





Tuesday, December 22, 2009

REQUEST NUMBER: 10-1038

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
		1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
SW-846:6020		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
SW-846:6850		1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
		1	RE12-10-7551	R	12/18/2009	
SW-846:7471A		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
		1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
SW-846:8082		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
		1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
SW-846:8321A_MOD		1	RE12-10-7554	R	12/18/2009	
		1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
SW-846:9012A		1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	



Tuesday, December 22, 2009

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REQUEST NUMBER: 10-1038

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
SW-846:9012A		1	RE12-10-7554	R	12/18/2009	

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Tuesday, December 22, 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1038

LOS ALAMOS

REQUEST NUMBER: 10-1038

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/21/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7553	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7553	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7553	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7554	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7554	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7554	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7551	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7551	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7552	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7552	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7551	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7552	1	AMBER GLASS	8082+NMED-HEXP	Ice	R

Relinquished By:

Date Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2486

EVENT NAME: 4th Qtr. FY09 - AOC C-12-001 - Threemile Canyon

SAMPLE ID: RE12-10-7551

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/18/2009		MEDIA:	QBT3	ALLH	
TIME COLLECTED(HH:MM)		14:23		SUB-MEDIA:	TUFF1	NA	
PRS ID:	C-12-001	OK		SAMPLE TECH CODE:	HA	OK	
LOCATION ID:	12-610624	↓		FIELD QC TYPE:	NA	OK	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:	NA	OK	
TOP DEPTH:	0	0 ft		SAMPLE USAGE:	INV	OK	
BOTTOM DEPTH:	0	0.5 ft		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA	NO		
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
BOREHOLE: YES/NO/NA	NO			BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 12/18/09	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 Liter	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	
1	↓	8082+NMED- HEXP	250 ML AMBER GLASS	Ice	Y	

## SAMPLE DESC:

Brown, pebbly, dry, sandy, silt.

## SAMPLE COMMENTS:

All HE spot tests negative

## LOCATION DESC:

1-1 0-6 inches

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 33$  dpm

HE negative

 $B\gamma \leq 2190$  dpm

## COLLECTED BY (PRINT)

TL McFarland

## REVIEWED BY (PRINT)

Jm Maria

RELINQUISHED BY (Printed Name) <i>Lorey A. Lopez</i> (Signature) <i>Lorey A. Lopez</i>	Date/Time 12/16/09 16:20	RECEIVED BY (Printed Name) <i>S. MARCHAN</i> (Signature) <i>[Signature]</i>	Date/Time 12/16/09 1620
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2486

EVENT NAME: 4th Qtr. FY09 - AOC C-12-001 - Threemile Canyon

SAMPLE ID: RE12-10-7552

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		12/18/2009	MEDIA:	QBT3	ok
TIME COLLECTED (HH:MM)		1459	SUB-MEDIA:	TUFF 1	
PRS ID:	C-12-001	ok	SAMPLE TECH CODE:	HA	
LOCATION ID:	12-610624		FIELD QC TYPE:	NA	
LOCATION TYPE:	GENERIC		FIELD PREP:	NA	
TOP DEPTH:	0	2.0	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0	3.0	SCREEN/PORT DESC:	NA	
FIELD MATRIX:	R	alc	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 1 LITER	None	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 Liter	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	
1		8082+NMED- HEXP	250 ML AMBER GLASS	Ice	Y	

SAMPLE DESC:

Pinkish gray dry, Tuff

SAMPLE COMMENTS:

NA

LOCATION DESC:

1-1, south north side of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 22$  dpm $\text{BY} \leq 2400$  dpm

COLLECTED BY (PRINT)

T L McFarland

REVIEWED BY (PRINT)

J R. Martin

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Larry A. Lopez	12/18/09	S. MARRAM	12/18/09
(Signature) Larry A. Lopez	16:20	(Signature) [Signature]	1620
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2486

EVENT NAME: 4th Qtr. FY09 - AOC C-12-001 - Threemile Canyon

SAMPLE ID: RE12-10-7553

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		12/18/2009	MEDIA:		OBT3
TIME COLLECTED (HH:MM)		14:30	SUB-MEDIA:		TUFF 1
PRS ID:	C-12-001	OK	SAMPLE TECH CODE:		HA
LOCATION ID:	12-610625	OK	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	OK	FIELD PREP:		NA
TOP DEPTH:	0	0	SAMPLE USAGE:		INV
BOTTOM DEPTH:	0	0.5	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		NO
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY 72.4 12/18/09	None	Y	
1		Met+U+CLO4+C N	1-GAL POLY 1 Liter	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

## SAMPLE DESC:

Dark brown, semi-moist sandy silt

## SAMPLE COMMENTS:

NA

## LOCATION DESC:

1-2

## FIELD SCREENING/MEASUREMENT RESULTS:

Alpha  $\leq$  27 dpm

HE spot test negative

B/g  $\leq$  2050 dpm

COLLECTED BY (PRINT)

TLMcFarlane

REVIEWED BY (PRINT)

J Marin

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Larry A. Lopez	12/18/09	S. MARIN	12/18/09
(Signature) Larry A. Lopez	16:20	(Signature) [Signature]	1620
RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	



## SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2486

EVENT NAME: 4th Qtr. FY09 - AOC C-12-001 - Threemile Canyon

SAMPLE ID: RE12-10-7554

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		12/18/2009	MEDIA:	OBT3	OK
TIME COLLECTED (HH:MM)		15:01	SUB-MEDIA:	TUFF 1	
PRS ID:	C-12-001	OK	SAMPLE TECH CODE:	HA	
LOCATION ID:	12-610625	OK	FIELD QC TYPE:	NA	
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	
TOP DEPTH:	0	2 ft	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0	3 ft	SCREEN/PORT DESC:	NA	
FIELD MATRIX:	R		EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY 725 12/18/09	None	Y	
1		Met+U+CLO4+C N	1-GAL POLY 1 Liter	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Pinkish gray dry tuff

SAMPLE COMMENTS:

Soil/tuff interface at 1.5 ft

LOCATION DESC:

1-2

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha  $\leq 27$  <sup>1RM 12/18/09</sup> dpm  
 44 <sup>2RM 12/18/09</sup> dpm  
 B/g  $\leq 2050$  <sup>2RM 12/18/09</sup> dpm  
 2330

HE spot test negative

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

JRMarin

RELINQUISHED BY (Printed Name) <u>Ray A. Lopez</u> (Signature) <u>Ray A. Lopez</u>	Date/Time 12/18/09 16:20	RECEIVED BY (Printed Name) <u>S. MARIAN</u> (Signature) <u>[Signature]</u>	Date/Time 12/18/09 1620
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



## DATA VALIDATION COVER SHEET

5121-1

## Data Validation Cover Sheet

Records Use only



## Section I.

REQUEST NUMBER: 10-1038 VALIDATION DATE: 02/05/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Monica Dymerski ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- |  |  |   |   |
|--|--|---|---|
| <input type="checkbox"/> TPH-GRO                 | <input type="checkbox"/> HIGH EXPLOSIVES | <input type="checkbox"/> DIOXIN FURANS          | <input checked="" type="checkbox"/> LCMSMS PERCHLORATES       |
| <input type="checkbox"/> TPH-DRO                 | <input type="checkbox"/> METALS          | <input type="checkbox"/> PCB CONGENERS          | <input type="checkbox"/> ORGANOCHLORINE                       |
| <input type="checkbox"/> GENERAL CHEMISTRY       | <input type="checkbox"/> RADIOCHEMISTRY  | <input type="checkbox"/> LCMSMS HIGH EXPLOSIVES | <input type="checkbox"/> PESTICIDES/POLYCHLORINATED BIPHENYLS |
| <input type="checkbox"/> OTHER (DESCRIBE): _____ |  |   |   |

## Section II. Completeness Check

- | YES                                 | NO                       | N/A                                 | (CHECK ONE)                 | YES                                 | NO                       | N/A                                 | (CHECK ONE)              |
|-------------------------------------|--------------------------|-------------------------------------|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 1. CHAIN-OF-CUSTODY FORM(S) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 6. RAW/BSS DATA          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 2. CASE NARRATIVE           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 7. QUALITY CONTROL FORMS |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 3. SAMPLE RESULT FORMS      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 8. QUANTITATION REPORTS  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 4. SAMPLE CHROMATOGRAMS     | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. TICS FORMS            |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. STANDARD CHROMATOGRAMS   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. TICS MASS SPECTRA    |

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):


None.

Reviewed by: Mary Donovan Level: I Date: 02/09/10

VALIDATOR'S SIGNATURE: Monica Dymerski


DATE: 02/05/10



LC/MS/MS PERCHLORATE ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5121-2</b> <b>LC/MS/MS Perchlorate Analytical Data Validation Checklist</b>	Records Use only 


Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The Internal Standard (IS) relative retention time has shifted by more than 0.98 to 1.02 seconds.	R, PERC0	J, PERC0
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Required IS retention time documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, PERC0b	R, PERC0b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. The IS are count is <25% of the expected value.	UJ, PERC1a	J, PERC1a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. The IS area count is <70% but >25% of the average of that obtained from the calibration standards.	UJ, PERC1b	J, PERC1b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. The IS area count is >130% of the average of that obtained from the calibration standards.	UJ, PERC1c	J, PERC1c
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Required IS information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, PERC1d	R, PERC1d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. The sample result is $\leq 5X$ the concentration of the related analyte in the method blank.	U, PERC4	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was $>5X$ .	N/A	J+, PERC4a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. The sample result is $\leq 5X$ the concentration of the related analyte in the trip blank, rinsate blank, and/or equipment blank.	U, PERC4d	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, PERC4e	R, PERC4e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ, PERC7	J, PERC7
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is $<0.99$ .	UJ, R, PERC7a	J, PERC7a



LC/MS/MS PERCHLORATE ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5121-2</b> <b>LC/MS/MS Perchlorate Analytical Data Validation Checklist</b>	Records Use only 

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. The ICV and/or CCV were recovered outside the method limits.	UJ, R, PERC7c	J, PERC7c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, R, PERC7d	J, PERC7d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, PERC7f	R, PERC7f
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. The affected analyte is considered not detected because ion abundance ratios did not meet specifications.	N/A	R, PERC8
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. The ion ratio documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	N/A	R, PERC8a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ PERC9	J-, PERC9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. The holding time was > 2 times the applicable holding time requirement.	R, PERC9a	J-, PERC9a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. The LCS percent recovery was <10%. Follow the external laboratory limits.	R, PERC12	J-, PERC12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21. The LCS percent recovery was < the Lower Acceptance Limit but >10%. Follow the external laboratory limits.	UJ, PERC12a	J-, PERC12a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22. The LCS percent recovery was > the Upper Acceptance Limit. Follow the external laboratory limits.	N/A	J+, PERC12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, PERC12c	R, PERC12c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24. The MS/MSD percent recovery was <10%	R, PERC12d	R, PERC12d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. The MS/MSD percent recovery was >10% but <75%	UJ, PERC12e	J, PERC12e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. The MS/MSD percent recovery was >125%.	N/A	J+, PERC12f



LC/MS/MS PERCHLORATE ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5121-2</b>  <b>LC/MS/MS Perchlorate Analytical Data Validation Checklist</b>	Records Use only _____  

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	27. The MS/MSD relative percent difference was >20%.	UJ, PERC12g	J, PERC12g
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	28. The affected analytes are considered suspect because the sample was diluted without any target analytes identified due to matrix interference. Qualify as Reject if the analytical laboratory cannot provide proof for matrix interference.	UJ, R, PERC15	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	29. The sample was diluted because target analytes were > the initial verification calibration.	UJ, PERC15a	J, PERC15a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	30. The Contract Required Detection Limit check standard (CRI) sample did not pass method-acceptance limits.	UJ, R, PERC16	J, PERC16
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	31. The Interference Check Sample was not within $\pm 20\%$ of the known value.	UJ, PERC16a	J, PERC16a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	32. The required CRI sample information is missing. Contact the SMO or external laboratory for information.	R, PERC16c	R, PERC16c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	33. The LANL project chemist identified quality deficiencies in the reported data that require further qualification. This code can ONLY be used and/or under advisement by the LANL project chemist.	UJ, R, PERC19	J, R, PERC19
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	34. Duplicate, dilution, or reanalysis.	UJ, PERC88	J, PERC88



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC  
 Lab Code: GEL  
 Instrument: LCMSMS  
 Method: SW846 6850 Modified  
 Matrix: SOIL  
 Extraction Batch ID: 936668  
 Extraction Type: Solid Prep  
 Client Sample No. RE12-10-7553  
 Date Received: 23-DEC-09  
 GEL Job No (SDG): 10-1038  
 GEL Sample ID: 243457001  
 Date Filtered: 28-DEC-09  
 Injection Volume (uL): 20  
 Sample Volume/Weight: 2.00 g  
 %Solids: 79

Concentrated Extract Volume: 20.0

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.631	2.52	0.631	ug/kg	U	1	29-DEC-09 18:49	per1229047a
	Perchlorate Isotope Ratio						1	29-DEC-09 18:49	per1229047a
14797-73-0	Perchlorate-101	.631	2.52	0.631	ug/kg	U	1	29-DEC-09 18:49	per1229047a
	Perchlorate-O(18)			6.24	ug/kg		1	29-DEC-09 18:49	per1229047a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X Concentrated Extract Volume X %Solids  
 Aliquot

MLD 02/05/10



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC  
 Lab Code: GEL  
 Instrument: LCMSMS  
 Method: SW846 6850 Modified  
 Matrix: SOIL  
 Extraction Batch ID: 936668  
 Extraction Type: Solid Prep  
 Sample Volume/Weight: 2.00 g  
 Concentrated Extract Volume: 20.0  
 Client Sample No. RE12-10-7554  
 Date Received: 23-DEC-09  
 GEL Job No (SDG): 10-1038  
 GEL Sample ID: 243457002  
 Date Filtered: 28-DEC-09  
 Injection Volume (uL): 20  
 %Solids: 91.9

CAS No.	Analyte <sup>a</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.544	2.18	0.754	ug/kg	J	1	29-DEC-09 19:10	per1229050a
	Perchlorate Isotope Ratio			3.06			1	29-DEC-09 19:10	per1229050a
14797-73-0	Perchlorate-101	.544	2.18	0.747	ug/kg	J	1	29-DEC-09 19:10	per1229050a
	Perchlorate-O(18)			5.55	ug/kg		1	29-DEC-09 19:10	per1229050a

<sup>a</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X Concentrated Extract Volume X  $\frac{1}{\% \text{Solids}}$   
 Aliquot

MLD 02/05/10



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 236668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7551

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 243457003

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 89

CAS No.	Analyte <sup>a</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.562	2.25	0.562	ug/kg	U	1	29-DEC-09 19:17	per1229051a
	Perchlorate Isotope Ratio						1	29-DEC-09 19:17	per1229051a
14797-73-0	Perchlorate-101	.562	2.25	0.562	ug/kg	U	1	29-DEC-09 19:17	per1229051a
	Perchlorate-O(18)			5.53	ug/kg		1	29-DEC-09 19:17	per1229051a

<sup>a</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X Concentrated Extract Volume X <sup>1</sup>  
Aliquot %Solids

MLD 02/05/10



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 936668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7552

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 243457004

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 92.4

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.541	2.16	0.541	ug/kg	U	1	29-DEC-09 19:24	per1229052a
	Perchlorate Isotope Ratio						1	29-DEC-09 19:24	per1229052a
14797-73-0	Perchlorate-101	.541	2.16	0.541	ug/kg	U	1	29-DEC-09 19:24	per1229052a
	Perchlorate-O(18)			5.20	ug/kg		1	29-DEC-09 19:24	per1229052a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$  X  $\frac{1}{\% \text{Solids}}$

MLD 02/05/10



## DATA VALIDATION COVER SHEET

5122-1

## Data Validation Cover Sheet

Records Use only



## Section I.

REQUEST NUMBER: 10-1038 VALIDATION DATE: 02/05/10 LAB CODE: GEL  
 CONTRACT LABORATORY NAME: GEL Laboratories LLC  
 VALIDATOR: Monica Dymerski ORGANIZATION: Analytical Quality Associates, Inc.  
 ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- |  |  |  |  |
|--|--|--|--|
| <input type="checkbox"/> TPH-GRO                 | <input type="checkbox"/> HIGH EXPLOSIVES | <input type="checkbox"/> DIOXIN FURANS                     | <input type="checkbox"/> LCMSMS PERCHLORATES |
| <input type="checkbox"/> TPH-DRO                 | <input type="checkbox"/> METALS          | <input type="checkbox"/> PCB CONGENERS                     | <input type="checkbox"/> ORGANOCHLORINE      |
| <input type="checkbox"/> GENERAL CHEMISTRY       | <input type="checkbox"/> RADIOCHEMISTRY  | <input checked="" type="checkbox"/> LCMSMS HIGH EXPLOSIVES | PESTICIDES/POLYCHLORINATED BIPHENYLS         |
| <input type="checkbox"/> OTHER (DESCRIBE): _____ |  |  |  |

## Section II. Completeness Check

- | YES                                 | NO                       | N/A                                 | (CHECK ONE)                 | YES                                 | NO                       | N/A                                 | (CHECK ONE)              |
|-------------------------------------|--------------------------|-------------------------------------|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 1. CHAIN-OF-CUSTODY FORM(S) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 6. RAW/BSS DATA          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 2. CASE NARRATIVE           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 7. QUALITY CONTROL FORMS |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 3. SAMPLE RESULT FORMS      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 8. QUANTITATION REPORTS  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 4. SAMPLE CHROMATOGRAMS     | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. TICS FORMS            |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. STANDARD CHROMATOGRAMS   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. TICS MASS SPECTRA    |

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

1. The CCV %D was >20% with a positive bias for PETN. The associated sample results were NDs and, thus, were not qualified.
2. The LCS %R was < the laboratory LAL but >10% for 2,6-diamino-4-nitrotoluene. The associated sample results were NDs and, thus, were qualified UJ,HE12a. The LCS %Rs were > the laboratory UALs for 2,4,6-trinitrotoluene and TATB. The associated sample results were NDs and, thus, were not qualified.
3. The MS and MSD %Rs were > the laboratory UAL for TATB. The associated sample results were NDs and, thus, were not qualified. The MS/MSD RPD was > the laboratory acceptance limit for TATB. The associated sample results were NDs and, thus, were qualified UJ,HE12g.

Reviewed by: Mary Donovan Level: I Date: 02/09/10

VALIDATOR'S SIGNATURE: *Monica Dymerski*DATE: 02/05/10



# **LC/MS/MS HIGH EXPLOSIVE ANALYTICAL DATA VALIDATION CHECKLIST**

5122-2


## **LC/MS/MS High Explosive Analytical Data Validation Checklist**

Records Use only



Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The IS retention time has shifted by more than 30 seconds.	R, UJ, HE0	J, HE0
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Required IS retention time documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE0b	R, HE0b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. The quantitating IS area count is <25% of the expected value, which indicates increased potential for false negative results and other possible problems with sample quantitation. Follow the method-specific windows.	R, HE1a	J, HE1a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. The IS area count for the quantitating IS is <70% but >25% of the average of that obtained from the calibration standards.	UJ, HE1b	J+, HE1b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. The IS area count for the quantitating IS is >130% of the average of that obtained from the calibration standards.	UJ, HE1c	J-, HE1c
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Required IS Information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE1d	R, HE1d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. The surrogate is <10%R. Follow the external laboratory limits.	R, HE3	J-, HE3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. The surrogate is < the Lower Acceptance Limit but ≥10% recovery. Follow the external laboratory limits.	UJ, HE3a	J-, HE3a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9. The surrogate %R value is > the Upper Acceptance Limit. Follow the external laboratory limits.	N/A	J+, HE3b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. At least one surrogate is > the Upper Acceptance Limit and one surrogate is < the Lower Acceptance Limit. Follow the external laboratory limits.	UJ, HE3c	J, HE3c



LC/MS/MS HIGH EXPLOSIVE ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5122-2</b>  <b>LC/MS/MS High Explosive Analytical Data Validation Checklist</b>	Records Use only _____  

Yes No N/A (Check One)			Assign Qualifier Listed Below If Criterion = Yes	Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Required surrogate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE3d	R, HE3d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. The sample result is $\leq 5$ times the concentration of the related analyte in the method blank.	U, HE4	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was $>5x$ .	N/A	J, HE4a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14. The sample result is $\leq 5$ times the concentration of the related analyte in the trip blank, rinsate blank, and/or equipment blank.	U, HE4d	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE4e	R, HE4e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. The absence of sample carry-over must be determined and verified.	N/A	R, N, HE4f
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ, HE7	J, HE7
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is less $< 0.99$ .	UJ, R, HE7a	J, HE7a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. The affected analytes were analyzed with a RRF of $< 0.05$ in the initial calibration and/or CCV.	UJ, R, HE7b	J, HE7b
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20. The ICV and/or CCV were recovered outside the method limits.	UJ, R, HE7c	J, HE7c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, R, HE7d	J, HE7d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, HE7f	R, HE7f



**LC/MS/MS HIGH EXPLOSIVE ANALYTICAL DATA VALIDATION CHECKLIST**

5122-2

**LC/MS/MS High Explosive Analytical Data Validation Checklist**

Records Use only



Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23. The mass spectral documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE8a	R, HE8a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, HE9	J-, HE9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. The holding time was >2 times the applicable holding time requirement.	R, HE9a	J-, HE9a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. The LCS percent recovery was <10%. Follow the external laboratory limits.	R, HE12	J-, HE12
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27. The LCS percent recovery was < the Lower Acceptance Limit but >10%. Follow the external laboratory limits.	UJ, HE12a	J-, HE12a
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28. The LCS percent recovery was > the Upper Acceptance Limit. Follow the external laboratory limits.	N/A	J+, HE12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE12c	R, HE12c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	30. The MS/MSD percent recovery was <10%.	R, HE12d	R, HE12d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	31. The MS/MSD percent recovery was >10% but <70%.	UJ, HE12e	J, HE12e
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32. The MS/MSD percent recover was >70%.	N/A	J+, HE12f
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33. The MS/MSD relative percent difference was >30%.	UJ, HE12g	J, HE12g
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	34. The affected analytes are considered suspect because the sample was diluted without any target analytes identified due to matrix interference. (Qualify as Reject if the analytical laboratory cannot provide proof for matrix interference.)	UJ, R, HE15	R, HE15
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	35. The sample was diluted because target analytes were > the initial verification calibration.	UJ, HE15a	J, HE15a



**LC/MS/MS HIGH EXPLOSIVE ANALYTICAL DATA VALIDATION CHECKLIST****5122-2****LC/MS/MS High Explosive Analytical Data Validation Checklist**

Records Use only



Yes No N/A (Check One)			Assign Qualifier Listed Below If Criterion = Yes	Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	36. The Contract Required Detection Limit Check Standard (CRI) sample did not pass method acceptance criteria.	UJ, R, HE16	J, HE16
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	37. The required CRI sample information is missing. Contact the SMO or external laboratory for information.	R, HE16c	R, HE16c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	38. The LANL project chemist identified quality deficiencies in the reported data that requires further qualification. This code can only be used and/or under advisement by the LANL project chemist.	UJ, R, HE19	J, R, HE19
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	39. Duplicate, dilution, or reanalysis.	UJ, HE88	J, HE88



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457001

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108099a

Date Analyzed: 10-JAN-10 17:27

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor

MLD 02/05/10



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457001

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050075.wiff

Date Analyzed: 06-JAN-10 09:52

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB UJ,HE12g	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene UJ,HE12a	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7554

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457002

Sample Amount 2

Moisture: 8.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108102a

Date Analyzed: 10-JAN-10 18:55

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor

MLD 02/05/10



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7554

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457002

Sample Amount 2

Moisture: 8.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050078.wiff

Date Analyzed: 06-JAN-10 10:39

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB UJ,HE12g	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene UJ,HE12a	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor

MLD 02/05/10



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7551

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457003

Sample Amount 2

Moisture: 11.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108103a

Date Analyzed: 10-JAN-10 19:25

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor

MLD 02/05/10



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7551

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457003

Sample Amount 2

Moisture: 11.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050079.wiff

Date Analyzed: 06-JAN-10 10:55

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB UJ,HE12g	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene UJ,HE12a	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7552

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457004

Sample Amount 2

Moisture: 7.6

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108107a

Date Analyzed: 10-JAN-10 21:23

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor

MLD 02/05/10



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7552

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457004

Sample Amount 2

Moisture: 7.6

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050080.wiff

Date Analyzed: 06-JAN-10 11:11

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB UJ,HE12g	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene UJ,HE12a	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value	X	Concentrated Extract Volume	X	Dilution Factor
		Sample Amount		



## DATA VALIDATION COVER SHEET

5116-1

## Data Validation Cover Sheet

Records Use only



## Section I.

REQUEST NUMBER: 10-1038 VALIDATION DATE: 02/05/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Monica Dymerski ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- |   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> TPH-GRO                | <input type="checkbox"/> HIGH EXPLOSIVES | <input type="checkbox"/> DIOXIN FURANS          | <input type="checkbox"/> LCMSMS PERCHLORATES       |
| <input type="checkbox"/> TPH-DRO                | <input type="checkbox"/> METALS          | <input type="checkbox"/> PCB CONGENERS          | <input checked="" type="checkbox"/> ORGANOCHLORINE |
| <input type="checkbox"/> GENERAL CHEMISTRY      | <input type="checkbox"/> RADIOCHEMISTRY  | <input type="checkbox"/> LCMSMS HIGH EXPLOSIVES | PESTICIDES/POLYCHLORINATED BIPHENYLS               |
| <input type="checkbox"/> OTHER (DESCRIBE): PCBs |  |   |  |

## Section II. Completeness Check

- | YES                                 | NO                       | N/A                                 | (CHECK ONE)                 | YES                                 | NO                       | N/A                                 | (CHECK ONE)              |
|-------------------------------------|--------------------------|-------------------------------------|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 1. CHAIN-OF-CUSTODY FORM(S) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 6. RAW/BSS DATA          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 2. CASE NARRATIVE           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 7. QUALITY CONTROL FORMS |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 3. SAMPLE RESULT FORMS      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 8. QUANTITATION REPORTS  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 4. SAMPLE CHROMATOGRAMS     | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. TICS FORMS            |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. STANDARD CHROMATOGRAMS   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. TICS MASS SPECTRA    |

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

- It should be noted that the MS/MSD analyses were performed on a LANL sample from another RN, and the parent sample raw data were not included in the data package. No sample data were qualified as a result.

Reviewed by: Mary Donovan Level: I Date: 02/09/10

VALIDATOR'S SIGNATURE: Monica Dymerski

DATE: 02/05/10



# **ORGANOCHLORINE PESTICIDE (PEST) AND POLYCHLORINATED BIPHENYL (PCB) ANALYTICAL DATA VALIDATION CHECKLIST**

5116-2

## **Organochlorine Pesticide (PEST) and Polychlorinated Biphenyl (PCB) Analytical Data Validation Checklist**

Records Use only



Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, P9	J-, P9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. The holding time was >2 times the applicable holding time requirement.	R, P9	J-, P9a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. The affected analytes are regarded as rejected because the analytical holding time was exceeded.	R, P9b	R, P9b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ, R, P7	J, P7
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is <0.995.	UJ, P7a	J, P7a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. The Initial Calibration Verification (ICV) and/or Continuing Calibration Verification (CCV) were recovered outside the method-specific limits.	UJ, P7c	J, P7c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, P7d	J, P7d
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8. The multicomponent standard was not analyzed within 72 hours of the initial analysis.	R, P7e	J, P7e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, P7f	R, P7f
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. The breakdown criteria have been exceeded. This can cause low bias in reported results. If compound is detected, qualify J-. If compound is not present, but breakdown products are present, qualify R. If no compounds or breakdown products are present, qualify UJ (4,4' DDT and Endrin).	UJ, R, P13	J-, P13



# **ORGANOCHLORINE PESTICIDE (PEST) AND POLYCHLORINATED BIPHENYL (PCB) ANALYTICAL DATA VALIDATION CHECKLIST**

5116-2

## **Organochlorine Pesticide (PEST) and Polychlorinated Biphenyl (PCB) Analytical Data Validation Checklist**

Records Use only



Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. The breakdown criteria have been exceeded. This can cause high bias in the reported results and potential false positive results for the breakdown products Endrin ketone, Endrin aldehyde, DDD, and DDE.	UJ, P13a	J+, P13a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12. The breakdown documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, P13b	R, P13b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. The sample result is $\leq 5X$ the concentration of the related analyte in the method blank.	U, P4	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was greater than 5X.	N/A	J, P4a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15. The sample result is $\leq 5X$ the concentration of the related analyte in the instrument blank and continuing calibration blank.	UJ, P4b	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	16. The sample result is $\leq 5X$ the concentration of the related analyte in the trip blank, rinsate blank, or equipment blank.	UJ, P4d	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, P4e	R, P4e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. The analyte RT shifted by more than 0.05 minutes from the mid-level standard of the initial calibration.	R, P0	J, P0
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Required retention time documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, P0b	R, P0b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. The surrogate is $<10\%R$ . Follow the external laboratory limits located within the associated data package.	R, P3	J-, P3



# **ORGANOCHLORINE PESTICIDE (PEST) AND POLYCHLORINATED BIPHENYL (PCB) ANALYTICAL DATA VALIDATION CHECKLIST**

5116-2

## **Organochlorine Pesticide (PEST) and Polychlorinated Biphenyl (PCB) Analytical Data Validation Checklist**

Records Use only



Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21. The surrogate is < the Lower Acceptance Level (LAL) but $\geq 10\%R$ . Follow the external laboratory limits located within the associated data package.	UJ, P3a	J-, P3a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22. The surrogate %R value is > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, P3b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23. At least one surrogate is > the Upper Acceptance Limit (UAL) and one surrogate is < the LAL. Follow the external laboratory limits located within the associated data package.	UJ, P3c	J, P3c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24. Required surrogate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, P3d	R, P3d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, P12	J-, P12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. The LCS percent recovery was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, P12a	J-, P12a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	27. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, P12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	28. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, P12c	R, P12c
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	29. The analyte was not confirmed on a second dissimilar column.	N/A	R, P8
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	30. The second dissimilar column documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, P8a	R, P8a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	31. Duplicate, Dilution, or reanalysis.	UJ, P88	J, P88



**ORGANOCHLORINE PESTICIDE (PEST) AND POLYCHLORINATED BIPHENYL (PCB)  
ANALYTICAL DATA VALIDATION CHECKLIST**

5116-2

**Organochlorine Pesticide (PEST) and Polychlorinated  
Biphenyl (PCB) Analytical Data Validation Checklist**

Records Use only



Yes   No   N/A (Check One)				Assign Qualifier Listed Below If Criterion = Yes	
				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	32. The affected analytes have elevated detection limits and may not meet project DQOs because the sample was diluted without any target analytes identified due to matrix interference. Qualify as Reject if the analytical laboratory cannot provide proof for matrix interference.	UJ, R, P15	R, P15
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33. Qualification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB, NQ, NQ
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	34. The LANL project chemist identified quality deficiencies in the reported data that requires further qualification. This code can only be used and/or under advisement by the LANL project chemist.	UJ, R, P19	J, R, P19



## PCB

Page 1 of 1

## Certificate of Analysis

## Sample Summary

SDG Number: 10-1038  
Lab Sample ID: 243457003

Date Collected: 12/18/2009 12:00  
Date Received: 12/23/2009 10:10  
Client: LANL010  
Method: SW846 8082  
Inst: ECD2A.I  
Analyst: JAOC  
Aliquot: 30.02 g  
Column: 1 CLP1  
2 CLP2

Matrix: R  
%Moisture: 11.1  
Project: LANL01004  
SOP Ref: GL-OA-E-040  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL  
Level: LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.75	ug/kg	1.25	3.75	1
11104-28-2	Aroclor-1221	U	3.75	ug/kg	1.25	3.75	1
11141-16-5	Aroclor-1232	U	3.75	ug/kg	1.25	3.75	1
53469-21-9	Aroclor-1242	U	3.75	ug/kg	1.25	3.75	1
12672-29-6	Aroclor-1248	U	3.75	ug/kg	1.25	3.75	1
11097-69-1	Aroclor-1254	U	3.75	ug/kg	1.25	3.75	1
11096-82-5	Aroclor-1260	U	3.75	ug/kg	1.25	3.75	1



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

SDG Number: 10-1038  
Lab Sample ID: 243457004

Date Collected: 12/18/2009 12:00  
Date Received: 12/23/2009 10:10  
Client: LANL010  
Method: SW846 8082  
Inst: ECD2A.I  
Analyst: JAOC  
Aliquot: 30.19 g  
Column: 1 CLP1  
2 CLP2

Matrix: R  
%Moisture: 7.6  
Project: LANL01004  
SOP Ref: GL-OA-E-040  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL  
Level: LOW

Client ID: RE12-10-7552  
Batch ID: 937093  
Run Date: 12/29/2009 10:00  
Prep Date: 12/28/2009 20:43  
Data File: 015f1501.d  
015b1501.d

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.58	ug/kg	1.19	3.58	1
11104-28-2	Aroclor-1221	U	3.58	ug/kg	1.19	3.58	1
11141-16-5	Aroclor-1232	U	3.58	ug/kg	1.19	3.58	1
53469-21-9	Aroclor-1242	U	3.58	ug/kg	1.19	3.58	1
12672-29-6	Aroclor-1248	U	3.58	ug/kg	1.19	3.58	1
11097-69-1	Aroclor-1254	U	3.58	ug/kg	1.19	3.58	1
11096-82-5	Aroclor-1260	U	3.58	ug/kg	1.19	3.58	1



## DATA VALIDATION COVER SHEET

5118-1

## Data Validation Cover Sheet

Records Use only



## Section I.

REQUEST NUMBER: 10-1038 VALIDATION DATE: 02/05/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Monica Dymerski ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- |  |  |   |   |
|--|--|---|---|
| <input type="checkbox"/> TPH-GRO           | <input type="checkbox"/> HIGH EXPLOSIVES   | <input type="checkbox"/> DIOXIN FURANS          | <input type="checkbox"/> LCMSMS PERCHLORATES                  |
| <input type="checkbox"/> TPH-DRO           | <input checked="" type="checkbox"/> METALS | <input type="checkbox"/> PCB CONGENERS          | <input type="checkbox"/> ORGANOCHLORINE                       |
| <input type="checkbox"/> GENERAL CHEMISTRY | <input type="checkbox"/> RADIOCHEMISTRY    | <input type="checkbox"/> LCMSMS HIGH EXPLOSIVES | <input type="checkbox"/> PESTICIDES/POLYCHLORINATED BIPHENYLS |
| <input type="checkbox"/> OTHER (DESCRIBE): |  |   |   |

## Section II. Completeness Check

- | YES                                 | NO                       | N/A                                 | (CHECK ONE)                 | YES                                 | NO                       | N/A                                 | (CHECK ONE)              |
|-------------------------------------|--------------------------|-------------------------------------|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 1. CHAIN-OF-CUSTODY FORM(S) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 6. RAW/BSS DATA          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 2. CASE NARRATIVE           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 7. QUALITY CONTROL FORMS |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 3. SAMPLE RESULT FORMS      | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 8. QUANTITATION REPORTS  |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4. SAMPLE CHROMATOGRAMS     | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. TICS FORMS            |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. STANDARD CHROMATOGRAMS   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. TICS MASS SPECTRA    |

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

1. Target analytes Pb and Cr were detected in the MB. The Cr results for samples RE12-10-7552 and -7554 were detects >50X the MB concentration and, thus, were not qualified, based on professional judgment. The remaining associated sample results were detects >5X but ≤50X the MB concentrations and, thus, were qualified J,I4a.
2. The MS %Rs were > the laboratory UAL for Ca, Mg, K, Al, Fe, and Mn. The associated Ca, Mg, and K sample results were detects and, thus, were qualified J+,I6b. The Al, Fe, and Mn parent sample concentrations were >4X the spike concentrations; thus, those sample results were not qualified, based on professional judgment.
3. It should be noted that the matrix QC analyses were performed on a LANL sample from another RN for ICP-AES and ICP-MS, and parent sample raw data were not included in the data package. No sample data were qualified as a result.


Reviewed by: Mary Donovan Level: I Date: 02/09/10

VALIDATOR'S SIGNATURE:

A handwritten signature in black ink, appearing to read "Monica Dymerski".


DATE: 02/05/10



METALS ANALYTICAL DATA VALIDATION CHECKLIST	
5118-2  Metals Analytical Data Validation Checklist	Records Use only   Los Alamos NATIONAL LABORATORY EST. 1942


Yes No N/A (Check One)				Assign Qualifier Listed Below If Criterion = Yes	
				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, I9	J-, I9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. The holding time was >2 times the applicable holding time requirement.	R, I9a	J-, I9a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. The instrument performance sample did not pass method acceptance criteria.	R, I16	R, I16
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. The mass calibration is not within 0.1 amu or %RSD is >5% for any isotope (Be, Mg, Co, In, Pb).	UJ, I16a	J, I16a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Samples were analyzed outside specific method tune time criteria.	N/A	J, I16b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. The required instrument performance sample information is missing. Contact the SMO or external laboratory for information.	R, I16c	R, I16c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ, R, I7	J, I7
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is <0.995.	UJ, I7a	J, I7a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9. The Initial Calibration Verification (ICV) and/or Continuing Calibration Verification (CCV) were recovered outside the method-specific limits.	UJ, I7c	J, I7c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, I7d	J, I7d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, I7f	R, I7f
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Metals interference check sample percent recover value is <50%.	R, I2	J-, I2



METALS ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5118-2</b>  <b>Metals Analytical Data Validation Checklist</b>	Records Use only 


Yes   No   N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Metals interference check sample percent recovery value is $\geq 50\%$ and $< 80\%$	UJ, I2a	J-, I2a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Metals interference check sample percent recovery value is $> 120\%$ .	N/A	J+, I2b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. Metals interference check sample was not analyzed with the samples.	R, I2c	R, I2c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. The sample result is $\leq 5X$ the concentration of the related analyte in the method blank.	U, I4	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was $> 5X$ .	N/A	J, I4a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. The sample result is $\leq 5X$ the concentration of the related analyte in the instrument blank and continuing calibration blank.	U, I4b	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Continuing calibration blanks were not analyzed at the appropriate method frequency.	UJ, I4c	J, I4c
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	20. The sample result is $\leq 5X$ the concentration of the related analyte in the trip blank, rinsate blank, or equipment blank.	U, I4d	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, I4e	R, I4e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22. The associated matrix spike recovery was $< 10\%$ . Follow the external laboratory limits located within the associated data package.	R, I6	R, I6
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23. The associated matrix spike recovery was $< \text{the LAL}$ but $> 10\%$ . Follow the external laboratory limits located within the associated data package.	UJ, I6a	J+, I6a
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24. The associated matrix spike recovery was $> \text{the UAL}$ . Follow the external laboratory limits located within the associated data package.	UJ, I6b	J+, I6b



METALS ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5118-2</b>  <b>Metals Analytical Data Validation Checklist</b>	Records Use only _____  

Yes   No   N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. Required matrix spike information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. If the LCS information is present, do not Reject. Qualify data based on the LCS information.	R, I6c	R, I6c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. The sample and the duplicate sample results were ≥5X the RL and the duplicate RPD was >20% for water samples and >35% for soil samples.	UJ, I10a	J, I10a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	27. The duplicate sample was not prepared and/or analyzed with the samples for unspecified reasons. The duplicate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	UJ, I10d	J, I10d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	28. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, I12	R, I12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29. The LCS percent recover was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, I12a	J-, I12a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	30. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, I12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	31. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. Do not Reject if MS/MSD information is present. Qualify according to MS/MSD criteria.	R, I12c	R, I12c
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	32. The quantitating IS area count is <10% for metals window in relation to the initial calibration blank. Follow the method-specific windows.	R, I1a	J, I1a



METALS ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5118-2</b>  <b>Metals Analytical Data Validation Checklist</b>	Records Use only  

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	33. The IS area count for the quantitating IS is <60% but >10% for metals window in relation to the initial calibration blank. Follow the method-specific windows.	UJ, I1b	J, I1b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	34. The IS area count for the quantitating IS is >125% in relation to the metals initial calibration blank. Follow method-specific windows.	UJ, I1c	J, I1c
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	35. Required IS information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, I1d	R, I1d
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	36. Serial dilution sample RPD was >10% and the sample result was >50X the MDL (>100X the MDL for ICPMS). Qualify ONLY the sample used for the serial dilution.	UJ, I18	J, I18
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	37. Serial dilution sample was not analyzed with the samples.	UJ, I18a	J, I18
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	38. The sample result was reported as detected between the IDL and the EDL.	N/A	J, I1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	39. Duplicate, dilution, or reanalysis.	UJ, I88	J, I88
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40. Qualification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB, NQ, NQ
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	41. The LANL project chemist identified quality deficiencies in the reported data that require further qualification. This code can ONLY be used and/or under advisement by the LANL project chemist.	UJ, R, I19	J, R, I19



**METALS**  
-1-  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 10-1038

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243457001

BASIS: Dry Weight

DATE COLLECTED 18-DEC-09

CLIENT ID: RE12-10-7553

LEVEL: Low

DATE RECEIVED 23-DEC-09

MATRIX: SOIL

%SOLIDS: 79

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	9590000	ug/Kg		8530	25100	25100	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-36-0	Antimony	1250	ug/Kg	U	412	1250	1250	1	P	HSC	01/14/10 21:17	011410-2	941050
7440-38-2	Arsenic	2.61	mg/kg		0.252	1.26	1.26	2	MS	RMJ	01/13/10 22:05	100113-4	936805
7440-39-3	Barium	135000	ug/Kg		125	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-41-7	Beryllium	1.35	mg/kg		0.0252	0.126	0.126	2	MS	RMJ	01/12/10 12:48	100111-3	936805
7440-43-9	Cadmium	627	ug/Kg	U	125	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-70-2	Calcium J+,16b	2040000	ug/Kg		10000	31400	31400	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-47-3	Chromium J,14a	11900	ug/Kg		188	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-48-4	Cobalt	5410	ug/Kg		188	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-50-8	Copper	6030	ug/Kg		376	1250	1250	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-89-6	Iron	14500000	ug/Kg		10000	31400	31400	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-92-1	Lead J,14a	14200	ug/Kg		314	1250	1250	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-95-4	Magnesium J+,16b	1750000	ug/Kg		10700	37600	37600	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-96-5	Manganese	301000	ug/Kg		251	1250	1250	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-97-6	Mercury	14	ug/kg		4.66	13.7	13.7	1	AV	JXLI	01/07/10 11:19	010710S2-7	937638
7440-02-0	Nickel	9.28	mg/kg		0.126	0.505	0.505	2	MS	RMJ	01/12/10 12:48	100111-3	936805
7440-09-7	Potassium J+,16b	1710000	ug/Kg		8030	31400	31400	1	P	HSC	01/12/10 00:26	011110A-1	936808
7782-49-2	Selenium	1.26	mg/kg	U	0.631	1.26	1.26	2	MS	RMJ	01/12/10 12:48	100111-3	936805
7440-22-4	Silver	318	ug/Kg	J	125	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-23-5	Sodium	81700	ug/Kg		8780	31400	31400	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-28-0	Thallium	0.387	mg/kg		0.0757	0.252	0.252	2	MS	RMJ	01/13/10 22:05	100113-4	936805
7440-61-1	Uranium	4.07	mg/kg		0.0167	0.0505	0.0505	2	MS	RMJ	01/13/10 22:05	100113-4	936805
7440-62-2	Vanadium	32400	ug/Kg		125	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-66-6	Zinc	26700	ug/Kg		414	1250	1250	1	P	HSC	01/12/10 00:26	011110A-1	936808

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
936805	936804	SW846 3050B	0.5	g	50	mL	12/29/09	FGA
936808	936807	SW846 3050B	0.503	g	50	mL	12/29/09	FGA
937638	937637	SW846 7471A Prep	0.552	g	30	mL	01/06/10	TXB3
941050	941049	SW846 3050B	0.505	g	50	mL	01/13/10	FGA

MLD 02/05/10



**METALS**  
-1-  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 10-1038

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243457002

BASIS: Dry Weight

DATE COLLECTED 18-DEC-09

CLIENT ID: RE12-10-7554

LEVEL: Low

DATE RECEIVED 23-DEC-09

MATRIX: SOIL

%SOLIDS: 91.9

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	8510000	ug/Kg		7380	21700	21700	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-36-0	Antimony	426	ug/Kg	J	357	1080	1080	1	P	HSC	01/14/10 21:24	011410-2	941050
7440-38-2	Arsenic	1.57	mg/kg		0.213	1.07	1.07	2	MS	RMJ	01/13/10 22:09	100113-4	936805
7440-39-3	Barium	132000	ug/Kg		109	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-41-7	Beryllium	0.806	mg/kg		0.0213	0.107	0.107	2	MS	RMJ	01/12/10 12:54	100111-3	936805
7440-43-9	Cadmium	543	ug/Kg	U	109	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-70-2	Calcium J+,16b	3670000	ug/Kg		8680	27100	27100	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-47-3	Chromium	27000	ug/Kg		163	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-48-4	Cobalt	2460	ug/Kg		163	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-50-8	Copper	4020	ug/Kg		326	1090	1090	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-89-6	Iron	13600000	ug/Kg		8680	27100	27100	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-92-1	Lead J,14a	5730	ug/Kg		271	1090	1090	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-95-4	Magnesium J+,16b	1970000	ug/Kg		9230	32600	32600	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-96-5	Manganese	346000	ug/Kg		217	1090	1090	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-97-6	Mercury	31.4	ug/kg		4.44	13.1	13.1	1	AV	JXL	01/07/10 11:33	010710S2-7	937638
7440-02-0	Nickel	7.45	mg/kg		0.107	0.427	0.427	2	MS	RMJ	01/12/10 12:54	100111-3	936805
7440-09-7	Potassium J+,16b	1680000	ug/Kg		6950	27100	27100	1	P	HSC	01/12/10 00:33	011110A-1	936808
7782-49-2	Selenium	1.07	mg/kg	U	0.533	1.07	1.07	2	MS	RMJ	01/12/10 12:54	100111-3	936805
7440-22-4	Silver	463	ug/Kg	J	109	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-23-5	Sodium	228000	ug/Kg		7600	27100	27100	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-28-0	Thallium	0.175	mg/kg	J	0.064	0.213	0.213	2	MS	RMJ	01/13/10 22:09	100113-4	936805
7440-61-1	Uranium	0.398	mg/kg		0.0141	0.0427	0.0427	2	MS	RMJ	01/13/10 22:09	100113-4	936805
7440-62-2	Vanadium	15300	ug/Kg		109	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-66-6	Zinc	34600	ug/Kg		358	1090	1090	1	P	HSC	01/12/10 00:33	011110A-1	936808

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt/vol	Units	Final wt/vol.	Units	Date	Analyst
936805	936804	SW846 3050B	0.51	g	50	mL	12/29/09	FGA
936808	936807	SW846 3050B	0.501	g	50	mL	12/29/09	FGA
937638	937637	SW846 7471A Prep	0.5	g	30	mL	01/06/10	TXB3
941050	941049	SW846 3050B	0.503	g	50	mL	01/13/10	FGA

MLD 02/05/10



**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 10-1038

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243457003

BASIS: Dry Weight

DATE COLLECTED 18-DEC-09

CLIENT ID: RE12-10-7551

LEVEL: Low

DATE RECEIVED 23-DEC-09

MATRIX: SOIL

%SOLIDS: 89

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	11500000	ug/Kg		7630	22500	22500	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-36-0	Antimony	1080	ug/Kg	U	355	1080	1080	1	P	HSC	01/14/10 21:31	011410-2	941050
7440-38-2	Arsenic	2.06	mg/kg		0.222	1.11	1.11	2	MS	RMJ	01/13/10 22:13	100113-4	936805
7440-39-3	Barium	126000	ug/Kg		112	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-41-7	Beryllium	1.12	mg/kg		0.0222	0.111	0.111	2	MS	RMJ	01/12/10 13:00	100111-3	936805
7440-43-9	Cadmium	561	ug/Kg	U	112	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-70-2	Calcium J+,16b	2010000	ug/Kg		8980	28100	28100	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-47-3	Chromium J,14a	11200	ug/Kg		168	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-48-4	Cobalt	4740	ug/Kg		168	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-50-8	Copper	5780	ug/Kg		337	1120	1120	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-89-6	Iron	12800000	ug/Kg		8980	28100	28100	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-92-1	Lead J,14a	13000	ug/Kg		281	1120	1120	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-95-4	Magnesium J+,16b	1760000	ug/Kg		9540	33700	33700	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-96-5	Manganese	232000	ug/Kg		225	1120	1120	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-97-6	Mercury	16.2	ug/kg		4.19	12.3	12.3	1	AV	JXL1	01/07/10 11:35	010710S2-7	937638
7440-02-0	Nickel	7.23	mg/kg		0.111	0.445	0.445	2	MS	RMJ	01/12/10 13:00	100111-3	936805
7440-09-7	Potassium J+,16b	1690000	ug/Kg		7190	28100	28100	1	P	HSC	01/12/10 00:40	011110A-1	936808
7782-49-2	Selenium	1.11	mg/kg	U	0.556	1.11	1.11	2	MS	RMJ	01/12/10 13:00	100111-3	936805
7440-22-4	Silver	220	ug/Kg	J	112	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-23-5	Sodium	105000	ug/Kg		7860	28100	28100	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-28-0	Thallium	0.245	mg/kg		0.0667	0.222	0.222	2	MS	RMJ	01/13/10 22:13	100113-4	936805
7440-61-1	Uranium	1.44	mg/kg		0.0147	0.0445	0.0445	2	MS	RMJ	01/13/10 22:13	100113-4	936805
7440-62-2	Vanadium	26500	ug/Kg		112	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-66-6	Zinc	22600	ug/Kg		370	1120	1120	1	P	HSC	01/12/10 00:40	011110A-1	936808

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
936805	936804	SW846 3050B	0.506	g	50	mL	12/29/09	FGA
936808	936807	SW846 3050B	0.501	g	50	mL	12/29/09	FGA
937638	937637	SW846 7471A Prep	0.548	g	30	mL	01/06/10	TXB3
941050	941049	SW846 3050B	0.523	g	50	mL	01/13/10	FGA

MLD 02/05/10



**METALS**  
-1-  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 10-1038

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243457004

BASIS: Dry Weight

DATE COLLECTED 18-DEC-09

CLIENT ID: RE12-10-7552

LEVEL: Low

DATE RECEIVED 23-DEC-09

MATRIX: SOIL

%SOLIDS: 92.4

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	7260000	ug/Kg		7280	21400	21400	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-36-0	Antimony	1070	ug/Kg	U	354	1070	1070	1	P	HSC	01/14/10 21:38	011410-2	941050
7440-38-2	Arsenic	1.83	mg/kg		0.212	1.06	1.06	2	MS	RMJ	01/13/10 22:17	100113-4	936805
7440-39-3	Barium	66800	ug/Kg		107	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-41-7	Beryllium	0.644	mg/kg		0.0212	0.106	0.106	2	MS	RMJ	01/12/10 13:06	100111-3	936805
7440-43-9	Cadmium	536	ug/Kg	U	107	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-70-2	Calcium J+,16b	1360000	ug/Kg		8570	26800	26800	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-47-3	Chromium	16900	ug/Kg		161	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-48-4	Cobalt	3670	ug/Kg		161	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-50-8	Copper	4160	ug/Kg		321	1070	1070	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-89-6	Iron	12800000	ug/Kg		8570	26800	26800	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-92-1	Lead J,14a	5470	ug/Kg		268	1070	1070	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-95-4	Magnesium J+,16b	1640000	ug/Kg		9110	32100	32100	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-96-5	Manganese	208000	ug/Kg		214	1070	1070	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-97-6	Mercury	12.3	ug/kg		3.84	11.3	11.3	1	AV	JXL1	01/07/10 11:37	010710S2-7	937638
7440-02-0	Nickel	5.92	mg/kg		0.106	0.424	0.424	2	MS	RMJ	01/12/10 13:06	100111-3	936805
7440-09-7	Potassium J+,16b	1410000	ug/Kg		6860	26800	26800	1	P	HSC	01/12/10 00:47	011110A-1	936808
7782-49-2	Selenium	1.06	mg/kg	U	0.53	1.06	1.06	2	MS	RMJ	01/12/10 13:06	100111-3	936805
7440-22-4	Silver	369	ug/Kg	J	107	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-23-5	Sodium	232000	ug/Kg		7500	26800	26800	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-28-0	Thallium	0.137	mg/kg	J	0.0636	0.212	0.212	2	MS	RMJ	01/13/10 22:17	100113-4	936805
7440-61-1	Uranium	0.470	mg/kg		0.014	0.0424	0.0424	2	MS	RMJ	01/13/10 22:17	100113-4	936805
7440-62-2	Vanadium	13100	ug/Kg		107	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-66-6	Zinc	33500	ug/Kg		354	1070	1070	1	P	HSC	01/12/10 00:47	011110A-1	936808

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
936805	936804	SW846 3050B	0.51	g	50	mL	12/29/09	FGA
936808	936807	SW846 3050B	0.505	g	50	mL	12/29/09	FGA
937638	937637	SW846 7471A Prep	0.575	g	30	mL	01/06/10	TXB3
941050	941049	SW846 3050B	0.504	g	50	mL	01/13/10	FGA

MLD 02/05/10



## DATA VALIDATION COVER SHEET

5120-1

Records Use only

## Data Validation Cover Sheet



## Section I.

REQUEST NUMBER: 10-1038 VALIDATION DATE: 02/05/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Monica Dymerski ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- |   |  |   |   |
|---|--|---|---|
| <input type="checkbox"/> TPH-GRO                              | <input type="checkbox"/> HIGH EXPLOSIVES | <input type="checkbox"/> DIOXIN FURANS          | <input type="checkbox"/> LCMSMS PERCHLORATES                  |
| <input type="checkbox"/> TPH-DRO                              | <input type="checkbox"/> METALS          | <input type="checkbox"/> PCB CONGENERS          | <input type="checkbox"/> ORGANOCHLORINE                       |
| <input checked="" type="checkbox"/> GENERAL CHEMISTRY         | <input type="checkbox"/> RADIOCHEMISTRY  | <input type="checkbox"/> LCMSMS HIGH EXPLOSIVES | <input type="checkbox"/> PESTICIDES/POLYCHLORINATED BIPHENYLS |
| <input type="checkbox"/> OTHER (DESCRIBE): total cyanide only |  |   |   |

## Section II. Completeness Check

- | YES                                 | NO                       | N/A                                 | (CHECK ONE)                 | YES                                 | NO                       | N/A                                 | (CHECK ONE)              |
|-------------------------------------|--------------------------|-------------------------------------|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 1. CHAIN-OF-CUSTODY FORM(S) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 6. RAW/BSS DATA          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 2. CASE NARRATIVE           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 7. QUALITY CONTROL FORMS |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 3. SAMPLE RESULT FORMS      | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 8. QUANTITATION REPORTS  |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4. SAMPLE CHROMATOGRAMS     | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. TICS FORMS            |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. STANDARD CHROMATOGRAMS   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. TICS MASS SPECTRA    |

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):


- It should be noted that the matrix QC analyses were performed on LANL samples from other RNs. No sample data were qualified as a result.

Reviewed by: Mary Donovan Level: I Date: 02/09/10

VALIDATOR'S SIGNATURE:


DATE: 02/05/10



GENERAL CHEMISTRY ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5120-2</b>  <b>General Chemistry Analytical Data Validation Checklist</b>	Records Use only  


Yes No N/A (Check One)				Assign Qualifier Listed Below If Criterion = Yes	
				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, I9	J-, I9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. The holding time was >2 times the applicable holding time requirement.	R, I9a	J-, I9a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. The affected analytes are regarded as rejected because the analytical holding time was exceeded.	R, I9b	R, I9b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. The affected results were not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.	UJ, R, I7	J, I7
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. The affected analytes were analyzed with an initial calibration curve that exceeded the %RSD criteria and/or the associated multipoint calibration correlation coefficient is <0.995.	UJ, I7a	J, I7a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. The ICV and/or CCV were recovered outside the method specific limits.	UJ, I7c	J, I7c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. The ICV and/or CCV were not analyzed at the appropriate method frequency.	UJ, I7d	J, I7d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Required calibration information is missing or samples were analyzed on an expired calibration. Contact the SMO or external laboratory for information.	R, I7f	R, I7f
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. The interference check sample percent recovery value is <50%.	R, I2	J-, I2
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. The interference check sample percent recovery value is ≥50% and <80%.	UJ, I2a	J-, I2a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. The interference check sample percent recovery value is >120%.	N/A	J+, I2b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12. The interference check sample was not analyzed with the samples.	R, I2c	R, I2c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. The sample result is ≤5X the concentration of the related analyte in the method blank.	U, I4	N/A



GENERAL CHEMISTRY ANALYTICAL DATA VALIDATION CHECKLIST	
5120-2  General Chemistry Analytical Data Validation Checklist	Records Use only   Los Alamos NATIONAL LABORATORY EST. 1945

Yes No N/A (Check One)			Assign Qualifier Listed Below If Criterion = Yes	Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was >5X.	N/A	J, I4a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. The sample result is $\leq 5X$ the concentration of the related analyte in the instrument blank and continuing calibration blank.	U, I4b	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. Continuing calibration blanks were not analyzed at the appropriate method frequency.	UJ, I4c	J, I4c
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17. The sample result is $\leq 5X$ the concentration of the related analyte in the trip blank, rinsate blank, or equipment blank.	U, I4d	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, I4e	R, I4e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. The associate matrix spike recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, I6	R, I6
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. The associated matrix spike recovery was below the Lower Acceptance Limit (LAL) but >10%. Follow the external laboratory limits located within the associated data package.	UJ, I6a	J-, I6a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21. The associated matrix spike recovery was above the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package.	UJ, I6b	J+, I6b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22. Required matrix spike information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. If LCS Information is present, do not reject. Qualify data based on LCS information.	R, I6c	R, I6c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23. The sample and/or the duplicate sample results RPD is not within the acceptance limits. Follow the external laboratory limits located within the associated data package.	UJ, I10b	J, I10b



GENERAL CHEMISTRY ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5120-2</b>  <b>General Chemistry Analytical Data Validation Checklist</b>	Records Use only _____  

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24. The duplicate sample was not prepared and/or analyzed with the samples for unspecified reasons. The duplicate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	UJ, I10d	J, I10d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, I12	R, I12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. The LCS percent recover was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, I12a	J-, I12a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	27. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, I12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	28. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. Do not Reject if MS/MSD information is present. Qualify according to MS/MSD criteria.	R, I12c	R, I12c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29. Duplicate, dilution, or reanalysis	UJ, I88	J, I88
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	30. The LANL project chemist identified quality deficiencies in the reported data that require further qualification. This code can ONLY be used and/or under advisement by the LANL project chemist.	UJ, R, I19	J, R, I19
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	31. Qualification of data via data validation does not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB NQ, NQ (no qualification)



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 5, 2010

Client SDG: 10-1038

Client Sample ID: RE12-10-7553  
Sample ID: 243457001  
Matrix: R  
Collect Date: 18-DEC-09 12:00  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 20.7%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

### Flow Injection Analysis

SW9012A Cyanide, Total Federal "Dry Weight Corrected"

Cyanide, Total	U	ND	75.3	277	ug/kg	1	AXC2	12/31/09	1014	936400	1
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### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/30/09	1520	936399

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

MLD 02/05/10



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 5, 2010

Client SDG: 10-1038

Client Sample ID: RE12-10-7554  
Sample ID: 243457002  
Matrix: R  
Collect Date: 18-DEC-09 12:00  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 8.06%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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### Flow Injection Analysis

SW9012A Cyanide, Total Federal "Dry Weight Corrected"

Cyanide, Total	U	ND	68.5	252	ug/kg	1	AXC2	12/31/09	1019	936400	1
----------------	---	----	------	-----	-------	---	------	----------	------	--------	---

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/30/09	1520	936399

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	



## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 5, 2010

Client SDG: 10-1038

Client Sample ID: RE12-10-7551  
Sample ID: 243457003  
Matrix: R  
Collect Date: 18-DEC-09 12:00  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 11.1%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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#### Flow Injection Analysis

SW9012A Cyanide, Total Federal "Dry Weight Corrected"

Cyanide, Total	U	ND	73.6	270	ug/kg	1	AXC2	12/31/09	1020	936400	1
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#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/30/09	1520	936399

#### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	



## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 5, 2010

Client SDG: 10-1038

Client Sample ID: RE12-10-7552  
Sample ID: 243457004  
Matrix: R  
Collect Date: 18-DEC-09 12:00  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 7.58%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

#### Flow Injection Analysis

SW9012A Cyanide, Total Federal "Dry Weight Corrected"

Cyanide, Total	U	ND	73.6	271	ug/kg	1	AXC2	12/31/09	1020	936400	1
----------------	---	----	------	-----	-------	---	------	----------	------	--------	---

#### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/30/09	1520	936399

#### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	



## DATA VALIDATION COVER SHEET

5119-1

Records Use only

## Data Validation Cover Sheet



## Section I.

REQUEST NUMBER: 10-1038 VALIDATION DATE: 02/05/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Monica Dymerski ORGANIZATION: Analytical Quality Associates, Inc.

ANALYTICAL SUITE (CHECK ALL THAT APPLY):

- |  |  |   |   |
|--|--|---|---|
| <input type="checkbox"/> TPH-GRO                 | <input type="checkbox"/> HIGH EXPLOSIVES           | <input type="checkbox"/> DIOXIN FURANS          | <input type="checkbox"/> LCMSMS PERCHLORATES                  |
| <input type="checkbox"/> TPH-DRO                 | <input type="checkbox"/> METALS                    | <input type="checkbox"/> PCB CONGENERS          | <input type="checkbox"/> ORGANOCHLORINE                       |
| <input type="checkbox"/> GENERAL CHEMISTRY       | <input checked="" type="checkbox"/> RADIOCHEMISTRY | <input type="checkbox"/> LCMSMS HIGH EXPLOSIVES | <input type="checkbox"/> PESTICIDES/POLYCHLORINATED BIPHENYLS |
| <input type="checkbox"/> OTHER (DESCRIBE): _____ |  |   |   |

## Section II. Completeness Check

- | YES                                 | NO                       | N/A                                 | (CHECK ONE)                 | YES                                 | NO                       | N/A                                 | (CHECK ONE)              |
|-------------------------------------|--------------------------|-------------------------------------|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 1. CHAIN-OF-CUSTODY FORM(S) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 6. RAW/BSS DATA          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 2. CASE NARRATIVE           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 7. QUALITY CONTROL FORMS |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | 3. SAMPLE RESULT FORMS      | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 8. QUANTITATION REPORTS  |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4. SAMPLE CHROMATOGRAMS     | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. TICS FORMS            |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. STANDARD CHROMATOGRAMS   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. TICS MASS SPECTRA    |

Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact):

- The gamma spec sample results that were rejected by the laboratory due to low abundance or interference were qualified R,R5a. Some gamma spec results from QC samples were also rejected by the laboratory due to interference or low abundance. No sample data were qualified as a result.
- The matrix QC analyses were performed on LANL samples from other RNs for all methods except gamma spec and the alpha spec batch associated with sample RE12-10-7551. No sample data were qualified as a result.

Reviewed by: Mary Donovan Level: I Date: 02/09/10


VALIDATOR'S SIGNATURE: Monica Dymerski

DATE: 02/05/10

Form 5119-1, Revision 0.0


LOS ALAMOS  
Environmental Restoration Project



RAD ANALYTICAL DATA VALIDATION CHECKLIST	
<b>5119-2</b>  <b>Rad Analytical Data Validation Checklist</b>	<b>Records Use only</b>  


Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The holding time was >1 and ≤2 times the applicable holding time requirement.	UJ, R9	J-, R9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. The holding time was >2 times the applicable holding time requirement.	R, R9a	J-, R9a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. The results for the affected analytes are considered not detected (U) because the associated sample concentration was less than or equal to the MDC.	U, R5	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. The analyte should be regarded as rejected because spectral interferences prevent positive identification of the analytes.	R, R5a	R, R5a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. The MDC and/or TPU documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R5b	J-, R5b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. The results for the affected analytes should be regarded as not detected (U) because the associated sample concentration was less than 3X the 1 sigma TPU.	U, R11	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. The sample result is ≤5X the concentration of the related analyte in the method blank.	U, R4	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. The affected analytes are considered estimated and biased high because this analyte was identified in the method blank but was >5X.	N/A	J, R4a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. The sample result is ≤5X the concentration of the related analyte in the trip blank, rinsate blank, or equipment blank.	U, R4d	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10. Required method blank information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R4e	R, R4e
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. The tracer is <10%R. Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	R, R3	R, R3



RAD ANALYTICAL DATA VALIDATION CHECKLIST		
5119-2		Records Use only _____
Rad Analytical Data Validation Checklist		

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. The tracer is < the Lower Acceptance Level (LAL) but $\geq 10\%R$ . Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	UJ, R3a	J-, R3a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. The Tracer%R value is > the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	N/A	J+, R3b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Required tracer information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. Tracer%R is not applicable for Gamma Spectroscopy.	R, R3d	R, R3d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, R12	R, R12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. The LCS percent recovery was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, R12a	J-, R12a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, R12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R12c	R, R12c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Associated duplicate sample has DER or RER > the analytical laboratory's acceptance limits.	R, R10	J, J10
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. The duplicate sample was not prepared and/or analyzed with the samples for unspecified reasons. The duplicate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R6	R, R6



RAD ANALYTICAL DATA VALIDATION CHECKLIST	
5119-2	Records Use only
Rad Analytical Data Validation Checklist	

Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	21. The associated matrix spike recovery was <10%. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	R, R6	R, R6
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	22. The associated matrix spike recovery was <10%. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	UJ, R6a	J-, R6a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	23. The associated matrix spike recovery was above the UAL. Follow the external laboratory limits. MS/MSD is not applicable to Gamma Spectroscopy.	UJ, R6b	J+, R6b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	24. Required matrix spike information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. If LCS information is present, do not Reject. Qualify data based on LCS information. MS/MSD is not applicable to Gamma Spectroscopy.	R, R6c	R, R6c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. Duplicate, dilution, or reanalysis.	UJ, R88	J, R88
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. The LANL project chemist identified quality deficiencies in the reported data that require further qualification. This code can ONLY be used and/or under advisement by the LANL project chemist.	UJ, R, R19	J, R, R19
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27. Quantification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory.	U, U_LAB	J, J_LAB NQ, NQ



### Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID:	RE12-10-7553	Project:	LANL01004
Sample ID:	243457001	Client ID:	LANL010
Matrix:	R		
Collect Date:	18-DEC-09		
Receive Date:	23-DEC-09		
Collector:	Client		
Moisture:	20.7%		

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>												
<i>"As Received"</i>												
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00492	0.0191	+/-0.00237	0.050	pCi/g		MXE1	01/06/10	1820	936962	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00451	0.0248	+/-0.00261	0.050	pCi/g		MXE1	01/09/10	1201	939255	3
Plutonium-239/240	U	0.015	0.0284	+/-0.00567	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.52	0.113	+/-0.131	0.100	pCi/g		MXE1	01/06/10	1351	936975	5
Uranium-235/236		0.0994	0.0703	+/-0.0223	0.100	pCi/g						
Uranium-238		1.98	0.0657	+/-0.164	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0848	0.128	+/-0.0416	0.200	pCi/g		MXR1	01/04/10	1358	936923	6
Bismuth-211	UI	4.87	R.R5a	0.428	+/-0.338	pCi/g						
Bismuth-214		1.51		0.145	+/-0.113	pCi/g						
Cadmium-109	UI	4.67	R.R5a	1.18	+/-0.519	pCi/g						
Cerium-139	U	0.0176		0.0611	+/-0.0184	pCi/g						
Cesium-134	UI	0.124	R.R5a	0.121	+/-0.0429	pCi/g						
Cesium-137		0.347		0.0865	+/-0.0412	pCi/g						
Cobalt-60	U	0.000846		0.0726	+/-0.0225	pCi/g						
Europium-152	U	-0.00947		0.216	+/-0.0797	pCi/g						
Lanthanum-140	U	0.0692		0.240	+/-0.0722	pCi/g						
Lead-212		1.94		0.111	+/-0.124	pCi/g						
Lead-214		1.70		0.146	+/-0.126	pCi/g						
Mercury-203	U	0.0649		0.0938	+/-0.030	pCi/g						
Potassium-40		22.3		0.790	+/-1.15	pCi/g						
Radium-223	U	-0.35		1.37	+/-0.485	pCi/g						
Radium-224	UI	6.28	R.R5a	1.26	+/-0.944	pCi/g						
Radium-226		1.51		0.145	+/-0.113	pCi/g						
Radium-228		1.88		0.275	+/-0.195	pCi/g						
Ruthenium-106	U	0.599		0.822	+/-0.233	pCi/g						



## Certificate of Analysis

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7553  
Sample ID: 243457001  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Sodium-22	U	0.0404	0.098	+/-0.0282	0.080	pCi/g						
Strontium-85	UI	0.148	R,R5a	0.0982	+/-0.0286	pCi/g						
Thallium-208		0.587		0.0721	+/-0.0585	pCi/g						
Thorium-227	U	0.185		0.844	+/-0.246	pCi/g						
Thorium-231	U	-0.35		1.37	+/-0.485	pCi/g						
Thorium-234		1.79		1.24	+/-0.538	pCi/g	2.00					
Tin-113	U	-0.0293		0.103	+/-0.0318	pCi/g	0.100					
Uranium-235	U	0.0353		0.436	+/-0.136	pCi/g	0.500					
Yttrium-88	U	0.0227		0.0758	+/-0.0209	pCi/g	0.100					

**The following Analytical Methods were performed**

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	77.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.0	(50%-105%)

**Notes:**

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria

MLD 02/05/10



## Certificate of Analysis

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7554  
Sample ID: 243457002  
Matrix: R  
Collect Date: 18-DEC-09  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 8.06%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>												
<i>"As Received"</i>												
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00385	0.0193	+/-0.0021	0.050	pCi/g		MXE1	01/06/10	1820	936962	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00149	0.0245	+/-0.00904	0.050	pCi/g		MXE1	01/09/10	1201	939255	3
Plutonium-239/240	U	-0.00149	0.0281	+/-0.00647	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.332	0.115	+/-0.0428	0.100	pCi/g		MXE1	01/06/10	1351	936975	5
Uranium-235/236	U	0.0137	0.0711	+/-0.00797	0.100	pCi/g						
Uranium-238		0.355	0.0664	+/-0.044	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.015	0.186	+/-0.0618	0.200	pCi/g		MXR1	01/04/10	1358	936923	6
Bismuth-211	UI	3.44	R,R5a	0.361	+/-0.288	pCi/g						
Bismuth-214		1.05		0.138	+/-0.096	pCi/g						
Cadmium-109	UI	2.75	R,R5a	1.29	+/-0.519	pCi/g						
Cerium-139	U	-0.0111	0.0483	+/-0.0154	0.050	pCi/g						
Cesium-134	U	0.0555	0.0926	+/-0.0243	0.100	pCi/g						
Cesium-137	U	-0.0226	0.0631	+/-0.0203	0.100	pCi/g						
Cobalt-60	U	-0.00637	0.065	+/-0.0203	0.100	pCi/g						
Europium-152	U	-0.0312	0.160	+/-0.057	0.200	pCi/g						
Lanthanum-140	U	-0.00115	0.167	+/-0.0531		pCi/g						
Lead-212		1.60	0.0998	+/-0.099	0.100	pCi/g						
Lead-214		1.20	0.126	+/-0.105	0.100	pCi/g						
Mercury-203	U	0.00138	0.0754	+/-0.0256	0.100	pCi/g						
Potassium-40		35.3	0.613	+/-1.85	1.00	pCi/g						
Radium-223	U	0.466	1.21	+/-0.399		pCi/g						
Radium-224	UI	3.36	R,R5a	1.14	+/-0.627	pCi/g						
Radium-226		1.05	0.138	+/-0.096		pCi/g						
Radium-228		1.63	0.230	+/-0.195	0.500	pCi/g						
Ruthenium-106	U	-0.0628	0.558	+/-0.170	0.800	pCi/g						
Sodium-22	U	-0.00185	0.0831	+/-0.0254	0.080	pCi/g						

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: Sample ID:			RE12-10-7554 243457002		Project: Client ID:		LANL01004 LANL010				
Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
GAMMA SPEC "Dry Weight Corrected"											
Strontium-85	U	0.0716	0.0773	+/-0.0232		pCi/g					
Thallium-208		0.500	0.0637	+/-0.0513	0.080	pCi/g					
Thorium-227	U	-0.145	0.653	+/-0.199		pCi/g					
Thorium-231	U	0.466	1.21	+/-0.399		pCi/g					
Thorium-234	U	0.299	1.62	+/-0.648	2.00	pCi/g					
Tin-113	U	-0.0215	0.0815	+/-0.0257	0.100	pCi/g					
Uranium-235	U	-0.207	0.331	+/-0.111	0.500	pCi/g					
Yttrium-88	U	-0.0121	0.0461	+/-0.0155	0.100	pCi/g					

**The following Analytical Methods were performed**

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	81.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.6	(50%-105%)

**Notes:**

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E Organics--Concentration of the target analyte exceeds the instrument calibration range

MLD 02/05/10



## Certificate of Analysis

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7551  
Sample ID: 243457003  
Matrix: R  
Collect Date: 18-DEC-09  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 11.1%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>												
<i>"As Received"</i>												
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000378	0.0187	+/-0.0011	0.050	pCi/g		MXE1	01/06/10	1820	936962	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.0061	0.0202	+/-0.00801	0.050	pCi/g		MXE1	01/12/10	1128	940420	3
Plutonium-239/240	U	-0.00122	0.0231	+/-0.00366	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.43	0.115	+/-0.125	0.100	pCi/g		MXE1	01/06/10	1351	936975	7
Uranium-235/236	U	0.0414	0.0716	+/-0.0141	0.100	pCi/g						
Uranium-238		1.47	0.0669	+/-0.128	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0045	0.413	+/-0.120	0.200	pCi/g		MXR1	01/04/10	1358	936923	8
Bismuth-211	UI	4.22	R,R5a	+/-0.279		pCi/g						
Bismuth-214		1.24		+/-0.0919	0.200	pCi/g						
Cadmium-109	UI	4.17	R,R5a	+/-0.639		pCi/g						
Cerium-139	U	-0.0079	0.0497	+/-0.0154	0.050	pCi/g						
Cesium-134	U	0.0464	0.0816	+/-0.0227	0.100	pCi/g						
Cesium-137		0.114	0.0596	+/-0.0258	0.100	pCi/g						
Cobalt-60	U	0.00675	0.073	+/-0.0217	0.100	pCi/g						
Europium-152	U	-0.0946	0.150	+/-0.0553	0.200	pCi/g						
Lanthanum-140	U	-0.0333	0.151	+/-0.0493		pCi/g						
Lead-212		1.76	0.0944	+/-0.0885	0.100	pCi/g						
Lead-214		1.47	0.116	+/-0.104	0.100	pCi/g						
Mercury-203	U	0.0591	0.0783	+/-0.0243	0.100	pCi/g						
Potassium-40		19.9	0.461	+/-1.15	1.00	pCi/g						
Radium-223	U	0.0569	1.08	+/-0.363		pCi/g						
Radium-224	UI	5.42	R,R5a	+/-0.783		pCi/g						
Radium-226		1.24	0.111	+/-0.0919		pCi/g						
Radium-228		1.91	0.205	+/-0.210	0.500	pCi/g						
Ruthenium-106	U	0.435	0.601	+/-0.163	0.800	pCi/g						
Sodium-22	U	0.0179	0.0805	+/-0.0233	0.080	pCi/g						

MLD 02/05/10



## Certificate of Analysis

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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7551  
Sample ID: 243457003  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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### Rad Gamma Spec Analysis

*GAMMA SPEC "Dry Weight Corrected"*

Strontium-85	UI	0.0905	R,R5a	0.075	+/-0.0224		pCi/g
Thallium-208		0.547		0.0574	+/-0.0429	0.080	pCi/g
Thorium-227	U	-0.12		0.625	+/-0.187		pCi/g
Thorium-231	U	0.0569		1.08	+/-0.363		pCi/g
Thorium-234	U	1.08		3.25	+/-0.936	2.00	pCi/g
Tin-113	U	0.0147		0.080	+/-0.0237	0.100	pCi/g
Uranium-235	U	-0.00423		0.354	+/-0.108	0.500	pCi/g
Yttrium-88	U	-0.0195		0.0436	+/-0.0162	0.100	pCi/g

### The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, Pu-11-RC Modified
6	DOE EML HASL-300, Pu-11-RC Modified
7	DOE EML HASL-300, U-02-RC Modified
8	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	95.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

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- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7552  
Sample ID: 243457004  
Matrix: R  
Collect Date: 18-DEC-09  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 7.58%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>												
<i>"As Received"</i>												
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000268	0.0177	+/-0.00104	0.050	pCi/g		MXE1	01/06/10	1820	936962	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0104	0.0214	+/-0.00689	0.050	pCi/g		MXE1	01/09/10	1201	939255	3
Plutonium-239/240	U	0.0013	0.0245	+/-0.0013	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.452	0.117	+/-0.0525	0.100	pCi/g		MXE1	01/06/10	1351	936975	5
Uranium-235/236	U	0.0186	0.0725	+/-0.00941	0.100	pCi/g						
Uranium-238		0.550	0.0677	+/-0.0601	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.049	0.178	+/-0.0574	0.200	pCi/g		MXR1	01/04/10	1359	936923	6
Bismuth-211	UI	3.49	R,R5a 0.269	+/-0.304		pCi/g						
Bismuth-214		0.959	0.0974	+/-0.0917	0.200	pCi/g						
Cadmium-109	UI	2.41	R,R5a 0.960	+/-0.383		pCi/g						
Cerium-139	U	-0.0154	0.0383	+/-0.0117	0.050	pCi/g						
Cesium-134	UI	0.133	R,R5a 0.0889	+/-0.0317	0.100	pCi/g						
Cesium-137	U	-0.0159	0.0585	+/-0.0186	0.100	pCi/g						
Cobalt-60	U	-0.0145	0.0639	+/-0.0205	0.100	pCi/g						
Europium-152	U	-0.0948	0.136	+/-0.0462	0.200	pCi/g						
Lanthanum-140	U	0.0139	0.151	+/-0.0445		pCi/g						
Lead-212		1.53	0.0849	+/-0.120	0.100	pCi/g						
Lead-214		1.22	0.0937	+/-0.110	0.100	pCi/g						
Mercury-203	U	-0.0139	0.0609	+/-0.019	0.100	pCi/g						
Potassium-40		32.6	0.430	+/-1.69	1.00	pCi/g						
Radium-223	U	-0.0316	0.935	+/-0.326		pCi/g						
Radium-224	UI	1.53	R,R5a 0.966	+/-0.489		pCi/g						
Radium-226		0.959	0.0974	+/-0.0917		pCi/g						
Radium-228	UI	1.25	R,R5a 0.470	+/-0.161	0.500	pCi/g						
Ruthenium-106	U	0.115	0.522	+/-0.154	0.800	pCi/g						
Sodium-22	U	-0.0224	0.0657	+/-0.0216	0.080	pCi/g						



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID:  
Sample ID:

RE12-10-7552  
243457004

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0189	0.058	+/-0.0188		pCi/g						
Thallium-208		0.486	0.0555	+/-0.0464	0.080	pCi/g						
Thorium-227	U	0.0305	0.559	+/-0.168		pCi/g						
Thorium-231	U	-0.0316	0.935	+/-0.326		pCi/g						
Thorium-234	U	0.733	1.41	+/-0.653	2.00	pCi/g						
Tin-113	U	-0.00287	0.0618	+/-0.0181	0.100	pCi/g						
Uranium-235	U	0.0513	0.299	+/-0.0874	0.500	pCi/g						
Yttrium-88	U	-0.0134	0.0523	+/-0.0174	0.100	pCi/g						

### The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	81.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.6	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E Organics--Concentration of the target analyte exceeds the instrument calibration range

MLD 02/05/10



Tuesday, December 22, 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1038

LOS ALAMOS

REQUEST NUMBER: 10-1038

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/21/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

243457%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7553	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7553	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7553	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7554	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7554	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7554	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7551	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7551	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7552	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7552	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7551	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7552	1	AMBER GLASS	8082+NMED-HEXP	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

*[Signature]*  
Printed Name      Signature

12/22/09 1400

*[Signature]*  
Printed Name      Signature  
Patricia Dove-Dent P. AL 12-23-09 18:10

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature



Tuesday, December 22, 2009

**LOS ALAMOS  
NATIONAL LABORATORY**

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.  
2040 Savage Rd.  
Charleston, SC 29407

Please analyse the enclosed samples  
according to the schedule indicated:

SHIP DATE: 12/22/2009

TURNAROUND/REPORT DUE: 1/21/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Not Required

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



Page 1 of 3

REQUEST NUMBER: 10-1038

These Samples are on:

LANL Request Number: 10-1038  
Per Agreement Number: 128310011  
Project Cost Code: MR3A05529E00

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	HASL-300-AM-241	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	HASL-300-ISOPU	1	RE12-10-7551	R	12/18/2009	



Tuesday, December 22, 2009

PRIORITY	METHOD CODE	CNTR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	HASL-300:ISOU	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:8020	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:8850	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:7471A	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:8082	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
	SW-846:8321A_MOD	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:8012A	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	



REQUEST NUMBER: 10-1038

Tuesday, December 22, 2009

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	SW-846:9012A	1	RE12-10-7554	R	12/18/2009	

Final Page of REQUEST NUMBER 10-1038





January 05, 2010

www.gel.com

Ms. Joylene Valdez  
Los Alamos National Laboratory  
PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545

Re: LANL ER Project  
Work Order: 243457  
SDG: 10-1038

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on December 23, 2009, and analyzed for Explosives by LCMSMS, GC Semivolatile PCB, General Chemistry, Metals, Perchlorates by LCMSMS and Radiochemistry. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,

Valerie Davis  
Project Manager

Purchase Order: 72733-001-09  
Chain of Custody: 10-1038  
Enclosures



**Los Alamos National Laboratory (72733-001-09)**  
**LANL ER Project**  
**Work Order #: 243457**  
**SDG: 10-1038**



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# Case Narrative



**Case Narrative for  
Los Alamos National Laboratory (72733-001-09)  
LANL ER Project  
Workorder #: 243457  
SDG # : 10-1038**

**January 05, 2010**

**Laboratory Identification:**

GEL Laboratories LLC  
2040 Savage Road  
Charleston, South Carolina 29407  
(843) 556-8171

**Summary**

**Sample receipt** The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on December 23, 2009 for analysis. The samples were prepared/analyzed within the required holding time. Shipping container temperatures were checked, documented, and within specifications. The samples were screened according to GEL Standard Operating Procedure. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. The containers for radiochemistry were received at 13/15/16C temperatures. Shipping container temperature was within specification (0 - 6C).

**Sample Identification** The laboratory received the following samples:

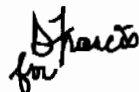
<u>Laboratory ID</u>	<u>Client ID</u>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552

**Case Narrative**

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

**Data Package** The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, GC Semivolatile PCB, General Chemistry, Metals, Perchlorates by LCMSMS and Radiochemistry.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.



Valerie Davis

Project Manager



**List of current GEL Certifications as of 05 January 2010**

<b>State</b>	<b>Certification</b>
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California -- NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA Region 5	WG-15J
Florida -- NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois -- NELAP	200029
Indiana	C-SC-01
Kansas -- NELAP	E-10332
Kentucky	90129
Louisiana -- NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey -- NELAP	SC002
New Mexico	FL NELAP E87156
New York -- NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania -- NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas -- NELAP	T104704235-07B-TX
U.S. Dept. of Agriculture	S-52597
Utah -- NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641



# **Chain of Custody and Supporting Documentation**



Tuesday, December 22, 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1038

LOS ALAMOS

REQUEST NUMBER: 10-1038

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/21/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

243457%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7553	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7553	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7553	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7554	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7554	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7554	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7551	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7551	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7552	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7552	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7551	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7552	1	AMBER GLASS	8082+NMED-HEXP	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

12/22/09 1400

Printed Name

Signature

Patricia Dover-Dent P. A. 12-23-09 10:10

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature



REQUEST NUMBER: 10-1038

Tuesday, December 22, 2009

**LOS ALAMOS  
NATIONAL LABORATORY**

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

These Samples are on:

LANL Request Number: 10-1038

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples  
according to the schedule indicated:

**SHIP DATE: 12/22/2009**

**TURNAROUND/REPORT DUE: 1/21/2010**

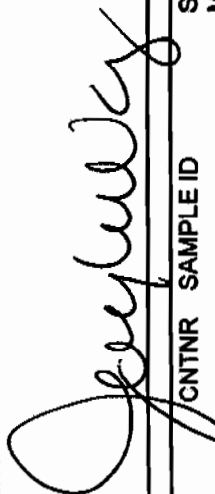
**TURNAROUND REQ'D: 30 Days**

**RAD SCREENING: Not Required**

**LAB REQUEST COMMENTS:**

LANL ER SMO CONTACT:

Signature:



PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	HASL-300:AM-241	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	HASL-300:ISOPU	1	RE12-10-7551	R	12/18/2009	



Tuesday, December 22, 2009

REQUEST NUMBER: 10-1038

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOPU	1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	HASL-300:ISOU	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:8020	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:6850	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:7471A	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:8082	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
	SW-846:8321A_MOD	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	
		1	RE12-10-7554	R	12/18/2009	
	SW-846:9012A	1	RE12-10-7551	R	12/18/2009	
		1	RE12-10-7552	R	12/18/2009	
		1	RE12-10-7553	R	12/18/2009	



REQUEST NUMBER: 10-1038

Tuesday, December 22, 2009

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
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	SW-846:9012A	1	RE12-10-7554	R	12/16/2009	
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Final Page of REQUEST NUMBER 10-1038





Laboratories LLC

## SAMPLE RECEIPT &amp; REVIEW FORM

Client: LANL			SDG/ARCOC/Work Order: 10-1038		
Received By: Patricia Dover-Dent			Date Received: December 23, 2009		
Suspected Hazard Information		Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further	
COC/Samples marked as radioactive?			X	Maximum Counts Observed*: 40CPM	
Classified Radioactive II by RSO?			X		
COC/Samples marked containing PCBs?			X		
Shipped as a DOT Hazardous?			X	Hazard Class Shipped: UN#:	
Samples identified as Foreign Soil?			X		

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: seals broken    damaged container    leaking container    other (describe)
2	Samples requiring cold preservation within (0 < 6 deg. C)?	X			Preservation Method: ice bags    BLUE ICE    dry ice    NONE    other (describe) 1-6,13,15,16
3	Chain of custody documents included with shipment?	X			
4	Sample containers intact and sealed?	X			Circle Applicable: seals broken    damaged container    leaking container    other (describe)
5	Samples requiring chemical preservation at proper pH?		X		Sample ID's, containers affected and observed pH. If Preservative added, Lot#
6	VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7	Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	X			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?		X		Sample ID's affected: No Time on Chain of Custody
11	Number of containers received match number indicated on COC?	X			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	X			

Comments: FED EX #'S

7209 7849 3479 1C	7209 7849 3550 4C
7209 7849 3446 2C	7209 7849 3538 5C
7209 7849 3457 2C	7209 7849 3516 6C RADIOACTIVE SAMPLES
7209 7849 3527 2C	7209 7849 3413 13C
7209 7849 3549 2C	7209 7849 3424 15C
7209 7849 3480 2C	7209 7849 3435 16C
7209 7849 3490 3C	
7209 7849 3505 4C	



ORIGIN ID: SAFA (505)665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03  
LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 22DEC89  
ACTWGT: 54.0 LB MAN  
CAD: 0014176/CAFE2434  
BILL: SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)556-8171  
REF: 68010AMR3A05528E00

DATE 11/11/11 11:11 AM 11/11/11 11:11 AM



FedEx  
Express



0014176-12234

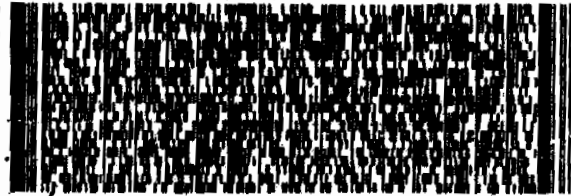
ORIGIN ID: SAFA (505)665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03  
LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 22DEC89  
ACTWGT: 57.0 LB MAN  
CAD: 0014176/CAFE2434  
BILL: SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)556-8171  
REF: 68010AMR1A015AGNHO

DATE 11/11/11 11:11 AM 11/11/11 11:11 AM



FedEx  
Express



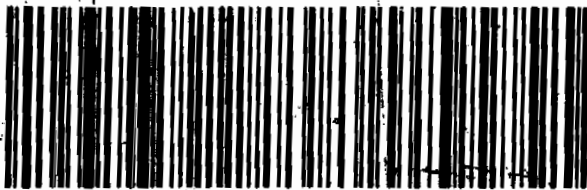
0014176-12234

TRK# 7209 7849 3479  
0201

WED - 23DEC A1  
PRIORITY OVERNIGHT

XX CHSA

29407  
SC-US  
CHS



Part # 156148-434 NRT V3 09-08

ORIGIN ID: SAFA (505)665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

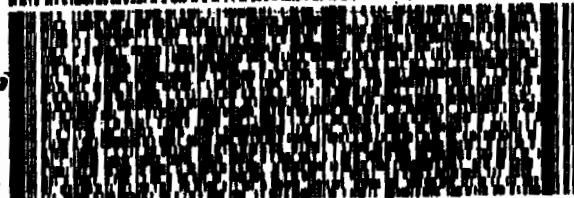
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CAD: 0014176/CAFE2434

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TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)556-8171  
REF: 68010AMR1A015AGNHO

DATE 11/11/11 11:11 AM 11/11/11 11:11 AM



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0014176-12234

ORIGIN ID: SAFA (505)665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

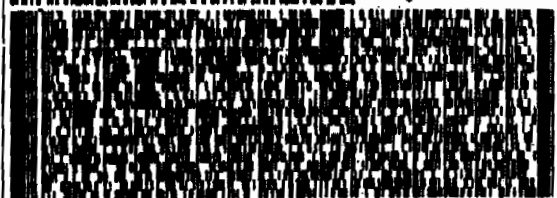
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3 of 3  
TRK# 7209 7849 3457  
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Matr# 7209 7849 3435 0201

1 of 3  
TRK# 7209 7849 3527  
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CHS

Matr# 7209 7849 3435 0201







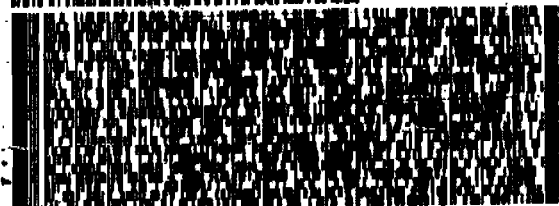
ORIGIN ID: SAFA (505)665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TAG0 BLDG 1237 DPU 03  
LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 22DEC09  
ACTWGT: 34.8 LB MAN  
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(843)556-8171  
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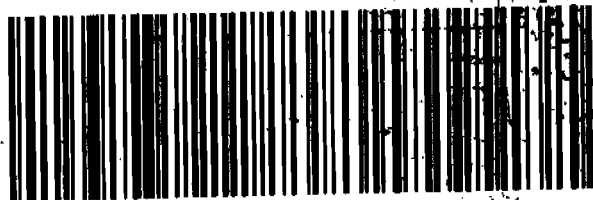


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Part 1 156148-434 NRT V3 09-09

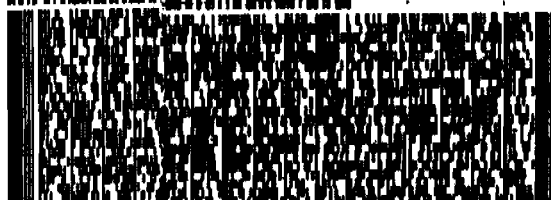
ORIGIN ID: SAFA (505)665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TAG0 BLDG 1237 DPU 03  
LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 22DEC09  
ACTWGT: 10.8 LB MAN  
CAD: 0014176/CAFE2434

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GENERAL ENGINEERING LAB  
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CHARLESTON SC 29407  
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REF: 6B010AMR1A015AGNH0



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TRKH 7209 7849 3516  
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PRIORITY OVERNIGHT

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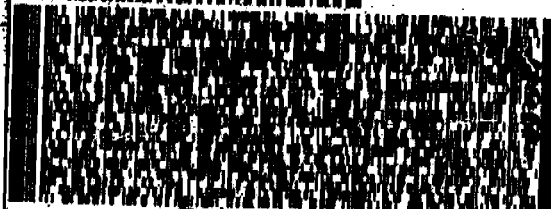
ORIGIN ID: SAFA (505)665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TAG0 BLDG 1237 DPU 03  
LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 22DEC09  
ACTWGT: 44.8 LB MAN  
CAD: 0014176/CAFE2434

BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)556-8171  
REF: 6B010AMR2A054106D0



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Express

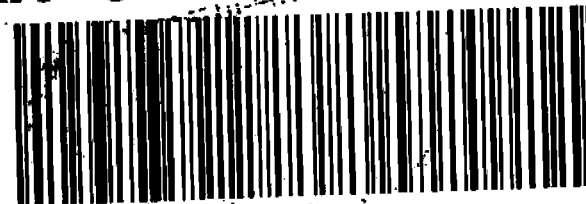


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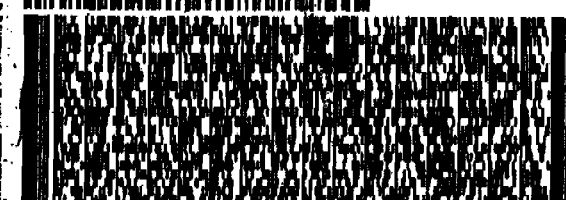
ORIGIN ID: SAFA (505)665-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TAG0 BLDG 1237 DPU 03  
LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 22DEC09  
ACTWGT: 44.8 LB MAN  
CAD: 0014176/CAFE2434

BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
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CHARLESTON SC 29407  
(843)556-8171  
REF: 6B010AMR1A015AGNH0



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2 of 3  
NPSH 7209 7849 3413  
0263

WED - 23DEC A1  
PRIORITY OVERNIGHT

MatrN 7209 7849 3402 0201

29407

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**BILL BENDER**

REF: 88010APR1A015AGW10



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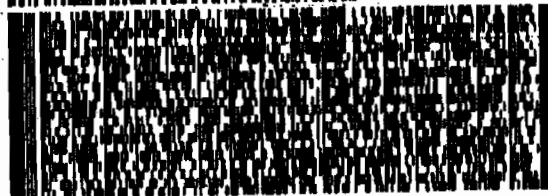
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**BILL SENDER**

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# **Data Review Qualifier Flag Definition Sheet**



## Data Review Qualifier Definitions

### Qualifier Explanation

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- B Metals-Either presence of analyte detected in the associated blank, or  
MDL/IDL < sample value < PQL
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- d 5-day BOD-The 2:1 depletion requirement was not met for this sample
- E Organics-Concentration of the target analyte exceeds the instrument calibration range
- E Metals-difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- h Preparation or preservation holding time was exceeded
- J Value is estimated
- N Metals-The Matrix spike sample recovery is not within specified control limits
- N Organics-Presumptive evidence based on mass spectral library search to make a tentative  
identification of the analyte (TIC). Quantitation is based on nearest internal standard  
response factor
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration  
by 4X or more
- ND Analyte concentration is not detected above the reporting limit
- UI Gamma Spectroscopy-Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.



# LC/MS/MS PERCHLORATE ANALYSIS



**Perchlorate by LC/MSMS  
Los Alamos National Laboratory (LANL)  
SDG 10-1038**

**Method/Analysis Information**

**Procedure:** **Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)**

**Analytical Method:** SW846 6850 Modified

**Prep Method:** SW846 6850 Modified

**Analytical Batch Number:** 936669

**Prep Batch Number:** 936668

**Sample Analysis**

<b>Sample ID</b>	<b>Client ID</b>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552
1202004147	Interference Check Sample (ICS)
1202004143	Method Blank (MB)
1202004144	Laboratory Control Sample (LCS)
1202004145	243457001(RE12-10-7553) Matrix Spike (MS)
1202004146	243457001(RE12-10-7553) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**Preparation/Analytical Method Verification**

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-067 REV# 6.

10-1038-PERLCMS

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### **Calibration Information**

#### **Initial Calibration**

All initial calibration requirements have been met for this SDG. Due to software constraints, all Initial Calibration Blanks must be designated as IPB001.

#### **CCV Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

#### **CCB Requirements**

All continuing calibration blanks (CCB) bracketing the analyses associated with this batch were within acceptance criteria.

#### **CCV Requirements**

All continuing calibration checks (CCV) requirements were met by all bracketing CCV standards.

#### **Low Level Standard (CRI) Requirements**

All low level calibration verification (CRI) requirements were met by all bracketing CRI standards.

### **Quality Control (QC) Information**

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Interference Check Sample (ICS)**

The interference check sample (ICS) met all recovery acceptance criteria.

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **QC Sample Designation**

Sample 243457001 (RE12-10-7553) was chosen for matrix spike and matrix spike duplicate analysis.

#### **Matrix Spike (MS) Recovery Statement**

The MS recoveries were within the established acceptance limits.

#### **Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recoveries were within the established acceptance limits.

#### **MS/MSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the MS and MSD met the acceptance limits.

#### **Retention Time Standard Area Acceptance**

The retention time standard areas were within the required acceptance criteria for all samples and QC.



#### **Retention Time**

During the analysis of Perchlorate by LC/MS/MS, retention time shifts are commonly observed. These retention time shifts, which are caused by fouling of the column by the sample matrices, are problematic when the retention time is used as one of the criterion for confirmation. To overcome this problem, a known amount of O(18) labeled Perchlorate was added to each sample as a retention time standard. The presence of Perchlorate was confirmed by the relative retention time (RRT) of the Perchlorate peak and the O(18) standard. A RRT window of 0.98 to 1.02, as required by Method 332.0, has been used. In addition to the isotopic ratio, the presence of Perchlorate in the samples associated with this data package have been confirmed using the relative retention criteria stated above, not the absolute retention time.

#### **Technical Information**

##### **Holding Time Specifications**

All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

##### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

##### **Sample Dilutions**

The samples in this SDG did not require dilutions.

##### **Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG except for dilutions.

#### **Miscellaneous Information**

##### **Nonconformance (NCR) Documentation**

Nonconformance reports (NCRs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

##### **Manual Integrations**

Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations.

##### **Method Comments**

The samples in this SDG were not originally analyzed using EPA Method 314.0.

##### **Additional Comments**

The Perchlorate Isotope Ratio on the Form I may differ slightly from the ratio on the corresponding raw data due to rounding rules and/or significant figures or due to software limitations when there are manual integrations, dilutions or other factors. The ratio value of the Form I is the correct value.

The retention time marker, Perchlorate-O (18), is added to all samples, instrument blanks, and standards prior to injection. It is used to verify the retention time of Perchlorate and Perchlorate-101 and to insure an accurate injection occurred. Due to various anions affecting the recovery of Perchlorate-O (18) and not Perchlorate and Perchlorate-101, the calibration curves of Perchlorate and Perchlorate-101 are not internally corrected for using Perchlorate-O (18). They are external calibrations.



#### **Perchlorate Isotope Ratio**

The Perchlorate isotope ratio met acceptance criteria for all samples and QC samples. Please see the isotope ratio criteria in the Miscellaneous Section.

#### **System Configuration**

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for perchlorate analysis. It is coupled with either a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an electrospray probe that is operated in the negative electrospray ionization mode for perchlorate analysis. The laboratory may also utilize an Agilent 1100 liquid chromatography instrument for perchlorate analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as LCMSMS #3 or LCMSMS #4. It is also fitted with an electrospray probe that is operated in the negative electrospray ionization mode for perchlorate analysis.

#### **Chromatographic Columns**

Chromatographic separation of perchlorate is accomplished through analysis on the following anion column:

Dionex: IonPac AG-16 2 x 50 mm.

#### **Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

#### **Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer:

Herbert Mauer Date: 01/12/10



# SAMPLE DATA SUMMARY



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC  
 Lab Code: GEL  
 Instrument: LCMSMS  
 Method: SW846 6850 Modified  
 Matrix: SOIL  
 Extraction Batch ID: 936668  
 Extraction Type: Solid Prep  
 Client Sample No. RE12-10-7553  
 Date Received: 23-DEC-09  
 GEL Job No (SDG): 10-1038  
 GEL Sample ID: 243457001  
 Date Filtered: 28-DEC-09  
 Injection Volume (uL): 20  
 Sample Volume/Weight: 2.00 g  
 %Solids: 72

Concentrated Extract Volume: 20.0

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.631	2.52	0.631	ug/kg	U	1	29-DEC-09 18:49	per1229047a
	Perchlorate Isotope Ratio						1	29-DEC-09 18:49	per1229047a
14797-73-0	Perchlorate-101	.631	2.52	0.631	ug/kg	U	1	29-DEC-09 18:49	per1229047a
	Perchlorate-O(18)			6.24	ug/kg		1	29-DEC-09 18:49	per1229047a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X Concentrated Extract Volume X  $\frac{1}{\% \text{Solids}}$   
 Aliquot



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 936668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7554

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 243457002

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 91.9

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.544	2.18	0.754	ug/kg	J	1	29-DEC-09 19:10	per1229050a
	Perchlorate Isotope Ratio			3.06			1	29-DEC-09 19:10	per1229050a
14797-73-0	Perchlorate-101	.544	2.18	0.747	ug/kg	J	1	29-DEC-09 19:10	per1229050a
	Perchlorate-O(18)			5.55	ug/kg		1	29-DEC-09 19:10	per1229050a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X Concentrated Extract Volume X 1  
Aliquot %Solids



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 936668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7551

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 243457003

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 89

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.562	2.25	0.562	ug/kg	U	1	29-DEC-09 19:17	per1229051a
	Perchlorate Isotope Ratio						1	29-DEC-09 19:17	per1229051a
14797-73-0	Perchlorate-101	.562	2.25	0.562	ug/kg	U	1	29-DEC-09 19:17	per1229051a
	Perchlorate-O(18)			5.53	ug/kg		1	29-DEC-09 19:17	per1229051a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$  X  $\frac{1}{\% \text{Solids}}$



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC  
 Lab Code: GEL  
 Instrument: LCMSMS  
 Method: SW846 6850 Modified  
 Matrix: SOIL  
 Extraction Batch ID: 236668  
 Extraction Type: Solid Prep  
 Sample Volume/Weight: 2.00 g  
 Concentrated Extract Volume: 20.0  
 Client Sample No. RE12-10-7552  
 Date Received: 23-DEC-09  
 GEL Job No (SDG): 10-1038  
 GEL Sample ID: 243457004  
 Date Filtered: 28-DEC-09  
 Injection Volume (uL): 20  
 %Solids: 92.4

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.541	2.16	0.541	ug/kg	U	1	29-DEC-09 19:24	per1229052a
	Perchlorate Isotope Ratio						1	29-DEC-09 19:24	per1229052a
14797-73-0	Perchlorate-101	.541	2.16	0.541	ug/kg	U	1	29-DEC-09 19:24	per1229052a
	Perchlorate-O(18)			5.20	ug/kg		1	29-DEC-09 19:24	per1229052a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =  
 Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$  X  $\frac{1}{\% \text{Solids}}$



# QUALITY CONTROL SUMMARY



Form 5

Perchlorate Laboratory Control Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL GEL Job No. (SDG): 10-1038

Extract Batch Code: 936668 Date Filtered: 28-DEC-09

Matrix: SOIL Sample ID: 1202004144

Analyte <sup>^</sup>	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	2.00	1.99	ug/kg	99.5		70 - 130
Perchlorate Isotope Ratio		3.08				-
Perchlorate-101	2.00	1.97	ug/kg	98.3		70 - 130
Perchlorate-O(18)		4.91	ug/kg			-

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.



Form 5a

Perchlorate Interference Check Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No. (SDG): 10-1038

Extract Batch Code: 936668

Date Filtered: 28-DEC-09

Matrix: SOIL

Sample ID: 1202004147

Analyte <sup>^</sup>	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	2.00	2.06	ug/kg	103		70 - 130
Perchlorate Isotope Ratio		2.93				
Perchlorate-101	2.00	2.14	ug/kg	107		70 - 130
Perchlorate-O(18)		5.09	ug/kg			

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.



**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Name: per1229034a

Date: 29-Dec-2009

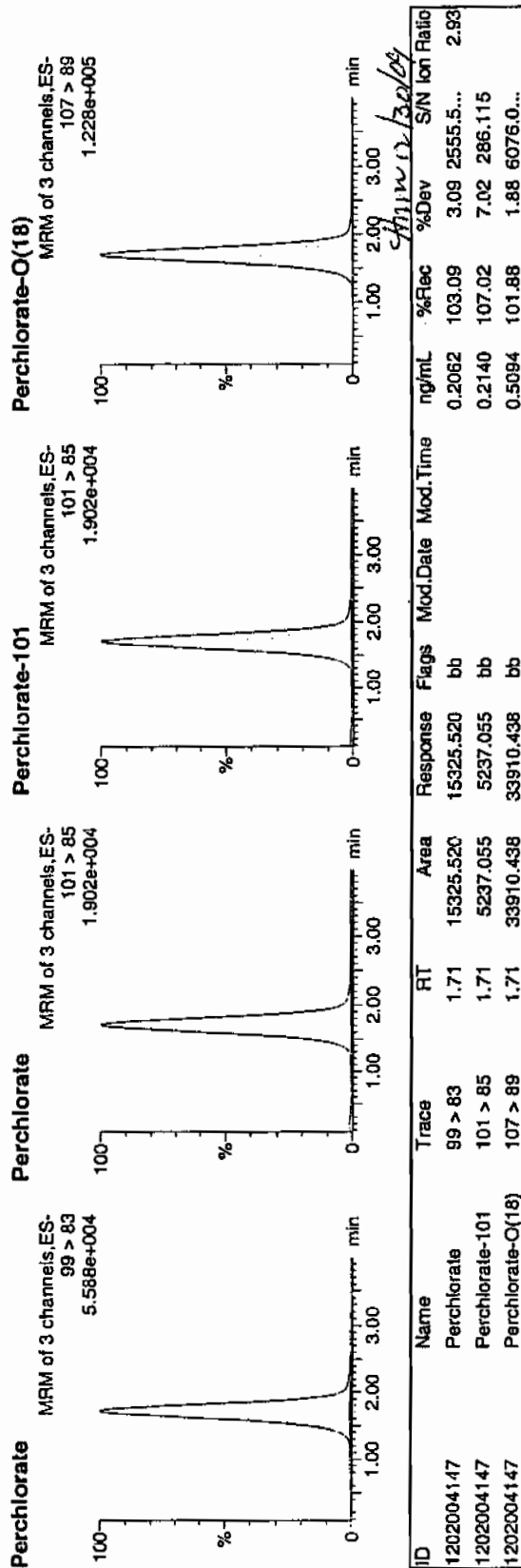
Time: 17:17:25

ID: 1202004147

Vial: 2:1,C

1617  
12/30/09

WAW-936669 / SALS / ICS / 1 /





Form 6

Perchlorate Spike/Spike Duplicate Summary

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No (SDG): 10-1038

Extract Batch Code: 936668

Date Extracted: 28-DEC-09

GEL MS/PS ID: 1202004145

Client ID: RE12-10-7553

GEL MSD/PSD ID: 1202004146

QC Type: MS

Compound <sup>^</sup>	Spike Added	Sample Conc	Units	MS Conc	MS Rec	MSD Conc	MSD Rec	RPD	#	RPD Limit	Recovery Limit
Perchlorate	2.52	0.222	ug/kg	2.61	94.6	2.63	95.4	.799		30	75 - 125
Perchlorate Isotope Ratio	0	0.00		3.03		3.09		0			-
Perchlorate-101	2.52	0.224	ug/kg	2.62	94.9	2.59	93.7	1.19		30	75 - 125
Perchlorate-O(18)	0	6.24	ug/kg	6.50		6.24		4.14			-

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Comments:



Form 4

Perchlorate Initial Calibration Blank

GEL Job No.(SDG): 10-1038

Lab Name: General Engineering Laboratories

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id	GEL Sample ID
Perchlorate	0.00	0	NA	29-DEC-09	per1229001a	IPB001
Perchlorate-101	0.00	0	NA	29-DEC-09	per1229001a	IPB001
Perchlorate	0.00	0	NA	29-DEC-09	per1229002a	IPB001
Perchlorate-101	0.00	0	NA	29-DEC-09	per1229002a	IPB001



Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

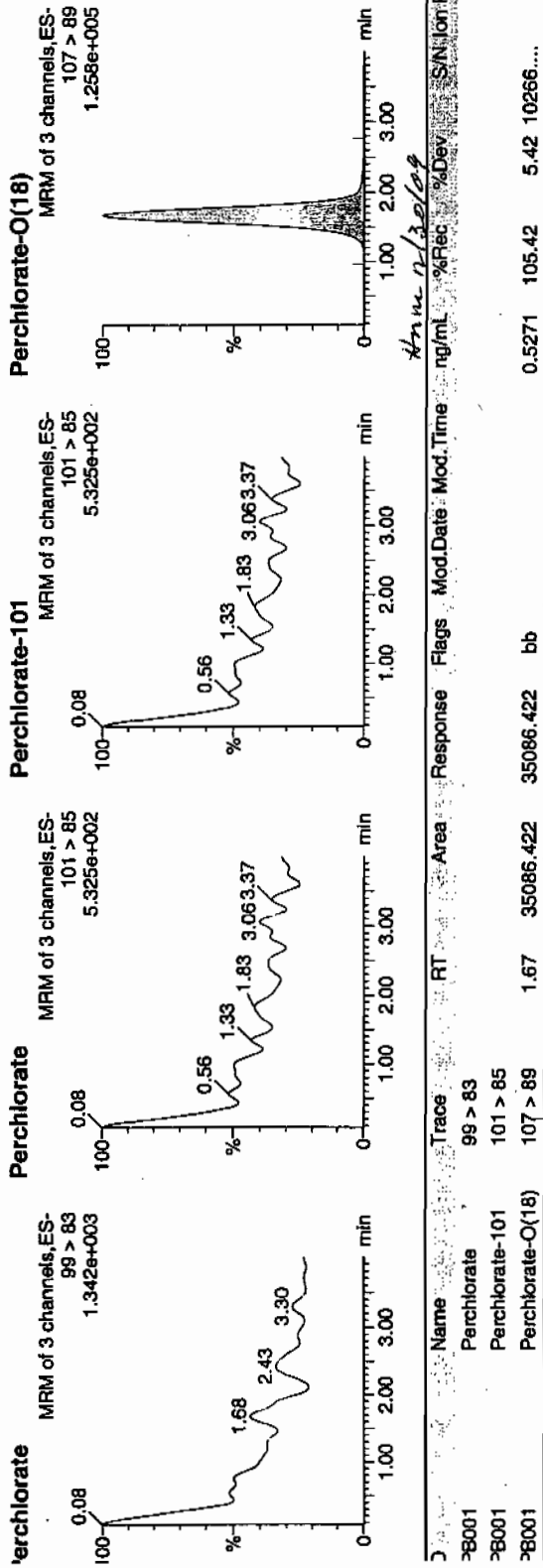
Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Method: C:\MassLynx\Perchlorate.PRO\MethDB\per122909a.mdb 29 Dec 2009 14:36:05  
Calibration: C:\MassLynx\Perchlorate.PRO\CurveDB\per122909a.cdb 30 Dec 2009 06:51:17

Sample Name: per1229001a  
Date: 29-Dec-2009  
Time: 13:24:44  
D: IPB001  
Vial: 1:1,A

12/30/09  
10:20:01



Sample	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/ml	%Rec	%Dev	S/N	Ion Ratio
8001	Perchlorate	99 > 83											0.00
8001	Perchlorate-101	101 > 85											
8001	Perchlorate-O(18)	107 > 89	1.67	35086.422	35086.422	bb			0.5271	105.42	5.42	10266...	



Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Page 2 of 85

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229002a

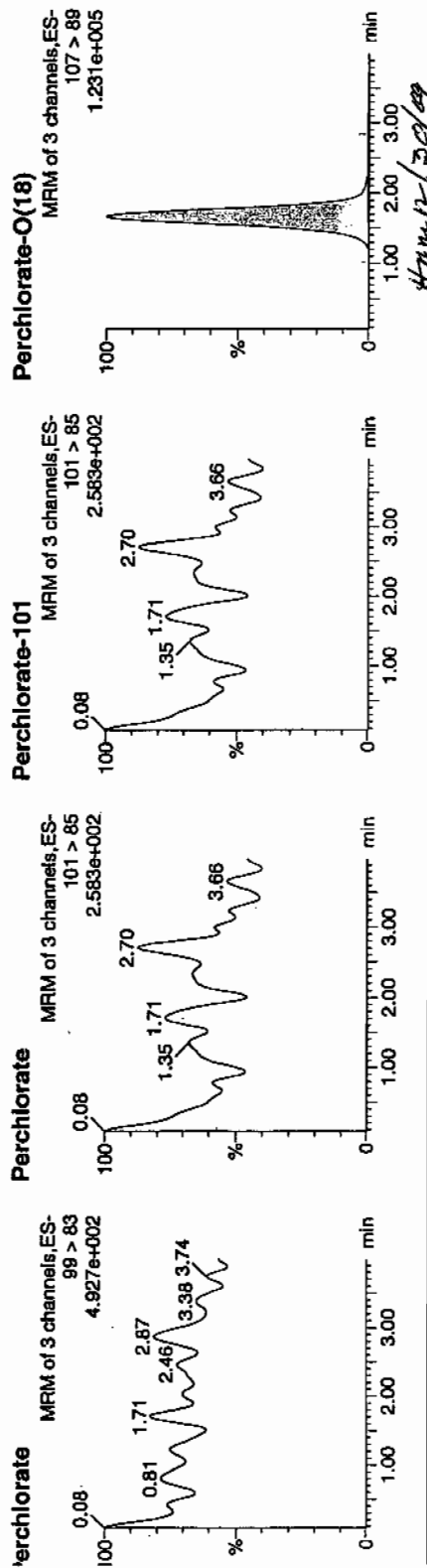
Date: 29-Dec-2009

Time: 13:31:57

ID: IPB001

Label: 1:1,A

12/30/09  
M.A.P.



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
Perchlorate	99 > 83											0.00
Perchlorate-101	101 > 85											
Perchlorate-O(18)	107 > 89	1.67	34490.836	34490.836	bb			0.5181	103.63	3.63	3293.3...	



Form 4

Perchlorate Continuing Calibration Blank

GEL Job No.(SDG): 10-1038

Lab Name: General Engineering Laboratories

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id	GEL Sample ID
Perchlorate	0.00	0	NA	29-DEC-09	per1229008a	IPB002
Perchlorate-101	0.00	0	NA	29-DEC-09	per1229008a	IPB002
Perchlorate	0.00	0	NA	29-DEC-09	per1229010a	IPB003
Perchlorate-101	0.00	0	NA	29-DEC-09	per1229010a	IPB003
Perchlorate	0.00	0	NA	29-DEC-09	per1229023a	IPB004
Perchlorate-101	0.00	0	NA	29-DEC-09	per1229023a	IPB004
Perchlorate	0.00	0	NA	29-DEC-09	per1229030a	IPB005
Perchlorate-101	0.00	0	NA	29-DEC-09	per1229030a	IPB005
Perchlorate	0.00	0	NA	29-DEC-09	per1229043a	IPB006
Perchlorate-101	0.00	0	NA	29-DEC-09	per1229043a	IPB006
Perchlorate	0.00	0	NA	29-DEC-09	per1229054a	IPB007
Perchlorate-101	0.00	0	NA	29-DEC-09	per1229054a	IPB007



Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229008a

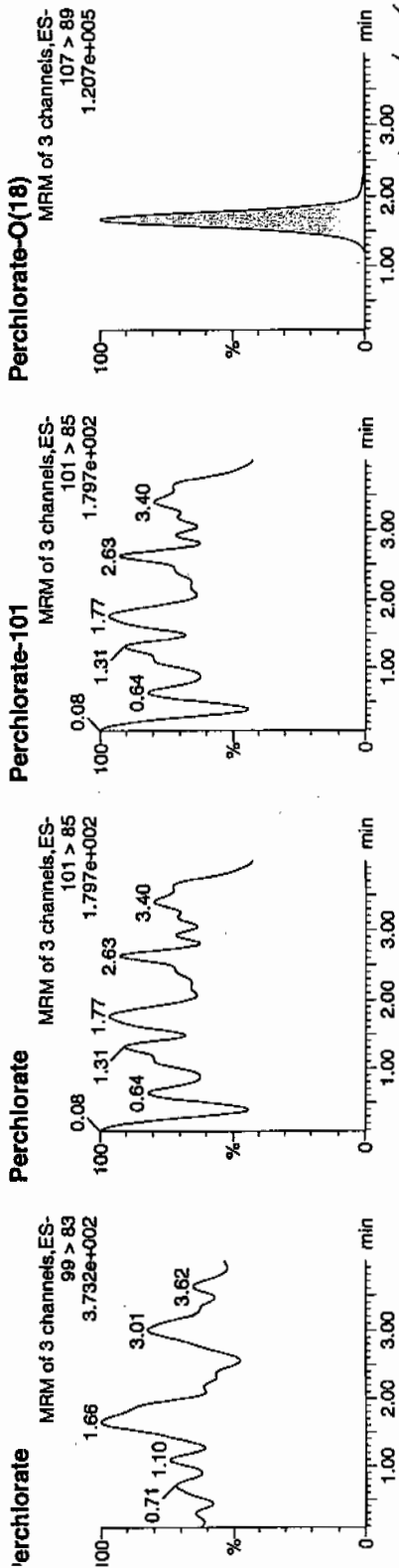
Sample Date: 29-Dec-2009

Sample Time: 14:14:07

Sample ID: IPB002

Sample Label: 1:1,A

12/30/09



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
PB002	Perchlorate	99 > 83										
PB002	Perchlorate-101	101 > 85										
PB002	Perchlorate-O(18)	107 > 89	1.67	33924.273	33924.273	bb		0.5096	101.92	1.92	7224.2...	



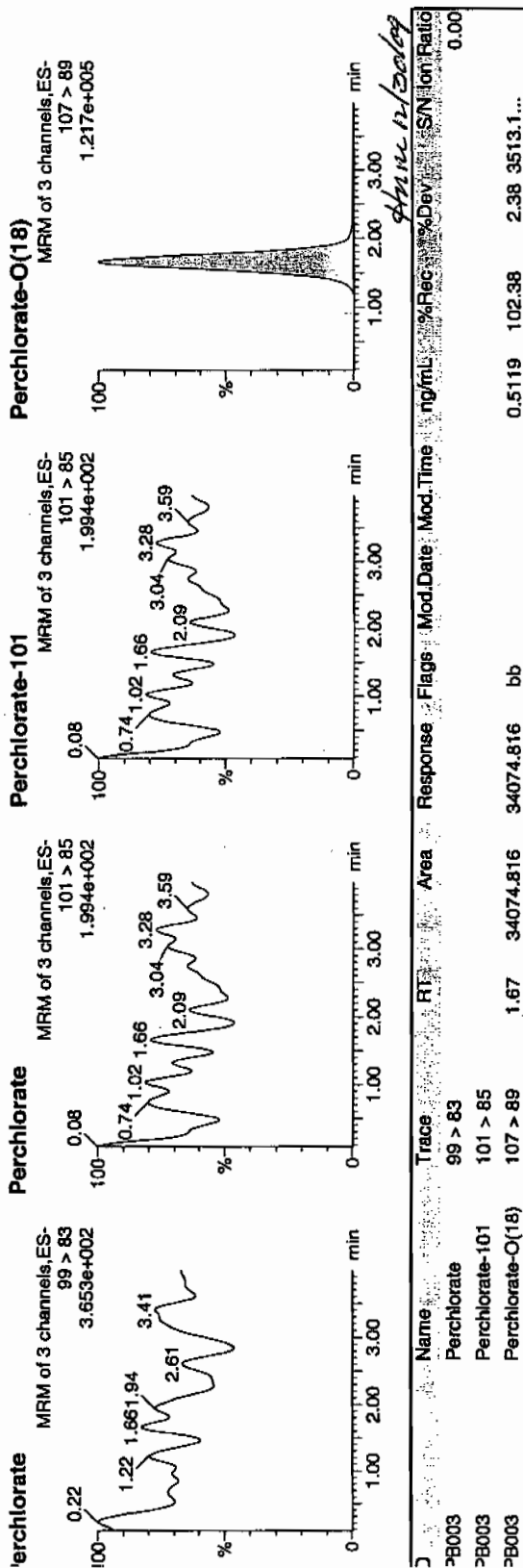
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229010a  
Date: 29-Dec-2009  
Time: 14:28:12  
Job: IPB003  
Label: 1:1A

12/30/09  
14:28:12





uantify Sample Report MassLynx 4.0 SP4  
he GEL Group, LLC Analyst: Michael A. Penny

ataset: C:\MassLynx\Perchlorate.PRO\per122909a.qid

ast Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
rinted: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

ame: per1229023a

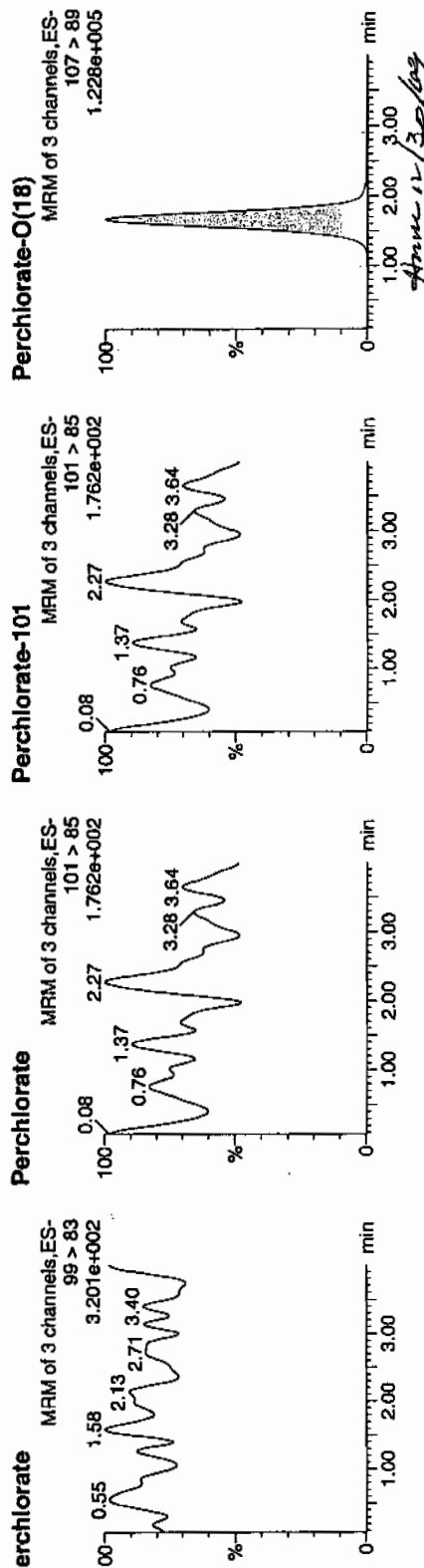
ate: 29-Dec-2009

ime: 15:59:47

); IPB004

ial: 1:1,A

Page 37 of 1729



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
B004	Perchlorate	99 > 83										0.00
B004	Perchlorate-101	101 > 85										
B004	Perchlorate-O(18)	107 > 89	1.67	34397.980	34397.980	bb		0.5167	103.35	3.35	5102.0...	



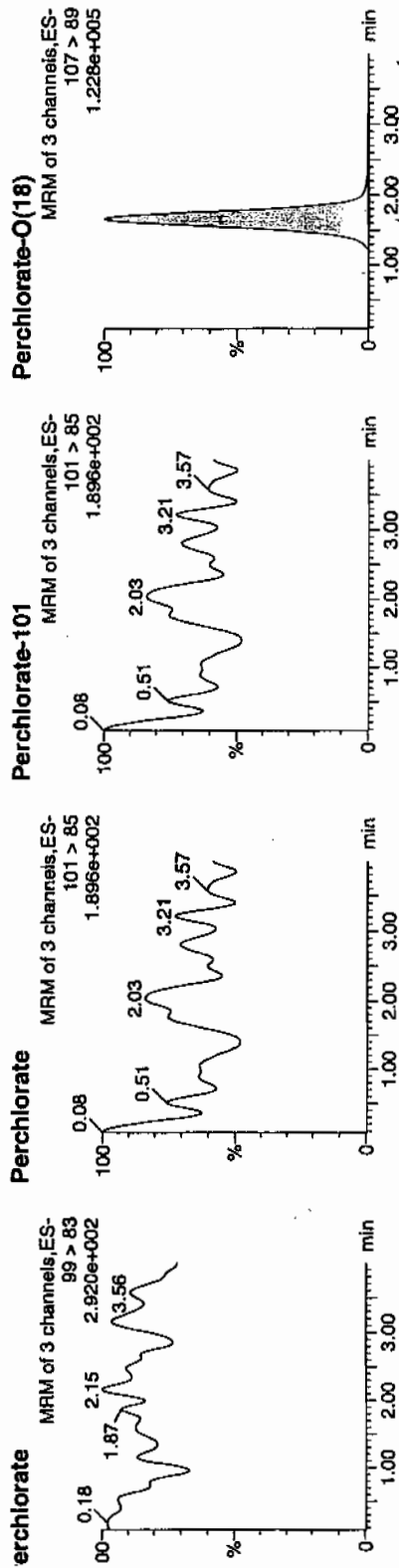
Quantify Sample Report MassLynx 4.0 SP4  
The GEL-Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229030a  
Date: 29-Dec-2009  
Time: 16:49:06  
Job: IPB005  
Label: 1:1,A

12/30/09



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
B005	Perchlorate	99 > 83										0.00
B005	Perchlorate-101	101 > 85										
B005	Perchlorate-O(18)	107 > 89	1.67	34324.867	34324.867	bb		0.5156	103.13	3.13	20032	....

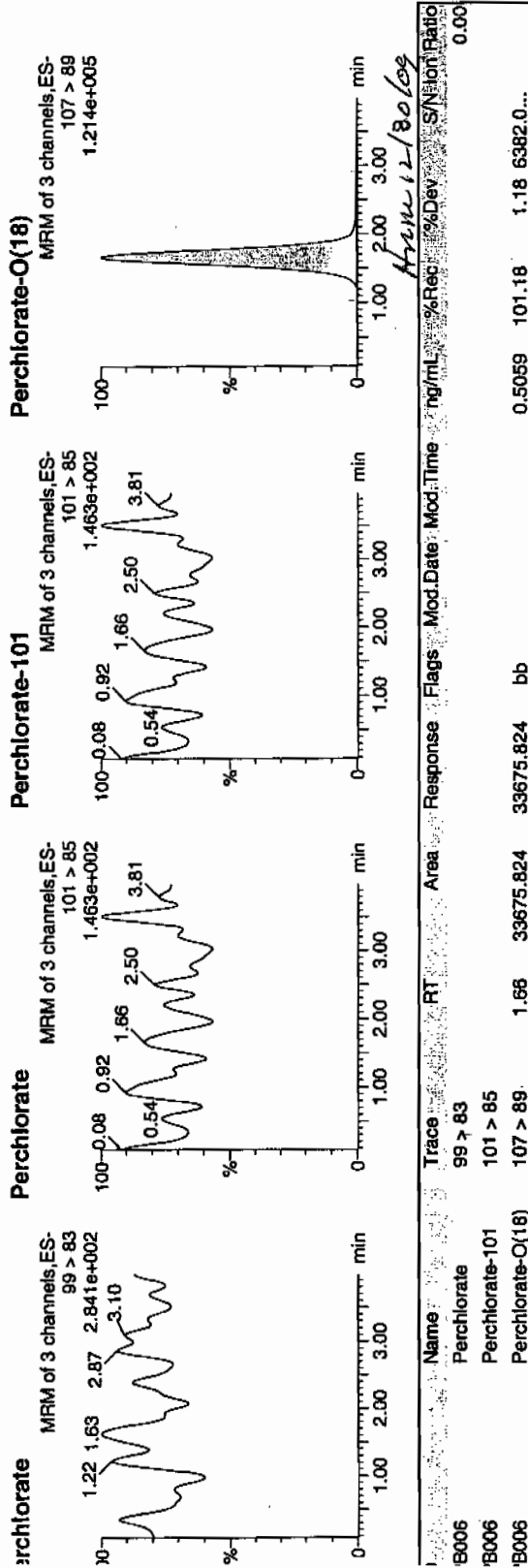


Identify Sample Report MassLynx 4.0 SP4  
 ie GEL Group, LLC Analyst: Michael A. Penny

itaset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

st Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
 inted: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

me: per1229043a  
 ite: 29-Dec-2009  
 me: 18:20:54  
 al: 1:1,A





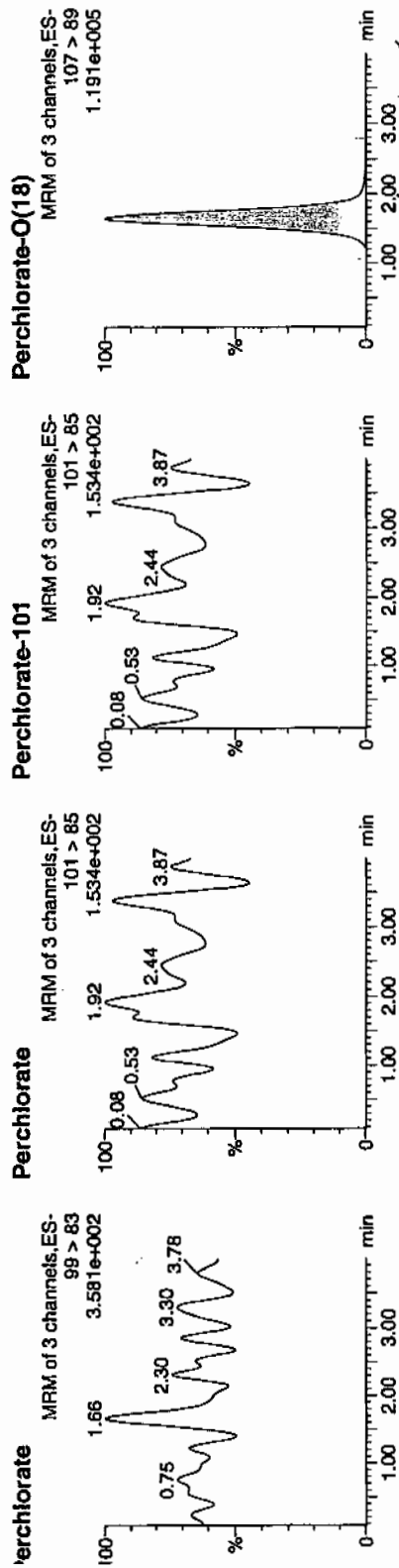
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229054a  
Date: 29-Dec-2009  
Time: 19:38:41  
ID: IPB007  
Label: 1:1,A

12/30



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
Perchlorate	99 > 83											0.00
Perchlorate-101	101 > 85											
Perchlorate-Q(18)	107 > 89	1.66	32852.363	32852.363	bb			0.4935	98.70	-1.30	3290.1...	



Nairb.ref

;Positive ion monoisotopic and average masses from solution  
;of NaI/Rbi (2.0/0.05ug/ul) in 50/20 2-propanol/H<sub>2</sub>O.  
;Most useful general purpose calibrant for all low  
;MW applications, including MS/MS work.  
;At high resolution, readily covers from m/z 50-2000.  
;At reduced resolution, can be used to over m/z 3000.  
;NOT RECOMMENDED FOR PROTEIN WORK. USE MYO, MYOTRP or TRP.

Updated 20 April '95

22.9898	100
84.9118	100
172.8840	100
322.7782	100
472.6725	100
622.5667	100
772.4610	100
922.3552	100
1072.2494	100
; 1222.1437	100
; 1372.0379	100
; 1521.9321	100
; 1671.8264	100
; 1821.7206	100
; 1971.6149	100
; 2121.5091	100
; 2271.4033	100
; 2421.2976	100
; 2571.1918	100
; 2721.0861	100
; 2870.9803	100
; 3020.8745	100
; 3170.7688	100
; 3320.6630	100
; 3470.5572	100
; 3620.4515	100
; 3770.3457	100
; 3920.2400	100



QUARTO ULTIMA: nairb 01 08 08.cal

Calibration Report - MS1 Static

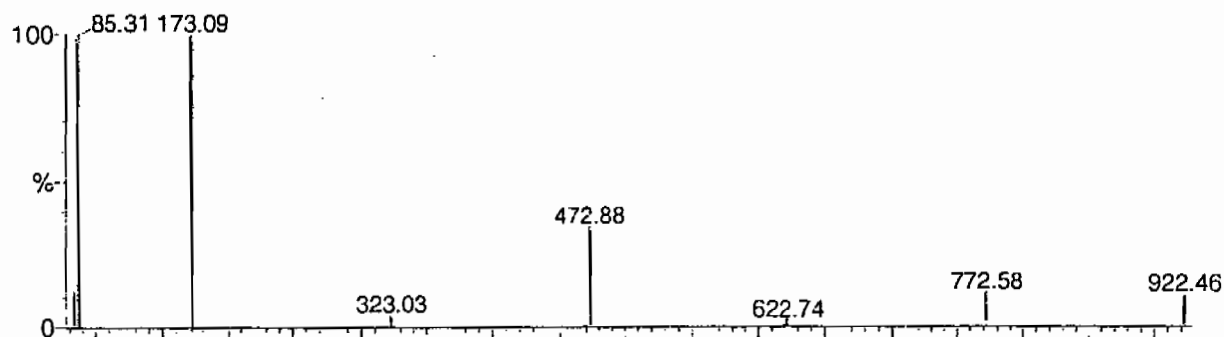
Page 1 of 1

Printed: Tue Jan 08 12:19:12 2008

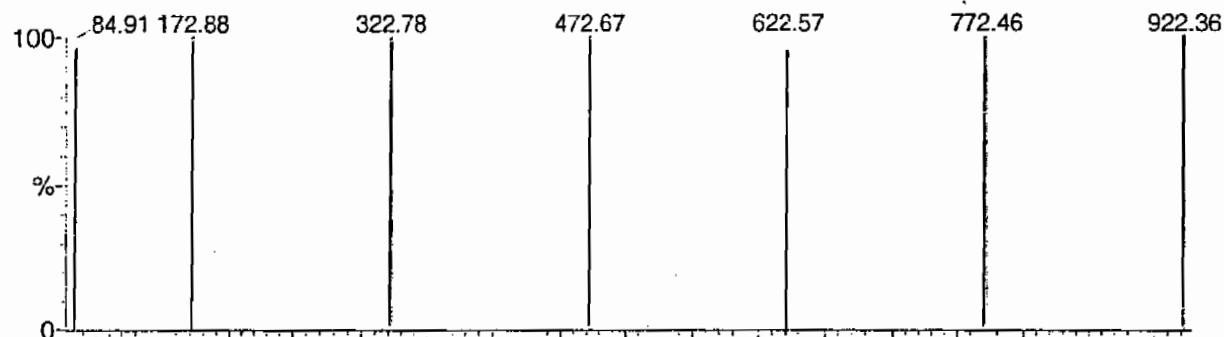
PEAKS HIGHLIGHTED BY CURV 01-01-08

Data file: STATMS1 - Uncalibrated

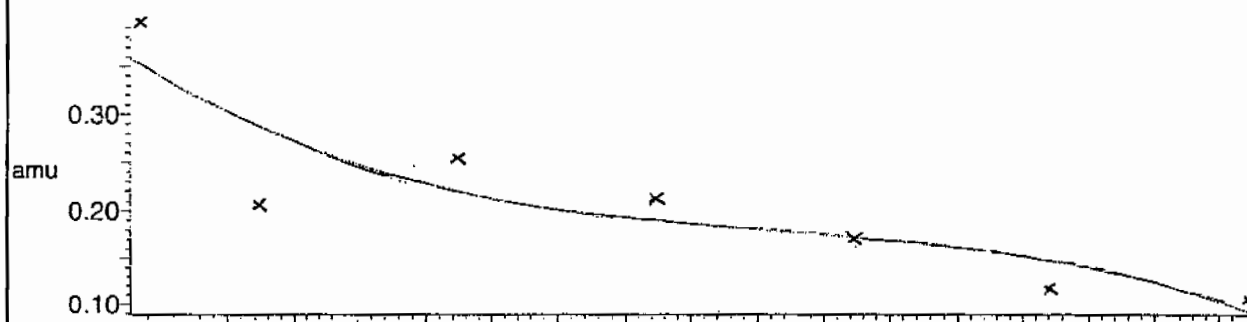
7 matches of 7 tested references



Reference file: Nairb

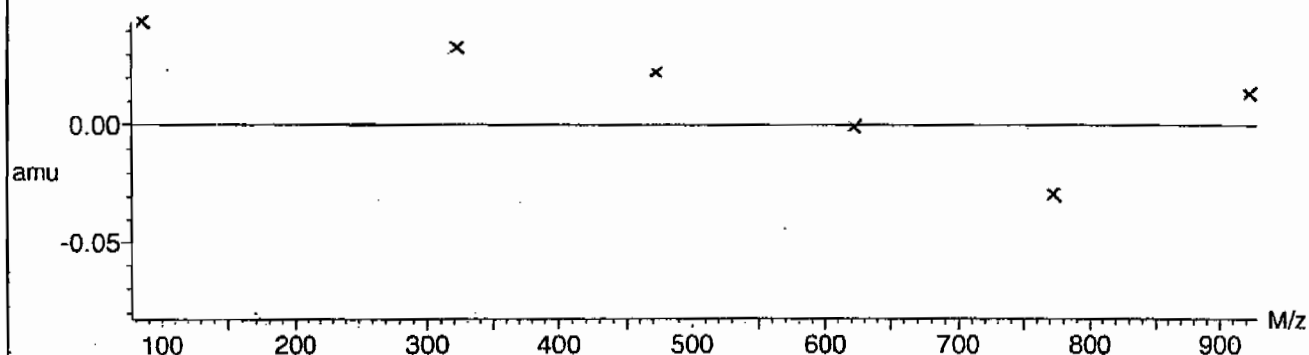


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $3.212012 \times 10^{-2} \pm 0.024108$

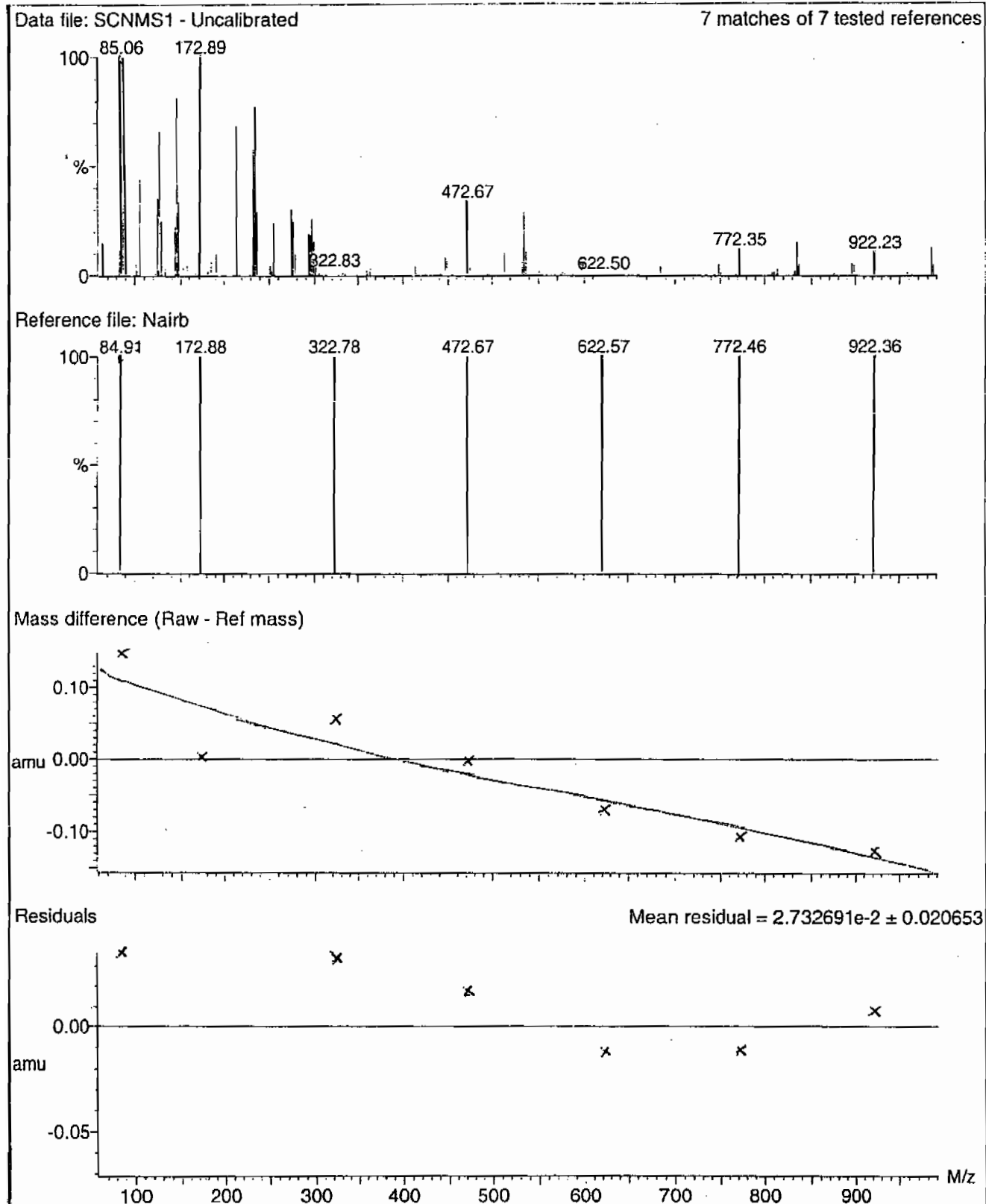




Calibration Report - MS1 Scanning

Page 1 of 1

Printed: Tue Jan 08 12:20:09 2008

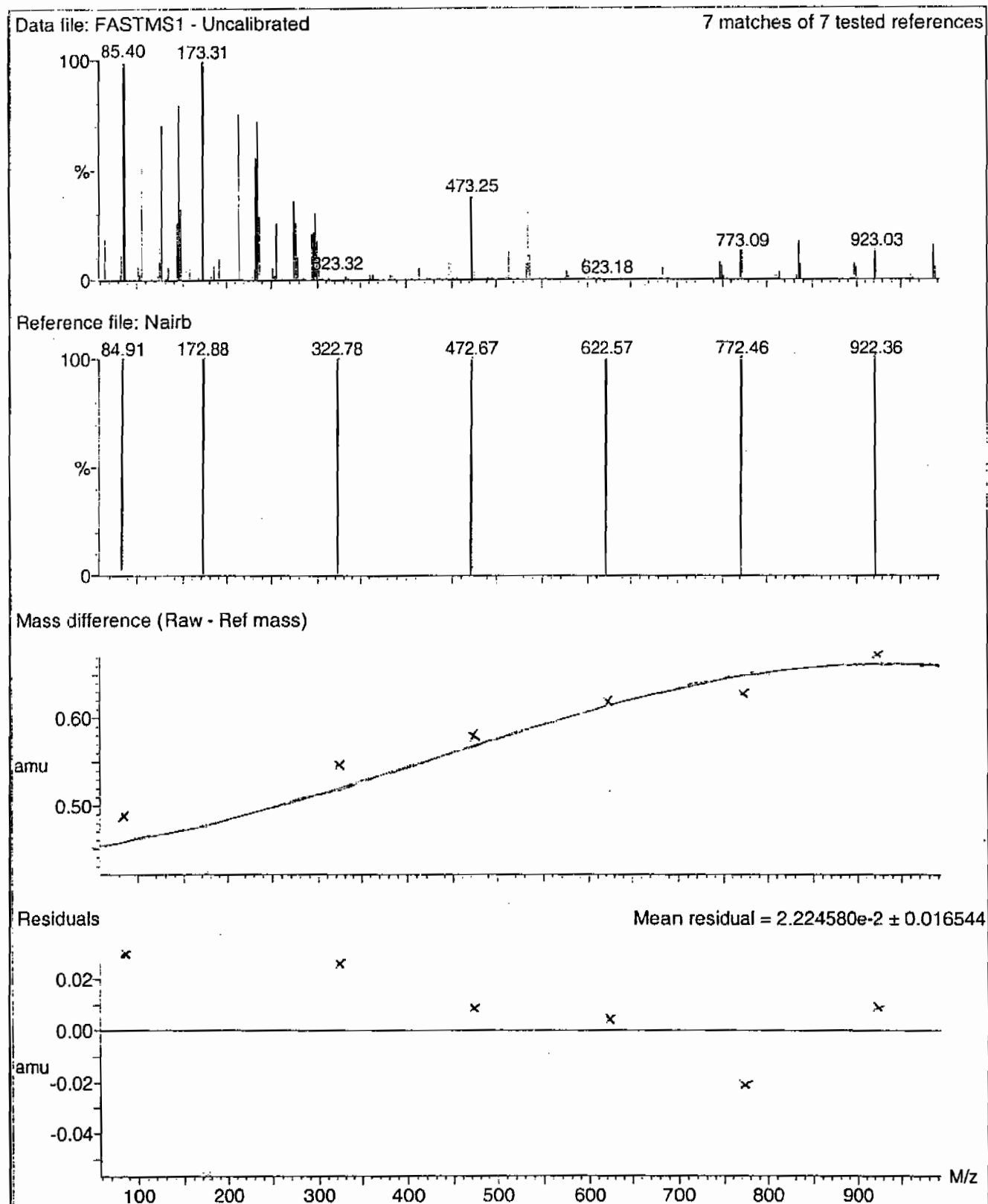




Calibration Report - MS1 Scan Speed Compensation

Page 1 of 1

Printed: Tue Jan 08 12:21:04 2008





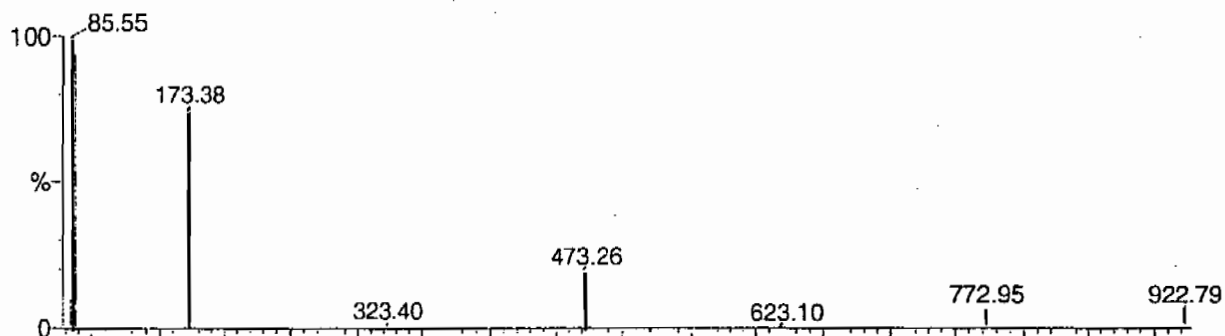
Calibration Report - MS2 Static

Page 1 of 1

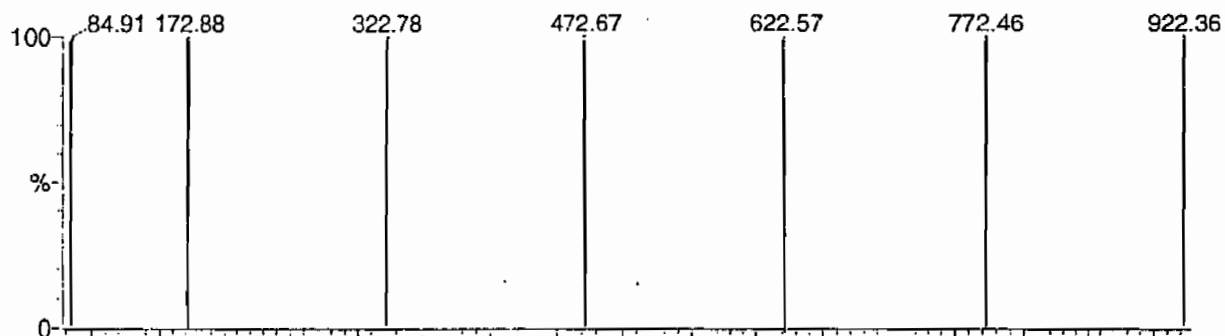
Printed: Tue Jan 08 12:21:59 2008

Data file: STATMS2 - Uncalibrated

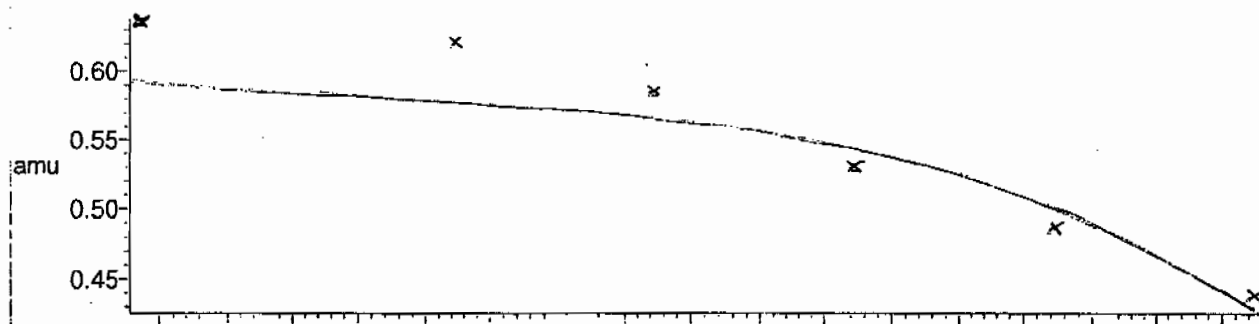
7 matches of 7 tested references



Reference file: Nairb

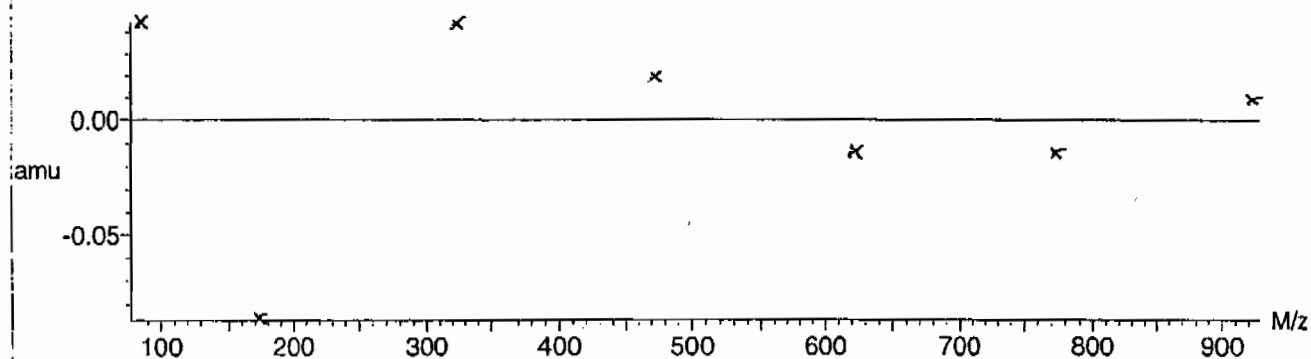


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $3.295980 \times 10^{-2} \pm 0.025603$





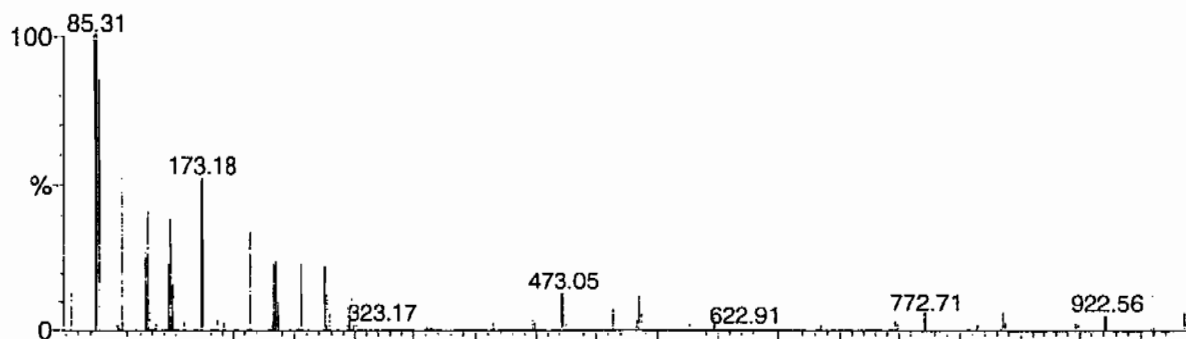
Calibration Report - MS2 Scanning

Page 1 of 1

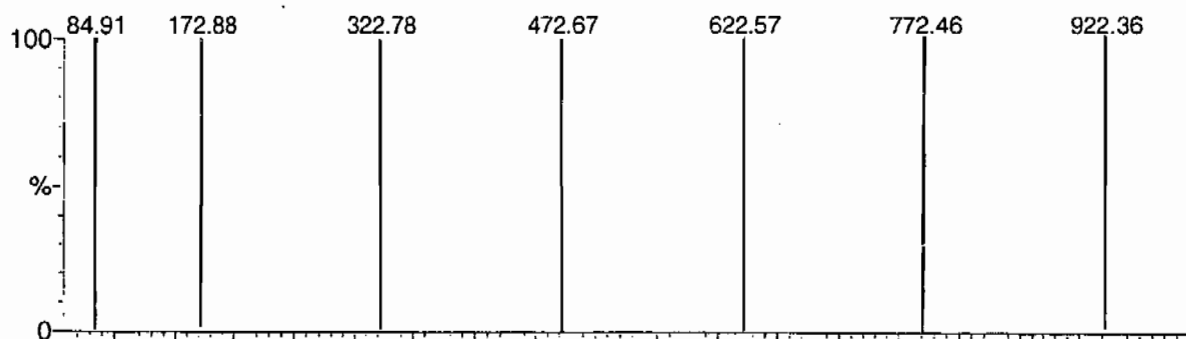
Printed: Tue Jan 08 12:22:56 2008

Data file: SCNMS2 - Uncalibrated

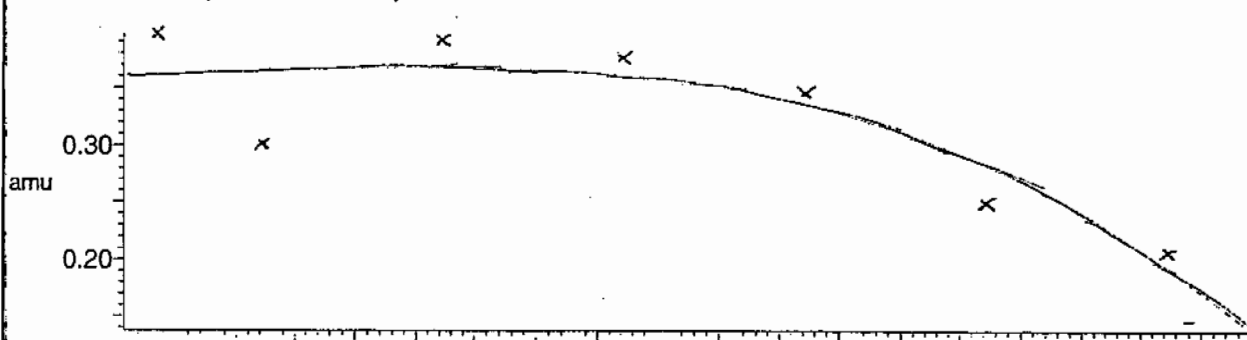
7 matches of 7 tested references



Reference file: Nairb

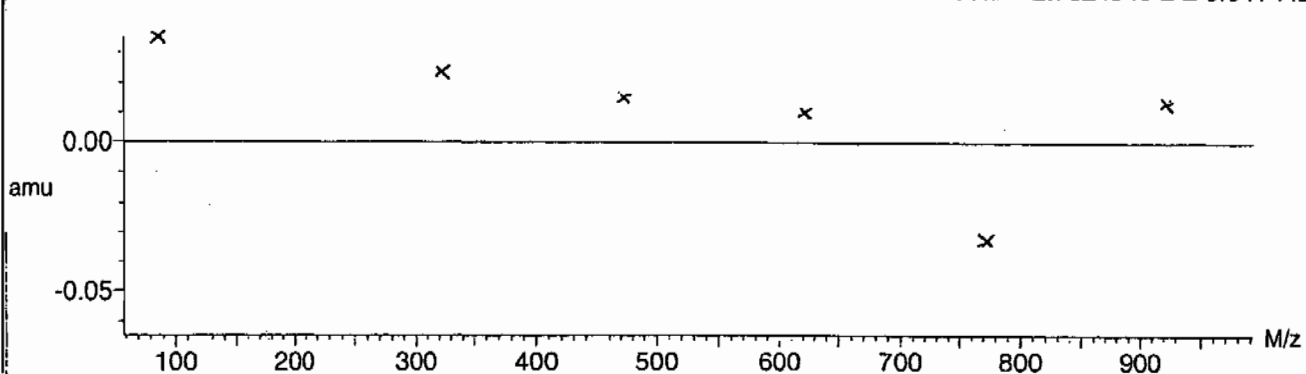


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $2.782494 \times 10^{-2} \pm 0.017442$

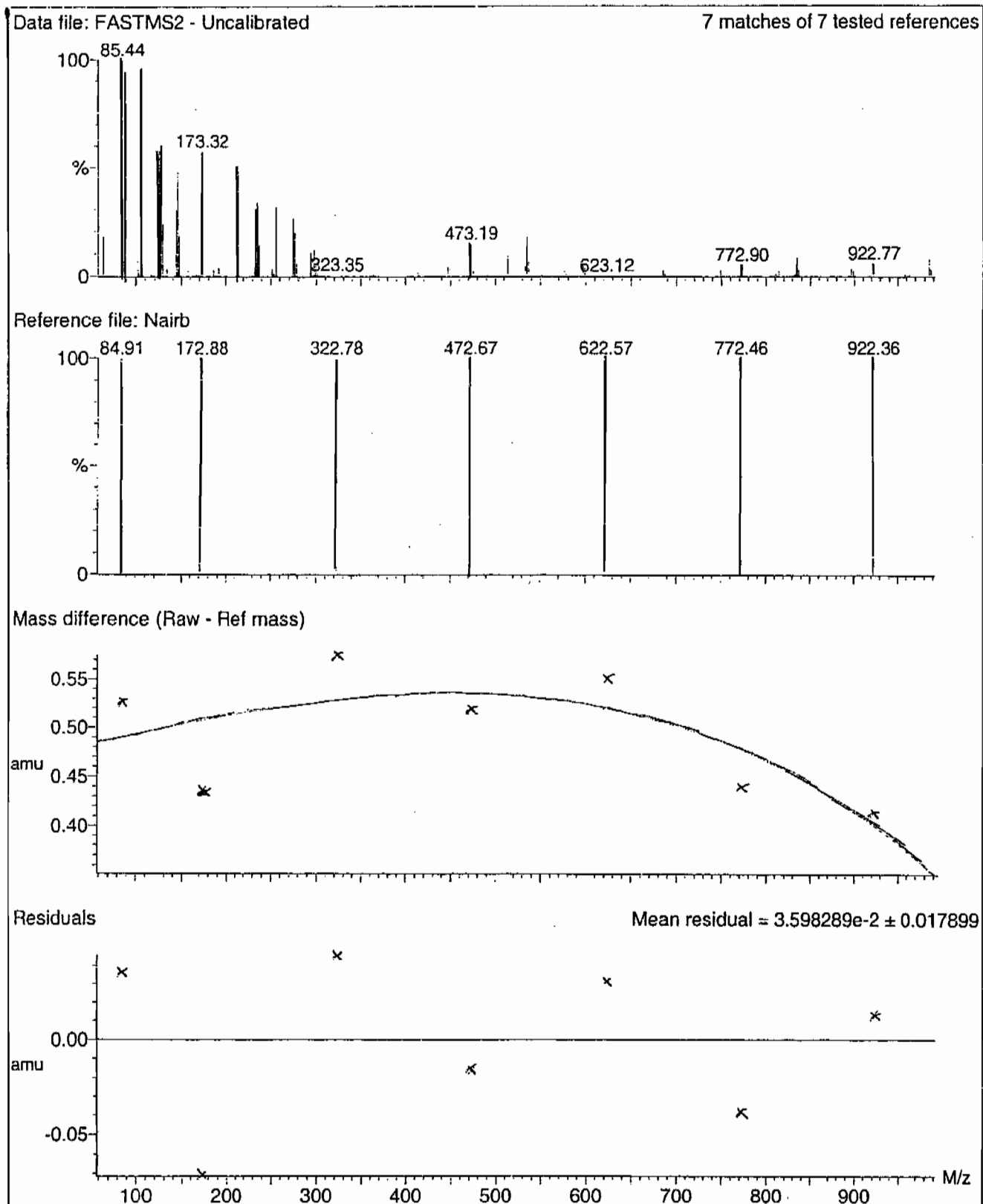




Calibration Report - MS2 Scan Speed Compensation

Page 1 of 1

Printed: Tue Jan 08 12:23:51 2008





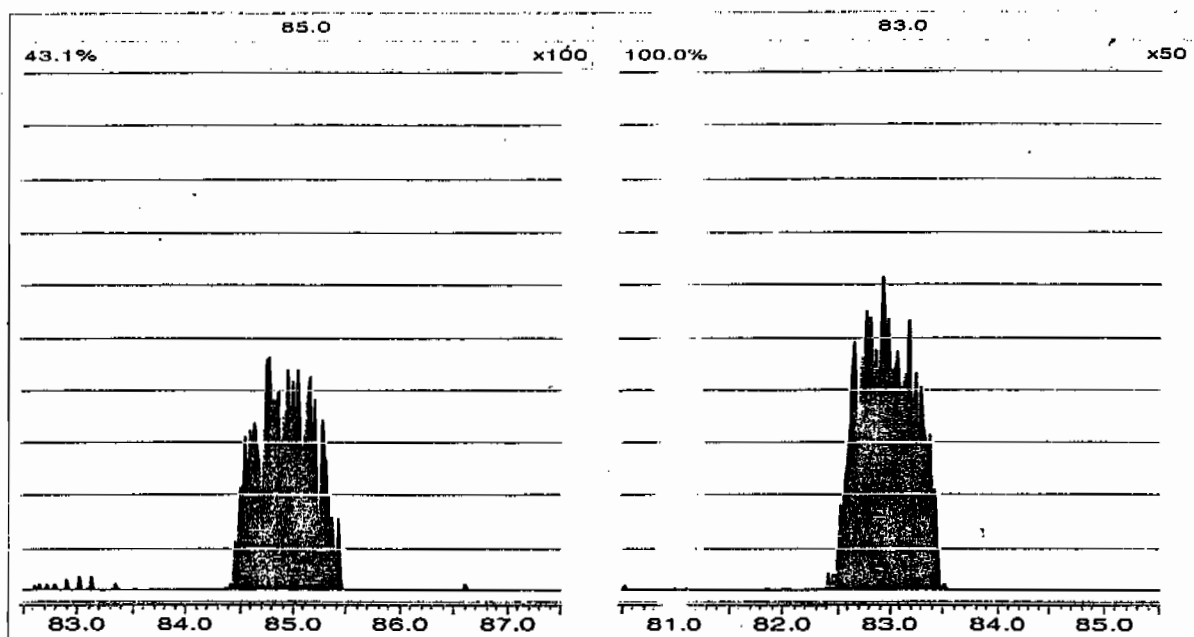
Tune Parameters

MassLynx 4.0 SP4

Page 1 of 1

File: C:\MassLynx\Perchlorate.PRO\ACQUDB\Perchlorate.IPR

Printed: Tuesday, December 29, 2009 13:23:13 Eastern Standard Time





Perchlorate RT And Area Summary

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-1038

Lab Code: GEL

Instrument ID: LCMSMS

HPLC Column: Phenomenex Ion Pac AG-16 2 X 50 mm

Sample ID	Datafile	Run Date	Area	RT	RT CLO4	RRT	Q 0.98-1.02
MidLevel Standard Area	per1229006a	29-DEC-09	33335.8				
Lower Area Limit			16667.9				
Upper Area Limit			66671.6				
1202004143	per1229032a	29-DEC-09 17:03	32727.4	1.66	1.65668	.998	
1202004144	per1229033a	29-DEC-09 17:10	32681.7	1.66	1.66913	1.006	
1202004147	per1229034a	29-DEC-09 17:17	33910.4	1.71	1.70645	.998	
243457001	per1229047a	29-DEC-09 18:49	32923	1.66	1.66915	1.006	
1202004145	per1229048a	29-DEC-09 18:56	34310.3	1.66	1.66915	1.006	
1202004146	per1229049a	29-DEC-09 19:03	32919.4	1.66	1.6567	.998	
243457002	per1229050a	29-DEC-09 19:10	33995.4	1.64	1.6567	1.01	
243457003	per1229051a	29-DEC-09 19:17	32747.7	1.66	1.66915	1.006	



Perchlorate RT And Area Summary

GEL Job No.(SDG): 10-1038

Lab Name: General Engineering Laboratories

Lab Code: GEL

Instrument ID: LCMSMS

HPLC Column: Phenomenex Ion Pac AG-16 2 X 50 mm

Sample ID	Datafile	Run Date	Area	RT	RT CLO4	RRT	Q 0.98-1.02
MidLevel Standard Area	per1229006a	29-DEC-09	33335.8				
Lower Area Limit			16667.9				
Upper Area Limit			66671.6				
243457004	per1229052a	29-DEC-09 19:24	31984.8	1.66	1.66917	1.006	



# SAMPLE DATA



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 936668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7553

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 243457001

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 79

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.631	2.52	0.631	ug/kg	U	1	29-DEC-09 18:49	per1229047a
	Perchlorate Isotope Ratio						1	29-DEC-09 18:49	per1229047a
14797-73-0	Perchlorate-101	.631	2.52	0.631	ug/kg	U	1	29-DEC-09 18:49	per1229047a
	Perchlorate-O(18)			6.24	ug/kg		1	29-DEC-09 18:49	per1229047a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$  X  $\frac{1}{\% \text{Solids}}$



## Quantify Sample Report MassLynx 4.0 SP4

The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

**Last Altered:** Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time

Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

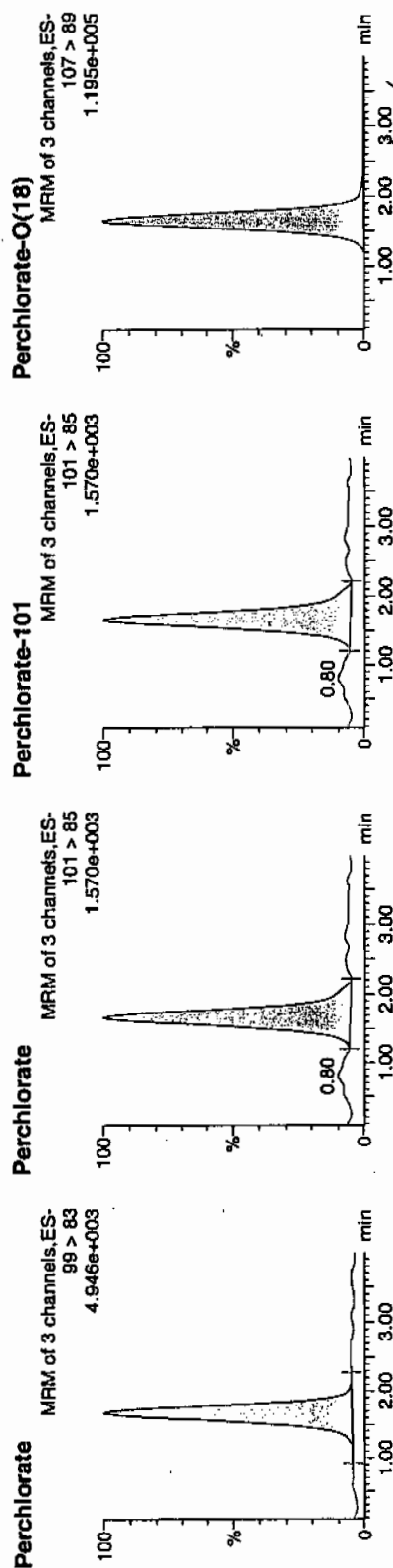
**Name: per1229047a**

**Date: 29-Dec-2009**

Time: 18:49:11

ID: 243457001

Vial: 2:3.A



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
243457001	Perchlorate	99 > 83	1.67	1308.509	1308.509	bb			0.0176			226.974	3.01
243457001	Perchlorate-101	101 > 85	1.67	434.042	434.042	bb			0.0177			264.887	
243457001	Perchlorate-O(18)	107 > 89	1.66	32923.031	32923.031	bb			0.4946	98.92	-1.08	5495.4...	



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC  
 Lab Code: GEL  
 Instrument: LCMSMS  
 Method: SW846 6850 Modified  
 Matrix: SOIL  
 Extraction Batch ID: 936668  
 Extraction Type: Solid Prep  
 Client Sample No. RE12-10-7554  
 Date Received: 23-DEC-09  
 GEL Job No (SDG): 10-1038  
 GEL Sample ID: 243457002  
 Date Filtered: 28-DEC-09  
 Injection Volume (uL): 20  
 Sample Volume/Weight: 2.00 g  
 %Solids: 21.2

Concentrated Extract Volume: 20.0

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.544	2.18	0.754	ug/kg	J	1	29-DEC-09 19:10	per1229050a
	Perchlorate Isotope Ratio			3.06			1	29-DEC-09 19:10	per1229050a
14797-73-0	Perchlorate-101	.544	2.18	0.747	ug/kg	J	1	29-DEC-09 19:10	per1229050a
	Perchlorate-O(18)			5.55	ug/kg		1	29-DEC-09 19:10	per1229050a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =  
 Instrument Value X Concentrated Extract Volume X  $\frac{1}{\% \text{Solids}}$   
 Aliquot



Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

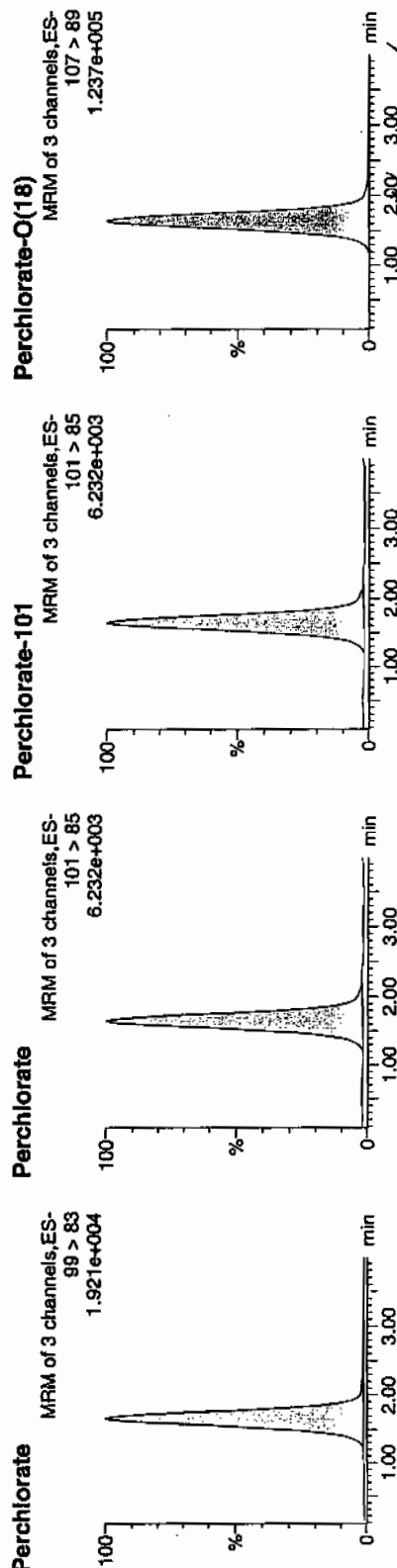
Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Page 55 of 1729  
Name: per1229050a  
Date: 29-Dec-2009  
Time: 19:10:19  
D: 243457002  
Vial: 2:3,D

1477  
12/30/09

LANE 936669 / 1 /



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
243457002	Perchlorate	99 > 83	1.66	5149.479	5149.479	bb			0.0693			712.690	3.06
243457002	Perchlorate-101	101 > 85	1.64	1680.221	1680.221	bb			0.0687			515.496	
243457002	Perchlorate-O(18)	107 > 89	1.64	33995.418	33995.418	bb			0.5107	102.14	2.14	1920.9...	



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 936668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7551

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 243457003

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 82

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.562	2.25	0.562	ug/kg	U	1	29-DEC-09 19:17	per1229051a
	Perchlorate Isotope Ratio						1	29-DEC-09 19:17	per1229051a
14797-73-0	Perchlorate-101	.562	2.25	0.562	ug/kg	U	1	29-DEC-09 19:17	per1229051a
	Perchlorate-O(18)			5.53	ug/kg		1	29-DEC-09 19:17	per1229051a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$  X %Solids



Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Name: per1229051a

Date: 29-Dec-2009

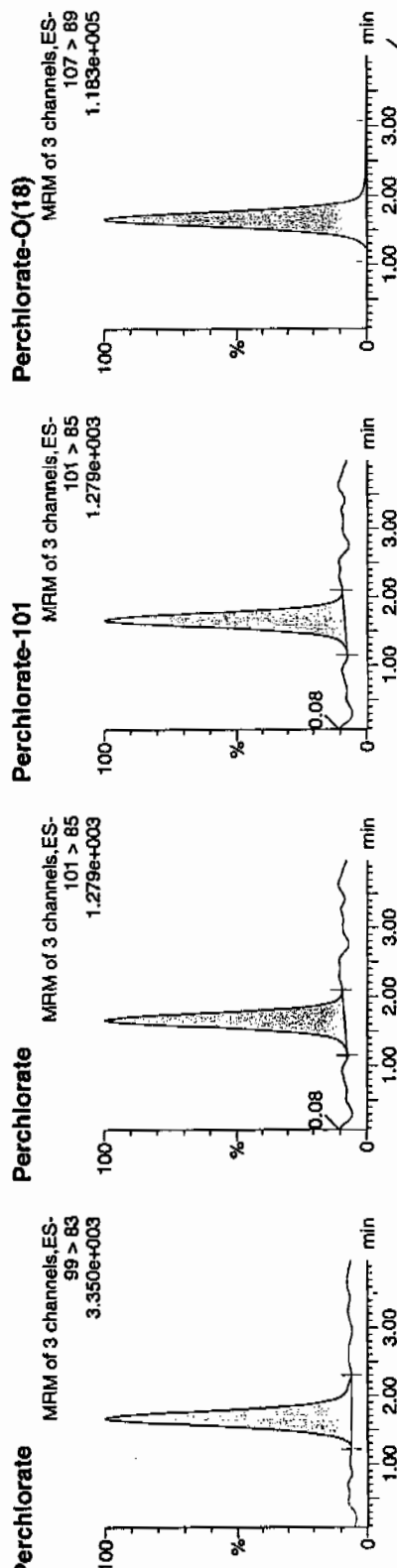
Time: 19:17:21

D: 243457003

/lat: 2:3,E

12/30/09

936669 / 802 / 11



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
243457003	Perchlorate	99 > 83	1.67	902.654	902.654	bb			0.0121			59.937	2.98
243457003	Perchlorate-101	101 > 85	1.66	302.490	302.490	bb			0.0124			119.677	
243457003	Perchlorate-O(18)	107 > 89	1.66	32747.715	32747.715	bb			0.4919	98.39	-1.61	4512.4...	

Time 12/30/09



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 236668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7552

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 243457004

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 92.4

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.541	2.16	0.541	ug/kg	U	1	29-DEC-09 19:24	per1229052a
	Perchlorate Isotope Ratio						1	29-DEC-09 19:24	per1229052a
14797-73-0	Perchlorate-101	.541	2.16	0.541	ug/kg	U	1	29-DEC-09 19:24	per1229052a
	Perchlorate-O(18)			5.20	ug/kg		1	29-DEC-09 19:24	per1229052a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X Concentrated Extract Volume X 1  
Aliquot %Solids



Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

atlaset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

ast Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
rinted: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

lame: per1229052a

ate: 29-Dec-2009

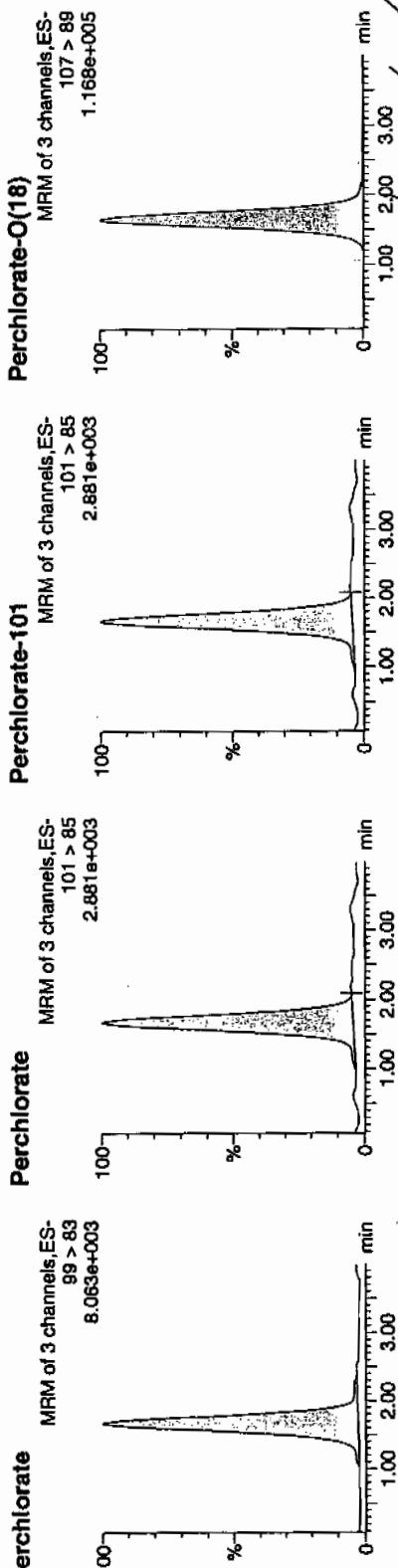
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id: 243457004

tail: 2:3.F

12/30/09

936669 / 8022 / 1 /



D	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ratio
243457004	Perchlorate	99 > 83	1.67	2197.135	2197.135	bb			0.0296			598.367	2.87
243457004	Perchlorate-101	101 > 85	1.66	766.767	766.767	bb			0.0313			275.956	
243457004	Perchlorate-O(18)	107 > 89	1.66	31984.750	31984.750	bb			0.4805	96.10	-3.90	9826.2...	



# STANDARDS DATA



Form 2

Perchlorate Initial Calibration

Lab Name: General Engineering Laboratories GEL Job No.(SDG): 10-1038

Lab Code: GEL

Instrument ID: LCMSMS Date Analyzed: 29-DEC-09

HPLC Column: Phenomenex Ion Pac AG-16 2 X 50 mm

Calibration Level	1	2	3	4	5
Cal Concentration (ug/L)	0.05	0.1	0.25	0.50	1.0

Parname Perchlorate

Coefficient of Determination:

Calibration Curve: 74334.32

Response Type: External Standard

Curve Type: RF



Form 2

Perchlorate Initial Calibration

Lab Name: General Engineering Laboratories GEL Job No.(SDG): 10-1038

Lab Code: GEL

Instrument ID: LCMSMS Date Analyzed: 29-DEC-09

HPLC Column: Phenomenex Ion Pac AG-16 2 X 50 mm

Calibration Level	1	2	3	4	5
Cal Concentration (ug/L)	0.05	0.1	0.25	0.50	1.0

Paramname Perchlorate-101

Coefficient of Determination:

Calibration Curve: 24468.6

Response Type: External Standard

Curve Type: RF



Quantify Calibration Report MassLynx 4.0 SP4

The GEL Group, LLC Analyst: Michael A. Penny

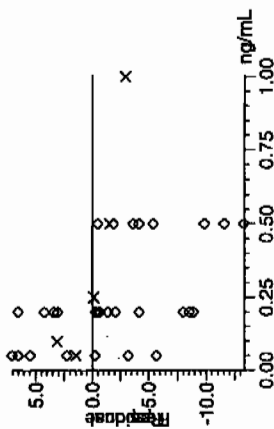
Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

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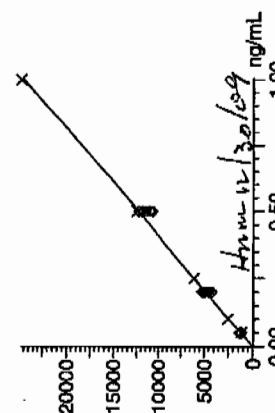
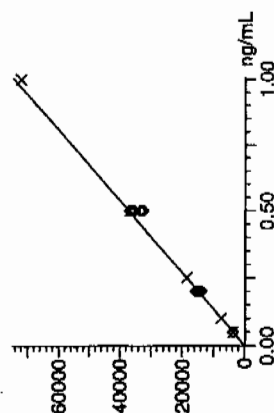
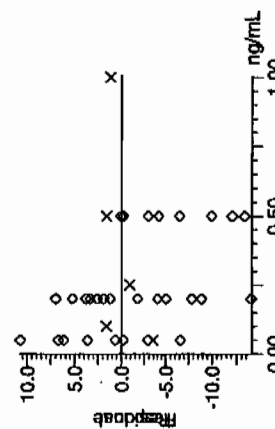
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Method: C:\MassLynx\Perchlorate.PRO\MethDB\per122909a.mdb 29 Dec 2009 14:36:05  
Calibration: C:\MassLynx\Perchlorate.PRO\CurveDB\per122909a.cdb 30 Dec 2009 06:51:17

Compound name: Perchlorate  
Response Factor: 74334.3  
RF SD: 1798.79, % Relative SD: 2.41986  
Response type: External Std, Area  
Curve type: RF



Compound name: Perchlorate-101  
Response Factor: 24468.6  
RF SD: 542.853, % Relative SD: 2.21857  
Response type: External Std, Area  
Curve type: RF





Quantify Calibration Report MassLynx 4.0 SP4

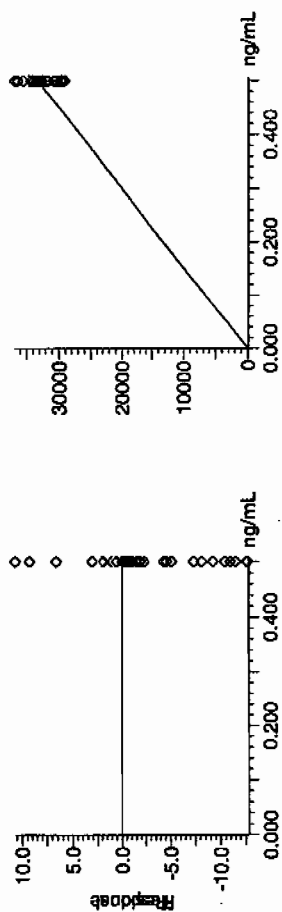
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time

Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Compound name: Perchlorate-O(18)  
 Response Factor: 66568.2  
 RRF SD: 652.618, % Relative SD: 0.980376  
 Response type: External Std, Area  
 Curve type: Rf





Form 3

Perchlorate Initial Calibration Verification

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-1038

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.5	.5	99.53	29-DEC-09 14:21	per1229009a
Perchlorate Isotope Ratio		3.02		29-DEC-09 14:21	per1229009a
Perchlorate-101	.5	.5	100.07	29-DEC-09 14:21	per1229009a



Quantify Sample Report MassLynx 4.0 SP4  
 he GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
 Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

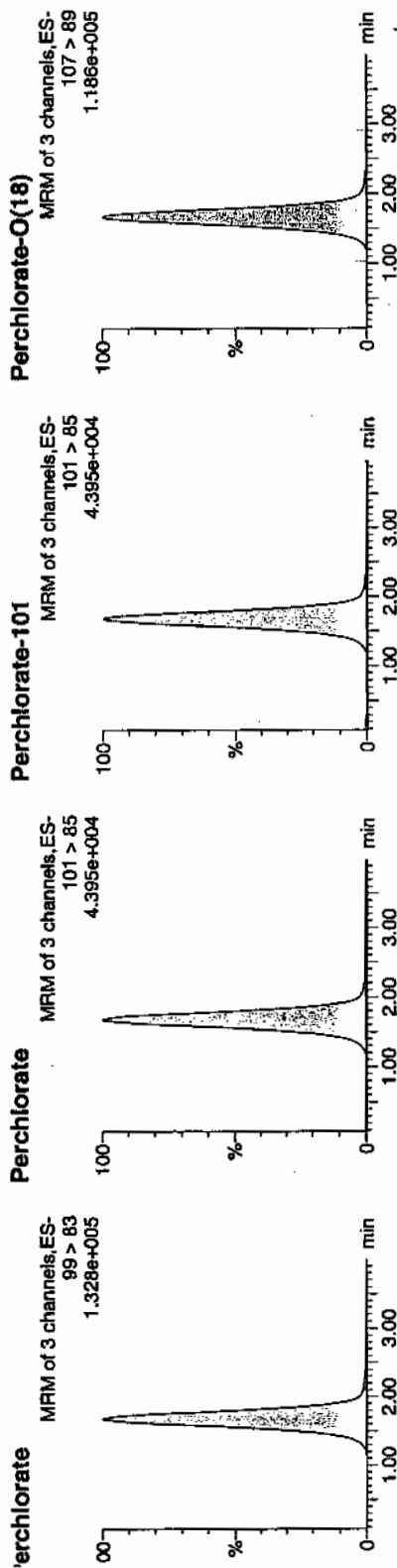
Sample Name: per122909a

Sample Date: 29-Dec-2009

Sample Time: 14:21:09

Sample ID: WCL091218-06ICV

Sample Label: 1:2,A



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
VCL091218-06ICV	Perchlorate	1.68	36993.602	36993.602	bb			0.4977	99.53	-0.47	3237.0...	3.02
VCL091218-06ICV	Perchlorate-101	1.67	12242.883	12242.883	bb			0.5004	100.07	0.07	2677.3...	
VCL091218-06ICV	Perchlorate-O(18)	1.67	33292.156	33292.156	bb			0.5001	100.02	0.02	9403.9...	

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Form 3

Perchlorate Continuing Calibration Verification

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-1038

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.5	.49	98.1	29-DEC-09 15:52	per1229022a
Perchlorate Isotope Ratio		2.99		29-DEC-09 15:52	per1229022a
Perchlorate-101	.5	.5	99.76	29-DEC-09 15:52	per1229022a
Perchlorate	.5	.48	96.39	29-DEC-09 16:42	per1229029a
Perchlorate Isotope Ratio		3.06		29-DEC-09 16:42	per1229029a
Perchlorate-101	.5	.48	95.84	29-DEC-09 16:42	per1229029a
Perchlorate	.5	.48	95.84	29-DEC-09 18:13	per1229042a
Perchlorate Isotope Ratio		3		29-DEC-09 18:13	per1229042a
Perchlorate-101	.5	.49	97.07	29-DEC-09 18:13	per1229042a
Perchlorate	.5	.47	94.57	29-DEC-09 19:31	per1229053a
Perchlorate Isotope Ratio		3.07		29-DEC-09 19:31	per1229053a
Perchlorate-101	.5	.47	93.48	29-DEC-09 19:31	per1229053a



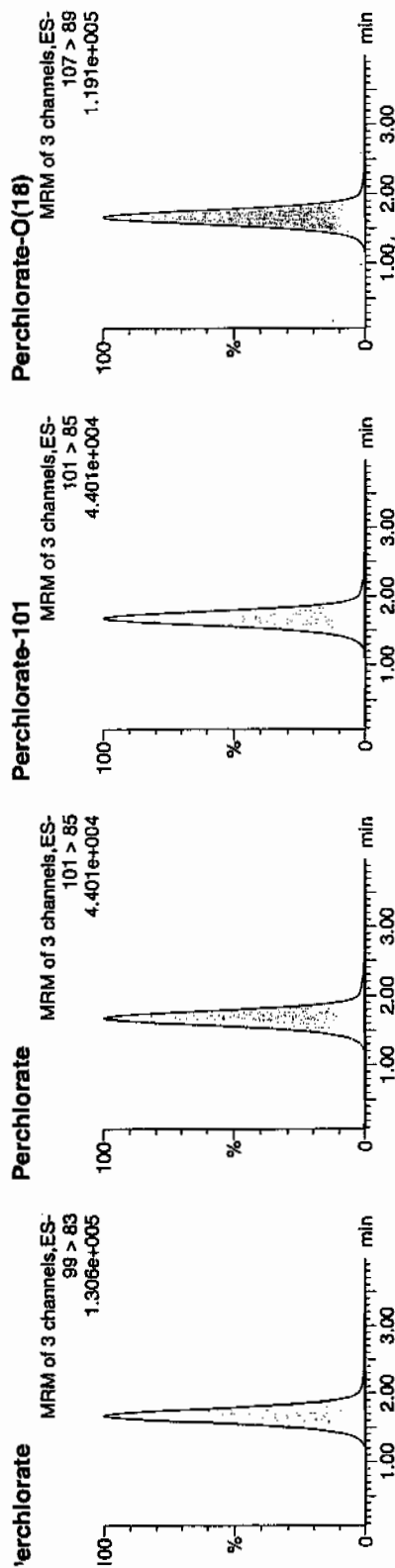
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229022a  
Date: 29-Dec-2009  
Time: 15:52:44  
D: WCL091218-06CCV  
File: 1:2,A

WAT  
12/30/09



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
VCL091218-06CCV	Perchlorate	99 > 83	1.68	36461.191	bb			0.4905	98.10	-1.90	3999.9...	2.99
VCL091218-06CCV	Perchlorate-101	101 > 85	1.67	12204.641	bb			0.4988	99.76	-0.24	3695.9...	
VCL091218-06CCV	Perchlorate-O(18)	107 > 89	1.67	32995.398	bb			0.4957	99.13	-0.87	10703....	



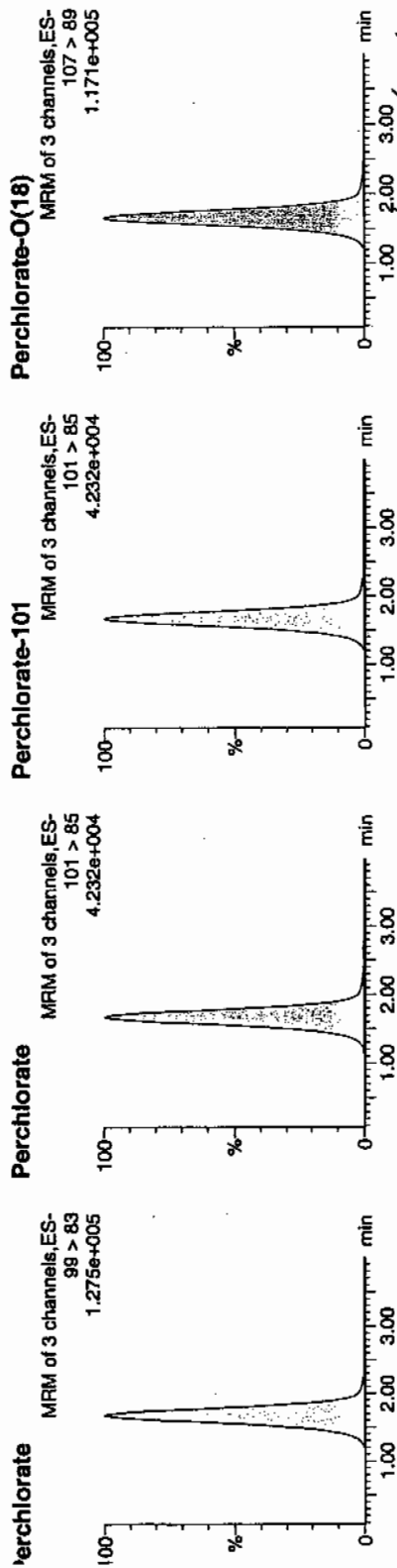
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229029a  
Date: 29-Dec-2009  
Time: 16:42:03  
D: WCL091218-06CCV  
File: 1:2,A

WAF  
12/30/09



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
VCL091218-06CCV	Perchlorate	99 > 83	1.67	35824.668	bb			0.4819	96.39	-3.61	5571.2...	3.06
VCL091218-06CCV	Perchlorate-101	101 > 85	1.67	11724.945	bb			0.4792	95.84	-4.16	2980.9...	
VCL091218-06CCV	Perchlorate-O(18)	107 > 89	1.66	32661.146	bb			0.4906	98.13	-1.87	5311.3...	



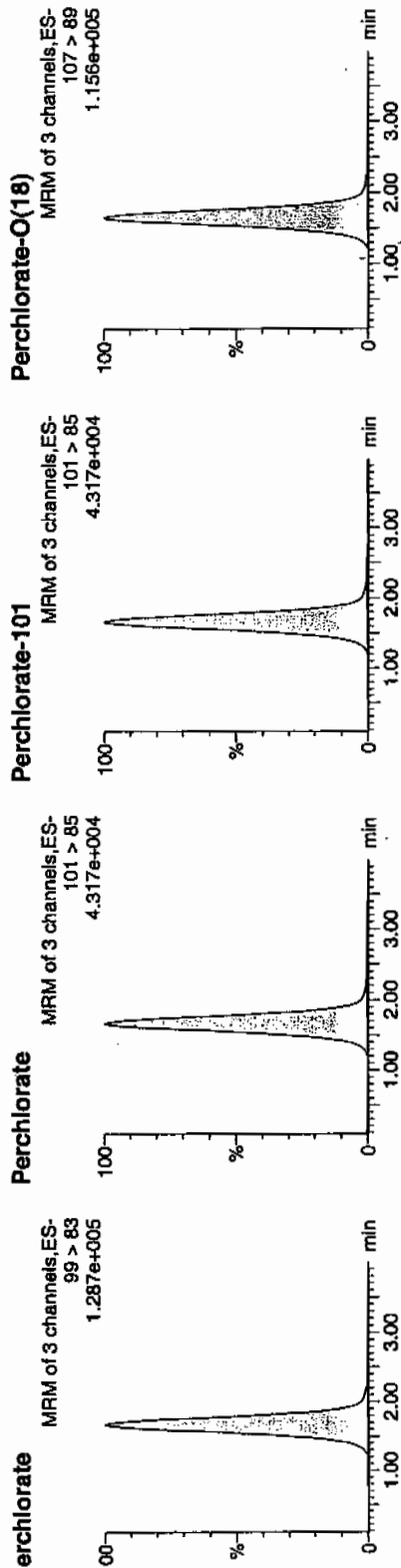
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Fast Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229042a  
Date: 29-Dec-2009  
Time: 18:13:37  
File: WCL091218-06CCV  
Label: 1:2,A

12/30/09  
11:12 AM



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
WCL091218-06CCV Perchlorate	99 > 83	1.67	35622.629	35622.629	bb			0.4792	95.84	-4.16	4705.1...	3.00
WCL091218-06CCV Perchlorate-101	101 > 85	1.66	11875.902	11875.902	bb			0.4854	97.07	-2.93	3464.2...	
WCL091218-06CCV Perchlorate-O(18)	107 > 89	1.66	31837.980	31837.980	bb			0.4783	95.66	-4.34	2223.5...	

Shimadzu log



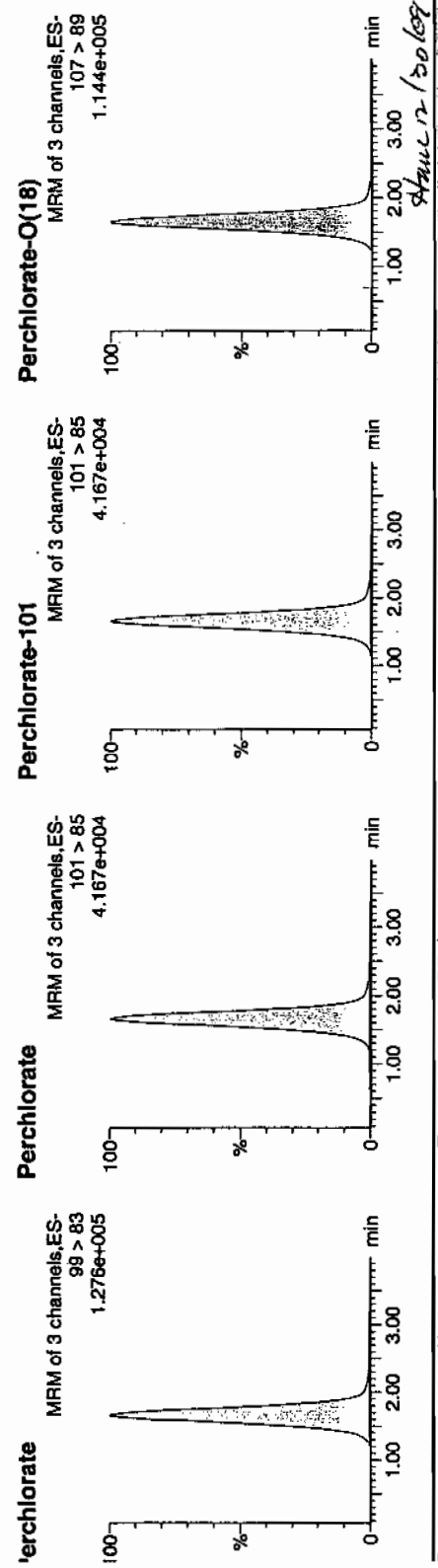
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229053a  
Date: 29-Dec-2009  
Time: 19:31:24  
D: WCL091218-06CCV  
Label: 1:2,A

12/31/09



Name	Trace	RT	Area	Response	Flags	Mod. Date	Mod. Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
VCL091218-06CCV	Perchlorate	99 > 83	1.66	35149.563	35149.563	bb		0.4729	94.57	-5.43	4413.5...	3.07
VCL091218-06CCV	Perchlorate-101	101 > 85	1.66	11436.879	11436.879	bb		0.4674	93.48	-6.52	1527.3...	
VCL091218-06CCV	Perchlorate-O(18)	107 > 89	1.64	31572.385	31572.385	bb		0.4743	94.86	-5.14	9724.2...	



Form 3

Perchlorate MDL Verification

GEL Job No.(SDG): 10-1038

Lab Name: General Engineering Laboratories

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.05	.05	106.51	29-DEC-09 14:35	per1229011a
Perchlorate Isotope Ratio		3.12		29-DEC-09 14:35	per1229011a
Perchlorate-101	.05	.05	103.65	29-DEC-09 14:35	per1229011a
Perchlorate	.05	.05	102.28	29-DEC-09 16:06	per1229024a
Perchlorate Isotope Ratio		2.8		29-DEC-09 16:06	per1229024a
Perchlorate-101	.05	.06	110.81	29-DEC-09 16:06	per1229024a
Perchlorate	.05	.05	107.05	29-DEC-09 16:56	per1229031a
Perchlorate Isotope Ratio		3.05		29-DEC-09 16:56	per1229031a
Perchlorate-101	.05	.05	106.72	29-DEC-09 16:56	per1229031a
Perchlorate	.05	.05	105.47	29-DEC-09 18:27	per1229044a
Perchlorate Isotope Ratio		3.02		29-DEC-09 18:27	per1229044a



Form 3

Perchlorate MDL Verification

GEL Job No.(SDG): 10-1038

Lab Name: General Engineering Laboratories

Lab Code: GEL

Reporting Units: ug/kg

Perchlorate-101	.05	.05	106.16	29-DEC-09 18:27	per1229044a
Perchlorate	.05	.05	99.78	29-DEC-09 19:45	per1229055a
Perchlorate Isotope Ratio		3.01		29-DEC-09 19:45	per1229055a
Perchlorate-101	.05	.05	100.67	29-DEC-09 19:45	per1229055a



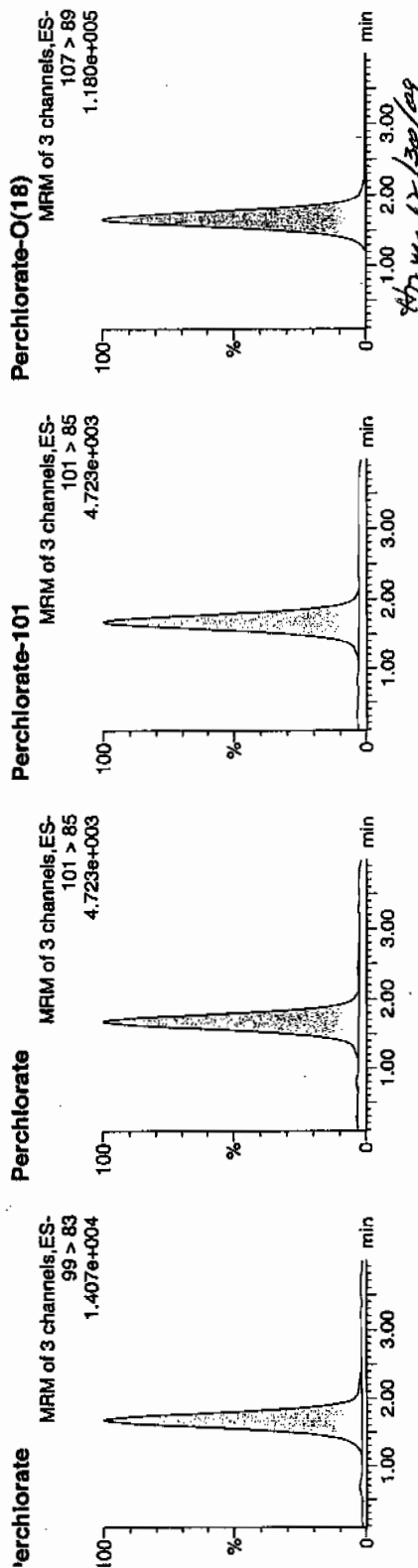
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

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Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229011a  
Date: 29-Dec-2009  
Time: 14:35:14  
ID: WCL091218-07CRI  
File: 1:2,B

MR  
12/30/09



D	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
VCL091218-07CRI	Perchlorate	99 > 83	1.68	3958.786	3958.786	bb			0.0533	106.51	6.51	363.360	3.12
VCL091218-07CRI	Perchlorate-101	101 > 85	1.67	1268.100	1268.100	bb			0.0518	103.65	3.65	235.884	
VCL091218-07CRI	Perchlorate-O(18)	107 > 89	1.67	33050.422	33050.422	bb			0.4965	99.30	-0.70	5866.9...	



Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

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Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229024a

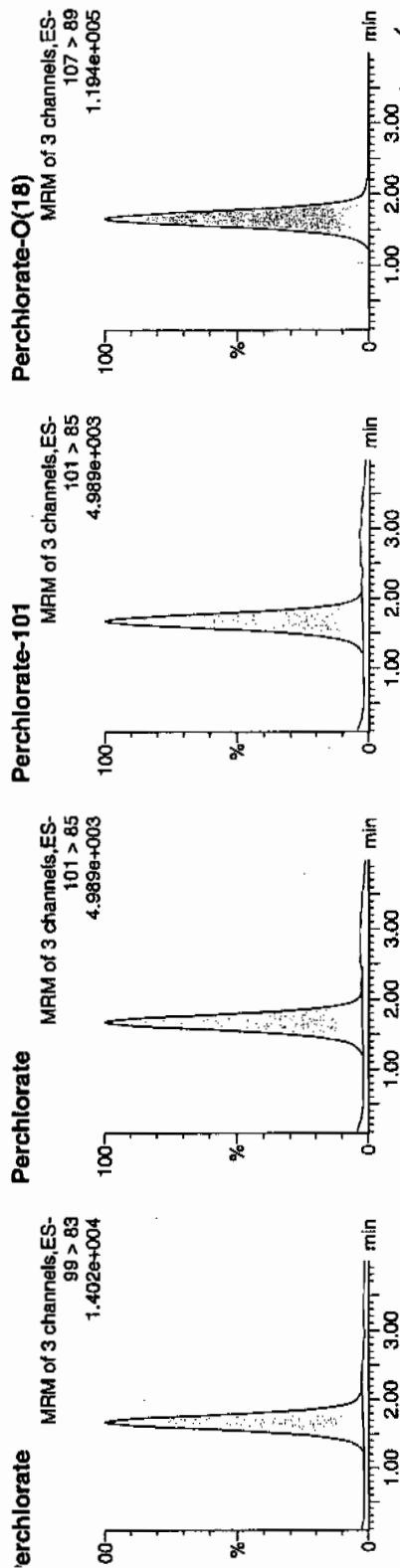
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Time: 16:06:49

File: WCL091218-07CRI

Label: 1:2,B

12/30/09



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
VCL091218-07CRI	Perchlorate	99 > 83	1.67	3801.353	bb			0.0511	102.28	2.28	372.962	2.80
VCL091218-07CRI	Perchlorate-101	101 > 85	1.67	1355.651	bb			0.0554	110.81	10.81	171.230	
VCL091218-07CRI	Perchlorate-O(18)	107 > 89	1.66	33458.375	bb			0.5026	100.52	0.52	8206.0...	

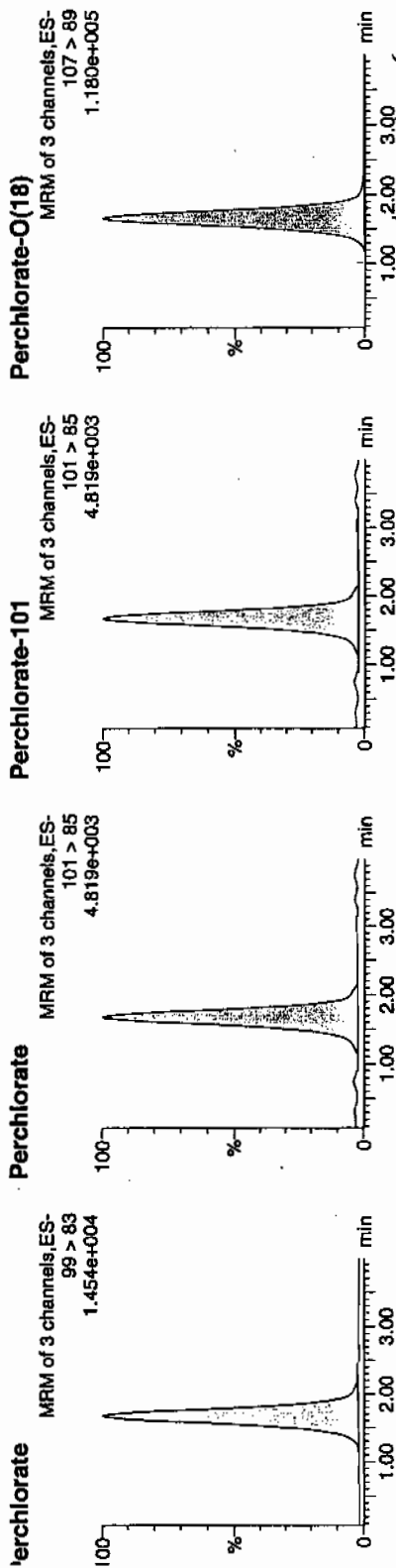


**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

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Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229031a  
Date: 29-Dec-2009  
Time: 16:56:08  
D: WCL091218-07CRI  
File: 1:2,B



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
VCL091218-07CRI	Perchlorate	99 > 83	1.67	3978.753	bb			0.0535	107.05	7.05	1632.9...	3.05
VCL091218-07CRI	Perchlorate-101	101 > 85	1.67	1305.628	bb			0.0534	106.72	6.72	556.260	
VCL091218-07CRI	Perchlorate-O(18)	107 > 89	1.66	32789.859	bb			0.4926	98.52	-1.48	4096.5...	



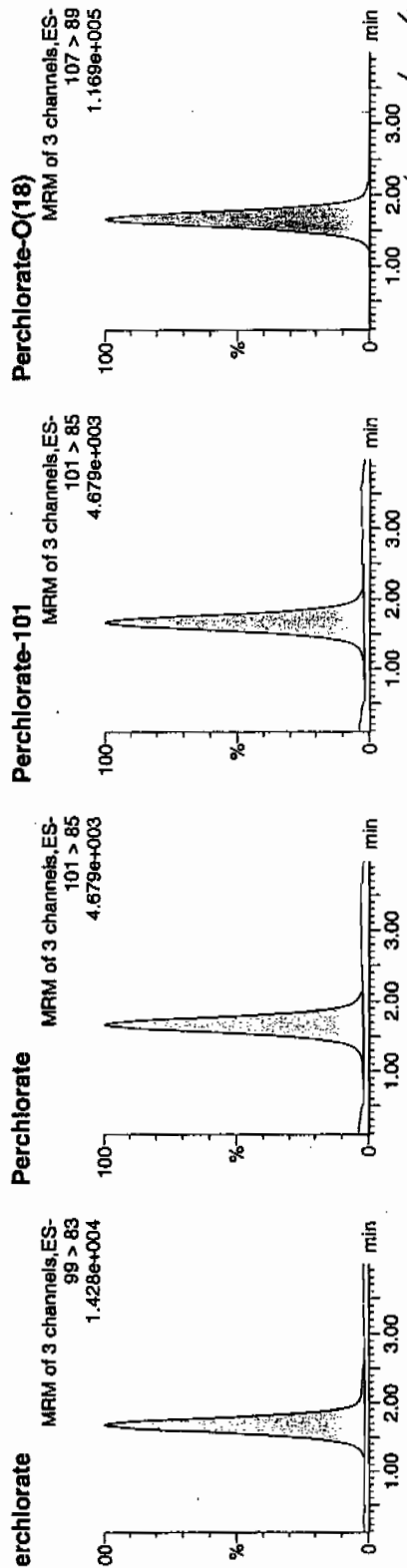
Quantify Sample Report MassLynx 4.0 SP4  
 he GEL Group, LLC Analyst: Michael A. Penny

atset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

ast Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
 rited: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

ame: per1229044a  
 ate: 29-Dec-2009  
 ime: 18:27:56  
 ): WCL091218-07CRI  
 ial: 1:2,B

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 12/30/09



Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ratio
/CL091218-07CRI Perchlorate	99 > 83	1.67	3920.063	3920.063	bb			0.0527	105.47	5.47	653.754	3.02
/CL091218-07CRI Perchlorate-101	101 > 85	1.67	1298.797	1298.797	bb			0.0531	106.16	6.16	251.043	
/CL091218-07CRI Perchlorate-O(18)	107 > 89	1.66	32513.240	32513.240	bb			0.4884	97.68	-2.32	2527.9...	

Handwritten: 12/30/09



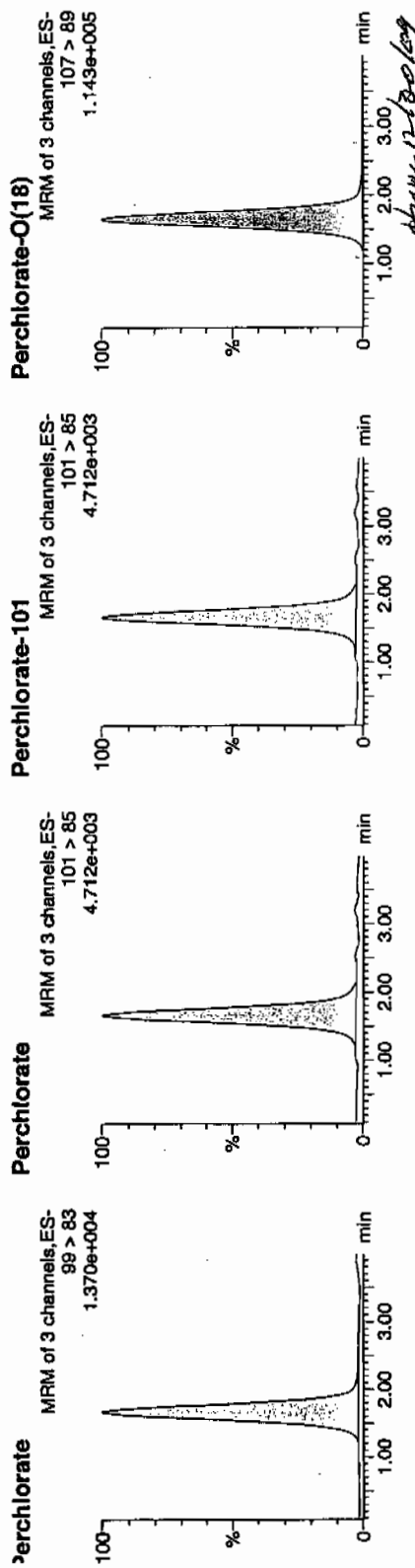
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Sample Name: per1229055a  
Date: 29-Dec-2009  
Time: 19:45:43  
D: WCL091218-07CRI  
/ial: 1:2,B

12/30/09  
M.A.P.



D	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ig/ml	%Rec	%Dev	S/N	Ion Ratio
	Perchlorate	99 > 83	1.67	3708.720	3708.720	bb			0.0499	99.78	-0.22	588.082	3.01
	Perchlorate-101	101 > 85	1.66	1231.665	1231.665	bb			0.0503	100.67	0.67	180.729	
	Perchlorate-O(18)	107 > 89	1.66	31600.350	31600.350	bb			0.4747	94.94	-5.06	6698.1...	



# QUALITY CONTROL



Form 1

Perchlorate Analysis Data Sheet

Client Sample No.

MB

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: EPA 6850 Modified

Matrix: SOIL

Extraction Batch ID: 936668

Extraction Type: Solid Prep

Date Received: 28-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 1202004143

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 100

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.5	2	0.500	ug/kg	U	1	29-DEC-09 17:03	per1229032a
	Perchlorate Isotope Ratio						1	29-DEC-09 17:03	per1229032a
14797-73-0	Perchlorate-101	.5	2	0.500	ug/kg	U	1	29-DEC-09 17:03	per1229032a
	Perchlorate-O(18)			4.92	ug/kg		1	29-DEC-09 17:03	per1229032a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$  X  $\frac{1}{\% \text{Solids}}$







Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: EPA 6850 Modified

Matrix: SOIL

Extraction Batch ID: 236668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

LCS

Date Received: 28-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 1202004144

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 100

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.5	2	1.99	ug/kg	J	1	29-DEC-09 17:10	per1229033a
	Perchlorate Isotope Ratio			3.08			1	29-DEC-09 17:10	per1229033a
14797-73-0	Perchlorate-101	.5	2	1.97	ug/kg	J	1	29-DEC-09 17:10	per1229033a
	Perchlorate-O(18)			4.91	ug/kg		1	29-DEC-09 17:10	per1229033a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X Concentrated Extract Volume X 1 %Solids  
Aliquot



**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Name: per1229033a

Date: 29-Dec-2009

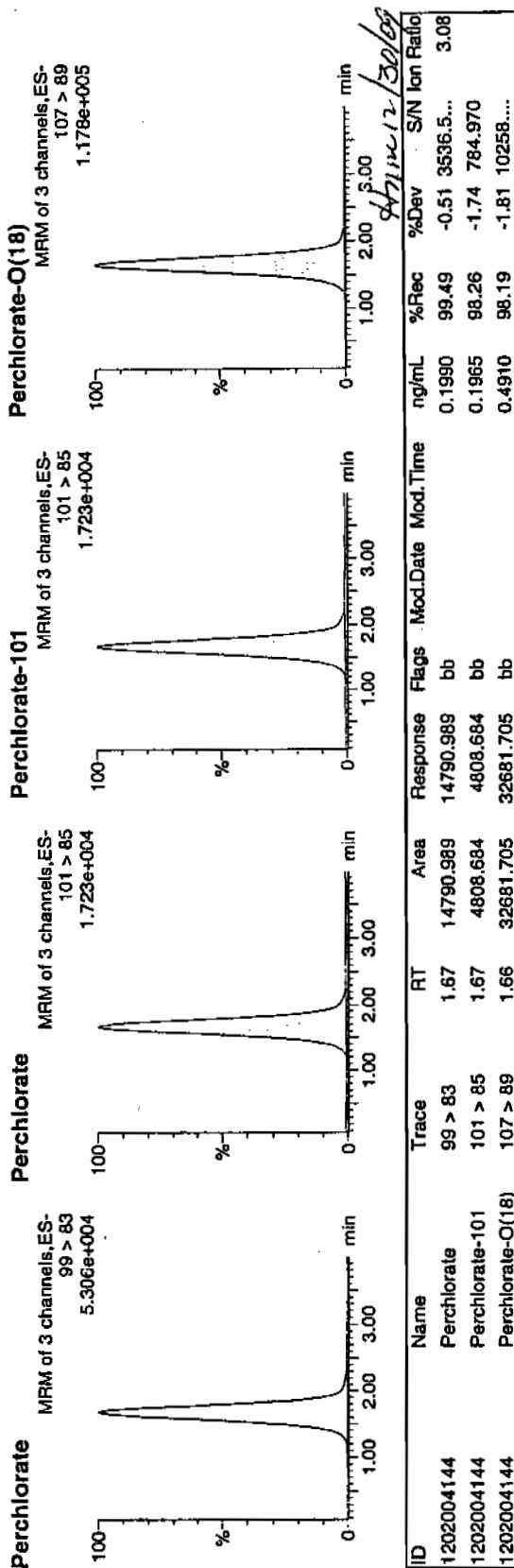
Time: 17:10:23

ID: 1202004144

Vial: 2:1,B

12/30/09

WAL-936669 / Soars / LCS / 1 /



14790.989  
74337.3 = 0.1990  
4/11/12/30/09



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 936668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7553MS

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 1202004145

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 79

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.631	2.52	2.61	ug/kg		1	29-DEC-09 18:56	per1229048a
	Perchlorate Isotope Ratio			3.03			1	29-DEC-09 18:56	per1229048a
14797-73-0	Perchlorate-101	.631	2.52	2.62	ug/kg		1	29-DEC-09 18:56	per1229048a
	Perchlorate-O(18)			6.50	ug/kg		1	29-DEC-09 18:56	per1229048a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X Concentrated Extract Volume X 1  
Aliquot %Solids



**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Name: per1229048a

Date: 29-Dec-2009

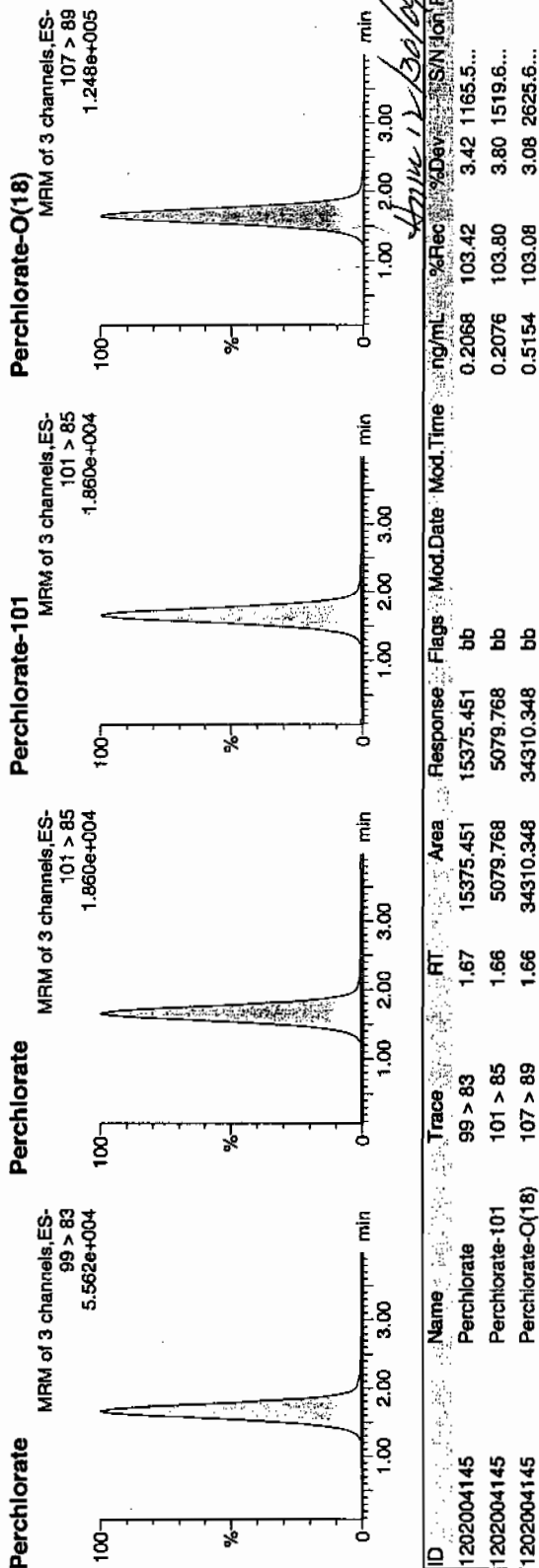
Time: 18:56:14

ID: 1202004145

Vial: 2:3,B

1.67  
12/30/09

LANC | 936669 | 8022 | 24345700122 | 1 |



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
1202004145	Perchlorate	99 > 83	1.67	15375.451	15375.451	bb			0.2068	103.42	3.42	1165.5...	3.03
1202004145	Perchlorate-101	101 > 85	1.66	5079.768	5079.768	bb			0.2076	103.80	3.80	1519.6...	
1202004145	Perchlorate-O(18)	107 > 89	1.66	34310.348	34310.348	bb			0.5154	103.08	3.08	2625.6...	

Amie 12/30/09



Form 1

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 936668

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7553MSD

Date Received: 23-DEC-09

GEL Job No (SDG): 10-1038

GEL Sample ID: 1202004146

Date Filtered: 28-DEC-09

Injection Volume (uL): 20

%Solids: 79

CAS No.	Analyte <sup>^</sup>	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.631	2.52	2.63	ug/kg		1	29-DEC-09 19:03	per1229049a
	Perchlorate Isotope Ratio			3.09			1	29-DEC-09 19:03	per1229049a
14797-73-0	Perchlorate-101	.631	2.52	2.59	ug/kg		1	29-DEC-09 19:03	per1229049a
	Perchlorate-O(18)			6.24	ug/kg		1	29-DEC-09 19:03	per1229049a

<sup>^</sup> When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$  X  $\frac{1}{\% \text{Solids}}$



# Quantify Sample Report MassLynx 4.0 SP4

The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122909a.qld

Last Altered: Wednesday, December 30, 2009 6:51:18 AM Eastern Standard Time  
 Printed: Wednesday, December 30, 2009 6:56:40 AM Eastern Standard Time

Name: per1229049a

Date: 29-Dec-2009

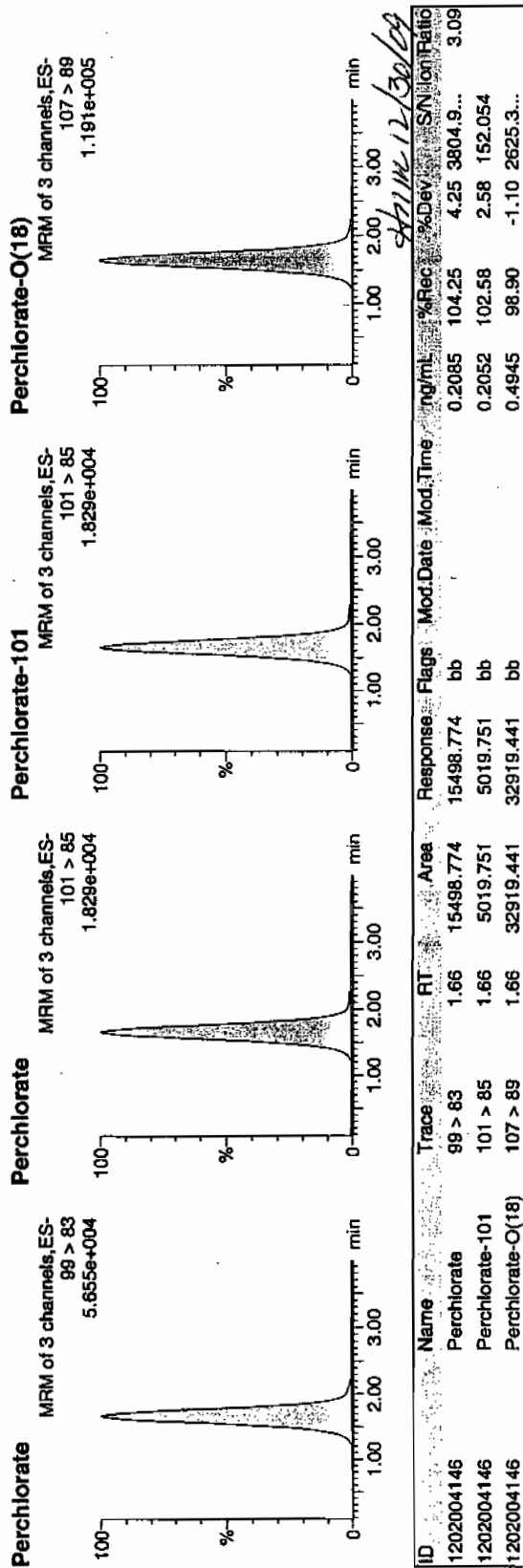
Time: 19:03:17

ID: 1202004146

Vial: 2:3,C

WAVE 936669 / 80122 / 243457001111

per122909  
12/30/09





# MISCELLANEOUS DATA



# Prep Logbook

## Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)

Batch ID: 936668  
 Analyst: Lynne Russell  
 Method: SW846 6850 Modified  
 Lab SOP: GL-OA-E-067 REV# 6  
 Instrument: MicroMass Quattro Ultima

Verified by:

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1202004143 MB	28-DEC-2009 14:57:49	2	20	10
1202004144 LCS	28-DEC-2009 14:57:49	2	20	10
243407001	28-DEC-2009 14:57:49	2	20	10
243407002	28-DEC-2009 14:57:49	2	20	10
243407003	28-DEC-2009 14:57:49	2	20	10
243407004	28-DEC-2009 14:57:49	2	20	10
243407005	28-DEC-2009 14:57:49	2	20	10
243407006	28-DEC-2009 14:57:49	2	20	10
243407007	28-DEC-2009 14:57:49	2	20	10
243407008	28-DEC-2009 14:57:49	2	20	10
243407009	28-DEC-2009 14:57:49	2	20	10
243457001	28-DEC-2009 14:57:49	2	20	10
1202004145 MS (243457001)	28-DEC-2009 14:57:49	2	20	10
1202004146 MSD (243457001)	28-DEC-2009 14:57:49	2	20	10
243457002	28-DEC-2009 14:57:49	2	20	10
243457003	28-DEC-2009 14:57:49	2	20	10
243457004	28-DEC-2009 14:57:49	2	20	10
1202004147 ICS	28-DEC-2009 14:57:49	2	20	10

### Comments:

Type	Sample Id	Description	Serial Number	Spike Amt	Units
ICS	1202004147	10 ug/L ICV/CCV Second Source	UCL091201-01.2	.4	mL
LCS	1202004144	10 ug/L ICV/CCV Second Source	UCL091201-01.2	.4	mL
MS	1202004145	10 ug/L ICV/CCV Second Source	UCL091201-01.2	.4	mL
MSD	1202004146	10 ug/L ICV/CCV Second Source	UCL091201-01.2	.4	mL

De-salting cartridges used: 091027-1-H and 090407-1-Ba.



GEL ORGANIC RUN LOG

INSTRUMENT ID: LCMSMS#2

Date: 12/29/09

Extr. Injection Volume: 20ul

Sequence Number: per122909a

Initial Calibration Date: 12/29/09

Method: EPA 8850-Modified

Int. Std.: UCL091019-03.2

Mobile Phase Lot#: 1233781, 1233976

Standard-Samp Reagent Lot#: 1233976

Reviewed BY: *shu*

Date: 12/30/09

SOP: GL-OA-E-067 Rev.6

Alt Check Std. ID: WCL091218-06

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC_Flag
per1229001a	IPB001	MAP	12/29/2009 13:24			1		USE	B
per1229002a	IPB001	MAP	12/29/2009 13:31			1		USE	B
per1229003a	WCLICAL-01	MAP	12/29/2009 13:39			1		USE	I
per1229004a	WCLICAL-02	MAP	12/29/2009 13:46			1		USE	I
per1229005a	WCLICAL-03	MAP	12/29/2009 13:53			1		USE	I
per1229006a	WCLICAL-04	MAP	12/29/2009 14:00			1		USE	I
per1229007a	WCLICAL-05	MAP	12/29/2009 14:07			1		USE	I
per1229008a	IPB002	MAP	12/29/2009 14:14			1		USE	B
per1229009a	WCLICV	MAP	12/29/2009 14:21			1		USE	C
per1229010a	IPB003	MAP	12/29/2009 14:28			1		USE	B
per1229011a	WCLCRI	MAP	12/29/2009 14:35			1		USE	C
per1229012a	1202004322	MAP	12/29/2009 14:42	936761	Various	1	LANL	USE	S
per1229013a	1202004325	MAP	12/29/2009 14:49	936761	Various	1	LANL	USE	S
per1229014a	1202004326	MAP	12/29/2009 14:56	936761	Various	1	LANL	USE	S
per1229015a	243506001	MAP	12/29/2009 15:03	936761	10-1066-1	1	LANL	USE	S
per1229016a	1202004323	MAP	12/29/2009 15:10	936761	10-1066-1	1	LANL	USE	S
per1229017a	1202004324	MAP	12/29/2009 15:17	936761	10-1066-1	1	LANL	USE	S
per1229018a	243513001	MAP	12/29/2009 15:24	936761	10-1071	1	LANL	USE	S
per1229019a	243513002	MAP	12/29/2009 15:31	936761	10-1071	1	LANL	USE	S
per1229020a	243539001	MAP	12/29/2009 15:38	936761	10-1079	1	LANL	USE	S
per1229021a	243539002	MAP	12/29/2009 15:45	936761	10-1079	1	LANL	USE	S
per1229022a	WCLCCV	MAP	12/29/2009 15:52			1		USE	C
per1229023a	IPB004	MAP	12/29/2009 15:59			1		USE	B
per1229024a	WCLCRI	MAP	12/29/2009 16:06			1		USE	C
per1229025a	243554001	MAP	12/29/2009 16:13	936761	10-1087-1	1	LANL	USE	S
per1229026a	243554002	MAP	12/29/2009 16:20	936761	10-1087-1	1	LANL	USE	S
per1229027a	243554003	MAP	12/29/2009 16:27	936761	10-1087-1	1	LANL	USE	S
per1229028a	243554004	MAP	12/29/2009 16:34	936761	10-1087-1	1	LANL	USE	S
per1229029a	WCLCCV	MAP	12/29/2009 16:42			1		USE	C







per1229067a	WCLCRI	MAP	12/29/2009 21:10	936066	10-1010	1	LANL	USE	C
per1229068a	243396001	MAP	12/29/2009 21:17	936066	10-1010	1	LANL	USE	S
per1229069a	1202003536	MAP	12/29/2009 21:24	936066	10-1010	1	LANL	USE	S
per1229070a	1202003537	MAP	12/29/2009 21:31	936066	10-1010	1	LANL	USE	S
per1229071a	243400001	MAP	12/29/2009 21:39	936066	10-1021	1	LANL	USE	S
per1229072a	243400004	MAP	12/29/2009 21:46	936066	10-1021	1	LANL	USE	S
per1229073a	243405001	MAP	12/29/2009 21:53	936066	10-1012	1	LANL	USE	S
per1229074a	243459001	MAP	12/29/2009 22:00	936066	10-1045	1	LANL	USE	S
per1229075a	243459002	MAP	12/29/2009 22:07	936066	10-1045	1	LANL	USE	S
per1229076a	243461002	MAP	12/29/2009 22:14	936066	10-1050	1	LANL	USE	S
per1229077a	WCLCCV	MAP	12/29/2009 22:21			1		USE	C
per1229078a	IPB009	MAP	12/29/2009 22:28			1		USE	B
per1229079a	WCLCRI	MAP	12/29/2009 22:35			1		USE	C
per1229080a	243466001	MAP	12/29/2009 22:42	936066	10-1056	1	LANL	DUSE-DL	S
per1229081a	243466002	MAP	12/29/2009 22:49	936066	10-1056	1	LANL	DUSE-DL	S
per1229082a	243493001	MAP	12/29/2009 22:56	936066	10-1037-1	1	LANL	USE	S
per1229083a	WCLCCV	MAP	12/29/2009 23:04			1		USE	C
per1229084a	IPB010	MAP	12/29/2009 23:11			1		USE	B
per1229085a	WCLCRI	MAP	12/29/2009 23:18			1		USE	C



### Isotope Ratio Criteria

#### Isotope Ratio $^{35}\text{Cl}/^{37}\text{Cl}$

2.31-3.85

### Tune Criteria

The tuning solution is introduced directly into the mass spectrometer using the ESI interface in the positive ion mode. The mass range scanned is 20 to 1100 amu using at least six scans. The observed mass for the target compound in the daily calibration standards must be within 0.2 amu of the expected value. If it is greater than 0.2 amu, then a mass calibration is performed and the instrument is re-calibrated.



# LC/MS/MS EXPLOSIVES ANALYSIS



**LC/MS/MS Case Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-1038**

**Method/Analysis Information**

**Procedure:** Definitive Low Level Analysis of Nitroaromatic Explosives Utilizing Liquid Chromatography / Mass Spectrometry / Mass Spectrometry (LC/MS/MS) by SW-846 Method 8321 Modified (8321M)

**Analytical Method:** SW846 8321A Modified

**Prep Method:** SW846 8330 PREP

**Analytical Batch Number:** 937031

**Prep Batch Number:** 937030

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in SW846 8321A Modified:

<b>Sample ID</b>	<b>Client ID</b>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552
1202005106	Method Blank (MB)
1202005107	Laboratory Control Sample (LCS)
1202005108	243457001(RE12-10-7553) Matrix Spike (MS)
1202005109	243457001(RE12-10-7553) Matrix Spike Duplicate (MSD)

**Preparation/Analytical Method Verification**

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-056 REV# 12.

10-1038-EXPLCMS

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## **Primary Analyte Analysis**

### **Calibration Information**

#### **Initial Calibration**

All initial calibration requirements for this analysis have been met for this SDG.

#### **Calibration Verification Standard Requirements**

All associated calibration verification standard(s) (ICV or CCV) for this analysis met the acceptance criteria.

#### **Calibration Blank Requirements**

All initial or continuing calibration blanks (ICB or CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria. Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

#### **CRI Requirements**

All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards and may be based off the grand mean average percent recovery of all target analytes.

### **Quality Control (QC) Information**

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG for this analysis met the acceptance criteria.

#### **Surrogate Recoveries**

All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

#### **Laboratory Control Sample (LCS) Recovery**

The LCS recovered 2,4,6-Trinitrotoluene at 140% with recovery limits of 78-132%. Since the Matrix Spike and Matrix Spike Duplicate both met acceptance limits for 2,4,6-Trinitrotoluene, these data are reported. Please see data exception report 779317.

#### **QC Sample Designation**

Sample 243457001 (RE12-10-7553) was chosen for matrix spike and matrix spike duplicate analysis.

#### **Matrix Spike (MS) Recovery Statement**

The MS spike recoveries were within the established acceptance limits.

#### **Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD spike recoveries were within the established acceptance limits.

#### **MS/MSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the MS and MSD met the acceptance limits.

#### **Internal Standard (ISTD) Acceptance**

The internal standard responses were within the required acceptance criteria for all samples and QC.



### **Technical Information**

#### **Holding Time Specifications**

All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

#### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

#### **Sample Dilutions**

According to the GEL SOP for Method 8321A, all sample and QC extracts are diluted 1:1 v/v with HPLC grade water. The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

#### **Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis except for dilutions.

#### **Secondary Analyte Analysis**

### **Calibration Information**

#### **Initial Calibration**

All initial calibration requirements for this analysis have been met for this SDG.

#### **Calibration Verification Standard Requirements**

All associated calibration verification standard(s) (ICV or CCV) for this analysis met the acceptance criteria.

#### **Calibration Blank Requirements**

All initial or continuing calibration blanks (ICB or CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria. Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

#### **CRI Requirements**

All low level calibration verification (CRI) requirements for this analysis were met by all bracketing CRI standards and may be based off the grand mean average percent recovery of all target analytes.

### **Quality Control (QC) Information**

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG for this analysis met the acceptance criteria.

#### **Surrogate Recoveries**

All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

#### **Laboratory Control Sample (LCS) Recovery**

The LCS recovered 2,4-Diamino-6-nitrotoluene at 61.6% with recovery limits of 65-128% and TATB at 946% with limits of 47-166%. Since the Matrix Spike and Matrix Spike Duplicate both met acceptance limits for 2,4-Diamino-6-nitrotoluene, these data are reported. While TATB exhibited a high bias in each QC sample, it was not detected in the associated samples. These data are reported. Please see data exception report 779317.

10-1038-EXPLCMS

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**QC Sample Designation**

Sample 243457001 (RE12-10-7553) was chosen for matrix spike and matrix spike duplicate analysis.

**Matrix Spike (MS) Recovery Statement**

The MS recovered TATB at 352%. The recovery limits are 44-166%. While TATB exhibited a high bias in each QC sample, it was not detected in the associated samples. Therefore, the data are reported. Please see data exception report 779317.

**Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recovered TATB at 183%. The recovery limits are 44-166%. While TATB exhibited a high bias in each QC sample, it was not detected in the associated samples. Therefore, the data are reported. Please see data exception report 779317.

**MS/MSD Relative Percent Difference (RPD) Statement**

The MS/MSD RPD for TATB was 63.0%. The acceptance limits are 0-30%. Since all other RPD recoveries met acceptance criteria, the noted exception is attributed to vagaries in the extraction process. The data are reported. Please see data exception report 779317.

**Internal Standard (ISTD) Acceptance**

The internal standards were not added to the secondary analyte extracts.

**Technical Information**

**Holding Time Specifications**

All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

**Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

**Sample Dilutions**

According to the GEL SOP for Method 8321A, all sample and QC extracts are diluted 1:1 v/v with HPLC grade water. The samples in this SDG in this analytical batch for this analysis did not require any additional dilutions.

**Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG in this analytical batch for this analysis except for dilutions.



### Miscellaneous Information

#### **Data Exception (DER) Documentation**

Data exception report 779317 was generated for this SDG.

The LCS recovered 2,4,6-Trinitrotoluene at 140% with recovery limits of 78-132%. The LCS recovered 2,4-Diamino-6-nitrotoluene at 61.6% with recovery limits of 65-128% and TATB at 946% with limits of 47-166%. Since the Matrix Spike and Matrix Spike Duplicate both met acceptance limits for 2,4,6-Trinitrotoluene and 2,4-Diamino-6-nitrotoluene, these data are reported. While TATB exhibited a high bias in each QC sample, it was not detected in the associated samples. These data are reported.

The MS recovered TATB at 352%. The MSD recovered TATB at 183%. The recovery limits are 44-166%. While TATB exhibited a high bias in each QC sample, it was not detected in the associated samples. Therefore, the data are reported.

The MS/MSD RPD for TATB was 63.0%. The acceptance limits are 0-30%. Since all other RPD recoveries met acceptance criteria, the noted exception is attributed to vagaries in the extraction process. The data are reported.

#### **Manual Integrations**

Some initial calibration standards, continuing calibration standards, and/or samples required manual integrations due to software limitations.

#### **Flagging Convention**

The samples were not originally analyzed using SW-846 Method 8330.

#### **Additional Comments**

Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct.

Due to software limitations in the secondary analyte analysis, false positives and analytes detected below the MDL cannot be deleted from the raw data.

Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data.

### System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for primary analyte analysis. It is coupled with either a Micromass Quattro Micro Mass Spectrometer/ Mass Spectrometer, or a Micromass Quattro Ultima Mass Spectrometer/ Mass Spectrometer. Each being designated as LCMSMS #1, and LCMSMS #2, respectively. It is fitted with an APCI (Atmospheric Pressure chemical Ionization) probe that is operated in the negative ionization mode for the primary analyte analysis. The laboratory also utilizes an Agilent 1100 liquid chromatography instrument for either primary or secondary analyte analysis. It is coupled with a Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LCMSMS #3 or LCMSMS #4. It is fitted with a APCI (Atmospheric Pressure chemical Ionization) probe that is operated in the negative ionization mode for both the primary and secondary analyte analysis.



### Chromatographic Columns

The detection of the primary analyte nitroaromatic and nitramines is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

The detection of the secondary analytes is accomplished through analysis on the following reversed phase column:

YMC: J'sphere ODS-H80, 150 x 4.6mm I.D.

### Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

### Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Heather Mauer Date: 01/13/10



# SAMPLE DATA SUMMARY



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457001

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108099a

Date Analyzed: 10-JAN-10 17:27

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value	X	$\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$	X	Dilution Factor
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1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457001

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050075.wiff

Date Analyzed: 06-JAN-10 09:52

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



1

# High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7554

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457002

Sample Amount 2

Moisture: 8.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108102a

Date Analyzed: 10-JAN-10 18:55

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



1

# High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7554

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457002

Sample Amount 2

Moisture: 8.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050078.wiff

Date Analyzed: 06-JAN-10 10:39

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7551

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457003

Sample Amount 2

Moisture: 11.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108103a

Date Analyzed: 10-JAN-10 19:25

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7551

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457003

Sample Amount 2

Moisture: 11.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050079.wiff

Date Analyzed: 06-JAN-10 10:55

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument X Concentrated Extract Volume X Dilution  
Value Sample Amount Factor



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7552

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457004

Sample Amount 2

Moisture: 7.6

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108107a

Date Analyzed: 10-JAN-10 21:23

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7552

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457004

Sample Amount 2

Moisture: 7.6

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050080.wiff

Date Analyzed: 06-JAN-10 11:11

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



# QUALITY CONTROL SUMMARY



# High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

HPLC Column: Phenomenex Ultracarb 5u ODS(20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
243457001	RE12-10-7553	95.1	73.7 - 133.3	
243457001	RE12-10-7553	103	73.7 - 133.3	
243457002	RE12-10-7554	107	73.7 - 133.3	
243457002	RE12-10-7554	104	73.7 - 133.3	
243457003	RE12-10-7551	102	73.7 - 133.3	
243457003	RE12-10-7551	98.4	73.7 - 133.3	
243457004	RE12-10-7552	107	73.7 - 133.3	
243457004	RE12-10-7552	110	73.7 - 133.3	
1202005106	MB for batch 937030	104	73.7 - 133.3	
1202005106	MB for batch 937030	109	73.7 - 133.3	
1202005107	LCS for batch 937030	97.9	73.7 - 133.3	
1202005107	LCS for batch 937030	104	73.7 - 133.3	
1202005108	RE12-10-7553(243457001MS)	110	73.7 - 133.3	
1202005108	RE12-10-7553(243457001MS)	103	73.7 - 133.3	
1202005109	RE12-10-7553(243457001MSD)	110	73.7 - 133.3	
1202005109	RE12-10-7553(243457001MSD)	92.8	73.7 - 133.3	

DNT = 3,4-Dinitrotoluene



3B  
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 10-1038

Extract Batch Code: 937030

Date Extracted: 30-DEC-09

GEL LCS ID: 1202005107

GEL LCSDUP ID:

Analysis Date/Time: 10-JAN-10 16:57

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4-Dinitrotoluene	5000	4610	92.2					82.7 - 132
2,6-Dinitrotoluene	5000	4770	95.3					86.9 - 122
2-Amino-4,6-dinitrotoluene	5000	7220	144					84.2 - 149
4-Amino-2,6-dinitrotoluene	5000	6430	129					85.6 - 133
HMX	5000	4970	99.4					66.5 - 142
Nitrobenzene	5000	4260	85.1					71.8 - 126
2,4,6-Trinitrotoluene	5000	7020	140 *					78.3 - 132
1,3,5-Trinitrobenzene	5000	5180	104					62.1 - 124
PETN	5000	5700	114					64.6 - 147
RDX	5000	5450	109					78.7 - 144
Tetryl	5000	3920	78.4					31.2 - 119
m-Dinitrobenzene	5000	4650	93					80.9 - 127
m-Nitrotoluene	5000	4720	94.5					71.9 - 126
o-Nitrotoluene	5000	5270	105					75 - 123
p-Nitrotoluene	5000	5070	101					73.7 - 124

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits



3B  
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 10-1038

Extract Batch Code: 937030

Date Extracted: 30-DEC-09

GEL LCS ID: 1202005107

GEL LCSDUP ID:

Analysis Date/Time: 06-JAN-10 09:36

DUP Analysis Date/Time:

Reporting Units: ug/kg

QC Type: LCS/LCSD

Compound	Spike Added	LCS Conc	LCS Rec #	LCSD Conc	LCSD Rec #	RPD #	RPD	Recovery Limits
2,4-Diamino-6-nitrotoluene	5000	3080	61.6 *					64.8 - 128
2,6-Diamino-4-nitrotoluene	5000	3710	74.2					69.6 - 133
3,5-Dinitroaniline	5000	5150	103					77.3 - 123
tris(o-cresyl) phosphate	5000	5440	109					84.3 - 120
TATB	5000	47300	946 *					46.8 - 166

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits



High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: RE12-10-7553

Lab Code: GEL

GEL Job No (SDG) 10-1038

Extract Batch Code: 937030

Date Extracted:30-DEC-09

GEL Spike ID: 1202005108

GEL SpikeDup ID:1202005109

Analysis Date/Time: 10-JAN-10 17:56

MSD Analysis Date/Time:

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
1,3,5-Trinitrobenzene	5000	0	5670	113	5610	112	1.2	30	70.7 – 130
2,4,6-Trinitrotoluene	5000	0	6030	121	5980	120	.742	30	83.4 – 138
2,4-Dinitrotoluene	5000	0	4940	98.8	5450	109	9.83	30	79.1 – 137
2,6-Dinitrotoluene	5000	0	4940	98.7	4870	97.4	1.39	30	85.4 – 125
2-Amino-4,6-dinitrotoluene	5000	0	5670	113	6080	122	7.05	30	77.4 – 154
4-Amino-2,6-dinitrotoluene	5000	0	5270	105	5750	115	8.73	30	77.3 – 140
HMX	5000	0	5350	107	5340	107	.275	30	66.7 – 144
Nitrobenzene	5000	0	4730	94.6	4790	95.9	1.33	30	70.4 – 129
PETN	5000	0	6370	128	6670	133	4.59	30	61.9 – 153
RDX	5000	0	5370	107	5570	111	3.5	30	73 – 140
Tetryl	5000	0	4390	87.8	4440	88.8	1.21	30	46.8 – 138
m-Dinitrobenzene	5000	0	5040	101	5000	100	.71	30	83.5 – 126
m-Nitrotoluene	5000	0	4740	94.8	5460	109	14.1	30	68.6 – 135
o-Nitrotoluene	5000	0	4700	94.1	4960	99.2	5.33	30	71.2 – 131
p-Nitrotoluene	5000	0	4350	86.9	4520	90.3	3.82	30	69.3 – 133

#Column to be used to flag recovery and RPD values with an asterisk



High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: RE12-10-7553

Lab Code: GEL

GEL Job No (SDG) 10-1038

Extract Batch Code: 937030

Date Extracted:30-DEC-09

GEL Spike ID: 1202005108

GEL SpikeDup ID:1202005109

Analysis Date/Time: 06-JAN-10 10:08

MSD Analysis Date/Time:

Reporting Units: ug/kg

QC Type: MS/MSD

Compound	Spike Added	Sample Conc	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Rec Limits
2,4-Diamino-6-nitrotoluene	5000	0	4260	85.2	4020	80.4	5.8	30	51.6 - 127
2,6-Diamino-4-nitrotoluene	5000	0	4330	86.6	4330	86.6	0	30	58.9 - 135
3,5-Dinitroaniline	5000	0	5110	102	5640	113	9.86	30	72.8 - 125
tris(o-cresyl) phosphate	5000	0	5060	101	5140	103	1.57	30	79.1 - 124
TATB	5000	0	17600	352 *	9170	183 *	63 *	30	43.9 - 166

#Column to be used to flag recovery and RPD values with an asterisk



Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 08-JAN-10 17:15

GEL Data File: EXP0108001a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	483.878
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	501.47
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



uantify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Method: C:\MASSLYNX\New\_Exp.PRO\MethDB\010810expa.mdb, Time: Sat Jan 09 11:44:31 2010

Calibration: Untitled, Time: Sat Jan 09 12:01:37 2010

File: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108001a

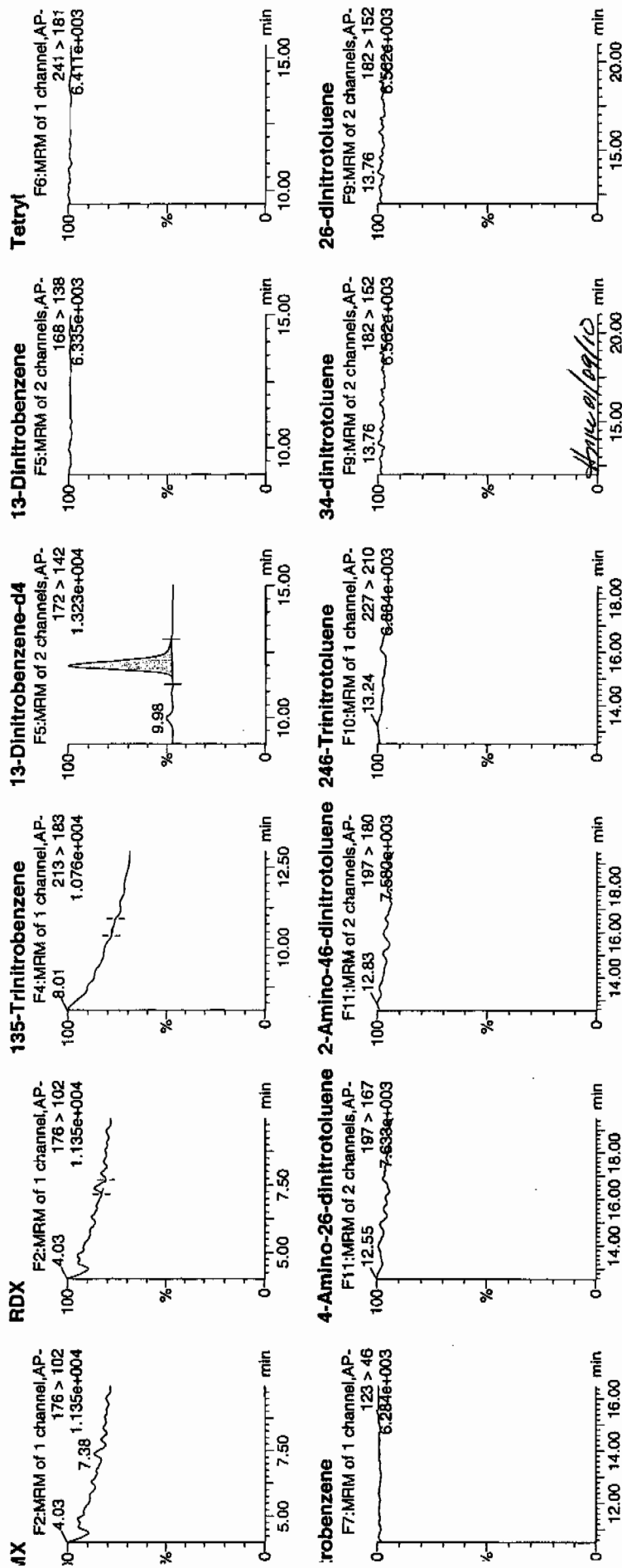
Date: 08-Jan-2010

Time: 17:15:04

Sample: XIBLK01

Ratio: 1:1,A

1/9/10

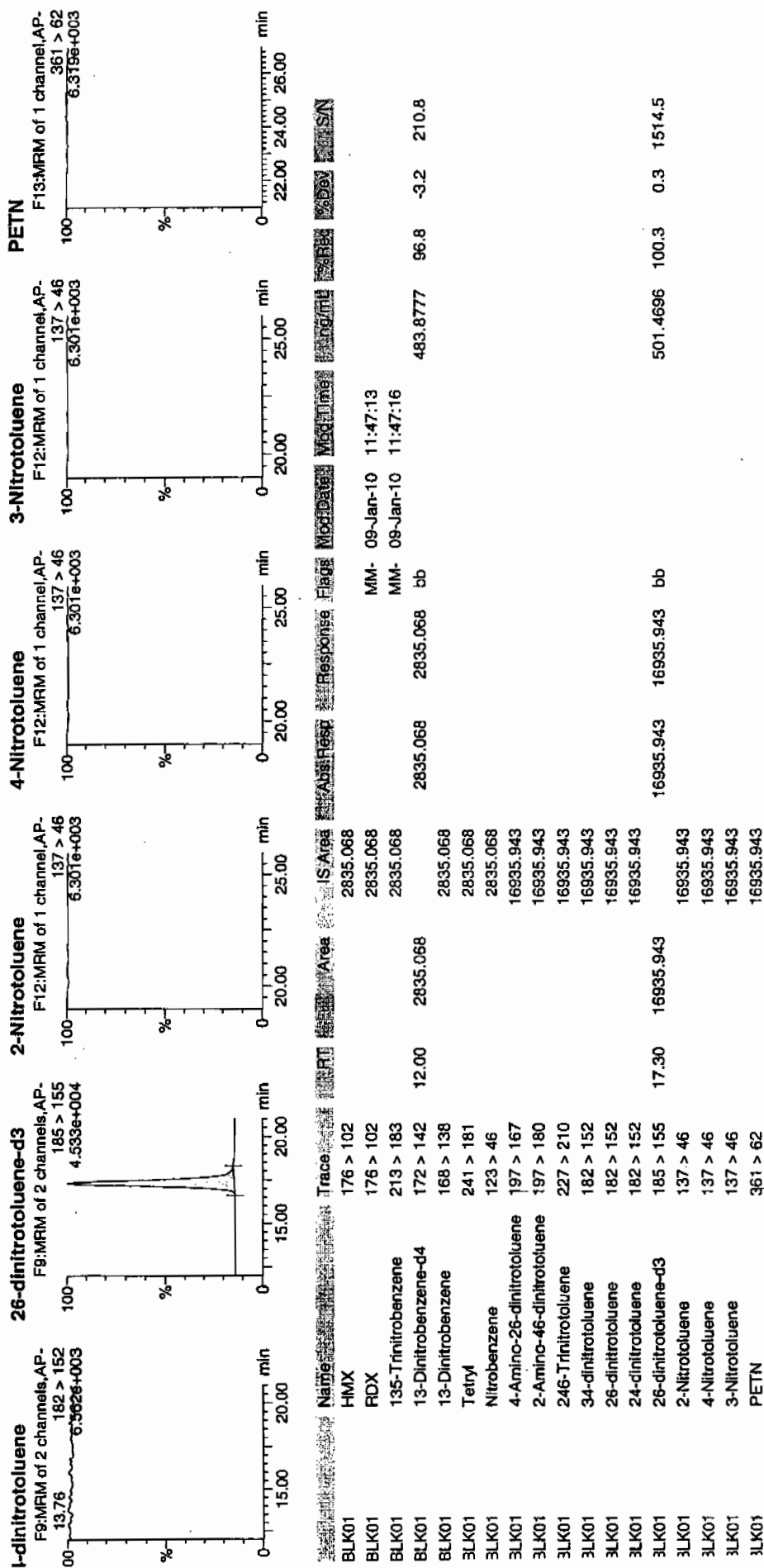




Printed: Sat Jan 09 12:02:23 2010, Page 2 of 61

unaffinity Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010





Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 08-JAN-10 17:44

GEL Data File: EXP0108002a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	481.722
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	602.181
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



Printed: Sat Jan 09 12:02:23 2010, Page 3 of 61

Identify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP01080002a

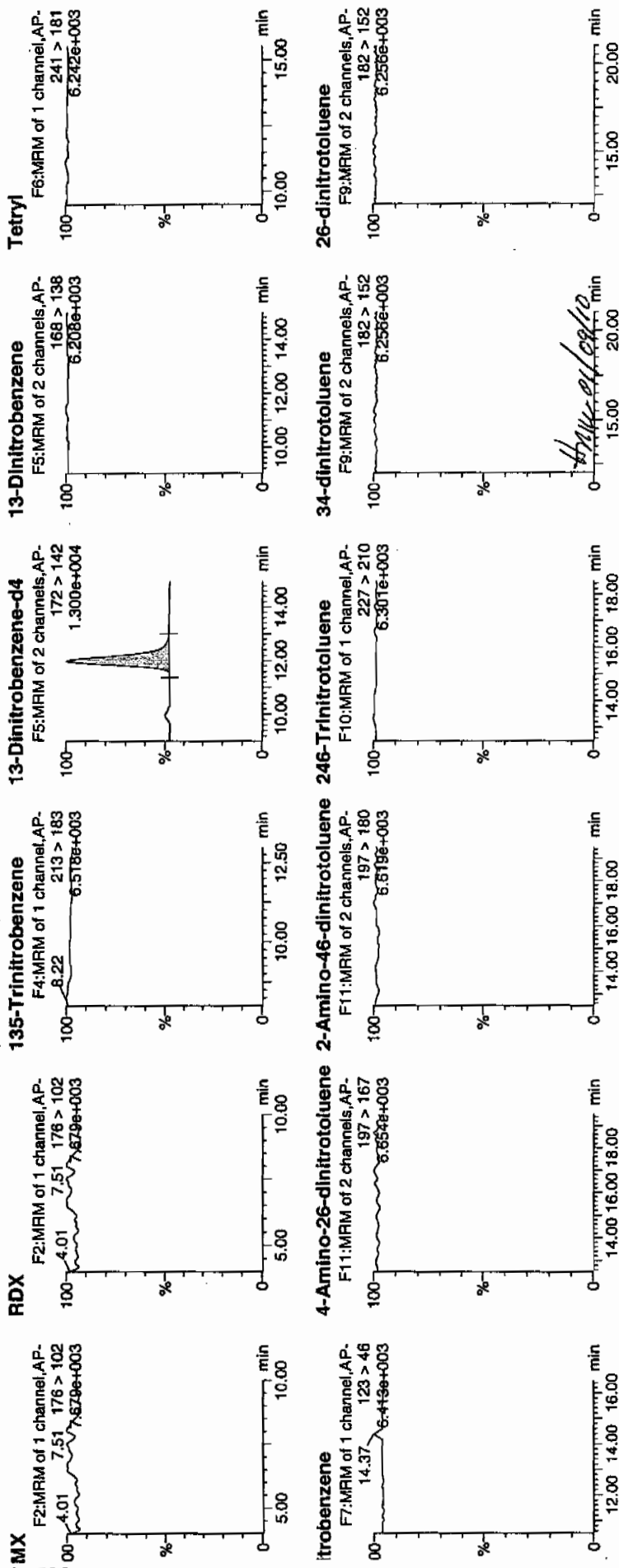
Date: 08-Jan-2010

Time: 17:44:36

File: XIBLK01

Injection: 1:1,A

1/27  
1/10

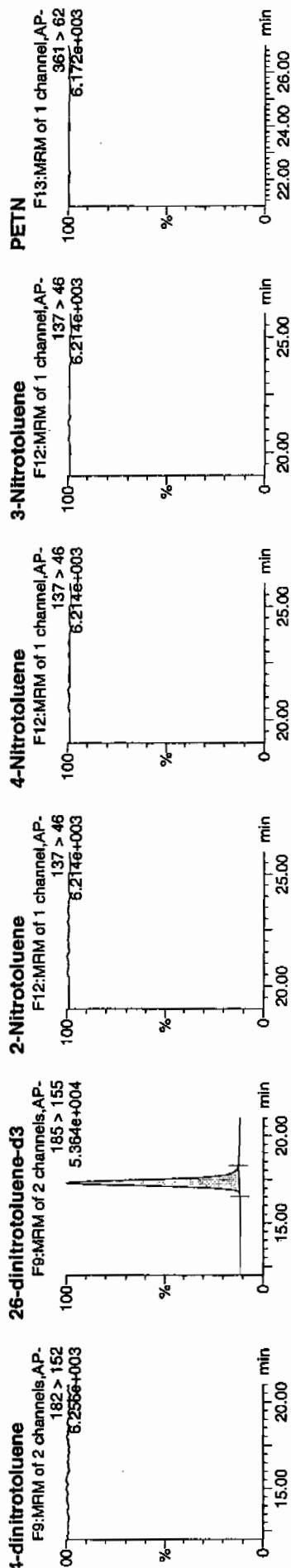




Printed: Sat Jan 09 12:02:23 2010, Page 4 of 61

Quantity Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

atset: C:\MASSLYNX\New\_Exp\PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010



Name	RT	Area	IS:Area	Ass:Resp	Flags	Mod:Time	Mod:Date	Mod:Dev	Mod:SN
BLK01	176 > 102		2822.435						
BLK01	176 > 102		2822.435						
BLK01	213 > 183		2822.435						
BLK01	172 > 142	12.00	2822.435		bb				
BLK01	168 > 138		2822.435						
BLK01	241 > 181		2822.435						
BLK01	123 > 46		2822.435						
BLK01	197 > 167		20337.240						
BLK01	197 > 180		20337.240						
BLK01	227 > 210		20337.240						
BLK01	182 > 152		20337.240						
BLK01	182 > 152		20337.240						
BLK01	182 > 152		20337.240						
BLK01	185 > 155	17.31	20337.240						
BLK01	137 > 46		20337.240						
BLK01	137 > 46		20337.240						
BLK01	137 > 46		20337.240						
BLK01	361 > 62		20337.240						
PETN									
				20337.240	20337.240	bb			
				2822.435	2822.435	bb			
				481.7216	96.3	-3.7	205.1		
				602.1813	120.4	20.4	2319.5		



Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 05-JAN-10 14:30

GEL Data File: EXS01050001.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

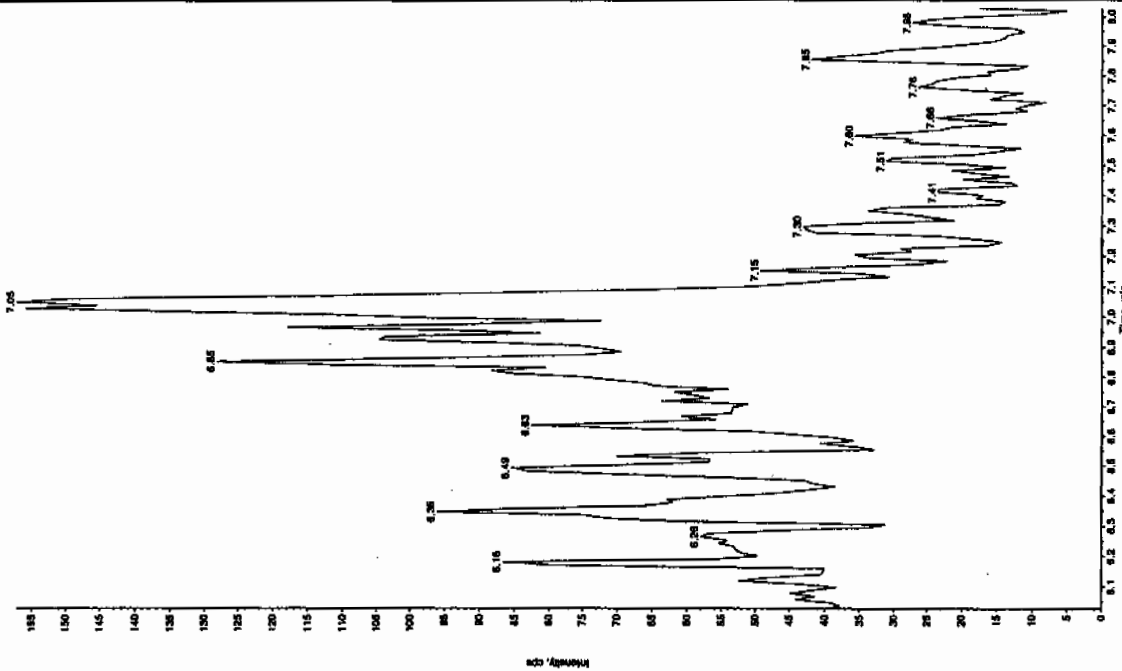
Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0



8/21/11  
2008

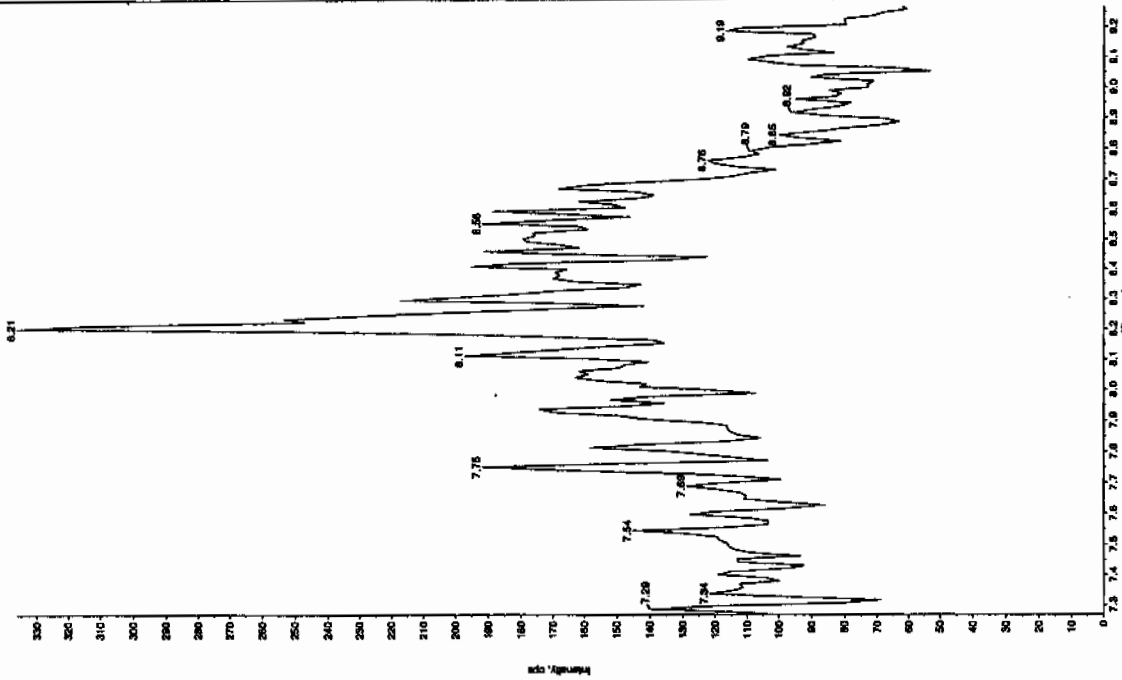
Sample Name: "XBL001" Sample ID: "11111" File: "EX01050001.wif"  
 Peak Name: "TATB" Mass(es): 257.2204.9 amu  
 Comment: "LCMSEXP\_B" Annotation: "

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/5/2010  
 Acq. Time: 2:30:25 PM  
 Modified: No



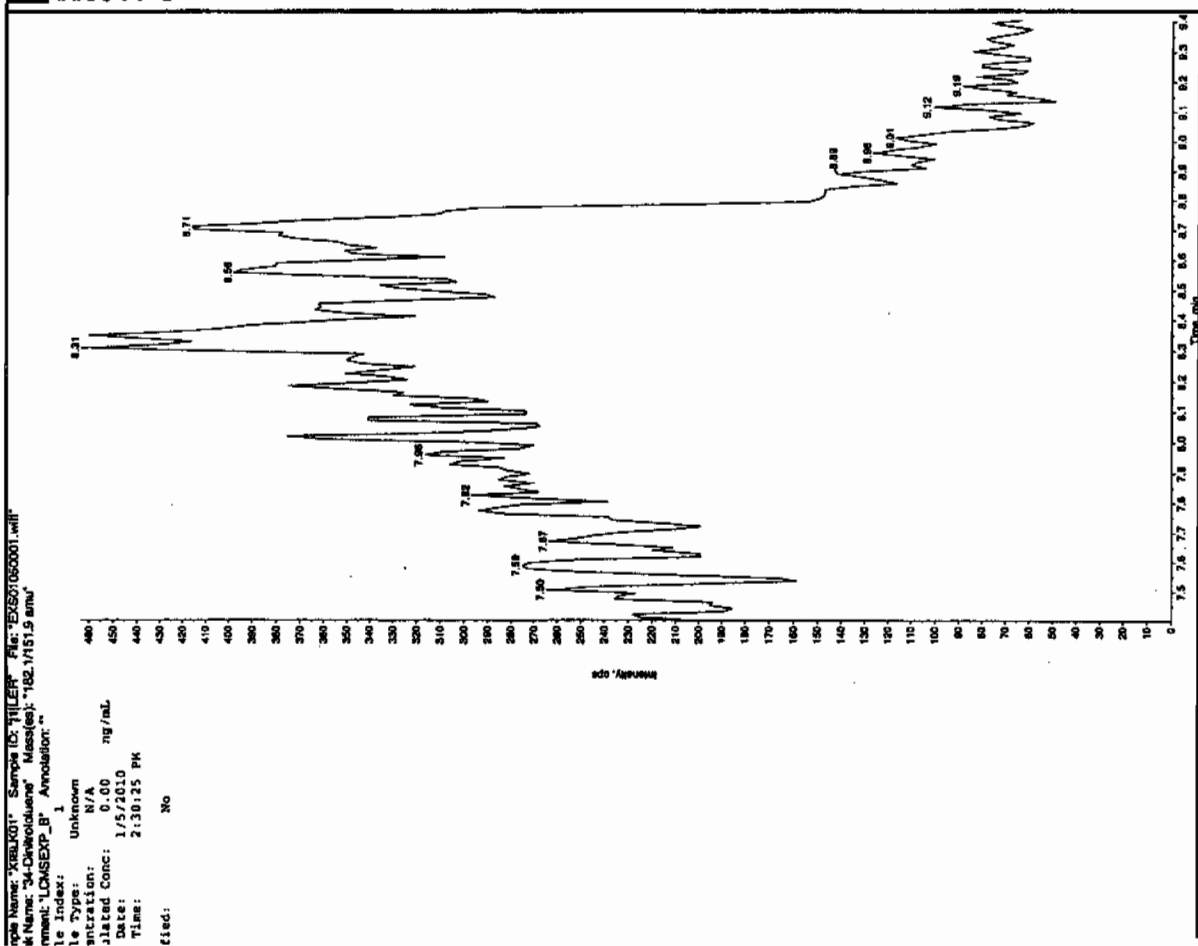
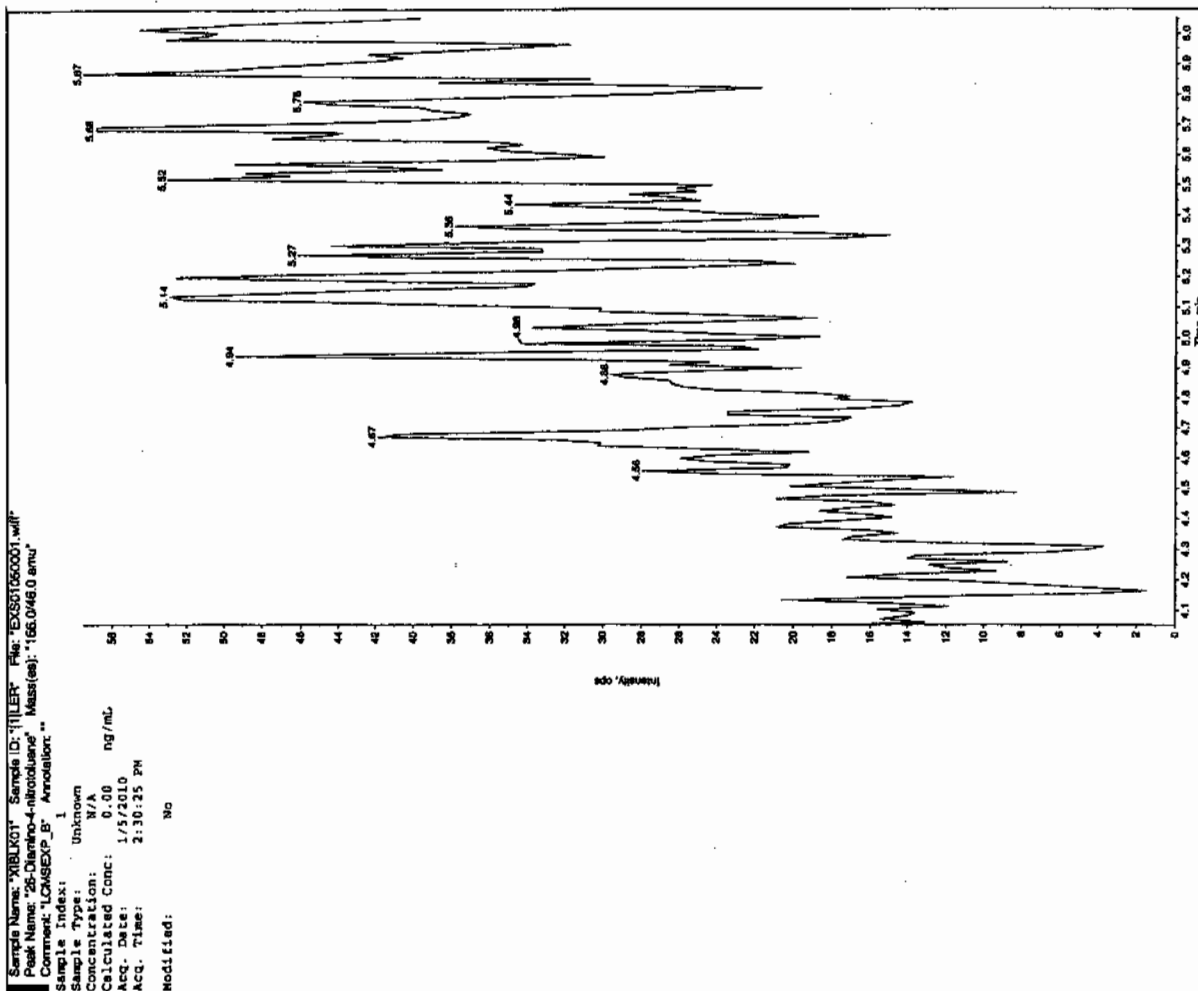
Sample Name: "XBL001" Sample ID: "11111" File: "EX01050001.wif"  
 Peak Name: "35-Dinitroaniline" Mass(es): "182.046.0 amu"  
 Comment: "LCMSEXP\_B" Annotation: "

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/5/2010  
 Acq. Time: 2:30:25 PM  
 Modified: No



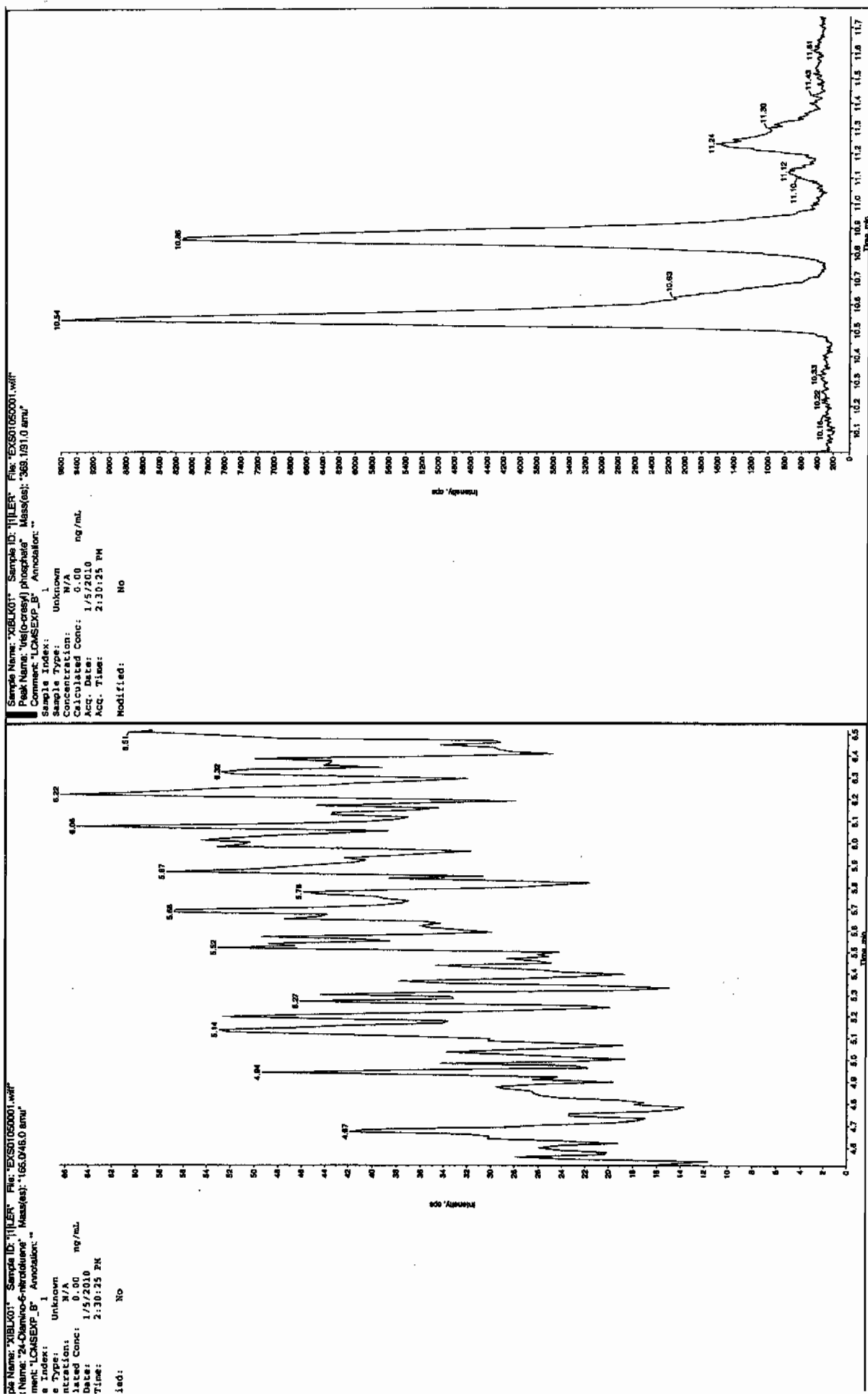
8/21/11





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 05-JAN-10 14:46

GEL Data File: EXS01050002.wiff

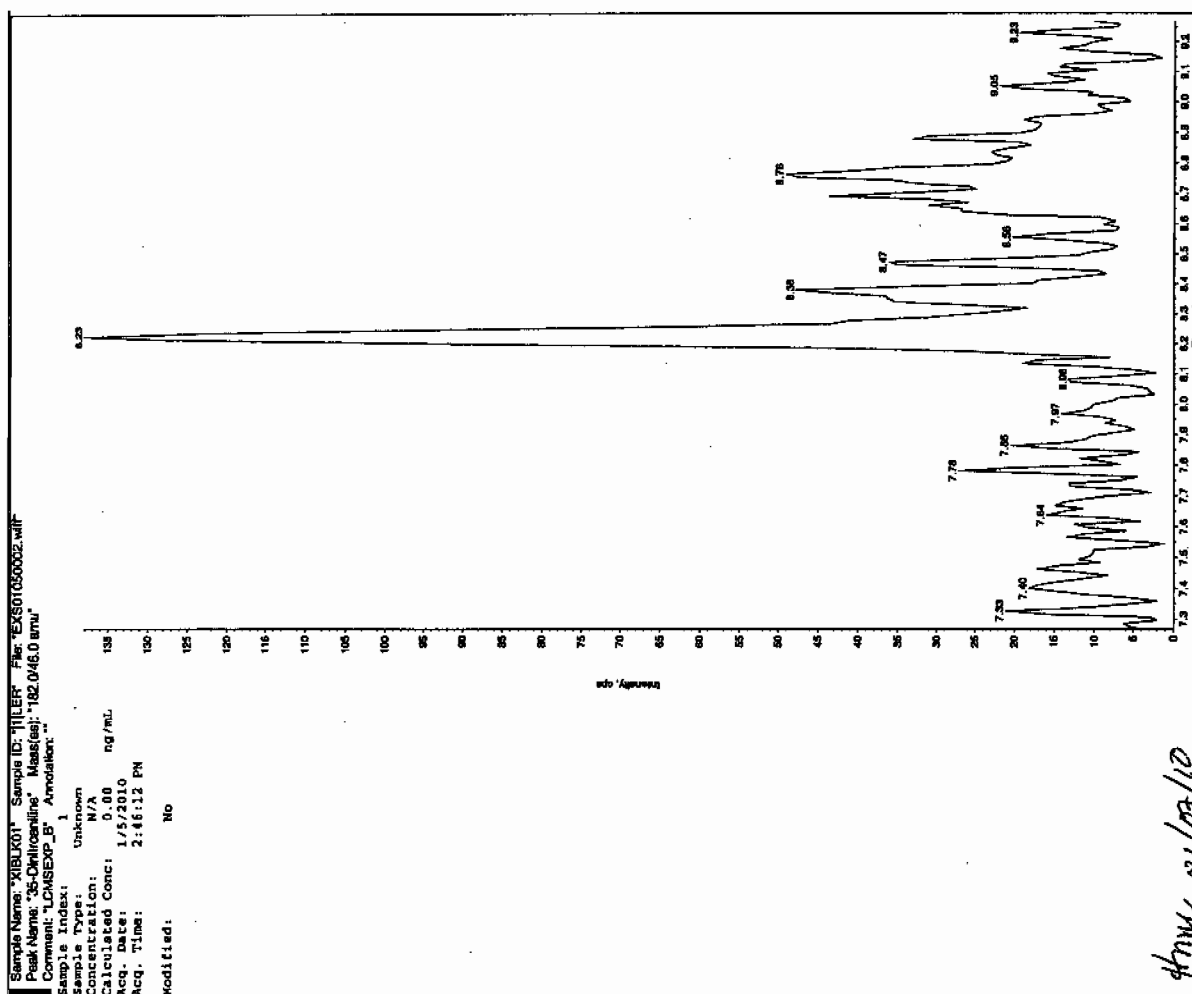
Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

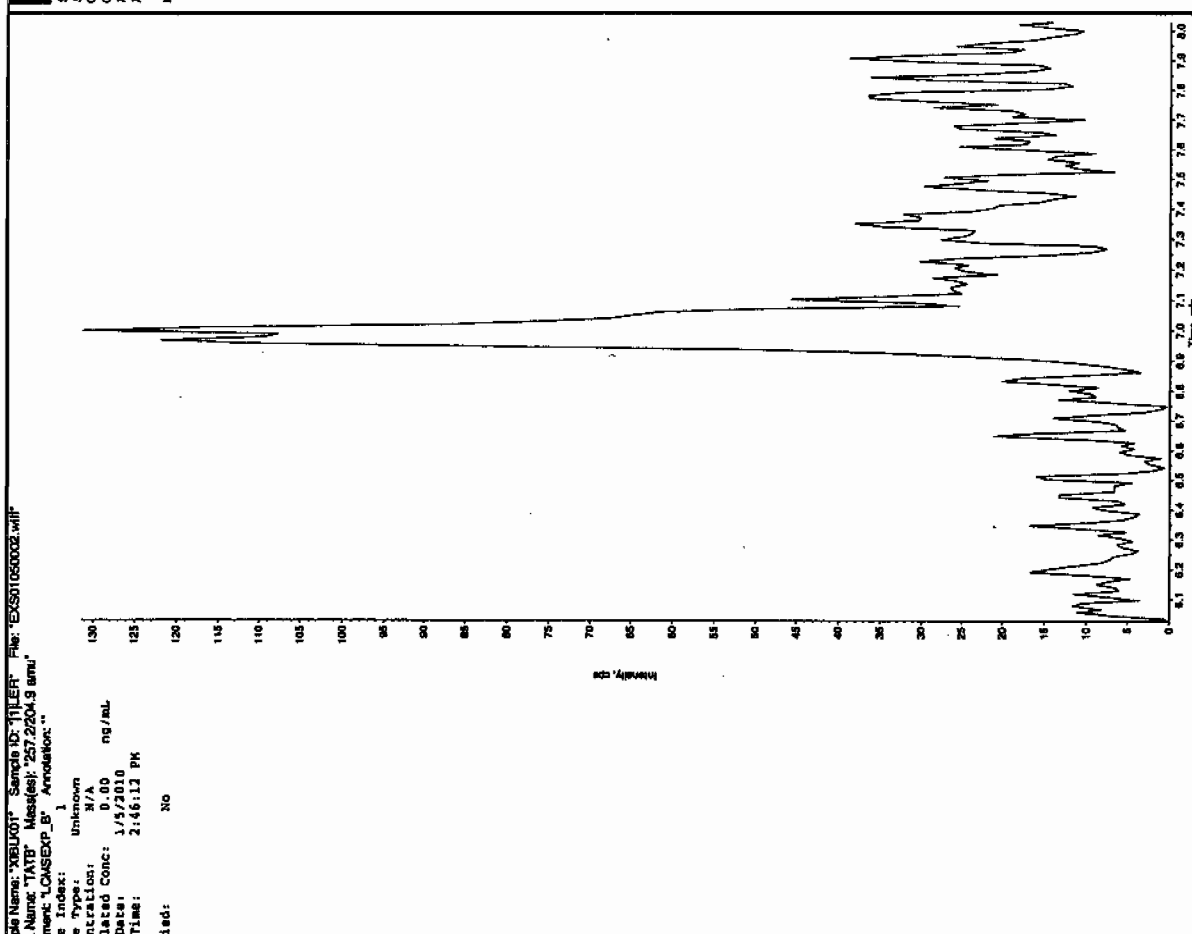
Compound	True	Found (ug/L)
2,6-Diamino-4-nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0



8/22/10

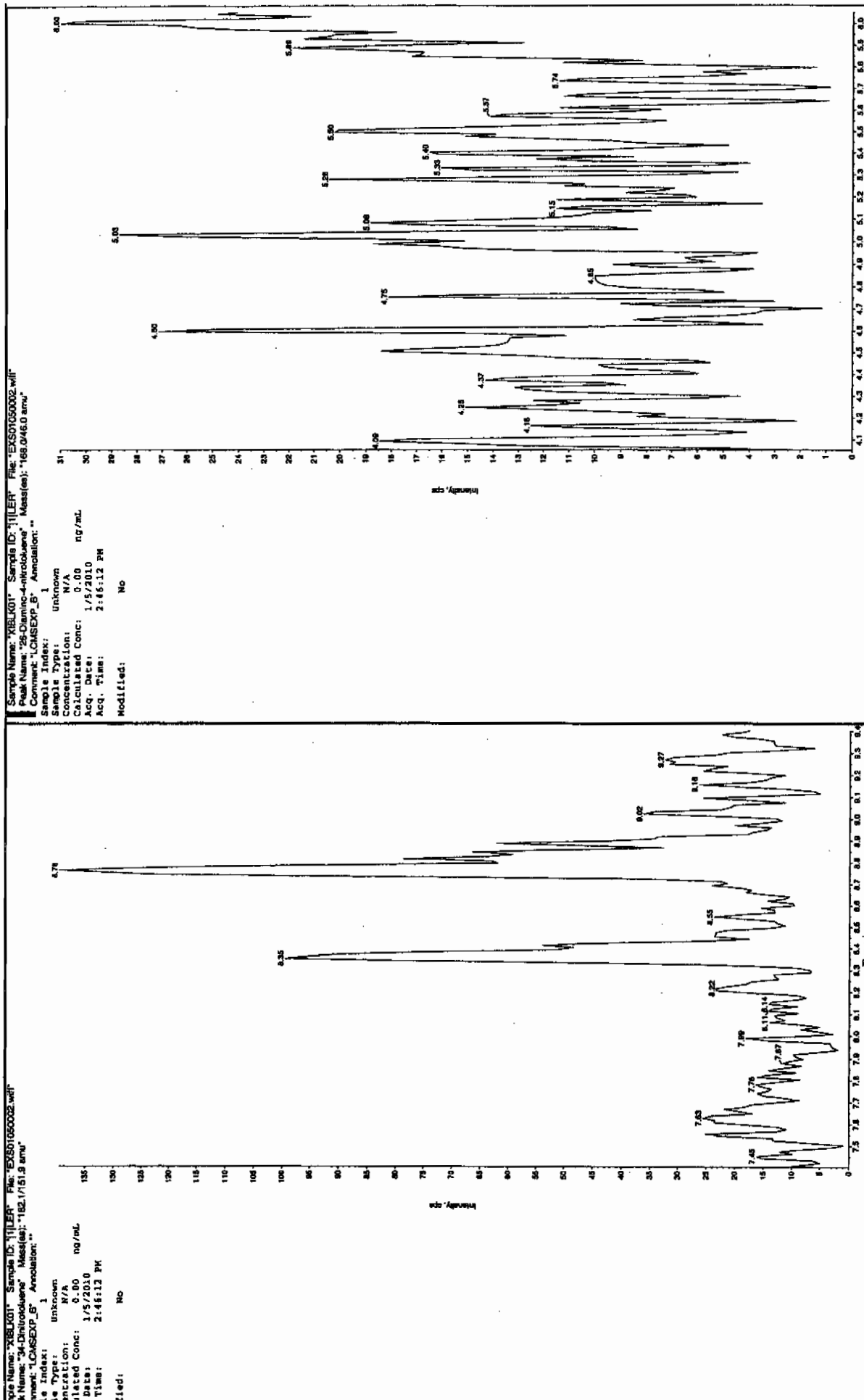


47mL 02/02/10



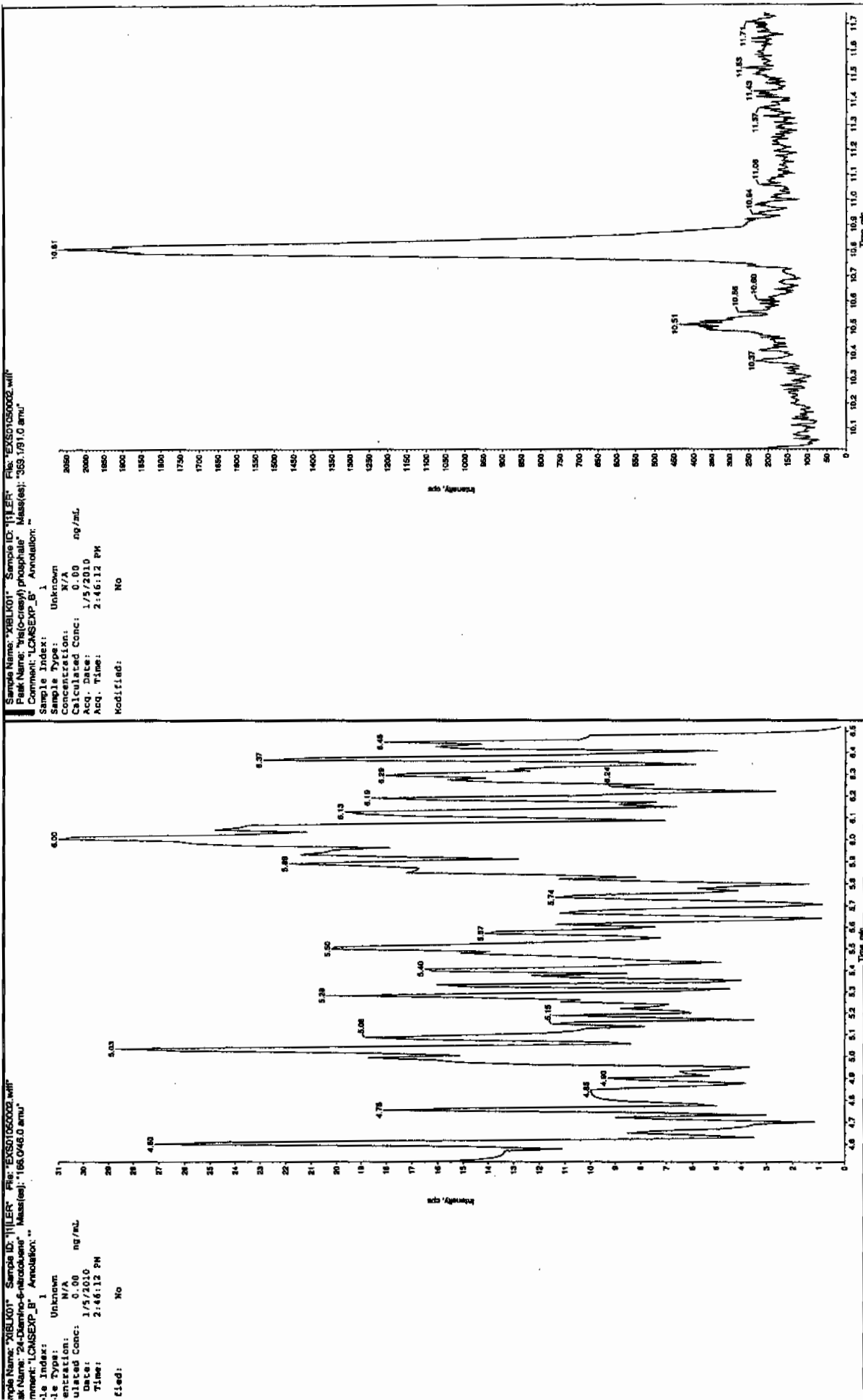
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A  
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 08-JAN-10 21:11

GEL Data File: EXP0108009a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	494.811
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	521.887
2,4,6-Trinitrotoluene	0	0



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uantify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atasset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

ame: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108009a

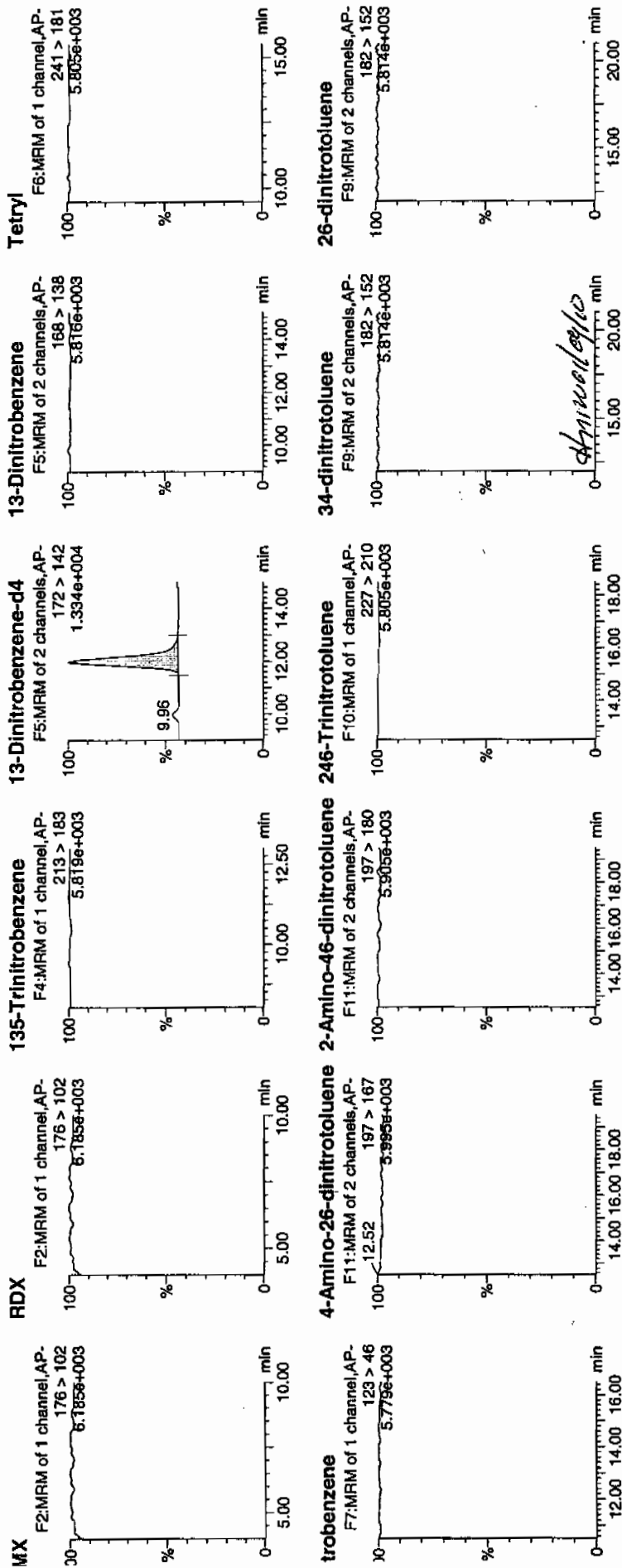
ate: 08-Jan-2010

me: 21:11:10

l: XIBLK02

at: 1:1,A

1/9/10

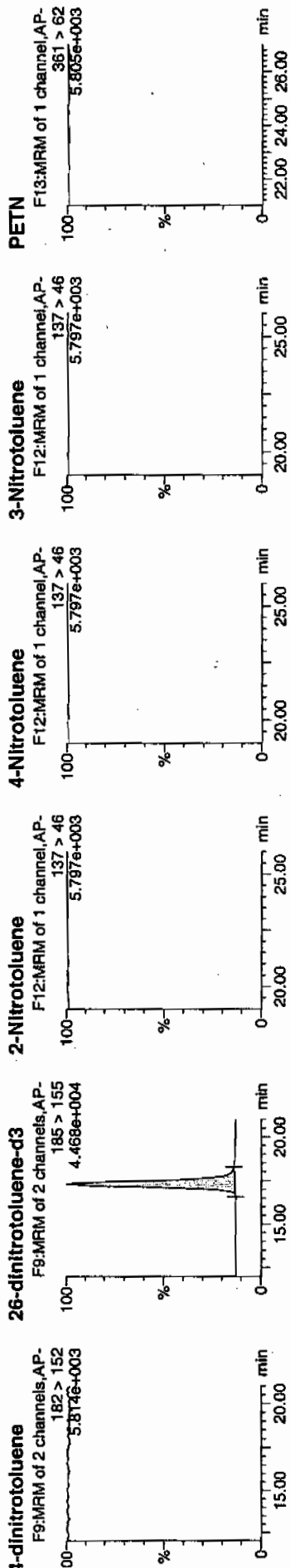




Printed: Sat Jan 09 12:02:23 2010, Page 18 of 61

unatify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

atset: C:\MASSLYNX\New\_Exp\PRO1010810expA.qld, Time: Sat Jan 09 12:01:37 2010



Name	RT	Area	SI Area	Abs Resp	Response	Flags	Mod Date	Mod Time	%Area	%Det	SIN
BLK02											
HMIX	176 > 102		3057.764								
BLK02	ROX		3057.764								
BLK02	135-Trinitrobenzene		3057.764								
BLK02	13-Dinitrobenzene-d4										
BLK02	13-Dinitrobenzene	172 > 142	3057.764								
BLK02	Teiryf	168 > 138									
BLK02	Nitrobenzene	241 > 181									
BLK02	4-Amino-26-dinitrotoluene	123 > 46									
BLK02	2-Amino-46-dinitrotoluene	197 > 167									
BLK02	246-Trinitrotoluene	197 > 180									
BLK02	34-dinitrotoluene	227 > 210									
BLK02	26-dinitrotoluene	182 > 152									
BLK02	24-dinitrotoluene	182 > 152									
BLK02	26-dinitrotoluene-d3	182 > 152									
BLK02	2-Nitrotoluene	185 > 155	16711.070								
BLK02	4-Nitrotoluene	137 > 46	16711.070								
BLK02	3-Nitrotoluene	137 > 46	16711.070								
BLK02	PETN	361 > 62	16711.070								
				3057.764	3057.764	bb					
				16711.070	16711.070	bb					
				521.8866	104.4						
				494.8112	99.0						
					-1.0						
					1255.0						



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 08-JAN-10 22:10

GEL Data File: EXP0108011a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	480.456
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	502.281
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



unaffiliated Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

ame: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108011a

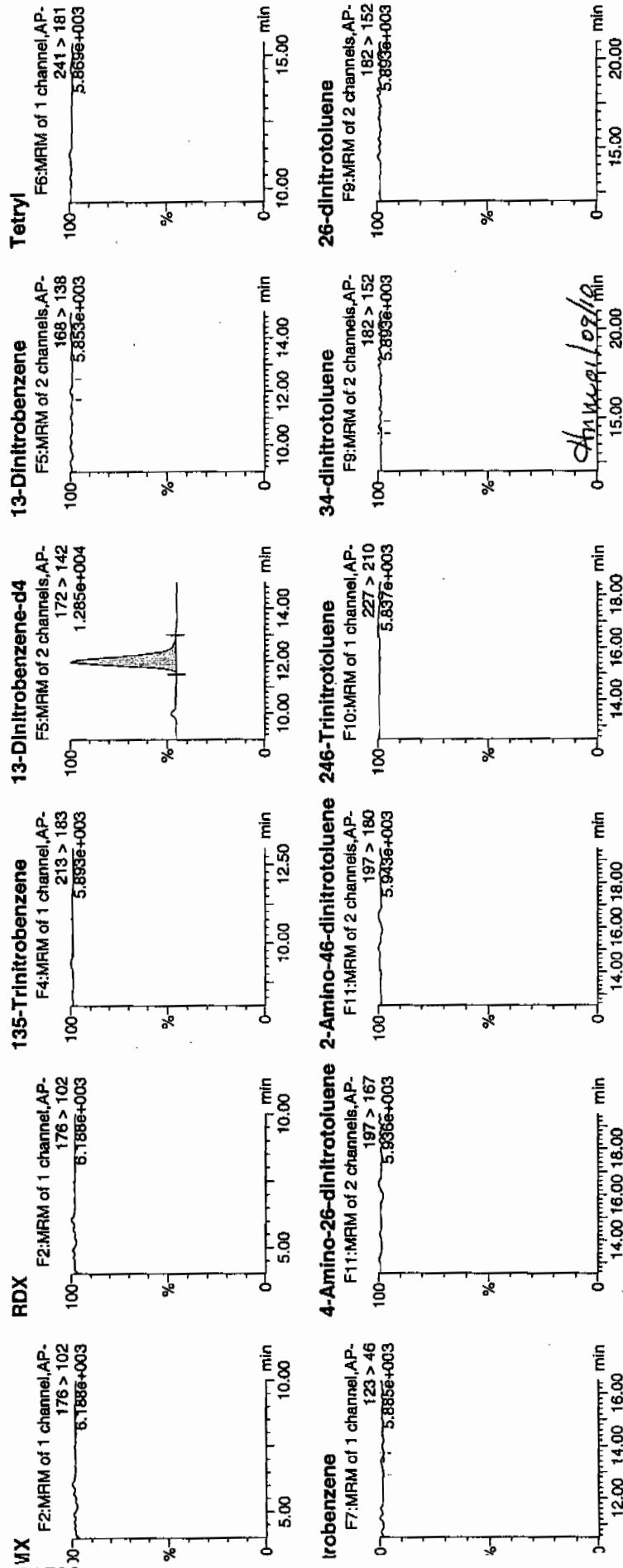
ate: 08-Jan-2010

me: 22:10:07

l: XIBLK03

al: 1:1,A

1/4/10

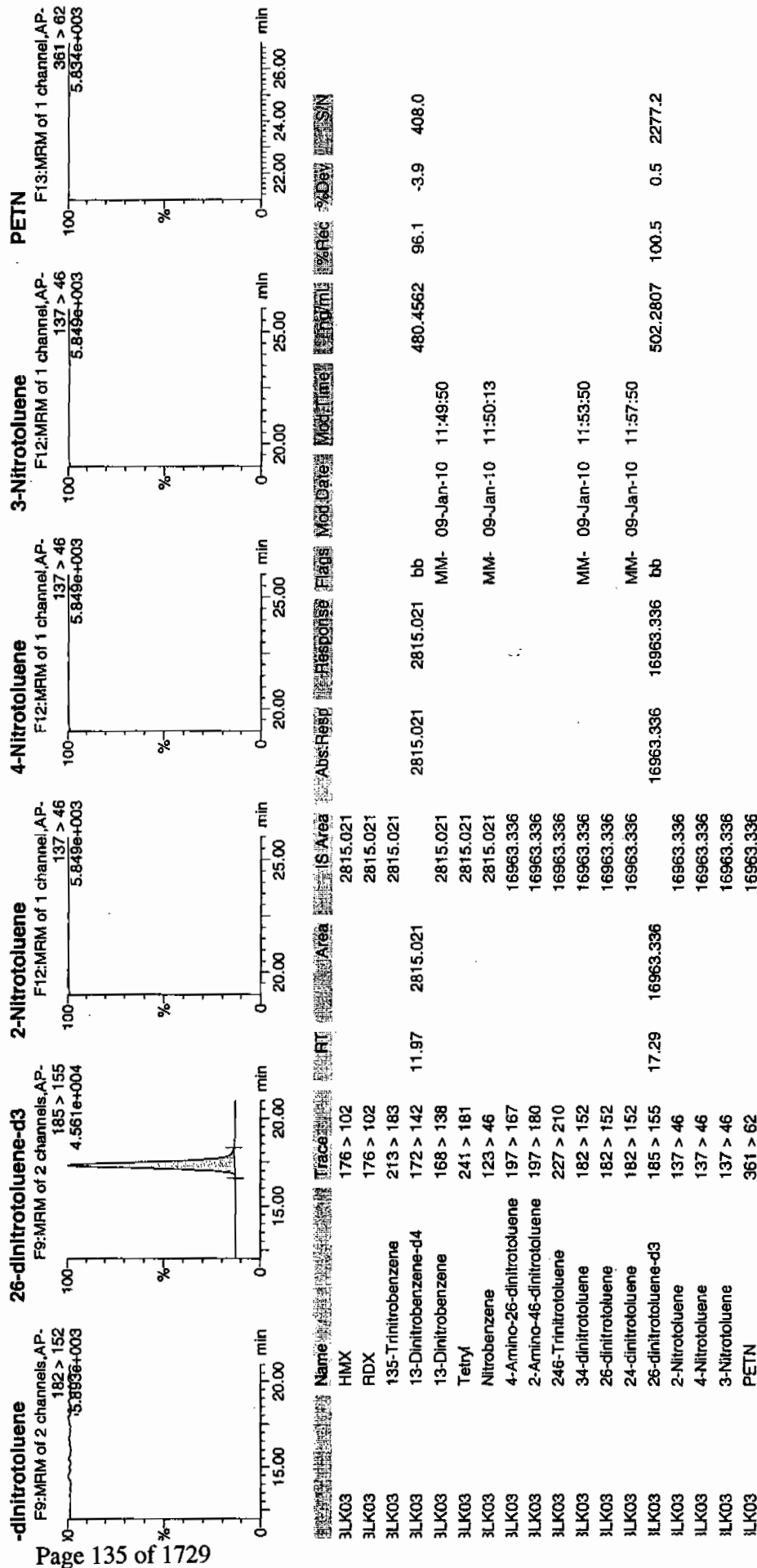




Printed: Sat Jan 09 12:02:23 2010, Page 22 of 61

Identify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO010810expA.qld, Time: Sat Jan 09 12:01:37 2010





4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 09-JAN-10 02:05

GEL Data File: EXP0108019a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	483.622
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	564.671



Printed: Sat Jan 09 12:02:23 2010, Page 37 of 61

Identify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

File: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108019a

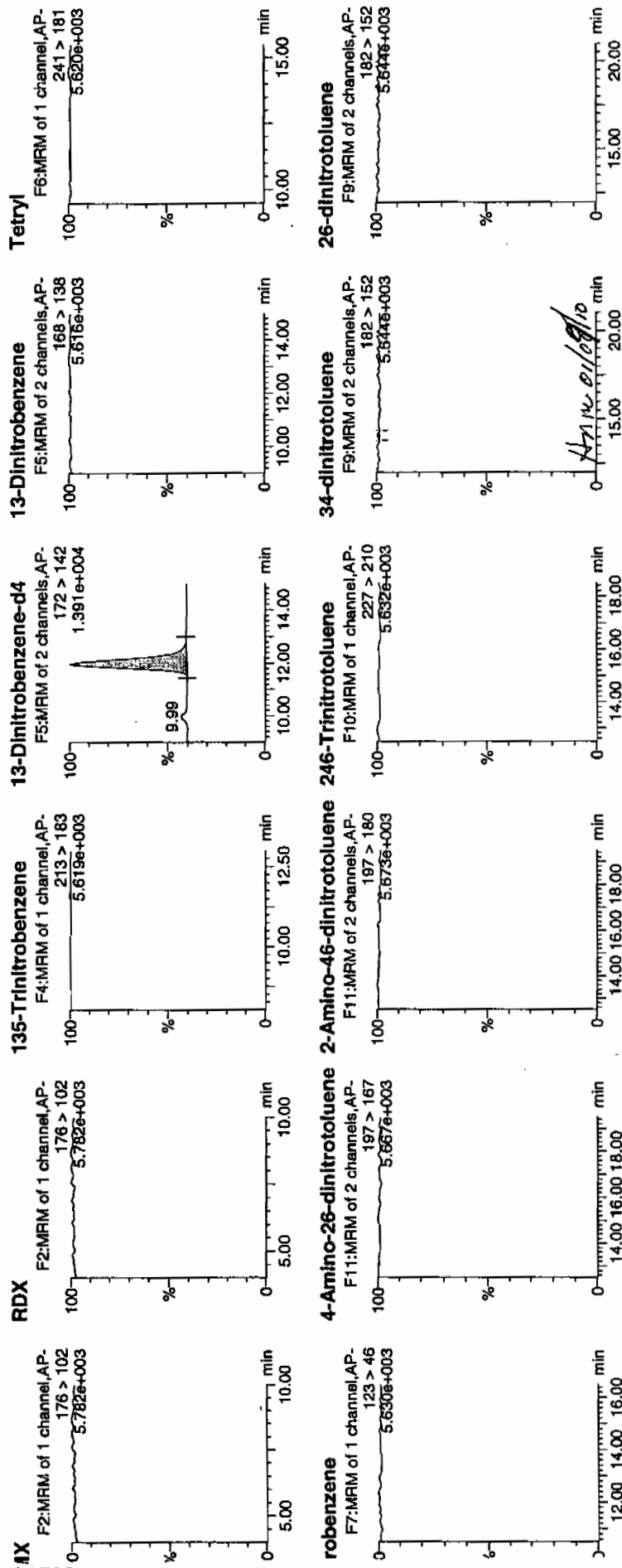
Date: 09-Jan-2010

Time: 02:05:56

Sample: XIBLK04

Ratio: 1:1,A

1/9/10

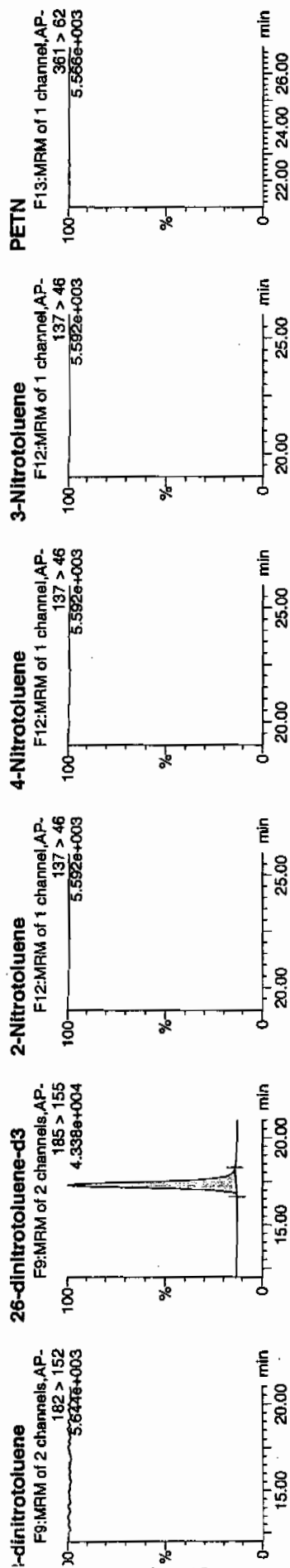




untify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

Printed: Sat Jan 09 12:02:23 2010, Page 38 of 61

Dataset: C:\MASSLYNX\New\_Exp\PRO010810expA.qld, Time: Sat Jan 09 12:01:37 2010



Name	Trace	RT	Area	Area	Abs. Resp	Response	Flags	Mod Date	Mod Time	%Dev	%Rec
3LK04	HMZ	176 > 102	3308.440	3308.440							
3LK04	RDX	176 > 102	3308.440	3308.440							
3LK04	135-Trinitrobenzene	213 > 183	3308.440	3308.440							
3LK04	13-Dinitrobenzene-d4	172 > 142	11.97	3308.440	3308.440	3308.440	bb	564.6709	112.9	12.9	301.2
3LK04	13-Dinitrobenzene	168 > 138	3308.440	3308.440							
3LK04	Tetryl	241 > 181	3308.440	3308.440							
3LK04	Nitrobenzene	123 > 46	16333.198	16333.198							
3LK04	4-Amino-26-dinitrotoluene	197 > 167	16333.198	16333.198							
3LK04	2-Amino-46-dinitrotoluene	197 > 180	16333.198	16333.198							
3LK04	246-Trinitrotoluene	227 > 210	16333.198	16333.198							
3LK04	34-dinitrotoluene	182 > 152	16333.198	16333.198							
3LK04	26-dinitrotoluene	182 > 152	16333.198	16333.198							
3LK04	24-dinitrotoluene	182 > 152	16333.198	16333.198							
3LK04	26-dinitrotoluene-d3	185 > 155	17.29	16333.198	16333.198	16333.198	bb	483.6225	96.7	-3.3	1495.0
3LK04	2-Nitrotoluene	137 > 46	16333.198	16333.198							
3LK04	4-Nitrotoluene	137 > 46	16333.198	16333.198							
3LK04	3-Nitrotoluene	137 > 46	16333.198	16333.198							
3LK04	PETN	361 > 62									



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 09-JAN-10 07:00

GEL Data File: EXP0108029a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	508.018
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	560.152
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



Printed: Sat Jan 09 12:02:23 2010, Page 57 of 61

Quantify Sample Report  
IEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO10810expA.qld, Time: Sat Jan 09 12:01:37 2010

Sample Name: C:\MASSLYNX\NEW\_EXP\PRO10810expA.qld

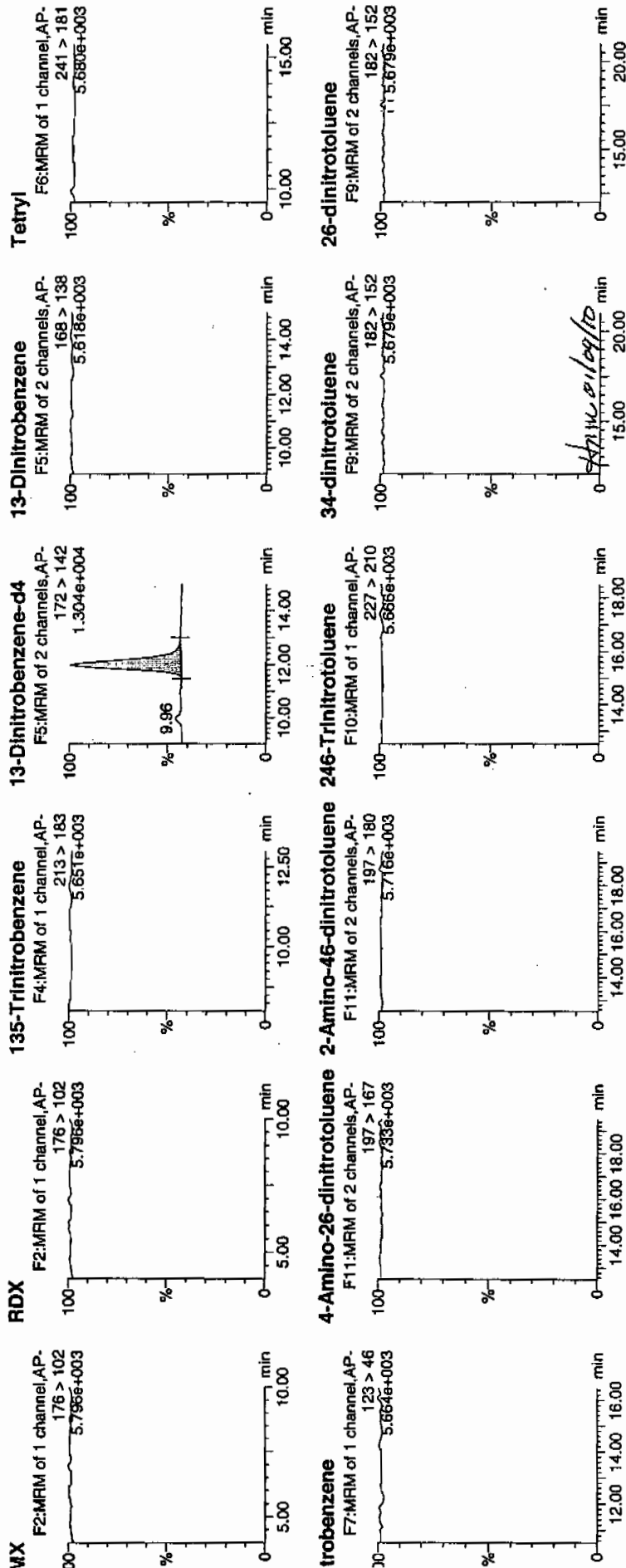
Date: 09-Jan-2010

Time: 07:00:47

File: XIBLK05

Label: 1:1,A

11/10/10

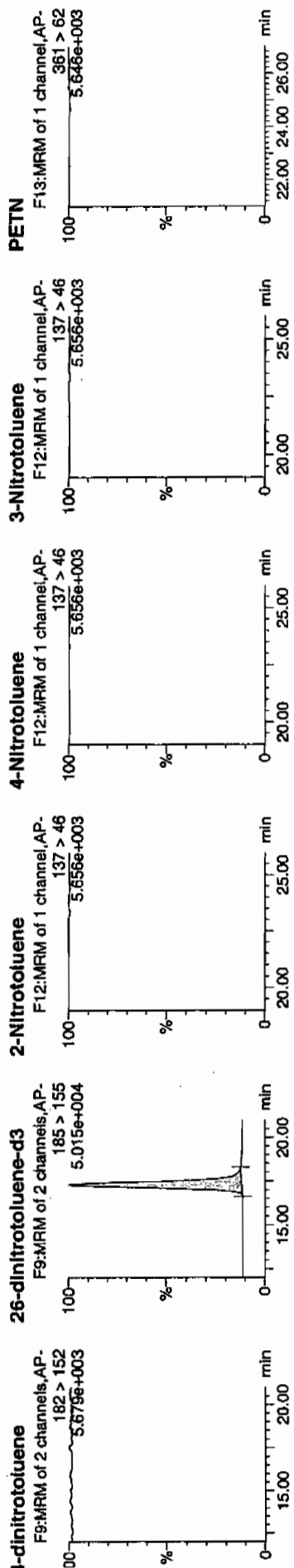




### Quantify Sample Report

CEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASS\YN\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

[illegible]



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 09-JAN-10 13:24

GEL Data File: EXP0108042a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
1,3-Dinitrobenzene-d4	500	515.137
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	427.876
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0



Identify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PROV010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

File: C:\MASSLYNX\NEW\_EXP\PROVData\EXP0108042a

Date: 09-Jan-2010

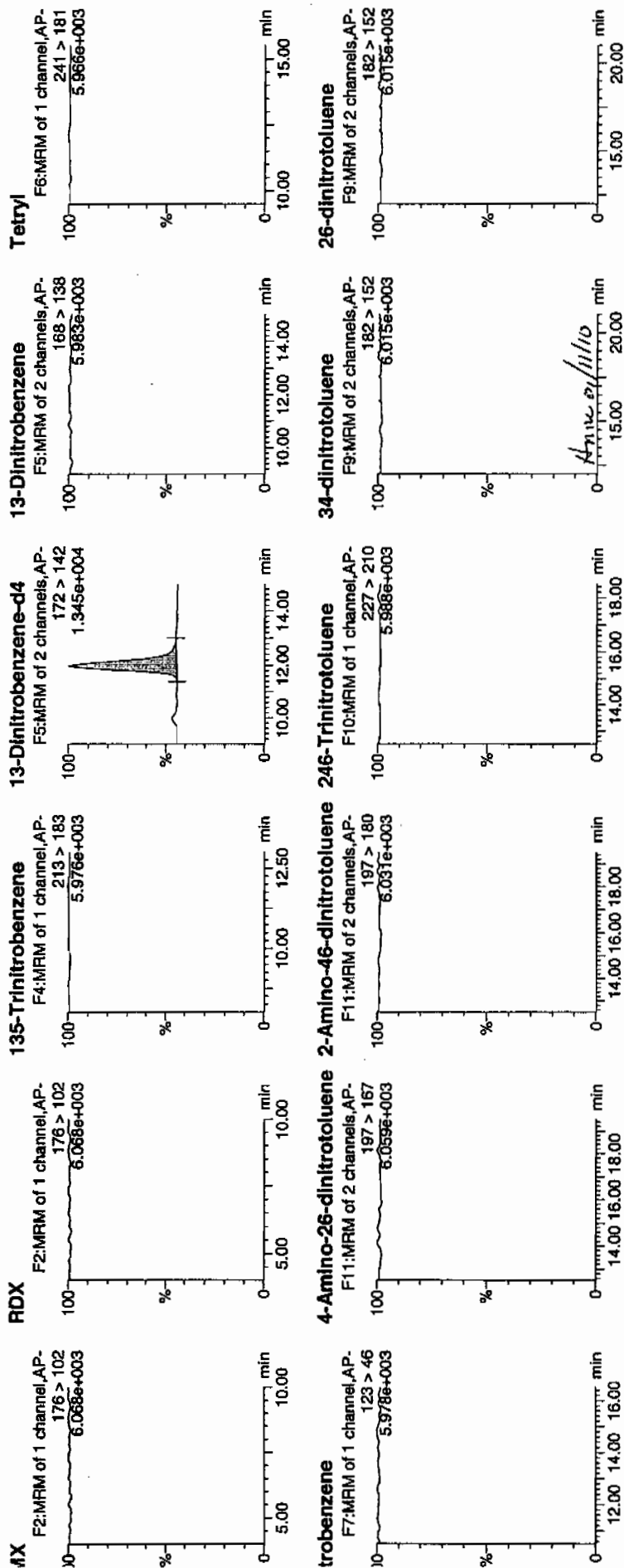
Time: 13:24:19

File: XIBLK06

Ratio: 1:1,A

1/11/10

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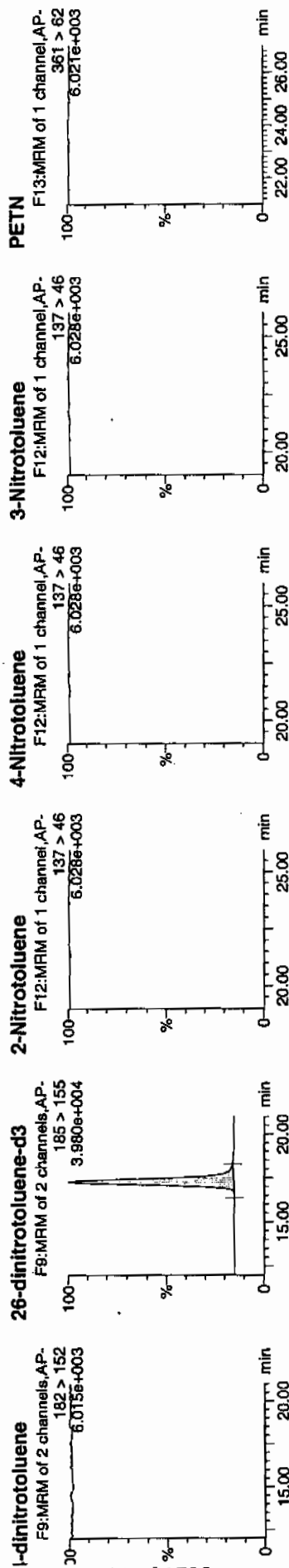




Printed: Mon Jan 11 09:29:17 2010, Page 24 of 189

uantify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atset: C:\MASSL\YNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	Area	IS Area	Abs Resp	Response	Flags	Mod Date	Mod Time	Mod User	Mod Sys
BLK06	HMZ	176 > 102	3018.220							
BLK06	RDX	176 > 102	3018.220							
BLK06	135-Trinitrobenzene	213 > 183	3018.220							
BLK06	13-Dinitrobenzene-d4	172 > 142	11.97	3018.220	bb					
BLK06	13-Dinitrobenzene	168 > 138	3018.220							
3LK06	Tetryl	241 > 181	3018.220							
3LK06	Nitrobenzene	123 > 46	3018.220							
3LK06	4-Amino-26-dinitrotoluene	197 > 167	14450.484							
3LK06	2-Amino-46-dinitrotoluene	197 > 180	14450.484							
3LK06	246-Trinitrotoluene	227 > 210	14450.484							
3LK06	34-dinitrotoluene	182 > 152	14450.484							
3LK06	26-dinitrotoluene	182 > 152	14450.484							
3LK06	24-dinitrotoluene	182 > 152	14450.484							
3LK06	26-dinitrotoluene-d3	185 > 155	14450.484							
3LK06	2-Nitrotoluene	137 > 46	14450.484							
3LK06	4-Nitrotoluene	137 > 46	14450.484							
3LK06	3-Nitrotoluene	137 > 46	14450.484							
3LK06	PETN	361 > 62	14450.484							
				14450.484	14450.484	bb				
				3018.220	3018.220	bb				
				515.1374	103.0					
				427.8757	85.6	-14.4				
				1394.9						



4A  
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 09-JAN-10 19:47

GEL Data File: EXP0108055a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	364.583
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	439.777
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



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Identify Sample Report  
IEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108055a

Date: 09-Jan-2010

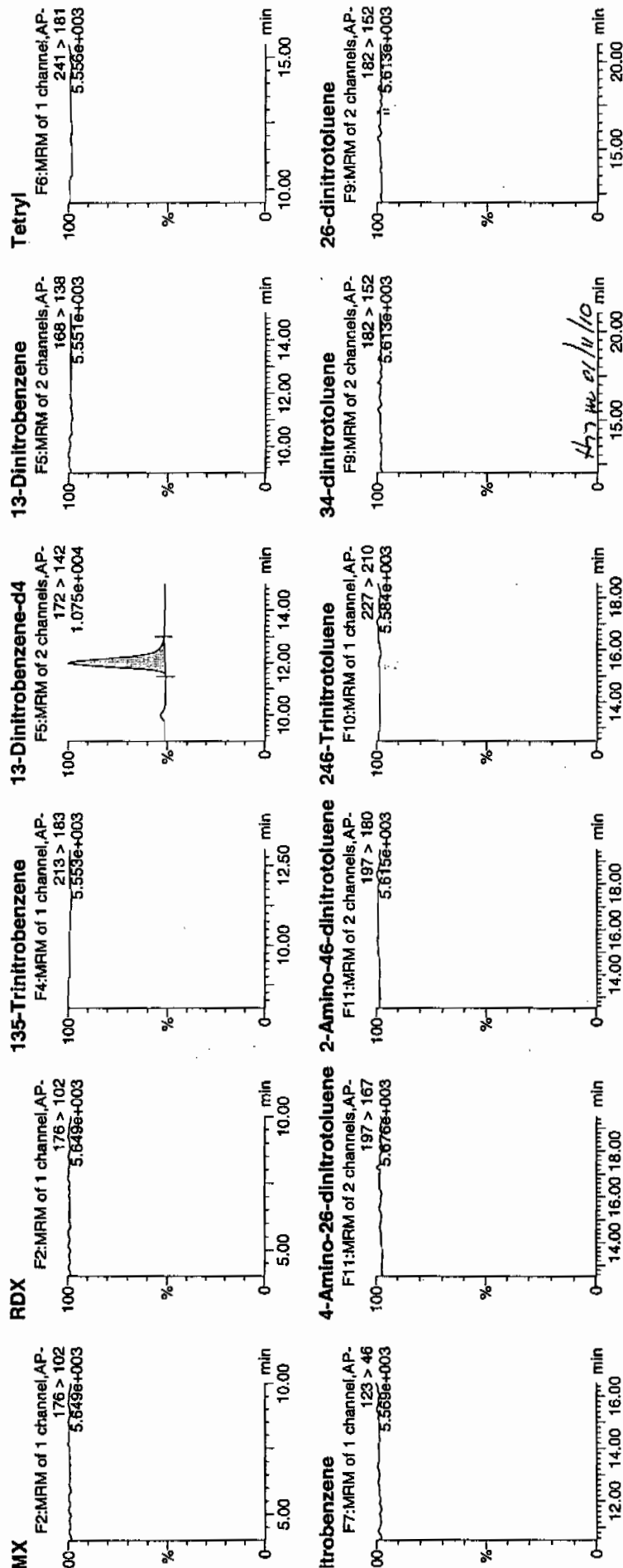
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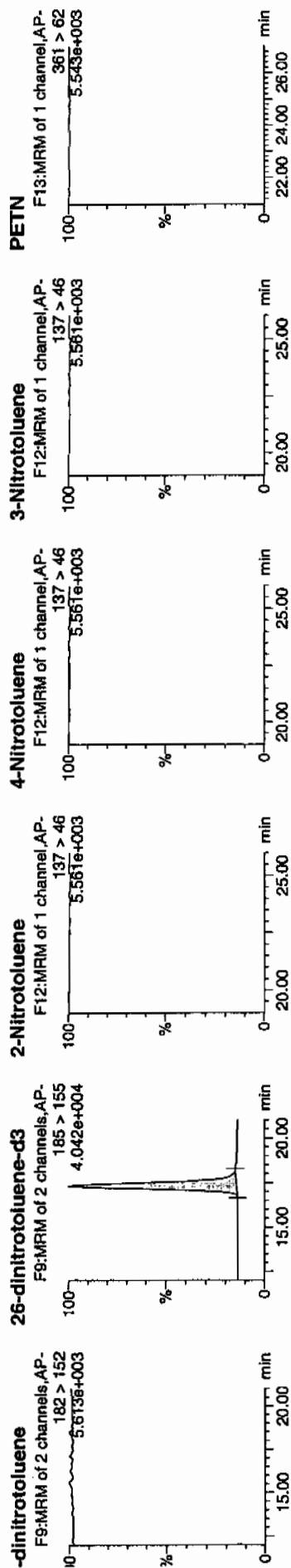
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1/11/10

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Dataset: C:\MASSLYN\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

[illegible]



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 09-JAN-10 21:16

GEL Data File: EXP0108058a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	392.477
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	402.473
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



Printed: Mon Jan 11 09:29:17 2010, Page 55 of 189

uantify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

File: C:\MASSLYNX\NEW\_EXP\PRO\Data\EXP0108058a

Date: 09-Jan-2010

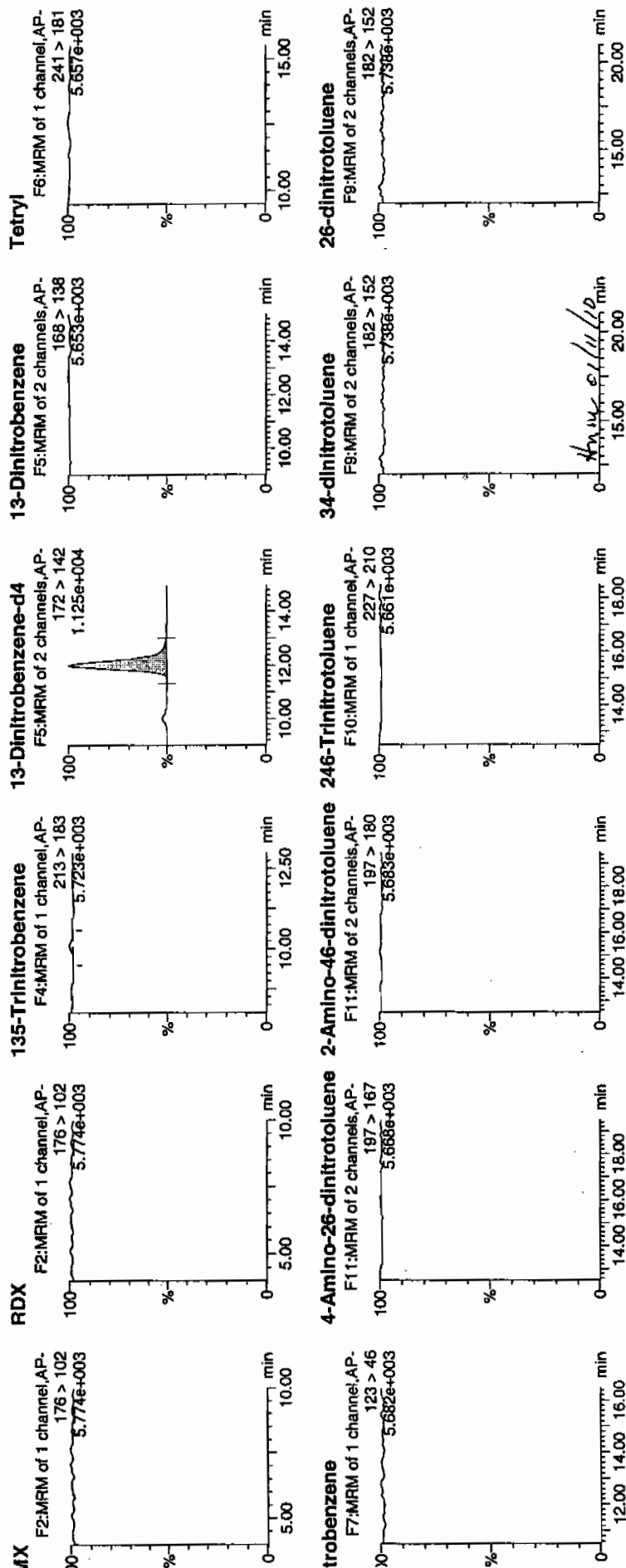
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Sample: XIBLK08

Ratio: 1:1,A

11/11/10

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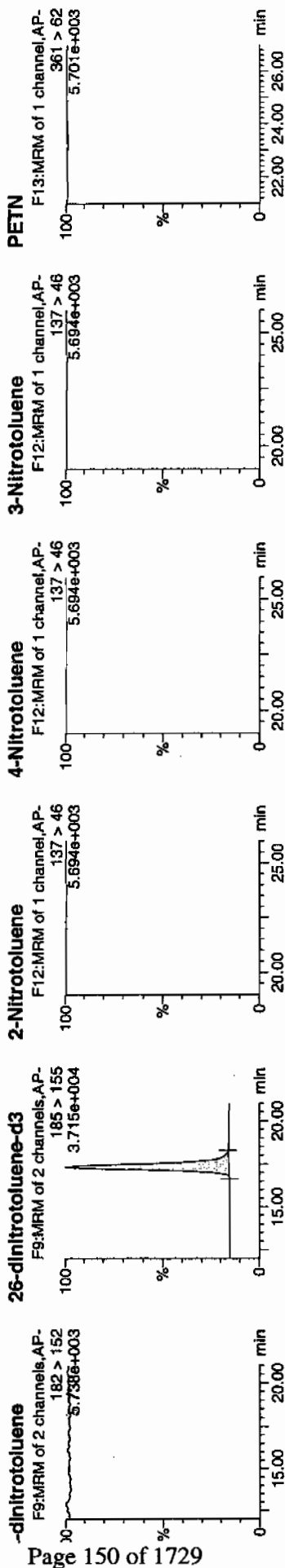




Printed: Mon Jan 11 09:29:17 2010, Page 56 of 189

Identify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



BLK08	Name	Trace	Area	IS Area	Abs Resp	Mod Data	Mod Time	% Rec	% Dev	SN
BLK08	HMZ	176 > 102	2299.545	2299.545						
BLK08	RDX	176 > 102	2299.545	2299.545						
BLK08	135-Trinitrobenzene	213 > 183	2299.545	2299.545						
BLK08	13-Dinitrobenzene-d4	172 > 142	12.00	2299.545	2299.545	MM- 11-Jan-10 08:55:42	392.4769	78.5	-21.5	504.9
BLK08	13-Dinitrobenzene	168 > 138		2299.545	2299.545					
BLK08	Tetryl	241 > 181		2299.545	2299.545					
BLK08	Nitrobenzene	123 > 46		2299.545	2299.545					
BLK08	4-Amino-26-dinitrotoluene	197 > 167		13592.562	13592.562					
BLK08	2-Amino-46-dinitrotoluene	197 > 180		13592.562	13592.562					
BLK08	246-Trinitrotoluene	227 > 210		13592.562	13592.562					
BLK08	34-dinitrotoluene	182 > 152		13592.562	13592.562					
BLK08	26-dinitrotoluene	182 > 152		13592.562	13592.562					
BLK08	24-dinitrotoluene	182 > 152		13592.562	13592.562					
BLK08	26-dinitrotoluene-d3	185 > 155	17.33	13592.562	13592.562	MM- 11-Jan-10 09:23:15	402.4728	80.5	-19.5	1560.6
BLK08	2-Nitrotoluene	137 > 46		13592.562	13592.562					
BLK08	4-Nitrotoluene	137 > 46		13592.562	13592.562					
BLK08	3-Nitrotoluene	137 > 46		13592.562	13592.562					
BLK08	PETN	361 > 62		13592.562	13592.562					



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 10-JAN-10 01:43

GEL Data File: EXP0108067a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	442.74
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	480.722
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



antify Sample Report  
 L Laboratories, LLC / Analyst : Michael A. Penny  
 Printed: Mon Jan 11 09:29:17 2010, Page 73 of 189

taset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

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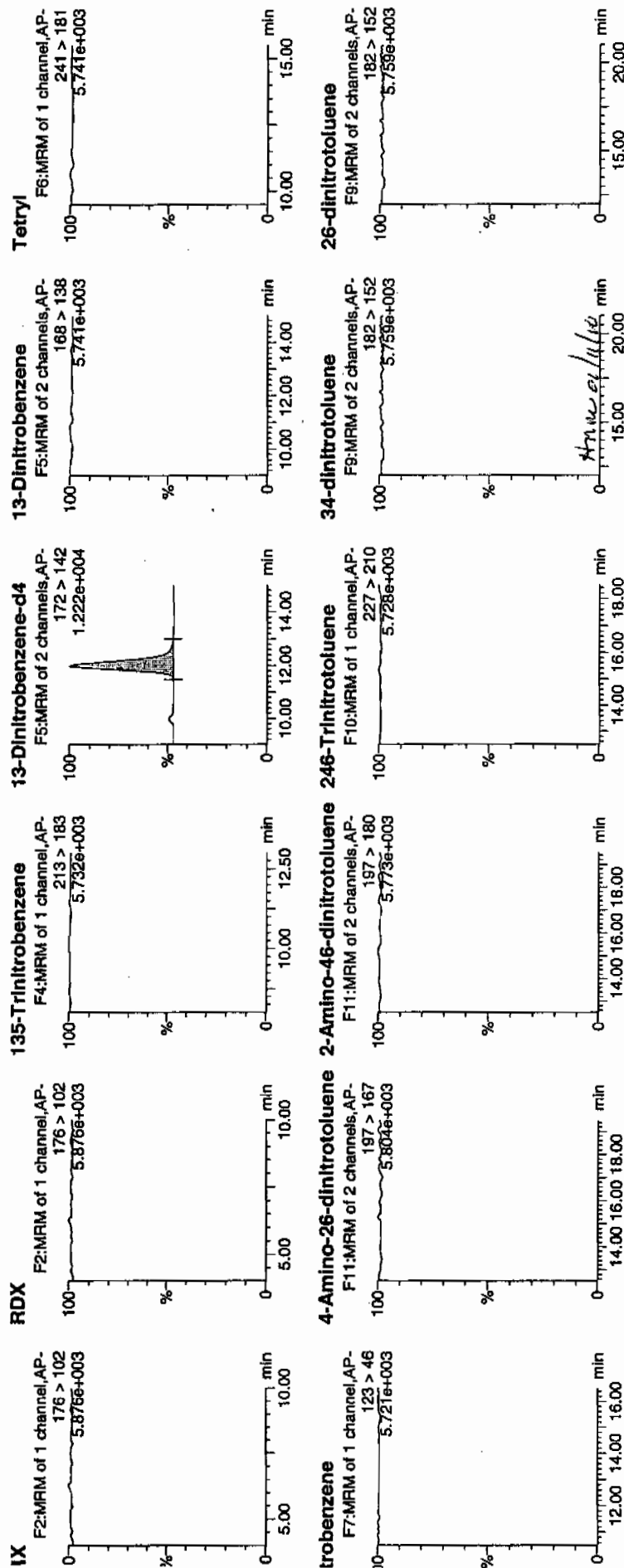
te: 10-Jan-2010

ne: 01:43:07

XIBLK09

il: 1:1,A

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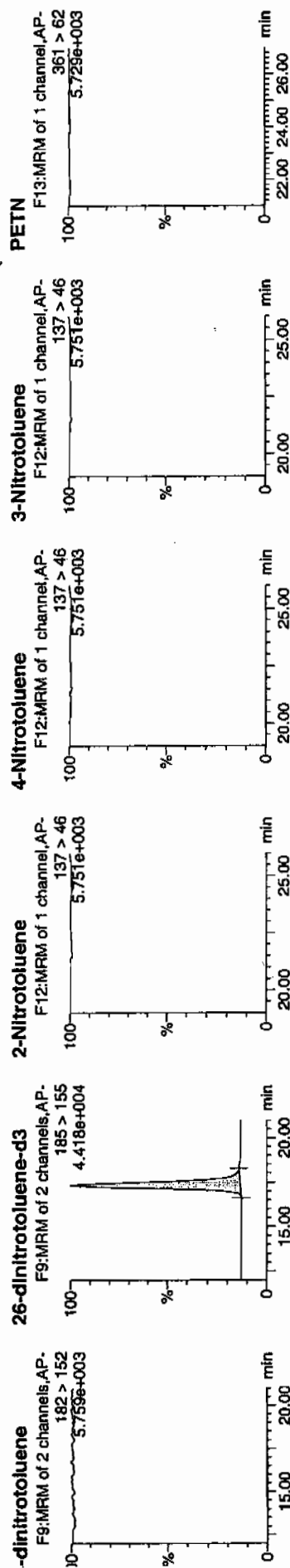




Printed: Mon Jan 11 09:29:17 2010, Page 74 of 189

**Quantify Sample Report**  
**CEL Laboratories, LLC / Analyst : Michael A. Penny**

Dataset: C:\MASSLYN\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	ITrace	FIT	Area	IS Area	Abs Resp	Response	Flags	Mod Date	Mod Time	Conc (mg/ml)	%Recd	%Dev
HMX	176 > 102			2594.039								
RDX	176 > 102			2594.039								
135-Trinitrobenzene	213 > 183			2594.039								
13-Dinitrobenzene-d4	172 > 142	12.00	2594.039		2594.039	2594.039	bb			442.7399	88.5	-11.5
13-Dinitrobenzene	168 > 138			2594.039								407.7
Tetryl	241 > 181			2594.039								
Nitrobenzene	123 > 46			2594.039								
4-Amino-26-dinitrotoluene	197 > 167			16235.240								
2-Amino-46-dinitrotoluene	197 > 180			16235.240								
246-Trinitrotoluene	227 > 210			16235.240								
34-dinitrotoluene	182 > 152			16235.240								
26-dinitrotoluene	182 > 152			16235.240								
24-dinitrotoluene	182 > 152			16235.240								
26-dinitrotoluene-d3	185 > 155	17.31	16235.240		16235.240	16235.240	bb			480.7220	96.1	-3.9
2-Nitrotoluene	137 > 46			16235.240								1256.5
4-Nitrotoluene	137 > 46			16235.240								
3-Nitrotoluene	137 > 46			16235.240								
PETN	361 > 62			16235.240								



4A  
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK10

Analysis Date: 10-JAN-10 07:37

GEL Data File: EXP0108079a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	477.367
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	488.988
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



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Identify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO\10810expA1.qld, Time: Mon Jan 11 09:26:07 2010

File: C:\MASSLYNX\NEW\_EXP\PRO\Data\EXP0108079a

Date: 10-Jan-2010

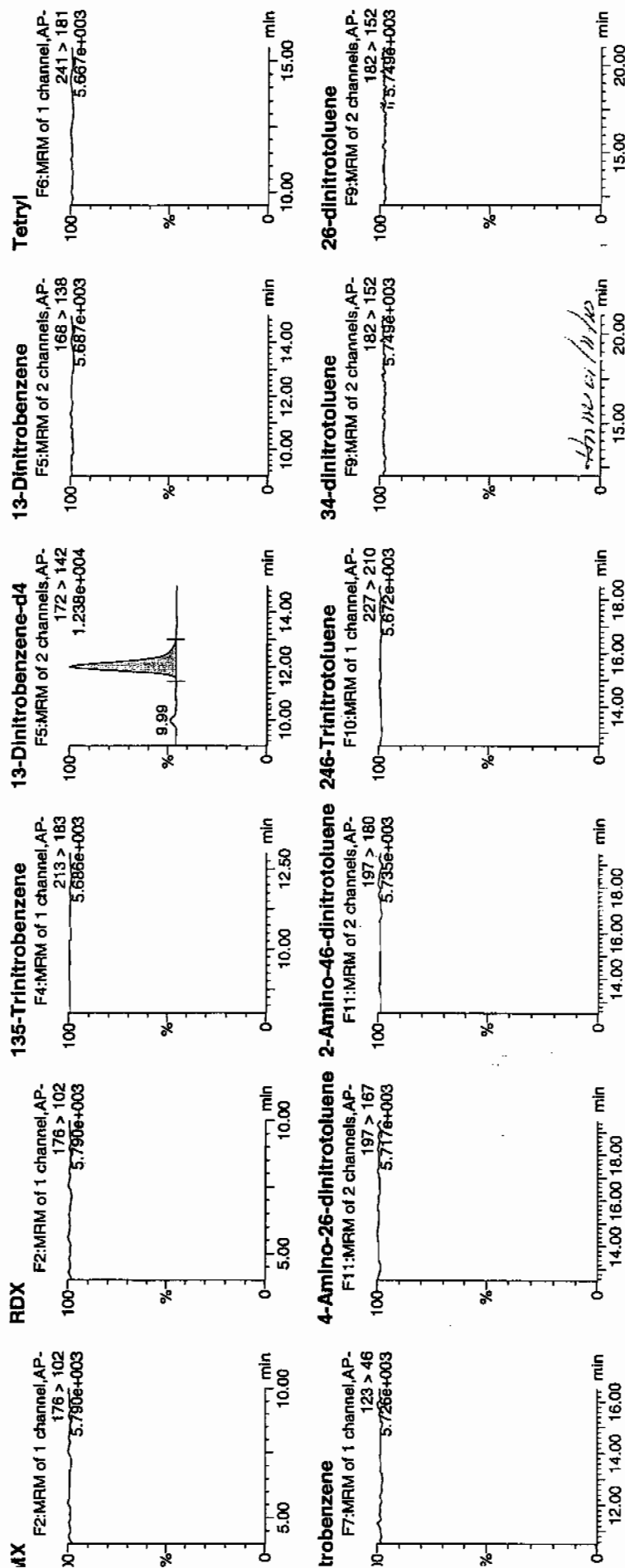
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Sample: XIBLK10

Ratio: 1:1,A

1/11/10  
1/11/10

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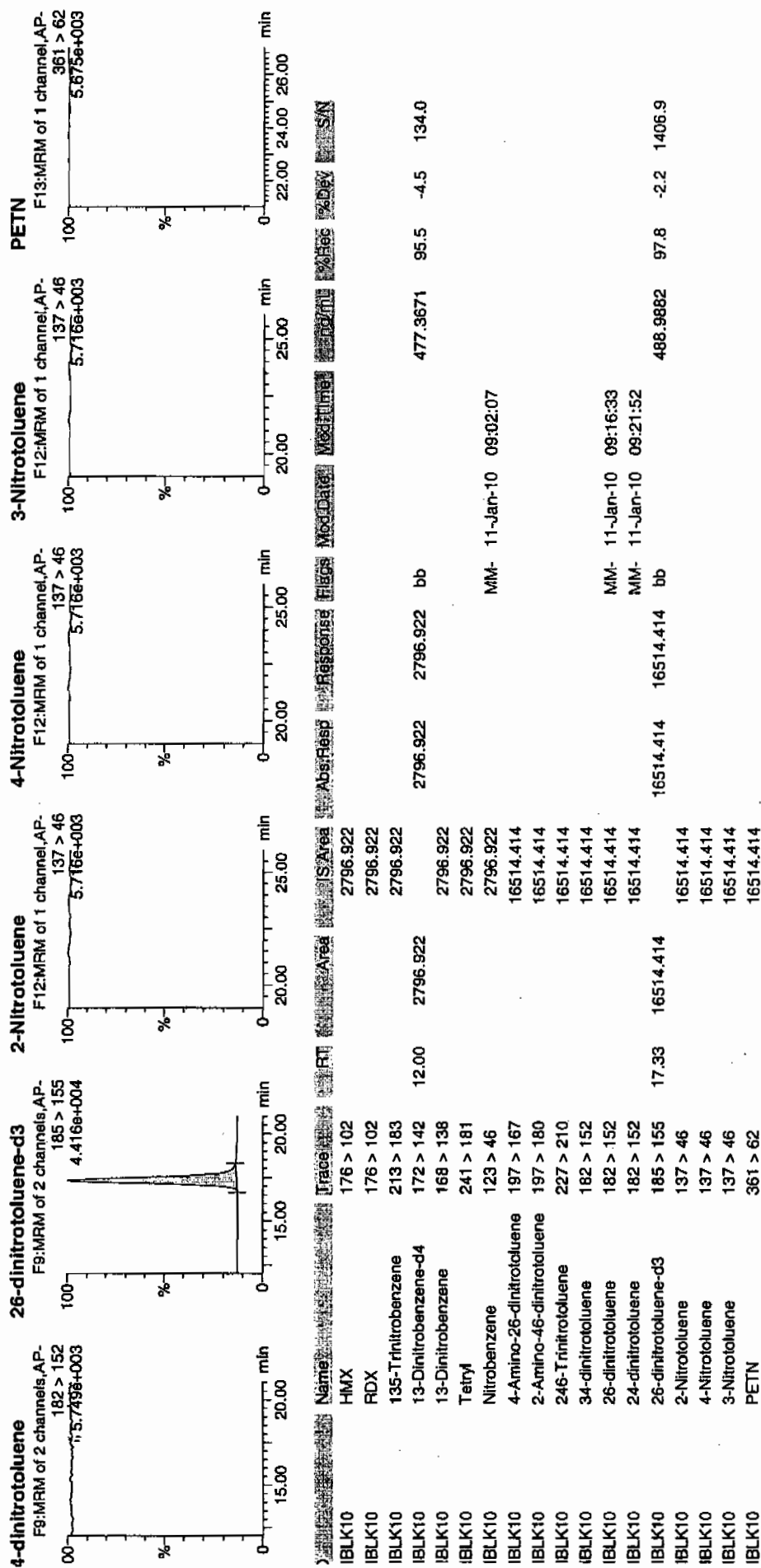




Printed: Mon Jan 11 09:29:17 2010, Page 98 of 189

Quantity Sample Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

atset: C:\MASSLYNX\New\_Exp.PRO\1010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK11

Analysis Date: 10-JAN-10 14:00

GEL Data File: EXP0108092a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	495.181
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	480.925
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



Printed: Mon Jan 11 09:29:17 2010, Page 123 of 189

Identify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atset: C:\MASSLYNX\New\_Exp\PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

ame: C:\MASSLYNX\NEW\_EXP\PRO\data\EXP0108092a

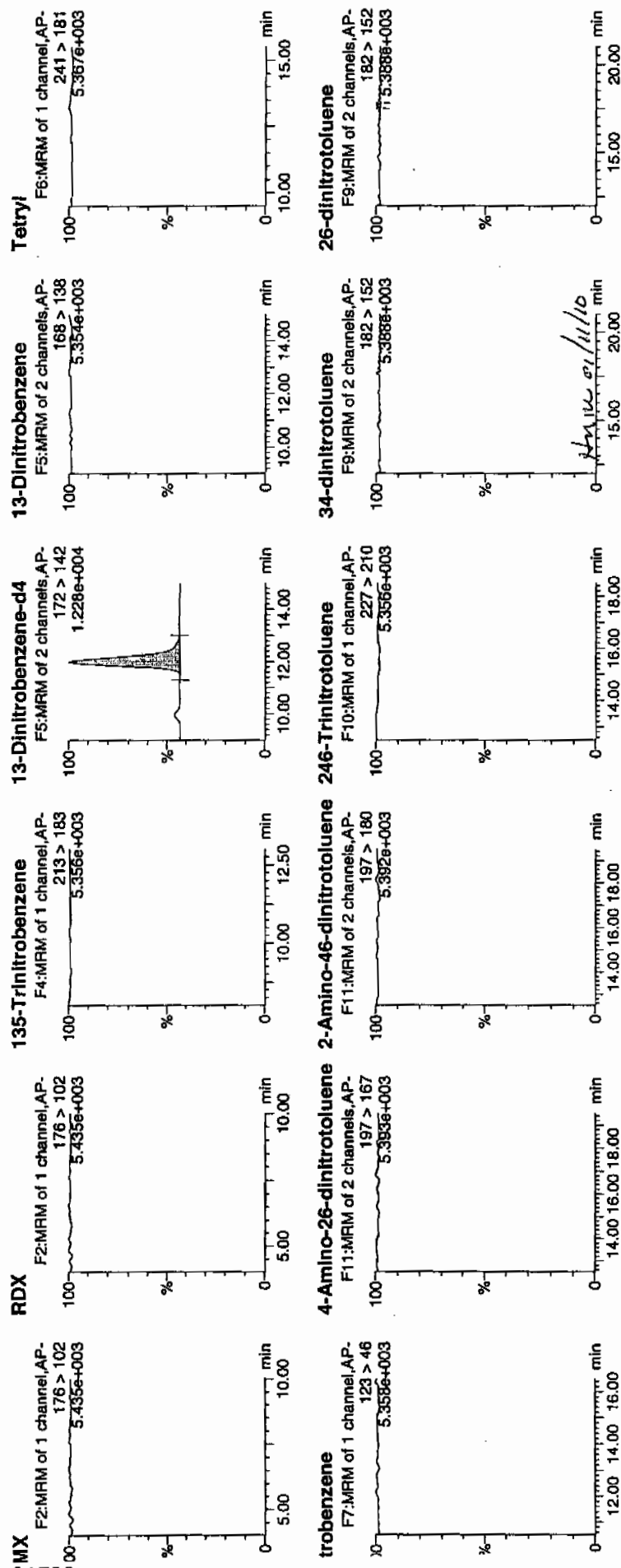
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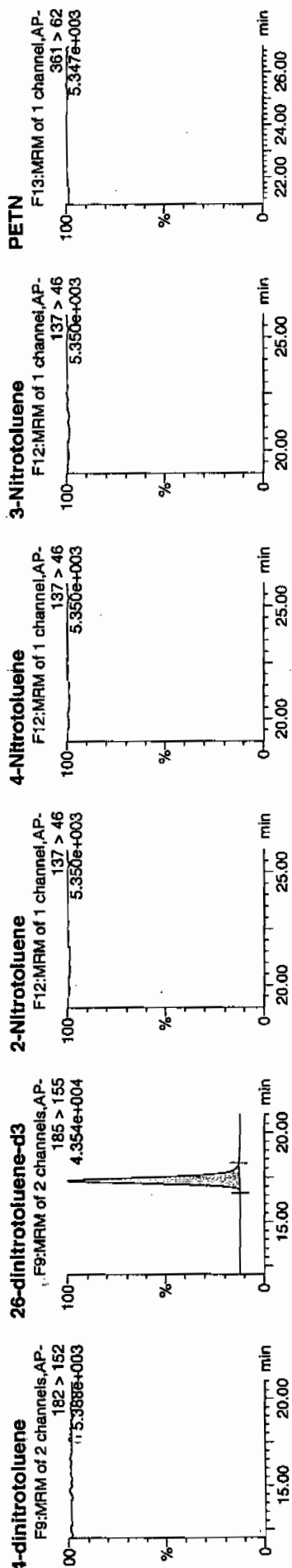




Printed: Mon Jan 11 09:29:17 2010, Page 124 of 189

Quantify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	Area	RT	Abs Resp	Response	Mod	Time	%Rec	%Dev
BLK11	HMZ	176 > 102	2901.297						
BLK11	RDX	176 > 102	2901.297						
BLK11	135-Trinitrobenzene	213 > 183	2901.297						
BLK11	13-Dinitrobenzene-d4	172 > 142	11.97	2901.297	bb			99.0	-1.0
BLK11	13-Dinitrobenzene	168 > 138	2901.297						
BLK11	Tetyl	241 > 181	2901.297						
BLK11	Nitrobenzene	123 > 46	2901.297						
BLK11	4-Amino-26-dinitrotoluene	197 > 167	16242.088						
BLK11	2-Amino-46-dinitrotoluene	197 > 180	16242.088						
BLK11	246-Trinitrotoluene	227 > 210	16242.088						
BLK11	34-dinitrotoluene	182 > 152	16242.088						
BLK11	26-dinitrotoluene	182 > 152	16242.088						
BLK11	24-dinitrotoluene	182 > 152	16242.088						
BLK11	26-dinitrotoluene-d3	185 > 155	17.31	16242.088				96.2	-3.8
BLK11	2-Nitrotoluene	137 > 46	16242.088						
BLK11	4-Nitrotoluene	137 > 46	16242.088						
BLK11	3-Nitrotoluene	137 > 46	16242.088						
BLK11	PETN	361 > 62	16242.088						



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK11

Analysis Date: 10-JAN-10 15:58

GEL Data File: EXP0108096a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
Tetryl	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	506.439
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	508.733
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0



uantify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

atset: C:\MASSLYNX\New\_Exp\PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

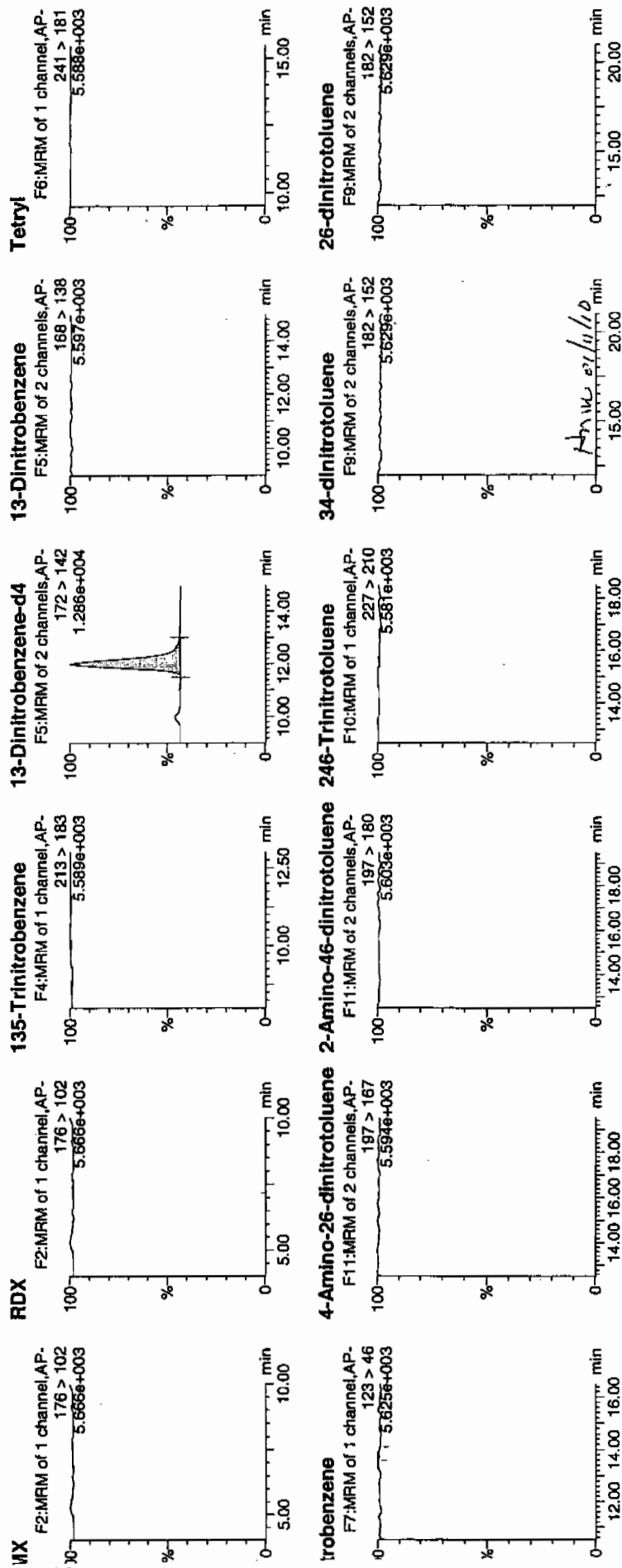
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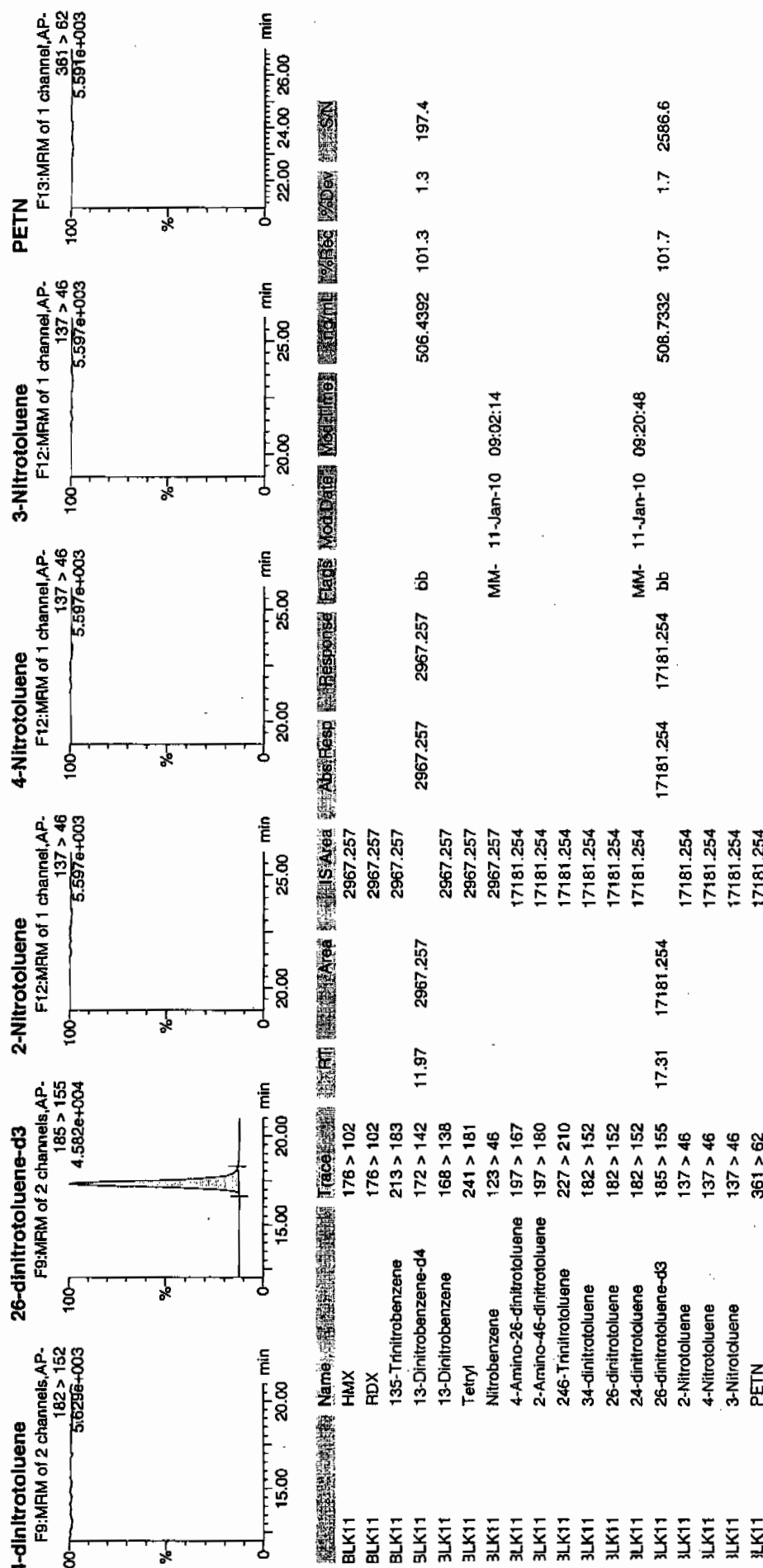




Printed: Mon Jan 11 09:29:17 2010, Page 132 of 189

uantify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

atset: C:\MASSLYNX\New\_Exp\PROV010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





4A  
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK12

Analysis Date: 10-JAN-10 20:24

GEL Data File: EXP0108105a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u QDS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	491.015
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	500.079
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



Printed: Mon Jan 11 09:29:17 2010, Page 149 of 189

uantify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

atset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

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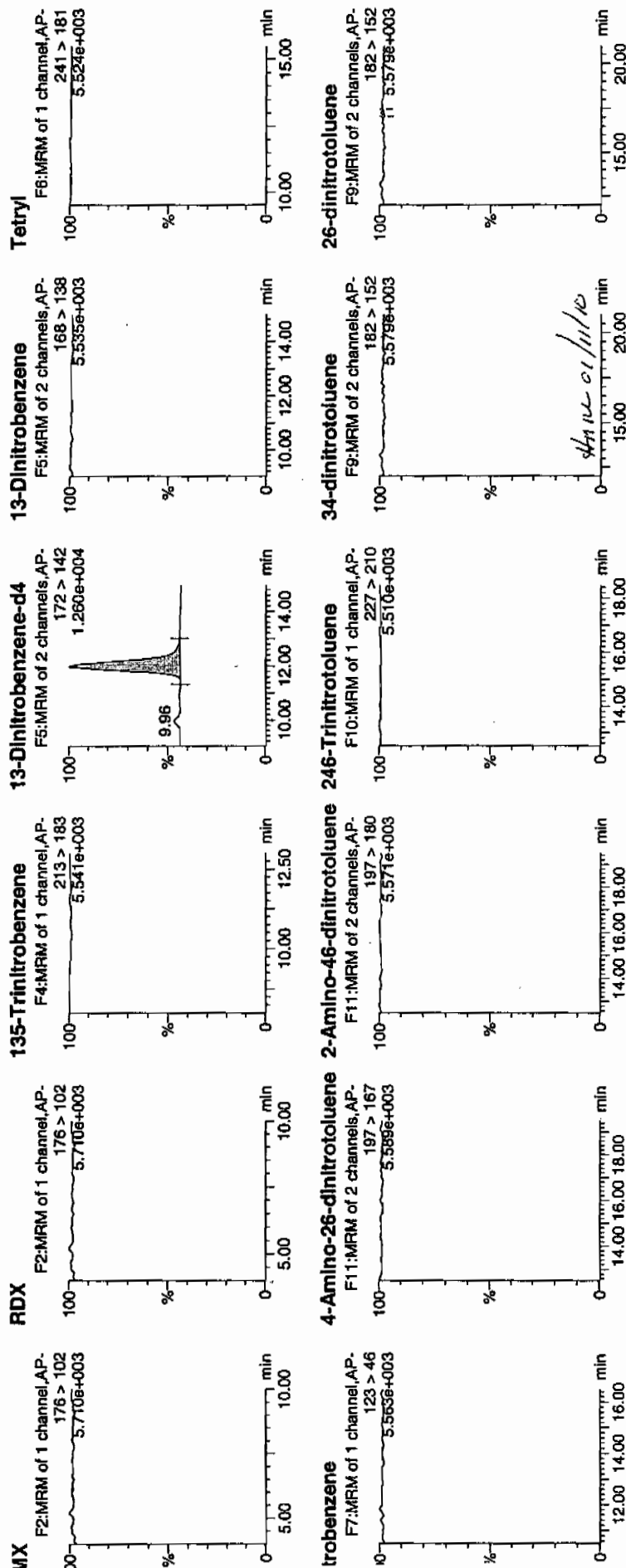
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al: 1:1,A

1/11/10

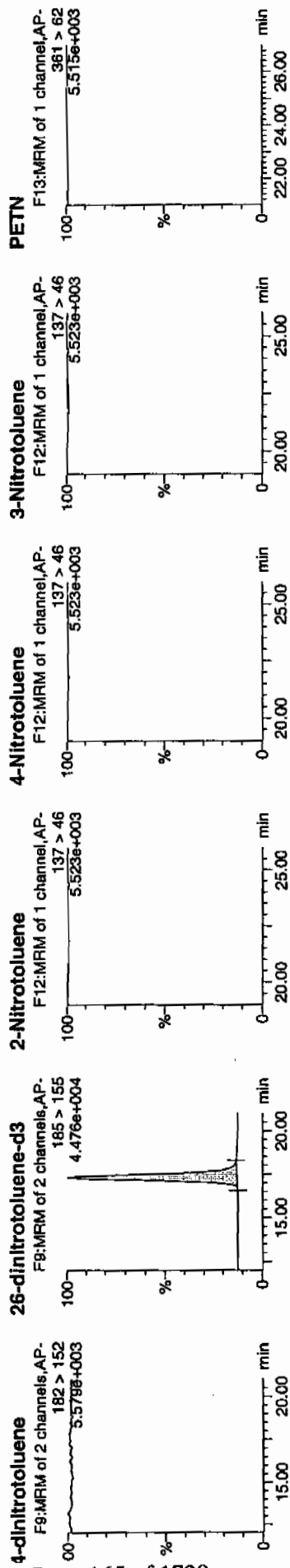




Printed: Mon Jan 11 09:29:17 2010, Page 150 of 189

Identify Sample Report  
IEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	RT	Area	Area	Abs Resp	Flags	Mod Date	Mod Time	Intens	%Area	%Day	%SN
BLK12	HMIX	176 > 102		2876.883								
BLK12	RDX	176 > 102		2876.883								
BLK12	135-Trinitrobenzene	213 > 183		2876.883								
BLK12	13-Dinitrobenzene-d4	172 > 142	11.97	2876.883	2876.883	bb			491.0145	98.2	-1.8	222.2
BLK12	13-Dinitrobenzene	168 > 138		2876.883								
BLK12	Tetryl	241 > 181		2876.883								
BLK12	Nitrobenzene	123 > 46		2876.883								
BLK12	4-Amino-26-dinitrotoluene	197 > 167		16888.990								
BLK12	2-Amino-46-dinitrotoluene	197 > 180		16888.990								
3LK12	246-Trinitrotoluene	227 > 210		16888.990								
3LK12	34-dinitrotoluene	182 > 152		16888.990								
3LK12	26-dinitrotoluene	182 > 152		16888.990								
3LK12	24-dinitrotoluene	182 > 152		16888.990								
3LK12	26-dinitrotoluene-d3	185 > 155	17.31	16888.990	16888.990	bb			500.0794	100.0	0.0	929.3
3LK12	2-Nitrotoluene	137 > 46		16888.990								
3LK12	4-Nitrotoluene	137 > 46		16888.990								
3LK12	3-Nitrotoluene	137 > 46		16888.990								
3LK12	PETN	361 > 62		16888.990								

MM- 11-Jan-10 09:18:19



4A  
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK13

Analysis Date: 11-JAN-10 02:18

GEL Data File: EXP0108117a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	514.672
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	519.983
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0



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uantify Sample Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

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ame: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108117a

ate: 11-Jan-2010

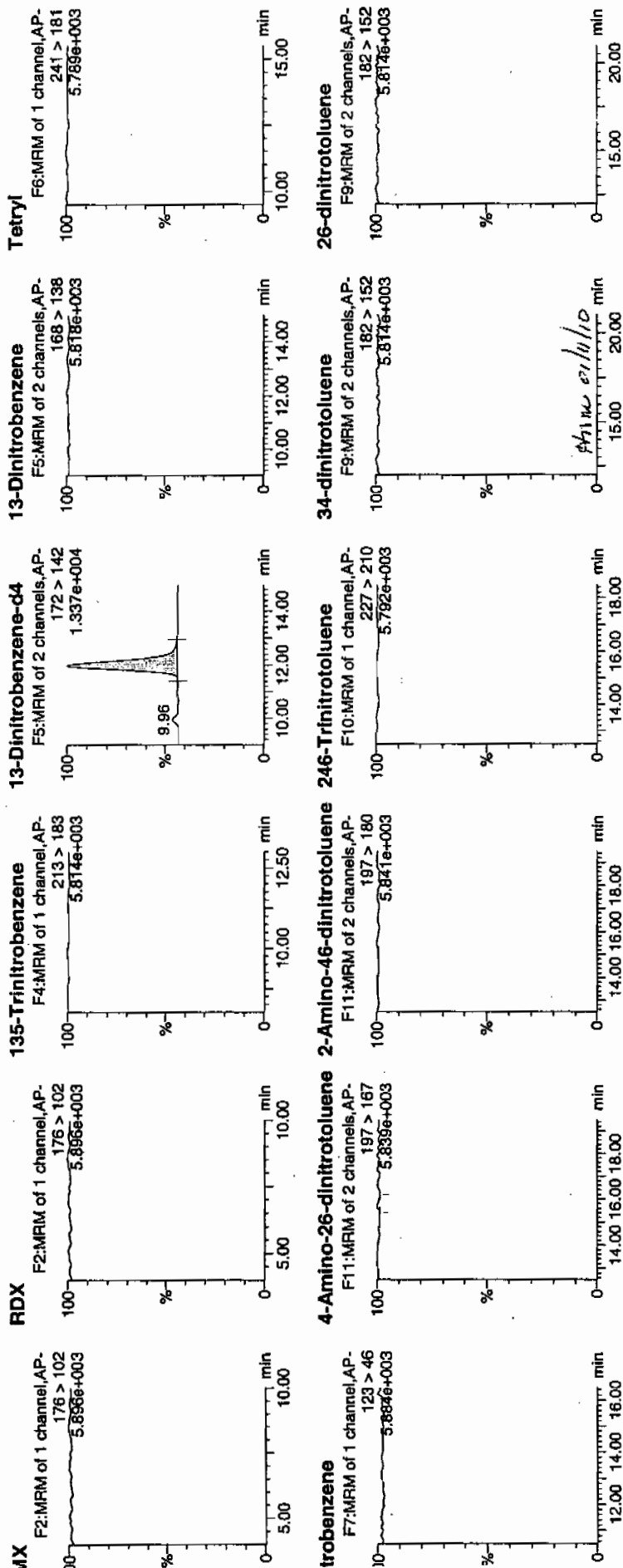
me: 02:18:22

i: XIBLK13

al: 1:1,A

1/11/10

Page 167 of 1729

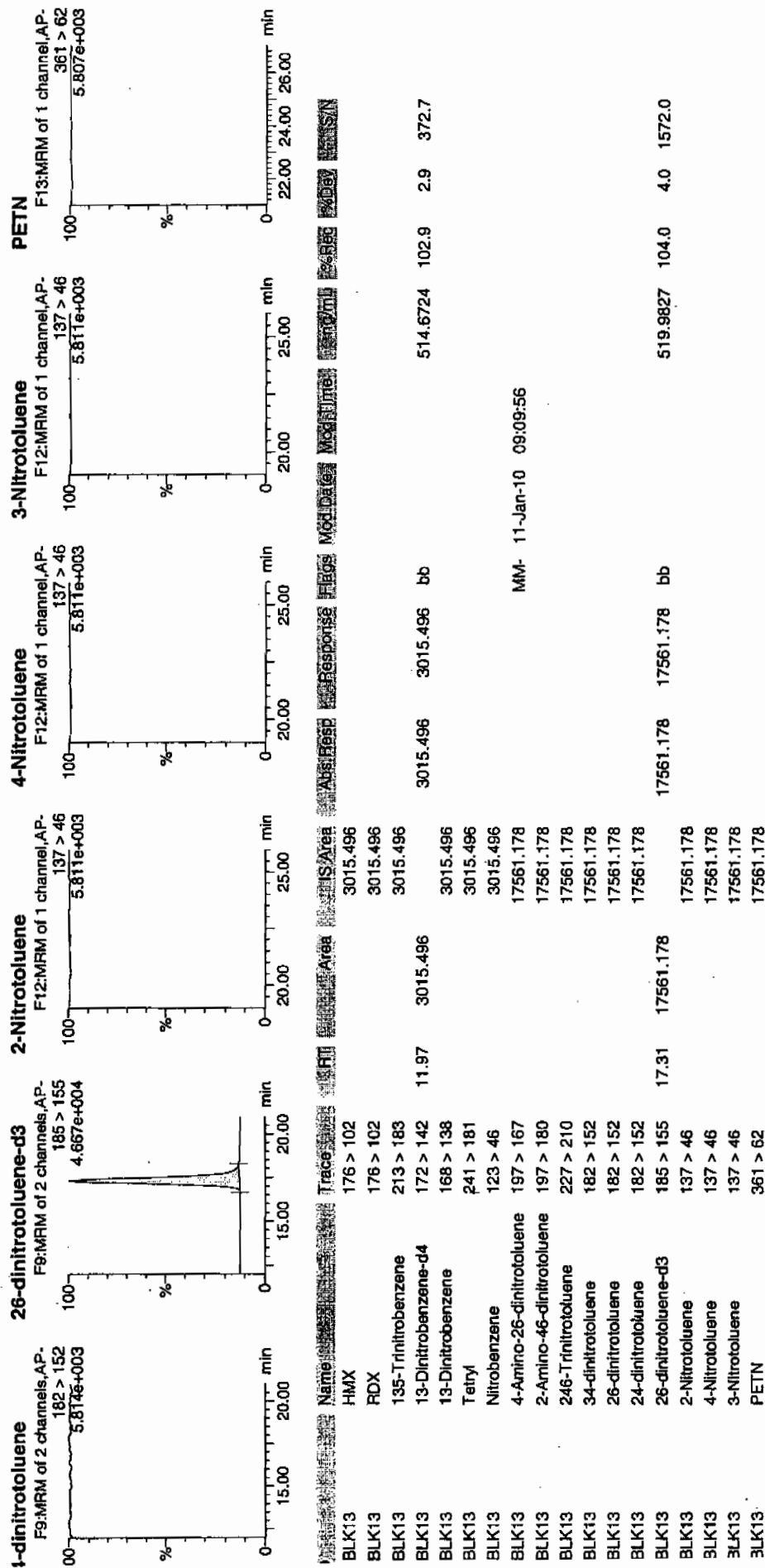




Printed: Mon Jan 11 09:29:17 2010, Page 174 of 189

Quantify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atset: C:\MASSL\YNN\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 05-JAN-10 16:51

GEL Data File: EXS01050010.wiff

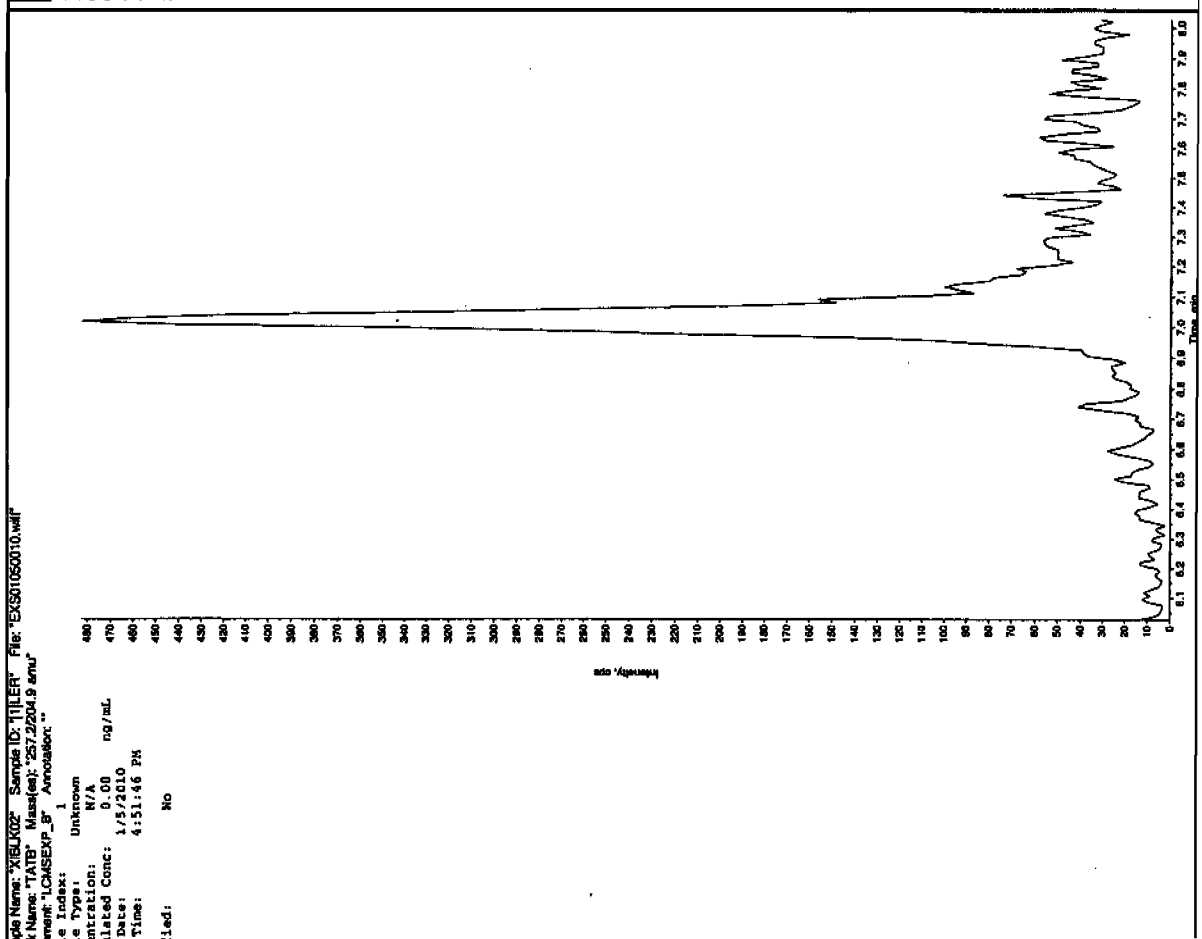
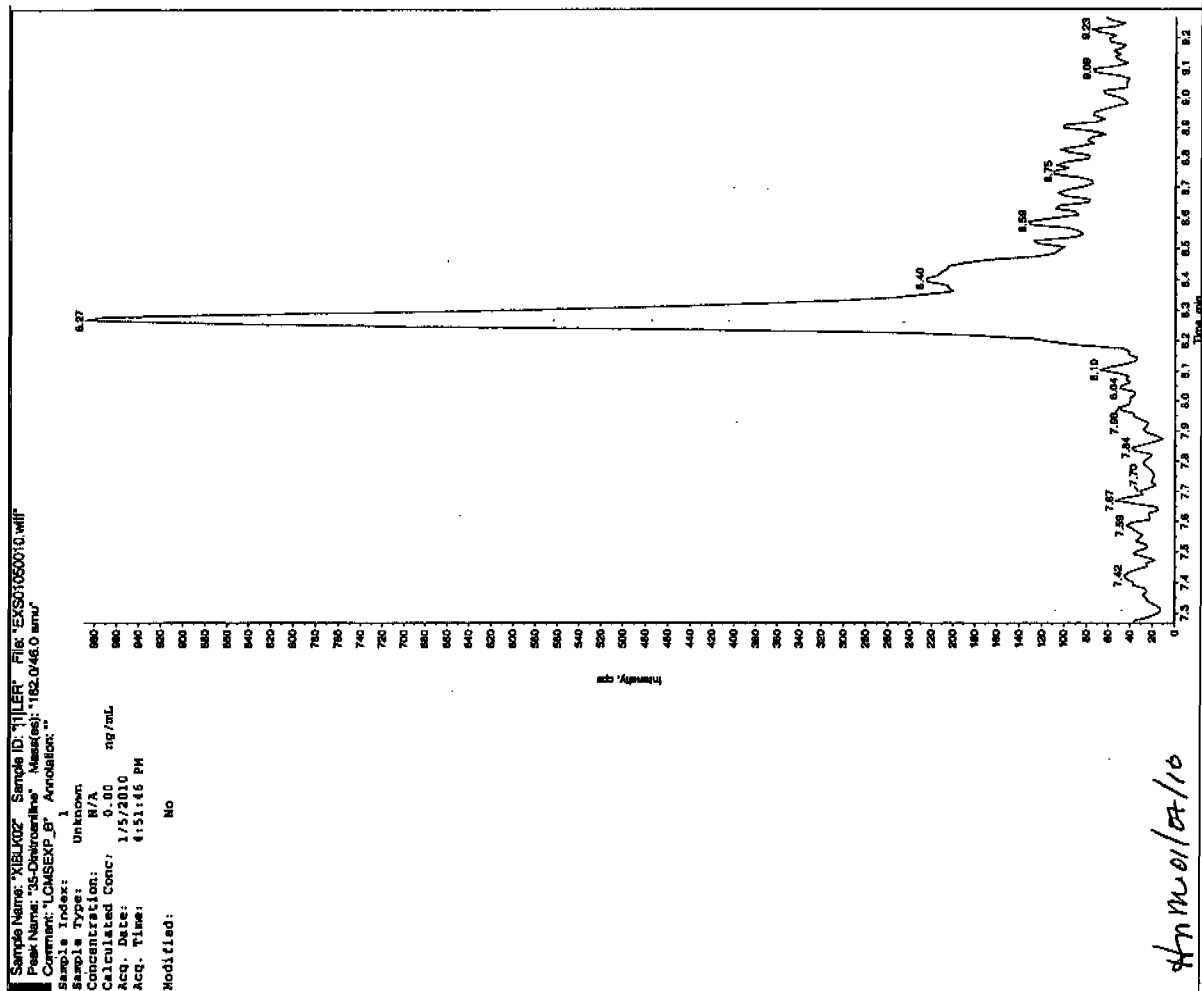
Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

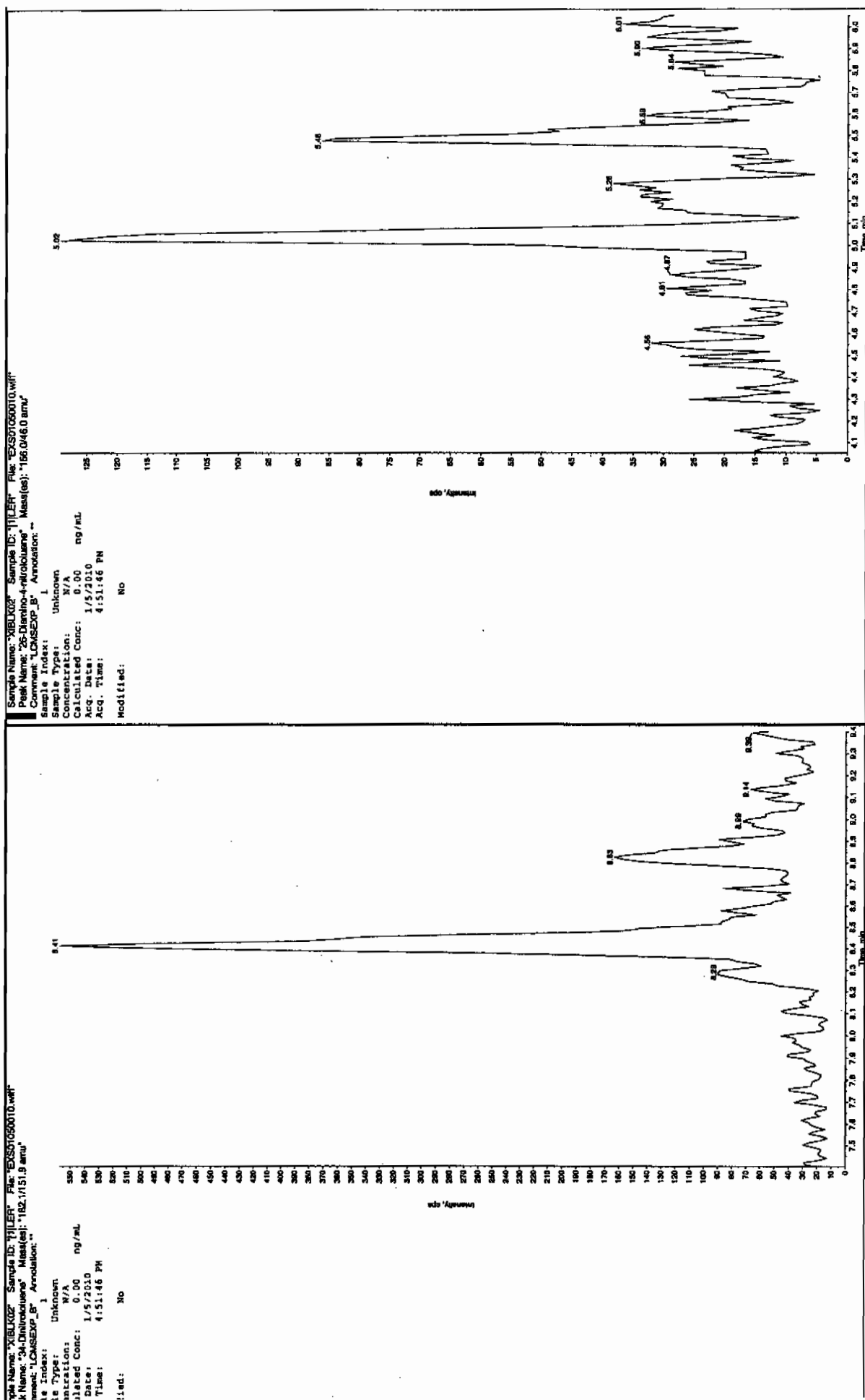
Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0



01/12/11  
2/2/11

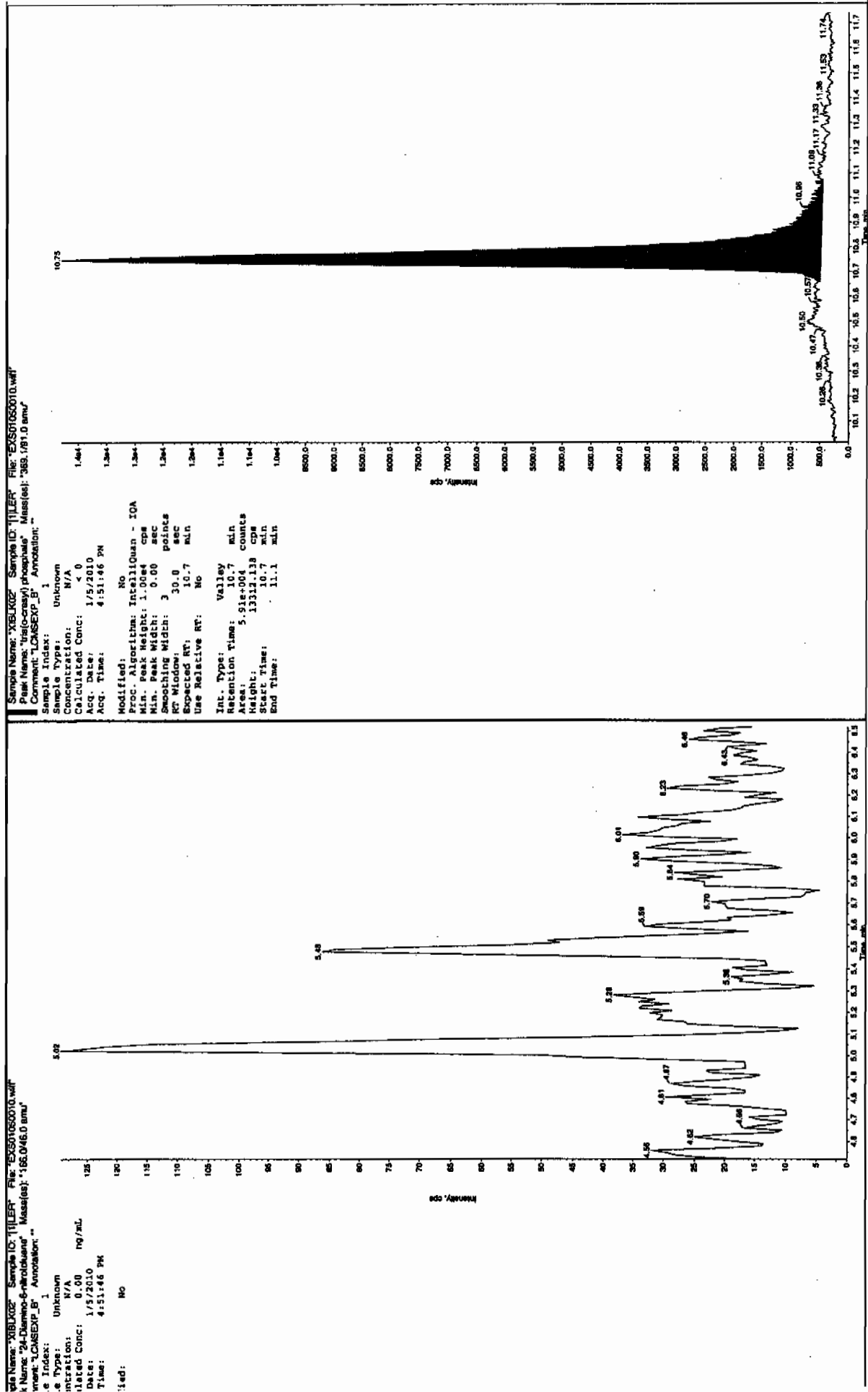






L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 05-JAN-10 17:23

GEL Data File: EXS01050012.wiff

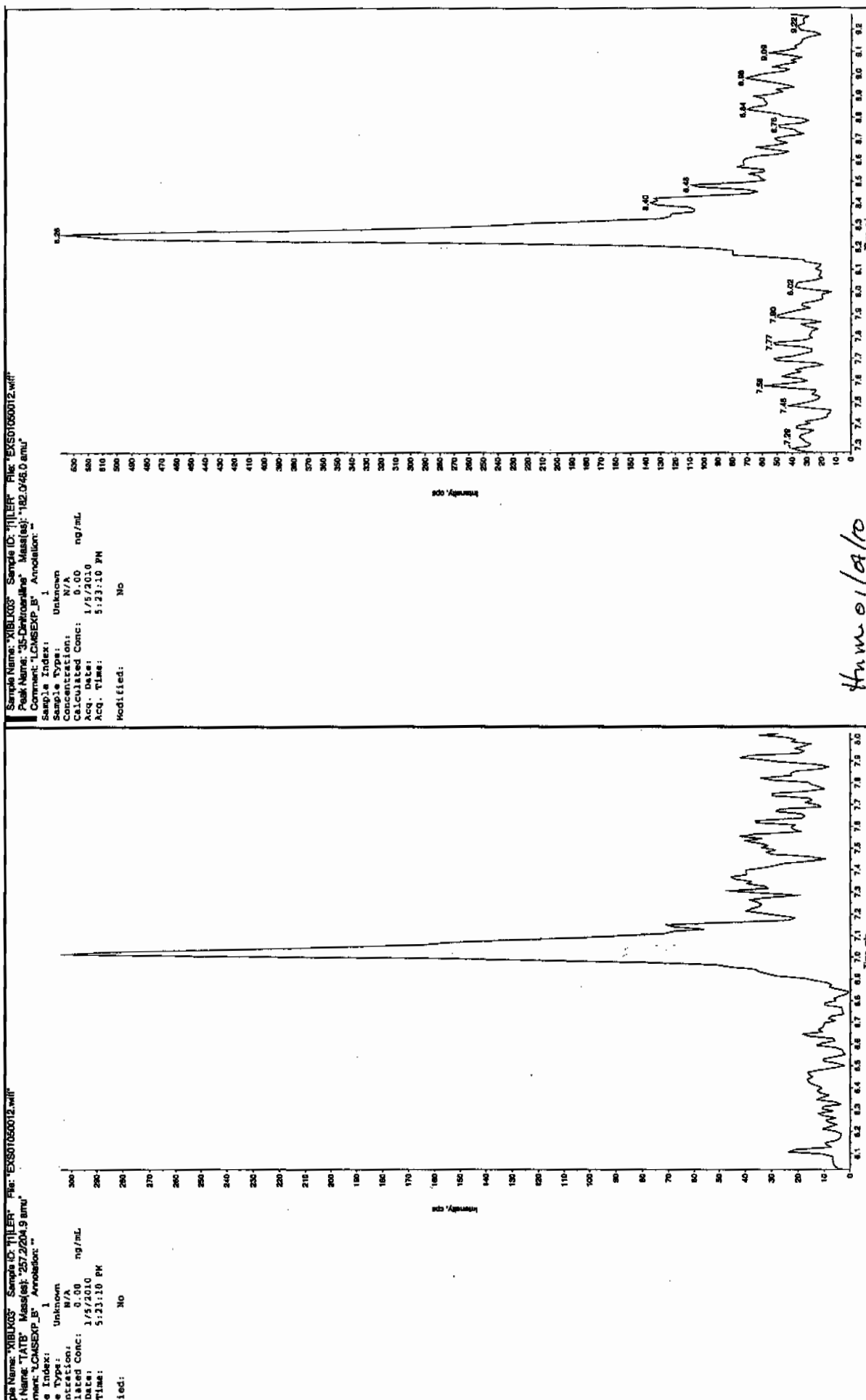
Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

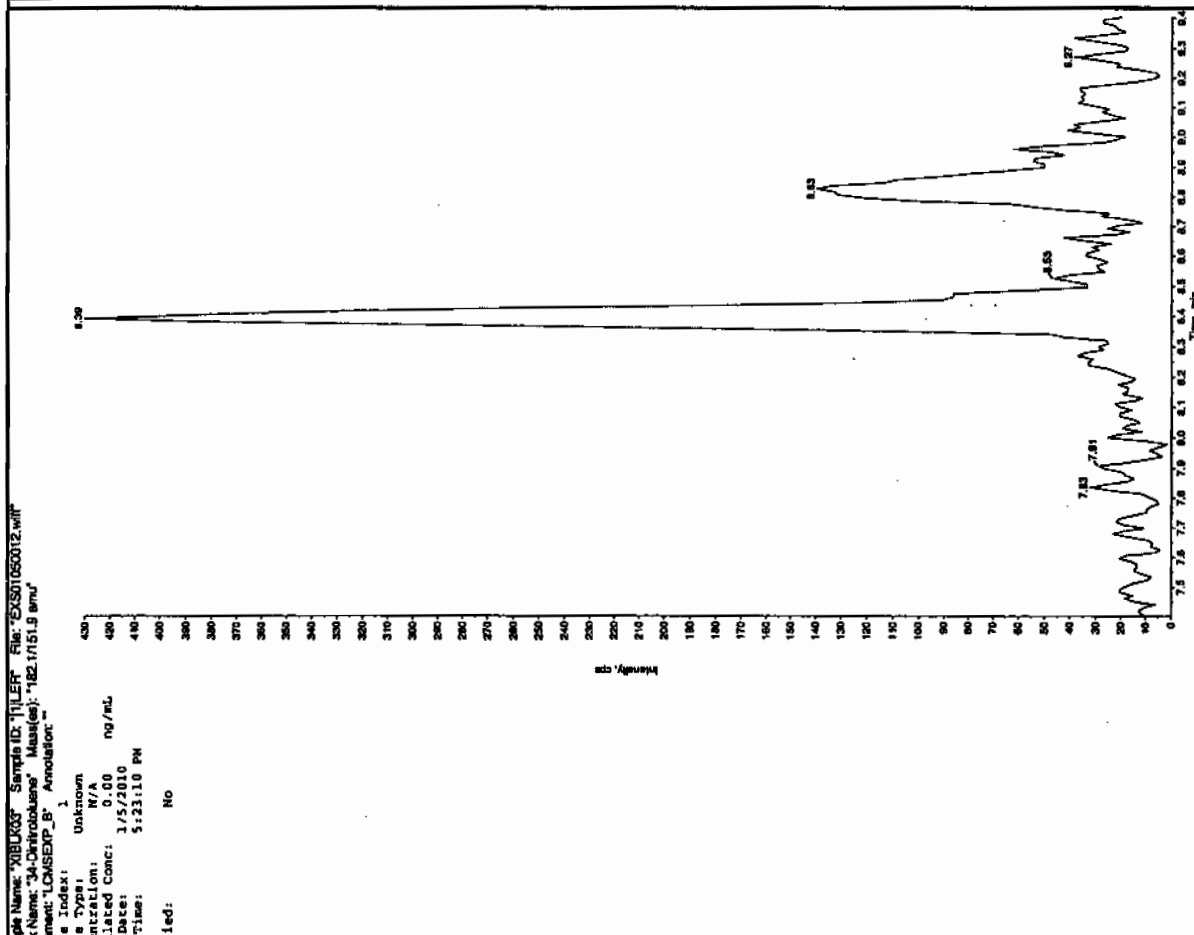
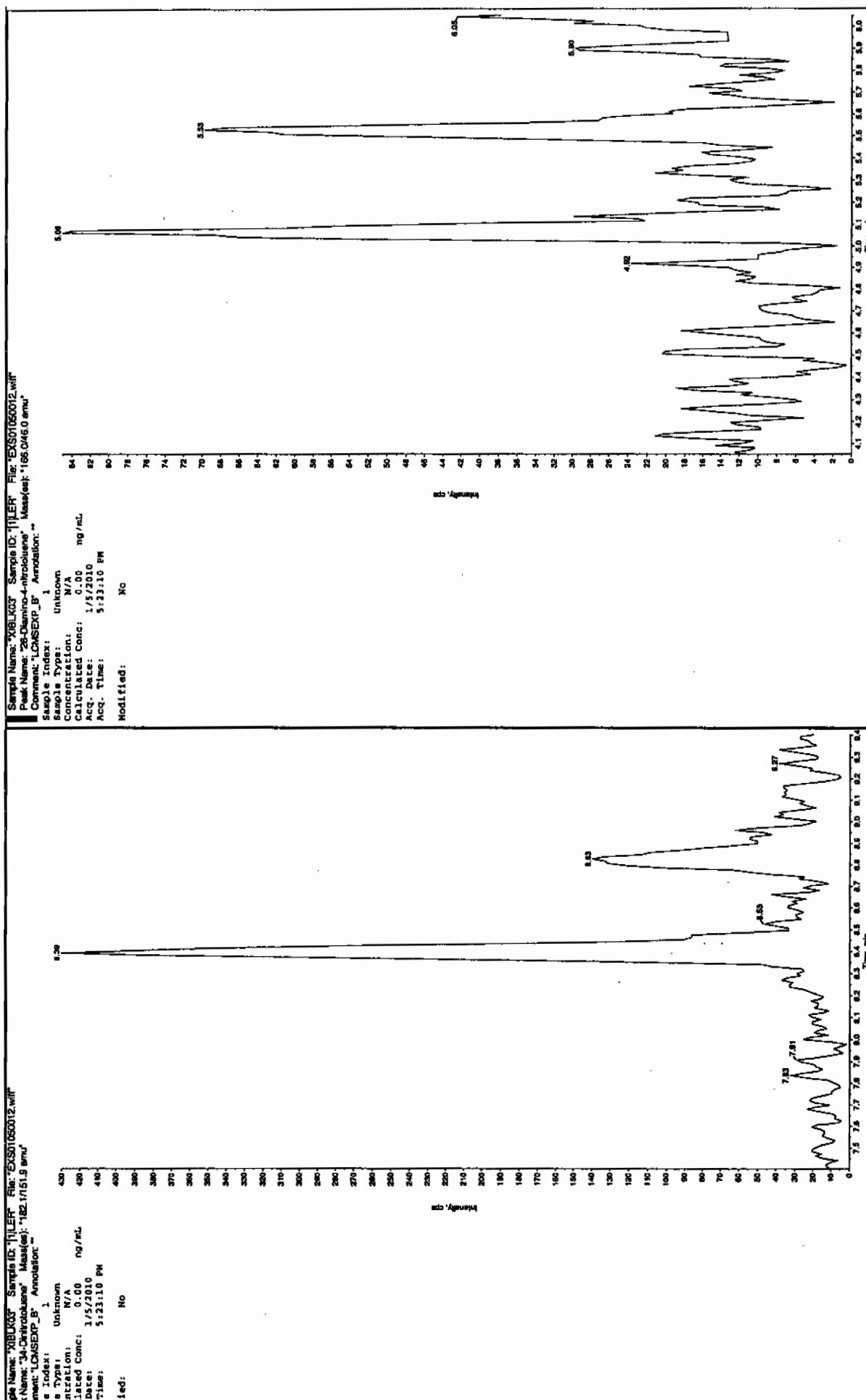


8/2/11



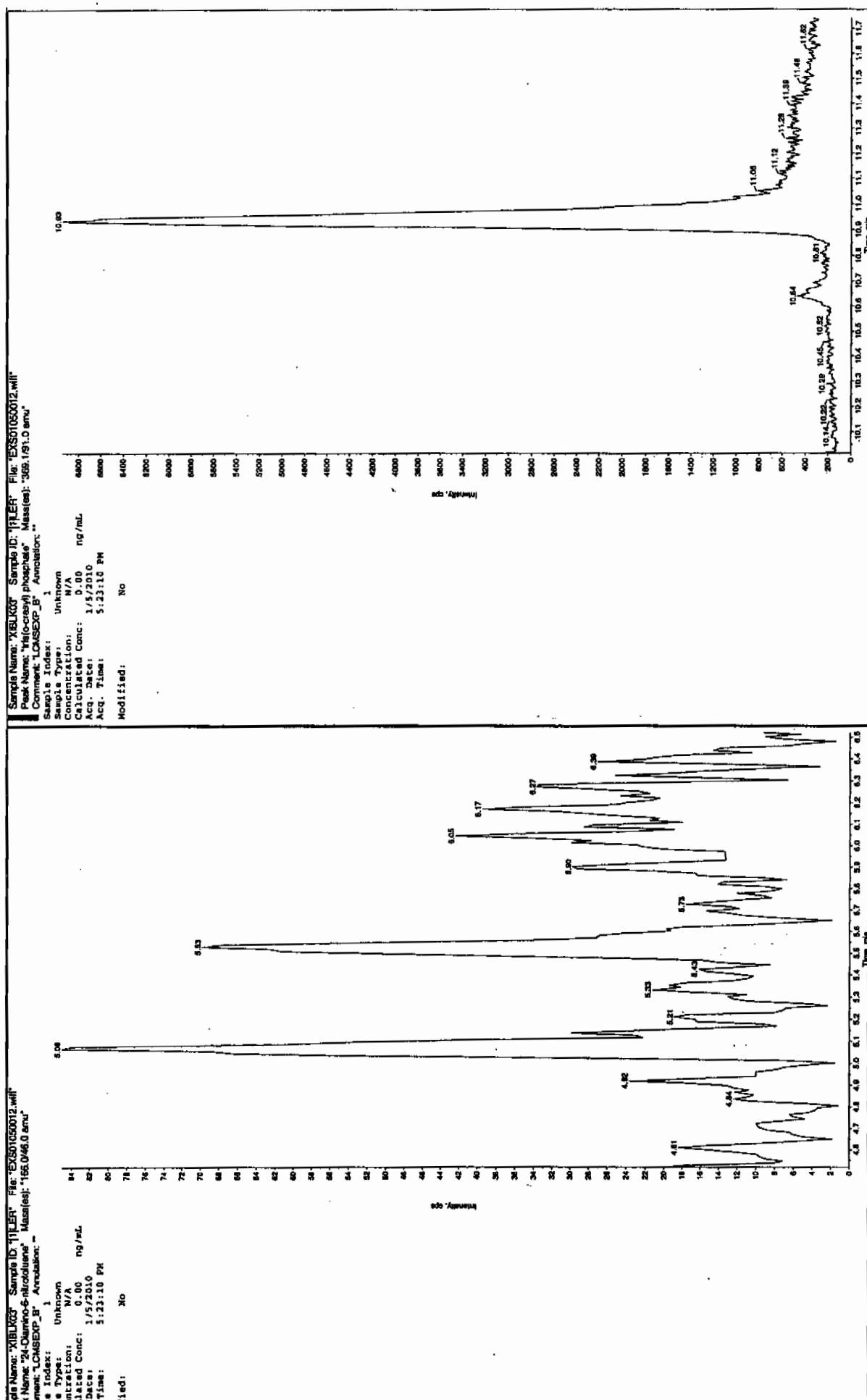
Hum o/a/o





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 05-JAN-10 20:47

GEL Data File: EXS01050025.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

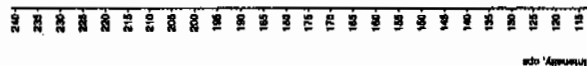
Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0



01/12/11

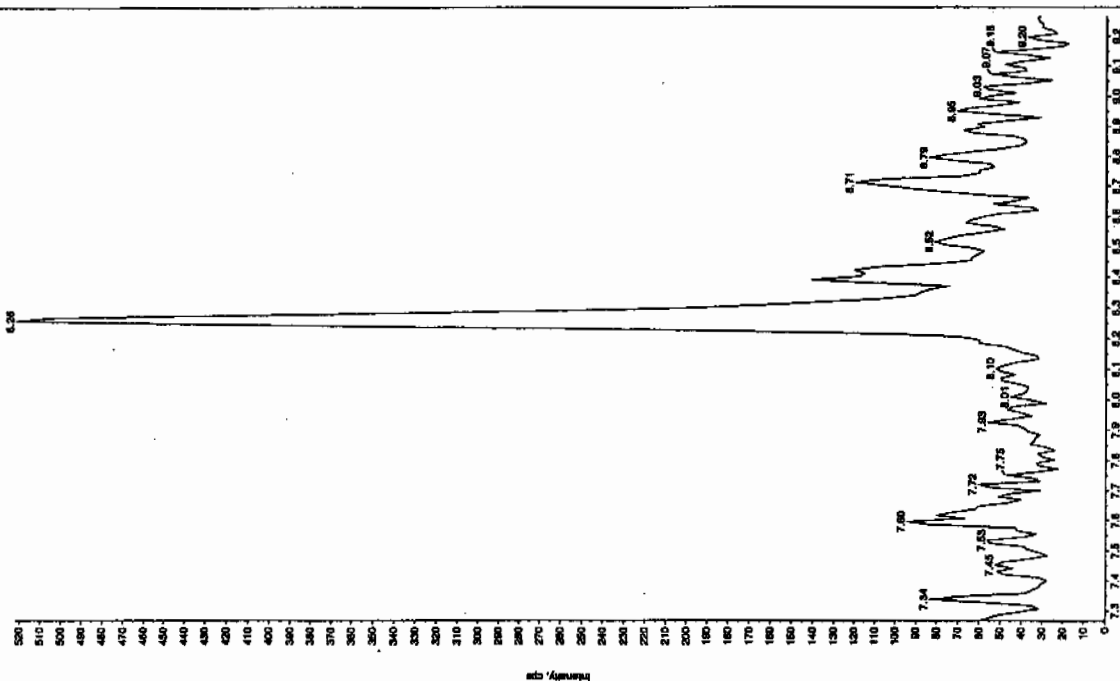
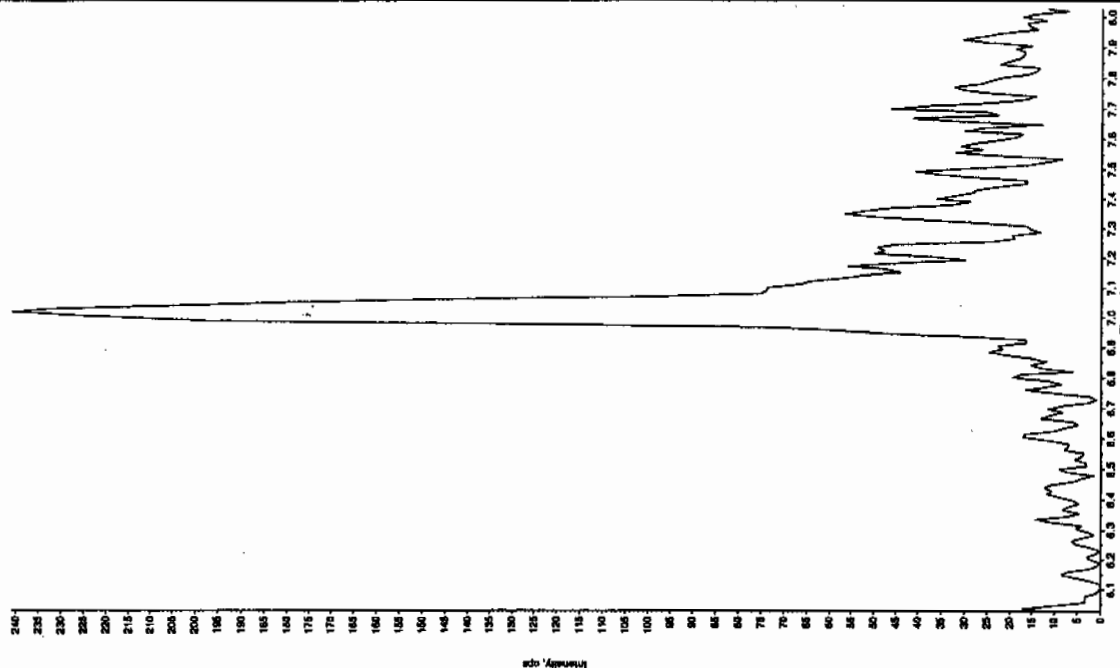
Sample Name: "XIBLX04" Sample ID: "T11LRF" File: "EX501050025.wif"  
 Peak Name: "T11LRF" Mass(es): "257.2204.9 amu"  
 Comment: "LCMS EXP\_B" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Calculated Conc: 1/5/2010  
 Acq. Date: 8:47:17 PM  
 Modified: No



Sample Name: "XIBLX04" Sample ID: "T11LRF" File: "EX501050025.wif"  
 Peak Name: "35-Oxibrolone" Mass(es): "182.046.0 amu"  
 Comment: "LCMS EXP\_B" Annotation: ""

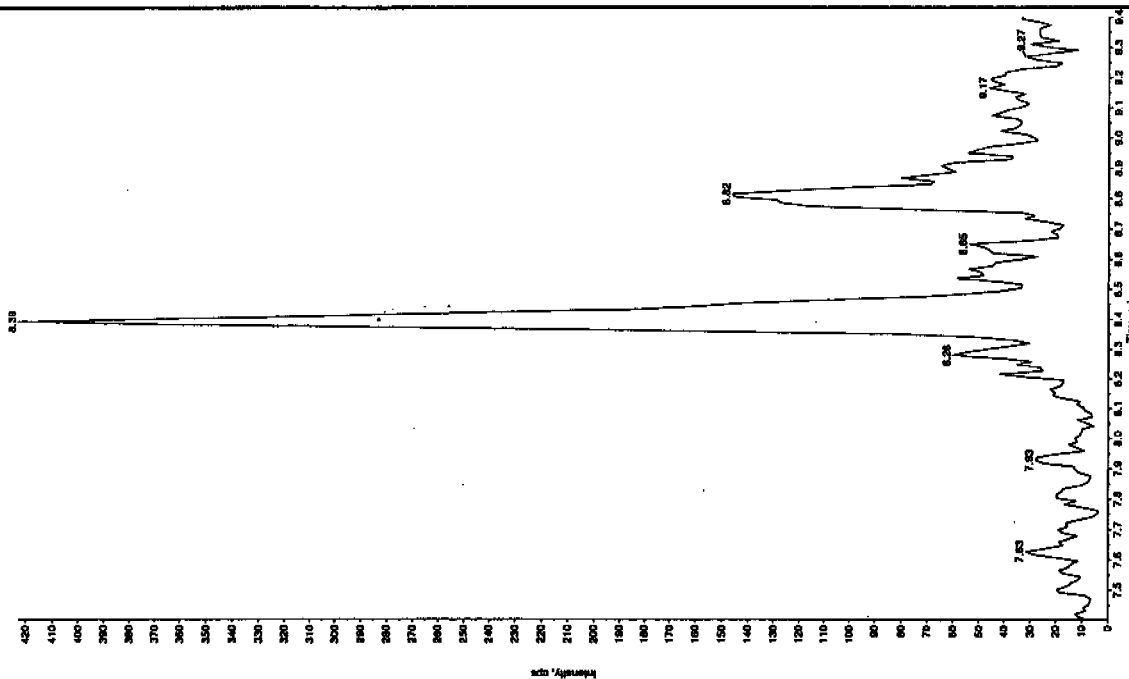
Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Calculated Conc: 1/5/2010  
 Acq. Date: 8:47:17 PM  
 Modified: No





Sample Name: "X1BLK04" Sample ID: "11LEA" File: "EXS01050025.wiff"  
Name: "34-Dinitrofluorene" Mass(es): "182.1751.9 amu"  
Element: "LCMSEXP\_8" Annotation: ""

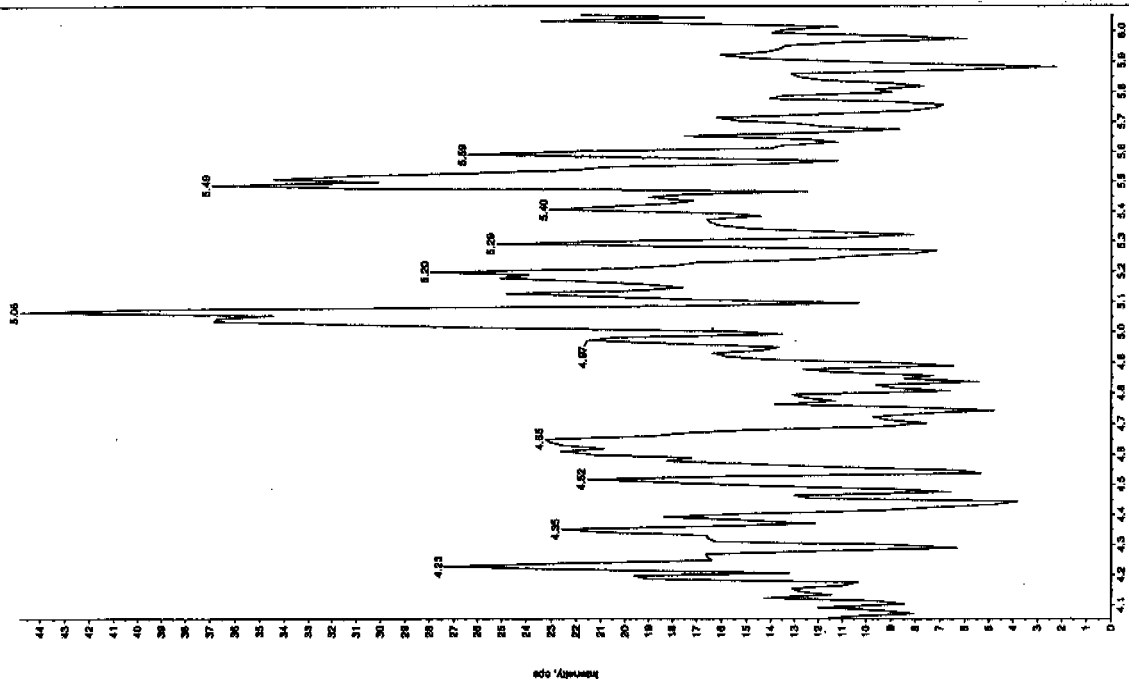
Index:	1
Type:	Unknown
Concentration:	N/A
Related Conc:	0.00
Date:	1/5/2010
Time:	8:47:17 PM
led:	No



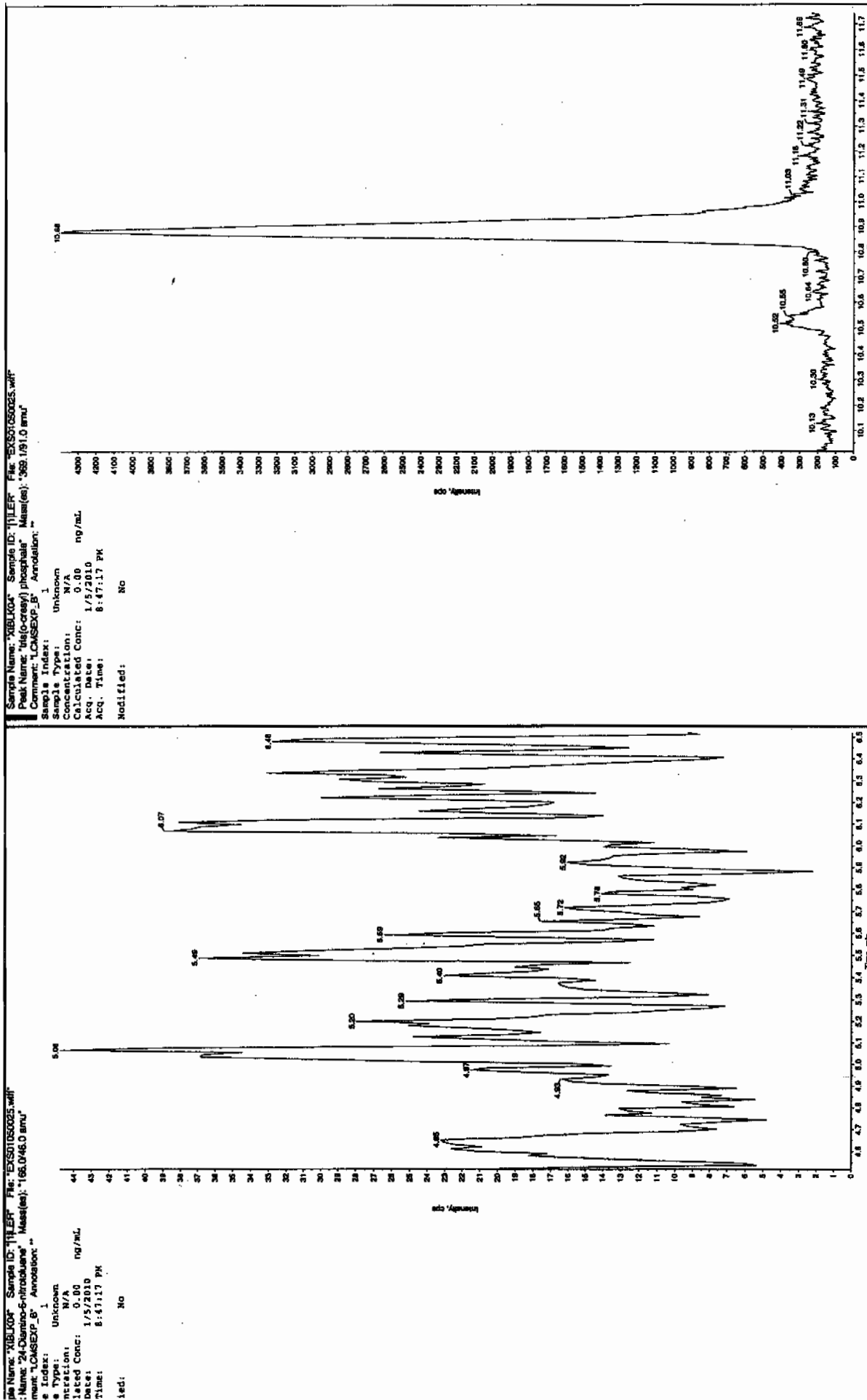
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

Sample Name: "XIBLK04" Sample ID: "11LER" File: "EXS01060025.wiff"  
Peak Name: "2,6-Diamino-4-nitrotoluene" Mass(es): "168.0/48.0 amu"

Comment: "LOMSEXP\_B" Annotation: 1  
Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A  
Calculated Conc: 0.00 ng/ml  
Acq. Date: 1/5/2010  
Acq. Time: 8:47:17 PM  
Modified: No







L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 06-JAN-10 00:11

GEL Data File: EXS01050038.wiff

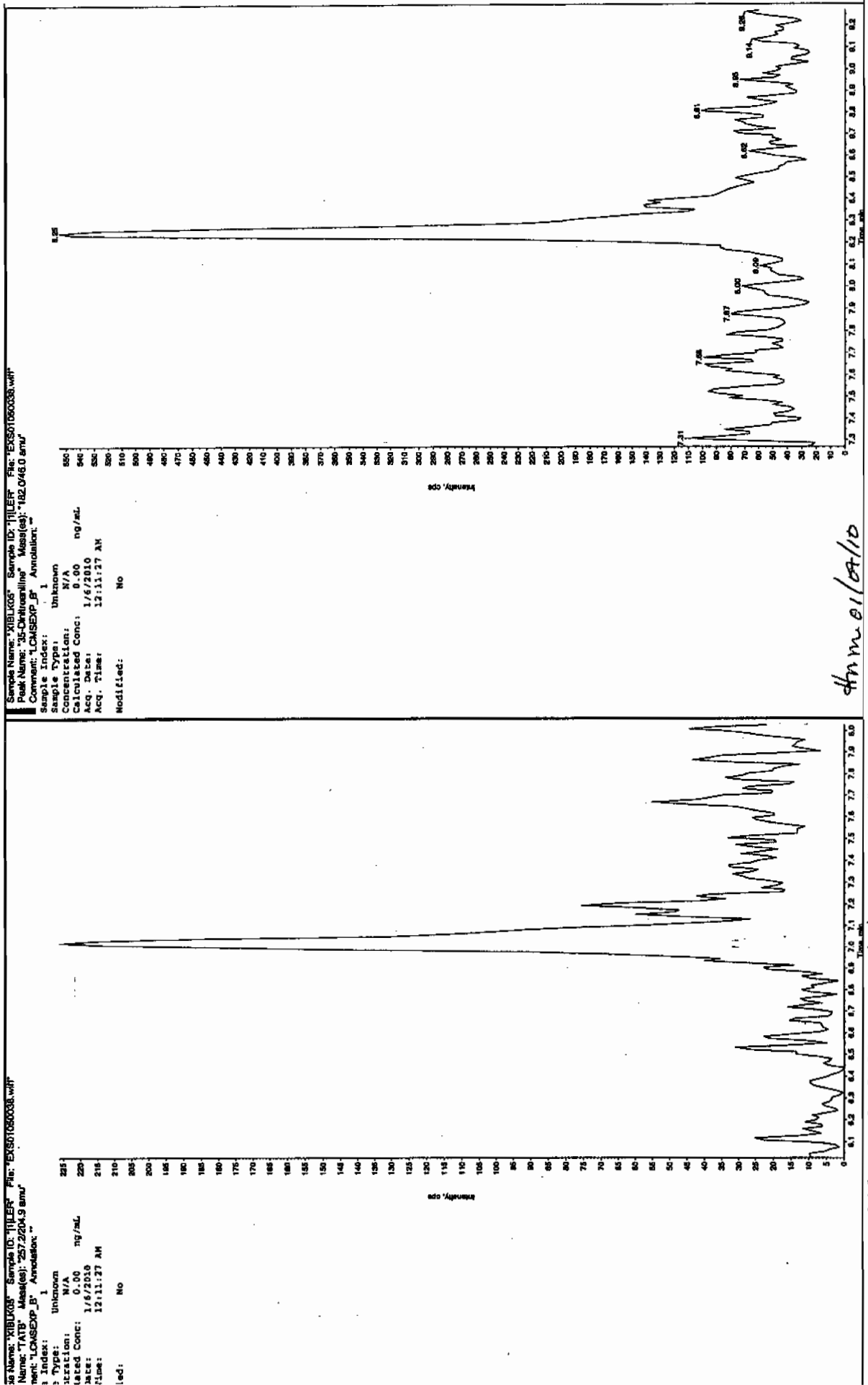
Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0



01/21/10  
2/2/10

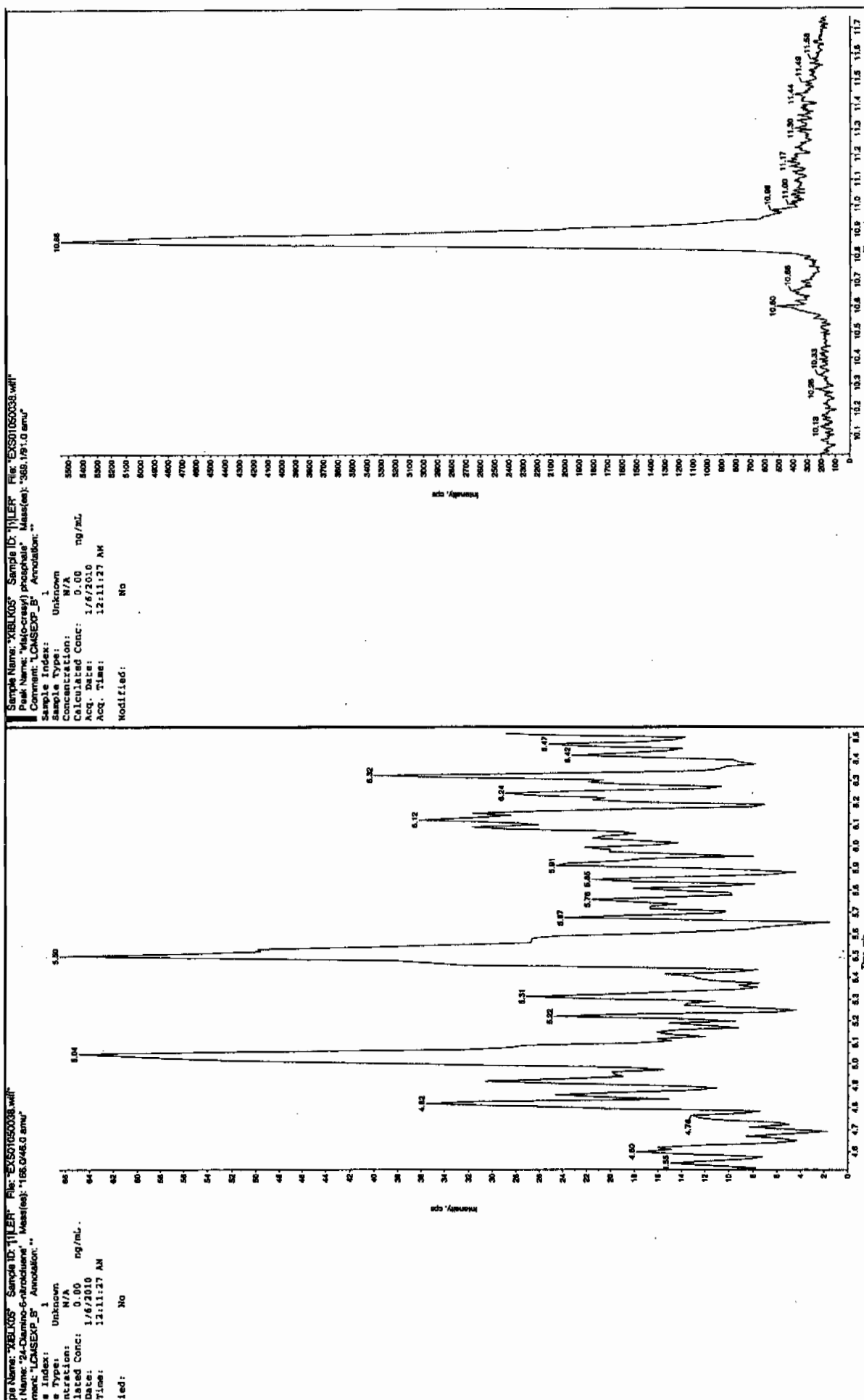


01/21/10









L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 06-JAN-10 03:35

GEL Data File: EXS01050051.wiff

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

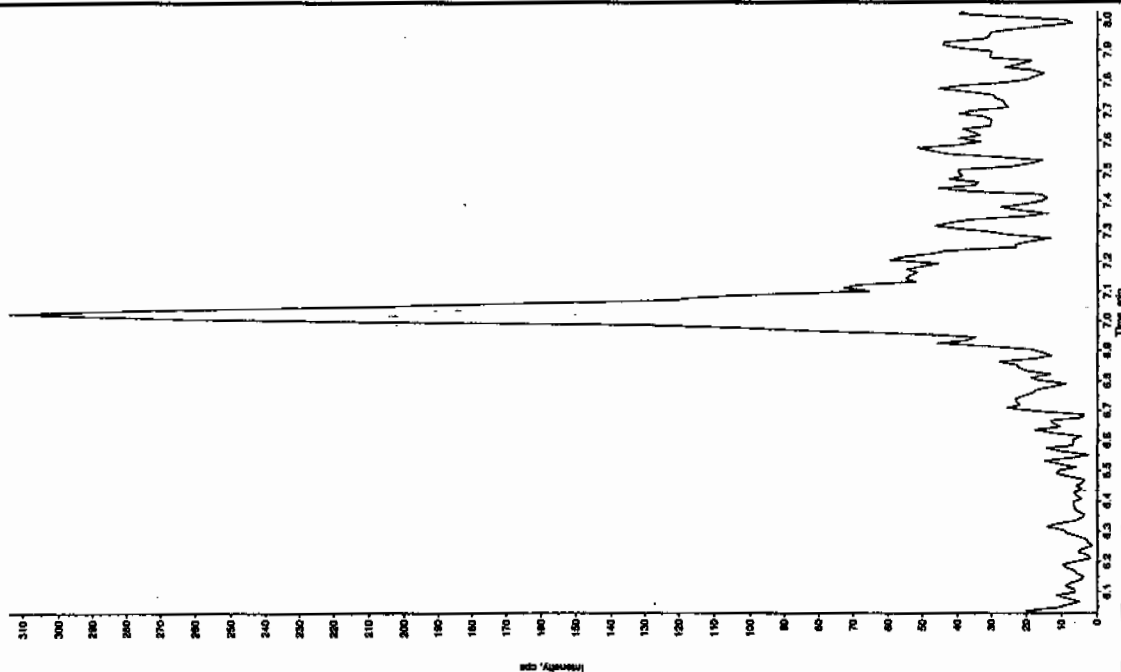
Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0



8/2/10  
JH

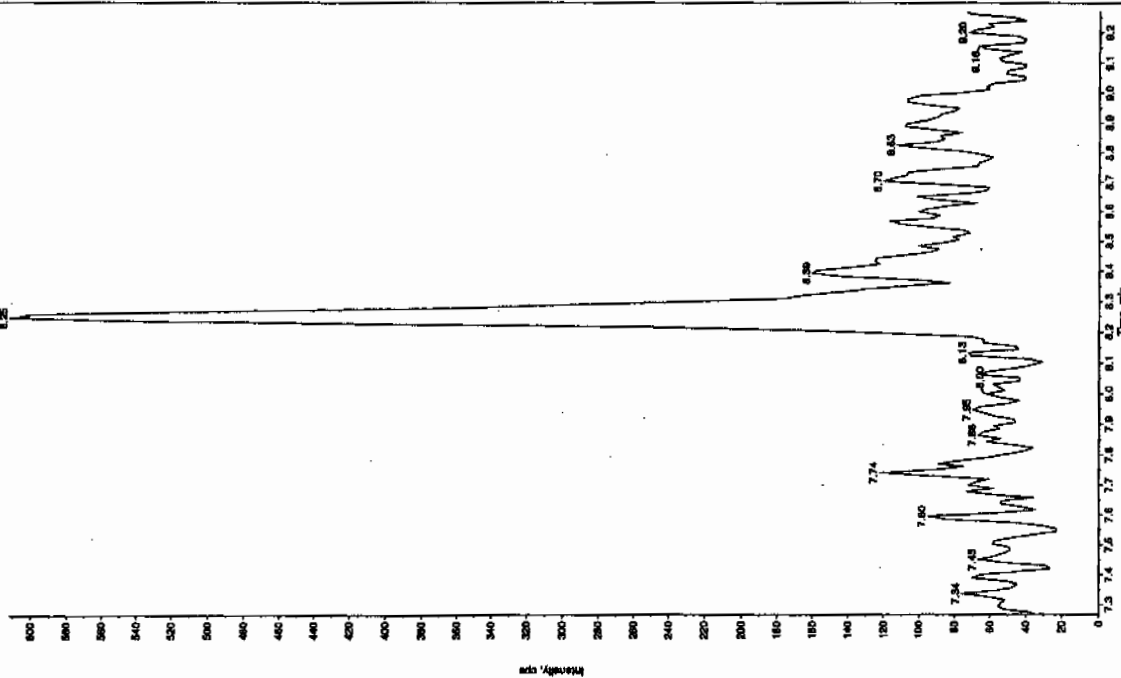
Sample Name: "XIBLK06" Sample ID: "JHLEP" File: "EX501050051.wnt"  
Peak Name: "TATB" Mass(es): "257.2204.9 amu"  
Comment: "LCMSXP\_B" Annotation: ""

Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A ng/mL  
Calculated Conc: 0.00  
Acq. Date: 1/6/2010  
Acq. Time: 3:35:40 AM  
Modified: No



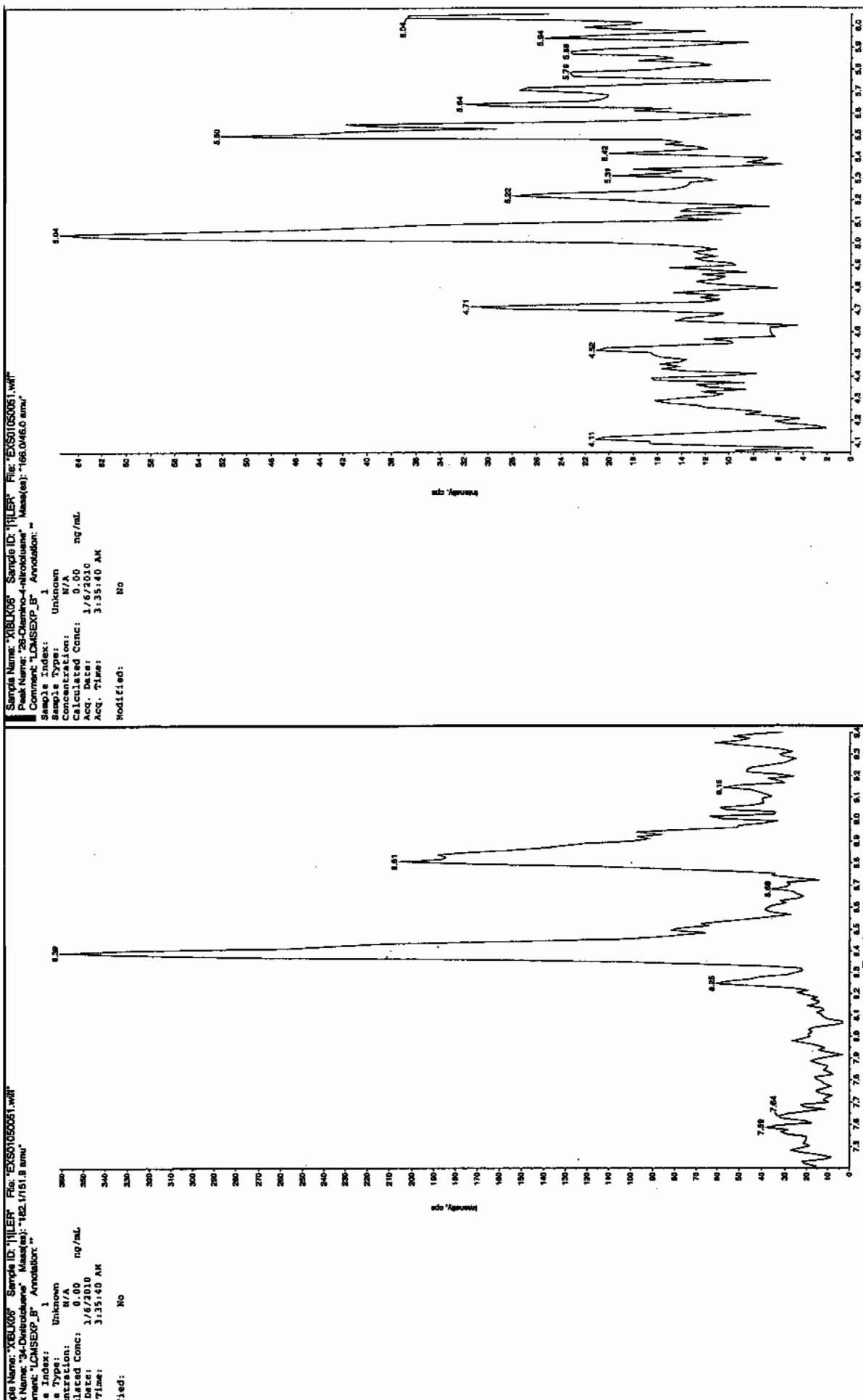
Sample Name: "XIBLK06" Sample ID: "JHLEP" File: "EX501050051.wnt"  
Peak Name: "35-Chloroanthracene" Mass(es): "182.046.0 amu"  
Comment: "LCMSXP\_B" Annotation: ""

Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A ng/mL  
Calculated Conc: 0.00  
Acq. Date: 1/6/2010  
Acq. Time: 3:35:40 AM  
Modified: No



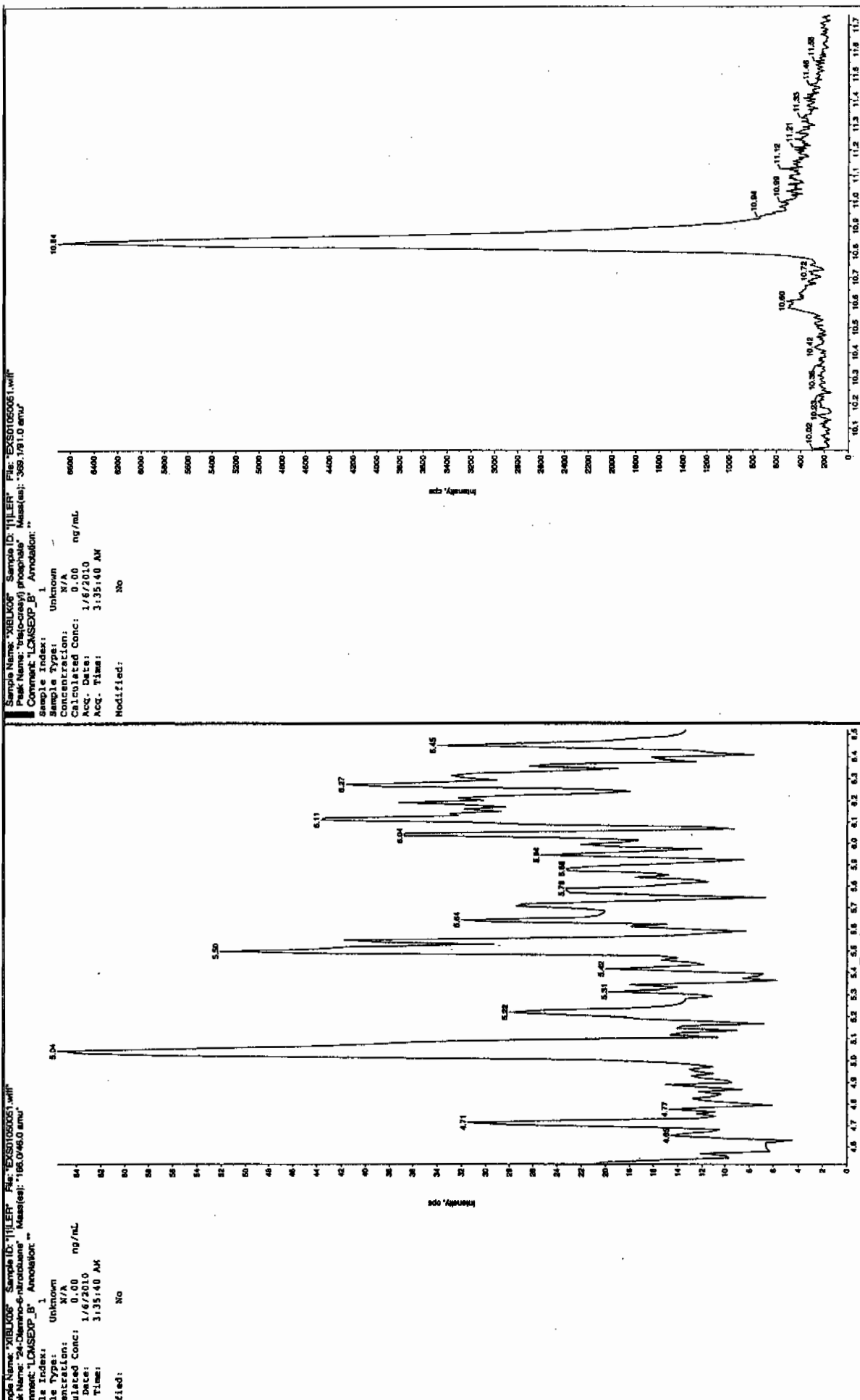
Time 01/06/10





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 06-JAN-10 06:59

GEL Data File: EXS01050064.wiff

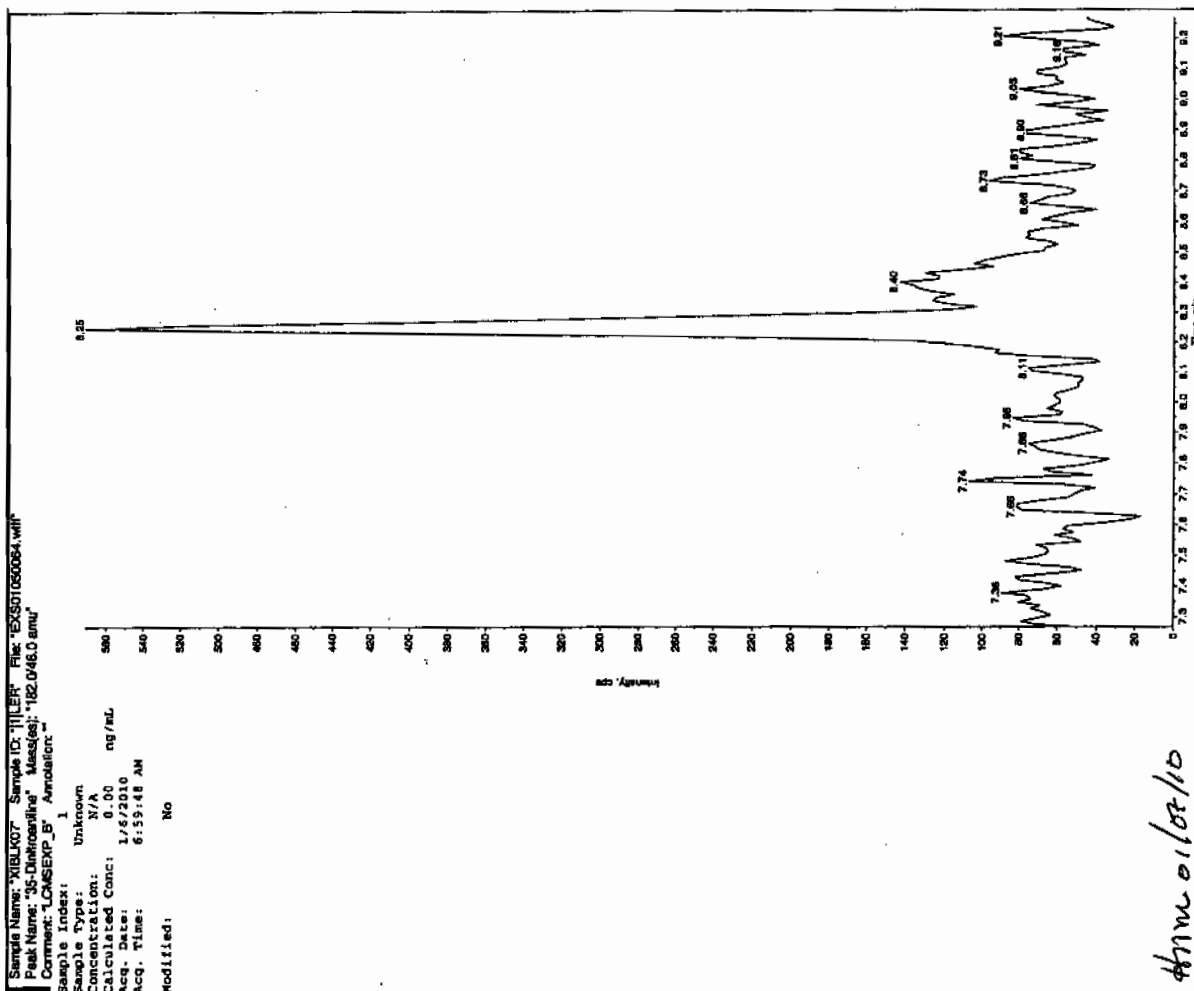
Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

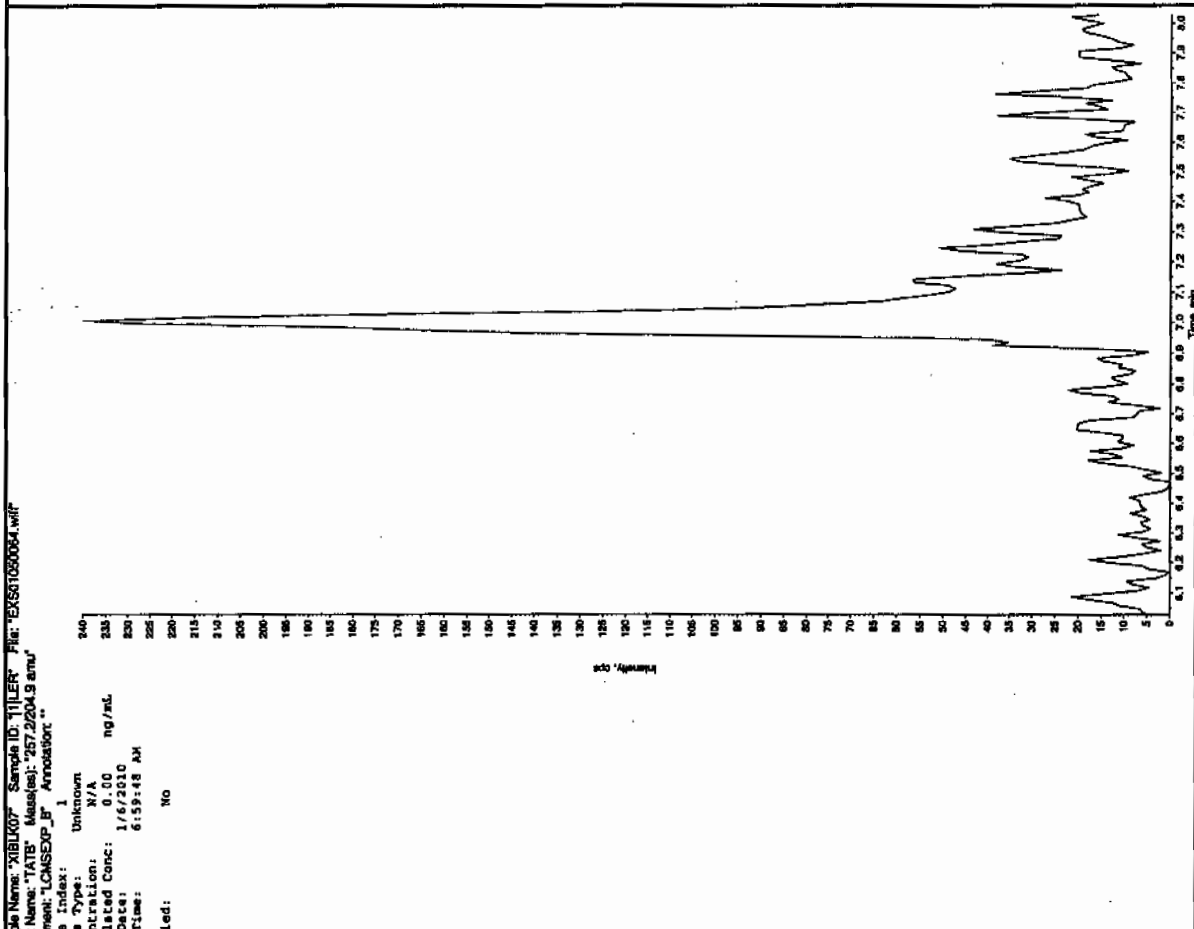
Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0



11/2/10  
JMS



Time 01/02/10

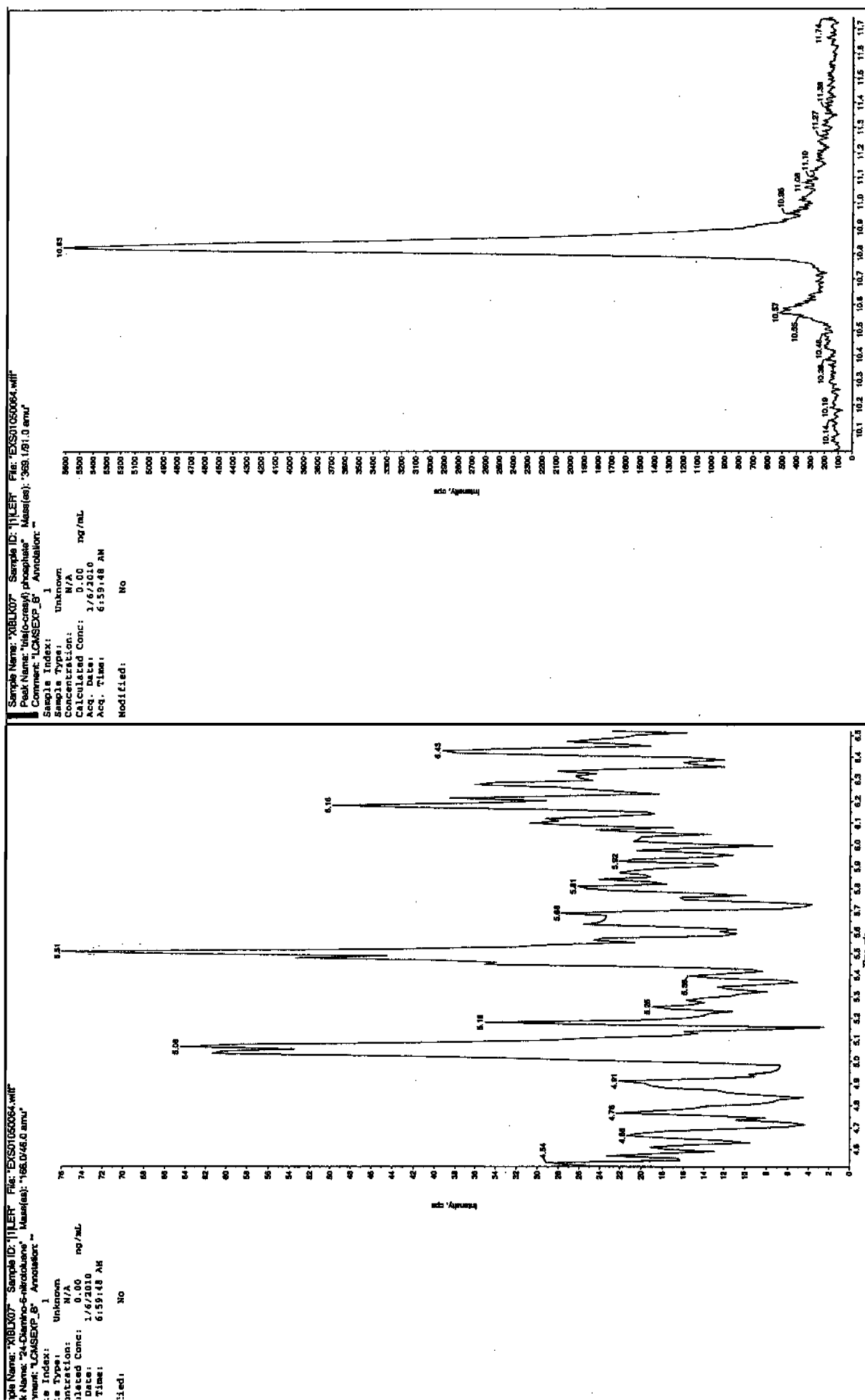


L SOP GL-CA-E-056, Method 8321A-Modified LCMSMS#4









LC SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 06-JAN-10 08:02

GEL Data File: EXS01050068.wiff

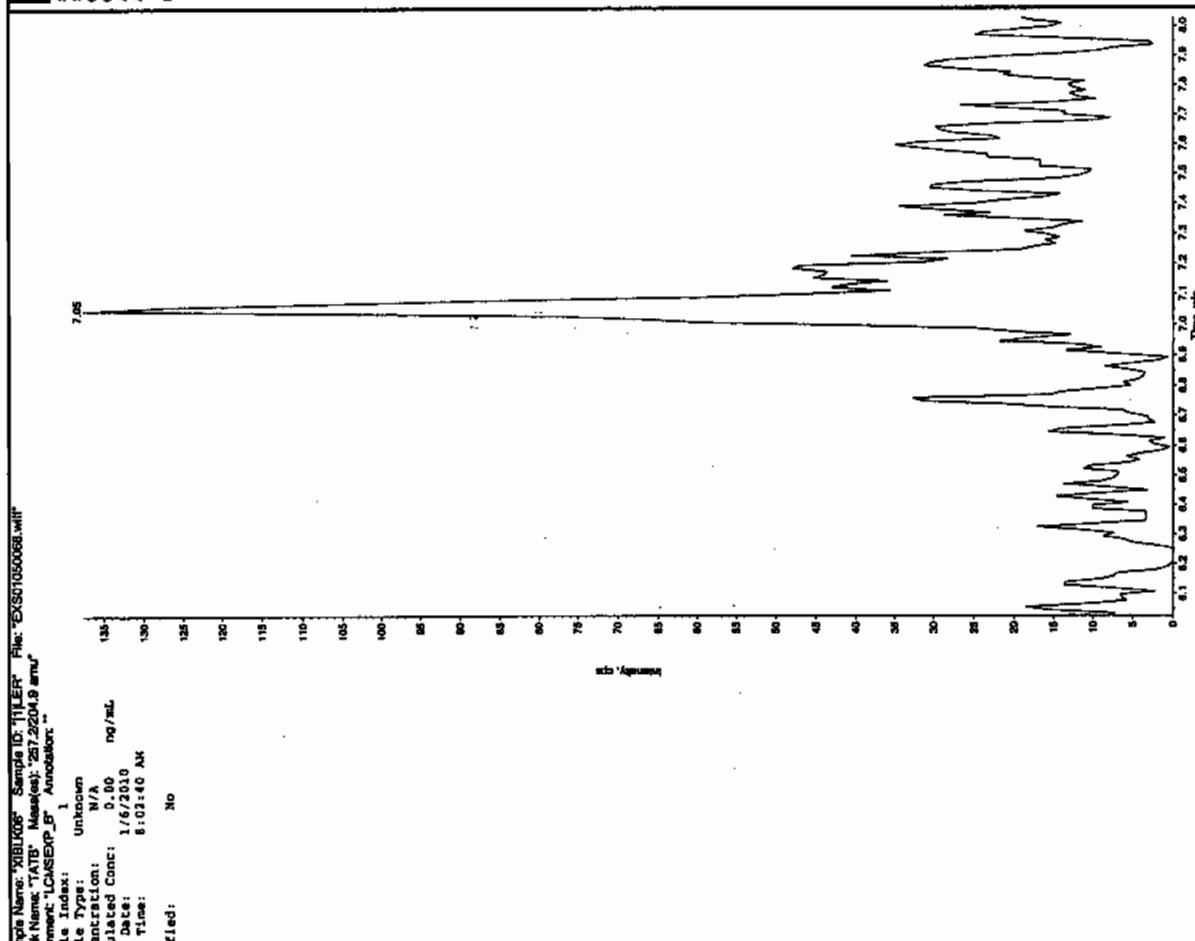
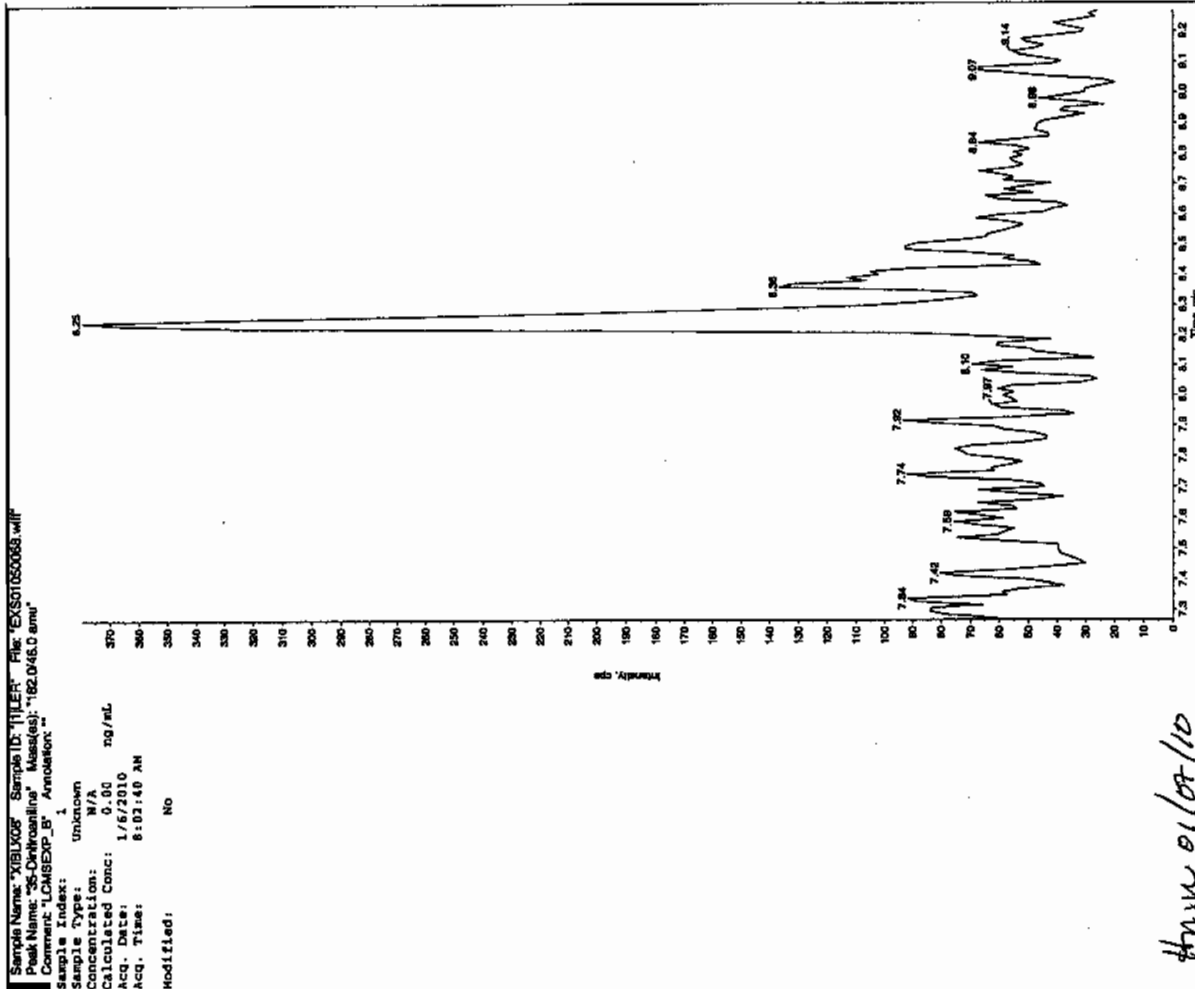
Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0



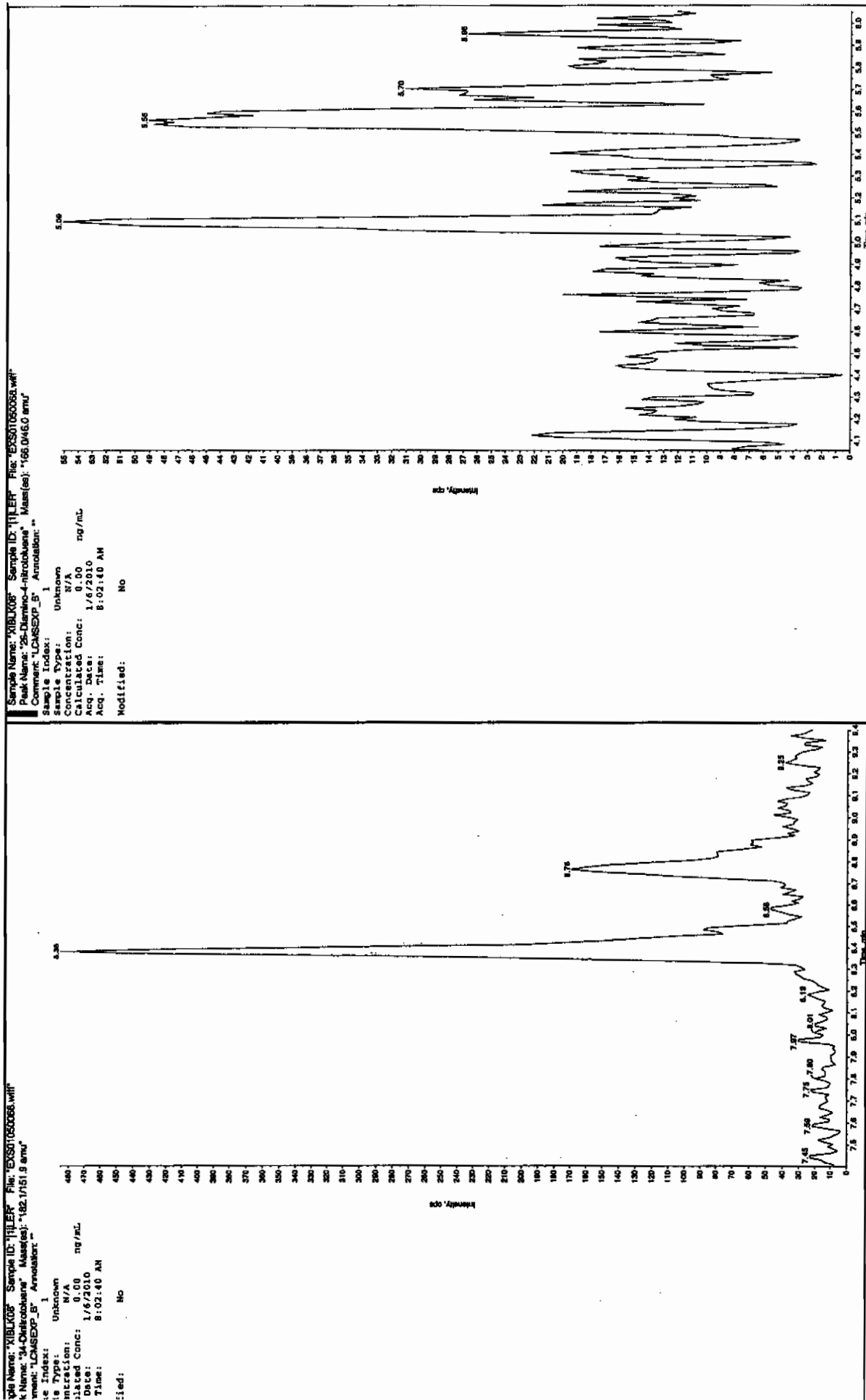
01/10  
2010



01/08/10

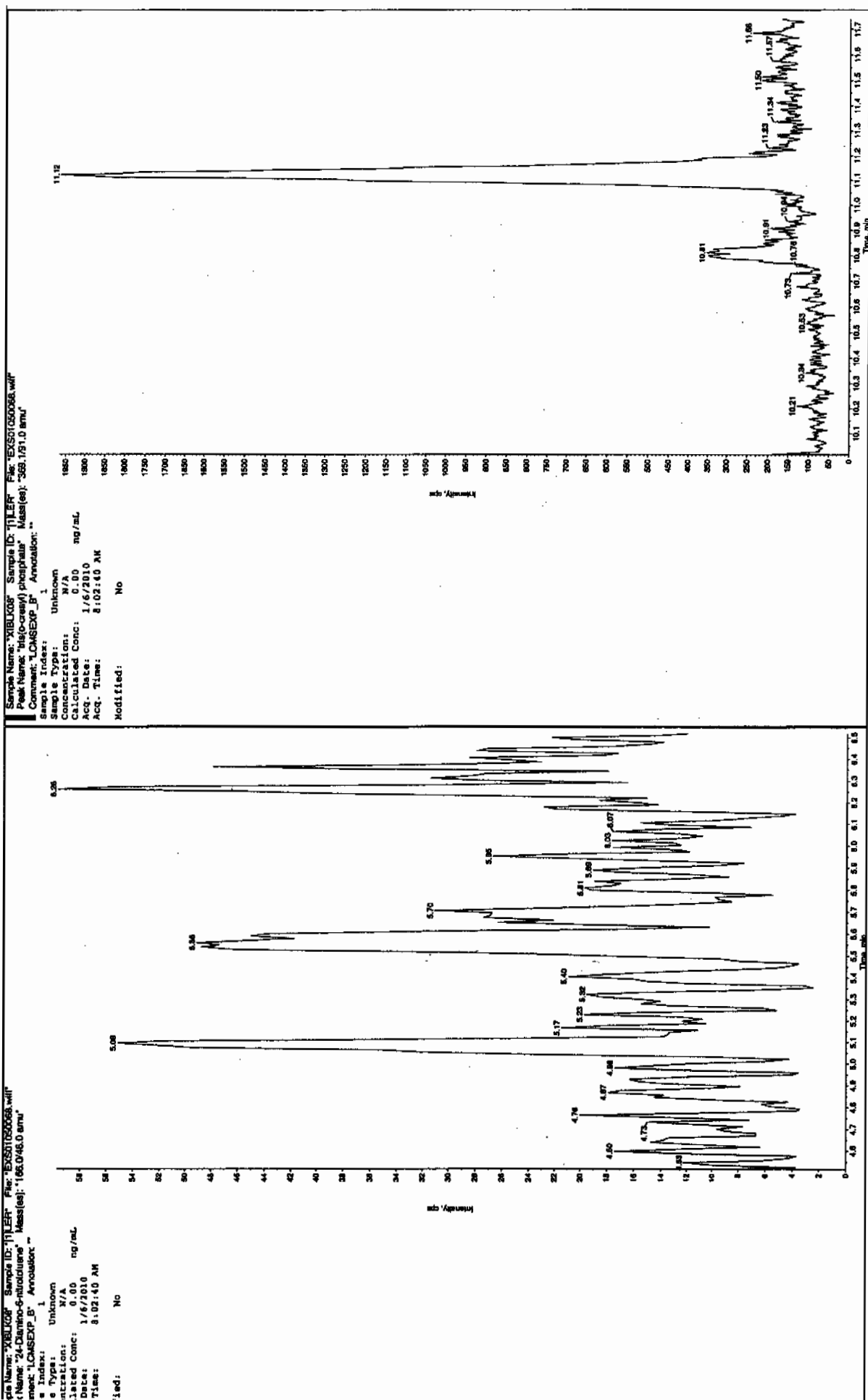
IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





XL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4







4A  
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 06-JAN-10 08:49

GEL Data File: EXS01050071.wiff

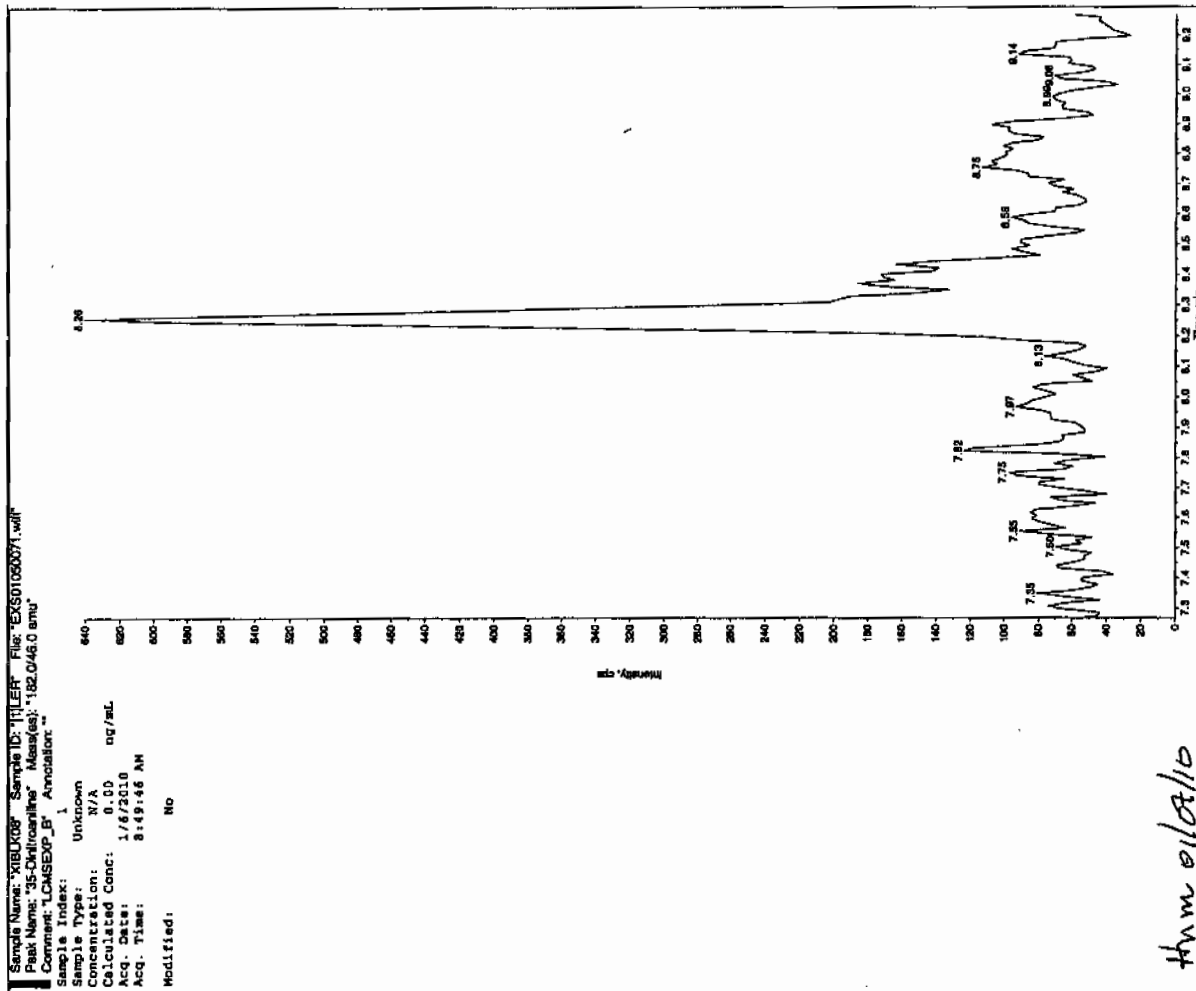
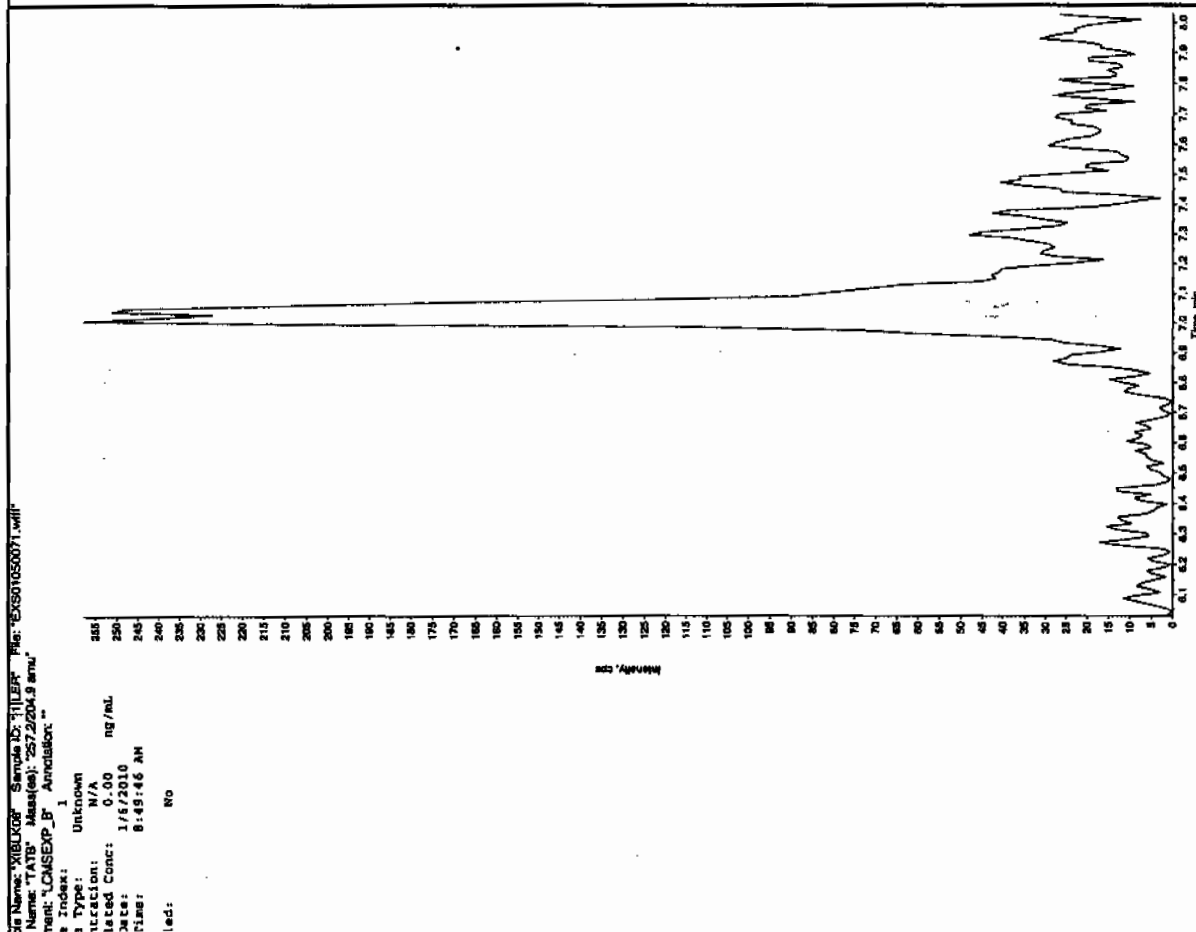
Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0
3,4-Dinitrotoluene	0	0



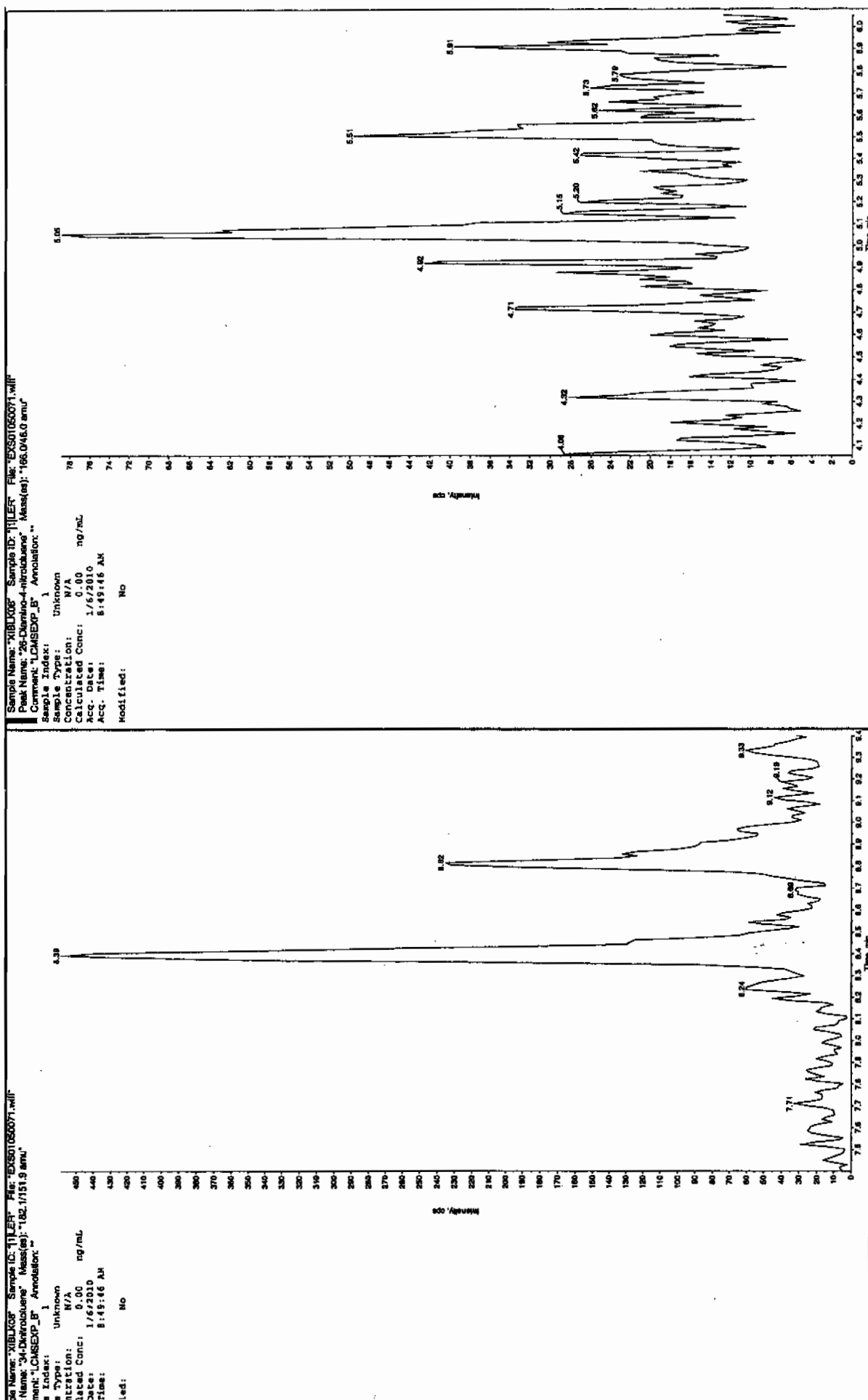
01/11/10  
JGK



thm 01/08/10

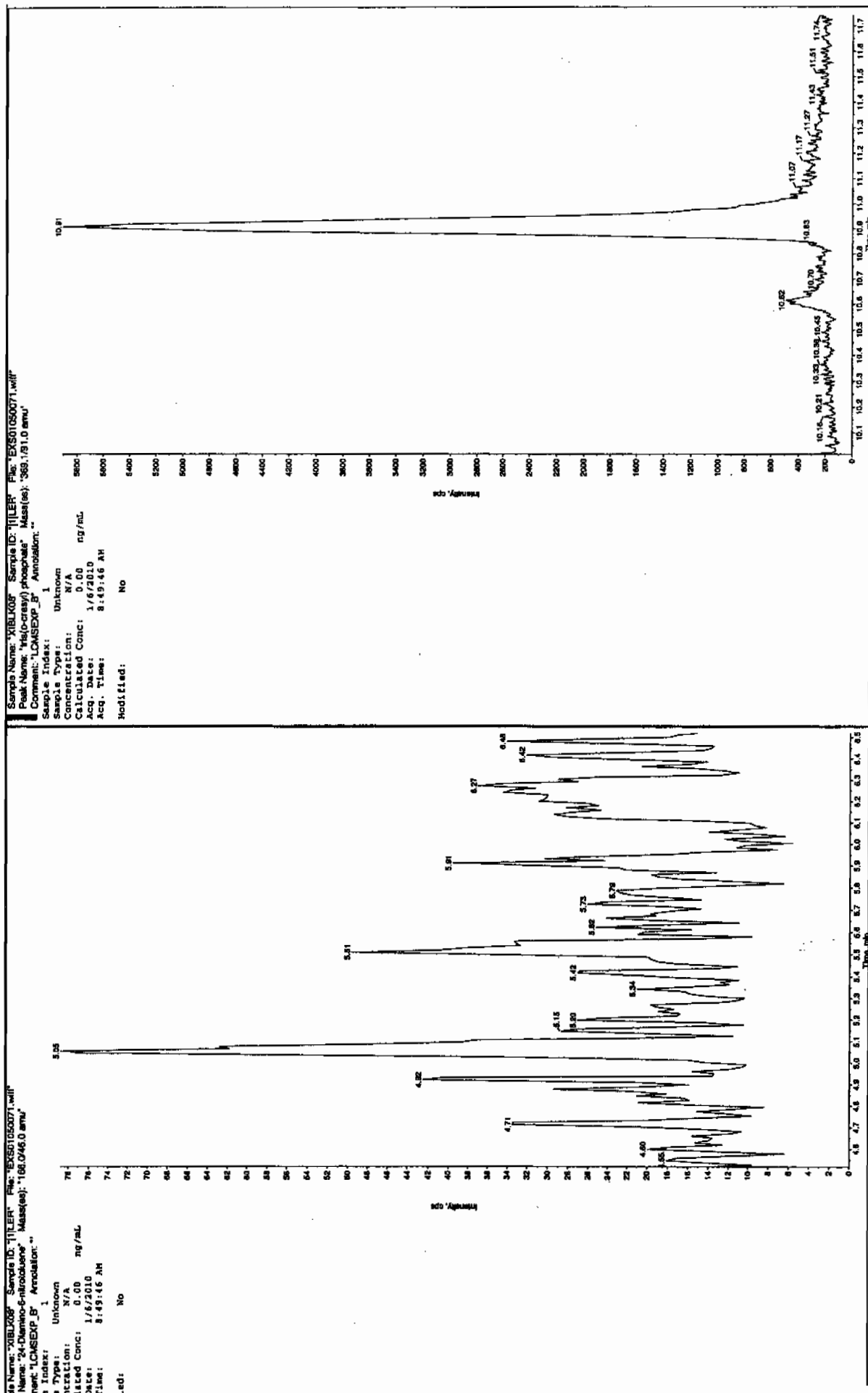
SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1038

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 06-JAN-10 12:13

GEL Data File: EXS01050084.wiff

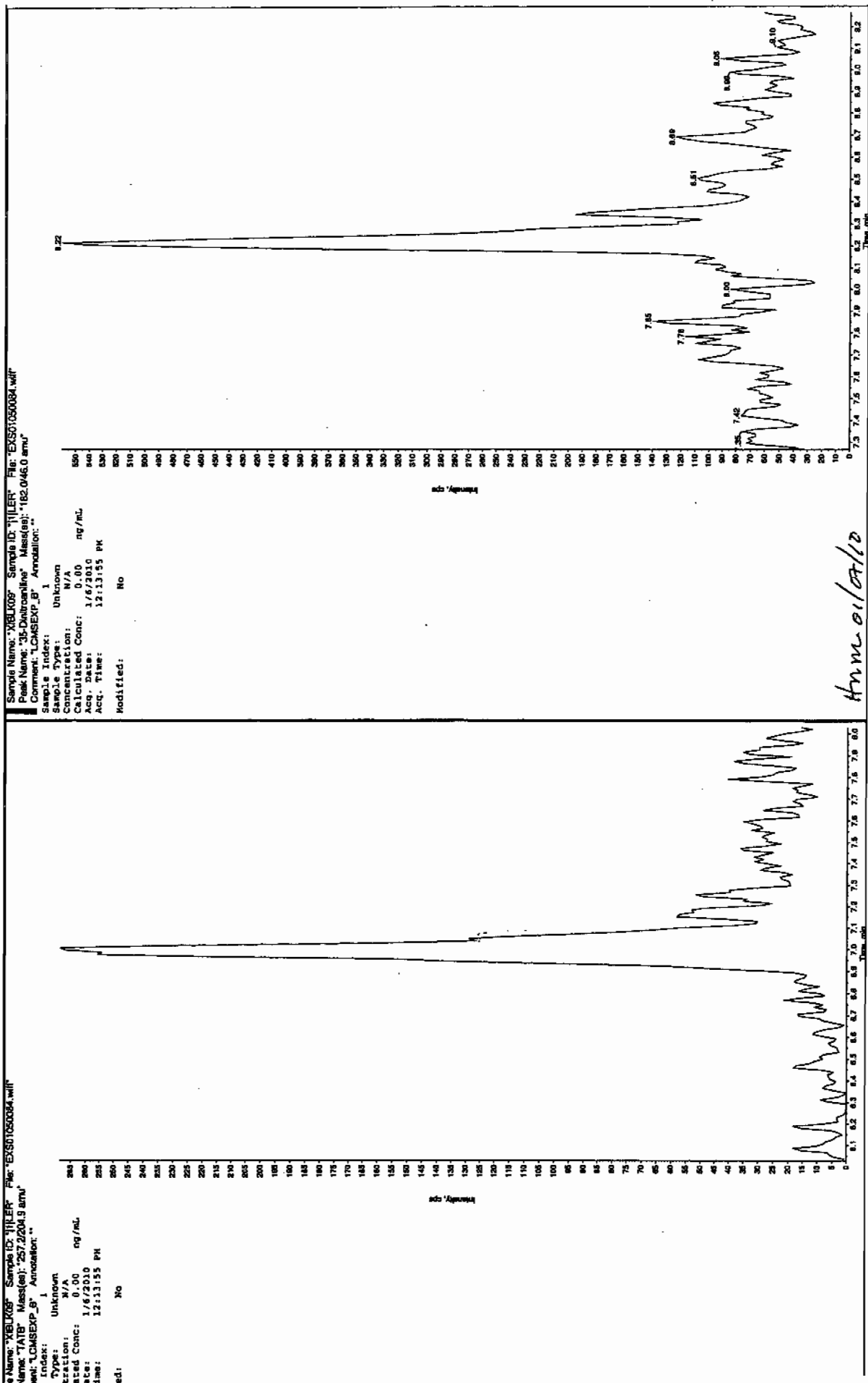
Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	0
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

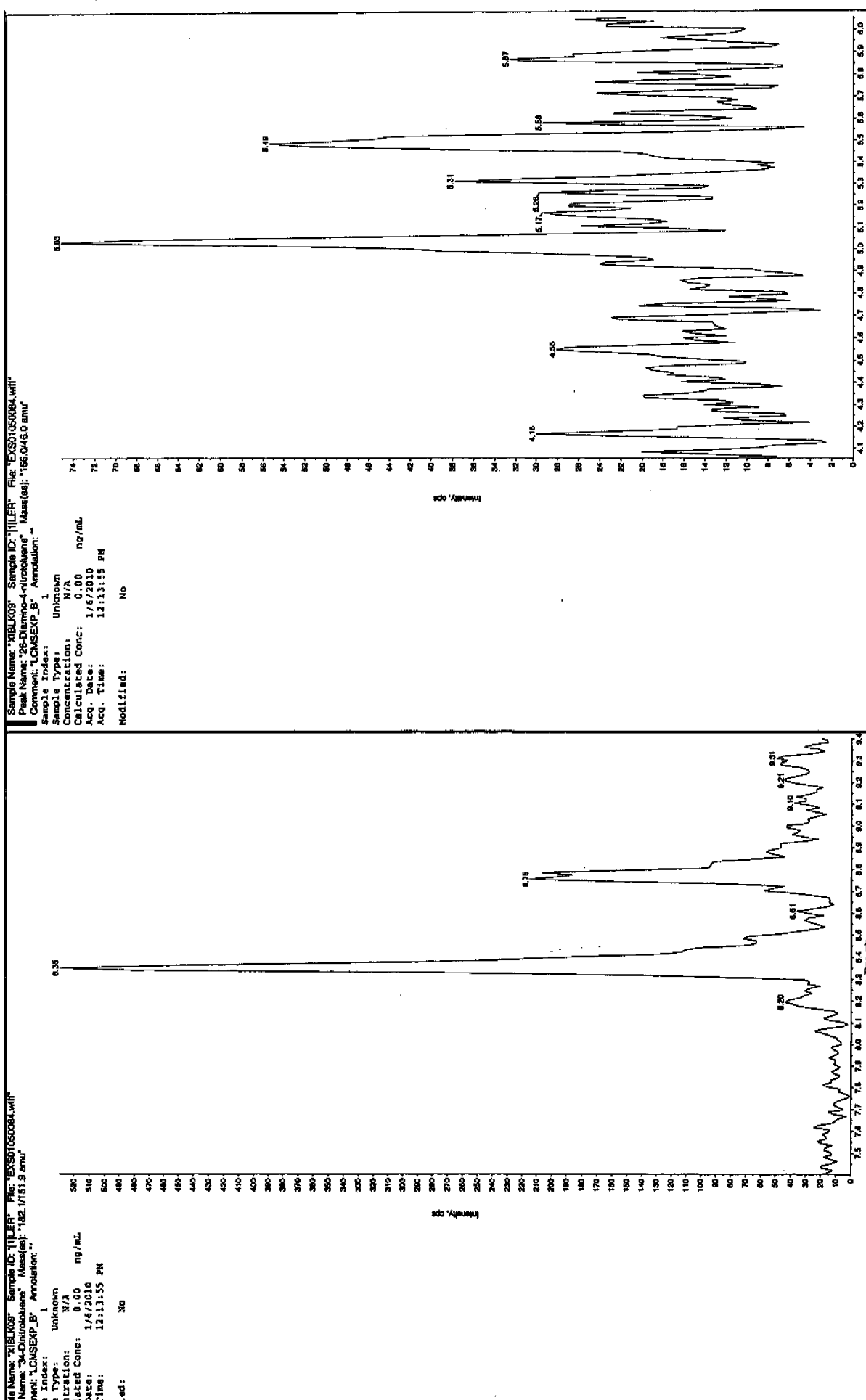


01/11/10  
Hm



SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4







Nairb.ref

;Positive ion monoisotopic and average masses from solution  
 ;of NaI/Rbi (2.0/0.05ug/ul) in 50/20 2-propanol/H2O.  
 ;Most useful general purpose calibrant for all low  
 ;MW applications, including MS/MS work.  
 ;At high resolution, readily covers from m/z 50-2000.  
 ;At reduced resolution, can be used to over m/z 3000.  
 ;NOT RECOMMENDED FOR PROTEIN WORK. USE MYO, MYOTRP or TRP.  
 Updated 20 April '95

22.9898	100
84.9118	100
172.8840	100
322.7782	100
472.6725	100
622.5667	100
772.4610	100
922.3552	100
1072.2494	100
; 1222.1437	100
; 1372.0379	100
; 1521.9321	100
; 1671.8264	100
; 1821.7206	100
; 1971.6149	100
; 2121.5091	100
; 2271.4033	100
; 2421.2976	100
; 2571.1918	100
; 2721.0861	100
; 2870.9803	100
; 3020.8745	100
; 3170.7688	100
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; 3620.4515	100
; 3770.3457	100
; 3920.2400	100



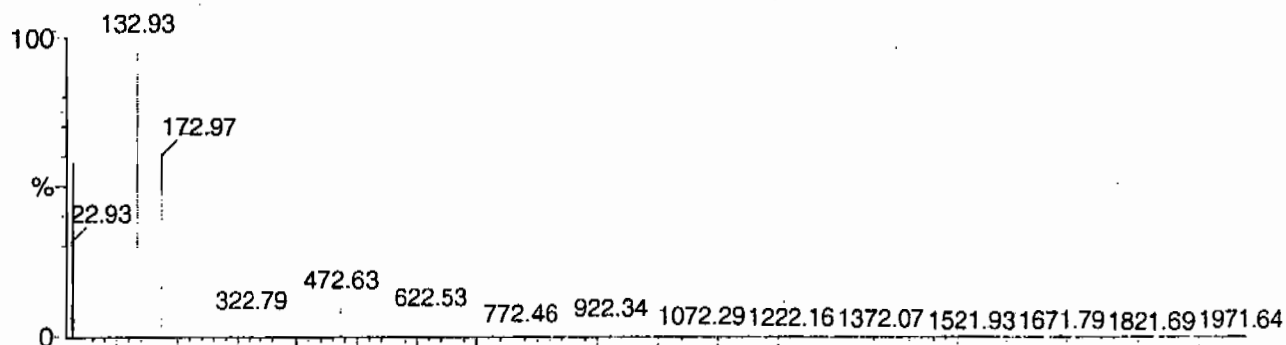
Calibration Report - MS1 Static

Page 1 of 1

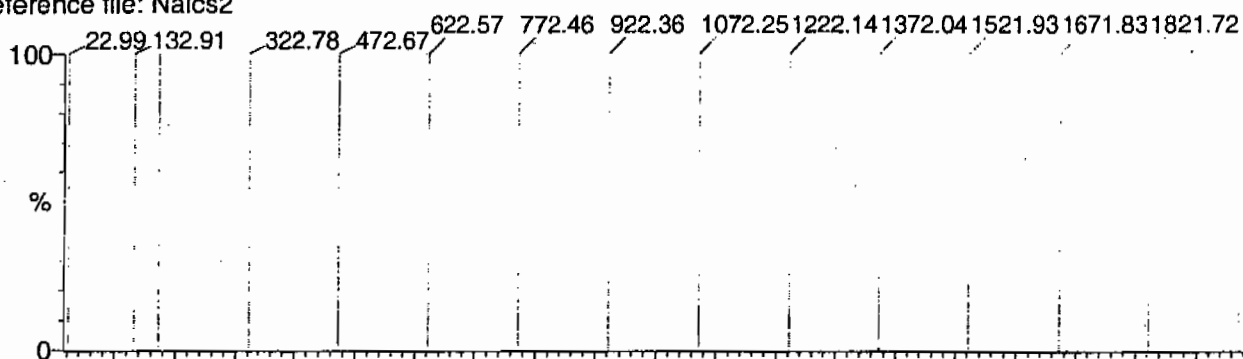
Printed: Fri Aug 25 10:50:01 2006

Data file: STATMS1 - Calibrated

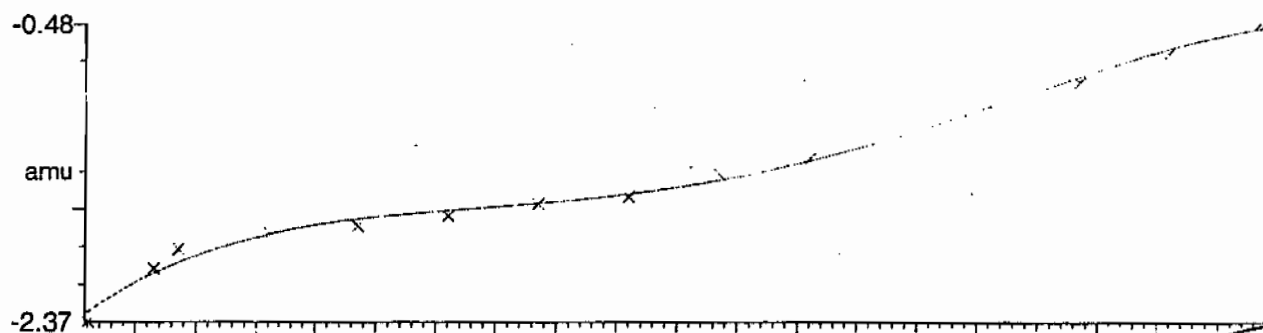
15 matches of 15 tested references



Reference file: Naics2

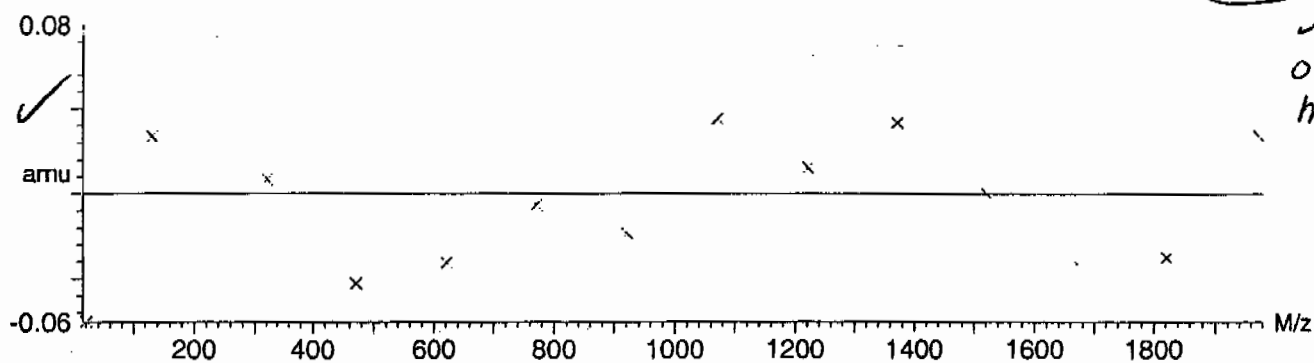


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $-1.673470 \times 10^{-9} \pm 0.036953$





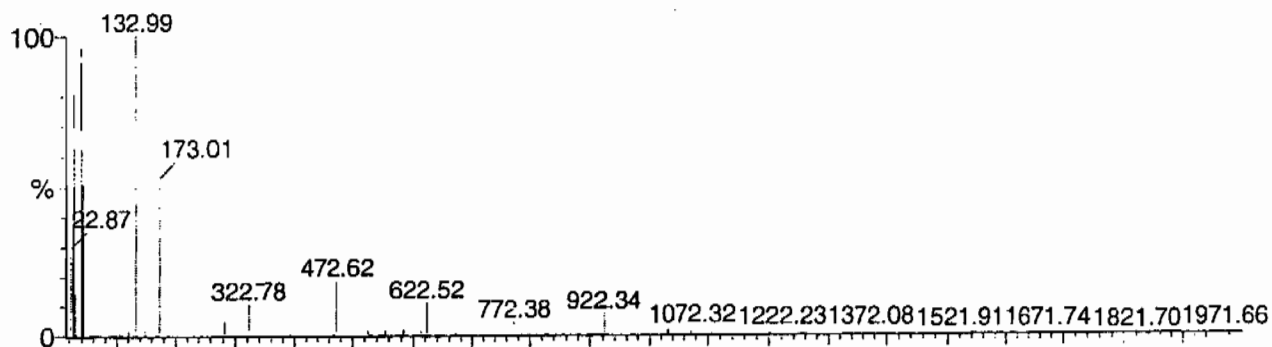
Calibration Report - MS1 Scanning

Page 1 of 1

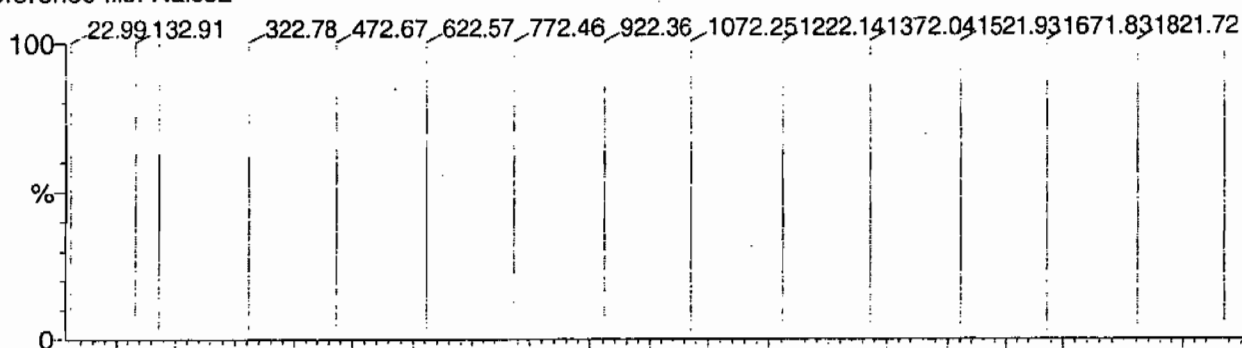
Printed: Fri Aug 25 10:51:06 2006

Data file: SCNMS1 - Calibrated

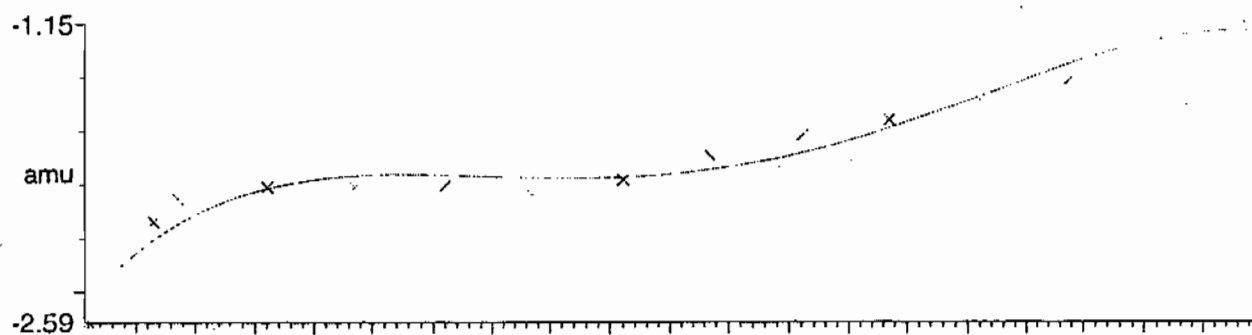
15 matches of 15 tested references



Reference file: Naics2

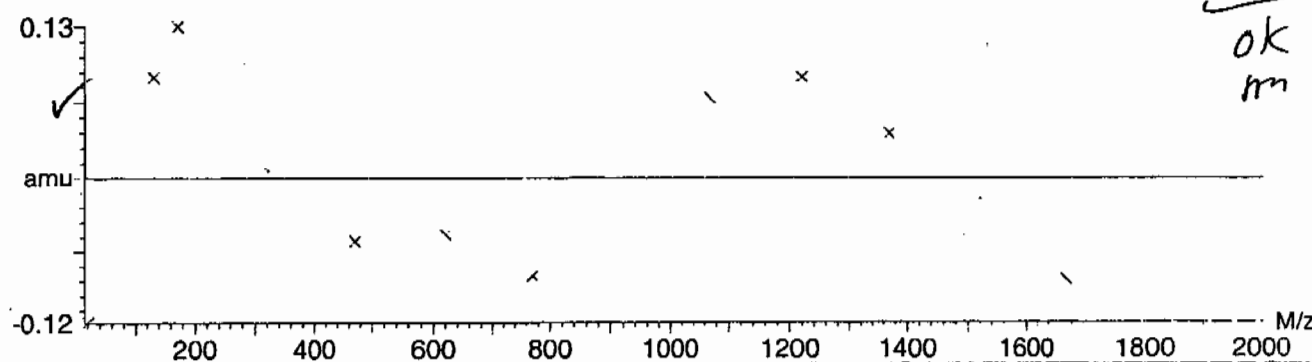


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $-5.432715e-9 \pm 0.069858$





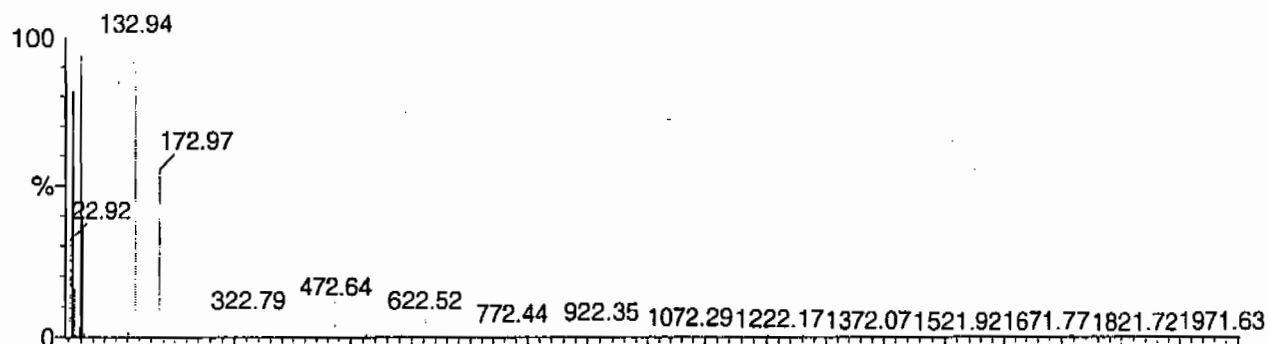
Calibration Report - MS1 Scan Speed Compensation

Page 1 of 1

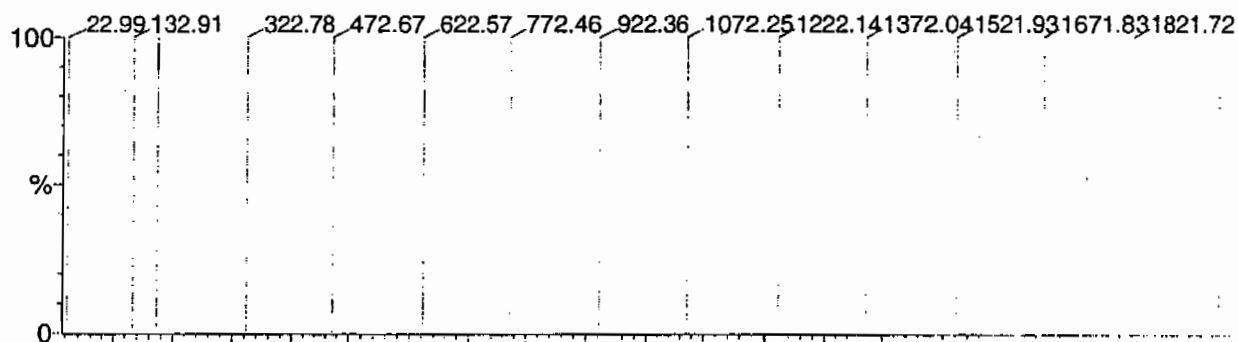
Printed: Fri Aug 25 10:52:01 2006

Data file: FASTMS1 - Calibrated

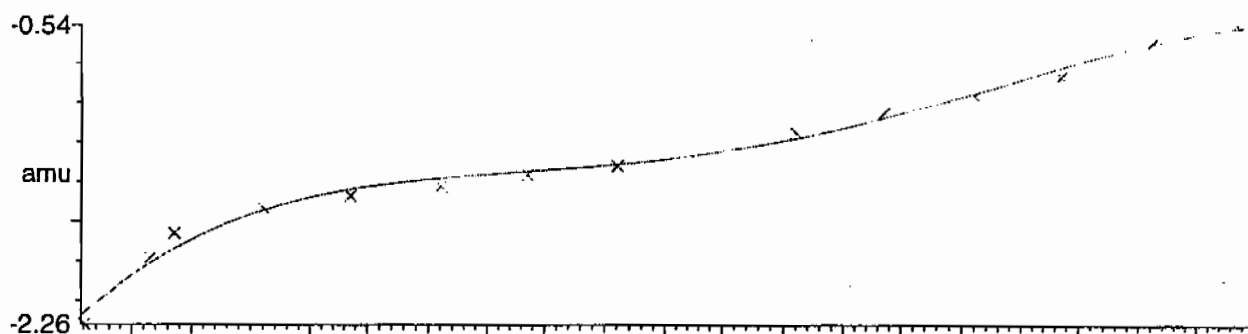
15 matches of 15 tested references



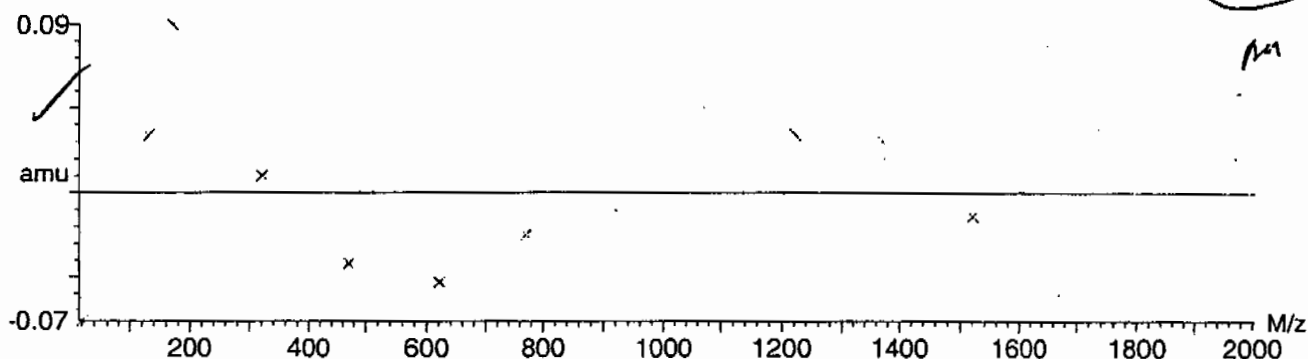
Reference file: Naics2



Mass difference (Raw - Ref mass)



Residuals



Mean residual =  $3.486639 \times 10^{-9} \pm 0.040487$



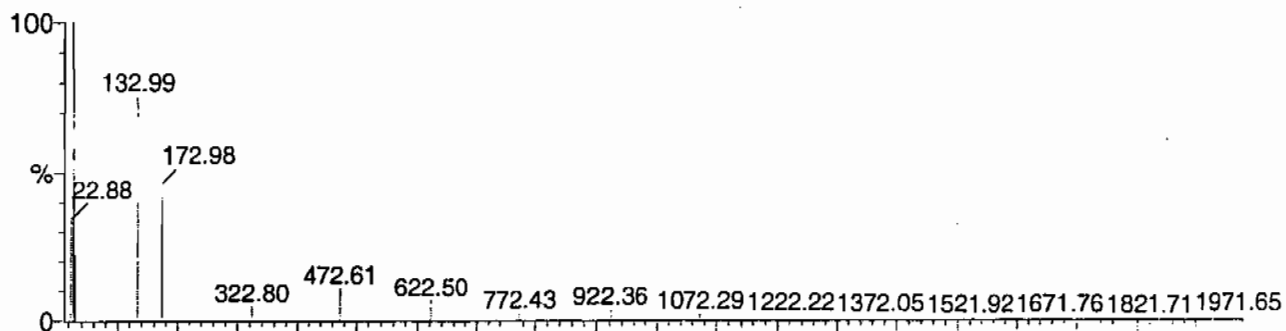
Calibration Report - MS2 Static

Page 1 of 1

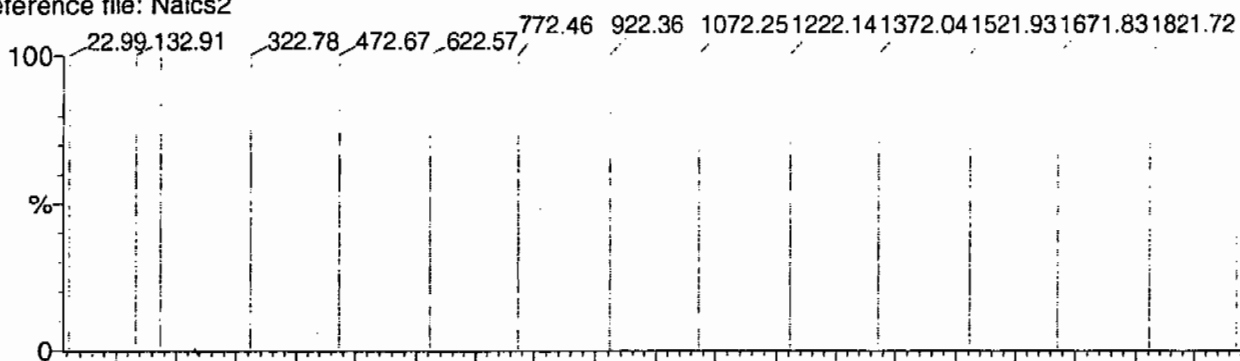
Printed: Fri Aug 25 10:52:54 2006

Data file: STATMS2 - Calibrated

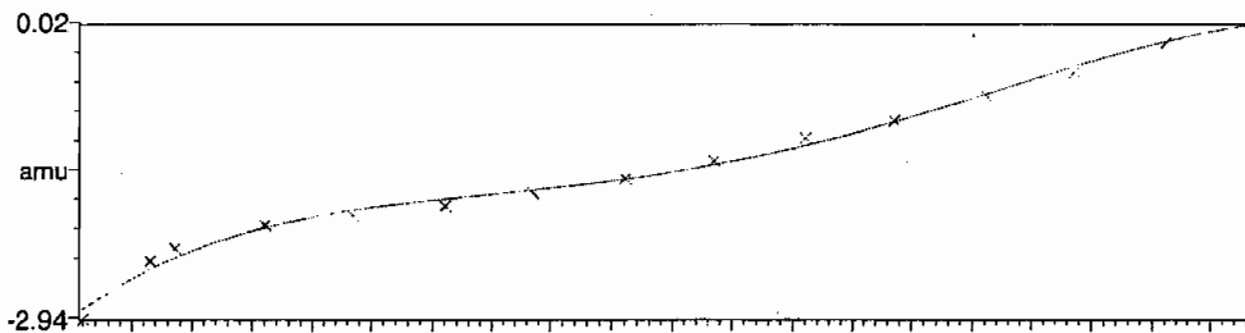
15 matches of 15 tested references



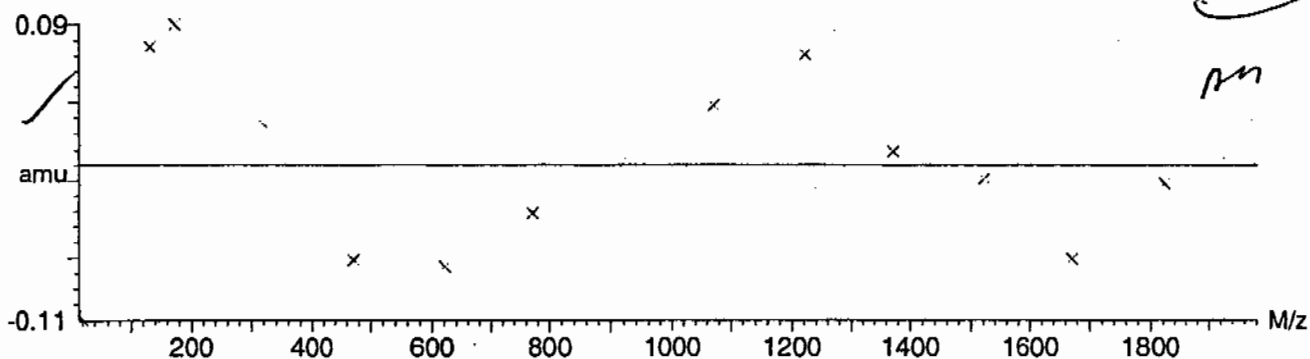
Reference file: Naics2



Mass difference (Raw - Ref mass)



Residuals





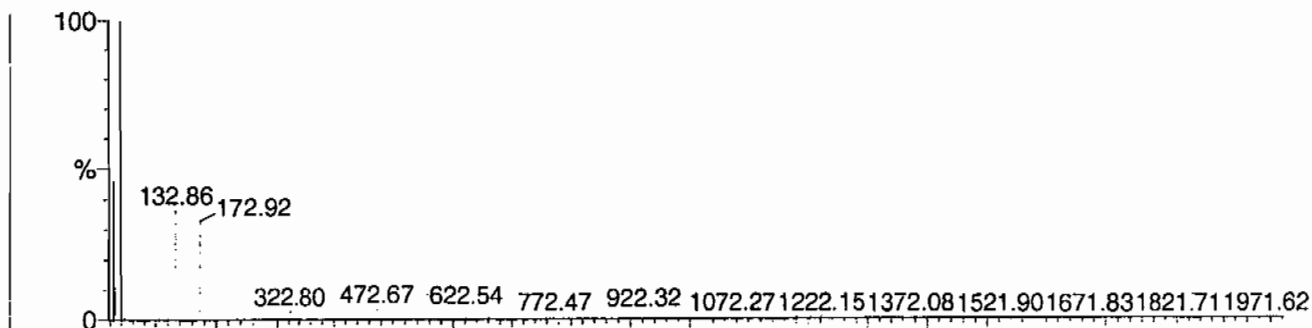
Calibration Report - MS2 Scanning

Page 1 of 1

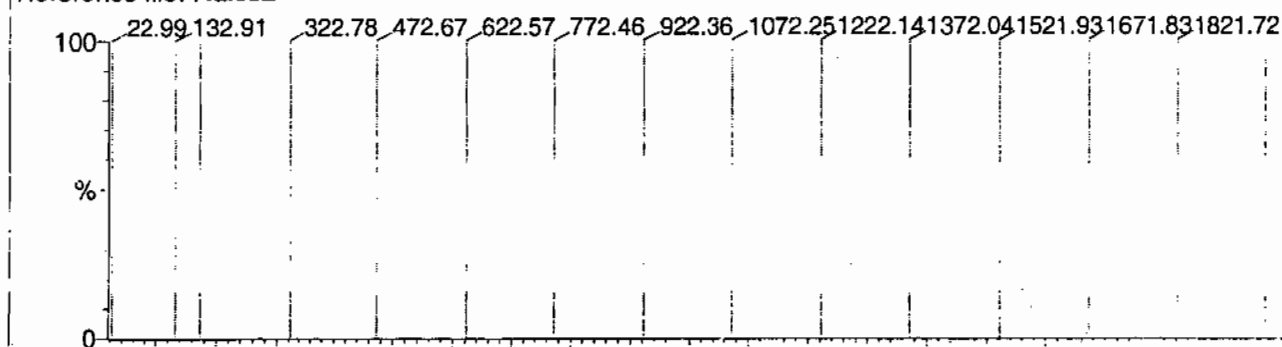
Printed: Fri Aug 25 10:54:00 2006

Data file: SCNMS2 - Calibrated

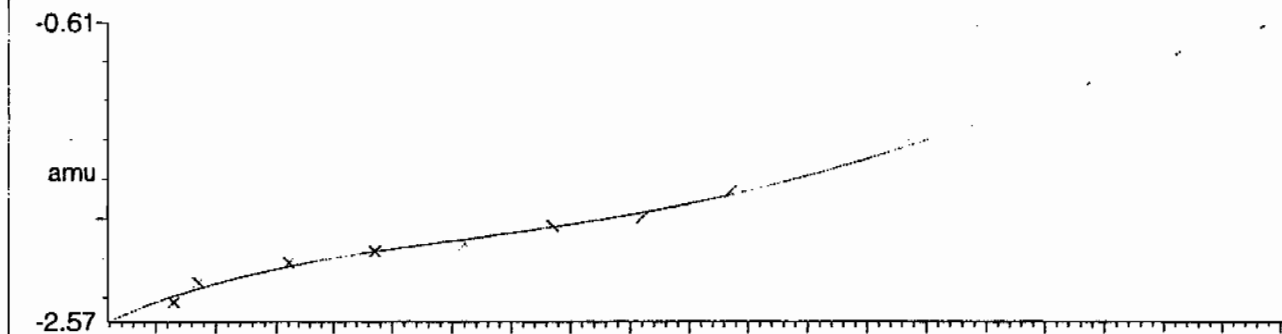
14 matches of 15 tested references



Reference file: Naics2

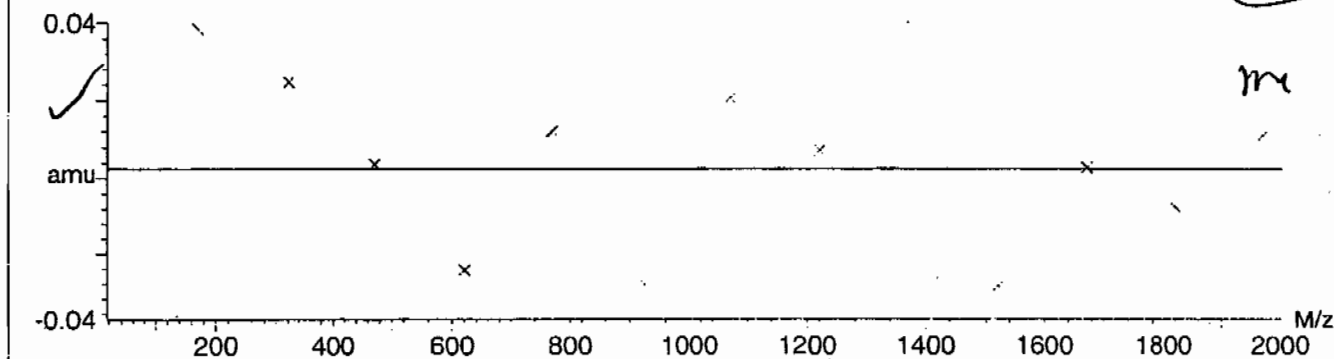


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $-2.623502 \times 10^{-9} \pm 0.025622$





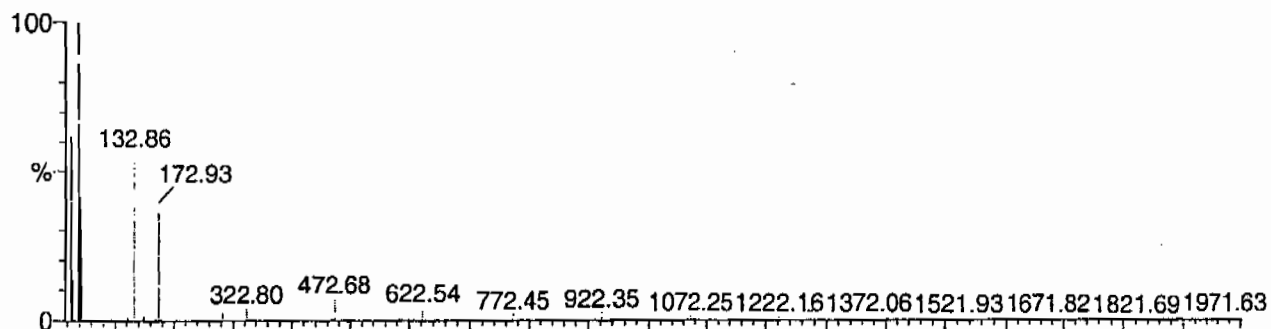
Calibration Report - MS2 Scan Speed Compensation

Page 1 of 1

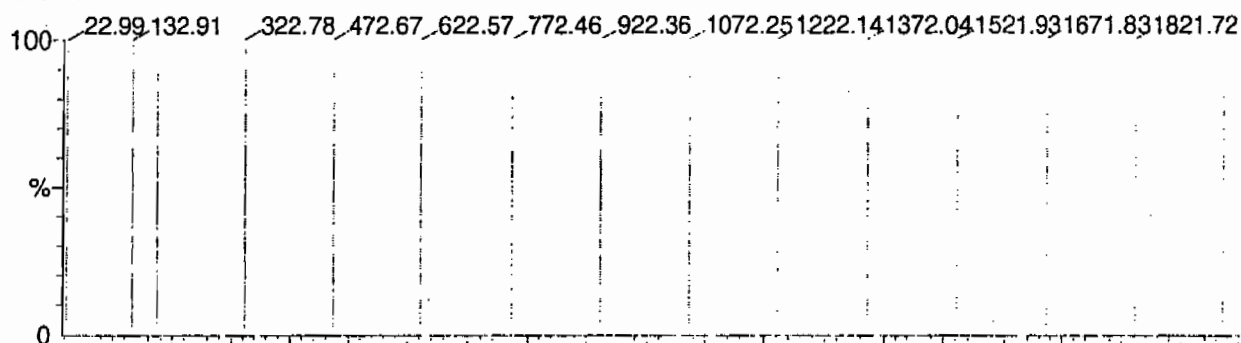
Printed: Fri Aug 25 10:54:54 2006

Data file: FASTMS2 - Calibrated

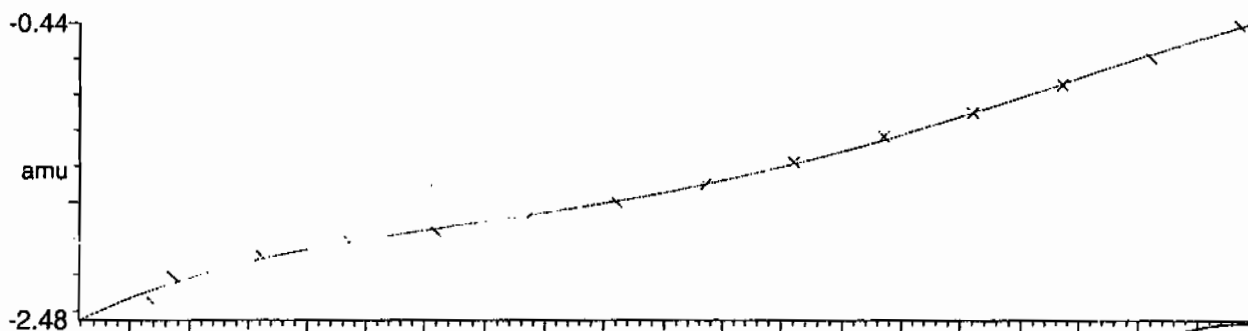
14 matches of 15 tested references



Reference file: Naics2

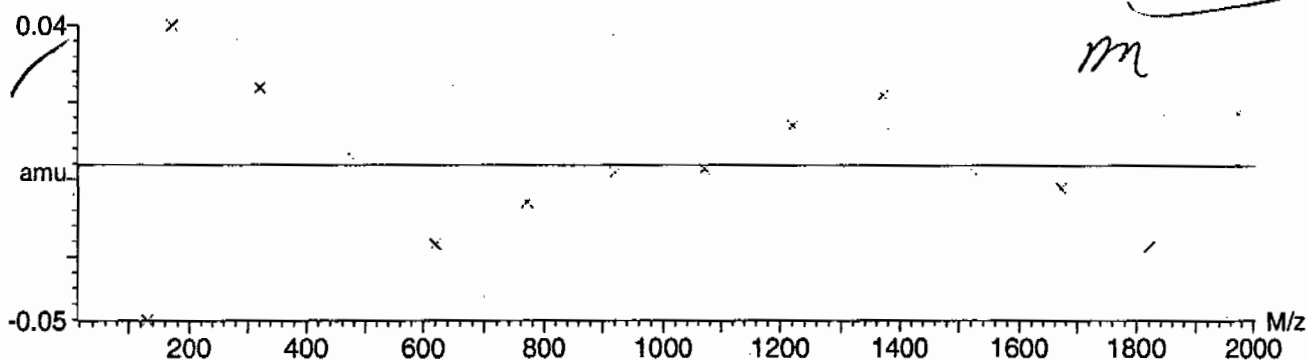


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $-6.785350 \times 10^{-9} \pm 0.023134$



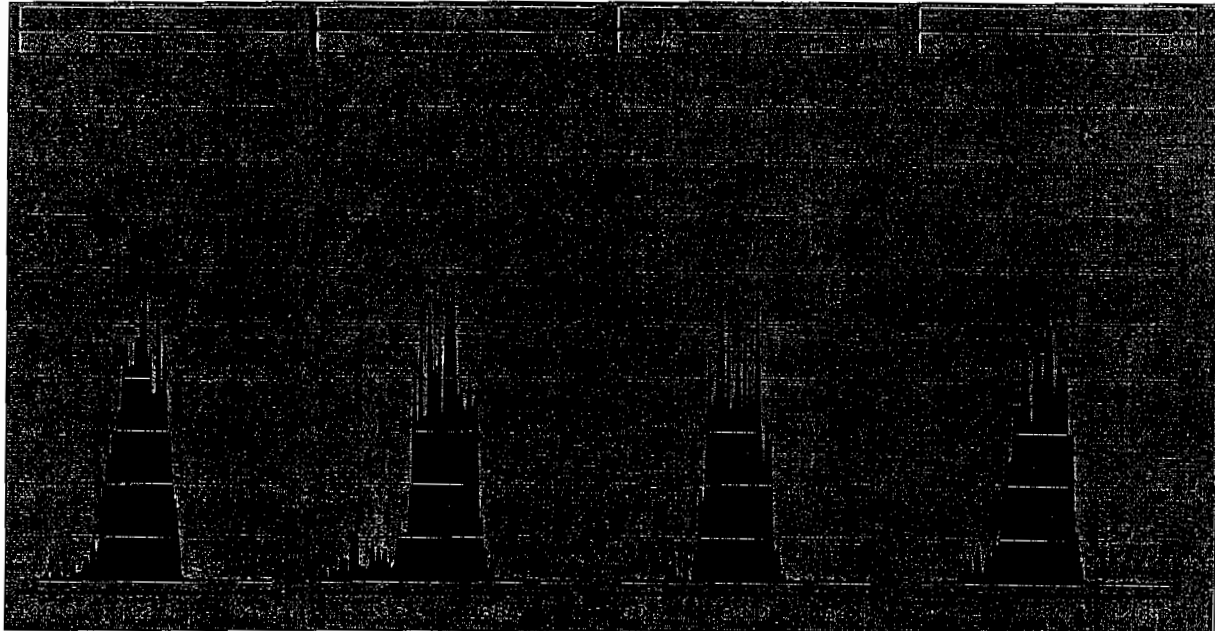


Quattro Micro Tune Parameters

Page 1

Parameter File: C:\MASSLYNX\NEW\_EXP.PROVACQUDB\explosives04.ipr

Printed : Fri Jan 08 17:13:08 2010





High Explosives Internal Standard Summary

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

HPLC Column: Phenomenex Ultracarb 5u ODS(20)

Instrument ID: LCMSMS

	Analysis Date/Time	GEL Data File	IS1 (DNB) (Area) #	RT (min) #	IS2 (DNT) (Area) #	RT2 (min) #
			2929.528	11.985	16886.317	17.3
Upper Limit			3808.3864	12.485	21952.2121	17.8
Lower Limit			2050.6696	11.485	11820.4219	16.8
MB for batch 937030	10-jan-10 16:28	EXP0108097a	3107.99	11.973	17807	17.314
LCS for batch 937030	10-jan-10 16:57	EXP0108098a	3224.2	11.972	19338.4	17.313
RE12-10-7553	10-jan-10 17:27	EXP0108099a	3504.95	11.972	17599.5	17.313
RE12-10-7553(243457001MS)	10-jan-10 17:56	EXP0108100a	3232.47	11.973	17442.7	17.314
RE12-10-7553(243457001MSD)	10-jan-10 18:26	EXP0108101a	2978.49	11.973	16580.2	17.31
RE12-10-7554	10-jan-10 18:55	EXP0108102a	2941.47	11.972	16970.3	17.314
RE12-10-7551	10-jan-10 19:25	EXP0108103a	2832.35	11.973	16472	17.311
RE12-10-7552	10-jan-10 21:23	EXP0108107a	2889.41	11.973	16657.2	17.31

IS1 (DNB) = 1,3-Dinitrobenzene-d4

IS2 (DNT) = 2,6-Dinitrotoluene-d3

Area Upper Limit = + 30% of average IS area from multipoint calibration

Area Lower Limit = - 30% of average IS area from multipoint calibration

RT Upper Limit = +0.5 of average multipoint RT

RT Lower Limit = -0.5 of average multipoint RT

# Column used to flag values outside QC limits with an asterisk

\* Values outside of QC limits



# SAMPLE DATA



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457001

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108099a

Date Analyzed: 10-JAN-10 17:27

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



**Quantify Sample Report**  
EEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYN\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

ime: C:\MASSLYN\NEW\_EXP.PRO\Data\EXP0108099a

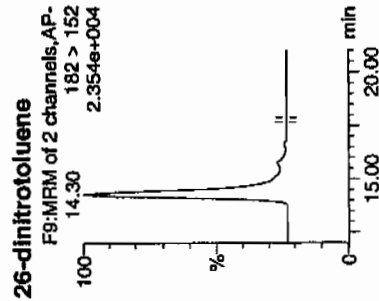
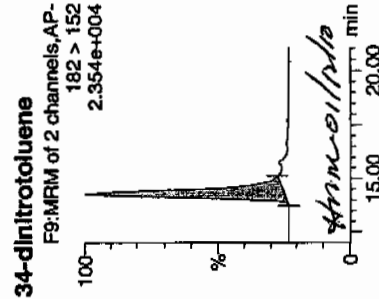
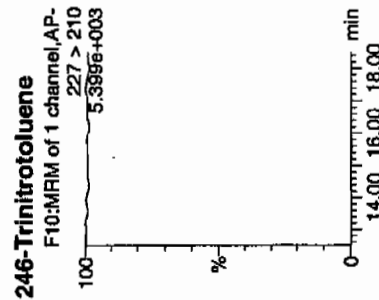
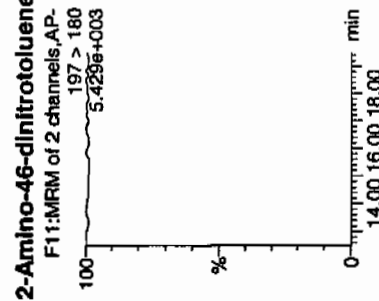
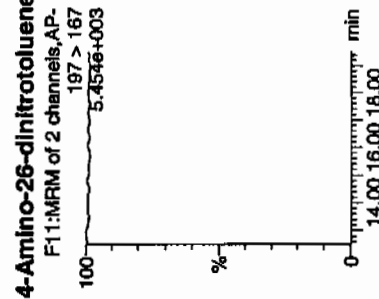
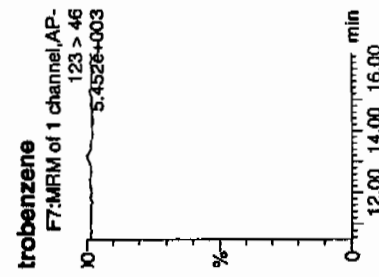
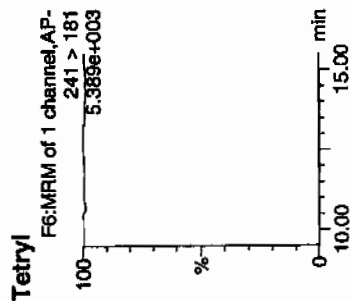
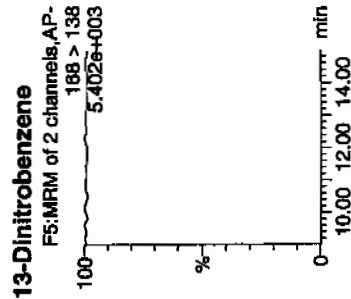
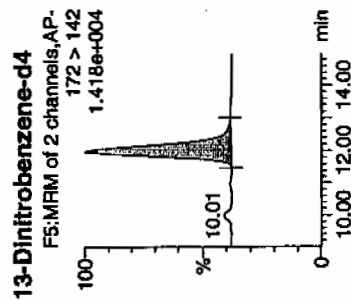
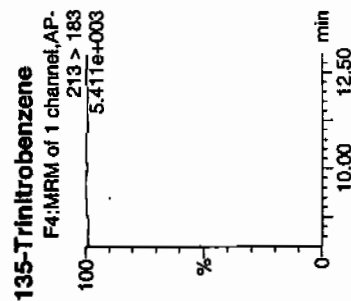
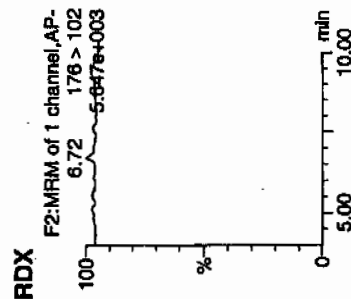
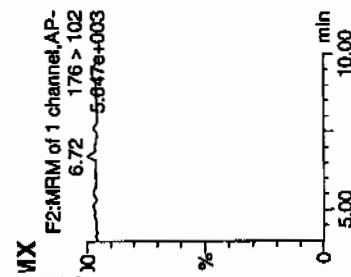
**ite: 10-Jan-2010**

me: 17:27:26

**: 243457001**

al: 3:3,C

01/11/12  
Lyon

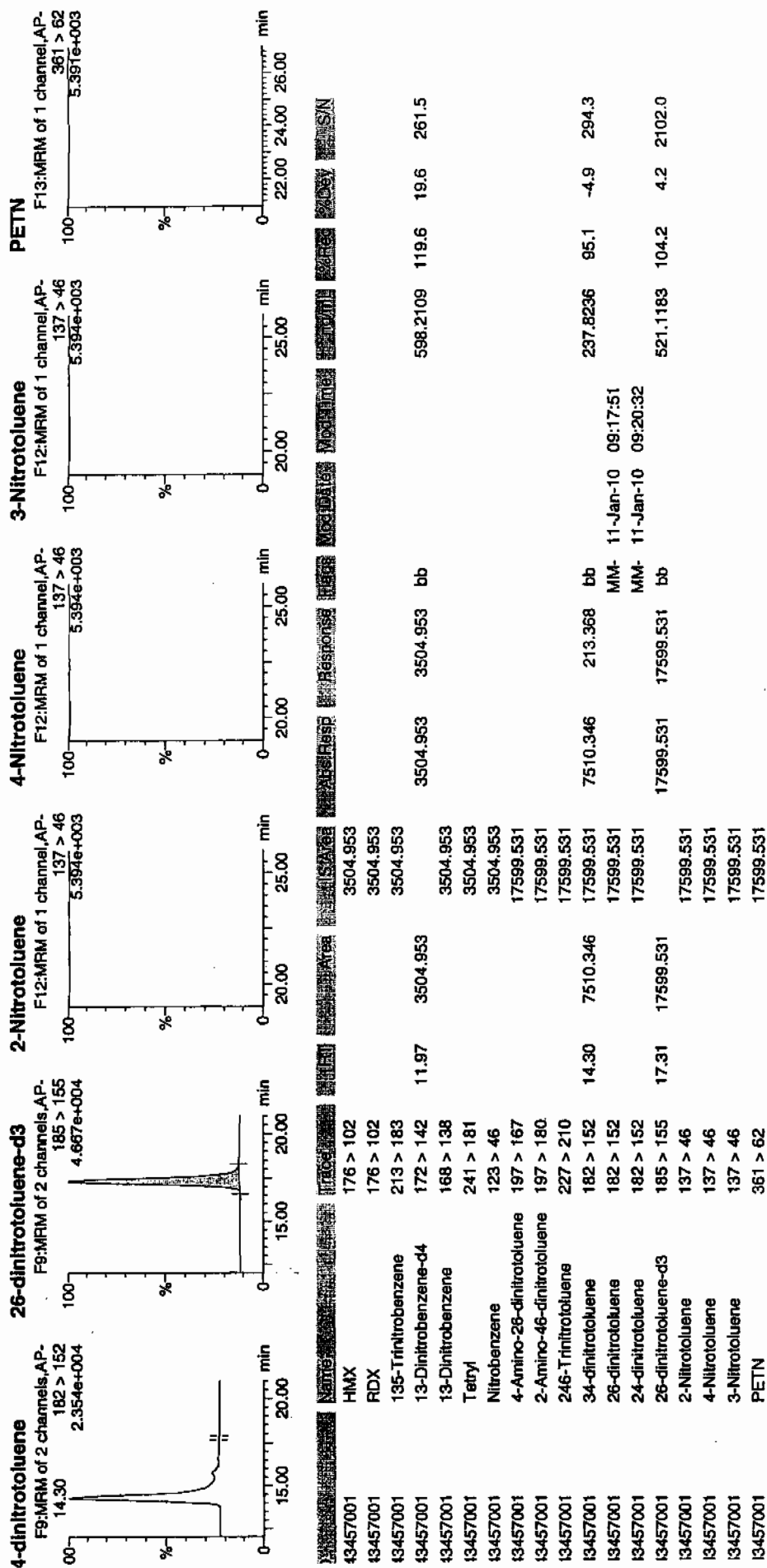




Printed: Mon Jan 11 09:29:17 2010, Page 138 of 189

Identify Sample Report  
IEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYN\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457001

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050075.wiff

Date Analyzed: 06-JAN-10 09:52

Units: ug/kg

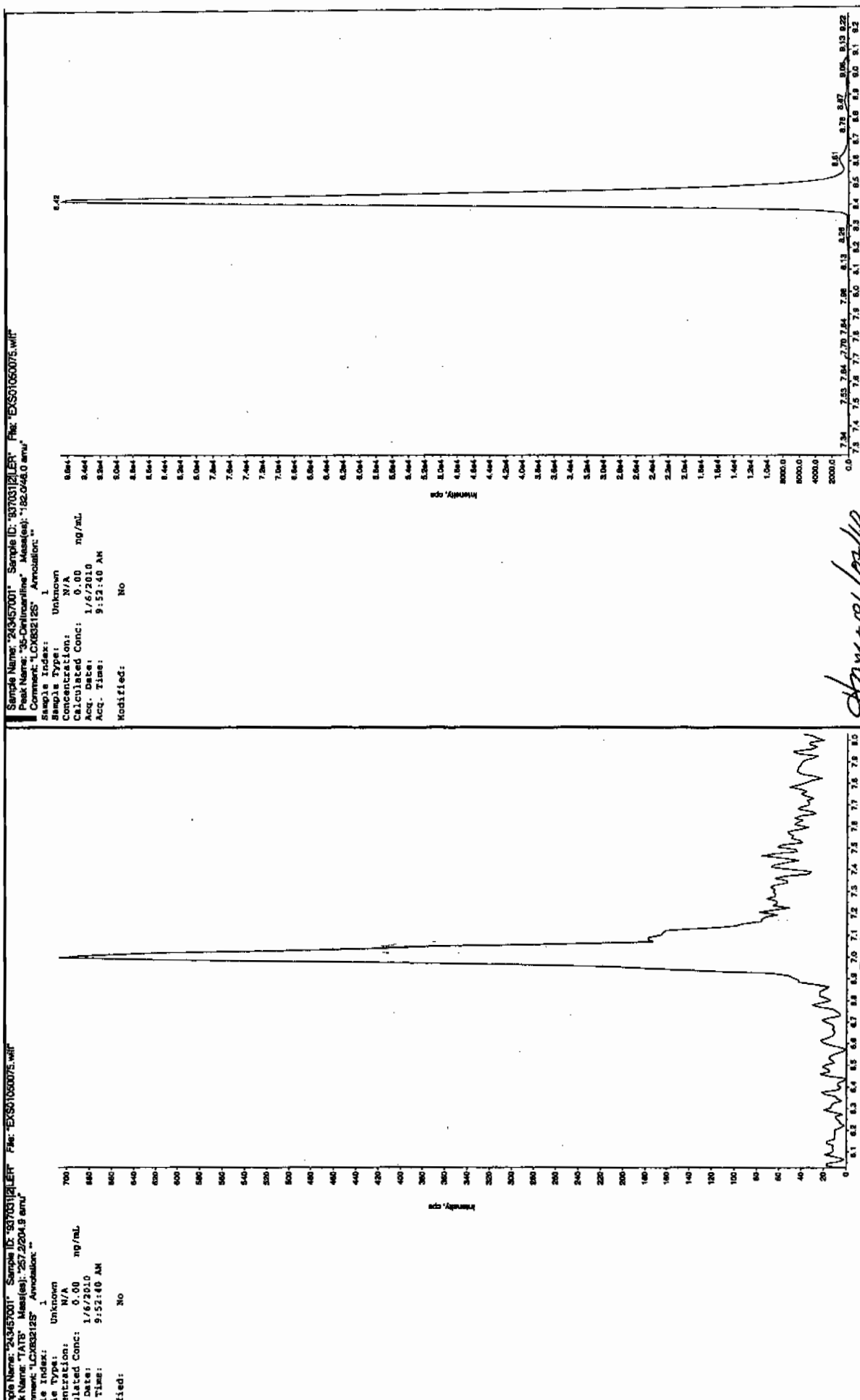
Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		



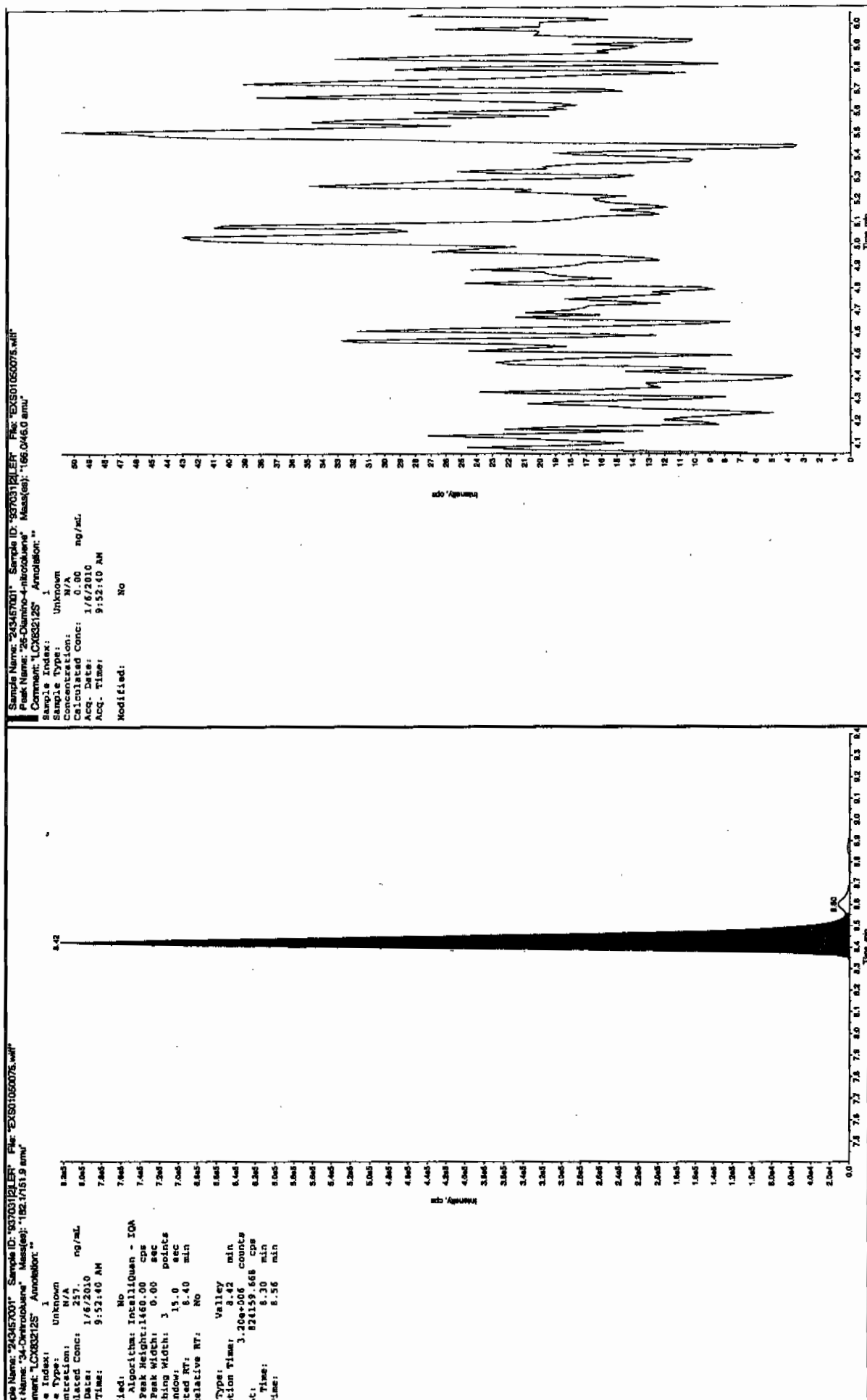
01/11/10  
274



Amc-01/04/10

L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





File Name: "20467001" Sample ID: "93703121.EP" File: "EX931060075.wif"  
 Peak Name: "25-Diamino-4-nitrobenzene" Mass(es): "166.046.0 amu"  
 Comment: "LC832125" Annotation: ""

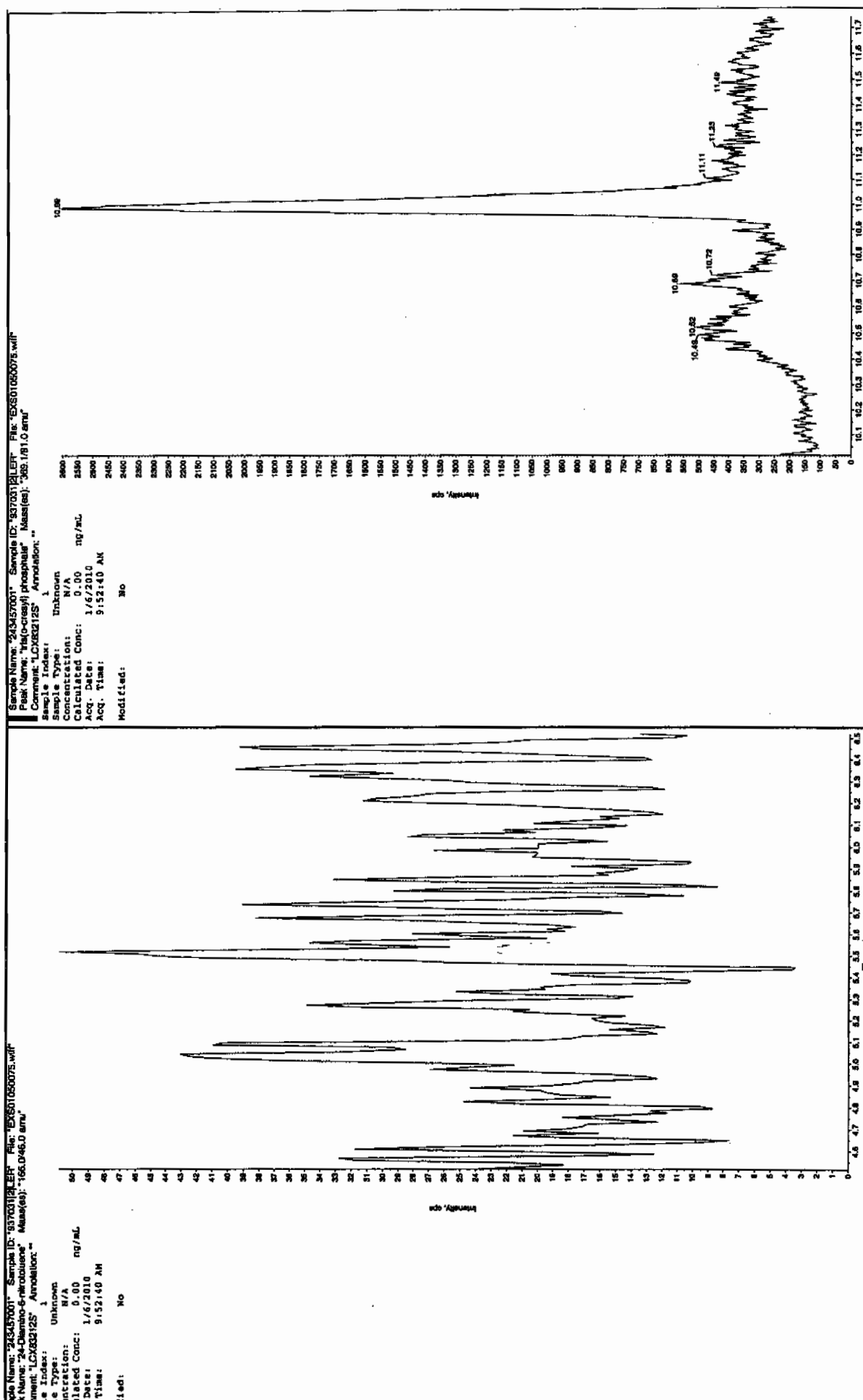
Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Calculated Conc: 1/6/2010  
 Acq. Date: 9:52:40 AM  
 Acq. Time: 9:52:40 AM  
 Modified: No

Algorithm: IntelliQuan - IQA  
 Peak Height: 1460.00 cps  
 Peak Width: 0.00 sec  
 Ring Width: 3 points  
 Window: 15.0 sec  
 Ret. RT: 8.40 min  
 Relative RT: No

Type: Valley  
 Ret. Time: 8.42 min  
 Counts: 3.20e+05  
 Time: 8.30 min  
 Time: 8.56 min

L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7554

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457002

Sample Amount 2

Moisture: 8.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108102a

Date Analyzed: 10-JAN-10 18:55

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		



Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108102a

Date: 10-Jan-2010

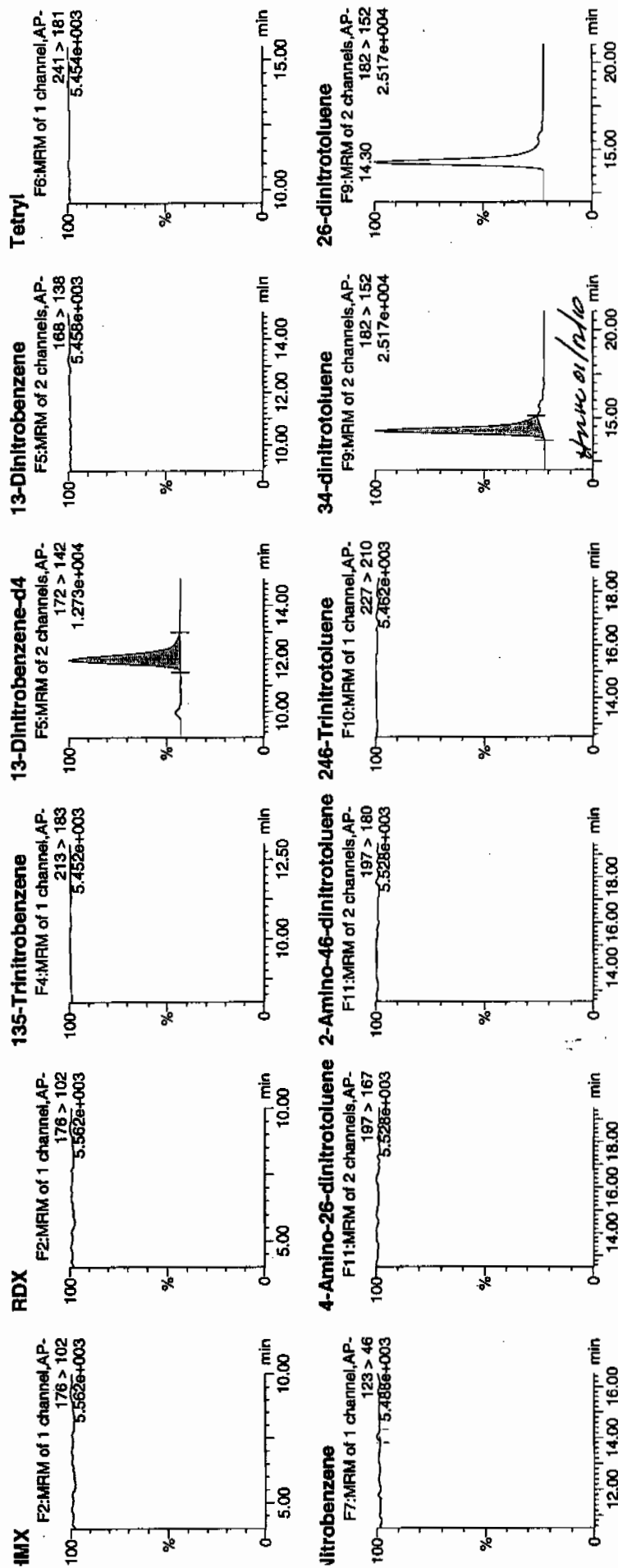
Time: 18:55:52

D: 243457002

/Iai: 3:3.F

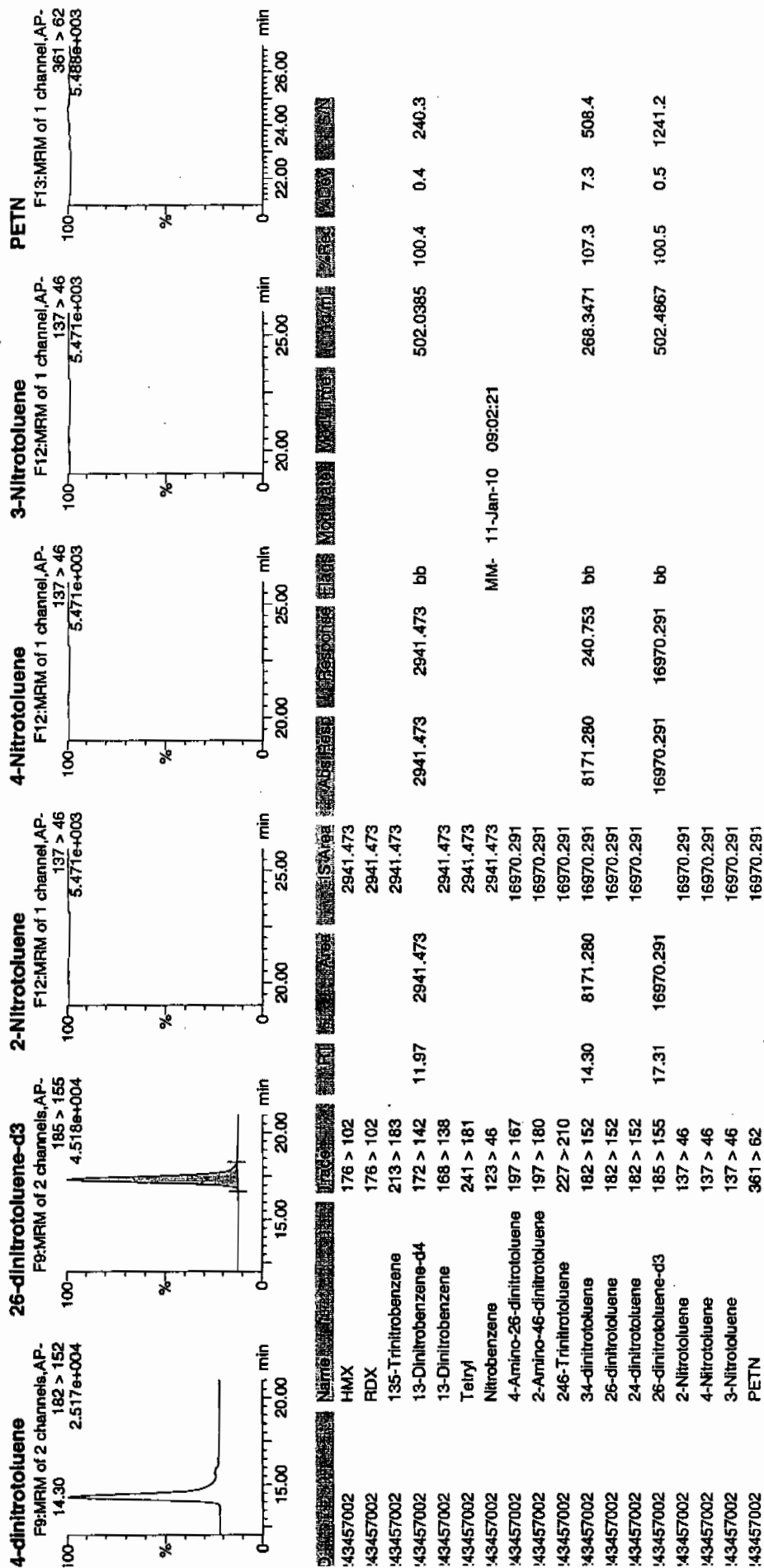
not  
 1/11/10

WAW 937031 / 8022 / 21





Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





1

# High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7554

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457002

Sample Amount 2

Moisture: 8.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050078.wiff

Date Analyzed: 06-JAN-10 10:39

Units: ug/kg

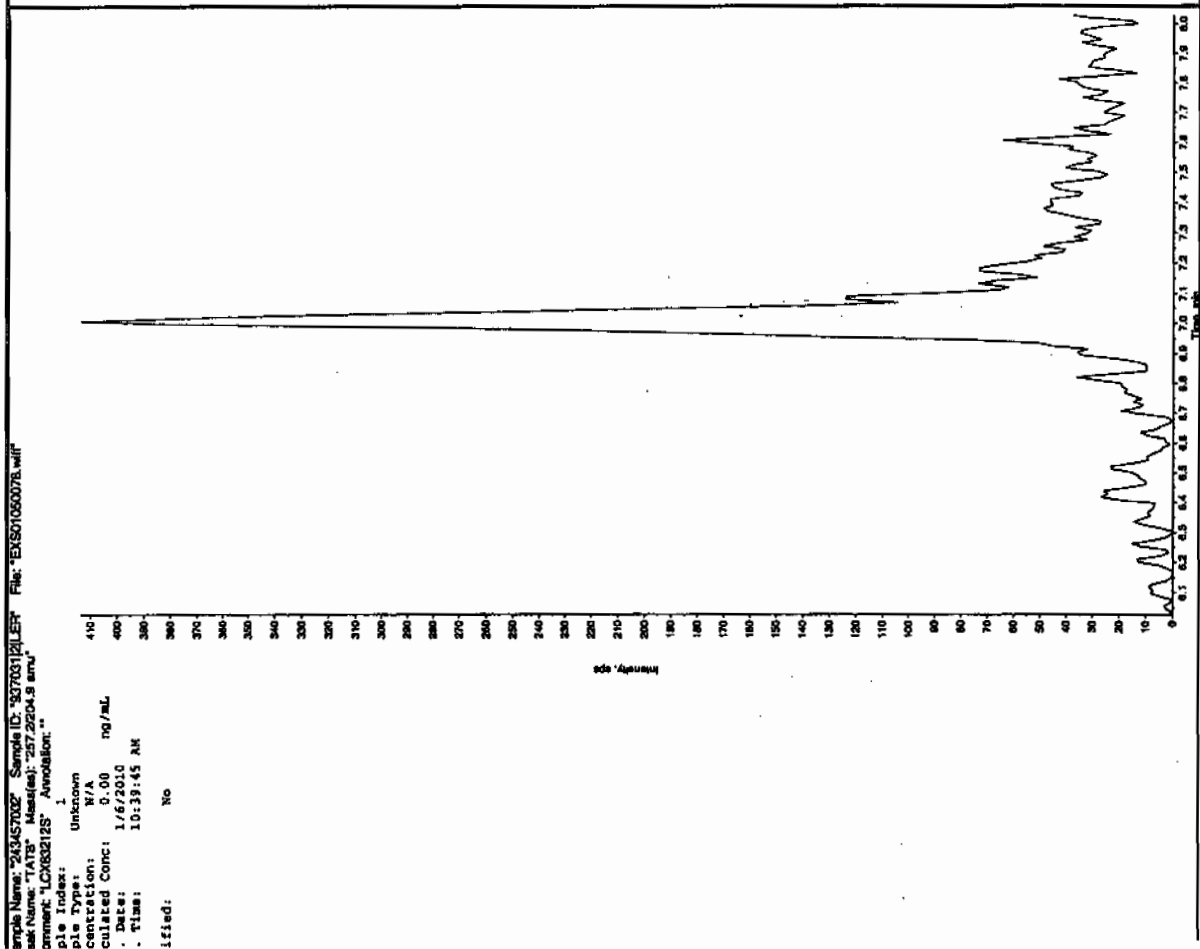
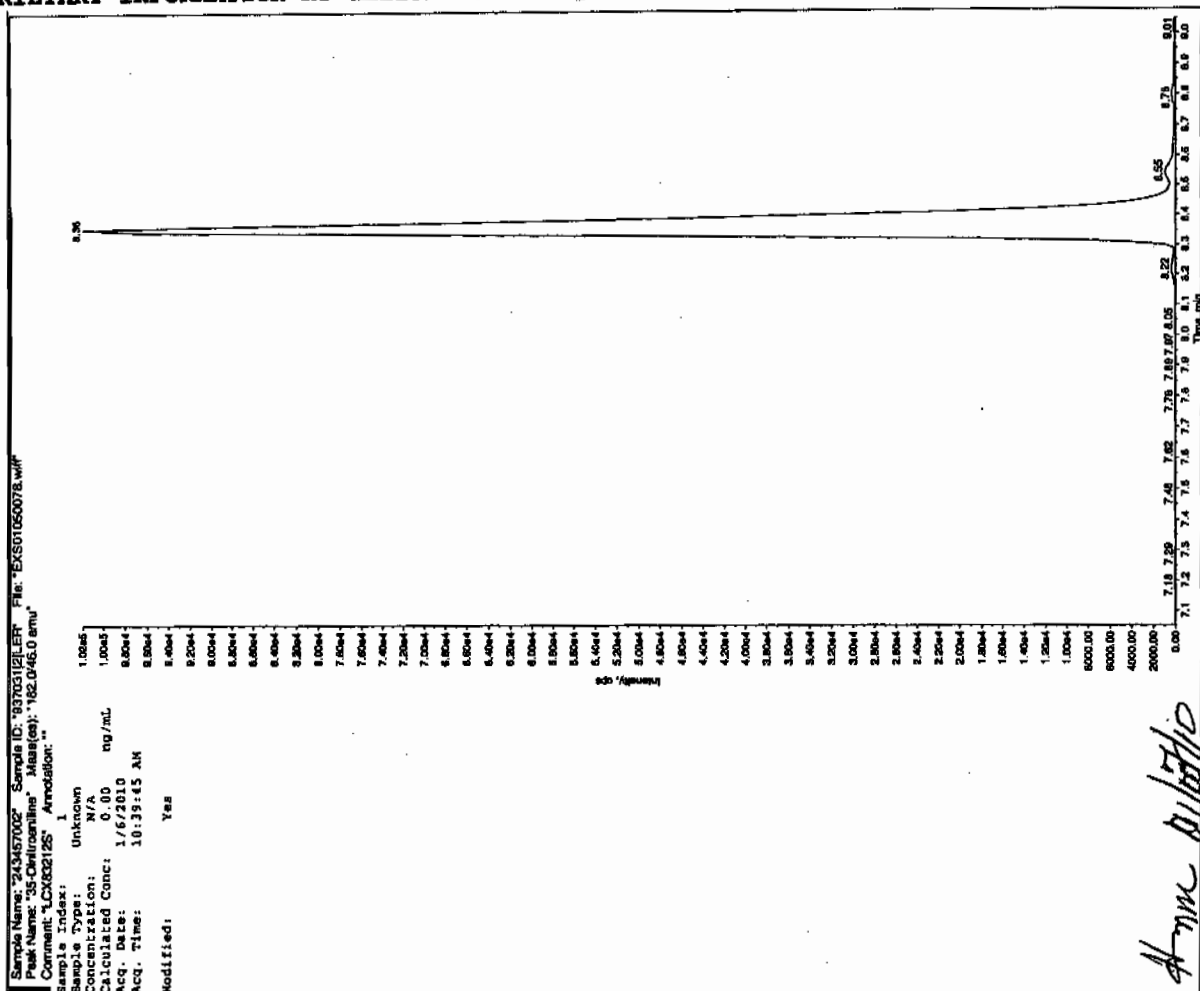
Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



11/7/10  
J. H. H.



IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

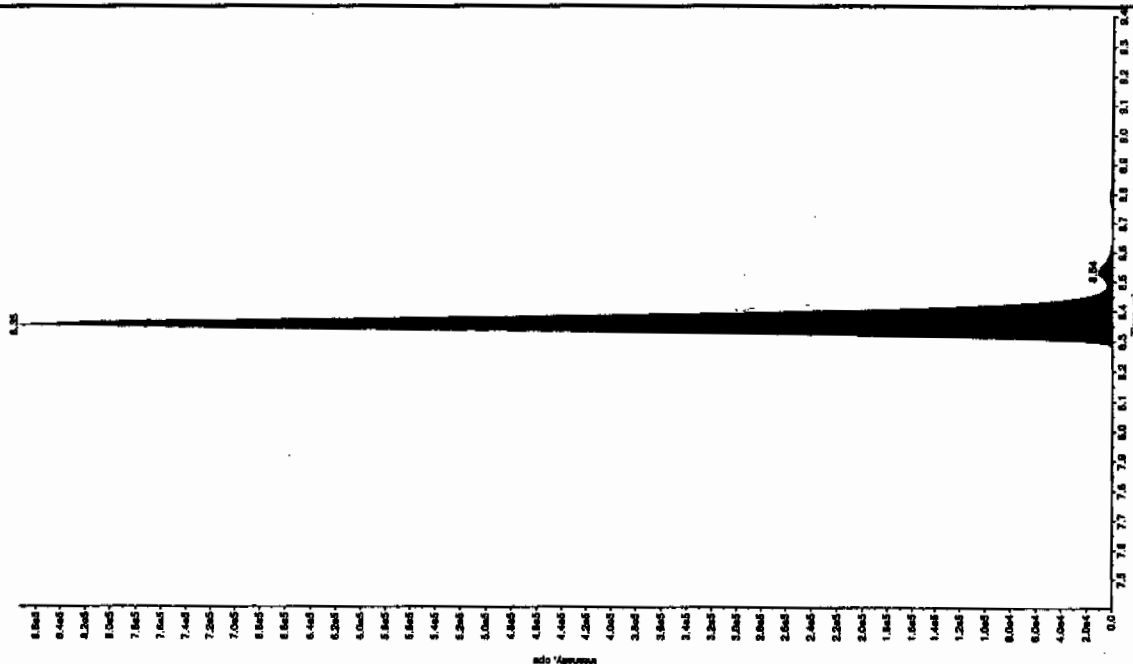


Sample Name: "24345702" Sample ID: "53703121" File: "EX501050078.wif"  
 Peak Name: "34-Diamino-4-nitrofluorene" Mass(es): "182.1761.9 amu"  
 Comment: "LCX032125" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: M/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/6/2010  
 Acq. Time: 10:39:45 AM  
 Modified: No

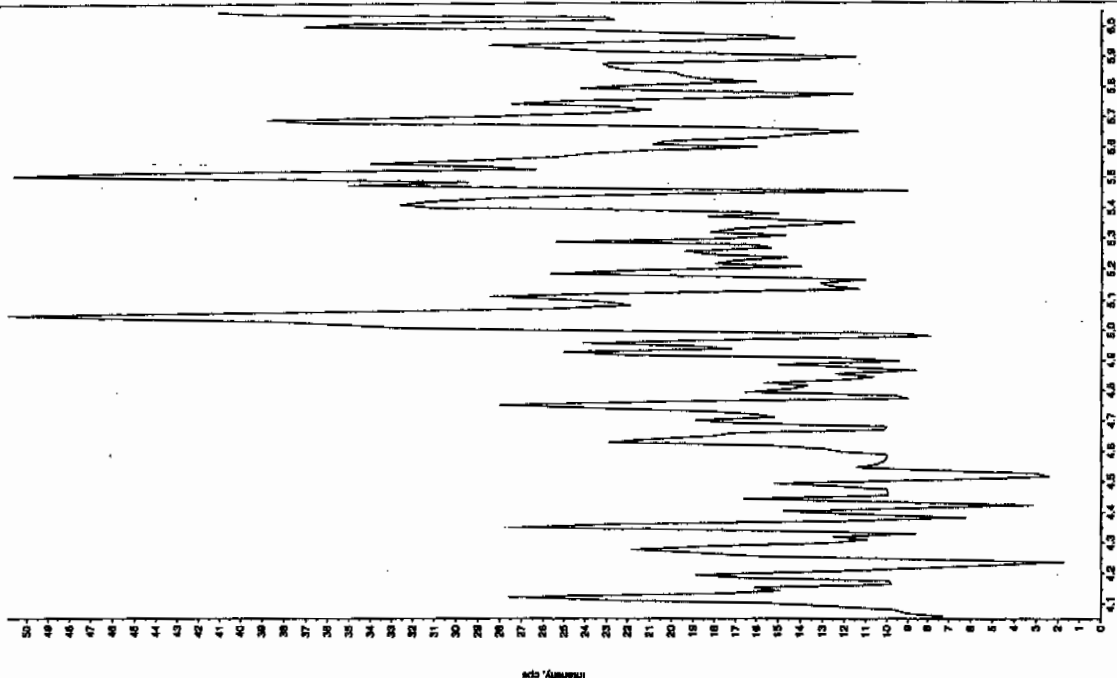
1. Type: Valley  
 Retention Time: 8.35 min  
 Area: 3.22e+006 counts  
 Height: 871894.641 cps  
 Width: 8.27 min  
 Time: 8.71 min

2. Algorithm: IntelliQuan - IQA  
 Peak Height: 1460.00 cps  
 Peak Width: 0.00 sec  
 Peak Area: 3 points  
 Window: 15.0 sec  
 Selected RT: 8.40 min  
 Relative RT: No

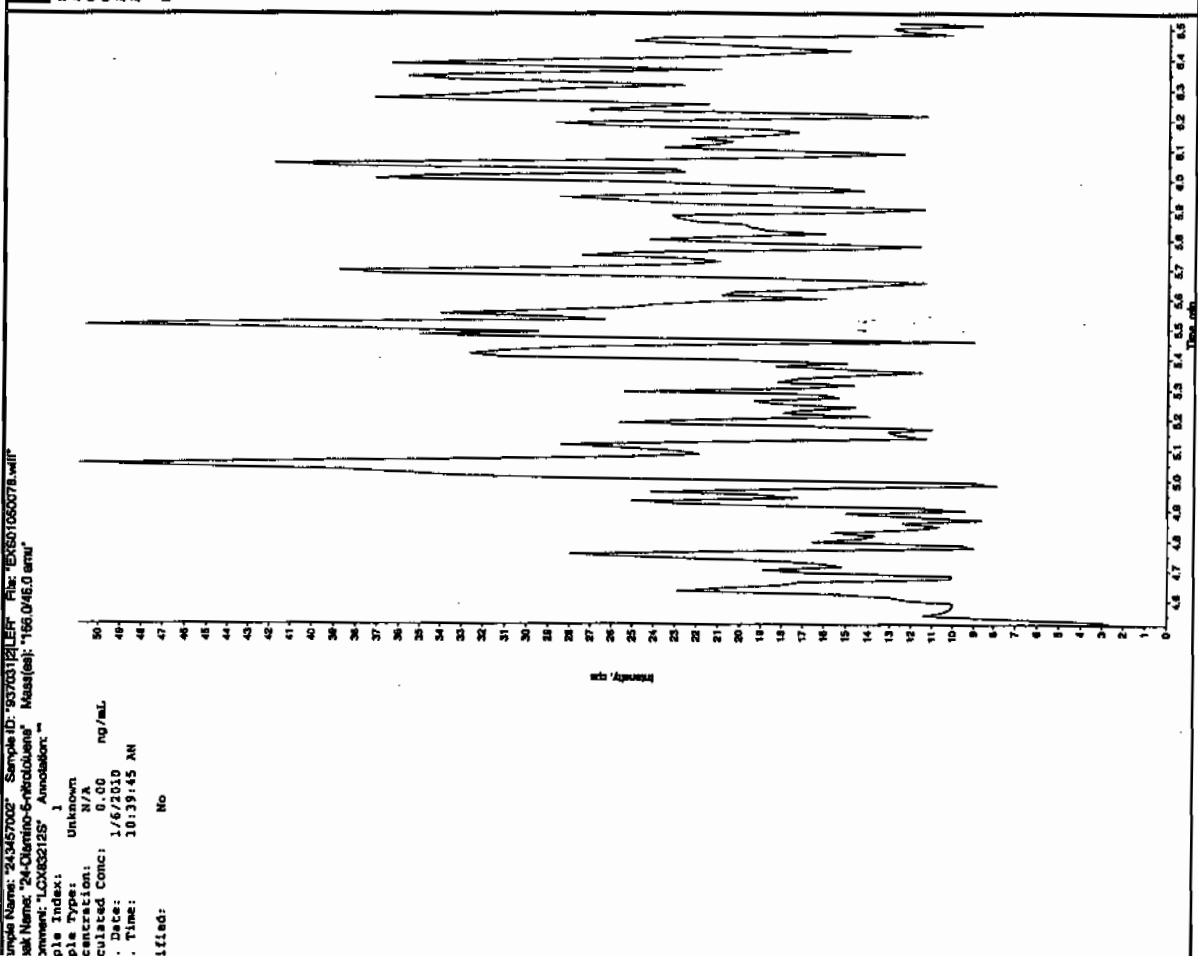
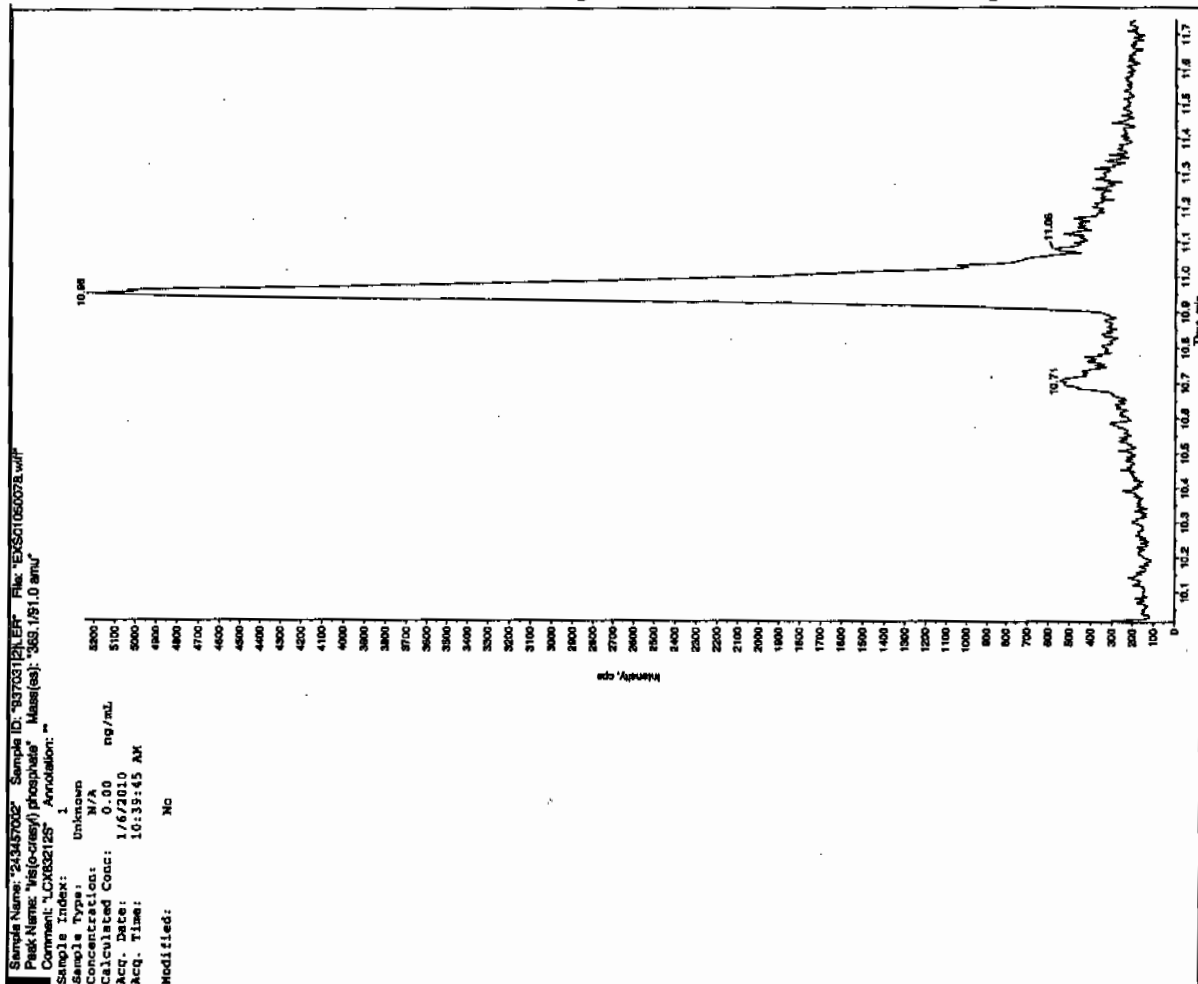


Sample Name: "24345702" Sample ID: "53703121" File: "EX501050078.wif"  
 Peak Name: "34-Diamino-4-nitrofluorene" Mass(es): "186.0461.0 amu"  
 Comment: "LCX032125" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: M/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/6/2010  
 Acq. Time: 10:39:45 AM  
 Modified: No







EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7551

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457003

Sample Amount 2

Moisture: 11.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108103a

Date Analyzed: 10-JAN-10 19:25

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



Printed: Mon Jan 11 09:29:17 2010, Page 145 of 189

Identify Sample Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108103a

Date: 10-Jan-2010

Time: 19:25:20

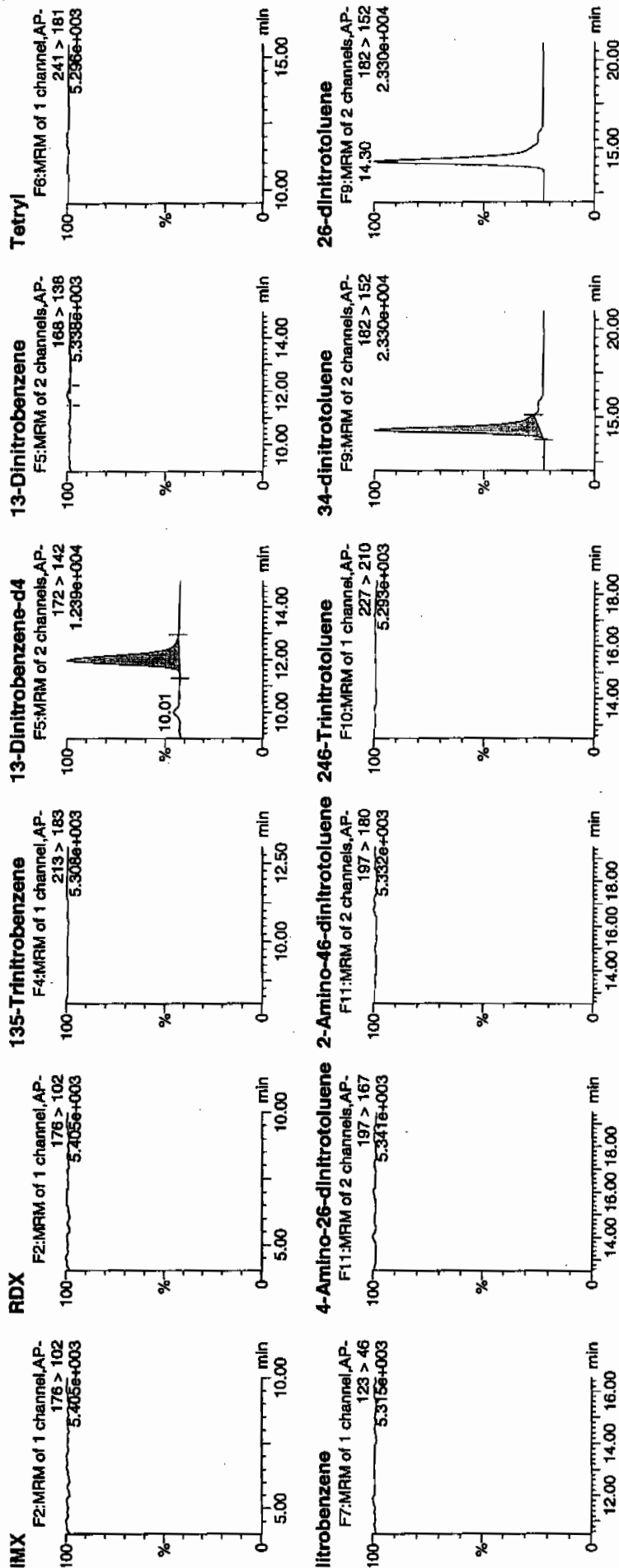
ID: 243457003

Label: 3:4,A

not  
d/11/10

WAV 937031 | 8025 | 21

Page 230 of 1729



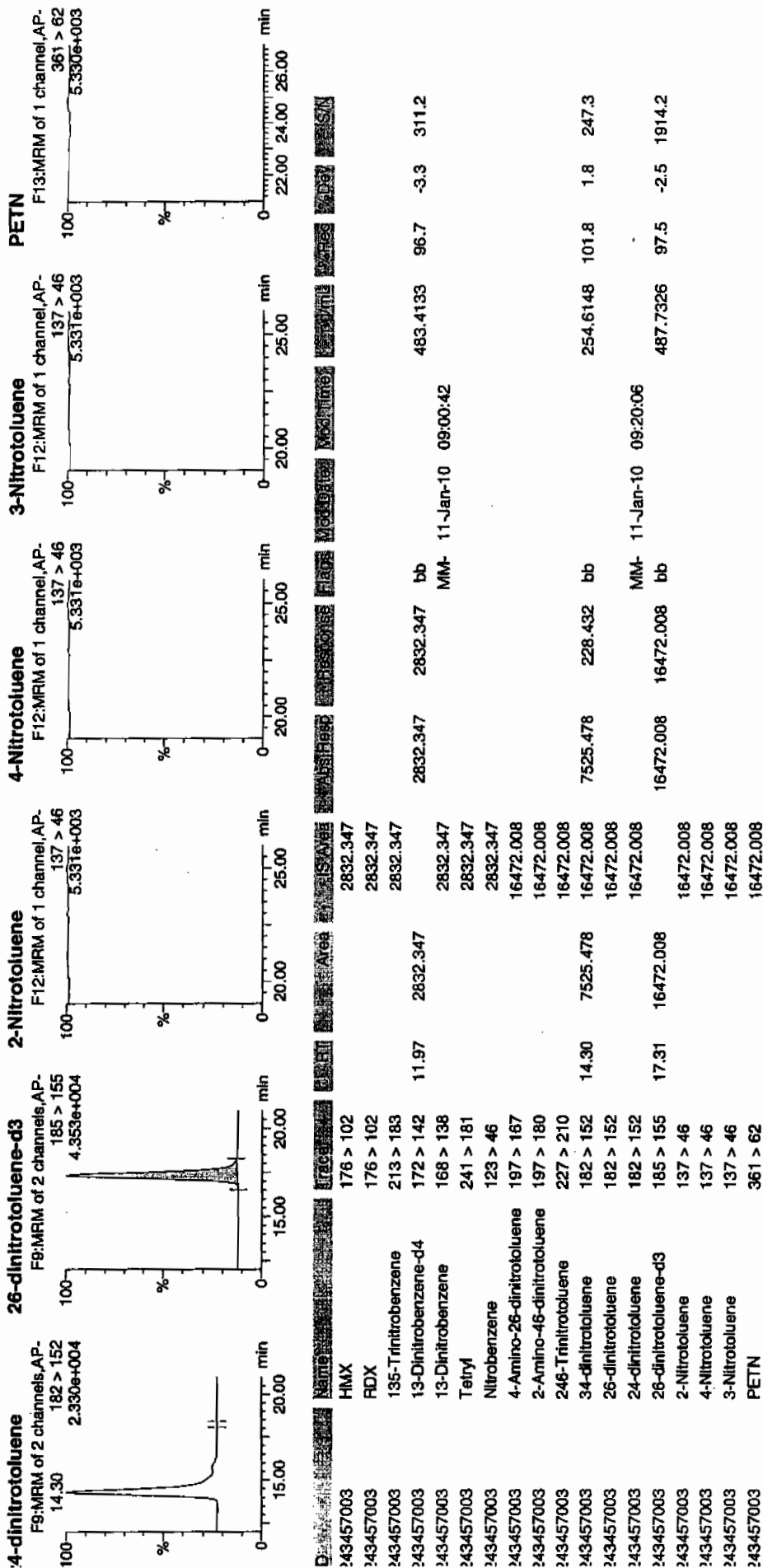
done 8/12/10



Printed: Mon Jan 11 09:29:17 2010, Page 146 of 189

Quantify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7551

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457003

Sample Amount 2

Moisture: 11.1

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050079.wiff

Date Analyzed: 06-JAN-10 10:55

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

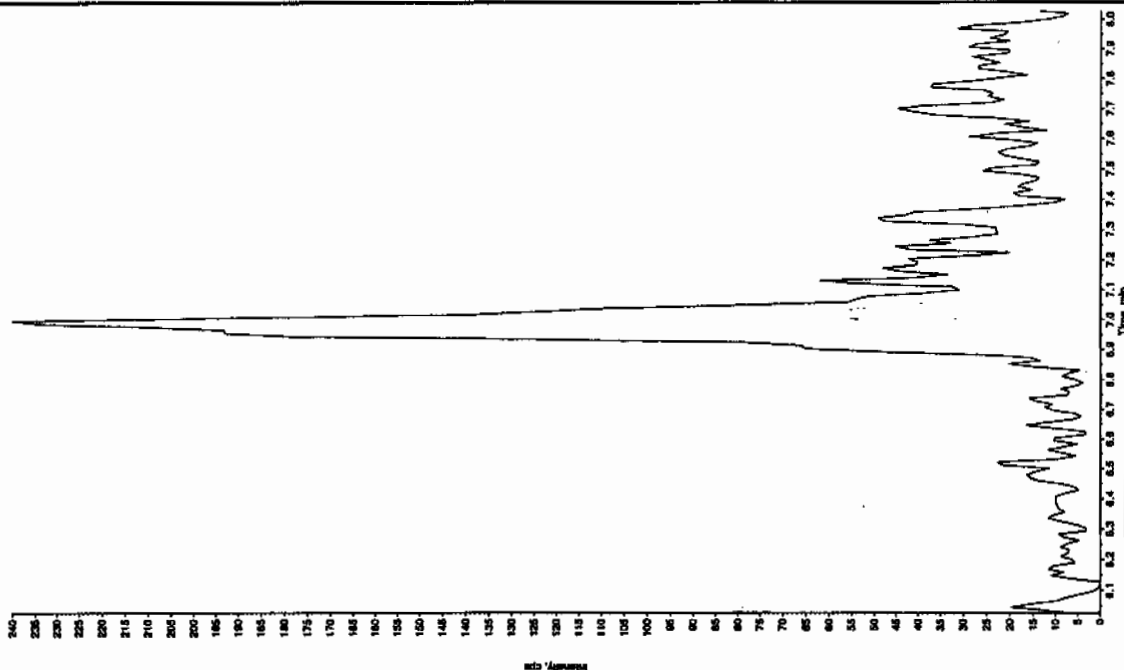
Instrument Value	X	$\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$	X	Dilution Factor
------------------	---	---	---	-----------------



01/11/10  
JAN

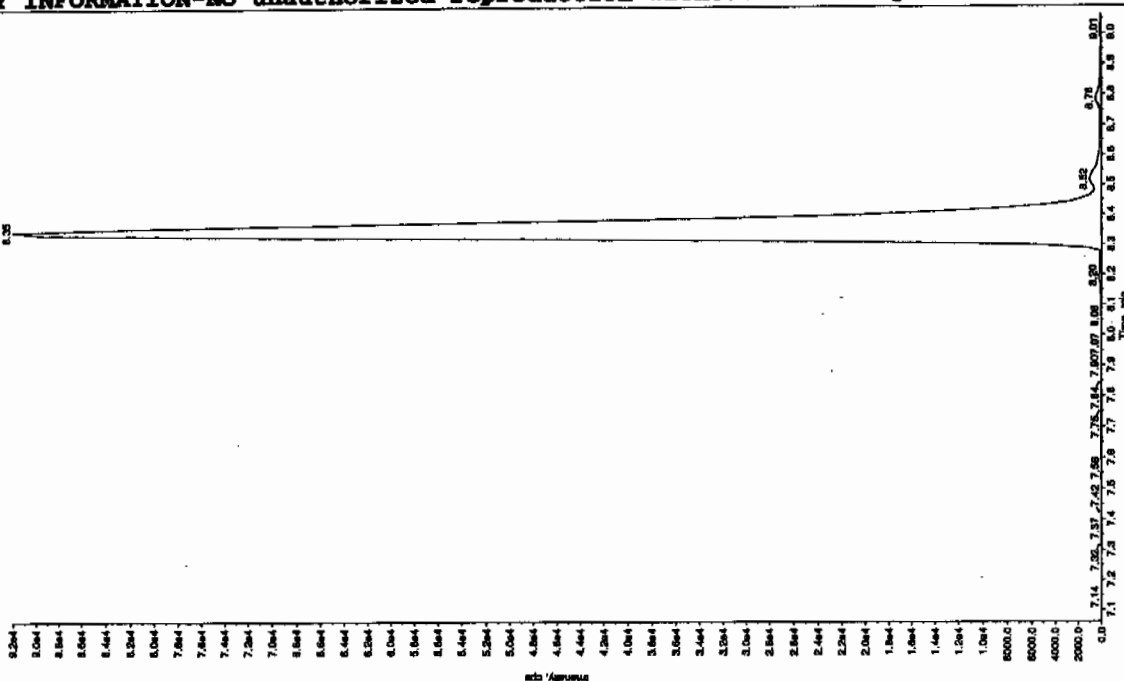
Sample Name: "243457003" Sample ID: "83703121ER" File: "EXS01050079.wif"  
Peak Name: "TATP" Mass(es): "257.2204.9 amu"  
Comment: "LCMS32125" Annotation: "

Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A  
Calculated Conc: 0.00 ng/mL  
Acq. Date: 1/6/2010  
Acq. Time: 10:55:26 AM  
Modified: No



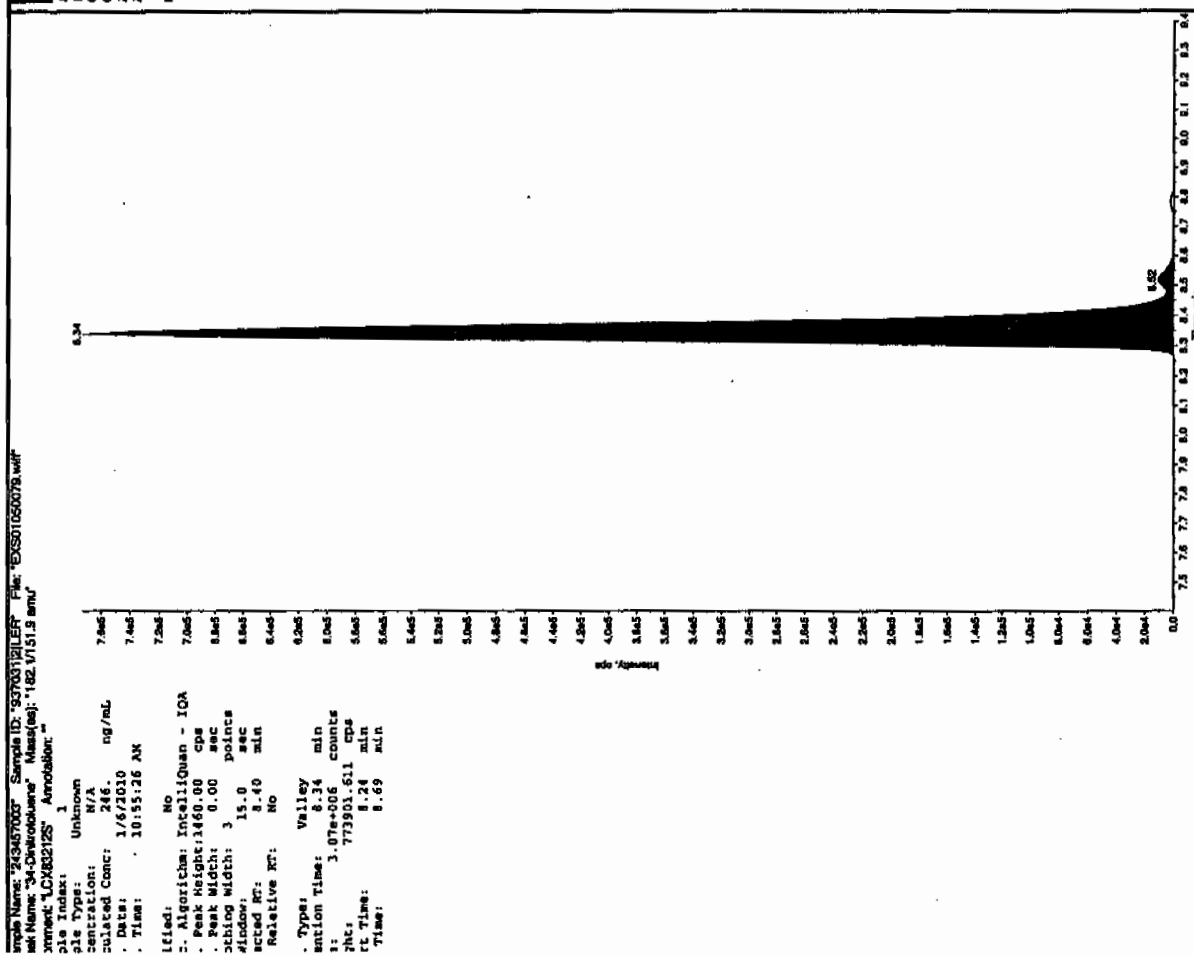
Sample Name: "243457003" Sample ID: "83703121ER" File: "EXS01050079.wif"  
Peak Name: "35-Diisocyanate" Mass(es): "182.046.0 amu"  
Comment: "LCMS32125" Annotation: "

Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A  
Calculated Conc: 0.00 ng/mL  
Acq. Date: 1/6/2010  
Acq. Time: 10:55:26 AM  
Modified: Yes

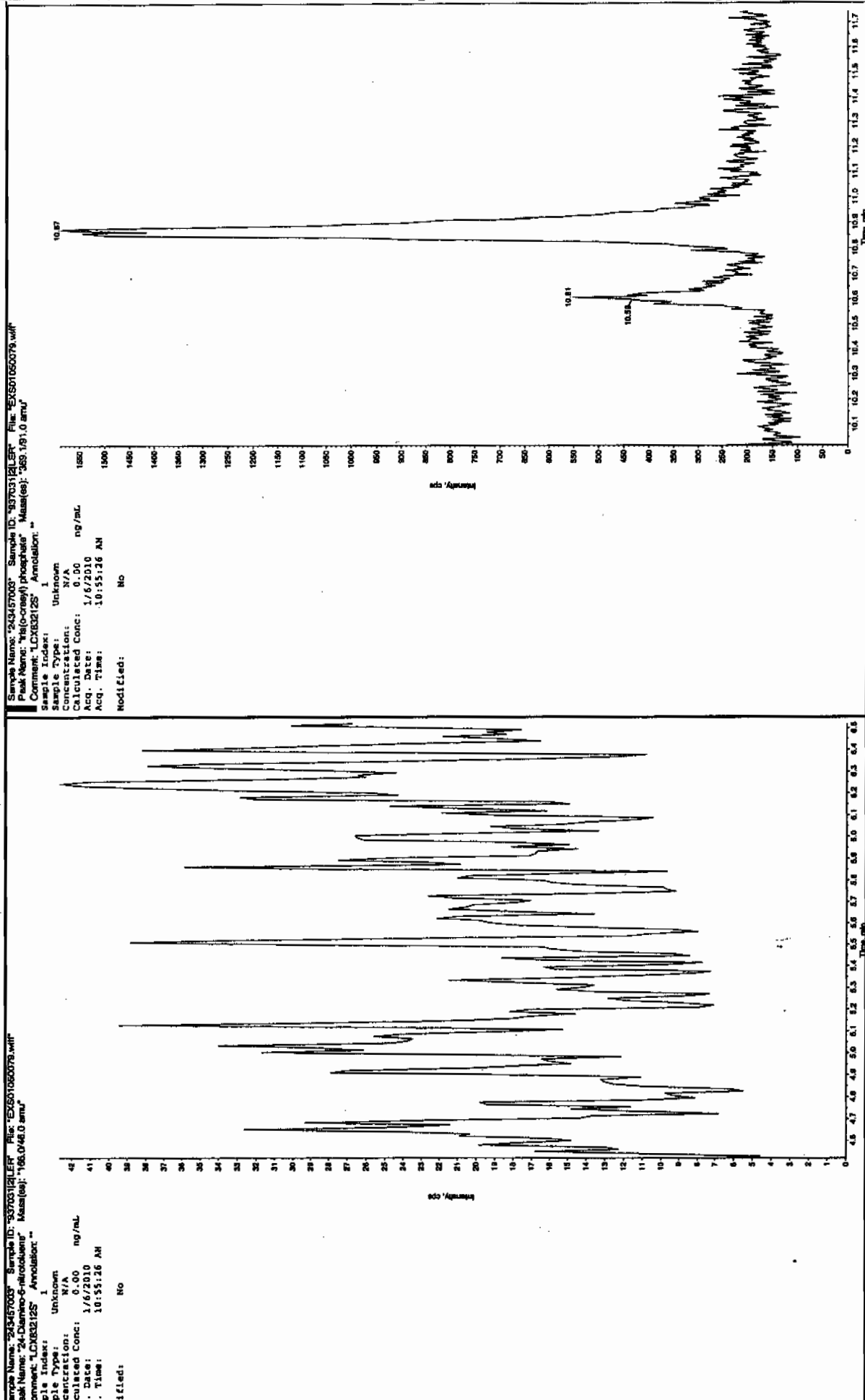


01/11/10  
JAN









EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7552

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457004

Sample Amount 2

Moisture: 7.6

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108107a

Date Analyzed: 10-JAN-10 21:23

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



Printed: Mon Jan 11 09:29:17 2010, Page 153 of 189

Identify Sample Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO1010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP\PROData\EXP0108107a

Date: 10-Jan-2010

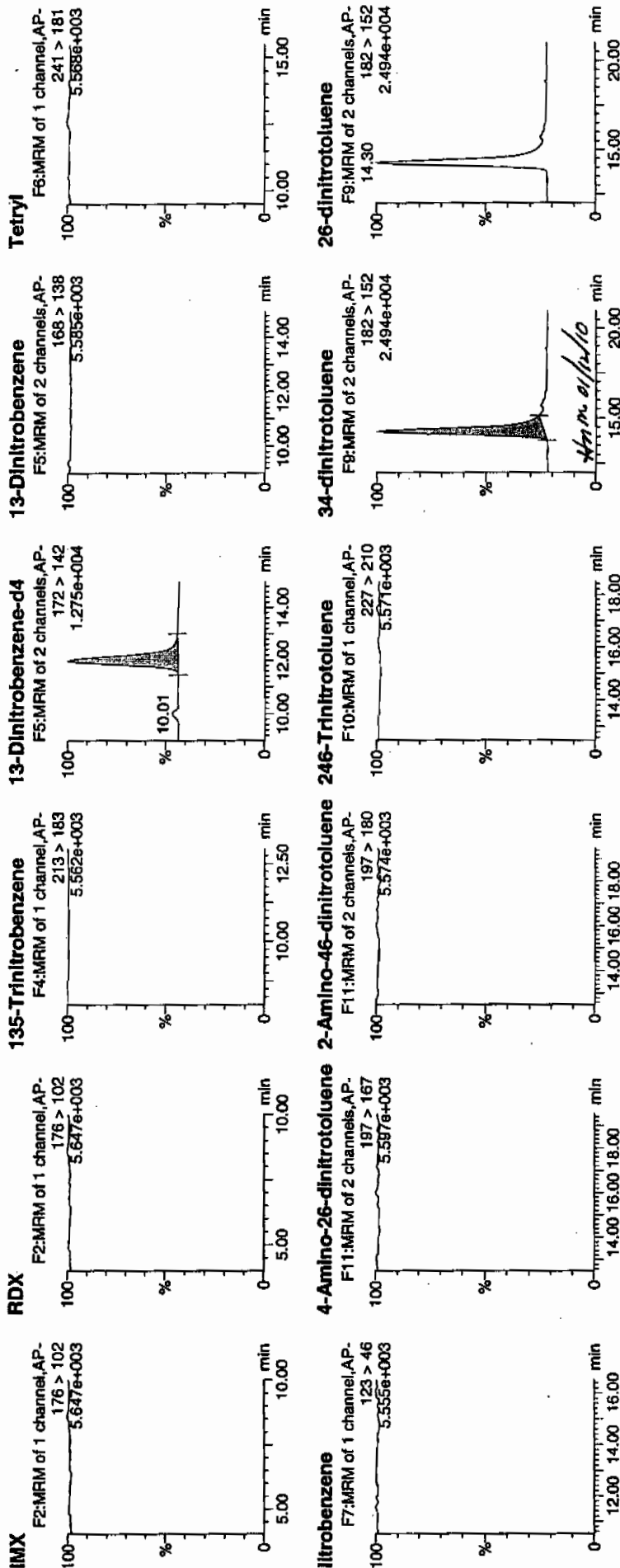
Time: 21:23:19

ID: 243457004

Label: 3:4,B

1/11/10

LAUW 937031 | 80222 | 21

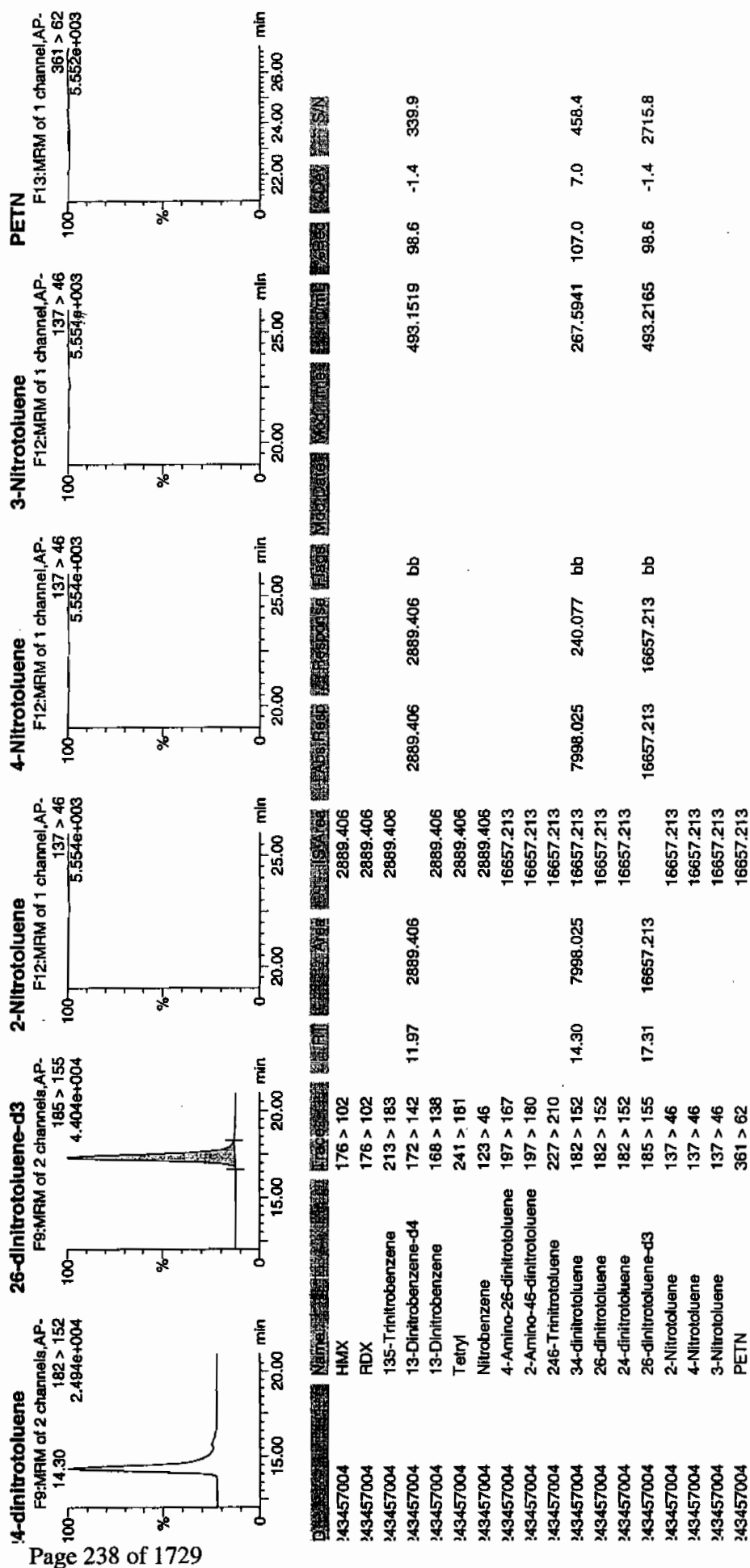




Printed: Mon Jan 11 09:29:17 2010, Page 154 of 189

Quantify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7552

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 243457004

Sample Amount 2

Moisture: 7.6

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050080.wiff

Date Analyzed: 06-JAN-10 11:11

Units: ug/kg

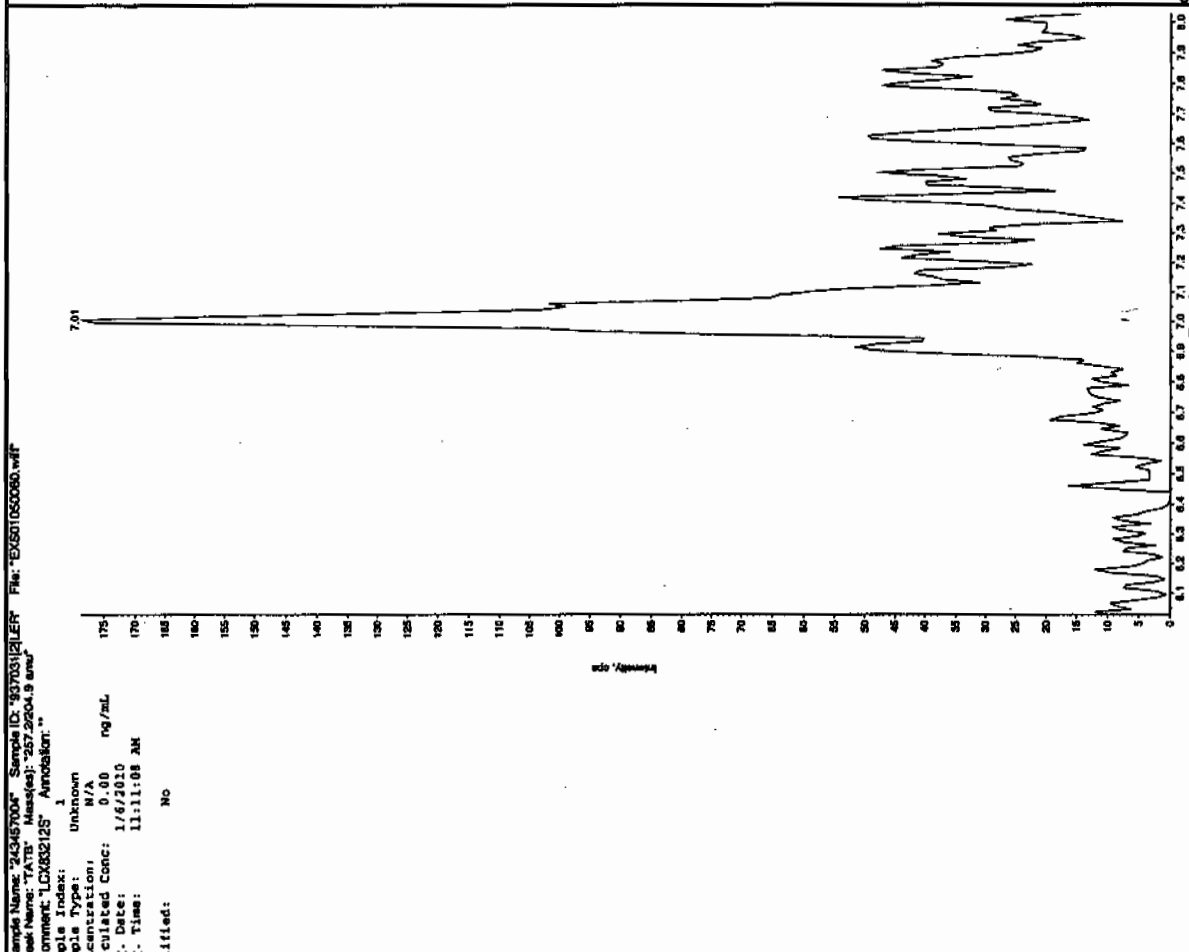
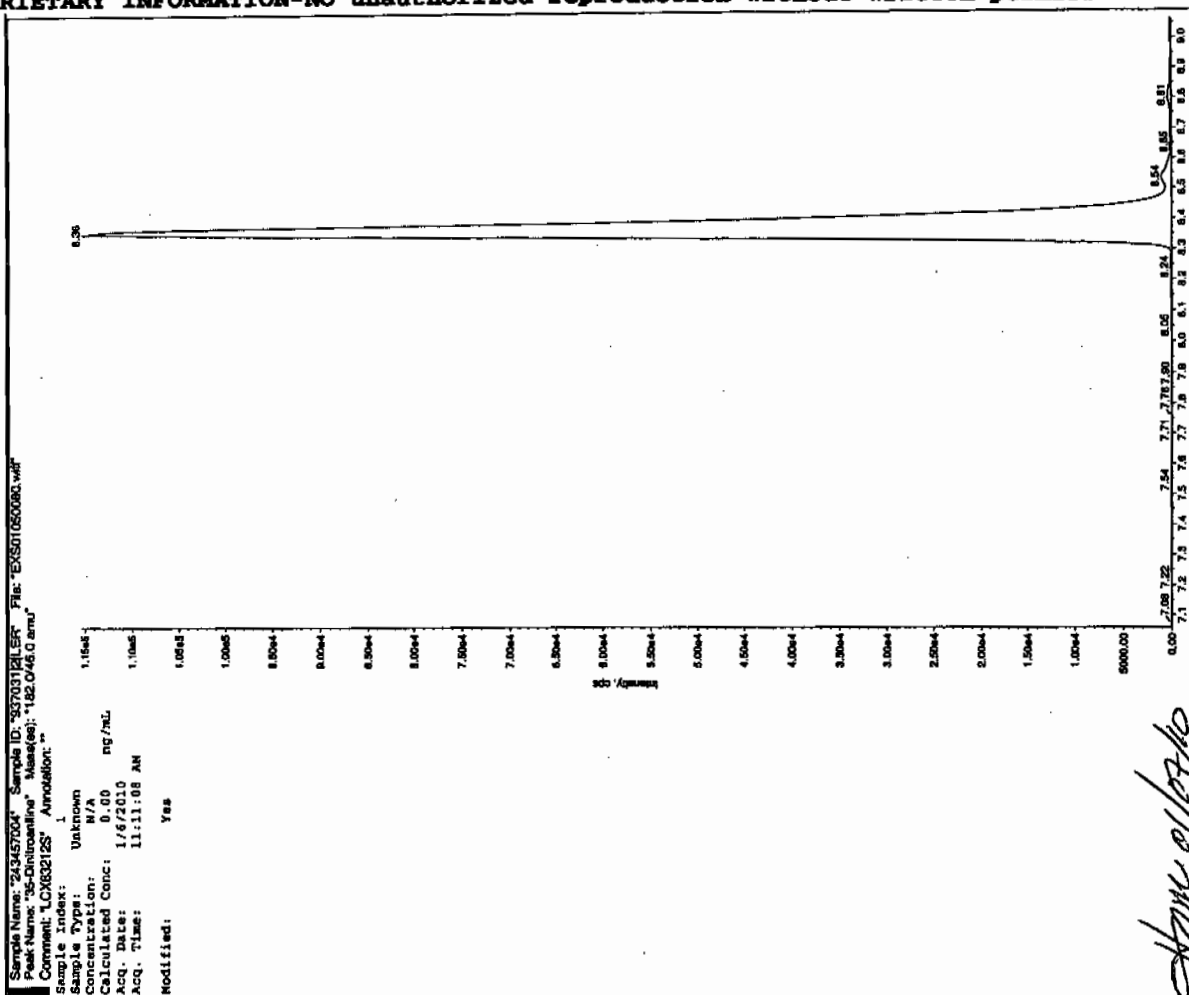
Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor

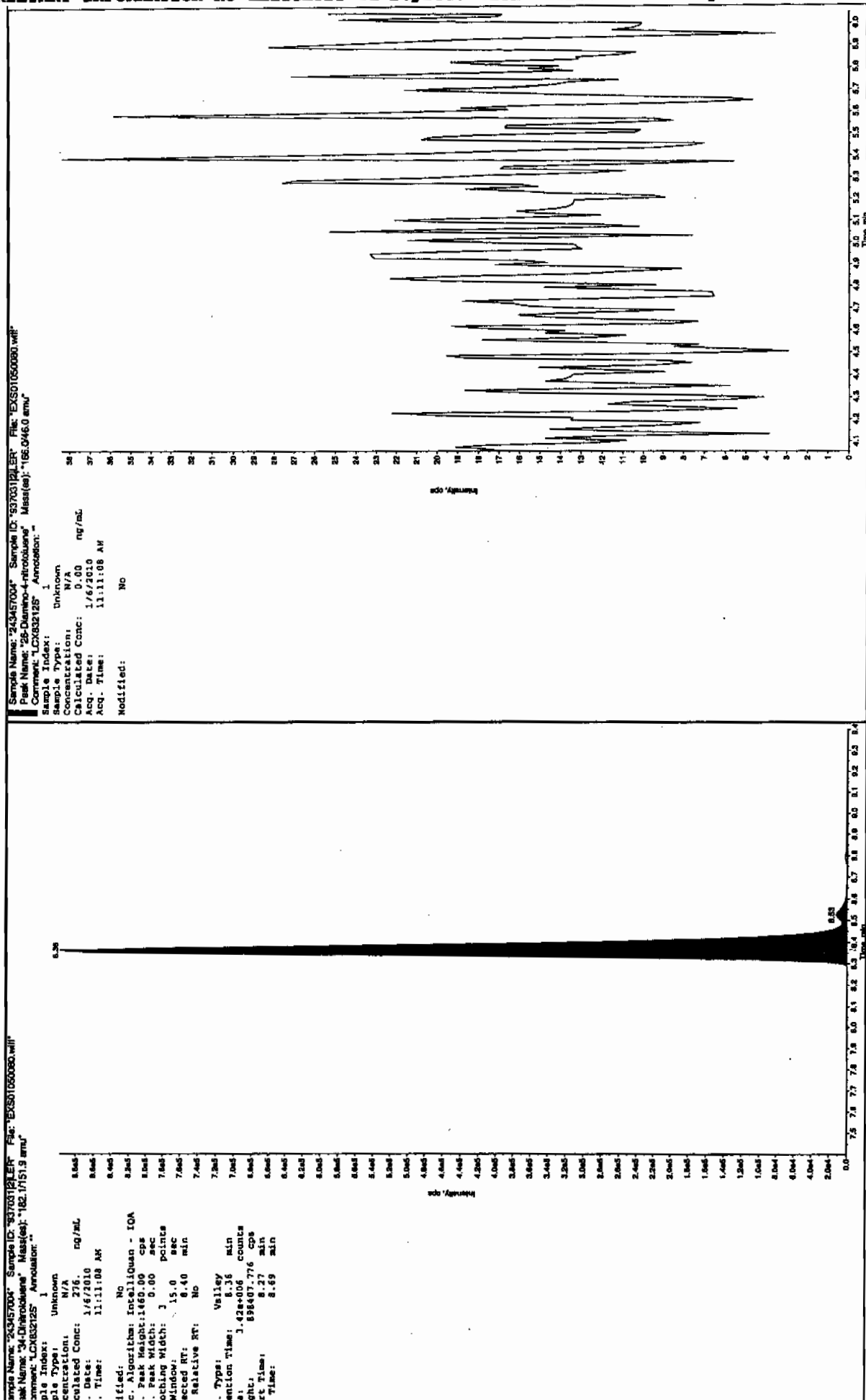


01/14/11  
J. B. B.



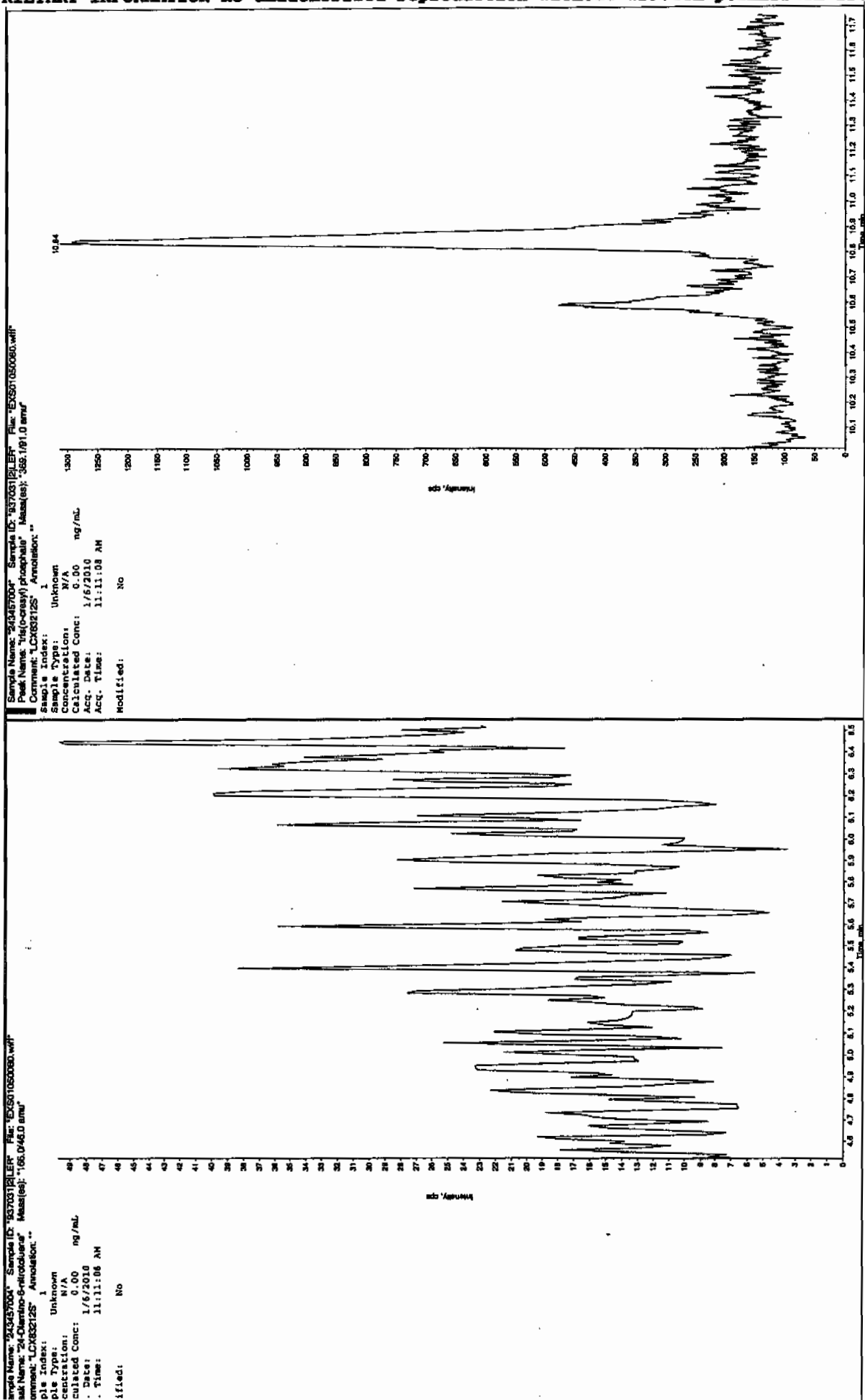
EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



# STANDARDS DATA



**SW846 8321A Modified-Explosives  
Calibration Standard Concentration Levels**

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	CCV
3,4-Dinitrotoluene (Surrogate)	12.5	25	100	200	400	500		300
<b>Primary Analytes</b>								
HMX	25	50	200	400	800	1000	na	600
RDX	25	50	200	400	800	1000	na	600
DNX	25	50	200	400	800	1000	na	600
MXN	25	50	200	400	800	1000	na	600
TNX	25	50	200	400	800	1000	na	600
1,3,5-Trinitrobenzene	25	50	200	400	800	1000	na	600
1,3-Dinitrobenzene	25	50	200	400	800	1000	na	600
Nitrobenzene	25	50	200	400	800	1000	na	600
Tetryl	25	50	200	400	800	1000	na	600
Nitroglycerin	50	100	200	400	800	1000	na	600
2,4,6-Trinitrotoluene	25	50	200	400	800	1000	na	600
2-Amino-4,6-dinitrotoluene	25	50	200	400	800	1000	na	600
4-Amino-2,6-dinitrotoluene	25	50	200	400	800	1000	na	600
2,4-Dinitrotoluene	25	50	200	400	800	1000	na	600
2,6-Dinitrotoluene	25	50	200	400	800	1000	na	600
2-Nitrotoluene	25	50	200	400	800	1000	na	600
4-Nitrotoluene	25	50	200	400	800	1000	an	600
3-Nitrotoluene	25	50	200	400	800	1000	na	600
PETN	25	50	200	400	800	1000	na	600
Picric Acid	200	400	1600	3200	6400	8000	na	4800
3,4-Dinitrotoluene (Surrogate)	25	50	125	250	375	500	1000	250
<b>Secondary Analytes</b>								
2,4-Diamino-6-nitrotoluene	50	100	250	500	750	1000	2000	500
2,6-Diamino-4-nitrotoluene	50	100	250	500	750	1000	2000	500
3,5-Dinitroaniline	50	100	250	500	750	1000	2000	500
TATB	50	100	250	500	750	1000	2000	500
tris(o-Cresyl)phosphate	50	100	250	500	750	1000	2000	500

All values are ug/L without the prep factor

Calibration Levels 8321A-Modified-EXPL.xls (08/09A)

Calibration Levels 8321A-Modified-EXPL.xls



Form 6

# Explosives Initial Calibration

Lab Name: GEL Laboratories LLC

GEL Job No: 10-1038

Lab Code: GEL

Run Date: 05-JAN-10.08-JAN-10

LCMSMS Instrument ID: LCMSMS

Method: 8321A Modified

HPLC Column: Phenomenex Ultracarb 5 ODS(20)

Calibration Type: Average RF

Parname	1	2	3	4	5	6	Ave RF	RSD	Q
Calibration Level:	EXP0108003a	EXP0108004a	EXP0108005a	EXP0108006a	EXP0108007a	EXP0108008a			
Data File:									
1,3-Dinitrobenzene-d4	5.252	5.624	5.891	6.445	6.107	5.835	5.859	6.957	
2,4,6-TriNitrotoluene	.306	.336	.314	.327	.314	.346	0.324	4.735	
2,4-Dinitrotoluene	.243	.248	.217	.259	.232	.264	0.244	7.094	
2,6-Dinitrotoluene	1.169	1.205	1.09	1.09	1.129	1.108	1.132	4.098	
2,6-Dinitrotoluene-d3	33.895	34.7	35.72	36.984	28.747	32.59	33.773	8.544	
2-Amino-4,6-dinitrotoluene	.336	.305	.353	.41	.383	.422	0.368	12.165	
3,4-Dinitrotoluene	.929	.814	.846	.967	.885	.941	0.897	6.587	
4-Amino-2,6-dinitrotoluene	.311	.255	.243	.286	.285	.313	0.282	10.113	
HMX	2.997	3.192	3.42	3.446	3.375	3.383	3.302	5.279	
Nitrobenzene	1.095	1.158	.964	.965	.784	.952	0.986	13.189	
RDX	2.497	2.664	2.216	2.444	2.402	2.465	2.448	5.935	
Tetryl	1.384	1.231	1.057	1.039	.881	.916	1.085	17.673	
m-Dinitrobenzene	1.194	1.443	1.14	1.219	1.21	1.157	1.227	8.957	
m-Nitrotoluene	.118	.092	.104	.098	.091	.098	0.100	10.044	
o-Nitrotoluene	.163	.159	.148	.167	.155	.134	0.154	7.843	
p-Nitrotoluene	.088	.105	.072	.08	.08	.083	0.085	13.229	

Q column used to flag RSD values outside of Limit (>20%)

\* Values outside of QC Limit



Form 6

Explosives Initial Calibration

Lab Name: GEL Laboratories LLC

GEL Job No: 10-1038

Lab Code: GEL

Run Date: 05-JAN-10.08-JAN-10

LCMSMS Instrument ID: LCMSMS

Method: 8321A Modified

HPLC Column:

Phenomenex Ultracarb 5 ODS(20)

Calibration Type: Linear

Calibration Level:	1	2	3	4	5	6	Slope	Intercept	COD	Q
Data File:	EXP0108003a	EXP0108004a	EXP0108005a	EXP0108006a	EXP0108007a	EXP0108008a				
Paraname										
1,3,5-Trinitrobenzene	679.468	1322.77	4392.01	8767.35	17070.5	19999.8	3.457	0	.9988	
PEIN	1824.72	3612.81	12304.1	21610.4	36335.8	39498.4	1.536	16.875	.9968	

Linear fit:  $Y = mx + b$   
where b is Intercept and m is slope

COD is Coefficient of Determination

Q column used to flag COD values outside of Limit (<0.990)

\* Values outside of QC Limit



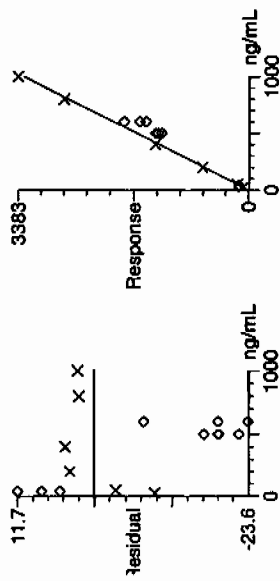
# Quantity Calibration Report

GEL Laboratories, LLC / Analyst : Michael A. Penny

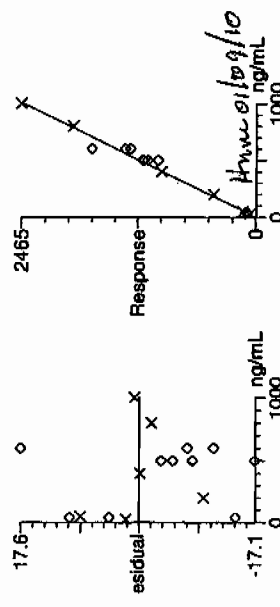
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Method: C:\MASSLYNX\New\_Exp.PRO\MethDB\010810expa.mdb, Time: Sat Jan 09 11:44:31 2010  
Calibration: Untitled, Time: Sat Jan 09 12:01:37 2010

Compound name: HMX  
Response Factor: 3.30223  
RF SD: 0.174327, % Relative SD: 5.27907  
Response type: Internal Std ( Ref 4 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF



Compound name: RDX  
Response Factor: 2.44794  
RF SD: 0.145292, % Relative SD: 5.93528  
Response type: Internal Std ( Ref 4 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF

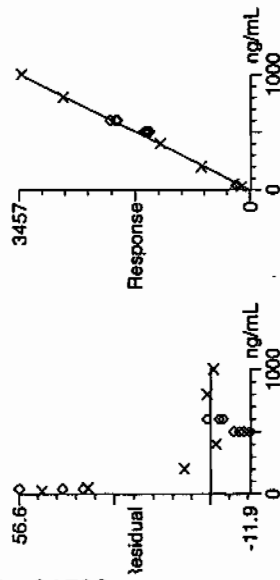




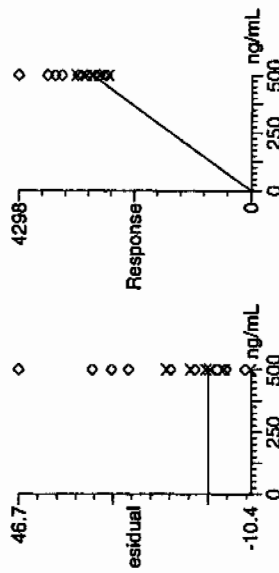
Quantify Calibration Report  
IEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYN\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Compound name: 135-Trinitrobenzene  
Coefficient of Determination: 0.998845  
Calibration curve:  $3.45704 \times x$   
Response type: Internal Std (Ref 4), Area \* (IS Conc. / IS Area)  
Curve type: Linear, Origin: Force, Weighting: Null, Axis trans: None



Compound name: 13-Dinitrobenzene-d4  
Response Factor: 5.85906  
RF SD: 0.407601, % Relative SD: 6.95677  
Response type: External Std, Area  
Curve type: RF



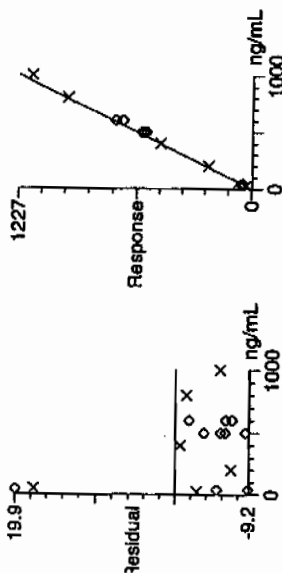


Quantify Calibration Report  
 JEL Laboratories, LLC / Analyst: Michael A. Penny

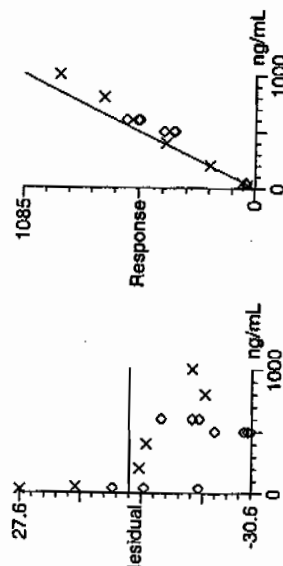
Dataset: C:\MASSLYN\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Compound name: 13-Dinitrobenzene  
 Response Factor: 1.22703  
 RF SD: 0.109909, % Relative SD: 8.95735  
 Response type: Internal Std ( Ref 4 ), Area \* ( IS Conc. / IS Area )  
 Curve type: RF

Page 249 of 1729



Compound name: Tetraol  
 Response Factor: 1.08466  
 RF SD: 0.191688, % Relative SD: 17.6727  
 Response type: Internal Std ( Ref 4 ), Area \* ( IS Conc. / IS Area )  
 Curve type: RF

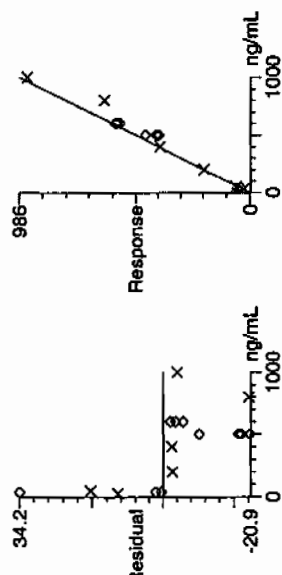




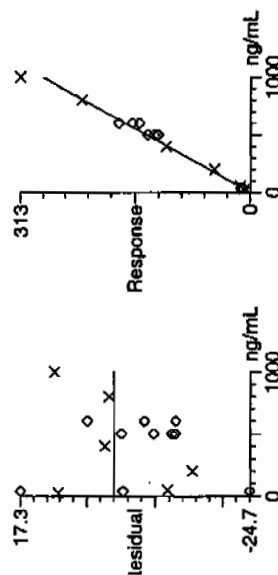
Quantify Calibration Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\10810expA.qld, Time: Sat Jan 09 12:01:37 2010

Compound name: Nitrobenzene  
Response Factor: 0.986407  
RF SD: 0.1301, % Relative SD: 13.1892  
Response type: Internal Std ( Ref 4 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF



Compound name: 4-Amino-26-dinitrotoluene  
Response Factor: 0.28197  
RF SD: 0.0285154, % Relative SD: 10.1129  
Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF

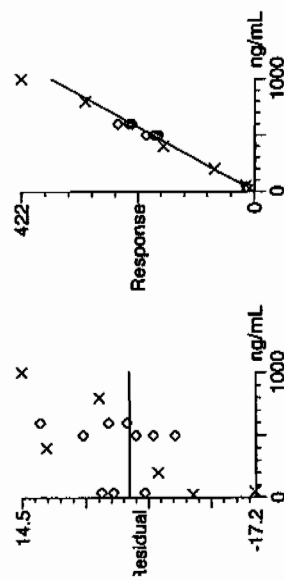




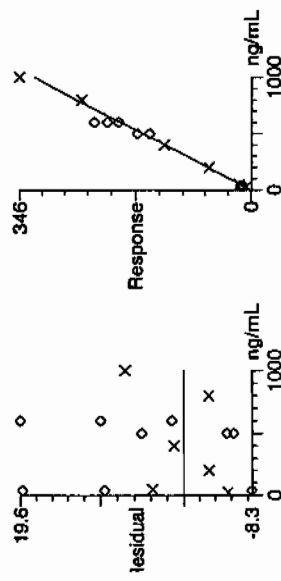
# Quantify Calibration Report iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Compound name: 2-Amino-46-dinitrotoluene  
Response Factor: 0.368254  
RF SD: 0.0447967, % Relative SD: 12.1646  
Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF



Compound name: 246-Trinitrotoluene  
Response Factor: 0.323689  
RF SD: 0.0153263, % Relative SD: 4.73488  
Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF

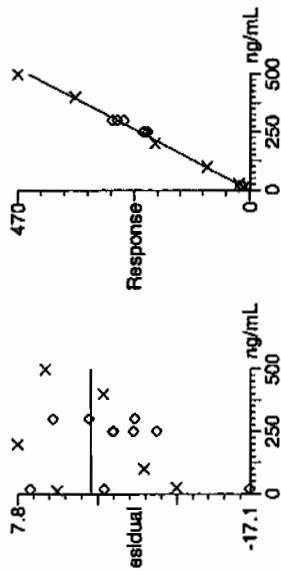




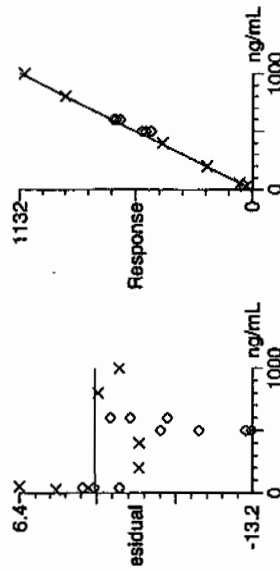
Quantify Calibration Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Compound name: 34-dinitrotoluene  
Response Factor: 0.897168  
RF SD: 0.0590949, % Relative SD: 6.58682  
Response type: Internal Std (Ref 14), Area \* (IS Conc. / IS Area)  
Curve type: RF



Compound name: 26-dinitrotoluene  
Response Factor: 1.13194  
RF SD: 0.0463851, % Relative SD: 4.09785  
Response type: Internal Std (Ref 14), Area \* (IS Conc. / IS Area)  
Curve type: RF

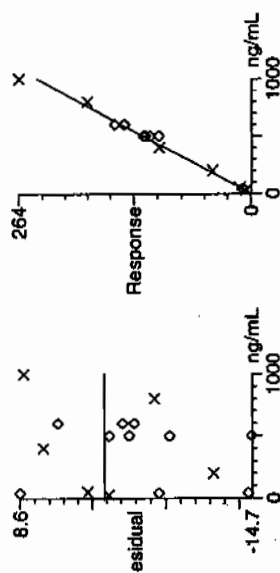




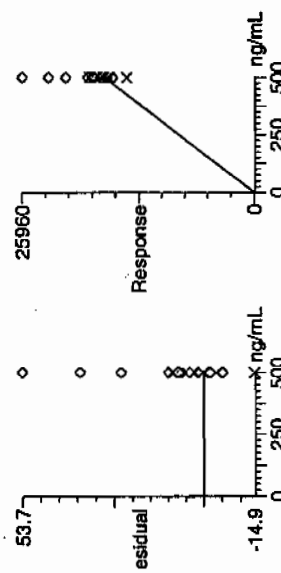
Quantify Calibration Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atset: C:\MASSLYNX\New\_Exp.PRO\10810expA.qld, Time: Sat Jan 09 12:01:37 2010

compound name: 24-dinitrotoluene  
response factor: 0.243856  
RF SD: 0.0172996, % Relative SD: 7.09421  
response type: Internal Std (Ref 14), Area \* (IS Conc. / IS Area)  
curve type: RF



compound name: 26-dinitrotoluene-d3  
response factor: 33.7726  
RF SD: 2.88541, % Relative SD: 8.54363  
response type: External Std, Area  
curve type: RF

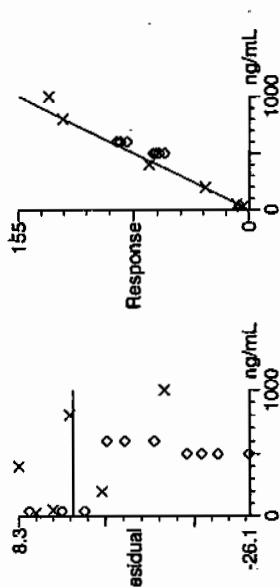




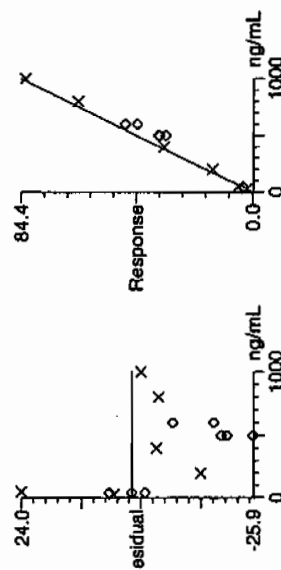
Quantify Calibration Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Compound name: 2-Nitrotoluene  
Response Factor: 0.154586  
RF SD: 0.0121245, % Relative SD: 7.84323  
Response type: Internal Std (Ref 14), Area \* (IS Conc. / IS Area)  
Curve type: RF



Compound name: 4-Nitrotoluene  
Response Factor: 0.0844098  
RF SD: 0.0111663, % Relative SD: 13.2286  
Response type: Internal Std (Ref 14), Area \* (IS Conc. / IS Area)  
Curve type: RF

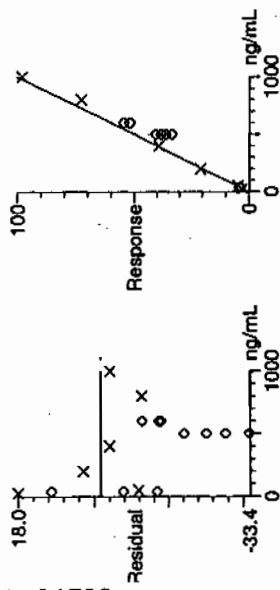




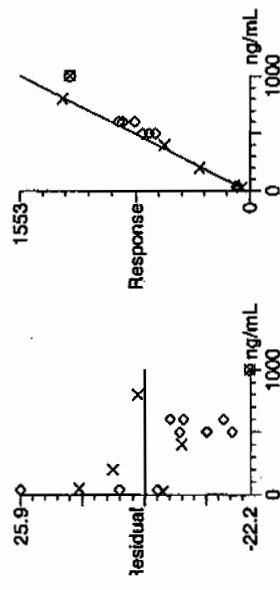
**Quantify Calibration Report**  
 GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Compound name: 3-Nitrotoluene  
 Response Factor: 0.100163  
 RF SD: 0.01006, % Relative SD: 10.0436  
 Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
 Curve type: RF



Compound name: PETN  
 Correlation coefficient:  $r = 0.998412$ ,  $r^2 = 0.996827$   
 Calibration curve:  $1.53649 * x + 16.8747$   
 Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
 Curve type: Linear, Origin: Exclude, Weighting: Null, Axis trans: None





Explosives Initial Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXICV

GEL Data File EXP0108010a

Analysis Date: 08-JAN-10 21:40

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
p-Nitrotoluene	600	547.059	91	
1,3,5-Trinitrobenzene	600	584.535	97	
1,3-Dinitrobenzene-d4	500	488.896	98	
2,4,6-Trinitrotoluene	600	658.712	110	
2,4-Dinitrotoluene	600	582.225	97	
2,6-Dinitrotoluene	600	581.833	97	
2,6-Dinitrotoluene-d3	500	490.316	98	
2-Amino-4,6-dinitrotoluene	600	617.209	103	
3,4-Dinitrotoluene	300	311.903	104	
4-Amino-2,6-dinitrotoluene	600	567.423	95	
HMX	600	485.93	81	
Nitrobenzene	600	589.772	98	
PETN	600	568.486	95	
RDX	600	557.415	93	
Tetryl	600	496.018	83	
m-Dinitrobenzene	600	561.696	94	
m-Nitrotoluene	600	518.123	86	
o-Nitrotoluene	600	554.614	92	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene , 2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108010a

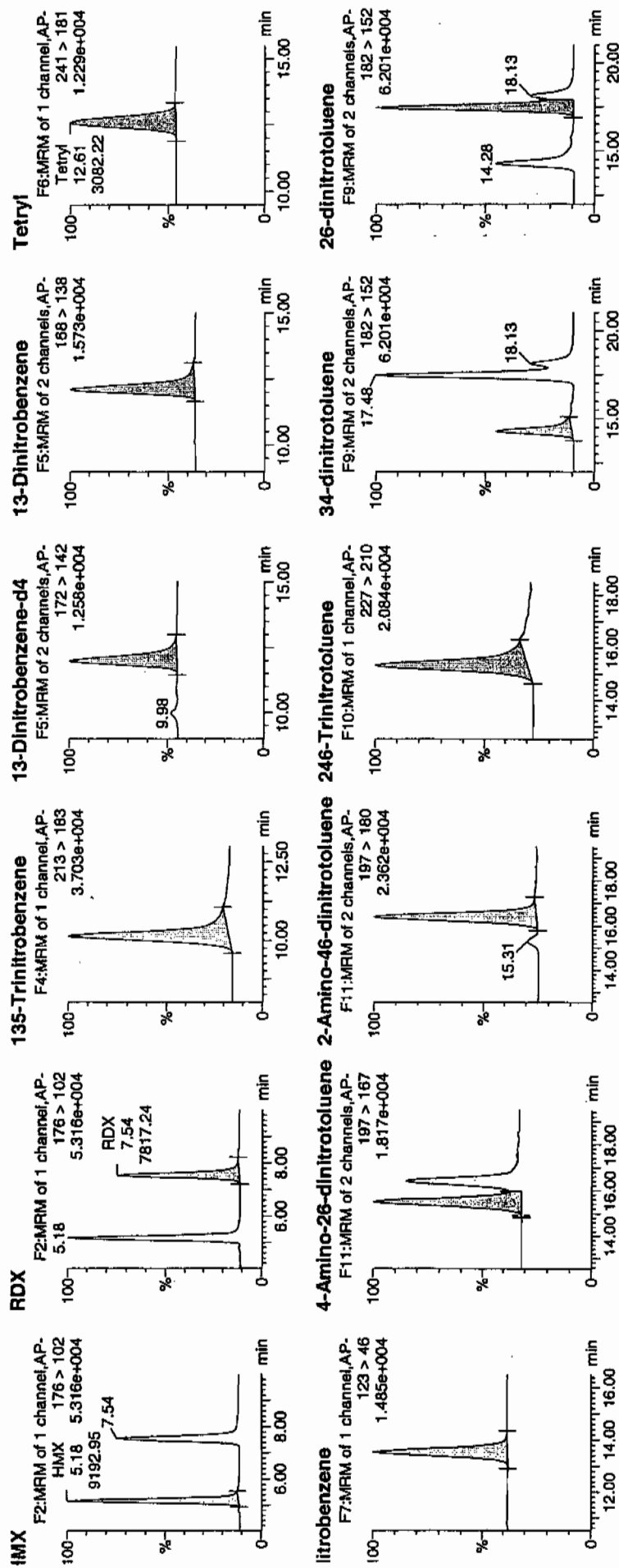
Date: 08-Jan-2010

Time: 21:40:39

File: D:\WXX100108-07ICV

Ratio: 1:1,B

Handwritten: 1/9/10



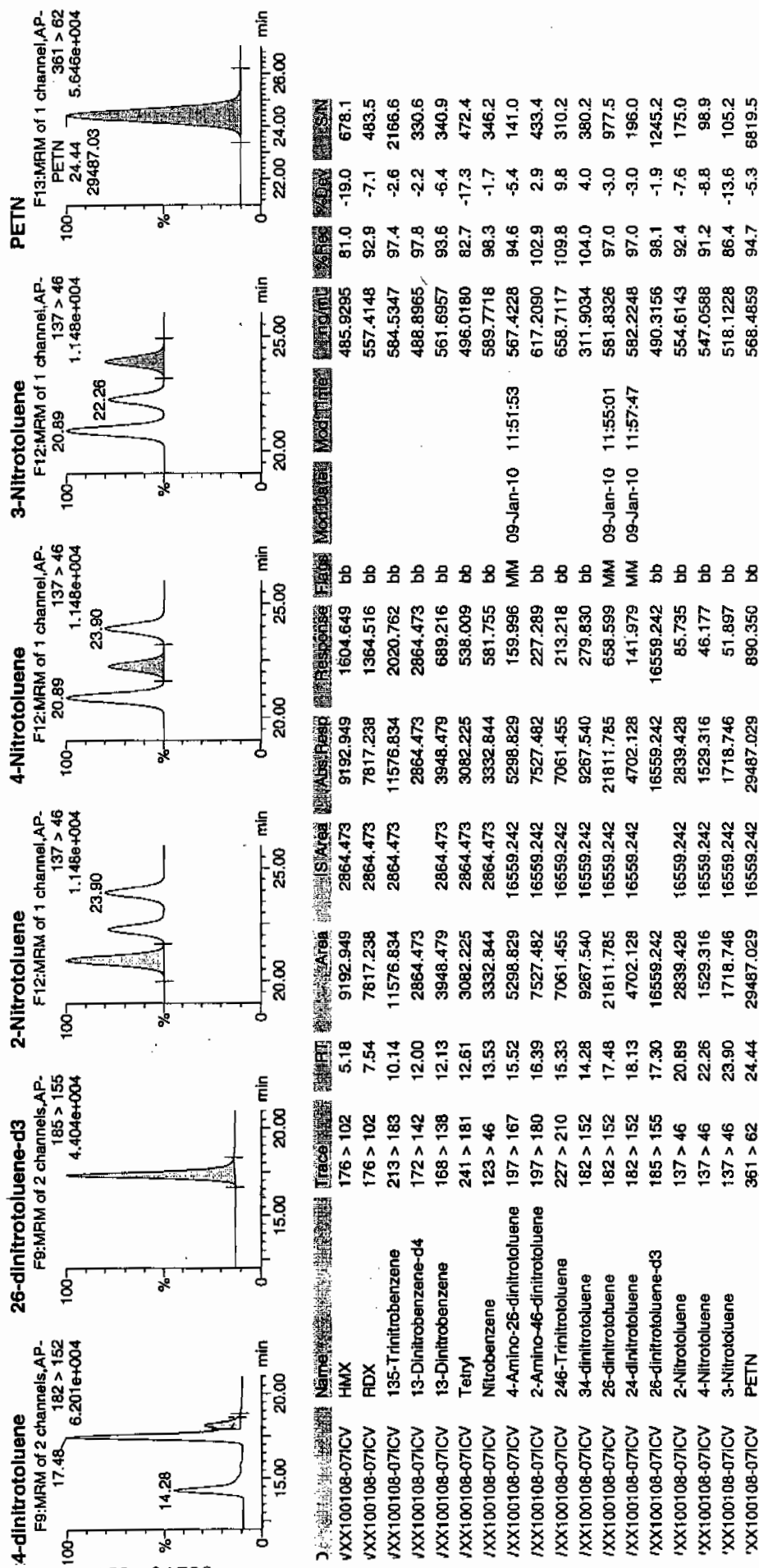
Handwritten: 1/9/10



Printed: Sat Jan 09 12:02:23 2010, Page 20 of 61

Quantify Sample Report  
JEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010





GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/08/10  
 Time of Injection: 2140  
 Standard Number: WXX100108-07ICV  
 Data File: EXP0108010a

HMX	81.0
RDX	92.9
135-TNB	97.4
13-DNB	93.6
Tetryl	82.7
Nitrobenzene	98.3
4A-26-DNT	94.6
2A-46-DNT	102.9
246-TNT	109.8
34-DNT(surr)	104.0
26-DNT	97.0
24-DNT	97.0
2-NT	92.4
4-NT	91.2
3-NT	86.4
PETN	94.7

Total 1515.9

Average 94.7

*Handwritten:* 1/9/10

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



Form 6

# Explosives Initial Calibration

Lab Name: GEL Laboratories LLC

GEL Job No: 10-1038

Lab Code: GEL

Run Date: 05-JAN-10.08-JAN-10

LCMSMS Instrument ID: LCMSMS4

Method: 8321A Modified

HPLC Column: YMC I-Sphere ODS-H8Q

Calibration Type: 2nd Order

Calibration Level:	19	20	21	22	23	24	25	X	X^2	Intercept	COD	Q
Data File:	EXS01050003.wiff	EXS01050004.wiff	EXS01050005.wiff	EXS01050006.wiff	EXS01050007.wiff	EXS01050008.wiff	EXS01050009.wiff					
Parname:												
2,4-Diamino-6-nitrotoluene	119000	240000	570000	1160000	1580000	2320000	4580000	14300	2190	.045	.9995	
2,6-Diamino-4-nitrotoluene	167000	321000	888000	1630000	2510000	3420000	6300000	-30400	3590	-.207	.9997	
3,4-Dinitrotoluene	288000	581000	1500000	2870000	4340000	5830000	10300000	-99000	13700	-3.22	.9988	
3,5-Dinitroaniline	438000	907000	2250000	4080000	6180000	7980000	13400000	-15600	9130	-1.2	.9999	
TATB	66800	138000	345000	682000	998000	1360000	2570000	-4460	1410	-.059	.9999	
tris(o-cresyl) phosphate	1220000	2460000	6050000	11400000	16000000	20200000	31700000	80200	24600	-4.39	1	

Quadratic Fit:  $y = Ax^2 + Bx + C$   
 where  $X^2$  column above is coefficient A  
 $X$  column above is coefficient B  
 intercept is C

COD is Coefficient of Determination

Q column used to flag COD outside of Limit (<0.990)

\* Values outside of QC Limit



010510ICAL

Peak Name: TATB  
No Internal Standard  
Q1/Q3 Masses: 257.20/204.90 amu

Fit	Quadratic	Weighting	None	Iterate No
a0	-4.46e+003			
a1	1.41e+003			
a2	-0.0594			
Correlation coefficient 0.9999				
Use Area				

Peak Name: 35-Dinitroaniline  
No Internal Standard  
Q1/Q3 Masses: 182.00/46.00 amu

Fit	Quadratic	Weighting	None	Iterate No
a0	-1.56e+004			
a1	9.13e+003			
a2	-1.2			
Correlation coefficient 0.9999				
Use Area				

Peak Name: 34-Dinitrotoluene  
No Internal Standard  
Q1/Q3 Masses: 182.08/151.90 amu

Fit	Quadratic	Weighting	None	Iterate No
a0	-9.9e+004			
a1	1.37e+004			
a2	-3.22			
Correlation coefficient 0.9988				
Use Area				

Peak Name: 26-Diamino-4-nitrotoluene  
No Internal Standard  
Q1/Q3 Masses: 165.97/46.00 amu

Fit	Quadratic	Weighting	None	Iterate No
a0	-3.04e+004			
a1	3.59e+003			
a2	-0.207			
Correlation coefficient 0.9997				
Use Area				

*for 11/10*

*from 01/01/10*



010510ICAL

Peak Name: 24-Diamino-6-nitrotoluene  
No Internal Standard  
Q1/Q3 Masses: 165.97/46.00 amu

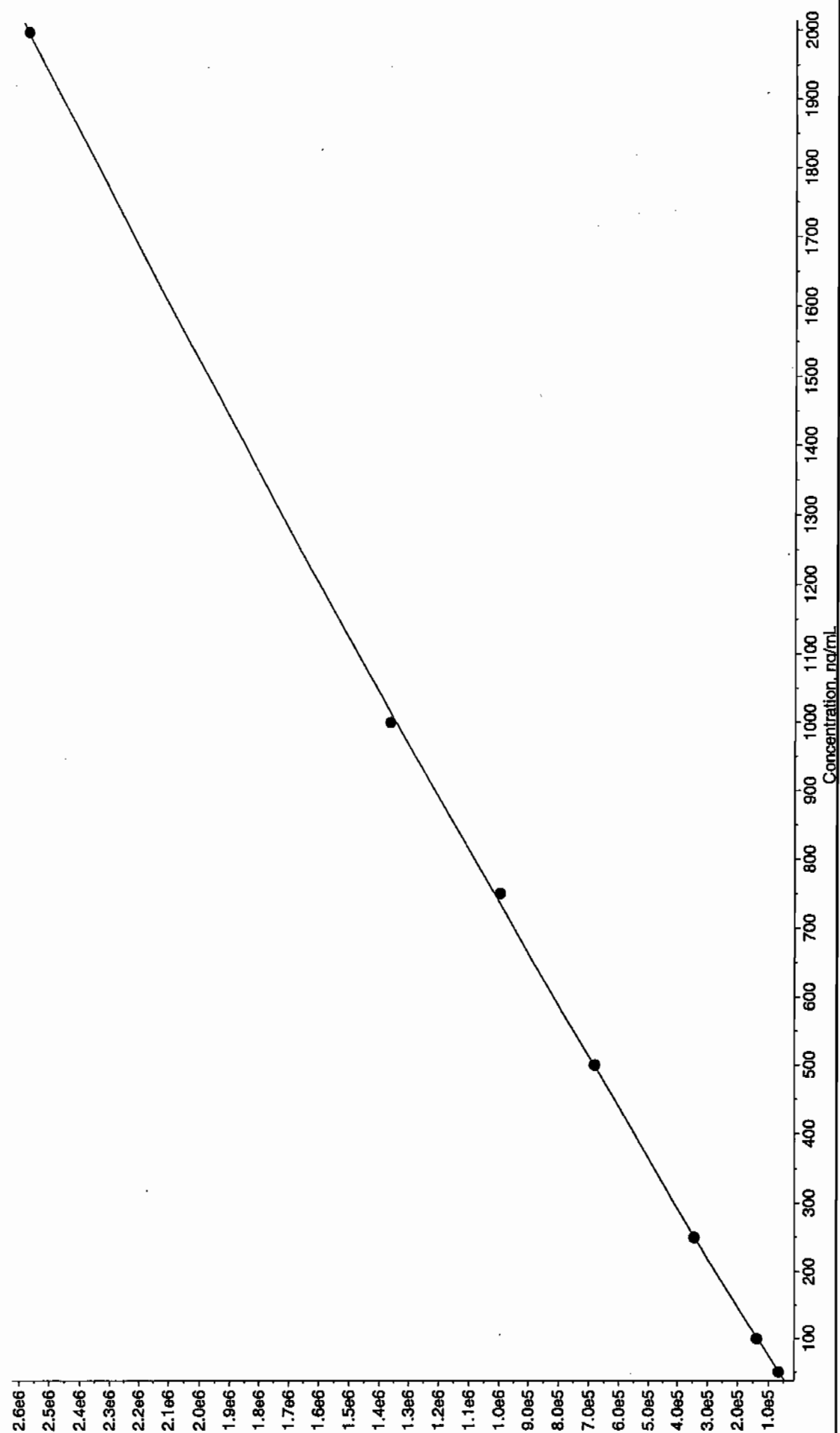
Fit	Quadratic	Weighting	None	Iterate No
a0	1.43e+004			
a1	2.19e+003			
a2	0.0451			
Correlation coefficient 0.9995				
Use Area				

Peak Name: tris(o-cresyl) phosphate  
No Internal Standard  
Q1/Q3 Masses: 369.15/91.00 amu

Fit	Quadratic	Weighting	None	Iterate No
a0	8.02e+004			
a1	2.46e+004			
a2	-4.39			
Correlation coefficient 1.0000				
Use Area				



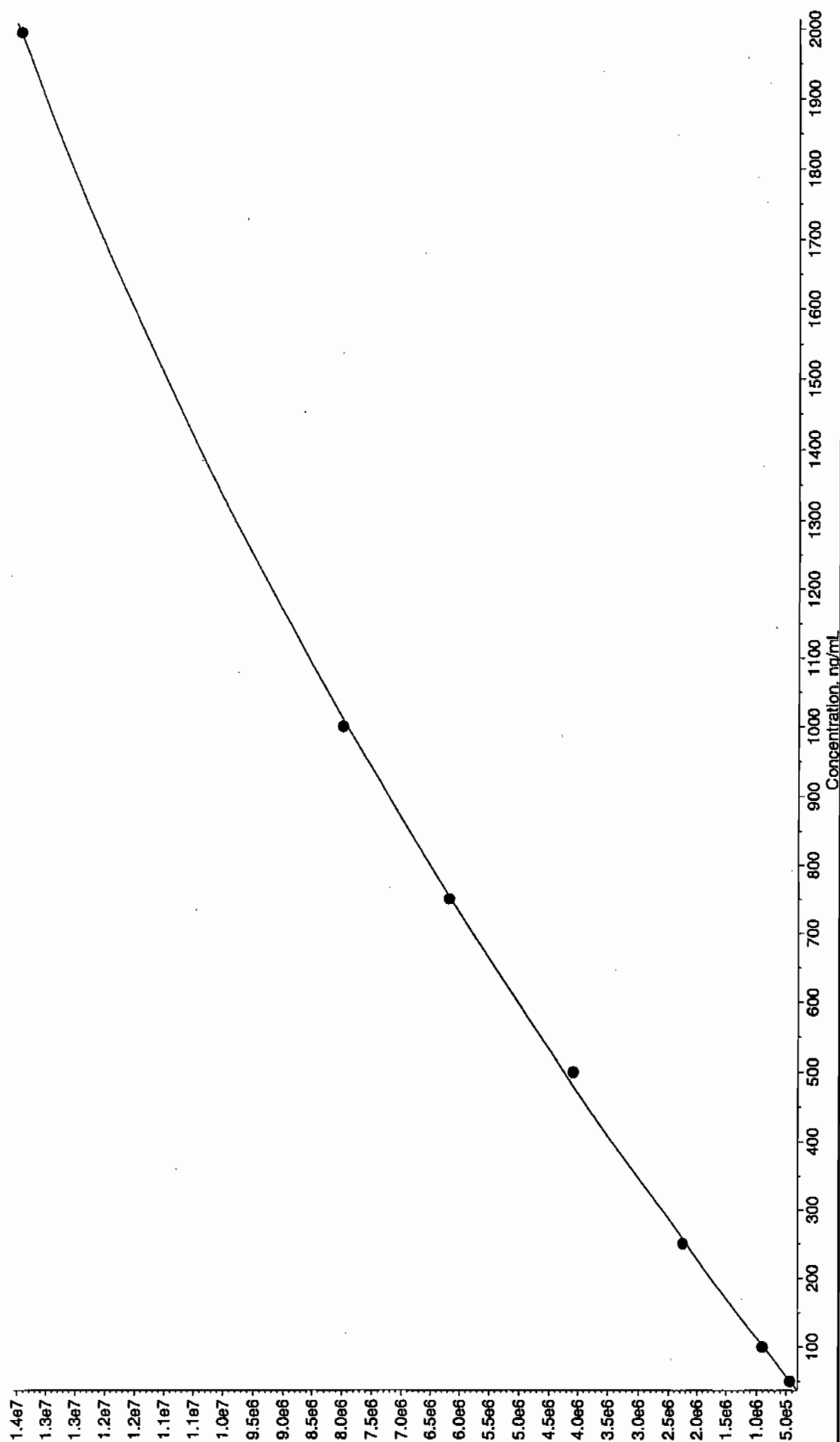
010510.rdb (TATB): "Quadratic" Regression ("No" weighting):  $y = -0.0594 x^2 + 1.41e+003 x + -4.46e+003$  ( $r = 0.9999$ )



L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



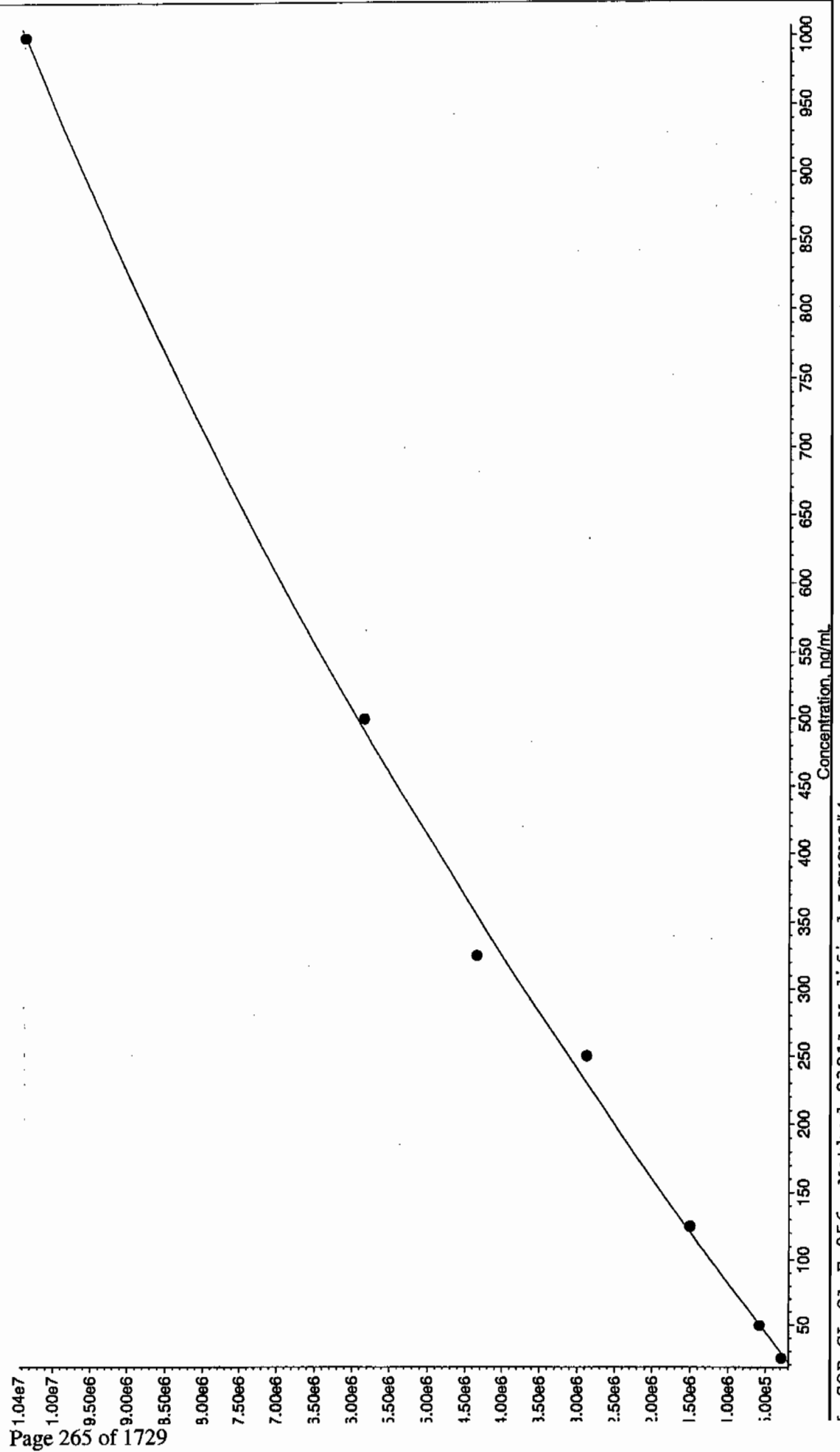
010510.rdb (35-Dinitroaniline): "Quadratic" Regression ("No" weighting):  $y = -1.2 \times 10^{-2} x^2 + 9.13 \times 10^{-3} x + -1.56 \times 10^{-4}$  ( $r = 0.9999$ )



L. SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



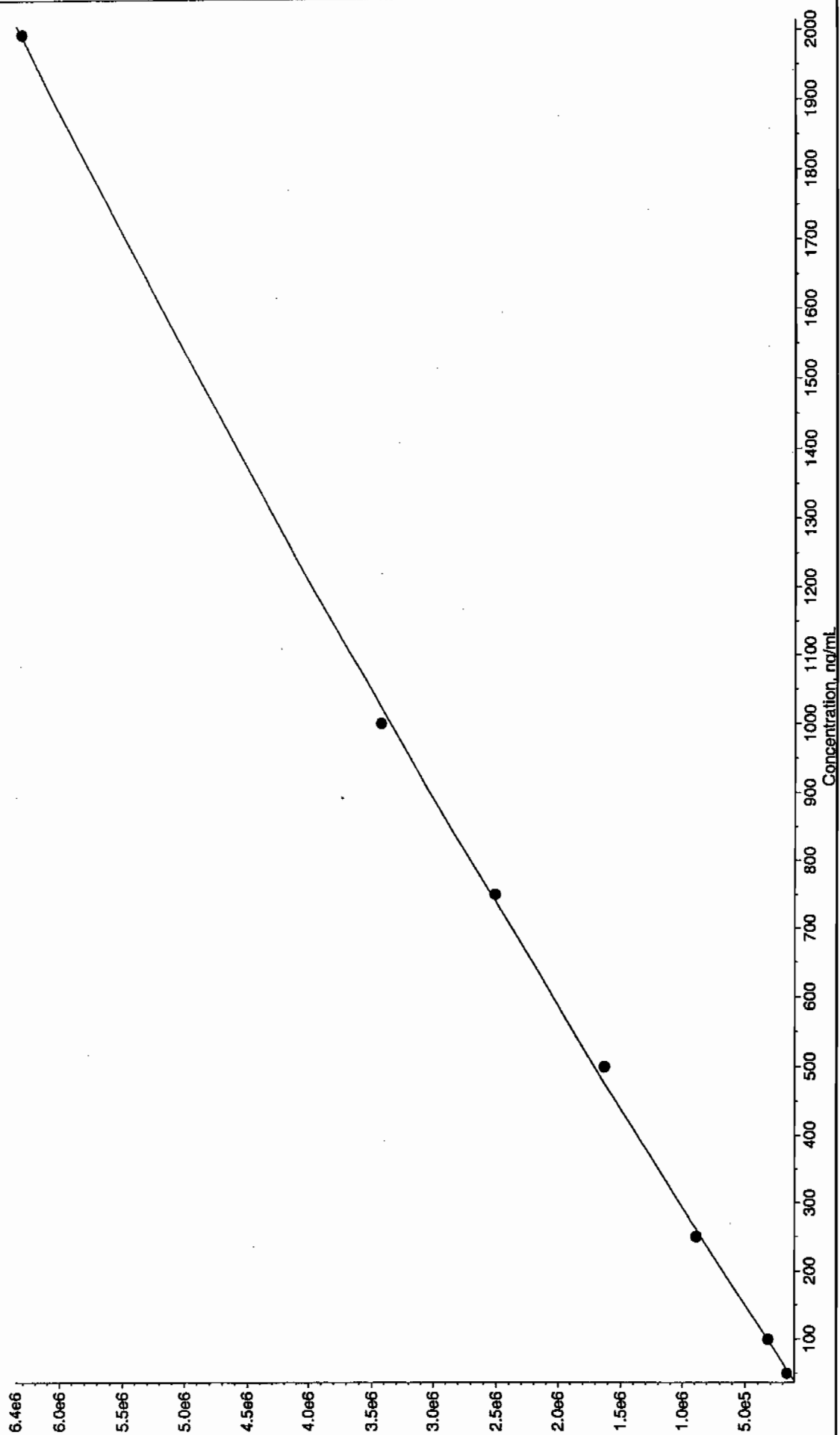
010510.rdb (34-Dinitrotoluene): "Quadratic" Regression ("No" weighting):  $y = -3.22 x^2 + 1.37e+004 x + -9.9e+004$  ( $r = 0.9988$ )



L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

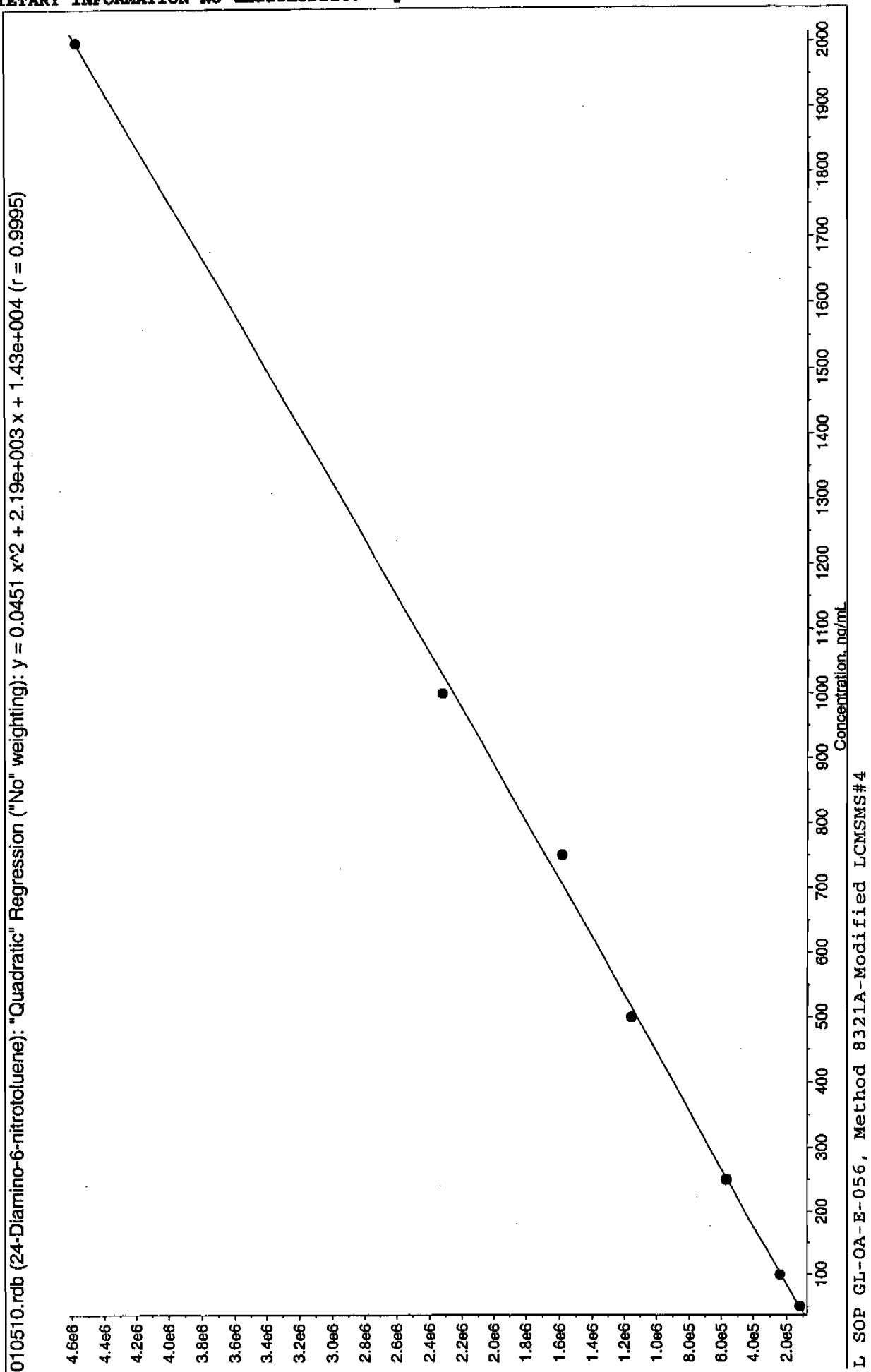


010510.rdb (26-Diamino-4-nitrotoluene): "Quadratic" Regression ("No" weighting):  $y = -0.207 x^2 + 3.59e+003 x + -3.04e+004$  ( $r = 0.9997$ )



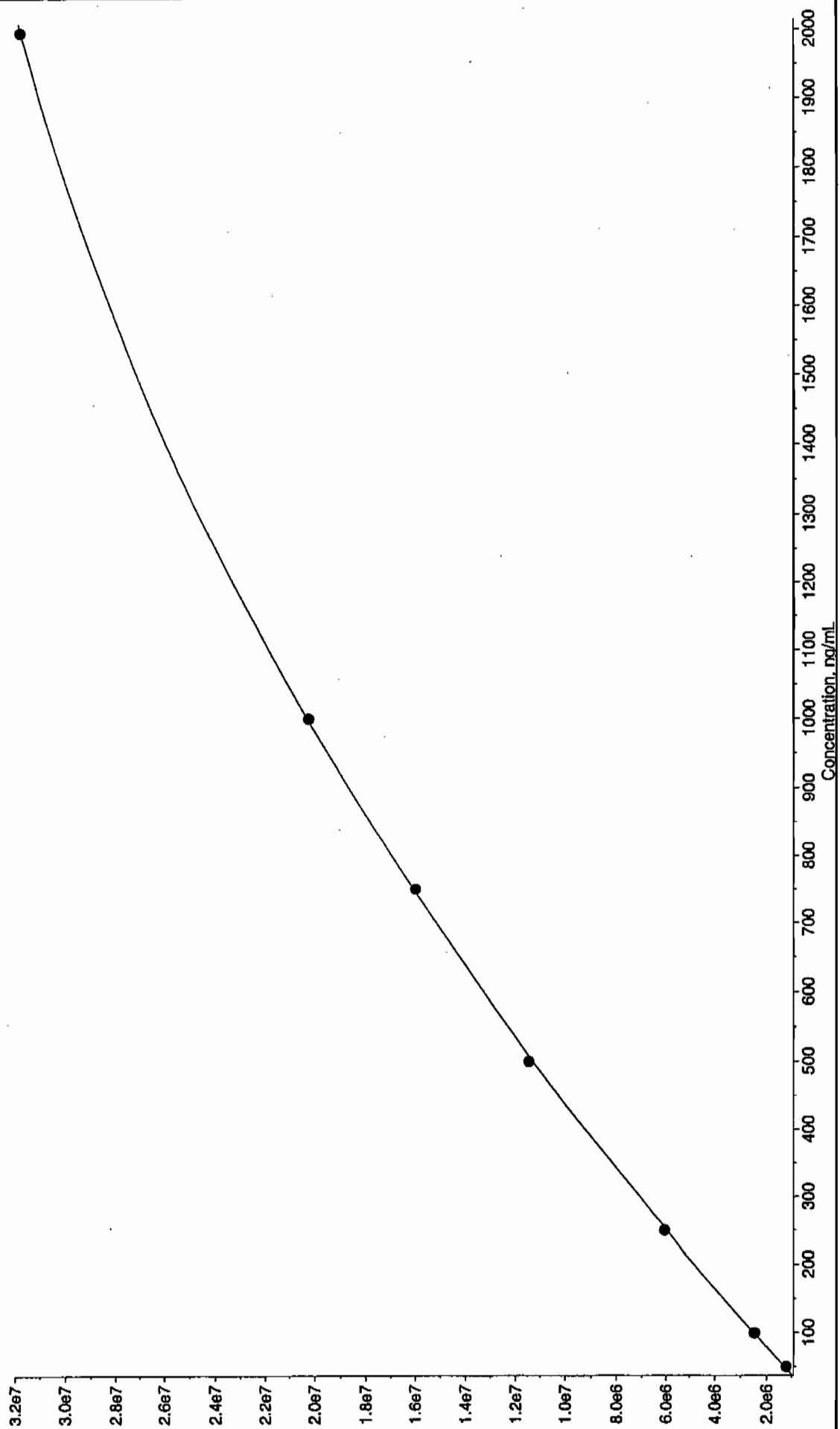
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4







010510.rdb (tris(o-cresyl) phosphate): "Quadratic" Regression ("No" weighting):  $y = -4.39 x^2 + 2.46e+004 x + 8.02e+004$  ( $r = 1.0000$ )



L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



Explosives Initial Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXICV

GEL Data File EXS01050011.wiff

Analysis Date: 05-JAN-10 17:07

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	512	102	
2,6-Diamino-4-nitrotoluene	500	553	111	
3,4-Dinitrotoluene	250	225	90	
3,5-Dinitroaniline	500	509	102	
TATB	500	514	103	
tris(o-cresyl) phosphate	500	481	96	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

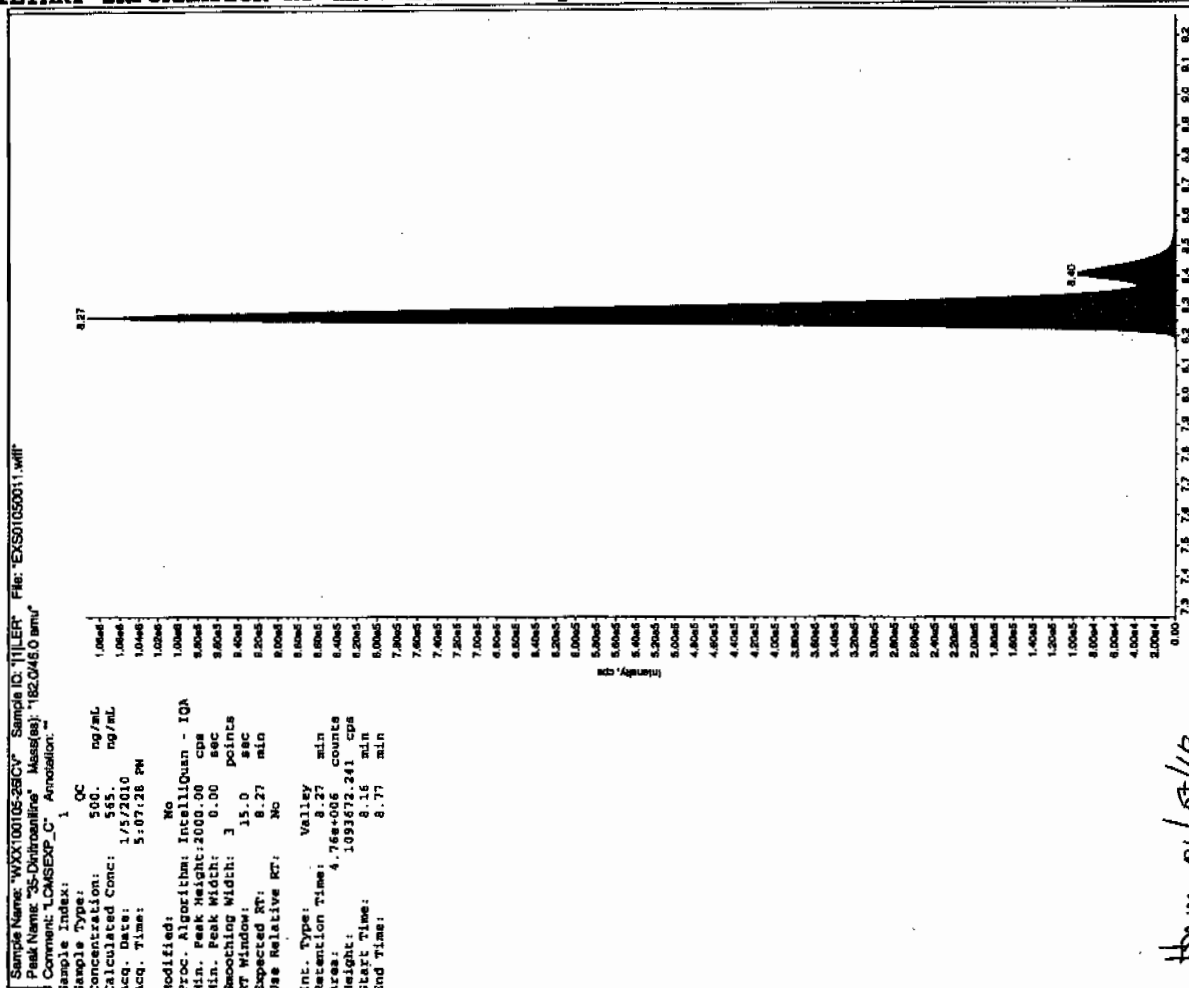
Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

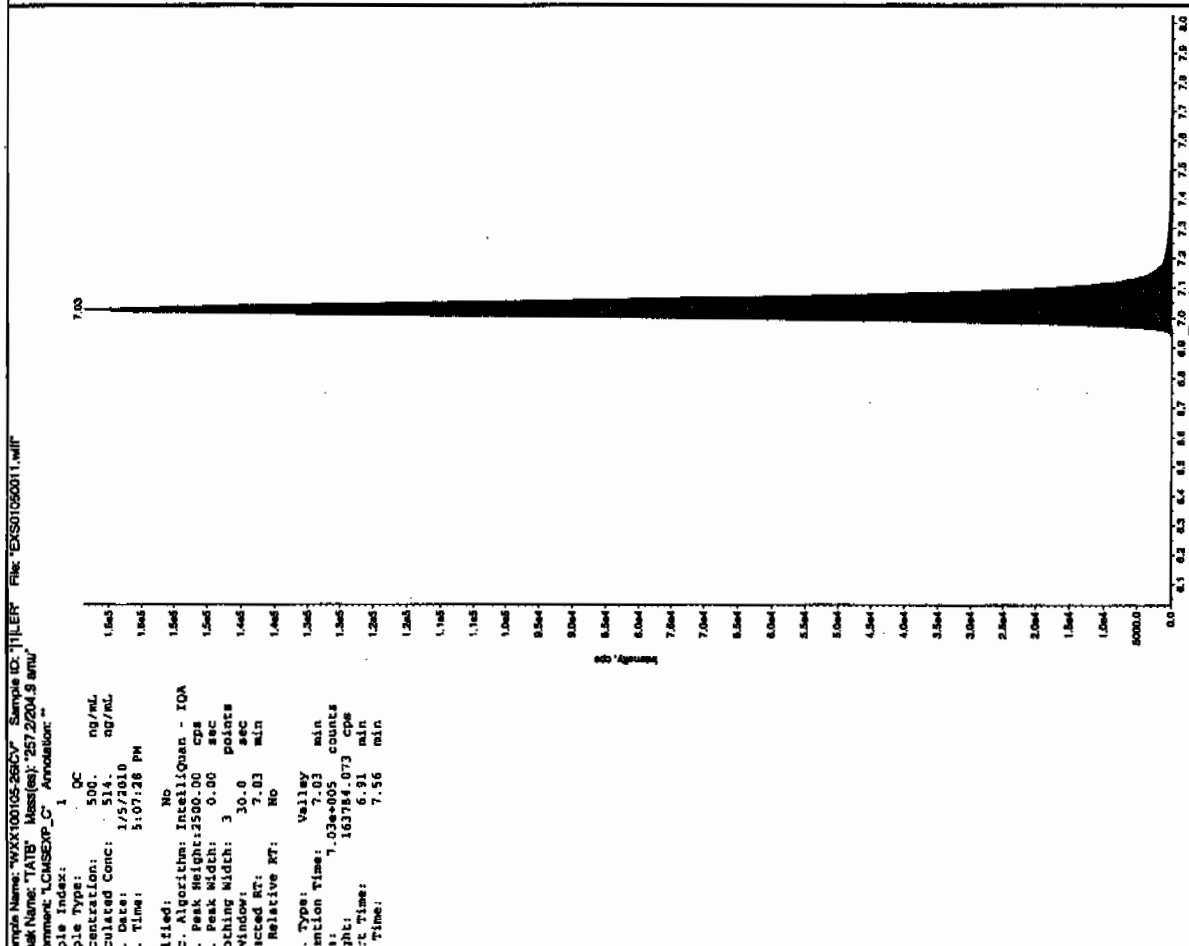
\* Value outside of Recovery Limits



01/11/11  
2008  
2008

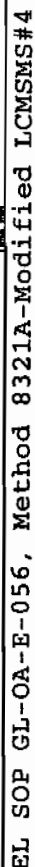


thru 01/08/10

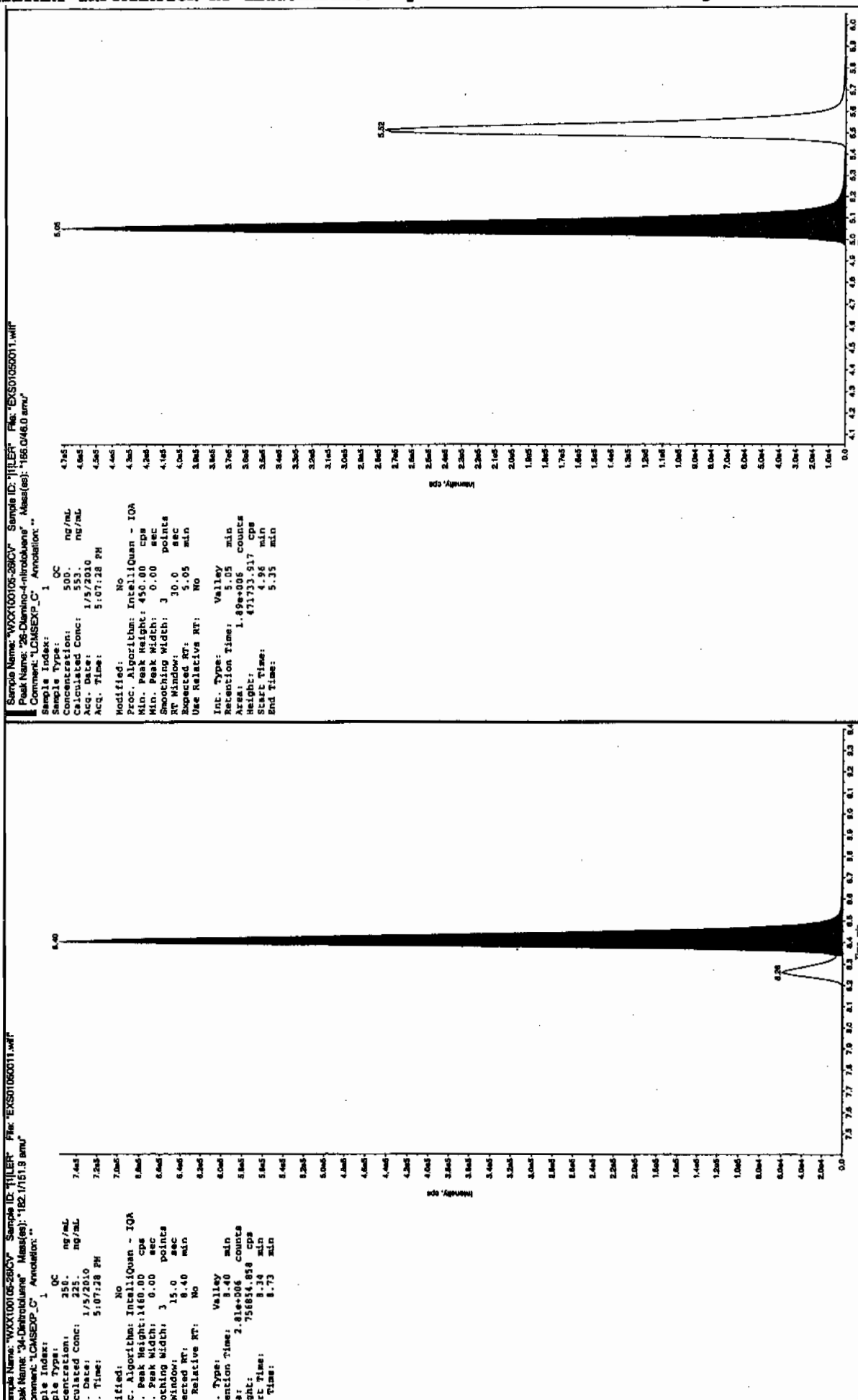


3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



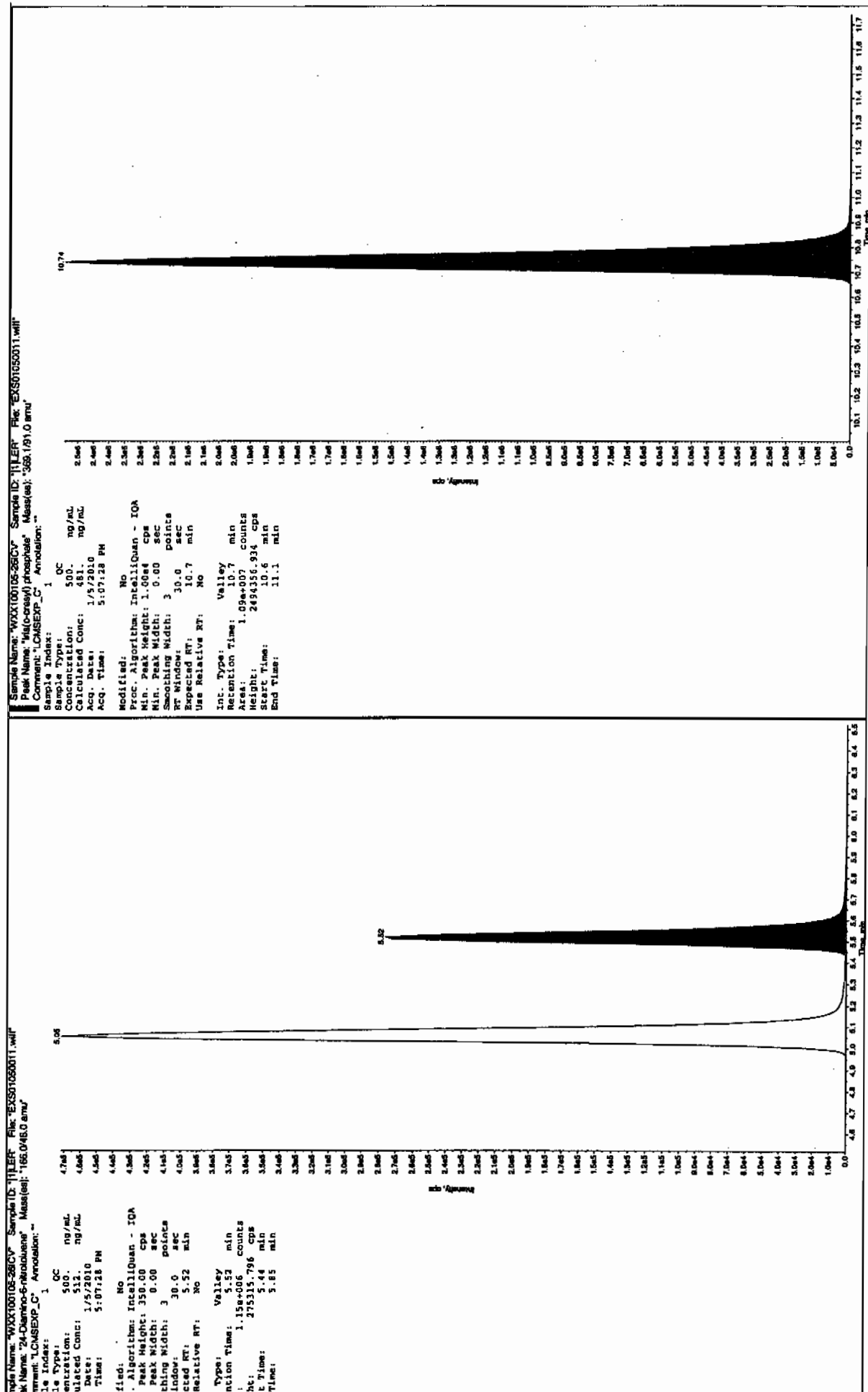






EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4







7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108012a

Analysis Date: 08-JAN-10 22:39

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2,4-Dinitrotoluene	40	34.288	86	
2,6-Dinitrotoluene	40	40.401	101	
2,6-Dinitrotoluene-d3	500	509.639	102	
2-Amino-4,6-dinitrotoluene	40	40.883	102	
3,4-Dinitrotoluene	20	16.575	83	
4-Amino-2,6-dinitrotoluene	40	30.131	75	
HMX	40	42.046	105	
Nitrobenzene	40	53.695	134	*
PETN	40	42.102	105	
RDX	40	34.339	86	
Tetryl	40	33.119	83	
m-Dinitrobenzene	40	47.97	120	
m-Nitrotoluene	40	44.301	111	
o-Nitrotoluene	40	42.717	107	
p-Nitrotoluene	40	40.049	100	
1,3,5-Trinitrobenzene	40	62.632	157	*
1,3-Dinitrobenzene-d4	500	454.977	91	
2,4,6-Trinitrotoluene	40	36.667	92	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene, 2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Printed: Sat Jan 09 12:02:23 2010, Page 23 of 61

Quantify Sample Report  
SEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\10810expA.qld, Time: Sat Jan 09 12:01:37 2010

Sample: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108012a

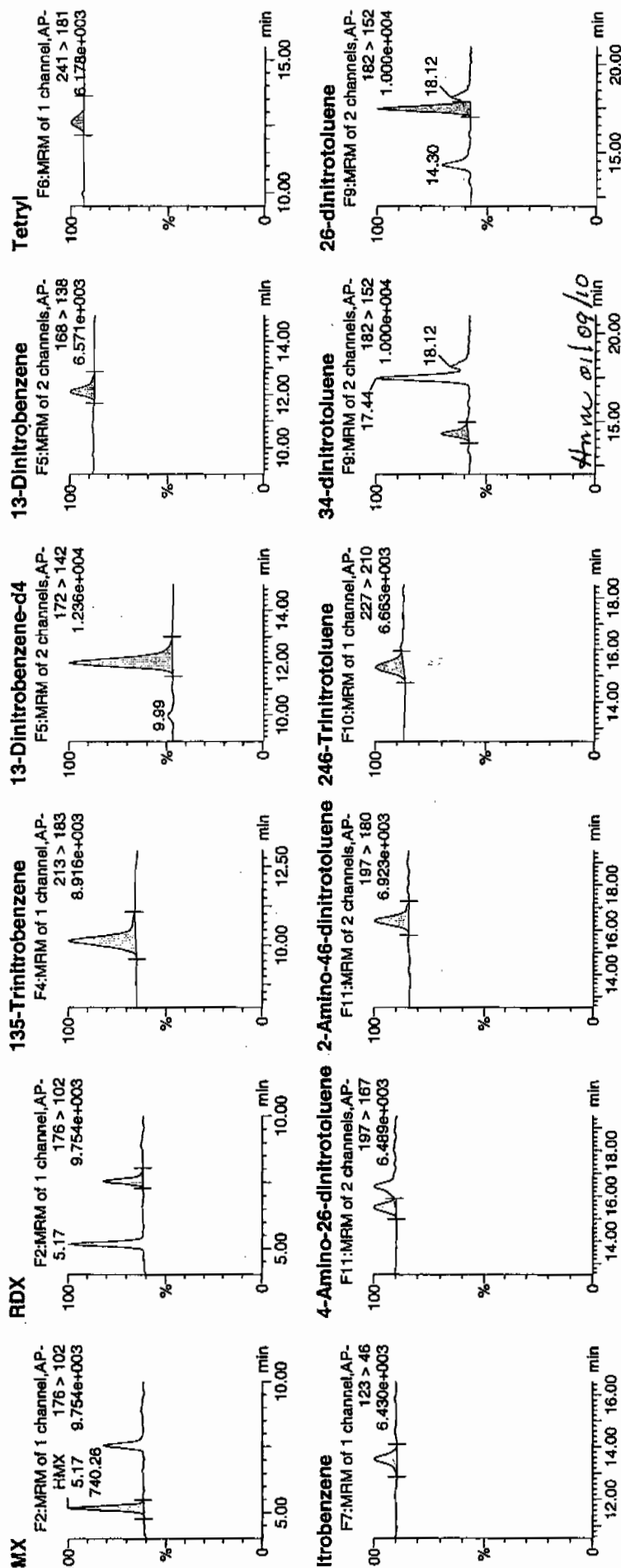
Date: 08-Jan-2010

Time: 22:39:36

D: WXX100108-08CRI

File: 1:1,C

Page 275 of 1729

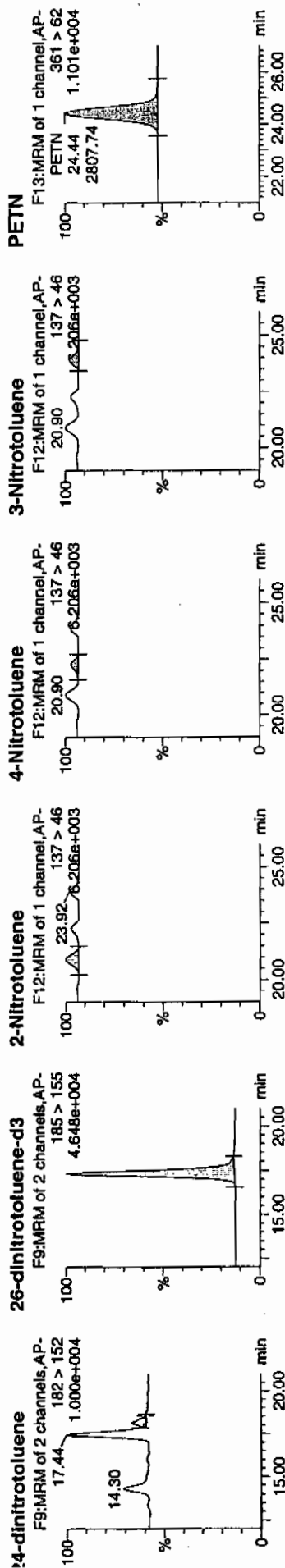




Printed: Sat Jan 09 12:02:23 2010, Page 24 of 61

Quantify Sample Report  
3EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\_PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010



DN	Name	Trace	RT	Area	IS Area	Abs Resp	Flags	Mod Date	Mod Time	Norm	% Rec	% Dev	MSIN
VXX100108-08CRI	HMZ	176 > 102	5.17	740.255	2665.739	740.255	138.946	bb		42.0462	105.1	5.1	132.3
VXX100108-08CRI	RDX	176 > 102	7.56	448.163	2665.739	448.163	84.060	bb		34.3391	85.8	-14.2	69.1
VXX100108-08CRI	135-Trinitrobenzene	213 > 183	10.14	1154.387	2665.739	1154.387	216.523	bb		62.6324	156.6	56.6	190.7
VXX100108-08CRI	13-Dinitrobenzene-d4	172 > 142	11.97	2665.739		2665.739	2665.739	bb		454.9774	91.0	-9.0	576.5
VXX100108-08CRI	13-Dinitrobenzene	168 > 138	12.10	313.812	2665.739	313.812	58.860	bb		47.9698	119.9	19.9	34.5
VXX100108-08CRI	Tetryl	241 > 181	12.63	191.522	2665.739	191.522	35.923	bb		33.1191	82.8	-17.2	28.0
VXX100108-08CRI	Nitrobenzene	123 > 46	13.54	282.384	2665.739	282.384	52.965	bb		53.6953	134.2	34.2	14.1
VXX100108-08CRI	4-Amino-26-dinitrotoluene	197 > 167	15.49	292.467	17211.854	292.467	8.496	MM	09-Jan-10 11:52:00	30.1312	75.3	-24.7	14.3
VXX100108-08CRI	2-Amino-46-dinitrotoluene	197 > 180	16.40	518.263	17211.854	518.263	15.055	bb		40.8833	102.2	2.2	44.4
VXX100108-08CRI	246-Trinitrotoluene	227 > 210	15.31	408.566	17211.854	408.566	11.869	bb		36.6671	91.7	-8.3	29.7
VXX100108-08CRI	34-dinitrotoluene	182 > 152	14.30	511.903	17211.854	511.903	14.871	bb		16.5751	82.9	-17.1	33.0
VXX100108-08CRI	26-dinitrotoluene	182 > 152	17.44	1574.255	17211.854	1574.255	45.732	MM	09-Jan-10 11:55:08	40.4012	101.0	1.0	110.8
VXX100108-08CRI	24-dinitrotoluene	182 > 152	18.12	287.829	17211.854	287.829	8.361	MM	09-Jan-10 11:58:02	34.2881	85.7	-14.3	19.9
VXX100108-08CRI	26-dinitrotoluene-d3	185 > 155	17.29	17211.854		17211.854	17211.854	bb		509.6393	101.9	1.9	1903.6
VXX100108-08CRI	2-Nitrotoluene	137 > 46	20.90	227.317	17211.854	227.317	6.604	bb		42.7174	106.8	6.8	79.4
VXX100108-08CRI	4-Nitrotoluene	137 > 46	22.28	116.371	17211.854	116.371	3.381	bb		40.0492	100.1	0.1	45.3
VXX100108-08CRI	3-Nitrotoluene	137 > 46	23.92	152.750	17211.854	152.750	4.437	bb		44.3012	110.8	10.8	55.7
VXX100108-08CRI	PETN	361 > 62	24.44	2807.735	17211.854	2807.735	81.564	bb		42.1019	105.3	5.3	1168.6



GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/08/10  
 Time of Injection 2239  
 Standard Number WXX100108-08CRI  
 Data File EXP0108012a

HMX	105.1
RDX	85.8
135-TNB	156.6
13-DNB	119.9
Tetryl	82.8
Nitrobenzene	134.2
4A-26-DNT	75.3
2A-46-DNT	102.2
246-TNT	91.7
34-DNT(surr)	82.9
26-DNT	101.0
24-DNT	85.7
2-NT	106.8
4-NT	100.1
3-NT	110.8
PETN	105.3

*MTT  
1/9/10*

Total 1646.2

Average 102.9

*Amw 01/09/10*  
 ICV Limits 85-115%  
 CRI Limits 70-130%  
 CCV Limits 85-115%  
 No single analyte > +/- 60%



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0108018a

Analysis Date: 09-JAN-10 01:36

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	606.021	101	
1,3-Dinitrobenzene-d4	500	516.054	103	
2,4,6-Trinitrotoluene	600	608.705	101	
2,4-Dinitrotoluene	600	628.741	105	
2,6-Dinitrotoluene	600	563.684	94	
2,6-Dinitrotoluene-d3	500	538.099	108	
2-Amino-4,6-dinitrotoluene	600	601.969	100	
3,4-Dinitrotoluene	300	285.84	95	
4-Amino-2,6-dinitrotoluene	600	533.955	89	
HMX	600	554.517	92	
Nitrobenzene	600	581.678	97	
PETN	600	551.216	92	
RDX	600	705.816	118	
Tetryl	600	552.916	92	
m-Dinitrobenzene	600	589.319	98	
m-Nitrotoluene	600	544.817	91	
o-Nitrotoluene	600	528.699	88	
p-Nitrotoluene	600	494.24	82	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%  
Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Printed: Sat Jan 09 12:02:23 2010, Page 35 of 61

Quantify Sample Report  
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108018a

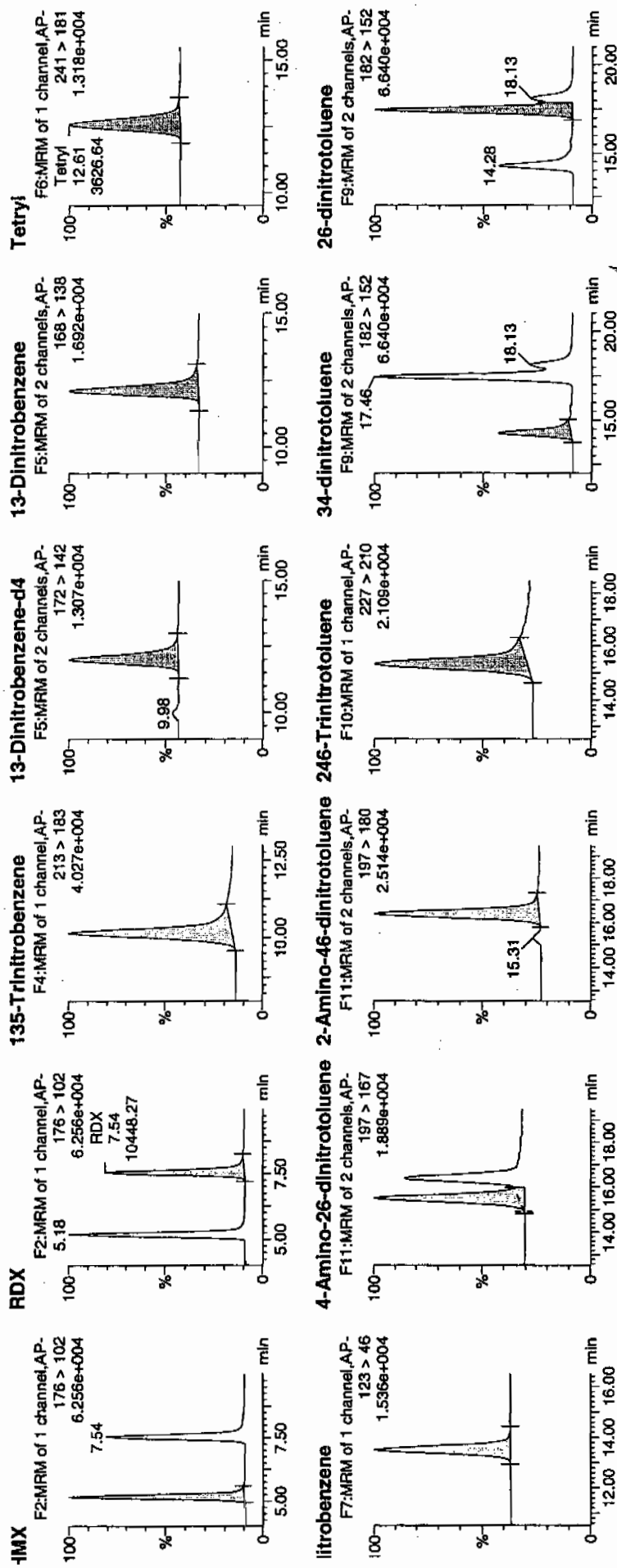
Date: 09-Jan-2010

Time: 01:36:28

D: WXX100108-07CCV

/lal: 1:1,B

1/9/10



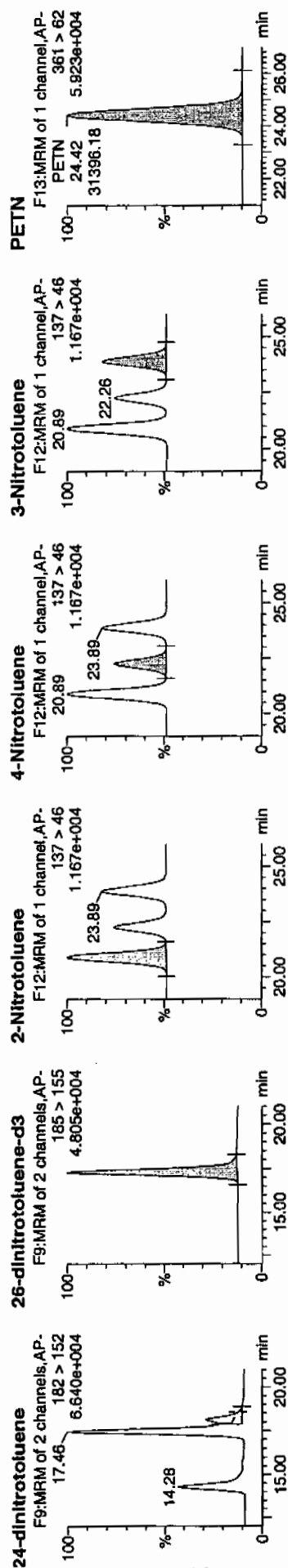
1/9/10



### Quantify Sample Report

GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010



ID	Name	Trace	RT	Area	SWArea	AbsResp	Response	Flags	ModTime	ModDate	ModUser	ModPc	ModOS	ModSN
WXX100108-07CCV	HMX	176 > 102	5.18	11073.245	3023.591	11073.245	1831.141	bb		554.5172	92.4	-7.6	1676.1	
WXX100108-07CCV	RDX	176 > 102	7.54	10448.271	3023.591	10448.271	1727.792	bb		705.8157	117.6	17.6	1325.5	
WXX100108-07CCV	135-Trinitrobenzene	213 > 183	10.14	12669.103	3023.591	12669.103	2095.042	bb		606.0215	101.0	1.0	1439.2	
WXX100108-07CCV	13-Dinitrobenzene-d4	172 > 142	11.97	3023.591		3023.591	3023.591	bb		516.0541	103.2	3.2	166.8	
WXX100108-07CCV	13-Dinitrobenzene	168 > 138	12.10	4372.778	3023.591	4372.778	723.110	bb		589.3189	98.2	-1.8	711.6	
WXX100108-07CCV	Tetryl	241 > 181	12.61	3626.639	3023.591	3626.639	599.724	bb		552.9160	92.2	-7.8	585.9	
WXX100108-07CCV	Nitrobenzene	123 > 46	13.53	3469.703	3023.591	3469.703	573.772	bb		581.6785	96.9	-3.1	273.3	
WXX100108-07CCV	4-Amino-26-dinitrotoluene	197 > 167	15.52	5472.227	18172.998	5472.227	150.559	MM	09-Jan-10	11:52:27	533.9552	89.0	-11.0	472.4
WXX100108-07CCV	2-Amino-46-dinitrotoluene	197 > 180	16.39	8057.079	18172.998	8057.079	221.677	bb		601.9689	100.3	0.3	352.2	
WXX100108-07CCV	246-Trinitrotoluene	227 > 210	15.33	7181.302	18172.998	7181.302	197.031	bb		608.7053	101.5	1.5	360.5	
WXX100108-07CCV	34-dinitrotoluene	182 > 152	14.28	9320.819	18172.998	9320.819	256.447	bb		285.8404	95.3	-4.7	411.0	
WXX100108-07CCV	26-dinitrotoluene	182 > 152	17.46	23190.764	18172.998	23190.764	638.056	MM	09-Jan-10	11:55:35	563.6840	93.9	-6.1	1111.5
WXX100108-07CCV	24-dinitrotoluene	182 > 152	18.13	5572.645	18172.998	5572.645	153.322	MM	09-Jan-10	11:58:24	628.7406	104.8	4.8	229.7
WXX100108-07CCV	26-dinitrotoluene-d3	185 > 155	17.30	18172.998		18172.998	18172.998	bb		538.0986	107.6	7.6	1261.8	
WXX100108-07CCV	2-Nitrotoluene	137 > 46	20.89	2970.536	18172.998	2970.536	81.729	bb		528.6995	88.1	-11.9	169.2	
WXX100108-07CCV	4-Nitrotoluene	137 > 46	22.26	1516.307	18172.998	1516.307	41.719	bb		494.2399	82.4	-17.6	89.1	
WXX100108-07CCV	3-Nitrotoluene	137 > 46	23.89	1983.425	18172.998	1983.425	54.571	bb		544.8170	90.8	-9.2	109.1	
WXX100108-07CCV	PETN	361 > 62	24.42	31396.178	18172.998	31396.178	863.814	bb		551.2156	91.9	-8.1	5840.6	



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/09/10  
 Time of Injection: 0136  
 Standard Number: WXX100108-07CCV  
 Data File: EXP0108018a

HMX	92.4
RDX	117.6
135-TNB	101.0
13-DNB	98.2
Tetryl	92.2
Nitrobenzene	96.9
4A-26-DNT	89.0
2A-46-DNT	100.3
246-TNT	101.5
34-DNT(surr)	95.3
26-DNT	93.9
24-DNT	104.8
2-NT	88.1
4-NT	82.4
3-NT	90.8
PETN	91.9

*MMT*  
*1/9/10*

Total 1536.3

Average 96.0

*MMT 01/09/10*

ICV Limits 85-115%
CRI Limits 70-130%
CCV Limits 85-115%
No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108020a

Analysis Date: 09-JAN-10 02:35

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
m-Dinitrobenzene	40	36.303	91	
m-Nitrotoluene	40	34.916	87	
o-Nitrotoluene	40	40.683	102	
p-Nitrotoluene	40	38.865	97	
1,3,5-Trinitrobenzene	40	57.42	144	*
1,3-Dinitrobenzene-d4	500	478.135	96	
2,4,6-Trinitrotoluene	40	47.739	119	
2,4-Dinitrotoluene	40	43.444	109	
2,6-Dinitrotoluene	40	39.173	98	
2,6-Dinitrotoluene-d3	500	472.045	94	
2-Amino-4,6-dinitrotoluene	40	41.528	104	
3,4-Dinitrotoluene	20	19.72	99	
4-Amino-2,6-dinitrotoluene	40	39.363	98	
HMX	40	44.675	112	
Nitrobenzene	40	40.724	102	
PETN	40	50.356	126	
RDX	40	41.821	105	
Tetryl	40	41.61	104	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Quantify Sample Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108020a

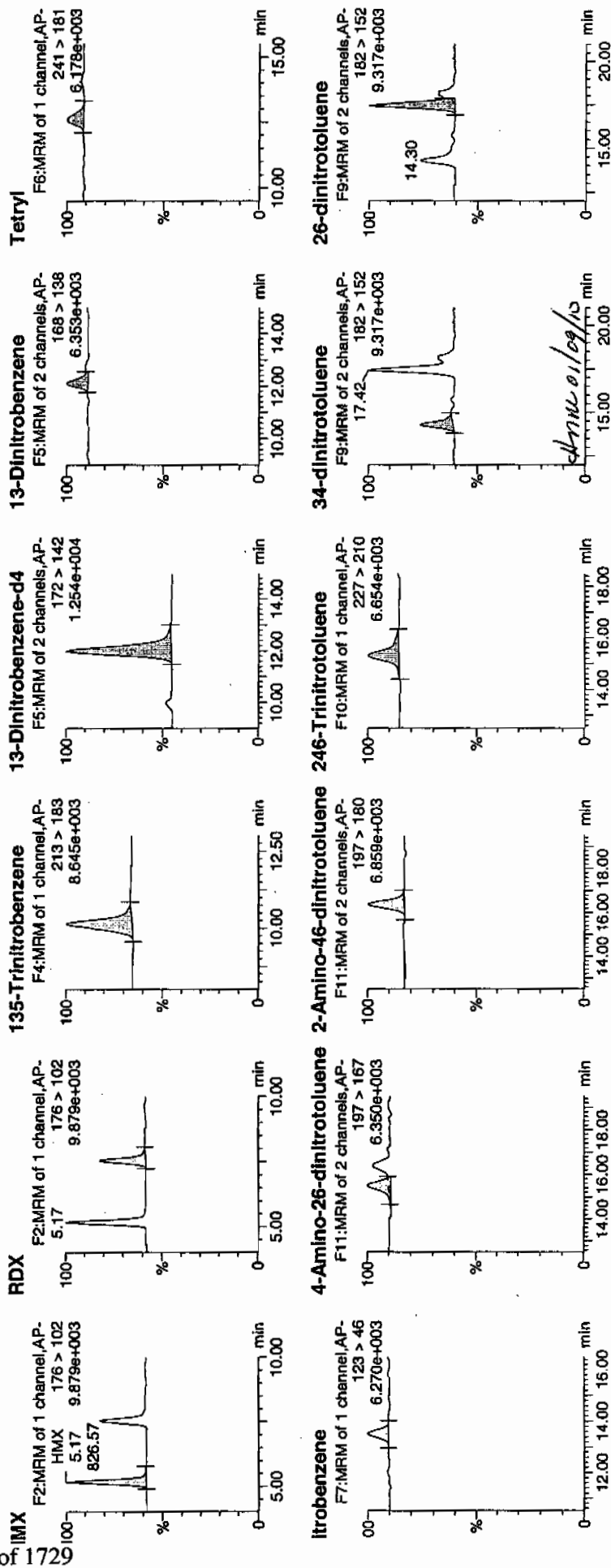
Plate: 09-Jan-2010

Time: 02:35:25

Sample ID: WXX100108-08CRI

Label: 1:1,C

1/9/10

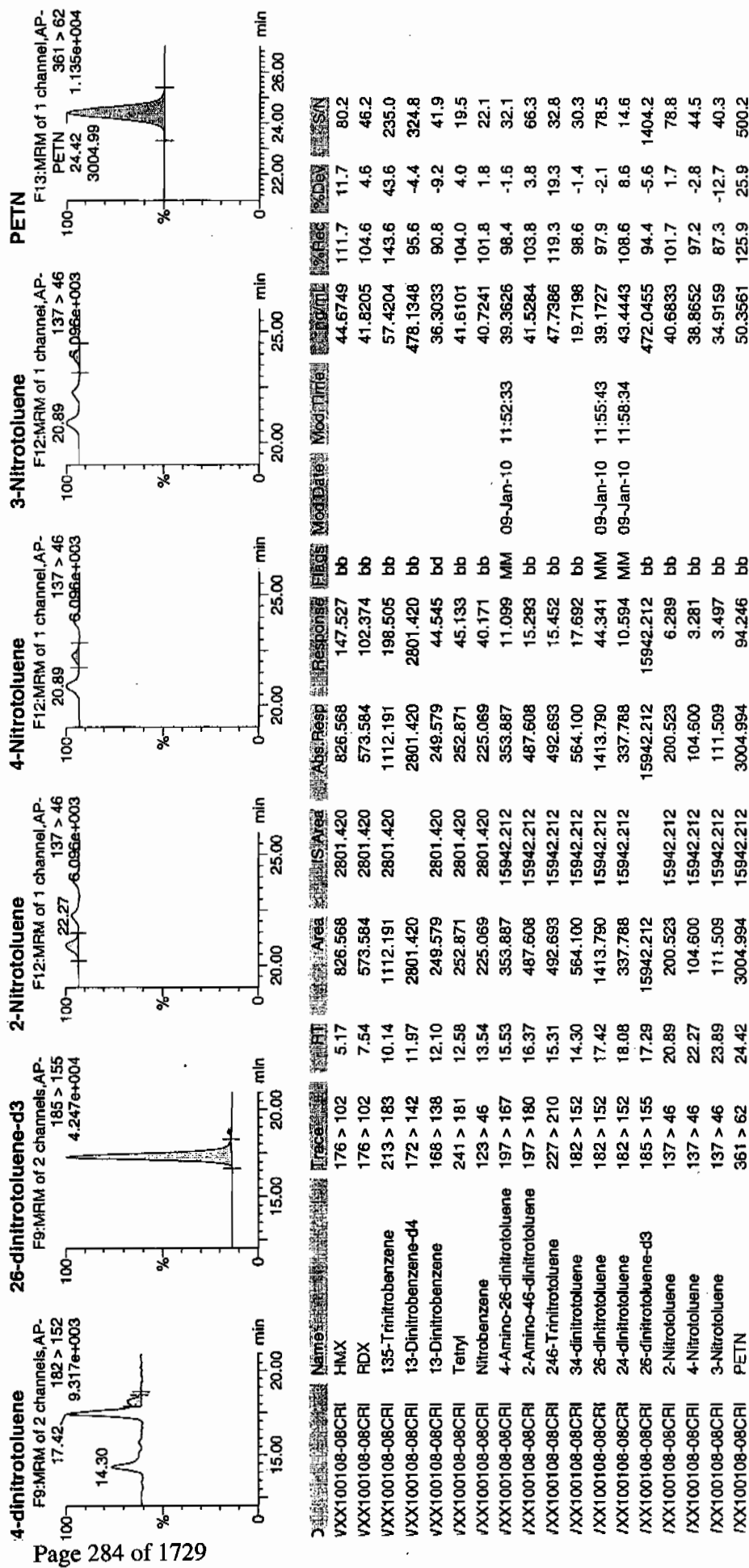




Printed: Sat Jan 09 12:02:23 2010, Page 40 of 61

Quantify Sample Report  
JEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010





GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/09/10  
 Time of Injection 0235  
 Standard Number WXX100108-08CRI  
 Data File EXP0108020a

HMX	111.7
RDX	104.6
135-TNB	143.6
13-DNB	90.8
Tetryl	104.0
Nitrobenzene	101.8
4A-26-DNT	98.4
2A-46-DNT	103.8
246-TNT	119.3
34-DNT(surr)	98.6
26-DNT	97.9
24-DNT	108.6
2-NT	101.7
4-NT	97.2
3-NT	87.3
PETN	125.9

*mtf  
1/9/10*

Total 1695.2

Average 106.0

*Sum 01/09/10*

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0108028a

Analysis Date: 09-JAN-10 06:31

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
3,4-Dinitrotoluene	300	300.567	100	
4-Amino-2,6-dinitrotoluene	600	628.87	105	
HMX	600	458.234	76	*
Nitrobenzene	600	570.673	95	
PETN	600	499.896	83	
RDX	600	534.399	89	
Tetryl	600	506.836	84	
m-Dinitrobenzene	600	556.783	93	
m-Nitrotoluene	600	521.919	87	
o-Nitrotoluene	600	569.819	95	
p-Nitrotoluene	600	546.099	91	
1,3,5-Trinitrobenzene	600	576.974	96	
1,3-Dinitrobenzene-d4	500	545.758	109	
2,4,6-Trinitrotoluene	600	717.642	120	
2,4-Dinitrotoluene	600	588.932	98	
2,6-Dinitrotoluene	600	592.045	99	
2,6-Dinitrotoluene-d3	500	532.538	107	
2-Amino-4,6-dinitrotoluene	600	672.488	112	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Quantify Sample Report  
GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010

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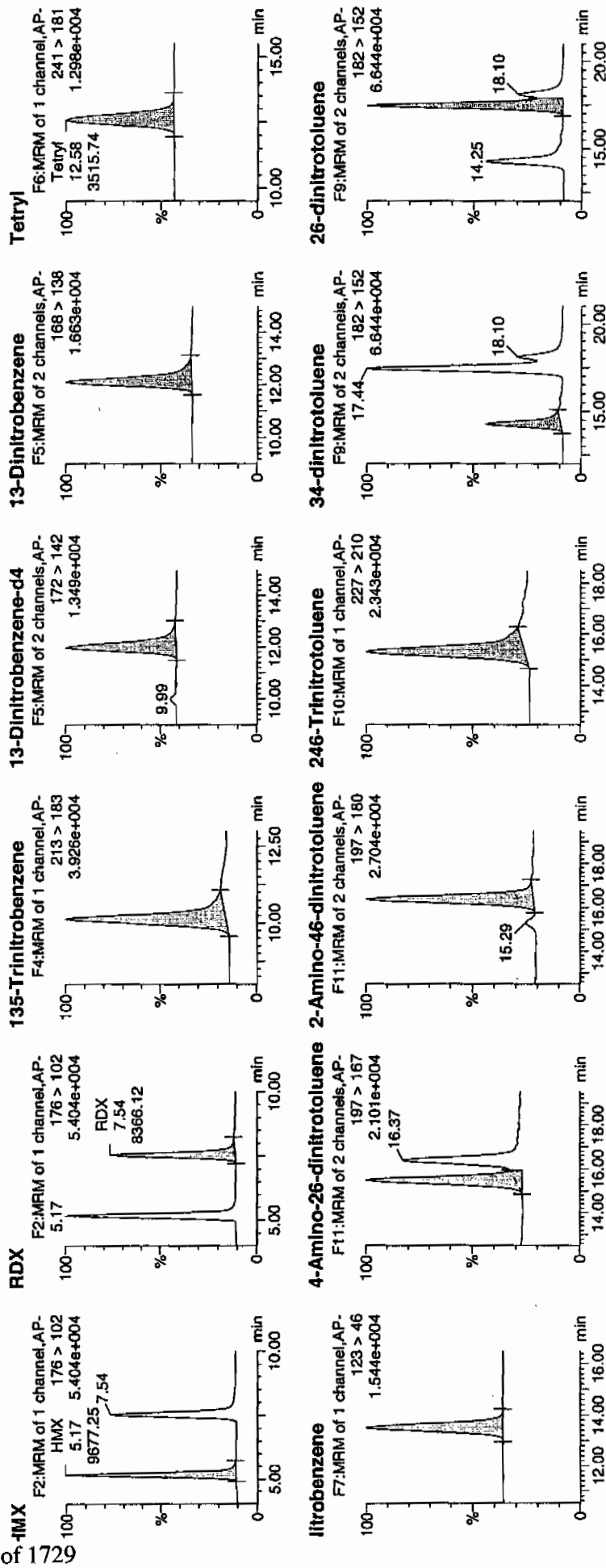
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Time: 06:31:18

ID: WXX100108-07CCV

Vial: 1:1,B

1/9/10



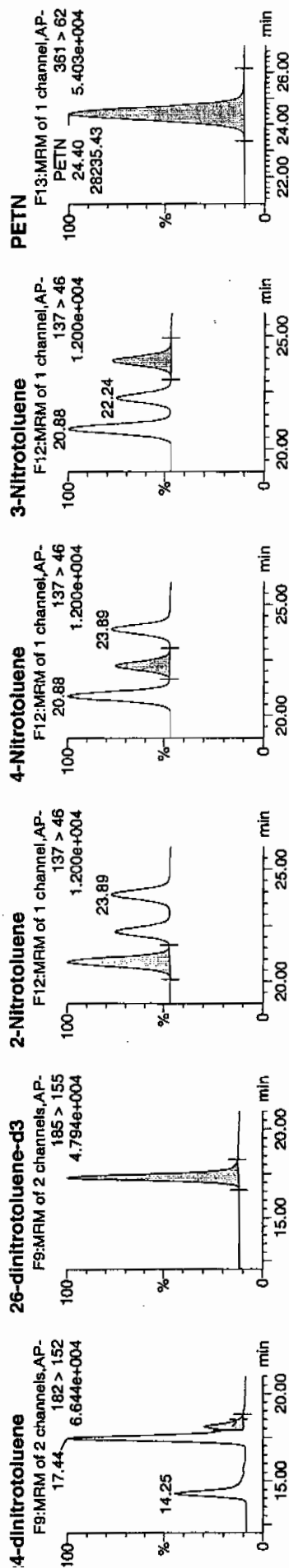
1/9/10



Printed: Sat Jan 09 12:02:23 2010, Page 56 of 61

Quantify Sample Report  
JEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010



Name	Trace	RT	Area	IS Area	Alt Resp	Response	Flags	Mod Date	Mod Time	Area	Response	Flags	Mod Date	Mod Time	Area	Response	Flags
VXX100108-07CCV	HMZ	176 > 102	5.17	9677.248	3197.627	9677.248	1513.192	db		458.2339	76.4	-23.6	1302.2				
VXX100108-07CCV	RDX	176 > 102	7.54	8366.117	3197.627	8366.117	1308.176	bb		534.3985	89.1	-10.9	958.9				
VXX100108-07CCV	135-Trinitrobenzene	213 > 183	10.14	12756.131	3197.627	12756.131	1994.625	bb		576.9742	96.2	-3.8	1775.0				
VXX100108-07CCV	13-Dinitrobenzene-d4	172 > 142	11.97	3197.627		3197.627	3197.627	bb		545.7578	109.2	9.2	366.9				
VXX100108-07CCV	13-Dinitrobenzene	168 > 138	12.10	4369.159	3197.627	4369.159	683.188	bb		556.7831	92.8	-7.2	476.5				
VXX100108-07CCV	Tetryl	241 > 181	12.58	3515.744	3197.627	3515.744	549.743	bb		506.8358	84.5	-15.5	212.3				
VXX100108-07CCV	Nitrobenzene	123 > 46	13.50	3599.990	3197.627	3599.990	562.916	bb		570.6729	95.1	-4.9	348.4				
VXX100108-07CCV	4-Amino-26-dinitrotoluene	197 > 167	15.49	6378.363	17985.215	6378.363	177.322	MM	09-Jan-10 11:53:12	628.8700	104.8	4.8	295.3				
VXX100108-07CCV	2-Amino-46-dinitrotoluene	197 > 180	16.37	8907.944	17985.215	8907.944	247.646	bb		672.4885	112.1	12.1	287.3				
VXX100108-07CCV	246-Trinitrotoluene	227 > 210	15.31	8355.686	17985.215	8355.686	232.293	bb		717.6425	119.6	19.6	206.5				
VXX100108-07CCV	34-dinitrotoluene	182 > 152	14.25	9699.747	17985.215	9699.747	269.659	bb		300.5667	100.2	0.2	301.1				
VXX100108-07CCV	26-dinitrotoluene	182 > 152	17.44	24105.902	17985.215	24105.902	670.159	MM	09-Jan-10 11:56:23	592.0454	98.7	-1.3	785.9				
VXX100108-07CCV	24-dinitrotoluene	182 > 152	18.10	5165.875	17985.215	5165.875	143.614	MM	09-Jan-10 11:59:16	588.9317	98.2	-1.8	169.9				
VXX100108-07CCV	26-dinitrotoluene-d3	185 > 155	17.29	17985.215		17985.215	17985.215	bb		532.5383	106.5	6.5	1402.7				
VXX100108-07CCV	2-Nitrotoluene	137 > 46	20.88	3168.489	17985.215	3168.489	88.086	bb		569.8193	95.0	-5.0	519.0				
VXX100108-07CCV	4-Nitrotoluene	137 > 46	22.24	1658.095	17985.215	1658.095	46.096	bb		546.0986	91.0	-9.0	277.7				
VXX100108-07CCV	3-Nitrotoluene	137 > 46	23.89	1880.430	17985.215	1880.430	52.277	bb		521.9189	87.0	-13.0	299.0				
VXX100108-07CCV	PETN	361 > 62	24.40	28235.434	17985.215	28235.434	784.962	bb		499.8984	83.3	-16.7	7767.7				



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/09/10  
 Time of Injection: 0631  
 Standard Number: WXX100108-07CCV  
 Data File: EXP0108028a

HMX	76.4
RDX	89.1
135-TNB	96.2
13-DNB	92.8
Tetryl	84.5
Nitrobenzene	95.1
4A-26-DNT	104.8
2A-46-DNT	112.1
246-TNT	119.6
34-DNT(surr)	100.2
26-DNT	98.7
24-DNT	98.2
2-NT	95.0
4-NT	91.0
3-NT	97.0
PETN	83.3

*MTF*  
*1/9/10*

Total 1534.0

Average 95.9

*Hmm 01/09/10*

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108030a

Analysis Date: 09-JAN-10 07:30

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	54.913	137	*
1,3-Dinitrobenzene-d4	500	516.042	103	
2,4,6-Trinitrotoluene	40	43.734	109	
2,4-Dinitrotoluene	40	37.846	95	
2,6-Dinitrotoluene	40	40.027	100	
2,6-Dinitrotoluene-d3	500	552.633	111	
2-Amino-4,6-dinitrotoluene	40	39.157	98	
3,4-Dinitrotoluene	20	21.298	106	
4-Amino-2,6-dinitrotoluene	40	46.914	117	
HMX	40	43.202	108	
Nitrobenzene	40	40.174	100	
PETN	40	38.928	97	
RDX	40	44.19	110	
Tetryl	40	38.528	96	
m-Dinitrobenzene	40	37.875	95	
m-Nitrotoluene	40	37.972	95	
o-Nitrotoluene	40	39.332	98	
p-Nitrotoluene	40	42.004	105	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Printed: Sat Jan 09 12:02:23 2010, Page 59 of 61

Quantify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\10810expA.qld, Time: Sat Jan 09 12:01:37 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108030a

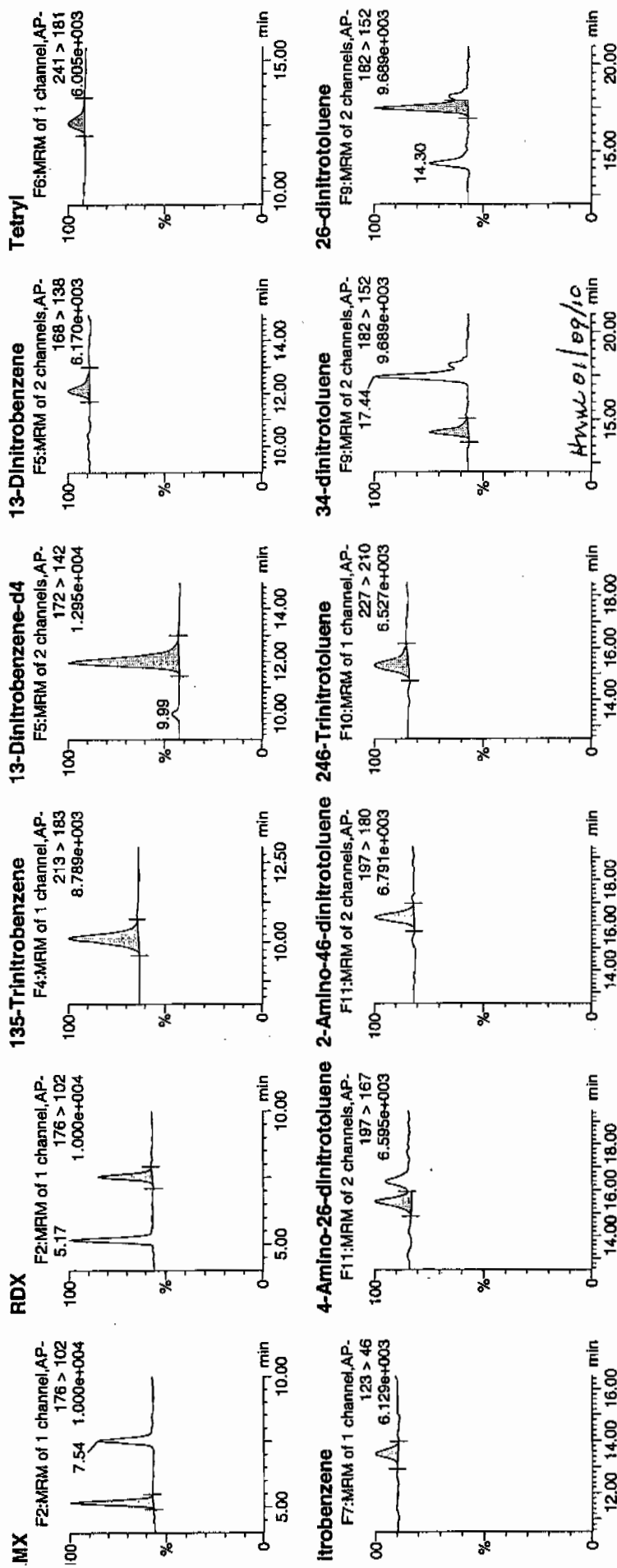
Date: 09-Jan-2010

Time: 07:30:16

File: WXX100108-08CRI

Label: 1:1,C

1/6/10

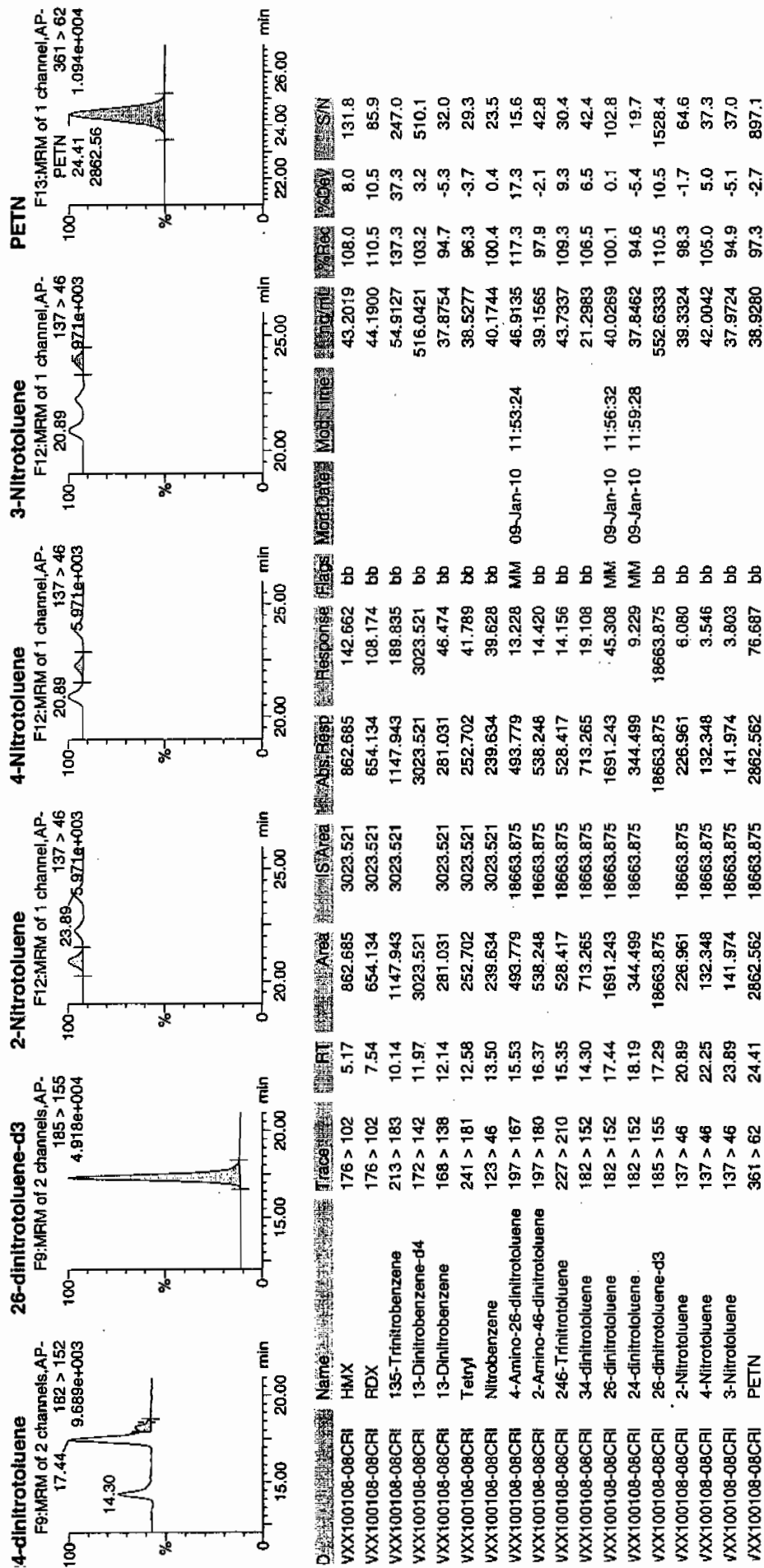




Printed: Sat Jan 09 12:02:23 2010, Page 60 of 61

Quantify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO\010810expA.qld, Time: Sat Jan 09 12:01:37 2010





GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/09/10  
 Time of Injection 0730  
 Standard Number WXX100108-08CRI  
 Data File EXP0108030a

HMX	108.0
RDX	110.5
135-TNB	137.3
13-DNB	94.7
Tetryl	96.3
Nitrobenzene	100.4
4A-26-DNT	117.3
2A-46-DNT	97.9
246-TNT	109.3
34-DNT(surr)	106.5
26-DNT	100.1
24-DNT	94.6
2-NT	98.3
4-NT	105.0
3-NT	94.9
PETN	97.3

*WAF*  
*1/9/10*

Total 1668.4

Average 104.3

*Wm 01/09/10*

ICV Limits 85-115%
CRI Limits 70-130%
CCV Limits 85-115%
No single analyte > +/- 60%



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0108041a

Analysis Date: 09-JAN-10 12:54

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
RDX	600	709.927	118	
Tetryl	600	543.428	91	
m-Dinitrobenzene	600	585.785	98	
m-Nitrotoluene	600	636.48	106	
o-Nitrotoluene	600	717.89	120	
p-Nitrotoluene	600	645.985	108	
PETN	600	657.72	110	
1,3,5-Trinitrobenzene	600	642.502	107	
1,3-Dinitrobenzene-d4	500	410.851	82	
2,4,6-Trinitrotoluene	600	726.215	121	*
2,4-Dinitrotoluene	600	603.311	101	
2,6-Dinitrotoluene	600	568.233	95	
2,6-Dinitrotoluene-d3	500	432.514	87	
2-Amino-4,6-dinitrotoluene	600	684.018	114	
3,4-Dinitrotoluene	300	377.773	126	*
4-Amino-2,6-dinitrotoluene	600	605.8	101	
HMX	600	620.528	103	
Nitrobenzene	600	719.579	120	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Printed: Mon Jan 11 09:29:17 2010, Page 21 of 189

uantify Sample Report  
 iEL Laboratories, LLC / Analyst : Michael A. Penny

ataset: C:\MASSLYNX\New\_Exp\PRO1010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

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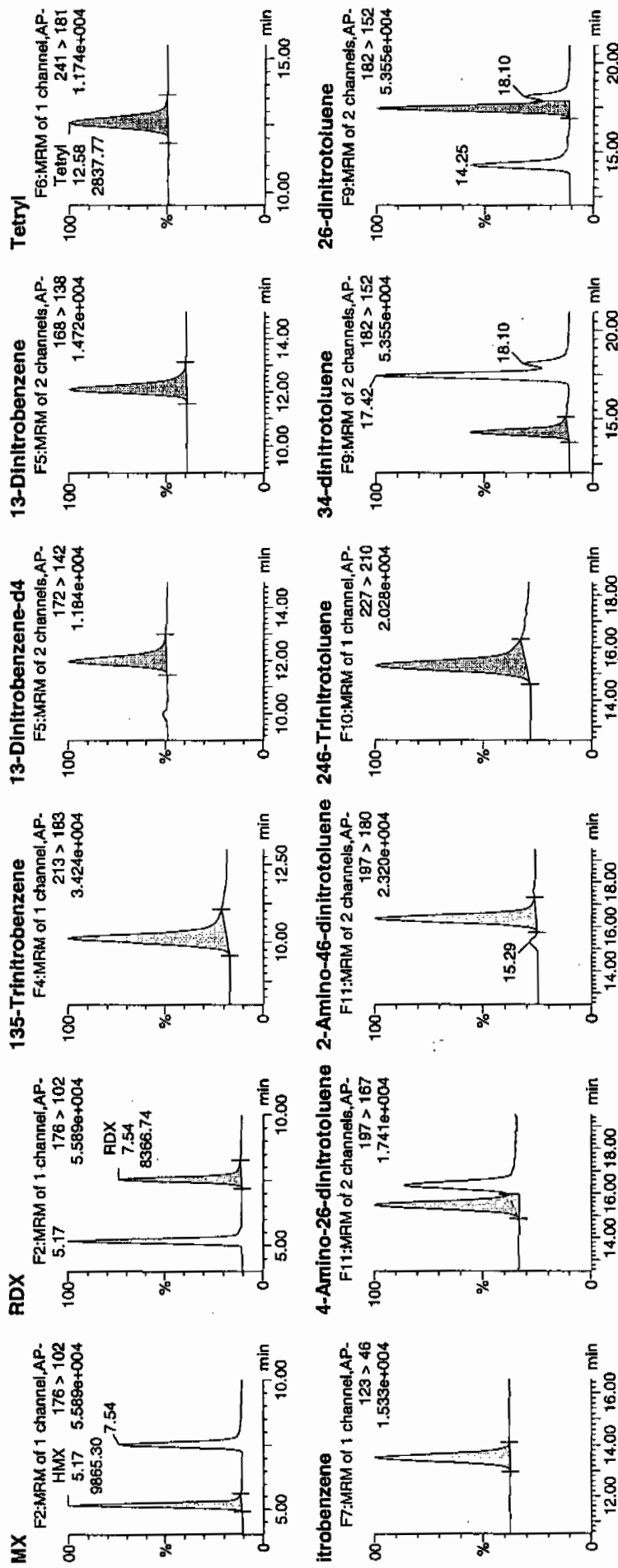
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ime: 12:54:44

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ial: 1:1,B

MM  
 1/11/10



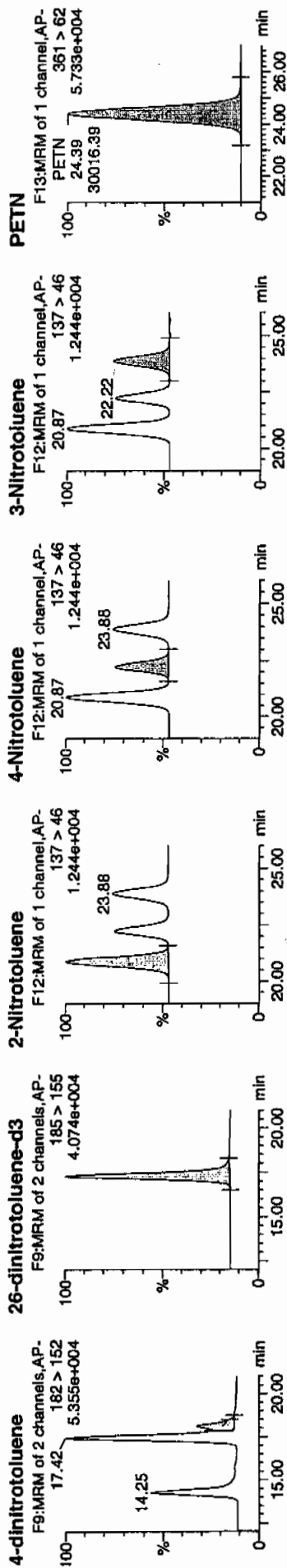
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 01/11/10



Printed: Mon Jan 11 09:29:17 2010, Page 22 of 189

Quantify Sample Report  
IEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PROV010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	RT	Area	%Area	Assay	Response	Peak	Mod Date	Mod Time	Mod User	Mod	SN
HMX	176 > 102	5.17	9865.303	2407.200	9865.303	2049.124	bb		620.5281	103.4	3.4	1575.3
RDX	176 > 102	7.54	8366.739	2407.200	8366.739	1737.857	bb		709.9274	118.3	18.3	1118.7
135-Trinitrobenzene	213 > 183	10.14	10693.540	2407.200	10693.540	2221.157	bb		642.5021	107.1	7.1	992.0
13-Dinitrobenzene-d4	172 > 142	11.97	2407.200	2407.200	2407.200	2407.200	bb		410.8510	82.2	-17.8	95.7
13-Dinitrobenzene	168 > 138	12.10	3460.467	2407.200	3460.467	718.774	bb		585.7854	97.6	-2.4	254.8
Tetryl	241 > 181	12.58	2837.766	2407.200	2837.766	589.433	bb		543.4283	90.6	-9.4	206.7
Nitrobenzene	123 > 46	13.50	3417.250	2407.200	3417.250	709.798	bb		719.5787	119.9	19.9	485.4
4-Amino-26-dinitrotoluene	197 > 167	15.49	4990.300	14607.119	4990.300	170.817	MM	11-Jan-10 09:05:40	605.8002	101.0	1.0	251.8
2-Amino-46-dinitrotoluene	197 > 180	16.37	7358.833	14607.119	7358.833	251.892	bb		684.0178	114.0	14.0	209.6
246-Trinitrotoluene	227 > 210	15.31	6867.335	14607.119	6867.335	235.068	bb		726.2152	121.0	21.0	383.0
34-dinitrotoluene	182 > 152	14.25	9901.460	14607.119	9901.460	338.926	bb		377.7728	125.9	25.9	210.7
26-dinitrotoluene	182 > 152	17.42	18790.738	14607.119	18790.738	643.205	MM	11-Jan-10 09:14:29	568.2331	94.7	-5.3	417.6
24-dinitrotoluene	182 > 152	18.10	4298.026	14607.119	4298.026	147.121	MM	11-Jan-10 09:24:05	603.3109	100.6	0.6	93.0
26-dinitrotoluene-d3	185 > 155	17.27	14607.119	14607.119	14607.119	14607.119	bb		432.5136	86.5	-13.5	1040.5
2-Nitrotoluene	137 > 46	20.87	3242.066	14607.119	3242.066	110.976	bb		717.8900	119.6	19.6	520.9
4-Nitrotoluene	137 > 46	22.22	1592.977	14607.119	1592.977	54.527	bb		645.9846	107.7	7.7	268.9
3-Nitrotoluene	137 > 46	23.88	1862.463	14607.119	1862.463	63.752	bb		636.4797	106.1	6.1	279.2
PETN	361 > 62	24.39	30016.387	14607.119	30016.387	1027.457	bb		657.7201	109.6	9.6	4741.7



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/09/10  
 Time of Injection: 1254  
 Standard Number: WXX100108-07CCV  
 Data File: EXP0108041a

HMX	103.4
RDX	118.3
135-TNB	107.1
13-DNB	97.6
Tetryl	90.6
Nitrobenzene	119.9
4A-26-DNT	101.0
2A-46-DNT	114.0
246-TNT	121.0
34-DNT(surr)	125.9
26-DNT	94.7
24-DNT	100.6
2-NT	119.6
4-NT	107.7
3-NT	106.1
PETN	109.6

*WTP  
1/11/10*

Total 1737.1

Average 108.6

*4/11/10 01/11/10*

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108043a

Analysis Date: 09-JAN-10 13:53

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2-Amino-4,6-dinitrotoluene	40	47.565	119	
3,4-Dinitrotoluene	20	17.147	86	
4-Amino-2,6-dinitrotoluene	40	39.341	98	
HMX	40	45.002	113	
Nitrobenzene	40	36.425	91	
PETN	40	42.713	107	
RDX	40	40.233	101	
Tetryl	40	41.019	103	
m-Dinitrobenzene	40	45.897	115	
m-Nitrotoluene	40	36.845	92	
o-Nitrotoluene	40	34.24	86	
p-Nitrotoluene	40	43.58	109	
1,3,5-Trinitrobenzene	40	51.073	128	
1,3-Dinitrobenzene-d4	500	556.076	111	
2,4,6-Trinitrotoluene	40	41.823	105	
2,4-Dinitrotoluene	40	37.307	93	
2,6-Dinitrotoluene	40	38.365	96	
2,6-Dinitrotoluene-d3	500	533.163	107	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Printed: Mon Jan 11 09:29:17 2010, Page 25 of 189

Quantify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108043a

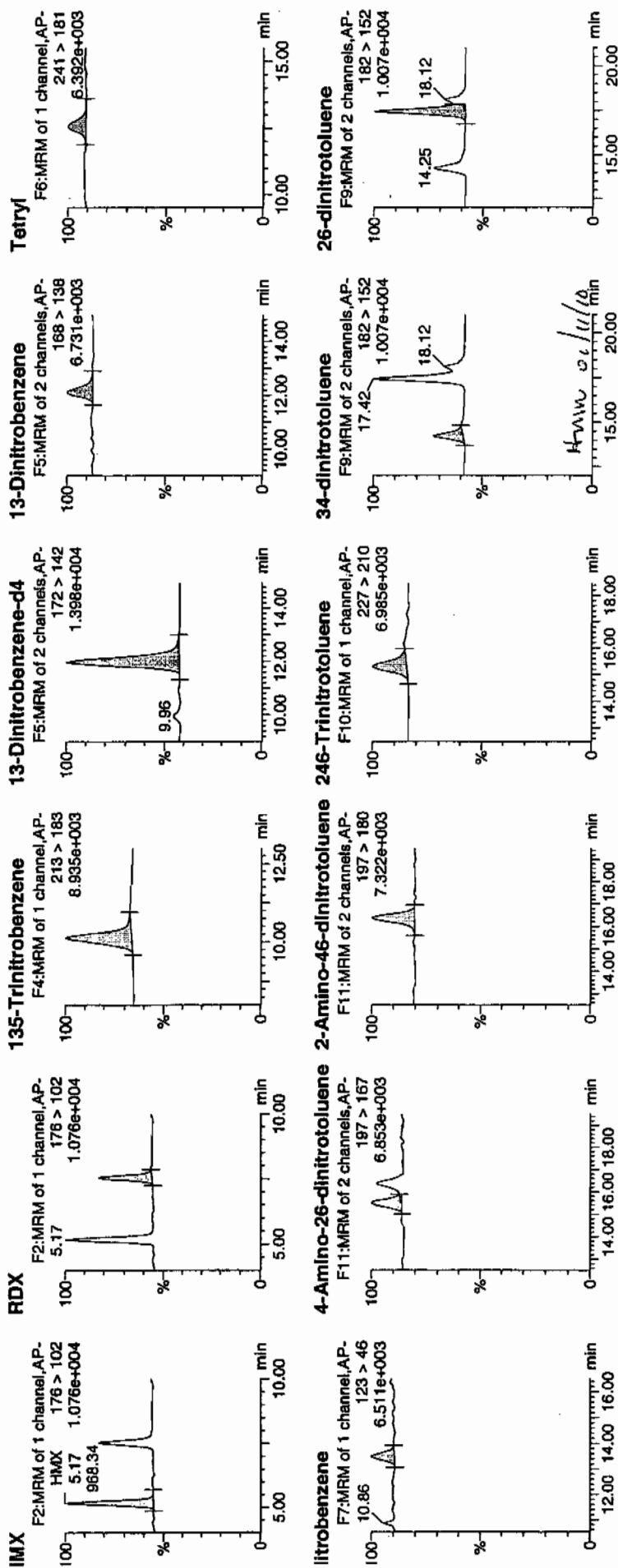
Date: 09-Jan-2010

Time: 13:53:47

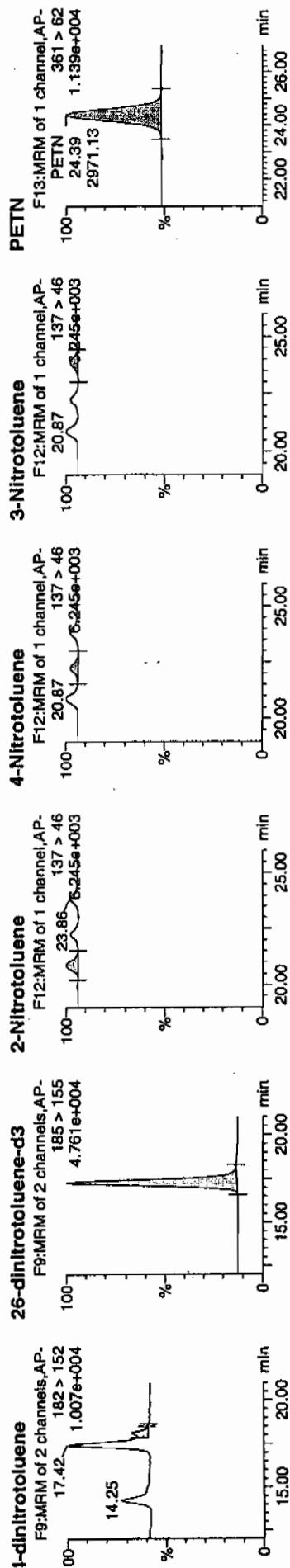
Job: WXX100108-08CRI

Label: 1:1,C

Page 299 of 1729







Name	Trace	RT	Area	IS Area	Abst Resp	Flags	Mod Date	Mod Time	Int Time	%Rec	%Dev	ISIN
XX100108-08CRI	HMx	176 > 102	968.336	3258.082	968.336	bb	148.605	bb	45.0015	112.5	12.5	152.7
XX100108-08CRI	ROX	176 > 102	641.765	3258.082	641.765	bb	98.488	bb	40.2331	100.6	0.6	91.5
XX100108-08CRI	135-Trinitrobenzene	213 > 183	1150.506	3258.082	1150.506	bb	176.562	bb	51.0731	127.7	27.7	224.7
XX100108-08CRI	13-Dinitrobenzene-d4	172 > 142	3258.082		3258.082	bb	3258.082	bb	556.0760	111.2	11.2	142.1
XX100108-08CRI	13-Dinitrobenzene	168 > 138	366.971	3258.082	366.971	bb	56.317	bb	45.8972	114.7	14.7	33.2
XX100108-08CRI	Tetryl	241 > 181	289.912	3258.082	289.912	bb	44.491	bb	41.0187	102.5	2.5	30.4
XX100108-08CRI	Nitrobenzene	123 > 46	13.50	3258.082	234.126	bb	35.930	bb	36.4252	91.1	-8.9	16.6
XX100108-08CRI	4-Amino-26-dinitrotoluene	197 > 167	399.489	18006.328	399.489	MM	11.093	MM	39.3411	98.4	-1.6	27.0
XX100108-08CRI	2-Amino-46-dinitrotoluene	197 > 180	630.800	18006.328	630.800	bb	17.516	bb	47.5852	118.9	18.9	48.7
XX100108-08CRI	246-Trinitrotoluene	227 > 210	487.525	18006.328	487.525	bb	13.538	bb	41.8228	104.6	4.6	69.3
XX100108-08CRI	34-dinitrotoluene	182 > 152	554.005	18006.328	554.005	bb	15.384	bb	17.1469	85.7	-14.3	30.8
XX100108-08CRI	26-dinitrotoluene	182 > 152	17.42	1563.905	1563.905	MM	43.427	MM	38.3648	95.9	-4.1	92.8
XX100108-08CRI	24-dinitrotoluene	182 > 152	327.628	18006.328	327.628	MM	9.098	MM	37.3072	93.3	-6.7	19.1
XX100108-08CRI	26-dinitrotoluene-d3	185 > 155	17.27	18006.328	18006.328	bb	18006.328	bb	533.1635	106.6	6.6	1646.2
XX100108-08CRI	2-Nitrotoluene	137 > 46	20.87	190.615	190.615	bb	5.293	bb	34.2399	85.6	-14.4	43.9
XX100108-08CRI	4-Nitrotoluene	137 > 46	22.24	132.476	132.476	bb	3.679	bb	43.5802	109.0	9.0	28.6
XX100108-08CRI	3-Nitrotoluene	137 > 46	23.86	132.906	132.906	bb	3.691	bb	36.8452	92.1	-7.9	27.2
XX100108-08CRI	PETN	361 > 62	24.39	2971.125	2971.125	bb	82.502	bb	42.7126	106.8	6.8	660.2



GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/09/10  
 Time of Injection 1353  
 Standard Number WXX100108-08CRI  
 Data File EXP0108043a

HMX	112.5
RDX	100.6
135-TNB	127.7
13-DNB	114.7
Tetryl	102.5
Nitrobenzene	91.1
4A-26-DNT	98.4
2A-46-DNT	118.9
246-TNT	104.6
34-DNT(surr)	85.7
26-DNT	95.9
24-DNT	93.3
2-NT	85.6
4-NT	109.0
3-NT	92.1
PETN	106.8

*Handwritten:* 11/10

Total 1639.4

Average 102.5

*Handwritten:* 11/10

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0108054a

Analysis Date: 09-JAN-10 19:18

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	546.192	91	
1,3-Dinitrobenzene-d4	500	515.635	103	
2,4,6-Trinitrotoluene	600	625.678	104	
2,4-Dinitrotoluene	600	582.101	97	
2,6-Dinitrotoluene	600	568.59	95	
2,6-Dinitrotoluene-d3	500	549.388	110	
2-Amino-4,6-dinitrotoluene	600	621.715	104	
3,4-Dinitrotoluene	300	288.143	96	
4-Amino-2,6-dinitrotoluene	600	555.588	93	
HMX	600	474.068	79	*
Nitrobenzene	600	548.71	91	
PETN	600	562.416	94	
RDX	600	560.942	93	
Tetryl	600	481.886	80	
m-Dinitrobenzene	600	590.009	98	
m-Nitrotoluene	600	497.526	83	
o-Nitrotoluene	600	568.858	95	
p-Nitrotoluene	600	550.462	92	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Quantify Sample Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108054a

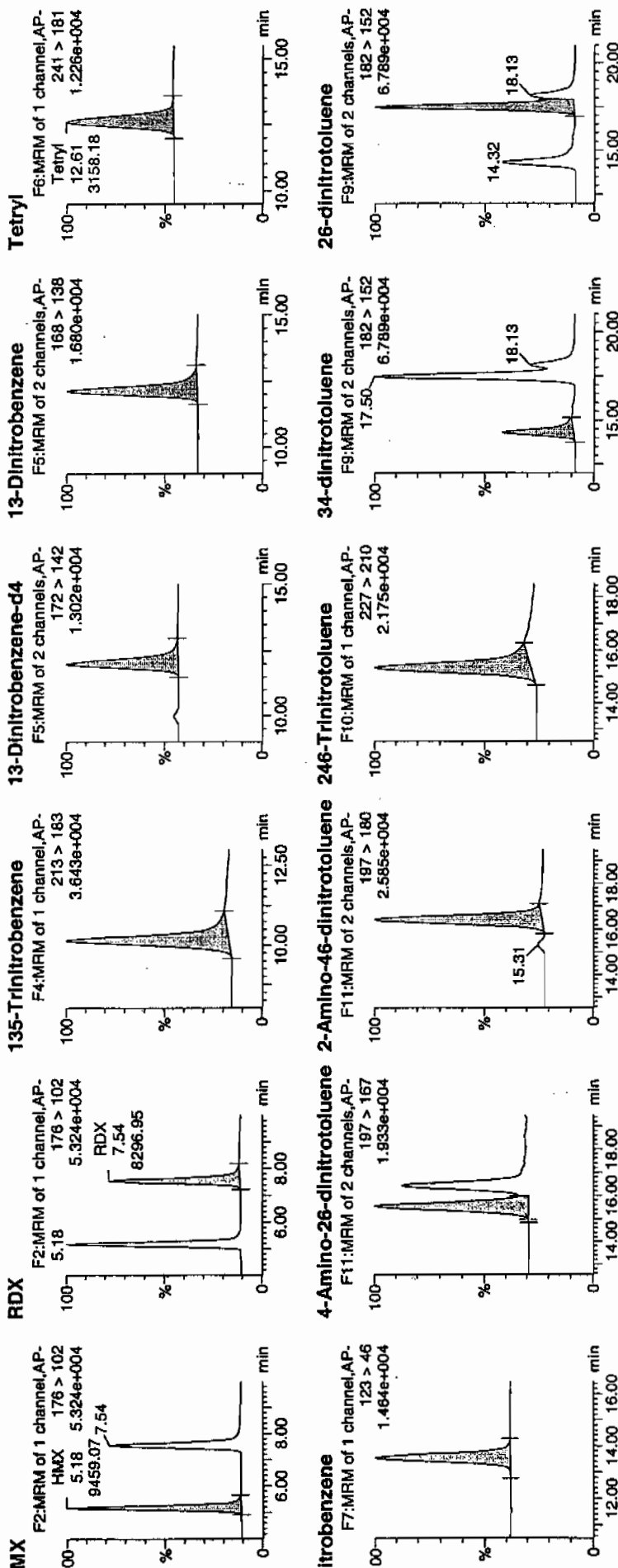
Date: 09-Jan-2010

Time: 19:18:19

Job: WXX100108-07CCV

Label: 1:1,B

WXX  
1/11/10



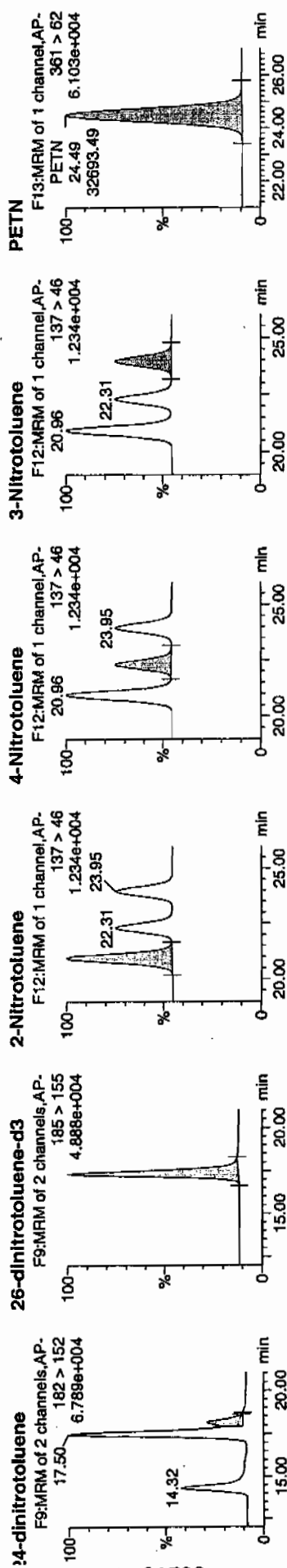
Amu 26/11/10



## Quantify Sample Report

CEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYN\New Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	RT	Area	IS Area	Area Resp	Response	Flags	Mod Date	Mod Time	Int Time	2Z Rec	2Z Rev	SN
HMX	176 > 102	5.18	9459.089	3021.138	9459.069	1565.481	bb			474.0684	79.0	-21.0	1228.8
ROX	176 > 102	7.54	8296.951	3021.138	8296.951	1373.150	bb			560.9419	93.5	-6.5	919.4
135-Trinitrobenzene	213 > 183	10.14	11409.079	3021.138	11409.079	1888.209	bb			546.1919	91.0	-9.0	1312.9
13-Dinitrobenzene-d4	172 > 142	12.00	3021.138		3021.138	3021.138	bb			515.6354	103.1	3.1	134.5
13-Dinitrobenzene	168 > 138	12.13	4374.350	3021.138	4374.350	723.957	bb			590.0094	98.3	-1.7	436.8
Tetyl	241 > 181	12.61	3158.181	3021.138	3158.181	522.681	bb			481.8880	80.3	-19.7	408.0
Nitrobenzene	123 > 46	13.53	3270.393	3021.138	3270.393	541.252	bb			548.7103	91.5	-8.5	224.6
4-Amino-26-dinitrotoluene	197 > 167	15.55	5813.388	18554.258	5813.388	156.659	MM	11-Jan-10	09:06:02	555.5882	92.6	-7.4	164.1
2-Amino-46-dinitrotoluene	197 > 180	16.42	8495.949	18554.258	8495.949	228.949	bb			621.7149	103.6	3.6	235.6
246-Trinitrotoluene	227 > 210	15.33	7515.410	18554.258	7515.410	202.525	bb			625.6778	104.3	4.3	435.6
34-dinitrotoluene	182 > 152	14.32	9593.035	18554.258	9593.035	258.513	bb			288.1433	96.0	-4.0	307.7
26-dinitrotoluene	182 > 152	17.50	23883.365	18554.258	23883.365	643.609	MM	11-Jan-10	09:14:47	568.5900	94.8	-5.2	844.5
24-dinitrotoluene	182 > 152	18.13	5267.504	18554.258	5267.504	141.949	MM	11-Jan-10	09:23:30	582.1005	97.0	-3.0	170.3
26-dinitrotoluene-d3	185 > 155	17.32	18554.258		18554.258	18554.258	bb			549.3876	109.9	9.9	1202.2
2-Nitrotoluene	137 > 46	20.96	3263.225	18554.258	3263.225	87.937	bb			568.8582	94.8	-5.2	533.6
4-Nitrotoluene	137 > 46	22.31	1724.223	18554.258	1724.223	46.464	bb			550.4617	91.7	-8.3	286.9
3-Nitrotoluene	137 > 46	23.95	1849.261	18554.258	1849.261	49.834	bb			497.5284	82.9	-17.1	286.3
135X100108-07CCV	361 > 62	24.49	32693.492	18554.258	32693.492	881.024	bb			562.4164	93.7	-6.3	3672.1



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/09/10  
 Time of Injection: 1918  
 Standard Number: WXX100108-07CCV  
 Data File: EXP0108054a

HMX	79.0
RDX	93.5
135-TNB	91.0
13-DNB	98.3
Tetryl	80.3
Nitrobenzene	91.5
4A-26-DNT	92.6
2A-46-DNT	103.6
246-TNT	104.3
34-DNT(surr)	96.0
26-DNT	94.8
24-DNT	97.0
2-NT	94.8
4-NT	91.7
3-NT	82.9
PETN	93.7

*1/11/10*

Total 1485.0

Average 92.8

*1/11/10*

ICV Limits 85-115%
CRI Limits 70-130%
CCV Limits 85-115%
No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108056a

Analysis Date: 09-JAN-10 20:17

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
p-Nitrotoluene	40	35.576	89	
1,3,5-Trinitrobenzene	40	59.27	148	*
1,3-Dinitrobenzene-d4	500	464.374	93	
2,4,6-Trinitrotoluene	40	38.265	96	
2,4-Dinitrotoluene	40	43.974	110	
2,6-Dinitrotoluene	40	38.05	95	
2,6-Dinitrotoluene-d3	500	479.013	96	
2-Amino-4,6-dinitrotoluene	40	44.757	112	
3,4-Dinitrotoluene	20	21.59	108	
4-Amino-2,6-dinitrotoluene	40	36.912	92	
HMX	40	43.588	109	
Nitrobenzene	40	46.771	117	
PETN	40	57.163	143	*
RDX	40	43.887	110	
Tetryl	40	33.653	84	
m-Dinitrobenzene	40	43.08	108	
m-Nitrotoluene	40	44.272	111	
o-Nitrotoluene	40	43.778	109	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Quantify Sample Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108056a

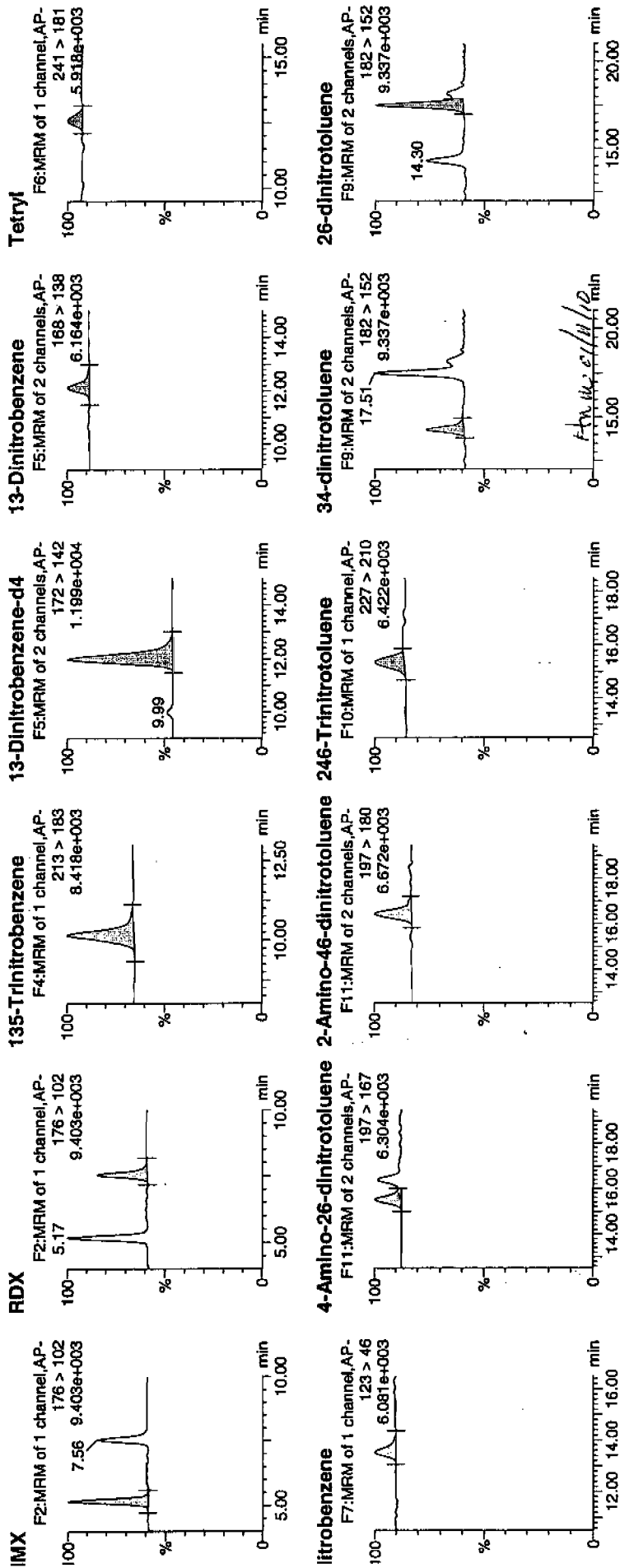
Date: 09-Jan-2010

Time: 20:17:22

Job: WXX100108-08CRI

Ratio: 1:1,C

WXX  
1/11/10

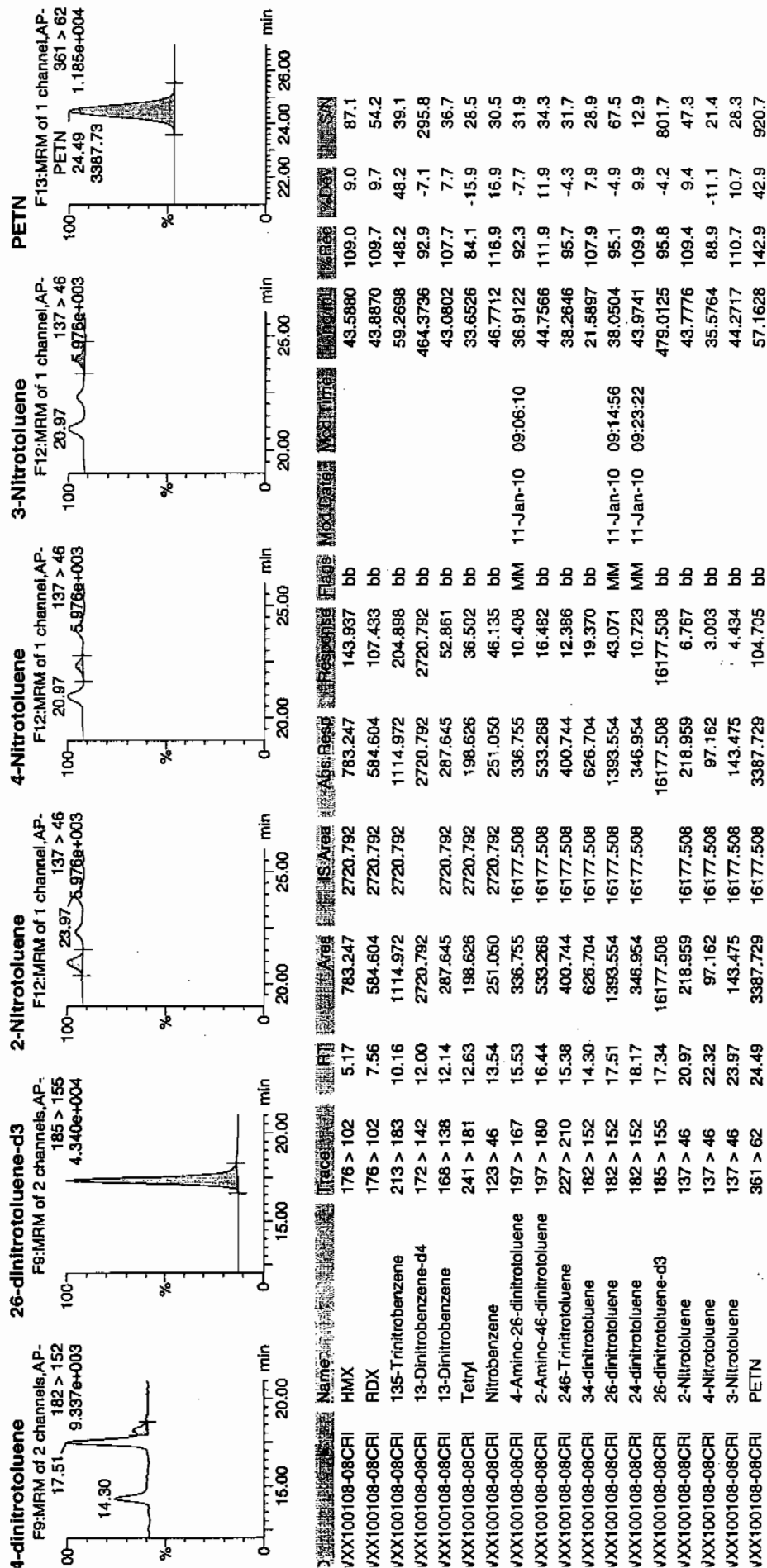




Printed: Mon Jan 11 09:29:17 2010, Page 52 of 189

Quantify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

atlaset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/09/10  
 Time of Injection 2017  
 Standard Number WXX100108-08CRI  
 Data File EXP0108056a

HMX	109.0
RDX	109.7
135-TNB	148.2
13-DNB	107.7
Tetryl	84.1
Nitrobenzene	116.9
4A-26-DNT	92.3
2A-46-DNT	111.9
246-TNT	95.7
34-DNT(surr)	107.9
26-DNT	95.1
24-DNT	109.9
2-NT	109.4
4-NT	88.9
3-NT	110.7
PETN	142.9

*Handwritten:* 1/11/10

Total 1740.3

Average 108.8

*Handwritten:* 1/11/10

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0108066a

Analysis Date: 10-JAN-10 01:13

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2,4-Dinitrotoluene	600	601.975	100	
2,6-Dinitrotoluene	600	582.905	97	
2,6-Dinitrotoluene-d3	500	575.13	115	
2-Amino-4,6-dinitrotoluene	600	641.928	107	
3,4-Dinitrotoluene	300	305.145	102	
4-Amino-2,6-dinitrotoluene	600	585.652	98	
HMX	600	500.389	83	
Nitrobenzene	600	569.202	95	
PETN	600	542.393	90	
RDX	600	593.14	99	
Tetryl	600	538.678	90	
m-Dinitrobenzene	600	571.489	95	
m-Nitrotoluene	600	407.7	68	*
o-Nitrotoluene	600	451.552	75	*
p-Nitrotoluene	600	433.745	72	*
1,3,5-Trinitrobenzene	600	637.826	106	
1,3-Dinitrobenzene-d4	500	554.289	111	
2,4,6-Trinitrotoluene	600	790.151	132	*

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Printed: Mon Jan 11 09:29:17 2010, Page 71 of 189

Identify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\10810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108066a

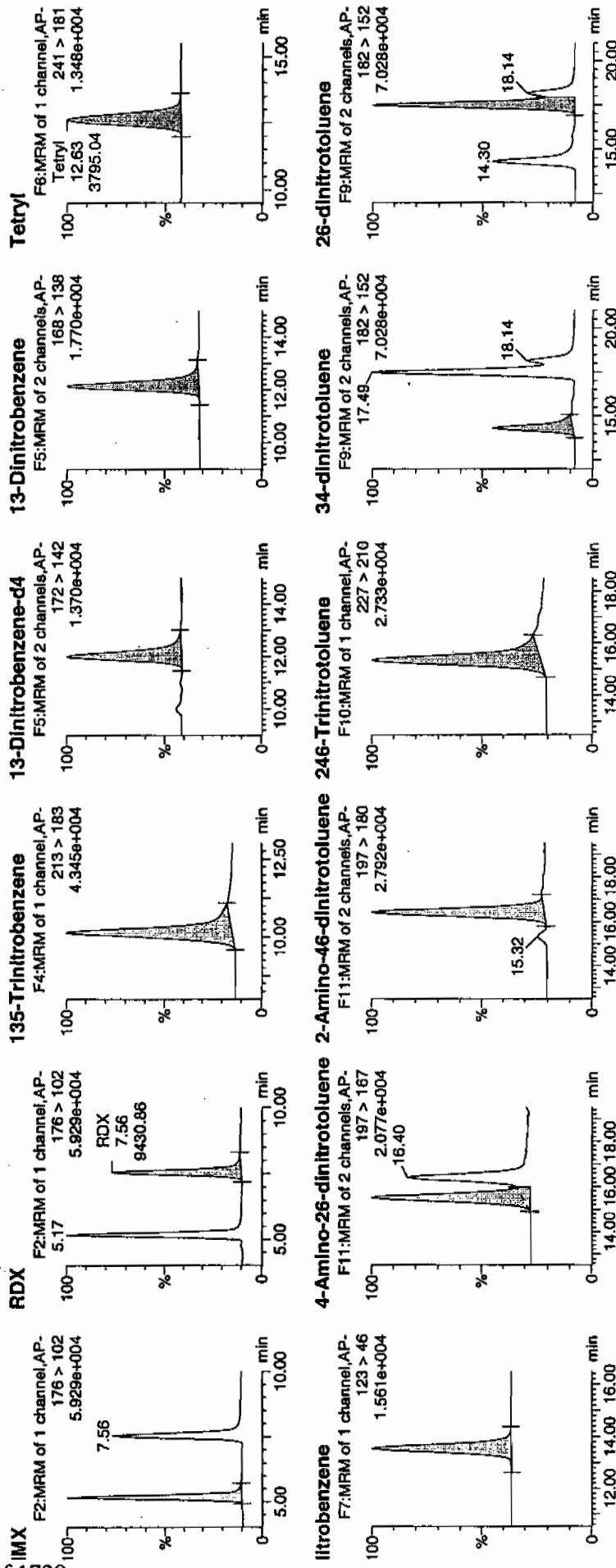
Date: 10-Jan-2010

Time: 01:13:31

Job: WXX100108-07CCV

Label: 1:1,B

1/11/10



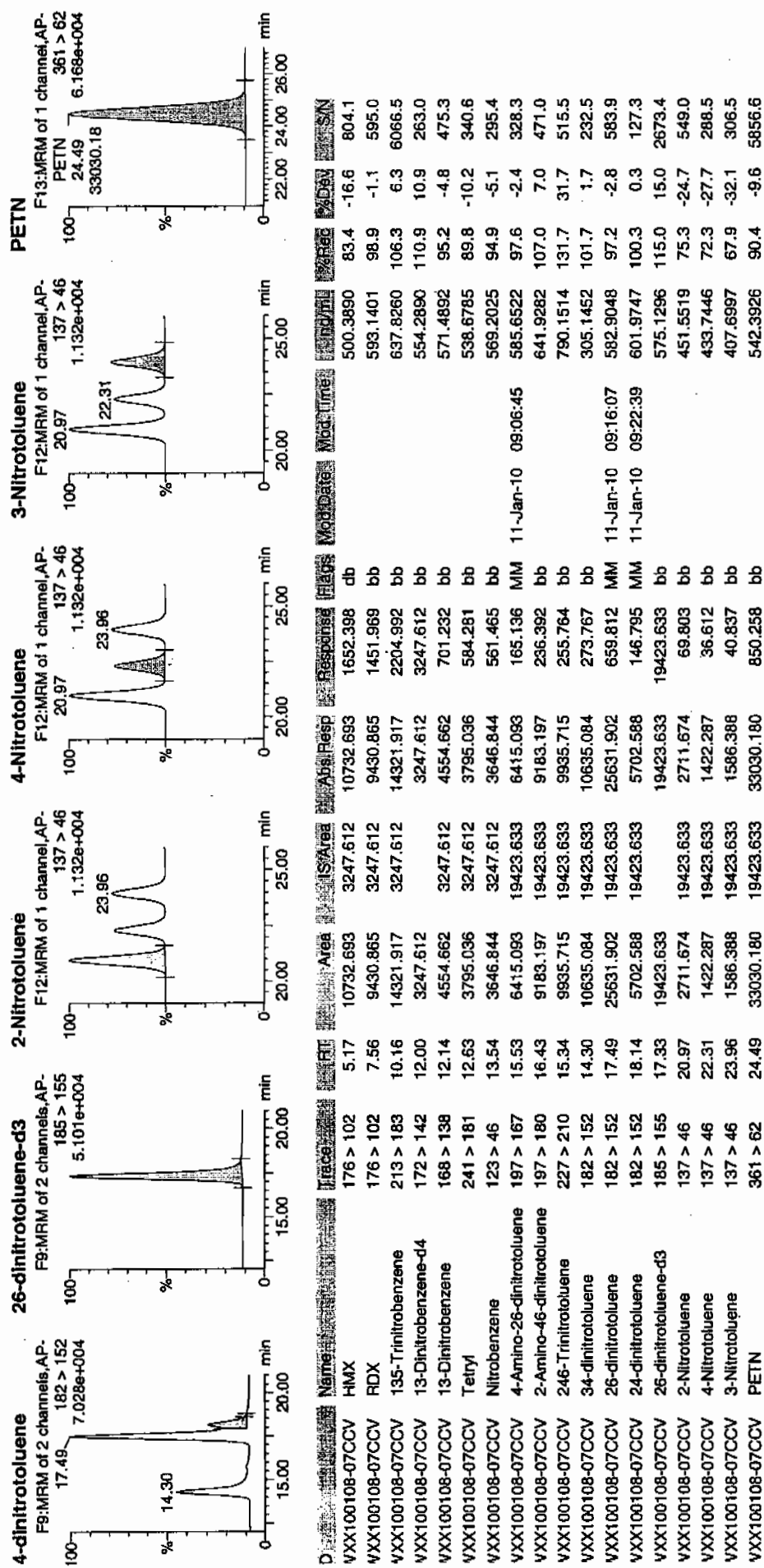
1/11/10



Printed: Mon Jan 11 09:29:17 2010, Page 72 of 189

Quantify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\_PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/10/10  
 Time of Injection: 0113  
 Standard Number: WXX100108-07CCV  
 Data File: EXP0108066a

HMX	83.4
RDX	98.9
135-TNB	106.3
13-DNB	95.2
Tetryl	89.8
Nitrobenzene	94.9
4A-26-DNT	97.6
2A-46-DNT	107.0
246-TNT	131.7
34-DNT(surr)	101.7
26-DNT	97.2
24-DNT	100.3
2-NT	75.3
4-NT	72.3
3-NT	67.9
PETN	90.4

*WAT*  
*1/11/10*

Total 1509.9

Average 94.4

*WAT 01/11/10*

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108068a

Analysis Date: 10-JAN-10 02:12

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	52.772	132	*
1,3-Dinitrobenzene-d4	500	489.728	98	
2,4,6-Trinitrotoluene	40	47.037	118	
2,4-Dinitrotoluene	40	38.543	96	
2,6-Dinitrotoluene	40	42.215	106	
2,6-Dinitrotoluene-d3	500	499.867	100	
2-Amino-4,6-dinitrotoluene	40	39.507	99	
3,4-Dinitrotoluene	20	17.76	89	
4-Amino-2,6-dinitrotoluene	40	38.627	97	
HMX	40	52.773	132	*
Nitrobenzene	40	36.499	91	
PETN	40	53.186	133	*
RDX	40	42.566	106	
Tetryl	40	39.965	100	
m-Dinitrobenzene	40	42.808	107	
m-Nitrotoluene	40	47.09	118	
o-Nitrotoluene	40	38.112	95	
p-Nitrotoluene	40	41.342	103	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene, 2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Printed: Mon Jan 11 09:29:17 2010, Page 75 of 189

Quantify Sample Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\10810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108068a

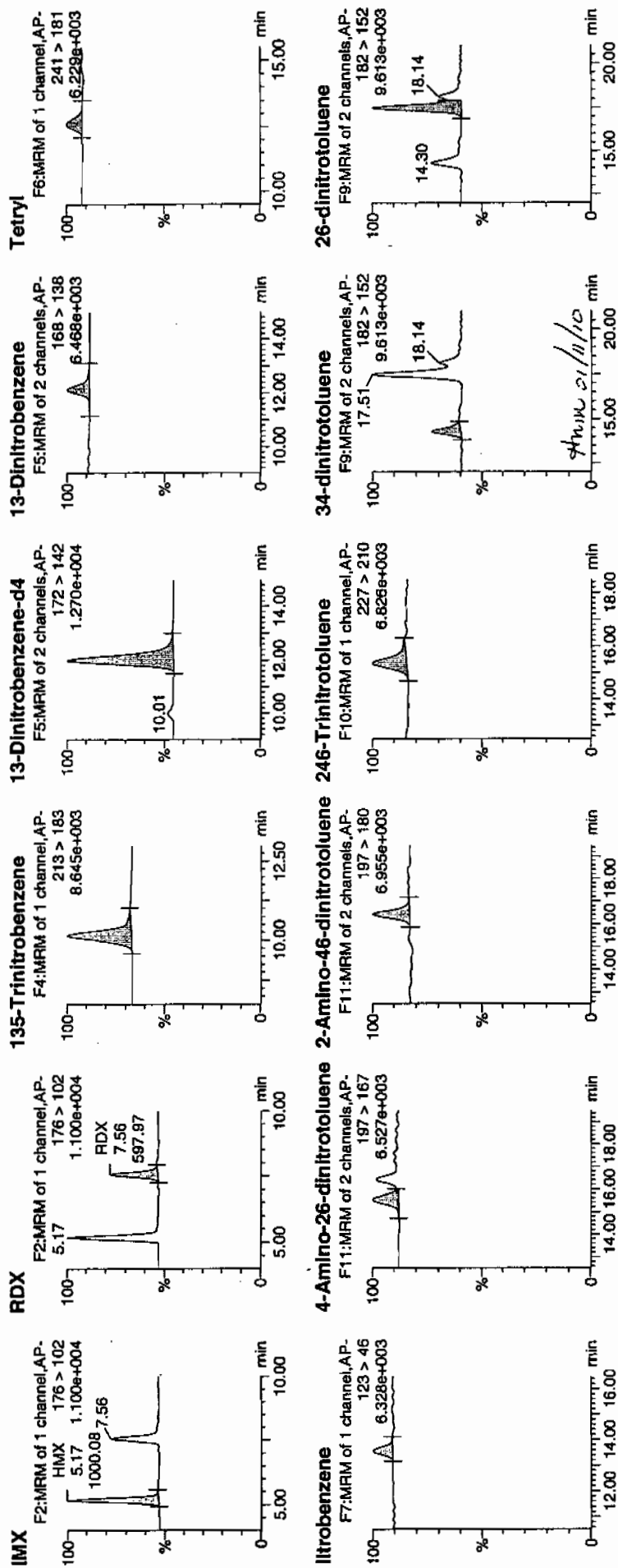
Date: 10-Jan-2010

Time: 02:12:36

Job: WXX100108-08CRI

Ratio: 1:1,C

Page 315 of 1729

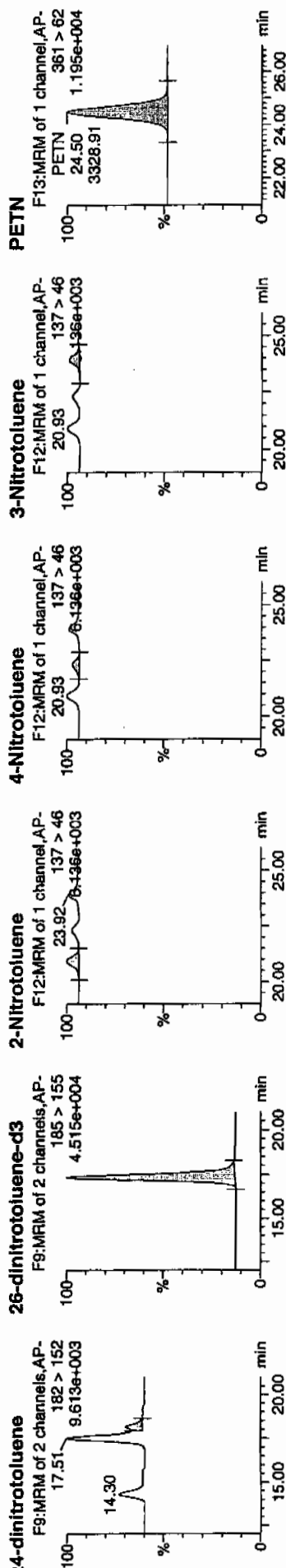




Printed: Mon Jan 11 09:29:17 2010, Page 76 of 189

Quantify Sample Report  
JEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO1010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	Area	IS Area	Abs Resp	Response	Mod Date	Mod Time	Mod User
NXX100108-08CRI	HMx	176 > 102	5.17	1000.080	2869.344	1000.080	174.270	bb
NXX100108-08CRI	RDX	176 > 102	7.56	597.971	2869.344	597.971	104.200	bb
NXX100108-08CRI	135-Trinitrobenzene	213 > 183	10.14	1046.944	2869.344	1046.944	182.436	bb
NXX100108-08CRI	13-Dinitrobenzene-d4	172 > 142	12.00	2869.344	2869.344	2869.344	489.7278	bb
NXX100108-08CRI	13-Dinitrobenzene	168 > 138	12.17	301.431	52.526	301.431	42.8076	bb
NXX100108-08CRI	Tetryl	241 > 181	12.63	248.762	43.348	248.762	39.9649	bb
NXX100108-08CRI	Nitrobenzene	123 > 46	13.54	206.607	36.002	206.607	36.4986	bb
NXX100108-08CRI	4-Amino-26-dinitrotoluene	197 > 167	15.49	367.739	10.892	367.739	38.6257	bb
NXX100108-08CRI	2-Amino-46-dinitrotoluene	197 > 180	16.40	491.218	14.549	491.218	39.5074	bb
NXX100108-08CRI	246-Trinitrotoluene	227 > 210	15.34	514.065	15.225	514.065	47.0371	bb
NXX100108-08CRI	34-dinitrotoluene	182 > 152	14.30	537.975	15.934	537.975	17.7598	bb
NXX100108-08CRI	26-dinitrotoluene	182 > 152	17.51	1613.374	47.784	1613.374	42.2147	bb
NXX100108-08CRI	24-dinitrotoluene	182 > 152	18.14	317.340	9.399	317.340	38.5427	bb
NXX100108-08CRI	26-dinitrotoluene-d3	185 > 155	17.33	16881.805	16881.805	16881.805	499.8666	bb
NXX100108-08CRI	2-Nitrotoluene	137 > 46	20.93	198.923	5.892	198.923	38.1124	bb
NXX100108-08CRI	4-Nitrotoluene	137 > 46	22.33	117.823	3.490	117.823	41.3417	bb
NXX100108-08CRI	3-Nitrotoluene	137 > 46	23.92	159.253	4.717	159.253	47.0902	bb
NXX100108-08CRI	PETN	361 > 82	24.50	3328.914	98.595	3328.914	53.1861	bb



GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/10/10  
 Time of Injection 0212  
 Standard Number WXX100108-08CRI  
 Data File EXP0108068a

HMX	131.9
RDX	106.4
135-TNB	131.9
13-DNB	107.0
Tetryl	99.9
Nitrobenzene	91.2
4A-26-DNT	96.6
2A-46-DNT	98.8
246-TNT	117.6
34-DNT(surr)	88.8
26-DNT	105.5
24-DNT	96.4
2-NT	95.3
4-NT	103.4
3-NT	117.7
PETN	133.0

*Handwritten:* 1/11/10

Total 1721.4

Average 107.6

*Handwritten:* 1/11/10

ICV Limits 85-115%
CRI Limits 70-130%
CCV Limits 85-115%
No single analyte > +/- 60%



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0108091a

Analysis Date: 10-JAN-10 13:31

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	650.958	108	
1,3-Dinitrobenzene-d4	500	458.91	92	
2,4,6-Trinitrotoluene	600	699.324	117	
2,4-Dinitrotoluene	600	592.866	99	
2,6-Dinitrotoluene	600	564.473	94	
2,6-Dinitrotoluene-d3	500	474.354	95	
2-Amino-4,6-dinitrotoluene	600	667.151	111	
3,4-Dinitrotoluene	300	291.884	97	
4-Amino-2,6-dinitrotoluene	600	599.072	100	
HMX	600	647.797	108	
Nitrobenzene	600	571.253	95	
PETN	600	710.624	118	
RDX	600	698.264	116	
Tetryl	600	543.131	91	
m-Dinitrobenzene	600	619.419	103	
m-Nitrotoluene	600	512.942	85	
o-Nitrotoluene	600	583.602	97	
p-Nitrotoluene	600	560.912	93	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



**Quantify Sample Report**  
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\_PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Name: C:\MASSLYNX\NEW\_EXP\_PRO\Data\EXP0108091a

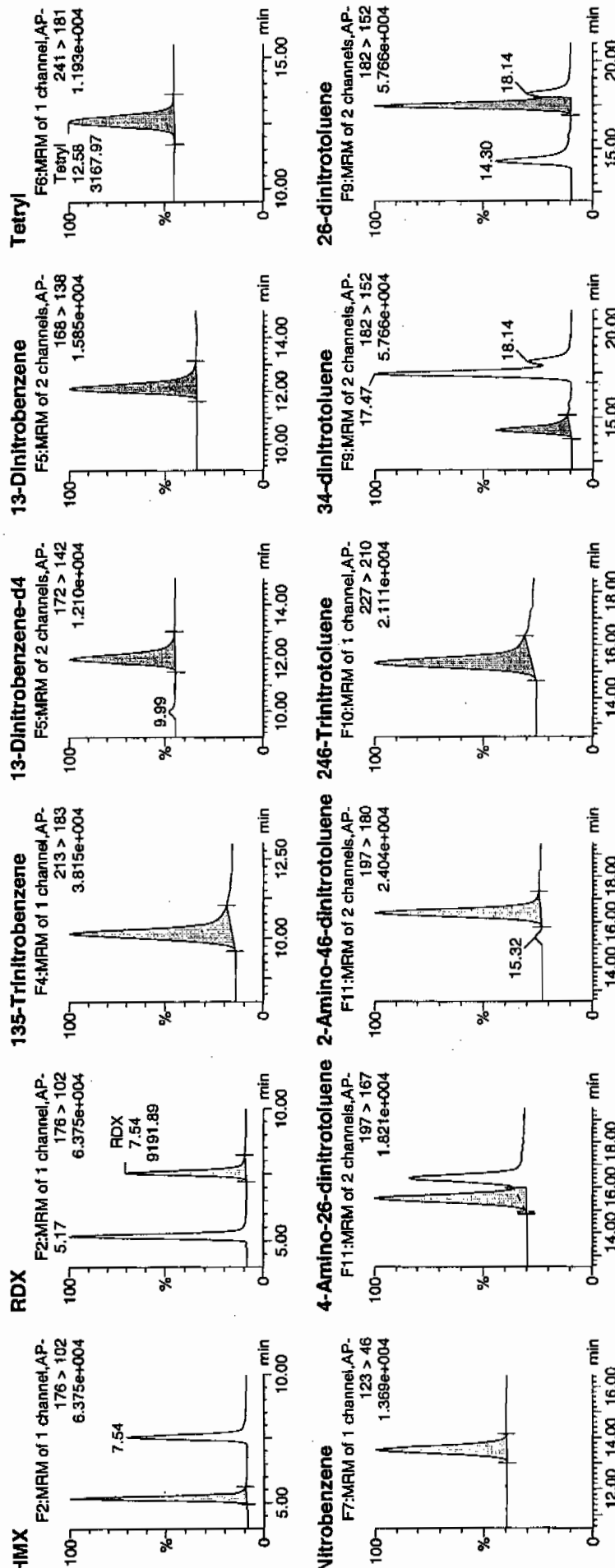
Date: 10-Jan-2010

Time: 13:31:19

ID: WXX100108-07CCV

Vial: 1:1,B

1/11/10



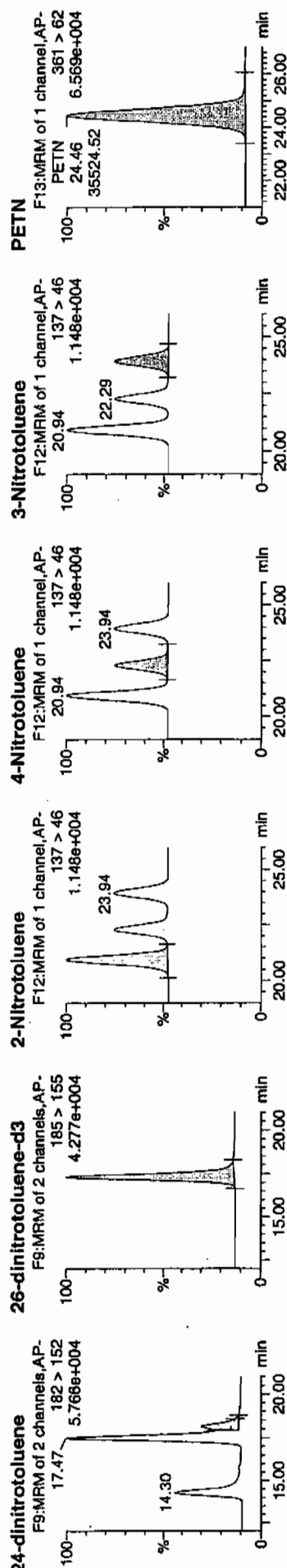
MANUAL



## Quantify Sample Report

GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	RT	Area	IS Area	Abs Resp	Response	Flags	Mod Date	Mod Time	Int. Conc	% Rec	% Dev	SSIN
135-Trinitrobenzene	176 > 102	5.17	11503.515	2688.778	11503.515	2139.172	bb			647.7988	108.0	8.0	1281.5
13-Dinitrobenzene-d4	176 > 102	7.54	9191.890	2688.778	9191.890	1709.306	bb			698.2642	116.4	16.4	864.1
13-Dinitrobenzene	213 > 183	10.14	12101.591	2688.778	12101.591	2250.389	bb			650.9576	108.5	8.5	1043.6
13-Dinitrobenzene	172 > 142	11.97	2688.778		2688.778	2688.778	bb			458.9096	91.8	-8.2	101.2
13-Dinitrobenzene	166 > 138	12.10	4087.176	2688.778	4087.176	760.043	bb			619.4188	103.2	3.2	428.2
Tetryl	241 > 181	12.58	3167.974	2688.778	3167.974	589.110	bb			543.1309	90.5	-9.5	206.3
Nitrobenzene	123 > 46	13.54	3030.191	2688.778	3030.191	563.489	bb			571.2534	95.2	-4.8	227.8
4-Amino-26-dinitrotoluene	197 > 167	15.53	5412.261	16020.170	5412.261	168.920	MM	11-Jan-10	09:08:09	599.0718	99.8	-0.2	112.2
2-Amino-46-dinitrotoluene	197 > 180	16.40	7871.692	16020.170	7871.692	245.681	bb			667.1507	111.2	11.2	718.2
246-Trinitrotoluene	227 > 210	15.34	7252.766	16020.170	7252.766	226.364	bb			699.3236	116.6	16.6	548.9
34-dinitrotoluene	182 > 152	14.30	8390.373	16020.170	8390.373	261.869	bb			291.8839	97.3	-2.7	271.7
26-dinitrotoluene	182 > 152	17.47	20472.125	16020.170	20472.125	638.948	MM	11-Jan-10	09:17:26	564.4729	94.1	-5.9	719.2
24-dinitrotoluene	182 > 152	18.14	4632.196	16020.170	4632.196	144.574	MM	11-Jan-10	09:21:10	592.8659	98.8	-1.2	150.3
26-dinitrotoluene-d3	185 > 155	17.31	16020.170		16020.170	16020.170	bb			474.3538	94.9	-5.1	1314.4
2-Nitrotoluene	137 > 46	20.94	2890.570	16020.170	2890.570	90.217	bb			583.6023	97.3	-2.7	223.5
4-Nitrotoluene	137 > 46	22.29	1516.997	16020.170	1516.997	47.346	bb			560.9122	93.5	-6.5	118.9
3-Nitrotoluene	137 > 46	23.94	1646.168	16020.170	1646.168	51.378	bb			512.9423	85.5	-14.5	119.9
PETN	361 > 62	24.46	35524.516	16020.170	35524.516	1108.743	bb			710.6236	118.4	18.4	1262.9



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/10/10  
 Time of Injection: 1331  
 Standard Number: WXX100108-07CCV  
 Data File: EXP0108091a

HMX	108.0
RDX	116.4
135-TNB	108.5
13-DNB	103.2
Tetryl	90.5
Nitrobenzene	95.2
4A-26-DNT	99.8
2A-46-DNT	111.2
246-TNT	116.6
34-DNT(surr)	97.3
26-DNT	94.1
24-DNT	98.8
2-NT	97.3
4-NT	93.5
3-NT	85.5
PETN	118.4
Total	1634.3

Average

102.1

*Handwritten: 11/10*

ICV Limits 85-115%
CRI Limits 70-130%
CCV Limits 85-115%

No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108093a

Analysis Date: 10-JAN-10 14:30

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	55.778	139	*
1,3-Dinitrobenzene-d4	500	485.529	97	
2,4,6-Trinitrotoluene	40	42.864	107	
2,4-Dinitrotoluene	40	40.064	100	
2,6-Dinitrotoluene	40	37.592	94	
2,6-Dinitrotoluene-d3	500	487.002	97	
2-Amino-4,6-dinitrotoluene	40	40.747	102	
3,4-Dinitrotoluene	20	23.656	118	
4-Amino-2,6-dinitrotoluene	40	41.941	105	
HMX	40	47.029	118	
Nitrobenzene	40	39.943	100	
PETN	40	62.987	157	*
RDX	40	41.581	104	
Tetryl	40	41.48	104	
m-Dinitrobenzene	40	34.915	87	
m-Nitrotoluene	40	46.334	116	
o-Nitrotoluene	40	48.232	121	
p-Nitrotoluene	40	37.864	95	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Quantify Sample Report  
 EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\_PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP\_PRO\Data\EXP0108093a

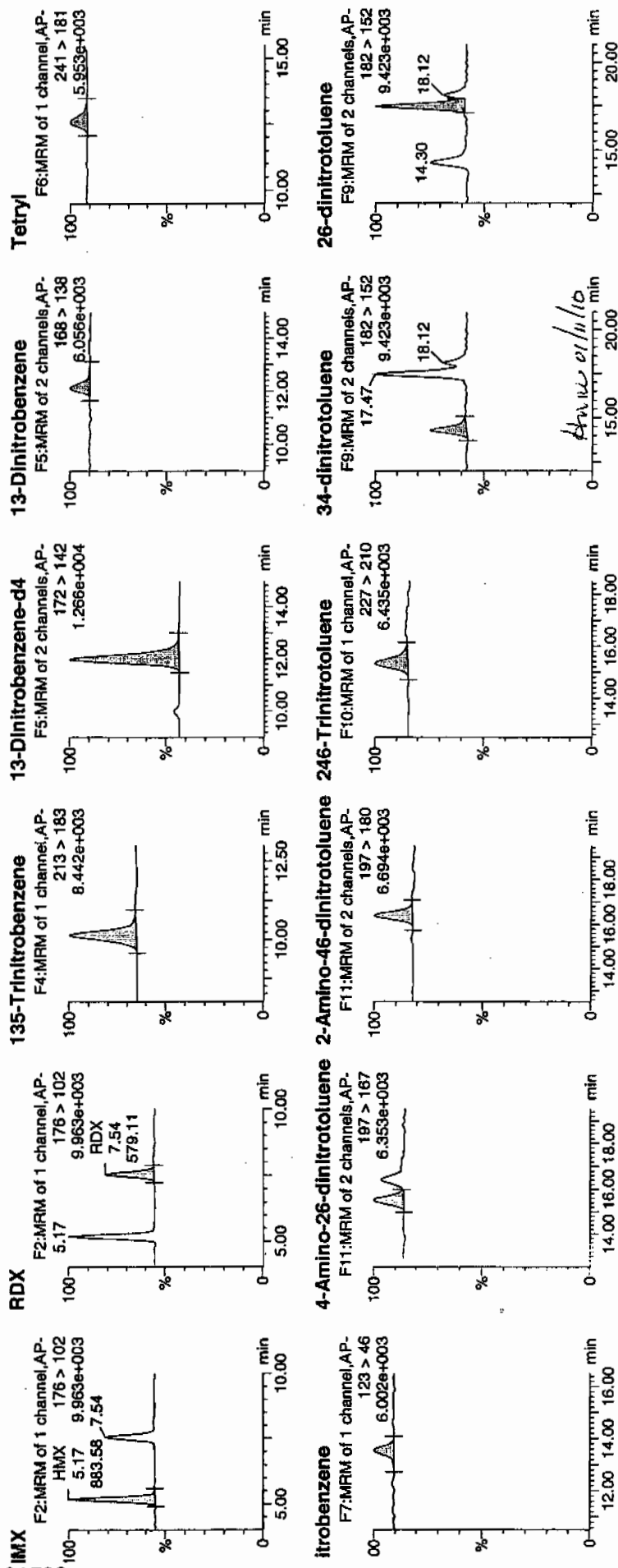
Date: 10-Jan-2010

Time: 14:30:21

File: WXX100108-08CRI

Ratio: 1:1,C

1/11/10

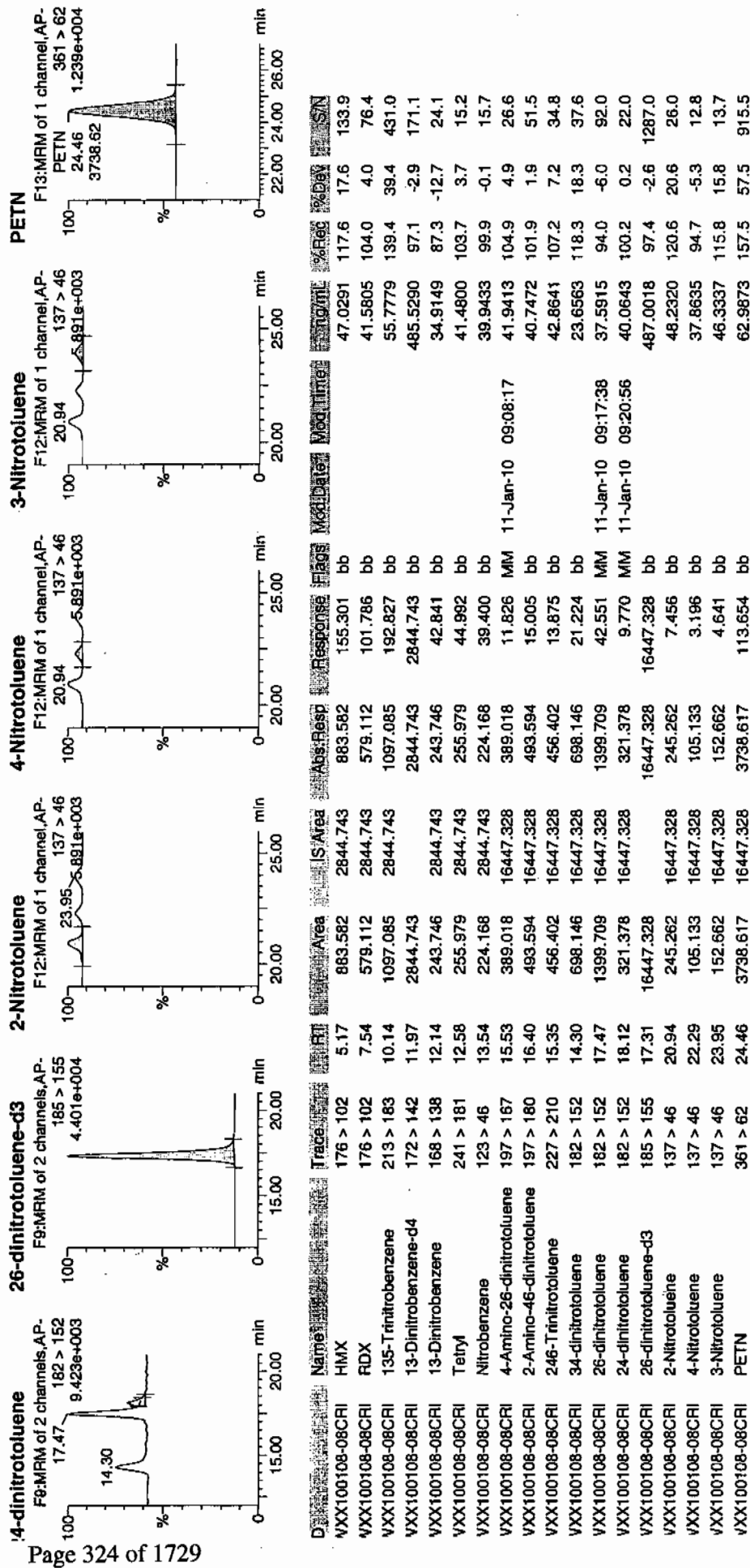




Printed: Mon Jan 11 09:29:17 2010, Page 126 of 189

Quantify Sample Report  
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PROV010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/10/10  
 Time of Injection 1430  
 Standard Number WXX100108-08CRI  
 Data File EXP0108093a

HMX	117.6
RDX	104.0
135-TNB	139.4
13-DNB	87.3
Tetryl	103.7
Nitrobenzene	99.9
4A-26-DNT	104.9
2A-46-DNT	101.9
246-TNT	107.2
34-DNT(surr)	118.3
26-DNT	94.0
24-DNT	100.2
2-NT	120.6
4-NT	94.7
3-NT	115.8
PETN	157.5

*WAT*  
*1/10/10*

Total 1767.0

Average 110.4

*ABILE 01/10/10*

ICV Limits 85-115%
CRI Limits 70-130%
CCV Limits 85-115%
No single analyte > +/- 60%



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0108104a

Analysis Date: 10-JAN-10 19:54

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2,6-Dinitrotoluene-d3	500	446.002	89	
2-Amino-4,6-dinitrotoluene	600	688.053	115	
3,4-Dinitrotoluene	300	307.229	102	
4-Amino-2,6-dinitrotoluene	600	597.117	100	
HMX	600	590.294	98	
Nitrobenzene	600	546.9	91	
PETN	600	753.361	126	*
RDX	600	638.442	106	
Tetryl	600	483.476	81	
m-Dinitrobenzene	600	565.448	94	
m-Nitrotoluene	600	524.965	87	
o-Nitrotoluene	600	615.288	103	
p-Nitrotoluene	600	559.742	93	
1,3,5-Trinitrobenzene	600	622.64	104	
1,3-Dinitrobenzene-d4	500	480.709	96	
2,4,6-Trinitrotoluene	600	691.061	115	
2,4-Dinitrotoluene	600	600.835	100	
2,6-Dinitrotoluene	600	573.631	96	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene, 2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



uantify Sample Report  
EL Laboratories, LLC / Analyst: Michael A. Penny

alaset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

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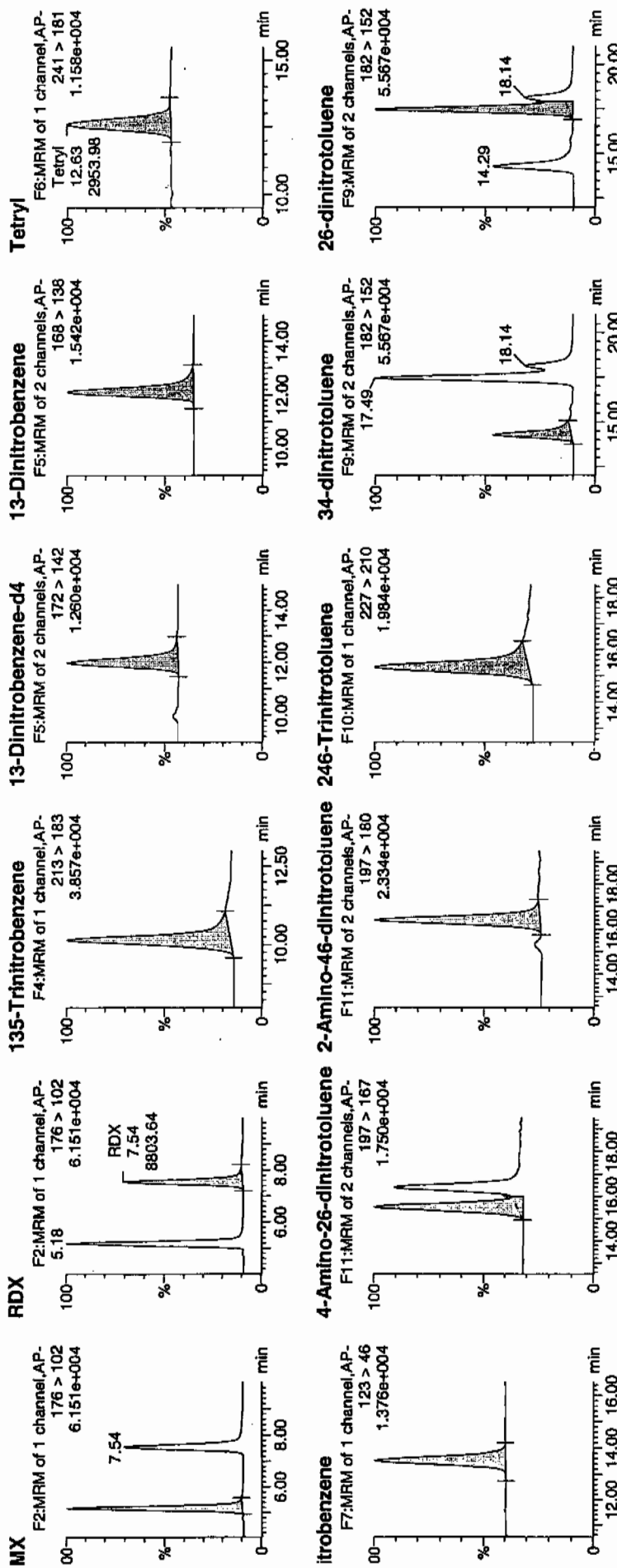
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ime: 19:54:49

); WXX100108-07CCV

ial: 1:1,B

1/11/10



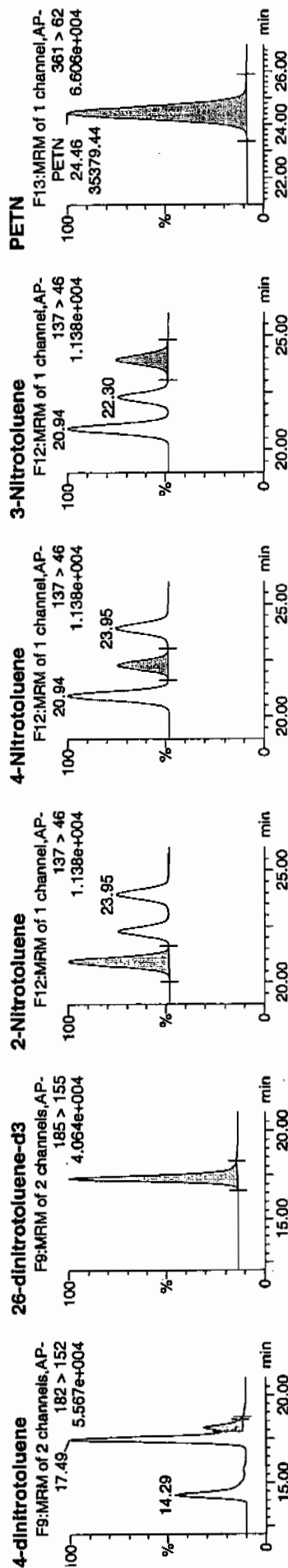
1/11/10



Printed: Mon Jan 11 09:29:17 2010, Page 148 of 189

Quantify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Iataset: C:\MASSLYNX\New\_Exp\_PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	Area	Abundance	Response	Time	Area	Abundance	Response	Time
XX100108-07CCV HMX	176 > 102	5.18	10980.336	2816.504	10980.336	1949.285	bb	590.2941	98.4
XX100108-07CCV RDX	176 > 102	7.54	8803.635	2816.504	8803.635	1562.866	bb	638.4422	106.4
XX100108-07CCV 135-Trinitrobenzene	213 > 183	10.14	12125.007	2816.504	12125.007	2152.492	bb	622.6397	103.8
XX100108-07CCV 13-Dinitrobenzene-d4	172 > 142	11.97	2816.504	2816.504	2816.504	2816.504	bb	480.7093	96.1
XX100108-07CCV 13-Dinitrobenzene	168 > 138	12.10	3908.290	2816.504	3908.290	693.819	bb	565.4477	94.2
XX100108-07CCV Tetryl	241 > 181	12.63	2953.978	2816.504	2953.978	524.405	bb	483.4758	80.6
XX100108-07CCV Nitrobenzene	123 > 46	13.54	3038.816	2816.504	3038.816	539.466	bb	546.8998	91.1
XX100108-07CCV 4-Amino-26-dinitrotoluene	197 > 167	15.52	5072.169	15062.650	5072.169	168.369	MM	597.1173	99.5
XX100108-07CCV 2-Amino-46-dinitrotoluene	197 > 180	16.40	7633.091	15062.650	7633.091	253.378	bb	688.0533	114.7
XX100108-07CCV 246-Trinitrotoluene	227 > 210	15.34	6738.703	15062.650	6738.703	223.689	bb	691.0613	115.2
XX100108-07CCV 34-dinitrotoluene	182 > 152	14.29	8303.619	15062.650	8303.619	275.636	bb	307.2289	102.4
XX100108-07CCV 26-dinitrotoluene	182 > 152	17.49	19560.799	15062.650	19560.799	649.315	MM	573.6308	95.6
XX100108-07CCV 24-dinitrotoluene	182 > 152	18.14	4413.875	15062.650	4413.875	146.517	MM	600.8352	100.1
XX100108-07CCV 26-dinitrotoluene-d3	185 > 155	17.31	15062.650	15062.650	15062.650	15062.650	bb	446.0018	89.2
XX100108-07CCV 2-Nitrotoluene	137 > 46	20.94	2855.362	15062.650	2855.362	95.115	bb	615.2884	102.5
XX100108-07CCV 4-Nitrotoluene	137 > 46	22.30	1423.350	15062.650	1423.350	47.248	bb	559.7416	93.3
XX100108-07CCV 3-Nitrotoluene	137 > 46	23.95	1584.054	15062.650	1584.054	52.582	bb	524.9647	87.5
XX100108-07CCV PETN	361 > 62	24.46	35379.441	15062.650	35379.441	1174.410	bb	753.3613	125.6



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/10/10  
 Time of Injection: 1954  
 Standard Number: WXX100108-07CCV  
 Data File: EXP0108104a

HMX	98.4
RDX	106.4
135-TNB	103.8
13-DNB	94.2
Tetryl	80.6
Nitrobenzene	91.1
4A-26-DNT	99.5
2A-46-DNT	114.7
246-TNT	115.2
34-DNT(surr)	102.4
26-DNT	95.6
24-DNT	100.1
2-NT	102.5
4-NT	93.3
3-NT	87.5
PETN	125.6

*mtf*  
*1/11/10*

Total 1610.9

Average 100.7

*Sum = 01/14/10*

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108106a

Analysis Date: 10-JAN-10 20:53

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2,4,6-Trinitrotoluene	40	37.6	94	
2,4-Dinitrotoluene	40	38.936	97	
2,6-Dinitrotoluene	40	43.405	109	
2,6-Dinitrotoluene-d3	500	521.469	104	
2-Amino-4,6-dinitrotoluene	40	43.784	109	
3,4-Dinitrotoluene	20	18.648	93	
4-Amino-2,6-dinitrotoluene	40	43.699	109	
HMX	40	48.31	121	
Nitrobenzene	40	39.9	100	
PETN	40	57.568	144	*
RDX	40	45.132	113	
Tetryl	40	46.537	116	
m-Dinitrobenzene	40	40.055	100	
m-Nitrotoluene	40	36.54	91	
o-Nitrotoluene	40	44.173	110	
p-Nitrotoluene	40	42.407	106	
1,3,5-Trinitrobenzene	40	59.238	148	*
1,3-Dinitrobenzene-d4	500	493.386	99	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Printed: Mon Jan 11 09:29:17 2010, Page 151 of 189

Quantify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Filename: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108106a

Date: 10-Jan-2010

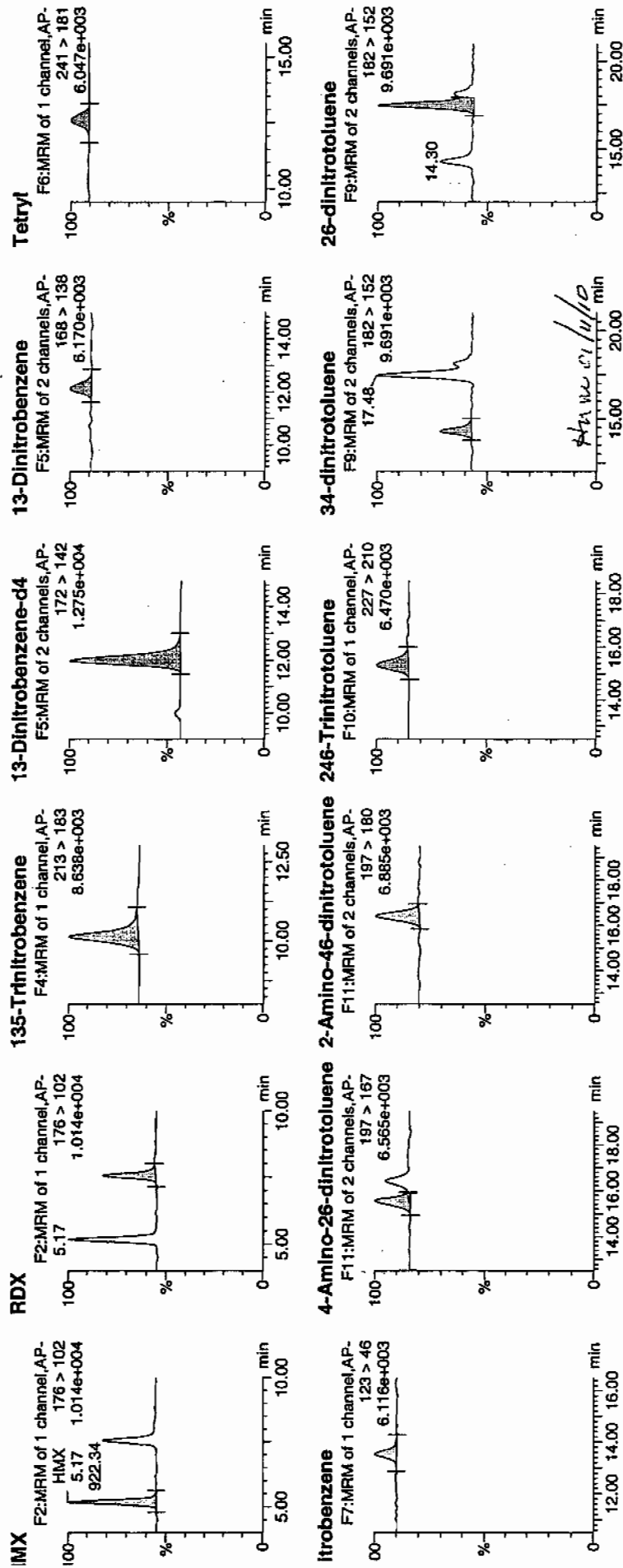
Time: 20:53:52

Job: WXX100108-08CRI

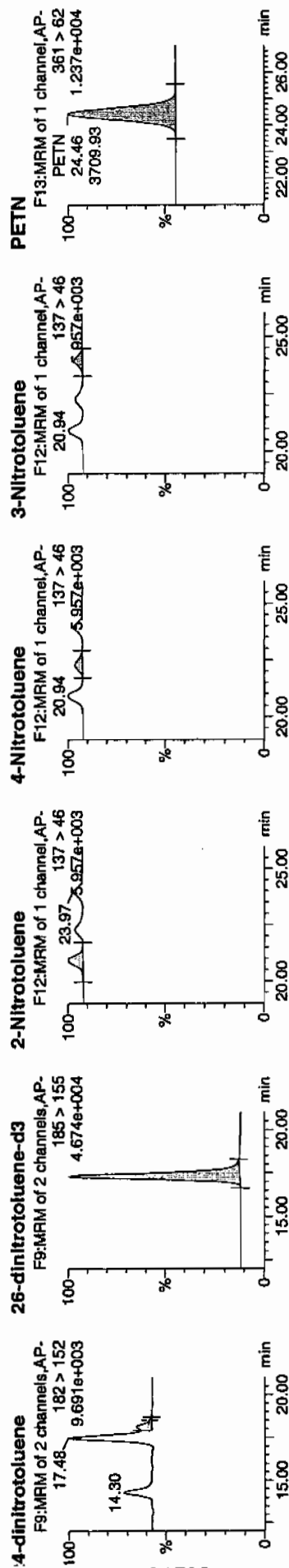
Ratio: 1:1,C

WXX  
1/11/10

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Name	Trace	RT	Area	IS Area	Abst Resp	Response	Flags	Mod Date	Mod Time	In DM	Area	Conv	S/N
HMX	176 > 102	5.17	922.336	2890.776	922.336	159.531	bb			48.3101	120.8	20.8	146.3
RDX	176 > 102	7.54	638.743	2890.776	638.743	110.480	bb			45.1317	112.8	12.8	86.7
135-Trinitrobenzene	213 > 183	10.14	1183.993	2890.776	1183.993	204.788	bb			59.2379	148.1	48.1	349.9
13-Dinitrobenzene-d4	172 > 142	11.97	2890.776		2890.776	2890.776	bb			493.3857	98.7	-1.3	499.6
13-Dinitrobenzene	168 > 138	12.14	284.154	2890.776	284.154	49.148	bb			40.0549	100.1	0.1	13.6
Tenyl	241 > 181	12.63	291.835	2890.776	291.835	50.477	bb			46.5373	116.3	16.3	60.1
Nitrobenzene	123 > 46	13.50	227.546	2890.776	227.546	39.357	bb			39.8996	99.7	-0.3	19.7
4-Amino-26-dinitrotoluene	197 > 167	15.53	434.011	17611.391	434.011	12.322	MM	11-Jan-10	09:09:14	43.6993	109.2	9.2	36.8
2-Amino-46-dinitrotoluene	197 > 180	16.41	567.918	17611.391	567.918	16.124	bb			43.7840	109.5	9.5	48.4
246-Trinitrotoluene	227 > 210	15.31	428.684	17611.391	428.684	12.171	bb			37.5998	94.0	-6.0	56.2
34-dinitrotoluene	182 > 152	14.30	589.281	17611.391	589.281	16.730	bb			18.6477	93.2	-6.8	20.7
26-dinitrotoluene	182 > 152	17.48	1730.544	17611.391	1730.544	49.131	MM	11-Jan-10	09:18:25	43.4046	108.5	8.5	62.1
24-dinitrotoluene	182 > 152	18.16	334.430	17611.391	334.430	9.495	MM	11-Jan-10	09:19:53	38.9357	97.3	-2.7	11.9
26-dinitrotoluene-d3	185 > 155	17.31	17611.391		17611.391	17611.391	bb			521.4895	104.3	4.3	1061.1
2-Nitrotoluene	137 > 46	20.94	240.521	17611.391	240.521	6.829	bb			44.1733	110.4	10.4	94.4
4-Nitrotoluene	137 > 46	22.29	126.081	17611.391	126.081	3.580	bb			42.4066	106.0	6.0	48.2
3-Nitrotoluene	137 > 46	23.97	128.914	17611.391	128.914	3.660	bb			36.5399	91.3	-8.7	55.5
PETN	361 > 62	24.46	3709.930	17611.391	3709.930	105.328	bb			57.5980	143.9	43.9	1249.0



GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/10/10  
 Time of Injection 2053  
 Standard Number WXX100108-08CRI  
 Data File EXP0108106a

HMX	120.8
RDX	112.8
135-TNB	148.1
13-DNB	100.1
Tetryl	116.3
Nitrobenzene	99.7
4A-26-DNT	109.2
2A-46-DNT	109.5
246-TNT	94.0
34-DNT(surr)	93.2
26-DNT	108.5
24-DNT	97.3
2-NT	110.4
4-NT	106.0
3-NT	91.3
PETN	143.9

*MA  
1/11/10*

Total 1761.1

Average 110.1

*thru 01/11/10*

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0108116a

Analysis Date: 11-JAN-10 01:48

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
m-Nitrotoluene	600	519.041	87	
o-Nitrotoluene	600	562.643	94	
p-Nitrotoluene	600	543.71	91	
1,3,5-Trinitrobenzene	600	622.514	104	
1,3-Dinitrobenzene-d4	500	463.132	93	
2,4,6-Trinitrotoluene	600	688.281	115	
2,4-Dinitrotoluene	600	578.024	96	
2,6-Dinitrotoluene	600	572.44	95	
2,6-Dinitrotoluene-d3	500	479.71	96	
2-Amino-4,6-dinitrotoluene	600	667.775	111	
3,4-Dinitrotoluene	300	298.847	100	
4-Amino-2,6-dinitrotoluene	600	578.115	96	
HMX	600	634.379	106	
Nitrobenzene	600	534.73	89	
PETN	600	720.985	120	*
RDX	600	674.407	112	
Tetryl	600	509.619	85	
m-Dinitrobenzene	600	589.886	98	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Quantify Sample Report  
SEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

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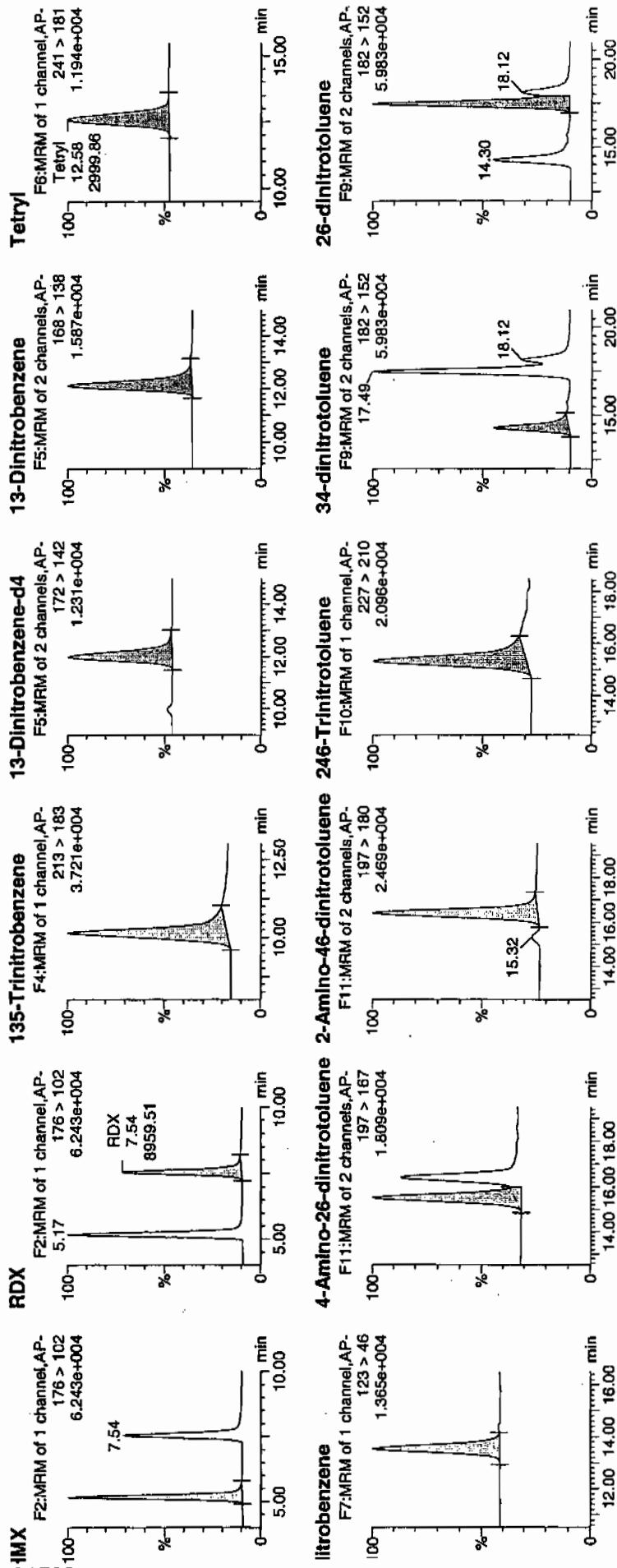
Date: 11-Jan-2010

Time: 01:48:48

D: WXX100108-07CCV

File: 1:1,B

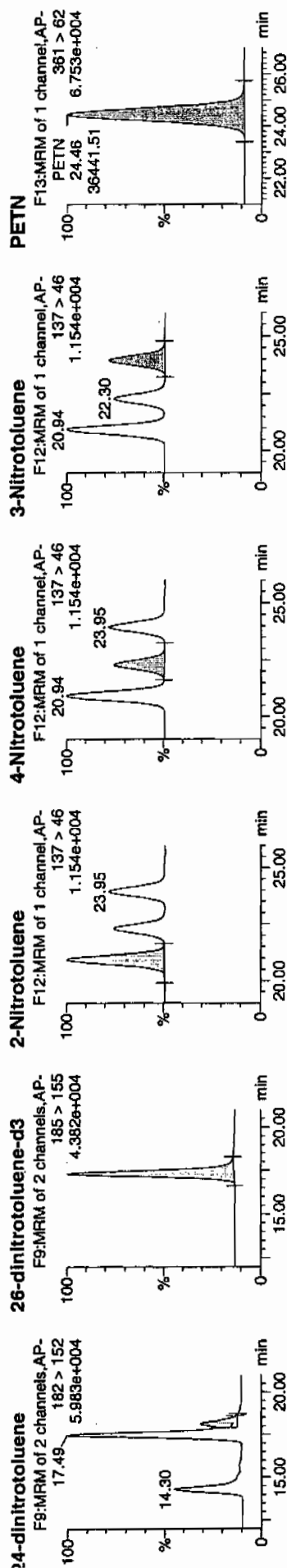
1/11/10



1/11/10



Dataset: C:\MASSLYN\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



Name	Trace	RT	Area	IS Area	AbstrResp	Response	Flags	ModDate	ModTime	Intm	Peak	Mod	SN
135-Tribromobenzene	176 > 102	5.17	11368.897	2713.517	11368.897	2094.864	db			634.3792	105.7	5.7	1824.3
135-Tribromobenzene	176 > 102	7.54	8959.514	2713.517	8959.514	1650.904	bb			674.4066	112.4	12.4	1236.4
135-Tribromobenzene	213 > 183	10.14	11679.300	2713.517	11679.300	2152.059	bb			622.5145	103.8	3.8	950.3
13-Dinitrobenzene	172 > 142	11.97	2713.517	2713.517	2713.517	2713.517	bb			463.1319	92.6	-7.4	187.9
13-Dinitrobenzene	168 > 138	12.10	3928.121	2713.517	3928.121	723.806	bb			589.8863	98.3	-1.7	621.6
Tetralin	241 > 181	12.58	2999.855	2713.517	2999.855	552.761	bb			509.6189	84.9	-15.1	337.6
Nitrobenzene	123 > 46	13.54	2862.554	2713.517	2862.554	527.462	bd			534.7304	89.1	-10.9	258.9
4-Amino-2,6-dinitrotoluene	197 > 167	15.53	5281.910	16201.079	5281.910	163.011	MM	11-Jan-10	09:09:52	578.1152	86.4	-3.6	206.4
2-Amino-4,6-dinitrotoluene	197 > 180	16.41	7968.033	16201.079	7968.033	245.911	bb			667.7750	111.3	11.3	403.9
2,4,6-Trinitrotoluene	227 > 210	15.31	7218.848	16201.079	7218.848	222.789	bb			688.2807	114.7	14.7	497.6
34-dinitrotoluene	182 > 152	14.30	8687.551	16201.079	8687.551	268.116	bb			298.8474	99.6	-0.4	192.7
26-dinitrotoluene	182 > 152	17.49	20995.535	16201.079	20995.535	647.967	MM	11-Jan-10	09:18:34	572.4404	95.4	-4.6	500.6
24-dinitrotoluene	182 > 152	18.12	4567.231	16201.079	4567.231	140.955	MM	11-Jan-10	09:19:43	578.0238	96.3	-3.7	106.5
26-dinitrotoluene-d3	185 > 155	17.31	16201.079	16201.079	16201.079	16201.079	bb			479.7105	95.9	-4.1	696.1
2-Nitrotoluene	137 > 46	20.94	2818.231	16201.079	2818.231	86.977	bb			562.6435	93.8	-6.2	241.0
4-Nitrotoluene	137 > 46	22.30	1487.079	16201.079	1487.079	45.894	bb			543.7100	90.6	-9.4	124.7
3-Nitrotoluene	137 > 46	23.95	1684.551	16201.079	1684.551	51.989	bb			519.0410	86.5	-13.5	136.7
PETN	361 > 62	24.46	36441.512	16201.079	36441.512	1124.663	bb			720.9847	120.2	20.2	6429.2



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/11/10  
 Time of Injection: 0148  
 Standard Number: WXX100108-07CCV  
 Data File: EXP0108116a

HMX	105.7
RDX	112.4
135-TNB	103.8
13-DNB	98.3
Tetryl	84.9
Nitrobenzene	89.1
4A-26-DNT	96.4
2A-46-DNT	111.3
246-TNT	114.7
34-DNT(surr)	99.6
26-DNT	95.4
24-DNT	96.3
2-NT	93.8
4-NT	90.6
3-NT	86.5
PETN	120.2

*MTT*  
*1/11/10*

Total 1599.0

Average 99.9

*Ampl 01/11/10*

ICV Limits 85-115%
CRI Limits 70-130%
CCV Limits 85-115%

No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0108118a

Analysis Date: 11-JAN-10 02:48

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
RDX	40	42.499	106	
Tetryl	40	38.427	96	
m-Dinitrobenzene	40	42.478	106	
m-Nitrotoluene	40	35.501	89	
o-Nitrotoluene	40	41.799	104	
p-Nitrotoluene	40	35.275	88	
1,3,5-Trinitrobenzene	40	60.079	150	*
1,3-Dinitrobenzene-d4	500	485.965	97	
2,4,6-Trinitrotoluene	40	43.487	109	
2,4-Dinitrotoluene	40	44.401	111	
2,6-Dinitrotoluene	40	40.281	101	
2,6-Dinitrotoluene-d3	500	500.252	100	
2-Amino-4,6-dinitrotoluene	40	44.722	112	
3,4-Dinitrotoluene	20	24.485	122	
4-Amino-2,6-dinitrotoluene	40	36.486	91	
HMX	40	49.203	123	
Nitrobenzene	40	34.055	85	
PETN	40	61.76	154	*

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Quantify Sample Report  
3EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

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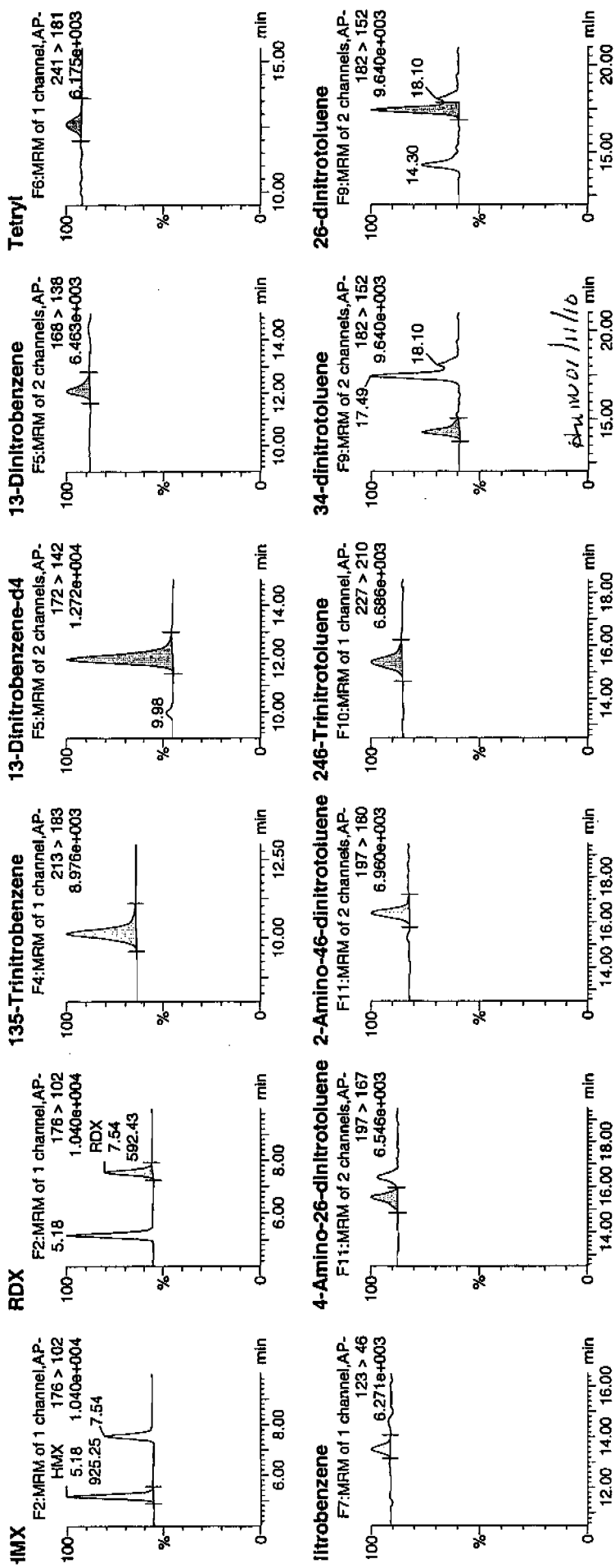
Date: 11-Jan-2010

Time: 02:48:06

D: WXX100108-08CRI

/Ial: 1:1,C

1/11/10

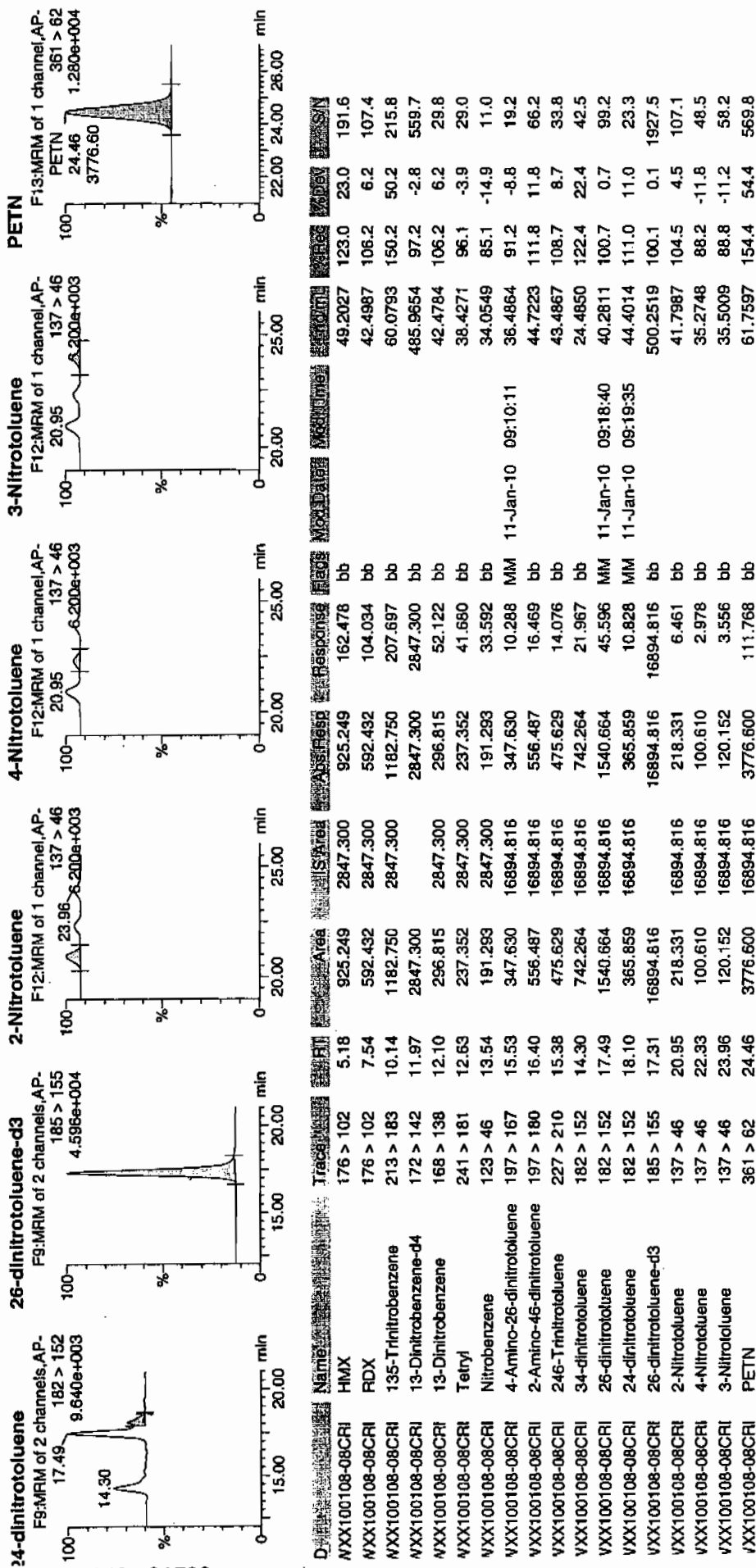




Printed: Mon Jan 11 09:29:17 2010, Page 176 of 189

Quantify Sample Report  
3EL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/11/10  
 Time of Injection 0248  
 Standard Number WXX100108-08CRI  
 Data File EXP0108118a

HMX	123.0	✓
RDX	106.2	✓
135-TNB	150.2	✓
13-DNB	106.2	
Tetryl	96.1	
Nitrobenzene	85.1	
4A-26-DNT	91.2	
2A-46-DNT	111.8	
246-TNT	108.7	
34-DNT(surr)	122.4	
26-DNT	100.7	
24-DNT	111.0	
2-NT	104.5	
4-NT	88.2	
3-NT	88.8	
PETN	154.4	✓
Total	1748.5	

MAP  
1/11/10

Average

109.3

done 01/11/10

ICV Limits 85-115%

CRI Limits 70-130%

CCV Limits 85-115%

No single analyte > +/- 60%



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01050013.wiff

Analysis Date: 05-JAN-10 17:38

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	97.7	98	
2,6-Diamino-4-nitrotoluene	100	97.5	98	
3,4-Dinitrotoluene	50	50.4	101	
3,5-Dinitroaniline	100	98.7	99	
TATB	100	101	101	
tris(o-cresyl) phosphate	100	101	101	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

2,4-Diamino-6-nitrotoluene 50-150%

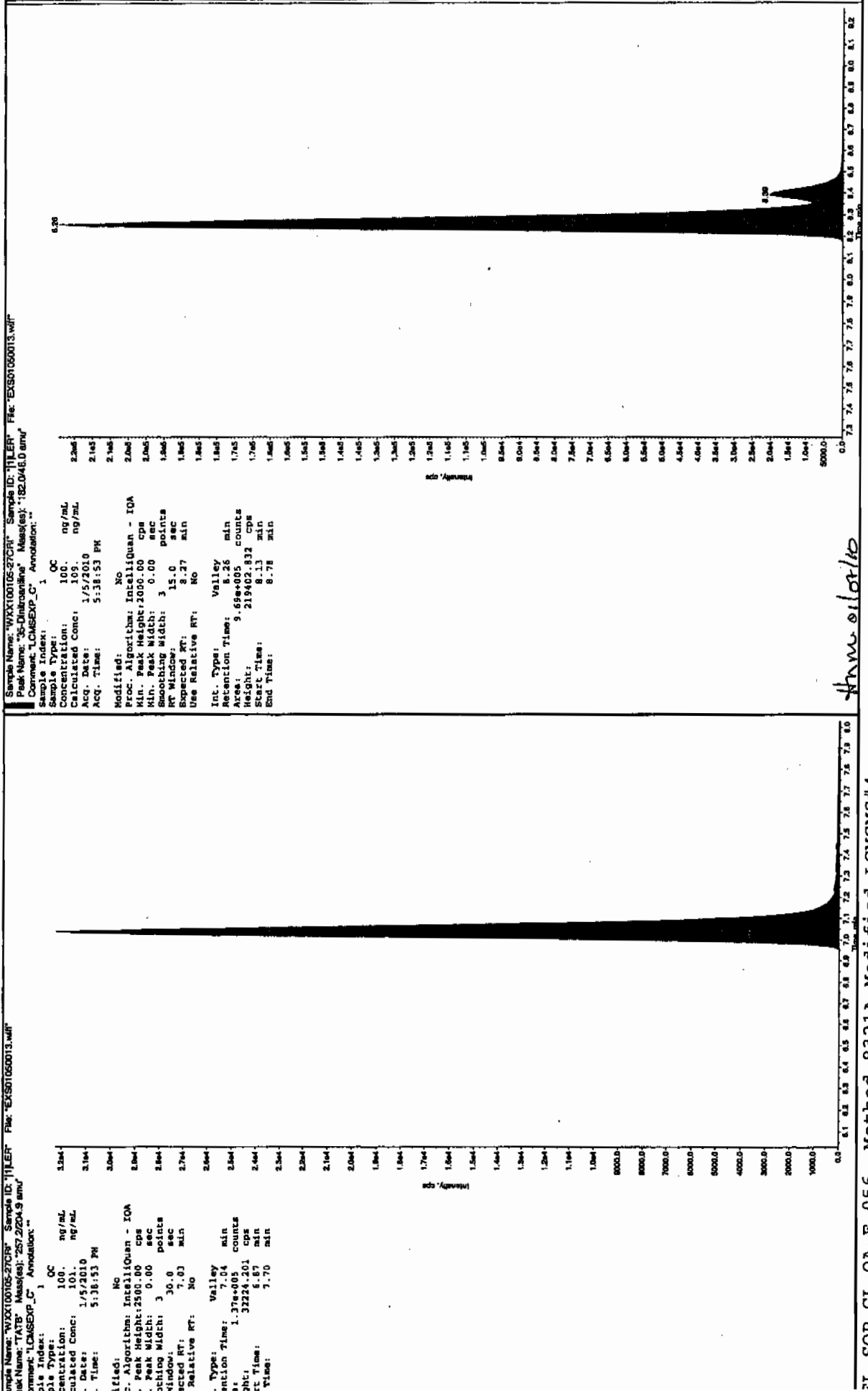
Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



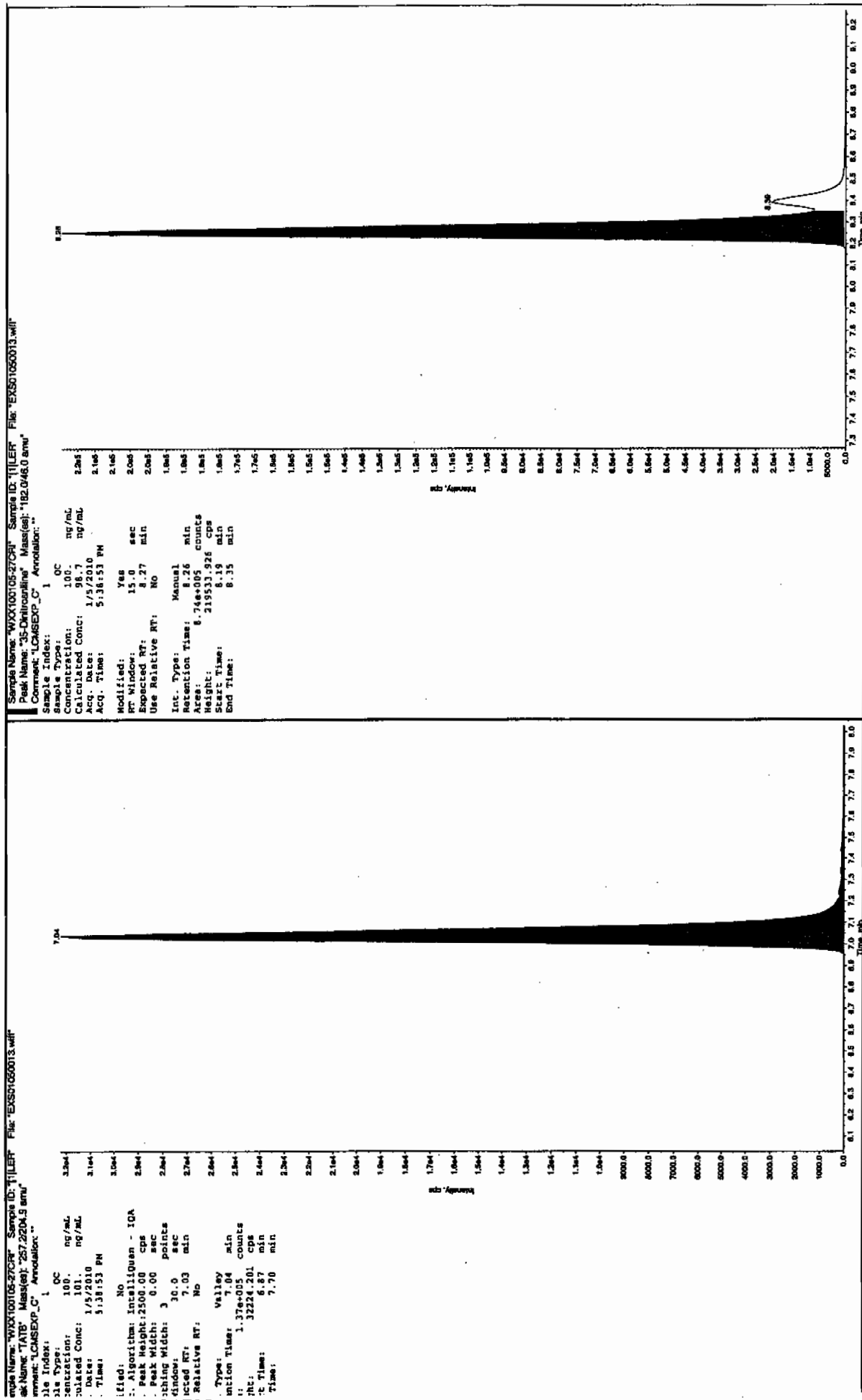
01/14/11  
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2204.9



thru 01/14/10

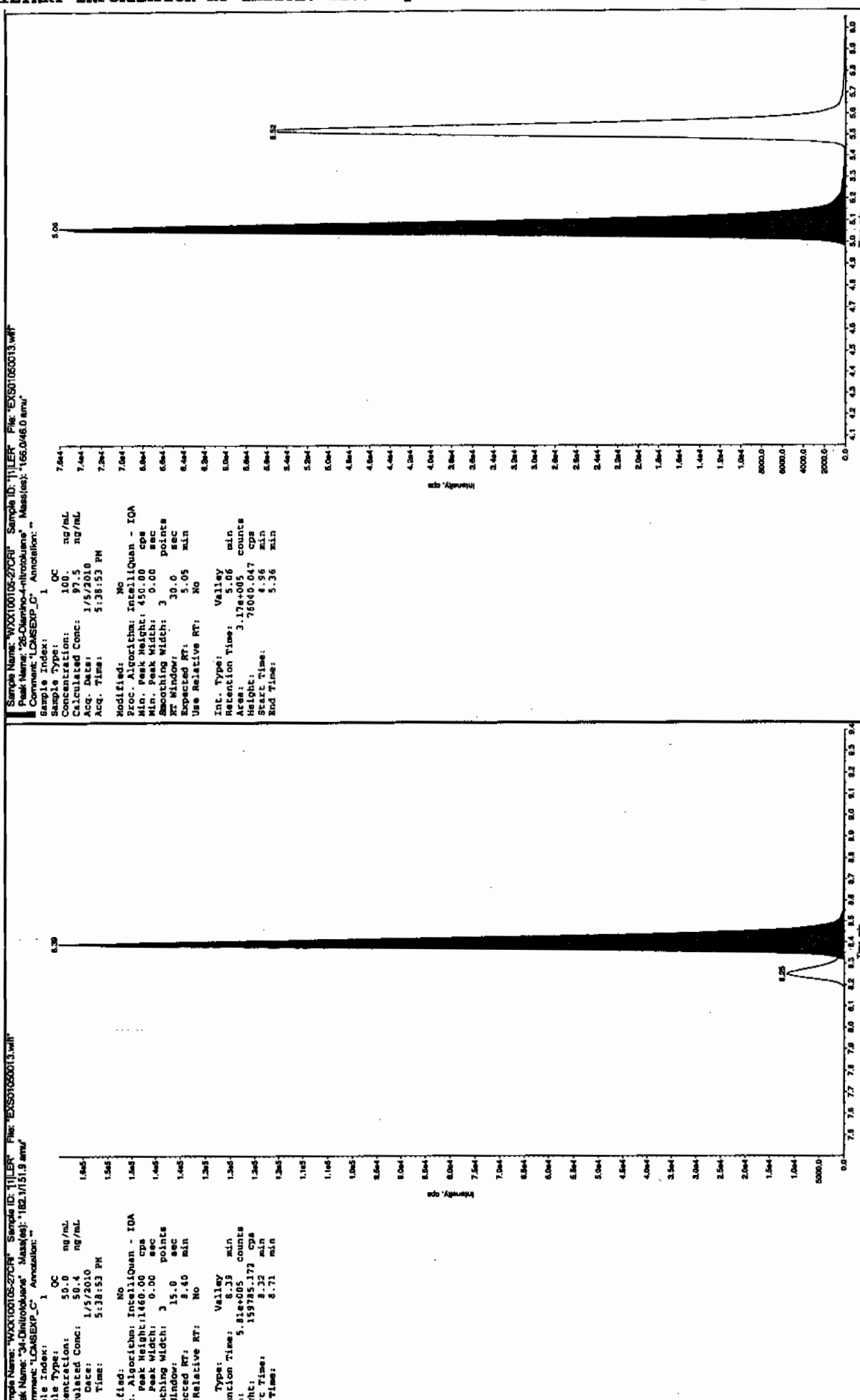


01/21/10  
2008  
2008



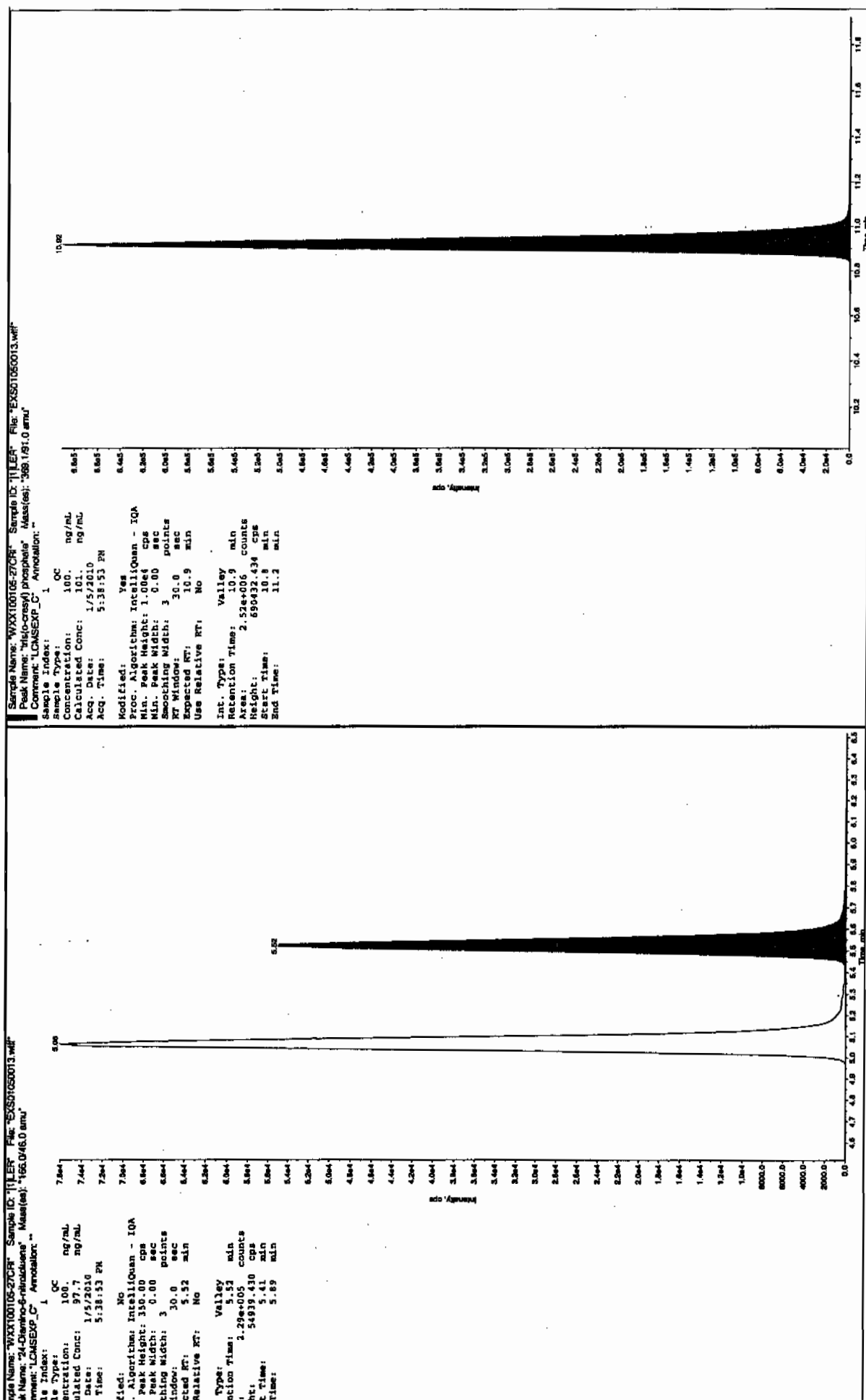
3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01050024.wiff

Analysis Date: 05-JAN-10 20:31

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	498	100	
2,6-Diamino-4-nitrotoluene	500	425	85	
3,4-Dinitrotoluene	250	230	92	
3,5-Dinitroaniline	500	495	99	
TATB	500	521	104	
tris(o-cresyl) phosphate	500	508	102	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

2,4-Diamino-6-nitrotoluene 70-130%

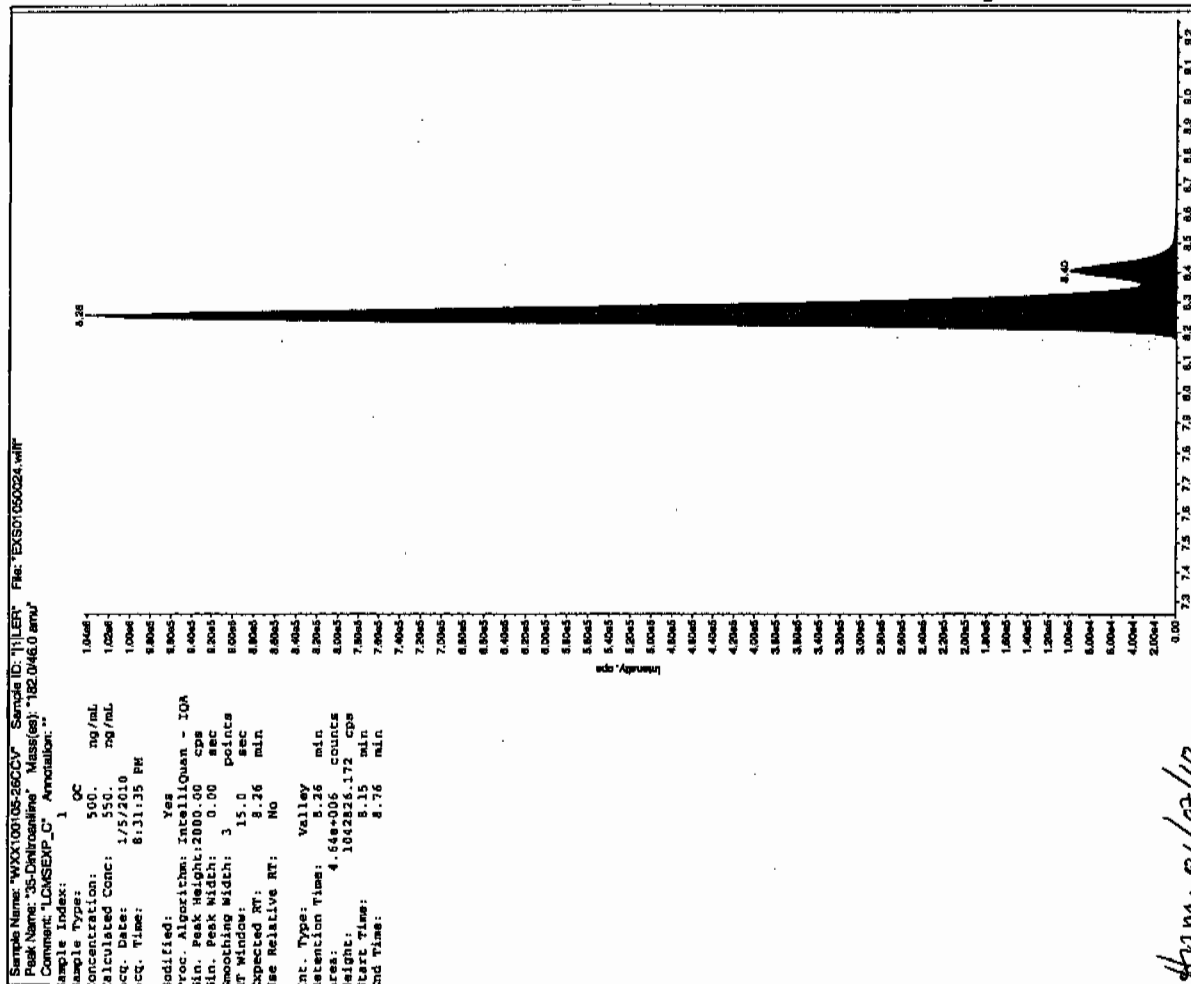
Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

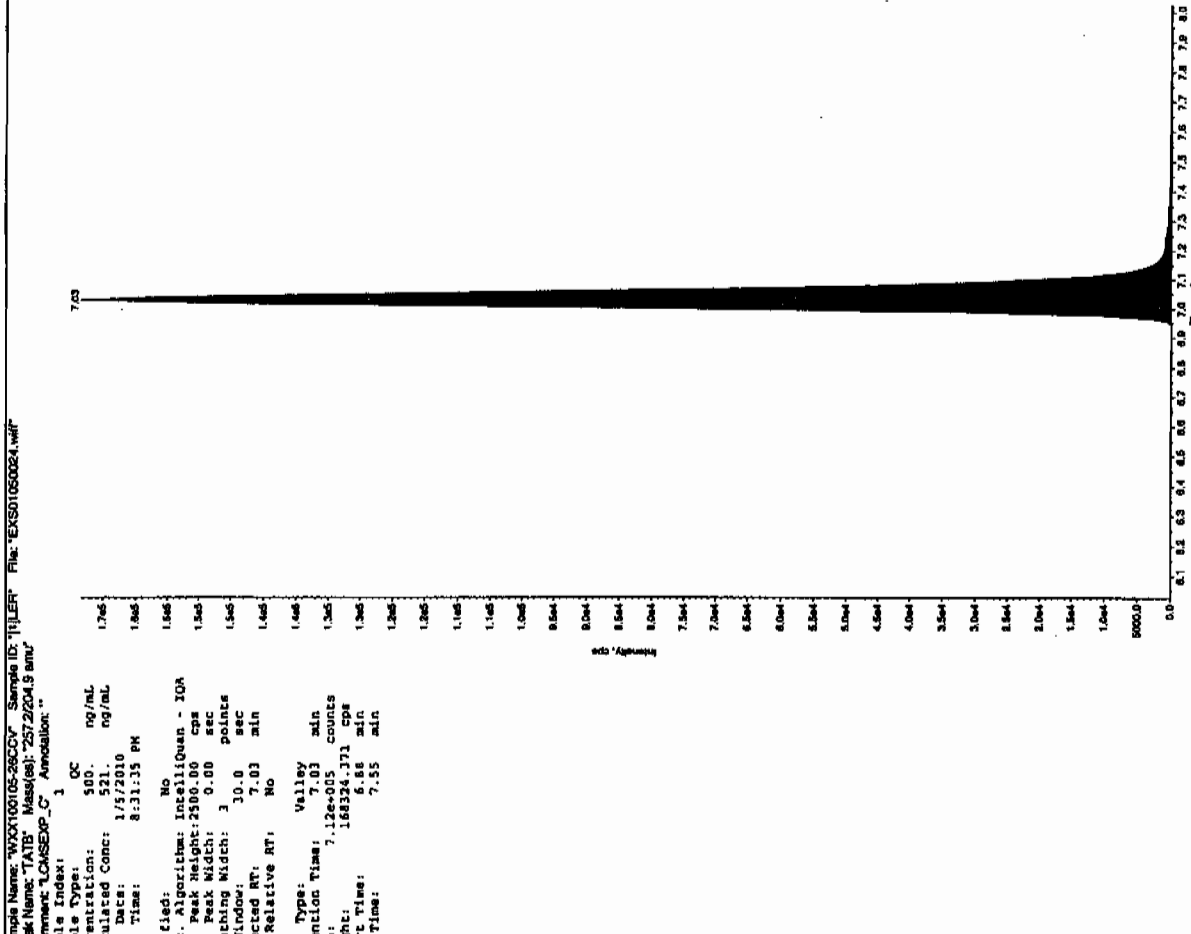
\* Value outside of Recovery Limits



1/17/10  
Dolan



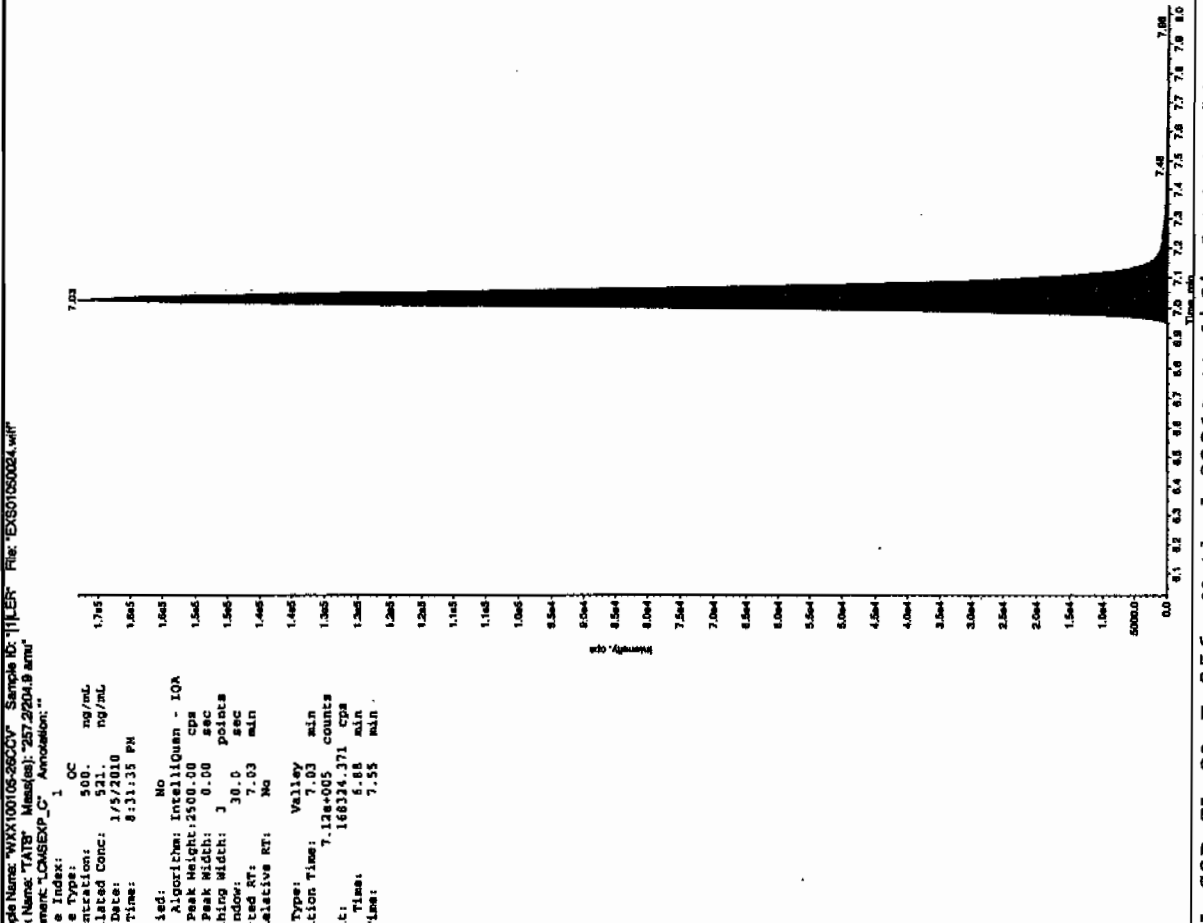
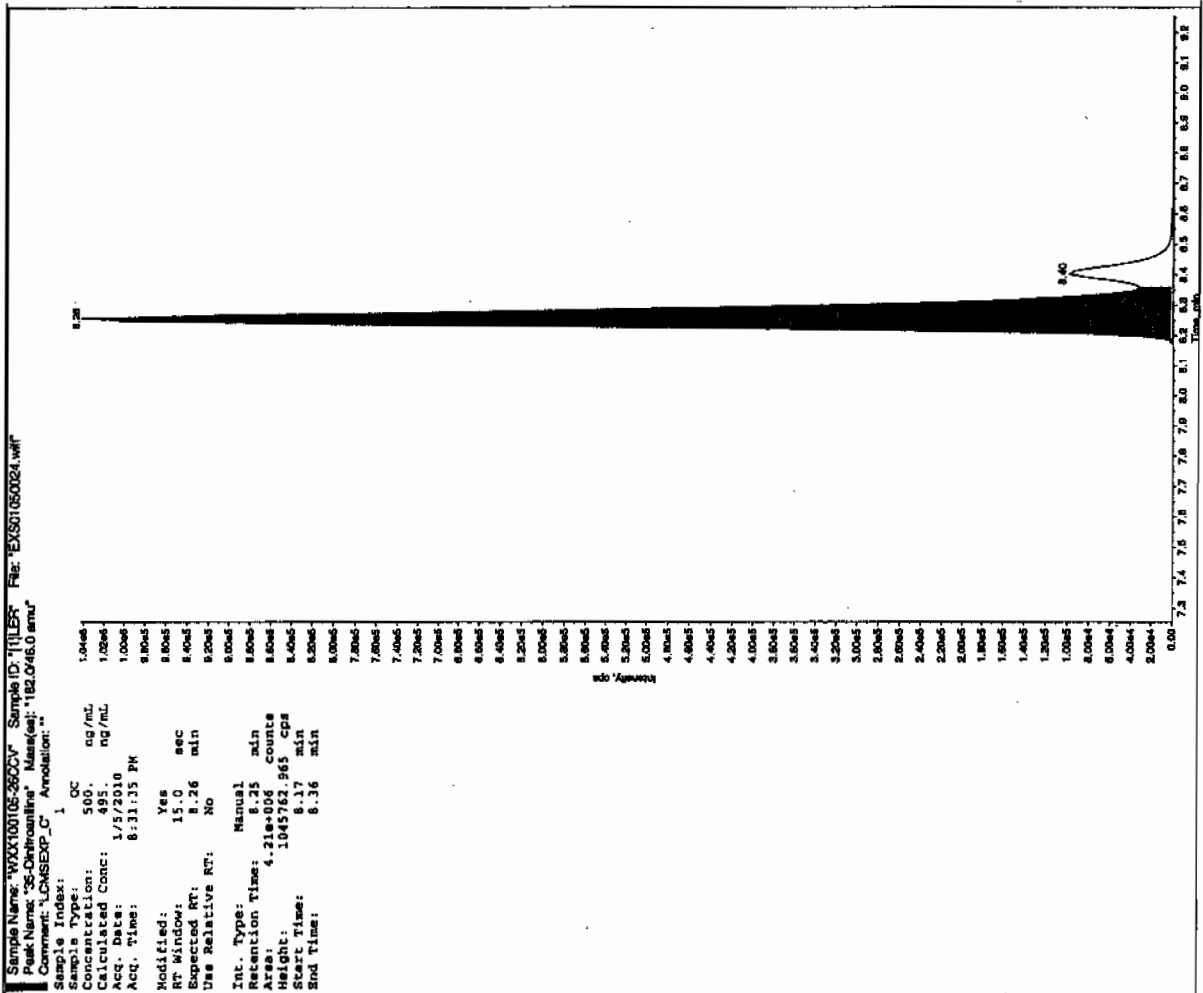
4mm 0.1/0.1/0



3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00



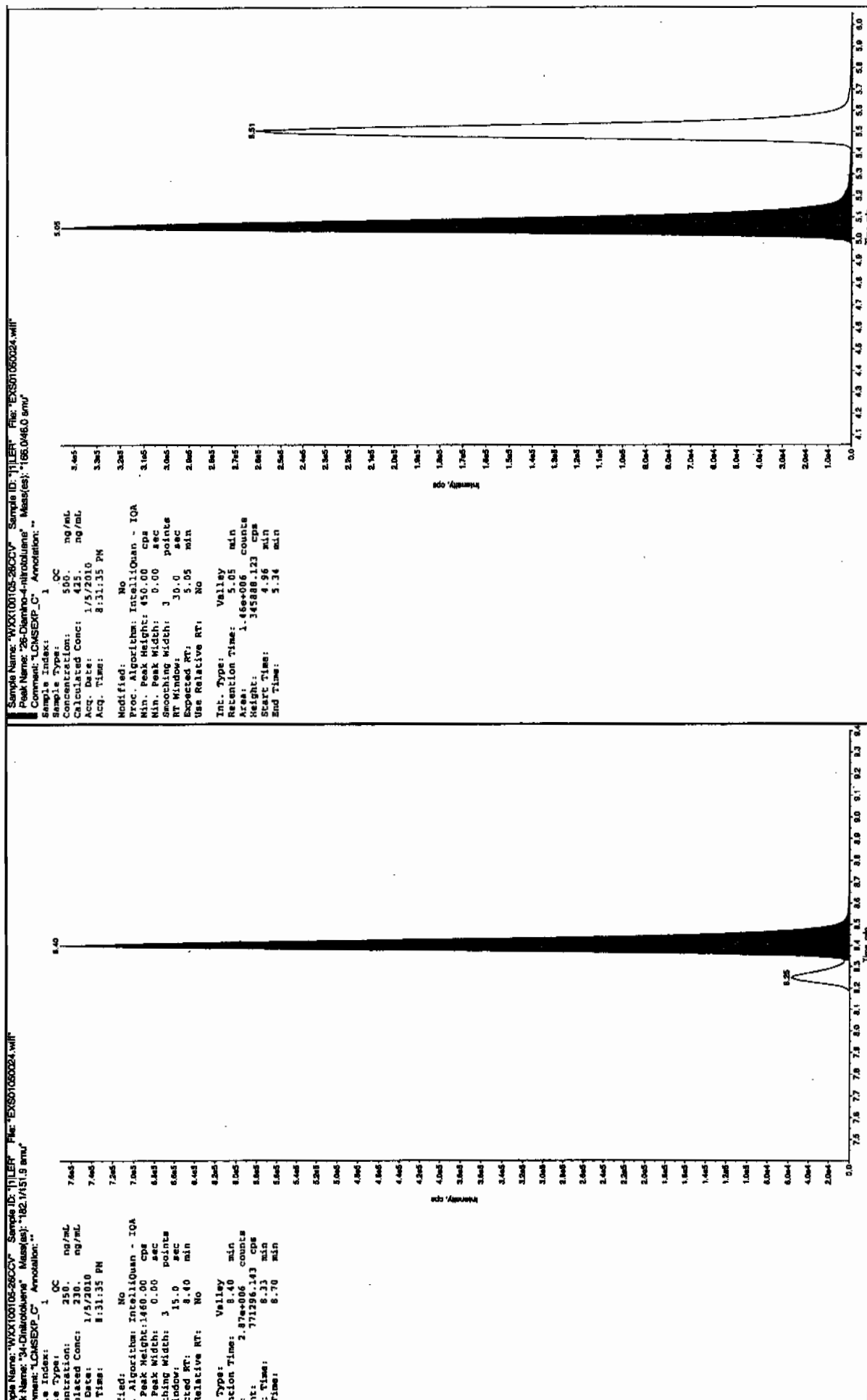
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 Peak Name: "3S-Dinitroaniline" Mass(es): "182.0/183.0 amu"  
 Comment: "LCMS-EXP\_C" Annotation: ""

Sample Index: 1  
 Sample Type: QC  
 Concentration: 500. ng/mL  
 Calculated Conc: 495. ng/mL  
 Acq. Date: 1/5/2010  
 Acq. Time: 8:31:35 PM  
 Modified: Yes  
 RT Window: 15.0 sec  
 Expected RT: 8.26 min  
 Use Relative RT: No  
 Int. Type: Manual  
 Retention Time: 8.25 min  
 Area: 4.21e+008 counts  
 Height: 1045762.965 cps  
 Start Time: 8.17 min  
 End Time: 8.36 min

Sample Index: 1  
 Sample Type: QC  
 Concentration: 500. ng/mL  
 Calculated Conc: 521. ng/mL  
 Acq. Date: 1/5/2010  
 Acq. Time: 8:31:35 PM  
 Modified: No  
 RT Window: 15.0 sec  
 Expected RT: 7.03 min  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 7.03 min  
 Area: 7.12e+005 counts  
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 Start Time: 6.88 min  
 End Time: 7.55 min

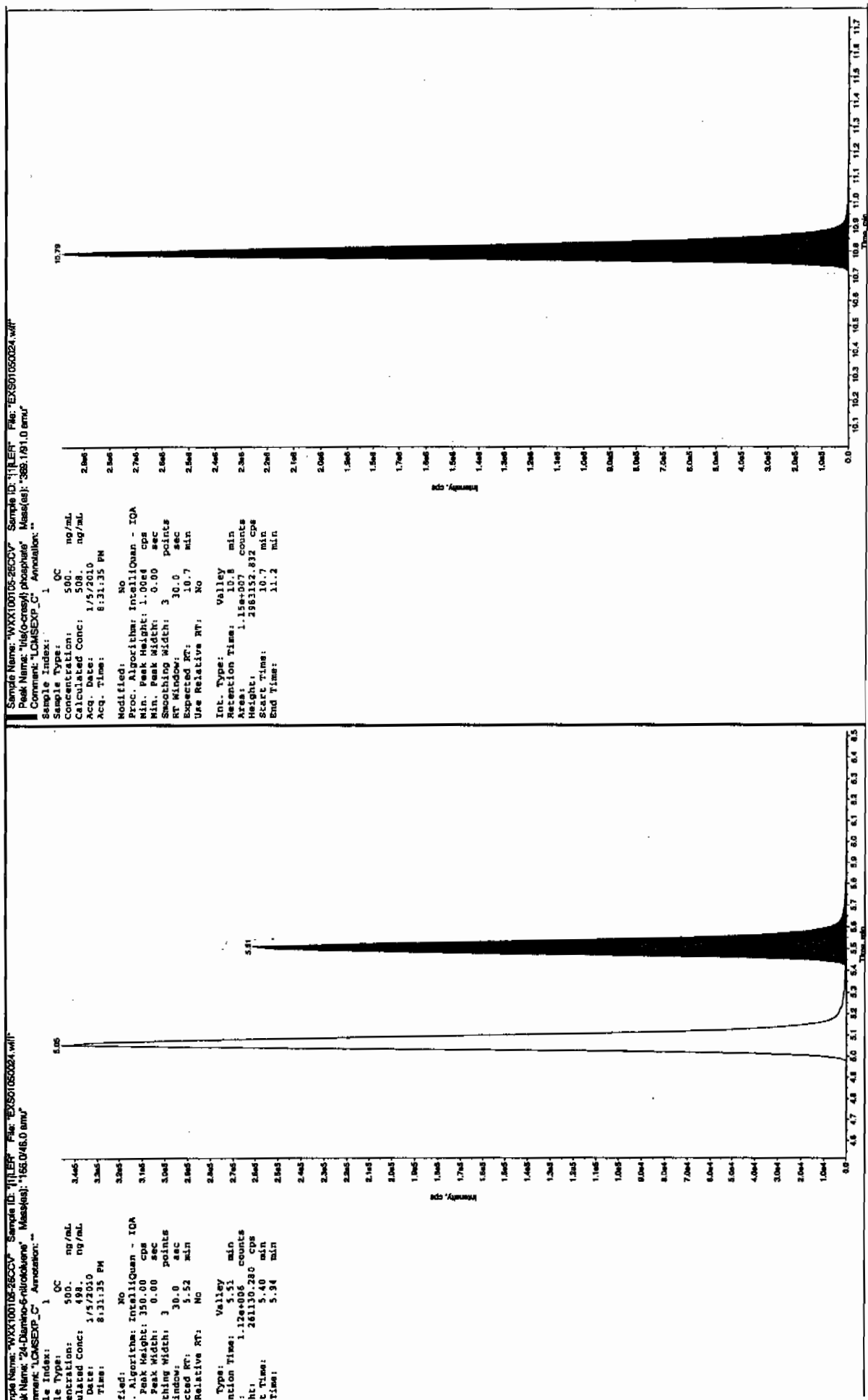
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01050026.wiff

Analysis Date: 05-JAN-10 21:03

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	89.5	90	
2,6-Diamino-4-nitrotoluene	100	93.1	93	
3,4-Dinitrotoluene	50	50.6	101	
3,5-Dinitroaniline	100	102	102	
TATB	100	104	104	
tris(o-cresyl) phosphate	100	93.4	93	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

2,4-Diamino-6-nitrotoluene 50-150%

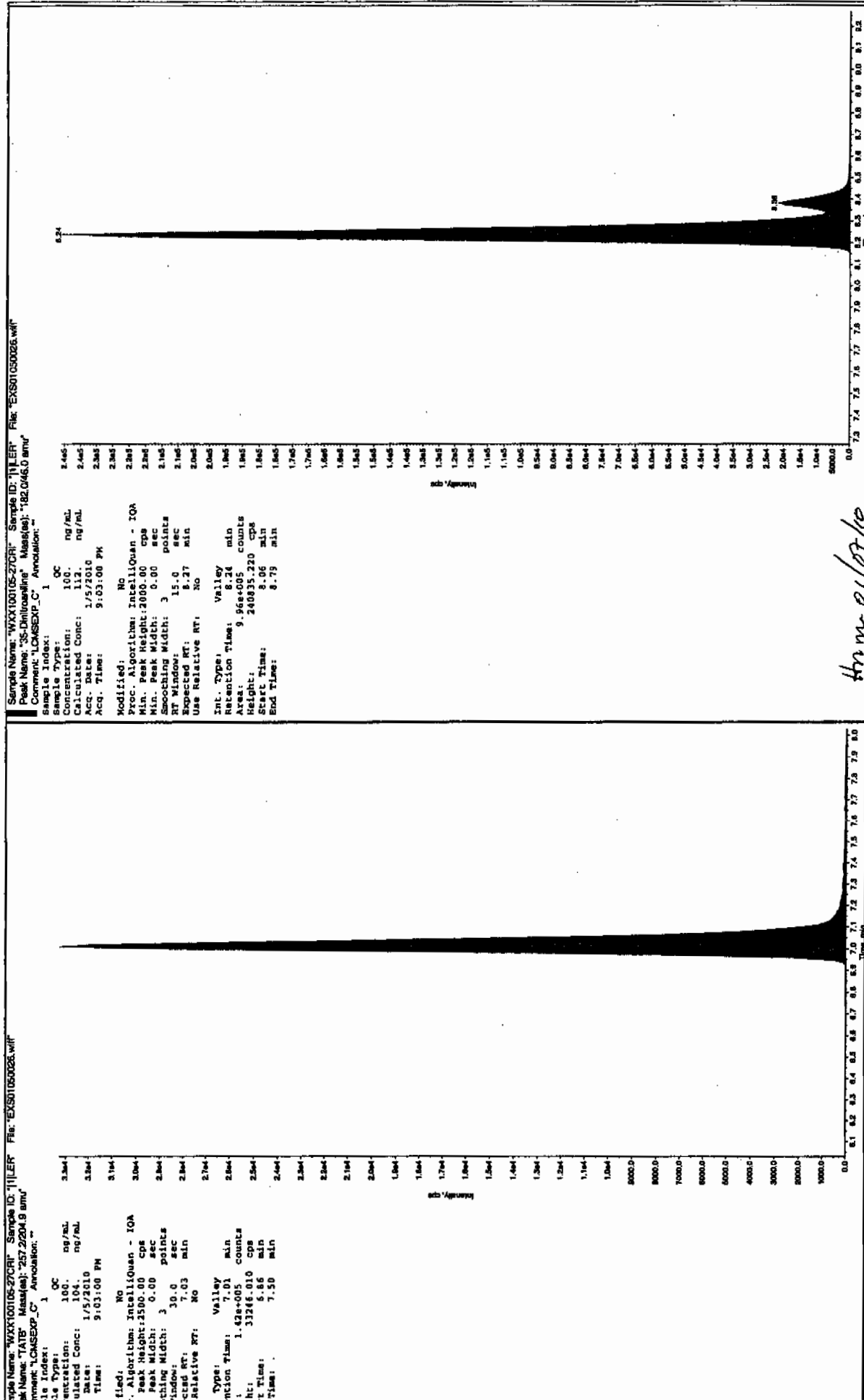
Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



1/17/10  
D. J. J. J.

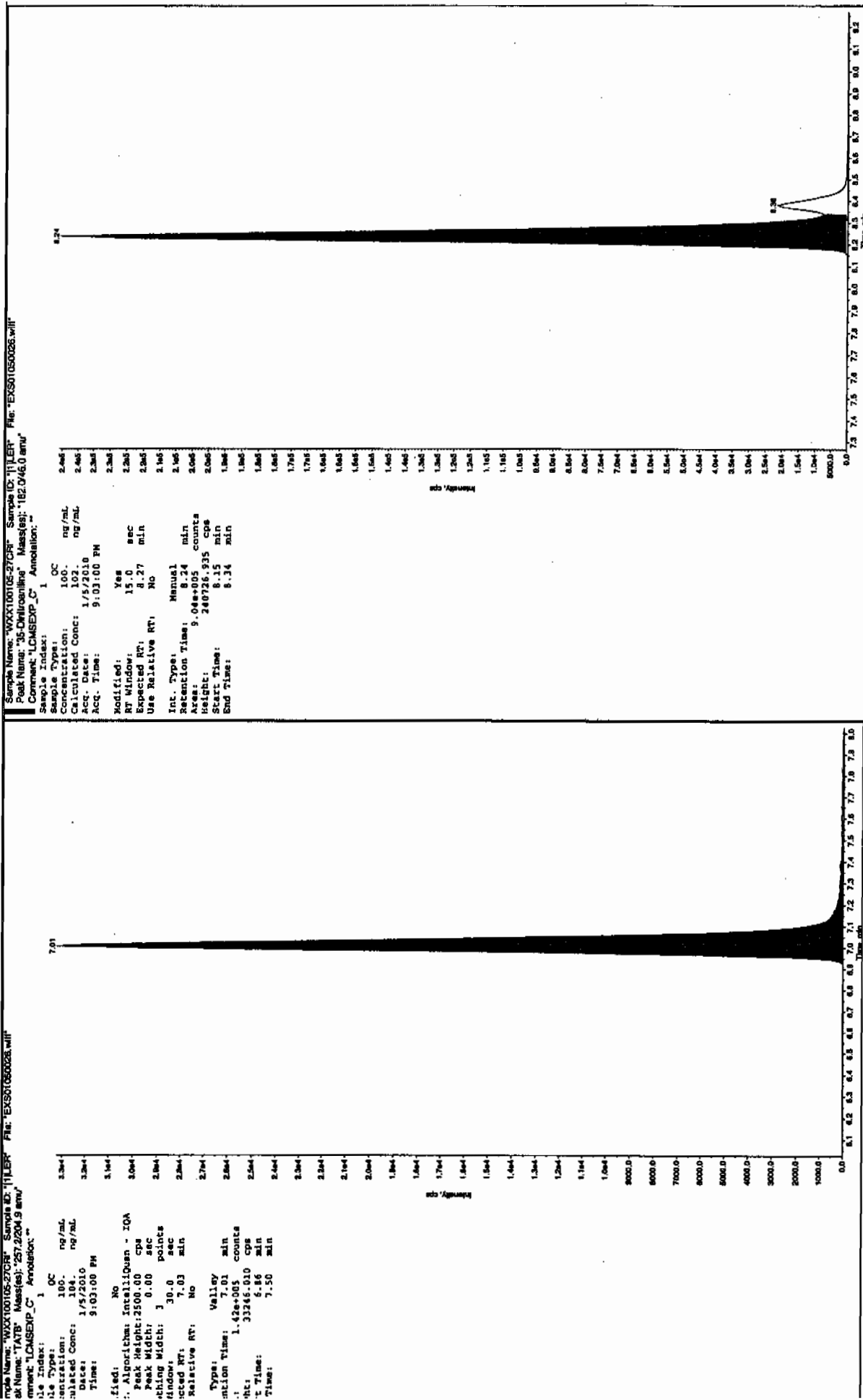


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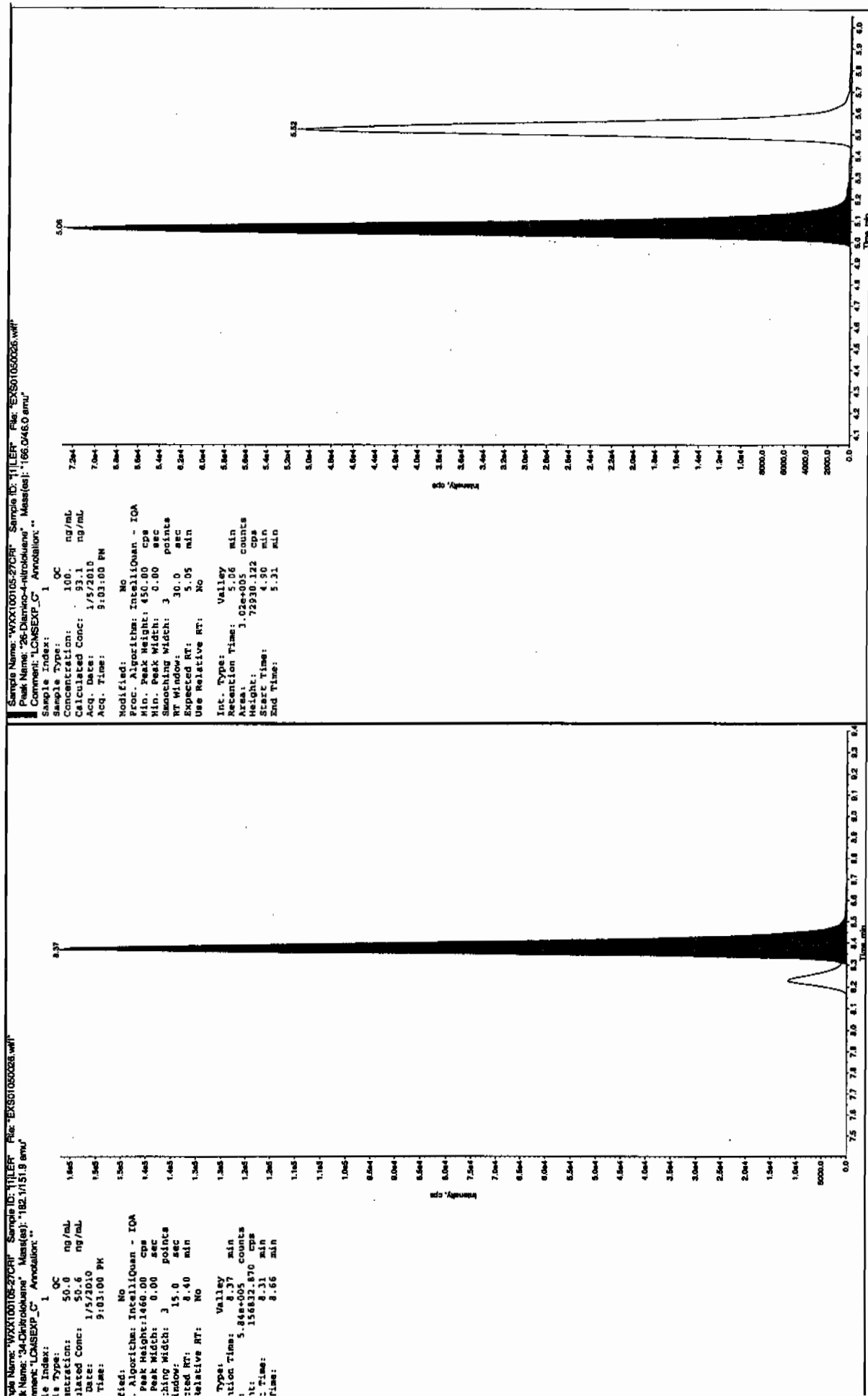
EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



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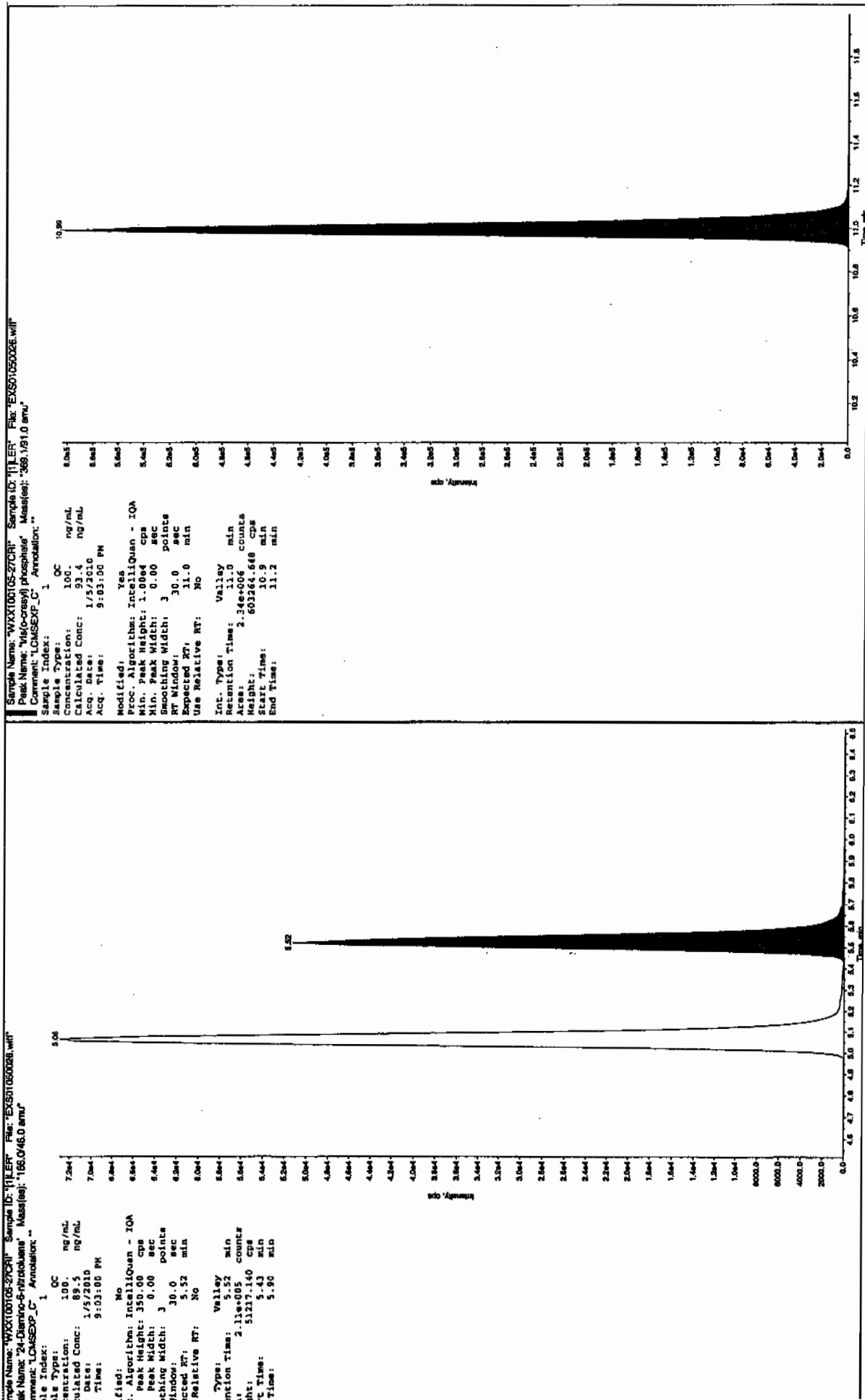






TL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01050037.wiff

Analysis Date: 05-JAN-10 23:55

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	469	94	
2,6-Diamino-4-nitrotoluene	500	380	76	
3,4-Dinitrotoluene	250	237	95	
3,5-Dinitroaniline	500	522	104	
TATB	500	521	104	
tris(o-cresyl) phosphate	500	475	95	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

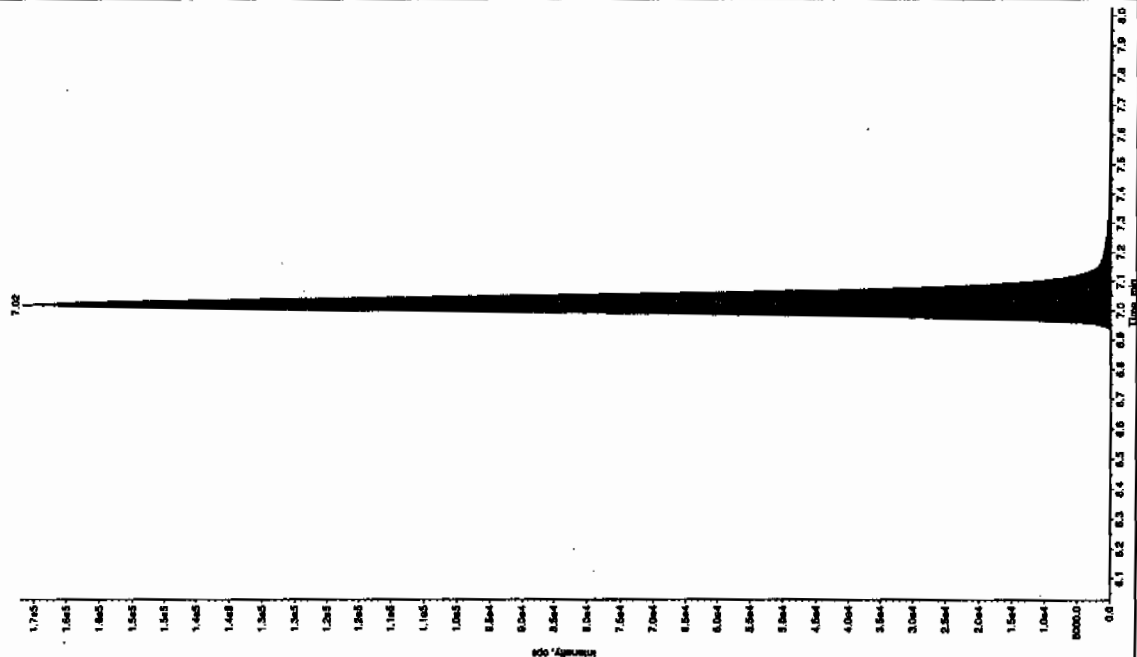
# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



Sample Name: "WXX100105-280CV" Sample ID: "111ER" File: "EX501050037.wif"  
 Peak Name: "111ER" Mass(es): 257.2204.9 amu  
 Comment: "LCMSXP\_C" Annotation:

Sample Index: 1  
 Sample Type: QC  
 Concentration: 500 ng/mL  
 Calculated Conc: 521 ng/mL  
 Acq. Date: 1/5/2010  
 Acq. Time: 11:55:45 PM  
 Modified: No  
 Proc. Algorithm: IntelliQuan - IOA  
 Min. Peak Height: 2500.00 cps  
 Peak Width: 30.0 sec  
 Smoothing Width: 3 points  
 RT Window: 7.03 min  
 Expected RT: No  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 7.02 min  
 Area: 7.12e+005 counts  
 Height: 167034.396 cps  
 Start Time: 6.98 min  
 End Time: 7.33 min



EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

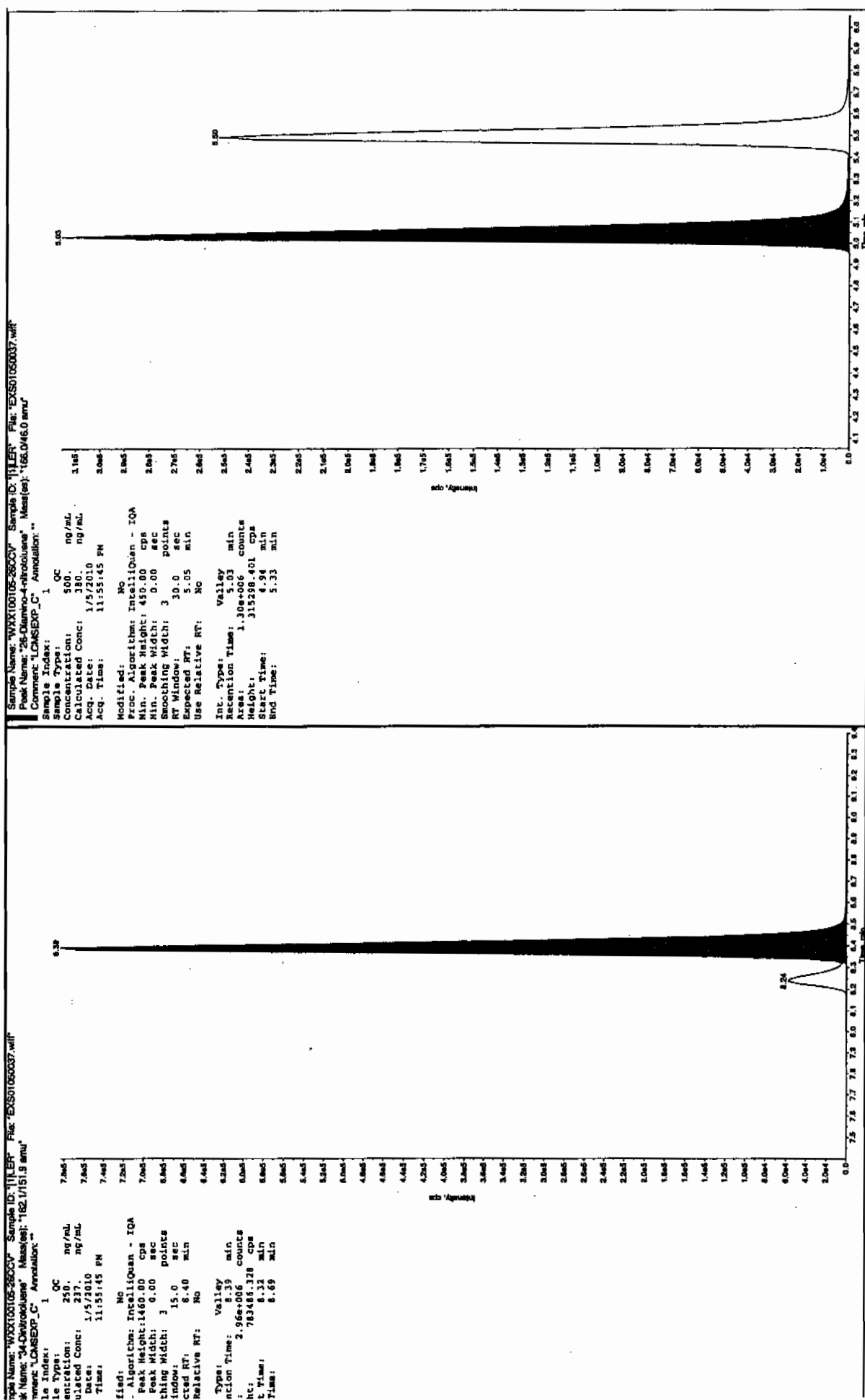
Sample Name: "WXX100105-280CV" Sample ID: "111ER" File: "EX501050037.wif"  
 Peak Name: "111ER" Mass(es): 182.046.0 amu  
 Comment: "LCMSXP\_C" Annotation:

Sample Index: 1  
 Sample Type: QC  
 Concentration: 500 ng/mL  
 Calculated Conc: 521 ng/mL  
 Acq. Date: 1/5/2010  
 Acq. Time: 11:55:45 PM  
 Modified: Yes  
 Proc. Algorithm: IntelliQuan - IOA  
 Min. Peak Height: 2000.00 cps  
 Peak Width: 0.00 sec  
 Smoothing Width: 3 points  
 RT Window: 15.0 sec  
 Expected RT: 8.20 min  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 8.25 min  
 Area: 4.43e+006 counts  
 Height: 1125666.628 cps  
 Start Time: 8.15 min  
 End Time: 8.35 min



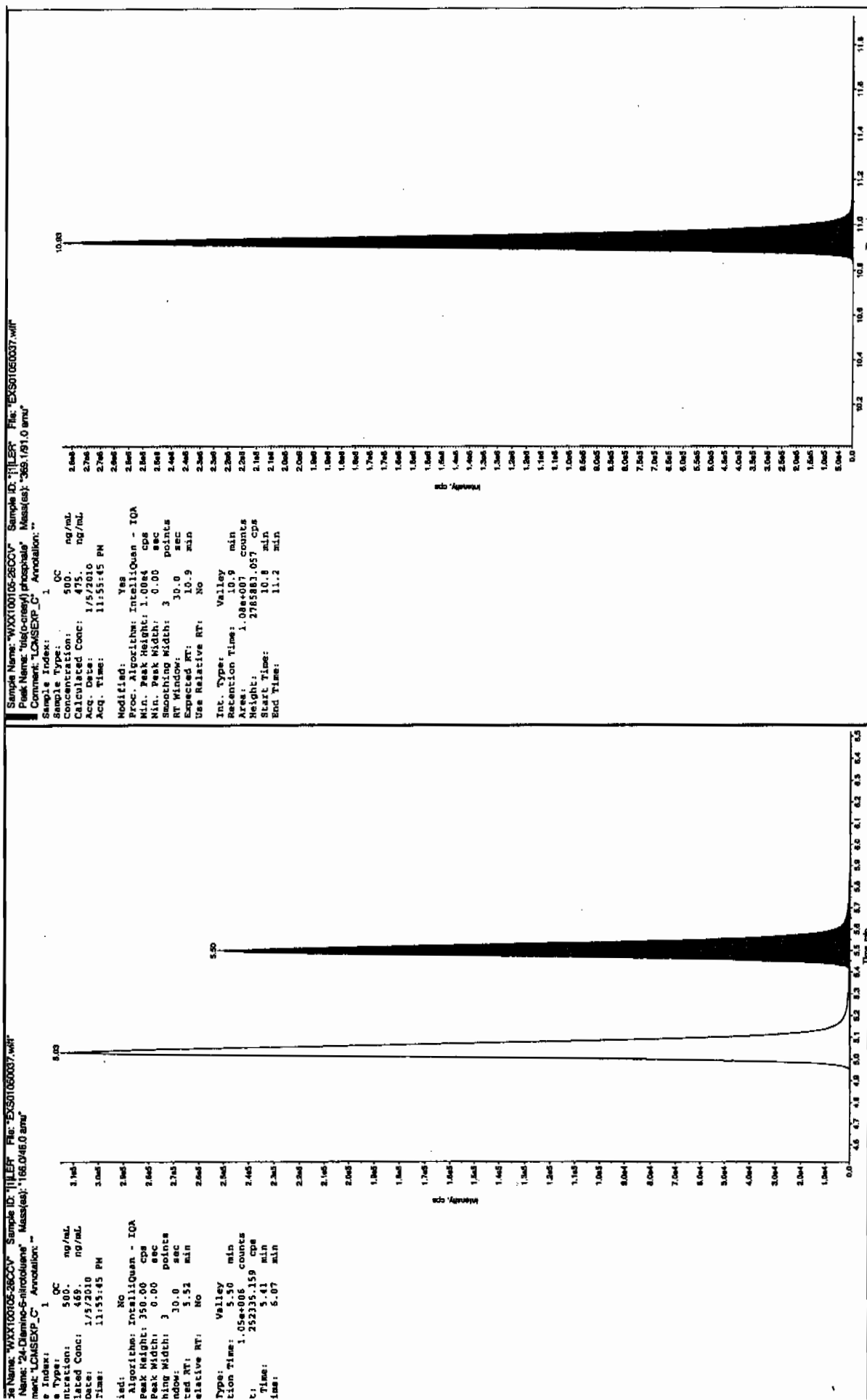
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IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01050039.wiff

Analysis Date: 06-JAN-10 00:27

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
3,4-Dinitrotoluene	50	52	104	
3,5-Dinitroaniline	100	108	108	
TATB	100	111	111	
tris(o-cresyl) phosphate	100	93.6	94	
2,4-Diamino-6-nitrotoluene	100	87.7	88	
2,6-Diamino-4-nitrotoluene	100	94.9	95	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

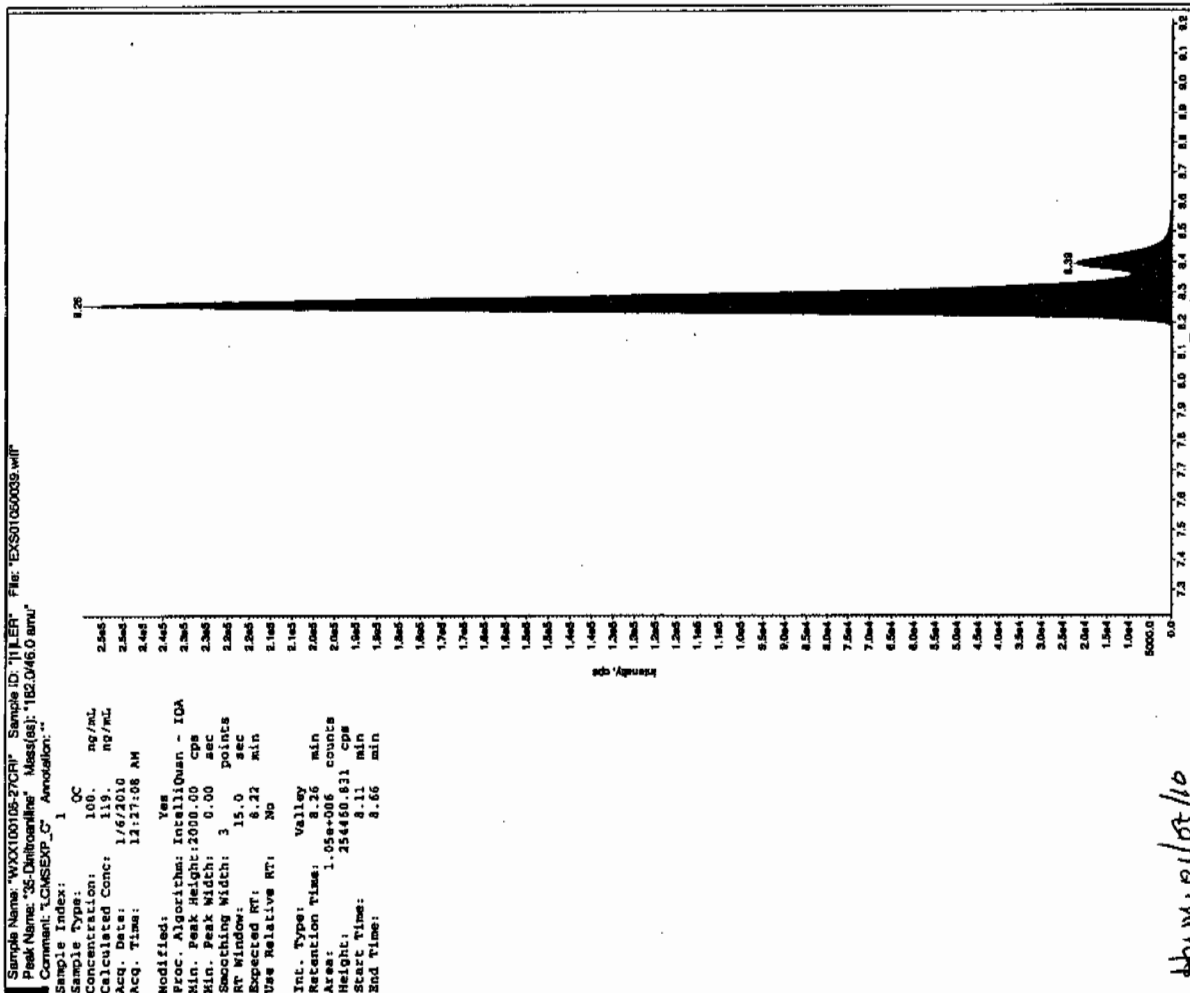
Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

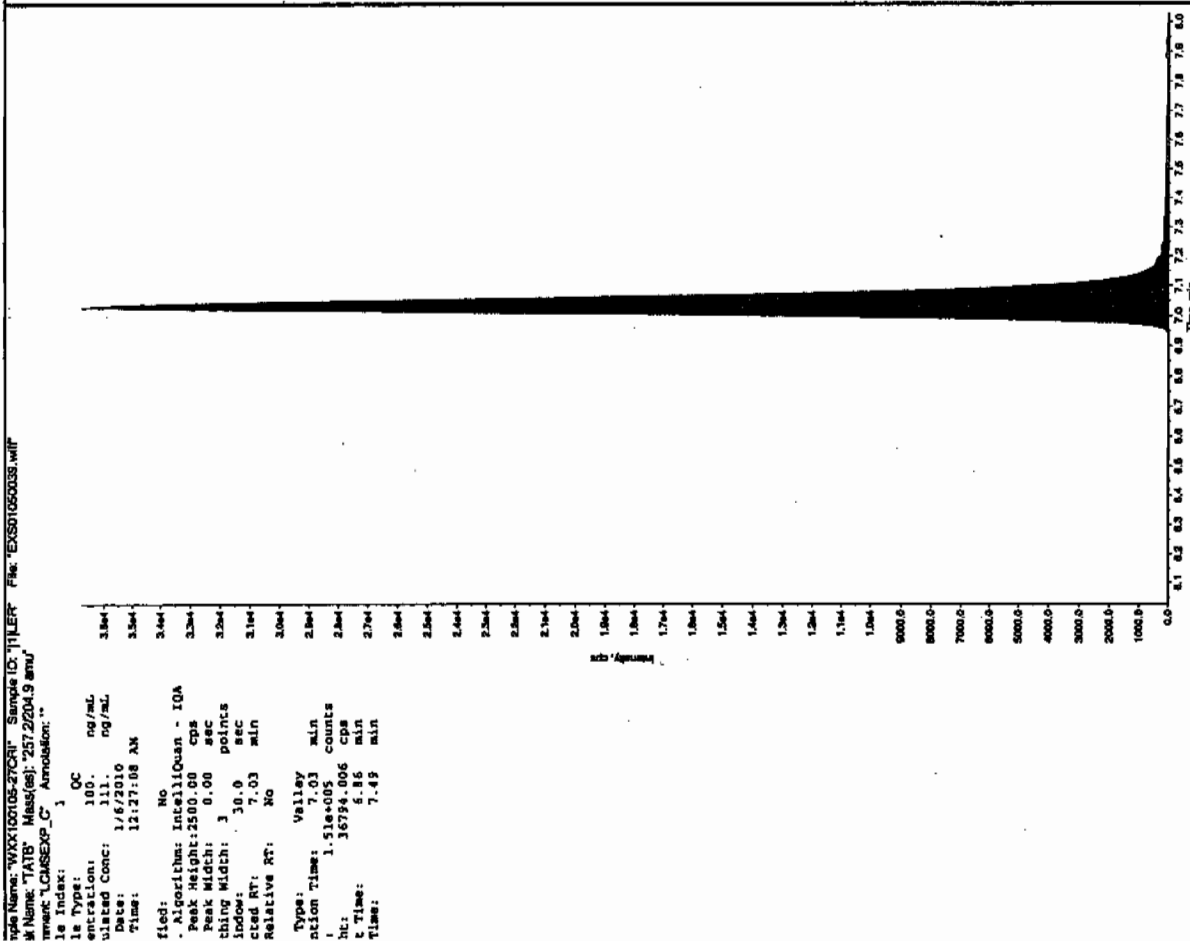
\* Value outside of Recovery Limits



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before



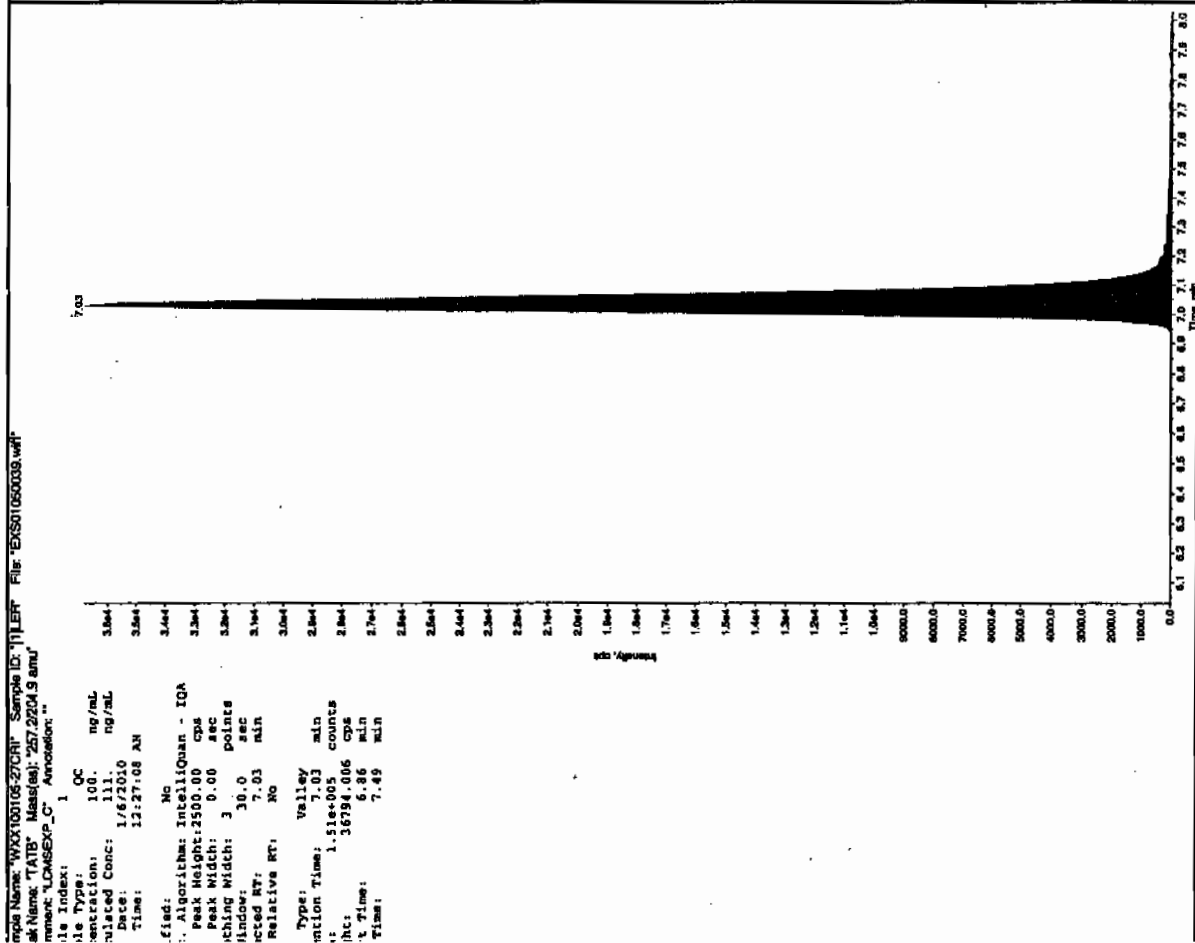
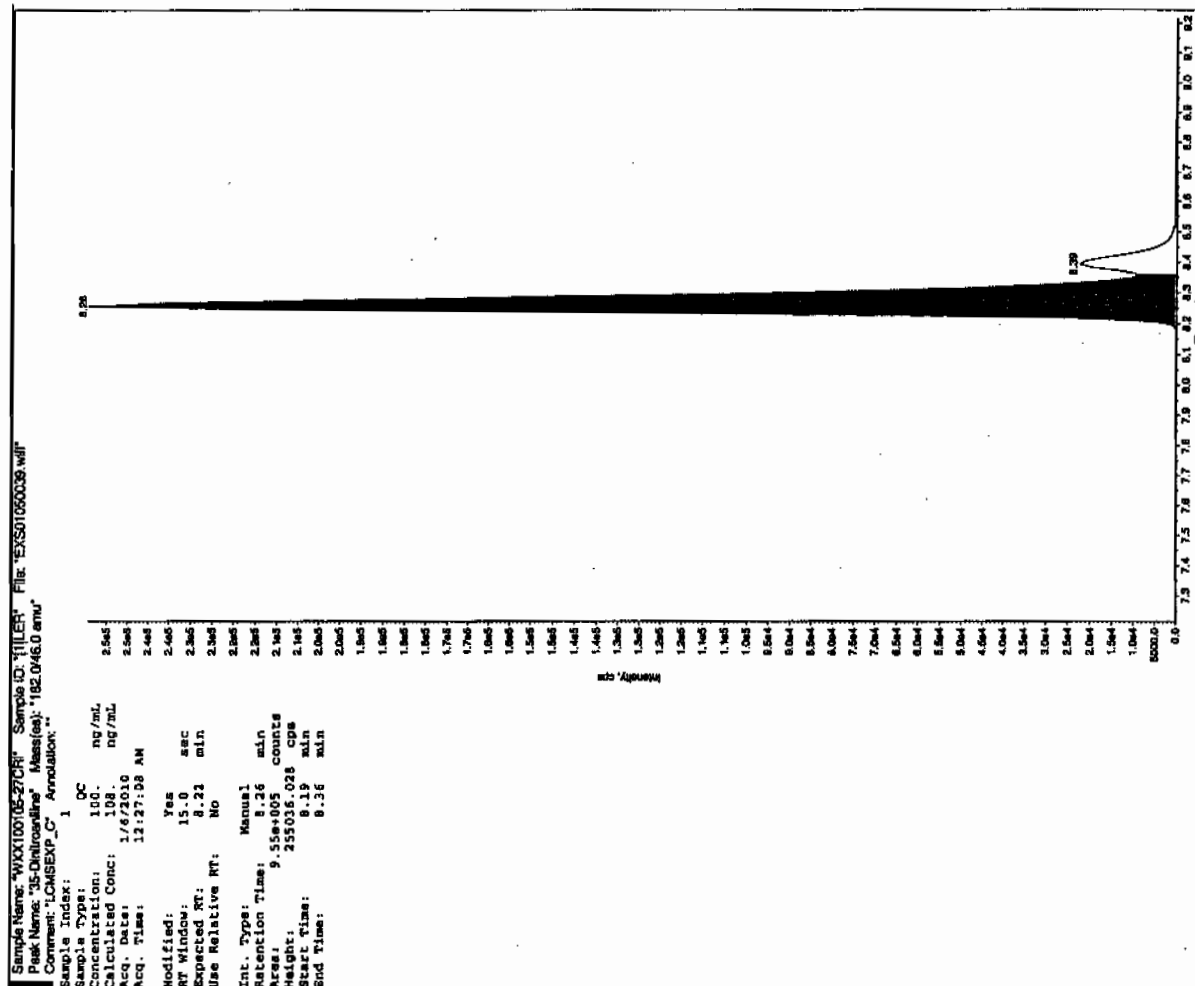
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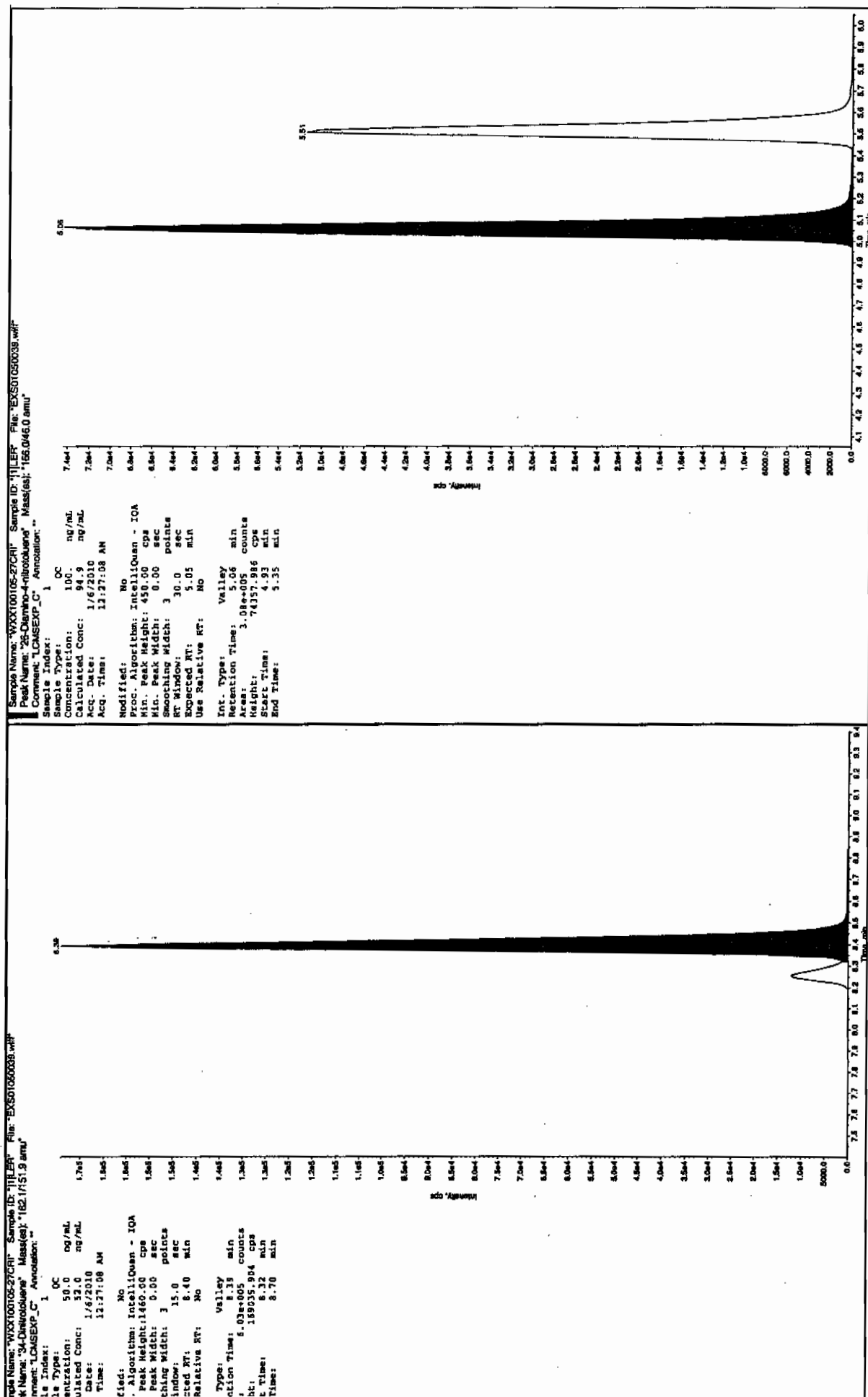
IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



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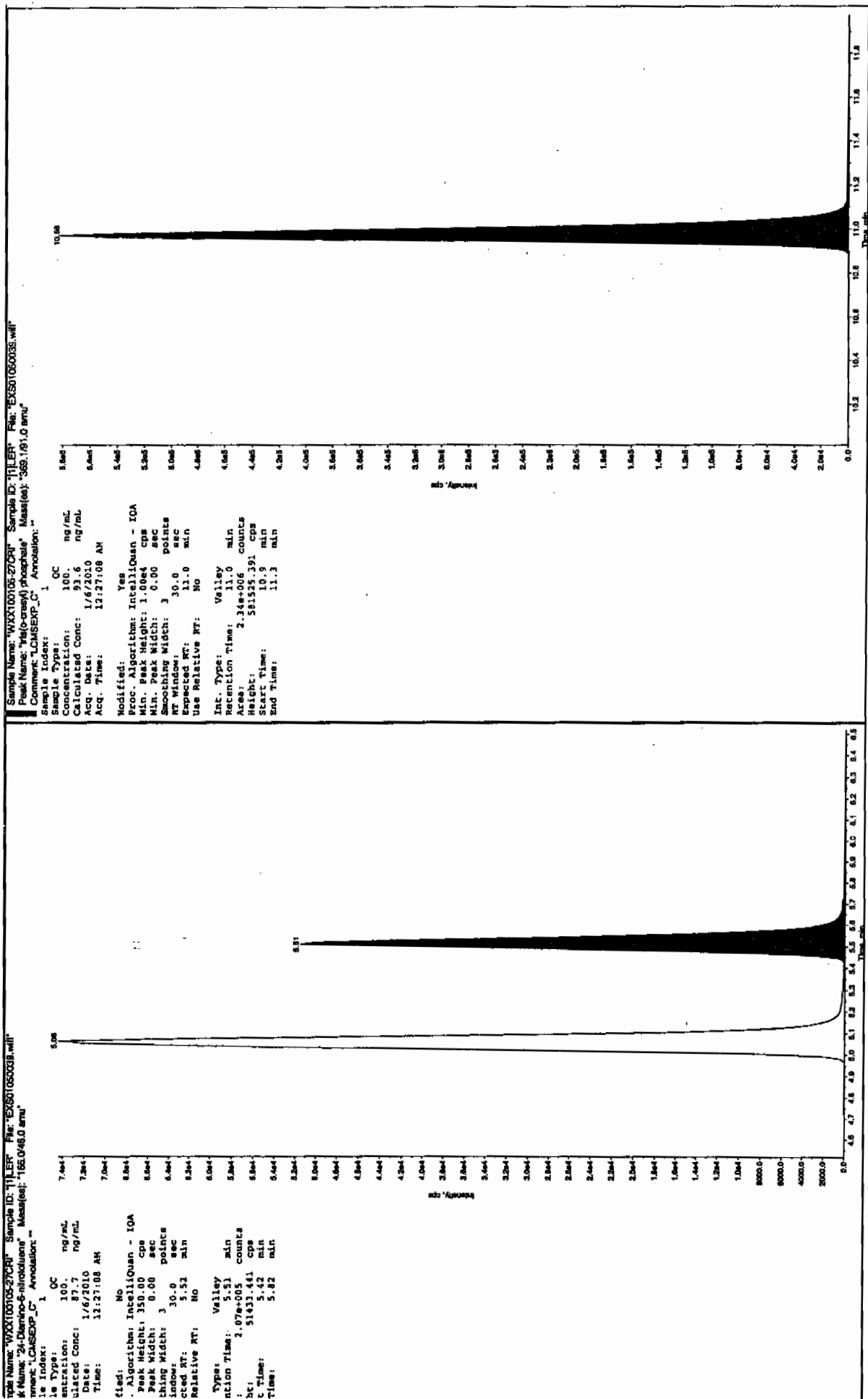






IL SOP GL-OA-E-056, Method 8321A-Modified LCMSEXP#4







7A

Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01050050.wiff

Analysis Date: 06-JAN-10 03:19

LCMSMS ID: 1358

Column ID JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	479	96	
2,6-Diamino-4-nitrotoluene	500	449	90	
3,4-Dinitrotoluene	250	224	90	
3,5-Dinitroaniline	500	515	103	
TATB	500	537	107	
tris(o-cresyl) phosphate	500	476	95	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

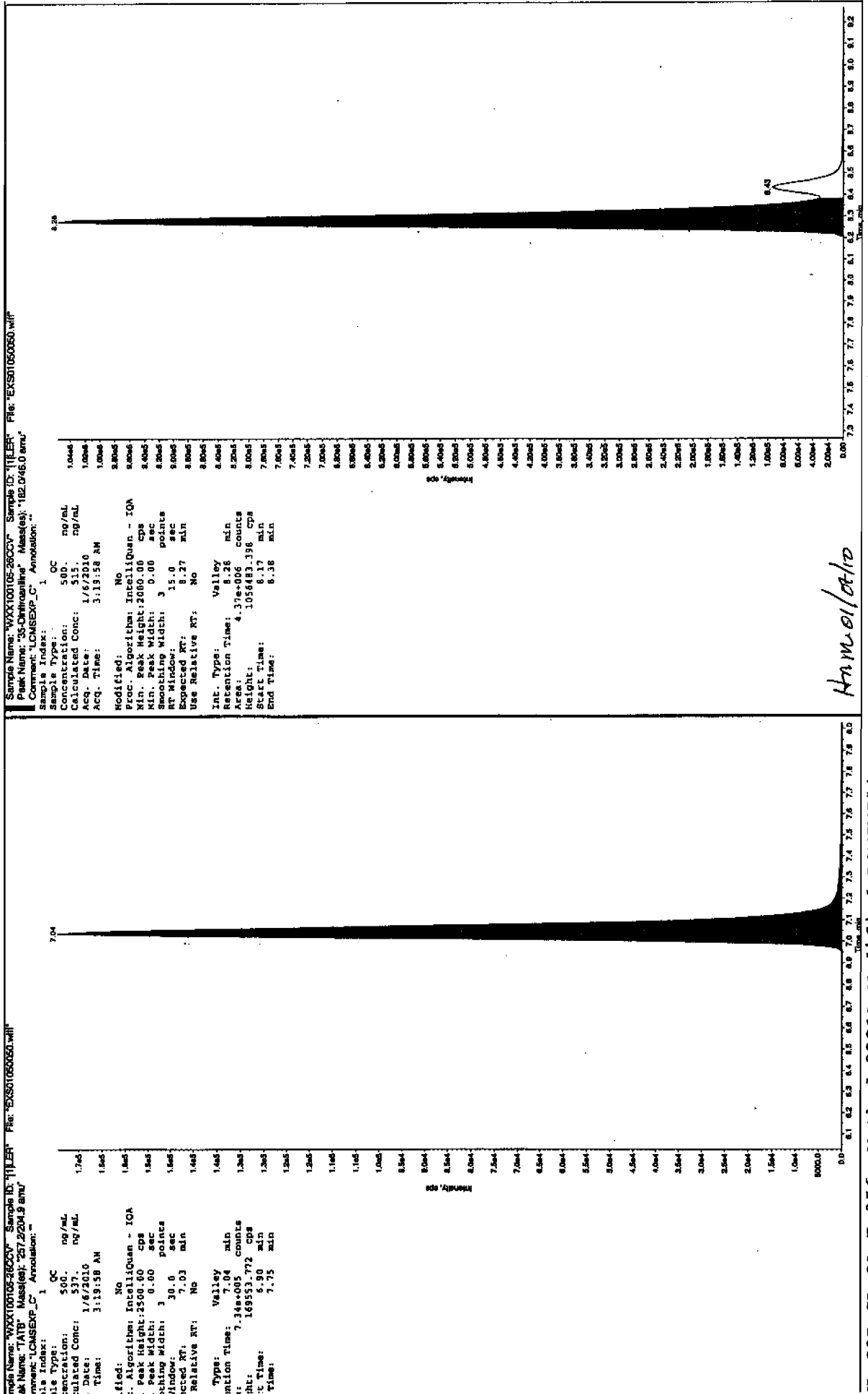
Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits

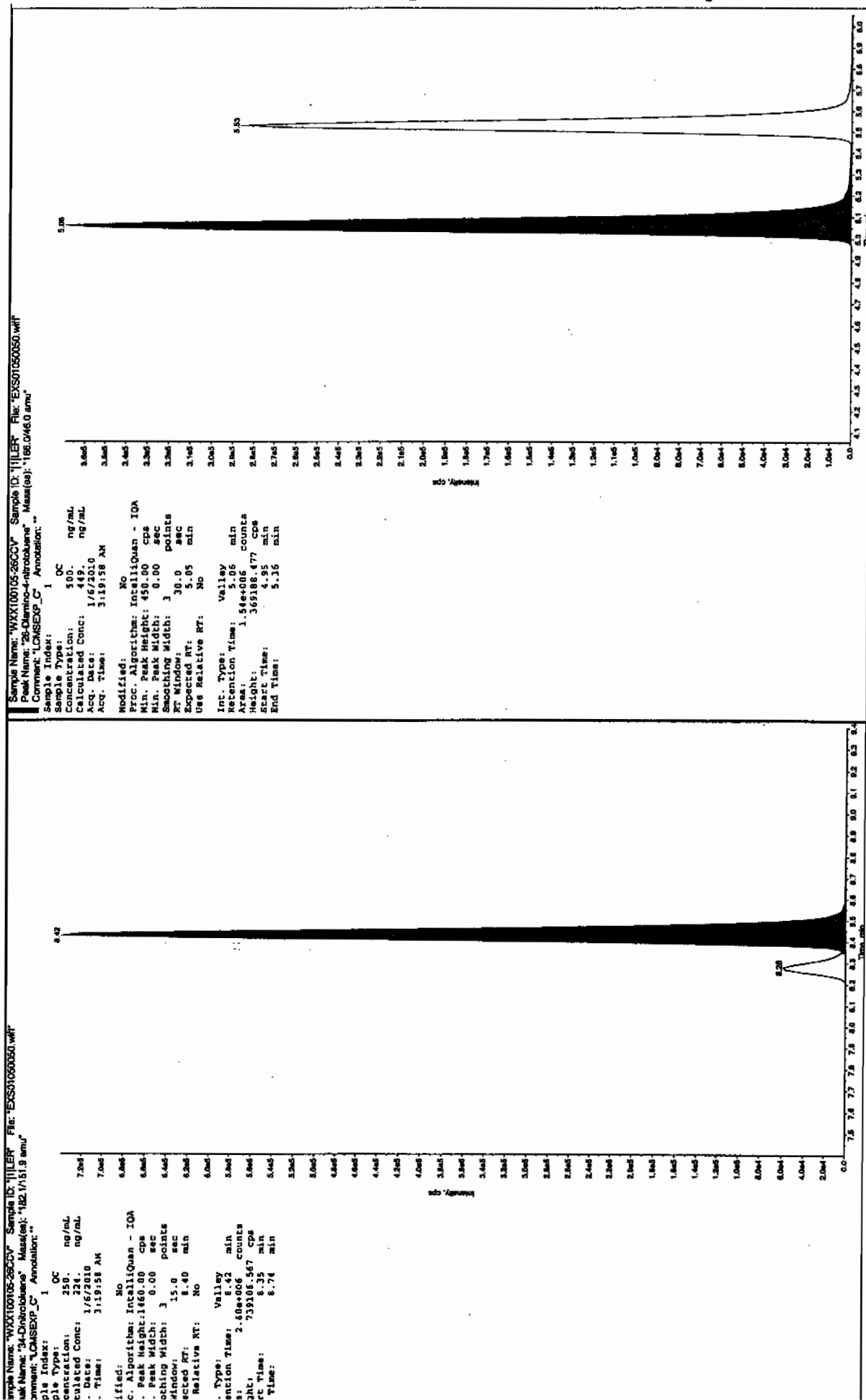


*Handwritten:* 11/10/10



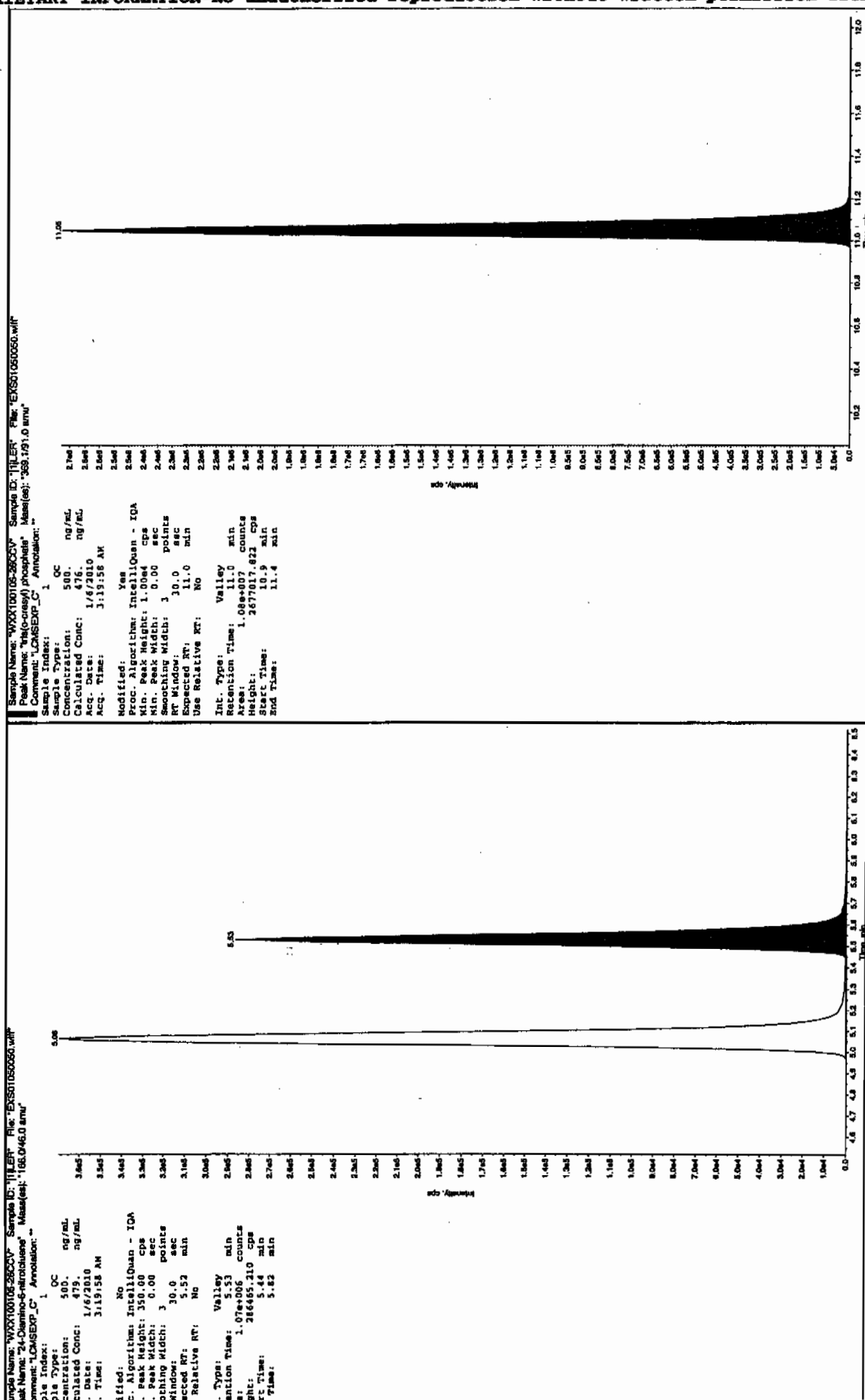
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EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01050052.wiff

Analysis Date: 06-JAN-10 03:51

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	80.6	81	
2,6-Diamino-4-nitrotoluene	100	86.8	87	
3,4-Dinitrotoluene	50	52	104	
3,5-Dinitroaniline	100	105	105	
TATB	100	107	107	
tris(o-cresyl) phosphate	100	97	97	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

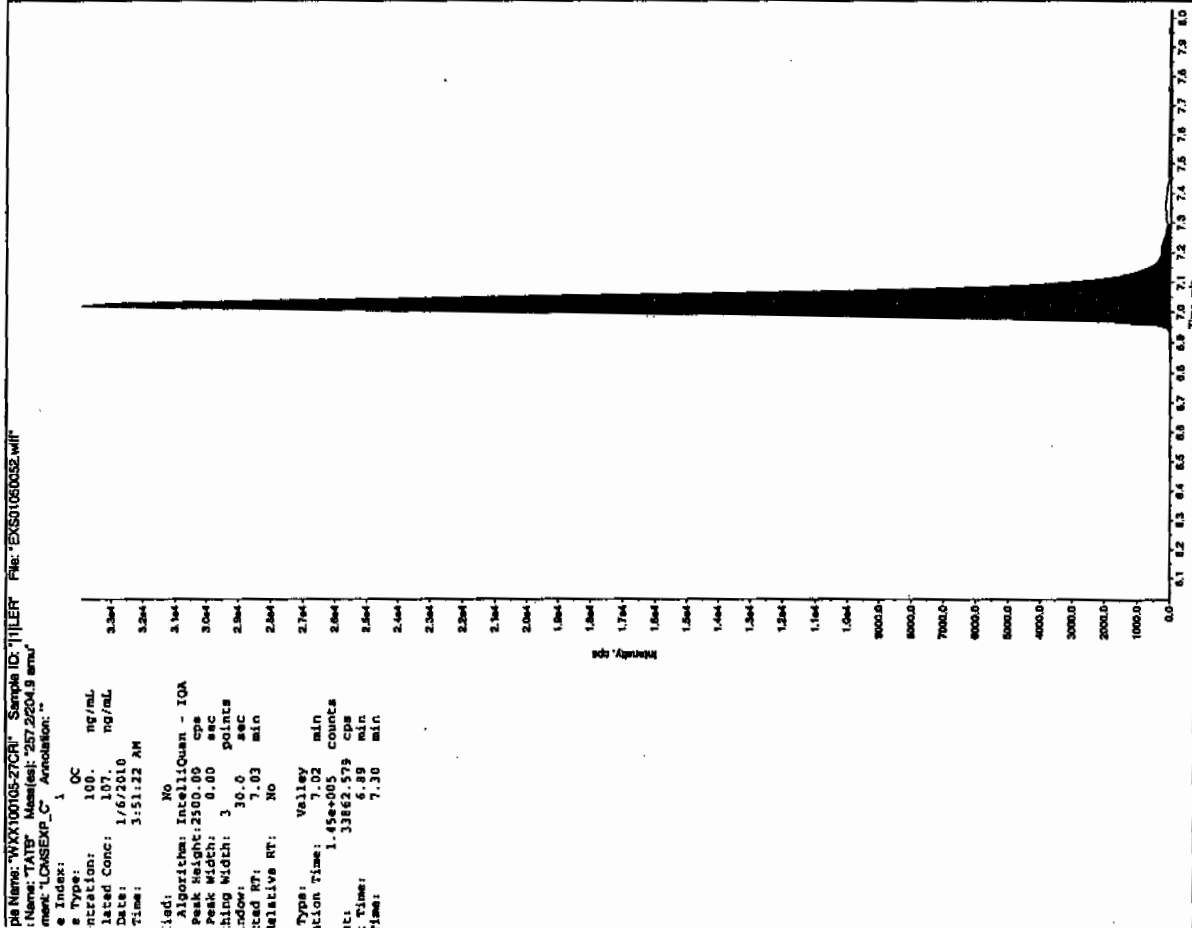
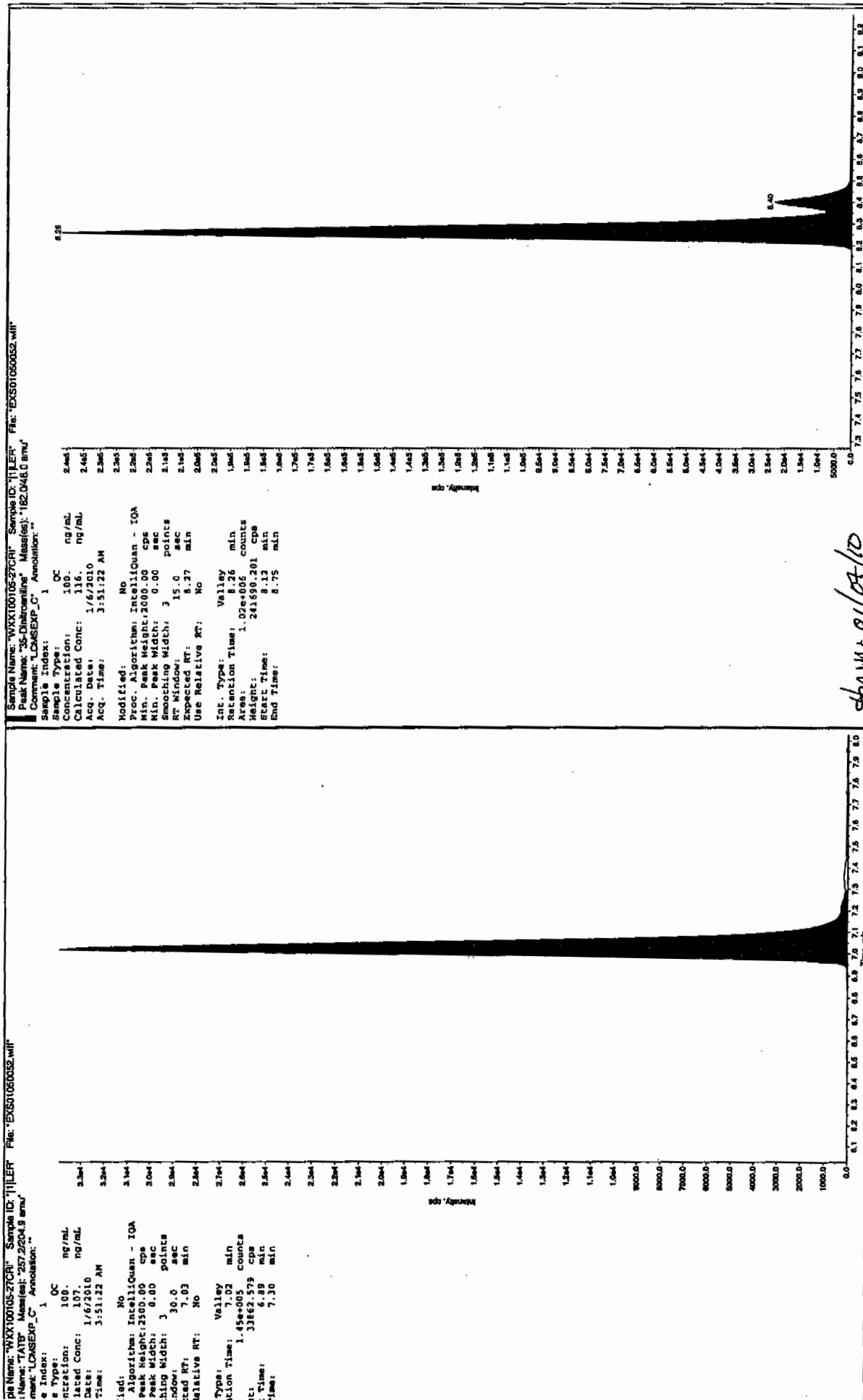
Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

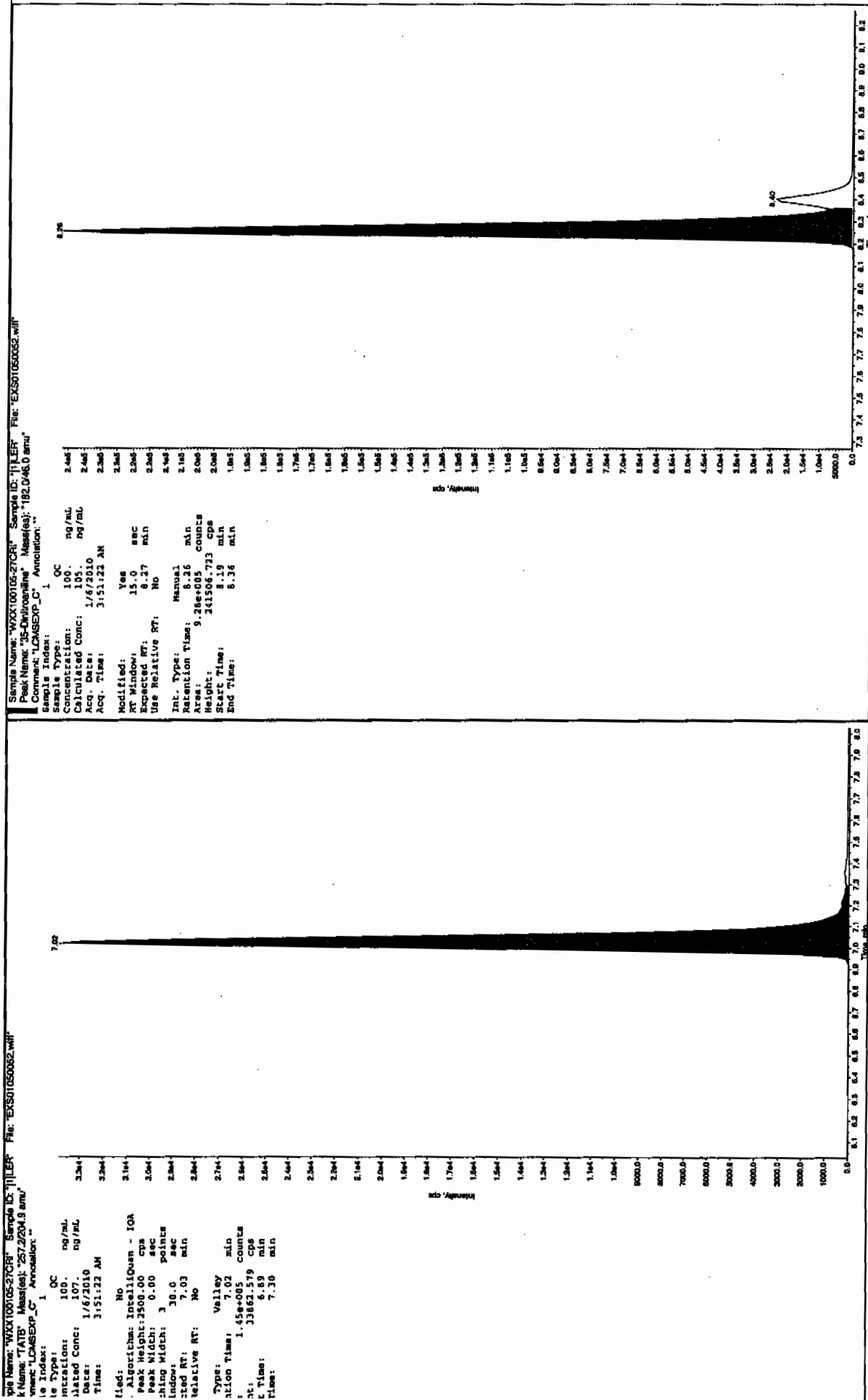
\* Value outside of Recovery Limits



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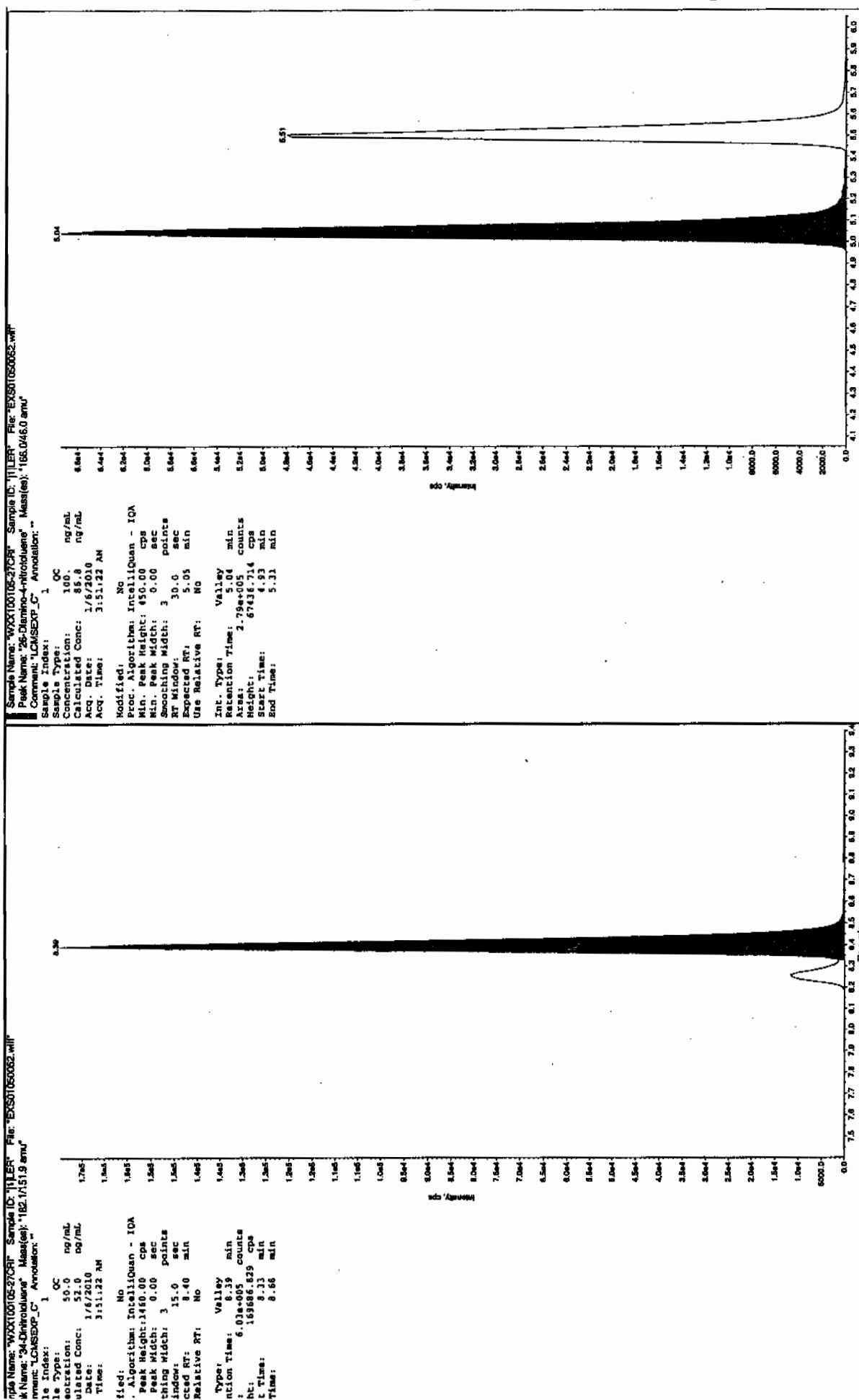






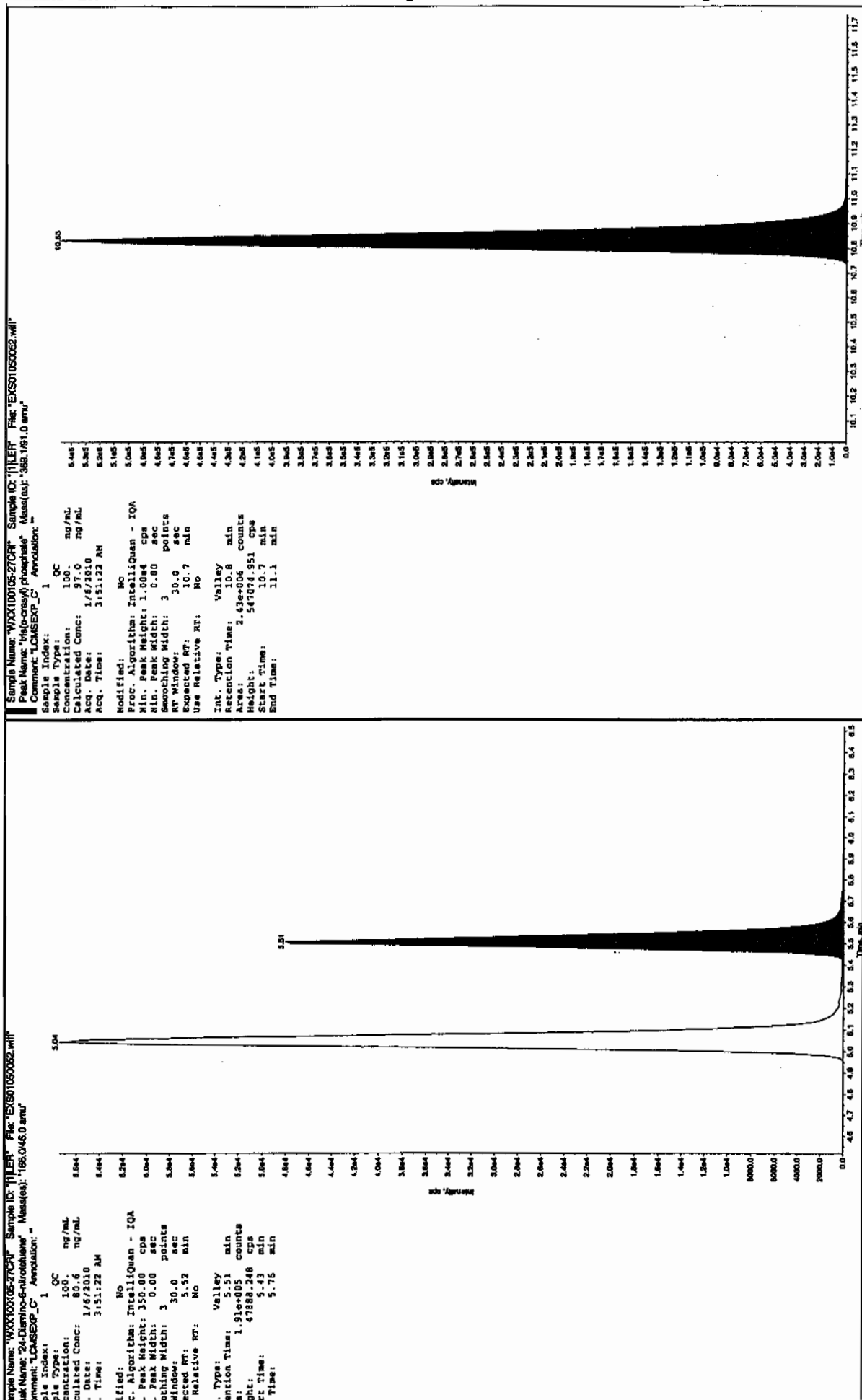
EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01050063.wiff

Analysis Date: 06-JAN-10 06:44

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,6-Diamino-4-nitrotoluene	500	452	90	
3,4-Dinitrotoluene	250	222	89	
3,5-Dinitroaniline	500	508	102	
TATB	500	542	108	
tris(o-cresyl) phosphate	500	491	98	
2,4-Diamino-6-nitrotoluene	500	494	99	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

2,4-Diamino-6-nitrotoluene 70-130%

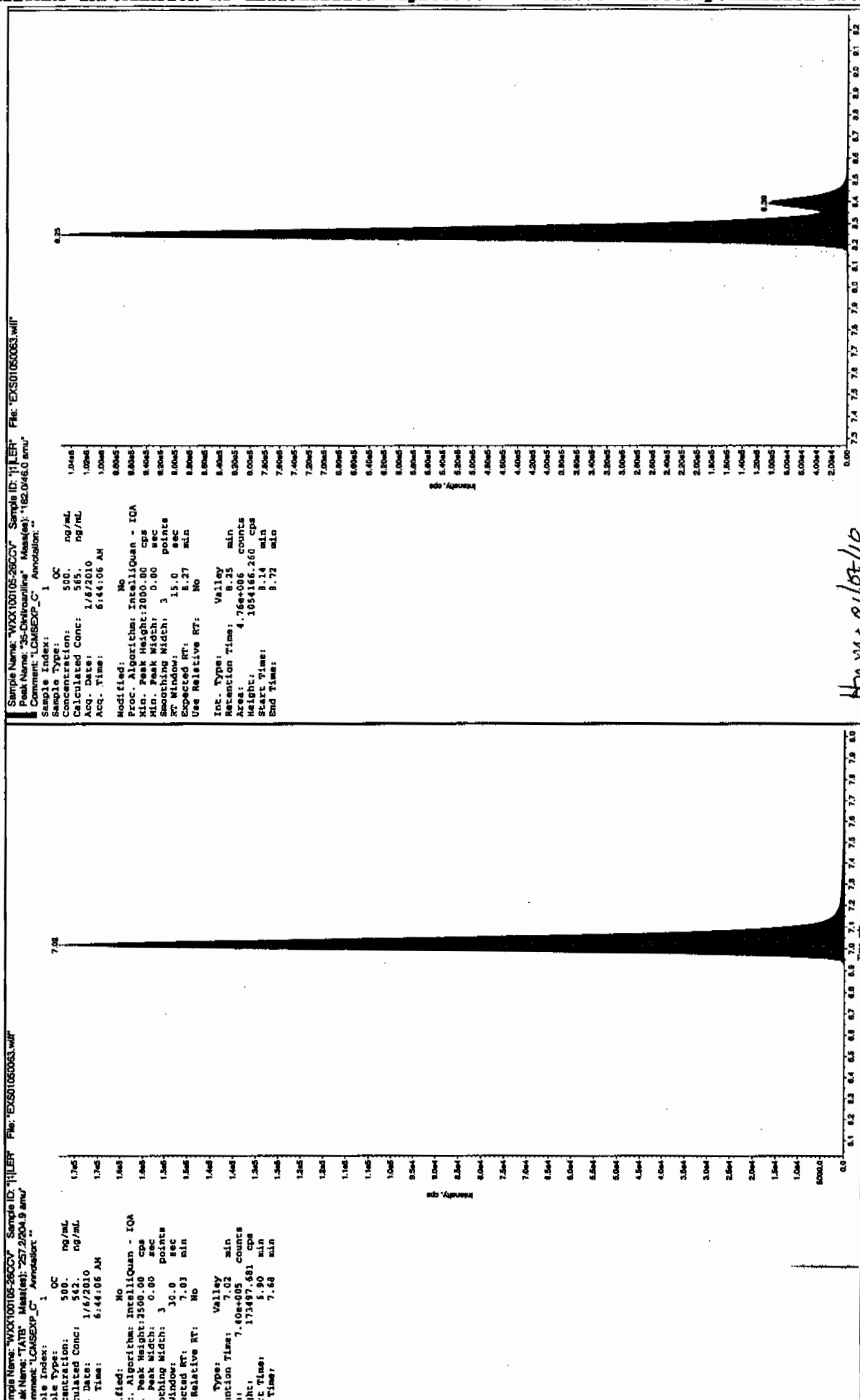
Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



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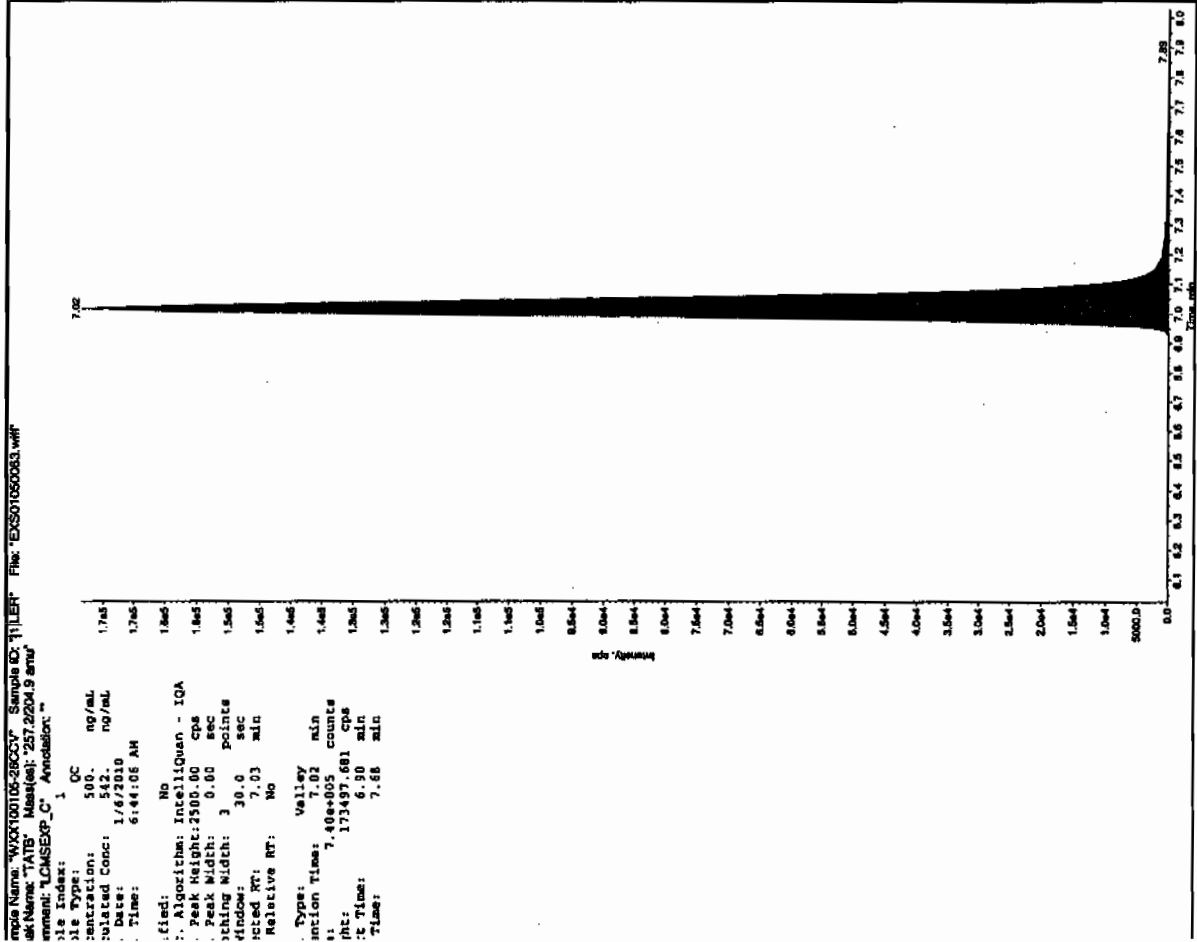
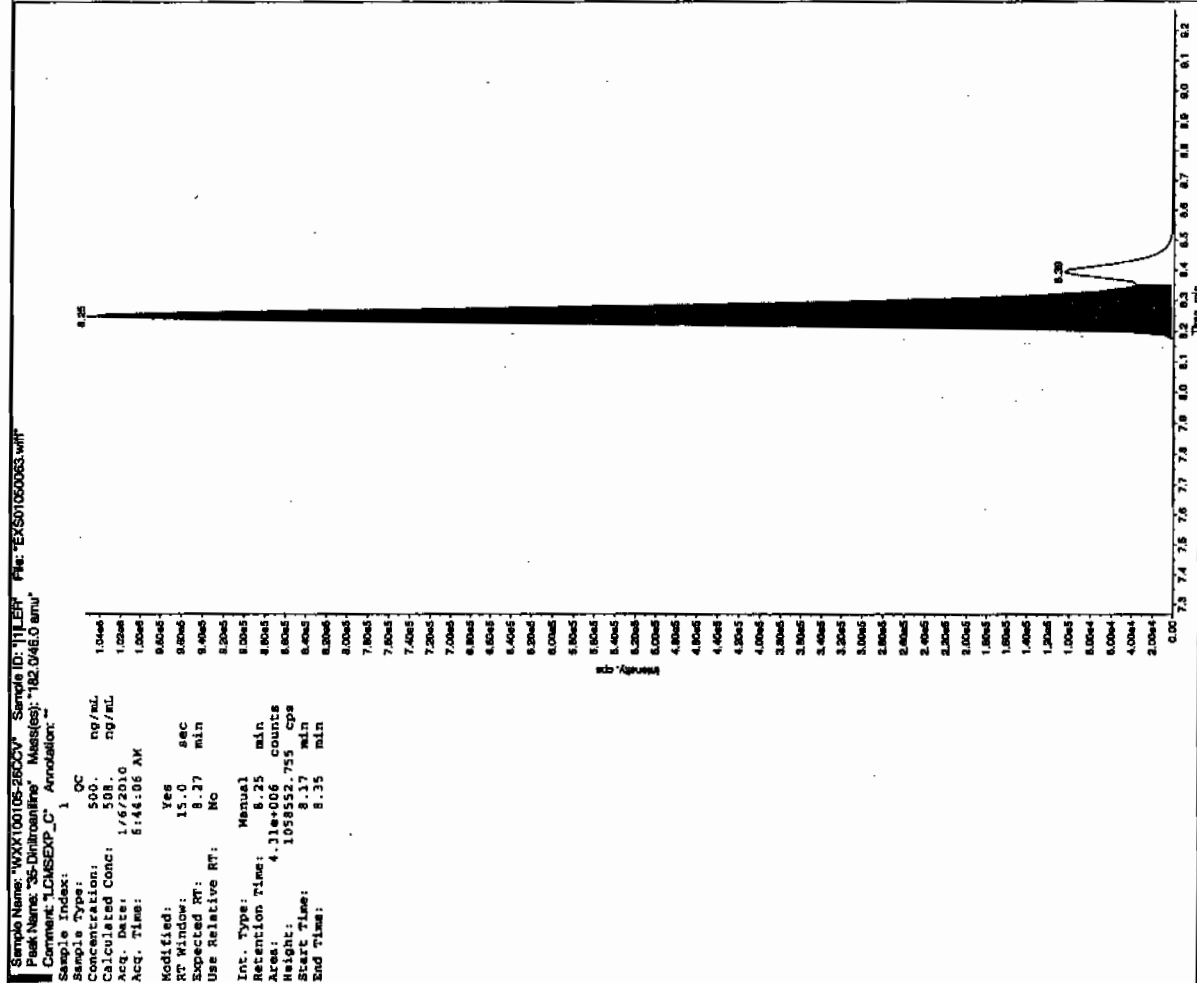


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EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

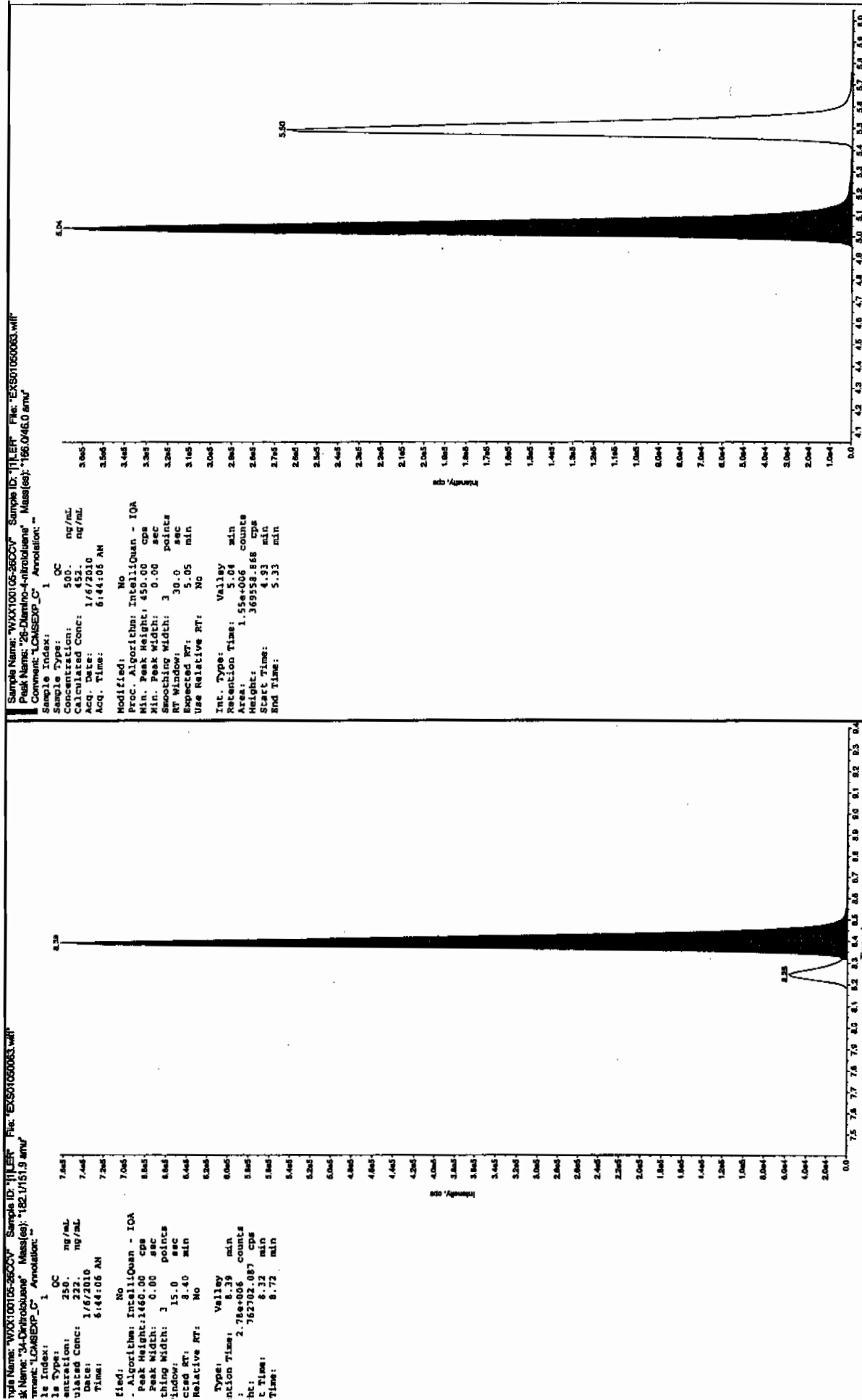


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2011/11/10



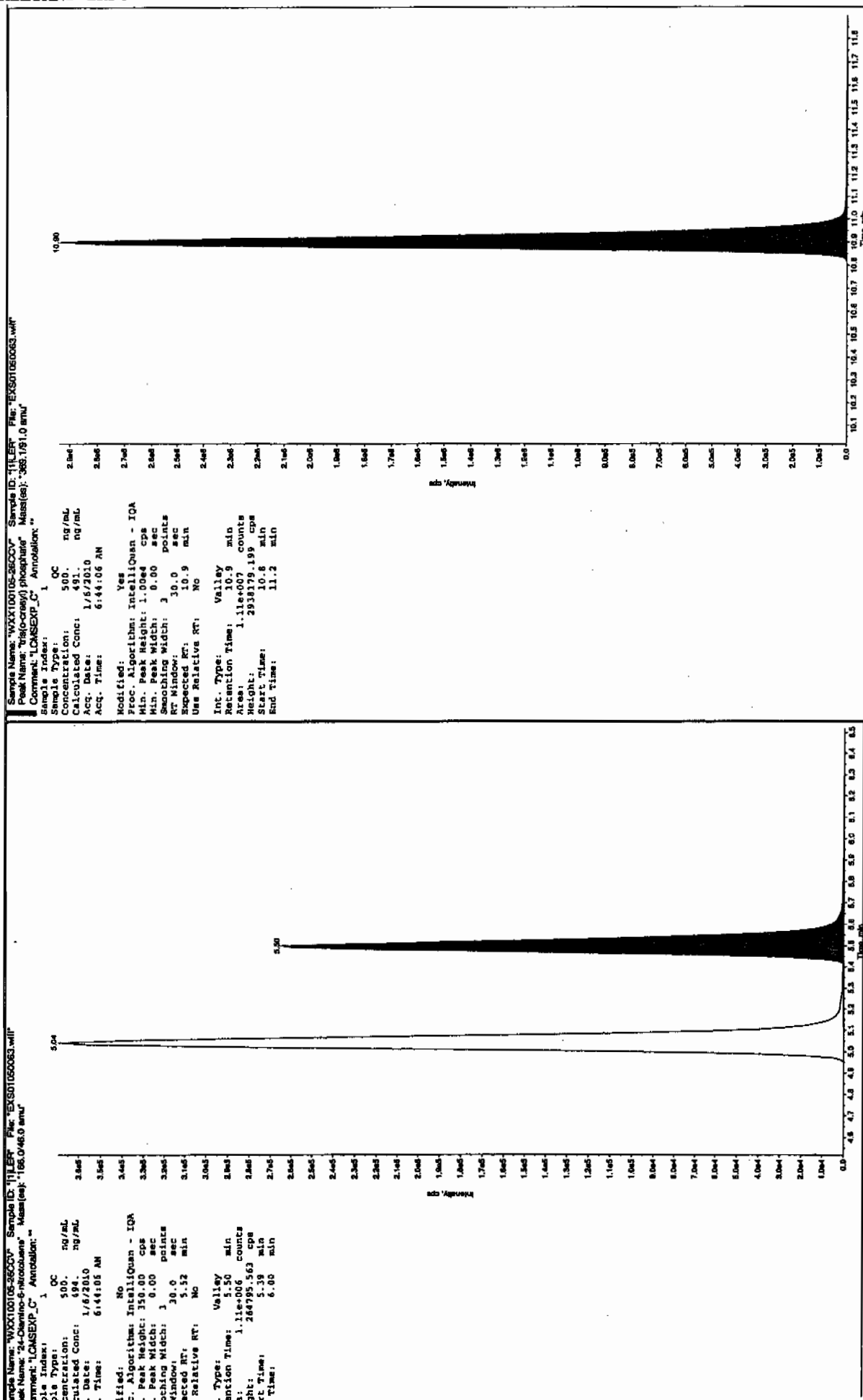
3L SOP GL-OA-E-056, Method 8321A-Modified LCM SMS#4





3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01050065.wiff

Analysis Date: 06-JAN-10 07:15

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	82.8	83	
2,6-Diamino-4-nitrotoluene	100	92.7	93	
3,4-Dinitrotoluene	50	48.7	98	
3,5-Dinitroaniline	100	105	105	
TATB	100	110	110	
tris(o-cresyl) phosphate	100	102	102	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

2,4-Diamino-6-nitrotoluene 50-150%

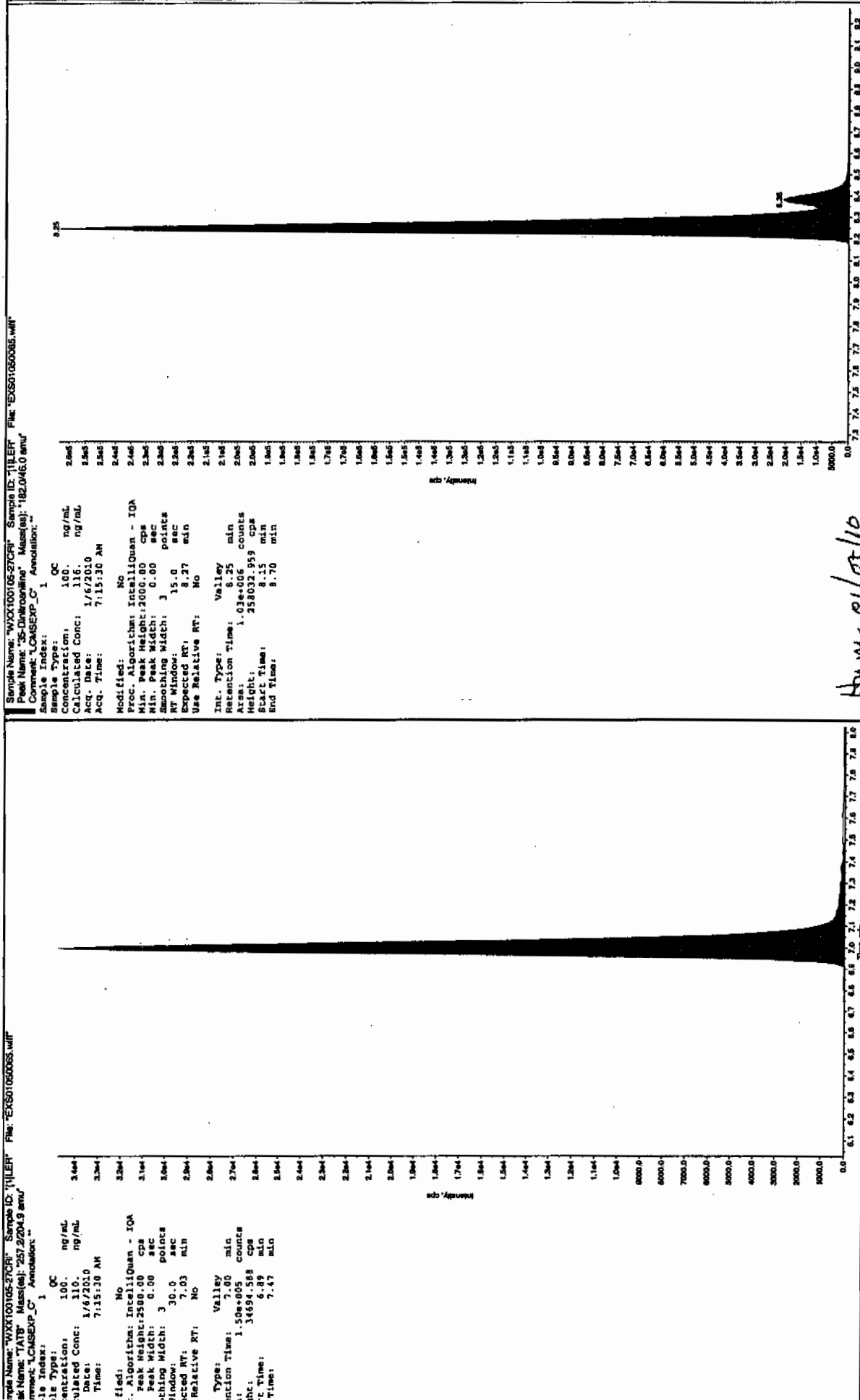
Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



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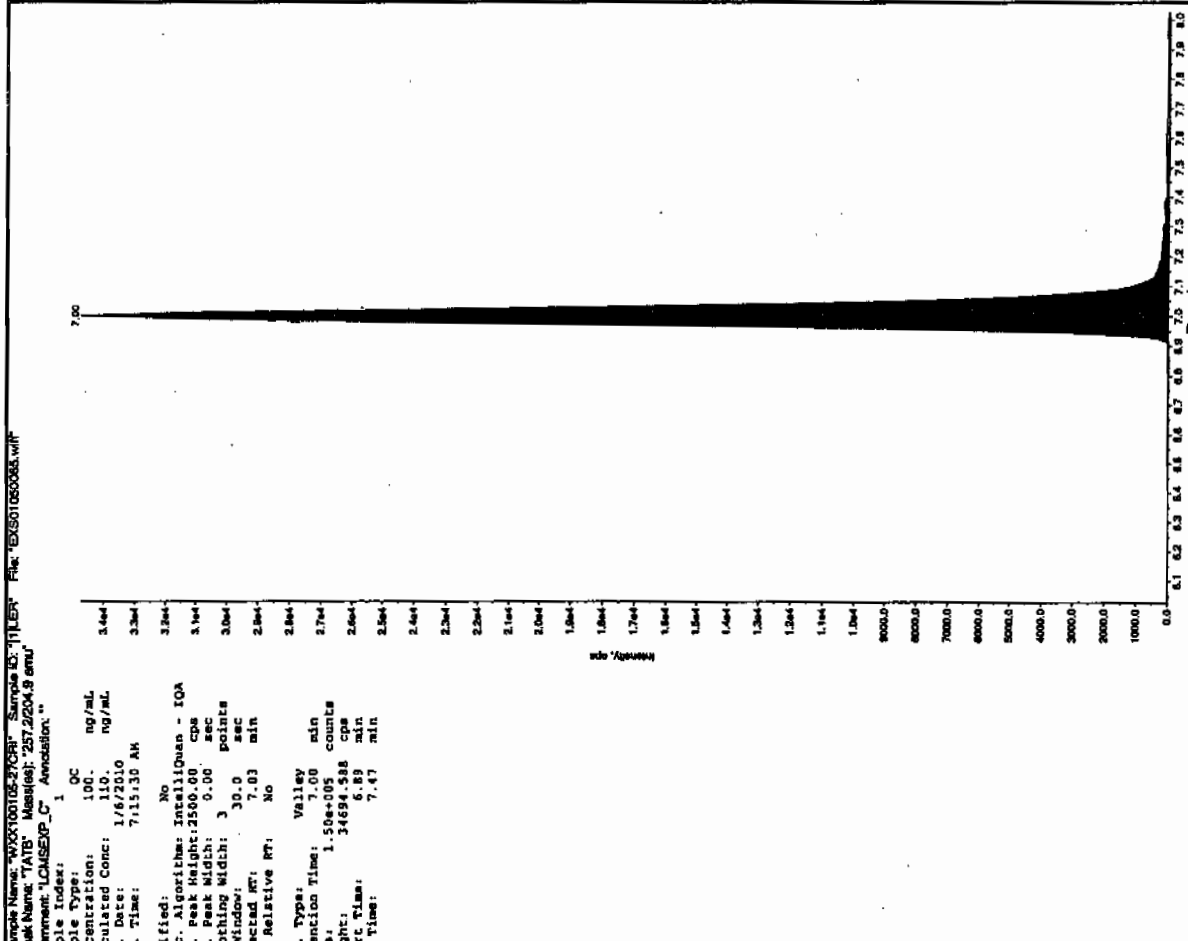
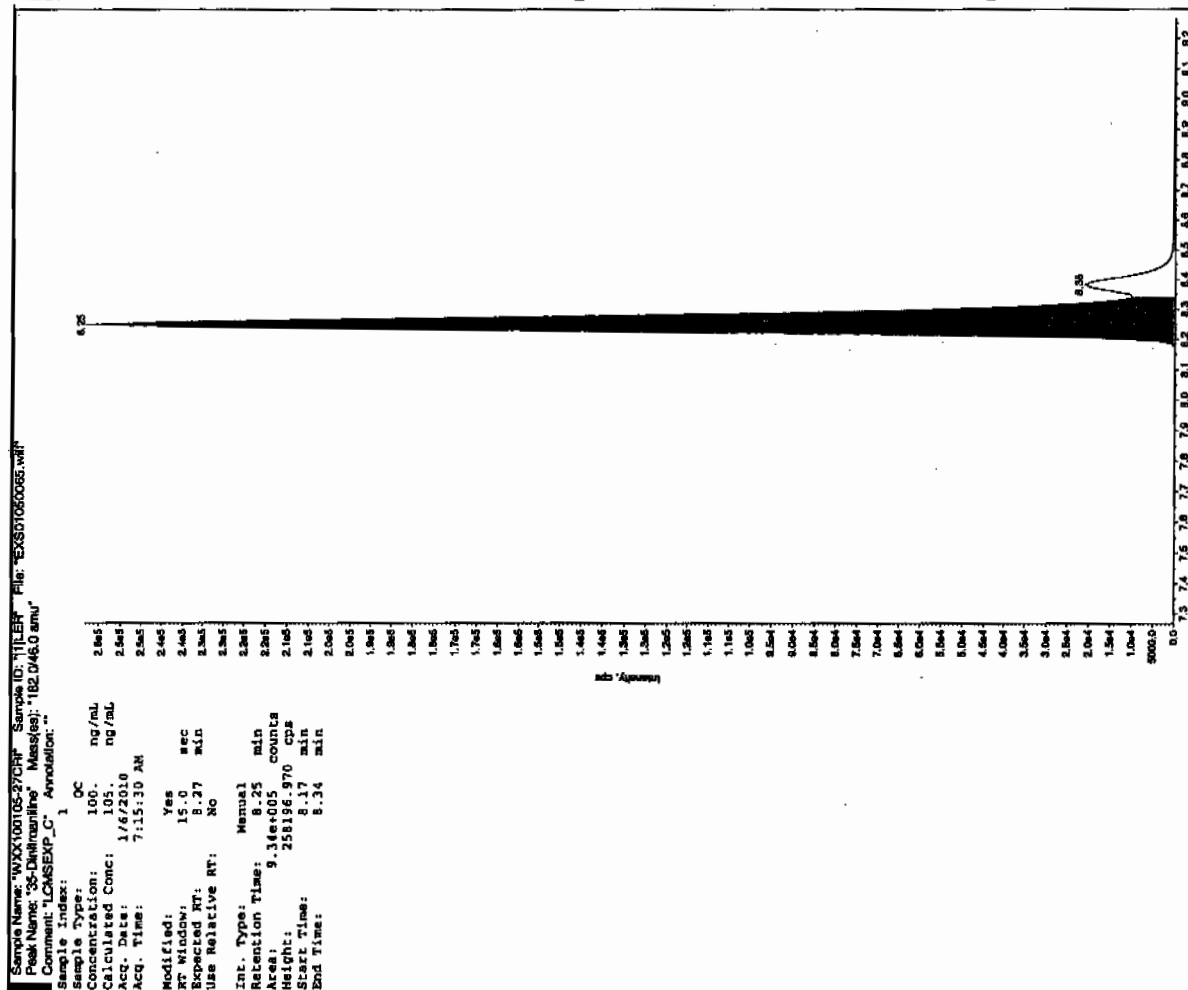


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EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

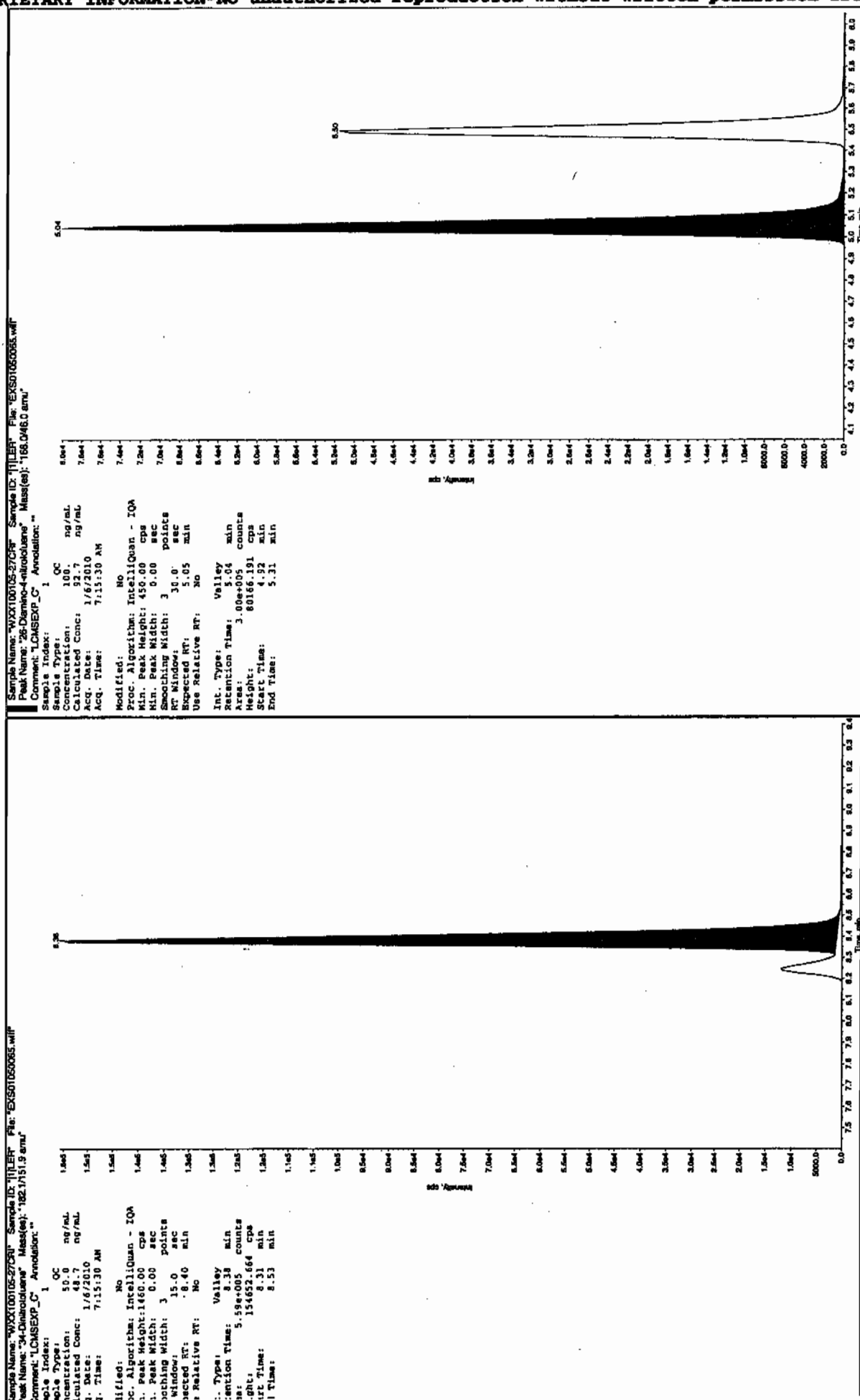


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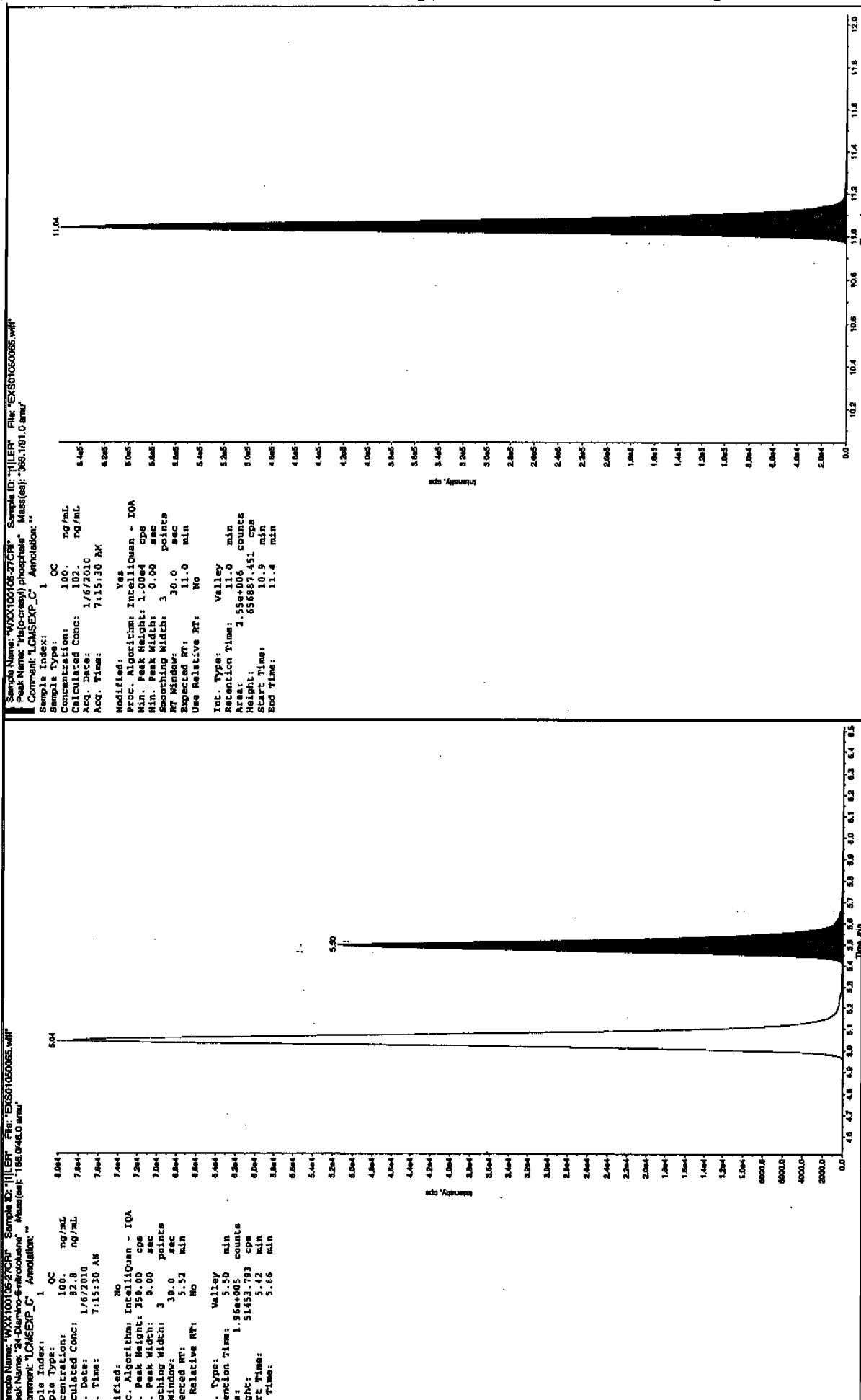


EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4









EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01050070.wiff

Analysis Date: 06-JAN-10 08:34

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	430	86	
2,6-Diamino-4-nitrotoluene	500	427	85	
3,4-Dinitrotoluene	250	226	90	
3,5-Dinitroaniline	500	521	104	
TATB	500	548	110	
tris(o-cresyl) phosphate	500	484	97	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

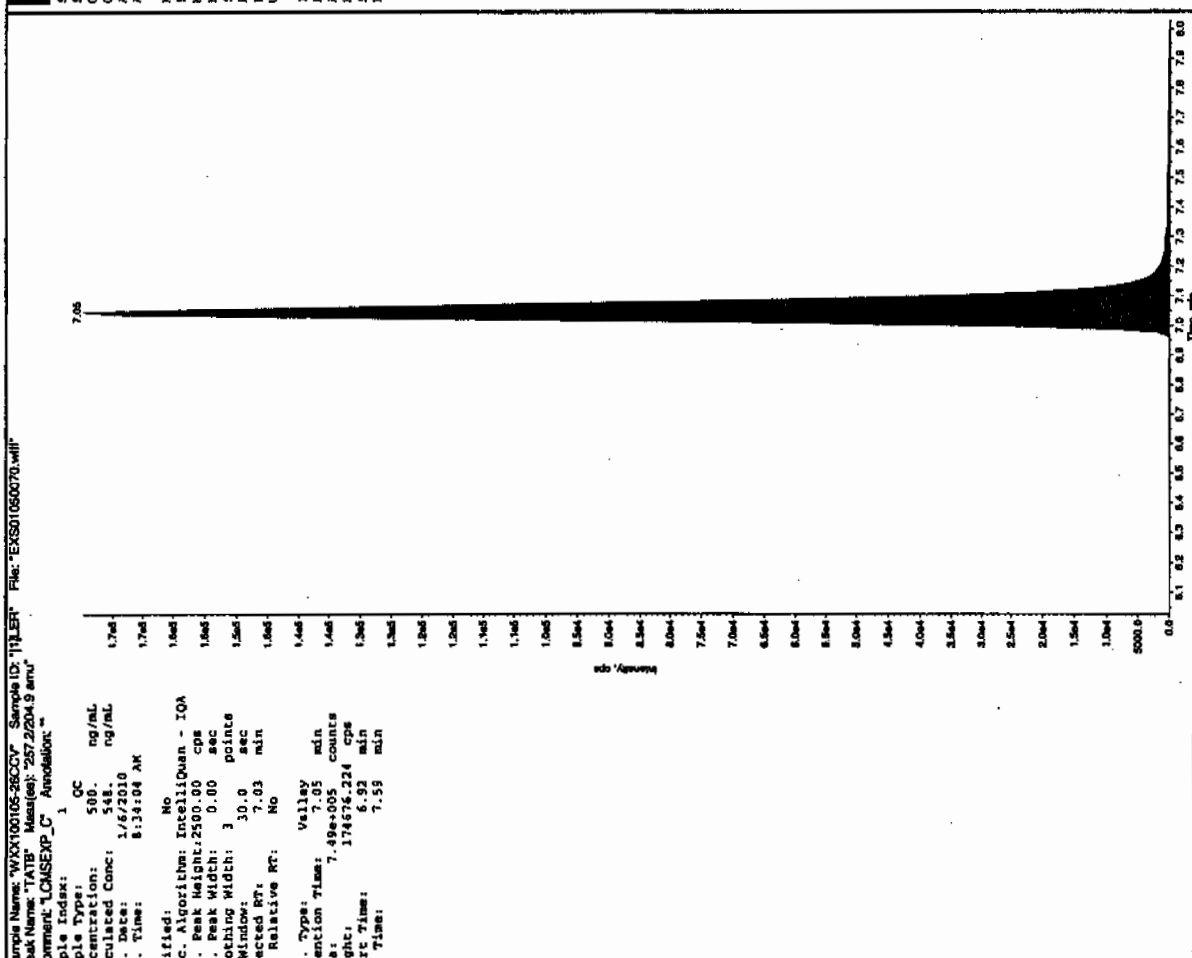
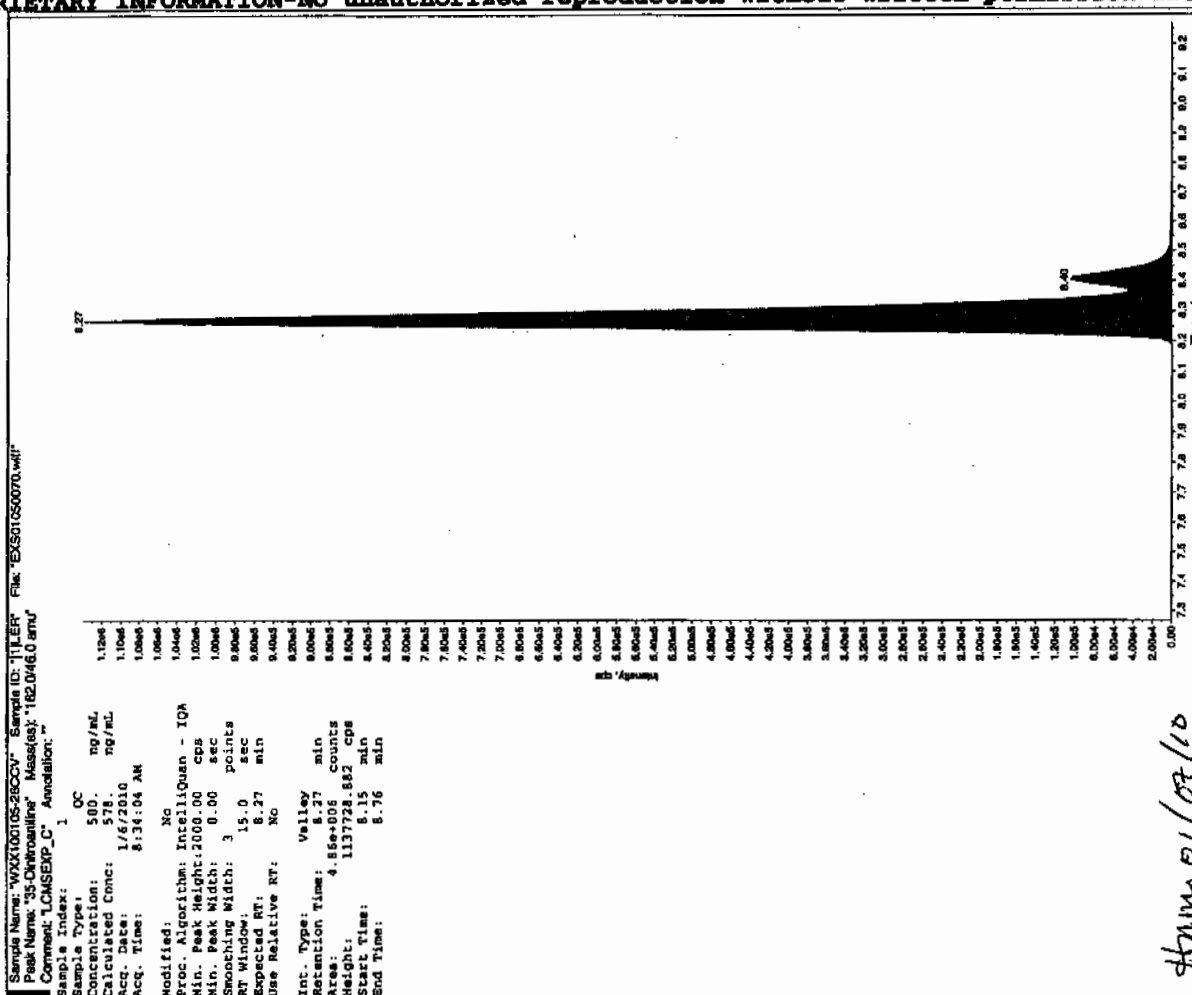
Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



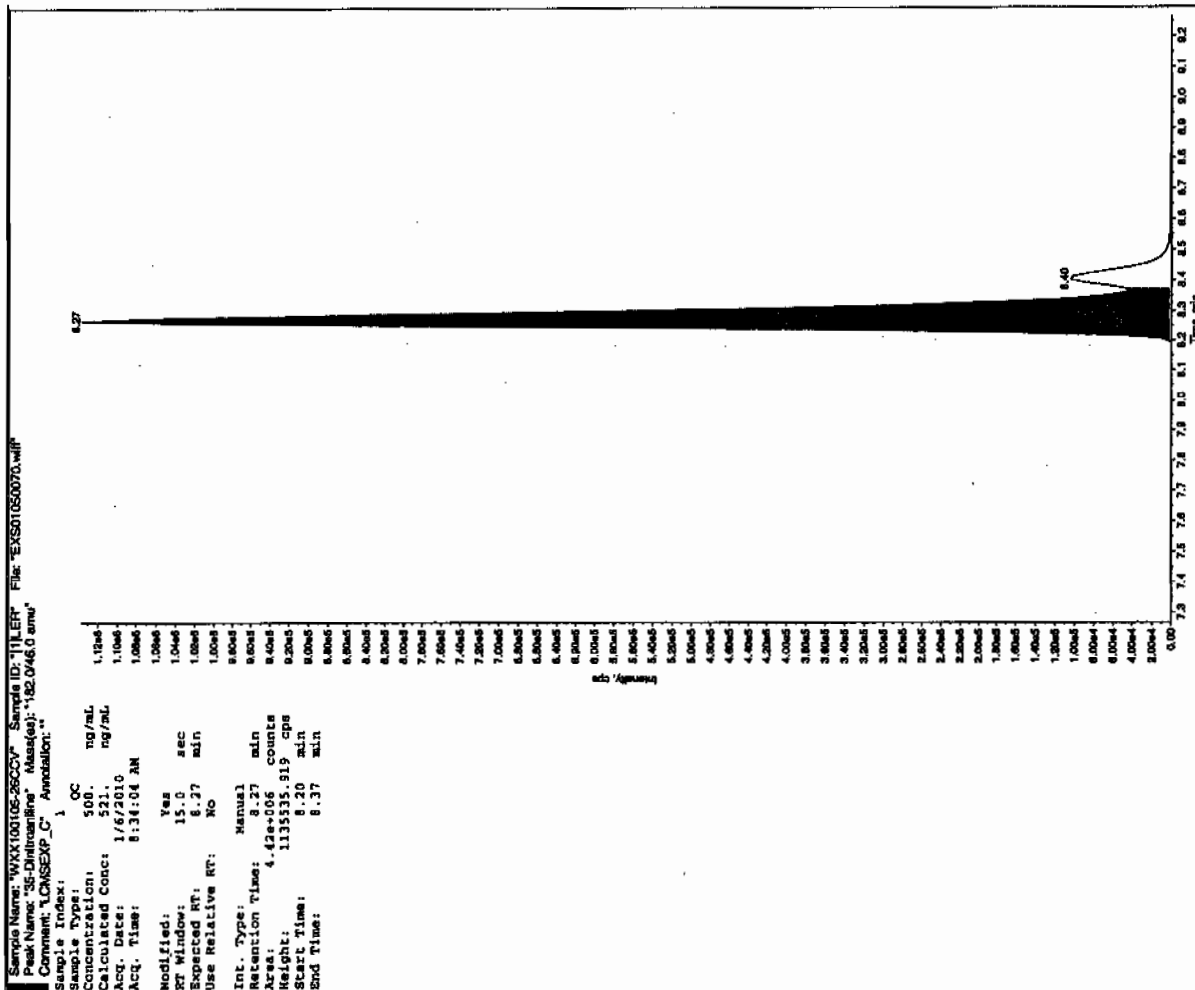
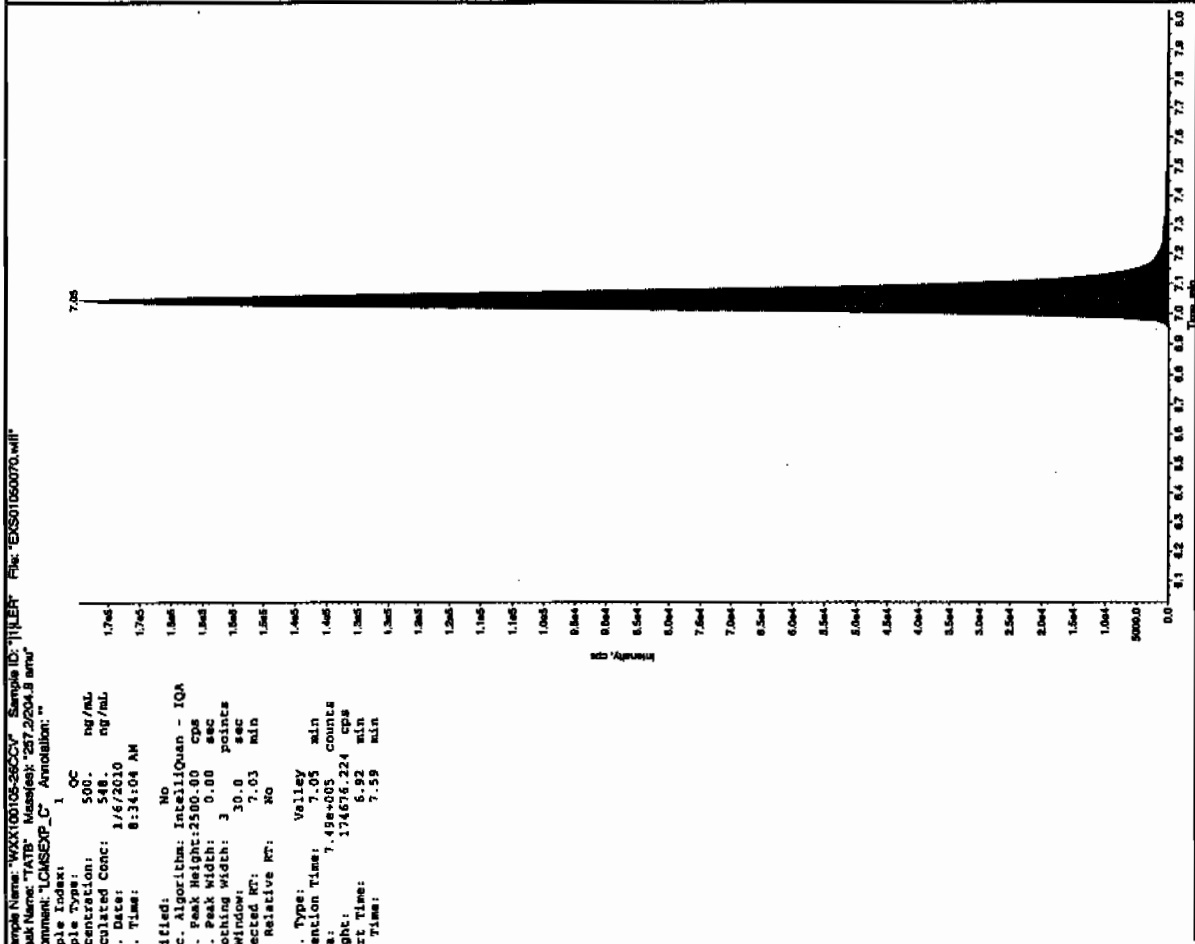
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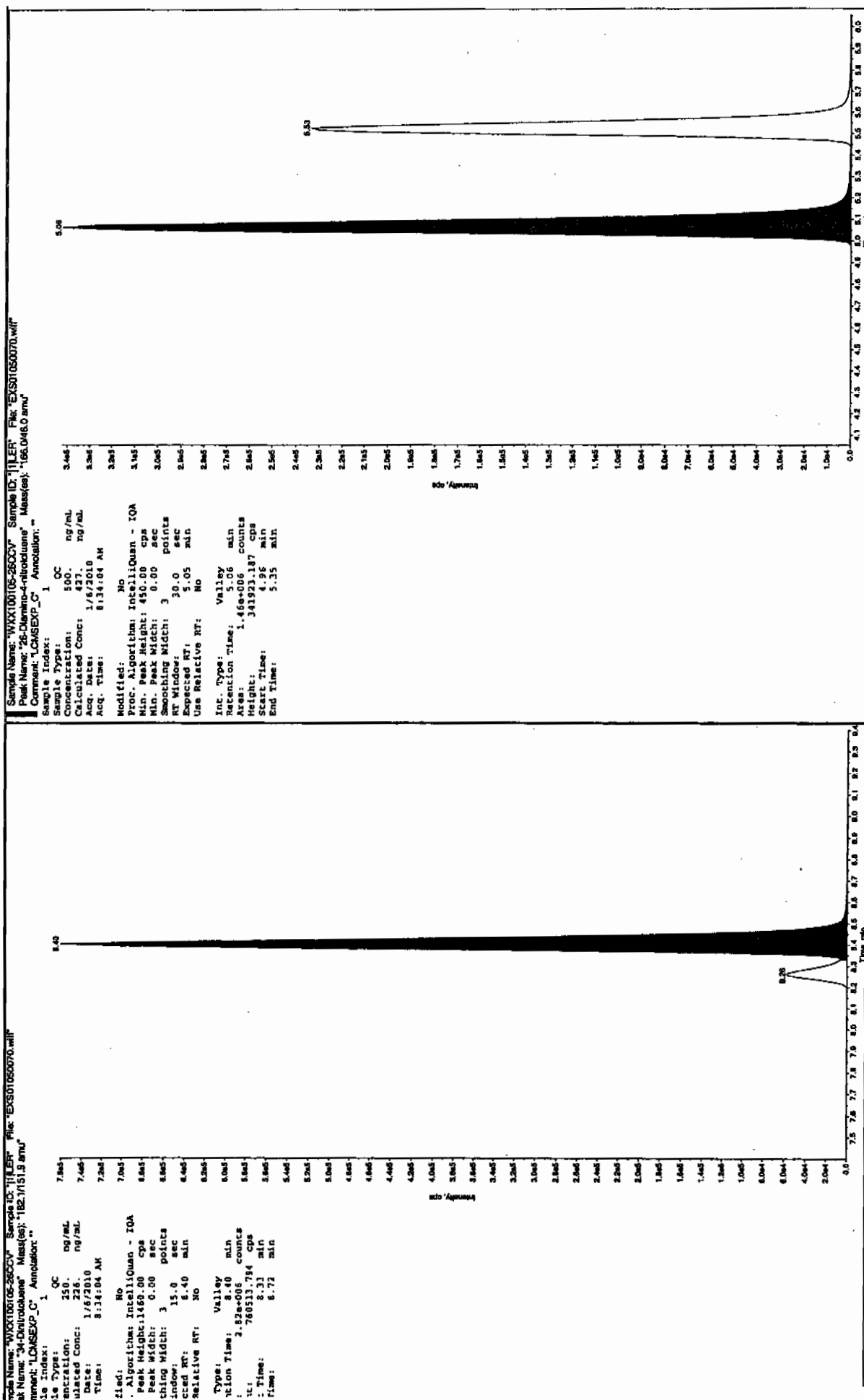
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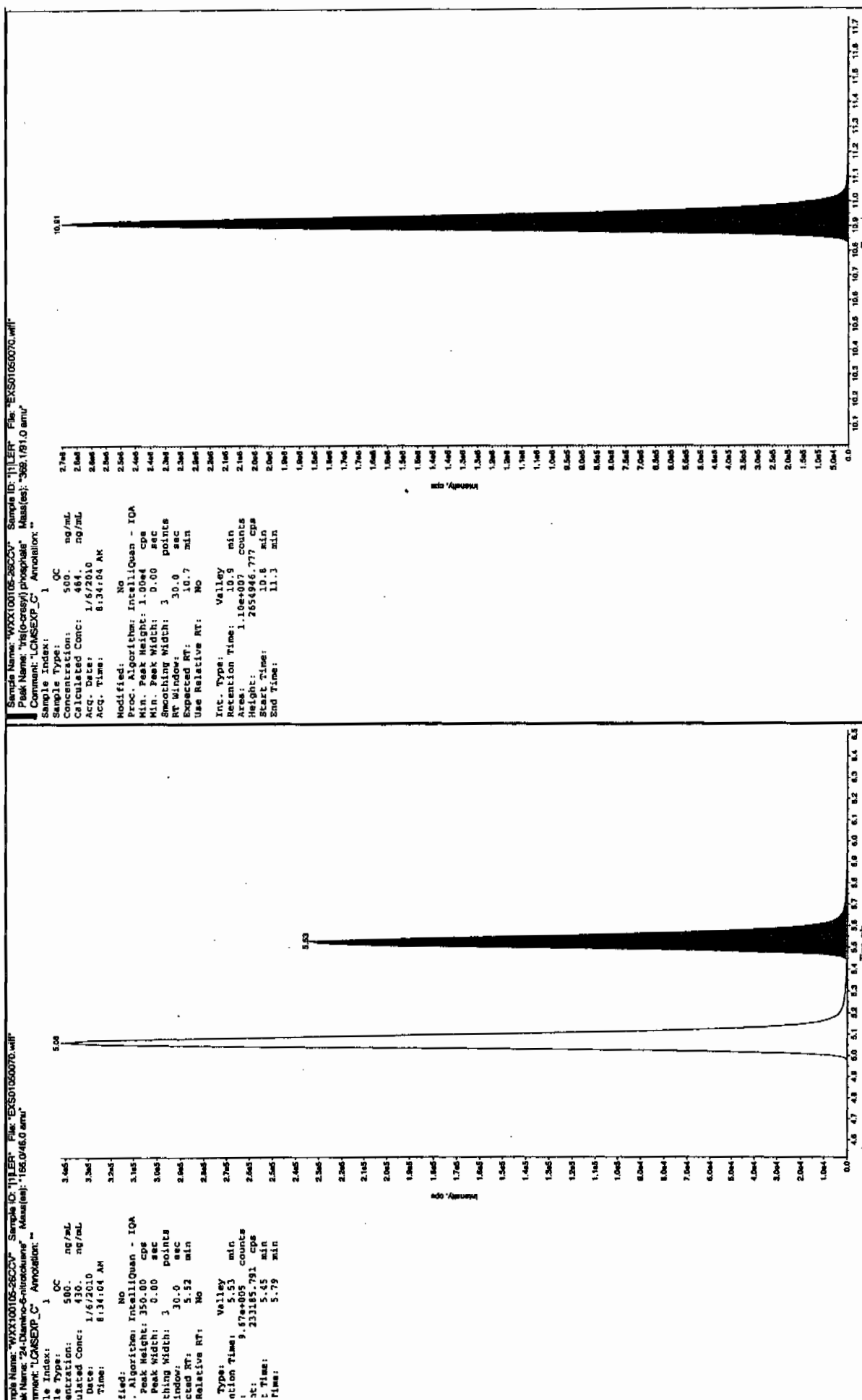






SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





, SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01050072.wiff

Analysis Date: 06-JAN-10 09:05

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	73.3	73	
2,6-Diamino-4-nitrotoluene	100	91.9	92	
3,4-Dinitrotoluene	50	50.8	102	
3,5-Dinitroaniline	100	103	103	
TATB	100	108	108	
tris(o-cresyl) phosphate	100	100	100	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

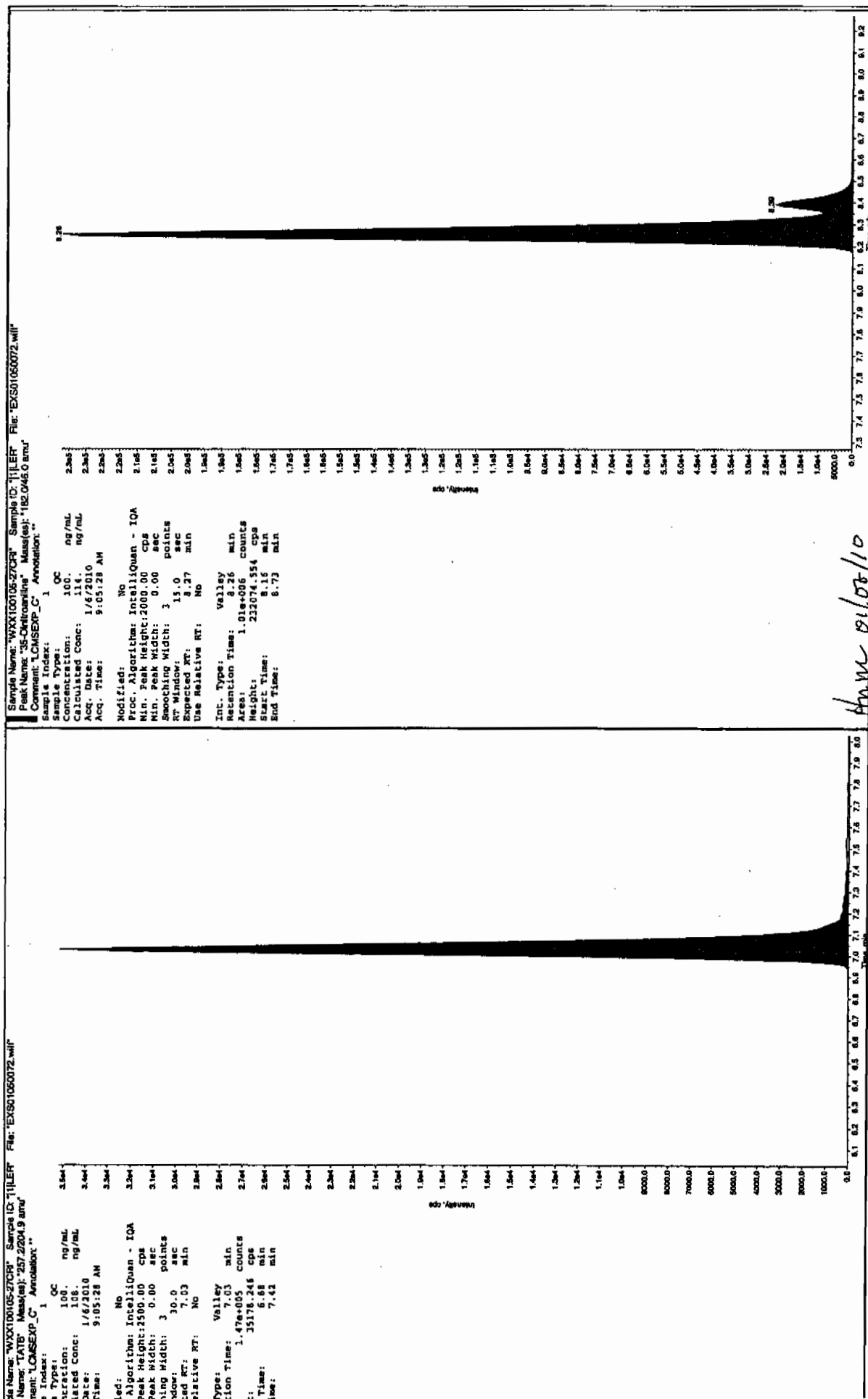
Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



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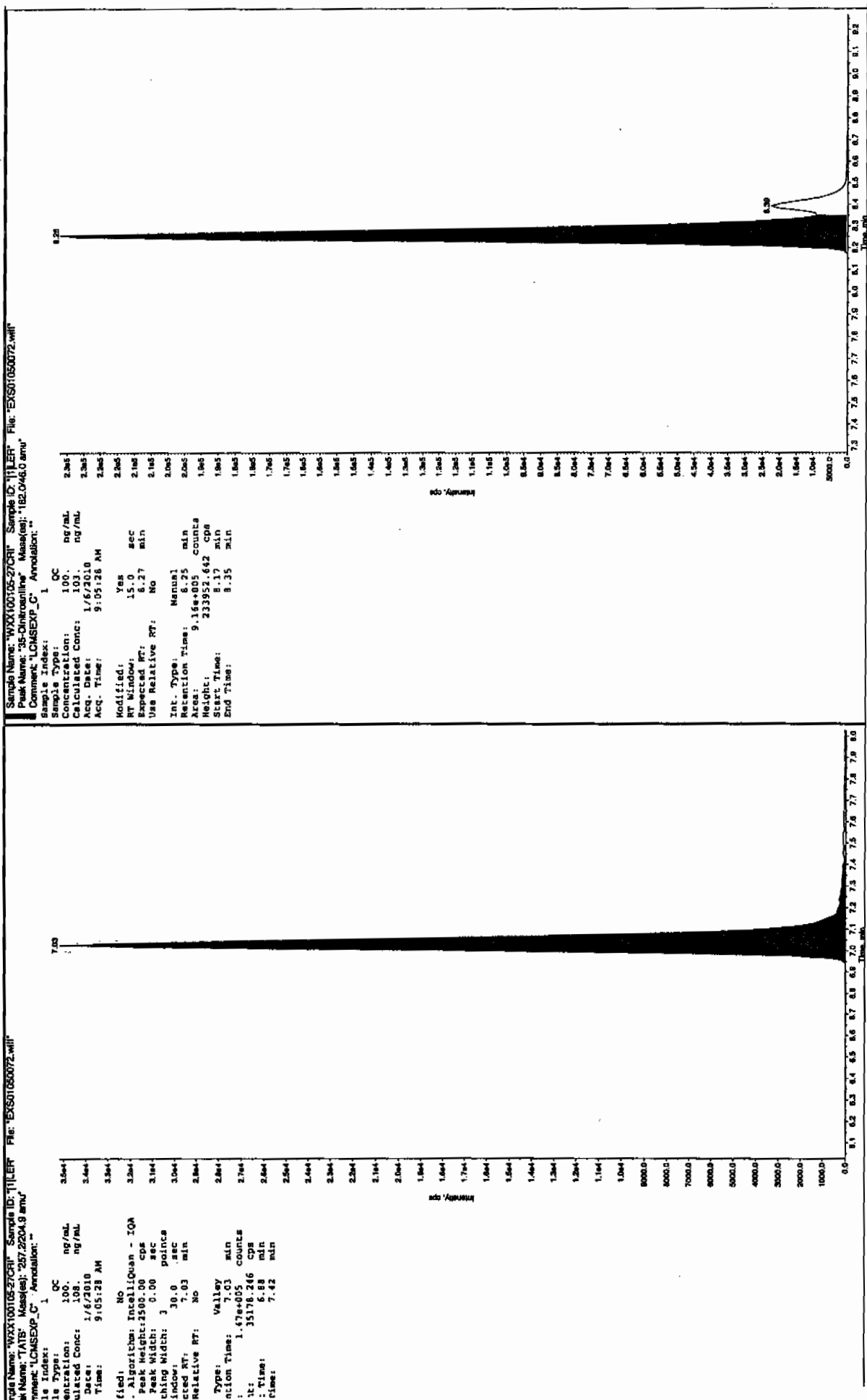


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, SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

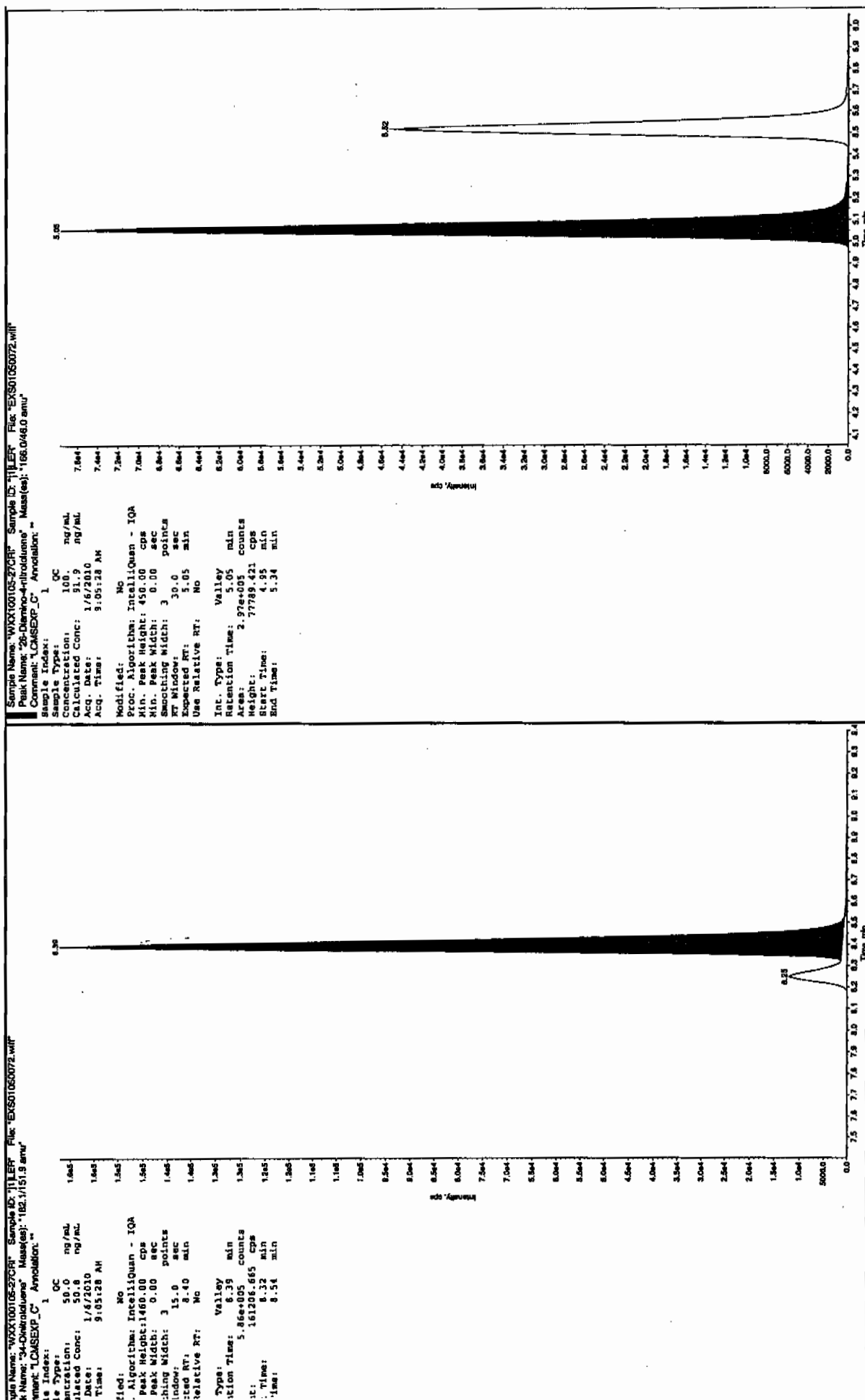


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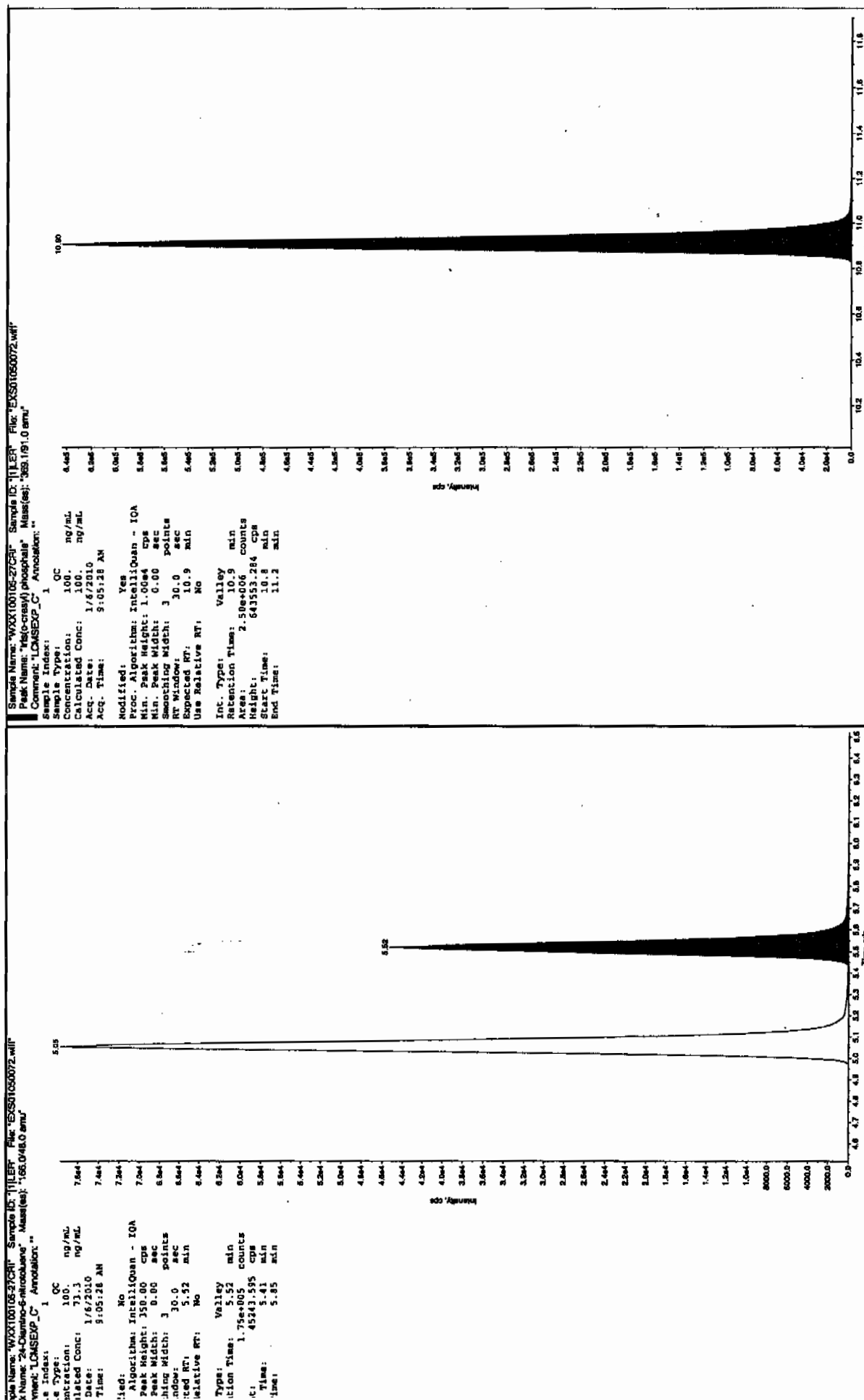
, SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





J. SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7A  
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01050083.wiff

Analysis Date: 06-JAN-10 11:58

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	431	86	
2,6-Diamino-4-nitrotoluene	500	427	85	
3,4-Dinitrotoluene	250	238	95	
3,5-Dinitroaniline	500	535	107	
TATB	500	566	113	
tris(o-cresyl) phosphate	500	486	97	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

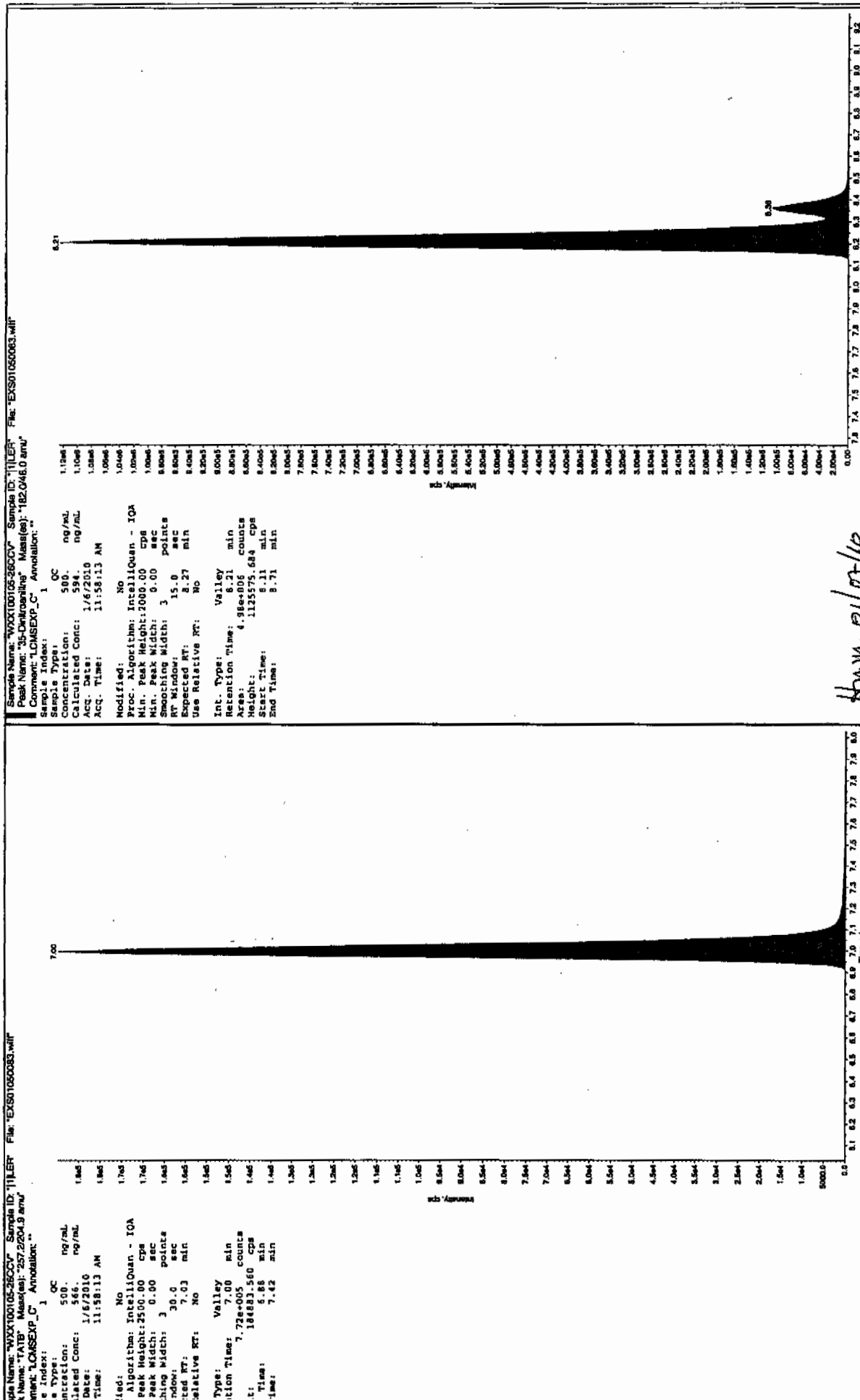
Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



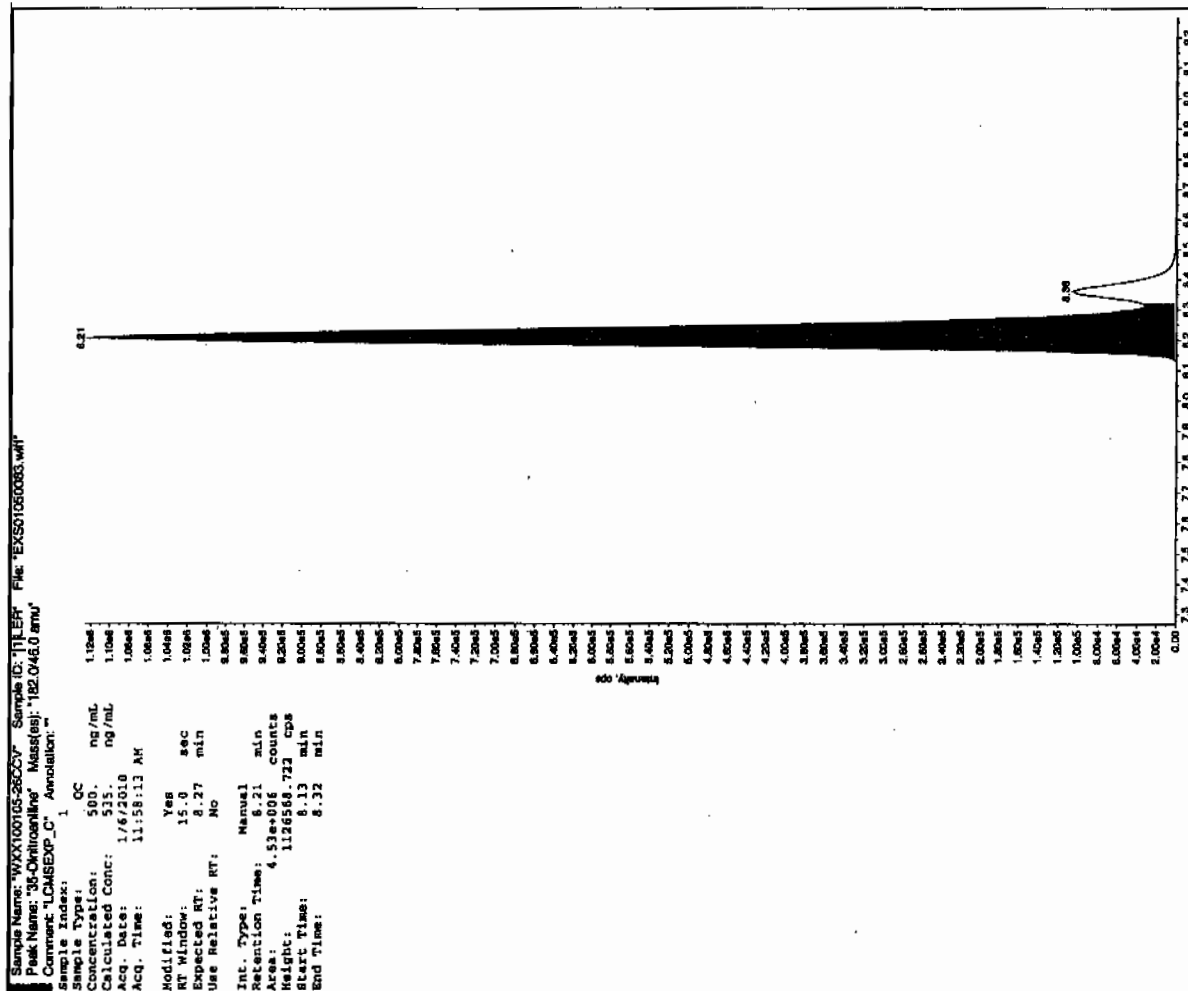
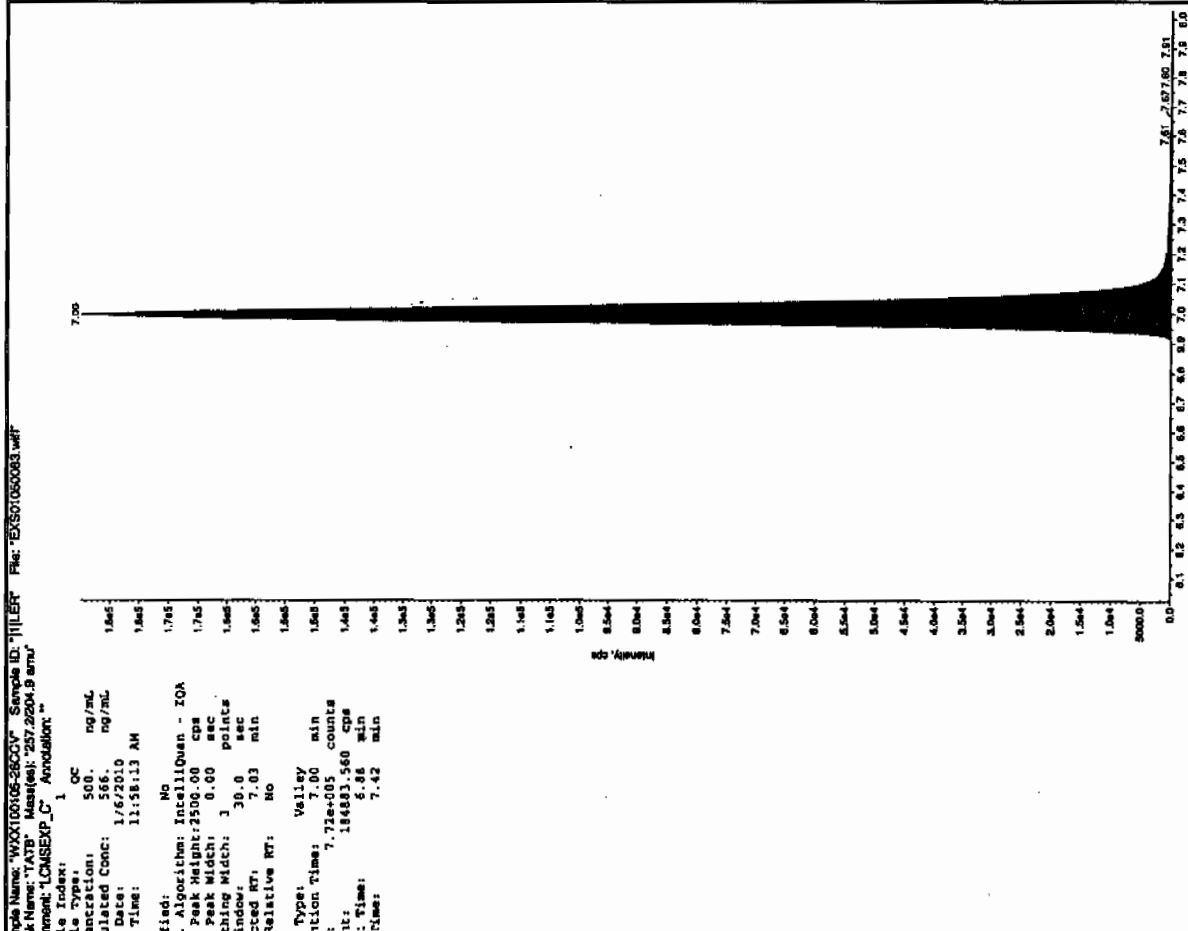
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Duffy



Hum 01/07/10

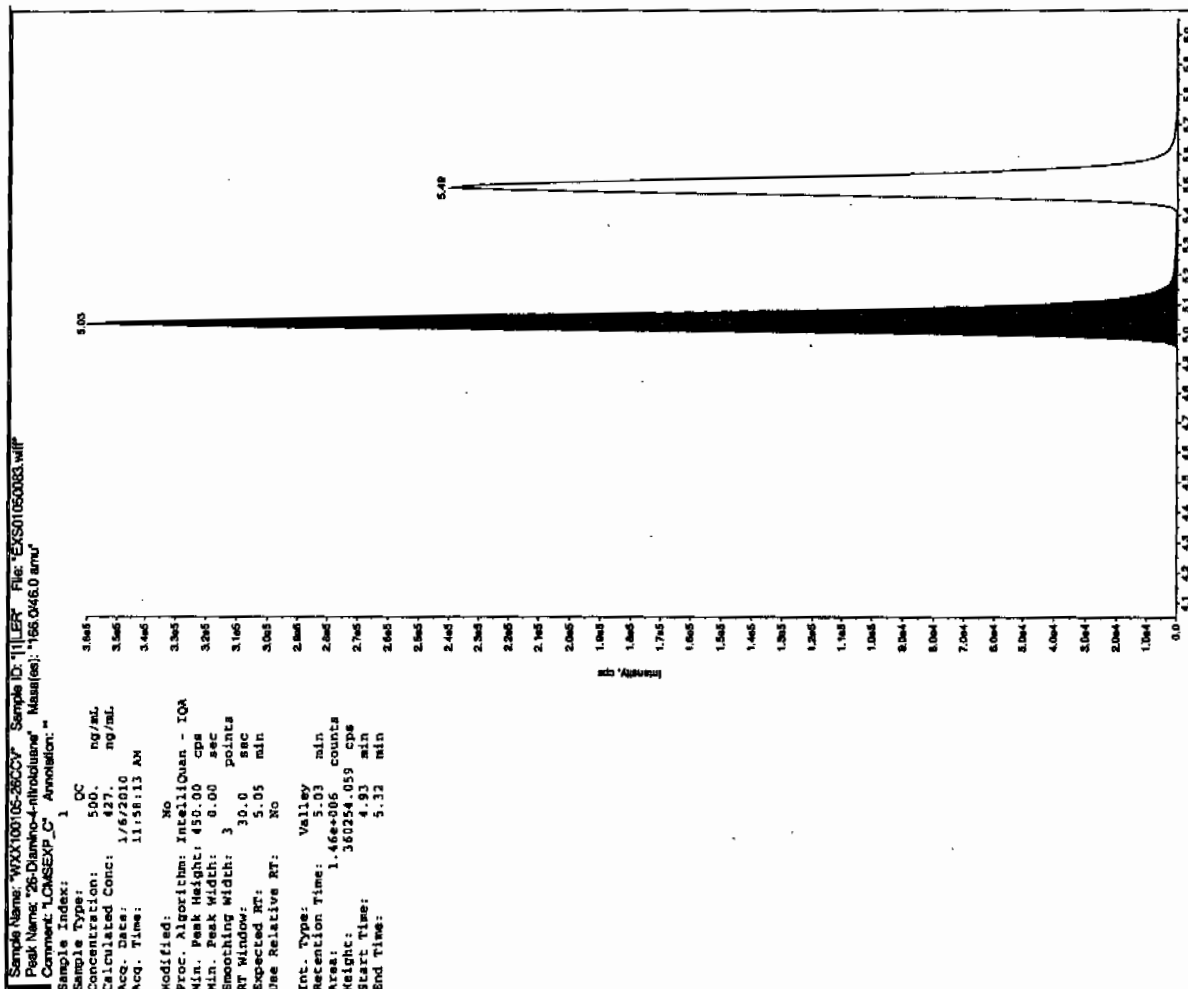
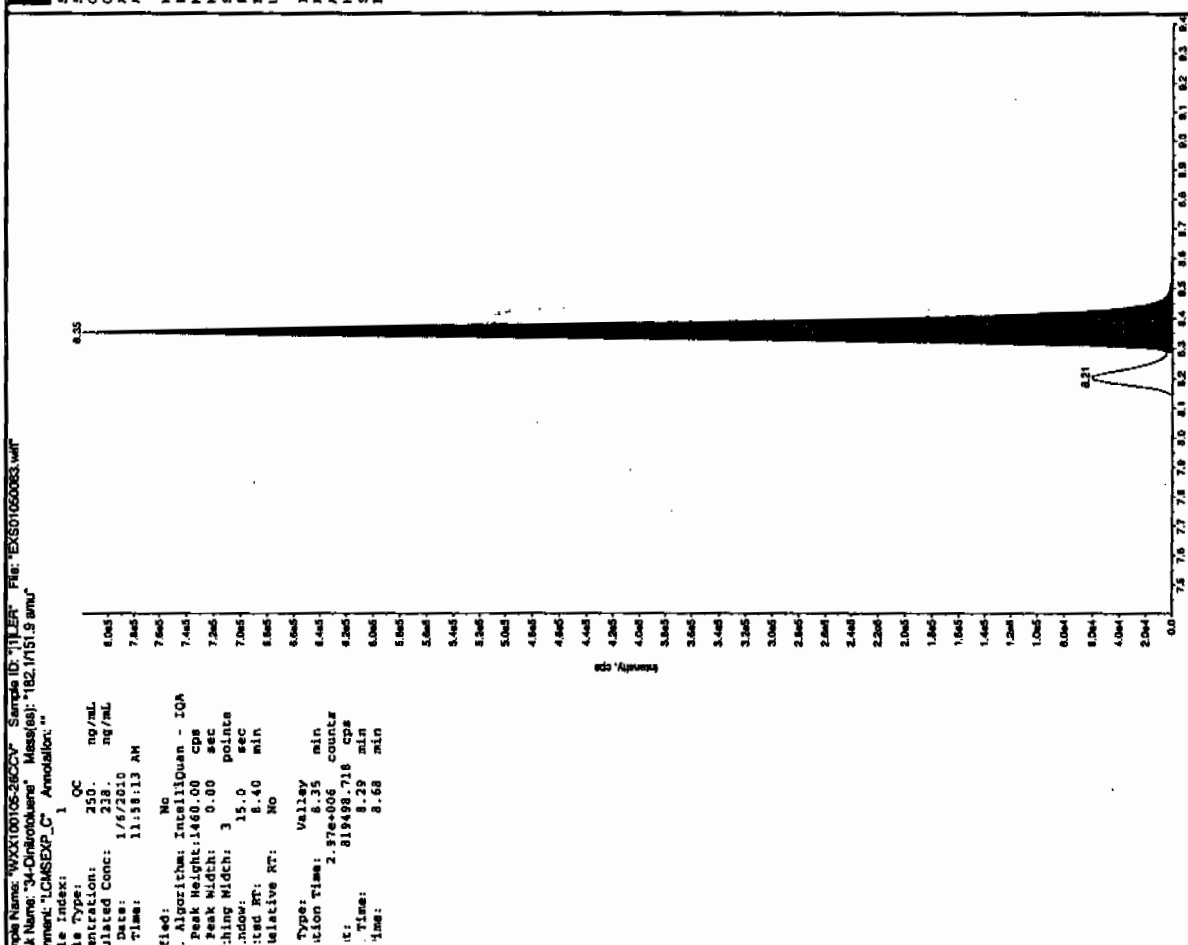


11/17/10  
D. H. H.

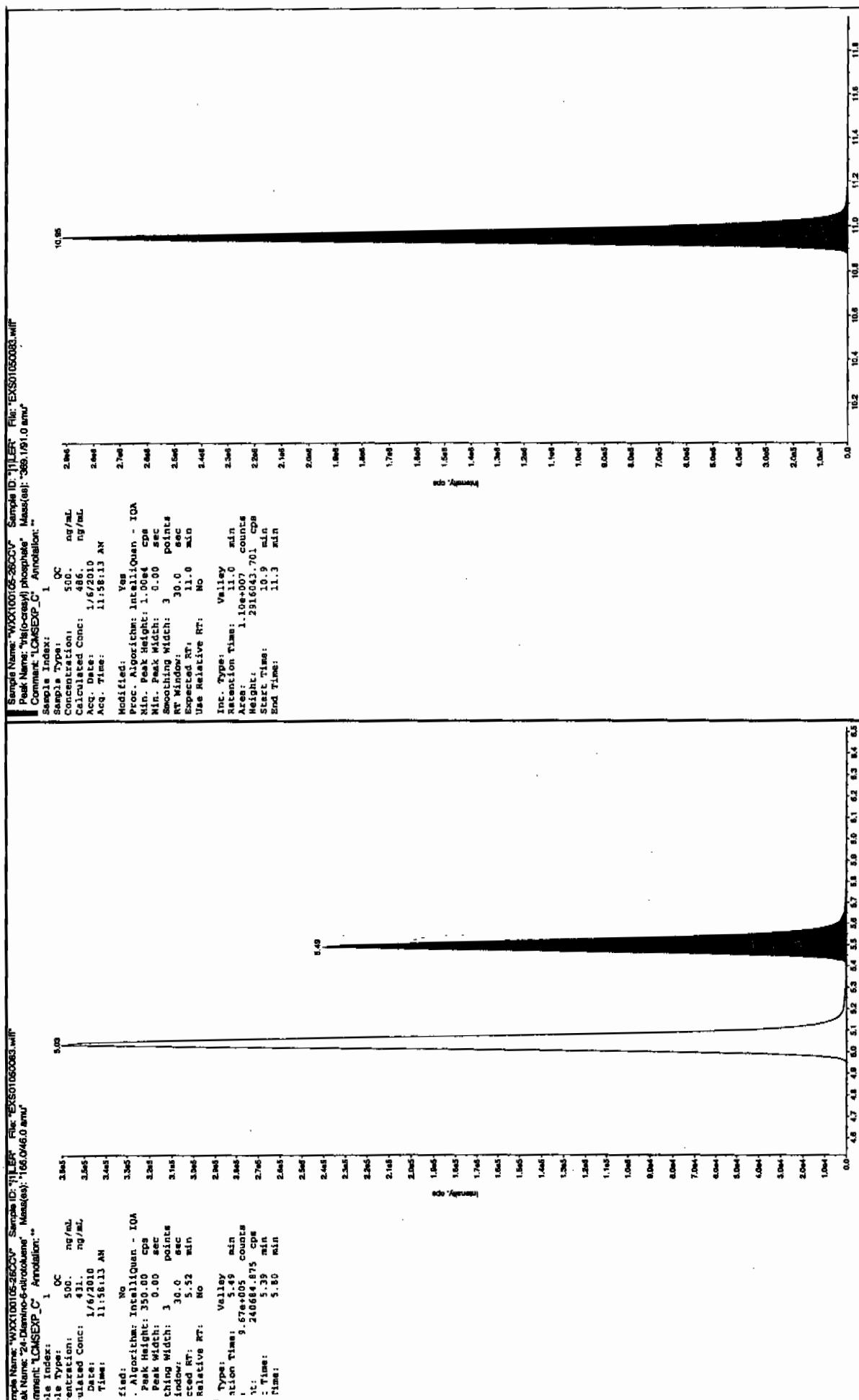


SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4









SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1038

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01050085.wiff

Analysis Date: 06-JAN-10 12:29

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	83.3	83	
2,6-Diamino-4-nitrotoluene	100	88	88	
3,4-Dinitrotoluene	50	51.5	103	
3,5-Dinitroaniline	100	113	113	
TATB	100	110	110	
tris(o-cresyl) phosphate	100	104	104	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

2,4-Diamino-6-nitrotoluene 50-150%

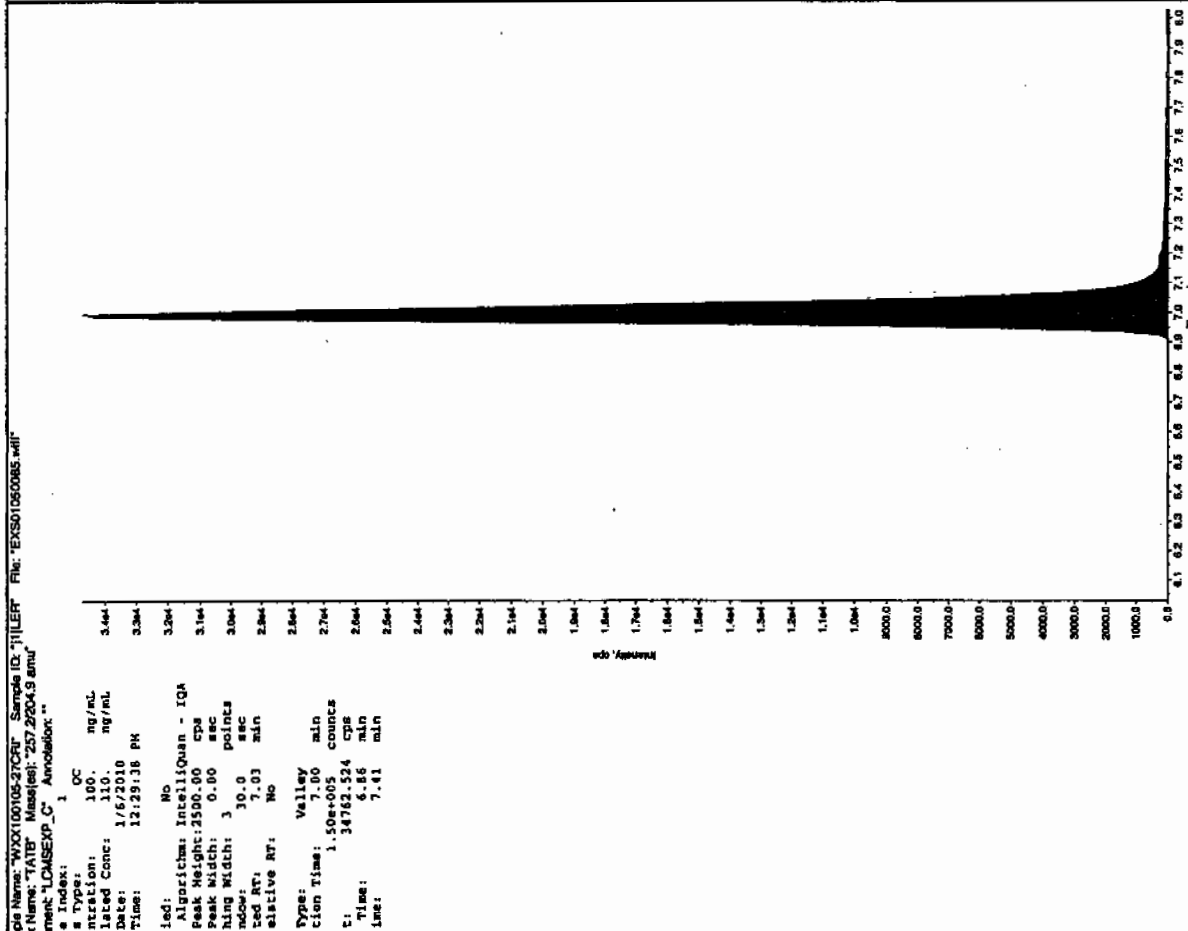
Other Target Analytes 70-130%

# Column used to flag Recovery outside of Limits

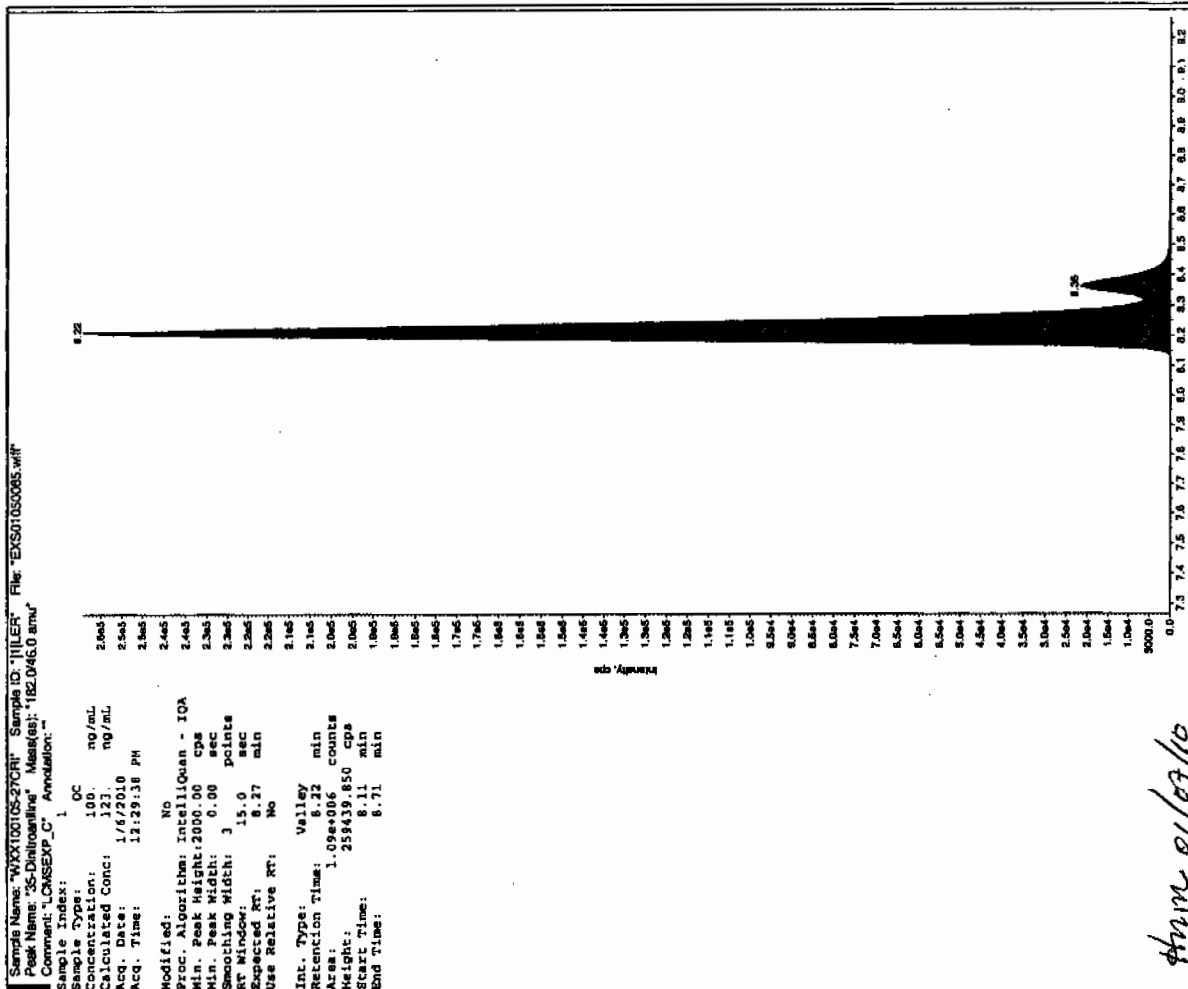
\* Value outside of Recovery Limits



01/16/10  
J. L. Miller



Ann 01/07/10

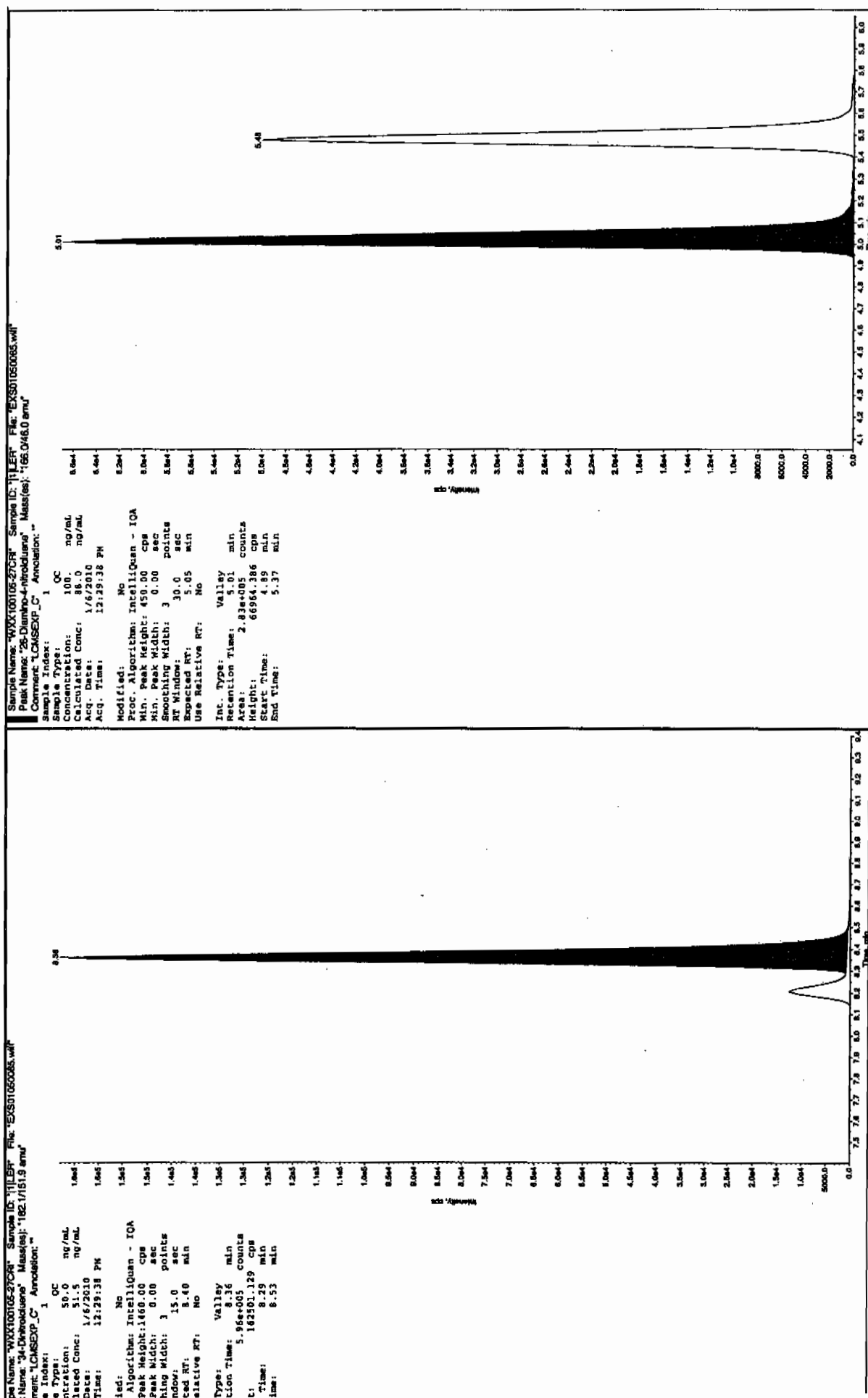


, SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



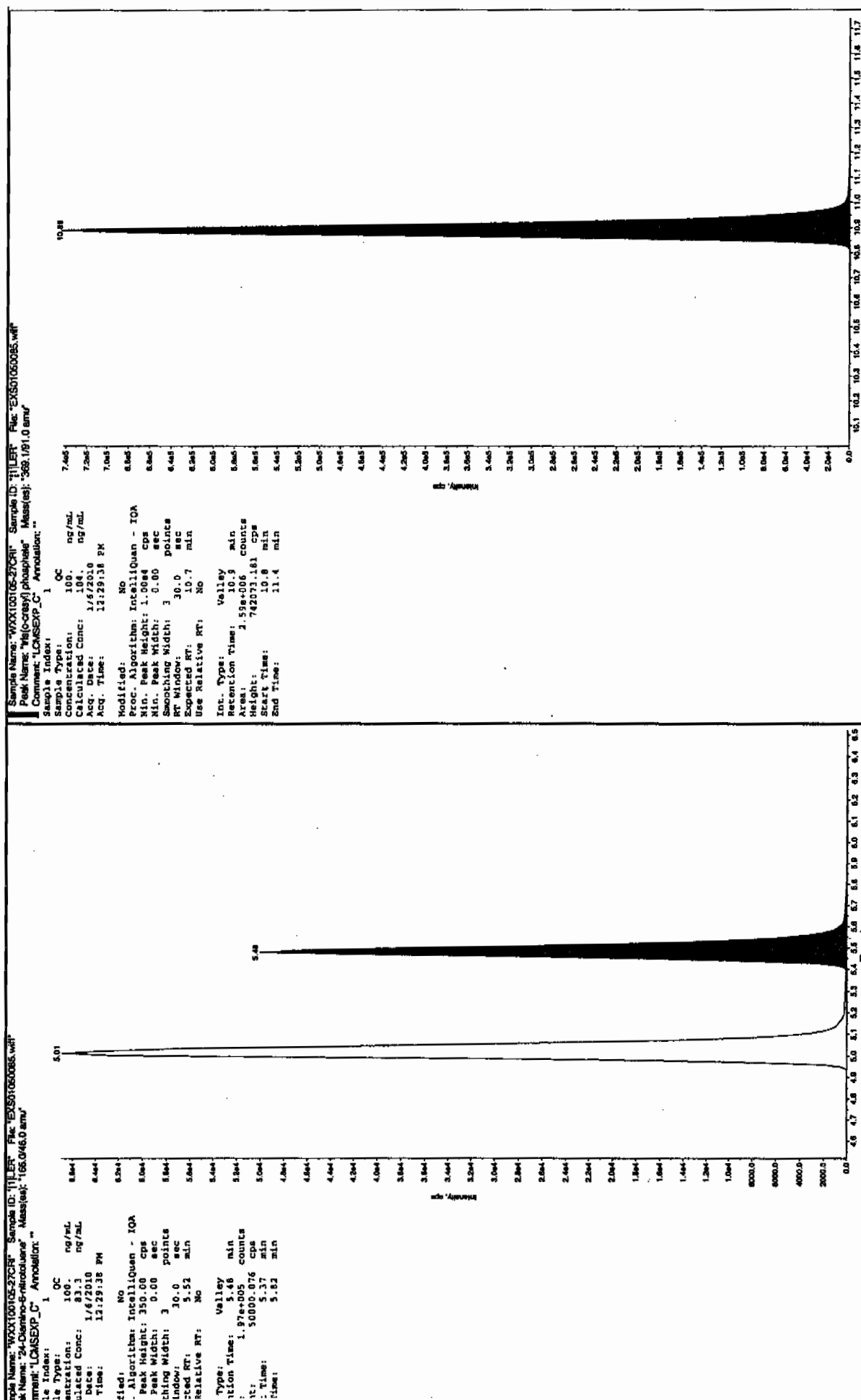






, SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



# QUALITY CONTROL DATA



1

# High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 937030

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 1202005106

Sample Amount 2

Moisture:

Amount Units g

Date Received: 28-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108097a

Date Analyzed: 10-JAN-10 16:28

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



Quantify Sample Report  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0108097a

Plate: 10-Jan-2010

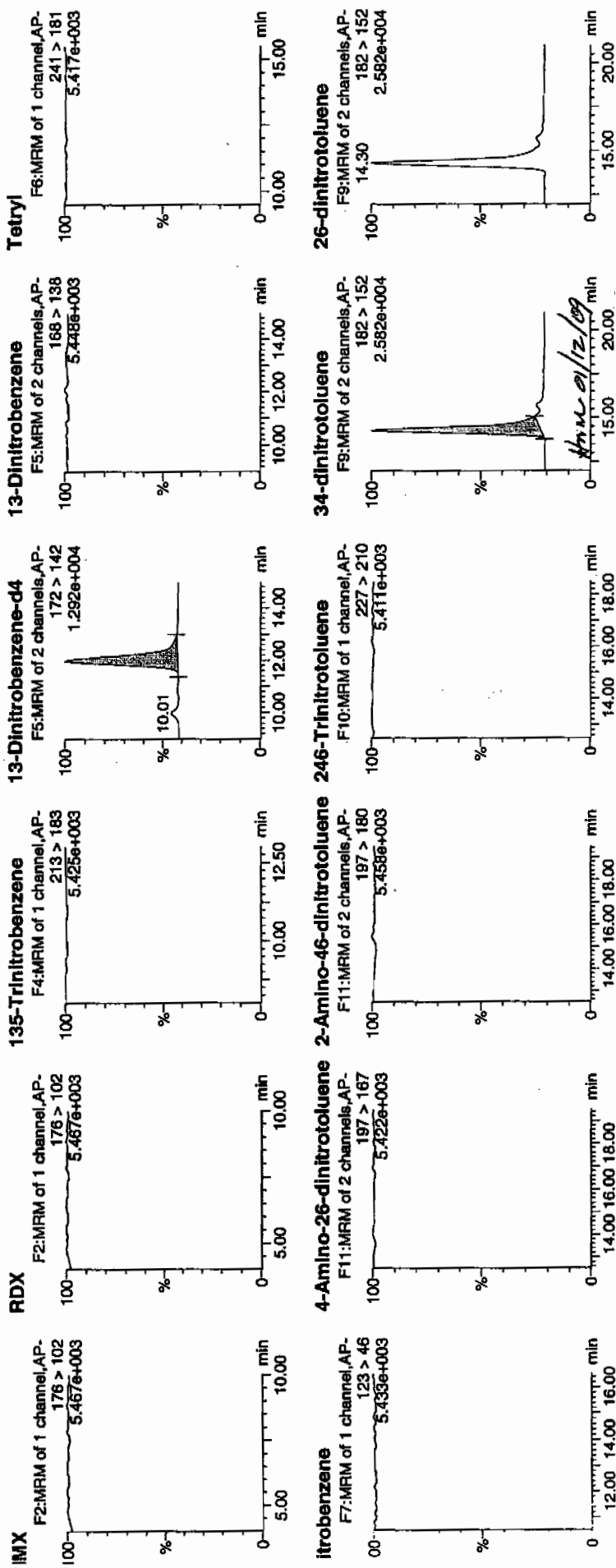
Time: 16:28:23

File: 1202005106

Label: 3:3.A

Handwritten: 937031 | 8000 | 123 | 21

Handwritten: 1/11/10

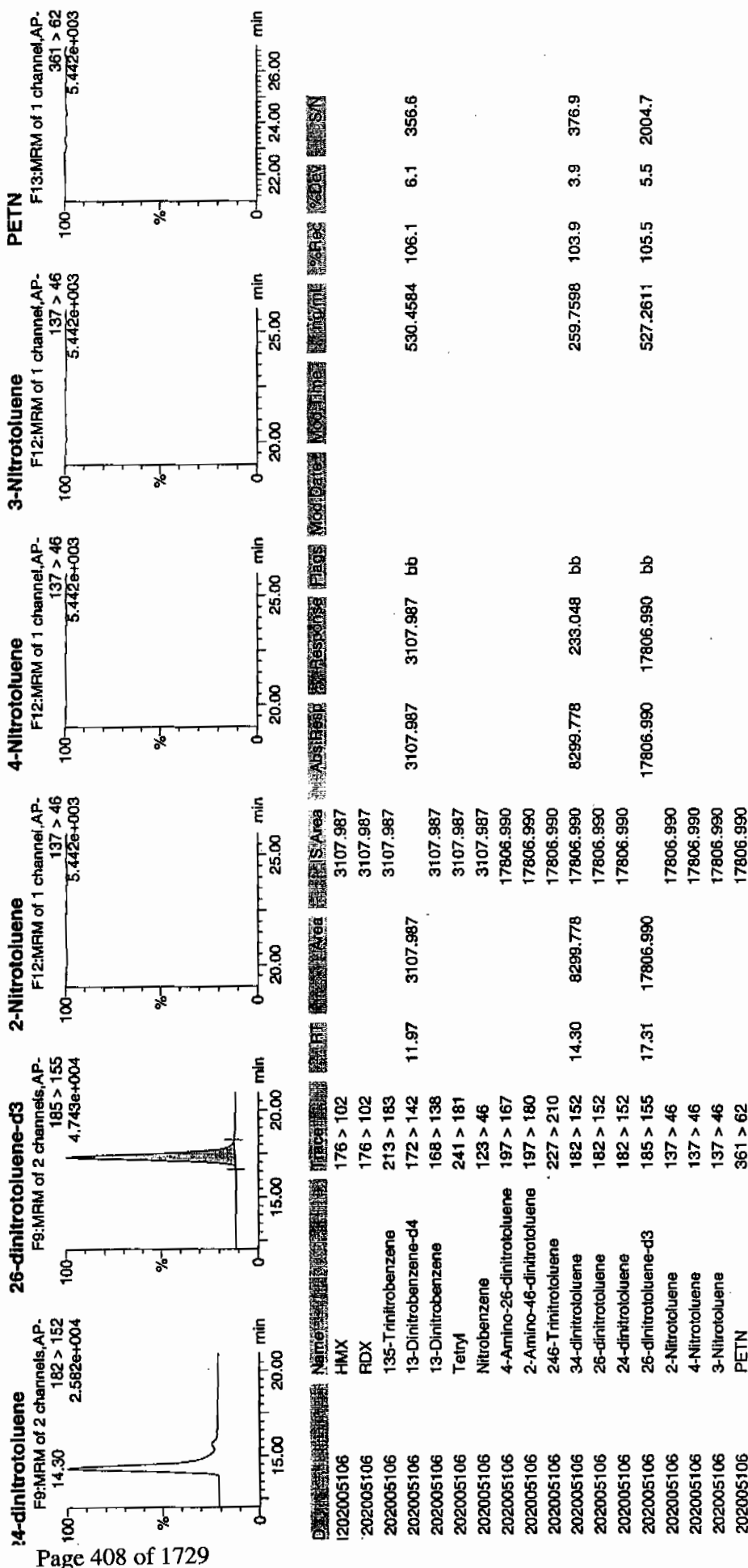




Printed: Mon Jan 11 09:29:17 2010, Page 134 of 189

Quantify Sample Report  
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSL\YNNXNew\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 937030

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 1202005106

Sample Amount 2

Moisture:

Amount Units g

Date Received: 28-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050073.wiff

Date Analyzed: 06-JAN-10 09:21

Units: ug/kg

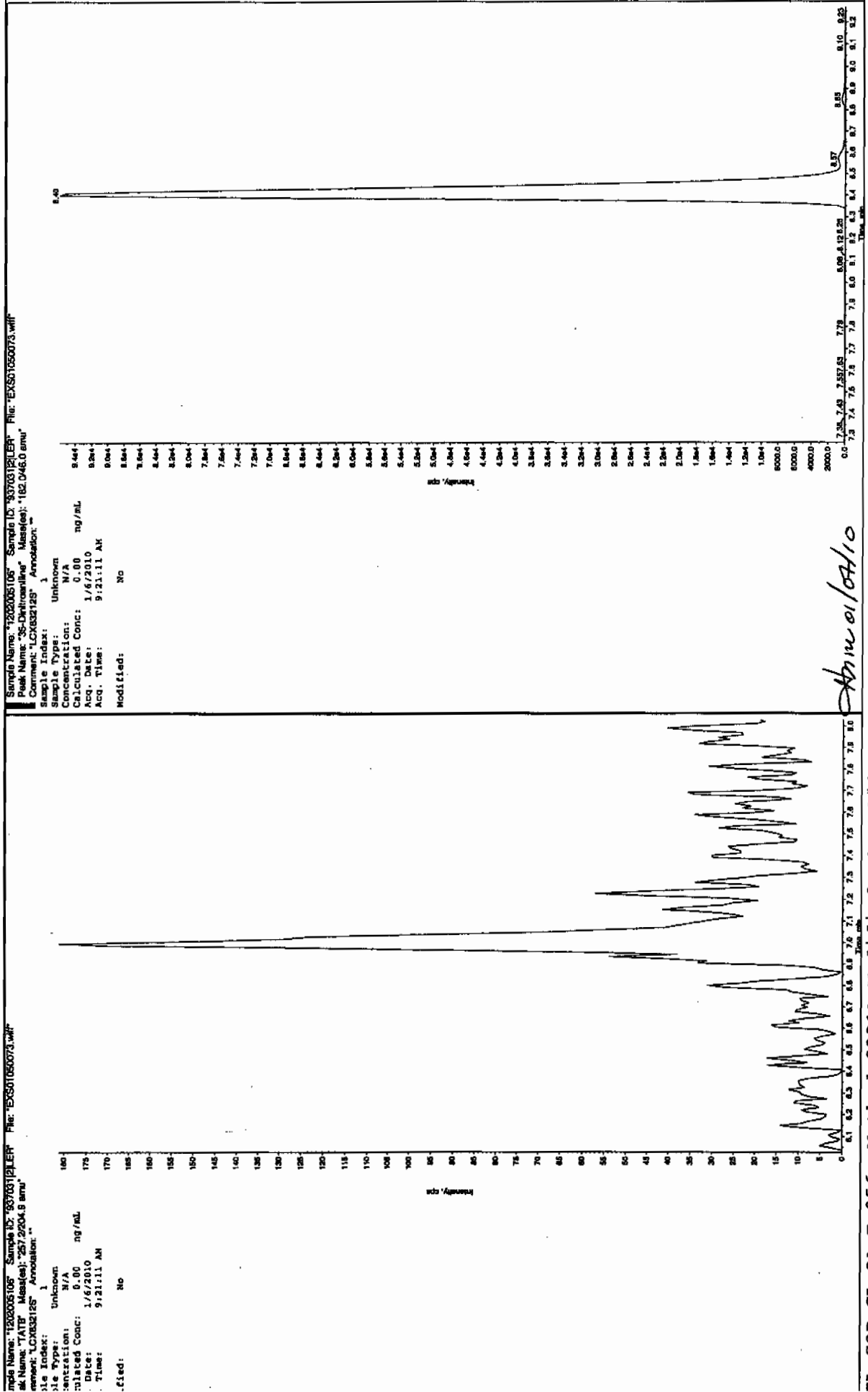
Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor

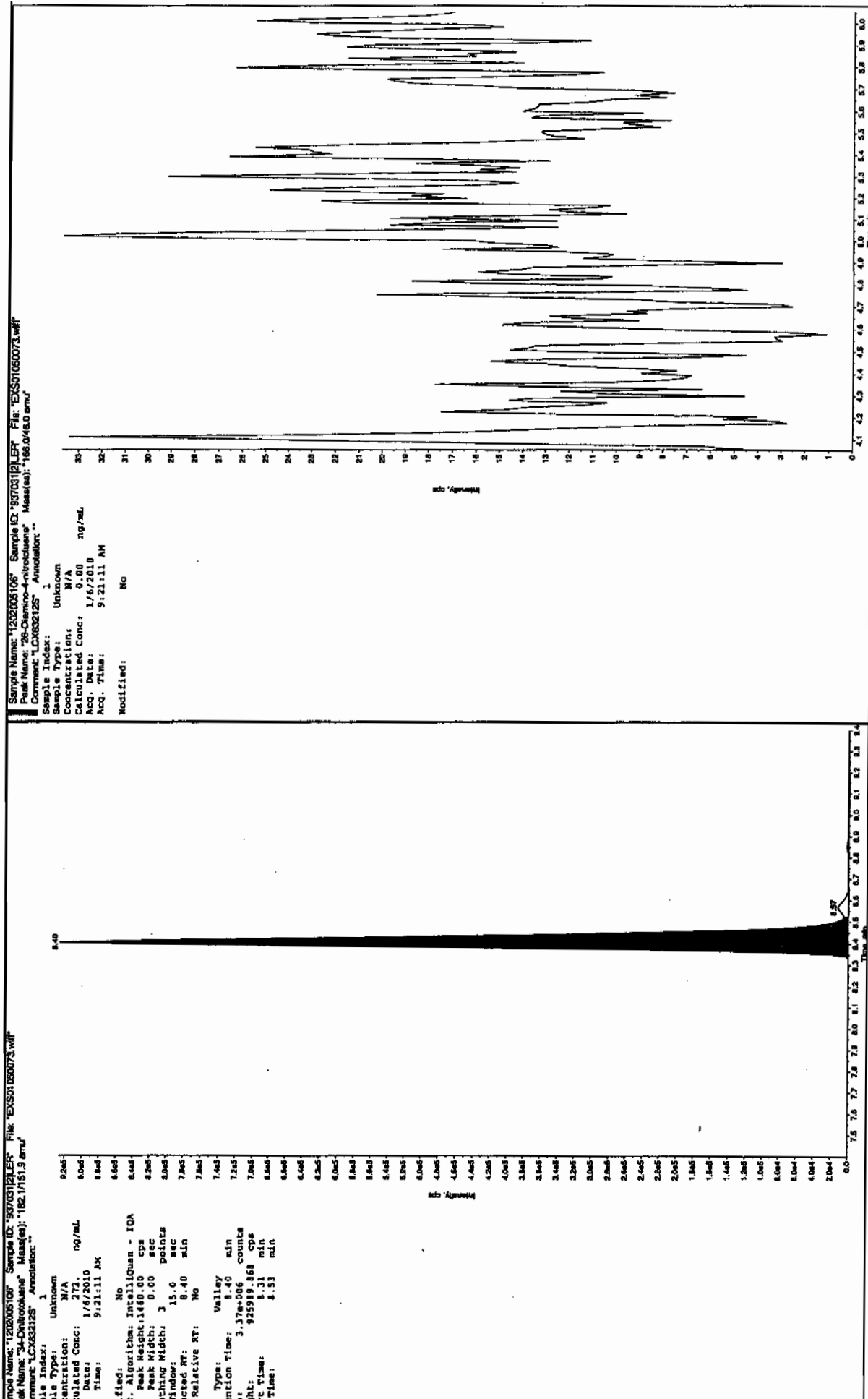


01/10/10  
2008



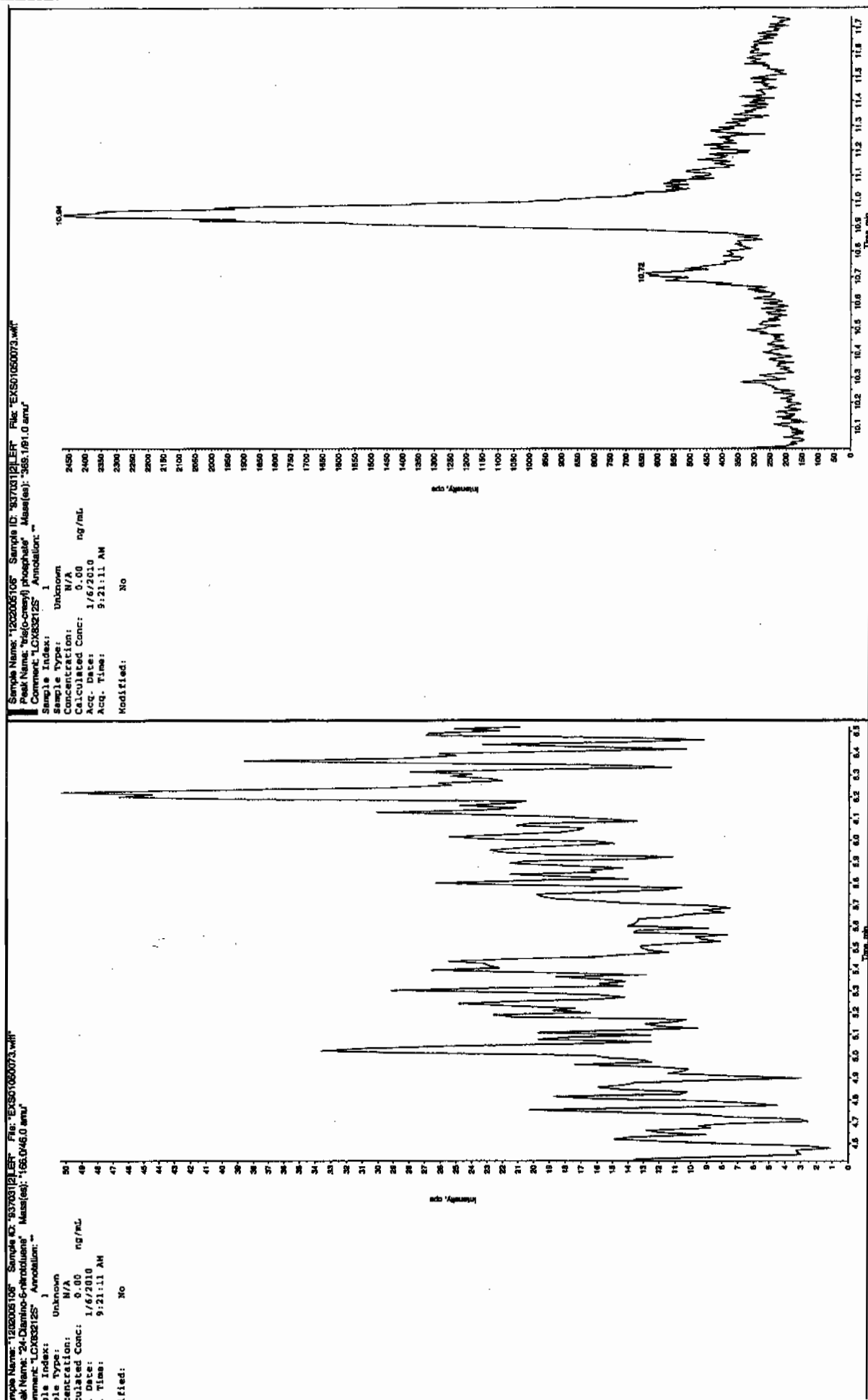
01/10/10





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



1

# High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 937030

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 1202005107

Sample Amount 2

Moisture:

Amount Units g

Date Received: 28-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108098a

Date Analyzed: 10-JAN-10 16:57

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	7020	
121-14-2	2,4-Dinitrotoluene	4610	
121-82-4	RDX	5450	
19406-51-0	4-Amino-2,6-dinitrotoluene	6430	
2691-41-0	HMX	4970	
35572-78-2	2-Amino-4,6-dinitrotoluene	7220	
479-45-8	Tetryl	3920	
606-20-2	2,6-Dinitrotoluene	4770	
78-11-5	PETN	5700	
88-72-2	o-Nitrotoluene	5270	
98-95-3	Nitrobenzene	4260	
99-08-1	m-Nitrotoluene	4720	
99-35-4	1,3,5-Trinitrobenzene	5180	
99-65-0	m-Dinitrobenzene	4650	
99-99-0	p-Nitrotoluene	5070	

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



Printed: Mon Jan 11 09:29:17 2010, Page 135 of 189

Identify Sample Report  
iEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO1010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP\PRO1010810expA1\EXP0108098a

Date: 10-Jan-2010

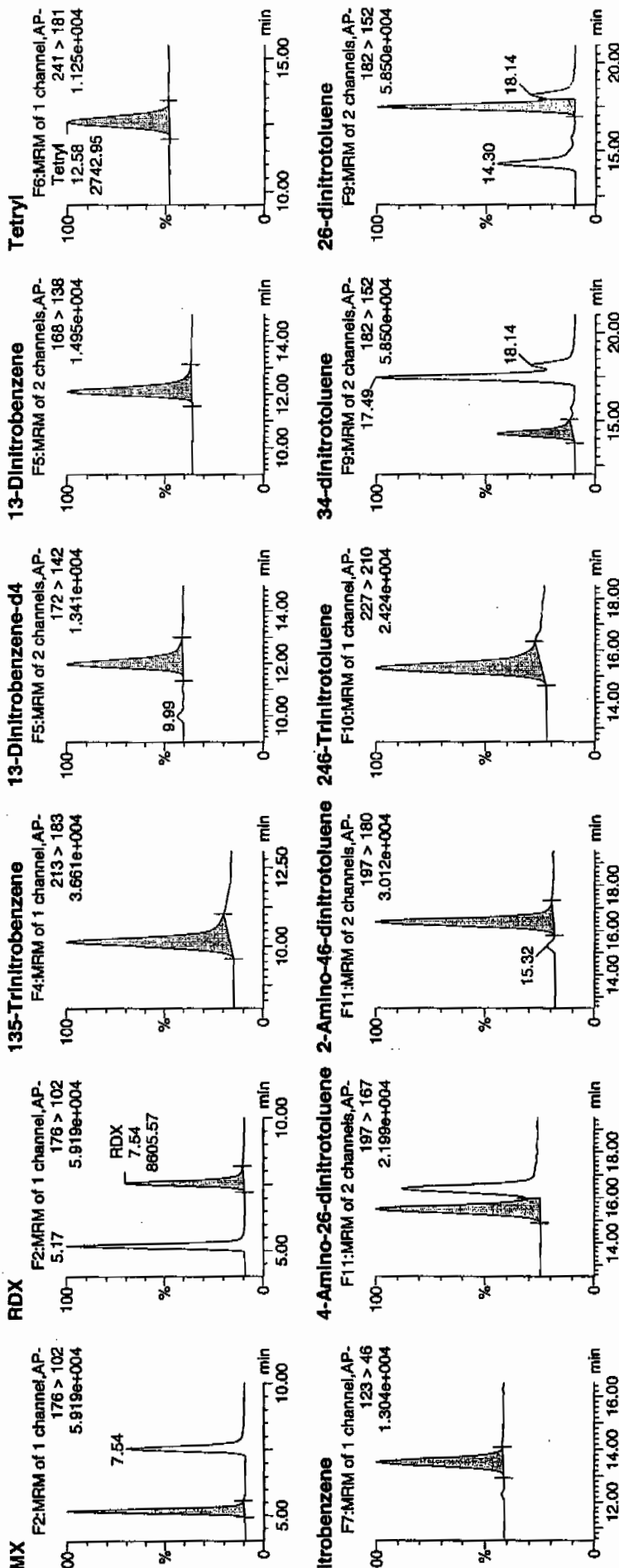
Time: 16:57:57

ID: 1202005107

Label: 3:3,B

1/11/10

12/21/08

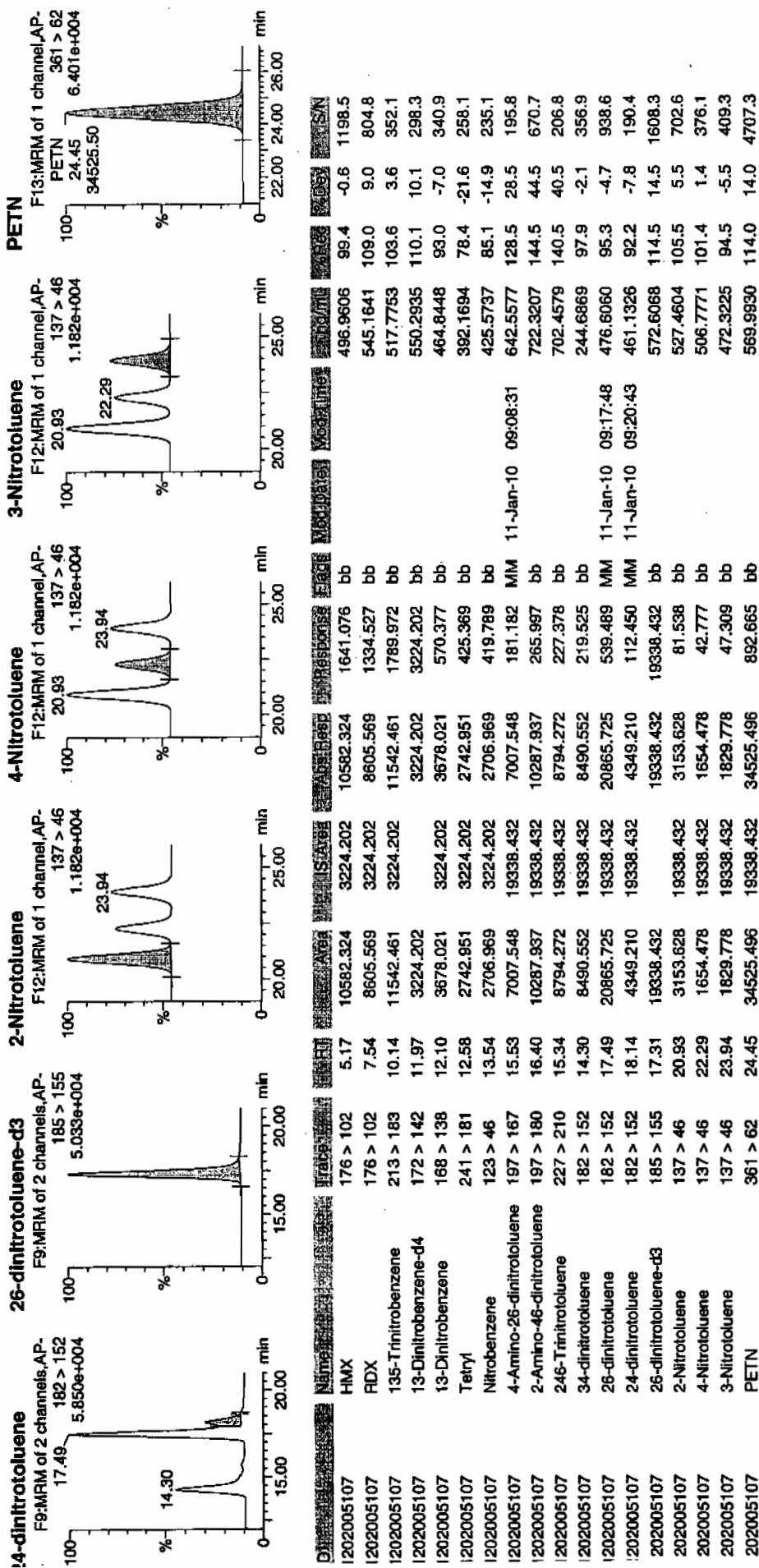


8/11/12/10



Quantify Sample Report  
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO1010810expA1.qld, Time: Mon Jan 11 09:26:07 2010





1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 937030

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 1202005107

Sample Amount 2

Moisture:

Amount Units g

Date Received: 28-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050074.wiff

Date Analyzed: 06-JAN-10 09:36

Units: ug/kg

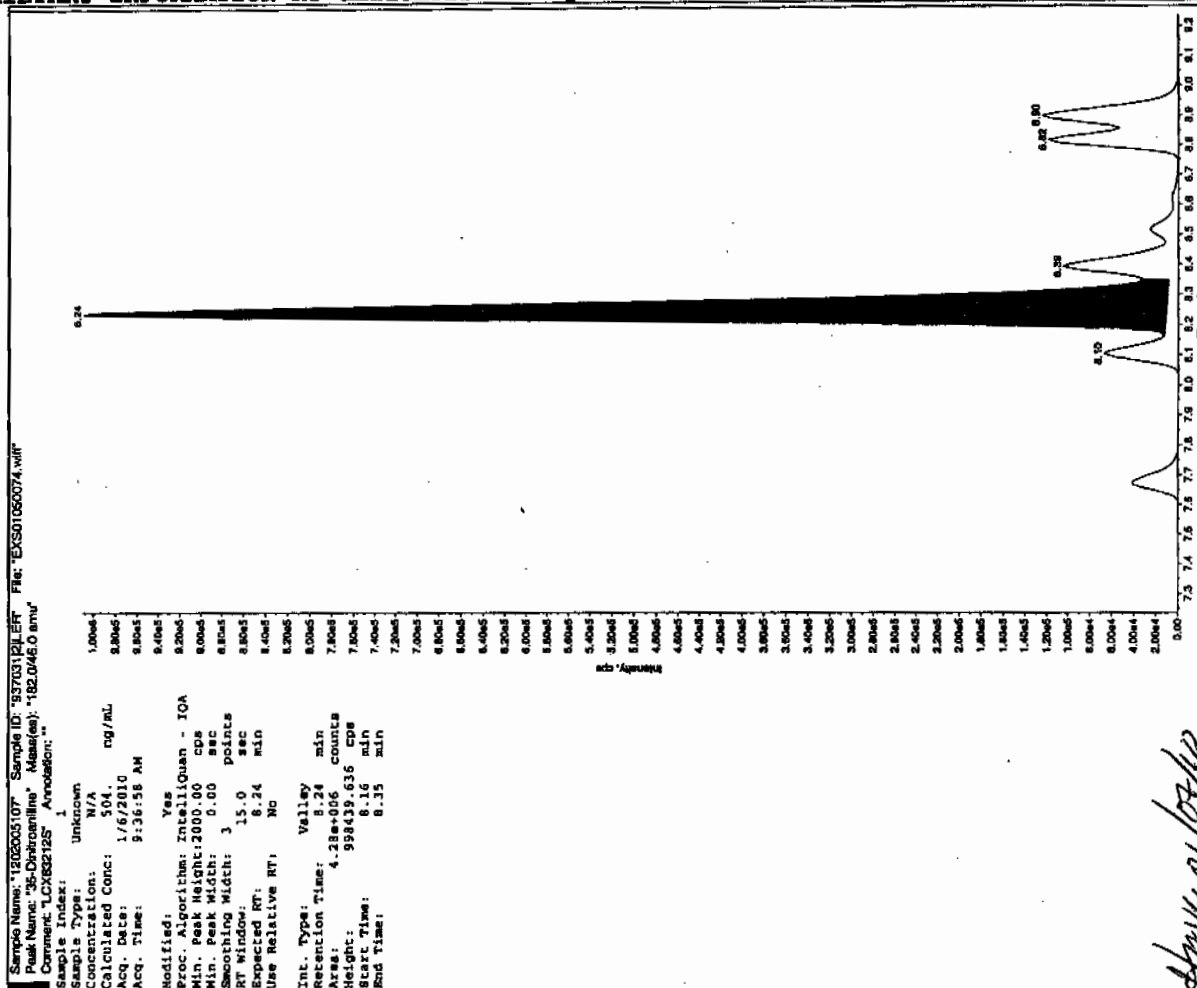
Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	47300	
59229-75-3	2,6-Diamino-4-nitrotoluene	3710	
618-87-1	3,5-Dinitroaniline	5150	
6629-29-4	2,4-Diamino-6-nitrotoluene	3080	
78-30-8	tris(o-cresyl) phosphate	5440	

\*Concentration =

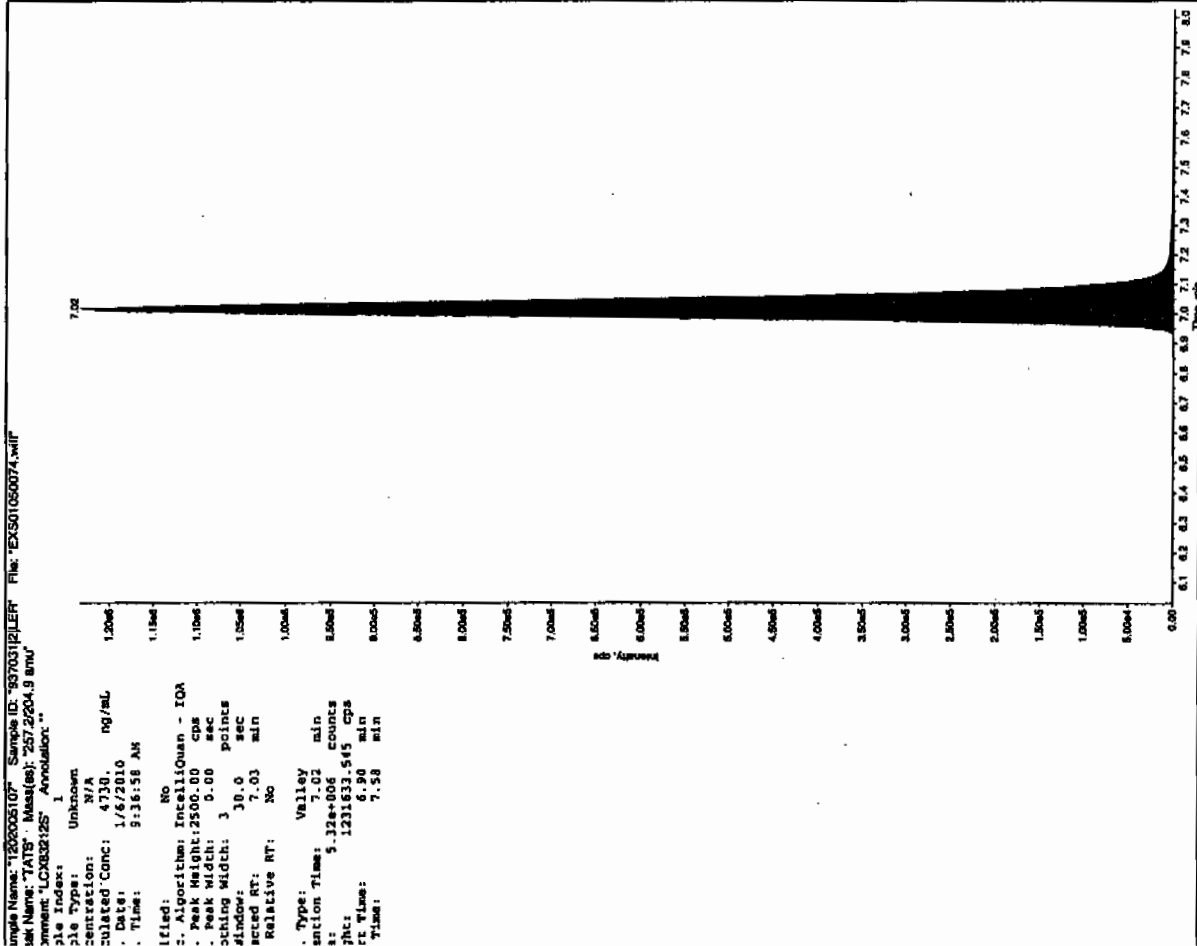
Instrument Value	X	$\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$	X	Dilution Factor
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Before Data 1/17/10



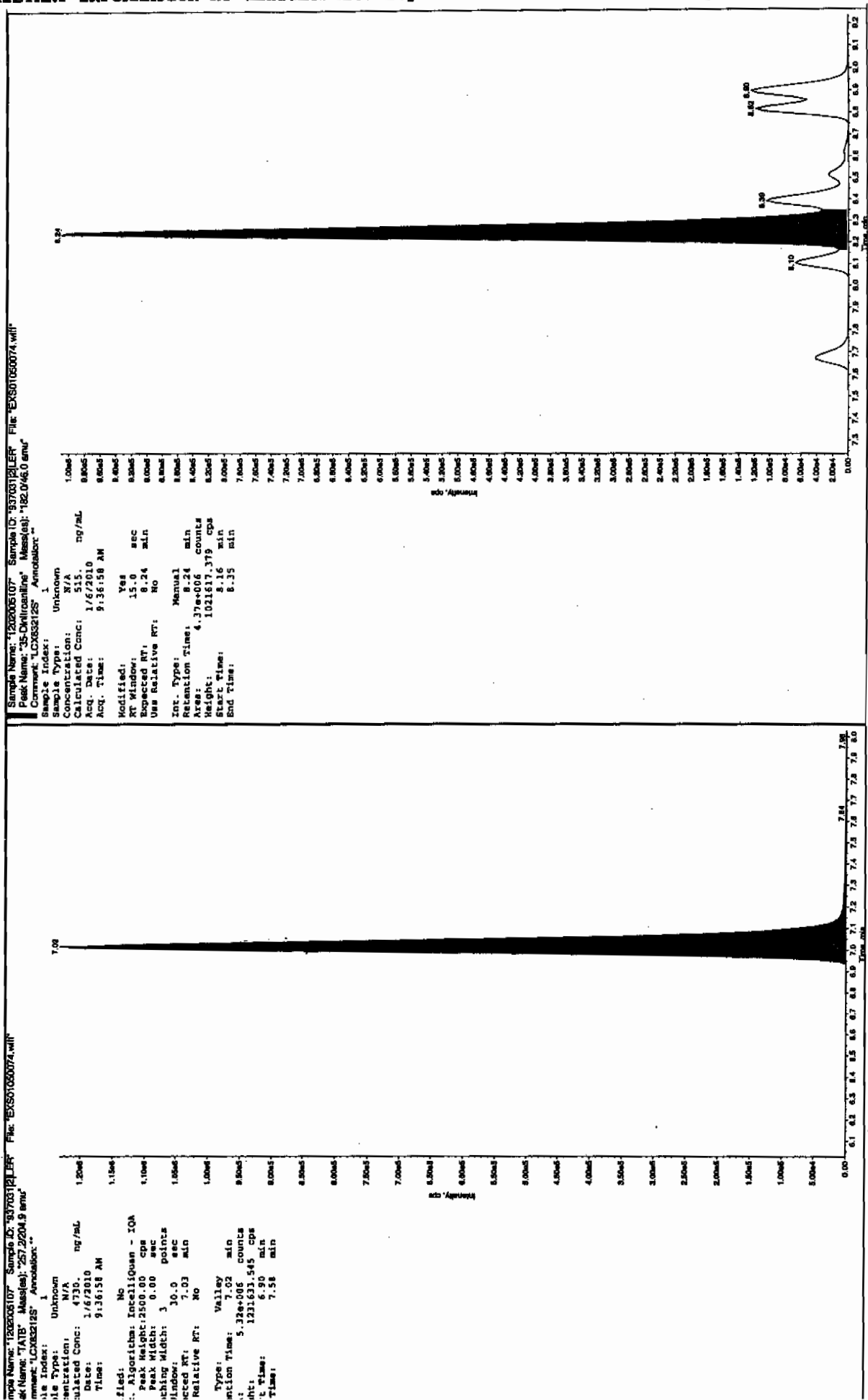
Amu. 21/04/10



EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

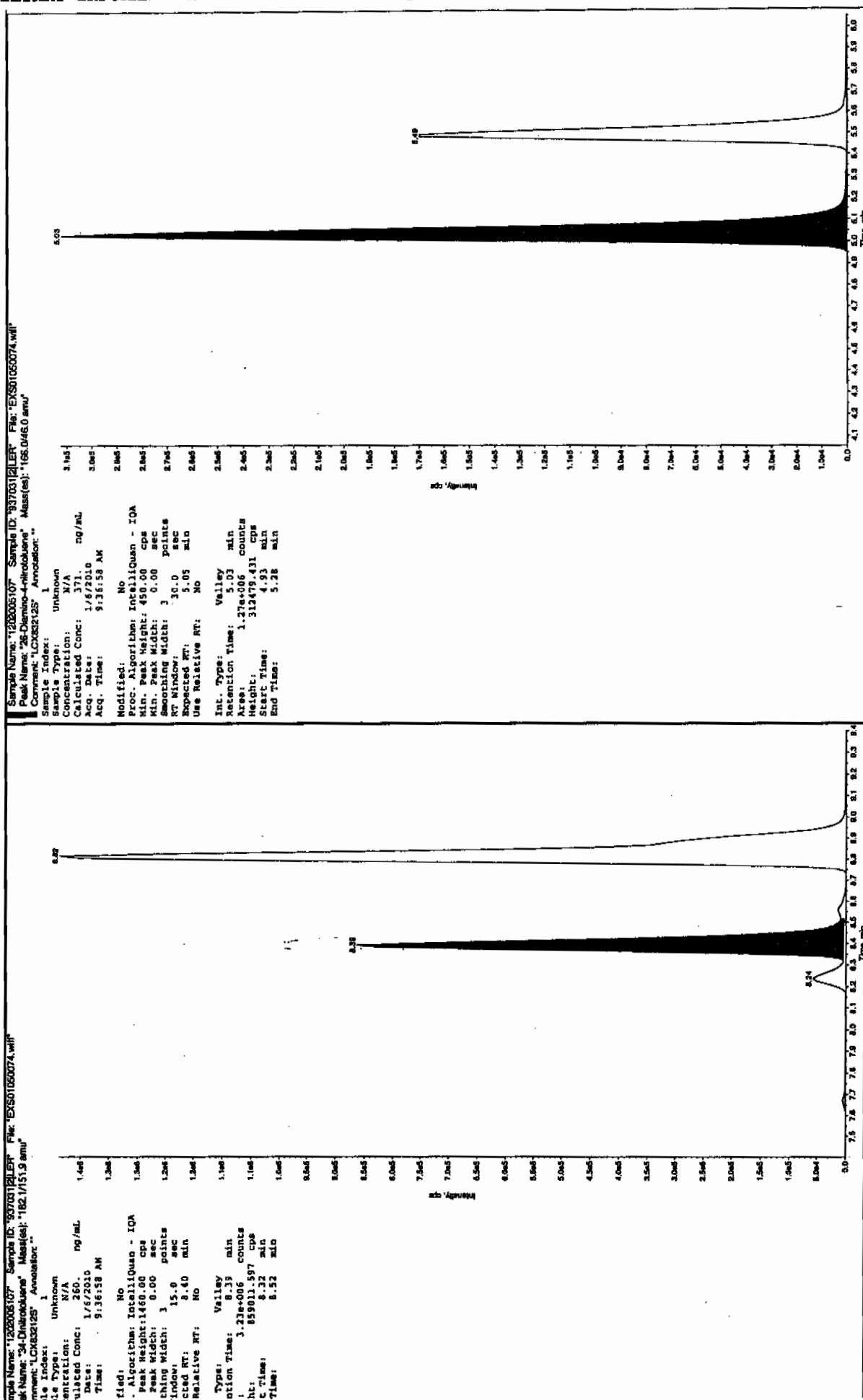


11/11/10  
JL  
JL  
JL



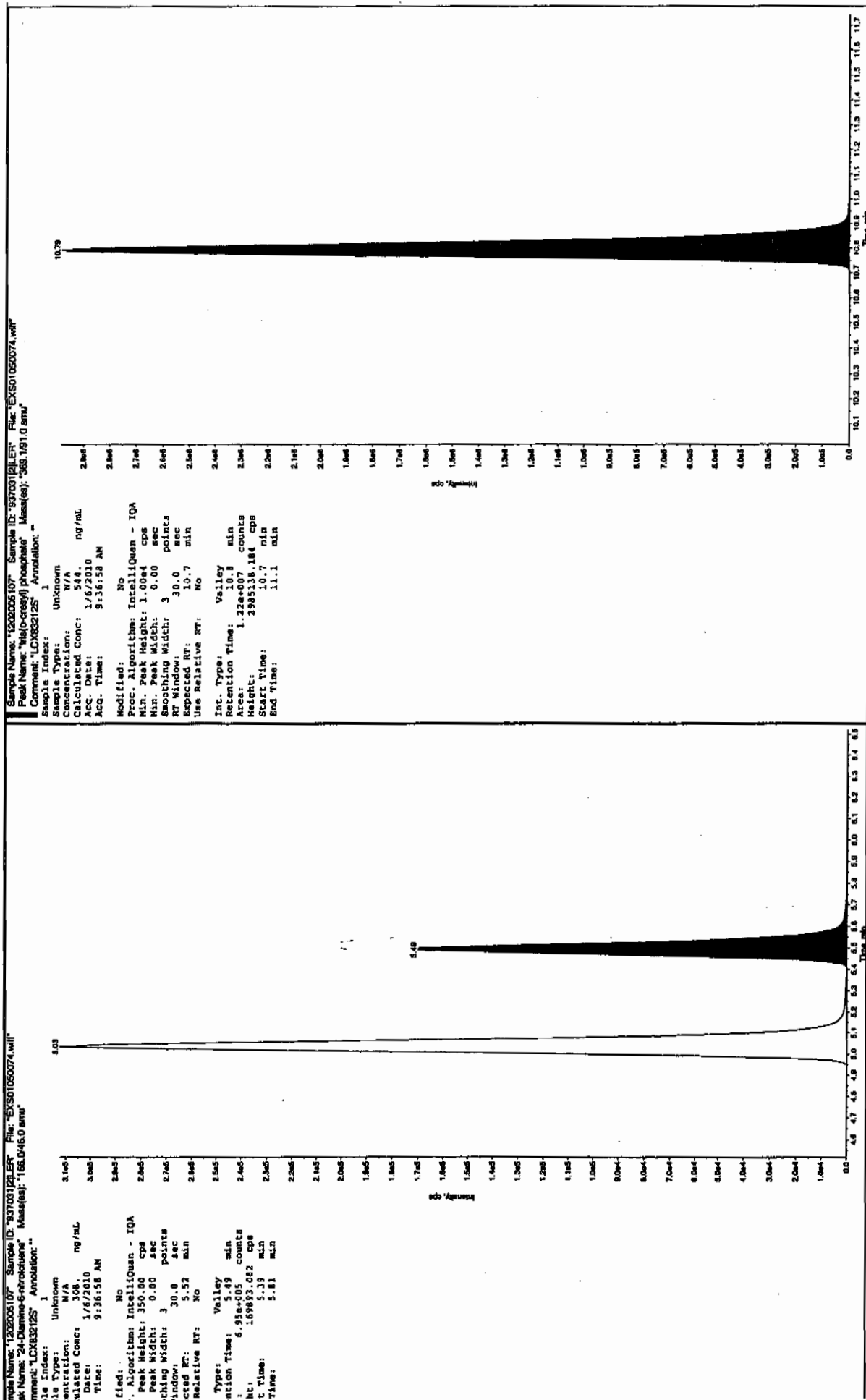
3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





Method 8321A-Modified LCMSMS#4



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553(243457001MS)

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 1202005108

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108100a

Date Analyzed: 10-JAN-10 17:56

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	6030	
121-14-2	2,4-Dinitrotoluene	4940	
121-82-4	RDX	5370	
19406-51-0	4-Amino-2,6-dinitrotoluene	5270	
2691-41-0	HMX	5350	
35572-78-2	2-Amino-4,6-dinitrotoluene	5670	
479-45-8	Tetryl	4390	
606-20-2	2,6-Dinitrotoluene	4940	
78-11-5	PETN	6370	
88-72-2	o-Nitrotoluene	4700	
98-95-3	Nitrobenzene	4730	
99-08-1	m-Nitrotoluene	4740	
99-35-4	1,3,5-Trinitrobenzene	5670	
99-65-0	m-Dinitrobenzene	5040	
99-99-0	p-Nitrotoluene	4350	

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



Identify Sample Report  
IEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PROV010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PROV010810expA1.qld

Date: 10-Jan-2010

Time: 17:56:55

Job: 1202005108

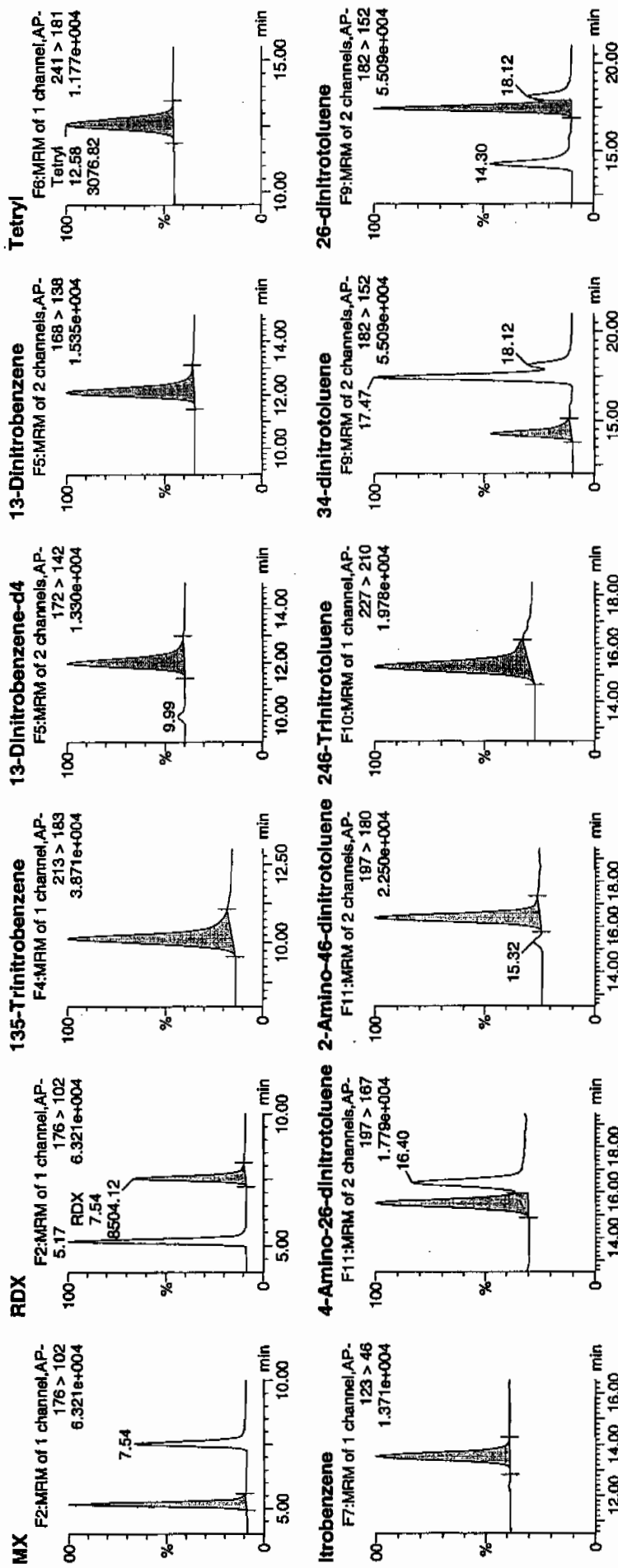
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1/11/10

21

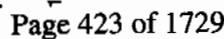
243457001 MS

937031 / 8012



8/11/10





EL SOP GL-OA-E-056, Method 8321A-Modified / MM = Manual Modification



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553(243457001MS)

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 1202005108

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050076.wiff

Date Analyzed: 06-JAN-10 10:08

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	17600	
59229-75-3	2,6-Diamino-4-nitrotoluene	4330	
618-87-1	3,5-Dinitroaniline	5110	
6629-29-4	2,4-Diamino-6-nitrotoluene	4260	
78-30-8	tris(o-cresyl) phosphate	5060	

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



Sample Name: '1202005108' Sample ID: '93703121ER' File: 'EX501060076.wif'  
Peak Name: '35-Dinitroaniline' Mass(es): '182.045.0 amu'

```

Sample Index: 1
Comment: "LC#832125" Annotation: ""
Sample Name: Unknown
Sample Type: N/A
Concentration: 583.
Sample Size: 1.76/20.0
Calculated Conc: 1.76/20.0
Acq. Date: 10-08-20 AM
Acq. Time:
Modified: Yes
Proc. Algorithm: IntelliQuan - IQA
Min. Peak Height: 3000.0 cps
Min. Peak Width: 0.00 sec
Smoothing Width: 3.00 points
Min. S/N: 15.0
Expected RT: 8.26 min
Use Relative RT: No
Valent. Type: Valley
Retention Time: 6.26 min
Area: 4.89e+006 counts
Height: 107733.276 cps
Width: 8.49 min
End Times: 8.49 min

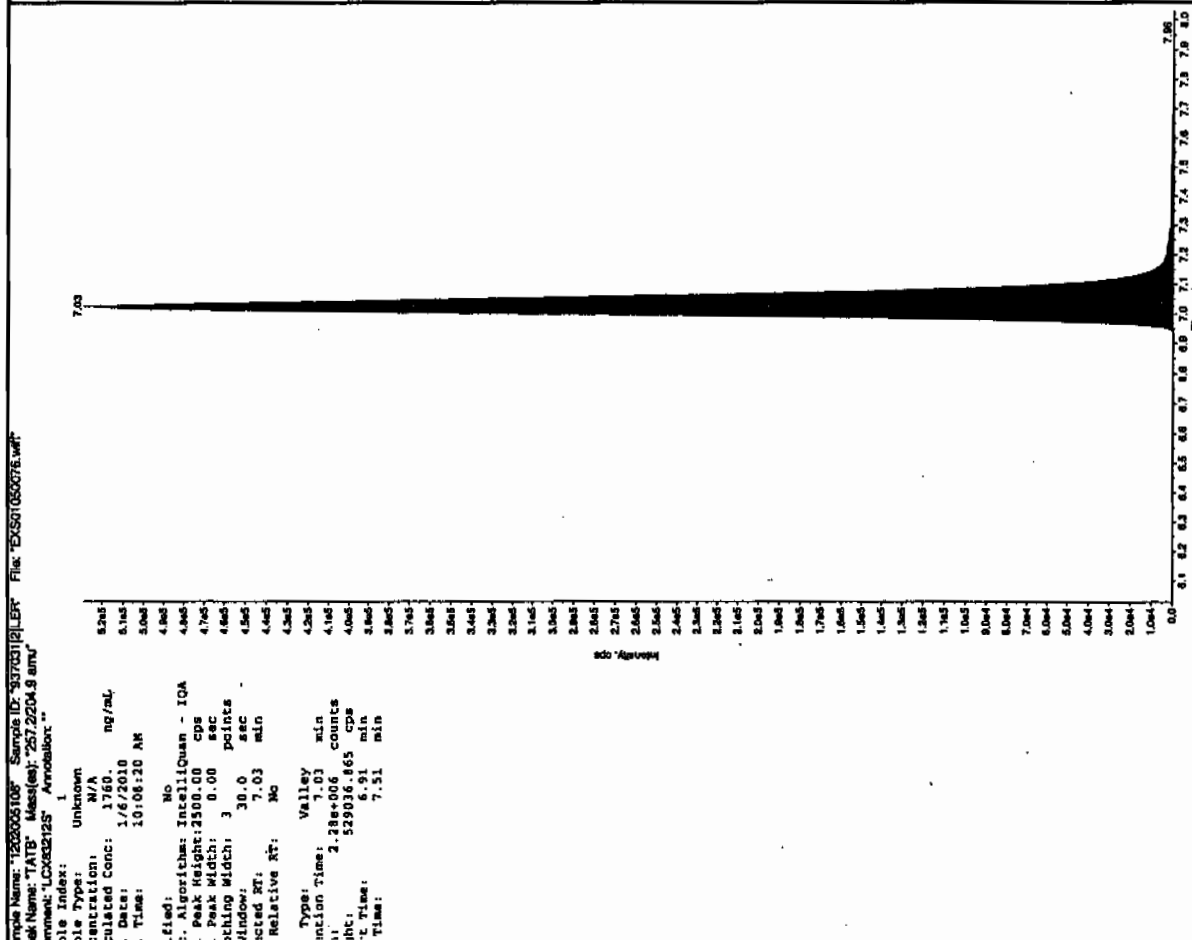
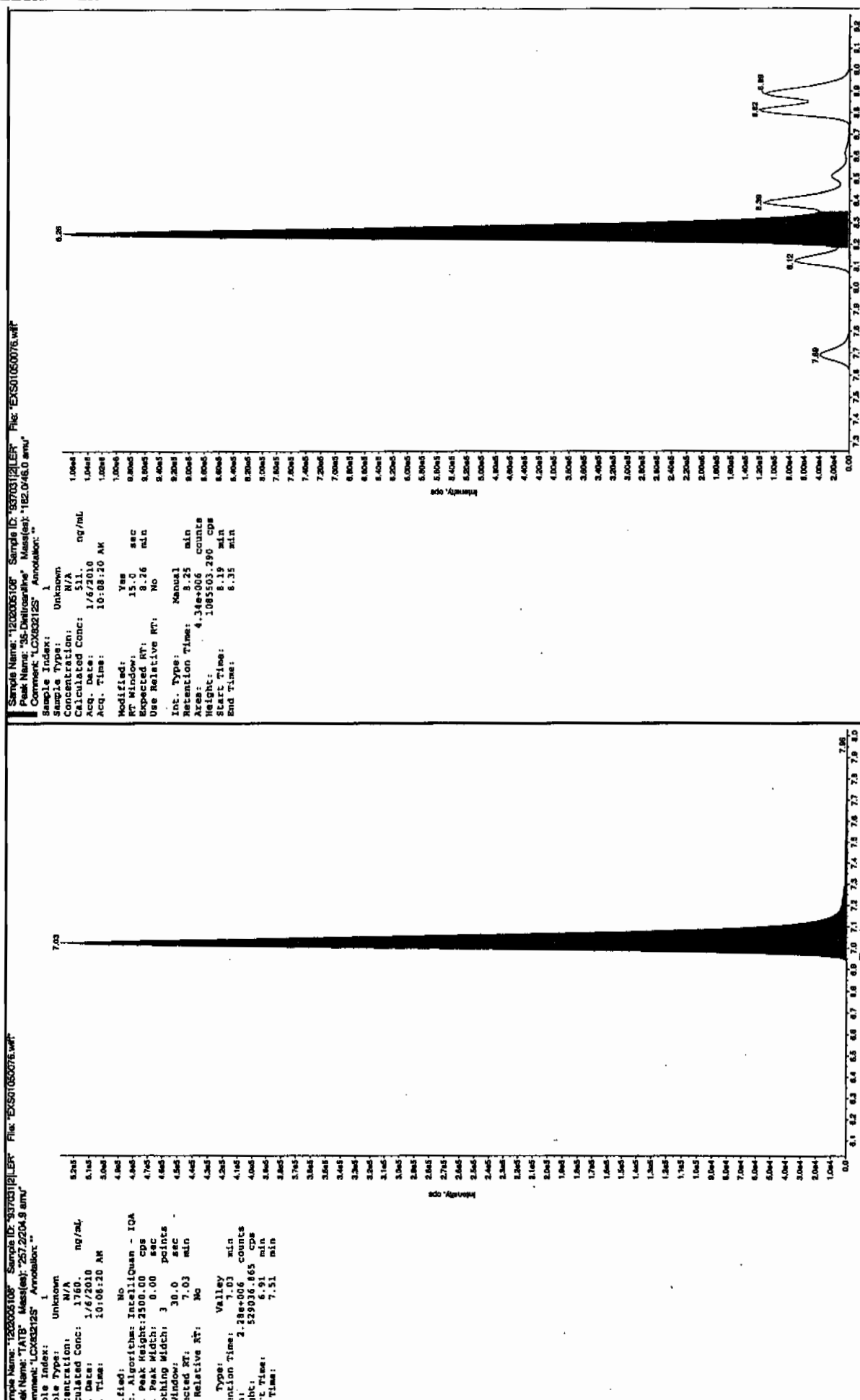
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Hyman 01/02/10

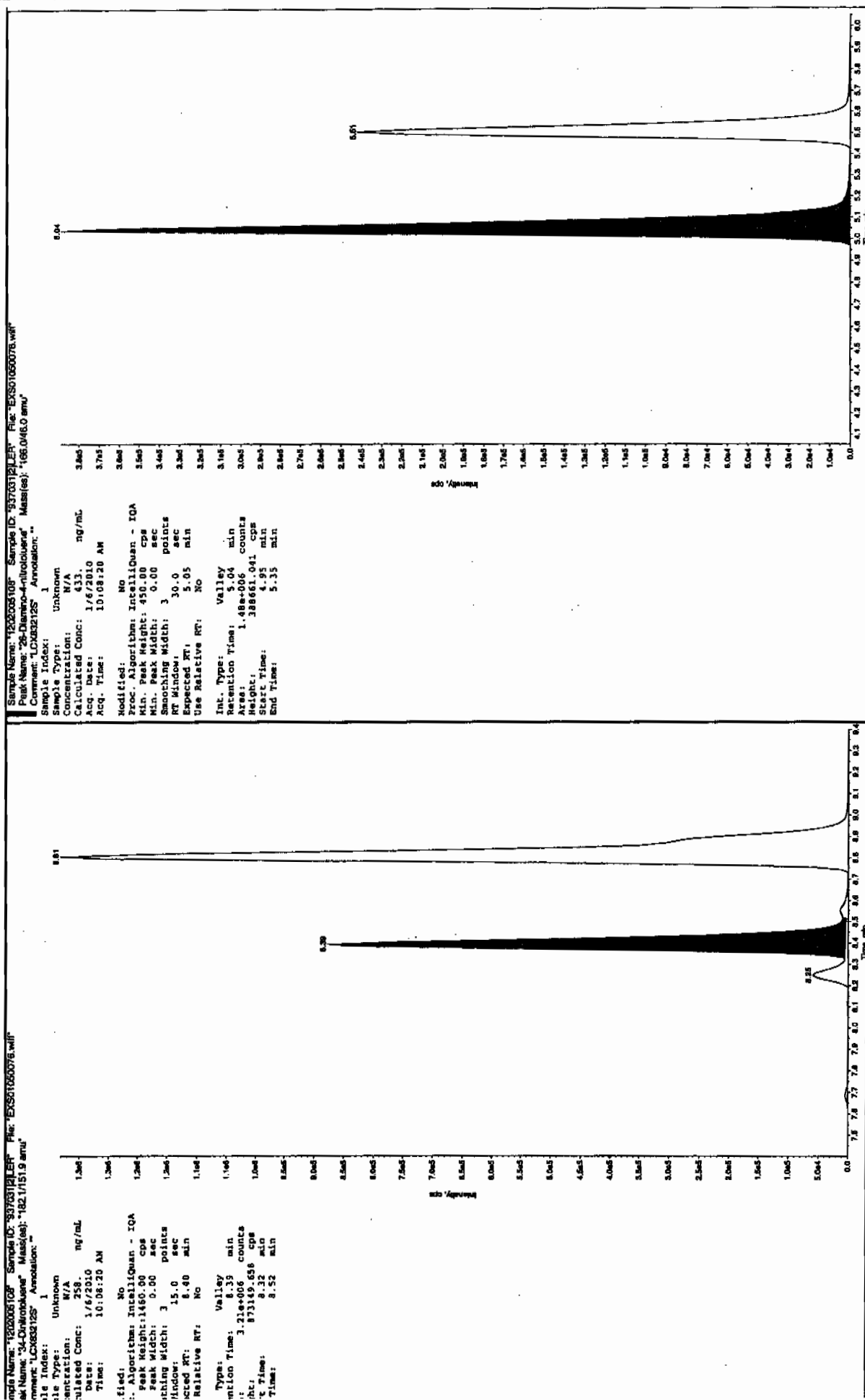


01/11/17  
J. J. J.



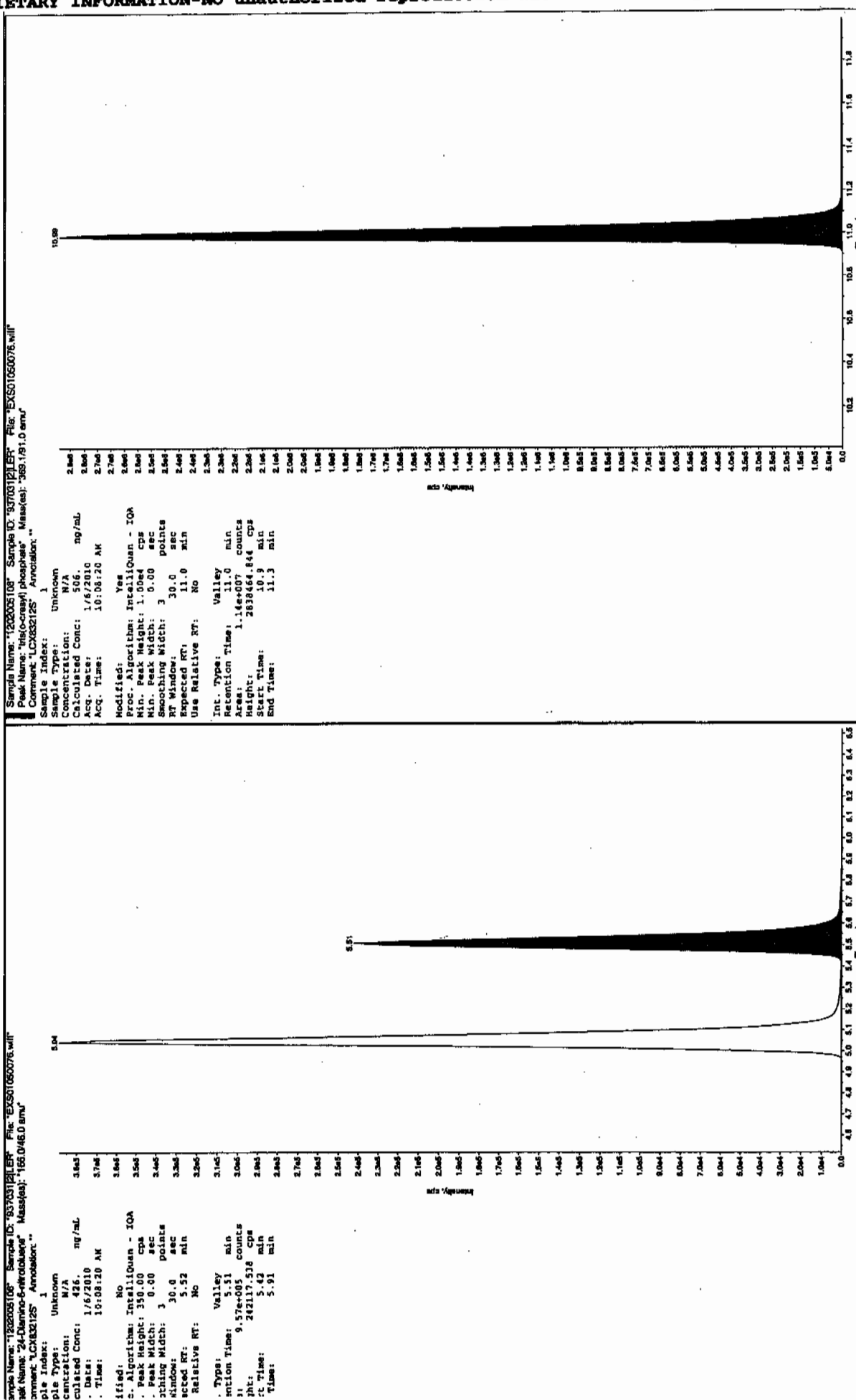
IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553(243457001MSD)

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 1202005109

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0108101a

Date Analyzed: 10-JAN-10 18:26

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	5980	
121-14-2	2,4-Dinitrotoluene	5450	
121-82-4	RDX	5570	
19406-51-0	4-Amino-2,6-dinitrotoluene	5750	
2691-41-0	HMX	5340	
35572-78-2	2-Amino-4,6-dinitrotoluene	6080	
479-45-8	Tetryl	4440	
606-20-2	2,6-Dinitrotoluene	4870	
78-11-5	PETN	6670	
88-72-2	o-Nitrotoluene	4960	
98-95-3	Nitrobenzene	4790	
99-08-1	m-Nitrotoluene	5460	
99-35-4	1,3,5-Trinitrobenzene	5610	
99-65-0	m-Dinitrobenzene	5000	
99-99-0	p-Nitrotoluene	4520	

\*Concentration =

Instrument Value X  $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$  X Dilution Factor



Quantify Sample Report  
JEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO1010810expA1.qld, Time: Mon Jan 11 09:26:07 2010

Sample Name: C:\MASSLYNX\NEW\_EXP\PRO1010810expA1.qld

Date: 10-Jan-2010

Time: 18:26:24

ID: 1202005109

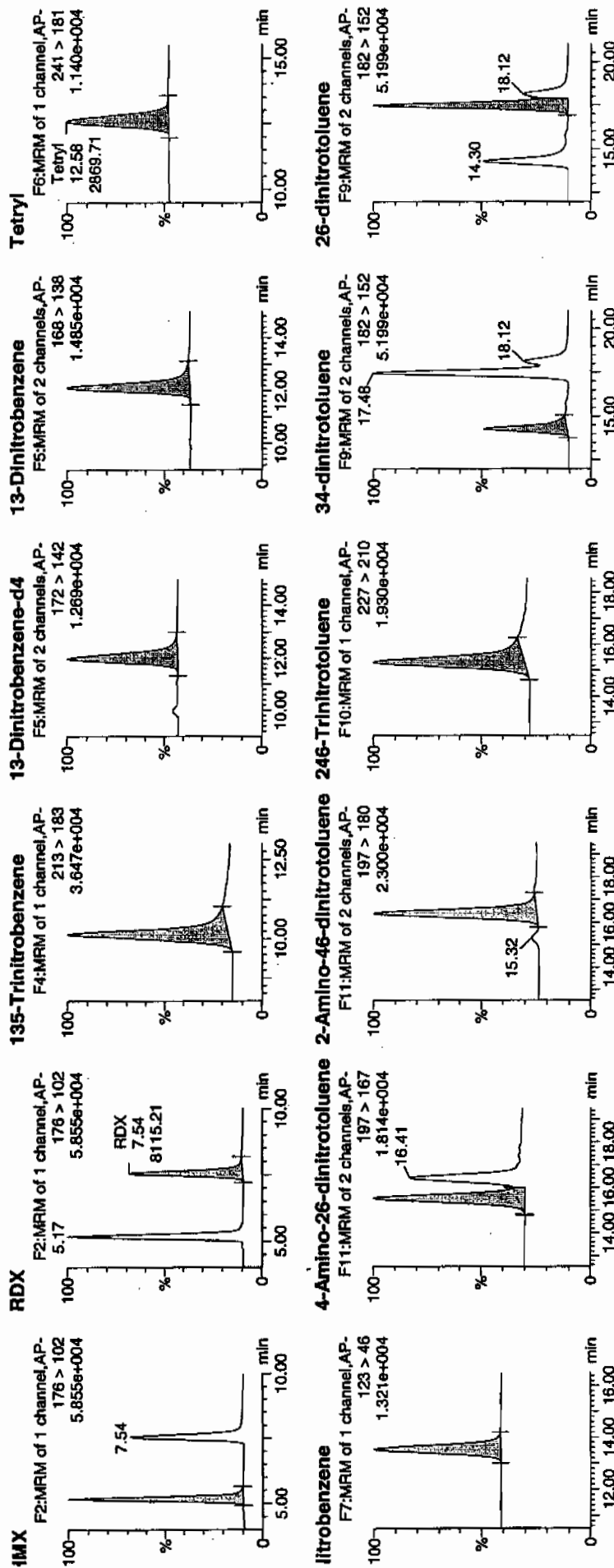
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NOT  
1/11/10

21

243457001WSD

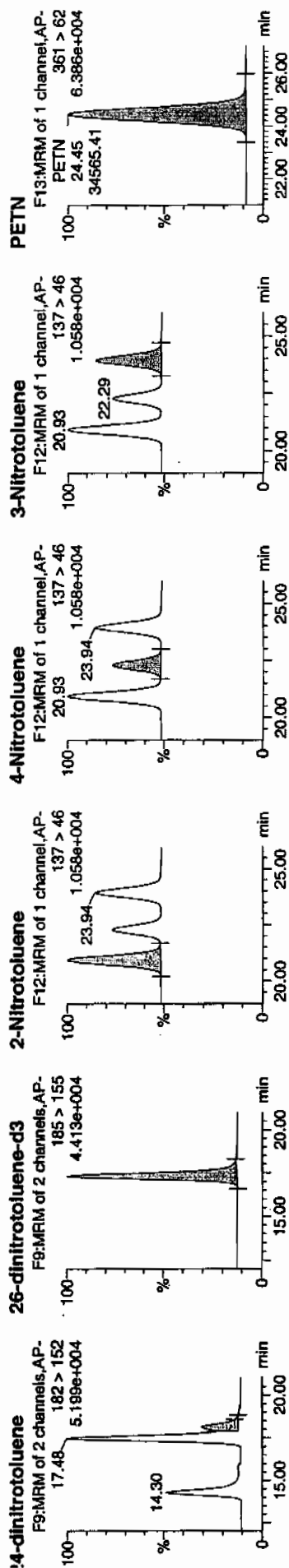
WAV/937031/Solvent



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Dataset: C:\MASSLYNX\New\_Exp.PRO\010810expA1.qld, Time: Mon Jan 11 09:26:07 2010



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HMX	176 > 102	5.17	10504.867	2978.490	10504.867	1763.455	db		534.0201	106.8	6.8	1281.1
RDX	176 > 102	7.54	8115.210	2978.490	8115.210	1362.303	bb		556.5107	111.3	11.3	835.0
135-Trinitrobenzene	213 > 183	10.14	11546.074	2978.490	11546.074	1938.243	bb		560.6649	112.1	12.1	1109.5
13-Dinitrobenzene-d4	172 > 142	11.97	2978.490	2978.490	2978.490	2978.490	bb		508.3564	101.7	1.7	319.6
13-Dinitrobenzene	168 > 138	12.14	3657.967	2978.490	3657.967	614.064	bb		500.4488	100.1	0.1	567.4
Tetryl	241 > 181	12.58	2869.709	2978.490	2869.709	481.739	bb		444.1397	88.8	-11.2	428.0
Nitrobenzene	123 > 46	13.54	2817.105	2978.490	2817.105	472.908	bb		479.4250	95.9	-4.1	226.7
4-Amino-26-dinitrotoluene	197 > 167	15.53	5380.360	16580.193	5380.360	162.253	MM	11-Jan-10 09:08:54	575.4254	115.1	15.1	206.2
2-Amino-46-dinitrotoluene	197 > 180	16.41	7426.883	16580.193	7426.883	223.969	bb		608.1910	121.6	21.6	884.8
246-Trinitrotoluene	227 > 210	15.31	6420.238	16580.193	6420.238	193.612	bb		598.1405	119.6	19.6	439.6
34-dinitrotoluene	182 > 152	14.30	8152.432	16580.193	8152.432	245.849	bb		274.0272	109.6	9.6	373.9
26-dinitrotoluene	182 > 152	17.48	18277.711	16580.193	18277.711	551.191	MM	11-Jan-10 09:18:04	486.9445	97.4	-2.6	885.4
24-dinitrotoluene	182 > 152	18.12	4407.809	16580.193	4407.809	132.924	MM	11-Jan-10 09:20:14	545.0921	109.0	9.0	186.3
26-dinitrotoluene-d3	185 > 155	17.31	16580.193	16580.193	16580.193	16580.193	bb		490.9359	98.2	-1.8	1154.6
2-Nitrotoluene	137 > 46	20.93	2542.742	16580.193	2542.742	76.680	bb		496.0362	99.2	-0.8	558.2
4-Nitrotoluene	137 > 46	22.29	1263.865	16580.193	1263.865	38.114	bb		451.5318	90.3	-9.7	290.1
3-Nitrotoluene	137 > 46	23.94	1812.846	16580.193	1812.846	54.669	bb		545.7991	109.2	9.2	391.1
PETN	361 > 62	24.45	34565.410	16580.193	34565.410	1042.371	bb		667.4260	133.5	33.5	5933.3



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7553(243457001MSD)

Lab Code: GEL

GEL Job No (SDG) 10-1038

Matrix: SOIL

GEL Sample ID: 1202005109

Sample Amount 2

Moisture: 20.7

Amount Units g

Date Received: 23-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937030

Concentrated Extract Volume (mL) 10

Date Extracted: 30-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01050077.wiff

Date Analyzed: 06-JAN-10 10:24

Units: ug/kg

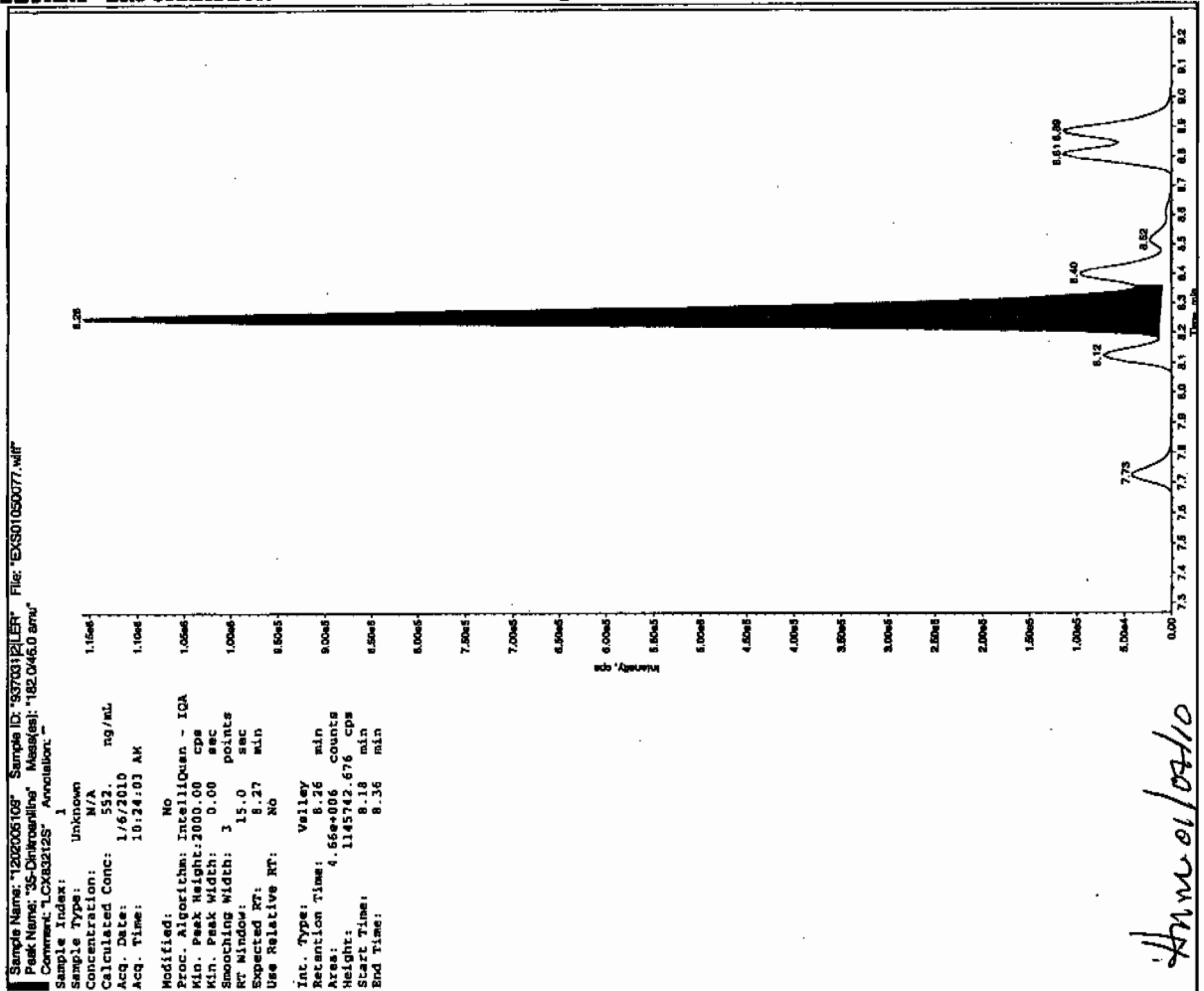
Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	9170	
59229-75-3	2,6-Diamino-4-nitrotoluene	4330	
618-87-1	3,5-Dinitroaniline	5640	
6629-29-4	2,4-Diamino-6-nitrotoluene	4020	
78-30-8	tris(o-cresyl) phosphate	5140	

\*Concentration =

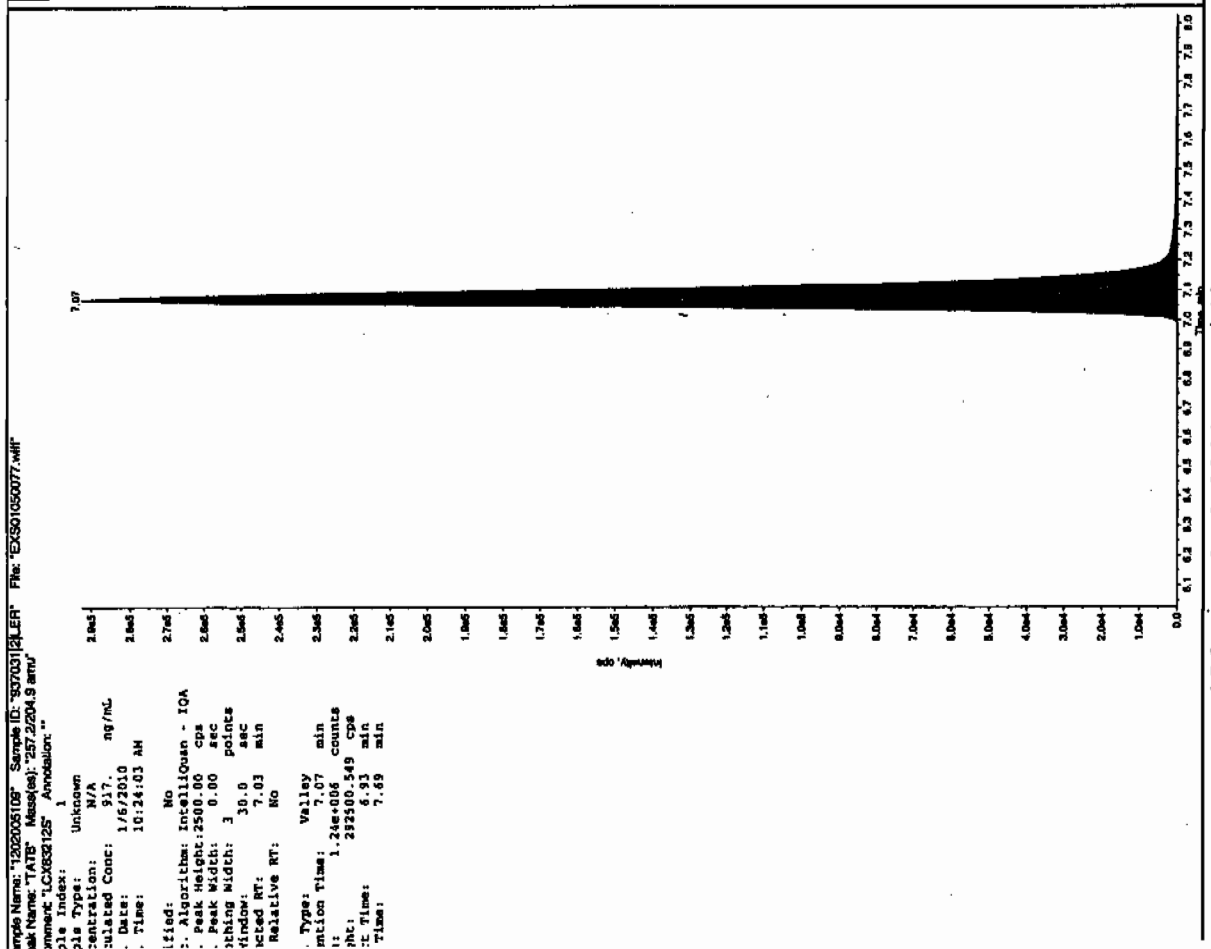
Instrument Value X Concentrated Extract Volume X Dilution Factor  
Sample Amount



*Debra  
11/11/10*



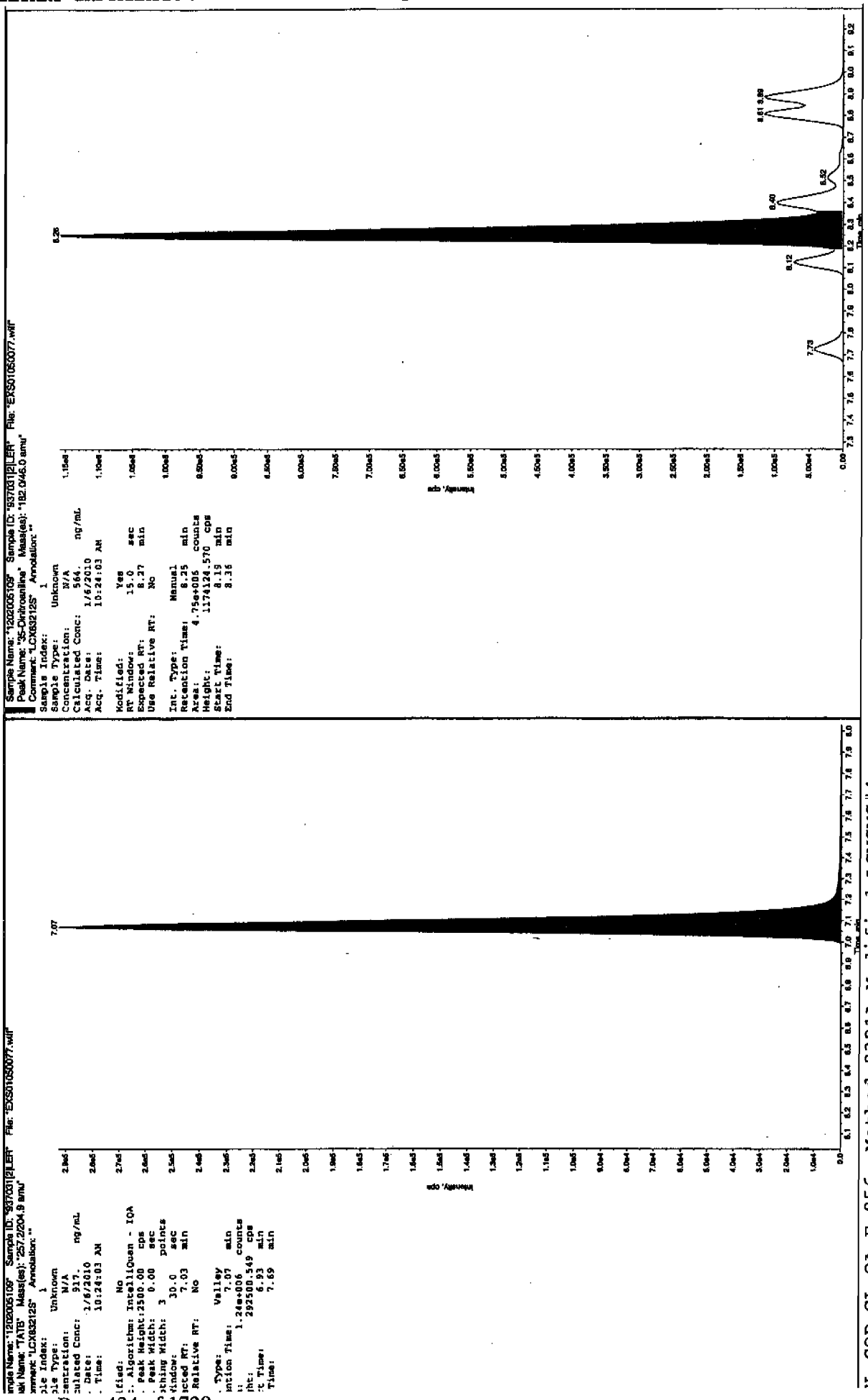
*Amuel/08/10*



IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

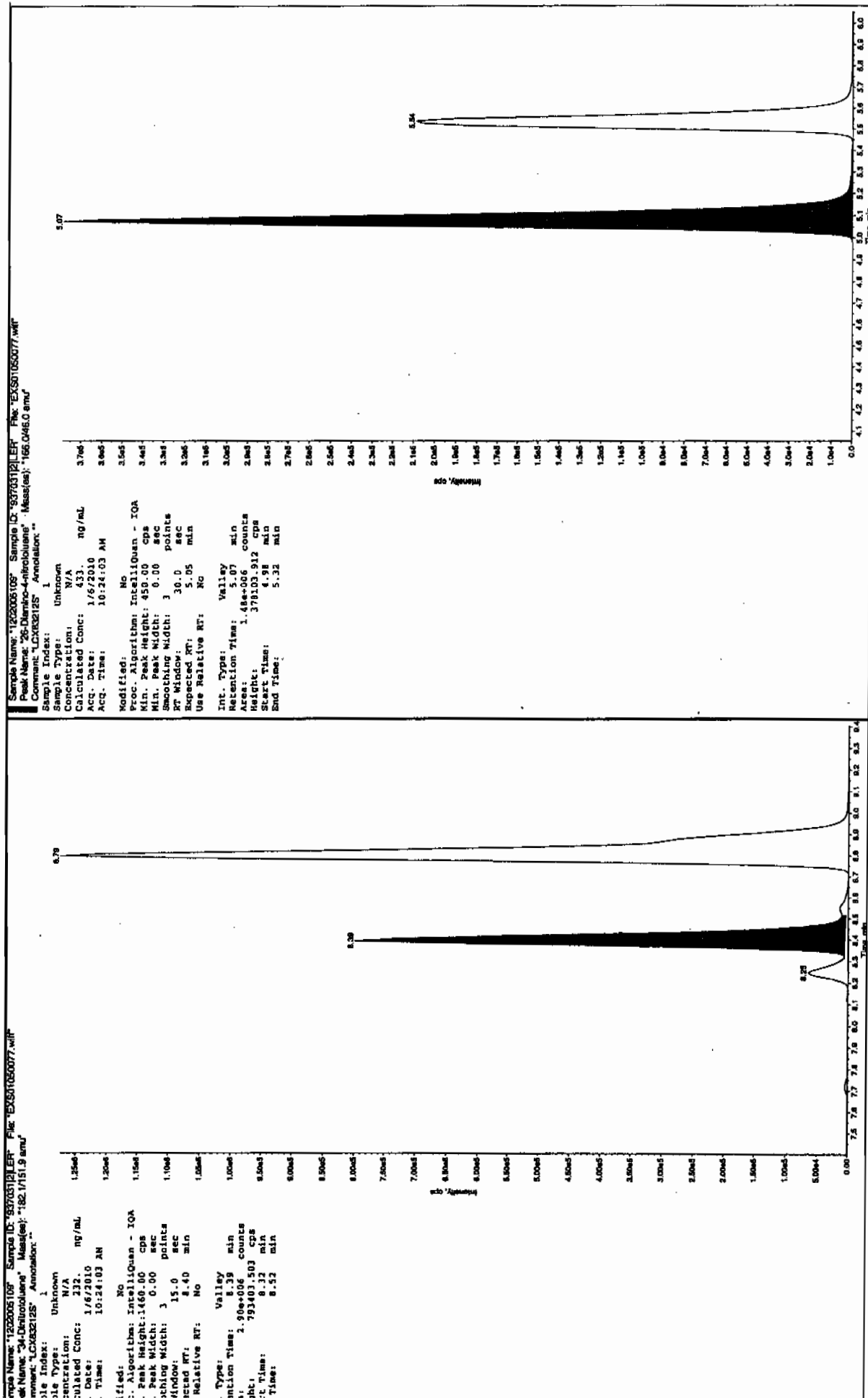


1/17/10  
Jey  
1/17/10



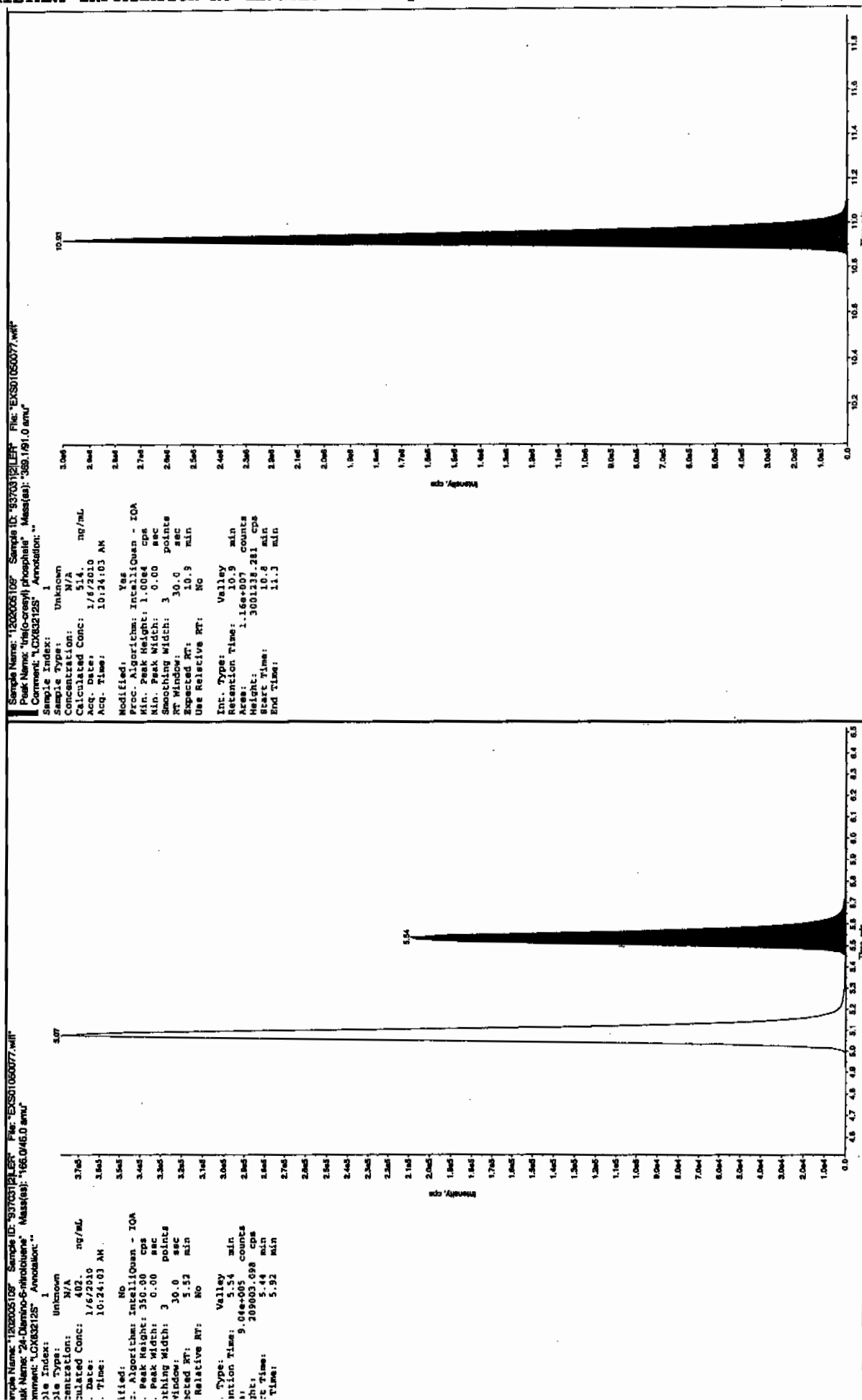
IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



# MISCELLANEOUS DATA



# Prep Logbook Nitroaromatics and Nitramines by High Performance Liquid Chromatography (HPLC)

Batch ID: 937030 Verified by: \_\_\_\_\_  
 Analyst: Sirena White  
 Method: SW846 8330 PREP  
 Lab SOP: GL-OA-E-033 REV# 17  
 Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1202005106 MB	30-DEC-2009 15:06:49	2	10	5
1202005107 LCS	30-DEC-2009 15:06:49	2	10	5
243457001	30-DEC-2009 15:06:49	2	10	5
1202005108 MS (243457001)	30-DEC-2009 15:06:49	2	10	5
1202005109 MSD (243457001)	30-DEC-2009 15:06:49	2	10	5
243457002	30-DEC-2009 15:06:49	2	10	5
243457003	30-DEC-2009 15:06:49	2	10	5
243457004	30-DEC-2009 15:06:49	2	10	5
243502001	30-DEC-2009 15:06:49	2	10	5
243502002	30-DEC-2009 15:06:49	2	10	5
243502003	30-DEC-2009 15:06:49	2	10	5
243502004	30-DEC-2009 15:06:49	2	10	5
243502005	30-DEC-2009 15:06:49	2	10	5
243502006	30-DEC-2009 15:06:49	2	10	5
243502007	30-DEC-2009 15:06:49	2	10	5
243502008	30-DEC-2009 15:06:49	2	10	5
243509001	30-DEC-2009 15:06:49	2	10	5
243509002	30-DEC-2009 15:06:49	2	10	5
243509003	30-DEC-2009 15:06:49	2	10	5

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1202005107	8321 Explosives LCS	DXC091127-03	.1	mL	Final Solvent: ACN
LCS	1202005107	8321 LANL Explosives Mix 10mg/L	UXC091117-03.1	1	mL	
MS	1202005108	8321 Explosives LCS	DXC091127-03	.1	mL	
MS	1202005108	8321 LANL Explosives Mix 10mg/L	UXC091117-03.1	1	mL	
MSD	1202005109	8321 Explosives LCS	DXC091127-03	.1	mL	
MSD	1202005109	8321 LANL Explosives Mix 10mg/L	UXC091117-03.1	1	mL	
SURR	All	3,4-Dinitrotoluene (8330 Sur.) 100ppm	DXP091223-02	.05	mL	



GEL ORGANIC RUN LOG

INSTRUMENT ID: LCMSMS #1

Date: 01/08/10  
 Extr. Injection Volume: 50uL  
 Sequence Number: 010810expA  
 Initial Calibration Date: 01/08/10  
 Method: SW846 8321A-Modified  
 Int. Std.: UXX091201-01.4  
 Mobile Phase Lot#: 1250684, 1236350  
 Standard-Samp Reagent Lot#: 1246693, 1246195  
 Reviewed BY: *John*  
 Date: *2/12/10*  
 SOP: GL-OA-E-056 Rev.12  
 Alt Check Std. ID: WXX100108-07

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC_Flag
EXP0108001a	XIBLK01	MAP	1/8/10 17:15			1		USE	B
EXP0108002a	XIBLK01	MAP	1/8/10 17:44			1		USE	B
EXP0108003a	WXXICAL-01	MAP	1/8/10 18:14			1		USE	I
EXP0108004a	WXXICAL-02	MAP	1/8/10 18:43			1		USE	I
EXP0108005a	WXXICAL-03	MAP	1/8/10 19:13			1		USE	I
EXP0108006a	WXXICAL-04	MAP	1/8/10 19:42			1		USE	I
EXP0108007a	WXXICAL-05	MAP	1/8/10 20:12			1		USE	I
EXP0108008a	WXXICAL-06	MAP	1/8/10 20:41			1		USE	I
EXP0108009a	XIBLK02	MAP	1/8/10 21:11			1		USE	B
EXP0108010a	WXXICV	MAP	1/8/10 21:40			1		USE	C
EXP0108011a	XIBLK03	MAP	1/8/10 22:10			1		USE	B
EXP0108012a	WXXCRI	MAP	1/8/10 22:39			1		USE	C
EXP0108013a	1202005625	MAP	1/8/10 23:09	937041	10-1073	2	LANL	USE	S
EXP0108014a	243519005	MAP	1/8/10 23:38	937041	10-1074	2	LANL	USE	S
EXP0108015a	243519007	MAP	1/9/10 0:08	937041	10-1074	2	LANL	USE	S
EXP0108016a	243519010	MAP	1/9/10 0:37	937041	10-1074	2	LANL	USE	S
EXP0108017a	243519011	MAP	1/9/10 1:07	937041	10-1074	2	LANL	USE	S
EXP0108018a	WXXCCV	MAP	1/9/10 1:36			1		USE	C
EXP0108019a	XIBLK04	MAP	1/9/10 2:05			1		USE	B
EXP0108020a	WXXCRI	MAP	1/9/10 2:35			1		USE	C
EXP0108021a	1201998993	MAP	1/9/10 3:04	934323	Various	2	LANL	USE	S
EXP0108022a	1201998994	MAP	1/9/10 3:34	934323	Various	2	LANL	USE	S
EXP0108023a	243012005	MAP	1/9/10 4:03	934323	10-937	2	LANL	USE	S
EXP0108024a	243016003	MAP	1/9/10 4:33	934323	10-932	2	LANL	USE	S
EXP0108025a	1201998995	MAP	1/9/10 5:02	934323	10-932	2	LANL	USE	S
EXP0108026a	1201998996	MAP	1/9/10 5:32	934323	10-932	2	LANL	USE	S
EXP0108027a	243016007	MAP	1/9/10 6:01	934323	10-932	2	LANL	USE	S
EXP0108028a	WXXCCV	MAP	1/9/10 6:31			1		USE	C
EXP0108029a	XIBLK05	MAP	1/9/10 7:00			1		USE	B
EXP0108030a	WXXCRI	MAP	1/9/10 7:30			1		USE	C
EXP0108031a	1202005117	MAP	1/9/10 7:59	937035	10-1070	2	LANL	USE	S



EXP0108032a	1202005118	MAP	1/9/10 8:29	937035	10-1070	2	LANL	USE	S
EXP0108033a	243510002	MAP	1/9/10 8:58	937035	10-1070	2	LANL	USE	S
EXP0108034a	1202005119	MAP	1/9/10 9:28	937035	10-1070	2	LANL	USE	S
EXP0108035a	1202005120	MAP	1/9/10 9:57	937035	10-1070	2	LANL	USE	S
EXP0108036a	243510003	MAP	1/9/10 10:27	937035	10-1070	2	LANL	USE	S
EXP0108037a	243510004	MAP	1/9/10 10:56	937035	10-1070	2	LANL	USE	S
EXP0108038a	243510005	MAP	1/9/10 11:26	937035	10-1070	2	LANL	USE	S
EXP0108039a	243510006	MAP	1/9/10 11:55	937035	10-1070	2	LANL	USE	S
EXP0108040a	243510007	MAP	1/9/10 12:25	937035	10-1070	2	LANL	USE	S
EXP0108041a	WXXCCV	MAP	1/9/10 12:54			1		USE	C
EXP0108042a	XIBLK06	MAP	1/9/10 13:24			1		USE	B
EXP0108043a	WXXCRI	MAP	1/9/10 13:53			1		USE	C
EXP0108044a	243510008	MAP	1/9/10 14:23	937035	10-1070	2	LANL	USE	S
EXP0108045a	243510009	MAP	1/9/10 14:53	937035	10-1070	2	LANL	USE	S
EXP0108046a	243510010	MAP	1/9/10 15:22	937035	10-1070	2	LANL	USE	S
EXP0108047a	243510011	MAP	1/9/10 15:51	937035	10-1070	2	LANL	USE	S
EXP0108048a	243510012	MAP	1/9/10 16:21	937035	10-1070	2	LANL	USE	S
EXP0108049a	243510013	MAP	1/9/10 16:50	937035	10-1070	2	LANL	USE	S
EXP0108050a	243510014	MAP	1/9/10 17:20	937035	10-1070	2	LANL	USE	S
EXP0108051a	243510015	MAP	1/9/10 17:49	937035	10-1070	2	LANL	USE	S
EXP0108052a	243510016	MAP	1/9/10 18:19	937035	10-1070	2	LANL	USE	S
EXP0108053a	243510017	MAP	1/9/10 18:48	937035	10-1070	2	LANL	USE	S
EXP0108054a	WXXCCV	MAP	1/9/10 19:18			1		USE	C
EXP0108055a	XIBLK07	MAP	1/9/10 19:47			1		USE	B
EXP0108056a	WXXCRI	MAP	1/9/10 20:17			1		USE	C
EXP0108057a	243510018	MAP	1/9/10 20:47	937035	10-1070	2	LANL	USE	S
EXP0108058a	XIBLK08	MAP	1/9/10 21:16			1		USE	B
EXP0108059a	1202006213	MAP	1/9/10 21:46	937556	Various	2	LANL	USE	S
EXP0108060a	1202006214	MAP	1/9/10 22:16	937556	Various	2	LANL	USE	S
EXP0108061a	243611001	MAP	1/9/10 22:45	937556	10-1096	2	LANL	USE	S
EXP0108062a	1202006215	MAP	1/9/10 23:15	937556	10-1096	2	LANL	USE	S
EXP0108063a	1202006216	MAP	1/9/10 23:44	937556	10-1096	2	LANL	USE	S
EXP0108064a	243611002	MAP	1/10/10 0:14	937556	10-1096	2	LANL	USE	S
EXP0108065a	243611003	MAP	1/10/10 0:44	937556	10-1096	2	LANL	USE	S
EXP0108066a	WXXCCV	MAP	1/10/10 1:13			1		USE	C
EXP0108067a	XIBLK09	MAP	1/10/10 1:43			1		USE	B
EXP0108068a	WXXCRI	MAP	1/10/10 2:12			1		USE	C
EXP0108069a	243615001	MAP	1/10/10 2:42	937556	10-1098-1	2	LANL	DUSE-RA	S
EXP0108070a	243615002	MAP	1/10/10 3:11	937556	10-1098-1	2	LANL	DUSE-RA	S



EXP0108071a	243615003	MAP	1/10/10 3:41	937556	10-1098-1	2	LANL	DUSE-RA	S
EXP0108072a	243615004	MAP	1/10/10 4:10	937556	10-1098-1	2	LANL	DUSE-RA	S
EXP0108073a	243615005	MAP	1/10/10 4:40	937556	10-1098-1	2	LANL	DUSE-RA	S
EXP0108074a	243615006	MAP	1/10/10 5:09	937556	10-1098-1	2	LANL	DUSE-RA	S
EXP0108075a	243615007	MAP	1/10/10 5:39	937556	10-1098-1	2	LANL	DUSE-RA	S
EXP0108076a	243615008	MAP	1/10/10 6:08	937556	10-1098-1	2	LANL	DUSE-RA	S
EXP0108077a	243615009	MAP	1/10/10 6:38	937556	10-1098-1	2	LANL	DUSE-RA	S
EXP0108078a	WXXCCV X	MAP	1/10/10 7:07			1		DUSE	C
EXP0108079a	XIBLK10	MAP	1/10/10 7:37			1		USE	B
EXP0108080a	WXXCRI X	MAP	1/10/10 8:06			1		DUSE	C
EXP0108081a	1202004626	MAP	1/10/10 8:36	936890	Various	2	LANL	DUSE-RA	S
EXP0108082a	1202004627	MAP	1/10/10 9:05	936890	Various	2	LANL	DUSE-RA	S
EXP0108083a	243490001	MAP	1/10/10 9:35	936890	10-1036	2	LANL	DUSE-RA	S
EXP0108084a	1202004628	MAP	1/10/10 10:04	936890	10-1036	2	LANL	DUSE-RA	S
EXP0108085a	1202004629	MAP	1/10/10 10:34	936890	10-1036	2	LANL	DUSE-RA	S
EXP0108086a	243490002	MAP	1/10/10 11:03	936890	10-1036	2	LANL	DUSE-RA	S
EXP0108087a	243490003	MAP	1/10/10 11:33	936890	10-1036	2	LANL	DUSE-RA	S
EXP0108088a	243490004	MAP	1/10/10 12:02	936890	10-1036	2	LANL	DUSE-RA	S
EXP0108089a	243490005	MAP	1/10/10 12:32	936890	10-1036	2	LANL	DUSE-RA	S
EXP0108090a	243490006	MAP	1/10/10 13:01	936890	10-1036	2	LANL	DUSE-RA	S
EXP0108091a	WXXCCV	MAP	1/10/10 13:31			1		USE	C
EXP0108092a	XIBLK11	MAP	1/10/10 14:00			1		USE	B
EXP0108093a	WXXCRI	MAP	1/10/10 14:30			1		USE	C
EXP0108094a	243490007	MAP	1/10/10 14:59	936890	10-1036	2	LANL	USE	S
EXP0108095a	243543001	MAP	1/10/10 15:29	936890	10-1081	2	LANL	USE	S
EXP0108096a	XIBLK11	MAP	1/10/10 15:58			1		USE	B
EXP0108097a	1202005106	MAP	1/10/10 16:28	937031	Various	2	LANL	USE	S
EXP0108098a	1202005107	MAP	1/10/10 16:57	937031	Various	2	LANL	USE	S
EXP0108099a	243457001	MAP	1/10/10 17:27	937031	10-1038	2	LANL	USE	S
EXP0108100a	1202005108	MAP	1/10/10 17:56	937031	10-1038	2	LANL	USE	S
EXP0108101a	1202005109	MAP	1/10/10 18:26	937031	10-1038	2	LANL	USE	S
EXP0108102a	243457002	MAP	1/10/10 18:55	937031	10-1038	2	LANL	USE	S
EXP0108103a	243457003	MAP	1/10/10 19:25	937031	10-1038	2	LANL	USE	S
EXP0108104a	WXXCCV	MAP	1/10/10 19:54			1		USE	C
EXP0108105a	XIBLK12	MAP	1/10/10 20:24			1		USE	B
EXP0108106a	WXXCRI	MAP	1/10/10 20:53			1		USE	C
EXP0108107a	243457004	MAP	1/10/10 21:23	937031	10-1038	2	LANL	USE	S
EXP0108108a	243502001	MAP	1/10/10 21:52	937031	10-1065	2	LANL	USE	S
EXP0108109a	243502002	MAP	1/10/10 22:22	937031	10-1065	2	LANL	USE	S



EXP0108110a	243502003	MAP	1/10/10 22:51	937031	10-1065	2	LANL	USE	S
EXP0108111a	243502004	MAP	1/10/10 23:21	937031	10-1065	2	LANL	USE	S
EXP0108112a	243502005	MAP	1/10/10 23:50	937031	10-1065	2	LANL	USE	S
EXP0108113a	243502006	MAP	1/11/10 0:20	937031	10-1065	2	LANL	USE	S
EXP0108114a	243502007	MAP	1/11/10 0:49	937031	10-1065	2	LANL	USE	S
EXP0108115a	243502008	MAP	1/11/10 1:19	937031	10-1065	2	LANL	USE	S
EXP0108116a	WXXCVC	MAP	1/11/10 1:48	937031	10-1065	1		USE	C
EXP0108117a	XIBLK13	MAP	1/11/10 2:18			1		USE	B
EXP0108118a	WXXCRI	MAP	1/11/10 2:48			1		USE	C
EXP0108119a	243509001	MAP	1/11/10 3:17	937031	10-1069	2	LANL	USE	S
EXP0108120a	243509002	MAP	1/11/10 3:47	937031	10-1069	2	LANL	USE	S
EXP0108121a	243509003	MAP	1/11/10 4:16	937031	10-1069	2	LANL	USE	S
EXP0108122a	WXXCVC	MAP	1/11/10 4:46			1		USE	C
EXP0108123a	XIBLK14	MAP	1/11/10 5:15			1		USE	B
EXP0108124a	WXXCRI	MAP	1/11/10 5:45			1		USE	C
EXP0108125a	243615001	MAP	1/11/10 6:14	937556	10-1098-1	2	LANL	USE	S
EXP0108126a	243615002	MAP	1/11/10 6:44	937556	10-1098-1	2	LANL	USE	S
EXP0108127a	243615003	MAP	1/11/10 7:13	937556	10-1098-1	2	LANL	USE	S
EXP0108128a	243615004	MAP	1/11/10 7:43	937556	10-1098-1	2	LANL	USE	S
EXP0108129a	243615005	MAP	1/11/10 8:12	937556	10-1098-1	2	LANL	USE	S
EXP0108130a	243615006	MAP	1/11/10 8:42	937556	10-1098-1	2	LANL	USE	S
EXP0108131a	243615007	MAP	1/11/10 9:11	937556	10-1098-1	2	LANL	USE	S
EXP0108132a	243615008	MAP	1/11/10 9:41	937556	10-1098-1	2	LANL	USE	S
EXP0108133a	243615009	MAP	1/11/10 10:10	937556	10-1098-1	2	LANL	USE	S
EXP0108134a	WXXCVC	MAP	1/11/10 10:40	937556	10-1098-1	2	LANL	USE	C
EXP0108135a	XIBLK15	MAP	1/11/10 11:09			1		USE	B
EXP0108136a	WXXCRI	MAP	1/11/10 11:39			1		USE	C
EXP0108137a	1202004626	MAP	1/11/10 12:08	936890	Various	2	LANL	USE	S
EXP0108138a	1202004627	MAP	1/11/10 12:38	936890	Various	2	LANL	USE	S
EXP0108139a	243490001	MAP	1/11/10 13:07	936890	10-1036	2	LANL	USE	S
EXP0108140a	1202004628	MAP	1/11/10 13:37	936890	10-1036	2	LANL	USE	S
EXP0108141a	1202004629	MAP	1/11/10 14:06	936890	10-1036	2	LANL	USE	S
EXP0108142a	243490002	MAP	1/11/10 14:36	936890	10-1036	2	LANL	USE	S
EXP0108143a	243490003	MAP	1/11/10 15:05	936890	10-1036	2	LANL	USE	S
EXP0108144a	243490004	MAP	1/11/10 15:35	936890	10-1036	2	LANL	USE	S
EXP0108145a	243490005	MAP	1/11/10 16:04	936890	10-1036	2	LANL	USE	S
EXP0108146a	243490006	MAP	1/11/10 16:34	936890	10-1036	2	LANL	USE	S
EXP0108147a	WXXCVC	MAP	1/11/10 17:03			1		USE	C
EXP0108148a	XIBLK16	MAP	1/11/10 17:33			1		USE	B



EXP0108149a	WXXCRI	MAP	1/11/10 18:02	937031	10-1065	1	LANL	USE	C
EXP0108150a	243502006	MAP	1/11/10 18:32	937031	10-1069	10	LANL	USE	S
EXP0108151a	243509002	MAP	1/11/10 19:01	937031	10-1069	10	LANL	USE	S
EXP0108152a	XIBLK17	MAP	1/11/10 19:31	934771	10-952	1	LANL	USE	B
EXP0108153a	1201999937	MAP	1/11/10 20:00	934771	10-952	2	LANL	DUSE-RA	S
EXP0108154a	1201999938	MAP	1/11/10 20:30	934771	10-952	2	LANL	DUSE-RA	S
EXP0108155a	1201999941	MAP	1/11/10 20:59	934771	10-952	2	LANL	DUSE-RA	S
EXP0108156a	243099004	MAP	1/11/10 21:29	934771	10-952	2	LANL	DUSE-RA	S
EXP0108157a	WXXCCV	MAP	1/11/10 21:58			1		USE	C
EXP0108158a	XIBLK18	MAP	1/11/10 22:28			1		USE	B
EXP0108159a	WXXCRI	MAP	1/11/10 22:57			1		USE	C
EXP0108160a	1202000961	MAP	1/11/10 23:27	935214	Various	2	LANL	DUSE-RA	S
EXP0108161a	1202000964	MAP	1/11/10 23:56	935214	Various	2	LANL	DUSE-RA	S
EXP0108162a	243254006	MAP	1/12/10 0:26	935214	10-972	2	LANL	DUSE-RA	S
EXP0108163a	243254011	MAP	1/12/10 0:55	935214	10-972	2	LANL	DUSE-RA	S
EXP0108164a	243257003	MAP	1/12/10 1:25	935214	10-976	2	LANL	DUSE-RA	S
EXP0108165a	1202000962	MAP	1/12/10 1:54	935214	10-976	2	LANL	DUSE-RA	S
EXP0108166a	1202000963	MAP	1/12/10 2:24	935214	10-976	2	LANL	DUSE-RA	S
EXP0108167a	243257005	MAP	1/12/10 2:53	935214	10-976	2	LANL	DUSE-RA	S
EXP0108168a	WXXCCV	MAP	1/12/10 3:23			1		USE	C
EXP0108169a	XIBLK19	MAP	1/12/10 3:52			1		USE	B
EXP0108170a	WXXCRI	MAP	1/12/10 4:22			1		USE	C
EXP0108171a	1202000990	MAP	1/12/10 4:51	935230	Various	2	LANL	DUSE-RA	S
EXP0108172a	1202000991	MAP	1/12/10 5:21	935230	Various	2	LANL	DUSE-RA	S
EXP0108173a	1202000994	MAP	1/12/10 5:50	935230	Various	2	LANL	DUSE-RA	S
EXP0108174a	243283004	MAP	1/12/10 6:20	935230	10-994	2	LANL	DUSE-RA	S
EXP0108175a	243284005	MAP	1/12/10 6:49	935230	10-997	2	LANL	DUSE-RA	S
EXP0108176a	243284012	MAP	1/12/10 7:19	935230	10-997	2	LANL	DUSE-RA	S
EXP0108177a	WXXCCV	MAP	1/12/10 7:48			1		USE	C
EXP0108178a	XIBLK20	MAP	1/12/10 8:18			1		USE	B
EXP0108179a	WXXCRI	MAP	1/12/10 8:47			1		USE	C



GEL ORGANIC RUN LOG

INSTRUMENT ID: LCMSMS4

Date: 01/05/10  
 Extr. Injection Volume: 10ul  
 Sequence Number: 010510exs  
 Initial Calibration Date: 010510  
 Method: 8321A-Modified  
 Int. Std.: N/A  
 Mobile Phase Lot#:1236350, 1246467  
 Standard-Samp Reagent Lot#:1233976, 1246693

Reviewed By: *[Signature]*  
 Date: 01/07/10  
 SOP: GL-OA-E-056 Rev.12  
 Alt Check Std. ID: WXX100105-26

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC Flag
EXS01050001.wiff	XIBLK01	LER	1/5/2010 14:30			1		USE	B
EXS01050002.wiff	XIBLK01	LER	1/5/2010 14:46			1		USE	B
EXS01050003.wiff	WXXICAL-19	LER	1/5/2010 15:01			1		USE	I
EXS01050004.wiff	WXXICAL-20	LER	1/5/2010 15:17			1		USE	I
EXS01050005.wiff	WXXICAL-21	LER	1/5/2010 15:33			1		USE	I
EXS01050006.wiff	WXXICAL-22	LER	1/5/2010 15:49			1		USE	I
EXS01050007.wiff	WXXICAL-23	LER	1/5/2010 16:04			1		USE	I
EXS01050008.wiff	WXXICAL-24	LER	1/5/2010 16:20			1		USE	I
EXS01050009.wiff	WXXICAL-25	LER	1/5/2010 16:36			1		USE	I
EXS01050010.wiff	XIBLK02	LER	1/5/2010 16:51			1		USE	B
EXS01050011.wiff	WXXICV	LER	1/5/2010 17:07			1		USE	C
EXS01050012.wiff	XIBLK03	LER	1/5/2010 17:23			1		USE	B
EXS01050013.wiff	WXXCRI	LER	1/5/2010 17:38			1		USE	C
EXS01050014.wiff	1202005136	LER	1/5/2010 17:54	937046	VARIOUS	2	LANL	USE	S
EXS01050015.wiff	1202005137	LER	1/5/2010 18:10	937046	VARIOUS	2	LANL	USE	S
EXS01050016.wiff	243535001	LER	1/5/2010 18:25	937046	10-1078	2	LANL	USE	S
EXS01050017.wiff	243535002	LER	1/5/2010 18:41	937046	10-1078	2	LANL	USE	S
EXS01050018.wiff	243535003	LER	1/5/2010 18:57	937046	10-1078	2	LANL	USE	S
EXS01050019.wiff	243535004	LER	1/5/2010 19:13	937046	10-1078	2	LANL	USE	S
EXS01050020.wiff	243535005	LER	1/5/2010 19:28	937046	10-1078	2	LANL	USE	S
EXS01050021.wiff	243535006	LER	1/5/2010 19:44	937046	10-1078	2	LANL	USE	S
EXS01050022.wiff	243535007	LER	1/5/2010 20:00	937046	10-1078	2	LANL	USE	S
EXS01050023.wiff	243535008	LER	1/5/2010 20:15	937046	10-1078	2	LANL	USE	S
EXS01050024.wiff	WXXCCV	LER	1/5/2010 20:31			1		USE	C
EXS01050025.wiff	XIBLK04	LER	1/5/2010 20:47			1		USE	B
EXS01050026.wiff	WXXCRI	LER	1/5/2010 21:03			1		USE	C
EXS01050027.wiff	243535009	LER	1/5/2010 21:18	937046	10-1078	2	LANL	USE	S
EXS01050028.wiff	243535010	LER	1/5/2010 21:34	937046	10-1078	2	LANL	USE	S
EXS01050029.wiff	243540001	LER	1/5/2010 21:50	937046	10-1077	2	LANL	USE	S
EXS01050030.wiff	1202005138	LER	1/5/2010 22:05	937046	10-1077	2	LANL	USE	S



EXS01050031.wiff	1202005139	LER	1/5/2010 22:21	937046	10-1077	2	LANL	USE	S
EXS01050032.wiff	243540002	LER	1/5/2010 22:37	937046	10-1077	2	LANL	USE	S
EXS01050033.wiff	243540003	LER	1/5/2010 22:52	937046	10-1077	2	LANL	USE	S
EXS01050034.wiff	243546001	LER	1/5/2010 23:08	937046	10-1083	2	LANL	USE	S
EXS01050035.wiff	243546002	LER	1/5/2010 23:24	937046	10-1083	2	LANL	USE	S
EXS01050036.wiff	243546003	LER	1/5/2010 23:40	937046	10-1083	2	LANL	USE	S
EXS01050037.wiff	WXXCCV	LER	1/5/2010 23:55			1		USE	C
EXS01050038.wiff	XIBLK05	LER	1/6/2010 0:11			1		USE	B
EXS01050039.wiff	WXXCRI	LER	1/6/2010 0:27			1		USE	C
EXS01050040.wiff	1202005126	LER	1/6/2010 0:42	937041	VARIOUS	2	LANL	USE	S
EXS01050041.wiff	1202005127	LER	1/6/2010 0:58	937041	VARIOUS	2	LANL	USE	S
EXS01050042.wiff	243517003	LER	1/6/2010 1:14	937041	10-1073	2	LANL	USE	S
EXS01050043.wiff	243517004	LER	1/6/2010 1:29	937041	10-1073	2	LANL	USE	S
EXS01050044.wiff	243517005	LER	1/6/2010 1:45	937041	10-1073	2	LANL	USE	S
EXS01050045.wiff	243517006	LER	1/6/2010 2:01	937041	10-1073	2	LANL	USE	S
EXS01050046.wiff	243517007	LER	1/6/2010 2:17	937041	10-1073	2	LANL	USE	S
EXS01050047.wiff	243517008	LER	1/6/2010 2:32	937041	10-1073	2	LANL	USE	S
EXS01050048.wiff	1202005624	LER	1/6/2010 2:48	937041	10-1073	2	LANL	USE	S
EXS01050049.wiff	1202005625	LER	1/6/2010 3:04	937041	10-1073	2	LANL	USE	S
EXS01050050.wiff	WXXCCV	LER	1/6/2010 3:19			1		USE	C
EXS01050051.wiff	XIBLK06	LER	1/6/2010 3:35			1		USE	B
EXS01050052.wiff	WXXCRI	LER	1/6/2010 3:51			1		USE	C
EXS01050053.wiff	243517009	LER	1/6/2010 4:07	937041	10-1073	2	LANL	USE	S
EXS01050054.wiff	243519001	LER	1/6/2010 4:22	937041	10-1074	2	LANL	USE	S
EXS01050055.wiff	243519002	LER	1/6/2010 4:38	937041	10-1074	2	LANL	USE	S
EXS01050056.wiff	243519003	LER	1/6/2010 4:54	937041	10-1074	2	LANL	USE	S
EXS01050057.wiff	243519004	LER	1/6/2010 5:09	937041	10-1074	2	LANL	USE	S
EXS01050058.wiff	243519005	LER	1/6/2010 5:25	937041	10-1074	2	LANL	USE	S
EXS01050059.wiff	243519006	LER	1/6/2010 5:41	937041	10-1074	2	LANL	USE	S
EXS01050060.wiff	243519007	LER	1/6/2010 5:56	937041	10-1074	2	LANL	USE	S
EXS01050061.wiff	243519008	LER	1/6/2010 6:12	937041	10-1074	2	LANL	USE	S
EXS01050062.wiff	243519009	LER	1/6/2010 6:28	937041	10-1074	2	LANL	USE	S
EXS01050063.wiff	WXXCCV	LER	1/6/2010 6:44			1		USE	C
EXS01050064.wiff	XIBLK07	LER	1/6/2010 6:59			1		USE	B
EXS01050065.wiff	WXXCRI	LER	1/6/2010 7:15			1		USE	C
EXS01050066.wiff	243519010	LER	1/6/2010 7:31	937041	10-1074	2	LANL	USE	S
EXS01050067.wiff	243519011	LER	1/6/2010 7:46	937041	10-1074	2	LANL	USE	S



EXS01050068.wiff	LER	1/6/2010 8:02	SCREEN	SOLID	1	USE	B
EXS01050069.wiff	LER	1/6/2010 8:18			1	USE	C
EXS01050070.wiff	LER	1/6/2010 8:34			1	USE	C
EXS01050071.wiff	LER	1/6/2010 8:49			1	USE	B
EXS01050072.wiff	LER	1/6/2010 9:05			1	USE	C
EXS01050073.wiff	LER	1/6/2010 9:21	937031	VARIOUS	2	USE	S
EXS01050074.wiff	LER	1/6/2010 9:36	937031	VARIOUS	2	USE	S
EXS01050075.wiff	LER	1/6/2010 9:52	937031	10-1038	2	USE	S
EXS01050076.wiff	LER	1/6/2010 10:08	937031	10-1038	2	USE	S
EXS01050077.wiff	LER	1/6/2010 10:24	937031	10-1038	2	USE	S
EXS01050078.wiff	LER	1/6/2010 10:39	937031	10-1038	2	USE	S
EXS01050079.wiff	LER	1/6/2010 10:55	937031	10-1038	2	USE	S
EXS01050080.wiff	LER	1/6/2010 11:11	937031	10-1038	2	USE	S
EXS01050081.wiff	LER	1/6/2010 11:26	937031	10-1065	2	USE	S
EXS01050082.wiff	LER	1/6/2010 11:42	937031	10-1065	2	USE	S
EXS01050083.wiff	LER	1/6/2010 11:58			1	USE	C
EXS01050084.wiff	LER	1/6/2010 12:13			1	USE	B
EXS01050085.wiff	LER	1/6/2010 12:29			1	USE	C
EXS01050086.wiff	LER	1/6/2010 12:45	937031	10-1065	2	USE	S
EXS01050087.wiff	LER	1/6/2010 13:01	937031	10-1065	2	USE	S
EXS01050088.wiff	LER	1/6/2010 13:16	937031	10-1065	2	USE	S
EXS01050089.wiff	LER	1/6/2010 13:32	937031	10-1065	2	USE	S
EXS01050090.wiff	LER	1/6/2010 13:48	937031	10-1065	2	USE	S
EXS01050091.wiff	LER	1/6/2010 14:03	937031	10-1065	2	USE	S
EXS01050092.wiff	LER	1/6/2010 14:19	937031	10-1069	2	USE	S
EXS01050093.wiff	LER	1/6/2010 14:35	937031	10-1069	2	USE	S
EXS01050094.wiff	LER	1/6/2010 14:50	937031	10-1069	2	USE	S
EXS01050095.wiff	LER	1/6/2010 15:06			1	USE	C
EXS01050096.wiff	LER	1/6/2010 15:28			1	USE	B
EXS01050097.wiff	LER	1/6/2010 15:44			1	USE	C
EXS01050098.wiff	LER	1/6/2010 15:59	936890	VARIOUS	2	USE	S
EXS01050099.wiff	LER	1/6/2010 16:15	936890	VARIOUS	2	USE	S
EXS01050100.wiff	LER	1/6/2010 16:31	936890	10-1036	2	USE	S
EXS01050101.wiff	LER	1/6/2010 16:47	936890	10-1036	2	USE	S
EXS01050102.wiff	LER	1/6/2010 17:02	936890	10-1036	2	USE	S
EXS01050103.wiff	LER	1/6/2010 17:18	936890	10-1036	2	USE	S
EXS01050104.wiff	LER	1/6/2010 17:34	936890	10-1036	2	USE	S



EXS01050105.wiff	243490004	LER	1/6/2010 17:49	936890	10-1036	2	LANL	USE	S
EXS01050106.wiff	243490005	LER	1/6/2010 18:05	936890	10-1036	2	LANL	USE	S
EXS01050107.wiff	243490006	LER	1/6/2010 18:21	936890	10-1036	2	LANL	USE	S
EXS01050108.wiff	WXXCCV	LER	1/6/2010 18:37			1		USE	C
EXS01050109.wiff	XIBLK11	LER	1/6/2010 18:52			1		USE	B
EXS01050110.wiff	WXXCRI	LER	1/6/2010 19:08			1		USE	C
EXS01050111.wiff	243490007	LER	1/6/2010 19:24	936890	10-1036	2	LANL	USE	S
EXS01050112.wiff	243543001	LER	1/6/2010 19:39	936890	10-1081	2	LANL	USE	S
EXS01050113.wiff	XIBLK12	LER	1/6/2010 19:55			1		USE	B
EXS01050114.wiff	UXX091229-02.1	LER	1/6/2010 20:11	SCREEN	SOLID	2	O2SI	USE	S
EXS01050115.wiff	XIBLK13	LER	1/6/2010 20:26			1		USE	B
EXS01050116.wiff	1202006213	LER	1/6/2010 20:42	937556	VARIOUS	2	LANL	USE	S
EXS01050117.wiff	1202006214	LER	1/6/2010 20:58	937556	VARIOUS	2	LANL	USE	S
EXS01050118.wiff	243611001	LER	1/6/2010 21:14	937556	10-1096	2	LANL	USE	S
EXS01050119.wiff	1202006215	LER	1/6/2010 21:29	937556	10-1096	2	LANL	USE	S
EXS01050120.wiff	1202006216	LER	1/6/2010 21:45	937556	10-1096	2	LANL	USE	S
EXS01050121.wiff	WXXCCV	LER	1/6/2010 22:01			1		USE	C
EXS01050122.wiff	XIBLK14	LER	1/6/2010 22:16			1		USE	B
EXS01050123.wiff	WXXCRI	LER	1/6/2010 22:32			1		USE	C
EXS01050124.wiff	243611002	LER	1/6/2010 22:48	937556	10-1096	2	LANL	USE	S
EXS01050125.wiff	243611003	LER	1/6/2010 23:03	937556	10-1096	2	LANL	USE	S
EXS01050126.wiff	243615001	LER	1/6/2010 23:19	937556	10-1098-1	2	LANL	USE	S
EXS01050127.wiff	243615002	LER	1/6/2010 23:35	937556	10-1098-1	2	LANL	USE	S
EXS01050128.wiff	243615003	LER	1/6/2010 23:50	937556	10-1098-1	2	LANL	USE	S
EXS01050129.wiff	243615004	LER	1/7/2010 0:06	937556	10-1098-1	2	LANL	USE	S
EXS01050130.wiff	243615005	LER	1/7/2010 0:22	937556	10-1098-1	2	LANL	USE	S
EXS01050131.wiff	243615006	LER	1/7/2010 0:38	937556	10-1098-1	2	LANL	USE	S
EXS01050132.wiff	243615007	LER	1/7/2010 0:53	937556	10-1098-1	2	LANL	USE	S
EXS01050133.wiff	243615008	LER	1/7/2010 1:09	937556	10-1098-1	2	LANL	USE	S
EXS01050134.wiff	WXXCCV	LER	1/7/2010 1:25			1		USE	C
EXS01050135.wiff	XIBLK15	LER	1/7/2010 1:40			1		USE	B
EXS01050136.wiff	WXXCRI	LER	1/7/2010 1:56			1		USE	C
EXS01050137.wiff	243615009	LER	1/7/2010 2:12	937556	10-1098-1	2	LANL	USE	S
EXS01050138.wiff	WXXCCV	LER	1/7/2010 2:27			1		USE	C
EXS01050139.wiff	XIBLK16	LER	1/7/2010 2:43			1		USE	B
EXS01050140.wiff	WXXCRI	LER	1/7/2010 2:59			1		USE	C







GC  
SEMIVOLATILE  
PCB  
ANALYSIS



**PCB Case Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-1038**

**Method/Analysis Information**

**Procedure:** Analysis of Polychlorinated Biphenyls by ECD

Analytical Method: SW846 8082

Prep Method: SW846 3550B

Analytical Batch Number: 937093

Prep Batch Number: 937092

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in SW846 8082:

<b>Sample ID</b>	<b>Client ID</b>
243457003	RE12-10-7551
243457004	RE12-10-7552
1202005226	Method Blank (MB)
1202005227	Laboratory Control Sample (LCS)
1202005228	243547002(WST54-10-9921) Matrix Spike (MS)
1202005229	243547002(WST54-10-9921) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**Preparation/Analytical Method Verification**

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 14.

Raw data reports are processed and reviewed by the analyst using the Target software package. False positives have been removed from the Target quantitation reports per standard operating procedures (SOP) section 23.0.

**Calibration Information**

Please note that the 'Cal Date' indicated on each quantitation report reflects the date and time of the most recent calibrated analyte(s) in the Target processing method. Since the laboratory may calibrate with multiple solutions on different days using the same processing method, the Target software will update the 'Cal Date' to the last calibration file, date and time. The correct dates and times for all calibration files are located on the Calibration History report in the Standard Data section in the data package.

Due to software limitations, the Calibration Summary Form 6 may not indicate all the calibration files comprising the initial calibration. A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

**Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).



The linear equation used in Target and indicated on the initial calibration summary form is not a conventional linear equation (slope intercept formula) and does not match the equation found in SW-846 method 8000B. The x and y axes are inverted in Target, so that the instrument response is treated as the independent variable (x) and the concentration ratio is treated as the dependent variable (y). The equation used in Target to calculate sample results is adjusted to account for the linear equation inversion and reciprocal slope. The adjusted calculation has been independently verified to produce valid results.

#### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

#### **Quality Control (QC) Information**

##### **Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

##### **Surrogate Recoveries**

All surrogate recoveries were within the established acceptance criteria for this SDG.

##### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

##### **QC Sample Designation**

A LANL sample of similar matrix associated with another SDG (#10-1084) was selected for the matrix spike and matrix spike duplicate analysis. A Form III and QC raw data are included in the package summarizing the results.

##### **Matrix Spike (MS) Recovery Statement**

The MS recoveries were within the established acceptance limits.

##### **Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recoveries were within the established acceptance limits.

##### **MS/MSD Relative Percent Difference (RPD) Statement**

The RPD between the MS and MSD met the acceptance limits.

#### **Technical Information**

##### **Holding Time Specifications**

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

##### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP. All sample extracts were cleaned using alumina. Additionally, copper was added to all sample extracts to remove sulfur.

##### **Sample Dilutions**

The samples in this SDG did not require dilutions.

##### **Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

#### **Miscellaneous Information**

##### **Electronic Package Comment**

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually



generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the analyst, reviewer, and report specialist names associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

#### **Data Exception (DER) Documentation**

Data exception report (DER) is for documentation of any procedural anomalies that may deviate from referenced SOP or contractual document. A DER was not required for this SDG.

#### **Manual Integration**

Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

#### **Additional Comments**

The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS.

The data reported on the form I and III may differ slightly from the data reported on the form X. This is due to software limitations in rounding differences between the forms.

Aroclors quantitated on the raw data report by the Target data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report. These situations will be noted on the raw data as DMP, representing does not match pattern, or DNC does not confirm.

Due to software limitation, the Form VII's will display the results either in the % difference or % drift depending on the type of the calibration curve. If the curve of all analytes is generated using an average response factor (RF), the Form VII will display results using the %difference calculation (RF). If the curve of one or more analytes is generated using a linear curve, the Form VII will display results using the % drift calculation (by concentration) for all analytes.

#### **System Configuration**

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

<b>Instrument ID</b>	<b>Instrument</b>	<b>System Configuration</b>	<b>Column ID</b>	<b>Column Description</b>
ECD2A.I_1	HP Gas Chromatograph	HP6890 Series ECD	Rtx-CLP I	30m x 0.25mm, 0.25um (Rtx-CLPesticide)
ECD2A.I_2	HP Gas Chromatograph	HP6890 Series ECD	Rtx-CLP II	30m x 0.25mm, 0.20um (Rtx-CLPesticide II)

#### **Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



**Review Validation**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: Jinni Cao

Date: 1/15/10



## Roadmap for LANL 10-1038 PCB

This roadmap was analyzed by jen01212 on 12-31-2009, 11:07.

This roadmap was reviewed by rob01090 on 01-04-2010, 16:35.

This roadmap was packaged by yml on 01-15-2010, 11:58.

This roadmap was validated by jim01140 on 01-15-2010, 16:03.

Front Sample Column

exclude	manual	datafile	smplid	sampletype	injdte	injtime	sublist	clientid	dilution	prepbatchid	comment
<input type="checkbox"/>	N	/chem/ecd2a.i/122909.b014f1401.d	243457003	sample	29-DEC-2009	09:49	10-1038.sub	RE12-10-7551	1.00000	937093	UPLOAD BOTH, USE HIGHER
<input type="checkbox"/>	N	/chem/ecd2a.i/122909.b015f1501.d	243457004	sample	29-DEC-2009	10:00	10-1038.sub	RE12-10-7552	1.00000	937093	UPLOAD BOTH, USE HIGHER

Back Sample Column

exclude	manual	datafile	smplid	sampletype	injdte	injtime	sublist	clientid	dilution	prepbatchid	comment
<input type="checkbox"/>	N	/chem/ecd2a.i/122909.b014b1401.d	243457003	sample	29-DEC-2009	09:49	10-1038.sub	RE12-10-7551	1.00000	937093	UPLOAD BOTH, USE HIGHER
<input type="checkbox"/>	N	/chem/ecd2a.i/122909.b015b1501.d	243457004	sample	29-DEC-2009	10:00	10-1038.sub	RE12-10-7552	1.00000	937093	UPLOAD BOTH, USE HIGHER

Front QC Sample Column

exclude	manual	datafile	smplid	sampletype	injdte	injtime	sublist	clientid	dilution	prepbatchid	comment
<input type="checkbox"/>	N	/chem/ecd2a.i/122909.b012f1201-1.d	1202005226	mb	29-DEC-2009	09:27	10-1038.sub	PBLK01	1.00000	937093	<input type="text"/>
<input type="checkbox"/>	N	/chem/ecd2a.i/122909.b013f1301-1.d	1202005227	lcs	29-DEC-2009	09:38	10-1038.sub	PBLK01LCS	1.00000	937093	<input type="text"/>

Back QC Sample Column

exclude	manual	datafile	smplid	sampletype	injdte	injtime	sublist	clientid	dilution	prepbatchid	comment
<input type="checkbox"/>	N	/chem/ecd2a.i/122909.b012b1201-1.d	1202005226	mb	29-DEC-2009	09:27	10-1038.sub	PBLK01	1.00000	937093	<input type="text"/>
<input type="checkbox"/>	N	/chem/ecd2a.i/122909.b013b1301-1.d	1202005227	lcs	29-DEC-2009	09:38	10-1038.sub	PBLK01LCS	1.00000	937093	<input type="text"/>



# SAMPLE DATA SUMMARY



## PCB

Page 1 of 1

## Certificate of Analysis

## Sample Summary

SDG Number: 10-1038  
Lab Sample ID: 243457003

Client ID: RE12-10-7551  
Batch ID: 937093  
Run Date: 12/29/2009 09:49  
Prep Date: 12/28/2009 20:43  
Data File: 014f1401.d  
014b1401.d

Date Collected: 12/18/2009 12:00  
Date Received: 12/23/2009 10:10  
Client: LANL010  
Method: SW846 8082  
Inst: ECD2A.I  
Analyst: JAOC  
Aliquot: 30.02 g  
Column: 1 CLP1  
2 CLP2

Matrix: R  
% Moisture: 11.1  
Project: LANL01004  
SOP Ref: GL-OA-E-040  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL  
Level: LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.75	ug/kg	1.25	3.75	1
11104-28-2	Aroclor-1221	U	3.75	ug/kg	1.25	3.75	1
11141-16-5	Aroclor-1232	U	3.75	ug/kg	1.25	3.75	1
53469-21-9	Aroclor-1242	U	3.75	ug/kg	1.25	3.75	1
12672-29-6	Aroclor-1248	U	3.75	ug/kg	1.25	3.75	1
11097-69-1	Aroclor-1254	U	3.75	ug/kg	1.25	3.75	1
11096-82-5	Aroclor-1260	U	3.75	ug/kg	1.25	3.75	1



## PCB

Page 1 of 1

Certificate of Analysis  
Sample SummarySDG Number: 10-1038  
Lab Sample ID: 243457004Date Collected: 12/18/2009 12:00  
Date Received: 12/23/2009 10:10  
Client: LANL010  
Method: SW846 8082  
Inst: ECD2A.I  
Analyst: JAOC  
Aliquot: 30.19 g  
Column: 1 CLP1  
2 CLP2Matrix: R  
%Moisture: 7.6  
Project: LANL01004  
SOP Ref: GL-OA-E-040  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL  
Level: LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.58	ug/kg	1.19	3.58	1
11104-28-2	Aroclor-1221	U	3.58	ug/kg	1.19	3.58	1
11141-16-5	Aroclor-1232	U	3.58	ug/kg	1.19	3.58	1
53469-21-9	Aroclor-1242	U	3.58	ug/kg	1.19	3.58	1
12672-29-6	Aroclor-1248	U	3.58	ug/kg	1.19	3.58	1
11097-69-1	Aroclor-1254	U	3.58	ug/kg	1.19	3.58	1
11096-82-5	Aroclor-1260	U	3.58	ug/kg	1.19	3.58	1



# QUALITY CONTROL SUMMARY



PCB  
Surrogate Recovery Report

Page 1 of 1

SDG Number: 10-1038

Matrix Type: SOLID

CAP Column (1) : CLP1

CAP Column (2) : CLP2

Sample ID	Client ID	4CMX 1 %REC #	4CMX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #
1202005226	MB for batch 937092	65	69	71	81
1202005227	LCS for batch 937092	66	69	70	79
243457003	RE12-10-7551	58	61	65	73
243457004	RE12-10-7552	55	58	59	65

## Surrogate

## Acceptance Limits

4CMX = 4cmx

(34%-105%)

DCB = Decachlorobiphenyl

(33%-115%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted



PCB

Page 1 of 1

**Quality Control Summary  
Spike Recovery Report**

SDG Number: 10-1038

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 937092

Matrix: SOIL

Lab Sample ID:1202005227

Instrument: ECD2A.I

Analysis Date: 12/29/2009 09:38

Dilution: 1

Analyst: JAOC

Prep Batch ID: 937092

Inj. Vol: 1 uL

Batch ID: 937093

CAS No	Paramname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	LCS Aroclor-1016	33.3	0.0	21.1	63	41-110
11096-82-5	LCS Aroclor-1260	33.3	0.0	26.3	79	48-110



PCB

Page 1 of 2

Quality Control Summary  
Spike Recovery Report

SDG Number: 10-1084

Sample Type: Matrix Spike

Client ID: WST54-10-9921MS

Matrix: S

Lab Sample ID: 1202005228

%Moisture: 11.1

Instrument: ECD2A.I

Analysis Date: 12/29/2009 13:53

Dilution: 1

Analyst: JAOC

Pren Batch II 937092

Inj. Vol: 1 uL

Batch ID: 937093

CAS No	Paramname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	MS Aroclor-1016	37.3	0.00 U	22.4	60	23-117
11096-82-5	MS Aroclor-1260	37.3	0.00 U	29.7	80	27-116



PCB

Page 2 of 2

Quality Control Summary  
Spike Recovery Report

SDG Number: 10-1084

Client ID: WST54-10-9921MSD

Lab Sample ID: 1202005229

Instrument: ECD2A.I

Analyst: JAOC

Inj. Vol: 1 uL

Sample Type: Matrix Spike Duplicate

Matrix: S

%Moisture: 11.1

Analysis Date: 12/29/2009 14:04

Dilution: 1

Pre Batch ID: 937092

Batch ID: 937093

CAS No	Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits	RPD	Acceptance Limits
12674-11-2	MSD Aroclor-1016	37.3	0.00 U	24.1	65	23-117	7	0-30
11096-82-5	MSD Aroclor-1260	37.3	0.00 U	30.7	82	27-116	3	0-30



## Method Blank Summary

Page 1 of 1

SDG Number:	10-1038	Client:	LANL010	Matrix:	SOIL
Client ID:	MB for batch 937092	Instrument ID:	ECD2AJ_2	Data File:	012b1201-1.d
Lab Sample ID:	1202005226		ECD2AJ_1		012f1201-1.d
Column:	CLP2	Prep Date:	12/28/2009 20:43	Analyzed:	12/29/09 09:27
	CLP1	Level:	LOW		

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 937092	1202005227	013f1301-1.d 013b1301-1.d	12/29/09	0938
02 RE12-10-7551	243457003	014f1401.d 014b1401.d	12/29/09	0949
03 RE12-10-7552	243457004	015f1501.d 015b1501.d	12/29/09	1000



# SAMPLE DATA



## PCB

Page 1 of 1

## Certificate of Analysis

## Sample Summary

SDG Number: 10-1038  
Lab Sample ID: 243457003

Date Collected: 12/18/2009 12:00  
Date Received: 12/23/2009 10:10  
Client: LANL010  
Method: SW846 8082  
Inst: ECD2A.1  
Analyst: JAOC  
Aliquot: 30.02 g  
Column: 1 CLP1  
2 CLP2

Matrix: R  
%Moisture: 11.1  
Project: LANL01004  
SOP Ref: GL-OA-E-040  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL  
Level: LOW

Client ID: RE12-10-7551  
Batch ID: 937093  
Run Date: 12/29/2009 09:49  
Prep Date: 12/28/2009 20:43  
Data File: 014f1401.d  
014b1401.d

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.75	ug/kg	1.25	3.75	1
11104-28-2	Aroclor-1221	U	3.75	ug/kg	1.25	3.75	1
11141-16-5	Aroclor-1232	U	3.75	ug/kg	1.25	3.75	1
53469-21-9	Aroclor-1242	U	3.75	ug/kg	1.25	3.75	1
12672-29-6	Aroclor-1248	U	3.75	ug/kg	1.25	3.75	1
11097-69-1	Aroclor-1254	U	3.75	ug/kg	1.25	3.75	1
11096-82-5	Aroclor-1260	U	3.75	ug/kg	1.25	3.75	1



Data File: /chem/ecd2a.i/122909.b/014f1401.d  
Report Date: 30-Dec-2009 08:28

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/014f1401.d  
Lab Smp Id: 243457003 Client Smp ID: RE12-10-7551  
Inj Date : 29-DEC-2009 09:49  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |243457003|1|  
Misc Info : |ECD82P\_1S|937093|SVA|LANL|SOIL|RE12-10-7551|||  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
Meth Date : 29-Dec-2009 14:49 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
Als bottle: 14  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-1038.sub  
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vi} * \text{Ws} * (100 - \text{M}) / 100) * \text{CpndVariable}$

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.02000	Weight of sample extracted (g)
M	11.10790	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS						
		ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
<hr/>						
\$ 11 4cmx			CAS #: 877-09-8			
1.774	1.771	0.003	7239847	116.225	4.4 80.00- 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
5.608	5.607	0.001	6995220	129.274	4.8 80.00- 120.00	100.00
<hr/>						



Data File: /chem/ecod2a.i/122909.b/014f1401.d

Date: 29-DEC-2009 09:49

Client ID: RE12-10-7561

Sample Info: 124345700311

Volume Injected (uL): 1.0

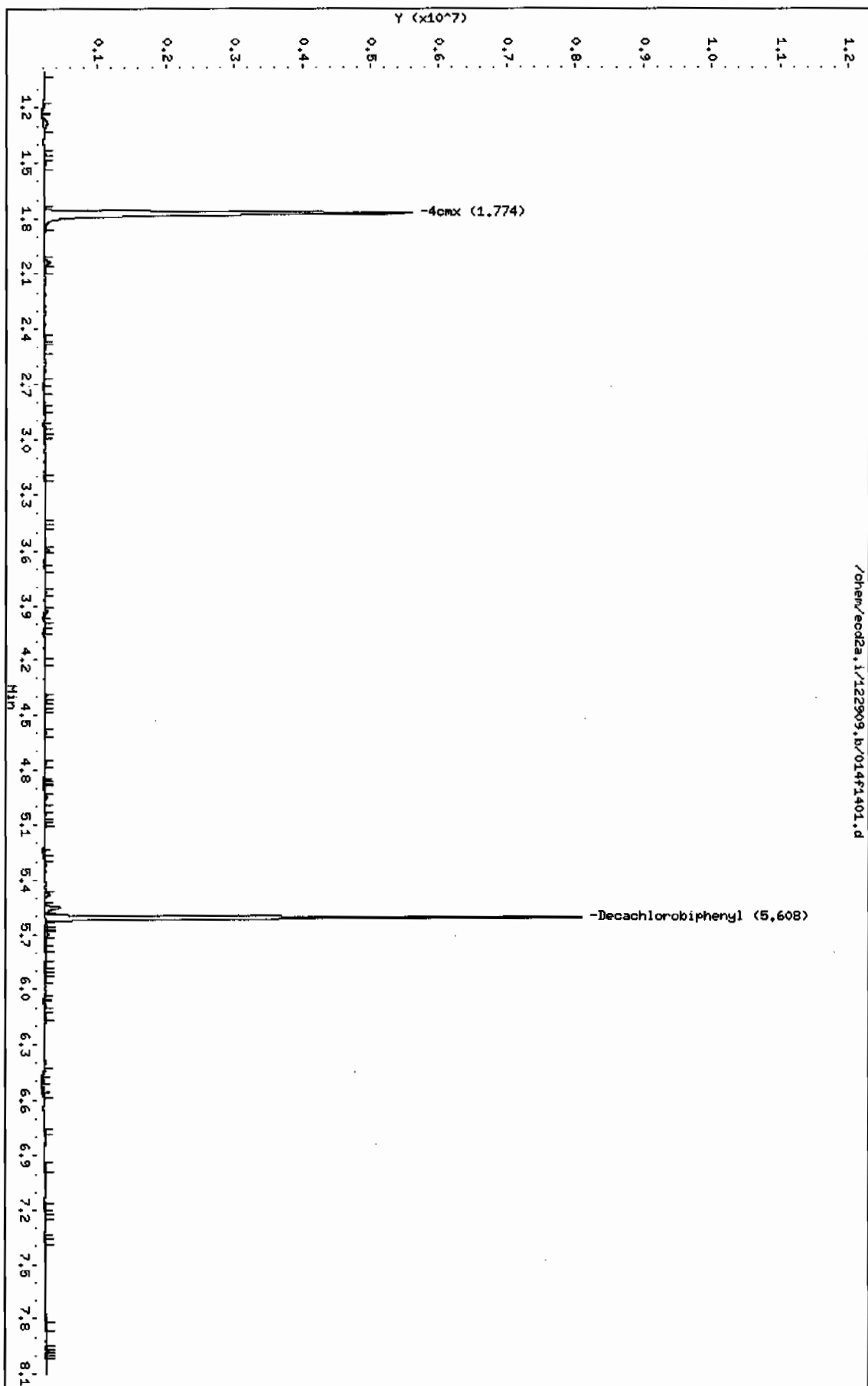
Column phase: CLP1

Instrument: ecod2a.i

Operator: JPOC

Column diameter: 0.25

Page 1





Data File: /chem/ecd2a.i/122909.b/014b1401.d  
Report Date: 29-Dec-2009 14:45

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL  
Data file : /chem/ecd2a.i/122909.b/014b1401.d  
Lab Smp Id: 243457003 Client Smp ID: RE12-10-7551  
Inj Date : 29-DEC-2009 09:49  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |243457003|1|  
Misc Info : |ECD82P\_1S|937093|SVA|LANL|SOIL|RE12-10-7551|||  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
Meth Date : 29-Dec-2009 14:44 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
Als bottle: 14  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-1038.sub  
Target Version: 3.50 Sample Matrix: Soil  
Processing Host: hpc1pl

Concentration Formula: Amt \* DF \* Uf \* Vt / (Vi \* Ws \* (100 - M) / 100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.02000	Weight of sample extracted (g)
M	11.10790	% Moisture

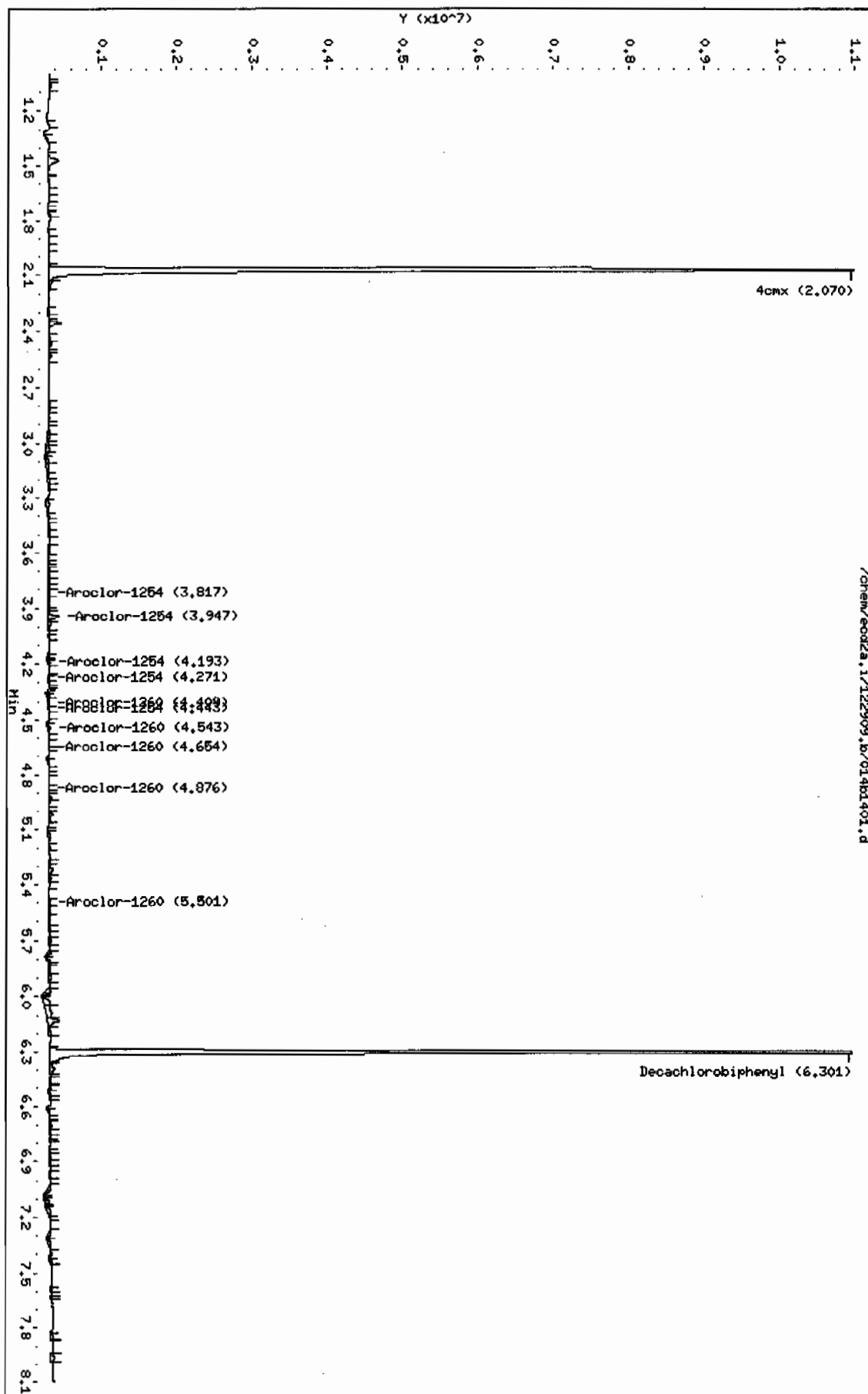
Cpnd Variable Local Compound Variable

CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8	
2.070	2.068	0.002	15731117	121.647	4.6 80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
6.301	6.300	0.001	16370505	145.150	5.4 80.00- 120.00	100.00
-----						



Data File: /chem/eod2a.i/122909.b/014b1401.d  
 Date: 29-DEC-2009 09:49  
 Client ID: REL2-10-7661  
 Sample Info: 1243457003111  
 Volume Injected (uL): 1.0  
 Column phase: CLP2

Instrument: eod2a.i  
 Operator: JROC  
 Column diameter: 0.25





## PCB

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## Certificate of Analysis

## Sample Summary

SDG Number: 10-1038  
Lab Sample ID: 243457004

Date Collected: 12/18/2009 12:00  
Date Received: 12/23/2009 10:10  
Client: LANL010  
Method: SW846 8082  
Inst: ECD2A.1  
Analyst: JAOC  
Aliquot: 30.19 g  
Column: 1 CLP1  
2 CLP2

Matrix: R  
%Moisture: 7.6  
Project: LANL01004  
SOP Ref: GL-OA-E-040  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL  
Level: LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.58	ug/kg	1.19	3.58	1
11104-28-2	Aroclor-1221	U	3.58	ug/kg	1.19	3.58	1
11141-16-5	Aroclor-1232	U	3.58	ug/kg	1.19	3.58	1
53469-21-9	Aroclor-1242	U	3.58	ug/kg	1.19	3.58	1
12672-29-6	Aroclor-1248	U	3.58	ug/kg	1.19	3.58	1
11097-69-1	Aroclor-1254	U	3.58	ug/kg	1.19	3.58	1
11096-82-5	Aroclor-1260	U	3.58	ug/kg	1.19	3.58	1



Data File: /chem/ecd2a.i/122909.b/015f1501.d  
Report Date: 29-Dec-2009 14:39

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/015f1501.d

Lab Smp Id: 243457004

Client Smp ID: RE12-10-7552

Inj Date : 29-DEC-2009 10:00

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |243457004|1|

Misc Info : |ECD82P\_1S|937093|SVA|LANL|SOIL|RE12-10-7552|||

Comment :

Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m

Meth Date : 29-Dec-2009 13:37 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 15

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: 10-1038.sub

Target Version: 3.50

Sample Matrix: Soil

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vi \* Ws \* (100 - M)/100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.19000	Weight of sample extracted (g)
M	7.58000	% Moisture

Cpnd Variable Local Compound Variable

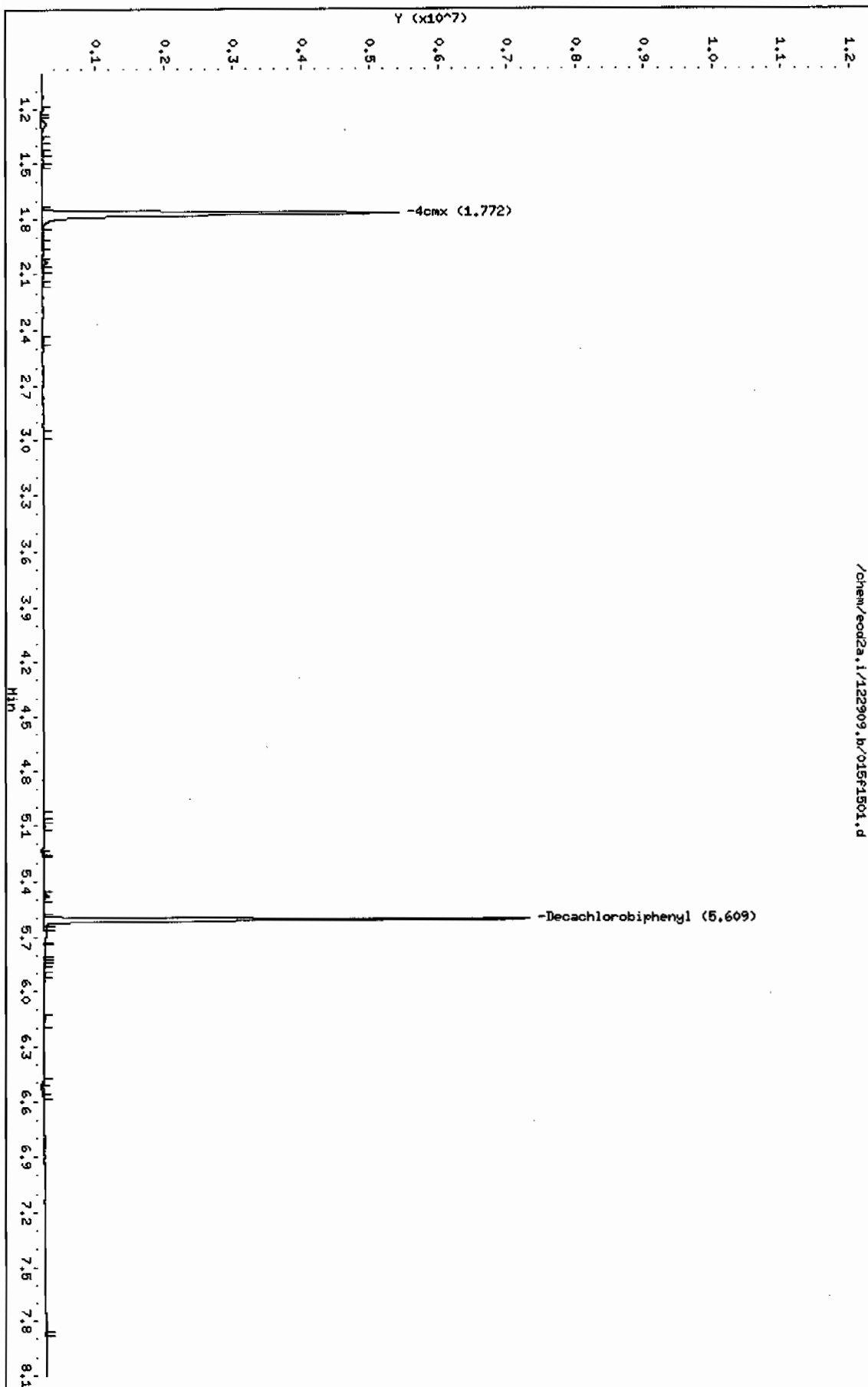
CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx CAS #: 877-09-8						
1.772	1.771	0.001	6874823 110.365	4.0	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl CAS #: 2051-24-3						
5.609	5.607	0.002	6431167 118.850	4.2	80.00- 120.00	100.00
-----						



Data File: /chem/eod2a.i/122909.b/015f1501.d  
Date: 29-DEC-2009 10:00  
Client ID: RE12-10-7552  
Sample Info: 124345700411  
Volume Injected (uL): 1.0  
Column Phase: CLP1

Instrument: eod2a.i  
Operator: JHOC  
Column diameter: 0.25

/chem/eod2a.i/122909.b/015f1501.d





Data File: /chem/ecd2a.i/122909.b/015b1501.d  
Report Date: 29-Dec-2009 14:45

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL  
Data file : /chem/ecd2a.i/122909.b/015b1501.d  
Lab Smp Id: 243457004 Client Smp ID: RE12-10-7552  
Inj Date : 29-DEC-2009 10:00  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |243457004|1|  
Misc Info : |ECD82P\_1S|937093|SVA|LANL|SOIL|RE12-10-7552|||  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
Meth Date : 29-Dec-2009 14:44 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
Als bottle: 15  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-1038.sub  
Target Version: 3.50 Sample Matrix: Soil  
Processing Host: hpclp1

Concentration Formula: Amt \* DF \* Uf \* Vt / (Vi \* Ws \* (100 - M) / 100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.19000	Weight of sample extracted (g)
M	7.58000	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS							
				ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO	
---	-----	-----	-----	-----	-----	-----	
\$ 11 4cmx				CAS #: 877-09-8			
2.069	2.068	0.001	14906562	115.271	4.1 80.00- 120.00	100.00	
-----							
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3			
6.301	6.300	0.001	14570408	129.190	4.6 80.00- 120.00	100.00	
-----							



Data File: /chem/eod2a.i/122909.b/015b1501.d

Date: 29-DEC-2009 10:00

Client ID: RE12-10-7682

Sample Info: 124345700411

Volume Injected (uL): 1.0

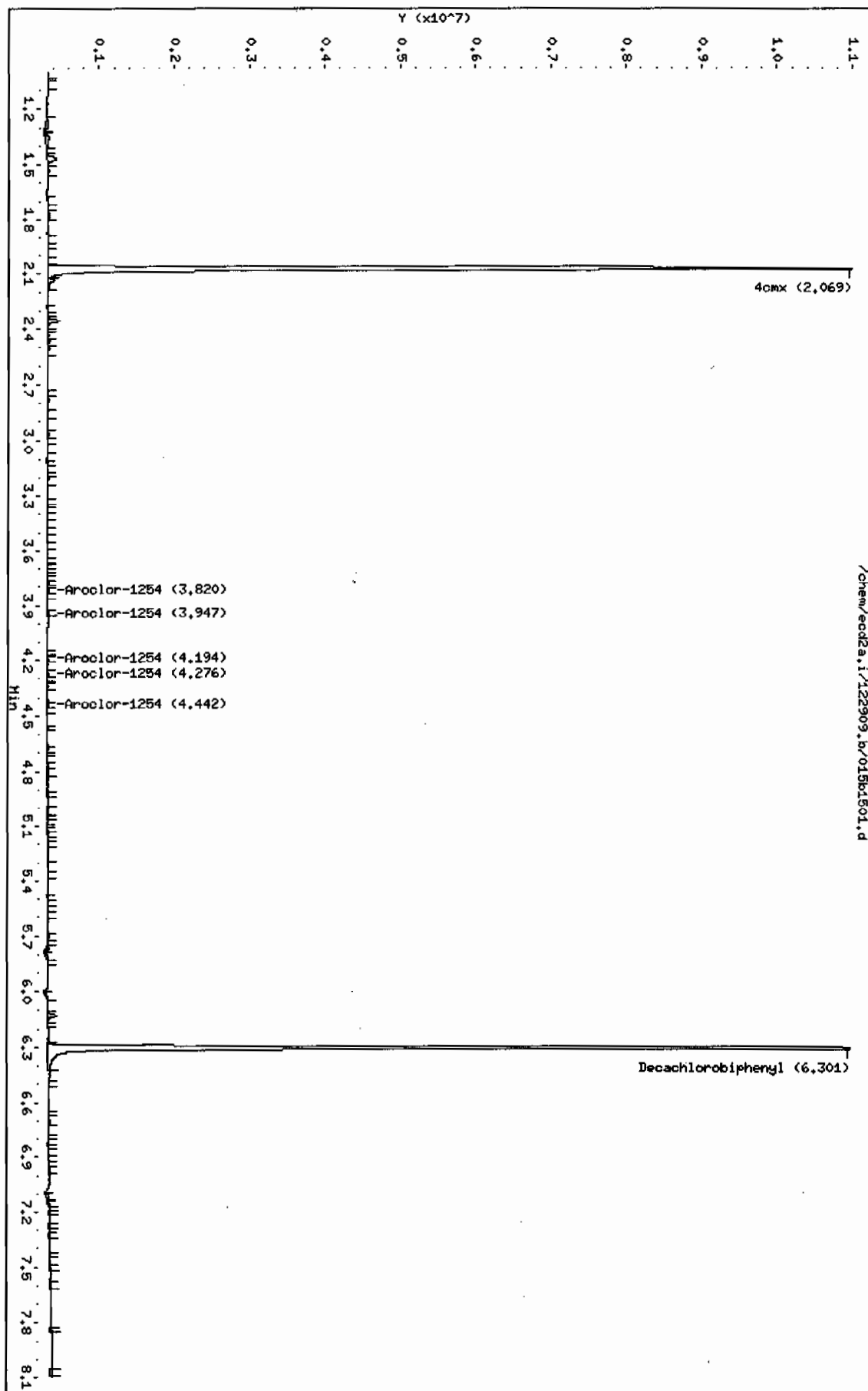
Column phase: CLP2

Instrument: eod2a.i

Operator: JAO

Column diameter: 0.25

Page 1





# STANDARDS DATA



Report Date: 31-Dec-2009 09:15

### Calibration History

Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
Start Cal Date: 12-NOV-2009 11:00  
End Cal Date : 14-DEC-2009 09:35

#### Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
02-DEC-2009 07:05	AR1262	/chem/ecd2a.i/120209.b/008f0801.d
12-NOV-2009 16:22	AR1268	/chem/ecd2a.i/111209a.b/035f3501.d
30-NOV-2009 10:12	AR1248	/chem/ecd2a.i/113009a.b/011f1101.d
12-NOV-2009 14:09	AR1242	/chem/ecd2a.i/111209a.b/023f2301.d
30-NOV-2009 08:43	AR1254	/chem/ecd2a.i/113009a.b/003f0301.d
14-DEC-2009 08:51	AR1660	/chem/ecd2a.i/121409.b/011f1101.d

Cal Level: 2 , Cal Amount: 250.00000		
02-DEC-2009 07:16	AR1262	/chem/ecd2a.i/120209.b/009f0901.d
12-NOV-2009 16:33	AR1268	/chem/ecd2a.i/111209a.b/036f3601.d
30-NOV-2009 10:23	AR1248	/chem/ecd2a.i/113009a.b/012f1201.d
12-NOV-2009 14:20	AR1242	/chem/ecd2a.i/111209a.b/024f2401.d
30-NOV-2009 08:54	AR1254	/chem/ecd2a.i/113009a.b/004f0401.d
14-DEC-2009 09:02	AR1660	/chem/ecd2a.i/121409.b/012f1201.d

Cal Level: 3 , Cal Amount: 500.00000		
02-DEC-2009 07:27	AR1262	/chem/ecd2a.i/120209.b/010f1001.d
12-NOV-2009 16:44	AR1268	/chem/ecd2a.i/111209a.b/037f3701.d
30-NOV-2009 10:34	AR1248	/chem/ecd2a.i/113009a.b/013f1301.d
12-NOV-2009 14:31	AR1242	/chem/ecd2a.i/111209a.b/025f2501.d
30-NOV-2009 09:05	AR1254	/chem/ecd2a.i/113009a.b/005f0501.d
14-DEC-2009 09:13	AR1660	/chem/ecd2a.i/121409.b/013f1301.d

Cal Level: 4 , Cal Amount: 1000.00000		
30-NOV-2009 10:45	AR1248	/chem/ecd2a.i/113009a.b/014f1401.d
12-NOV-2009 14:42	AR1242	/chem/ecd2a.i/111209a.b/026f2601.d
30-NOV-2009 09:16	AR1254	/chem/ecd2a.i/113009a.b/006f0601.d
14-DEC-2009 09:24	AR1660	/chem/ecd2a.i/121409.b/014f1401.d
12-NOV-2009 11:45	DDTANALOGSTD	/chem/ecd2a.i/111209a.b/010f1001.d
12-NOV-2009 16:55	AR1268	/chem/ecd2a.i/111209a.b/038f3801.d
02-DEC-2009 07:38	AR1262	/chem/ecd2a.i/120209.b/011f1101.d
12-NOV-2009 11:11	AR1221	/chem/ecd2a.i/111209a.b/007f0701.d
12-NOV-2009 11:00	AR1232	/chem/ecd2a.i/111209a.b/006f0601.d

Cal Level: 5 , Cal Amount: 4000.00000		
02-DEC-2009 07:50	AR1262	/chem/ecd2a.i/120209.b/012f1201.d
12-NOV-2009 17:07	AR1268	/chem/ecd2a.i/111209a.b/039f3901.d
30-NOV-2009 10:56	AR1248	/chem/ecd2a.i/113009a.b/015f1501.d



12-NOV-2009 14:53	AR1242	/chem/ecd2a.i/111209a.b/027f2701.d
30-NOV-2009 09:27	AR1254	/chem/ecd2a.i/113009a.b/007f0701.d
14-DEC-2009 09:35	AR1660	/chem/ecd2a.i/121409.b/015f1501.d

# Continuing Calibration

Ccal Level Mode: GLOBAL LEVEL 4

Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 14:26	AR1660	/chem/ecd2a.i/122909.b/039f3901.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 13:19	AR1660	/chem/ecd2a.i/122909.b/033f3301.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 11:17	AR1660	/chem/ecd2a.i/122909.b/022f2201.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 08:50	AR1268	/chem/ecd2a.i/122909.b/009f0901.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 08:39	AR1262	/chem/ecd2a.i/122909.b/008f0801.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 08:28	AR1221	/chem/ecd2a.i/122909.b/007f0701.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 08:17	AR1232	/chem/ecd2a.i/122909.b/006f0601.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 07:59	AR1248	/chem/ecd2a.i/122909.b/005f0501.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 07:48	AR1242	/chem/ecd2a.i/122909.b/004f0401.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 07:37	AR1254	/chem/ecd2a.i/122909.b/003f0301.d
Ccal Level: 4 , Ccal Amount: 1000		
29-DEC-2009 07:26	AR1660	/chem/ecd2a.i/122909.b/002f0201.d



Report Date: 31-Dec-2009 09:15

### Calibration History

Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
Start Cal Date: 12-NOV-2009 11:00  
End Cal Date : 14-DEC-2009 09:35

#### Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
02-DEC-2009 07:05	AR1262	/chem/ecd2a.i/120209.b/008b0801.d
12-NOV-2009 16:22	AR1268	/chem/ecd2a.i/111209a.b/035b3501.d
30-NOV-2009 10:12	AR1248	/chem/ecd2a.i/113009a.b/011b1101.d
12-NOV-2009 14:09	AR1242	/chem/ecd2a.i/111209a.b/023b2301.d
30-NOV-2009 08:43	AR1254	/chem/ecd2a.i/113009a.b/003b0301.d
14-DEC-2009 08:51	AR1660	/chem/ecd2a.i/121409.b/011b1101.d
Cal Level: 2 , Cal Amount: 250.00000		
02-DEC-2009 07:16	AR1262	/chem/ecd2a.i/120209.b/009b0901.d
12-NOV-2009 16:33	AR1268	/chem/ecd2a.i/111209a.b/036b3601.d
30-NOV-2009 10:23	AR1248	/chem/ecd2a.i/113009a.b/012b1201.d
12-NOV-2009 14:20	AR1242	/chem/ecd2a.i/111209a.b/024b2401.d
30-NOV-2009 08:54	AR1254	/chem/ecd2a.i/113009a.b/004b0401.d
14-DEC-2009 09:02	AR1660	/chem/ecd2a.i/121409.b/012b1201.d
Cal Level: 3 , Cal Amount: 500.00000		
02-DEC-2009 07:27	AR1262	/chem/ecd2a.i/120209.b/010b1001.d
12-NOV-2009 16:44	AR1268	/chem/ecd2a.i/111209a.b/037b3701.d
30-NOV-2009 10:34	AR1248	/chem/ecd2a.i/113009a.b/013b1301.d
12-NOV-2009 14:31	AR1242	/chem/ecd2a.i/111209a.b/025b2501.d
30-NOV-2009 09:05	AR1254	/chem/ecd2a.i/113009a.b/005b0501.d
14-DEC-2009 09:13	AR1660	/chem/ecd2a.i/121409.b/013b1301.d
Cal Level: 4 , Cal Amount: 1000.00000		
30-NOV-2009 10:45	AR1248	/chem/ecd2a.i/113009a.b/014b1401.d
12-NOV-2009 14:42	AR1242	/chem/ecd2a.i/111209a.b/026b2601.d
30-NOV-2009 09:16	AR1254	/chem/ecd2a.i/113009a.b/006b0601.d
14-DEC-2009 09:24	AR1660	/chem/ecd2a.i/121409.b/014b1401.d
12-NOV-2009 11:45	DDTANALOGSTD	/chem/ecd2a.i/111209a.b/010b1001.d
12-NOV-2009 16:55	AR1268	/chem/ecd2a.i/111209a.b/038b3801.d
02-DEC-2009 07:38	AR1262	/chem/ecd2a.i/120209.b/011b1101.d
12-NOV-2009 11:11	AR1221	/chem/ecd2a.i/111209a.b/007b0701.d
12-NOV-2009 11:00	AR1232	/chem/ecd2a.i/111209a.b/006b0601.d
Cal Level: 5 , Cal Amount: 4000.00000		
02-DEC-2009 07:50	AR1262	/chem/ecd2a.i/120209.b/012b1201.d
12-NOV-2009 17:07	AR1268	/chem/ecd2a.i/111209a.b/039b3901.d
30-NOV-2009 10:56	AR1248	/chem/ecd2a.i/113009a.b/015b1501.d
12-NOV-2009 14:53	AR1242	/chem/ecd2a.i/111209a.b/027b2701.d
30-NOV-2009 09:27	AR1254	/chem/ecd2a.i/113009a.b/007b0701.d
14-DEC-2009 09:35	AR1660	/chem/ecd2a.i/121409.b/015b1501.d



Continuing Calibration  
Ccal Level Mode: GLOBAL LEVEL 4

Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 14:26   AR1660	/chem/ecd2a.i/122909.b/039b3901.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 13:19   AR1660	/chem/ecd2a.i/122909.b/033b3301.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 11:17   AR1660	/chem/ecd2a.i/122909.b/022b2201.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 08:17   AR1232	/chem/ecd2a.i/122909.b/006b0601.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 07:59   AR1248	/chem/ecd2a.i/122909.b/005b0501.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 07:48   AR1242	/chem/ecd2a.i/122909.b/004b0401.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 07:37   AR1254	/chem/ecd2a.i/122909.b/003b0301.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 07:26   AR1660	/chem/ecd2a.i/122909.b/002b0201.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 08:50   AR1268	/chem/ecd2a.i/122909.b/009b0901.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 08:39   AR1262	/chem/ecd2a.i/122909.b/008b0801.d
Ccal Level: 4 , Ccal Amount: 1000	
29-DEC-2009 08:28   AR1221	/chem/ecd2a.i/122909.b/007b0701.d



## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Quant Method : ESTD Target Version : 3.50  
 Last Update : 29-Dec-2009 14:49 Number of Cpnds : 15  
 Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events

Values

-----  
 Initial:Start Threshold 500.000000  
 Initial:End Threshold 250.000000  
 Initial:Area Threshold 10000.000000  
 Initial:P-P Resolution 1.000000  
 Initial:Bunch Factor 2.000000  
 Initial:Negative Peaks OFF  
 Initial:Tension 1.100000  
 8.500:Bunch Factor 2.000000

Compound	RT	RT Window	RF
1 Aroclor-1016	2.273	2.243-2.303	2.238e+03
	2.597	2.567-2.627	4.685e+03
	2.688	2.658-2.718	1.901e+03
	2.823	2.793-2.853	9.760e+02
	2.974	2.944-3.004	1.458e+03
2 Aroclor-1221	1.436	1.406-1.466	4.641e+02
	1.898	1.868-1.928	6.570e+02
	1.997	1.967-2.027	3.467e+02
3 Aroclor-1232	2.027	1.997-2.057	1.165e+03
	2.277	2.247-2.307	9.314e+02
	2.693	2.663-2.723	8.004e+02
	2.736	2.706-2.766	5.102e+02
4 Aroclor-1242	2.981	2.951-3.011	5.840e+02
	2.274	2.244-2.304	1.733e+03
	2.689	2.659-2.719	1.484e+03
	2.731	2.701-2.761	9.058e+02
	2.824	2.794-2.854	7.269e+02
5 Aroclor-1248	2.976	2.946-3.006	1.120e+03
	2.825	2.795-2.855	1.527e+03
	2.975	2.945-3.005	2.027e+03
	3.035	3.005-3.065	1.571e+03
	3.270	3.240-3.300	2.218e+03
	3.424	3.394-3.454	1.913e+03



## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m

Compound	RT	RT Window	RF
6 Aroclor-1254	3.242	3.212-3.272	2.080e+03
	3.424	3.394-3.454	2.772e+03
	3.694	3.664-3.724	3.742e+03
	3.886	3.856-3.916	2.783e+03
	4.015	3.985-4.045	2.760e+03
7 Aroclor-1260	4.014	3.984-4.044	4.165e+03
	4.286	4.256-4.316	2.591e+03
	4.451	4.421-4.481	2.631e+03
	4.664	4.634-4.694	6.088e+03
	4.853	4.823-4.883	2.942e+03
8 Aroclor-1262	3.824	3.794-3.854	2.273e+03
	4.017	3.987-4.047	3.072e+03
	4.288	4.258-4.318	4.004e+03
	4.453	4.423-4.483	3.573e+03
	4.856	4.826-4.886	2.501e+03
9 Aroclor-1268	4.884	4.854-4.914	9.392e+03
	4.910	4.880-4.940	9.361e+03
	5.043	5.013-5.073	7.073e+03
	5.281	5.251-5.311	3.056e+03
	5.478	5.448-5.508	2.201e+04
M 10 Aroclor-Total	1.000	0.980-1.020	
\$ 11 4cmx	1.771	1.741-1.801	6.229e+04
\$ 12 Decachlorobiphenyl	5.607	5.577-5.637	5.411e+04
13 4,4'-DDT	4.229	4.209-4.249	5.006e+04
14 4,4'-DDD	4.036	4.016-4.056	7.298e+04
15 4,4'-DDE	3.632	3.612-3.652	7.426e+04



## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
 Quant Method : ESTD Target Version : 3.50  
 Last Update : 29-Dec-2009 14:47 Number of Cpnds : 15  
 Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events	Values
Initial:Start Threshold	1000.000000
Initial:End Threshold	500.000000
Initial:Area Threshold	500.000000
Initial:P-P Resolution	0.000000
Initial:Bunch Factor	3.000000
Initial:Negative Peaks	OFF
Initial:Tension	4.000000
4.200:Tension	1.000000

Compound	RT	RT Window	RF
1 Aroclor-1016	2.745	2.715-2.775	4.538e+03
	3.179	3.149-3.209	3.602e+03
	3.330	3.300-3.360	2.053e+03
	3.359	3.329-3.389	2.137e+03
	3.518	3.488-3.548	2.871e+03
2 Aroclor-1221	2.292	2.262-2.322	1.263e+03
	2.397	2.367-2.427	7.739e+02
	2.442	2.412-2.472	3.051e+03
3 Aroclor-1232	2.442	2.412-2.472	2.061e+03
	2.747	2.717-2.777	1.960e+03
	3.183	3.153-3.213	1.498e+03
	3.254	3.224-3.284	9.309e+02
4 Aroclor-1242	3.521	3.491-3.551	1.107e+03
	2.746	2.716-2.776	3.445e+03
	3.181	3.151-3.211	2.681e+03
	3.253	3.223-3.283	1.637e+03
	3.331	3.301-3.361	1.508e+03
5 Aroclor-1248	3.518	3.488-3.548	2.145e+03
	3.332	3.302-3.362	3.282e+03
	3.519	3.489-3.549	4.187e+03
	3.605	3.575-3.635	4.451e+03
	3.795	3.765-3.825	4.697e+03
	3.824	3.794-3.854	5.389e+03



## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m

Compound	RT	RT Window	RF
6 Aroclor-1254	3.818	3.788-3.848	4.985e+03
	3.959	3.929-3.989	5.799e+03
	4.196	4.166-4.226	4.023e+03
	4.277	4.247-4.307	7.731e+03
	4.440	4.410-4.470	5.608e+03
7 Aroclor-1260	4.414	4.384-4.444	5.767e+03
	4.565	4.535-4.595	7.124e+03
	4.677	4.647-4.707	4.819e+03
	4.874	4.844-4.904	5.632e+03
	5.500	5.470-5.530	9.038e+03
8 Aroclor-1262	4.415	4.385-4.445	4.703e+03
	4.567	4.537-4.597	5.853e+03
	4.875	4.845-4.905	8.946e+03
	5.076	5.046-5.106	7.772e+03
	5.254	5.224-5.284	1.672e+04
9 Aroclor-1268	5.498	5.468-5.528	2.032e+04
	5.531	5.501-5.561	2.018e+04
	5.703	5.673-5.733	1.496e+04
	5.903	5.873-5.933	6.438e+03
	6.127	6.097-6.157	4.409e+04
M 10 Aroclor-Total	1.000	0.980-1.020	
\$ 11 4cmx	2.068	2.038-2.098	1.293e+05
\$ 12 Decachlorobiphenyl	6.300	6.270-6.330	1.128e+05
13 4,4'-DDT	4.814	4.794-4.834	8.705e+04
14 4,4'-DDD	4.600	4.580-4.620	1.499e+05
15 4,4'-DDE	4.195	4.175-4.215	1.504e+05



GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2009 11:00  
 End Cal Date : 14-DEC-2009 09:35  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Cal Date : 29-Dec-2009 14:49 jen01212  
 Curve Type : Average

## Calibration File Names:

Level 1: /chem/ecd2a.i/120209.b/008f0801.d  
 Level 2: /chem/ecd2a.i/120209.b/009f0901.d  
 Level 3: /chem/ecd2a.i/120209.b/010f1001.d  
 Level 4: /chem/ecd2a.i/113009a.b/014f1401.d  
 Level 5: /chem/ecd2a.i/120209.b/012f1201.d

Compound	100.000	250.000	500.000	1000.000	4000.000	RRF	% RSD
Level 1	Level 2	Level 3	Level 4	Level 5			
1 Aroclor-1016(1)	2466	2335	2250	2152	1986	2238	8.133
(2)	4869	4683	4664	4616	4594	4685	2.323
(3)	2072	1962	1892	1818	1764	1901	6.365
(4)	1061	990	984	930	915	976	5.885
(5)	1595	1490	1441	1389	1375	1458	6.121
2 Aroclor-1221(1)	++++	++++	++++	464	++++	464	0.000
(2)	++++	++++	++++	657	++++	657	0.000
(3)	++++	++++	++++	347	++++	347	0.000
3 Aroclor-1232(1)	++++	++++	++++	1165	++++	1165	0.000
(2)	++++	++++	++++	931	++++	931	0.000
(3)	++++	++++	++++	800	++++	800	0.000
(4)	++++	++++	++++	510	++++	510	0.000
(5)	++++	++++	++++	584	++++	584	0.000
4 Aroclor-1242(1)	1990	1799	1692	1619	1566	1733	9.686
(2)	1678	1536	1439	1387	1381	1484	8.410
(3)	1015	931	874	843	866	906	7.639
(4)	817	761	714	669	673	727	8.615
(5)	1272	1143	1059	1036	1087	1120	8.434
5 Aroclor-1248(1)	1738	1529	1527	1515	1325	1527	9.560
(2)	2238	2070	1990	2006	1832	2027	7.247
(3)	1706	1611	1571	1551	1415	1571	6.718
(4)	2322	2198	2161	2230	2178	2218	2.874
(5)	2083	1922	1902	1885	1770	1913	5.861
6 Aroclor-1254(1)	2304	2118	2048	2007	1924	2080	6.888
(2)	2981	2797	2739	2702	2642	2772	4.677
(3)	3870	3712	3711	3744	3675	3742	2.011
(4)	2886	2776	2725	2760	2767	2783	2.186
(5)	2994	2820	2741	2711	2533	2760	6.080



GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2009 11:00  
 End Cal Date : 14-DEC-2009 09:35  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Cal Date : 29-Dec-2009 14:49 jen01212  
 Curve Type : Average

Compound	100.000 Level 1	250.000 Level 2	500.000 Level 3	1000.000 Level 4	4000.000 Level 5	RRF	% RSD
7 Aroclor-1260(1)	4187	4145	4185	4134	4175	4165	0.584
(2)	2696	2603	2589	2529	2536	2591	2.593
(3)	2699	2626	2625	2591	2614	2631	1.539
(4)	5867	6003	6142	6129	6296	6088	2.650
(5)	2925	2904	2929	2920	3034	2942	1.769
8 Aroclor-1262(1)	2530	2266	2239	2239	2092	2273	6.993
(2)	3295	3066	3031	3051	2917	3072	4.482
(3)	4237	3997	3977	3997	3815	4004	3.763
(4)	3754	3532	3556	3594	3430	3573	3.295
(5)	2578	2453	2481	2538	2454	2501	2.217
9 Aroclor-1268(1)	9077	9136	9272	9373	10103	9392	4.409
(2)	9332	9272	9238	9197	9765	9361	2.470
(3)	6985	6923	6953	6984	7523	7073	3.568
(4)	3112	3015	2984	2964	3207	3056	3.331
(5)	21397	21592	21760	21851	23464	22013	3.767
M 10 Aroclor-Total	+++++	+++++	+++++	+++++	+++++	+++++	+++++
13 4,4'-DDT	+++++	+++++	+++++	50063	+++++	50063	0.000
14 4,4'-DDD	+++++	+++++	+++++	72978	+++++	72978	0.000
15 4,4'-DDE	+++++	+++++	+++++	74262	+++++	74262	0.000
11 4cmx	61300	61246	62868	63075	62969	62292	1.498
12 Decachlorobiphenyl	55102	53352	54400	53360	54345	54112	1.389



GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2009 11:00  
 End Cal Date : 14-DEC-2009 09:35  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
 Cal Date : 29-Dec-2009 14:47 jen01212  
 Curve Type : Average

## Calibration File Names:

Level 1: /chem/ecd2a.i/120209.b/008b0801.d  
 Level 2: /chem/ecd2a.i/120209.b/009b0901.d  
 Level 3: /chem/ecd2a.i/120209.b/010b1001.d  
 Level 4: /chem/ecd2a.i/113009a.b/014b1401.d  
 Level 5: /chem/ecd2a.i/120209.b/012b1201.d

Compound	100.000	250.000	500.000	1000.000	4000.000	RRF	% RSD
Level 1	Level 2	Level 3	Level 4	Level 5			
1 Aroclor-1016(1)	4662	4582	4609	4551	4285	4538	3.244
(2)	3647	3696	3564	3575	3528	3602	1.886
(3)	2078	2044	2044	2059	2041	2053	0.760
(4)	2149	2125	2133	2140	2138	2137	0.428
(5)	2852	2832	2882	2908	2879	2871	1.025
2 Aroclor-1221(1)	++++	++++	++++	1263	++++	1263	0.000
(2)	++++	++++	++++	774	++++	774	0.000
(3)	++++	++++	++++	3051	++++	3051	0.000
3 Aroclor-1232(1)	++++	++++	++++	2061	++++	2061	0.000
(2)	++++	++++	++++	1960	++++	1960	0.000
(3)	++++	++++	++++	1498	++++	1498	0.000
(4)	++++	++++	++++	931	++++	931	0.000
(5)	++++	++++	++++	1107	++++	1107	0.000
4 Aroclor-1242(1)	3674	3489	3409	3384	3271	3445	4.346
(2)	2815	2677	2634	2637	2644	2681	2.863
(3)	1696	1624	1594	1606	1663	1637	2.599
(4)	1601	1513	1471	1467	1487	1508	3.655
(5)	2235	2100	2068	2141	2180	2145	3.068
5 Aroclor-1248(1)	3439	3315	3263	3296	3099	3282	3.723
(2)	4291	4205	4192	4250	3996	4187	2.717
(3)	4601	4495	4377	4484	4299	4451	2.609
(4)	4665	4612	4696	4831	4682	4697	1.733
(5)	5471	5399	5390	5477	5208	5389	2.022
6 Aroclor-1254(1)	5121	4955	4998	5025	4828	4985	2.145
(2)	5885	5693	5812	5852	5753	5799	1.330
(3)	4010	3906	3992	4126	4082	4023	2.109
(4)	7559	7611	7766	7925	7797	7731	1.909
(5)	5659	5569	5439	5821	5553	5608	2.538



GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2009 11:00  
 End Cal Date : 14-DEC-2009 09:35  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
 Cal Date : 29-Dec-2009 14:47 jen01212  
 Curve Type : Average

Compound	100.000	250.000	500.000	1000.000	4000.000	RRF	% RSD
Level 1	Level 2	Level 3	Level 4	Level 5			
7 Aroclor-1260(1)	5735	5627	5779	5816	5877	5767	1.626
(2)	6687	7031	7243	7286	7372	7124	3.855
(3)	4572	4701	4890	4942	4988	4819	3.647
(4)	5377	5518	5714	5746	5803	5632	3.163
(5)	8369	8607	9231	9252	9728	9038	6.039
8 Aroclor-1262(1)	4855	4536	4634	4812	4677	4703	2.776
(2)	5760	5648	5834	6083	5942	5853	2.859
(3)	8687	8674	9001	9349	9021	8946	3.121
(4)	7559	7507	7790	8124	7880	7772	3.221
(5)	15890	16154	16824	17584	17141	16719	4.167
9 Aroclor-1268(1)	18829	19584	20101	20533	22559	20321	6.904
(2)	18822	19343	20333	20389	22025	20182	6.077
(3)	13874	14365	14864	15141	16565	14962	6.808
(4)	5734	6115	6404	6840	7097	6438	8.497
(5)	40707	42777	43856	44408	48724	44094	6.689
10 Aroclor-Total	++++	++++	++++	++++	++++	++++	++++
13 4,4'-DDT	++++	++++	++++	87046	++++	87046	0.000
14 4,4'-DDD	++++	++++	++++	149858	++++	149858	0.000
15 4,4'-DDE	++++	++++	++++	150414	++++	150414	0.000
11 4cmx	118604	126358	131414	133891	136323	129318	5.440
12 Decachlorobiphenyl	109662	108705	113295	113170	119083	112783	3.614



FORM 7  
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A  
 Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1038  
 Instrument ID: ECD2A Calibration Date: 12/29/09 Time: 0726  
 Lab File ID: 002F0201 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935  
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	2237.690	1979.810	0.01	-11.5	15.0
(2)	4685.268	4181.732	0.01	-10.7	15.0
(3)	1901.482	1665.482	0.01	-12.4	15.0
(4)	975.978	854.977	0.01	-12.4	15.0
(5)	1457.866	1264.967	0.01	-13.2	15.0
Aroclor-1260	4165.097	4064.277	0.01	-2.4	15.0
(2)	2590.571	2586.356	0.01	-0.2	15.0
(3)	2631.205	2655.669	0.01	0.9	15.0
(4)	6087.596	6276.714	0.01	3.1	15.0
(5)	2942.150	3010.974	0.01	2.3	15.0
4cmx	62291.660	63833.220	0.01	2.5	15.0
Decachlorobiphenyl	54111.563	60710.230	0.01	12.2	15.0

FORM VII PEST



FORM 7  
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A  
 Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1038  
 Instrument ID: ECD2A Calibration Date: 12/29/09 Time: 0726  
 Lab File ID: 002B0201 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935  
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	4537.819	4194.660	0.01	-7.6	15.0
(2)	3602.166	3292.312	0.01	-8.6	15.0
(3)	2053.230	1911.309	0.01	-6.9	15.0
(4)	2137.091	2011.780	0.01	-5.9	15.0
(5)	2870.516	2685.788	0.01	-6.4	15.0
Aroclor-1260	5766.921	5686.021	0.01	-1.4	15.0
(2)	7123.891	7269.875	0.01	2.0	15.0
(3)	4818.707	4996.379	0.01	3.7	15.0
(4)	5631.757	5755.064	0.01	2.2	15.0
(5)	9037.511	9498.759	0.01	5.1	15.0
4cmx	129318.03	138216.34	0.01	6.9	15.0
Decachlorobiphenyl	112782.99	128323.67	0.01	13.8	15.0

FORM VII PEST



FORM 7  
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A  
 Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1038  
 Instrument ID: ECD2A Calibration Date: 12/29/09 Time: 1117  
 Lab File ID: 022F2201 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935  
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	2237.690	2015.417	0.01	-9.9	15.0
(2)	4685.268	4292.741	0.01	-8.4	15.0
(3)	1901.482	1720.292	0.01	-9.5	15.0
(4)	975.978	868.251	0.01	-11.0	15.0
(5)	1457.866	1328.140	0.01	-8.9	15.0
Aroclor-1260	4165.097	4128.858	0.01	-0.9	15.0
(2)	2590.571	2595.442	0.01	0.2	15.0
(3)	2631.205	2674.422	0.01	1.6	15.0
(4)	6087.596	6344.394	0.01	4.2	15.0
(5)	2942.150	3057.700	0.01	3.9	15.0
4cmx	62291.660	64591.400	0.01	3.7	15.0
Decachlorobiphenyl	54111.563	59777.760	0.01	10.5	15.0

FORM VII PEST



FORM 7  
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A  
 Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1038  
 Instrument ID: ECD2A Calibration Date: 12/29/09 Time: 1117  
 Lab File ID: 022B2201 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935  
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	4537.819	4206.631	0.01	-7.3	15.0
(2)	3602.166	3357.192	0.01	-6.8	15.0
(3)	2053.230	1937.576	0.01	-5.6	15.0
(4)	2137.091	2015.700	0.01	-5.7	15.0
(5)	2870.516	2726.459	0.01	-5.0	15.0
Aroclor-1260	5766.921	5723.117	0.01	-0.8	15.0
(2)	7123.891	7231.224	0.01	1.5	15.0
(3)	4818.707	4952.700	0.01	2.8	15.0
(4)	5631.757	5709.014	0.01	1.4	15.0
(5)	9037.511	9420.244	0.01	4.2	15.0
4cmx	129318.03	138965.45	0.01	7.5	15.0
Decachlorobiphenyl	112782.99	126206.43	0.01	11.9	15.0

FORM VII PEST



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/002f0201.d  
Lab Smp Id: WAR091211-60 01 Client Smp ID: AR166001  
Inj Date : 29-DEC-2009 07:26  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |WAR091211-60 01  
Misc Info : |PCB\_CVS|1660||CVS|  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
Meth Date : 29-Dec-2009 13:37 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
Als bottle: 2 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1660.sub  
Target Version: 3.50 Sample Matrix: None

AMOUNTS

			CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	( ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8		
1.771	1.771	0.000	6383322	100.000	102	80.00- 120.00	100.00
-----							
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.607	5.607	0.000	6071023	100.000	112	80.00- 120.00	100.00
-----							
1 Aroclor-1016					CAS #: 12674-11-2		
2.273	2.273	0.000	1979809	1000.00	885	80.00- 120.00	100.00
2.597	2.597	0.000	4181731	1000.00	892	192.49- 232.49	211.22
2.688	2.688	0.000	1665482	1000.00	876	64.38- 104.38	84.12
2.823	2.823	0.000	854976	1000.00	876	22.92- 62.92	43.18
2.974	2.974	0.000	1264967	1000.00	868	43.84- 83.84	63.89
Average of Peak Amounts =					879		
-----							
7 Aroclor-1260					CAS #: 11096-82-5		
4.014	4.014	0.000	4064277	1000.00	976	80.00- 120.00	100.00
4.286	4.286	0.000	2586356	1000.00	998	42.56- 82.56	63.64
4.451	4.451	0.000	2655669	1000.00	1010	44.13- 84.13	65.34
4.664	4.664	0.000	6276714	1000.00	1030	133.57- 173.57	154.44
4.853	4.853	0.000	3010973	1000.00	1020	53.66- 93.66	74.08
Average of Peak Amounts =					1.01e+03		
-----							



Data File: /chem/eod2a.i/122909.b/002f0201.d

Date: 29-DEC-2009 07:26

Client ID: AR166001

Sample Info: 1MAR091211-60 01

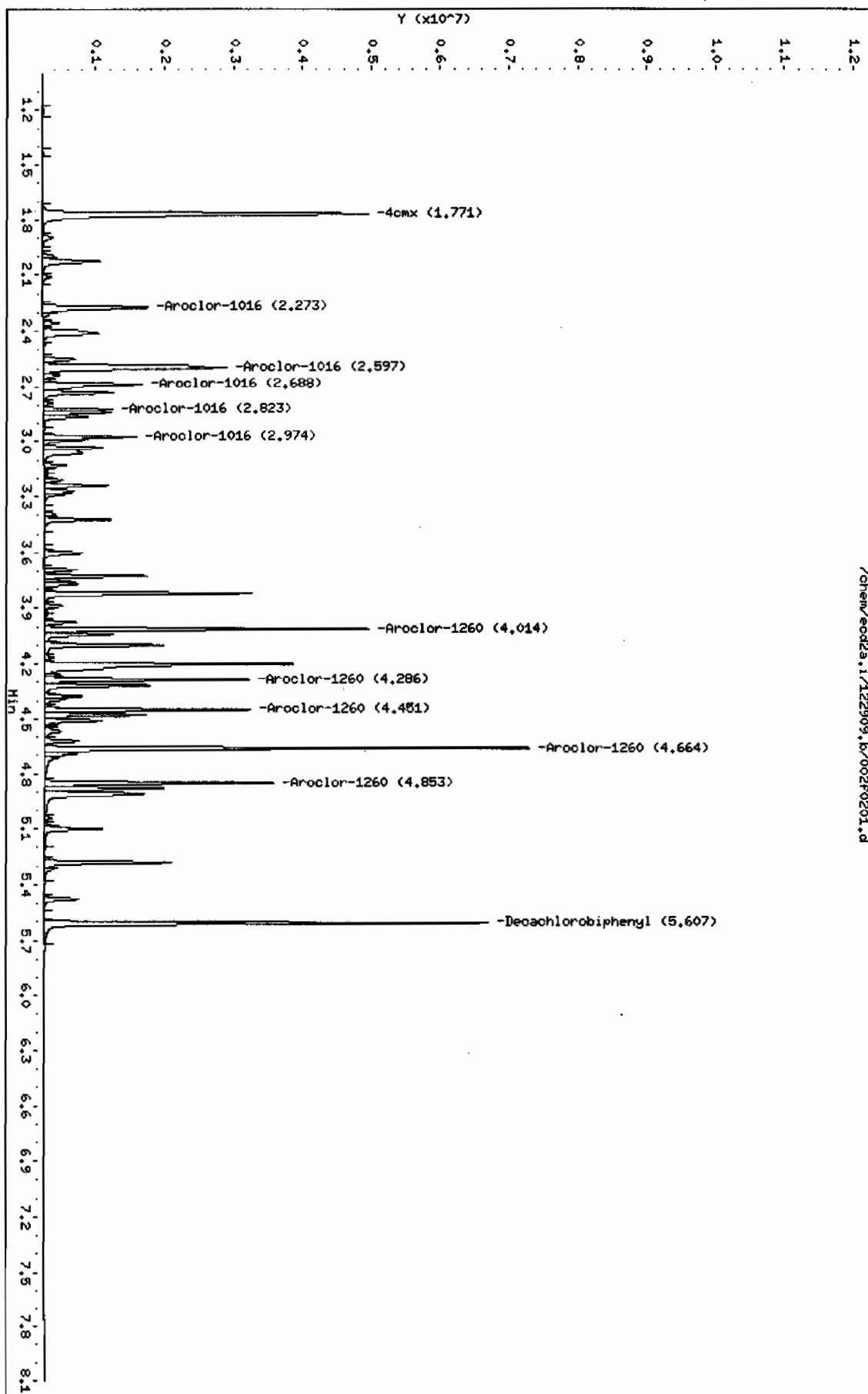
Column phase: CLP1

Instrument: eod2a.i

Operator: JHOC

Column diameter: 0.25

Page 1





Data File: /chem/ecd2a.i/122909.b/002b0201.d  
 Report Date: 29-Dec-2009 14:41

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/002b0201.d  
 Lab Smp Id: WAR091211-60 01 Client Smp ID: AR166001  
 Inj Date : 29-DEC-2009 07:26  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |WAR091211-60 01  
 Misc Info : |PCB\_CVS|1660||CVS|  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
 Meth Date : 29-Dec-2009 14:41 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
 Als bottle: 2 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: AR1660.sub  
 Target Version: 3.50 Sample Matrix: None  
 Processing Host: hpc1p1

AMOUNTS						
RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
11 4cmx				CAS #: 877-09-8		
2.068	2.068	0.000	13821634 100.000	107	80.00- 120.00	100.00
-----						
12 Decachlorobiphenyl				CAS #: 2051-24-3		
6.300	6.300	0.000	12832367 100.000	114	80.00- 120.00	100.00
-----						
1 Aroclor-1016				CAS #: 12674-11-2		
2.745	2.745	0.000	4194660 1000.00	924	80.00- 120.00	100.00
3.179	3.179	0.000	3292312 1000.00	914	58.49- 98.49	78.49
3.330	3.330	0.000	1911309 1000.00	931	25.57- 65.57	45.57
3.359	3.359	0.000	2011780 1000.00	941	27.96- 67.96	47.96
3.518	3.518	0.000	2685788 1000.00	936	44.03- 84.03	64.03
Average of Peak Amounts =				929		
-----						
7 Aroclor-1260				CAS #: 11096-82-5		
4.414	4.414	0.000	5686021 1000.00	986	80.00- 120.00	100.00
4.565	4.565	0.000	7269875 1000.00	1020	107.86- 147.86	127.86
4.677	4.677	0.000	4996379 1000.00	1040	67.87- 107.87	87.87
4.874	4.874	0.000	5755064 1000.00	1020	81.21- 121.21	101.21
5.500	5.500	0.000	9498759 1000.00	1050	147.05- 187.05	167.05
Average of Peak Amounts =				1.02e+03		



Data File: /chem/eod2a.i/122909.b/002b0201.d

Date : 29-DEC-2009 07:26

Client ID: AR16001

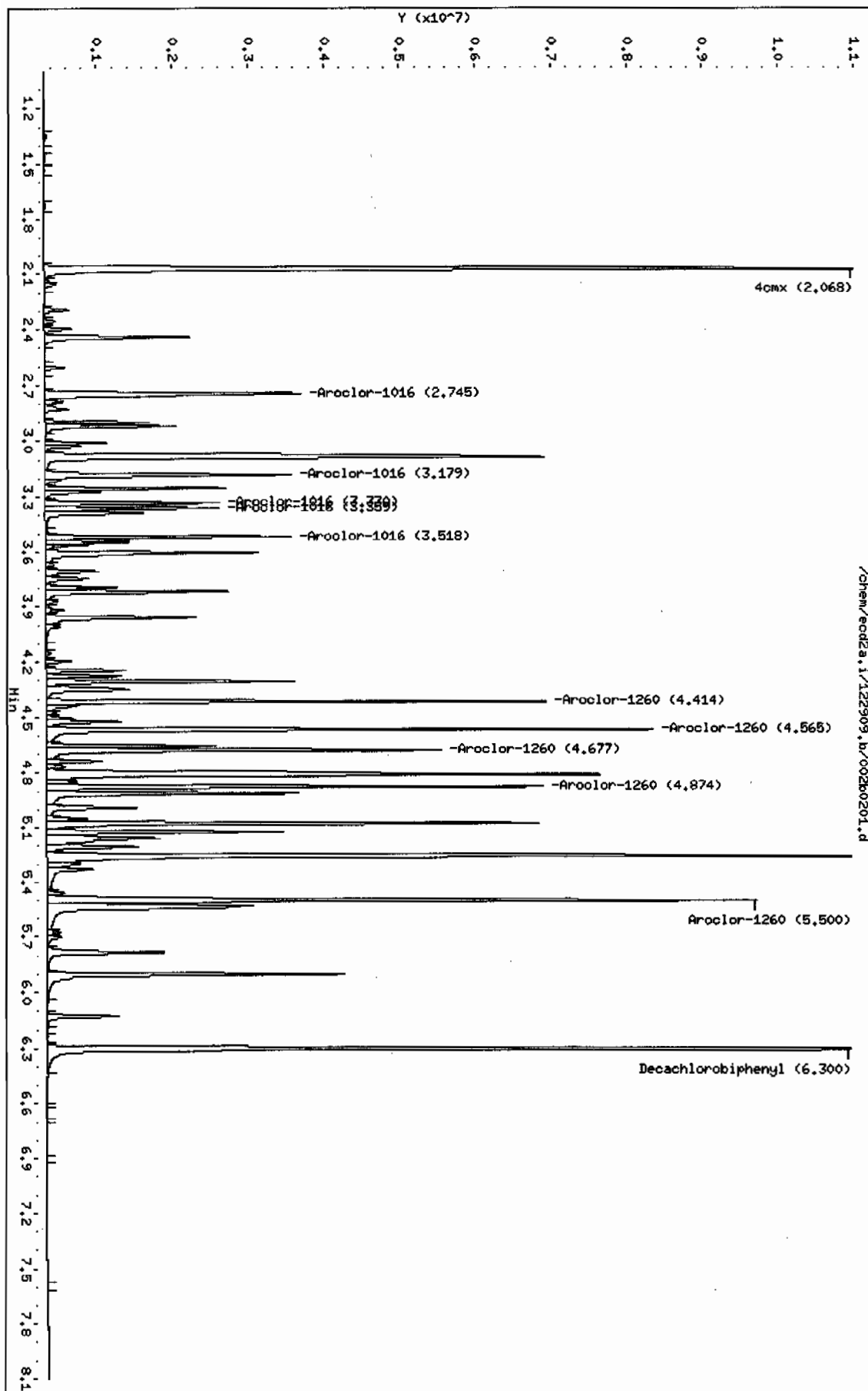
Sample Info: IAPR091211-60 01

Column phase: CLP2

Instrument: eod2a.i

Operator: JROC

Column diameter: 0.25





Data File: /chem/ecd2a.i/122909.b/003f0301.d  
Report Date: 29-Dec-2009 14:37

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/003f0301.d  
Lab Smp Id: WAR091216-54 Client Smp ID: AR125401  
Inj Date : 29-DEC-2009 07:37  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |WAR091216-54  
Misc Info : |PCB\_CVS|1254||CVS|  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
Meth Date : 29-Dec-2009 13:37 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
Als bottle: 3 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1254.sub  
Target Version: 3.50 Sample Matrix: None

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
-----						
\$ 11 4cmx					CAS #: 877-09-8	
1.771	1.771	0.000	6744893 100.000	108	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
5.608	5.607	0.001	6435687 100.000	119	80.00- 120.00	100.00
-----						
6 Aroclor-1254					CAS #: 11097-69-1	
3.242	3.242	0.000	1956242 1000.00	940	80.00- 120.00	100.00
3.424	3.424	0.000	2598080 1000.00	937	112.81- 152.81	132.81
3.694	3.694	0.000	3579085 1000.00	956	162.96- 202.96	182.96
3.886	3.886	0.000	2609855 1000.00	938	113.41- 153.41	133.41
4.015	4.015	0.000	2682182 1000.00	972	117.11- 157.11	137.11
Average of Peak Amounts =				949		



Data file: /chem/eod2a.i/122909.b/003f0301.d

Date : 29-DEC-2009 07:37

Client ID: AR125401

Sample Info: 1MAR091216-54

Column phase: CLP1

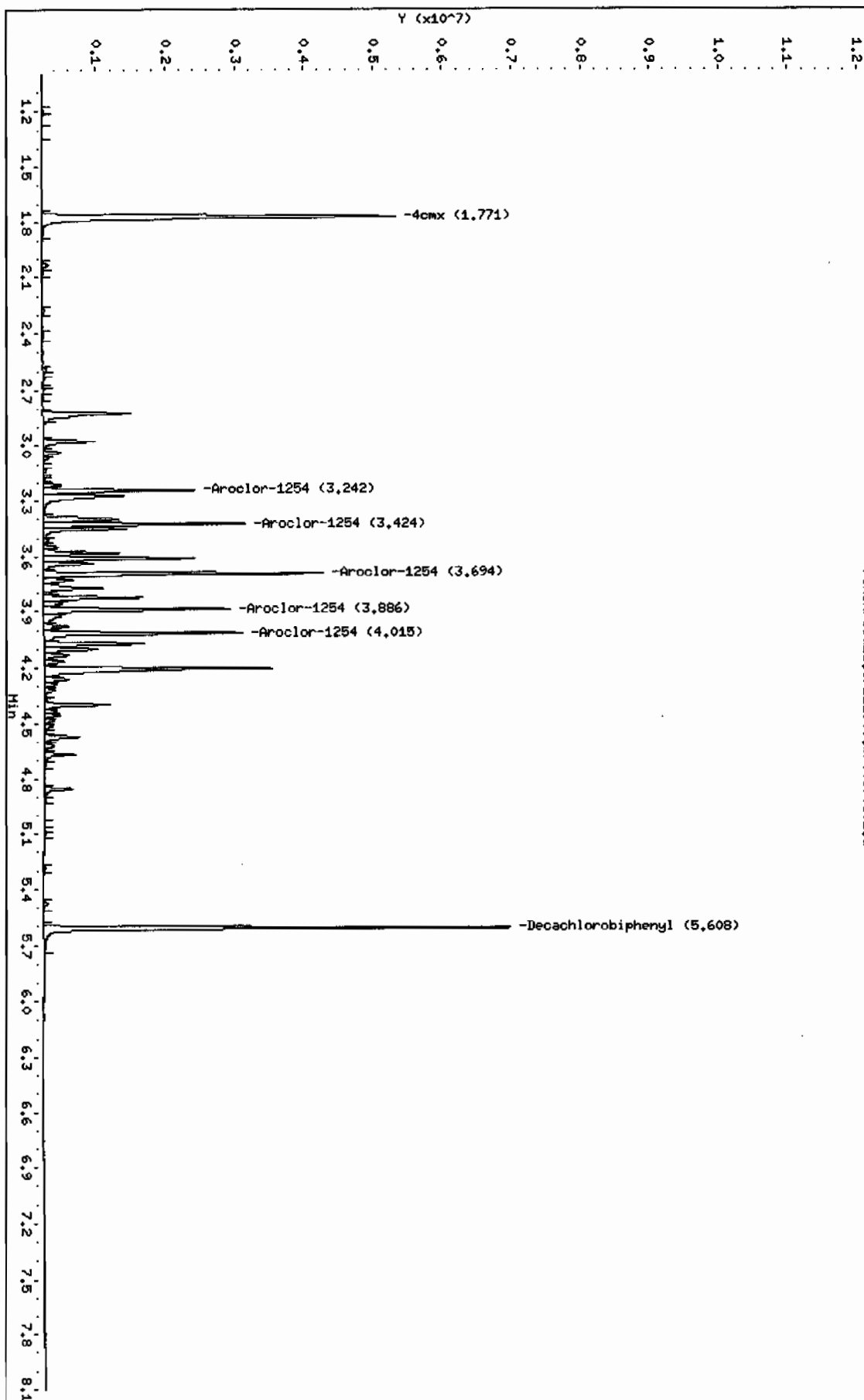
Instrument: eod2a.i

Operator: JHOC

Column diameter: 0.25

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/chem/eod2a.i/122909.b/003f0301.d





Data File: /chem/ecd2a.i/122909.b/003b0301.d  
Report Date: 29-Dec-2009 14:42

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/003b0301.d

Lab Smp Id: WAR091216-54

Client Smp ID: AR125401

Inj Date : 29-DEC-2009 07:37

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091216-54

Misc Info : |PCB\_CVS|1254||CVS|

Comment :

Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m

Meth Date : 29-Dec-2009 14:42 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012b1201.d

Als bottle: 3

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1254.sub

Target Version: 3.50

Sample Matrix: None

Processing Host: hpc1p1

AMOUNTS							
			CAL-AMT		ON-COL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)		( ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
-----							
\$ 11 4cmx					CAS #: 877-09-8		
2.068	2.068	0.000	14704314	100.000	114	80.00- 120.00	100.00
-----							
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
6.301	6.300	0.001	13560839	100.000	120	80.00- 120.00	100.00
-----							
6 Aroclor-1254					CAS #: 11097-69-1		
3.818	3.818	0.000	4876217	1000.00	978	80.00- 120.00	100.00
3.959	3.959	0.000	5566214	1000.00	960	94.15- 134.15	114.15
4.196	4.196	0.000	3977097	1000.00	988	61.56- 101.56	81.56
4.277	4.277	0.000	7608694	1000.00	984	136.04- 176.04	156.04
4.440	4.440	0.000	5544908	1000.00	989	93.71- 133.71	113.71
Average of Peak Amounts =					980		
-----							



Data File: /chem/ecd2a.i/122909.b/003b0301.d

Date: 29-DEC-2009 07:37

Client ID: AR125401

Sample Info: 14R091216-S4

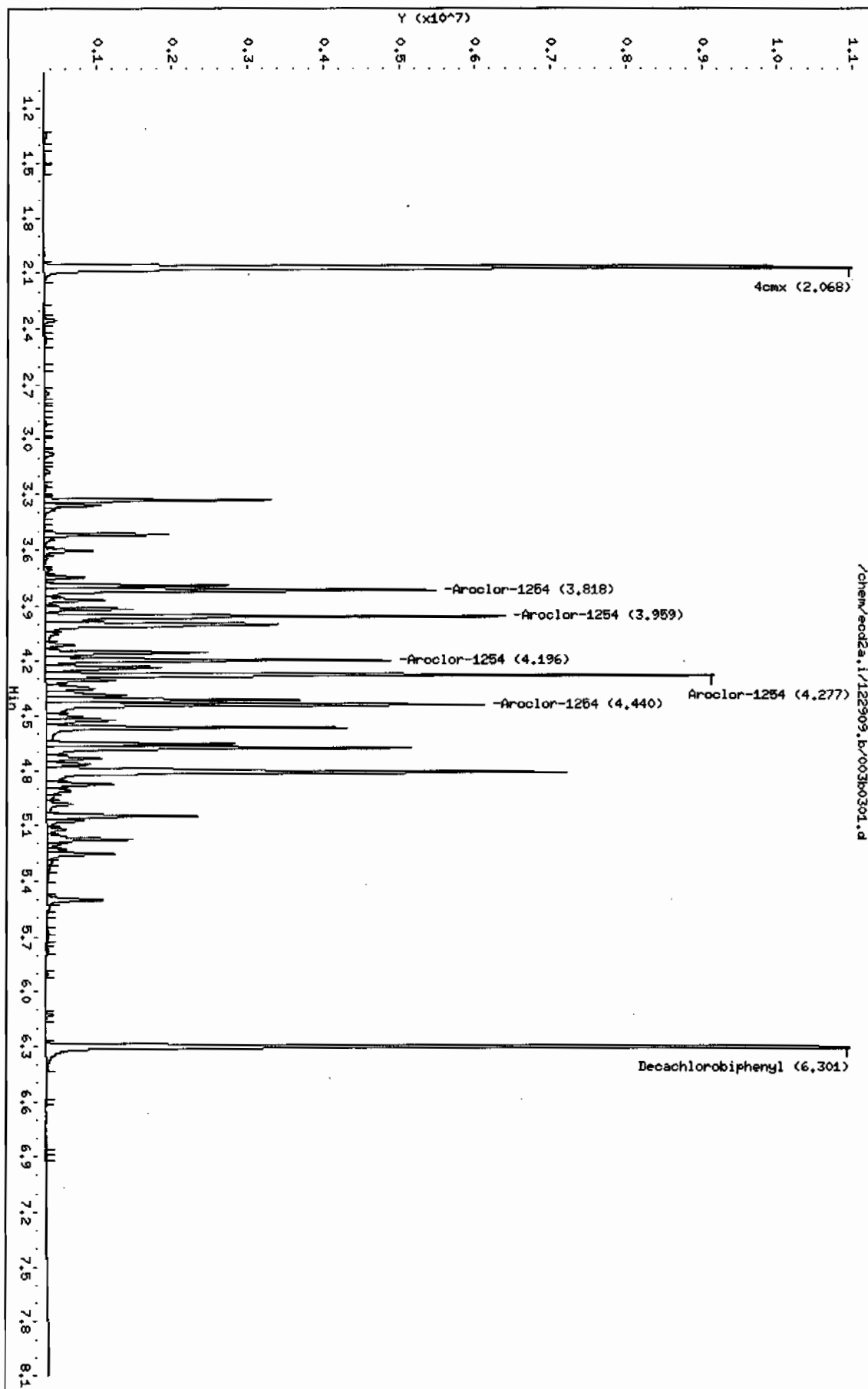
Column phase: CLP2

Instrument: ecd2a.i

Operator: J40C

Column diameter: 0.25

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Data File: /chem/ecd2a.i/122909.b/004f0401.d  
 Report Date: 29-Dec-2009 14:37

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/004f0401.d

Lab Smp Id: WAR091217-42

Client Smp ID: AR124201

Inj Date : 29-DEC-2009 07:48

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091217-42

Misc Info : |PCB\_CVS|1242||CVS|

Comment :

Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m

Meth Date : 29-Dec-2009 13:37 jen01212

Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 4

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1242.sub

Target Version: 3.50

Sample Matrix: None

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
---	-----	-----	-----	-----	-----	-----
\$ 11 4cmx			CAS #: 877-09-8			
1.771	1.771	0.000	6773785 100.000	109	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
5.609	5.607	0.002	6474825 100.000	120	80.00- 120.00	100.00
-----						
4 Aroclor-1242			CAS #: 53469-21-9			
2.274	2.274	0.000	1765815 1000.00	1020	80.00- 120.00	100.00
2.689	2.689	0.000	1458150 1000.00	982	62.58- 102.58	82.58
2.731	2.731	0.000	900745 1000.00	994	31.01- 71.01	51.01
2.824	2.824	0.000	710651 1000.00	978	20.24- 60.24	40.24
2.976	2.976	0.000	1119351 1000.00	1000	43.39- 83.39	63.39
Average of Peak Amounts =			995			



Data File: /chem/ecod2a.i/122909.b/004f0401.d

Date: 29-DEC-2009 07:48

Client ID: AR124201

Sample Info: 1MRO91217-42

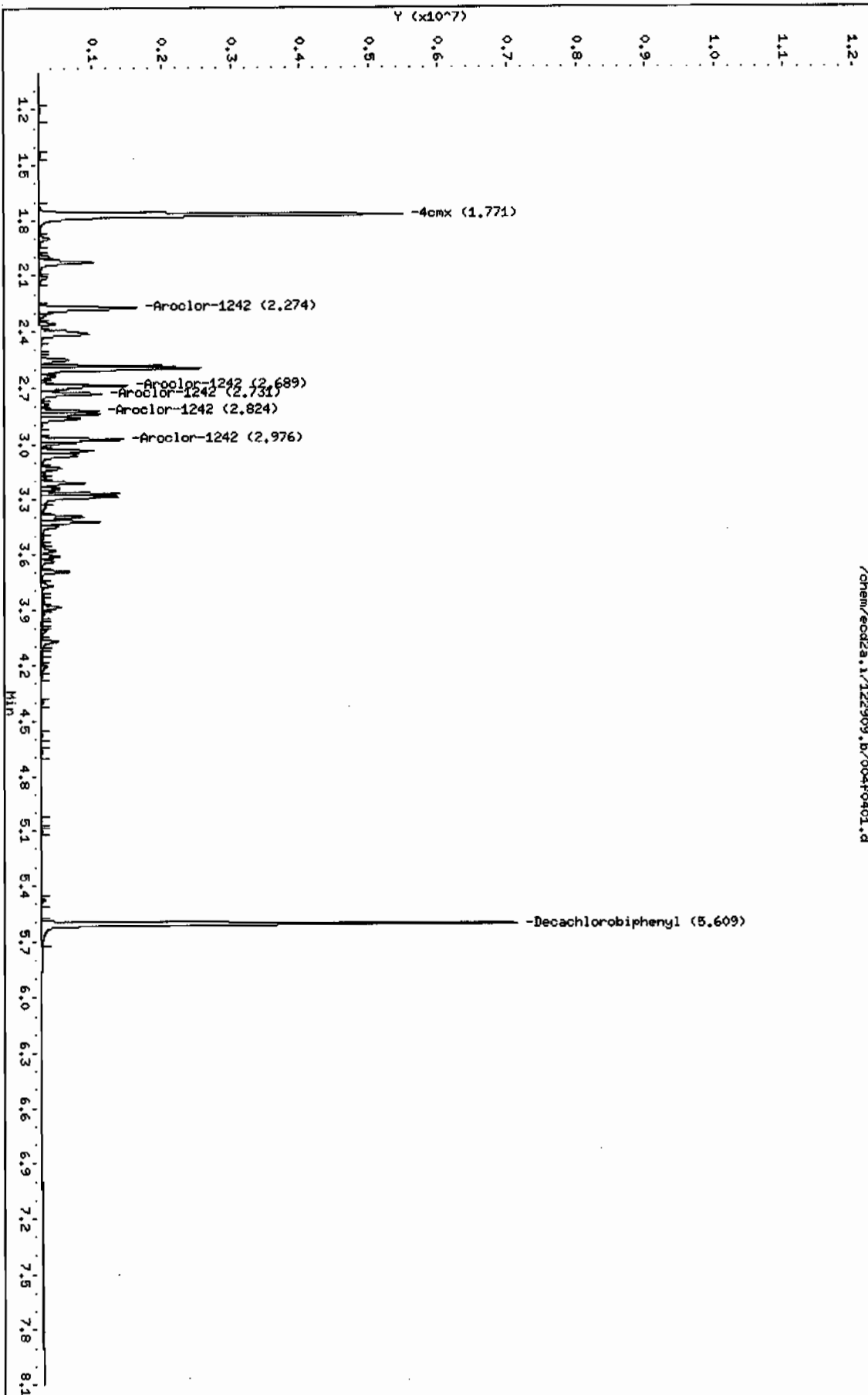
Column phase: CLP1

Instrument: ecod2a.i

Operator: JHOC

Column diameter: 0.25

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Data File: /chem/ecd2a.i/122909.b/004b0401.d  
Report Date: 29-Dec-2009 14:43

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/004b0401.d  
Lab Smp Id: WAR091217-42 Client Smp ID: AR124201  
Inj Date : 29-DEC-2009 07:48  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |WAR091217-42  
Misc Info : |PCB\_CVS|1242||CVS|  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
Meth Date : 29-Dec-2009 14:43 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
Als bottle: 4 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1242.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpc1p1

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
<hr/>						
\$ 11 4cmx			CAS #: 877-09-8			
2.069	2.068	0.001	14696292 100.000	114	80.00- 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
6.302	6.300	0.002	13702837 100.000	121	80.00- 120.00	100.00
<hr/>						
4 Aroclor-1242			CAS #: 53469-21-9			
2.746	2.746	0.000	3718888 1000.00	1080	80.00- 120.00	100.00
3.181	3.181	0.000	2793608 1000.00	1040	55.12- 95.12	75.12
3.253	3.253	0.000	1669349 1000.00	1020	24.89- 64.89	44.89
3.331	3.331	0.000	1567550 1000.00	1040	22.15- 62.15	42.15
3.518	3.518	0.000	2299357 1000.00	1070	41.83- 81.83	61.83
Average of Peak Amounts =			1.05e+03			



Data File: /chem/eod2a.i/122309.b/004b0401.d

Date : 29-DEC-2009 07:48

Client ID: PR124201

Sample Info: 11MR091217-42

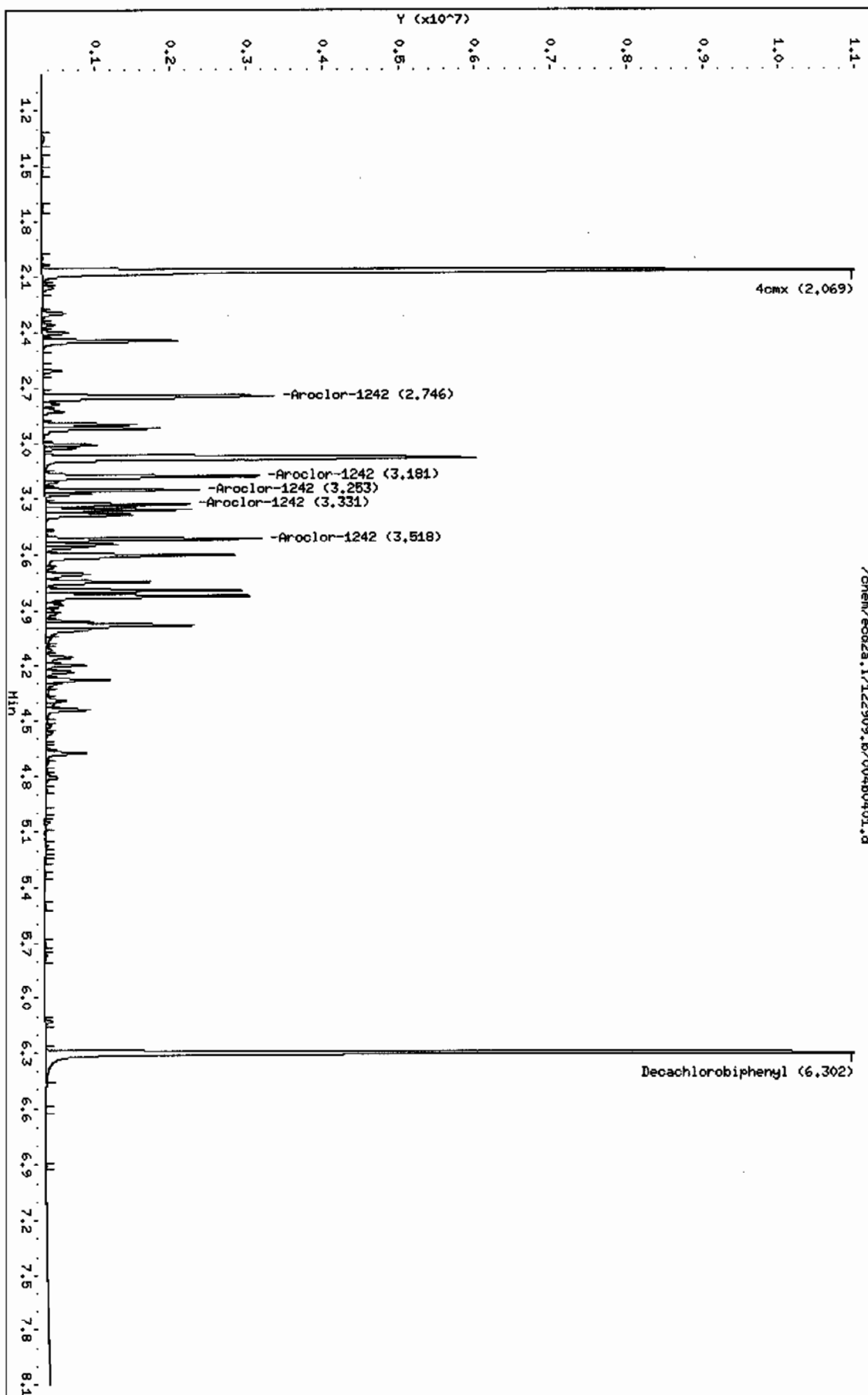
Column phase: CLP2

Instrument: eod2a.i

Operator: JNOC

Column diameter: 0.25

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Data File: /chem/ecd2a.i/122909.b/005f0501.d  
 Report Date: 29-Dec-2009 14:37

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/005f0501.d  
 Lab Smp Id: WAR091217-48 Client Smp ID: AR124801  
 Inj Date : 29-DEC-2009 07:59  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |WAR091217-48  
 Misc Info : |PCB\_CVS|1248||CVS|  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Meth Date : 29-Dec-2009 13:37 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
 Als bottle: 5 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: AR1248.sub  
 Target Version: 3.50 Sample Matrix: None

AMOUNTS							
			CAL-AMT		ON-COL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)		TARGET RANGE		RATIO
==	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8		
1.770	1.771	-0.001	7360215	100.000	118	80.00- 120.00	100.00
-----							
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.610	5.607	0.003	7090053	100.000	131	80.00- 120.00	100.00
-----							
5 Aroclor-1248					CAS #: 12672-29-6		
2.825	2.825	0.000	1468344	1000.00	962	80.00- 120.00	100.00
2.975	2.975	0.000	1982668	1000.00	978	115.03- 155.03	135.03
3.035	3.035	0.000	1519725	1000.00	967	83.50- 123.50	103.50
3.270	3.270	0.000	2078664	1000.00	937	121.57- 161.57	141.57
3.424	3.424	0.000	1799011	1000.00	940	102.52- 142.52	122.52
Average of Peak Amounts =					957		



Data File: /chem/ecd2a.i/122909.b/005f0501.d

Date: 29-DEC-2009 07:59

Client ID: AR124801

Sample Info: IIR091217-48

Column phase: CLP1

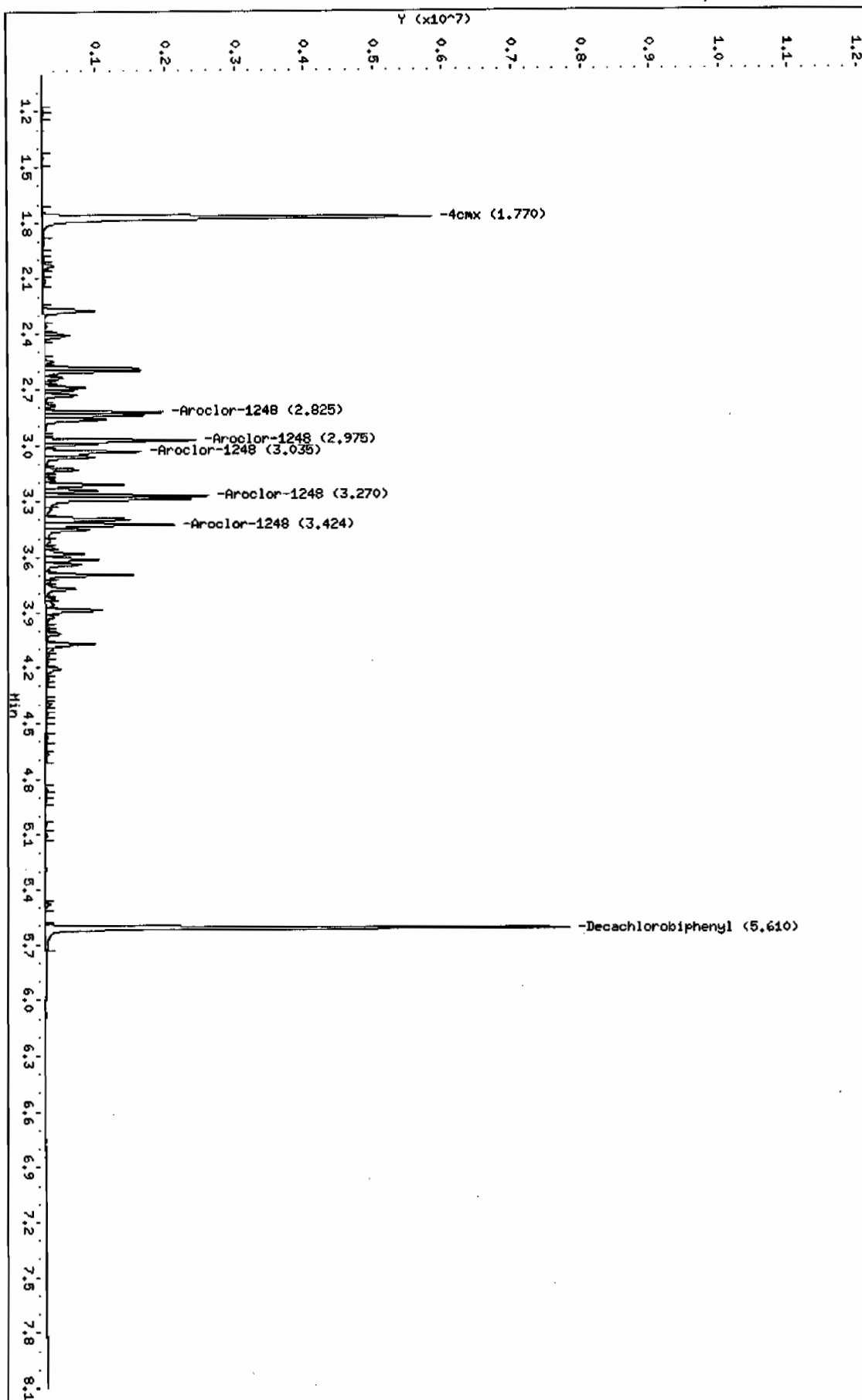
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Instrument: ecd2a.i

Operator: JADC

Column diameter: 0.25

/chem/ecd2a.i/122909.b/005f0501.d





Data File: /chem/ecd2a.i/122909.b/005b0501.d  
 Report Date: 29-Dec-2009 14:43

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/005b0501.d  
 Lab Smp Id: WAR091217-48 Client Smp ID: AR124801  
 Inj Date : 29-DEC-2009 07:59  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |WAR091217-48  
 Misc Info : |PCB\_CVS|1248||CVS|  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
 Meth Date : 29-Dec-2009 14:43 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
 Als bottle: 5 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: AR1248.sub  
 Target Version: 3.50 Sample Matrix: None  
 Processing Host: hpc1p1

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
-----						
\$ 11 4cmx				CAS #: 877-09-8		
2.069	2.068	0.001	16057466 100.000	124	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
6.302	6.300	0.002	14981334 100.000	133	80.00- 120.00	100.00
-----						
5 Aroclor-1248				CAS #: 12672-29-6		
3.332	3.332	0.000	3275090 1000.00	998	80.00- 120.00	100.00
3.519	3.519	0.000	4196280 1000.00	1000	108.13- 148.13	128.13
3.605	3.605	0.000	4475627 1000.00	1000	116.66- 156.66	136.66
3.795	3.795	0.000	4536185 1000.00	966	118.51- 158.51	138.51
3.824	3.824	0.000	5374355 1000.00	997	144.10- 184.10	164.10
Average of Peak Amounts =				994		

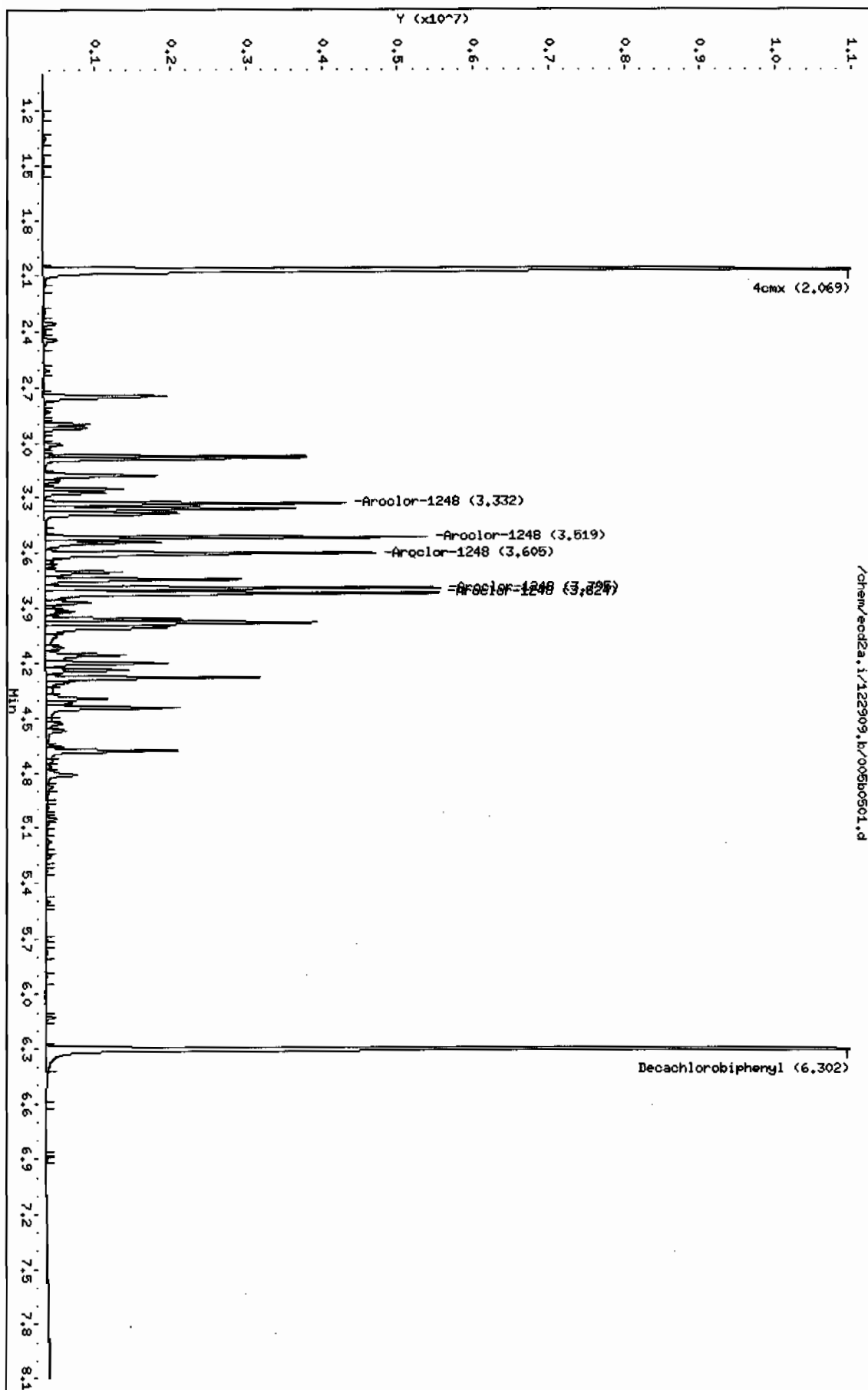


Data File: /chem/ecd2a,i/122909,b/005b0501.d  
Date: 29-DEC-2009 07:59  
Client ID: AR124801  
Sample Info: IMA091217-48

Column phase: CLP2

Instrument: ecd2a,i  
Operator: JROC  
Column diameter: 0.25

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/006f0601.d  
 Lab Smp Id: WAR090930-32 Client Smp ID: AR123201  
 Inj Date : 29-DEC-2009 08:17  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |WAR090930-32  
 Misc Info : |PCB\_CVS|1232||CVS|  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Meth Date : 29-Dec-2009 13:37 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
 Als bottle: 6 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: AR1232.sub  
 Target Version: 3.50 Sample Matrix: None

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
-----						
\$ 11 4cmx				CAS #: 877-09-8		
1.772	1.771	0.001	10114890 100.000	162	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.616	5.607	0.009	9874511 100.000	182	80.00- 120.00	100.00
-----						
3 Aroclor-1232				CAS #: 11141-16-5		
2.027	2.027	0.000	1546440 1000.00	1330	80.00- 120.00	100.00
2.277	2.277	0.000	1232894 1000.00	1320	59.72- 99.72	79.72
2.693	2.693	0.000	1048268 1000.00	1310	47.79- 87.79	67.79
2.736	2.736	0.000	666971 1000.00	1310	23.13- 63.13	43.13
2.981	2.981	0.000	767292 1000.00	1310	29.62- 69.62	49.62
Average of Peak Amounts =			1.32e+03			

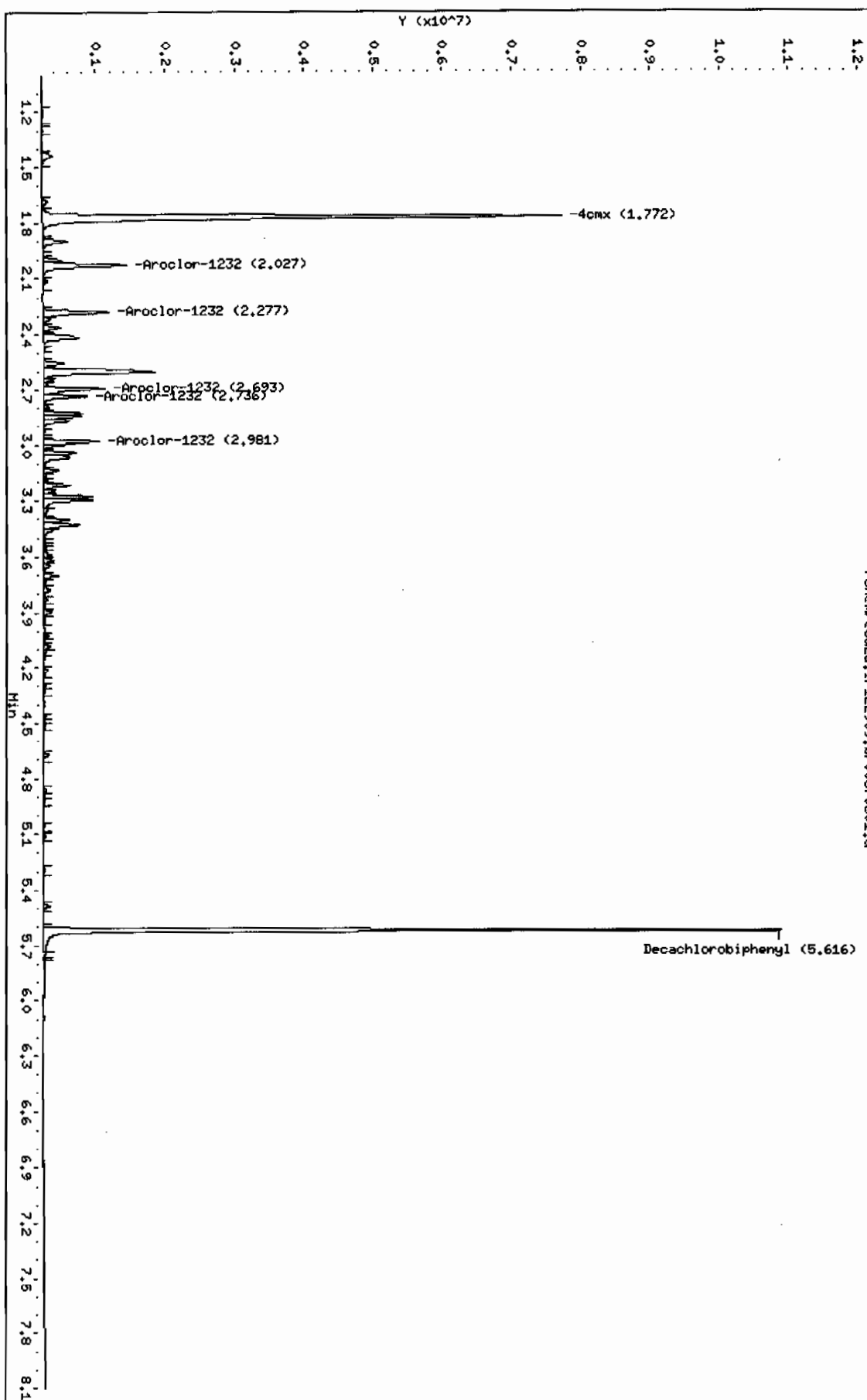


Data File: /chem/eod2a.i/122909.b/006f0601.d  
Date : 29-DEC-2009 08:17  
Client ID: RK123201  
Sample Info: 1MAR090930-32

Column phase: CLP1

Instrument: eod2a.i  
Operator: JROC  
Column diameter: 0.25

/chem/eod2a.i/122909.b/006f0601.d





Data File: /chem/ecd2a.i/122909.b/006b0601.d  
Report Date: 29-Dec-2009 14:44

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/006b0601.d  
Lab Smp Id: WAR090930-32 Client Smp ID: AR123201  
Inj Date : 29-DEC-2009 08:17  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |WAR090930-32  
Misc Info : |PCB\_CVS|1232||CVS|  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
Meth Date : 29-Dec-2009 14:43 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
Als bottle: 6 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1232.sub  
Target Version: 3.50 Sample Matrix: None  
Processing Host: hpc1p1

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
-----						
\$ 11 4cmx				CAS #: 877-09-8		
2.069	2.068	0.001	22199517 100.000	172	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
6.304	6.300	0.004	21227910 100.000	188	80.00- 120.00	100.00
-----						
3 Aroclor-1232				CAS #: 11141-16-5		
2.442	2.442	0.000	2893358 1000.00	1400	80.00- 120.00	100.00
2.747	2.747	0.000	2666991 1000.00	1360	72.18- 112.18	92.18
3.183	3.183	0.000	1975790 1000.00	1320	48.29- 88.29	68.29
3.254	3.254	0.000	1214623 1000.00	1300	21.98- 61.98	41.98
3.521	3.521	0.000	1476417 1000.00	1330	31.03- 71.03	51.03
Average of Peak Amounts =			1.34e+03			

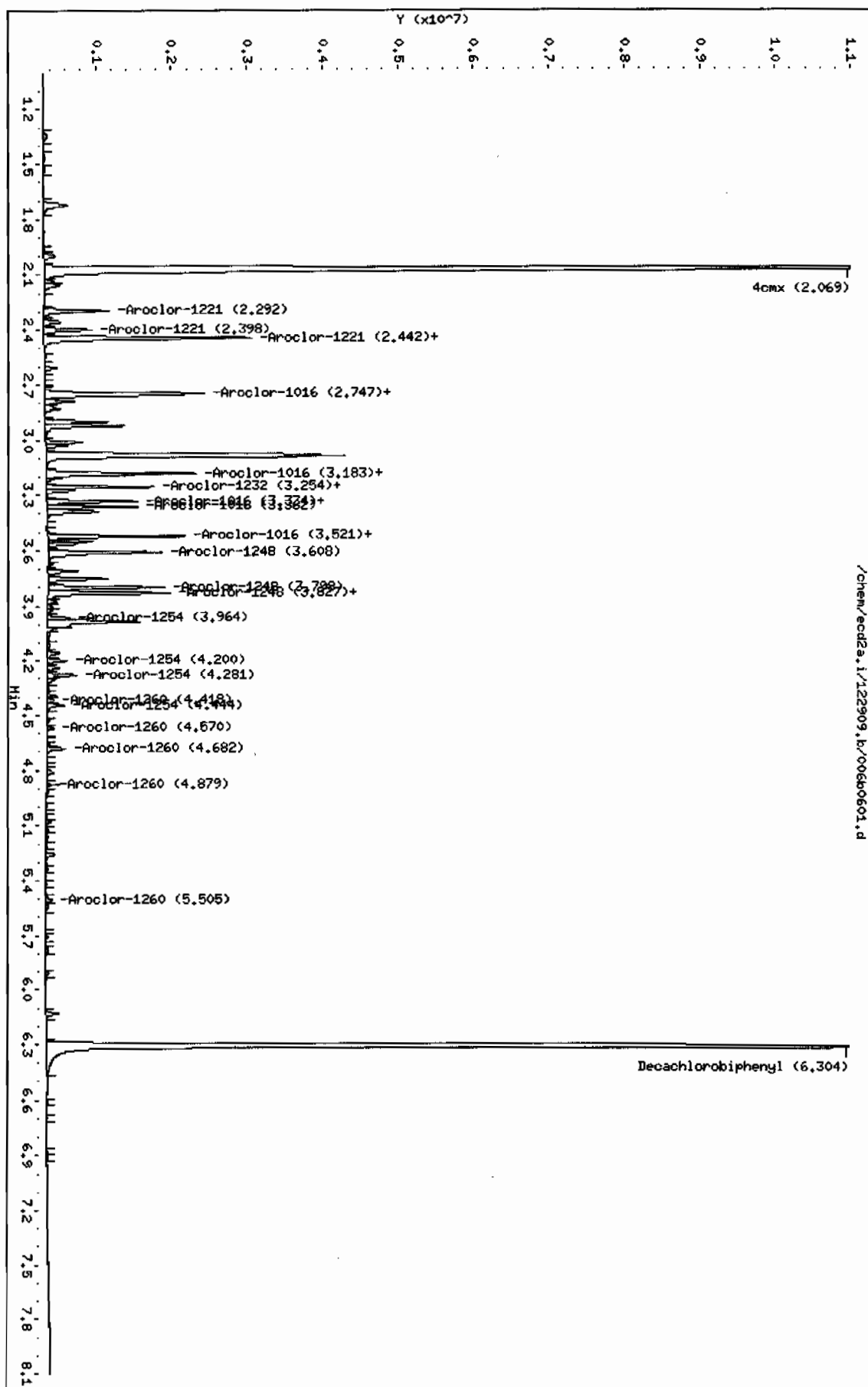


Data File: /chem/ecd2a.i/122909.b/0060601.d  
Date : 29-DEC-2009 08:17  
Client ID: AR123201  
Sample Info: IMR090930-32

Column phase: CLP2

Instrument: ecd2a.i  
Operator: JROC  
Column diameter: 0.25

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Data File: /chem/ecd2a.i/122909.b/007f0701.d  
Report Date: 29-Dec-2009 14:38

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/007f0701.d  
Lab Smp Id: WAR091111-21 Client Smp ID: AR122101  
Inj Date : 29-DEC-2009 08:28  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |WAR091111-21  
Misc Info : |PCB\_CVS|1262||CVS|  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
Meth Date : 29-Dec-2009 13:37 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
Als bottle: 7 Continuing Calibration Sample  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: AR1221.sub  
Target Version: 3.50 Sample Matrix: None

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
<hr/>						
\$ 11 4cmx				CAS #: 877-09-8		
1.770	1.771	-0.001	7024932 100.000	113	80.00- 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.610	5.607	0.003	6697965 100.000	124	80.00- 120.00	100.00
<hr/>						
2 Aroclor-1221				CAS #: 11104-28-2		
1.436	1.436	0.000	558071 1000.00	1200	80.00- 120.00	100.00
1.898	1.898	0.000	800768 1000.00	1220	123.49- 163.49	143.49
1.997	1.997	0.000	428834 1000.00	1240	56.84- 96.84	76.84
Average of Peak Amounts =			1.22e+03			

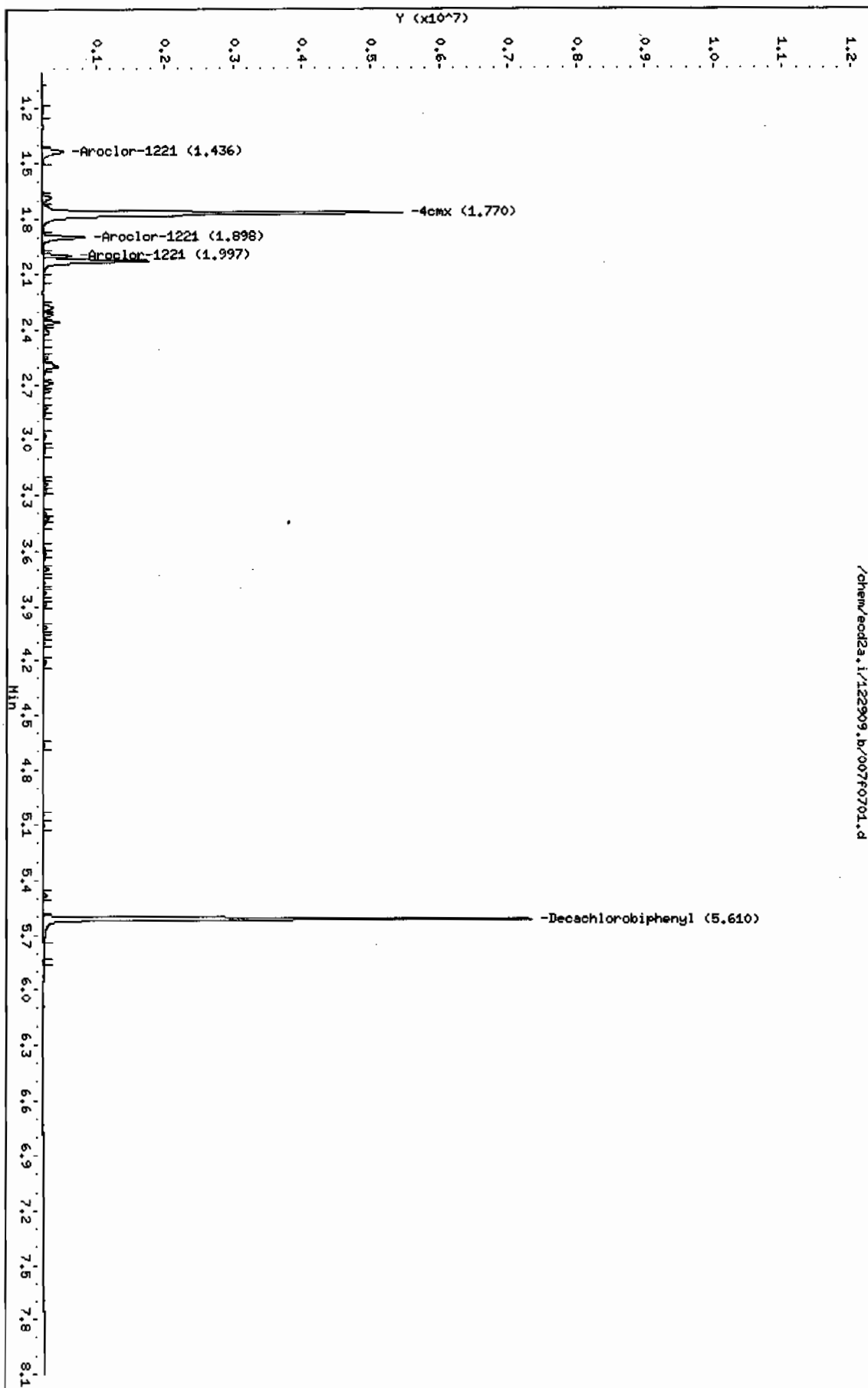


Data File: /chem/eod2a.i/122909.b/007f0701.d  
Date: 29-DEC-2009 08:28  
Client ID: AR122101  
Sample Info: 1MAR091111-21

Column phase: CLP1

Instrument: eod2a.i  
Operator: JROC  
Column diameter: 0.25

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Data File: /chem/ecd2a.i/122909.b/007b0701.d  
 Report Date: 29-Dec-2009 14:38

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/007b0701.d  
 Lab Smp Id: WAR091111-21 Client Smp ID: AR122101  
 Inj Date : 29-DEC-2009 08:28  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |WAR091111-21  
 Misc Info : |PCB\_CVS|1262||CVS|  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
 Meth Date : 29-Dec-2009 13:36 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
 Als bottle: 7 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: AR1221.sub  
 Target Version: 3.50 Sample Matrix: None

AMOUNTS								
			CAL-AMT		ON-COL			
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	( ug/L)	TARGET RANGE	RATIO	
---	-----	-----	-----	-----	-----	-----	-----	-----
<hr/>								
\$ 11 4cmx					CAS #: 877-09-8			
2.068	2.068	0.000	14992798	100.000	116	80.00- 120.00	100.00	
<hr/>								
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
6.302	6.300	0.002	14125451	100.000	125	80.00- 120.00	100.00	
<hr/>								
2 Aroclor-1221					CAS #: 11104-28-2			
2.292	2.292	0.000	1486678	1000.00	1180	80.00- 120.00	100.00	
2.397	2.397	0.000	909190	1000.00	1170	41.16- 81.16	61.16	
2.442	2.442	0.000	3573346	1000.00	1170	220.36- 260.36	240.36	
Average of Peak Amounts =					1.17e+03			



Data File: /chem/eod2a.i/122909.b/007b0701.d  
Date: 29-DEC-2009 08:28  
Client ID: KR122101  
Sample Info: 1MR091111-21

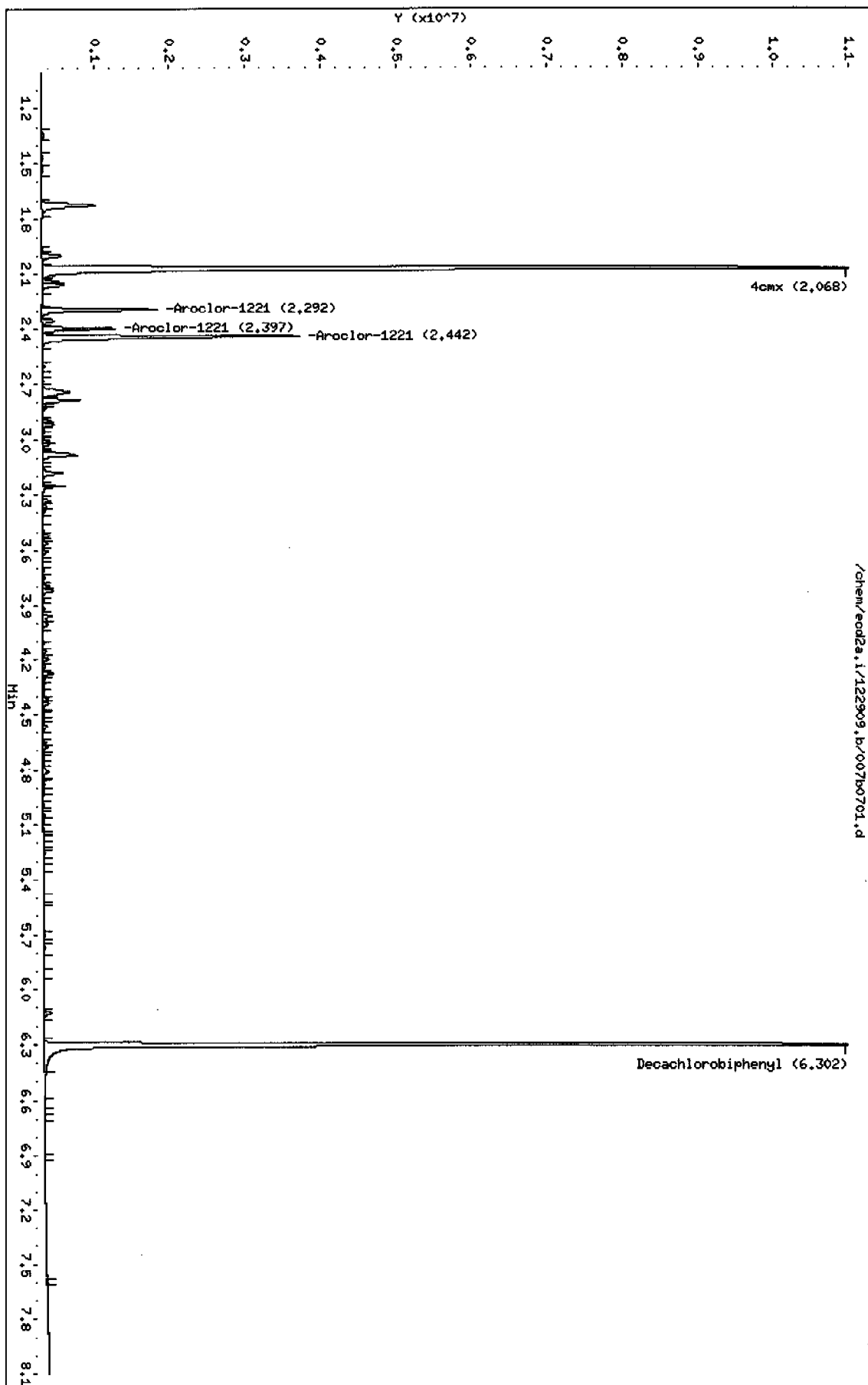
Instrument: eod2a.i

Page 1

Column phase: CLP2

Operator: JHOC  
Column diameter: 0.25

/chem/eod2a.i/122909.b/007b0701.d





Data File: /chem/ecd2a.i/122909.b/022f2201.d  
Report Date: 29-Dec-2009 14:40

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/022f2201.d

Lab Smp Id: WAR091211-60 02

Client Smp ID: AR166002

Inj Date : 29-DEC-2009 11:17

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091211-60 02

Misc Info : |PCB\_CVS|1660||CVS|

Comment :

Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m

Meth Date : 29-Dec-2009 13:37 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d

Als bottle: 22

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1660.sub

Target Version: 3.50

Sample Matrix: None

AMOUNTS						
			CAL-AMT	ON-COL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	( ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx				CAS #: 877-09-8		
1.775	1.771	0.004	6459140 100.000	104	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.610	5.607	0.003	5977776 100.000	110	80.00- 120.00	100.00
-----						
1 Aroclor-1016				CAS #: 12674-11-2		
2.276	2.273	0.003	2015417 1000.00	901	80.00- 120.00	100.00
2.600	2.597	0.003	4292741 1000.00	916	192.49- 232.49	213.00
2.691	2.688	0.003	1720292 1000.00	905	64.38- 104.38	85.36
2.826	2.823	0.003	868251 1000.00	890	22.92- 62.92	43.08
2.976	2.974	0.002	1328140 1000.00	911	43.84- 83.84	65.90
Average of Peak Amounts =				904		
-----						
7 Aroclor-1260				CAS #: 11096-82-5		
4.016	4.014	0.002	4128857 1000.00	991	80.00- 120.00	100.00
4.287	4.286	0.001	2595441 1000.00	1000	42.56- 82.56	62.86
4.453	4.451	0.002	2674421 1000.00	1020	44.13- 84.13	64.77
4.666	4.664	0.002	6344393 1000.00	1040	133.57- 173.57	153.66
4.855	4.853	0.002	3057700 1000.00	1040	53.66- 93.66	74.06
Average of Peak Amounts =				1.02e+03		
-----						



Data File: /chem/eod2a.i/122909.b/022f2201.d

Date: 29-DEC-2009 11:17

Client ID: AR16002

Sample Info: IWR091211-60 02

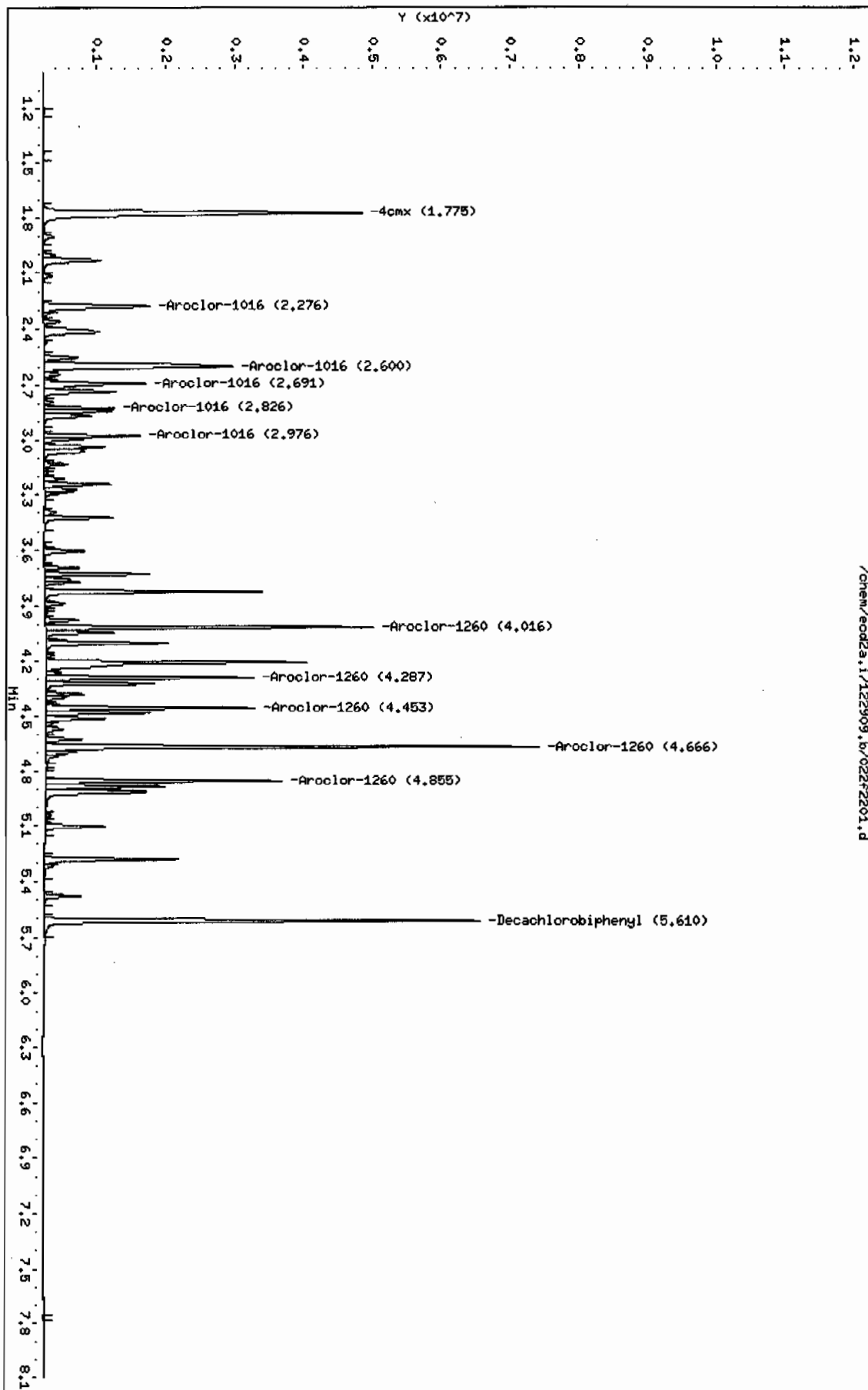
Column phase: CLP1

Instrument: eod2a.i

Operator: JADC

Column diameter: 0.25

/chem/eod2a.i/122909.b/022f2201.d





Data File: /chem/ecd2a.i/122909.b/022b2201.d  
 Report Date: 29-Dec-2009 14:45

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/022b2201.d  
 Lab Smp Id: WAR091211-60 02 Client Smp ID: AR166002  
 Inj Date : 29-DEC-2009 11:17  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |WAR091211-60 02  
 Misc Info : |PCB\_CVS|1660||CVS|  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
 Meth Date : 29-Dec-2009 14:45 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
 Als bottle: 22 Continuing Calibration Sample  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: AR1660.sub  
 Target Version: 3.50 Sample Matrix: None  
 Processing Host: hpc1pl

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
-----						
\$ 11 4cmx				CAS #: 877-09-8		
2.071	2.068	0.003	13896545 100.000	107	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
6.302	6.300	0.002	12620643 100.000	112	80.00- 120.00	100.00
-----						
1 Aroclor-1016				CAS #: 12674-11-2		
2.747	2.745	0.002	4206631 1000.00	927	80.00- 120.00	100.00
3.182	3.179	0.003	3357192 1000.00	932	59.81- 99.81	79.81
3.332	3.330	0.002	1937576 1000.00	944	26.06- 66.06	46.06
3.361	3.359	0.002	2015700 1000.00	943	27.92- 67.92	47.92
3.519	3.518	0.001	2726459 1000.00	950	44.81- 84.81	64.81
Average of Peak Amounts =				939		
-----						
7 Aroclor-1260				CAS #: 11096-82-5		
4.415	4.414	0.001	5723117 1000.00	992	80.00- 120.00	100.00
4.566	4.565	0.001	7231224 1000.00	1020	106.35- 146.35	126.35
4.678	4.677	0.001	4952700 1000.00	1030	66.54- 106.54	86.54
4.875	4.874	0.001	5709014 1000.00	1010	79.75- 119.75	99.75
5.501	5.500	0.001	9420244 1000.00	1040	144.60- 184.60	164.60
Average of Peak Amounts =				1.02e+03		
-----						



Data File: /chem/eod2a.i/122909.b/022b2201.d

Date: 29-DEC-2009 11:17

Client ID: AR166002

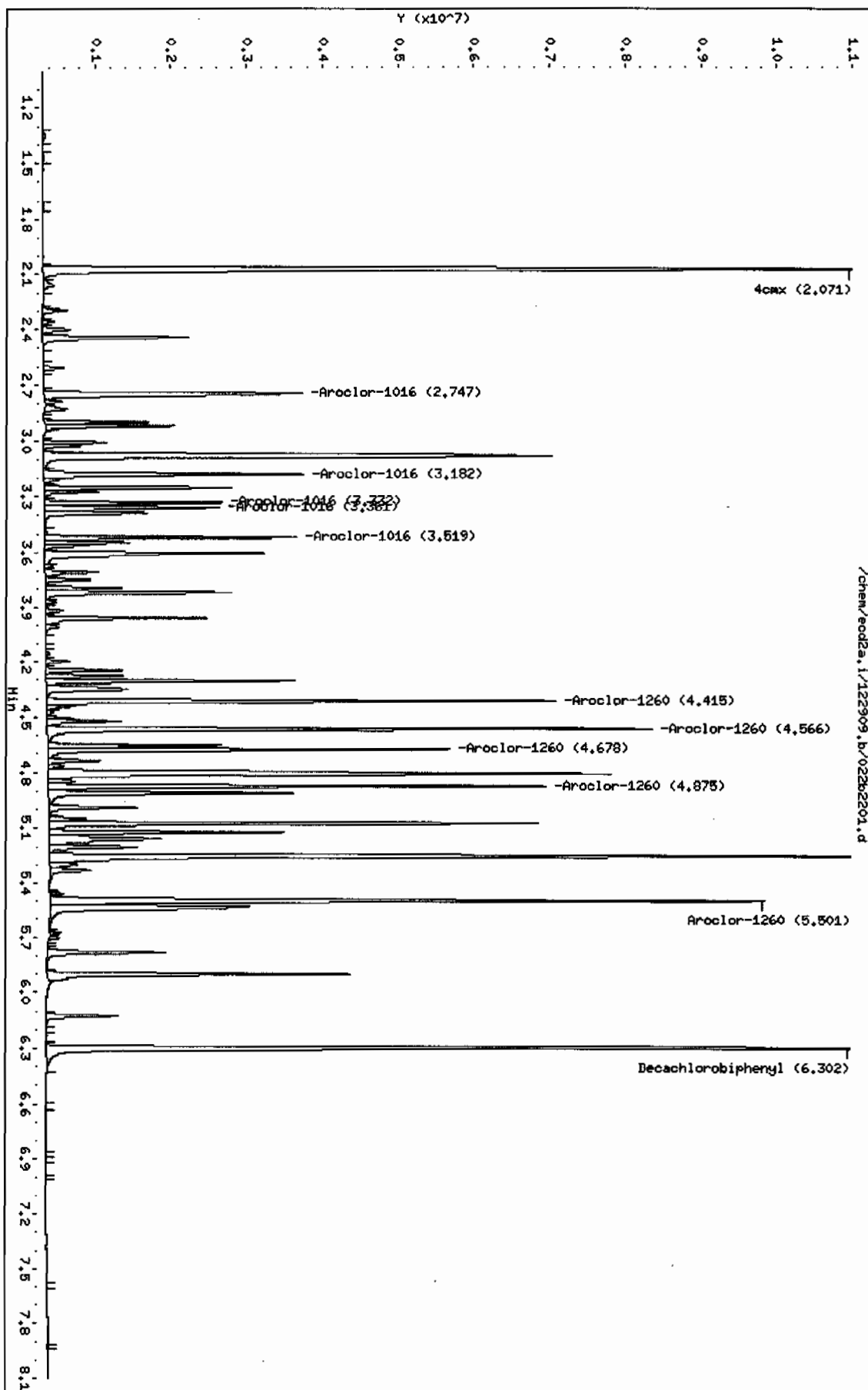
Sample Info: 11AR091211-60 02

Column phase: CLP2

Instrument: eod2a.i

Operator: J40C

Column diameter: 0.25





8D  
PCB ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1038

GC Column: CLP1 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD2A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION					
S1 : 1.77			DCB: 5.61		
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	PIBLK01	WAR091130-99	12/14/09 0700	1.77	5.61
02	ZZZZZ	ZZZZZ	12/14/09 0711	1.77	5.61
03	AR125401	WAR091102-54	12/14/09 0722	1.77	5.61
04	AR124201	WAR091102-42	12/14/09 0733	1.77	5.61
05	AR124801	WAR091027-48	12/14/09 0744	1.77	5.61
06	AR123201	WAR090930-32	12/14/09 0755	1.77	5.61
07	AR122101	WAR091111-21	12/14/09 0807	1.77	5.61
08	ZZZZZ	ZZZZZ	12/14/09 0818	1.77	5.61
09	AR126201	WAR091111-62	12/14/09 0829	1.77	5.61
10	AR126801	WAR091106-68	12/14/09 0840	1.77	5.61
11	AR166001	WAR091214-01	12/14/09 0851	1.77	5.61
12	AR166002	WAR091214-02	12/14/09 0902	1.77	5.61
13	AR166003	WAR091214-03	12/14/09 0913	1.77	5.61
14	AR166004	WAR091214-04	12/14/09 0924	1.77	5.61
15	AR166005	IAR091102-01	12/14/09 0935	1.77	5.61
16	AR166001	WAR091211-60	12/14/09 0946	1.77	5.61
17	DDTANALOGSTD	WAR091020-DD	12/14/09 0958		
18	PIBLK02	WAR091130-99	12/14/09 1009	1.77	5.61
19	ZZZZZ	ZZZZZ	12/14/09 1020	1.77	5.61
20	ZZZZZ	ZZZZZ	12/14/09 1031	1.77	5.61
21	ZZZZZ	ZZZZZ	12/14/09 1042	1.77	
22	ZZZZZ	ZZZZZ	12/14/09 1053	1.76	
23	ZZZZZ	ZZZZZ	12/14/09 1104	1.76	
24	ZZZZZ	ZZZZZ	12/14/09 1115	1.77	5.61
25	ZZZZZ	ZZZZZ	12/14/09 1126	1.77	5.61
26	ZZZZZ	ZZZZZ	12/14/09 1137	1.76	
27	ZZZZZ	ZZZZZ	12/14/09 1148	1.77	5.61
28	ZZZZZ	ZZZZZ	12/14/09 1159	1.76	5.62
29	AR166002	WAR091211-60	12/14/09 1211	1.77	5.61
30	PIBLK03	WAR091130-99	12/14/09 1222	1.77	5.61
31	ZZZZZ	ZZZZZ	12/14/09 1233	1.77	5.61
32	ZZZZZ	ZZZZZ	12/14/09 1244	1.76	

QC LIMITS

S1 = 4cmx (+/- 0.03 MINUTES)

DCB = Decachlorobiphenyl (+/- 0.03 MINUTES)

# Column used to flag retention time values with an asterisk.  
\* Values outside of QC limits.



8D  
PCB ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1038

GC Column: CLP2 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD2A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION					
S1 : 2.07			DCB: 6.30		
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	PIBLK01	WAR091130-99	12/14/09 0700	2.07	6.31
02	ZZZZZ	ZZZZZ	12/14/09 0711	2.07	6.30
03	AR125401	WAR091102-54	12/14/09 0722	2.07	6.30
04	AR124201	WAR091102-42	12/14/09 0733	2.07	6.30
05	AR124801	WAR091027-48	12/14/09 0744	2.07	6.30
06	AR123201	WAR090930-32	12/14/09 0755	2.07	6.30
07	AR122101	WAR091111-21	12/14/09 0807	2.07	6.30
08	ZZZZZ	ZZZZZ	12/14/09 0818	2.07	6.30
09	AR166201	WAR091111-62	12/14/09 0829	2.07	6.30
10	AR126801	WAR091106-68	12/14/09 0840	2.07	6.30
11	AR166001	WAR091214-01	12/14/09 0851	2.07	6.30
12	AR166002	WAR091214-02	12/14/09 0902	2.07	6.30
13	AR166003	WAR091214-03	12/14/09 0913	2.07	6.30
14	AR166004	WAR091214-04	12/14/09 0924	2.07	6.30
15	AR166005	WAR091102-01	12/14/09 0935	2.07	6.30
16	AR166001	WAR091211-60	12/14/09 0946	2.07	6.30
17	DDTANALOGSTD	WAR091020-DD	12/14/09 0958		
18	PIBLK02	WAR091130-99	12/14/09 1009	2.07	6.30
19	ZZZZZ	ZZZZZ	12/14/09 1020	2.07	6.30
20	ZZZZZ	ZZZZZ	12/14/09 1031	2.07	6.30
21	ZZZZZ	ZZZZZ	12/14/09 1042	2.07	
22	ZZZZZ	ZZZZZ	12/14/09 1053	2.07	
23	ZZZZZ	ZZZZZ	12/14/09 1104	2.06	
24	ZZZZZ	ZZZZZ	12/14/09 1115	2.07	6.30
25	ZZZZZ	ZZZZZ	12/14/09 1126	2.07	6.31
26	ZZZZZ	ZZZZZ	12/14/09 1137	2.07	
27	ZZZZZ	ZZZZZ	12/14/09 1148	2.07	6.30
28	ZZZZZ	ZZZZZ	12/14/09 1159	2.06	6.30
29	AR166002	WAR091211-60	12/14/09 1211	2.07	6.30
30	PIBLK03	WAR091130-99	12/14/09 1222	2.07	6.30
31	ZZZZZ	ZZZZZ	12/14/09 1233	2.07	6.31
32	ZZZZZ	ZZZZZ	12/14/09 1244	2.07	

QC LIMITS  
S1 = 4cmx (+/- 0.03 MINUTES)  
DCB = Decachlorobiphenyl (+/- 0.03 MINUTES)

# Column used to flag retention time values with an asterisk.  
\* Values outside of QC limits.



8D  
PCB ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1038

GC Column: CLP1 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD2A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION					
S1 : 1.77		DCB: 5.61			
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	SI RT #	DCB RT #
01	PIBLK01	WAR091130-99	12/29/09 0715	1.77	5.60
02	AR166001	WAR091211-60	12/29/09 0726	1.77	5.61
03	AR125401	WAR091216-54	12/29/09 0737	1.77	5.61
04	AR124201	WAR091217-42	12/29/09 0748	1.77	5.61
05	AR124801	WAR091217-48	12/29/09 0759	1.77	5.61
06	AR123201	WAR090930-32	12/29/09 0817	1.77	5.62
07	AR122101	WAR091111-21	12/29/09 0828	1.77	5.61
08	AR126201	WAR091111-62	12/29/09 0839	1.77	5.61
09	AR126801	WAR091106-68	12/29/09 0850	1.77	5.61
10	DDTANALOGSTD	WAR091219-DD	12/29/09 0901		
11	PIBLK02	WAR091130-99	12/29/09 0913	1.77	5.61
12	PBLK01	1202005226	12/29/09 0927	1.77	5.61
13	PBLK01LCS	1202005227	12/29/09 0938	1.77	5.61
14	RE12-10-7551	243457003	12/29/09 0949	1.77	5.61
15	RE12-10-7552	243457004	12/29/09 1000	1.77	5.61
16	ZZZZZ	ZZZZZ	12/29/09 1011	1.77	5.61
17	ZZZZZ	ZZZZZ	12/29/09 1022	1.77	5.61
18	ZZZZZ	ZZZZZ	12/29/09 1033	1.77	5.61
19	ZZZZZ	ZZZZZ	12/29/09 1044	1.77	5.61
20	ZZZZZ	ZZZZZ	12/29/09 1055	1.77	5.61
21	ZZZZZ	ZZZZZ	12/29/09 1106	1.77	5.61
22	AR166002	WAR091211-60	12/29/09 1117	1.77	5.61
23	PIBLK03	WAR091130-99	12/29/09 1128	1.77	5.61
24	ZZZZZ	ZZZZZ	12/29/09 1140	1.77	5.61
25	ZZZZZ	ZZZZZ	12/29/09 1151	1.77	5.61
26	ZZZZZ	ZZZZZ	12/29/09 1202	1.77	5.61
27	ZZZZZ	ZZZZZ	12/29/09 1213	1.77	5.61
28	ZZZZZ	ZZZZZ	12/29/09 1224	1.77	5.61
29	ZZZZZ	ZZZZZ	12/29/09 1235	1.77	5.61
30	ZZZZZ	ZZZZZ	12/29/09 1246	1.77	5.61
31	ZZZZZ	ZZZZZ	12/29/09 1257	1.77	5.61
32	ZZZZZ	ZZZZZ	12/29/09 1308	1.77	5.61

QC LIMITS  
S1 = 4cmx (+/- 0.03 MINUTES)  
DCB = Decachlorobiphenyl (+/- 0.03 MINUTES)

# Column used to flag retention time values with an asterisk.  
\* Values outside of QC limits.



8D  
PCB ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1038

GC Column: CLP2 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD2A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION					
S1 : 2.07			DCB: 6.30		
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	SI RT #	DCB RT #
01	PIBLK01	WAR091130-99	12/29/09	0715	2.07 6.30
02	AR166001	WAR091211-60	12/29/09	0726	2.07 6.30
03	AR125401	WAR091216-54	12/29/09	0737	2.07 6.30
04	AR124201	WAR091217-42	12/29/09	0748	2.07 6.30
05	AR124801	WAR091217-48	12/29/09	0759	2.07 6.30
06	AR123201	WAR090930-32	12/29/09	0817	2.07 6.30
07	AR122101	WAR091111-21	12/29/09	0828	2.07 6.30
08	AR126201	WAR091111-62	12/29/09	0839	2.07 6.30
09	AR126801	WAR091106-68	12/29/09	0850	2.07 6.30
10	DDTANALOGSTD	WAR091219-DD	12/29/09	0901	
11	PIBLK02	WAR091130-99	12/29/09	0913	2.07 6.30
12	PBLK01	1202005226	12/29/09	0927	2.07 6.30
13	PBLK01LCS	1202005227	12/29/09	0938	2.07 6.30
14	RE12-10-7551	243457003	12/29/09	0949	2.07 6.30
15	RE12-10-7552	243457004	12/29/09	1000	2.07 6.30
16	ZZZZZ	ZZZZZ	12/29/09	1011	2.07 6.30
17	ZZZZZ	ZZZZZ	12/29/09	1022	2.07 6.30
18	ZZZZZ	ZZZZZ	12/29/09	1033	2.07 6.30
19	ZZZZZ	ZZZZZ	12/29/09	1044	2.07 6.30
20	ZZZZZ	ZZZZZ	12/29/09	1055	2.07 6.30
21	ZZZZZ	ZZZZZ	12/29/09	1106	2.07 6.30
22	AR166002	WAR091211-60	12/29/09	1117	2.07 6.30
23	PIBLK03	WAR091130-99	12/29/09	1128	2.07 6.30
24	ZZZZZ	ZZZZZ	12/29/09	1140	2.07 6.30
25	ZZZZZ	ZZZZZ	12/29/09	1151	2.07 6.30
26	ZZZZZ	ZZZZZ	12/29/09	1202	2.07 6.30
27	ZZZZZ	ZZZZZ	12/29/09	1213	2.07 6.30
28	ZZZZZ	ZZZZZ	12/29/09	1224	2.07 6.30
29	ZZZZZ	ZZZZZ	12/29/09	1235	2.07 6.30
30	ZZZZZ	ZZZZZ	12/29/09	1246	2.07 6.30
31	ZZZZZ	ZZZZZ	12/29/09	1257	2.07 6.30
32	ZZZZZ	ZZZZZ	12/29/09	1308	2.07 6.30

QC LIMITS  
S1 = 4cmx (+/- 0.03 MINUTES)  
DCB = Decachlorobiphenyl (+/- 0.03 MINUTES)

# Column used to flag retention time values with an asterisk.  
\* Values outside of QC limits.



## Identification Summary

Page 1 of 1

SDG Number: 10-1038

Client ID: LCS for batch 937092

Lab Sample ID: 1202005227

Data File: 013f1301.d

Data File: 013b1301.d

Inst: ECD2A.I\_1

Inst: ECD2A.I\_2

Column: CLP1

Column: CLP2

Analyzed: 29-DEC-09 09:38

Analyzed: 29-DEC-09 09:38

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
<b>Aroclor-1016</b>							.673
Column 1	1	2.28	2.24 – 2.3	21.8		ug/kg	
	2	2.6	2.57 – 2.63	21.1		ug/kg	
	3	2.69	2.66 – 2.72	20.8		ug/kg	
	4	2.83	2.79 – 2.85	21.1		ug/kg	
	5	2.98	2.94 – 3	20.9		ug/kg	
					21.2		
Column 2	1	2.75	2.72 – 2.78	21.1		ug/kg	
	2	3.18	3.15 – 3.21	20.7		ug/kg	
	3	3.33	3.3 – 3.36	21.2		ug/kg	
	4	3.36	3.33 – 3.39	20.8		ug/kg	
	5	3.52	3.49 – 3.55	21.2		ug/kg	
					21		
<b>Aroclor-1260</b>							2.56
Column 1	1	4.02	3.98 – 4.04	25.4		ug/kg	
	2	4.29	4.26 – 4.32	25.9		ug/kg	
	3	4.45	4.42 – 4.48	26.3		ug/kg	
	4	4.67	4.63 – 4.69	27.5		ug/kg	
	5	4.86	4.82 – 4.88	26.3		ug/kg	
					26.3		
Column 2	1	4.42	4.38 – 4.44	24.4		ug/kg	
	2	4.57	4.54 – 4.6	25.5		ug/kg	
	3	4.68	4.65 – 4.71	25.2		ug/kg	
	4	4.88	4.84 – 4.9	25.6		ug/kg	
	5	5.5	5.47 – 5.53	27.3		ug/kg	
					25.6		



# QUALITY CONTROL DATA



**PCB**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 1

SDG Number: 10-1038

Lab Sample ID: 1202005226

Client Sample: QC for batch 937092

Client ID: MB for batch 937092

Batch ID: 937093

Run Date: 12/29/2009 09:27

Prep Date: 12/28/2009 20:43

Data File: 012f1201-1.d

012b1201-1.d

Client: LANL010

Method: SW846 8082

Inst: ECD2A.I

Analyst: JAOC

Aliquot: 30 g

Column: 1 CLP1

2 CLP2

Matrix: SOIL

Project: QC

SOP Ref: GL-OA-E-040

Dilution: 1

Inj. Vol: 1 uL

Final Volume: 1 mL

Level: LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.33	ug/kg	1.11	3.33	1
11104-28-2	Aroclor-1221	U	3.33	ug/kg	1.11	3.33	1
11141-16-5	Aroclor-1232	U	3.33	ug/kg	1.11	3.33	1
53469-21-9	Aroclor-1242	U	3.33	ug/kg	1.11	3.33	1
12672-29-6	Aroclor-1248	U	3.33	ug/kg	1.11	3.33	1
11097-69-1	Aroclor-1254	U	3.33	ug/kg	1.11	3.33	1
11096-82-5	Aroclor-1260	U	3.33	ug/kg	1.11	3.33	1



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/012f1201-1.d  
 Lab Smp Id: 1202005226 Client Smp ID: PBLK01  
 Inj Date : 29-DEC-2009 09:27  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |1202005226|1|  
 Misc Info : |ECD82P\_1S|937093|SVA|QC A|SOIL|MB|||  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Meth Date : 29-Dec-2009 14:49 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
 Als bottle: 12 QC Sample: BLANK  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-1038.sub  
 Target Version: 3.50 Sample Matrix: Soil  
 Processing Host: hpc1p1

Concentration Formula: Amt \* DF \* Uf \* Vt / (Vi \* Ws \* (100 - M) / 100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

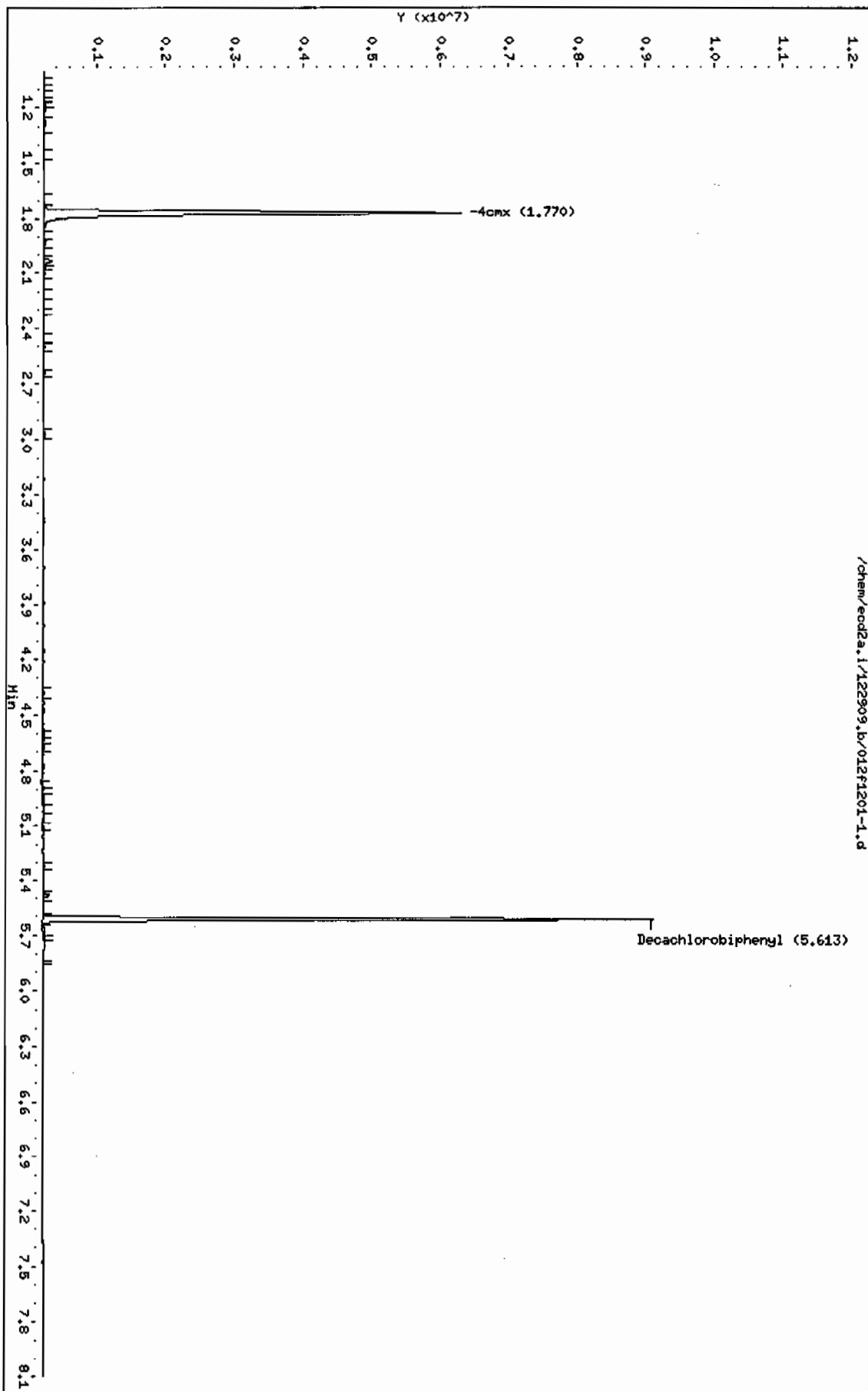
CONCENTRATIONS						
		ON-COL		FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx				CAS #: 877-09-8		
1.770	1.771	-0.001	8143925 130.739	4.4	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.613	5.607	0.006	7671039 141.763	4.7	80.00- 120.00	100.00
-----						



Data File: /chem/ecod2a.i/122909.b/012f1201-1.d  
Date : 29-DEC-2009 09:27  
Client ID: PRLK01  
Sample Info: 11202006226111  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: ecod2a.i  
Operator: JROC  
Column diameter: 0.25

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Data File: /chem/ecd2a.i/122909.b/012b1201-1.d  
Report Date: 30-Dec-2009 10:11

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL  
Data file : /chem/ecd2a.i/122909.b/012b1201-1.d  
Lab Smp Id: 1202005226 Client Smp ID: PBLK01  
Inj Date : 29-DEC-2009 09:27  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |1202005226|1|  
Misc Info : |ECD82P\_1S|937093|SVA|QC A|SOIL|MB|||  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
Meth Date : 29-Dec-2009 14:47 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
Als bottle: 12 QC Sample: BLANK  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-1038.sub  
Target Version: 3.50 Sample Matrix: Soil  
Processing Host: hpc1p1

Concentration Formula:  $\text{Amt} * \text{DF} * \text{Uf} * \text{Vt} / (\text{Vi} * \text{Ws} * (100 - \text{M}) / 100) * \text{CpndVariable}$

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
<hr/>						
\$ 11 4cmx				CAS #: 877-09-8		
2.066	2.068	-0.002	17916708 138.548	4.6	80.00- 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
6.303	6.300	0.003	18327481 162.502	5.4	80.00- 120.00	100.00
<hr/>						



Data File: /chem/eod2a.i/122909.b/012b1201-1.d

Date : 29-DEC-2009 09:27

Client ID: PBLK01

Sample Info: 11202005226141

Volume Injected (uL): 1.0

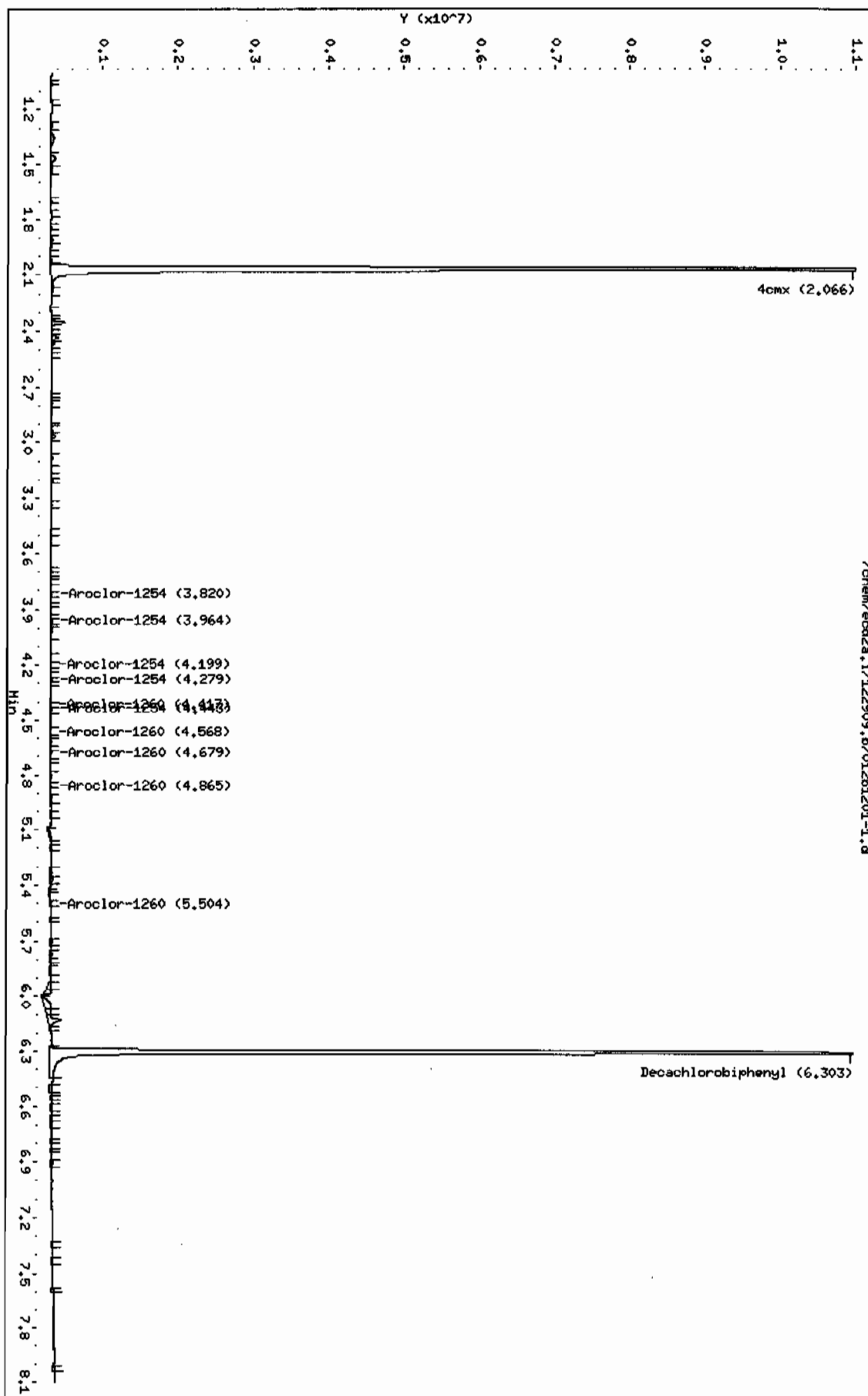
Column phase: CLP2

Instrument: eod2a.1

Operator: JHOC

Column diameter: 0.25

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**PCB**  
**Certificate of Analysis**  
**Sample Summary**

SDG Number: 10-1038

Matrix: SOIL

Lab Sample ID: 1202005227

Client Sample: QC for batch 937092

Client: LANL010

Project: QC

Client ID: LCS for batch 937092

Method: SW846 8082

SOP Ref: GL-OA-E-040

Batch ID: 937093

Inst: ECD2A.I

Dilution: 1

Run Date: 12/29/2009 09:38

Analyst: JAOC

Inj. Vol: 1 uL

Prep Date: 12/28/2009 20:43

Aliquot: 30 g

Final Volume: 1 mL

Data File: 013f1301-1.d

Column: 1 CLP1

Level: LOW

013b1301-1.d

2 CLP2

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		21.1	ug/kg	1.11	3.33	1
11104-28-2	Aroclor-1221	U	3.33	ug/kg	1.11	3.33	1
11141-16-5	Aroclor-1232	U	3.33	ug/kg	1.11	3.33	1
53469-21-9	Aroclor-1242	U	3.33	ug/kg	1.11	3.33	1
12672-29-6	Aroclor-1248	U	3.33	ug/kg	1.11	3.33	1
11097-69-1	Aroclor-1254	U	3.33	ug/kg	1.11	3.33	1
11096-82-5	Aroclor-1260		26.3	ug/kg	1.11	3.33	1



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/013f1301-1.d  
 Lab Smp Id: 1202005227 Client Smp ID: PBLK01LCS  
 Inj Date : 29-DEC-2009 09:38  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |1202005227|1|  
 Misc Info : |ECD82P\_1S|937093|SVA|QC A|SOIL|LCS|||  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Meth Date : 29-Dec-2009 14:49 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
 Als bottle: 13 QC Sample: LCS  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-1038.sub  
 Target Version: 3.50 Sample Matrix: Soil  
 Processing Host: hpc1p1

Concentration Formula: Amt \* DF \* Uf \* Vt / (Vi \* Ws \* (100 - M) / 100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS						
RT	EXP RT	DLT RT	ON-COL	FINAL	TARGET RANGE	RATIO
			RESPONSE ( ug/L)	(ug/Kg)		
\$ 11 4cmx					CAS #: 877-09-8	
1.773	1.771	0.002	8184621 131.392	4.4	80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
5.610	5.607	0.003	7531097 139.177	4.6	80.00- 120.00	100.00
1 Aroclor-1016					CAS #: 12674-11-2	
2.276	2.273	0.003	1464235 654.351	21.8	80.00- 120.00	100.00
2.599	2.597	0.002	2965794 633.004	21.1	191.82- 231.82	202.55
2.691	2.688	0.003	1186756 624.122	20.8	64.77- 104.77	81.05
2.826	2.823	0.003	618759 633.989	21.1	22.45- 62.45	42.26

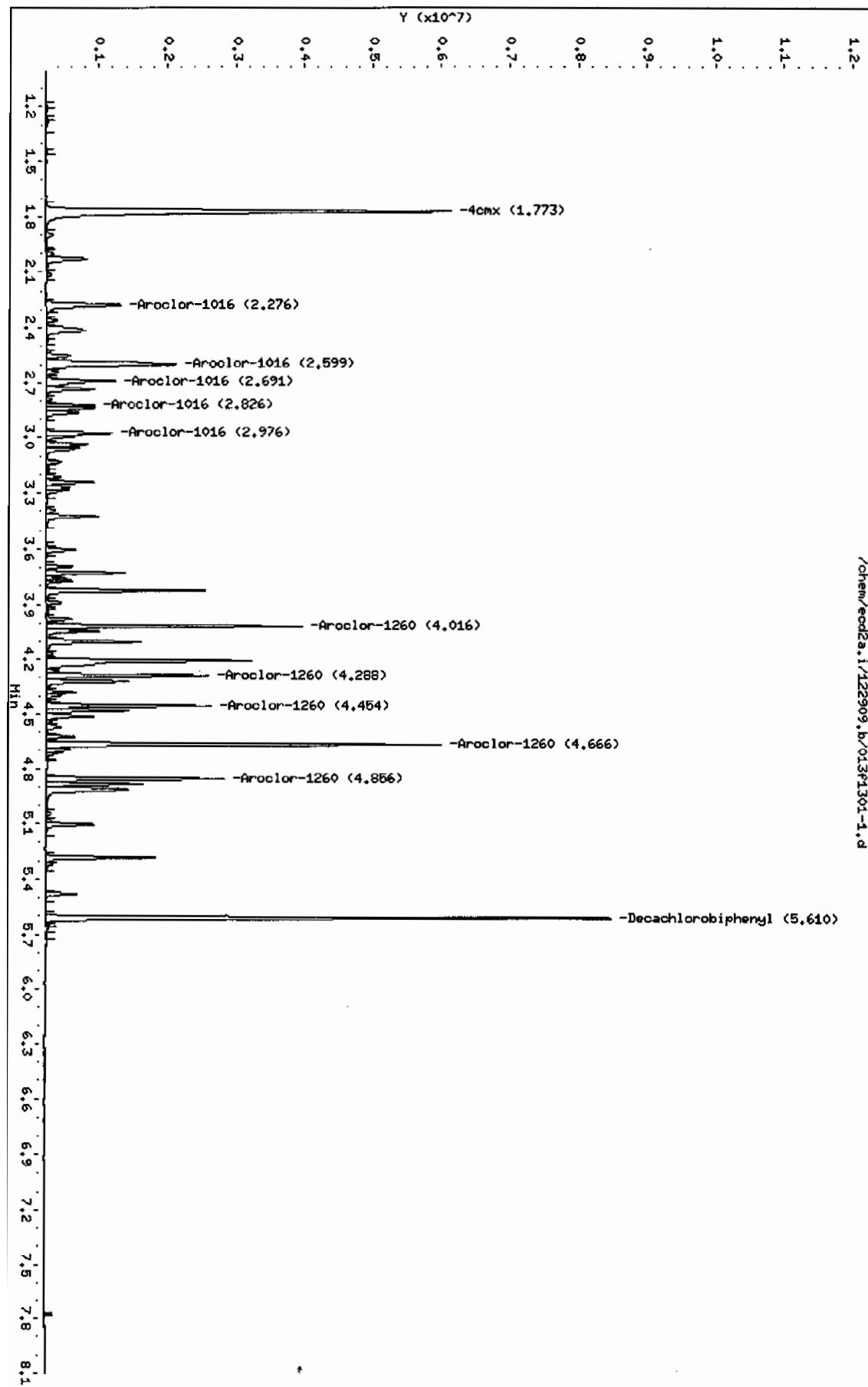


CONCENTRATIONS								
			ON-COL	FINAL				
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	(ug/Kg)	TARGET	RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====	=====
1 Aroclor-1016 (continued)								
2.976	2.974	0.002	915257	627.806	20.9	43.69-	83.69	62.51
Average of Peak Concentrations =					21.2			
-----								
7 Aroclor-1260					CAS #: 11096-82-5			
4.016	4.014	0.002	3171930	761.550	25.4	80.00-	120.00	100.00
4.288	4.286	0.002	2014984	777.815	25.9	42.92-	82.92	63.53
4.454	4.451	0.003	2076929	789.345	26.3	46.15-	86.15	65.48
4.666	4.664	0.002	5017946	824.290	27.5	132.63-	172.63	158.20
4.856	4.853	0.003	2320195	788.605	26.3	53.77-	93.77	73.15
Average of Peak Concentrations =					26.3			
-----								



Data File: /chem/eod2a.i/122909.b/013F1301-1.d  
Date : 29-DEC-2009 09:38  
Client ID: PLK01LCS  
Sample Info: 120200522711  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: eod2a.i  
Operator: JHOC  
Column diameter: 0.25





Data File: /chem/ecd2a.i/122909.b/013b1301-1.d  
Report Date: 30-Dec-2009 10:11

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/013b1301-1.d  
Lab Smp Id: 1202005227 Client Smp ID: PBLK01LCS  
Inj Date : 29-DEC-2009 09:38  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |1202005227|1|  
Misc Info : |ECD82P\_1S|937093|SVA|QC A|SOIL|LCS|||  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
Meth Date : 29-Dec-2009 14:47 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
Als bottle: 13 QC Sample: LCS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-1038.sub  
Target Version: 3.50 Sample Matrix: Soil  
Processing Host: hpclp1

Concentration Formula: Amt \* DF \* Uf \* Vt / (Vi \* Ws \* (100 - M) / 100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS							
			ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO	
==	=====	=====	=====	=====	=====	=====	
\$ 11 4cmx					CAS #: 877-09-8		
2.070	2.068	0.002	17898820 138.409	4.6	80.00- 120.00	100.00	
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
6.302	6.300	0.002	17817344 157.979	5.3	80.00- 120.00	100.00	
1 Aroclor-1016					CAS #: 12674-11-2		
2.746	2.745	0.001	2879212 634.492	21.1	80.00- 120.00	100.00	
3.181	3.179	0.002	2234760 620.393	20.7	58.34- 98.34	77.62	
3.332	3.330	0.002	1305611 635.882	21.2	24.56- 64.56	45.35	
3.361	3.359	0.002	1333055 623.771	20.8	26.71- 66.71	46.30	



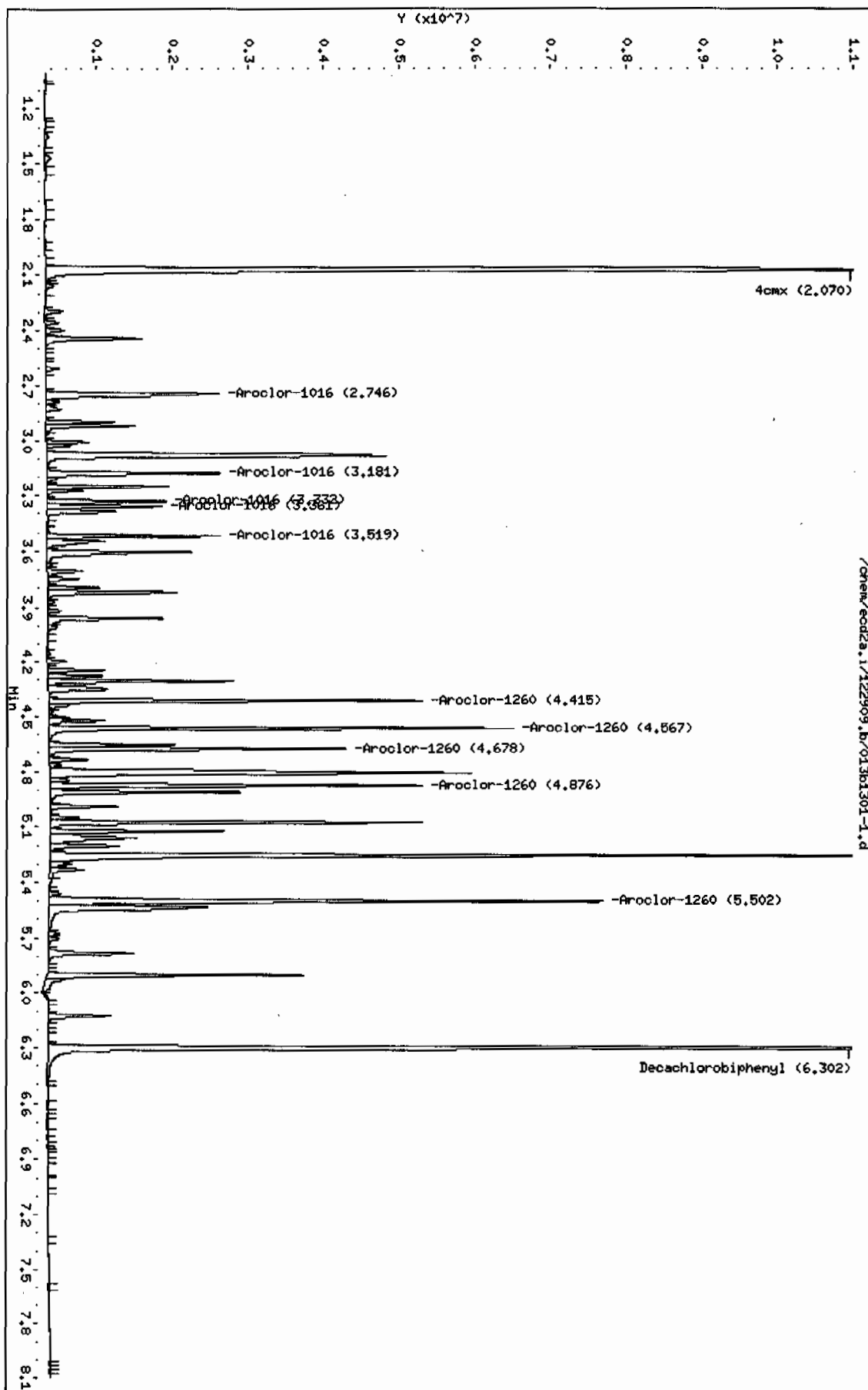
CONCENTRATIONS									
			ON-COL		FINAL				
RT	EXP RT	DLT RT	RESPONSE ( ug/L)		(ug/Kg)	TARGET RANGE		RATIO	
==	=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Aroclor-1016 (continued)									
3.519	3.518	0.001	1829775	637.438	21.2	43.42-	83.42	63.55	
Average of Peak Concentrations =					21.0				
-----									
7 Aroclor-1260					CAS #: 11096-82-5				
4.415	4.414	0.001	4221981	732.103	24.4	80.00-	120.00	100.00	
4.567	4.565	0.002	5453794	765.564	25.5	107.94-	147.94	129.18	
4.678	4.677	0.001	3640930	755.582	25.2	67.11-	107.11	86.24	
4.876	4.874	0.002	4331800	769.174	25.6	80.57-	120.57	102.60	
5.502	5.500	0.002	7406477	819.526	27.3	146.62-	186.62	175.43	
Average of Peak Concentrations =					25.6				



Data File: /chem/ecod2a.i/122909.b/013b1301-1.d  
Date: 29-DEC-2009 09:38  
Client ID: PBLK01LCS  
Sample Info: 1120200522711  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: ecod2a.i  
Operator: JADC  
Column diameter: 0.25

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# MISCELLANEOUS DATA



## GEL ORGANIC RUN LOG

INSTRUMENT ID: ECD2

DATE: 12/14/2009

METHOD: ECD2-F-8082-111209A.m

OPERATOR:YS1

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION &amp; METHOD SUMMARY: No. 1 on pg. 1

SOLVENT LOT:DA385  
ALUMINA LOT:1230997-A  
COPPER LOT:236547-A

## Calibration &amp; QC Information

Initial Calibration Dates: See Calibration History and Standards Log  
Initial Calibration Std ID's: See Calibration History and Standards Log  
GEL SOP GL-OA-E-040EPA Method: 8082 Polychlorinated Biphenyls PCBs by Gas Chromatography  
Sequence Number: Injection Volume: 1.0 uL

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
001f0101.d	WAR091130-99 IB	YS1	114-DEC-2009 07:00		1121409	1.0	CLEAN	
002f0201.d	WAR091211-60 01	YS1	114-DEC-2009 07:11		1121409	1.0	DOSE RE-I-CAL	
003f0301.d	WAR091102-54	YS1	114-DEC-2009 07:22		1121409	1.0	PASSED ON BOTH COLUMNS	
004f0401.d	WAR091102-42	YS1	114-DEC-2009 07:33		1121409	1.0	PASSED ON BOTH COLUMNS	
005f0501.d	WAR091027-48	YS1	114-DEC-2009 07:44		1121409	1.0	PASSED ON BOTH COLUMNS	
006f0601.d	WAR090930-32	YS1	114-DEC-2009 07:55		1121409	1.0	PATTERN ONLY	
007f0701.d	WAR091111-21	YS1	114-DEC-2009 08:07		1121409	1.0	PATTERN ONLY	
008f0801.d	ARI1660-4	YS1	114-DEC-2009 08:18		1121409	1.0	DOSE SCREEN	
009f0901.d	WAR091111-62	YS1	114-DEC-2009 08:29		1121409	1.0	PATTERN ONLY	
010f1001.d	WAR091106-68	YS1	114-DEC-2009 08:40		1121409	1.0	PATTERN ONLY	
011f1101.d	WAR091214-01 60	YS1	114-DEC-2009 08:51		1121409	1.0	ARI1660 I-CAL LEVEL 1	
012f1201.d	WAR091214-02 60	YS1	114-DEC-2009 09:02		1121409	1.0	ARI1660 I-CAL LEVEL 2	
013f1301.d	WAR091214-03 60	YS1	114-DEC-2009 09:13		1121409	1.0	ARI1660 I-CAL LEVEL 3	
014f1401.d	WAR091214-04 60	YS1	114-DEC-2009 09:24		1121409	1.0	ARI1660 I-CAL LEVEL 4	
015f1501.d	WAR091102-01	YS1	114-DEC-2009 09:35		1121409	1.0	ARI1660 I-CAL LEVEL 5	

Instrument Batch: /chem/ecd2a.i/121409.b

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Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
016f1601.d	WAR091211-60 01	YS1	114-DEC-2009 09:46		1121409	1.0	PASSED ON BOTH COLUMNS	



1017f1701.d	1WAR091020-DDT	YS1	114-DEC-2009 09:58		121409		1.01		DDT ANALOG STANDARD	
1018f1801.d	1WAR091130-99 02	YS1	114-DEC-2009 10:09		121409		1.011B		CLEAN	
1019f1901.d	11201992205	YS1	114-DEC-2009 10:20		121409		1.010C A		UPLOAD BOTH COLUMNS, USE HIGHER	
1020f2001.d	11201992206	YS1	114-DEC-2009 10:31		121409		1.010C A		UPLOAD BOTH COLUMNS, USE HIGHER	
1021f2101.d	1241934001	YS1	114-DEC-2009 10:42		121409		10.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1022f2201.d	11201992207	YS1	114-DEC-2009 10:53		121409		10.010C A		UPLOAD BOTH COLUMNS, USE HIGHER	
1023f2301.d	11201992208	YS1	114-DEC-2009 11:04		121409		10.010C A		UPLOAD BOTH COLUMNS, USE HIGHER	
1024f2401.d	1241934002	YS1	114-DEC-2009 11:15		121409		1.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1025f2501.d	1241934003	YS1	114-DEC-2009 11:26		121409		1.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1026f2601.d	1241934004	YS1	114-DEC-2009 11:37		121409		10.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1027f2701.d	1241934005	YS1	114-DEC-2009 11:48		121409		1.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1028f2801.d	1241934006	YS1	114-DEC-2009 11:59		121409		20.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1029f2901.d	1WAR091211-60 02	YS1	114-DEC-2009 12:11		121409		1.01CVS		PASSED ON BOTH COLUMNS	
1030f3001.d	1WAR091130-99 03	YS1	114-DEC-2009 12:22		121409		1.011B		CLEAN	
1031f3101.d	1241934007	YS1	114-DEC-2009 12:33		121409		1.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1032f3201.d	1241934008	YS1	114-DEC-2009 12:44		121409		10.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1033f3301.d	1241934009	YS1	114-DEC-2009 13:00		121409		1.01NREA		DOSE RR5X AFTER MORE SULFUR CLEANED	
1034f3401.d	1241934010	YS1	114-DEC-2009 13:11		121409		10.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1035f3501.d	1241934011	YS1	114-DEC-2009 13:27		121409		5.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	

Instrument Batch: /chem/ecd2a.i/121409.b

Page: 2

1036f3601.d	1241935001	YS1	114-DEC-2009 13:43		121409		1.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1037f3701.d	1241935004	YS1	114-DEC-2009 13:54		121409		5.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1038f3801.d	1241935005	YS1	114-DEC-2009 14:05		121409		5.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1039f3901.d	1241935006	YS1	114-DEC-2009 14:21		121409		50.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1040f4001.d	1241935007	YS1	114-DEC-2009 14:36		121409		5.01NREA		UPLOAD BOTH COLUMNS, USE HIGHER	
1041f4101.d	1WAR091211-60 03	YS1	114-DEC-2009 14:52		121409		1.01		PASSED ON BOTH COLUMNS	



042f4201.d	WARD91130-99 04	YS1	14-DEC-2009 15:03	ISOLV	121409	1.0	IB	CLEAN	
043f4301.d	1241934009	YS1	14-DEC-2009 15:14	1931371	1241934	5.0	NREA	UPLOAD BOTH COLUMNS, USE HIGHER	
044f4401.d	1241935008	YS1	14-DEC-2009 15:30	1931371	1241935	20000.0	NREA	UPLOAD BOTH COLUMNS, USE HIGHER	
045f4501.d	WARD91211-60 04	YS1	14-DEC-2009 15:45		121409	1.0		PASSED ON BOTH COLUMNS	

Instrument Batch: /chem/ecd2a.i/121409.b

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## GEL ORGANIC RUN LOG

INSTRUMENT ID: ECD2

DATE: 12/30/2009

METHOD: ECD2-F-8082-111209A.m

OPERATOR: JAOC

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION &amp; METHOD SUMMARY: No. 1 on pg. 1

SOLVENT LOT: DA385  
ALUMINA LOT: 1230997-A  
COPPER LOT: 236547-A

## Calibration &amp; QC Information

Initial Calibration Dates: See Calibration History and Standards Log

Initial Calibration Std ID's: See Calibration History and Standards Log

GEL SOP GL-OA-E-040

EPA Method: 8082 Polychlorinated Biphenyls PCBs by Gas Chromatography  
Injection Volume: 1.0 uL

Sequence Number: 122909

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
1001f0101.d	1WAR091130-99 IB	JAOC	129-DEC-2009 07:15	1	122909	1.0	1	CLEAN
1002f0201.d	1WAR091211-60 01	JAOC	129-DEC-2009 07:26	1	122909	1.0	1	PASSES BOTH COLUMNS
1003f0301.d	1WAR091216-54	JAOC	129-DEC-2009 07:37	1	122909	1.0	1	PASSES BOTH COLUMNS
1004f0401.d	1WAR091217-42	JAOC	129-DEC-2009 07:48	1	122909	1.0	1	PASSES BOTH COLUMNS
1005f0501.d	1WAR091217-48	JAOC	129-DEC-2009 07:59	1	122909	1.0	1	PASSES BOTH COLUMNS
1006f0601.d	1WAR090930-32	JAOC	129-DEC-2009 08:17	1	122909	1.0	1	PATTERN ONLY
1007f0701.d	1WAR091111-21	JAOC	129-DEC-2009 08:28	1	122909	1.0	1	PATTERN ONLY
1008f0801.d	1WAR091111-62	JAOC	129-DEC-2009 08:39	1	122909	1.0	1	PATTERN ONLY
1009f0901.d	1WAR091106-68	JAOC	129-DEC-2009 08:50	1	122909	1.0	1	PATTERN ONLY
1010f1001.d	1WAR091219-DDT	JAOC	129-DEC-2009 09:01	1	122909	1.0	1	DDT
1011f1101.d	1WAR091130-99 02	JAOC	129-DEC-2009 09:13	1	122909	1.0	1	CLEAN
1012f1201.d	11202005226	JAOC	129-DEC-2009 09:27	1	937093	110-1036	1	1.0 QC A   UPLOAD BOTH, USE HIGHER
1013f1301.d	11202005227	JAOC	129-DEC-2009 09:38	1	937093	110-1036	1	1.0 QC A   UPLOAD BOTH, USE HIGHER
1014f1401.d	1243457003	JAOC	129-DEC-2009 09:49	1	937093	110-1038	1	1.0 LANL   UPLOAD BOTH, USE HIGHER
1015f1501.d	1243457004	JAOC	129-DEC-2009 10:00	1	937093	110-1038	1	1.0 LANL   UPLOAD BOTH, USE HIGHER

Instrument Batch: /chem/ecd2a.i/122909.b

Page: 1

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
1016f1601.d	1243472001	JAOC	129-DEC-2009 10:11	1	937093	110-1057	1	1.0 LANL   UPLOAD BOTH, USE HIGHER



1017f1701.d	1243472002	JAO	29-DEC-2009 10:22	937093	110-1057	1.0	LANL	UPLOAD BOTH, USE HIGHER
1018f1801.d	1243472003	JAO	29-DEC-2009 10:33	937093	110-1057	1.0	LANL	UPLOAD BOTH, USE HIGHER
1019f1901.d	1243490001	JAO	29-DEC-2009 10:44	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1020f2001.d	1243490002	JAO	29-DEC-2009 10:55	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1021f2101.d	1243490003	JAO	29-DEC-2009 11:06	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1022f2201.d	1243490004	JAO	29-DEC-2009 11:17	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1023f2301.d	1243490005	JAO	29-DEC-2009 11:28	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1024f2401.d	1243490006	JAO	29-DEC-2009 11:39	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1025f2501.d	1243490007	JAO	29-DEC-2009 11:51	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1026f2601.d	1243490008	JAO	29-DEC-2009 12:02	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1027f2701.d	1243490009	JAO	29-DEC-2009 12:13	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1028f2801.d	1243490010	JAO	29-DEC-2009 12:24	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1029f2901.d	1243490011	JAO	29-DEC-2009 12:35	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1030f3001.d	1243490012	JAO	29-DEC-2009 12:46	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1031f3101.d	1243490013	JAO	29-DEC-2009 12:57	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1032f3201.d	1243490014	JAO	29-DEC-2009 13:08	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1033f3301.d	1243490015	JAO	29-DEC-2009 13:19	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1034f3401.d	1243490016	JAO	29-DEC-2009 13:30	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1035f3501.d	1243490017	JAO	29-DEC-2009 13:42	937093	110-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER

Instrument Batch: /chem/ecd2a.i/122909.b

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Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
1036f3601.d	1202005228	JAO	29-DEC-2009 13:53	937093	110-1084	1.0	QC A	UPLOAD BOTH, USE HIGHER
1037f3701.d	1202005229	JAO	29-DEC-2009 14:04	937093	110-1084	1.0	QC A	UPLOAD BOTH, USE HIGHER
1038f3801.d	1243547003	JAO	29-DEC-2009 14:15	937093	110-1084	1.0	LANL	UPLOAD BOTH, USE HIGHER
1039f3901.d	1243547004	JAO	29-DEC-2009 14:26	937093	110-1084	1.0	LANL	UPLOAD BOTH, USE HIGHER
1040f4001.d	1243547005	JAO	29-DEC-2009 14:37	937093	110-1084	1.0	LANL	UPLOAD BOTH, USE HIGHER



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/036b3601.d  
Lab Smp Id: 1202005228 Client Smp ID: WST54-10-9921MS  
Inj Date : 29-DEC-2009 13:53  
Operator : JAOC Inst ID: ecd2a.i  
Smp Info : |1202005228|1|  
Misc Info : |ECD82P\_1S|937093|SVA|QC A|SOIL|MS|||  
Comment :  
Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
Meth Date : 29-Dec-2009 14:47 jen01212 Quant Type: ESTD  
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
Als bottle: 36 QC Sample: MS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-1084.sub  
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vi \* Ws \* (100 - M)/100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.14000	Weight of sample extracted (g)
M	11.09100	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS							
			ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO	
---	-----	-----	-----	-----	-----	-----	
\$ 11 4cmx					CAS #: 877-09-8		
2.068	2.068	0.000	17126572	132.438	4.9 80.00- 120.00	100.00	
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
6.301	6.300	0.001	17171358	152.251	5.7 80.00- 120.00	100.00	
1 Aroclor-1016					CAS #: 12674-11-2		
2.746	2.745	0.001	2830727	623.808	23.3 80.00- 120.00	100.00	
3.180	3.179	0.001	2217386	615.570	23.0 58.34- 98.34	78.33	
3.331	3.330	0.001	1337551	651.438	24.3 24.56- 64.56	47.25	
3.359	3.359	0.000	1208015	565.261	21.1 26.71- 66.71	42.68	
3.519	3.518	0.001	1875453	653.350	24.4 43.42- 83.42	66.25	
Average of Peak Concentrations =				23.2			

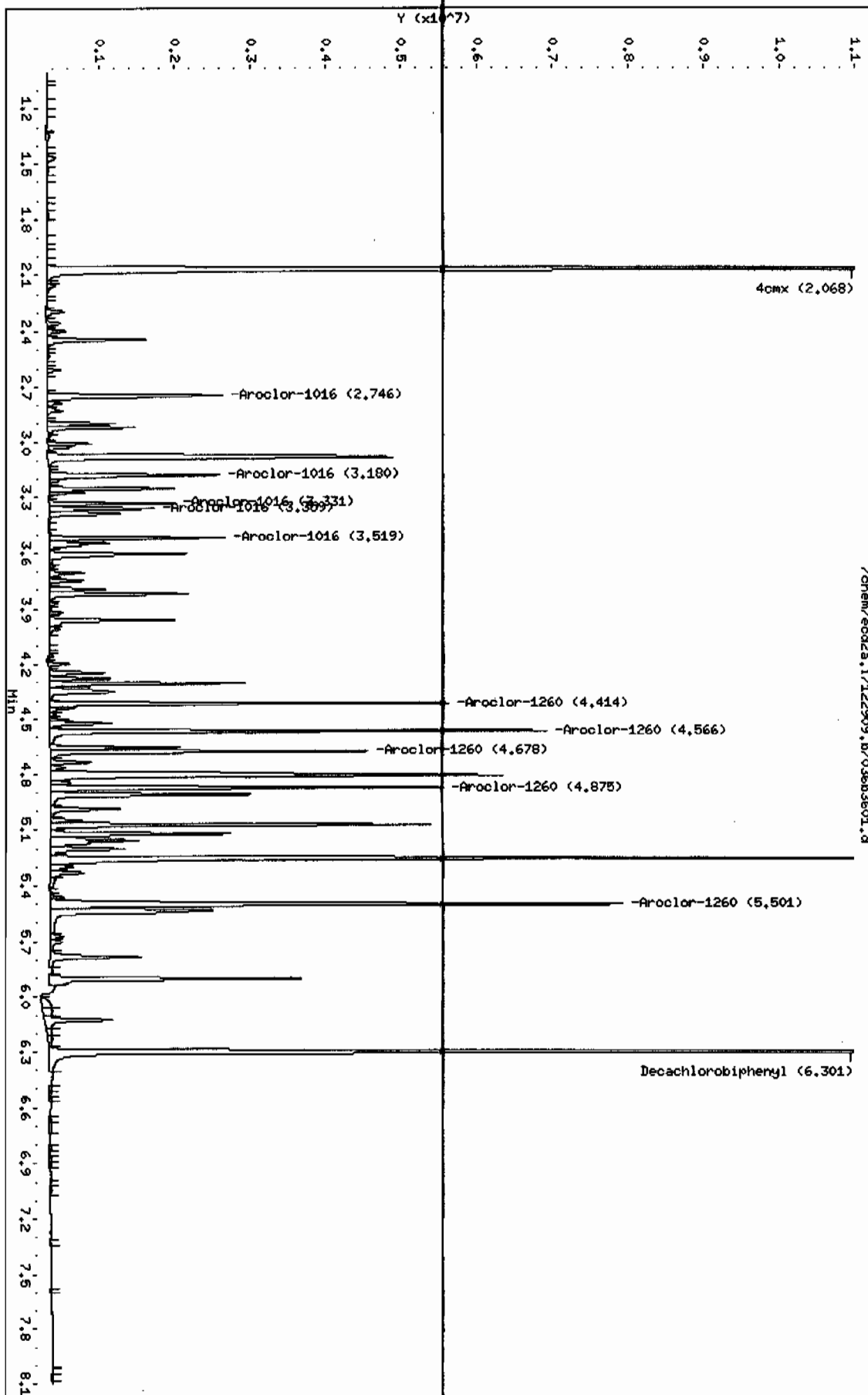


CONCENTRATIONS								
			ON-COL		FINAL			
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	(ug/Kg)	TARGET RANGE	RATIO	
==	=====	=====	=====	=====	=====	=====	=====	
7 Aroclor-1260					CAS #: 11096-82-5			
4.414	4.414	0.000	4459338	773.261	28.8	80.00- 120.00	100.00	
4.566	4.565	0.001	5860124	822.602	30.7	107.94- 147.94	131.41	
4.678	4.677	0.001	3877434	804.663	30.0	67.11- 107.11	86.95	
4.875	4.874	0.001	4545278	807.080	30.1	80.57- 120.57	101.93	
5.501	5.500	0.001	7616995	842.820	31.4	146.62- 186.62	170.81	
Average of Peak Concentrations =					30.2			



Data File: /chem/eod2a.i/122909.b/036b3601.d  
 Date : 29-DEC-2009 13:53  
 Client ID: MST54-10-9921MS  
 Sample Info: 120200522811  
 Volume Injected (uL): 1.0  
 Column phase: CLP2

Instrument: eod2a.i  
 Operator: JAC  
 Column diameter: 0.25





Data File: /chem/ecd2a.i/122909.b/036f3601.d  
 Report Date: 31-Dec-2009 09:20

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RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/036f3601.d  
 Lab Smp Id: 1202005228 Client Smp ID: WST54-10-9921MS  
 Inj Date : 29-DEC-2009 13:53  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |1202005228|1|  
 Misc Info : |ECD82P\_1S|937093|SVA|QC A|SOIL|MS|||  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Meth Date : 29-Dec-2009 14:49 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
 Als bottle: 36 QC Sample: MS  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-1084.sub  
 Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vi \* Ws \* (100 - M)/100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.14000	Weight of sample extracted (g)
M	11.09100	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS

RT	EXP RT	DLT RT	RESPONSE ( ug/L)	ON-COL	FINAL	TARGET RANGE	RATIO
\$ 11 4cmx					CAS #: 877-09-8		
1.771	1.771	0.000	7821503 125.563	4.7	80.00- 120.00	100.00	
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.609	5.607	0.002	7461180 137.885	5.1	80.00- 120.00	100.00	
1 Aroclor-1016					CAS #: 12674-11-2		
2.274	2.273	0.001	1358669 607.175	22.6	80.00- 120.00	100.00 (M)	
2.598	2.597	0.001	2913922 621.933	23.2	191.82- 231.82	214.47	
2.688	2.688	0.000	1173723 617.268	23.0	64.77- 104.77	86.39	
2.824	2.823	0.001	604102 618.971	23.1	22.45- 62.45	44.46	
2.976	2.974	0.002	793559 544.329	20.3	43.69- 83.69	58.41	
Average of Peak Concentrations =				22.4			



CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
7 Aroclor-1260				CAS #: 11096-82-5		
4.016	4.014	0.002	3324493 798.179	29.8	80.00- 120.00	100.00
4.287	4.286	0.001	2060507 795.387	29.7	42.92- 82.92	61.98
4.452	4.451	0.001	2108687 801.415	29.9	46.15- 86.15	63.43
4.665	4.664	0.001	5154171 846.668	31.6	132.63- 172.63	155.04
4.855	4.853	0.002	2180887 741.256	27.7	53.77- 93.77	65.60
Average of Peak Concentrations =				29.7		

QC Flag Legend

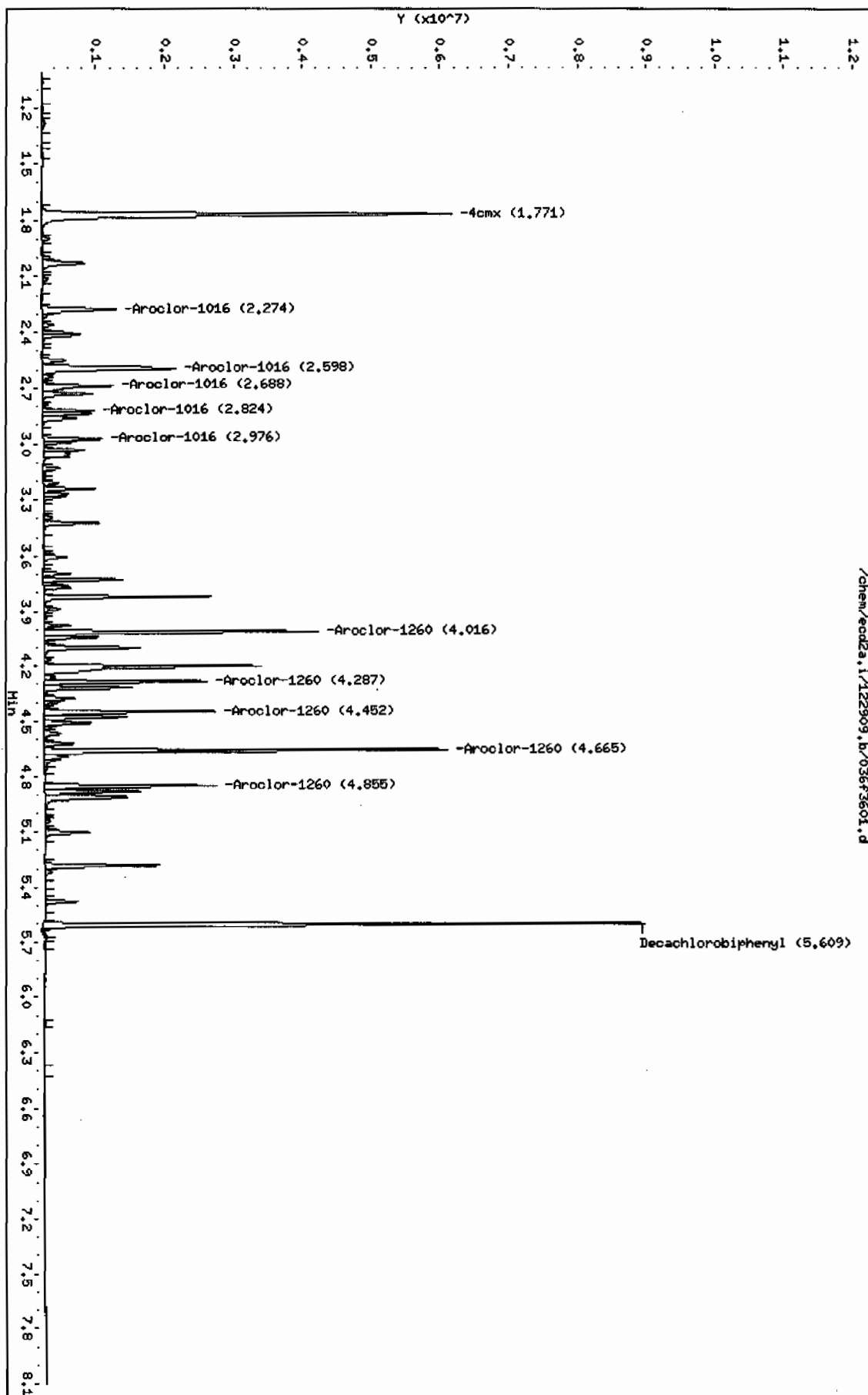
M - Compound response manually integrated.



Data File: /chem/eod2a.i/122909.b/036f3601.d  
Date: 29-DEC-2009 13:53  
Client ID: MST54-10-992LHS  
Sample Info: 11202005228111  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: eod2a.i  
Operator: JHOC  
Column diameter: 0.25

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/037b3701.d  
 Lab Smp Id: 1202005229 Client Smp ID: WST54-10-9921MSD  
 Inj Date : 29-DEC-2009 14:04  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |1202005229|1|  
 Misc Info : |ECD82P\_1S|937093|SVA|QC A|SOIL|MSD|||  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-B-8082-111209A.m  
 Meth Date : 29-Dec-2009 14:47 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d  
 Als bottle: 37 QC Sample: MSD  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-1084.sub  
 Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt \* DF \* Uf \* Vt / (Vi \* Ws \* (100 - M) / 100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.17000	Weight of sample extracted (g)
M	11.09100	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS							
			ON-COL		FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)		(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8.		
2.069	2.068	0.001	18247734	141.107	5.3	80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
6.301	6.300	0.001	17814926	157.958	5.9	80.00- 120.00	100.00
1 Aroclor-1016					CAS #: 12674-11-2		
2.746	2.745	0.001	2912309	641.786	23.9	80.00- 120.00	100.00
3.181	3.179	0.002	2339521	649.476	24.2	58.34- 98.34	80.33
3.332	3.330	0.002	1388934	676.463	25.2	24.56- 64.56	47.69
3.360	3.359	0.001	1402698	656.359	24.5	26.71- 66.71	48.16
3.519	3.518	0.001	1933785	673.672	25.1	43.42- 83.42	66.40
Average of Peak Concentrations =					24.6		

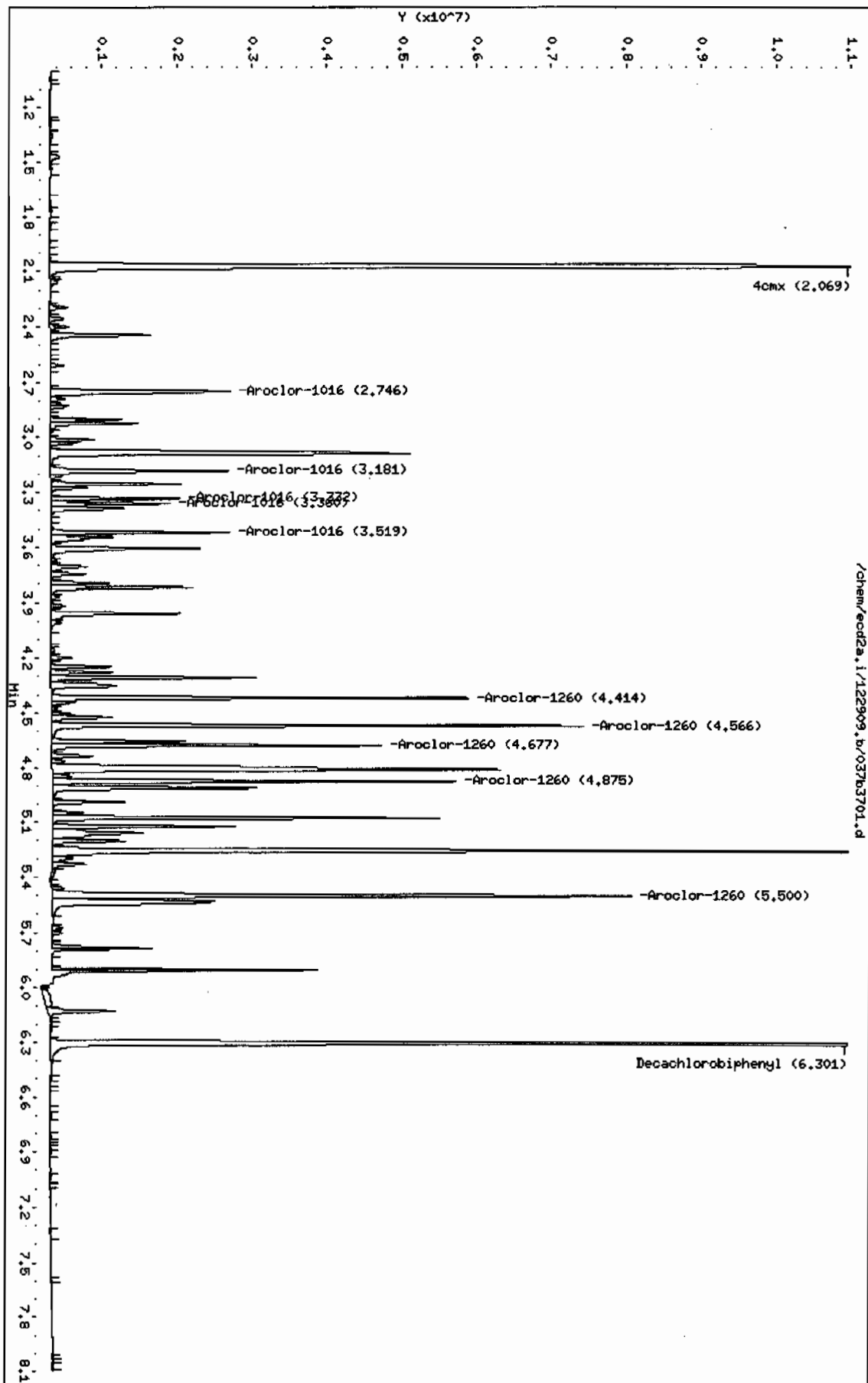


CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
7 Aroclor-1260				CAS #: 11096-82-5		
4.414	4.414	0.000	4606360 798.755	29.8	80.00- 120.00	100.00
4.566	4.565	0.001	6012028 843.925	31.5	107.94- 147.94	130.52
4.677	4.677	0.000	3959627 821.720	30.6	67.11- 107.11	85.96
4.875	4.874	0.001	4649139 825.522	30.8	80.57- 120.57	100.93
5.500	5.500	0.000	7728487 855.157	31.9	146.62- 186.62	167.78
Average of Peak Concentrations =				30.9		



Data File: /chem/eod2a.i/122909.b/037b3701.d  
Date: 23-DEC-2009 14:04  
Client ID: MST94-10-9921HSD  
Sample Info: 11202005229111  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: eod2a.i  
Operator: JHOC  
Column diameter: 0.25





Data File: /chem/ecd2a.i/122909.b/037f3701.d  
 Report Date: 31-Dec-2009 09:20

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/122909.b/037f3701.d  
 Lab Smp Id: 1202005229 Client Smp ID: WST54-10-9921MSD  
 Inj Date : 29-DEC-2009 14:04  
 Operator : JAOC Inst ID: ecd2a.i  
 Smp Info : |1202005229|1|  
 Misc Info : |ECD82P\_1S|937093|SVA|QC A|SOIL|MSD|||  
 Comment :  
 Method : /chem/ecd2a.i/122909.b/ECD2-F-8082-111209A.m  
 Meth Date : 29-Dec-2009 14:49 jen01212 Quant Type: ESTD  
 Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d  
 Als bottle: 37 QC Sample: MSD  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-1084.sub  
 Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt \* DF \* Uf \* Vt/(Vi \* Ws \* (100 - M)/100) \* CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.17000	Weight of sample extracted (g)
M	11.09100	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx				CAS #: 877-09-8		
1.772	1.771	0.001	8299557	133.237	5.0 80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.608	5.607	0.001	7807358	144.283	5.4 80.00- 120.00	100.00
1 Aroclor-1016				CAS #: 12674-11-2		
2.275	2.273	0.002	1410986	630.555	23.5 80.00- 120.00	100.00
2.599	2.597	0.002	3065472	654.279	24.4 191.82- 231.82	217.26
2.690	2.688	0.002	1214242	638.577	23.8 64.77- 104.77	86.06
2.825	2.823	0.002	632311	647.874	24.2 22.45- 62.45	44.81
2.977	2.974	0.003	960167	658.611	24.6 43.69- 83.69	68.05
Average of Peak Concentrations =				24.1		



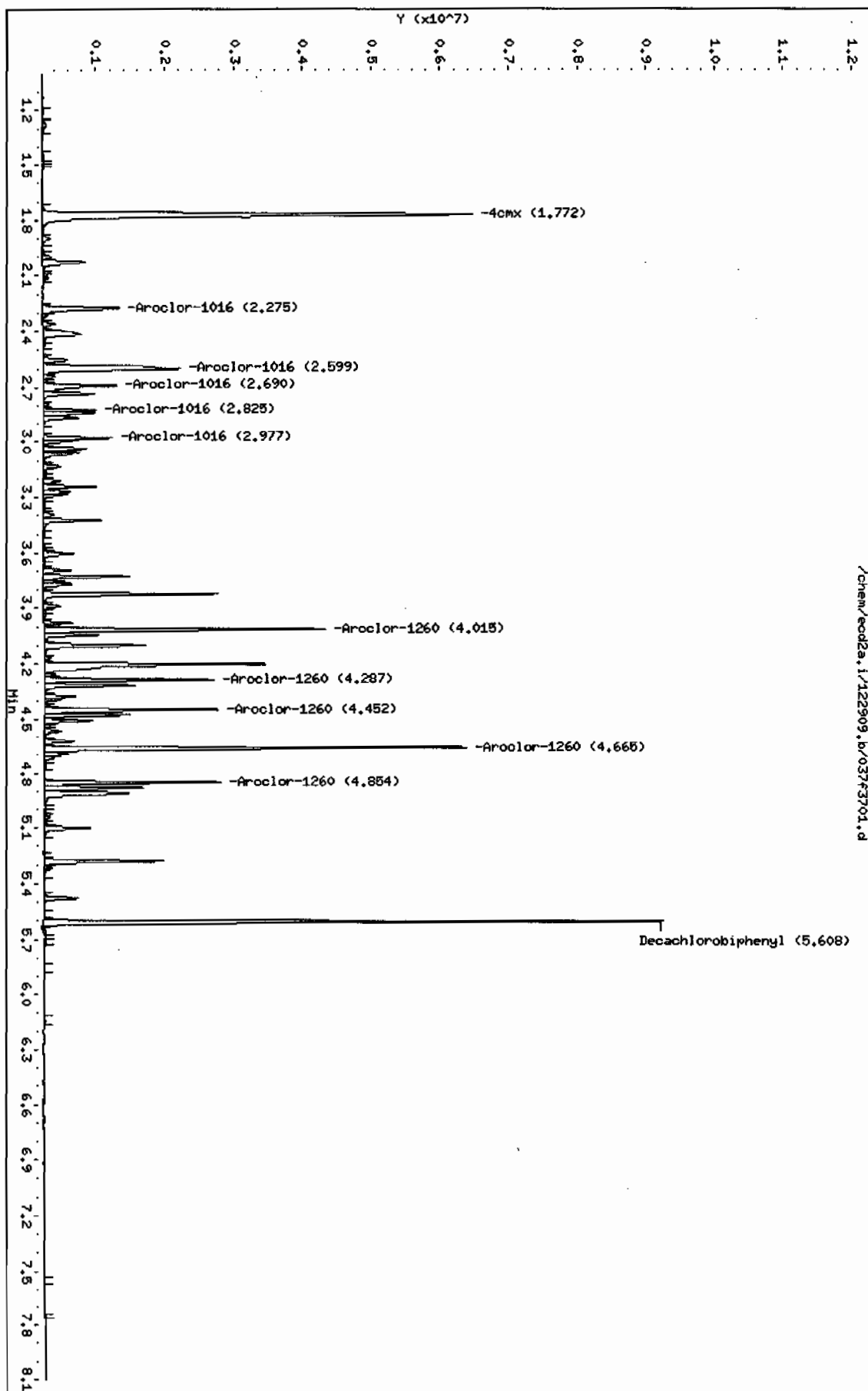
CONCENTRATIONS							
			ON-COL		FINAL		
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
7 Aroclor-1260					CAS #: 11096-82-5		
4.015	4.014	0.001	3436575	825.089	30.8	80.00- 120.00	100.00
4.287	4.286	0.001	2150260	830.033	30.9	42.92- 82.92	62.57
4.452	4.451	0.001	2183682	829.917	30.9	46.15- 86.15	63.54
4.665	4.664	0.001	5313352	872.816	32.5	132.63- 172.63	154.61
4.854	4.853	0.001	2261311	768.591	28.6	53.77- 93.77	65.80
Average of Peak Concentrations =					30.7		



Data File: /chem/ecod2a.i/122909.b/0373701.d  
Date: 29-DEC-2009 14:04  
Client ID: MSTB4-10-9921MSD  
Sample Info: 1120200522911  
Volume Injected (uL): 1.0  
Column Phase: CLP1

Instrument: ecod2a.i  
Operator: JMO  
Column diameter: 0.25

Page 1





# Prep Logbook

## Extraction of Semivolatile and Nonvolatile Organic Compounds from Soil, Sludge, and Other Miscellaneous Solid Samples

Batch ID: 937092  
 Analyst: Andrew Schwemin  
 Method: SW846 3550B

Verified by: \_\_\_\_\_

Lab SOP: GL-OA-E-010 REV# 18  
 Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Clean Up	Prior to Clean up (mL)	Amount Cleaned (mL)	After Clean up (mL)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1202005226 MB	28-DEC-2009 20:43:58	30	H2SO4/KM2	2	9	1	0.03333	
1202005227 LCS	28-DEC-2009 20:43:58	30	H2SO4/KM2	2	9	1	0.03333	
243457003	28-DEC-2009 20:43:58	30.02	H2SO4/KM2	2	9	1	0.03331	
243457004	28-DEC-2009 20:43:58	30.19	H2SO4/KM2	2	9	1	0.03312	
243472001	28-DEC-2009 20:43:58	30.02	H2SO4/KM2	2	9	1	0.03331	
243472002	28-DEC-2009 20:43:58	30.03	H2SO4/KM2	2	9	1	0.0333	
243472003	28-DEC-2009 20:43:58	30.12	H2SO4/KM2	2	9	1	0.0332	
243490001	28-DEC-2009 20:43:58	30.08	H2SO4/KM2	2	9	1	0.03324	
243490002	28-DEC-2009 20:43:58	30.14	H2SO4/KM2	2	9	1	0.03318	
243490003	28-DEC-2009 20:43:58	30.05	H2SO4/KM2	2	9	1	0.03328	
243517007	28-DEC-2009 20:43:58	30.14	H2SO4/KM2	2	9	1	0.03318	
243517008	28-DEC-2009 20:43:58	30.15	H2SO4/KM2	2	9	1	0.03317	
243517009	28-DEC-2009 20:43:58	30.01	H2SO4/KM2	2	9	1	0.03332	
243519001	28-DEC-2009 20:43:58	30.17	H2SO4/KM2	2	9	1	0.03315	
243519002	28-DEC-2009 20:43:58	30.19	H2SO4/KM2	2	9	1	0.03312	
243519003	28-DEC-2009 20:43:58	30.04	H2SO4/KM2	2	9	1	0.03329	
243519004	28-DEC-2009 20:43:58	30.01	H2SO4/KM2	2	9	1	0.03332	
243519005	28-DEC-2009 20:43:58	30.11	H2SO4/KM2	2	9	1	0.03321	
243547002	28-DEC-2009 20:43:58	30.04	H2SO4/KM2	2	9	1	0.03329	
1202005228 MS (243547002)	28-DEC-2009 20:43:58	30.14	H2SO4/KM2	2	9	1	0.03318	
1202005229 MSD (243547002)	28-DEC-2009 20:43:58	30.17	H2SO4/KM2	2	9	1	0.03315	
243547003	28-DEC-2009 20:43:58	30.04	H2SO4/KM2	2	9	1	0.03329	

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1202005227	PCB Laboratory Control	WE091210-07	1	mL	Clean up Date: 12/28/09
MS	1202005228	PCB Laboratory Control	WE091210-07	1	mL	Clean up Initials: AJS
MSD	1202005229	PCB Laboratory Control	WE091210-07	1	mL	Verified By: AV
SURR	ALL	PEST LOW LEVEL SURROGATE 200 UG/L	UB091130-15	1	mL	Final Solvent: Hexane
REGNT	ALL	1:1 sulfuric acid	11333264a	5	mL	Clean Up SOP: GL-OA-E-037
REGNT	ALL	Acetone	1233927	150	mL	
REGNT	ALL	Hexane	1241300-B2	150	mL	
REGNT	ALL	5% Potassium Permanganate	B1202457-F	5	mL	
SOURC	ALL	SODIUM SULFATE	1242582	30	g	



# **Metals Analysis**



# **Case Narrative**



**Metals Fractional Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-1038**

**Sample Analysis**

<b>Sample ID</b>	<b>Client ID</b>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552
1202004426	Method Blank (MB) ICP
1202014118	Method Blank (MB) ICP
1202004427	Laboratory Control Sample (LCS)
1202014119	Laboratory Control Sample (LCS)
1202004430	243549002(WST03-10-2148L) Serial Dilution (SD)
1202004428	243549002(WST03-10-2148D) Sample Duplicate (DUP)
1202004429	243549002(WST03-10-2148S) Matrix Spike (MS)
1202004431	243549002(WST03-10-2148SD) Matrix Spike Duplicate (MSD)
1202004420	Method Blank (MB) ICP-MS
1202004421	Laboratory Control Sample (LCS)
1202004424	243549002(WST03-10-2148L) Serial Dilution (SD)
1202004422	243549002(WST03-10-2148D) Sample Duplicate (DUP)
1202004423	243549002(WST03-10-2148S) Matrix Spike (MS)
1202004425	243549002(WST03-10-2148SD) Matrix Spike Duplicate (MSD)
1202006448	Method Blank (MB) CVAA
1202006453	Laboratory Control Sample (LCS)
1202006450	243457001(RE12-10-7553L) Serial Dilution (SD)
1202006449	243457001(RE12-10-7553D) Sample Duplicate (DUP)
1202006451	243457001(RE12-10-7553S) Matrix Spike (MS)
1202006452	243457001(RE12-10-7553SD) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.



### **Method/Analysis Information**

**Analytical Batch:** 936808, 941050, 936805 and 937638  
**Prep Batch :** 936807, 941049, 936804 and 937637  
**Standard Operating Procedures:** GL-MA-E-013 REV# 20, GL-MA-E-009 REV# 19, GL-MA-E-014 REV# 21 and GL-MA-E-010 REV# 23  
**Analytical Method:** SW846 3050B/6010B, SW846 3050B/6020 and SW846 7471A  
**Prep Method :** SW846 3050B and SW846 7471A Prep

### **Preparation/Analytical Method Verification**

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

### **System Configuration**

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with a Burgener nebulizer, cyclonic spray chamber, and yttrium or scandium internal standard. Operating conditions for the ICP are set at a power level of 1500 watts. The instrument has a peristaltic pump flow rate of 1.4L/min, argon gas flows of 15 L/min and 0.2 L/min for the torch and auxiliary gases, and a flow setting of 0.65L/min for the nebulizer.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum. Operating conditions are set at 1400W power and combined argon pressures of 360+/- 7 kPa for the plasma and auxiliary gases, and 0.85 L/min carrier gas flow, and an initial lens voltage of 5.2.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm. Sample introduction through the flow injection system is performed via a peristaltic pump at 9 mL/min and nitrogen carrier gas rate of 80 mL/min.

### **Calibration Information**

#### **Instrument Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).



**CRDL Requirements**

All CRDL standard(s) met the referenced advisory control limits.

**ICSA/ICSAB Statement**

All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

**Continuing Calibration Blank (CCB) Requirements**

All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

**Continuing Calibration Verification (CCV) Requirements**

All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

**Quality Control (QC) Information****Method Blank (MB) Statement**

The MBs analyzed with this SDG met the acceptance criteria.

**Laboratory Control Sample (LCS) Recovery**

The LCS analyzed with this SDG met the acceptance criteria of percent recovery.

**Quality Control (QC) Sample Statement**

The following samples were selected as the quality control (QC) samples for this SDG: 243549002 (WST03-10-2148)-ICP and ICP-MS and 243457001 (RE12-10-7553)-CVAA.

**Matrix Spike (MS) Recovery Statement**

The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes with the exceptions of magnesium, potassium and calcium as indicated by the "N" qualifiers.

**Matrix Spike Duplicate (MSD) Recovery Statement**

The percent recovery (%R) obtained from the MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MSD met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes with the exceptions of selenium, magnesium and potassium as indicated by the "N" qualifiers.

**MS/MSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the MS and MSD met the acceptance limits.

**Duplicate Relative Percent Difference (RPD) Statement**

The relative percent difference (RPD) obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required



detection limit (RL). In cases where either the sample or duplicate value is less than 5X the contract required detection limit (RL), a control of  $\pm$ RL is used to evaluate the DUP results. All applicable analytes met these requirements with the exceptions of beryllium, nickel, cobalt and vanadium as indicated by the "\*" qualifiers.

#### **Serial Dilution % Difference Statement**

The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations that are 25X the IDL/MDL for CVAA, 50X the IDL/MDL for ICP, and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes met the acceptance criteria of less than 10% difference (%D) with the exception of iron as indicated by the "E" qualifeir.

#### **Technical Information**

##### **Holding Time Specifications**

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

##### **Sample Dilutions**

Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG were diluted the standard 2x for solids on the ICPMS.

##### **Preparation Information**

The samples in this SDG were prepared exactly according to the cited SOP.

#### **Miscellaneous Information**

##### **Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

##### **Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following DER was generated for this SDG:



DER ID 779262, 780456 and 780714. A copy is included in the Miscellaneous Data section of this package.

**Additional Comments**

Additional comments were not required for this SDG.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer: Nick-Cole A. Elmore Date: 1.19.10



# **Sample Data Summary**



**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 10-1038

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243457001

BASIS: Dry Weight

DATE COLLECTED 18-DEC-09

CLIENT ID: RE12-10-7553

LEVEL: Low

DATE RECEIVED 23-DEC-09

MATRIX: SOIL

%SOLIDS: 79

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	9590000	ug/Kg		8530	25100	25100	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-36-0	Antimony	1250	ug/Kg	U	412	1250	1250	1	P	HSC	01/14/10 21:17	011410-2	941050
7440-38-2	Arsenic	2.61	mg/kg		0.252	1.26	1.26	2	MS	RMJ	01/13/10 22:05	100113-4	936805
7440-39-3	Barium	135000	ug/Kg		125	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-41-7	Beryllium	1.35	mg/kg		0.0252	0.126	0.126	2	MS	RMJ	01/12/10 12:48	100111-3	936805
7440-43-9	Cadmium	627	ug/Kg	U	125	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-70-2	Calcium	2040000	ug/Kg		10000	31400	31400	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-47-3	Chromium	11900	ug/Kg		188	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-48-4	Cobalt	5410	ug/Kg		188	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-50-8	Copper	6030	ug/Kg		376	1250	1250	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-89-6	Iron	14500000	ug/Kg		10000	31400	31400	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-92-1	Lead	14200	ug/Kg		314	1250	1250	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-95-4	Magnesium	1750000	ug/Kg		10700	37600	37600	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-96-5	Manganese	301000	ug/Kg		251	1250	1250	1	P	HSC	01/12/10 00:26	011110A-1	936808
7439-97-6	Mercury	14	ug/kg		4.66	13.7	13.7	1	AV	JXL1	01/07/10 11:19	010710S2-7	937638
7440-02-0	Nickel	9.28	mg/kg		0.126	0.505	0.505	2	MS	RMJ	01/12/10 12:48	100111-3	936805
7440-09-7	Potassium	1710000	ug/Kg		8030	31400	31400	1	P	HSC	01/12/10 00:26	011110A-1	936808
7782-49-2	Selenium	1.26	mg/kg	U	0.631	1.26	1.26	2	MS	RMJ	01/12/10 12:48	100111-3	936805
7440-22-4	Silver	318	ug/Kg	J	125	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-23-5	Sodium	81700	ug/Kg		8780	31400	31400	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-28-0	Thallium	0.387	mg/kg		0.0757	0.252	0.252	2	MS	RMJ	01/13/10 22:05	100113-4	936805
7440-61-1	Uranium	4.07	mg/kg		0.0167	0.0505	0.0505	2	MS	RMJ	01/13/10 22:05	100113-4	936805
7440-62-2	Vanadium	32400	ug/Kg		125	627	627	1	P	HSC	01/12/10 00:26	011110A-1	936808
7440-66-6	Zinc	26700	ug/Kg		414	1250	1250	1	P	HSC	01/12/10 00:26	011110A-1	936808

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
936805	936804	SW846 3050B	0.5	g	50	mL	12/29/09	FGA
936808	936807	SW846 3050B	0.503	g	50	mL	12/29/09	FGA
937638	937637	SW846 7471A Prep	0.552	g	30	mL	01/06/10	TXB3
941050	941049	SW846 3050B	0.505	g	50	mL	01/13/10	FGA



**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 10-1038

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243457002

BASIS: Dry Weight

DATE COLLECTED 18-DEC-09

CLIENT ID: RE12-10-7554

LEVEL: Low

DATE RECEIVED 23-DEC-09

MATRIX: SOIL

%SOLIDS: 91.9

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	8510000	ug/Kg		7380	21700	21700	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-36-0	Antimony	426	ug/Kg	J	357	1080	1080	1	P	HSC	01/14/10 21:24	011410-2	941050
7440-38-2	Arsenic	1.57	mg/kg		0.213	1.07	1.07	2	MS	RMJ	01/13/10 22:09	100113-4	936805
7440-39-3	Barium	132000	ug/Kg		109	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-41-7	Beryllium	0.806	mg/kg		0.0213	0.107	0.107	2	MS	RMJ	01/12/10 12:54	100111-3	936805
7440-43-9	Cadmium	543	ug/Kg	U	109	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-70-2	Calcium	3670000	ug/Kg		8680	27100	27100	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-47-3	Chromium	27000	ug/Kg		163	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-48-4	Cobalt	2460	ug/Kg		163	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-50-8	Copper	4020	ug/Kg		326	1090	1090	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-89-6	Iron	13600000	ug/Kg		8680	27100	27100	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-92-1	Lead	5730	ug/Kg		271	1090	1090	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-95-4	Magnesium	1970000	ug/Kg		9230	32600	32600	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-96-5	Manganese	346000	ug/Kg		217	1090	1090	1	P	HSC	01/12/10 00:33	011110A-1	936808
7439-97-6	Mercury	31.4	ug/kg		4.44	13.1	13.1	1	AV	JXL	01/07/10 11:33	010710S2-7	937638
7440-02-0	Nickel	7.45	mg/kg		0.107	0.427	0.427	2	MS	RMJ	01/12/10 12:54	100111-3	936805
7440-09-7	Potassium	1680000	ug/Kg		6950	27100	27100	1	P	HSC	01/12/10 00:33	011110A-1	936808
7782-49-2	Selenium	1.07	mg/kg	U	0.533	1.07	1.07	2	MS	RMJ	01/12/10 12:54	100111-3	936805
7440-22-4	Silver	463	ug/Kg	J	109	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-23-5	Sodium	228000	ug/Kg		7600	27100	27100	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-28-0	Thallium	0.175	mg/kg	J	0.064	0.213	0.213	2	MS	RMJ	01/13/10 22:09	100113-4	936805
7440-61-1	Uranium	0.398	mg/kg		0.0141	0.0427	0.0427	2	MS	RMJ	01/13/10 22:09	100113-4	936805
7440-62-2	Vanadium	15300	ug/Kg		109	543	543	1	P	HSC	01/12/10 00:33	011110A-1	936808
7440-66-6	Zinc	34600	ug/Kg		358	1090	1090	1	P	HSC	01/12/10 00:33	011110A-1	936808

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt/vol.	Units	Final wt/vol.	Units	Date	Analyst
936805	936804	SW846 3050B	0.51	g	50	mL	12/29/09	FGA
936808	936807	SW846 3050B	0.501	g	50	mL	12/29/09	FGA
937638	937637	SW846 7471A Prep	0.5	g	30	mL	01/06/10	TXB3
941050	941049	SW846 3050B	0.503	g	50	mL	01/13/10	FGA



**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 10-1038

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243457003

BASIS: Dry Weight

DATE COLLECTED 18-DEC-09

CLIENT ID: RE12-10-7551

LEVEL: Low

DATE RECEIVED 23-DEC-09

MATRIX: SOIL

%SOLIDS: 89

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	11500000	ug/Kg		7630	22500	22500	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-36-0	Antimony	1080	ug/Kg	U	355	1080	1080	1	P	HSC	01/14/10 21:31	011410-2	941050
7440-38-2	Arsenic	2.06	mg/kg		0.222	1.11	1.11	2	MS	RMJ	01/13/10 22:13	100113-4	936805
7440-39-3	Barium	126000	ug/Kg		112	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-41-7	Beryllium	1.12	mg/kg		0.0222	0.111	0.111	2	MS	RMJ	01/12/10 13:00	100111-3	936805
7440-43-9	Cadmium	561	ug/Kg	U	112	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-70-2	Calcium	2010000	ug/Kg		8980	28100	28100	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-47-3	Chromium	11200	ug/Kg		168	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-48-4	Cobalt	4740	ug/Kg		168	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-50-8	Copper	5780	ug/Kg		337	1120	1120	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-89-6	Iron	12800000	ug/Kg		8980	28100	28100	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-92-1	Lead	13000	ug/Kg		281	1120	1120	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-95-4	Magnesium	1760000	ug/Kg		9540	33700	33700	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-96-5	Manganese	232000	ug/Kg		225	1120	1120	1	P	HSC	01/12/10 00:40	011110A-1	936808
7439-97-6	Mercury	16.2	ug/kg		4.19	12.3	12.3	1	AV	JXL1	01/07/10 11:35	010710S2-7	937638
7440-02-0	Nickel	7.23	mg/kg		0.111	0.445	0.445	2	MS	RMJ	01/12/10 13:00	100111-3	936805
7440-09-7	Potassium	1690000	ug/Kg		7190	28100	28100	1	P	HSC	01/12/10 00:40	011110A-1	936808
7782-49-2	Selenium	1.11	mg/kg	U	0.556	1.11	1.11	2	MS	RMJ	01/12/10 13:00	100111-3	936805
7440-22-4	Silver	220	ug/Kg	J	112	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-23-5	Sodium	105000	ug/Kg		7860	28100	28100	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-28-0	Thallium	0.245	mg/kg		0.0667	0.222	0.222	2	MS	RMJ	01/13/10 22:13	100113-4	936805
7440-61-1	Uranium	1.44	mg/kg		0.0147	0.0445	0.0445	2	MS	RMJ	01/13/10 22:13	100113-4	936805
7440-62-2	Vanadium	26500	ug/Kg		112	561	561	1	P	HSC	01/12/10 00:40	011110A-1	936808
7440-66-6	Zinc	22600	ug/Kg		370	1120	1120	1	P	HSC	01/12/10 00:40	011110A-1	936808

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt/vol.	Units	Final wt/vol.	Units	Date	Analyst
936805	936804	SW846 3050B	0.506	g	50	mL	12/29/09	FGA
936808	936807	SW846 3050B	0.501	g	50	mL	12/29/09	FGA
937638	937637	SW846 7471A Prep	0.548	g	30	mL	01/06/10	TXB3
941050	941049	SW846 3050B	0.523	g	50	mL	01/13/10	FGA



**METALS**  
**-1-**  
**INORGANICS ANALYSIS DATA PACKAGE**

SDG No: 10-1038

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243457004

BASIS: Dry Weight

DATE COLLECTED 18-DEC-09

CLIENT ID: RE12-10-7552

LEVEL: Low

DATE RECEIVED 23-DEC-09

MATRIX: SOIL

%SOLIDS: 92.4

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	7260000	ug/Kg		7280	21400	21400	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-36-0	Antimony	1070	ug/Kg	U	354	1070	1070	1	P	HSC	01/14/10 21:38	011410-2	941050
7440-38-2	Arsenic	1.83	mg/kg		0.212	1.06	1.06	2	MS	RMJ	01/13/10 22:17	100113-4	936805
7440-39-3	Barium	66800	ug/Kg		107	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-41-7	Beryllium	0.644	mg/kg		0.0212	0.106	0.106	2	MS	RMJ	01/12/10 13:06	100111-3	936805
7440-43-9	Cadmium	536	ug/Kg	U	107	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-70-2	Calcium	1360000	ug/Kg		8570	26800	26800	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-47-3	Chromium	16900	ug/Kg		161	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-48-4	Cobalt	3670	ug/Kg		161	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-50-8	Copper	4160	ug/Kg		321	1070	1070	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-89-6	Iron	12800000	ug/Kg		8570	26800	26800	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-92-1	Lead	5470	ug/Kg		268	1070	1070	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-95-4	Magnesium	1640000	ug/Kg		9110	32100	32100	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-96-5	Manganese	208000	ug/Kg		214	1070	1070	1	P	HSC	01/12/10 00:47	011110A-1	936808
7439-97-6	Mercury	12.3	ug/kg		3.84	11.3	11.3	1	AV	JXL1	01/07/10 11:37	010710S2-7	937638
7440-02-0	Nickel	5.92	mg/kg		0.106	0.424	0.424	2	MS	RMJ	01/12/10 13:06	100111-3	936805
7440-09-7	Potassium	1410000	ug/Kg		6860	26800	26800	1	P	HSC	01/12/10 00:47	011110A-1	936808
7782-49-2	Selenium	1.06	mg/kg	U	0.53	1.06	1.06	2	MS	RMJ	01/12/10 13:06	100111-3	936805
7440-22-4	Silver	369	ug/Kg	J	107	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-23-5	Sodium	232000	ug/Kg		7500	26800	26800	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-28-0	Thallium	0.137	mg/kg	J	0.0636	0.212	0.212	2	MS	RMJ	01/13/10 22:17	100113-4	936805
7440-61-1	Uranium	0.470	mg/kg		0.014	0.0424	0.0424	2	MS	RMJ	01/13/10 22:17	100113-4	936805
7440-62-2	Vanadium	13100	ug/Kg		107	536	536	1	P	HSC	01/12/10 00:47	011110A-1	936808
7440-66-6	Zinc	33500	ug/Kg		354	1070	1070	1	P	HSC	01/12/10 00:47	011110A-1	936808

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
936805	936804	SW846 3050B	0.51	g	50	mL	12/29/09	FGA
936808	936807	SW846 3050B	0.505	g	50	mL	12/29/09	FGA
937638	937637	SW846 7471A Prep	0.575	g	30	mL	01/06/10	TXB3
941050	941049	SW846 3050B	0.504	g	50	mL	01/13/10	FGA



# **Quality Control Summary**



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICV01										
	Mercury	5.05	ug/L	5	ug/L	101	90.0 – 110.0	AV	07-JAN-10 10:28	010710S2-7
	Aluminum	4810	ug/L	5000	ug/L	96.2	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Barium	499	ug/L	500	ug/L	99.8	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Cadmium	487	ug/L	500	ug/L	97.4	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Calcium	4790	ug/L	5000	ug/L	95.8	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Chromium	478	ug/L	500	ug/L	95.6	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Cobalt	494	ug/L	500	ug/L	98.8	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Copper	494	ug/L	500	ug/L	98.8	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Iron	4860	ug/L	5000	ug/L	97.2	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Lead	495	ug/L	500	ug/L	99	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Magnesium	5100	ug/L	5000	ug/L	102	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Manganese	503	ug/L	500	ug/L	100.7	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Potassium	2380	ug/L	2500	ug/L	95	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Silver	257	ug/L	250	ug/L	102.7	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Sodium	2290	ug/L	2500	ug/L	91.6	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Vanadium	503	ug/L	500	ug/L	100.7	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Zinc	494	ug/L	500	ug/L	98.9	90.0 – 110.0	P	11-JAN-10 15:38	011110A-1
	Beryllium	49.2	ug/L	50	ug/L	98.5	90.0 – 110.0	MS	12-JAN-10 11:37	100111-3
	Nickel	49.9	ug/L	50	ug/L	99.8	90.0 – 110.0	MS	12-JAN-10 11:37	100111-3
	Selenium	48	ug/L	50	ug/L	95.9	90.0 – 110.0	MS	12-JAN-10 11:37	100111-3
	Arsenic	46.4	ug/L	50	ug/L	92.9	90.0 – 110.0	MS	13-JAN-10 21:16	100113-4
	Thallium	49.5	ug/L	50	ug/L	98.9	90.0 – 110.0	MS	13-JAN-10 21:16	100113-4
	Uranium	54.1	ug/L	50	ug/L	108.2	90.0 – 110.0	MS	13-JAN-10 21:16	100113-4
	Antimony	519	ug/L	500	ug/L	103.7	90.0 – 110.0	P	14-JAN-10 10:32	011410-2
CCV01										
	Mercury	5.01	ug/L	5	ug/L	100.3	80.0 – 120.0	AV	07-JAN-10 10:33	010710S2-7
	Aluminum	4920	ug/L	5000	ug/L	98.4	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Barium	510	ug/L	500	ug/L	102	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Cadmium	511	ug/L	500	ug/L	102.1	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Calcium	5060	ug/L	5000	ug/L	101.3	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Chromium	512	ug/L	500	ug/L	102.3	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Cobalt	512	ug/L	500	ug/L	102.3	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Copper	504	ug/L	500	ug/L	100.9	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Iron	5200	ug/L	5000	ug/L	104.1	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Lead	512	ug/L	500	ug/L	102.5	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Magnesium	5250	ug/L	5000	ug/L	105	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Manganese	507	ug/L	500	ug/L	101.5	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Potassium	5250	ug/L	5000	ug/L	104.9	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Silver	517	ug/L	500	ug/L	103.5	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Sodium	10400	ug/L	10000	ug/L	104	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Vanadium	515	ug/L	500	ug/L	103	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Zinc	507	ug/L	500	ug/L	101.4	90.0 – 110.0	P	11-JAN-10 16:24	011110A-1
	Beryllium	46.6	ug/L	50	ug/L	93.2	90.0 – 110.0	MS	12-JAN-10 12:07	100111-3
	Nickel	50.2	ug/L	50	ug/L	100.3	90.0 – 110.0	MS	12-JAN-10 12:07	100111-3
	Selenium	47.6	ug/L	50	ug/L	95.1	90.0 – 110.0	MS	12-JAN-10 12:07	100111-3
	Arsenic	45.5	ug/L	50	ug/L	91	90.0 – 110.0	MS	13-JAN-10 21:36	100113-4
	Thallium	48.3	ug/L	50	ug/L	96.6	90.0 – 110.0	MS	13-JAN-10 21:36	100113-4
	Uranium	52.9	ug/L	50	ug/L	105.8	90.0 – 110.0	MS	13-JAN-10 21:36	100113-4
	Antimony	528	ug/L	500	ug/L	105.6	90.0 – 110.0	P	14-JAN-10 11:33	011410-2
CCV02										
	Mercury	5.28	ug/L	5	ug/L	105.7	80.0 – 120.0	AV	07-JAN-10 10:57	010710S2-7
	Aluminum	4990	ug/L	5000	ug/L	99.7	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Barium	503	ug/L	500	ug/L	100.5	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Cadmium	503	ug/L	500	ug/L	100.6	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Calcium	5080	ug/L	5000	ug/L	101.6	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Chromium	504	ug/L	500	ug/L	100.8	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Cobalt	505	ug/L	500	ug/L	100.9	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Copper	496	ug/L	500	ug/L	99.2	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Iron	5170	ug/L	5000	ug/L	103.5	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Lead	505	ug/L	500	ug/L	101	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Magnesium	5260	ug/L	5000	ug/L	105.1	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Manganese	506	ug/L	500	ug/L	101.1	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Potassium	5120	ug/L	5000	ug/L	102.4	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Silver	509	ug/L	500	ug/L	101.9	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Sodium	10100	ug/L	10000	ug/L	101	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Vanadium	508	ug/L	500	ug/L	101.5	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Zinc	499	ug/L	500	ug/L	99.8	90.0 – 110.0	P	11-JAN-10 16:38	011110A-1
	Beryllium	45.9	ug/L	50	ug/L	91.8	90.0 – 110.0	MS	12-JAN-10 12:36	100111-3
	Nickel	49.6	ug/L	50	ug/L	99.1	90.0 – 110.0	MS	12-JAN-10 12:36	100111-3
	Selenium	45.7	ug/L	50	ug/L	91.5	90.0 – 110.0	MS	12-JAN-10 12:36	100111-3
	Arsenic	47.6	ug/L	50	ug/L	95.2	90.0 – 110.0	MS	13-JAN-10 21:57	100113-4
	Thallium	50.1	ug/L	50	ug/L	100.1	90.0 – 110.0	MS	13-JAN-10 21:57	100113-4
	Uranium	54	ug/L	50	ug/L	107.9	90.0 – 110.0	MS	13-JAN-10 21:57	100113-4
	Antimony	535	ug/L	500	ug/L	107	90.0 – 110.0	P	14-JAN-10 11:54	011410-2
CCV03										
	Mercury	5.47	ug/L	5	ug/L	109.4	80.0 – 120.0	AV	07-JAN-10 11:21	010710S2-7
	Aluminum	4830	ug/L	5000	ug/L	96.7	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Barium	493	ug/L	500	ug/L	98.5	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Cadmium	493	ug/L	500	ug/L	98.6	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Calcium	4860	ug/L	5000	ug/L	97.3	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Chromium	494	ug/L	500	ug/L	98.8	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Cobalt	494	ug/L	500	ug/L	98.8	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Copper	486	ug/L	500	ug/L	97.2	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Iron	4900	ug/L	5000	ug/L	98	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Lead	497	ug/L	500	ug/L	99.5	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Magnesium	5000	ug/L	5000	ug/L	100.1	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Manganese	494	ug/L	500	ug/L	98.8	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Potassium	4910	ug/L	5000	ug/L	98.3	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Silver	501	ug/L	500	ug/L	100.2	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1
	Sodium	9470	ug/L	10000	ug/L	94.7	90.0 – 110.0	P	11-JAN-10 16:59	011110A-1



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Vanadium	498	ug/L	500	ug/L	99.6	90.0 - 110.0	P	11-JAN-10 16:59	011110A-1
	Zinc	489	ug/L	500	ug/L	97.8	90.0 - 110.0	P	11-JAN-10 16:59	011110A-1
	Beryllium	49.8	ug/L	50	ug/L	99.6	90.0 - 110.0	MS	12-JAN-10 13:36	100111-3
	Nickel	50.8	ug/L	50	ug/L	101.7	90.0 - 110.0	MS	12-JAN-10 13:36	100111-3
	Selenium	46.8	ug/L	50	ug/L	93.5	90.0 - 110.0	MS	12-JAN-10 13:36	100111-3
	Arsenic	46.4	ug/L	50	ug/L	92.8	90.0 - 110.0	MS	13-JAN-10 22:37	100113-4
	Thallium	48.7	ug/L	50	ug/L	97.4	90.0 - 110.0	MS	13-JAN-10 22:37	100113-4
	Uranium	53.8	ug/L	50	ug/L	107.7	90.0 - 110.0	MS	13-JAN-10 22:37	100113-4
	Antimony	524	ug/L	500	ug/L	104.9	90.0 - 110.0	P	14-JAN-10 12:56	011410-2
CCV04										
	Mercury	5.48	ug/L	5	ug/L	109.6	80.0 - 120.0	AV	07-JAN-10 11:45	010710S2-7
	Aluminum	4830	ug/L	5000	ug/L	96.6	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Barium	500	ug/L	500	ug/L	99.9	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Cadmium	500	ug/L	500	ug/L	100	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Calcium	4940	ug/L	5000	ug/L	98.9	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Chromium	500	ug/L	500	ug/L	100.1	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Cobalt	502	ug/L	500	ug/L	100.4	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Copper	494	ug/L	500	ug/L	98.7	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Iron	5050	ug/L	5000	ug/L	101.1	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Lead	501	ug/L	500	ug/L	100.2	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Magnesium	5200	ug/L	5000	ug/L	104	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Manganese	498	ug/L	500	ug/L	99.7	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Potassium	4920	ug/L	5000	ug/L	98.4	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Silver	507	ug/L	500	ug/L	101.4	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Sodium	10100	ug/L	10000	ug/L	100.8	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Vanadium	505	ug/L	500	ug/L	100.9	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Zinc	496	ug/L	500	ug/L	99.3	90.0 - 110.0	P	11-JAN-10 17:54	011110A-1
	Beryllium	53.3	ug/L	50	ug/L	106.6	90.0 - 110.0	MS	12-JAN-10 14:35	100111-3
	Nickel	50.9	ug/L	50	ug/L	101.8	90.0 - 110.0	MS	12-JAN-10 14:35	100111-3
	Selenium	47.1	ug/L	50	ug/L	94.1	90.0 - 110.0	MS	12-JAN-10 14:35	100111-3



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Arsenic	47	ug/L	50	ug/L	94	90.0 – 110.0	MS	13-JAN-10 23:14	100113-4
	Thallium	48.5	ug/L	50	ug/L	97	90.0 – 110.0	MS	13-JAN-10 23:14	100113-4
	Uranium	53.3	ug/L	50	ug/L	106.6	90.0 – 110.0	MS	13-JAN-10 23:14	100113-4
	Antimony	508	ug/L	500	ug/L	101.6	90.0 – 110.0	P	14-JAN-10 14:19	011410-2
CCV05										
	Aluminum	4850	ug/L	5000	ug/L	97.1	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Barium	503	ug/L	500	ug/L	100.6	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Cadmium	504	ug/L	500	ug/L	100.9	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Calcium	4910	ug/L	5000	ug/L	98.2	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Chromium	504	ug/L	500	ug/L	100.8	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Cobalt	505	ug/L	500	ug/L	101.1	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Copper	500	ug/L	500	ug/L	99.9	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Iron	5030	ug/L	5000	ug/L	100.6	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Lead	505	ug/L	500	ug/L	100.9	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Magnesium	5110	ug/L	5000	ug/L	102.2	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Manganese	501	ug/L	500	ug/L	100.2	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Potassium	4900	ug/L	5000	ug/L	97.9	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Silver	511	ug/L	500	ug/L	102.2	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Sodium	10100	ug/L	10000	ug/L	100.7	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Vanadium	509	ug/L	500	ug/L	101.8	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Zinc	501	ug/L	500	ug/L	100.1	90.0 – 110.0	P	11-JAN-10 18:58	011110A-1
	Beryllium	53.1	ug/L	50	ug/L	106.3	90.0 – 110.0	MS	12-JAN-10 15:16	100111-3
	Nickel	49.4	ug/L	50	ug/L	98.7	90.0 – 110.0	MS	12-JAN-10 15:16	100111-3
	Selenium	46.2	ug/L	50	ug/L	92.4	90.0 – 110.0	MS	12-JAN-10 15:16	100111-3
	Arsenic	45.9	ug/L	50	ug/L	91.7	90.0 – 110.0	MS	13-JAN-10 23:46	100113-4
	Thallium	48.6	ug/L	50	ug/L	97.3	90.0 – 110.0	MS	13-JAN-10 23:46	100113-4
	Uranium	52.9	ug/L	50	ug/L	105.8	90.0 – 110.0	MS	13-JAN-10 23:46	100113-4
	Antimony	526	ug/L	500	ug/L	105.1	90.0 – 110.0	P	14-JAN-10 15:04	011410-2
CCV06										
	Aluminum	4820	ug/L	5000	ug/L	96.4	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Barium	500	ug/L	500	ug/L	100	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Cadmium	499	ug/L	500	ug/L	99.7	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Calcium	4930	ug/L	5000	ug/L	98.6	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Chromium	501	ug/L	500	ug/L	100.1	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Cobalt	501	ug/L	500	ug/L	100.2	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Copper	496	ug/L	500	ug/L	99.1	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Iron	5010	ug/L	5000	ug/L	100.2	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Lead	498	ug/L	500	ug/L	99.5	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Magnesium	5170	ug/L	5000	ug/L	103.5	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Manganese	500	ug/L	500	ug/L	100	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Potassium	4830	ug/L	5000	ug/L	96.6	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Silver	507	ug/L	500	ug/L	101.4	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Sodium	9780	ug/L	10000	ug/L	97.8	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Vanadium	506	ug/L	500	ug/L	101.3	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Zinc	497	ug/L	500	ug/L	99.3	90.0 – 110.0	P	11-JAN-10 20:14	011110A-1
	Antimony	505	ug/L	500	ug/L	101	90.0 – 110.0	P	14-JAN-10 15:45	011410-2
CCV07	Aluminum	4850	ug/L	5000	ug/L	96.9	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Barium	502	ug/L	500	ug/L	100.4	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Cadmium	501	ug/L	500	ug/L	100.1	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Calcium	4980	ug/L	5000	ug/L	99.7	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Chromium	503	ug/L	500	ug/L	100.6	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Cobalt	504	ug/L	500	ug/L	100.8	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Copper	497	ug/L	500	ug/L	99.5	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Iron	5100	ug/L	5000	ug/L	102	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Lead	504	ug/L	500	ug/L	100.8	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Magnesium	5180	ug/L	5000	ug/L	103.7	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Manganese	502	ug/L	500	ug/L	100.3	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Potassium	4860	ug/L	5000	ug/L	97.3	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1
	Silver	509	ug/L	500	ug/L	101.8	90.0 – 110.0	P	11-JAN-10 21:31	011110A-1



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
CCV08	Sodium	9950	ug/L	10000	ug/L	99.5	90.0 - 110.0	P	11-JAN-10 21:31	011110A-1
	Vanadium	508	ug/L	500	ug/L	101.6	90.0 - 110.0	P	11-JAN-10 21:31	011110A-1
	Zinc	498	ug/L	500	ug/L	99.6	90.0 - 110.0	P	11-JAN-10 21:31	011110A-1
	Antimony	507	ug/L	500	ug/L	101.3	90.0 - 110.0	P	14-JAN-10 17:01	011410-2
	Aluminum	4890	ug/L	5000	ug/L	97.8	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Barium	506	ug/L	500	ug/L	101.2	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Cadmium	506	ug/L	500	ug/L	101.1	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Calcium	5070	ug/L	5000	ug/L	101.4	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Chromium	507	ug/L	500	ug/L	101.4	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Cobalt	508	ug/L	500	ug/L	101.5	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Copper	499	ug/L	500	ug/L	99.9	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Iron	5230	ug/L	5000	ug/L	104.6	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Lead	505	ug/L	500	ug/L	101.1	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Magnesium	5250	ug/L	5000	ug/L	105	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Manganese	504	ug/L	500	ug/L	100.8	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Potassium	4950	ug/L	5000	ug/L	99	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Silver	512	ug/L	500	ug/L	102.3	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Sodium	10200	ug/L	10000	ug/L	101.5	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Vanadium	512	ug/L	500	ug/L	102.4	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Zinc	502	ug/L	500	ug/L	100.4	90.0 - 110.0	P	11-JAN-10 22:48	011110A-1
	Antimony	508	ug/L	500	ug/L	101.7	90.0 - 110.0	P	14-JAN-10 18:23	011410-2
CCV09	Aluminum	4860	ug/L	5000	ug/L	97.3	90.0 - 110.0	P	11-JAN-10 23:59	011110A-1
	Barium	505	ug/L	500	ug/L	100.9	90.0 - 110.0	P	11-JAN-10 23:59	011110A-1
	Cadmium	506	ug/L	500	ug/L	101.2	90.0 - 110.0	P	11-JAN-10 23:59	011110A-1
	Calcium	5020	ug/L	5000	ug/L	100.4	90.0 - 110.0	P	11-JAN-10 23:59	011110A-1
	Chromium	506	ug/L	500	ug/L	101.1	90.0 - 110.0	P	11-JAN-10 23:59	011110A-1
	Cobalt	507	ug/L	500	ug/L	101.4	90.0 - 110.0	P	11-JAN-10 23:59	011110A-1
	Copper	497	ug/L	500	ug/L	99.4	90.0 - 110.0	P	11-JAN-10 23:59	011110A-1



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Iron	5200	ug/L	5000	ug/L	104.1	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Lead	506	ug/L	500	ug/L	101.2	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Magnesium	5290	ug/L	5000	ug/L	105.7	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Manganese	506	ug/L	500	ug/L	101.3	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Potassium	4920	ug/L	5000	ug/L	98.3	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Silver	510	ug/L	500	ug/L	101.9	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Sodium	10300	ug/L	10000	ug/L	103.1	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Vanadium	510	ug/L	500	ug/L	102.1	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Zinc	501	ug/L	500	ug/L	100.2	90.0 – 110.0	P	11-JAN-10 23:59	011110A-1
	Antimony	511	ug/L	500	ug/L	102.2	90.0 – 110.0	P	14-JAN-10 19:40	011410-2
CCV10	Aluminum	5010	ug/L	5000	ug/L	100.2	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Barium	518	ug/L	500	ug/L	103.6	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Cadmium	519	ug/L	500	ug/L	103.7	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Calcium	5080	ug/L	5000	ug/L	101.7	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Chromium	519	ug/L	500	ug/L	103.8	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Cobalt	520	ug/L	500	ug/L	104.1	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Copper	512	ug/L	500	ug/L	102.4	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Iron	5230	ug/L	5000	ug/L	104.6	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Lead	521	ug/L	500	ug/L	104.2	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Magnesium	5280	ug/L	5000	ug/L	105.7	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Manganese	520	ug/L	500	ug/L	104	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Potassium	5020	ug/L	5000	ug/L	100.5	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Silver	525	ug/L	500	ug/L	105	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Sodium	10200	ug/L	10000	ug/L	102.1	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Vanadium	524	ug/L	500	ug/L	104.8	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Zinc	514	ug/L	500	ug/L	102.8	90.0 – 110.0	P	12-JAN-10 01:01	011110A-1
	Antimony	527	ug/L	500	ug/L	105.4	90.0 – 110.0	P	14-JAN-10 20:50	011410-2
CCV11	Aluminum	5050	ug/L	5000	ug/L	100.9	90.0 – 110.0	P	12-JAN-10 02:12	011110A-1



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Barium	517	ug/L	500	ug/L	103.4	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Cadmium	517	ug/L	500	ug/L	103.5	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Calcium	5050	ug/L	5000	ug/L	101	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Chromium	518	ug/L	500	ug/L	103.6	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Cobalt	520	ug/L	500	ug/L	104	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Copper	510	ug/L	500	ug/L	102	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Iron	5180	ug/L	5000	ug/L	103.7	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Lead	517	ug/L	500	ug/L	103.4	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Magnesium	5220	ug/L	5000	ug/L	104.4	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Manganese	515	ug/L	500	ug/L	103	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Potassium	5040	ug/L	5000	ug/L	100.8	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Silver	524	ug/L	500	ug/L	104.9	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Sodium	10300	ug/L	10000	ug/L	102.8	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Vanadium	524	ug/L	500	ug/L	104.7	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Zinc	512	ug/L	500	ug/L	102.4	90.0 - 110.0	P	12-JAN-10 02:12	011110A-1
	Antimony	527	ug/L	500	ug/L	105.4	90.0 - 110.0	P	14-JAN-10 22:00	011410-2
CCV12	Aluminum	5080	ug/L	5000	ug/L	101.5	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Barium	525	ug/L	500	ug/L	105.1	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Cadmium	526	ug/L	500	ug/L	105.2	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Calcium	5170	ug/L	5000	ug/L	103.3	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Chromium	527	ug/L	500	ug/L	105.5	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Cobalt	527	ug/L	500	ug/L	105.5	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Copper	518	ug/L	500	ug/L	103.6	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Iron	5300	ug/L	5000	ug/L	105.9	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Lead	527	ug/L	500	ug/L	105.4	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Magnesium	5410	ug/L	5000	ug/L	108.3	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Manganese	522	ug/L	500	ug/L	104.5	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Potassium	5080	ug/L	5000	ug/L	101.6	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Silver	532	ug/L	500	ug/L	106.4	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1



**METALS**  
-2a-  
**Initial and Continuing Calibration Verification**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
CCV13	Sodium	10300	ug/L	10000	ug/L	102.7	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Vanadium	532	ug/L	500	ug/L	106.4	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Zinc	521	ug/L	500	ug/L	104.3	90.0 - 110.0	P	12-JAN-10 03:22	011110A-1
	Antimony	532	ug/L	500	ug/L	106.5	90.0 - 110.0	P	14-JAN-10 23:10	011410-2
	Antimony	529	ug/L	500	ug/L	105.9	90.0 - 110.0	P	15-JAN-10 00:13	011410-2



**METALS**  
**-2b-**  
**CRDL Standard for AA & ICP**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

AA CRDL Standard Source: SPEX

ICP CRDL Standard Source Solutions Plus

Instrument ID: ICPMS6,MER536,OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Advisory Limits (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
CRDL01										
	Mercury	.201	ug/L	.2	ug/L	100.5	70.0 – 130.0	AV	07-JAN-10 10:31	010710S2-7
	Nickel	2.28	ug/L	2	ug/L	113.9	70.0 – 130.0	MS	12-JAN-10 11:49	100111-3
	Beryllium	.528	ug/L	.5	ug/L	105.6	70.0 – 130.0	MS	12-JAN-10 11:49	100111-3
	Selenium	5.41	ug/L	5	ug/L	108.3	70.0 – 130.0	MS	12-JAN-10 11:49	100111-3
	Thallium	1.06	ug/L	1	ug/L	106.3	70.0 – 130.0	MS	13-JAN-10 21:24	100113-4
	Arsenic	5.57	ug/L	5	ug/L	111.5	70.0 – 130.0	MS	13-JAN-10 21:24	100113-4
	Uranium	.175	ug/L	.2	ug/L	87.5	70.0 – 130.0	MS	13-JAN-10 21:24	100113-4
PQL01										
	Magnesium	343	ug/L	300	ug/L	114.4	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Manganese	10.5	ug/L	10	ug/L	104.9	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Potassium	159	ug/L	150	ug/L	106.1	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Silver	4.78	ug/L	5	ug/L	95.5	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Sodium	291	ug/L	300	ug/L	97	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Barium	5.02	ug/L	5	ug/L	100.4	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Cadmium	5.07	ug/L	5	ug/L	101.5	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Lead	10.6	ug/L	10	ug/L	106.1	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Iron	116	ug/L	100	ug/L	116.4	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Aluminum	202	ug/L	200	ug/L	101	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Chromium	4.72	ug/L	5	ug/L	94.4	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Cobalt	4.96	ug/L	5	ug/L	99.2	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Copper	9.9	ug/L	10	ug/L	99	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Vanadium	4.95	ug/L	5	ug/L	99	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Zinc	10.5	ug/L	10	ug/L	104.8	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Calcium	209	ug/L	200	ug/L	104.7	70.0 – 130.0	P	11-JAN-10 15:52	011110A-1
	Antimony	9.49	ug/L	10	ug/L	94.9	70.0 – 130.0	P	14-JAN-10 10:46	011410-2
PQL02										
	Antimony	11.5	ug/L	10	ug/L	115	70.0 – 130.0	P	14-JAN-10 14:26	011410-2
PQL03										
	Antimony	11.7	ug/L	10	ug/L	117.1	70.0 – 130.0	P	14-JAN-10 15:52	011410-2



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**METALS**  
**-2b-**  
**CRDL Standard for AA & ICP**

**SDG No:** 10-1038

**Contract:** LANL01004

**Lab Code:** GEL

**AA CRDL Standard Source:**

**ICP CRDL Standard Source**

**Instrument ID:** ICPMS6,MER536,OPTIMA3

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<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Advisory Limits (%R)</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
PQL04	Antimony	10.2	ug/L	10	ug/L	102	70.0 – 130.0	P	14-JAN-10 17:08	011410-2



Metals  
-3a-  
Initial and Continuing Calibration Blank Summary

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
<b>ICB01</b>										
	Mercury	-0.073	+/-2	J	0.068	0.2	SOL	AV	07-JAN-10 10:29	010710S2-7
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 15:45	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 15:45	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 15:45	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 15:45	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 15:45	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 15:45	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 15:45	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 15:45	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 15:45	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 15:45	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 15:45	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	11-JAN-10 15:45	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 15:45	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	11-JAN-10 15:45	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 15:45	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 15:45	011110A-1
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	12-JAN-10 11:43	100111-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	12-JAN-10 11:43	100111-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	12-JAN-10 11:43	100111-3
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	13-JAN-10 21:20	100113-4
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	13-JAN-10 21:20	100113-4
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	13-JAN-10 21:20	100113-4
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 10:39	011410-2
<b>CCB01</b>										
	Mercury	-0.077	+/-2	J	0.068	0.2	SOL	AV	07-JAN-10 10:35	010710S2-7
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 16:31	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 16:31	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 16:31	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 16:31	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 16:31	011110A-1



**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 16:31	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 16:31	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 16:31	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 16:31	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 16:31	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 16:31	011110A-1
	Potassium	128.97	+/-250	J	64.0	250	SOL	P	11-JAN-10 16:31	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 16:31	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	11-JAN-10 16:31	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 16:31	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 16:31	011110A-1
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	12-JAN-10 12:13	100111-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	12-JAN-10 12:13	100111-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	12-JAN-10 12:13	100111-3
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	13-JAN-10 21:40	100113-4
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	13-JAN-10 21:40	100113-4
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	13-JAN-10 21:40	100113-4
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 11:40	011410-2
<b>CCB02</b>										
	Mercury	-0.119	+/-2	J	0.068	0.2	SOL	AV	07-JAN-10 10:59	010710S2-7
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 16:45	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 16:45	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 16:45	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 16:45	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 16:45	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 16:45	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 16:45	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 16:45	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 16:45	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 16:45	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 16:45	011110A-1



Metals  
-3a-  
Initial and Continuing Calibration Blank Summary

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
	Potassium	84.9	+/-250	J	64.0	250	SOL	P	11-JAN-10 16:45	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 16:45	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	11-JAN-10 16:45	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 16:45	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 16:45	011110A-1
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	12-JAN-10 12:42	100111-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	12-JAN-10 12:42	100111-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	12-JAN-10 12:42	100111-3
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	13-JAN-10 22:01	100113-4
	Thallium	0.312	+/-1	J	0.3	1.0	SOL	MS	13-JAN-10 22:01	100113-4
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	13-JAN-10 22:01	100113-4
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 12:01	011410-2
<b>CCB03</b>	Mercury	-0.148	+/-2	J	0.068	0.2	SOL	AV	07-JAN-10 11:23	010710S2-7
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 17:06	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 17:06	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 17:06	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 17:06	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 17:06	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 17:06	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 17:06	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 17:06	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 17:06	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 17:06	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 17:06	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	11-JAN-10 17:06	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 17:06	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	11-JAN-10 17:06	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 17:06	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 17:06	011110A-1
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	12-JAN-10 13:42	100111-3



**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	12-JAN-10 13:42	100111-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	12-JAN-10 13:42	100111-3
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	13-JAN-10 22:41	100113-4
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	13-JAN-10 22:41	100113-4
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	13-JAN-10 22:41	100113-4
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 13:03	011410-2
CCB04	Mercury	-0.164	+/-2	J	0.068	0.2	SOL	AV	07-JAN-10 11:47	010710S2-7
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 18:01	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 18:01	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 18:01	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 18:01	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 18:01	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 18:01	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 18:01	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 18:01	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 18:01	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 18:01	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 18:01	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	11-JAN-10 18:01	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 18:01	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	11-JAN-10 18:01	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 18:01	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 18:01	011110A-1
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	12-JAN-10 14:41	100111-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	12-JAN-10 14:41	100111-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	12-JAN-10 14:41	100111-3
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	13-JAN-10 23:18	100113-4
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	13-JAN-10 23:18	100113-4
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	13-JAN-10 23:18	100113-4
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 14:33	011410-2



**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
<b>CCB05</b>										
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 19:05	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 19:05	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 19:05	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 19:05	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 19:05	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 19:05	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 19:05	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 19:05	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 19:05	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 19:05	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 19:05	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	11-JAN-10 19:05	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 19:05	011110A-1
	Sodium	88.32	+/-250	J	70.0	250	SOL	P	11-JAN-10 19:05	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 19:05	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 19:05	011110A-1
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	12-JAN-10 15:22	100111-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	12-JAN-10 15:22	100111-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	12-JAN-10 15:22	100111-3
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	13-JAN-10 23:50	100113-4
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	13-JAN-10 23:50	100113-4
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	13-JAN-10 23:50	100113-4
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 15:11	011410-2
<b>CCB06</b>										
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 20:21	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 20:21	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 20:21	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 20:21	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 20:21	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 20:21	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 20:21	011110A-1



**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 20:21	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 20:21	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 20:21	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 20:21	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	11-JAN-10 20:21	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 20:21	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	11-JAN-10 20:21	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 20:21	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 20:21	011110A-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 15:59	011410-2
CCB07	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 21:38	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 21:38	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 21:38	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 21:38	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 21:38	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 21:38	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 21:38	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 21:38	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 21:38	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 21:38	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 21:38	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	11-JAN-10 21:38	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 21:38	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	11-JAN-10 21:38	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 21:38	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 21:38	011110A-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 17:15	011410-2
CCB08	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	11-JAN-10 22:55	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 22:55	011110A-1



**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 22:55	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 22:55	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 22:55	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	11-JAN-10 22:55	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	11-JAN-10 22:55	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	11-JAN-10 22:55	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	11-JAN-10 22:55	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	11-JAN-10 22:55	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	11-JAN-10 22:55	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	11-JAN-10 22:55	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 22:55	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	11-JAN-10 22:55	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	11-JAN-10 22:55	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	11-JAN-10 22:55	011110A-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 18:30	011410-2
<b>CCB09</b>	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	12-JAN-10 00:06	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 00:06	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 00:06	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	12-JAN-10 00:06	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	12-JAN-10 00:06	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	12-JAN-10 00:06	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	12-JAN-10 00:06	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	12-JAN-10 00:06	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	12-JAN-10 00:06	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	12-JAN-10 00:06	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	12-JAN-10 00:06	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	12-JAN-10 00:06	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 00:06	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	12-JAN-10 00:06	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 00:06	011110A-1



**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
CCB10	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	12-JAN-10 00:06	011110A-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 19:47	011410-2
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	12-JAN-10 01:08	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 01:08	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 01:08	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	12-JAN-10 01:08	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	12-JAN-10 01:08	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	12-JAN-10 01:08	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	12-JAN-10 01:08	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	12-JAN-10 01:08	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	12-JAN-10 01:08	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	12-JAN-10 01:08	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	12-JAN-10 01:08	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	12-JAN-10 01:08	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 01:08	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	12-JAN-10 01:08	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 01:08	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	12-JAN-10 01:08	011110A-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 20:57	011410-2
CCB11	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	12-JAN-10 02:19	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 02:19	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 02:19	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	12-JAN-10 02:19	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	12-JAN-10 02:19	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	12-JAN-10 02:19	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	12-JAN-10 02:19	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	12-JAN-10 02:19	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	12-JAN-10 02:19	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	12-JAN-10 02:19	011110A-1



**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ug/L</u>	<u>Acceptance</u>	<u>Conc</u> <u>Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis</u> <u>Date/Time</u>	<u>Run</u>
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	12-JAN-10 02:19	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	12-JAN-10 02:19	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 02:19	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	12-JAN-10 02:19	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 02:19	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	12-JAN-10 02:19	011110A-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 22:07	011410-2
<b>CCB12</b>	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	12-JAN-10 03:29	011110A-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 03:29	011110A-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 03:29	011110A-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	12-JAN-10 03:29	011110A-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	12-JAN-10 03:29	011110A-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	12-JAN-10 03:29	011110A-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	12-JAN-10 03:29	011110A-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	12-JAN-10 03:29	011110A-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	12-JAN-10 03:29	011110A-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	12-JAN-10 03:29	011110A-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	12-JAN-10 03:29	011110A-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	12-JAN-10 03:29	011110A-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 03:29	011110A-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	12-JAN-10 03:29	011110A-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	12-JAN-10 03:29	011110A-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	12-JAN-10 03:29	011110A-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	14-JAN-10 23:17	011410-2
<b>CCB13</b>	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	15-JAN-10 00:20	011410-2



**METALS**  
**-3b-**  
**PREPARATION BLANK SUMMARY**

**SDG NO.** 10-1038  
**Contract:** LANL01004  
**Matrix:** SOIL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Acceptance Window</u>	<u>Conc Qual</u>	<u>M</u>	<u>MDL</u>	<u>RDL</u>
1202004420	Arsenic	0.199	mg/kg	+/-0.994	U	MS	0.199	0.994
	Beryllium	0.0199	mg/kg	+/-0.0994	U	MS	0.0199	0.0994
	Nickel	0.0994	mg/kg	+/-0.398	U	MS	0.0994	0.398
	Selenium	0.497	mg/kg	+/-0.994	U	MS	0.497	0.994
	Uranium	0.0131	mg/kg	+/-0.0398	U	MS	0.0131	0.0398
	Thallium	0.0596	mg/kg	+/-0.199	U	MS	0.0596	0.199
1202004426	Aluminum	6730	ug/Kg	+/-19800	U	P	6730	19800
	Cobalt	149	ug/Kg	+/-495	U	P	149	495
	Iron	7920	ug/Kg	+/-24800	U	P	7920	24800
	Zinc	327	ug/Kg	+/-990	U	P	327	990
	Vanadium	99	ug/Kg	+/-495	U	P	99	495
	Sodium	6930	ug/Kg	+/-24800	U	P	6930	24800
	Silver	99	ug/Kg	+/-495	U	P	99	495
	Potassium	6340	ug/Kg	+/-24800	U	P	6340	24800
	Manganese	198	ug/Kg	+/-990	U	P	198	990
	Magnesium	8420	ug/Kg	+/-29700	U	P	8420	29700
	Lead	866	ug/Kg	+/-990	J	P	248	990
	Copper	297	ug/Kg	+/-990	U	P	297	990
	Chromium	302	ug/Kg	+/-495	J	P	149	495
	Barium	99	ug/Kg	+/-495	U	P	99	495
	Cadmium	99	ug/Kg	+/-495	U	P	99	495
	Calcium	7920	ug/Kg	+/-24800	U	P	7920	24800
1202006448	Mercury	4.02	ug/kg	+/-11.8	U	AV	4.02	11.8
1202014118	Antimony	330	ug/Kg	+/-1000	U	P	330	1000



## METALS

-4-

## Interference Check Sample

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

ICS: O2Si

Instrument: OPTIMA3

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
<b>ICSA01</b>									
	Aluminum	514000	ug/L	500000	ug/L	103	80.0 - 120.0	11-JAN-10 15:59	011110A-1
	Barium	3.06	ug/L					11-JAN-10 15:59	011110A-1
	Cadmium	-0.409	ug/L					11-JAN-10 15:59	011110A-1
	Calcium	482000	ug/L	500000	ug/L	96.5	80.0 - 120.0	11-JAN-10 15:59	011110A-1
	Chromium	1.65	ug/L					11-JAN-10 15:59	011110A-1
	Cobalt	-1.58	ug/L					11-JAN-10 15:59	011110A-1
	Copper	4.62	ug/L					11-JAN-10 15:59	011110A-1
	Iron	189000	ug/L	200000	ug/L	94.5	80.0 - 120.0	11-JAN-10 15:59	011110A-1
	Lead	-0.0021	ug/L					11-JAN-10 15:59	011110A-1
	Magnesium	492000	ug/L	500000	ug/L	98.3	80.0 - 120.0	11-JAN-10 15:59	011110A-1
	Manganese	2.73	ug/L					11-JAN-10 15:59	011110A-1
	Potassium	-217.0	ug/L					11-JAN-10 15:59	011110A-1
	Silver	0.174	ug/L					11-JAN-10 15:59	011110A-1
	Sodium	8.11	ug/L					11-JAN-10 15:59	011110A-1
	Vanadium	-1.0	ug/L					11-JAN-10 15:59	011110A-1
	Zinc	7.89	ug/L					11-JAN-10 15:59	011110A-1
<b>ICSAB01</b>									
	Aluminum	509000	ug/L	500000	ug/L	102	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Barium	499	ug/L	500	ug/L	99.9	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Cadmium	470	ug/L	500	ug/L	94	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Calcium	476000	ug/L	500000	ug/L	95.1	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Chromium	485	ug/L	500	ug/L	97	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Cobalt	448	ug/L	500	ug/L	89.7	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Copper	558	ug/L	500	ug/L	112	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Iron	187000	ug/L	200000	ug/L	93.3	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Lead	466	ug/L	500	ug/L	93.2	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Magnesium	487000	ug/L	500000	ug/L	97.4	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Manganese	485	ug/L	500	ug/L	97.1	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Potassium	5310	ug/L	5000	ug/L	106	80.0 - 120.0	11-JAN-10 16:05	011110A-1



**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

ICS:

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (% R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
	Silver	275	ug/L	250	ug/L	110	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Sodium	5540	ug/L	5000	ug/L	111	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Vanadium	512	ug/L	500	ug/L	102	80.0 - 120.0	11-JAN-10 16:05	011110A-1
	Zinc	504	ug/L	500	ug/L	101	80.0 - 120.0	11-JAN-10 16:05	011110A-1



**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

ICS: O2Si

Instrument: OPTIMA3

---

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICSA01	Antimony	4.44	ug/L					14-JAN-10 10:53	011410-2
ICSAB01	Antimony	550	ug/L	500	ug/L	110	80.0 - 120.0	14-JAN-10 10:59	011410-2



## METALS

-4-

## Interference Check Sample

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

ICS: O2Si

Instrument: ICPMS6

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICSA01	Beryllium	0.061	ug/L					12-JAN-10 11:55	100111-3
	Nickel	3.05	ug/L					12-JAN-10 11:55	100111-3
	Selenium	-1.46	ug/L					12-JAN-10 11:55	100111-3
ICSAB01	Beryllium	18.6	ug/L	20	ug/L	93.1	80.0 - 120.0	12-JAN-10 12:01	100111-3
	Nickel	22.5	ug/L	22.7	ug/L	98.9	80.0 - 120.0	12-JAN-10 12:01	100111-3
	Selenium	19.4	ug/L	20	ug/L	96.8	80.0 - 120.0	12-JAN-10 12:01	100111-3



## METALS

-4-

## Interference Check Sample

SDG No: 10-1038

Contract: LANL01004

Lab Code: GEL

ICS: O2Si

Instrument: ICPMS6

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>True Value</u>	<u>Units</u>	<u>% Recovery</u>	<u>Acceptance Window (%R)</u>	<u>Analysis Date/Time</u>	<u>Run Number</u>
ICSA01	Arsenic	-0.074	ug/L					13-JAN-10 21:28	100113-4
	Thallium	-0.001	ug/L					13-JAN-10 21:28	100113-4
	Uranium	-0.067	ug/L					13-JAN-10 21:28	100113-4
ICSAB01	Arsenic	19.6	ug/L	20	ug/L	98.1	80.0 - 120.0	13-JAN-10 21:32	100113-4
	Thallium	17.9	ug/L	20	ug/L	89.5	80.0 - 120.0	13-JAN-10 21:32	100113-4
	Uranium	20.9	ug/L	20	ug/L	104	80.0 - 120.0	13-JAN-10 21:32	100113-4



## METALS

-5a-

## Matrix Spike Summary

SDG NO. 10-1038

Client ID WST03-10-2148S

Contract: LANL01004

Level: Low

Matrix: SOIL

% Solids: 92.8

Sample ID: 243549002

Spike ID: 1202004423

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	mg/kg	75-125	9.38		0.864	J	8.34	102		MS
Beryllium	mg/kg	75-125	6.28		0.542		5.21	110		MS
Nickel	mg/kg	75-125	8.5		2.95		5.21	107		MS
Selenium	mg/kg	75-125	1.72		0.536	U	2.08	77.8		MS
Thallium	mg/kg	75-125	9.87		0.0643	U	10.4	94.2		MS
Uranium	mg/kg	75-125	6.26		0.532		5.21	110		MS



## METALS

-5a-

## Matrix Spike Duplicate Summary

SDG NO. 10-1038 Client ID WST03-10-2148SD

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 92.8

Sample ID: 243549002 Spike ID: 1202004425

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	mg/kg	75-125	8.5		0.864	J	8.5	89.9		MS
Beryllium	mg/kg	75-125	5.78		0.542		5.31	98.5		MS
Nickel	mg/kg	75-125	7.93		2.95		5.31	93.7		MS
Selenium	mg/kg	75-125	1.43		0.536	U	2.13	62.8	N	MS
Thallium	mg/kg	75-125	9.24		0.0643	U	10.6	86.4		MS
Uranium	mg/kg	75-125	5.92		0.532		5.31	101		MS



## METALS

-5a-

## Matrix Spike Summary

SDG NO. 10-1038 Client ID WST03-10-2148S

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 92.8

Sample ID: 243549002 Spike ID: 1202004429

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/Kg		10400000		3890000		528000	1230	N/A	P
Antimony	ug/Kg	75-125	49100		333	U	53300	91.9		P
Barium	ug/Kg	75-125	94000		47200		52800	88.7		P
Cadmium	ug/Kg	75-125	49900		106	U	52800	94.4		P
Calcium	ug/Kg	75-125	1680000		816000		528000	164	N	P
Chromium	ug/Kg	75-125	70300		12200		52800	110		P
Cobalt	ug/Kg	75-125	51700		2510		52800	93.2		P
Copper	ug/Kg	75-125	58200		3480		52800	104		P
Iron	ug/Kg		11400000		8430000		528000	555	N/A	P
Lead	ug/Kg	75-125	60600		7570		52800	100		P
Magnesium	ug/Kg	75-125	1950000		750000		528000	227	N	P
Manganese	ug/Kg		330000		220000		52800	209	N/A	P
Potassium	ug/Kg	75-125	1500000		581000		528000	175	N	P
Silver	ug/Kg	75-125	52300		106	U	52800	98.8		P
Sodium	ug/Kg	75-125	743000		174000		528000	108		P
Vanadium	ug/Kg	75-125	63500		10700		52800	100		P
Zinc	ug/Kg	75-125	81400		26200		52800	105		P



## METALS

-5a-

## Matrix Spike Duplicate Summary

SDG NO. 10-1038 Client ID WST03-10-2148SD

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 92.8

Sample ID: 243549002 Spike ID: 1202004431

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/Kg		8640000		3890000		529000	897	N/A	P
Antimony	ug/Kg	75-125	48800		333	U	52500	92.7		P
Barium	ug/Kg	75-125	96500		47200		52900	93.2		P
Cadmium	ug/Kg	75-125	50900		106	U	52900	96.1		P
Calcium	ug/Kg	75-125	1430000		816000		529000	116		P
Chromium	ug/Kg	75-125	74100		12200		52900	117		P
Cobalt	ug/Kg	75-125	52100		2510		52900	93.7		P
Copper	ug/Kg	75-125	58400		3480		52900	104		P
Iron	ug/Kg		10200000		8430000		529000	337	N/A	P
Lead	ug/Kg	75-125	58700		7570		52900	96.6		P
Magnesium	ug/Kg	75-125	1670000		750000		529000	174	N	P
Manganese	ug/Kg		273000		220000		52900	101	N/A	P
Potassium	ug/Kg	75-125	1380000		581000		529000	150	N	P
Silver	ug/Kg	75-125	53100		106	U	52900	100		P
Sodium	ug/Kg	75-125	708000		174000		529000	101		P
Vanadium	ug/Kg	75-125	62100		10700		52900	97.2		P
Zinc	ug/Kg	75-125	79300		26200		52900	100		P



## METALS

-5a-

## Matrix Spike Summary

SDG NO. 10-1038 Client ID RE12-10-7553S

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 79

Sample ID: 243457001 Spike ID: 1202006451

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	ug/kg	75-125	174		14		138	116		AV



## METALS

-5a-

## Matrix Spike Duplicate Summary

SDG NO. 10-1038 Client ID RE12-10-7553SD

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 79

Sample ID: 243457001 Spike ID: 1202006452

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	ug/kg	75-125	164		14		126	118		AV



## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: WST03-10-2148D

Sample ID: 243549002

Duplicate ID: 1202004422

Percent Solids for Dup: 92.8

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	mg/kg	+/-1.05	0.864 J		1.03 J		17.7		MS
Beryllium	mg/kg	+/-20%	0.542		0.717		27.7	*	MS
Nickel	mg/kg	+/-20%	2.95		3.73		23.3	*	MS
Selenium	mg/kg		0.536 U		0.523 U				MS
Thallium	mg/kg		0.0643 U		0.0718 J		200		MS
Uranium	mg/kg	+/-20%	0.532		0.582		8.93		MS



## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: WST03-10-2148SD

Sample ID: 1202004423

Duplicate ID: 1202004425

Percent Solids for Dup: 92.8

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	mg/kg	+/-20	9.38		8.5		9.85		MS
Beryllium	mg/kg	+/-20	6.28		5.78		8.41		MS
Nickel	mg/kg	+/-20	8.5		7.93		7		MS
Selenium	mg/kg	+/-20	1.72		1.43		18.2		MS
Thallium	mg/kg	+/-20	9.87		9.24		6.64		MS
Uranium	mg/kg	+/-20	6.26		5.92		5.61		MS



## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: WST03-10-2148D

Sample ID: 243549002

Duplicate ID: 1202004428

Percent Solids for Dup: 92.8

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/Kg	+/-20%	3890000		3860000		.997		P
Antimony	ug/Kg		333 U		356 U				P
Barium	ug/Kg	+/-20%	47200		42200		11.1		P
Cadmium	ug/Kg		106 U		108 U				P
Calcium	ug/Kg	+/-20%	816000		889000		8.57		P
Chromium	ug/Kg	+/-20%	12200		12500		2.15		P
Cobalt	ug/Kg	+/-538	2510		1550		47.4	*	P
Copper	ug/Kg	+/-1080	3480		3400		2.4		P
Iron	ug/Kg	+/-20%	8430000		8190000		2.88		P
Lead	ug/Kg	+/-20%	7570		6870		9.75		P
Magnesium	ug/Kg	+/-20%	750000		715000		4.68		P
Manganese	ug/Kg	+/-20%	220000		251000		13.1		P
Potassium	ug/Kg	+/-20%	581000		532000		8.93		P
Silver	ug/Kg		106 U		232 J		200		P
Sodium	ug/Kg	+/-20%	174000		172000		1.21		P
Vanadium	ug/Kg	+/-20%	10700		7980		29	*	P
Zinc	ug/Kg	+/-20%	26200		25800		1.24		P



## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: WST03-10-2148SD

Sample ID: 1202004429

Duplicate ID: 1202004431

Percent Solids for Dup: 92.8

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/Kg	+/-20	10400000		8640000		18.5		P
Antimony	ug/Kg	+/-20	49100		48800		.705		P
Barium	ug/Kg	+/-20	94000		96500		2.58		P
Cadmium	ug/Kg	+/-20	49900		50900		2		P
Calcium	ug/Kg	+/-20	1680000		1430000		16.4		P
Chromium	ug/Kg	+/-20	70300		74100		5.36		P
Cobalt	ug/Kg	+/-20	51700		52100		.677		P
Copper	ug/Kg	+/-20	58200		58400		.439		P
Iron	ug/Kg	+/-20	11400000		10200000		10.6		P
Lead	ug/Kg	+/-20	60600		58700		3.17		P
Magnesium	ug/Kg	+/-20	1950000		1670000		15.4		P
Manganese	ug/Kg	+/-20	330000		273000		18.8		P
Potassium	ug/Kg	+/-20	1500000		1380000		8.81		P
Silver	ug/Kg	+/-20	52300		53100		1.62		P
Sodium	ug/Kg	+/-20	743000		708000		4.91		P
Vanadium	ug/Kg	+/-20	63500		62100		2.24		P
Zinc	ug/Kg	+/-20	81400		79300		2.6		P



## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: RE12-10-7553D

Sample ID: 243457001

Duplicate ID: 1202006449

Percent Solids for Dup: 79

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	ug/kg	+/-14.5	14		12.6 J		10.8		AV



## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-1038

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: RE12-10-7553SD

Sample ID: 1202006451

Duplicate ID: 1202006452

Percent Solids for Dup: 79

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	ug/kg	+/-20	174		164		6.11		AV



## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 10-1038

Contract: LANL01004

Aqueous LCS Source:

Solid LCS Source: ERA

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M</u>
1202004421	Arsenic	mg/kg	104	108		104	83-120	MS
	Beryllium	mg/kg	77.6	74.9		96.5	81.2-126.8	MS
	Nickel	mg/kg	134	144		107	83.3-121.4	MS
	Selenium	mg/kg	286	271		94.7	80.2-125.9	MS
	Thallium	mg/kg	121	120		98.9	78-123.2	MS
	Uranium	mg/kg	2.13	1.98		92.8	61.9-130.7	MS



## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 10-1038

Contract: LANL01004

Aqueous LCS Source:

Solid LCS Source: ERA

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M</u>
1202004427								
	Aluminum	ug/Kg	10500000	8580000		81.7	56-144	P
	Barium	ug/Kg	198000	194000		97.7	80-120	P
	Cadmium	ug/Kg	60700	56100		92.4	81-120	P
	Calcium	ug/Kg	9870000	9470000		96	83-117	P
	Chromium	ug/Kg	236000	224000		95.1	80-120	P
	Cobalt	ug/Kg	91200	86900		95.2	81-120	P
	Copper	ug/Kg	174000	181000		104	81-118	P
	Iron	ug/Kg	18000000	18700000		104	51-149	P
	Lead	ug/Kg	86000	83200		96.7	79-121	P
	Magnesium	ug/Kg	4000000	3810000		95.3	79-122	P
	Manganese	ug/Kg	558000	524000		93.9	81-119	P
	Potassium	ug/Kg	4300000	3970000		92.3	74-127	P
	Silver	ug/Kg	30100	31700		105	66-134	P
	Sodium	ug/Kg	1020000	1040000		102	74-127	P
	Vanadium	ug/Kg	115000	119000		104	79-121	P
	Zinc	ug/Kg	594000	598000		101	80-121	P



## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 10-1038

Contract: LANL01004

Aqueous LCS Source:

Solid LCS Source: ERA

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M</u>
1202006453	Mercury	ug/kg	5150	6540		127	71.6-128.3	AV



## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 10-1038

Contract: LANL01004

Aqueous LCS Source:

Solid LCS Source: ERA

<u>Sample ID</u>	<u>Analyte</u>	<u>Units</u>	<u>True Value</u>	<u>Result</u>	<u>C</u>	<u>% Recovery</u>	<u>Acceptance Limit</u>	<u>M</u>
1202014119	Antimony	ug/Kg	173000	174000		100	71-130	P



## METALS

-9-

## Serial Dilution Sample Summary

SDG NO. 10-1038 Client ID WST03-10-2148L

Contract: LANL01004

Matrix: SOLID Level: Low

Sample ID: 243549002 Serial Dilution ID: 1202004424

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M
Arsenic	4.03	J	5	U	100			MS
Beryllium	2.53		2.99		18.2			MS
Nickel	13.8		14.9		7.61			MS
Selenium	2.5	U	12.5	U				MS
Thallium	.3	U	2.91	J				MS
Uranium	2.48		2.28		8.27			MS



**METALS**  
**-9-**  
**Serial Dilution Sample Summary**

**SDG NO.** 10-1038 **Client ID** WST03-10-2148L

**Contract:** LANL01004

**Matrix:** SOLID **Level:** Low

**Sample ID:** 243549002 **Serial Dilution ID:** 1202004430

<b>Analyte</b>	<b>Initial Value ug/L</b>	<b>C</b>	<b>Serial Value ug/L</b>	<b>C</b>	<b>% Difference</b>	<b>Qual</b>	<b>Acceptance Limit</b>	<b>M</b>
Aluminum	36700		38700		5.31		10	P
Antimony	3.3	U	16.5	U				P
Barium	444		465		4.73		10	P
Cadmium	1	U	5	U				P
Calcium	7680		8350		8.72		10	P
Chromium	115		123		6.96		10	P
Cobalt	23.7		24.7	J	4.22			P
Copper	32.7		33.2	J	1.38			P
Iron	79300		87500		10.3	E	10	P
Lead	71.3		78.5		10.1			P
Magnesium	7060		7600		7.65		10	P
Manganese	2070		2200		6.04		10	P
Potassium	5470		5900		7.86		10	P
Silver	1	U	5	U				P
Sodium	1640		1710		4.27			P
Vanadium	101		103		1.49		10	P
Zinc	246		258		4.88		10	P



## METALS

-9-

## Serial Dilution Sample Summary

SDG NO. 10-1038

Client ID RE12-10-7553L

Contract: LANL01004

Matrix: SOLID

Level: Low

Sample ID: 243457001

Serial Dilution ID: 1202006450

<u>Analyte</u>	<u>Initial Value ug/L</u>	<u>C</u>	<u>Serial Value ug/L</u>	<u>C</u>	<u>% Difference</u>	<u>Qual</u>	<u>Acceptance Limit</u>	<u>M</u>
Mercury	.205		.34	U	100			AV



**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

SDG No: 10-1038

Method Type: P

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Client ID</u>	<u>Sample Type</u>	<u>Matrix</u>	<u>Prep Date</u>	<u>Initial Sample Size</u>	<u>Final Sample Volume</u>	<u>Percent Solids</u>
<b>Batch Number 936807</b>							
1202004426	MB for batch 936807	MB	S	29-DEC-09	.505g	50mL	
1202004427	LCS for batch 936807	LCS	S	29-DEC-09	.503g	50mL	
1202004429	WST03-10-2148S	MS	S	29-DEC-09	.51g	50mL	
1202004431	WST03-10-2148SD	MSD	S	29-DEC-09	.509g	50mL	
1202004428	WST03-10-2148D	DUP	S	29-DEC-09	.501g	50mL	
243457001	RE12-10-7553	SAMPLE	S	29-DEC-09	.503g	50mL	
243457002	RE12-10-7554	SAMPLE	S	29-DEC-09	.501g	50mL	
243457003	RE12-10-7551	SAMPLE	S	29-DEC-09	.501g	50mL	
243457004	RE12-10-7552	SAMPLE	S	29-DEC-09	.505g	50mL	
<b>Batch Number 941049</b>							
1202014118	MB for batch 941049	MB	S	13-JAN-10	.5g	50mL	
1202014119	LCS for batch 941049	LCS	S	13-JAN-10	.51g	50mL	
1202004429	WST03-10-2148S	MS	S	13-JAN-10	.505g	50mL	
1202004431	WST03-10-2148SD	MSD	S	13-JAN-10	.513g	50mL	
1202004428	WST03-10-2148D	DUP	S	13-JAN-10	.5g	50mL	
243457001	RE12-10-7553	SAMPLE	S	13-JAN-10	.505g	50mL	
243457002	RE12-10-7554	SAMPLE	S	13-JAN-10	.503g	50mL	
243457003	RE12-10-7551	SAMPLE	S	13-JAN-10	.523g	50mL	
243457004	RE12-10-7552	SAMPLE	S	13-JAN-10	.504g	50mL	

SW846



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**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

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SDG No: 10-1038

Method Type: MS

Contract: LANL01004

Lab Code: GEL

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<u>Sample ID</u>	<u>Client ID</u>	<u>Sample Type</u>	<u>Matrix</u>	<u>Prep Date</u>	<u>Initial Sample Size</u>	<u>Final Sample Volume</u>	<u>Percent Solids</u>
Batch Number 936804							
1202004420	MB for batch 936804	MB	S	29-DEC-09	.503g	50mL	
1202004421	LCS for batch 936804	LCS	S	29-DEC-09	.501g	50mL	
1202004423	WST03-10-2148S	MS	S	29-DEC-09	.517g	50mL	
1202004425	WST03-10-2148SD	MSD	S	29-DEC-09	.507g	50mL	
1202004422	WST03-10-2148D	DUP	S	29-DEC-09	.515g	50mL	
243457001	RE12-10-7553	SAMPLE	S	29-DEC-09	.5g	50mL	
243457002	RE12-10-7554	SAMPLE	S	29-DEC-09	.51g	50mL	
243457003	RE12-10-7551	SAMPLE	S	29-DEC-09	.506g	50mL	
243457004	RE12-10-7552	SAMPLE	S	29-DEC-09	.51g	50mL	

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SW846



METALS  
-13-  
SAMPLE PREPARATION SUMMARY

SDG No: 10-1038

Method Type: AV

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Client ID</u>	<u>Sample Type</u>	<u>Matrix</u>	<u>Prep Date</u>	<u>Initial Sample Size</u>	<u>Final Sample Volume</u>	<u>Percent Solids</u>
Batch Number 937637							
1202006448	MB for batch 937637	MB	S	06-JAN-10	.507g	30mL	
1202006453	LCS for batch 937637	LCS	S	06-JAN-10	.201g	30mL	
1202006451	RE12-10-7553S	MS	S	06-JAN-10	.55g	30mL	
1202006452	RE12-10-7553SD	MSD	S	06-JAN-10	.6g	30mL	
1202006449	RE12-10-7553D	DUP	S	06-JAN-10	.523g	30mL	
243457001	RE12-10-7553	SAMPLE	S	06-JAN-10	.552g	30mL	
243457002	RE12-10-7554	SAMPLE	S	06-JAN-10	.5g	30mL	
243457003	RE12-10-7551	SAMPLE	S	06-JAN-10	.548g	30mL	
243457004	RE12-10-7552	SAMPLE	S	06-JAN-10	.575g	30mL	

SW846



Metals  
-14-  
Analysis Run Log

Contract: LANL01004

Lab Code: GEL

Inst Name: ICPMS6

Start Date: 12-JAN-10

End Date: 12-JAN-10

Client Sdg: 10-1038

Method MS

Data File: 100111-3

Samp No.	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Ti	U	V	Zn
S0.0	1	11:19					X											X	X							
S10	1	11:25					X											X	X							
S100	1	11:31					X											X	X							
ICV01	1	11:37					X											X	X							
ICB01	1	11:43					X											X	X							
CRDL01	1	11:49					X											X	X							
ICSA01	1	11:55					X											X	X							
ICSAB01	1	12:01					X											X	X							
CCV01	1	12:07					X											X	X							
CCB01	1	12:13					X											X	X							
1202004420	2	12:18					X											X	X							
ZZZZZZ	20	12:24																								
1202004421	40	12:30					X											X	X							
CCV02	1	12:36					X											X	X							
CCB02	1	12:42					X											X	X							
243457001	2	12:48					X											X	X							
243457002	2	12:54					X											X	X							
243457003	2	13:00					X											X	X							
243457004	2	13:06					X											X	X							
ZZZZZZ	2	13:12																								
ZZZZZZ	2	13:18																								
ZZZZZZ	2	13:24																								
ZZZZZZ	2	13:30																								
CCV03	1	13:36					X											X	X							
CCB03	1	13:42					X											X	X							
ZZZZZZ	2	13:47																								
ZZZZZZ	2	13:53																								
ZZZZZZ	2	13:59																								
ZZZZZZ	2	14:05																								
ZZZZZZ	2	14:11																								
ZZZZZZ	2	14:17																								
ZZZZZZ	2	14:23																								
ZZZZZZ	2	14:29																								
CCV04	1	14:35					X											X	X							
CCB04	1	14:41					X											X	X							
ZZZZZZ	2	14:47																								
1202004422	2	14:53					X											X	X							
1202004423	2	14:58					X											X	X							
1202004425	2	15:04					X											X	X							
1202004424	10	15:10					X											X	X							



**Metals**  
**-14-**  
**Analysis Run Log**

Samp No.	D/F	Run Time																		
CCV05	1	15:16					X										X	X		
CCB05	1	15:22					X										X	X		



Metals  
-14-  
Analysis Run Log

Contract: LANL01004

Lab Code: GEL

Inst Name: ICPMS6

Start Date: 13-JAN-10

End Date: 13-JAN-10

Client Sdg: 10-1038

Method MS

Data File: 100113-4

Samp No.	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	U	V	Zn
S0.0	1	21:04			X																		X	X		
S10	1	21:08			X																		X	X		
S100	1	21:12			X																		X	X		
ICV01	1	21:16			X																		X	X		
ICB01	1	21:20			X																		X	X		
CRDL01	1	21:24			X																		X	X		
ICSA01	1	21:28			X																		X	X		
ICSAB01	1	21:32			X																		X	X		
CCV01	1	21:36			X																		X	X		
CCB01	1	21:40			X																		X	X		
1202004420	2	21:44			X																		X	X		
ZZZZZZ	20	21:49																								
1202004421	40	21:53			X																		X	X		
CCV02	1	21:57			X																		X	X		
CCB02	1	22:01			X																		X	X		
243457001	2	22:05			X																		X	X		
243457002	2	22:09			X																		X	X		
243457003	2	22:13			X																		X	X		
243457004	2	22:17			X																		X	X		
ZZZZZZ	2	22:21																								
ZZZZZZ	2	22:25																								
ZZZZZZ	2	22:29																								
ZZZZZZ	2	22:33																								
CCV03	1	22:37			X																		X	X		
CCB03	1	22:41			X																		X	X		
ZZZZZZ	2	22:45																								
ZZZZZZ	2	22:50																								
ZZZZZZ	2	22:54																								
ZZZZZZ	2	22:58																								
ZZZZZZ	2	23:02																								
ZZZZZZ	2	23:06																								
ZZZZZZ	2	23:10																								
CCV04	1	23:14			X																		X	X		
CCB04	1	23:18			X																		X	X		
ZZZZZZ	2	23:22																								
ZZZZZZ	2	23:26																								
1202004422	2	23:30			X																		X	X		
1202004423	2	23:34			X																		X	X		
1202004425	2	23:38			X																		X	X		
1202004424	10	23:42			X																		X	X		



Samp No.	D/F	Run Time																		
CCV05	1	23:46			X													X	X	
CCB05	1	23:50			X													X	X	



**Metals**  
**-14-**  
**Analysis Run Log**

Contract: LANL01004

Lab Code: GEL

Inst Name: OPTIMA3

Start Date: 11-JAN-10

End Date: 12-JAN-10

Client Sdg: 10-1038

Method P

Data File: 011110A-1

Samp No.	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	U	V	Zn
S0.0	1	15:06	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
S0.1	1	15:13				X		X		X	X	X		X		X			X		X				X	X
S0.5	1	15:19	X			X		X	X	X	X	X		X	X	X			X		X				X	X
SCAL	1	15:26	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
S10	1	15:33	X						X				X		X							X				
ICV01	1	15:38	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ICB01	1	15:45	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
PQL01	1	15:52	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ICSA01	1	15:59	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ICSAB01	1	16:05	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
LR01	1	16:11	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
LR02	1	16:17	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCV01	1	16:24	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB01	1	16:31	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCV02	1	16:38	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB02	1	16:45	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
LR03	1	16:52	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCV03	1	16:59	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB03	1	17:06	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	17:13																								
ZZZZZZ	1	17:19																								
ZZZZZZ	1	17:26																								
ZZZZZZ	1	17:33																								
ZZZZZZ	1	17:40																								
ZZZZZZ	5	17:48																								
CCV04	1	17:54	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB04	1	18:01	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	18:08																								
ZZZZZZ	1	18:15																								
ZZZZZZ	1	18:22																								
ZZZZZZ	1	18:29																								
ZZZZZZ	1	18:36																								
ZZZZZZ	1	18:43																								
ZZZZZZ	1	18:51																								
CCV05	1	18:58	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB05	1	19:05	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	19:11																								
ZZZZZZ	1	19:18																								
ZZZZZZ	1	19:25																								
ZZZZZZ	1	19:32																								



SW846



Metals  
-14-  
Analysis Run Log

Samp No.	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	U	V	Zn
1202004427	1	00:19	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
243457001	1	00:26	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
243457002	1	00:33	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
243457003	1	00:40	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
243457004	1	00:47	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	00:54																								
CCV10	1	01:01	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB10	1	01:08	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	01:15																								
ZZZZZZ	1	01:22																								
ZZZZZZ	1	01:29																								
ZZZZZZ	1	01:37																								
ZZZZZZ	1	01:44																								
ZZZZZZ	1	01:51																								
ZZZZZZ	1	01:58																								
ZZZZZZ	1	02:05																								
CCV11	1	02:12	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB11	1	02:19	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	02:26																								
ZZZZZZ	1	02:33																								
ZZZZZZ	1	02:40																								
ZZZZZZ	1	02:47																								
1202004428	1	02:54	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
1202004429	1	03:01	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
1202004431	1	03:08	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
1202004430	5	03:15	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCV12	1	03:22	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB12	1	03:29	X			X		X	X	X	X	X	X	X	X	X			X		X	X			X	X



**Metals**  
**-14-**  
**Analysis Run Log**

Contract: LANL01004

Lab Code: GEL

Inst Name: OPTIMA3

Start Date: 14-JAN-10

End Date: 15-JAN-10

Client Sdg: 10-1038

Method P

Data File: 011410-2

Samp No.	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	U	V	Zn
S0.0	1	10:00		X																						
S0.1	1	10:07		X																						
S0.5	1	10:13		X																						
SCAL	1	10:20		X																						
S10	1	10:27																								
ICV01	1	10:32		X																						
ICB01	1	10:39		X																						
PQL01	1	10:46		X																						
ICSA01	1	10:53		X																						
ICSAB01	1	10:59		X																						
LR01	1	11:05		X																						
LR02	1	11:11		X																						
ZZZZZZ	1	11:18																								
ZZZZZZ	1	11:25																								
CCV01	1	11:33		X																						
CCB01	1	11:40		X																						
LR03	1	11:47		X																						
CCV02	1	11:54		X																						
CCB02	1	12:01		X																						
ZZZZZZ	1	12:07																								
ZZZZZZ	1	12:14																								
ZZZZZZ	1	12:21																								
ZZZZZZ	1	12:28																								
ZZZZZZ	1	12:35																								
ZZZZZZ	1	12:42																								
ZZZZZZ	5	12:49																								
CCV03	1	12:56		X																						
CCB03	1	13:03		X																						
ZZZZZZ	1	13:15																								
ZZZZZZ	1	13:22																								
ZZZZZZ	1	13:28																								
ZZZZZZ	1	13:35																								
ZZZZZZ	1	13:42																								
ZZZZZZ	1	13:49																								
ZZZZZZ	5	13:56																								
ZZZZZZ	1	14:03																								
CCV04	1	14:19		X																						
PQL02	1	14:26		X																						
CCB04	1	14:33		X																						
CCV05	1	15:04		X																						



[illegible]



**Metals**  
**-14-**  
**Analysis Run Log**

Samp No.	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	U	V	Zn
CCB09	1	19:47		X																						
ZZZZZZ	1	19:54																								
ZZZZZZ	1	20:01																								
ZZZZZZ	1	20:08																								
ZZZZZZ	1	20:15																								
ZZZZZZ	1	20:22																								
ZZZZZZ	1	20:29																								
ZZZZZZ	1	20:36																								
ZZZZZZ	1	20:44																								
CCV10	1	20:50		X																						
CCB10	1	20:57		X																						
1202014118	1	21:04		X																						
1202014119	1	21:11		X																						
243457001	1	21:17		X																						
243457002	1	21:24		X																						
243457003	1	21:31		X																						
243457004	1	21:38		X																						
ZZZZZZ	1	21:45																								
ZZZZZZ	1	21:53																								
CCV11	1	22:00		X																						
CCB11	1	22:07		X																						
ZZZZZZ	1	22:13																								
ZZZZZZ	1	22:20																								
ZZZZZZ	1	22:27																								
ZZZZZZ	1	22:34																								
ZZZZZZ	1	22:41																								
ZZZZZZ	1	22:49																								
ZZZZZZ	1	22:56																								
ZZZZZZ	1	23:03																								
CCV12	1	23:10		X																						
CCB12	1	23:17		X																						
ZZZZZZ	1	23:24																								
ZZZZZZ	1	23:31																								
ZZZZZZ	1	23:38																								
1202004428	1	23:45		X																						
1202004429	1	23:52		X																						
1202004431	1	23:59		X																						
1202004430	5	00:06		X																						
CCV13	1	00:13		X																						
CCB13	1	00:20		X																						



**Metals**  
**-14-**  
**Analysis Run Log**

Contract: LANL01004

Lab Code: GEL

Inst Name: MER536

Start Date: 07-JAN-10

End Date: 07-JAN-10

Client Sdg: 10-1038

Method: AV

Data File: 010710S2-7

Samp No.	D/F	Run Time	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Se	Ag	Na	Tl	U	V	Zn
S0.0	1	10:16															X									
S0.2	1	10:17															X									
S0.5	1	10:19															X									
S2.0	1	10:21															X									
S5.0	1	10:23															X									
S10	1	10:25															X									
ICV01	1	10:28															X									
ICB01	1	10:29															X									
CRDL01	1	10:31															X									
CCV01	1	10:33															X									
CCB01	1	10:35															X									
ZZZZZZ	1	10:37																								
ZZZZZZ	10	10:39																								
ZZZZZZ	1	10:41																								
ZZZZZZ	1	10:44																								
ZZZZZZ	1	10:46																								
ZZZZZZ	1	10:48																								
ZZZZZZ	5	10:49																								
ZZZZZZ	1	10:51																								
ZZZZZZ	1	10:53																								
ZZZZZZ	1	10:55																								
CCV02	1	10:57															X									
CCB02	1	10:59															X									
ZZZZZZ	1	11:01																								
ZZZZZZ	1	11:03																								
ZZZZZZ	1	11:05																								
ZZZZZZ	1	11:07																								
ZZZZZZ	1	11:09																								
ZZZZZZ	1	11:11																								
ZZZZZZ	1	11:13																								
1202006448	1	11:15															X									
1202006453	10	11:17															X									
243457001	1	11:19															X									
CCV03	1	11:21															X									
CCB03	1	11:23															X									
1202006449	1	11:25															X									
1202006451	1	11:27															X									
1202006452	1	11:29															X									
1202006450	5	11:31															X									
243457002	1	11:33															X									



**Metals**  
-14-  
**Analysis Run Log**

Samp No.	D/F	Run Time
243457003	1	11:35
243457004	1	11:37
ZZZZZZ	1	11:39
ZZZZZZ	1	11:41
ZZZZZZ	1	11:43
CCV04	1	11:45
CCB04	1	11:47



# Standards



**METALS**  
**-10-**  
**Instrument Detection Limits**

SDG NO. 10-1038

Contract: LANL01004

Lab Code: GEL

MDL Effective Date: 01-JUL-09

ICP/MS	<u>Analyte</u>	<u>Wavelength</u> <u>(nm)</u>	<u>MDL</u>	<u>RDL</u>
			<u>ug/L</u>	<u>ug/L</u>
SOLID	Aluminum		15.0	50
	Antimony		0.5	3
	Arsenic		1.0	5
	Barium		0.5	2
	Beryllium		0.1	.5
	Cadmium		0.1	1
	Calcium		33.0	100
	Chromium		1.0	3
	Cobalt		0.3	1
	Copper		0.33	1
	Iron		25.0	100
	Lead		0.5	2
	Magnesium		7.5	25
	Manganese		1.0	5
	Nickel		0.5	2
	Potassium		80.0	300
	Selenium		2.5	5
	Silver		0.2	1
	Sodium		80.0	250
	Thallium		0.3	1
	Uranium		0.066	.2
	Vanadium		2.0	10
	Zinc		2.0	10



**METALS**  
**-10-**  
**Instrument Detection Limits**

**SDG NO.** 10-1038

**Contract:** LANL01004

**Lab Code:** GEL

**MDL Effective Date:** 15-JUN-09

		<u>Wavelength</u> <u>(nm)</u>	<u>MDL</u> <u>ug/L</u>	<u>RDL</u> <u>ug/L</u>
MERCURY	<u>Analyte</u>			
SOLID	Mercury		0.068	.2



**METALS**  
**-10-**  
**Instrument Detection Limits**

**SDG NO.** 10-1038

**Contract:** LANL01004

**Lab Code:** GEL

**MDL Effective Date:** 01-JUL-09

ICP	<u>Analyte</u>	<u>Wavelength</u> <u>(nm)</u>	<u>MDL</u>	<u>RDL</u>
			<u>ug/L</u>	<u>ug/L</u>
SOLID	Aluminum	396.153	68.0	200
	Antimony	206.836	3.3	10
	Arsenic	188.979	5.0	30
	Barium	233.527	1.0	5
	Beryllium	313.107	1.0	5
	Cadmium	226.502	1.0	5
	Calcium	317.933	80.0	250
	Chromium	267.716	1.5	5
	Cobalt	228.616	1.5	5
	Copper	324.752	3.0	10
	Iron	238.204	80.0	250
	Lead	220.353	2.5	10
	Magnesium	279.077	85.0	300
	Manganese	257.61	2.0	10
	Nickel	231.604	1.5	5
	Potassium	766.49	64.0	250
	Selenium	196.026	5.0	30
	Silver	328.068	1.0	5
	Sodium	589.592	70.0	250
	Thallium	190.801	5.0	20
	Uranium	409.014	10.0	50
	Vanadium	292.402	1.0	5
	Zinc	213.857	3.3	10



**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 10-1038

Contract: LANL01004

Instrument: OPTIMA3

Effective Dates: 01-NOV-09

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Parmname	Wavelength	Aluminum	Antimony	Arsenic	Barium	Beryllium
Aluminum	396.153	0.00000	0.00000	0.00000	0.00000	0.00000
Antimony	206.836	0.02738	0.00000	0.00000	0.00000	0.00000
Arsenic	188.979	0.00000	0.00000	0.00000	0.00000	0.00000
Barium	233.527	0.00000	0.00000	0.00000	0.00000	0.00000
Beryllium	313.107	0.00000	0.00000	0.00000	0.00000	0.00000
Boron	249.677	0.00000	0.00000	0.00000	0.00000	0.00000
Cadmium	226.502	0.00000	0.00000	0.00000	0.00000	0.00000
Chromium	267.716	0.00000	0.00000	0.00000	0.00000	0.00000
Cobalt	228.616	0.00000	0.00000	0.00000	-0.44940	0.00000
Copper	324.752	0.00000	0.00000	0.00000	0.00000	0.00000
Iron	238.204	0.00000	0.00000	0.00000	0.00000	0.00000
Lead	220.353	-0.22121	0.00000	0.00000	0.00000	0.00000
Magnesium	279.077	0.00000	0.00000	0.00000	0.00000	0.00000
Manganese	257.61	0.00000	0.00000	0.00000	0.00000	0.00000
Molybdenum	202.031	0.00000	0.00000	0.00000	0.00000	0.00000
Nickel	231.604	0.00000	0.00000	0.00000	0.00000	0.00000
Phosphorous	214.914	-0.33886	0.00000	0.00000	0.00000	0.00000
Potassium	766.49	-0.13648	0.00000	0.00000	0.00000	0.00000
Selenium	196.026	-0.05571	0.00000	0.00000	0.00000	0.00000
Silicon	251.611	0.00000	0.00000	0.00000	0.00000	0.00000
Silver	328.068	0.00000	0.00000	0.00000	0.00000	0.00000
Strontium	421.552	0.00000	0.00000	0.00000	0.00000	0.00000
Sulfur	181.975	0.19671	0.00000	0.00000	0.00000	0.00000
Thallium	190.801	-0.02739	0.00000	0.00000	0.00000	0.00000
Tin	189.927	-0.00058	0.00000	0.00000	0.00000	0.00000
Titanium	334.94	0.00000	0.00000	0.00000	0.00000	0.00000
Uranium	409.014	0.00000	0.00000	0.00000	0.00000	0.00000
Vanadium	292.402	0.00000	0.00000	0.00000	0.00000	0.00000
Zinc	213.857	0.00000	0.00000	0.00000	0.00000	0.00000



**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 10-1038

Contract: LANL01004

Instrument: OPTIMA3

Effective Dates: 01-NOV-09

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Parmname	Wavelength	Boron	Cadmium	Chromium	Cobalt	Copper
Aluminum	396.153	0.00000	0.00000	0.00000	0.00000	0.00000
Antimony	206.836	0.00000	0.00000	24.5549	0.00000	0.00000
Arsenic	188.979	0.52529	0.00000	-0.67113	0.00000	0.00000
Barium	233.527	0.00000	0.00000	0.00000	0.00000	0.00000
Beryllium	313.107	0.00000	0.00000	0.00000	0.00000	0.00000
Boron	249.677	0.00000	0.00000	0.00000	2.54031	0.00000
Cadmium	226.502	0.00000	0.00000	0.00000	0.00000	0.00000
Chromium	267.716	0.00000	0.00000	0.00000	0.00000	0.00000
Cobalt	228.616	0.00000	0.00000	0.38952	0.00000	0.00000
Copper	324.752	0.00000	0.00000	0.00000	0.00000	0.00000
Iron	238.204	0.00000	0.00000	0.00000	-31.5465	0.00000
Lead	220.353	0.00000	0.00000	0.00000	0.00000	0.78023
Magnesium	279.077	0.00000	0.00000	0.00000	0.00000	0.00000
Manganese	257.61	0.00000	0.00000	0.00000	0.00000	0.00000
Molybdenum	202.031	0.00000	0.00000	0.00000	0.00000	0.00000
Nickel	231.604	0.00000	0.00000	0.00000	0.63859	0.00000
Phosphorous	214.914	0.00000	0.00000	0.00000	0.00000	160.41
Potassium	766.49	0.00000	0.00000	0.00000	0.00000	0.00000
Selenium	196.026	0.00000	0.00000	0.00000	0.00000	0.00000
Silicon	251.611	0.00000	0.00000	0.00000	0.00000	0.00000
Silver	328.068	0.00000	0.00000	0.00000	0.00000	0.00000
Strontium	421.552	0.00000	0.00000	0.00000	0.00000	0.00000
Sulfur	181.975	0.00000	0.00000	0.00000	0.00000	0.00000
Thallium	190.801	0.00000	0.00000	0.00000	5.22870	0.00000
Tin	189.927	0.00000	0.00000	0.00000	0.00000	0.00000
Titanium	334.94	0.00000	0.00000	0.35099	0.00000	0.00000
Uranium	409.014	0.00000	0.00000	1.93161	0.00000	0.00000
Vanadium	292.402	0.00000	0.00000	0.39273	0.00000	0.00000
Zinc	213.857	0.00000	0.00000	0.00000	0.00000	1.19810



**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 10-1038

Contract: LANL01004

Instrument: OPTIMA3

Effective Dates: 01-NOV-09

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Parmname	Wavelength	Iron	Lead	Magnesium	Manganese	Molybdenum
Aluminum	396.153	0.00000	0.00000	0.00000	0.00000	42.8126
Antimony	206.836	-0.01635	0.00000	0.00000	0.00000	-22.2146
Arsenic	188.979	-0.21271	0.00000	0.00000	0.00000	1.34645
Barium	233.527	-0.03709	0.00000	0.00000	0.00000	0.00000
Beryllium	313.107	0.00000	0.00000	0.00000	0.00000	0.00000
Boron	249.677	0.13266	0.00000	0.00000	0.00000	0.00000
Cadmium	226.502	0.09998	0.00000	0.00000	0.00000	0.00000
Chromium	267.716	-0.01788	0.00000	0.00000	0.00000	0.00000
Cobalt	228.616	0.01425	0.00000	0.00000	0.00000	-2.64232
Copper	324.752	-0.05101	0.00000	0.00000	0.00000	0.00000
Iron	238.204	0.00000	0.00000	0.00000	0.00000	0.00000
Lead	220.353	0.09069	0.00000	0.00000	0.00000	-2.44485
Magnesium	279.077	0.85543	0.00000	0.00000	0.00000	-20.2401
Manganese	257.61	-0.09972	0.00000	0.01862	0.00000	0.00000
Molybdenum	202.031	-0.07094	0.00000	0.00000	0.00000	0.00000
Nickel	231.604	0.00000	0.00000	0.00000	0.00000	0.00000
Phosphorous	214.914	0.80633	0.00000	0.00000	0.00000	0.00000
Potassium	766.49	-0.03176	0.00000	0.01823	12.4291	-3.60863
Selenium	196.026	-3.00009	0.00000	0.00000	0.00000	-3.17982
Silicon	251.611	0.00000	0.00000	0.00000	0.00000	17.4444
Silver	328.068	-0.31825	0.00000	0.00000	0.00000	0.00000
Strontium	421.552	0.00000	0.00000	0.00000	0.00000	0.00000
Sulfur	181.975	0.00000	0.00000	0.00000	0.00000	0.00000
Thallium	190.801	0.00000	0.00000	0.00000	-5.85948	0.00000
Tin	189.927	-0.01337	0.00000	0.00000	0.00000	0.00000
Titanium	334.94	0.00000	0.00000	0.00000	0.00000	0.00000
Uranium	409.014	0.12581	0.00000	0.00000	0.00000	0.00000
Vanadium	292.402	0.15211	0.00000	-0.02256	0.00000	-14.2921
Zinc	213.857	0.09548	0.00000	0.03423	0.00000	0.00000



**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GELGEL Job No: **10-1038**Contract: **LANL01004**Instrument: **OPTIMA3**Effective Dates: **01-NOV-09**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Parmname	Wavelength	Nickel	Phosphorous	Potassium	Selenium	Silicon
Aluminum	396.153	0.00000	0.00000	0.00000	0.00000	0.00000
Antimony	206.836	0.00000	0.00000	0.00000	0.00000	0.00000
Arsenic	188.979	0.00000	0.00000	0.00000	0.00000	0.00000
Barium	233.527	0.00000	0.00000	0.00000	0.00000	0.00000
Beryllium	313.107	0.00000	0.00000	0.00000	0.00000	0.00000
Boron	249.677	0.00000	0.00000	0.00000	0.00000	0.00000
Cadmium	226.502	-0.64279	0.00000	0.00000	0.00000	0.00000
Chromium	267.716	0.00000	0.00000	0.00000	0.00000	0.00000
Cobalt	228.616	0.00000	0.00000	0.00000	0.00000	0.00000
Copper	324.752	0.00000	0.00000	0.00000	0.00000	0.00000
Iron	238.204	0.00000	0.00000	0.00000	0.00000	0.00000
Lead	220.353	0.00000	0.00000	0.00000	0.00000	0.00000
Magnesium	279.077	0.00000	0.00000	0.00000	0.00000	0.00000
Manganese	257.61	0.00000	0.00000	0.00000	0.00000	0.00000
Molybdenum	202.031	0.00000	0.00000	0.00000	0.00000	0.00000
Nickel	231.604	0.00000	0.00000	0.00000	0.00000	0.00000
Phosphorous	214.914	0.00000	0.00000	0.00000	0.00000	0.00000
Potassium	766.49	0.00000	0.00000	0.44040	0.00000	0.00000
Selenium	196.026	0.00000	0.00000	0.00000	0.00000	0.00000
Silicon	251.611	0.00000	0.00000	0.33191	0.00000	0.00000
Silver	328.068	0.00000	0.00000	0.00000	0.00000	0.00000
Strontium	421.552	0.00000	0.00000	0.00000	0.00000	0.00000
Sulfur	181.975	0.00000	0.00000	0.00000	0.00000	0.00000
Thallium	190.801	0.00000	0.00000	0.00000	0.00000	0.00000
Tin	189.927	0.00000	0.00000	0.00000	0.00000	0.00000
Titanium	334.94	0.00000	0.00000	0.00000	0.00000	0.00000
Uranium	409.014	0.00000	0.00000	0.00000	0.00000	0.00000
Vanadium	292.402	0.00000	0.00000	0.00000	0.00000	0.00000
Zinc	213.857	6.38465	0.00000	0.00000	0.00000	0.00000



**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 10-1038

Contract: LANL01004

Instrument: OPTIMA3

Effective Dates: 01-NOV-09

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Parmname	Wavelength	Silver	Strontium	Sulfur	Thallium	Tin
Aluminum	396.153	0.00000	0.00000	0.00000	0.00000	0.00000
Antimony	206.836	0.00000	0.00000	0.00000	0.00000	-17.4077
Arsenic	188.979	0.00000	0.00000	0.00000	0.00000	0.00000
Barium	233.527	0.00000	0.00000	0.00000	0.00000	0.00000
Beryllium	313.107	0.00000	0.00000	0.00000	0.00000	0.00000
Boron	249.677	0.00000	0.00000	0.00000	0.00000	0.00000
Cadmium	226.502	0.00000	0.00000	0.00000	0.00000	0.00000
Chromium	267.716	0.00000	0.00000	0.00000	0.00000	0.00000
Cobalt	228.616	0.00000	0.00000	0.00000	0.00000	0.00000
Copper	324.752	0.00000	0.00000	0.00000	0.00000	0.00000
Iron	238.204	0.00000	0.00000	0.00000	0.00000	0.00000
Lead	220.353	0.00000	0.00000	0.00000	0.00000	0.00000
Magnesium	279.077	0.00000	0.00000	0.00000	0.00000	0.00000
Manganese	257.61	0.00000	0.00000	0.00000	0.00000	0.00000
Molybdenum	202.031	0.00000	0.00000	0.00000	0.00000	0.00000
Nickel	231.604	0.00000	0.00000	0.00000	0.00000	0.00000
Phosphorous	214.914	0.00000	0.00000	0.00000	0.00000	-13.8713
Potassium	766.49	0.00000	0.00000	0.00000	0.00000	0.00000
Selenium	196.026	0.00000	0.00000	0.00000	0.00000	0.00000
Silicon	251.611	0.00000	0.00000	0.00000	0.00000	3.10491
Silver	328.068	0.00000	0.00000	0.00000	0.00000	0.00000
Strontium	421.552	0.00000	0.00000	0.00000	0.00000	0.00000
Sulfur	181.975	0.00000	0.00000	0.00000	0.00000	0.00000
Thallium	190.801	0.00000	0.00000	0.00000	0.00000	0.00000
Tin	189.927	0.00000	0.00000	0.00000	0.00000	0.00000
Titanium	334.94	0.00000	0.00000	0.00000	0.00000	0.00000
Uranium	409.014	0.00000	0.00000	0.00000	0.00000	0.00000
Vanadium	292.402	0.00000	0.00000	0.00000	0.00000	0.00000
Zinc	213.857	0.00000	0.00000	0.00000	0.00000	0.00000



**METALS**  
**-11-**  
**Interelement Correction Factors**

Lab Code: GEL

GEL Job No: 10-1038

Contract: LANL01004

Instrument: OPTIMA3

Effective Dates: 01-NOV-09

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Parmname	Wavelength	Titanium	Uranium	Vanadium	Zinc
Aluminum	396.153	0.00000	0.00000	0.00000	0.00000
Antimony	206.836	2.73145	0.00000	-2.31857	0.00000
Arsenic	188.979	-8.38419	0.00000	0.00000	0.00000
Barium	233.527	0.00000	0.00000	-2.24883	0.00000
Beryllium	313.107	-1.96555	0.00000	0.00000	0.00000
Boron	249.677	0.00000	0.00000	0.00000	0.00000
Cadmium	226.502	0.00000	0.00000	0.00000	0.00000
Chromium	267.716	0.00000	0.32181	-1.76281	0.00000
Cobalt	228.616	2.12623	0.00000	0.00000	0.00000
Copper	324.752	0.00000	0.00000	0.00000	0.00000
Iron	238.204	0.00000	0.00000	0.00000	0.00000
Lead	220.353	0.00000	0.00000	0.00000	0.00000
Magnesium	279.077	0.00000	0.00000	0.00000	0.00000
Manganese	257.61	0.00000	0.00000	0.00000	0.00000
Molybdenum	202.031	0.00000	0.00000	0.00000	0.00000
Nickel	231.604	0.00000	0.00000	0.00000	0.00000
Phosphorous	214.914	0.00000	0.00000	0.00000	0.00000
Potassium	766.49	0.00000	0.00000	0.00000	0.00000
Selenium	196.026	0.00000	0.00000	0.00000	0.00000
Silicon	251.611	0.00000	0.00000	0.00000	0.00000
Silver	328.068	0.00000	0.85359	-3.92851	0.00000
Strontium	421.552	0.00000	0.00000	0.00000	0.00000
Sulfur	181.975	0.00000	0.00000	0.00000	0.00000
Thallium	190.801	-7.67419	0.00000	2.18873	0.00000
Tin	189.927	0.00000	0.00000	0.00000	0.00000
Titanium	334.94	0.00000	0.44145	0.00000	0.00000
Uranium	409.014	0.00000	0.00000	0.00000	0.00000
Vanadium	292.402	1.10141	-1.94183	0.00000	0.00000
Zinc	213.857	0.00000	0.00000	0.00000	0.00000



METALS  
-12-  
Linear Ranges

SDG NO. 10-1038

Contract: LANL01004

Lab Code: GEL

Instrument ID ICPMS6

<u>Analyte</u>	<u>Integration Time (msec)</u>	<u>LDR</u>	<u>Units</u>	<u>Effective Date</u>
Vanadium	1000	100	ug/L	01-NOV-09
Zinc	1000	2500	ug/L	01-NOV-09
Uranium	1000	5000	ug/L	01-NOV-09
Aluminum	1	50000	ug/L	01-NOV-09
Antimony	1000	250	ug/L	01-NOV-09
Arsenic	1000	1000	ug/L	01-NOV-09
Barium	1000	1000	ug/L	01-NOV-09
Beryllium	1000	1000	ug/L	01-NOV-09
Cadmium	1000	1000	ug/L	01-NOV-09
Calcium	500	50000	ug/L	01-NOV-09
Chromium	1000	1000	ug/L	01-NOV-09
Cobalt	1000	1000	ug/L	01-NOV-09
Copper	1000	1000	ug/L	01-NOV-09
Iron	500	50000	ug/L	01-NOV-09
Lead	1000	5000	ug/L	01-NOV-09
Magnesium	1	50000	ug/L	01-NOV-09
Manganese	1000	1000	ug/L	01-NOV-09
Nickel	1000	1000	ug/L	01-NOV-09
Potassium	1	50000	ug/L	01-NOV-09
Selenium	1000	500	ug/L	01-NOV-09
Silver	1000	250	ug/L	01-NOV-09
Sodium	1	50000	ug/L	01-NOV-09
Thallium	1000	500	ug/L	01-NOV-09



**METALS**  
**-12-**  
**Linear Ranges**

SDG NO. 10-1038

Contract: LANL01004

Lab Code: GEL

Instrument ID OPTIMA3

<u>Analyte</u>	<u>Integration Time (sec)</u>	<u>LDR</u>	<u>Units</u>	<u>Effective Date</u>
Aluminum	20	500000	ug/L	01-NOV-09
Antimony	20	10000	ug/L	01-NOV-09
Arsenic	20	10000	ug/L	01-NOV-09
Barium	20	15000	ug/L	01-NOV-09
Beryllium	20	3000	ug/L	01-NOV-09
Cadmium	20	10000	ug/L	01-NOV-09
Calcium	20	500000	ug/L	01-NOV-09
Chromium	20	25000	ug/L	01-NOV-09
Cobalt	20	10000	ug/L	01-NOV-09
Copper	20	20000	ug/L	01-NOV-09
Iron	20	500000	ug/L	01-NOV-09
Lead	20	25000	ug/L	01-NOV-09
Magnesium	20	500000	ug/L	01-NOV-09
Manganese	20	10000	ug/L	01-NOV-09
Nickel	20	10000	ug/L	01-NOV-09
Potassium	20	300000	ug/L	01-NOV-09
Selenium	20	10000	ug/L	01-NOV-09
Silver	20	1000	ug/L	01-NOV-09
Sodium	20	500000	ug/L	01-NOV-09
Thallium	20	10000	ug/L	01-NOV-09
Uranium	20	15000	ug/L	01-NOV-09
Vanadium	20	10000	ug/L	01-NOV-09
Zinc	20	15000	ug/L	01-NOV-09



# Raw Data



=====  
Analysis Begun

Start Time: 1/11/2010 15:06:14

Plasma On Time: 1/11/2010 06:15:31

Logged In Analyst: Optima3

Technique: ICP Continuous

Spectrometer Model: Optima 5300 DV, S/N 077C7090601 Autosampler Model: S10

Sample Information File: C:\pe\Optima3\Sample Information\011110.sif

Batch ID:

Results Data Set: 011110A

Results Library: C:\pe\Optima3\Results\Results.mdb  
=====

## Method Loaded

Method Name: General Eng.2AX

Method Last Saved: 1/11/2010 14:49:13

IEC File: 011110.iec

MSF File:

Method Description:

Analyte	Calibration Equation	Processing	View	Internal Standard	IEC
Ag 328.068	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Al 396.153Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
As 188.979	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
B 249.677	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Ba 233.527	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Be 313.107	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Ca 317.933Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	No
Cd 226.502	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Co 228.616	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Cr 267.716	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Cu 324.752	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Fe 238.204 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
K 766.490 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Mg 279.077 IEC	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Mn 257.610	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Mo 202.031	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Na 589.592 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	No
Ni 231.604	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
P 214.914	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Pb 220.353	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
S 181.975 Axial	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sb 206.836	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sc 361.383	Lin Thru 0	Peak Area	Axial	n/a	n/a
Sc Radial	Lin, Calc Int	Peak Area	Radial	n/a	n/a
Se 196.026	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Si 251.611	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sn 189.927	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sr 421.552	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Ti 334.940	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Tl 190.801	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
U 409.014	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
V 292.402	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Y 371.029	Lin, Calc Int	Peak Area	Axial	n/a	n/a
Zn 213.857	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Y RADIAL	Lin, Calc Int	Peak Area	Radial	n/a	n/a
SiO2	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes

  
=====

Sequence No.: 1

Autosampler Location: 8

Sample ID: S0

Date Collected: 1/11/2010 15:06:16

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:  
=====

## Replicate Data: S0

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Analysis Time
1	Sc Radial	5078.5	5078.5	101 %	15:08:08
1	Y RADIAL	5435.8	5435.8	100.1 %	15:08:08
1	Al 396.153Radial†	-7.1	-7.0	[0.00] ug/L	15:08:08



1	Ca 317.933Radial†	21.6	21.4	[0.00]	ug/L	15:08:28
1	Fe 238.204 Radial†	8.3	8.2	[0.00]	ug/L	15:08:28
1	K 766.490 Radial†	2604.4	2582.2	[0.00]	ug/L	15:08:08
1	Mg 279.077 IEC†	-1.2	-1.2	[0.00]	ug/L	15:08:28
1	Na 589.592 Radial†	-1261.5	-1250.7	[0.00]	ug/L	15:08:08
1	Sr 421.552†	-42.5	-42.2	[0.00]	ug/L	15:08:08
1	Sc 361.383	853575.6	853575.6	100.14	%	15:09:25
1	Y 371.029	723166.7	723166.7	100.07	%	15:09:25
1	Ag 328.068†	394.2	393.7	[0.00]	ug/L	15:09:25
1	As 188.979†	-21.8	-21.8	[0.00]	ug/L	15:09:45
1	B 249.677†	-619.1	-618.3	[0.00]	ug/L	15:09:45
1	Ba 233.527†	-8.3	-8.3	[0.00]	ug/L	15:09:45
1	Be 313.107†	-4622.0	-4615.7	[0.00]	ug/L	15:09:25
1	Cd 226.502†	-216.8	-216.5	[0.00]	ug/L	15:09:45
1	Co 228.616†	-73.5	-73.4	[0.00]	ug/L	15:09:45
1	Cr 267.716†	79.7	79.6	[0.00]	ug/L	15:09:45
1	Cu 324.752†	6433.7	6424.8	[0.00]	ug/L	15:09:25
1	Mn 257.610†	428.4	427.8	[0.00]	ug/L	15:09:45
1	Mo 202.031†	21.2	21.1	[0.00]	ug/L	15:09:45
1	Ni 231.604†	67.3	67.2	[0.00]	ug/L	15:09:45
1	P 214.914†	236.7	236.4	[0.00]	ug/L	15:09:45
1	Pb 220.353†	-70.4	-70.3	[0.00]	ug/L	15:09:45
1	S 181.975 Axial†	43.2	43.1	[0.00]	ug/L	15:09:45
1	Sb 206.836†	24.2	24.2	[0.00]	ug/L	15:09:45
1	Se 196.026†	-31.0	-31.0	[0.00]	ug/L	15:09:45
1	Si 251.611†	564.6	563.8	[0.00]	ug/L	15:09:45
1	Sn 189.927†	12.1	12.0	[0.00]	ug/L	15:09:45
1	Ti 334.940†	-1400.5	-1398.6	[0.00]	ug/L	15:09:25
1	Tl 190.801†	-32.9	-32.8	[0.00]	ug/L	15:09:45
1	U 409.014†	-2104.8	-2101.9	[0.00]	ug/L	15:09:25
1	V 292.402†	-1333.9	-1332.0	[0.00]	ug/L	15:09:25
1	Zn 213.857†	621.9	621.0	[0.00]	ug/L	15:09:45
1	SiO2†	583.8	583.0	[0.00]	ug/L	15:10:41
2	Sc Radial	4968.4	4968.4	98.7	%	15:08:33
2	Y RADIAL	5382.3	5382.3	99.13	%	15:08:33
2	Al 396.153Radial†	-8.9	-9.0	[0.00]	ug/L	15:08:33
2	Ca 317.933Radial†	20.3	20.5	[0.00]	ug/L	15:08:53
2	Fe 238.204 Radial†	8.7	8.8	[0.00]	ug/L	15:08:53
2	K 766.490 Radial†	2613.0	2648.2	[0.00]	ug/L	15:08:33
2	Mg 279.077 IEC†	5.2	5.2	[0.00]	ug/L	15:08:53
2	Na 589.592 Radial†	-1304.4	-1322.0	[0.00]	ug/L	15:08:33
2	Sr 421.552†	-17.3	-17.5	[0.00]	ug/L	15:08:33
2	Sc 361.383	852244.3	852244.3	99.982	%	15:09:50
2	Y 371.029	722709.0	722709.0	100.01	%	15:09:50
2	Ag 328.068†	314.2	314.3	[0.00]	ug/L	15:09:50
2	As 188.979†	-24.8	-24.8	[0.00]	ug/L	15:10:10
2	B 249.677†	-645.8	-645.9	[0.00]	ug/L	15:10:10
2	Ba 233.527†	-16.3	-16.3	[0.00]	ug/L	15:10:10
2	Be 313.107†	-4532.1	-4532.9	[0.00]	ug/L	15:09:50
2	Cd 226.502†	-209.4	-209.5	[0.00]	ug/L	15:10:10
2	Co 228.616†	-74.6	-74.6	[0.00]	ug/L	15:10:10
2	Cr 267.716†	98.0	98.0	[0.00]	ug/L	15:10:10
2	Cu 324.752†	6405.3	6406.5	[0.00]	ug/L	15:09:50
2	Mn 257.610†	452.6	452.6	[0.00]	ug/L	15:10:10
2	Mo 202.031†	28.6	28.6	[0.00]	ug/L	15:10:10
2	Ni 231.604†	70.7	70.7	[0.00]	ug/L	15:10:10
2	P 214.914†	232.8	232.8	[0.00]	ug/L	15:10:10
2	Pb 220.353†	-68.5	-68.5	[0.00]	ug/L	15:10:10
2	S 181.975 Axial†	38.4	38.4	[0.00]	ug/L	15:10:10
2	Sb 206.836†	31.7	31.7	[0.00]	ug/L	15:10:10
2	Se 196.026†	-33.9	-33.9	[0.00]	ug/L	15:10:10
2	Si 251.611†	536.5	536.6	[0.00]	ug/L	15:10:10
2	Sn 189.927†	9.3	9.3	[0.00]	ug/L	15:10:10
2	Ti 334.940†	-1340.5	-1340.7	[0.00]	ug/L	15:09:50
2	Tl 190.801†	-38.1	-38.1	[0.00]	ug/L	15:10:10
2	U 409.014†	-2081.0	-2081.4	[0.00]	ug/L	15:09:50
2	V 292.402†	-1291.8	-1292.0	[0.00]	ug/L	15:09:50
2	Zn 213.857†	614.2	614.3	[0.00]	ug/L	15:10:10
2	SiO2†	567.0	567.1	[0.00]	ug/L	15:10:46
3	Sc Radial	5058.9	5058.9	100	%	15:08:58
3	Y RADIAL	5470.3	5470.3	100.8	%	15:08:58



3	Al 396.153Radial†	14.1	14.1	[0.00]	ug/L	15:08:58
3	Ca 317.933Radial†	17.5	17.4	[0.00]	ug/L	15:09:18
3	Fe 238.204 Radial†	9.7	9.6	[0.00]	ug/L	15:09:18
3	K 766.490 Radial†	2552.0	2540.1	[0.00]	ug/L	15:08:58
3	Mg 279.077 IEC†	1.7	1.7	[0.00]	ug/L	15:09:18
3	Na 589.592 Radial†	-1274.6	-1268.7	[0.00]	ug/L	15:08:58
3	Sr 421.552†	1.2	1.2	[0.00]	ug/L	15:08:58
3	Sc 361.383	851374.2	851374.2	99.880	%	15:10:15
3	Y 371.029	722128.0	722128.0	99.925	%	15:10:15
3	Ag 328.068†	365.6	366.0	[0.00]	ug/L	15:10:15
3	As 188.979†	-24.2	-24.3	[0.00]	ug/L	15:10:35
3	B 249.677†	-630.6	-631.3	[0.00]	ug/L	15:10:35
3	Ba 233.527†	-9.6	-9.6	[0.00]	ug/L	15:10:35
3	Be 313.107†	-4602.0	-4607.5	[0.00]	ug/L	15:10:15
3	Cd 226.502†	-186.1	-186.3	[0.00]	ug/L	15:10:35
3	Co 228.616†	-75.9	-76.0	[0.00]	ug/L	15:10:35
3	Cr 267.716†	72.0	72.1	[0.00]	ug/L	15:10:35
3	Cu 324.752†	6397.6	6405.3	[0.00]	ug/L	15:10:15
3	Mn 257.610†	453.6	454.2	[0.00]	ug/L	15:10:35
3	Mo 202.031†	21.4	21.4	[0.00]	ug/L	15:10:35
3	Ni 231.604†	65.9	66.0	[0.00]	ug/L	15:10:35
3	P 214.914†	220.2	220.4	[0.00]	ug/L	15:10:35
3	Pb 220.353†	-51.3	-51.3	[0.00]	ug/L	15:10:35
3	S 181.975 Axial†	47.5	47.5	[0.00]	ug/L	15:10:35
3	Sb 206.836†	27.8	27.9	[0.00]	ug/L	15:10:35
3	Se 196.026†	-31.1	-31.1	[0.00]	ug/L	15:10:35
3	Si 251.611†	550.3	551.0	[0.00]	ug/L	15:10:35
3	Sn 189.927†	1.6	1.6	[0.00]	ug/L	15:10:35
3	Ti 334.940†	-1382.6	-1384.2	[0.00]	ug/L	15:10:15
3	Tl 190.801†	-27.6	-27.7	[0.00]	ug/L	15:10:35
3	U 409.014†	-1849.4	-1851.6	[0.00]	ug/L	15:10:15
3	V 292.402†	-1303.5	-1305.1	[0.00]	ug/L	15:10:15
3	Zn 213.857†	624.7	625.4	[0.00]	ug/L	15:10:35
3	SiO2†	564.2	564.9	[0.00]	ug/L	15:10:51

## Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	852398.0	1108.71	0.13%	100.00 %
Sc Radial	5035.3	58.75	1.17%	100 %
Y 371.029	722667.9	520.58	0.07%	100.00 %
Y RADIAL	5429.4	44.32	0.82%	100.0 %
Ag 328.068†	358.0	40.31	11.26%	[0.00] ug/L
Al 396.153Radial†	-0.7	12.78	>999.9%	[0.00] ug/L
As 188.979†	-23.6	1.58	6.71%	[0.00] ug/L
B 249.677†	-631.8	13.81	2.19%	[0.00] ug/L
Ba 233.527†	-11.4	4.27	37.44%	[0.00] ug/L
Be 313.107†	-4585.4	45.60	0.99%	[0.00] ug/L
Ca 317.933Radial†	19.8	2.07	10.48%	[0.00] ug/L
Cd 226.502†	-204.1	15.84	7.76%	[0.00] ug/L
Co 228.616†	-74.7	1.33	1.79%	[0.00] ug/L
Cr 267.716†	83.3	13.36	16.05%	[0.00] ug/L
Cu 324.752†	6412.2	10.95	0.17%	[0.00] ug/L
Fe 238.204 Radial†	8.9	0.72	8.07%	[0.00] ug/L
K 766.490 Radial†	2590.2	54.49	2.10%	[0.00] ug/L
Mg 279.077 IEC†	1.9	3.20	167.84%	[0.00] ug/L
Mn 257.610†	444.9	14.79	3.32%	[0.00] ug/L
Mo 202.031†	23.7	4.26	17.95%	[0.00] ug/L
Na 589.592 Radial†	-1280.5	37.06	2.89%	[0.00] ug/L
Ni 231.604†	68.0	2.43	3.58%	[0.00] ug/L
P 214.914†	229.9	8.38	3.65%	[0.00] ug/L
Pb 220.353†	-63.4	10.47	16.52%	[0.00] ug/L
S 181.975 Axial†	43.0	4.57	10.63%	[0.00] ug/L
Sb 206.836†	27.9	3.75	13.44%	[0.00] ug/L
Se 196.026†	-32.0	1.65	5.16%	[0.00] ug/L
Si 251.611†	550.5	13.62	2.47%	[0.00] ug/L
Sn 189.927†	7.7	5.41	70.56%	[0.00] ug/L
Sr 421.552†	-19.5	21.77	111.63%	[0.00] ug/L
Ti 334.940†	-1374.5	30.15	2.19%	[0.00] ug/L
Tl 190.801†	-32.9	5.22	15.89%	[0.00] ug/L



U 409.014†	-2011.6	138.95	6.91%	[0.00] ug/L
V 292.402†	-1309.7	20.42	1.56%	[0.00] ug/L
Zn 213.857†	620.2	5.60	0.90%	[0.00] ug/L
SiO2†	571.7	9.89	1.73%	[0.00] ug/L



Sequence No.: 2

Sample ID: S0.1

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 2

Date Collected: 1/11/2010 15:13:01

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: S0.1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Analysis Time
1	Sc Radial	5243.2	5243.2	104 %	15:14:59
1	Y RADIAL	5645.1	5645.1	104.0 %	15:14:59
1	K 766.490 Radial†	7958.3	5052.6	[1000] ug/L	15:14:54
1	Sr 421.552†	15487.3	14892.7	[100] ug/L	15:14:59
1	Sc 361.383	845537.2	845537.2	99.195 %	15:15:26
1	Y 371.029	712913.9	712913.9	98.650 %	15:15:26
1	Ag 328.068†	22404.9	22228.7	[100] ug/L	15:15:26
1	As 188.979†	211.9	237.2	[100] ug/L	15:15:46
1	B 249.677†	3739.8	4402.0	[100] ug/L	15:15:26
1	Ba 233.527†	13104.0	13221.7	[100] ug/L	15:15:26
1	Be 313.107†	263804.1	270530.0	[100] ug/L	15:15:26
1	Cd 226.502†	9050.9	9328.5	[100] ug/L	15:15:26
1	Co 228.616†	4811.3	4925.0	[100] ug/L	15:15:46
1	Cr 267.716†	9220.9	9212.4	[100] ug/L	15:15:26
1	Cu 324.752†	40147.8	34061.4	[100] ug/L	15:15:26
1	Mn 257.610†	94290.9	94611.1	[100] ug/L	15:15:26
1	Mo 202.031†	1452.1	1440.2	[100] ug/L	15:15:46
1	Ni 231.604†	4065.7	4030.8	[100] ug/L	15:15:46
1	P 214.914†	1044.2	822.9	[500] ug/L	15:15:46
1	Pb 220.353†	767.6	837.2	[100] ug/L	15:15:46
1	S 181.975 Axial†	184.4	142.9	[200] ug/L	15:15:46
1	Sb 206.836†	314.8	289.4	[100] ug/L	15:15:46
1	Se 196.026†	126.2	159.2	[100] ug/L	15:15:46
1	Si 251.611†	16243.9	15825.3	[500] ug/L	15:15:26
1	Sn 189.927†	570.7	567.7	[100] ug/L	15:15:46
1	Ti 334.940†	61446.1	63319.2	[100] ug/L	15:15:26
1	Tl 190.801†	296.9	332.2	[100] ug/L	15:15:46
1	U 409.014†	1614.3	3639.0	[100] ug/L	15:15:26
1	V 292.402†	13401.7	14820.2	[100] ug/L	15:15:26
1	Zn 213.857†	11462.0	10934.7	[100] ug/L	15:15:26
1	SiO2†	16191.9	15751.6	[1069.5] ug/L	15:16:42
2	Sc Radial	5112.2	5112.2	102 %	15:15:09
2	Y RADIAL	5479.8	5479.8	100.9 %	15:15:09
2	K 766.490 Radial†	8010.3	5299.7	[1000] ug/L	15:15:04
2	Sr 421.552†	15649.1	15433.2	[100] ug/L	15:15:09
2	Sc 361.383	847214.4	847214.4	99.392 %	15:15:51
2	Y 371.029	714501.8	714501.8	98.870 %	15:15:51
2	Ag 328.068†	22517.5	22297.3	[100] ug/L	15:15:51
2	As 188.979†	209.8	234.7	[100] ug/L	15:16:11
2	B 249.677†	3743.0	4397.7	[100] ug/L	15:15:51
2	Ba 233.527†	13157.6	13249.5	[100] ug/L	15:15:51
2	Be 313.107†	264189.7	270391.5	[100] ug/L	15:15:51
2	Cd 226.502†	9051.7	9311.2	[100] ug/L	15:15:51
2	Co 228.616†	4816.9	4921.0	[100] ug/L	15:16:11
2	Cr 267.716†	9245.5	9218.8	[100] ug/L	15:15:51
2	Cu 324.752†	40344.7	34179.3	[100] ug/L	15:15:51
2	Mn 257.610†	94292.9	94425.0	[100] ug/L	15:15:51
2	Mo 202.031†	1447.2	1432.4	[100] ug/L	15:16:11
2	Ni 231.604†	4054.5	4011.3	[100] ug/L	15:16:11
2	P 214.914†	1042.0	818.5	[500] ug/L	15:16:11
2	Pb 220.353†	764.4	832.4	[100] ug/L	15:16:11
2	S 181.975 Axial†	186.1	144.2	[200] ug/L	15:16:11
2	Sb 206.836†	311.6	285.5	[100] ug/L	15:16:11
2	Se 196.026†	132.2	165.0	[100] ug/L	15:16:11
2	Si 251.611†	16303.3	15852.6	[500] ug/L	15:15:51
2	Sn 189.927†	570.5	566.4	[100] ug/L	15:16:11
2	Ti 334.940†	61535.5	63286.5	[100] ug/L	15:15:51
2	Tl 190.801†	298.8	333.5	[100] ug/L	15:16:11
2	U 409.014†	1553.2	3574.4	[100] ug/L	15:15:51



2	V 292.402†	13469.4	14861.5	[100]	ug/L	15:15:51
2	Zn 213.857†	11447.6	10897.4	[100]	ug/L	15:15:51
2	SiO2†	16377.9	15906.4	[1069.5]	ug/L	15:16:47
3	Sc Radial	5061.1	5061.1	101	%	15:15:19
3	Y RADIAL	5441.4	5441.4	100.2	%	15:15:19
3	K 766.490 Radial†	8046.2	5415.0	[1000]	ug/L	15:15:14
3	Sr 421.552†	15488.2	15428.7	[100]	ug/L	15:15:19
3	Sc 361.383	845493.3	845493.3	99.190	%	15:16:17
3	Y 371.029	714409.7	714409.7	98.857	%	15:16:17
3	Ag 328.068†	22151.1	21974.0	[100]	ug/L	15:16:17
3	As 188.979†	209.1	234.4	[100]	ug/L	15:16:37
3	B 249.677†	3689.4	4351.4	[100]	ug/L	15:16:17
3	Ba 233.527†	13021.0	13138.8	[100]	ug/L	15:16:17
3	Be 313.107†	260785.0	267500.1	[100]	ug/L	15:16:17
3	Cd 226.502†	8950.7	9227.9	[100]	ug/L	15:16:17
3	Co 228.616†	4819.9	4934.0	[100]	ug/L	15:16:37
3	Cr 267.716†	9117.0	9108.2	[100]	ug/L	15:16:17
3	Cu 324.752†	39795.5	33708.3	[100]	ug/L	15:16:17
3	Mn 257.610†	93083.9	93399.2	[100]	ug/L	15:16:17
3	Mo 202.031†	1447.2	1435.3	[100]	ug/L	15:16:37
3	Ni 231.604†	4084.9	4050.3	[100]	ug/L	15:16:37
3	P 214.914†	1047.1	825.8	[500]	ug/L	15:16:37
3	Pb 220.353†	794.2	864.0	[100]	ug/L	15:16:37
3	S 181.975 Axial†	187.0	145.5	[200]	ug/L	15:16:37
3	Sb 206.836†	308.9	283.5	[100]	ug/L	15:16:37
3	Se 196.026†	124.3	157.3	[100]	ug/L	15:16:37
3	Si 251.611†	16035.6	15616.1	[500]	ug/L	15:16:17
3	Sn 189.927†	570.5	567.5	[100]	ug/L	15:16:37
3	Ti 334.940†	60707.1	62577.4	[100]	ug/L	15:16:17
3	Tl 190.801†	301.9	337.2	[100]	ug/L	15:16:37
3	U 409.014†	1766.5	3792.6	[100]	ug/L	15:16:17
3	V 292.402†	13290.2	14708.4	[100]	ug/L	15:16:17
3	Zn 213.857†	11272.7	10744.5	[100]	ug/L	15:16:17
3	SiO2†	16213.8	15774.5	[1069.5]	ug/L	15:16:52

## Mean Data: S0.1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	846081.6	981.27	0.12%	99.259 %
Sc Radial	5138.8	93.93	1.83%	102 %
Y 371.029	713941.8	891.40	0.12%	98.793 %
Y RADIAL	5522.1	108.23	1.96%	101.7 %
Ag 328.068†	22166.7	170.33	0.77%	[100] ug/L
As 188.979†	235.5	1.53	0.65%	[100] ug/L
B 249.677†	4383.7	28.07	0.64%	[100] ug/L
Ba 233.527†	13203.3	57.62	0.44%	[100] ug/L
Be 313.107†	269473.9	1710.73	0.63%	[100] ug/L
Cd 226.502†	9289.2	53.79	0.58%	[100] ug/L
Co 228.616†	4926.7	6.64	0.13%	[100] ug/L
Cr 267.716†	9179.8	62.12	0.68%	[100] ug/L
Cu 324.752†	33983.0	245.13	0.72%	[100] ug/L
K 766.490 Radial†	5255.8	185.15	3.52%	[1000] ug/L
Mn 257.610†	94145.1	652.63	0.69%	[100] ug/L
Mo 202.031†	1435.9	3.97	0.28%	[100] ug/L
Ni 231.604†	4030.8	19.51	0.48%	[100] ug/L
P 214.914†	822.4	3.69	0.45%	[500] ug/L
Pb 220.353†	844.6	17.03	2.02%	[100] ug/L
S 181.975 Axial†	144.2	1.30	0.90%	[200] ug/L
Sb 206.836†	286.1	3.00	1.05%	[100] ug/L
Se 196.026†	160.5	4.03	2.51%	[100] ug/L
Si 251.611†	15764.7	129.35	0.82%	[500] ug/L
Sn 189.927†	567.2	0.71	0.12%	[100] ug/L
Sr 421.552†	15251.5	310.76	2.04%	[100] ug/L
Ti 334.940†	63061.0	419.17	0.66%	[100] ug/L
Tl 190.801†	334.3	2.60	0.78%	[100] ug/L
U 409.014†	3668.6	112.08	3.05%	[100] ug/L
V 292.402†	14796.7	79.21	0.54%	[100] ug/L
Zn 213.857†	10858.9	100.82	0.93%	[100] ug/L
SiO2†	15810.8	83.57	0.53%	[1069.5] ug/L



Sequence No.: 3  
 Sample ID: S0.5  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 3  
 Date Collected: 1/11/2010 15:19:03  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: S0.5

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib.	Analysis Time
1	Sc Radial	4947.4	4947.4	98.3	%	15:20:56
1	Y RADIAL	5332.9	5332.9	98.22	%	15:20:56
1	Al 396.153Radial†	6169.6	6279.9	[5000]	ug/L	15:20:56
1	Ca 317.933Radial†	3073.1	3107.9	[5000]	ug/L	15:21:16
1	K 766.490 Radial†	28495.3	26411.6	[5000]	ug/L	15:20:56
1	Mg 279.077 IEC†	153.2	154.0	[5000]	ug/L	15:21:16
1	Sr 421.552†	72590.6	73900.2	[500]	ug/L	15:20:56
1	Sc 361.383	845959.4	845959.4	99.245	%	15:22:13
1	Y 371.029	704574.1	704574.1	97.496	%	15:22:13
1	Ag 328.068†	109304.6	109778.5	[500]	ug/L	15:22:18
1	As 188.979†	1133.6	1165.9	[500]	ug/L	15:22:38
1	B 249.677†	21532.1	22327.8	[500]	ug/L	15:22:18
1	Ba 233.527†	63524.4	64019.3	[500]	ug/L	15:22:18
1	Be 313.107†	1282691.0	1297038.9	[500]	ug/L	15:22:13
1	Cd 226.502†	44542.3	45085.4	[500]	ug/L	15:22:18
1	Co 228.616†	24275.9	24535.4	[500]	ug/L	15:22:18
1	Cr 267.716†	44493.6	44749.0	[500]	ug/L	15:22:18
1	Cu 324.752†	171233.9	166125.0	[500]	ug/L	15:22:18
1	Mn 257.610†	441107.2	444019.6	[500]	ug/L	15:22:13
1	Mo 202.031†	7141.6	7172.2	[500]	ug/L	15:22:38
1	Ni 231.604†	20051.1	20135.7	[500]	ug/L	15:22:18
1	P 214.914†	4289.0	4091.7	[2500]	ug/L	15:22:38
1	Pb 220.353†	4017.0	4110.9	[500]	ug/L	15:22:38
1	S 181.975 Axial†	756.8	719.6	[1000]	ug/L	15:22:38
1	Sb 206.836†	1495.2	1478.6	[500]	ug/L	15:22:38
1	Se 196.026†	743.5	781.2	[500]	ug/L	15:22:38
1	Si 251.611†	79663.0	79718.8	[2500]	ug/L	15:22:18
1	Sn 189.927†	2851.9	2865.9	[500]	ug/L	15:22:38
1	Ti 334.940†	303997.7	307685.9	[500]	ug/L	15:22:18
1	Tl 190.801†	1584.4	1629.3	[500]	ug/L	15:22:38
1	U 409.014†	15168.3	17295.4	[500]	ug/L	15:22:18
1	V 292.402†	71188.8	73040.4	[500]	ug/L	15:22:18
1	Zn 213.857†	53175.8	52960.3	[500]	ug/L	15:22:18
1	SiO2†	78555.7	78581.9	[5347.5]	ug/L	15:23:46
2	Sc Radial	4915.6	4915.6	97.6	%	15:21:21
2	Y RADIAL	5252.9	5252.9	96.75	%	15:21:21
2	Al 396.153Radial†	6150.5	6300.9	[5000]	ug/L	15:21:21
2	Ca 317.933Radial†	3080.9	3136.1	[5000]	ug/L	15:21:41
2	K 766.490 Radial†	28478.4	26581.6	[5000]	ug/L	15:21:21
2	Mg 279.077 IEC†	155.6	157.5	[5000]	ug/L	15:21:41
2	Sr 421.552†	72234.7	74012.7	[500]	ug/L	15:21:21
2	Sc 361.383	844486.1	844486.1	99.072	%	15:22:44
2	Y 371.029	704049.9	704049.9	97.424	%	15:22:44
2	Ag 328.068†	109991.6	110664.1	[500]	ug/L	15:22:49
2	As 188.979†	1109.8	1143.8	[500]	ug/L	15:23:09
2	B 249.677†	21612.8	22447.2	[500]	ug/L	15:22:49
2	Ba 233.527†	63964.4	64575.0	[500]	ug/L	15:22:49
2	Be 313.107†	1307265.4	1324098.4	[500]	ug/L	15:22:44
2	Cd 226.502†	44958.3	45583.6	[500]	ug/L	15:22:49
2	Co 228.616†	24453.8	24757.6	[500]	ug/L	15:22:49
2	Cr 267.716†	44830.8	45167.6	[500]	ug/L	15:22:49
2	Cu 324.752†	172172.7	167373.5	[500]	ug/L	15:22:49
2	Mn 257.610†	449086.2	452848.8	[500]	ug/L	15:22:44
2	Mo 202.031†	7069.3	7111.8	[500]	ug/L	15:23:09
2	Ni 231.604†	20231.9	20353.5	[500]	ug/L	15:22:49
2	P 214.914†	4232.0	4041.7	[2500]	ug/L	15:23:09
2	Pb 220.353†	3962.1	4062.6	[500]	ug/L	15:23:09
2	S 181.975 Axial†	747.6	711.6	[1000]	ug/L	15:23:09
2	Sb 206.836†	1483.9	1469.9	[500]	ug/L	15:23:09



2	Se 196.026†	737.9	776.8	[500]	ug/L	15:23:09
2	Si 251.611†	80223.3	80424.5	[2500]	ug/L	15:22:49
2	Sn 189.927†	2827.8	2846.6	[500]	ug/L	15:23:09
2	Ti 334.940†	305730.8	309969.7	[500]	ug/L	15:22:49
2	Tl 190.801†	1570.4	1618.0	[500]	ug/L	15:23:09
2	U 409.014†	15243.5	17398.0	[500]	ug/L	15:22:49
2	V 292.402†	71765.1	73747.1	[500]	ug/L	15:22:49
2	Zn 213.857†	53614.1	53496.1	[500]	ug/L	15:22:49
2	SiO2†	78964.2	79132.3	[5347.5]	ug/L	15:23:51
3	Sc Radial	4989.2	4989.2	99.1	%	15:21:46
3	Y RADIAL	5321.5	5321.5	98.01	%	15:21:46
3	Al 396.153Radial†	6212.5	6270.6	[5000]	ug/L	15:21:46
3	Ca 317.933Radial†	3013.5	3021.6	[5000]	ug/L	15:22:06
3	K 766.490 Radial†	28728.7	26404.2	[5000]	ug/L	15:21:46
3	Mg 279.077 IEC†	154.9	154.5	[5000]	ug/L	15:22:06
3	Sr 421.552†	72818.3	73511.1	[500]	ug/L	15:21:46
3	Sc 361.383	851201.0	851201.0	99.860	%	15:23:15
3	Y 371.029	708627.2	708627.2	98.057	%	15:23:15
3	Ag 328.068†	109131.6	108927.1	[500]	ug/L	15:23:20
3	As 188.979†	1112.6	1137.8	[500]	ug/L	15:23:40
3	B 249.677†	21585.1	22247.3	[500]	ug/L	15:23:20
3	Ba 233.527†	63372.4	63472.9	[500]	ug/L	15:23:20
3	Be 313.107†	1297867.8	1304278.4	[500]	ug/L	15:23:15
3	Cd 226.502†	44539.8	44806.5	[500]	ug/L	15:23:20
3	Co 228.616†	24287.3	24396.1	[500]	ug/L	15:23:20
3	Cr 267.716†	44423.6	44402.8	[500]	ug/L	15:23:20
3	Cu 324.752†	170756.3	164584.3	[500]	ug/L	15:23:20
3	Mn 257.610†	446804.6	446988.0	[500]	ug/L	15:23:15
3	Mo 202.031†	7101.1	7087.4	[500]	ug/L	15:23:40
3	Ni 231.604†	20021.1	19981.2	[500]	ug/L	15:23:20
3	P 214.914†	4263.6	4039.7	[2500]	ug/L	15:23:40
3	Pb 220.353†	3986.8	4055.8	[500]	ug/L	15:23:40
3	S 181.975 Axial†	742.0	700.0	[1000]	ug/L	15:23:40
3	Sb 206.836†	1490.0	1464.2	[500]	ug/L	15:23:40
3	Se 196.026†	727.7	760.7	[500]	ug/L	15:23:40
3	Si 251.611†	79709.5	79271.1	[2500]	ug/L	15:23:20
3	Sn 189.927†	2843.9	2840.2	[500]	ug/L	15:23:40
3	Ti 334.940†	303580.5	305381.9	[500]	ug/L	15:23:20
3	Tl 190.801†	1582.4	1617.5	[500]	ug/L	15:23:40
3	U 409.014†	14959.5	16992.1	[500]	ug/L	15:23:20
3	V 292.402†	71100.6	72510.3	[500]	ug/L	15:23:20
3	Zn 213.857†	53189.5	52644.1	[500]	ug/L	15:23:20
3	SiO2†	80285.2	79826.4	[5347.5]	ug/L	15:23:56

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Mean Data: 80.5

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc. Units	Calib
Sc 361.383	847215.5	3529.26	0.42%	99.392	%
Sc Radial	4950.7	36.89	0.75%	98.3	%
Y 371.029	705750.4	2505.10	0.35%	97.659	%
Y RADIAL	5302.5	43.29	0.82%	97.66	%
Ag 328.068†	109789.9	868.57	0.79%	[500]	ug/L
Al 396.153Radial†	6283.8	15.52	0.25%	[5000]	ug/L
As 188.979†	1149.1	14.79	1.29%	[500]	ug/L
B 249.677†	22340.8	100.54	0.45%	[500]	ug/L
Ba 233.527†	64022.4	551.06	0.86%	[500]	ug/L
Be 313.107†	1308471.9	14008.70	1.07%	[500]	ug/L
Ca 317.933Radial†	3088.5	59.66	1.93%	[5000]	ug/L
Cd 226.502†	45158.5	393.66	0.87%	[500]	ug/L
Co 228.616†	24563.0	182.33	0.74%	[500]	ug/L
Cr 267.716†	44773.1	382.95	0.86%	[500]	ug/L
Cu 324.752†	166027.6	1397.18	0.84%	[500]	ug/L
K 766.490 Radial†	26465.8	100.35	0.38%	[5000]	ug/L
Mg 279.077 IEC†	155.3	1.89	1.22%	[5000]	ug/L
Mn 257.610†	447952.2	4492.87	1.00%	[500]	ug/L
Mo 202.031†	7123.8	43.67	0.61%	[500]	ug/L
Ni 231.604†	20156.8	187.02	0.93%	[500]	ug/L
P 214.914†	4057.7	29.48	0.73%	[2500]	ug/L
Pb 220.353†	4076.4	30.05	0.74%	[500]	ug/L
S 181.975 Axial†	710.4	9.83	1.38%	[1000]	ug/L



Sb 206.836†	1470.9	7.27	0.49%	[500] ug/L
Se 196.026†	772.9	10.74	1.39%	[500] ug/L
Si 251.611†	79804.8	581.46	0.73%	[2500] ug/L
Sn 189.927†	2850.9	13.39	0.47%	[500] ug/L
Sr 421.552†	73808.0	263.22	0.36%	[500] ug/L
Ti 334.940†	307679.2	2293.91	0.75%	[500] ug/L
Tl 190.801†	1621.6	6.70	0.41%	[500] ug/L
U 409.014†	17228.5	211.03	1.22%	[500] ug/L
V 292.402†	73099.3	620.51	0.85%	[500] ug/L
Zn 213.857†	53033.5	430.73	0.81%	[500] ug/L
SiO2†	79180.2	623.61	0.79%	[5347.5] ug/L



Sequence No.: 4

Sample ID: SCAL

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 4

Date Collected: 1/11/2010 15:26:06

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: SCAL

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib.	Analysis Time
1	Sc Radial	4991.6	4991.6	99.1 %		15:27:59
1	Y RADIAL	5328.6	5328.6	98.14 %		15:27:59
1	Al 396.153Radial†	12660.1	12771.6	[10000] ug/L		15:27:59
1	Ca 317.933Radial†	6320.0	6355.6	[10000] ug/L		15:27:59
1	Fe 238.204 Radial†	1191.2	1192.7	[10000] ug/L		15:28:19
1	K 766.490 Radial†	56635.2	54541.3	[10000] ug/L		15:27:59
1	Mg 279.077 IEC†	311.3	312.1	[10000] ug/L		15:28:19
1	Na 589.592 Radial†	32605.3	34171.4	[10000] ug/L		15:27:59
1	Sr 421.552†	153973.9	155342.4	[1000] ug/L		15:27:59
1	Sc 361.383	853558.2	853558.2	100.14 %		15:29:18
1	Y 371.029	708914.2	708914.2	98.097 %		15:29:18
1	Ag 328.068†	216775.3	216122.6	[1000] ug/L		15:29:18
1	As 188.979†	2299.9	2320.4	[1000] ug/L		15:29:38
1	B 249.677†	44323.4	44895.0	[1000] ug/L		15:29:18
1	Ba 233.527†	128248.6	128085.7	[1000] ug/L		15:29:18
1	Be 313.107†	2619791.8	2620816.1	[1000] ug/L		15:29:18
1	Cd 226.502†	89888.6	89970.5	[1000] ug/L		15:29:18
1	Co 228.616†	48773.3	48781.7	[1000] ug/L		15:29:18
1	Cr 267.716†	89442.2	89237.4	[1000] ug/L		15:29:18
1	Cu 324.752†	341095.7	334219.8	[1000] ug/L		15:29:18
1	Mn 257.610†	904877.2	903202.3	[1000] ug/L		15:29:18
1	Mo 202.031†	14130.5	14087.5	[1000] ug/L		15:29:38
1	Ni 231.604†	40183.6	40061.1	[1000] ug/L		15:29:18
1	P 214.914†	8404.6	8163.3	[5000] ug/L		15:29:38
1	Pb 220.353†	8100.8	8153.2	[1000] ug/L		15:29:38
1	S 181.975 Axial†	1452.9	1407.9	[2000] ug/L		15:29:38
1	Sb 206.836†	2946.6	2914.7	[1000] ug/L		15:29:38
1	Se 196.026†	1515.4	1545.4	[1000] ug/L		15:29:38
1	Si 251.611†	157018.3	156254.4	[5000] ug/L		15:29:18
1	Sn 189.927†	5642.6	5627.3	[1000] ug/L		15:29:38
1	Ti 334.940†	620768.4	621299.2	[1000] ug/L		15:29:18
1	Tl 190.801†	3227.0	3255.4	[1000] ug/L		15:29:38
1	U 409.014†	31729.0	33697.5	[1000] ug/L		15:29:18
1	V 292.402†	145175.5	146287.8	[1000] ug/L		15:29:18
1	Zn 213.857†	106205.1	105440.5	[1000] ug/L		15:29:18
1	SiO2†	157949.1	157162.7	[10695] ug/L		15:30:39
2	Sc Radial	4736.3	4736.3	94.1 %		15:28:24
2	Y RADIAL	5085.9	5085.9	93.67 %		15:28:24
2	Al 396.153Radial†	12468.6	13256.4	[10000] ug/L		15:28:24
2	Ca 317.933Radial†	6199.0	6570.6	[10000] ug/L		15:28:24
2	Fe 238.204 Radial†	1184.0	1249.9	[10000] ug/L		15:28:44
2	K 766.490 Radial†	55376.3	56282.3	[10000] ug/L		15:28:24
2	Mg 279.077 IEC†	313.7	331.6	[10000] ug/L		15:28:44
2	Na 589.592 Radial†	31980.7	35280.2	[10000] ug/L		15:28:24
2	Sr 421.552†	150876.6	160421.5	[1000] ug/L		15:28:24
2	Sc 361.383	856770.6	856770.6	100.51 %		15:29:46
2	Y 371.029	713390.2	713390.2	98.716 %		15:29:46
2	Ag 328.068†	217597.7	216129.2	[1000] ug/L		15:29:46
2	As 188.979†	2277.6	2289.6	[1000] ug/L		15:30:06
2	B 249.677†	44372.2	44777.6	[1000] ug/L		15:29:46
2	Ba 233.527†	128252.4	127609.2	[1000] ug/L		15:29:46
2	Be 313.107†	2630936.8	2622095.0	[1000] ug/L		15:29:46
2	Cd 226.502†	90039.5	89784.1	[1000] ug/L		15:29:46
2	Co 228.616†	48826.6	48652.1	[1000] ug/L		15:29:46
2	Cr 267.716†	89756.8	89215.5	[1000] ug/L		15:29:46
2	Cu 324.752†	342472.0	334312.0	[1000] ug/L		15:29:46
2	Mn 257.610†	905292.8	900227.7	[1000] ug/L		15:29:46
2	Mo 202.031†	14136.2	14040.3	[1000] ug/L		15:30:06
2	Ni 231.604†	40315.0	40041.3	[1000] ug/L		15:29:46



2	P 214.914†	8424.5	8151.6	[5000]	ug/L	15:30:06
2	Pb 220.353†	8088.8	8110.8	[1000]	ug/L	15:30:06
2	S 181.975 Axial†	1450.9	1400.5	[2000]	ug/L	15:30:06
2	Sb 206.836†	2931.6	2888.7	[1000]	ug/L	15:30:06
2	Se 196.026†	1521.6	1545.8	[1000]	ug/L	15:30:06
2	Si 251.611†	157269.3	155916.2	[5000]	ug/L	15:29:46
2	Sn 189.927†	5628.2	5591.8	[1000]	ug/L	15:30:06
2	Ti 334.940†	622229.7	620428.6	[1000]	ug/L	15:29:46
2	Tl 190.801†	3223.5	3239.9	[1000]	ug/L	15:30:06
2	U 409.014†	31853.1	33702.1	[1000]	ug/L	15:29:46
2	V 292.402†	145673.8	146240.0	[1000]	ug/L	15:29:46
2	Zn 213.857†	106459.8	105296.2	[1000]	ug/L	15:29:46
2	SiO2†	157350.0	155975.2	[10695]	ug/L	15:30:44
3	Sc Radial	5063.8	5063.8	101	%	15:28:49
3	Y RADIAL	5371.0	5371.0	98.92	%	15:28:49
3	Al 396.153Radial†	12735.9	12664.9	[10000]	ug/L	15:28:49
3	Ca 317.933Radial†	6335.3	6279.9	[10000]	ug/L	15:28:49
3	Fe 238.204 Radial†	1169.2	1153.7	[10000]	ug/L	15:29:09
3	K 766.490 Radial†	56959.1	54048.2	[10000]	ug/L	15:28:49
3	Mg 279.077 IEC†	305.4	301.7	[10000]	ug/L	15:29:09
3	Na 589.592 Radial†	32787.3	33883.0	[10000]	ug/L	15:28:49
3	Sr 421.552†	155040.2	154186.5	[1000]	ug/L	15:28:49
3	Sc 361.383	848587.0	848587.0	99.553	%	15:30:14
3	Y 371.029	705534.4	705534.4	97.629	%	15:30:14
3	Ag 328.068†	216529.3	217143.7	[1000]	ug/L	15:30:14
3	As 188.979†	2285.4	2319.2	[1000]	ug/L	15:30:34
3	B 249.677†	44227.4	45057.9	[1000]	ug/L	15:30:14
3	Ba 233.527†	127929.5	128515.5	[1000]	ug/L	15:30:14
3	Be 313.107†	2617713.7	2634055.2	[1000]	ug/L	15:30:14
3	Cd 226.502†	89763.7	90371.0	[1000]	ug/L	15:30:14
3	Co 228.616†	48665.0	48958.3	[1000]	ug/L	15:30:14
3	Cr 267.716†	89514.0	89832.7	[1000]	ug/L	15:30:14
3	Cu 324.752†	341213.1	336333.3	[1000]	ug/L	15:30:14
3	Mn 257.610†	902472.6	906080.8	[1000]	ug/L	15:30:14
3	Mo 202.031†	14199.9	14240.0	[1000]	ug/L	15:30:34
3	Ni 231.604†	40146.9	40259.3	[1000]	ug/L	15:30:14
3	P 214.914†	8453.8	8261.9	[5000]	ug/L	15:30:34
3	Pb 220.353†	8136.4	8236.3	[1000]	ug/L	15:30:34
3	S 181.975 Axial†	1461.3	1424.9	[2000]	ug/L	15:30:34
3	Sb 206.836†	2945.8	2931.1	[1000]	ug/L	15:30:34
3	Se 196.026†	1527.9	1566.8	[1000]	ug/L	15:30:34
3	Si 251.611†	156676.0	156829.2	[5000]	ug/L	15:30:14
3	Sn 189.927†	5652.9	5670.7	[1000]	ug/L	15:30:34
3	Ti 334.940†	619875.3	624033.7	[1000]	ug/L	15:30:14
3	Tl 190.801†	3235.2	3282.6	[1000]	ug/L	15:30:34
3	U 409.014†	31640.7	33794.4	[1000]	ug/L	15:30:14
3	V 292.402†	145180.3	147142.0	[1000]	ug/L	15:30:14
3	Zn 213.857†	106254.1	106111.0	[1000]	ug/L	15:30:14
3	SiO2†	155719.3	155847.0	[10695]	ug/L	15:30:50

## Mean Data: SCAL

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	852972.0	4123.17	0.48%	100.07 %
Sc Radial	4930.6	172.08	3.49%	97.9 %
Y 371.029	709279.6	3940.67	0.56%	98.147 %
Y RADIAL	5261.9	153.82	2.92%	96.91 %
Ag 328.068†	216465.2	587.67	0.27%	[1000] ug/L
Al 396.153Radial†	12897.6	315.27	2.44%	[10000] ug/L
As 188.979†	2309.7	17.47	0.76%	[1000] ug/L
B 249.677†	44910.1	140.76	0.31%	[1000] ug/L
Ba 233.527†	128070.1	453.32	0.35%	[1000] ug/L
Be 313.107†	2625655.5	7302.44	0.28%	[1000] ug/L
Ca 317.933Radial†	6402.0	150.81	2.36%	[10000] ug/L
Cd 226.502†	90041.9	299.87	0.33%	[1000] ug/L
Co 228.616†	48797.3	153.69	0.31%	[1000] ug/L
Cr 267.716†	89428.5	350.22	0.39%	[1000] ug/L
Cu 324.752†	334955.0	1194.48	0.36%	[1000] ug/L
Fe 238.204 Radial†	1198.8	48.37	4.04%	[10000] ug/L
K 766.490 Radial†	54957.3	1173.72	2.14%	[10000] ug/L



Mg 279.077 IEC†	315.2	15.17	4.81%	[10000]	ug/L
Mn 257.610†	903170.3	2926.65	0.32%	[1000]	ug/L
Mo 202.031†	14122.6	104.35	0.74%	[1000]	ug/L
Na 589.592 Radial†	34444.9	737.64	2.14%	[10000]	ug/L
Ni 231.604†	40120.5	120.56	0.30%	[1000]	ug/L
P 214.914†	8192.3	60.61	0.74%	[5000]	ug/L
Pb 220.353†	8166.8	63.83	0.78%	[1000]	ug/L
S 181.975 Axial†	1411.1	12.50	0.89%	[2000]	ug/L
Sb 206.836†	2911.5	21.35	0.73%	[1000]	ug/L
Se 196.026†	1552.7	12.21	0.79%	[1000]	ug/L
Si 251.611†	156333.3	461.59	0.30%	[5000]	ug/L
Sn 189.927†	5629.9	39.50	0.70%	[1000]	ug/L
Sr 421.552†	156650.1	3316.87	2.12%	[1000]	ug/L
Ti 334.940†	621920.5	1881.15	0.30%	[1000]	ug/L
Tl 190.801†	3259.3	21.61	0.66%	[1000]	ug/L
U 409.014†	33731.3	54.70	0.16%	[1000]	ug/L
V 292.402†	146556.6	507.53	0.35%	[1000]	ug/L
Zn 213.857†	105615.9	434.83	0.41%	[1000]	ug/L
SiO2†	156328.3	725.47	0.46%	[10695]	ug/L



Sequence No.: 5  
 Sample ID: S10  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 5  
 Date Collected: 1/11/2010 15:33:00  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: S10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Analysis Time
1	Sc Radial	4878.1	4878.1	96.9 %	15:35:14
1	Y RADIAL	5191.4	5191.4	95.62 %	15:35:14
1	Al 396.153Radial†	63564.9	65614.4	[50000] ug/L	15:34:54
1	Ca 317.933Radial†	30640.8	31608.6	[50000] ug/L	15:34:54
1	Fe 238.204 Radial†	2222.4	2285.2	[20000] ug/L	15:35:14
1	Mg 279.077 IEC†	1446.9	1491.6	[50000] ug/L	15:35:14
1	Na 589.592 Radial†	63708.9	67042.8	[20000] ug/L	15:34:54
1	Sc 361.383	828781.4	828781.4	97.229 %	15:36:11
1	Y 371.029	685978.7	685978.7	94.923 %	15:36:11
2	Sc Radial	4868.6	4868.6	96.7 %	15:35:39
2	Y RADIAL	5182.0	5182.0	95.44 %	15:35:39
2	Al 396.153Radial†	62506.8	64647.7	[50000] ug/L	15:35:19
2	Ca 317.933Radial†	30109.2	31120.4	[50000] ug/L	15:35:19
2	Fe 238.204 Radial†	2222.3	2289.5	[20000] ug/L	15:35:39
2	Mg 279.077 IEC†	1450.4	1498.2	[50000] ug/L	15:35:39
2	Na 589.592 Radial†	62672.0	66098.4	[20000] ug/L	15:35:19
2	Sc 361.383	832642.6	832642.6	97.682 %	15:36:16
2	Y 371.029	689630.1	689630.1	95.428 %	15:36:16
3	Sc Radial	4821.9	4821.9	95.8 %	15:36:04
3	Y RADIAL	5146.9	5146.9	94.80 %	15:36:04
3	Al 396.153Radial†	61540.7	64265.6	[50000] ug/L	15:35:44
3	Ca 317.933Radial†	29642.4	30934.8	[50000] ug/L	15:35:44
3	Fe 238.204 Radial†	2204.8	2293.6	[20000] ug/L	15:36:04
3	Mg 279.077 IEC†	1427.2	1488.4	[50000] ug/L	15:36:04
3	Na 589.592 Radial†	61672.1	65682.5	[20000] ug/L	15:35:44
3	Sc 361.383	833640.6	833640.6	97.799 %	15:36:22
3	Y 371.029	690643.4	690643.4	95.569 %	15:36:22

## Mean Data: S10

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	831688.2	2566.33	0.31%	97.570 %
Sc Radial	4856.2	30.10	0.62%	96.4 %
Y 371.029	688750.7	2453.51	0.36%	95.307 %
Y RADIAL	5173.5	23.45	0.45%	95.29 %
Al 396.153Radial†	64842.6	695.21	1.07%	[50000] ug/L
Ca 317.933Radial†	31221.3	348.06	1.11%	[50000] ug/L
Fe 238.204 Radial†	2289.4	4.19	0.18%	[20000] ug/L
Mg 279.077 IEC†	1492.7	4.98	0.33%	[50000] ug/L
Na 589.592 Radial†	66274.6	697.04	1.05%	[20000] ug/L

## Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	3	Lin Thru 0	0.0	217.1	0.00000	0.999982	
Al 396.153Radial	3	Lin Thru 0	0.0	1.296	0.00000	0.999995	
As 188.979	3	Lin Thru 0	0.0	2.308	0.00000	0.999996	
B 249.677	3	Lin Thru 0	0.0	44.86	0.00000	0.999996	
Ba 233.527	3	Lin Thru 0	0.0	128.1	0.00000	0.999996	
Be 313.107	3	Lin Thru 0	0.0	2624	0.00000	0.999996	
Ca 317.933Radial	3	Lin Thru 0	0.0	0.6250	0.00000	0.999988	
Cd 226.502	3	Lin Thru 0	0.0	90.12	0.00000	0.999995	
Co 228.616	3	Lin Thru 0	0.0	48.87	0.00000	0.999996	
Cr 267.716	3	Lin Thru 0	0.0	89.47	0.00000	0.999997	
Cu 324.752	3	Lin Thru 0	0.0	334.4	0.00000	0.999993	
Fe 238.204 Radia	2	Lin Thru 0	0.0	0.1156	0.00000	0.999825	
K 766.490 Radial	3	Lin Thru 0	0.0	5.454	0.00000	0.999885	



Mg 279.077 IEC	3	Lin Thru 0	0.0	0.0299	0.00000	0.999937
Mn 257.610	3	Lin Thru 0	0.0	902.0	0.00000	0.999987
Mo 202.031	3	Lin Thru 0	0.0	14.15	0.00000	0.999993
Na 589.592 Radia	2	Lin Thru 0	0.0	3.340	0.00000	0.999877
Ni 231.604	3	Lin Thru 0	0.0	40.16	0.00000	0.999998
P 214.914	3	Lin Thru 0	0.0	1.635	0.00000	0.999993
Pb 220.353	3	Lin Thru 0	0.0	8.166	0.00000	0.999995
S 181.975 Axial	3	Lin Thru 0	0.0	0.7066	0.00000	0.999995
Sb 206.836	3	Lin Thru 0	0.0	2.917	0.00000	0.999990
Se 196.026	3	Lin Thru 0	0.0	1.552	0.00000	0.999994
Si 251.611	3	Lin Thru 0	0.0	31.40	0.00000	0.999965
Sn 189.927	3	Lin Thru 0	0.0	5.645	0.00000	0.999987
Sr 421.552	3	Lin Thru 0	0.0	154.8	0.00000	0.999729
Ti 334.940	3	Lin Thru 0	0.0	620.7	0.00000	0.999990
Tl 190.801	3	Lin Thru 0	0.0	3.257	0.00000	0.999995
U 409.014	3	Lin Thru 0	0.0	33.90	0.00000	0.999937
V 292.402	3	Lin Thru 0	0.0	146.5	0.00000	0.999999
Zn 213.857	3	Lin Thru 0	0.0	105.7	0.00000	0.999996
SiO2	3	Lin Thru 0	0.0	14.66	0.00000	0.999986



Sequence No.: 6

Sample ID: ICV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 9

Date Collected: 1/11/2010 15:38:33

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5131.5	5131.5	102 %		15:40:26
1	Y RADIAL	5471.6	5471.6	100.8 %		15:40:26
1	Al 396.153Radial†	6248.8	6132.3	4705.2 ug/L	4705.2 ppb	15:40:26
1	Ca 317.933Radial†	2971.0	2895.6	4633.2 ug/L	4633.2 ppb	15:40:46
1	Fe 238.204 Radial†	561.3	541.9	4703.9 ug/L	4703.9 ppb	15:40:46
1	K 766.490 Radial†	15549.6	12668.0	2309.3 ug/L	2309.3 ppb	15:40:26
1	Mg 279.077 IEC†	151.4	146.6	4900.0 ug/L	4900.0 ppb	15:40:46
1	Na 589.592 Radial†	6369.4	7530.5	2254.7 ug/L	2254.7 ppb	15:40:26
1	Sr 421.552†	75677.1	74278.0	479.72 ug/L	479.72 ppb	15:40:26
1	Sc 361.383	854284.7	854284.7	100.22 %		15:41:43
1	Y 371.029	716450.9	716450.9	99.140 %		15:41:43
1	Ag 328.068†	55272.7	54792.6	255.27 ug/L	255.27 ppb	15:41:43
1	As 188.979†	1051.6	1072.9	466.86 ug/L	466.86 ppb	15:42:03
1	B 249.677†	21779.4	22363.2	496.68 ug/L	496.68 ppb	15:41:43
1	Ba 233.527†	63648.1	63519.0	497.13 ug/L	497.13 ppb	15:41:43
1	Be 313.107†	668692.5	671801.0	257.08 ug/L	257.08 ppb	15:41:43
1	Cd 226.502†	43550.6	43658.5	484.37 ug/L	484.37 ppb	15:41:43
1	Co 228.616†	23970.1	23991.9	491.30 ug/L	491.30 ppb	15:42:03
1	Cr 267.716†	42651.6	42474.1	475.47 ug/L	475.47 ppb	15:41:43
1	Cu 324.752†	171273.9	164483.5	491.83 ug/L	491.83 ppb	15:41:43
1	Mn 257.610†	453042.6	451597.2	500.97 ug/L	500.97 ppb	15:41:43
1	Mo 202.031†	7574.9	7534.4	532.87 ug/L	532.87 ppb	15:42:03
1	Ni 231.604†	19737.9	19626.4	488.40 ug/L	488.40 ppb	15:42:03
1	P 214.914†	4248.6	4009.3	2346.6 ug/L	2346.6 ppb	15:42:03
1	Pb 220.353†	3961.8	4016.4	493.52 ug/L	493.52 ppb	15:42:03
1	S 181.975 Axial†	1763.5	1716.6	2428.5 ug/L	2428.5 ppb	15:42:03
1	Sb 206.836†	1468.6	1437.4	511.46 ug/L	511.46 ppb	15:42:03
1	Se 196.026†	3858.8	3882.2	2518.7 ug/L	2518.7 ppb	15:42:03
1	Si 251.611†	147035.3	146160.2	4648.4 ug/L	4648.4 ppb	15:41:43
1	Sn 189.927†	3018.0	3003.7	532.88 ug/L	532.88 ppb	15:42:03
1	Ti 334.940†	301910.2	302618.0	487.29 ug/L	487.29 ppb	15:41:43
1	Tl 190.801†	1659.9	1689.1	521.27 ug/L	521.27 ppb	15:42:03
1	U 409.014†	14510.6	16490.2	484.86 ug/L	484.86 ppb	15:41:43
1	V 292.402†	71245.3	72397.7	501.73 ug/L	501.73 ppb	15:41:43
1	Zn 213.857†	53239.2	52501.4	492.33 ug/L	492.33 ppb	15:41:43
1	SiO2†	146051.2	145157.0	9889.8 ug/L	9889.8 ppb	15:43:01
2	Sc Radial	4910.6	4910.6	97.5 %		15:40:51
2	Y RADIAL	5267.0	5267.0	97.01 %		15:40:51
2	Al 396.153Radial†	6145.3	6302.1	4835.9 ug/L	4835.9 ppb	15:40:51
2	Ca 317.933Radial†	2989.4	3045.6	4873.2 ug/L	4873.2 ppb	15:41:11
2	Fe 238.204 Radial†	563.2	568.7	4936.2 ug/L	4936.2 ppb	15:41:11
2	K 766.490 Radial†	15451.2	13253.5	2416.5 ug/L	2416.5 ppb	15:40:51
2	Mg 279.077 IEC†	155.9	157.9	5277.3 ug/L	5277.3 ppb	15:41:11
2	Na 589.592 Radial†	6286.5	7726.6	2313.4 ug/L	2313.4 ppb	15:40:51
2	Sr 421.552†	75331.0	77263.9	499.00 ug/L	499.00 ppb	15:40:51
2	Sc 361.383	845183.0	845183.0	99.154 %		15:42:09
2	Y 371.029	707487.5	707487.5	97.899 %		15:42:09
2	Ag 328.068†	55142.7	55255.5	257.48 ug/L	257.48 ppb	15:42:09
2	As 188.979†	1047.5	1080.0	469.98 ug/L	469.98 ppb	15:42:29
2	B 249.677†	21710.0	22527.2	500.29 ug/L	500.29 ppb	15:42:09
2	Ba 233.527†	63434.9	63987.8	500.80 ug/L	500.80 ppb	15:42:09
2	Be 313.107†	664512.9	674771.0	258.22 ug/L	258.22 ppb	15:42:09
2	Cd 226.502†	43551.7	44127.6	489.56 ug/L	489.56 ppb	15:42:09
2	Co 228.616†	23990.6	24270.1	496.99 ug/L	496.99 ppb	15:42:29
2	Cr 267.716†	42601.0	42881.4	480.03 ug/L	480.03 ppb	15:42:09
2	Cu 324.752†	170507.0	165550.4	495.03 ug/L	495.03 ppb	15:42:09
2	Mn 257.610†	451993.5	455407.1	505.20 ug/L	505.20 ppb	15:42:09
2	Mo 202.031†	7556.1	7596.9	537.30 ug/L	537.30 ppb	15:42:29
2	Ni 231.604†	19743.9	19844.5	493.83 ug/L	493.83 ppb	15:42:29



2	P 214.914†	4250.6	4057.0	2375.0 ug/L	2375.0 ppb	15:42:29
2	Pb 220.353†	3961.9	4059.1	498.76 ug/L	498.76 ppb	15:42:29
2	S 181.975 Axial†	1772.3	1744.5	2467.8 ug/L	2467.8 ppb	15:42:29
2	Sb 206.836†	1463.0	1447.6	515.12 ug/L	515.12 ppb	15:42:29
2	Se 196.026†	3853.6	3918.5	2542.9 ug/L	2542.9 ppb	15:42:29
2	Si 251.611†	146609.1	147310.2	4685.0 ug/L	4685.0 ppb	15:42:09
2	Sn 189.927†	3020.8	3039.0	539.17 ug/L	539.17 ppb	15:42:29
2	Ti 334.940†	300787.7	304729.9	490.69 ug/L	490.69 ppb	15:42:09
2	Tl 190.801†	1666.8	1713.9	528.90 ug/L	528.90 ppb	15:42:29
2	U 409.014†	14533.5	16669.2	490.10 ug/L	490.10 ppb	15:42:09
2	V 292.402†	70947.9	72863.2	504.95 ug/L	504.95 ppb	15:42:09
2	Zn 213.857†	53089.4	52922.4	496.25 ug/L	496.25 ppb	15:42:09
2	SiO2†	148214.6	148908.2	10146 ug/L	10146 ppb	15:43:06
3	Sc Radial	4926.9	4926.9	97.8 %		15:41:16
3	Y RADIAL	5294.5	5294.5	97.51 %		15:41:16
3	Al 396.153Radial†	6239.9	6377.8	4894.5 ug/L	4894.5 ppb	15:41:16
3	Ca 317.933Radial†	2993.0	3039.1	4862.8 ug/L	4862.8 ppb	15:41:36
3	Fe 238.204 Radial†	565.3	568.9	4938.0 ug/L	4938.0 ppb	15:41:36
3	K 766.490 Radial†	15428.2	13177.5	2402.6 ug/L	2402.6 ppb	15:41:16
3	Mg 279.077 IEC†	151.7	153.1	5116.5 ug/L	5116.5 ppb	15:41:36
3	Na 589.592 Radial†	6269.0	7687.4	2301.7 ug/L	2301.7 ppb	15:41:16
3	Sr 421.552†	75643.4	77327.0	499.41 ug/L	499.41 ppb	15:41:16
3	Sc 361.383	847906.9	847906.9	99.473 %		15:42:35
3	Y 371.029	709674.4	709674.4	98.202 %		15:42:35
3	Ag 328.068†	55242.3	55176.9	257.11 ug/L	257.11 ppb	15:42:35
3	As 188.979†	1055.7	1085.0	472.12 ug/L	472.12 ppb	15:42:55
3	B 249.677†	21722.1	22469.0	499.00 ug/L	499.00 ppb	15:42:35
3	Ba 233.527†	63420.9	63768.2	499.09 ug/L	499.09 ppb	15:42:35
3	Be 313.107†	664984.9	673092.5	257.58 ug/L	257.58 ppb	15:42:35
3	Cd 226.502†	43466.3	43900.6	487.04 ug/L	487.04 ppb	15:42:35
3	Co 228.616†	23912.7	24114.1	493.79 ug/L	493.79 ppb	15:42:55
3	Cr 267.716†	42637.0	42779.6	478.90 ug/L	478.90 ppb	15:42:35
3	Cu 324.752†	170928.9	165422.1	494.64 ug/L	494.64 ppb	15:42:35
3	Mn 257.610†	452358.0	454309.2	503.99 ug/L	503.99 ppb	15:42:35
3	Mo 202.031†	7539.0	7555.2	534.36 ug/L	534.36 ppb	15:42:55
3	Ni 231.604†	19632.7	19668.7	489.46 ug/L	489.46 ppb	15:42:55
3	P 214.914†	4233.5	4026.0	2356.0 ug/L	2356.0 ppb	15:42:55
3	Pb 220.353†	3930.9	4015.1	493.38 ug/L	493.38 ppb	15:42:55
3	S 181.975 Axial†	1780.9	1747.4	2471.9 ug/L	2471.9 ppb	15:42:55
3	Sb 206.836†	1458.8	1438.6	511.86 ug/L	511.86 ppb	15:42:55
3	Se 196.026†	3836.9	3889.2	2524.0 ug/L	2524.0 ppb	15:42:55
3	Si 251.611†	146961.9	147189.8	4681.2 ug/L	4681.2 ppb	15:42:35
3	Sn 189.927†	2986.9	2995.0	531.38 ug/L	531.38 ppb	15:42:55
3	Ti 334.940†	301442.1	304413.3	490.19 ug/L	490.19 ppb	15:42:35
3	Tl 190.801†	1662.1	1703.7	525.78 ug/L	525.78 ppb	15:42:55
3	U 409.014†	14584.1	16673.0	490.22 ug/L	490.22 ppb	15:42:35
3	V 292.402†	70996.2	72682.0	503.67 ug/L	503.67 ppb	15:42:35
3	Zn 213.857†	53081.7	52742.6	494.58 ug/L	494.58 ppb	15:42:35
3	SiO2†	146987.9	147194.8	10029 ug/L	10029 ppb	15:43:11

## Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	849124.9	99.616 %	0.5480			0.55%
Sc Radial	4989.7	99.1 %	2.44			2.47%
Y 371.029	711204.2	98.414 %	0.6467			0.66%
Y RADIAL	5344.4	98.43 %	2.046			2.08%
Ag 328.068†	55075.0	256.62 ug/L	1.185	256.62 ppb	1.185	0.46%
QC value within limits for Ag 328.068 Recovery = 102.65%						
Al 396.153Radial†	6270.7	4811.9 ug/L	96.94	4811.9 ppb	96.94	2.01%
QC value within limits for Al 396.153Radial Recovery = 96.24%						
As 188.979†	1079.3	469.65 ug/L	2.649	469.65 ppb	2.649	0.56%
QC value within limits for As 188.979 Recovery = 93.93%						
B 249.677†	22453.1	498.66 ug/L	1.833	498.66 ppb	1.833	0.37%
QC value within limits for B 249.677 Recovery = 99.73%						
Ba 233.527†	63758.3	499.01 ug/L	1.839	499.01 ppb	1.839	0.37%
QC value within limits for Ba 233.527 Recovery = 99.80%						
Be 313.107†	673221.5	257.63 ug/L	0.571	257.63 ppb	0.571	0.22%
QC value within limits for Be 313.107 Recovery = 103.05%						
Ca 317.933Radial†	2993.4	4789.7 ug/L	135.68	4789.7 ppb	135.68	2.83%



QC value within limits for Ca 317.933 Radial Recovery = 95.79%						
Cd 226.502†	43895.6	486.99 ug/L	2.593	486.99 ppb	2.593	0.53%
QC value within limits for Cd 226.502 Recovery = 97.40%						
Co 228.616†	24125.3	494.03 ug/L	2.855	494.03 ppb	2.855	0.58%
QC value within limits for Co 228.616 Recovery = 98.81%						
Cr 267.716†	42711.7	478.13 ug/L	2.373	478.13 ppb	2.373	0.50%
QC value within limits for Cr 267.716 Recovery = 95.63%						
Cu 324.752†	165152.0	493.83 ug/L	1.747	493.83 ppb	1.747	0.35%
QC value within limits for Cu 324.752 Recovery = 98.77%						
Fe 238.204 Radial†	559.8	4859.4 ug/L	134.62	4859.4 ppb	134.62	2.77%
QC value within limits for Fe 238.204 Radial Recovery = 97.19%						
K 766.490 Radial†	13033.0	2376.1 ug/L	58.28	2376.1 ppb	58.28	2.45%
QC value within limits for K 766.490 Radial Recovery = 95.04%						
Mg 279.077 IEC†	152.6	5098.0 ug/L	189.35	5098.0 ppb	189.35	3.71%
QC value within limits for Mg 279.077 IEC Recovery = 101.96%						
Mn 257.610†	453771.2	503.39 ug/L	2.181	503.39 ppb	2.181	0.43%
QC value within limits for Mn 257.610 Recovery = 100.68%						
Mo 202.031†	7562.2	534.84 ug/L	2.257	534.84 ppb	2.257	0.42%
QC value within limits for Mo 202.031 Recovery = 106.97%						
Na 589.592 Radial†	7648.2	2289.9 ug/L	31.07	2289.9 ppb	31.07	1.36%
QC value within limits for Na 589.592 Radial Recovery = 91.60%						
Ni 231.604†	19713.2	490.56 ug/L	2.879	490.56 ppb	2.879	0.59%
QC value within limits for Ni 231.604 Recovery = 98.11%						
P 214.914†	4030.8	2359.2 ug/L	14.46	2359.2 ppb	14.46	0.61%
QC value within limits for P 214.914 Recovery = 94.37%						
Pb 220.353†	4030.2	495.22 ug/L	3.068	495.22 ppb	3.068	0.62%
QC value within limits for Pb 220.353 Recovery = 99.04%						
S 181.975 Axial†	1736.2	2456.1 ug/L	23.98	2456.1 ppb	23.98	0.98%
QC value within limits for S 181.975 Axial Recovery = 98.24%						
Sb 206.836†	1441.2	512.81 ug/L	2.011	512.81 ppb	2.011	0.39%
QC value within limits for Sb 206.836 Recovery = 102.56%						
Se 196.026†	3896.7	2528.5 ug/L	12.70	2528.5 ppb	12.70	0.50%
QC value within limits for Se 196.026 Recovery = 101.14%						
Si 251.611†	146886.7	4671.5 ug/L	20.11	4671.5 ppb	20.11	0.43%
QC value within limits for Si 251.611 Recovery = 93.43%						
Sn 189.927†	3012.6	534.48 ug/L	4.133	534.48 ppb	4.133	0.77%
QC value within limits for Sn 189.927 Recovery = 106.90%						
Sr 421.552†	76289.6	492.71 ug/L	11.253	492.71 ppb	11.253	2.28%
QC value within limits for Sr 421.552 Recovery = 98.54%						
Ti 334.940†	303920.4	489.39 ug/L	1.833	489.39 ppb	1.833	0.37%
QC value within limits for Ti 334.940 Recovery = 97.88%						
Tl 190.801†	1702.2	525.32 ug/L	3.836	525.32 ppb	3.836	0.73%
QC value within limits for Tl 190.801 Recovery = 105.06%						
U 409.014†	16610.8	488.39 ug/L	3.060	488.39 ppb	3.060	0.63%
QC value within limits for U 409.014 Recovery = 97.68%						
V 292.402†	72647.6	503.45 ug/L	1.621	503.45 ppb	1.621	0.32%
QC value within limits for V 292.402 Recovery = 100.69%						
Zn 213.857†	52722.1	494.39 ug/L	1.967	494.39 ppb	1.967	0.40%
QC value within limits for Zn 213.857 Recovery = 98.88%						
SiO2†	147086.7	10021 ug/L	128.1	10021 ppb	128.1	1.28%
QC value within limits for SiO2 Recovery = 93.70%						
All analyte(s) passed QC.						



Sequence No.: 7

Sample ID: ICB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 10

Date Collected: 1/11/2010 15:45:22

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: ICB

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib.	Conc. Units	Sample	Analysis Time
1	Sc Radial	5012.3	5012.3	99.5 %				15:47:15
1	Y RADIAL	5401.5	5401.5	99.49 %				15:47:15
1	Al 396.153Radial†	-18.5	-17.9	-13.801 ug/L		-13.801 ppb		15:47:15
1	Ca 317.933Radial†	14.3	-5.4	-8.6742 ug/L		-8.6742 ppb		15:47:35
1	Fe 238.204 Radial†	8.8	-0.0	-0.3309 ug/L		-0.3309 ppb		15:47:35
1	K 766.490 Radial†	2514.4	-64.3	-11.763 ug/L		-11.763 ppb		15:47:15
1	Mg 279.077 IEC†	0.7	-1.2	-41.240 ug/L		-41.240 ppb		15:47:35
1	Na 589.592 Radial†	-1330.5	-56.2	-16.826 ug/L		-16.826 ppb		15:47:15
1	Sr 421.552†	7.3	26.8	0.1731 ug/L		0.1731 ppb		15:47:15
1	Sc 361.383	860881.3	860881.3	101.00 %				15:48:32
1	Y 371.029	730069.0	730069.0	101.02 %				15:48:32
1	Ag 328.068†	307.3	-53.7	-0.2488 ug/L		-0.2488 ppb		15:48:37
1	As 188.979†	-15.0	8.7	3.7893 ug/L		3.7893 ppb		15:48:57
1	B 249.677†	-477.6	159.0	3.5441 ug/L		3.5441 ppb		15:48:57
1	Ba 233.527†	-5.4	6.0	0.0472 ug/L		0.0472 ppb		15:48:57
1	Be 313.107†	-4520.9	109.1	0.0415 ug/L		0.0415 ppb		15:48:37
1	Cd 226.502†	-216.3	-10.0	-0.1106 ug/L		-0.1106 ppb		15:48:57
1	Co 228.616†	-68.2	7.2	0.1444 ug/L		0.1444 ppb		15:48:57
1	Cr 267.716†	76.2	-7.8	-0.0883 ug/L		-0.0883 ppb		15:48:57
1	Cu 324.752†	6381.6	-93.5	-0.2806 ug/L		-0.2806 ppb		15:48:37
1	Mn 257.610†	420.3	-28.7	-0.0302 ug/L		-0.0302 ppb		15:48:57
1	Mo 202.031†	12.2	-11.6	-0.8207 ug/L		-0.8207 ppb		15:48:57
1	Ni 231.604†	89.2	20.3	0.5064 ug/L		0.5064 ppb		15:48:57
1	P 214.914†	220.2	-11.8	-7.1766 ug/L		-7.1766 ppb		15:48:57
1	Pb 220.353†	-66.2	-2.1	-0.2669 ug/L		-0.2669 ppb		15:48:57
1	S 181.975 Axial†	48.4	4.9	6.9158 ug/L		6.9158 ppb		15:48:57
1	Sb 206.836†	40.3	11.9	4.0820 ug/L		4.0820 ppb		15:48:57
1	Se 196.026†	-23.8	8.5	5.4449 ug/L		5.4449 ppb		15:48:57
1	Si 251.611†	525.5	-30.2	-0.9507 ug/L		-0.9507 ppb		15:48:57
1	Sn 189.927†	9.1	1.4	0.2404 ug/L		0.2404 ppb		15:48:57
1	Ti 334.940†	-1410.9	-22.5	-0.0347 ug/L		-0.0347 ppb		15:48:37
1	Tl 190.801†	-34.8	-1.6	-0.4960 ug/L		-0.4960 ppb		15:48:57
1	U 409.014†	-1963.9	67.1	1.9784 ug/L		1.9784 ppb		15:48:32
1	V 292.402†	-1313.5	9.2	0.0535 ug/L		0.0535 ppb		15:48:37
1	Zn 213.857†	612.4	-13.9	-0.1345 ug/L		-0.1345 ppb		15:48:57
1	SiO2†	539.9	-37.1	-2.5110 ug/L		-2.5110 ppb		15:50:03
2	Sc Radial	5026.4	5026.4	99.8 %				15:47:40
2	Y RADIAL	5421.1	5421.1	99.85 %				15:47:40
2	Al 396.153Radial†	-32.0	-31.4	-24.228 ug/L		-24.228 ppb		15:47:40
2	Ca 317.933Radial†	24.0	4.2	6.7766 ug/L		6.7766 ppb		15:48:00
2	Fe 238.204 Radial†	8.8	-0.1	-0.9622 ug/L		-0.9622 ppb		15:48:00
2	K 766.490 Radial†	2560.4	-25.2	-4.6285 ug/L		-4.6285 ppb		15:47:40
2	Mg 279.077 IEC†	0.9	-1.0	-32.020 ug/L		-32.020 ppb		15:48:00
2	Na 589.592 Radial†	-1298.3	-20.1	-6.0150 ug/L		-6.0150 ppb		15:47:40
2	Sr 421.552†	6.9	26.5	0.1709 ug/L		0.1709 ppb		15:47:40
2	Sc 361.383	871702.6	871702.6	102.26 %				15:49:02
2	Y 371.029	737843.8	737843.8	102.10 %				15:49:02
2	Ag 328.068†	330.1	-35.2	-0.1664 ug/L		-0.1664 ppb		15:49:07
2	As 188.979†	-20.9	3.2	1.3860 ug/L		1.3860 ppb		15:49:28
2	B 249.677†	-477.7	164.7	3.6709 ug/L		3.6709 ppb		15:49:28
2	Ba 233.527†	-14.1	-2.4	-0.0187 ug/L		-0.0187 ppb		15:49:28
2	Be 313.107†	-4633.4	54.6	0.0211 ug/L		0.0211 ppb		15:49:07
2	Cd 226.502†	-213.1	-4.3	-0.0464 ug/L		-0.0464 ppb		15:49:28
2	Co 228.616†	-66.1	10.0	0.2050 ug/L		0.2050 ppb		15:49:28
2	Cr 267.716†	89.3	4.0	0.0433 ug/L		0.0433 ppb		15:49:28
2	Cu 324.752†	6462.1	-93.2	-0.2819 ug/L		-0.2819 ppb		15:49:07
2	Mn 257.610†	452.5	-2.4	-0.0014 ug/L		-0.0014 ppb		15:49:28
2	Mo 202.031†	24.8	0.5	0.0384 ug/L		0.0384 ppb		15:49:28
2	Ni 231.604†	51.6	-17.5	-0.4349 ug/L		-0.4349 ppb		15:49:28



2	P 214.914†	209.8	-24.7	-15.078 ug/L	-15.078 ppb	15:49:28
2	Pb 220.353†	-63.2	1.5	0.1811 ug/L	0.1811 ppb	15:49:28
2	S 181.975 Axial†	43.8	-0.2	-0.2084 ug/L	-0.2084 ppb	15:49:28
2	Sb 206.836†	49.6	20.5	7.0387 ug/L	7.0387 ppb	15:49:28
2	Se 196.026†	-31.7	1.0	0.6611 ug/L	0.6611 ppb	15:49:28
2	Si 251.611†	538.3	-24.1	-0.7684 ug/L	-0.7684 ppb	15:49:28
2	Sn 189.927†	6.1	-1.7	-0.2989 ug/L	-0.2989 ppb	15:49:28
2	Ti 334.940†	-1328.7	75.3	0.1222 ug/L	0.1222 ppb	15:49:07
2	Tl 190.801†	-39.1	-5.4	-1.6562 ug/L	-1.6562 ppb	15:49:28
2	U 409.014†	-1867.4	185.6	5.4738 ug/L	5.4738 ppb	15:49:02
2	V 292.402†	-1321.6	17.4	0.1290 ug/L	0.1290 ppb	15:49:07
2	Zn 213.857†	629.1	-5.1	-0.0446 ug/L	-0.0446 ppb	15:49:28
2	SiO2†	557.1	-26.9	-1.8357 ug/L	-1.8357 ppb	15:50:08
3	Sc Radial	5086.8	5086.8	101 %		15:48:06
3	Y RADIAL	5459.8	5459.8	100.6 %		15:48:06
3	Al 396.153Radial†	5.7	6.3	4.8594 ug/L	4.8594 ppb	15:48:06
3	Ca 317.933Radial†	16.8	-3.2	-5.0566 ug/L	-5.0566 ppb	15:48:26
3	Fe 238.204 Radial†	9.5	0.5	4.4449 ug/L	4.4449 ppb	15:48:26
3	K 766.490 Radial†	2570.3	-45.9	-8.4024 ug/L	-8.4024 ppb	15:48:06
3	Mg 279.077 IEC†	0.6	-1.3	-44.641 ug/L	-44.641 ppb	15:48:26
3	Na 589.592 Radial†	-1346.6	-52.5	-15.723 ug/L	-15.723 ppb	15:48:06
3	Sr 421.552†	-5.4	14.1	0.0913 ug/L	0.0913 ppb	15:48:06
3	Sc 361.383	858140.5	858140.5	100.67 %		15:49:33
3	Y 371.029	727477.4	727477.4	100.67 %		15:49:33
3	Ag 328.068†	415.2	54.5	0.2481 ug/L	0.2481 ppb	15:49:38
3	As 188.979†	-20.0	3.7	1.6152 ug/L	1.6152 ppb	15:49:58
3	B 249.677†	-492.4	142.8	3.1820 ug/L	3.1820 ppb	15:49:58
3	Ba 233.527†	0.4	11.8	0.0911 ug/L	0.0911 ppb	15:49:58
3	Be 313.107†	-4611.3	4.9	0.0018 ug/L	0.0018 ppb	15:49:38
3	Cd 226.502†	-202.6	2.8	0.0316 ug/L	0.0316 ppb	15:49:58
3	Co 228.616†	-73.5	1.6	0.0332 ug/L	0.0332 ppb	15:49:58
3	Cr 267.716†	83.5	-0.3	-0.0056 ug/L	-0.0056 ppb	15:49:58
3	Cu 324.752†	6483.5	27.9	0.0823 ug/L	0.0823 ppb	15:49:38
3	Mn 257.610†	433.0	-14.7	-0.0140 ug/L	-0.0140 ppb	15:49:58
3	Mo 202.031†	21.3	-2.6	-0.1819 ug/L	-0.1819 ppb	15:49:58
3	Ni 231.604†	69.9	1.5	0.0363 ug/L	0.0363 ppb	15:49:58
3	P 214.914†	233.2	1.8	1.0622 ug/L	1.0622 ppb	15:49:58
3	Pb 220.353†	-57.3	6.4	0.7884 ug/L	0.7884 ppb	15:49:58
3	S 181.975 Axial†	43.6	0.3	0.4175 ug/L	0.4175 ppb	15:49:58
3	Sb 206.836†	27.8	-0.3	-0.0892 ug/L	-0.0892 ppb	15:49:58
3	Se 196.026†	-29.2	3.0	1.9237 ug/L	1.9237 ppb	15:49:58
3	Si 251.611†	553.1	-1.0	-0.0305 ug/L	-0.0305 ppb	15:49:58
3	Sn 189.927†	11.3	3.6	0.6343 ug/L	0.6343 ppb	15:49:58
3	Ti 334.940†	-1395.2	-11.4	-0.0163 ug/L	-0.0163 ppb	15:49:38
3	Tl 190.801†	-27.8	5.2	1.5966 ug/L	1.5966 ppb	15:49:58
3	U 409.014†	-1948.4	76.2	2.2480 ug/L	2.2480 ppb	15:49:33
3	V 292.402†	-1418.3	-99.1	-0.6765 ug/L	-0.6765 ppb	15:49:38
3	Zn 213.857†	610.9	-13.4	-0.1277 ug/L	-0.1277 ppb	15:49:58
3	SiO2†	517.4	-57.7	-3.9333 ug/L	-3.9333 ppb	15:50:13

## Mean Data: ICB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Conc. Units	Sample	Std.Dev.	RSD
Sc 361.383	863574.8	101.31 %		0.841				0.83%
Sc Radial	5041.9	100 %		0.8				0.78%
Y 371.029	731796.7	101.26 %		0.747				0.74%
Y RADIAL	5427.5	99.96 %		0.546				0.55%
Ag 328.068†	-11.5	-0.0557 ug/L		0.26628	-0.0557 ppb		0.26628	477.91%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153Radial†	-14.4	-11.057 ug/L		14.7368	-11.057 ppb		14.7368	133.29%
QC value within limits for Al 396.153Radial Recovery = Not calculated								
As 188.979†	5.2	2.2635 ug/L		1.32637	2.2635 ppb		1.32637	58.60%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	155.5	3.4657 ug/L		0.25373	3.4657 ppb		0.25373	7.32%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	5.1	0.0399 ug/L		0.05524	0.0399 ppb		0.05524	138.56%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	56.2	0.0215 ug/L		0.01982	0.0215 ppb		0.01982	92.33%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 317.933Radial†	-1.4	-2.3180 ug/L		8.08125	-2.3180 ppb		8.08125	348.63%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated						
Cd 226.502†	-3.8	-0.0418 ug/L	0.07123	-0.0418 ppb	0.07123	170.43%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	6.3	0.1275 ug/L	0.08713	0.1275 ppb	0.08713	68.33%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	-1.4	-0.0169 ug/L	0.06653	-0.0169 ppb	0.06653	393.98%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	-52.9	-0.1600 ug/L	0.20991	-0.1600 ppb	0.20991	131.16%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	0.1	1.0506 ug/L	2.95646	1.0506 ppb	2.95646	281.40%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	-45.1	-8.2647 ug/L	3.56936	-8.2647 ppb	3.56936	43.19%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	-1.2	-39.301 ug/L	6.5303	-39.301 ppb	6.5303	16.62%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	-15.3	-0.0152 ug/L	0.01441	-0.0152 ppb	0.01441	94.82%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	-4.5	-0.3214 ug/L	0.44625	-0.3214 ppb	0.44625	138.84%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	-42.9	-12.854 ug/L	5.9488	-12.854 ppb	5.9488	46.28%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	1.4	0.0360 ug/L	0.47065	0.0360 ppb	0.47065	>999.9%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	-11.6	-7.0640 ug/L	8.07047	-7.0640 ppb	8.07047	114.25%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	1.9	0.2342 ug/L	0.52966	0.2342 ppb	0.52966	226.16%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	1.7	2.3750 ug/L	3.94493	2.3750 ppb	3.94493	166.10%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	10.7	3.6772 ug/L	3.58112	3.6772 ppb	3.58112	97.39%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	4.2	2.6766 ug/L	2.47915	2.6766 ppb	2.47915	92.62%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	-18.4	-0.5832 ug/L	0.48727	-0.5832 ppb	0.48727	83.55%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	1.1	0.1919 ug/L	0.46846	0.1919 ppb	0.46846	244.09%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	22.5	0.1451 ug/L	0.04658	0.1451 ppb	0.04658	32.10%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	13.8	0.0237 ug/L	0.08580	0.0237 ppb	0.08580	361.38%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	-0.6	-0.1852 ug/L	1.64853	-0.1852 ppb	1.64853	890.01%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	109.6	3.2334 ug/L	1.94496	3.2334 ppb	1.94496	60.15%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	-24.2	-0.1647 ug/L	0.44484	-0.1647 ppb	0.44484	270.15%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	-10.8	-0.1022 ug/L	0.05003	-0.1022 ppb	0.05003	48.93%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	-40.6	-2.7600 ug/L	1.07077	-2.7600 ppb	1.07077	38.80%
QC value within limits for SiO2 Recovery = Not calculated						

All analyte(s) passed QC.



Sequence No.: 8

Sample ID: PQL

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 11

Date Collected: 1/11/2010 15:52:25

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: PQL

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5037.9	5037.9	100 %		15:54:18
1	Y RADIAL	5420.4	5420.4	99.83 %		15:54:18
1	Al 396.153Radial†	270.6	271.2	208.73 ug/L	208.73 ppb	15:54:18
1	Ca 317.933Radial†	149.7	129.9	207.82 ug/L	207.82 ppb	15:54:38
1	Fe 238.204 Radial†	23.6	14.7	127.71 ug/L	127.71 ppb	15:54:38
1	K 766.490 Radial†	3467.8	875.9	160.16 ug/L	160.16 ppb	15:54:18
1	Mg 279.077 IEC†	10.3	8.4	280.15 ug/L	280.15 ppb	15:54:38
1	Na 589.592 Radial†	-294.0	986.6	295.40 ug/L	295.40 ppb	15:54:18
1	Sr 421.552†	762.3	781.4	5.0453 ug/L	5.0453 ppb	15:54:18
1	Sc 361.383	860505.2	860505.2	100.95 %		15:55:34
1	Y 371.029	727613.9	727613.9	100.68 %		15:55:34
1	Ag 328.068†	1346.5	975.9	4.5059 ug/L	4.5059 ppb	15:55:39
1	As 188.979†	46.2	69.4	30.083 ug/L	30.083 ppb	15:55:59
1	B 249.677†	1593.6	2210.4	49.251 ug/L	49.251 ppb	15:55:39
1	Ba 233.527†	649.9	655.2	5.1295 ug/L	5.1295 ppb	15:55:59
1	Be 313.107†	8502.7	13007.9	4.9679 ug/L	4.9679 ppb	15:55:39
1	Cd 226.502†	243.6	445.4	4.9433 ug/L	4.9433 ppb	15:55:59
1	Co 228.616†	169.2	242.3	4.9701 ug/L	4.9701 ppb	15:55:59
1	Cr 267.716†	508.0	419.9	4.6825 ug/L	4.6825 ppb	15:55:59
1	Cu 324.752†	9837.7	3332.8	9.9426 ug/L	9.9426 ppb	15:55:39
1	Mn 257.610†	10001.8	9462.7	10.493 ug/L	10.493 ppb	15:55:39
1	Mo 202.031†	158.5	133.3	9.4306 ug/L	9.4306 ppb	15:55:59
1	Ni 231.604†	273.7	203.2	5.0568 ug/L	5.0568 ppb	15:55:59
1	P 214.914†	464.8	230.6	138.85 ug/L	138.85 ppb	15:55:59
1	Pb 220.353†	35.5	98.5	12.116 ug/L	12.116 ppb	15:55:59
1	S 181.975 Axial†	113.5	69.4	98.233 ug/L	98.233 ppb	15:55:59
1	Sb 206.836†	69.7	41.2	14.430 ug/L	14.430 ppb	15:55:59
1	Se 196.026†	13.1	45.0	29.445 ug/L	29.445 ppb	15:55:59
1	Si 251.611†	3647.5	3062.7	97.427 ug/L	97.427 ppb	15:55:39
1	Sn 189.927†	59.5	51.3	9.1131 ug/L	9.1131 ppb	15:55:59
1	Ti 334.940†	1779.2	3137.0	5.0291 ug/L	5.0291 ppb	15:55:39
1	Tl 190.801†	41.1	73.6	22.656 ug/L	22.656 ppb	15:55:59
1	U 409.014†	-169.6	1843.6	54.360 ug/L	54.360 ppb	15:55:34
1	V 292.402†	-641.0	674.8	4.8289 ug/L	4.8289 ppb	15:55:39
1	Zn 213.857†	1770.6	1133.7	10.665 ug/L	10.665 ppb	15:55:59
1	SiO2†	3695.3	3088.8	210.50 ug/L	210.50 ppb	15:57:05
2	Sc Radial	5010.4	5010.4	99.5 %		15:54:43
2	Y RADIAL	5391.1	5391.1	99.29 %		15:54:43
2	Al 396.153Radial†	259.0	261.0	200.90 ug/L	200.90 ppb	15:54:43
2	Ca 317.933Radial†	150.5	131.4	210.28 ug/L	210.28 ppb	15:55:03
2	Fe 238.204 Radial†	21.3	12.5	108.37 ug/L	108.37 ppb	15:55:03
2	K 766.490 Radial†	3431.6	858.5	156.97 ug/L	156.97 ppb	15:54:43
2	Mg 279.077 IEC†	12.2	10.3	344.37 ug/L	344.37 ppb	15:55:03
2	Na 589.592 Radial†	-298.5	980.4	293.56 ug/L	293.56 ppb	15:54:43
2	Sr 421.552†	763.2	786.5	5.0782 ug/L	5.0782 ppb	15:54:43
2	Sc 361.383	863273.7	863273.7	101.28 %		15:56:05
2	Y 371.029	729826.7	729826.7	100.99 %		15:56:05
2	Ag 328.068†	1491.5	1114.7	5.1419 ug/L	5.1419 ppb	15:56:10
2	As 188.979†	56.4	79.3	34.378 ug/L	34.378 ppb	15:56:30
2	B 249.677†	1532.7	2145.2	47.799 ug/L	47.799 ppb	15:56:10
2	Ba 233.527†	620.8	624.4	4.8885 ug/L	4.8885 ppb	15:56:30
2	Be 313.107†	8381.0	12860.8	4.9117 ug/L	4.9117 ppb	15:56:10
2	Cd 226.502†	267.7	468.4	5.1999 ug/L	5.1999 ppb	15:56:30
2	Co 228.616†	163.5	236.1	4.8445 ug/L	4.8445 ppb	15:56:30
2	Cr 267.716†	516.7	426.9	4.7615 ug/L	4.7615 ppb	15:56:30
2	Cu 324.752†	9777.8	3242.4	9.6727 ug/L	9.6727 ppb	15:56:10
2	Mn 257.610†	9961.1	9390.7	10.409 ug/L	10.409 ppb	15:56:10
2	Mo 202.031†	156.4	130.7	9.2479 ug/L	9.2479 ppb	15:56:30
2	Ni 231.604†	271.2	199.9	4.9735 ug/L	4.9735 ppb	15:56:30



2	P 214.914†	468.9	233.1	140.45 ug/L	140.45 ppb	15:56:30
2	Pb 220.353†	16.5	79.6	9.8040 ug/L	9.8040 ppb	15:56:30
2	S 181.975 Axial†	119.7	75.2	106.39 ug/L	106.39 ppb	15:56:30
2	Sb 206.836†	60.1	31.4	11.079 ug/L	11.079 ppb	15:56:30
2	Se 196.026†	16.9	48.7	31.777 ug/L	31.777 ppb	15:56:30
2	Si 251.611†	3636.4	3040.2	96.710 ug/L	96.710 ppb	15:56:10
2	Sn 189.927†	61.3	52.9	9.4050 ug/L	9.4050 ppb	15:56:30
2	Ti 334.940†	1760.6	3113.0	4.9865 ug/L	4.9865 ppb	15:56:10
2	Tl 190.801†	30.4	62.9	19.373 ug/L	19.373 ppb	15:56:30
2	U 409.014†	-258.3	1756.6	51.795 ug/L	51.795 ppb	15:56:05
2	V 292.402†	-620.8	696.8	4.9757 ug/L	4.9757 ppb	15:56:10
2	Zn 213.857†	1739.9	1097.8	10.327 ug/L	10.327 ppb	15:56:30
2	SiO2†	3663.0	3045.2	207.53 ug/L	207.53 ppb	15:57:11
3	Sc Radial	5096.0	5096.0	101 %		15:55:08
3	Y RADIAL	5494.9	5494.9	101.2 %		15:55:08
3	Al 396.153Radial†	257.4	255.0	196.26 ug/L	196.26 ppb	15:55:08
3	Ca 317.933Radial†	152.7	131.1	209.81 ug/L	209.81 ppb	15:55:28
3	Fe 238.204 Radial†	22.2	13.0	113.08 ug/L	113.08 ppb	15:55:28
3	K 766.490 Radial†	3509.4	877.4	160.45 ug/L	160.45 ppb	15:55:08
3	Mg 279.077 IEC†	14.2	12.1	405.35 ug/L	405.35 ppb	15:55:28
3	Na 589.592 Radial†	-336.1	948.3	283.95 ug/L	283.95 ppb	15:55:08
3	Sr 421.552†	768.2	778.5	5.0269 ug/L	5.0269 ppb	15:55:08
3	Sc 361.383	861164.6	861164.6	101.03 %		15:56:35
3	Y 371.029	729112.0	729112.0	100.89 %		15:56:35
3	Ag 328.068†	1387.3	1015.2	4.6835 ug/L	4.6835 ppb	15:56:40
3	As 188.979†	55.4	78.5	34.035 ug/L	34.035 ppb	15:57:00
3	B 249.677†	1643.5	2258.6	50.326 ug/L	50.326 ppb	15:56:40
3	Ba 233.527†	638.2	643.1	5.0353 ug/L	5.0353 ppb	15:57:00
3	Be 313.107†	8712.2	13208.9	5.0449 ug/L	5.0449 ppb	15:56:40
3	Cd 226.502†	255.5	457.0	5.0738 ug/L	5.0738 ppb	15:57:00
3	Co 228.616†	173.7	246.6	5.0596 ug/L	5.0596 ppb	15:57:00
3	Cr 267.716†	511.3	422.8	4.7150 ug/L	4.7150 ppb	15:57:00
3	Cu 324.752†	9895.0	3382.0	10.089 ug/L	10.089 ppb	15:56:40
3	Mn 257.610†	10072.8	9525.3	10.556 ug/L	10.556 ppb	15:56:40
3	Mo 202.031†	159.5	134.1	9.4889 ug/L	9.4889 ppb	15:57:00
3	Ni 231.604†	292.7	221.7	5.5183 ug/L	5.5183 ppb	15:57:00
3	P 214.914†	450.5	216.0	129.93 ug/L	129.93 ppb	15:57:00
3	Pb 220.353†	17.4	80.6	9.9220 ug/L	9.9220 ppb	15:57:00
3	S 181.975 Axial†	118.2	74.0	104.74 ug/L	104.74 ppb	15:57:00
3	Sb 206.836†	72.2	43.5	15.276 ug/L	15.276 ppb	15:57:00
3	Se 196.026†	25.2	56.9	37.088 ug/L	37.088 ppb	15:57:00
3	Si 251.611†	3690.4	3102.4	98.690 ug/L	98.690 ppb	15:56:40
3	Sn 189.927†	68.4	60.0	10.666 ug/L	10.666 ppb	15:57:00
3	Ti 334.940†	1925.1	3280.0	5.2497 ug/L	5.2497 ppb	15:56:40
3	Tl 190.801†	34.6	67.1	20.660 ug/L	20.660 ppb	15:57:00
3	U 409.014†	-183.2	1830.3	53.970 ug/L	53.970 ppb	15:56:35
3	V 292.402†	-609.9	706.0	5.0467 ug/L	5.0467 ppb	15:56:40
3	Zn 213.857†	1748.9	1110.8	10.447 ug/L	10.447 ppb	15:57:00
3	SiO2†	3709.4	3099.9	211.25 ug/L	211.25 ppb	15:57:16

## Mean Data: PQL

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	861647.8	101.09 %	0.170			0.17%
Sc Radial	5048.1	100 %	0.9			0.87%
Y 371.029	728850.9	100.86 %	0.156			0.15%
Y RADIAL	5435.5	100.1 %	0.99			0.98%
Ag 328.068†	1035.3	4.7771 ug/L	0.32813	4.7771 ppb	0.32813	6.87%
QC value within limits for Ag 328.068 Recovery = 95.54%						
Al 396.153Radial†	262.4	201.97 ug/L	6.304	201.97 ppb	6.304	3.12%
QC value within limits for Al 396.153Radial Recovery = 100.98%						
As 188.979†	75.7	32.832 ug/L	2.3868	32.832 ppb	2.3868	7.27%
QC value within limits for As 188.979 Recovery = 109.44%						
B 249.677†	2204.7	49.125 ug/L	1.2678	49.125 ppb	1.2678	2.58%
QC value within limits for B 249.677 Recovery = 98.25%						
Ba 233.527†	640.9	5.0178 ug/L	0.12144	5.0178 ppb	0.12144	2.42%
QC value within limits for Ba 233.527 Recovery = 100.36%						
Be 313.107†	13025.9	4.9748 ug/L	0.06689	4.9748 ppb	0.06689	1.34%
QC value within limits for Be 313.107 Recovery = 99.50%						
Ca 317.933Radial†	130.8	209.31 ug/L	1.306	209.31 ppb	1.306	0.62%



QC value within limits for Ca 317.933 Radial Recovery = 104.65%

Cd 226.502†	457.0	5.0723 ug/L	0.12828	5.0723 ppb	0.12828	2.53%
QC value within limits for Cd 226.502 Recovery = 101.45%						
Co 228.616†	241.7	4.9581 ug/L	0.10803	4.9581 ppb	0.10803	2.18%
QC value within limits for Co 228.616 Recovery = 99.16%						
Cr 267.716†	423.2	4.7197 ug/L	0.03971	4.7197 ppb	0.03971	0.84%
QC value within limits for Cr 267.716 Recovery = 94.39%						
Cu 324.752†	3319.1	9.9015 ug/L	0.21130	9.9015 ppb	0.21130	2.13%
QC value within limits for Cu 324.752 Recovery = 99.02%						
Fe 238.204 Radial†	13.4	116.39 ug/L	10.087	116.39 ppb	10.087	8.67%
QC value within limits for Fe 238.204 Radial Recovery = 116.39%						
K 766.490 Radial†	870.6	159.20 ug/L	1.930	159.20 ppb	1.930	1.21%
QC value within limits for K 766.490 Radial Recovery = 106.13%						
Mg 279.077 IEC†	10.3	343.29 ug/L	62.606	343.29 ppb	62.606	18.24%
QC value within limits for Mg 279.077 IEC Recovery = 114.43%						
Mn 257.610†	9459.6	10.486 ug/L	0.0739	10.486 ppb	0.0739	0.70%
QC value within limits for Mn 257.610 Recovery = 104.86%						
Mo 202.031†	132.7	9.3891 ug/L	0.12572	9.3891 ppb	0.12572	1.34%
QC value within limits for Mo 202.031 Recovery = 93.89%						
Na 589.592 Radial†	971.8	290.97 ug/L	6.150	290.97 ppb	6.150	2.11%
QC value within limits for Na 589.592 Radial Recovery = 96.99%						
Ni 231.604†	208.3	5.1829 ug/L	0.29347	5.1829 ppb	0.29347	5.66%
QC value within limits for Ni 231.604 Recovery = 103.66%						
P 214.914†	226.6	136.41 ug/L	5.672	136.41 ppb	5.672	4.16%
QC value within limits for P 214.914 Recovery = 90.94%						
Pb 220.353†	86.2	10.614 ug/L	1.3021	10.614 ppb	1.3021	12.27%
QC value within limits for Pb 220.353 Recovery = 106.14%						
S 181.975 Axial†	72.9	103.12 ug/L	4.313	103.12 ppb	4.313	4.18%
QC value within limits for S 181.975 Axial Recovery = 103.12%						
Sb 206.836†	38.7	13.595 ug/L	2.2199	13.595 ppb	2.2199	16.33%
QC value greater than the upper limit for Sb 206.836 Recovery = 135.95%						
Se 196.026†	50.2	32.770 ug/L	3.9170	32.770 ppb	3.9170	11.95%
QC value within limits for Se 196.026 Recovery = 109.23%						
Si 251.611†	3068.4	97.609 ug/L	1.0021	97.609 ppb	1.0021	1.03%
QC value within limits for Si 251.611 Recovery = 97.61%						
Sn 189.927†	54.7	9.7281 ug/L	0.82548	9.7281 ppb	0.82548	8.49%
QC value within limits for Sn 189.927 Recovery = 97.28%						
Sr 421.552†	782.1	5.0501 ug/L	0.02599	5.0501 ppb	0.02599	0.51%
QC value within limits for Sr 421.552 Recovery = 101.00%						
Ti 334.940†	3176.7	5.0884 ug/L	0.14130	5.0884 ppb	0.14130	2.78%
QC value within limits for Ti 334.940 Recovery = 101.77%						
Tl 190.801†	67.9	20.896 ug/L	1.6541	20.896 ppb	1.6541	7.92%
QC value within limits for Tl 190.801 Recovery = 104.48%						
U 409.014†	1810.1	53.375 ug/L	1.3821	53.375 ppb	1.3821	2.59%
QC value within limits for U 409.014 Recovery = 106.75%						
V 292.402†	692.5	4.9505 ug/L	0.11108	4.9505 ppb	0.11108	2.24%
QC value within limits for V 292.402 Recovery = 99.01%						
Zn 213.857†	1114.1	10.480 ug/L	0.1711	10.480 ppb	0.1711	1.63%
QC value within limits for Zn 213.857 Recovery = 104.80%						
SiO2†	3078.0	209.76 ug/L	1.971	209.76 ppb	1.971	0.94%
QC value within limits for SiO2 Recovery = 98.48%						

QC Failed. Continue with analysis.



Sequence No.: 9

Sample ID: ICSA

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 13

Date Collected: 1/11/2010 15:59:26

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICSA

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4554.2	4554.2	90.4 %		16:01:25
1	Y RADIAL	4880.1	4880.1	89.88 %		16:01:25
1	Al 396.153Radial†	588273.1	650416.6	501790 ug/L	501790 ppb	16:01:20
1	Ca 317.933Radial†	266503.8	294636.4	471450 ug/L	471450 ppb	16:01:20
1	Fe 238.204 Radial†	19366.6	21403.5	185230 ug/L	185230 ppb	16:01:25
1	K 766.490 Radial†	1955.5	-428.1	-236.05 ug/L	-236.05 ppb	16:01:20
1	Mg 279.077 IEC†	13060.3	14438.0	482210 ug/L	482210 ppb	16:01:25
1	Na 589.592 Radial†	-1089.1	76.3	22.843 ug/L	22.843 ppb	16:01:25
1	Sr 421.552†	532.5	608.3	0.4087 ug/L	0.4087 ppb	16:01:25
1	Sc 361.383	713940.1	713940.1	83.757 %		16:01:52
1	Y 371.029	590028.4	590028.4	81.646 %		16:01:52
1	Ag 328.068†	-9732.7	-11978.2	-1.5459 ug/L	-1.5459 ppb	16:01:52
1	As 188.979†	-99.1	-94.7	-4.6533 ug/L	-4.6533 ppb	16:02:12
1	B 249.677†	290.9	979.1	3.0617 ug/L	3.0617 ppb	16:01:52
1	Ba 233.527†	-441.1	-515.2	2.7787 ug/L	2.7787 ppb	16:02:12
1	Be 313.107†	-4427.5	-700.8	-0.3201 ug/L	-0.3201 ppb	16:01:52
1	Cd 226.502†	1281.6	1734.3	0.1201 ug/L	0.1201 ppb	16:02:12
1	Co 228.616†	-24.7	45.2	-1.7518 ug/L	-1.7518 ppb	16:02:12
1	Cr 267.716†	-113.7	-219.0	1.1722 ug/L	1.1722 ppb	16:02:12
1	Cu 324.752†	3876.8	-1783.6	4.4537 ug/L	4.4537 ppb	16:01:52
1	Mn 257.610†	1798.9	1702.9	2.8489 ug/L	2.8489 ppb	16:01:52
1	Mo 202.031†	-203.7	-266.9	-0.5853 ug/L	-0.5853 ppb	16:02:12
1	Ni 231.604†	186.0	154.1	3.8375 ug/L	3.8375 ppb	16:02:12
1	P 214.914†	194.2	2.0	-22.430 ug/L	-22.430 ppb	16:02:12
1	Pb 220.353†	-739.6	-819.7	-2.6514 ug/L	-2.6514 ppb	16:02:12
1	S 181.975 Axial†	83.2	56.3	-14.356 ug/L	-14.356 ppb	16:02:12
1	Sb 206.836†	78.9	66.3	7.7109 ug/L	7.7109 ppb	16:02:12
1	Se 196.026†	-829.4	-958.3	-0.6276 ug/L	-0.6276 ppb	16:02:12
1	Si 251.611†	584.3	147.1	4.9185 ug/L	4.9185 ppb	16:02:12
1	Sn 189.927†	-363.0	-441.0	-7.6066 ug/L	-7.6066 ppb	16:02:12
1	Ti 334.940†	-13311.2	-14518.2	-9.4664 ug/L	-9.4664 ppb	16:01:52
1	Tl 190.801†	-92.5	-77.6	-24.029 ug/L	-24.029 ppb	16:02:12
1	U 409.014†	-806.7	1048.4	9.8177 ug/L	9.8177 ppb	16:01:52
1	V 292.402†	1193.8	2735.1	-0.5070 ug/L	-0.5070 ppb	16:02:12
1	Zn 213.857†	2889.7	2829.8	8.7795 ug/L	8.7795 ppb	16:02:12
1	SiO2†	582.1	123.3	8.9247 ug/L	8.9247 ppb	16:03:09
2	Sc Radial	4313.1	4313.1	85.7 %		16:01:35
2	Y RADIAL	4611.6	4611.6	84.94 %		16:01:35
2	Al 396.153Radial†	593425.0	692788.0	534480 ug/L	534480 ppb	16:01:30
2	Ca 317.933Radial†	268523.4	313464.8	501570 ug/L	501570 ppb	16:01:30
2	Fe 238.204 Radial†	19406.2	22646.7	195990 ug/L	195990 ppb	16:01:35
2	K 766.490 Radial†	1950.8	-312.8	-224.98 ug/L	-224.98 ppb	16:01:30
2	Mg 279.077 IEC†	13084.6	15273.5	510110 ug/L	510110 ppb	16:01:35
2	Na 589.592 Radial†	-1067.0	34.7	10.403 ug/L	10.403 ppb	16:01:35
2	Sr 421.552†	533.6	642.4	0.4040 ug/L	0.4040 ppb	16:01:35
2	Sc 361.383	737937.7	737937.7	86.572 %		16:02:18
2	Y 371.029	608079.9	608079.9	84.144 %		16:02:18
2	Ag 328.068†	-9892.3	-11784.6	2.4125 ug/L	2.4125 ppb	16:02:18
2	As 188.979†	-78.0	-66.5	9.6873 ug/L	9.6873 ppb	16:02:38
2	B 249.677†	338.9	1023.3	2.9566 ug/L	2.9566 ppb	16:02:18
2	Ba 233.527†	-429.0	-484.2	3.4139 ug/L	3.4139 ppb	16:02:38
2	Be 313.107†	-4496.9	-609.1	-0.2857 ug/L	-0.2857 ppb	16:02:18
2	Cd 226.502†	1277.3	1679.5	-1.5978 ug/L	-1.5978 ppb	16:02:38
2	Co 228.616†	-4.6	69.3	-1.4096 ug/L	-1.4096 ppb	16:02:38
2	Cr 267.716†	-75.1	-170.0	1.9249 ug/L	1.9249 ppb	16:02:38
2	Cu 324.752†	3960.7	-1837.1	4.8577 ug/L	4.8577 ppb	16:02:18
2	Mn 257.610†	1638.0	1447.2	2.6255 ug/L	2.6255 ppb	16:02:18
2	Mo 202.031†	-196.8	-251.0	1.6332 ug/L	1.6332 ppb	16:02:38
2	Ni 231.604†	182.7	143.0	3.5611 ug/L	3.5611 ppb	16:02:38



2	P 214.914†	149.2	-57.6	-59.270 ug/L	-59.270 ppb	16:02:38
2	Pb 220.353†	-766.6	-822.2	3.5310 ug/L	3.5310 ppb	16:02:38
2	S 181.975 Axial†	77.6	46.6	-34.230 ug/L	-34.230 ppb	16:02:38
2	Sb 206.836†	81.2	65.8	6.7812 ug/L	6.7812 ppb	16:02:38
2	Se 196.026†	-833.9	-931.2	52.847 ug/L	52.847 ppb	16:02:38
2	Si 251.611†	566.0	103.3	3.5085 ug/L	3.5085 ppb	16:02:38
2	Sn 189.927†	-349.6	-411.4	2.1266 ug/L	2.1266 ppb	16:02:38
2	Ti 334.940†	-13871.4	-14648.4	-8.5522 ug/L	-8.5522 ppb	16:02:18
2	Tl 190.801†	-88.7	-69.6	-21.566 ug/L	-21.566 ppb	16:02:38
2	U 409.014†	-550.7	1375.6	18.240 ug/L	18.240 ppb	16:02:18
2	V 292.402†	1235.3	2736.6	-1.5657 ug/L	-1.5657 ppb	16:02:38
2	Zn 213.857†	2899.2	2728.7	6.7812 ug/L	6.7812 ppb	16:02:38
2	SiO2†	581.9	100.4	7.3361 ug/L	7.3361 ppb	16:03:14
3	Sc Radial	4458.8	4458.8	88.6 %		16:01:46
3	Y RADIAL	4803.8	4803.8	88.48 %		16:01:46
3	Al 396.153Radial†	578946.6	653797.4	504400 ug/L	504400 ppb	16:01:41
3	Ca 317.933Radial†	262181.2	296058.0	473720 ug/L	473720 ppb	16:01:41
3	Fe 238.204 Radial†	19015.6	21465.1	185760 ug/L	185760 ppb	16:01:46
3	K 766.490 Radial†	2134.1	-180.1	-191.31 ug/L	-191.31 ppb	16:01:41
3	Mg 279.077 IEC†	12793.9	14446.1	482470 ug/L	482470 ppb	16:01:46
3	Na 589.592 Radial†	-1160.2	-29.7	-8.9041 ug/L	-8.9041 ppb	16:01:46
3	Sr 421.552†	507.6	592.7	0.2912 ug/L	0.2912 ppb	16:01:46
3	Sc 361.383	734225.6	734225.6	86.136 %		16:02:43
3	Y 371.029	605159.6	605159.6	83.740 %		16:02:43
3	Ag 328.068†	-9811.2	-11748.3	-0.3445 ug/L	-0.3445 ppb	16:02:43
3	As 188.979†	-59.0	-44.9	17.049 ug/L	17.049 ppb	16:03:03
3	B 249.677†	274.8	950.8	2.3769 ug/L	2.3769 ppb	16:02:43
3	Ba 233.527†	-432.5	-490.7	2.9891 ug/L	2.9891 ppb	16:03:03
3	Be 313.107†	-4458.8	-591.0	-0.2778 ug/L	-0.2778 ppb	16:02:43
3	Cd 226.502†	1332.5	1751.1	0.2507 ug/L	0.2507 ppb	16:03:03
3	Co 228.616†	-17.0	54.9	-1.5635 ug/L	-1.5635 ppb	16:03:03
3	Cr 267.716†	-65.1	-158.8	1.8559 ug/L	1.8559 ppb	16:03:03
3	Cu 324.752†	4004.3	-1763.4	4.5436 ug/L	4.5436 ppb	16:02:43
3	Mn 257.610†	1713.0	1543.9	2.7211 ug/L	2.7211 ppb	16:02:43
3	Mo 202.031†	-224.2	-284.0	-1.7335 ug/L	-1.7335 ppb	16:03:03
3	Ni 231.604†	181.0	142.1	3.5382 ug/L	3.5382 ppb	16:03:03
3	P 214.914†	146.4	-59.9	-60.032 ug/L	-60.032 ppb	16:03:03
3	Pb 220.353†	-752.0	-809.7	-0.8858 ug/L	-0.8858 ppb	16:03:03
3	S 181.975 Axial†	75.4	44.5	-31.507 ug/L	-31.507 ppb	16:03:03
3	Sb 206.836†	51.1	31.4	-4.2766 ug/L	-4.2766 ppb	16:03:03
3	Se 196.026†	-823.4	-923.9	23.370 ug/L	23.370 ppb	16:03:03
3	Si 251.611†	591.3	136.0	4.5784 ug/L	4.5784 ppb	16:03:03
3	Sn 189.927†	-357.4	-422.6	-4.0082 ug/L	-4.0082 ppb	16:03:03
3	Ti 334.940†	-13567.2	-14376.3	-9.0016 ug/L	-9.0016 ppb	16:02:43
3	Tl 190.801†	-92.5	-74.5	-23.072 ug/L	-23.072 ppb	16:03:03
3	U 409.014†	-897.2	970.0	7.4415 ug/L	7.4415 ppb	16:02:43
3	V 292.402†	1185.5	2686.0	-0.9411 ug/L	-0.9411 ppb	16:03:03
3	Zn 213.857†	2915.0	2763.9	8.1058 ug/L	8.1058 ppb	16:03:03
3	SiO2†	561.2	79.9	5.9978 ug/L	5.9978 ppb	16:03:19

## Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	728701.1	85.488 %	1.5154			1.77%
Sc Radial	4442.1	88.2 %	2.41			2.73%
Y 371.029	601089.3	83.176 %	1.3408			1.61%
Y RADIAL	4765.2	87.77 %	2.548			2.90%
Ag 328.068†	-11837.0	0.1741 ug/L	2.02949	0.1741 ppb	2.02949	>999.9%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	665667.3	513550 ug/L	18166.9	513550 ppb	18166.9	3.54%
QC value within limits for Al 396.153Radial Recovery = 102.71%						
As 188.979†	-68.7	7.3611 ug/L	11.03681	7.3611 ppb	11.03681	149.93%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	984.4	2.7984 ug/L	0.36879	2.7984 ppb	0.36879	13.18%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-496.7	3.0606 ug/L	0.32361	3.0606 ppb	0.32361	10.57%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-633.6	-0.2945 ug/L	0.02251	-0.2945 ppb	0.02251	7.64%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	301386.4	482250 ug/L	16776.0	482250 ppb	16776.0	3.48%



QC value within limits for Ca 317.933 Radial	Recovery = 96.45%		
Cd 226.502†	1721.6	-0.4090 ug/L	1.03158 -0.4090 ppb 1.03158 252.21%
QC value within limits for Cd 226.502	Recovery = Not calculated		
Co 228.616†	56.5	-1.5750 ug/L	0.17142 -1.5750 ppb 0.17142 10.88%
QC value within limits for Co 228.616	Recovery = Not calculated		
Cr 267.716†	-182.6	1.6510 ug/L	0.41608 1.6510 ppb 0.41608 25.20%
QC value within limits for Cr 267.716	Recovery = Not calculated		
Cu 324.752†	-1794.7	4.6183 ug/L	0.21212 4.6183 ppb 0.21212 4.59%
QC value within limits for Cu 324.752	Recovery = Not calculated		
Fe 238.204 Radial†	21838.5	188990 ug/L	6063.4 188990 ppb 6063.4 3.21%
QC value within limits for Fe 238.204 Radial	Recovery = 94.50%		
K 766.490 Radial†	-307.0	-217.45 ug/L	23.302 -217.45 ppb 23.302 10.72%
QC value within limits for K 766.490 Radial	Recovery = Not calculated		
Mg 279.077 IEC†	14719.2	491600 ug/L	16033.9 491600 ppb 16033.9 3.26%
QC value within limits for Mg 279.077 IEC	Recovery = 98.32%		
Mn 257.610†	1564.6	2.7318 ug/L	0.11211 2.7318 ppb 0.11211 4.10%
QC value within limits for Mn 257.610	Recovery = Not calculated		
Mo 202.031†	-267.3	-0.2285 ug/L	1.71148 -0.2285 ppb 1.71148 748.88%
QC value within limits for Mo 202.031	Recovery = Not calculated		
Na 589.592 Radial†	27.1	8.1139 ug/L	15.99672 8.1139 ppb 15.99672 197.15%
QC value within limits for Na 589.592 Radial	Recovery = Not calculated		
Ni 231.604†	146.4	3.6456 ug/L	0.16660 3.6456 ppb 0.16660 4.57%
QC value within limits for Ni 231.604	Recovery = Not calculated		
P 214.914†	-38.5	-47.244 ug/L	21.4927 -47.244 ppb 21.4927 45.49%
QC value within limits for P 214.914	Recovery = Not calculated		
Pb 220.353†	-817.2	-0.0021 ug/L	3.18456 -0.0021 ppb 3.18456 >999.9%
QC value within limits for Pb 220.353	Recovery = Not calculated		
S 181.975 Axial†	49.1	-26.698 ug/L	10.7748 -26.698 ppb 10.7748 40.36%
QC value within limits for S 181.975 Axial	Recovery = Not calculated		
Sb 206.836†	54.5	3.4051 ug/L	6.66881 3.4051 ppb 6.66881 195.85%
QC value within limits for Sb 206.836	Recovery = Not calculated		
Se 196.026†	-937.8	25.196 ug/L	26.7838 25.196 ppb 26.7838 106.30%
QC value within limits for Se 196.026	Recovery = Not calculated		
Si 251.611†	128.8	4.3352 ug/L	0.73581 4.3352 ppb 0.73581 16.97%
QC value within limits for Si 251.611	Recovery = Not calculated		
Sn 189.927†	-425.0	-3.1627 ug/L	4.92134 -3.1627 ppb 4.92134 155.60%
QC value within limits for Sn 189.927	Recovery = Not calculated		
Sr 421.552†	614.5	0.3680 ug/L	0.06654 0.3680 ppb 0.06654 18.08%
QC value within limits for Sr 421.552	Recovery = Not calculated		
Ti 334.940†	-14514.3	-9.0067 ug/L	0.45711 -9.0067 ppb 0.45711 5.08%
QC value within limits for Ti 334.940	Recovery = Not calculated		
Tl 190.801†	-73.9	-22.889 ug/L	1.2413 -22.889 ppb 1.2413 5.42%
QC value within limits for Tl 190.801	Recovery = Not calculated		
U 409.014†	1131.3	11.833 ug/L	5.6743 11.833 ppb 5.6743 47.95%
QC value within limits for U 409.014	Recovery = Not calculated		
V 292.402†	2719.2	-1.0046 ug/L	0.53220 -1.0046 ppb 0.53220 52.98%
QC value within limits for V 292.402	Recovery = Not calculated		
Zn 213.857†	2774.1	7.8888 ug/L	1.01667 7.8888 ppb 1.01667 12.89%
QC value within limits for Zn 213.857	Recovery = Not calculated		
SiO2†	101.2	7.4195 ug/L	1.46525 7.4195 ppb 1.46525 19.75%
QC value within limits for SiO2	Recovery = Not calculated		

All analyte(s) passed QC.



Sequence No.: 10  
 Sample ID: ICSAB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 14  
 Date Collected: 1/11/2010 16:05:30  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: ICSAB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4469.6	4469.6	88.8 %		16:07:27
1	Y RADIAL	4809.0	4809.0	88.57 %		16:07:27
1	Al 396.153Radial†	589484.3	664101.1	512320 ug/L	512320 ppb	16:07:22
1	Ca 317.933Radial†	265752.0	299370.7	479020 ug/L	479020 ppb	16:07:22
1	Fe 238.204 Radial†	19164.5	21581.4	186780 ug/L	186780 ppb	16:07:27
1	K 766.490 Radial†	29032.3	30117.0	5349.0 ug/L	5349.0 ppb	16:07:22
1	Mg 279.077 IEC†	12958.7	14597.1	487520 ug/L	487520 ppb	16:07:27
1	Na 589.592 Radial†	15352.0	18575.7	5561.8 ug/L	5561.8 ppb	16:07:27
1	Sr 421.552†	69848.9	78709.8	504.80 ug/L	504.80 ppb	16:07:22
1	Sc 361.383	733242.9	733242.9	86.021 %		16:07:55
1	Y 371.029	603990.2	603990.2	83.578 %		16:07:55
1	Ag 328.068†	41150.7	47479.9	274.18 ug/L	274.18 ppb	16:07:55
1	As 188.979†	942.0	1118.8	522.69 ug/L	522.69 ppb	16:08:15
1	B 249.677†	20042.0	23930.7	513.29 ug/L	513.29 ppb	16:07:55
1	Ba 233.527†	54223.8	63046.9	500.15 ug/L	500.15 ppb	16:07:55
1	Be 313.107†	552945.6	647387.0	247.79 ug/L	247.79 ppb	16:07:55
1	Cd 226.502†	37791.5	44136.9	470.86 ug/L	470.86 ppb	16:07:55
1	Co 228.616†	18898.2	22043.9	448.66 ug/L	448.66 ppb	16:08:15
1	Cr 267.716†	37112.9	43060.7	485.60 ug/L	485.60 ppb	16:07:55
1	Cu 324.752†	163461.5	183612.5	558.64 ug/L	558.64 ppb	16:07:55
1	Mn 257.610†	377253.8	438114.2	486.61 ug/L	486.61 ppb	16:07:55
1	Mo 202.031†	5893.7	6827.7	501.02 ug/L	501.02 ppb	16:08:15
1	Ni 231.604†	15601.4	18068.8	449.64 ug/L	449.64 ppb	16:08:15
1	P 214.914†	3772.2	4155.3	2402.3 ug/L	2402.3 ppb	16:08:15
1	Pb 220.353†	2538.3	3014.1	469.98 ug/L	469.98 ppb	16:08:15
1	S 181.975 Axial†	1708.1	1942.6	2653.1 ug/L	2653.1 ppb	16:08:15
1	Sb 206.836†	1381.1	1577.6	543.20 ug/L	543.20 ppb	16:08:15
1	Se 196.026†	2597.7	3051.8	2590.6 ug/L	2590.6 ppb	16:08:15
1	Si 251.611†	143466.2	166229.6	5288.2 ug/L	5288.2 ppb	16:07:55
1	Sn 189.927†	2072.9	2402.1	497.21 ug/L	497.21 ppb	16:08:15
1	Ti 334.940†	261822.7	305744.6	506.54 ug/L	506.54 ppb	16:07:55
1	Tl 190.801†	1235.3	1469.0	453.76 ug/L	453.76 ppb	16:08:15
1	U 409.014†	13895.2	18164.8	513.49 ug/L	513.49 ppb	16:07:55
1	V 292.402†	64913.2	76771.6	512.44 ug/L	512.44 ppb	16:07:55
1	Zn 213.857†	48411.3	55658.1	504.70 ug/L	504.70 ppb	16:07:55
1	SiO2†	146220.1	169409.8	11546 ug/L	11546 ppb	16:09:13
2	Sc Radial	4482.5	4482.5	89.0 %		16:07:37
2	Y RADIAL	4833.9	4833.9	89.03 %		16:07:37
2	Al 396.153Radial†	596758.8	670353.8	517150 ug/L	517150 ppb	16:07:32
2	Ca 317.933Radial†	268788.3	301916.4	483100 ug/L	483100 ppb	16:07:32
2	Fe 238.204 Radial†	19305.8	21677.7	187620 ug/L	187620 ppb	16:07:37
2	K 766.490 Radial†	29387.3	30421.3	5403.4 ug/L	5403.4 ppb	16:07:32
2	Mg 279.077 IEC†	13078.8	14689.8	490620 ug/L	490620 ppb	16:07:37
2	Na 589.592 Radial†	15393.1	18571.9	5560.7 ug/L	5560.7 ppb	16:07:37
2	Sr 421.552†	70603.2	79329.8	508.78 ug/L	508.78 ppb	16:07:32
2	Sc 361.383	737995.2	737995.2	86.579 %		16:08:21
2	Y 371.029	608619.5	608619.5	84.218 %		16:08:21
2	Ag 328.068†	41527.3	47606.8	274.98 ug/L	274.98 ppb	16:08:21
2	As 188.979†	945.9	1116.1	521.71 ug/L	521.71 ppb	16:08:41
2	B 249.677†	20299.3	24077.9	516.49 ug/L	516.49 ppb	16:08:21
2	Ba 233.527†	54397.7	62841.8	498.58 ug/L	498.58 ppb	16:08:21
2	Be 313.107†	555552.7	646258.9	247.36 ug/L	247.36 ppb	16:08:21
2	Cd 226.502†	37861.3	43934.5	468.53 ug/L	468.53 ppb	16:08:21
2	Co 228.616†	18993.1	22012.0	447.99 ug/L	447.99 ppb	16:08:41
2	Cr 267.716†	37212.9	42898.3	483.80 ug/L	483.80 ppb	16:08:21
2	Cu 324.752†	164184.5	183223.9	557.53 ug/L	557.53 ppb	16:08:21
2	Mn 257.610†	377987.3	436137.4	484.39 ug/L	484.39 ppb	16:08:21
2	Mo 202.031†	5898.1	6788.7	498.37 ug/L	498.37 ppb	16:08:41
2	Ni 231.604†	15639.9	17996.4	447.84 ug/L	447.84 ppb	16:08:41



2	P 214.914†	3764.0	4117.6	2380.0 ug/L	2380.0 ppb	16:08:41
2	Pb 220.353†	2527.3	2982.4	467.12 ug/L	467.12 ppb	16:08:41
2	S 181.975 Axial†	1734.4	1960.2	2677.1 ug/L	2677.1 ppb	16:08:41
2	Sb 206.836†	1373.1	1558.1	536.24 ug/L	536.24 ppb	16:08:41
2	Se 196.026†	2597.7	3032.4	2581.0 ug/L	2581.0 ppb	16:08:41
2	Si 251.611†	144086.2	165871.8	5276.8 ug/L	5276.8 ppb	16:08:21
2	Sn 189.927†	2066.7	2379.4	493.77 ug/L	493.77 ppb	16:08:41
2	Ti 334.940†	262922.7	305055.0	505.64 ug/L	505.64 ppb	16:08:21
2	Tl 190.801†	1230.9	1454.6	449.33 ug/L	449.33 ppb	16:08:41
2	U 409.014†	13731.9	17872.2	504.76 ug/L	504.76 ppb	16:08:21
2	V 292.402†	65177.6	76591.0	511.08 ug/L	511.08 ppb	16:08:21
2	Zn 213.857†	48545.6	55450.8	502.67 ug/L	502.67 ppb	16:08:21
2	SiO2†	145974.6	168031.6	11452 ug/L	11452 ppb	16:09:18
3	Sc Radial	4634.8	4634.8	92.0 %		16:07:48
3	Y RADIAL	4938.0	4938.0	90.95 %		16:07:48
3	Al 396.153Radial†	592956.6	644189.1	496960 ug/L	496960 ppb	16:07:43
3	Ca 317.933Radial†	267381.8	290463.9	464770 ug/L	464770 ppb	16:07:43
3	Fe 238.204 Radial†	19723.7	21419.0	185380 ug/L	185380 ppb	16:07:48
3	K 766.490 Radial†	29237.8	29173.8	5180.8 ug/L	5180.8 ppb	16:07:43
3	Mg 279.077 IEC†	13294.3	14441.1	482310 ug/L	482310 ppb	16:07:48
3	Na 589.592 Radial†	15764.7	18407.2	5511.3 ug/L	5511.3 ppb	16:07:48
3	Sr 421.552†	70214.2	76300.3	489.35 ug/L	489.35 ppb	16:07:43
3	Sc 361.383	739056.4	739056.4	86.703 %		16:08:47
3	Y 371.029	609358.3	609358.3	84.321 %		16:08:47
3	Ag 328.068†	41608.9	47632.1	274.62 ug/L	274.62 ppb	16:08:47
3	As 188.979†	929.1	1095.3	512.22 ug/L	512.22 ppb	16:09:07
3	B 249.677†	20332.9	24083.0	516.83 ug/L	516.83 ppb	16:08:47
3	Ba 233.527†	54550.3	62927.6	499.17 ug/L	499.17 ppb	16:08:47
3	Be 313.107†	558331.1	648542.1	248.23 ug/L	248.23 ppb	16:08:47
3	Cd 226.502†	38038.4	44076.1	470.33 ug/L	470.33 ppb	16:08:47
3	Co 228.616†	19038.4	22032.7	448.46 ug/L	448.46 ppb	16:09:07
3	Cr 267.716†	37415.7	43070.5	485.69 ug/L	485.69 ppb	16:08:47
3	Cu 324.752†	164933.9	183816.0	559.18 ug/L	559.18 ppb	16:08:47
3	Mn 257.610†	379307.2	437032.8	485.47 ug/L	485.47 ppb	16:08:47
3	Mo 202.031†	5959.2	6849.4	502.29 ug/L	502.29 ppb	16:09:07
3	Ni 231.604†	15702.5	18042.6	448.99 ug/L	448.99 ppb	16:09:07
3	P 214.914†	3787.4	4138.4	2389.1 ug/L	2389.1 ppb	16:09:07
3	Pb 220.353†	2520.7	2970.7	461.27 ug/L	461.27 ppb	16:09:07
3	S 181.975 Axial†	1738.7	1962.3	2683.9 ug/L	2683.9 ppb	16:09:07
3	Sb 206.836†	1379.5	1563.1	538.63 ug/L	538.63 ppb	16:09:07
3	Se 196.026†	2613.4	3046.2	2581.7 ug/L	2581.7 ppb	16:09:07
3	Si 251.611†	144664.3	166299.5	5290.4 ug/L	5290.4 ppb	16:08:47
3	Sn 189.927†	2078.2	2389.2	492.86 ug/L	492.86 ppb	16:09:07
3	Ti 334.940†	263667.7	305478.3	504.93 ug/L	504.93 ppb	16:08:47
3	Tl 190.801†	1247.7	1471.8	454.64 ug/L	454.64 ppb	16:09:07
3	U 409.014†	13855.3	17991.8	508.54 ug/L	508.54 ppb	16:08:47
3	V 292.402†	65506.8	76862.6	513.19 ug/L	513.19 ppb	16:08:47
3	Zn 213.857†	48718.7	55569.9	504.00 ug/L	504.00 ppb	16:08:47
3	SiO2†	143683.8	165147.4	11255 ug/L	11255 ppb	16:09:23

## Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	736764.8	86.434 %		0.3632			0.42%
Sc Radial	4529.0	89.9 %		1.83			2.03%
Y 371.029	607322.6	84.039 %		0.4026			0.48%
Y RADIAL	4860.3	89.52 %		1.261			1.41%
Ag 328.068†	47572.9	274.59 ug/L		0.401	274.59 ppb	0.401	0.15%
QC value within limits for Ag 328.068 Recovery = 109.84%							
Al 396.153Radial†	659548.0	508810 ug/L		10541.4	508810 ppb	10541.4	2.07%
QC value within limits for Al 396.153Radial Recovery = 101.76%							
As 188.979†	1110.0	518.87 ug/L		5.780	518.87 ppb	5.780	1.11%
QC value within limits for As 188.979 Recovery = 103.77%							
B 249.677†	24030.5	515.54 ug/L		1.951	515.54 ppb	1.951	0.38%
QC value within limits for B 249.677 Recovery = 103.11%							
Ba 233.527†	62938.7	499.30 ug/L		0.795	499.30 ppb	0.795	0.16%
QC value within limits for Ba 233.527 Recovery = 99.86%							
Be 313.107†	647396.0	247.79 ug/L		0.436	247.79 ppb	0.436	0.18%
QC value within limits for Be 313.107 Recovery = 99.12%							
Ca 317.933Radial†	297250.3	475630 ug/L		9622.1	475630 ppb	9622.1	2.02%



QC value within limits for Ca 317.933 Radial Recovery = 95.13%							
Cd 226.502†	44049.2	469.91 ug/L	1.224	469.91 ppb	1.224	0.26%	
QC value within limits for Cd 226.502 Recovery = 93.98%							
Co 228.616†	22029.6	448.37 ug/L	0.343	448.37 ppb	0.343	0.08%	
QC value within limits for Co 228.616 Recovery = 89.67%							
Cr 267.716†	43009.8	485.03 ug/L	1.063	485.03 ppb	1.063	0.22%	
QC value within limits for Cr 267.716 Recovery = 97.01%							
Cu 324.752†	183550.8	558.45 ug/L	0.842	558.45 ppb	0.842	0.15%	
QC value within limits for Cu 324.752 Recovery = 111.69%							
Fe 238.204 Radial†	21559.4	186590 ug/L	1131.9	186590 ppb	1131.9	0.61%	
QC value within limits for Fe 238.204 Radial Recovery = 93.30%							
K 766.490 Radial†	29904.0	5311.1 ug/L	116.05	5311.1 ppb	116.05	2.19%	
QC value within limits for K 766.490 Radial Recovery = 106.22%							
Mg 279.077 IEC†	14576.0	486820 ug/L	4198.7	486820 ppb	4198.7	0.86%	
QC value within limits for Mg 279.077 IEC Recovery = 97.36%							
Mn 257.610†	437094.8	485.49 ug/L	1.113	485.49 ppb	1.113	0.23%	
QC value within limits for Mn 257.610 Recovery = 97.10%							
Mo 202.031†	6821.9	500.56 ug/L	2.000	500.56 ppb	2.000	0.40%	
QC value within limits for Mo 202.031 Recovery = 100.11%							
Na 589.592 Radial†	18518.3	5544.6 ug/L	28.80	5544.6 ppb	28.80	0.52%	
QC value within limits for Na 589.592 Radial Recovery = 110.89%							
Ni 231.604†	18035.9	448.83 ug/L	0.913	448.83 ppb	0.913	0.20%	
QC value within limits for Ni 231.604 Recovery = 89.77%							
P 214.914†	4137.1	2390.4 ug/L	11.21	2390.4 ppb	11.21	0.47%	
QC value within limits for P 214.914 Recovery = 95.62%							
Pb 220.353†	2989.1	466.12 ug/L	4.440	466.12 ppb	4.440	0.95%	
QC value within limits for Pb 220.353 Recovery = 93.22%							
S 181.975 Axial†	1955.1	2671.4 ug/L	16.16	2671.4 ppb	16.16	0.61%	
QC value within limits for S 181.975 Axial Recovery = 106.86%							
Sb 206.836†	1566.3	539.36 ug/L	3.534	539.36 ppb	3.534	0.66%	
QC value within limits for Sb 206.836 Recovery = 107.87%							
Se 196.026†	3043.4	2584.5 ug/L	5.36	2584.5 ppb	5.36	0.21%	
QC value within limits for Se 196.026 Recovery = 103.38%							
Si 251.611†	166133.6	5285.2 ug/L	7.28	5285.2 ppb	7.28	0.14%	
QC value within limits for Si 251.611 Recovery = 105.70%							
Sn 189.927†	2390.2	494.61 ug/L	2.289	494.61 ppb	2.289	0.46%	
QC value within limits for Sn 189.927 Recovery = 98.92%							
Sr 421.552†	78113.3	500.98 ug/L	10.265	500.98 ppb	10.265	2.05%	
QC value within limits for Sr 421.552 Recovery = 100.20%							
Ti 334.940†	305426.0	505.70 ug/L	0.808	505.70 ppb	0.808	0.16%	
QC value within limits for Ti 334.940 Recovery = 101.14%							
Tl 190.801†	1465.1	452.58 ug/L	2.842	452.58 ppb	2.842	0.63%	
QC value within limits for Tl 190.801 Recovery = 90.52%							
U 409.014†	18009.6	508.93 ug/L	4.374	508.93 ppb	4.374	0.86%	
QC value within limits for U 409.014 Recovery = 101.79%							
V 292.402†	76741.8	512.24 ug/L	1.067	512.24 ppb	1.067	0.21%	
QC value within limits for V 292.402 Recovery = 102.45%							
Zn 213.857†	55559.6	503.79 ug/L	1.031	503.79 ppb	1.031	0.20%	
QC value within limits for Zn 213.857 Recovery = 100.76%							
SiO2†	167529.6	11418 ug/L	148.4	11418 ppb	148.4	1.30%	
QC value within limits for SiO2 Recovery = 106.76%							
All analyte(s) passed QC.							



Sequence No.: 11  
 Sample ID: LR1  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 15  
 Date Collected: 1/11/2010 16:11:34  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: LR1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4437.1	4437.1	88.1 %		16:13:31
1	Y RADIAL	4779.6	4779.6	88.03 %		16:13:31
1	Al 396.153Radial†	570573.2	647502.8	499540 ug/L	499540 ppb	16:13:26
1	Ca 317.933Radial†	256964.9	291591.1	466570 ug/L	466570 ppb	16:13:26
1	Fe 238.204 Radial†	43538.9	49400.2	427520 ug/L	427520 ppb	16:13:31
1	K 766.490 Radial†	3585.3	1478.6	-161.78 ug/L	-161.78 ppb	16:13:26
1	Mg 279.077 IEC†	12496.5	14179.5	473320 ug/L	473320 ppb	16:13:31
1	Na 589.592 Radial†	1462340.2	1660784.5	497260 ug/L	497260 ppb	16:13:26
1	Sr 421.552†	705.4	820.0	1.8125 ug/L	1.8125 ppb	16:13:31
1	Sc 361.383	717381.5	717381.5	84.160 %		16:13:59
1	Y 371.029	593191.9	593191.9	82.084 %		16:13:59
1	Ag 328.068†	-22544.0	-27144.9	-4.8683 ug/L	-4.8683 ppb	16:13:59
1	As 188.979†	-182.6	-193.3	0.3508 ug/L	0.3508 ppb	16:14:19
1	B 249.677†	1714.1	2668.6	16.167 ug/L	16.167 ppb	16:13:59
1	Ba 233.527†	-1281.5	-1511.3	3.8804 ug/L	3.8804 ppb	16:14:19
1	Be 313.107†	-11195.4	-8717.1	-3.3744 ug/L	-3.3744 ppb	16:13:59
1	Cd 226.502†	3286.5	4109.1	4.3236 ug/L	4.3236 ppb	16:14:19
1	Co 228.616†	204.3	317.5	0.2605 ug/L	0.2605 ppb	16:14:19
1	Cr 267.716†	-58.9	-153.2	0.7866 ug/L	0.7866 ppb	16:14:19
1	Cu 324.752†	1322.8	-4840.4	-0.0414 ug/L	-0.0414 ppb	16:13:59
1	Mn 257.610†	-18590.9	-22534.8	3.3888 ug/L	3.3888 ppb	16:13:59
1	Mo 202.031†	-460.9	-571.3	-5.5879 ug/L	-5.5879 ppb	16:14:19
1	Ni 231.604†	239.7	216.9	5.3963 ug/L	5.3963 ppb	16:14:19
1	P 214.914†	545.7	418.6	38.508 ug/L	38.508 ppb	16:14:19
1	Pb 220.353†	-536.8	-574.5	3.6095 ug/L	3.6095 ppb	16:14:19
1	S 181.975 Axial†	110.4	88.2	31.183 ug/L	31.183 ppb	16:14:19
1	Sb 206.836†	59.5	42.8	-0.8075 ug/L	-0.8075 ppb	16:14:19
1	Se 196.026†	-1922.8	-2252.6	-61.956 ug/L	-61.956 ppb	16:14:19
1	Si 251.611†	-256.1	-854.8	-26.726 ug/L	-26.726 ppb	16:14:19
1	Sn 189.927†	-404.2	-488.0	-12.538 ug/L	-12.538 ppb	16:14:19
1	Ti 334.940†	-13335.9	-14471.3	-15.725 ug/L	-15.725 ppb	16:13:59
1	Tl 190.801†	-102.1	-88.5	-27.535 ug/L	-27.535 ppb	16:14:19
1	U 409.014†	420670.5	501855.4	14756 ug/L	14756 ppb	16:13:59
1	V 292.402†	3161.2	5065.9	6.1761 ug/L	6.1761 ppb	16:14:19
1	Zn 213.857†	5617.3	6054.3	15.776 ug/L	15.776 ppb	16:14:19
1	SiO2†	-255.6	-875.3	-58.627 ug/L	-58.627 ppb	16:15:16
2	Sc Radial	4444.7	4444.7	88.3 %		16:13:42
2	Y RADIAL	4767.1	4767.1	87.80 %		16:13:42
2	Al 396.153Radial†	570446.8	646252.1	498580 ug/L	498580 ppb	16:13:37
2	Ca 317.933Radial†	257026.3	291161.8	465890 ug/L	465890 ppb	16:13:37
2	Fe 238.204 Radial†	43407.6	49166.9	425500 ug/L	425500 ppb	16:13:42
2	K 766.490 Radial†	3497.9	1372.5	-179.48 ug/L	-179.48 ppb	16:13:37
2	Mg 279.077 IEC†	12459.3	14113.1	471100 ug/L	471100 ppb	16:13:42
2	Na 589.592 Radial†	1456824.9	1651697.6	494540 ug/L	494540 ppb	16:13:37
2	Sr 421.552†	676.9	786.3	1.6000 ug/L	1.6000 ppb	16:13:42
2	Sc 361.383	714481.0	714481.0	83.820 %		16:14:25
2	Y 371.029	589648.5	589648.5	81.593 %		16:14:25
2	Ag 328.068†	-22728.5	-27473.7	-7.0546 ug/L	-7.0546 ppb	16:14:25
2	As 188.979†	-198.6	-213.3	-8.7227 ug/L	-8.7227 ppb	16:14:45
2	B 249.677†	1700.9	2661.1	16.205 ug/L	16.205 ppb	16:14:25
2	Ba 233.527†	-1334.4	-1580.5	3.2659 ug/L	3.2659 ppb	16:14:45
2	Be 313.107†	-11238.0	-8821.9	-3.4141 ug/L	-3.4141 ppb	16:14:25
2	Cd 226.502†	3283.9	4121.8	4.6798 ug/L	4.6798 ppb	16:14:45
2	Co 228.616†	210.5	325.8	0.4624 ug/L	0.4624 ppb	16:14:45
2	Cr 267.716†	13.0	-67.7	1.6900 ug/L	1.6900 ppb	16:14:45
2	Cu 324.752†	1337.1	-4817.0	-0.0968 ug/L	-0.0968 ppb	16:14:25
2	Mn 257.610†	-18508.4	-22525.9	3.2638 ug/L	3.2638 ppb	16:14:25
2	Mo 202.031†	-444.3	-553.8	-4.4944 ug/L	-4.4944 ppb	16:14:45
2	Ni 231.604†	242.8	221.7	5.5161 ug/L	5.5161 ppb	16:14:45



2	P 214.914†	534.8	408.1	33.511 ug/L	33.511 ppb	16:14:45
2	Pb 220.353†	-534.5	-574.3	3.6051 ug/L	3.6051 ppb	16:14:45
2	S 181.975 Axial†	118.3	98.1	45.374 ug/L	45.374 ppb	16:14:45
2	Sb 206.836†	36.9	16.1	-9.8346 ug/L	-9.8346 ppb	16:14:45
2	Se 196.026†	-1916.7	-2254.7	-69.767 ug/L	-69.767 ppb	16:14:45
2	Si 251.611†	-296.1	-903.7	-28.300 ug/L	-28.300 ppb	16:14:45
2	Sn 189.927†	-389.6	-472.5	-9.9307 ug/L	-9.9307 ppb	16:14:45
2	Ti 334.940†	-13239.2	-14420.3	-15.554 ug/L	-15.554 ppb	16:14:25
2	Tl 190.801†	-90.9	-75.6	-23.594 ug/L	-23.594 ppb	16:14:45
2	U 409.014†	419923.4	502993.3	14790 ug/L	14790 ppb	16:14:25
2	V 292.402†	3152.1	5070.3	6.5539 ug/L	6.5539 ppb	16:14:45
2	Zn 213.857†	5598.1	6058.5	16.011 ug/L	16.011 ppb	16:14:45
2	SiO2†	-335.2	-971.6	-65.230 ug/L	-65.230 ppb	16:15:21
3	Sc Radial	4407.6	4407.6	87.5 %		16:13:52
3	Y RADIAL	4705.1	4705.1	86.66 %		16:13:52
3	Al 396.153Radial†	570884.8	652181.5	503150 ug/L	503150 ppb	16:13:47
3	Ca 317.933Radial†	256834.6	293388.9	469450 ug/L	469450 ppb	16:13:47
3	Fe 238.204 Radial†	43209.0	49353.2	427110 ug/L	427110 ppb	16:13:52
3	K 766.490 Radial†	3501.2	1409.6	-176.86 ug/L	-176.86 ppb	16:13:47
3	Mg 279.077 IEC†	12409.5	14174.7	473160 ug/L	473160 ppb	16:13:52
3	Na 589.592 Radial†	1460322.3	1669557.9	499890 ug/L	499890 ppb	16:13:47
3	Sr 421.552†	734.4	858.5	2.0393 ug/L	2.0393 ppb	16:13:52
3	Sc 361.383	723948.7	723948.7	84.931 %		16:14:51
3	Y 371.029	598389.1	598389.1	82.803 %		16:14:51
3	Ag 328.068†	-22796.8	-27199.6	-5.3293 ug/L	-5.3293 ppb	16:14:51
3	As 188.979†	-194.3	-205.2	-4.8896 ug/L	-4.8896 ppb	16:15:11
3	B 249.677†	1601.8	2517.9	12.848 ug/L	12.848 ppb	16:14:51
3	Ba 233.527†	-1246.6	-1456.4	4.2918 ug/L	4.2918 ppb	16:15:11
3	Be 313.107†	-11266.6	-8680.3	-3.3605 ug/L	-3.3605 ppb	16:14:51
3	Cd 226.502†	3248.9	4029.4	3.4892 ug/L	3.4892 ppb	16:15:11
3	Co 228.616†	215.4	328.3	0.4945 ug/L	0.4945 ppb	16:15:11
3	Cr 267.716†	-24.2	-111.8	1.2233 ug/L	1.2233 ppb	16:15:11
3	Cu 324.752†	1265.0	-4922.7	-0.3325 ug/L	-0.3325 ppb	16:14:51
3	Mn 257.610†	-19046.2	-22870.4	2.9777 ug/L	2.9777 ppb	16:14:51
3	Mo 202.031†	-438.9	-540.5	-3.3985 ug/L	-3.3985 ppb	16:15:11
3	Ni 231.604†	244.9	220.4	5.4827 ug/L	5.4827 ppb	16:15:11
3	P 214.914†	544.0	410.7	35.003 ug/L	35.003 ppb	16:15:11
3	Pb 220.353†	-504.4	-530.5	9.8610 ug/L	9.8610 ppb	16:15:11
3	S 181.975 Axial†	96.5	70.6	5.6681 ug/L	5.6681 ppb	16:15:11
3	Sb 206.836†	56.2	38.2	-2.3405 ug/L	-2.3405 ppb	16:15:11
3	Se 196.026†	-1905.6	-2211.7	-36.677 ug/L	-36.677 ppb	16:15:11
3	Si 251.611†	-249.7	-844.5	-26.425 ug/L	-26.425 ppb	16:15:11
3	Sn 189.927†	-384.9	-460.9	-7.3345 ug/L	-7.3345 ppb	16:15:11
3	Ti 334.940†	-13496.1	-14516.1	-15.477 ug/L	-15.477 ppb	16:14:51
3	Tl 190.801†	-114.1	-101.5	-31.527 ug/L	-31.527 ppb	16:15:11
3	U 409.014†	425739.2	503289.2	14798 ug/L	14798 ppb	16:14:51
3	V 292.402†	3062.1	4915.1	5.3194 ug/L	5.3194 ppb	16:15:11
3	Zn 213.857†	5542.5	5905.6	14.409 ug/L	14.409 ppb	16:15:11
3	SiO2†	-361.9	-997.7	-67.037 ug/L	-67.037 ppb	16:15:26

## Mean Data: LR1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	718603.7	84.304 %	0.5691			0.68%
Sc Radial	4429.8	88.0 %	0.39			0.44%
Y 371.029	593743.2	82.160 %	0.6083			0.74%
Y RADIAL	4750.6	87.50 %	0.735			0.84%
Ag 328.068†	-27272.7	-5.7507 ug/L	1.15246	-5.7507 ppb	1.15246	20.04%
Al 396.153Radial†	648645.5	500420 ug/L	2411.2	500420 ppb	2411.2	0.48%
QC value within limits for Al 396.153Radial Recovery = 100.08%						
As 188.979†	-203.9	-4.4205 ug/L	4.55488	-4.4205 ppb	4.55488	103.04%
B 249.677†	2615.9	15.073 ug/L	1.9270	15.073 ppb	1.9270	12.78%
Ba 233.527†	-1516.1	3.8127 ug/L	0.51630	3.8127 ppb	0.51630	13.54%
Be 313.107†	-8739.8	-3.3830 ug/L	0.02783	-3.3830 ppb	0.02783	0.82%
Ca 317.933Radial†	292047.3	467300 ug/L	1890.6	467300 ppb	1890.6	0.40%
QC value within limits for Ca 317.933Radial Recovery = 93.46%						
Cd 226.502†	4086.8	4.1642 ug/L	0.61107	4.1642 ppb	0.61107	14.67%
Co 228.616†	323.9	0.4058 ug/L	0.12683	0.4058 ppb	0.12683	31.26%
Cr 267.716†	-110.9	1.2333 ug/L	0.45181	1.2333 ppb	0.45181	36.63%
Cu 324.752†	-4860.0	-0.1569 ug/L	0.15457	-0.1569 ppb	0.15457	98.52%



Fe 238.204 Radial†	49306.8	426710 ug/L	1067.6	426710 ppb	1067.6	0.25%
QC value less than the lower limit for Fe 238.204 Radial Recovery = 85.34%						
K 766.490 Radial†	1420.2	-172.71 ug/L	9.554	-172.71 ppb	9.554	5.53%
Mg 279.077 IEC†	14155.8	472520 ug/L	1236.3	472520 ppb	1236.3	0.26%
QC value within limits for Mg 279.077 IEC Recovery = 94.50%						
Mn 257.610†	-22643.7	3.2101 ug/L	0.21071	3.2101 ppb	0.21071	6.56%
Mo 202.031†	-555.2	-4.4936 ug/L	1.09466	-4.4936 ppb	1.09466	24.36%
Na 589.592 Radial†	1660680.0	497230 ug/L	2673.9	497230 ppb	2673.9	0.54%
QC value within limits for Na 589.592 Radial Recovery = 99.45%						
Ni 231.604†	219.6	5.4650 ug/L	0.06185	5.4650 ppb	0.06185	1.13%
P 214.914†	412.5	35.674 ug/L	2.5652	35.674 ppb	2.5652	7.19%
Pb 220.353†	-559.8	5.6918 ug/L	3.61057	5.6918 ppb	3.61057	63.43%
S 181.975 Axial†	85.6	27.408 ug/L	20.1201	27.408 ppb	20.1201	73.41%
Sb 206.836†	32.4	-4.3275 ug/L	4.83044	-4.3275 ppb	4.83044	111.62%
Se 196.026†	-2239.7	-56.133 ug/L	17.2963	-56.133 ppb	17.2963	30.81%
Si 251.611†	-867.7	-27.150 ug/L	1.0073	-27.150 ppb	1.0073	3.71%
Sn 189.927†	-473.8	-9.9342 ug/L	2.60154	-9.9342 ppb	2.60154	26.19%
Sr 421.552†	821.6	1.8172 ug/L	0.21969	1.8172 ppb	0.21969	12.09%
Ti 334.940†	-14469.2	-15.585 ug/L	0.1267	-15.585 ppb	0.1267	0.81%
Tl 190.801†	-88.5	-27.552 ug/L	3.9664	-27.552 ppb	3.9664	14.40%
U 409.014†	502712.6	14781 ug/L	22.4	14781 ppb	22.4	0.15%
QC value within limits for U 409.014 Recovery = 98.54%						
V 292.402†	5017.1	6.0165 ug/L	0.63254	6.0165 ppb	0.63254	10.51%
Zn 213.857†	6006.1	15.399 ug/L	0.8650	15.399 ppb	0.8650	5.62%
SiO2†	-948.2	-63.631 ug/L	4.4273	-63.631 ppb	4.4273	6.96%

QC Failed. Continue with analysis.



Sequence No.: 12

Sample ID: LR2

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 16

Date Collected: 1/11/2010 16:17:37

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: LR2

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4991.9	4991.9	99.1 %		16:19:35
1	Y RADIAL	5291.5	5291.5	97.46 %		16:19:35
1	Al 396.153Radial†	559.9	565.4	-47.303 ug/L	-47.303 ppb	16:19:35
1	Ca 317.933Radial†	23.2	3.6	5.7610 ug/L	5.7610 ppb	16:19:55
1	Fe 238.204 Radial†	-23.5	-32.6	2.9771 ug/L	2.9771 ppb	16:19:55
1	K 766.490 Radial†	1585008.6	1596183.6	292480 ug/L	292480 ppb	16:19:30
1	Mg 279.077 IEC†	-3.6	-5.5	-79.004 ug/L	-79.004 ppb	16:19:55
1	Na 589.592 Radial†	-332.2	945.4	283.07 ug/L	283.07 ppb	16:19:35
1	Sr 421.552†	1498984.9	1512022.4	9766.0 ug/L	9766.0 ppb	16:19:30
1	Sc 361.383	804787.1	804787.1	94.414 %		16:21:12
1	Y 371.029	663375.9	663375.9	91.795 %		16:21:12
1	Ag 328.068†	-8134.3	-8973.6	-3.5960 ug/L	-3.5960 ppb	16:21:17
1	As 188.979†	22123.2	23455.6	10186 ug/L	10186 ppb	16:21:17
1	B 249.677†	211371.7	224508.2	4977.9 ug/L	4977.9 ppb	16:21:12
1	Ba 233.527†	1722642.5	1824564.7	14266 ug/L	14266 ppb	16:21:12
1	Be 313.107†	7247660.3	7681014.3	2949.2 ug/L	2949.2 ppb	16:21:06
1	Cd 226.502†	828330.1	877537.9	9743.8 ug/L	9743.8 ppb	16:21:12
1	Co 228.616†	438981.9	465026.6	9517.6 ug/L	9517.6 ppb	16:21:17
1	Cr 267.716†	2044395.3	2165257.6	24218 ug/L	24218 ppb	16:21:12
1	Cu 324.752†	6362228.7	6732203.4	20131 ug/L	20131 ppb	16:21:06
1	Mn 257.610†	8086158.8	8564087.8	9494.2 ug/L	9494.2 ppb	16:21:06
1	Mo 202.031†	133209.9	141066.8	9969.9 ug/L	9969.9 ppb	16:21:17
1	Ni 231.604†	368642.8	390383.6	9714.9 ug/L	9714.9 ppb	16:21:17
1	P 214.914†	30105.1	31656.2	15065 ug/L	15065 ppb	16:21:17
1	Pb 220.353†	189546.2	200823.0	24605 ug/L	24605 ppb	16:21:17
1	S 181.975 Axial†	35159.1	37196.1	52639 ug/L	52639 ppb	16:21:17
1	Sb 206.836†	29097.2	30790.6	10918 ug/L	10918 ppb	16:21:17
1	Se 196.026†	15056.3	15979.1	10327 ug/L	10327 ppb	16:21:17
1	Si 251.611†	1437742.2	1522247.9	48358 ug/L	48358 ppb	16:21:12
1	Sn 189.927†	56894.3	60252.5	10675 ug/L	10675 ppb	16:21:17
1	Ti 334.940†	5821832.8	6167624.7	9928.0 ug/L	9928.0 ppb	16:21:06
1	Tl 190.801†	30033.0	31842.5	9829.6 ug/L	9829.6 ppb	16:21:17
1	U 409.014†	-809.1	1154.7	-20.062 ug/L	-20.062 ppb	16:21:17
1	V 292.402†	1394534.0	1478343.7	10220 ug/L	10220 ppb	16:21:12
1	Zn 213.857†	1422944.5	1506505.1	14160 ug/L	14160 ppb	16:21:12
1	SiO2†	1433580.2	1517818.5	103290 ug/L	103290 ppb	16:22:03
2	Sc Radial	4952.1	4952.1	98.3 %		16:20:06
2	Y RADIAL	5240.7	5240.7	96.52 %		16:20:06
2	Al 396.153Radial†	559.5	569.6	-39.470 ug/L	-39.470 ppb	16:20:06
2	Ca 317.933Radial†	29.7	10.4	16.707 ug/L	16.707 ppb	16:20:26
2	Fe 238.204 Radial†	-20.8	-30.1	22.078 ug/L	22.078 ppb	16:20:26
2	K 766.490 Radial†	1571896.7	1595728.8	292400 ug/L	292400 ppb	16:20:01
2	Mg 279.077 IEC†	-5.7	-7.7	-154.53 ug/L	-154.53 ppb	16:20:26
2	Na 589.592 Radial†	-419.6	853.8	255.63 ug/L	255.63 ppb	16:20:06
2	Sr 421.552†	1477909.3	1502771.2	9706.3 ug/L	9706.3 ppb	16:20:01
2	Sc 361.383	809144.9	809144.9	94.926 %		16:21:32
2	Y 371.029	667135.6	667135.6	92.316 %		16:21:32
2	Ag 328.068†	-8079.8	-8869.7	-3.1377 ug/L	-3.1377 ppb	16:21:37
2	As 188.979†	22074.5	23278.1	10109 ug/L	10109 ppb	16:21:37
2	B 249.677†	212628.4	224626.4	4980.8 ug/L	4980.8 ppb	16:21:32
2	Ba 233.527†	1730278.2	1822782.3	14252 ug/L	14252 ppb	16:21:32
2	Be 313.107†	7131078.4	7516858.6	2886.2 ug/L	2886.2 ppb	16:21:26
2	Cd 226.502†	830186.7	874768.8	9713.0 ug/L	9713.0 ppb	16:21:32
2	Co 228.616†	437441.8	460900.1	9433.4 ug/L	9433.4 ppb	16:21:37
2	Cr 267.716†	2051622.2	2161209.3	24173 ug/L	24173 ppb	16:21:32
2	Cu 324.752†	6253182.6	6581036.8	19679 ug/L	19679 ppb	16:21:26
2	Mn 257.610†	7968353.2	8393859.9	9305.5 ug/L	9305.5 ppb	16:21:26
2	Mo 202.031†	132663.8	139731.7	9875.5 ug/L	9875.5 ppb	16:21:37
2	Ni 231.604†	366974.4	386523.2	9618.8 ug/L	9618.8 ppb	16:21:37



2	P 214.914†	29796.6	31159.5	14858 ug/L	14858 ppb	16:21:37
2	Pb 220.353†	188596.1	198740.9	24350 ug/L	24350 ppb	16:21:37
2	S 181.975 Axial†	34924.4	36748.3	52005 ug/L	52005 ppb	16:21:37
2	Sb 206.836†	28910.9	30428.4	10791 ug/L	10791 ppb	16:21:37
2	Se 196.026†	14969.6	15801.8	10213 ug/L	10213 ppb	16:21:37
2	Si 251.611†	1445521.3	1522241.7	48359 ug/L	48359 ppb	16:21:32
2	Sn 189.927†	56563.6	59579.6	10555 ug/L	10555 ppb	16:21:37
2	Ti 334.940†	5736371.6	6044386.2	9729.5 ug/L	9729.5 ppb	16:21:26
2	Tl 190.801†	29934.8	31567.9	9743.4 ug/L	9743.4 ppb	16:21:37
2	U 409.014†	-856.1	1109.8	-21.289 ug/L	-21.289 ppb	16:21:37
2	V 292.402†	1401052.3	1477255.8	10212 ug/L	10212 ppb	16:21:32
2	Zn 213.857†	1427087.7	1502753.0	14125 ug/L	14125 ppb	16:21:32
2	SiO2†	1423108.9	1498610.0	101980 ug/L	101980 ppb	16:22:09
3	Sc Radial	5028.1	5028.1	99.9 %		16:20:36
3	Y RADIAL	5309.4	5309.4	97.79 %		16:20:36
3	Al 396.153Radial†	563.8	565.3	-41.381 ug/L	-41.381 ppb	16:20:36
3	Ca 317.933Radial†	25.5	5.8	9.2464 ug/L	9.2464 ppb	16:20:56
3	Fe 238.204 Radial†	-19.9	-28.8	32.277 ug/L	32.277 ppb	16:20:56
3	K 766.490 Radial†	1561237.2	1560882.2	286010 ug/L	286010 ppb	16:20:31
3	Mg 279.077 IEC†	-6.7	-8.7	-186.07 ug/L	-186.07 ppb	16:20:56
3	Na 589.592 Radial†	-439.1	840.7	251.71 ug/L	251.71 ppb	16:20:36
3	Sr 421.552†	1470891.5	1473016.8	9514.1 ug/L	9514.1 ppb	16:20:31
3	Sc 361.383	806505.5	806505.5	94.616 %		16:21:52
3	Y 371.029	665096.9	665096.9	92.034 %		16:21:52
3	Ag 328.068†	-8025.0	-8839.6	-2.9981 ug/L	-2.9981 ppb	16:21:57
3	As 188.979†	21983.3	23257.8	10101 ug/L	10101 ppb	16:21:57
3	B 249.677†	211338.3	223995.9	4966.8 ug/L	4966.8 ppb	16:21:52
3	Ba 233.527†	1725269.5	1823453.8	14257 ug/L	14257 ppb	16:21:52
3	Be 313.107†	7253487.4	7670817.6	2945.4 ug/L	2945.4 ppb	16:21:45
3	Cd 226.502†	827943.0	875259.5	9718.4 ug/L	9718.4 ppb	16:21:52
3	Co 228.616†	435486.3	460341.5	9421.4 ug/L	9421.4 ppb	16:21:57
3	Cr 267.716†	2045813.6	2162143.1	24183 ug/L	24183 ppb	16:21:52
3	Cu 324.752†	6387520.1	6744576.6	20168 ug/L	20168 ppb	16:21:45
3	Mn 257.610†	8097220.6	8557531.4	9486.9 ug/L	9486.9 ppb	16:21:45
3	Mo 202.031†	131837.6	139315.9	9846.1 ug/L	9846.1 ppb	16:21:57
3	Ni 231.604†	364839.7	385532.2	9594.1 ug/L	9594.1 ppb	16:21:57
3	P 214.914†	29558.0	31010.1	14660 ug/L	14660 ppb	16:21:57
3	Pb 220.353†	187687.5	198430.8	24312 ug/L	24312 ppb	16:21:57
3	S 181.975 Axial†	34653.1	36582.0	51770 ug/L	51770 ppb	16:21:57
3	Sb 206.836†	28792.3	30402.7	10781 ug/L	10781 ppb	16:21:57
3	Se 196.026†	14875.5	15754.0	10182 ug/L	10182 ppb	16:21:57
3	Si 251.611†	1439625.9	1520994.4	48320 ug/L	48320 ppb	16:21:52
3	Sn 189.927†	56292.5	59488.0	10539 ug/L	10539 ppb	16:21:57
3	Ti 334.940†	5842211.5	6176025.1	9941.6 ug/L	9941.6 ppb	16:21:45
3	Tl 190.801†	29753.9	31479.9	9718.8 ug/L	9718.8 ppb	16:21:57
3	U 409.014†	-809.0	1156.5	-19.934 ug/L	-19.934 ppb	16:21:57
3	V 292.402†	1396430.5	1477201.2	10211 ug/L	10211 ppb	16:21:52
3	Zn 213.857†	1423384.7	1503759.2	14134 ug/L	14134 ppb	16:21:52
3	SiO2†	1392777.2	1471458.7	100130 ug/L	100130 ppb	16:22:15

## Mean Data: LR2

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	806812.5	94.652 %	0.2575			0.27%
Sc Radial	4990.7	99.1 %	0.76			0.76%
Y 371.029	665202.8	92.048 %	0.2604			0.28%
Y RADIAL	5280.5	97.26 %	0.656			0.67%
Ag 328.068†	-8894.3	-3.2439 ug/L	0.31278	-3.2439 ppb	0.31278	9.64%
Al 396.153Radial†	566.8	-42.718 ug/L	4.0836	-42.718 ppb	4.0836	9.56%
As 188.979†	23330.5	10132 ug/L	47.2	10132 ppb	47.2	0.47%
QC value within limits for As 188.979 Recovery = 101.32%						
B 249.677†	224376.8	4975.2 ug/L	7.41	4975.2 ppb	7.41	0.15%
QC value within limits for B 249.677 Recovery = 99.50%						
Ba 233.527†	1823600.3	14258 ug/L	7.0	14258 ppb	7.0	0.05%
QC value within limits for Ba 233.527 Recovery = 95.06%						
Be 313.107†	7622896.8	2927.0 ug/L	35.31	2927.0 ppb	35.31	1.21%
QC value within limits for Be 313.107 Recovery = 97.57%						
Ca 317.933Radial†	6.6	10.572 ug/L	5.5922	10.572 ppb	5.5922	52.90%
Cd 226.502†	875855.4	9725.0 ug/L	16.44	9725.0 ppb	16.44	0.17%
QC value within limits for Cd 226.502 Recovery = 97.25%						



Co 228.616†	462089.4	9457.5 ug/L	52.44	9457.5 ppb	52.44	0.55%
QC value within limits for Co 228.616 Recovery = 94.57%						
Cr 267.716†	2162870.0	24191 ug/L	23.7	24191 ppb	23.7	0.10%
QC value within limits for Cr 267.716 Recovery = 96.77%						
Cu 324.752†	6685938.9	19993 ug/L	272.3	19993 ppb	272.3	1.36%
QC value within limits for Cu 324.752 Recovery = 99.96%						
Fe 238.204 Radial†	-30.5	19.111 ug/L	14.8738	19.111 ppb	14.8738	77.83%
K 766.490 Radial†	1584264.9	290300 ug/L	3713.4	290300 ppb	3713.4	1.28%
QC value within limits for K 766.490 Radial Recovery = 96.77%						
Mg 279.077 IEC†	-7.3	-139.87 ug/L	55.018	-139.87 ppb	55.018	39.34%
Mn 257.610†	8505159.7	9428.9 ug/L	106.92	9428.9 ppb	106.92	1.13%
QC value within limits for Mn 257.610 Recovery = 94.29%						
Mo 202.031†	140038.1	9897.2 ug/L	64.65	9897.2 ppb	64.65	0.65%
QC value within limits for Mo 202.031 Recovery = 98.97%						
Na 589.592 Radial†	880.0	263.47 ug/L	17.085	263.47 ppb	17.085	6.48%
Ni 231.604†	387479.7	9642.6 ug/L	63.79	9642.6 ppb	63.79	0.66%
QC value within limits for Ni 231.604 Recovery = 96.43%						
P 214.914†	31275.3	14861 ug/L	202.2	14861 ppb	202.2	1.36%
QC value within limits for P 214.914 Recovery = 99.07%						
Pb 220.353†	199331.6	24422 ug/L	159.4	24422 ppb	159.4	0.65%
QC value within limits for Pb 220.353 Recovery = 97.69%						
S 181.975 Axial†	36842.1	52138 ug/L	449.5	52138 ppb	449.5	0.86%
QC value within limits for S 181.975 Axial Recovery = 104.28%						
Sb 206.836†	30540.6	10830 ug/L	76.7	10830 ppb	76.7	0.71%
QC value within limits for Sb 206.836 Recovery = 108.30%						
Se 196.026†	15844.9	10241 ug/L	76.6	10241 ppb	76.6	0.75%
QC value within limits for Se 196.026 Recovery = 102.41%						
Si 251.611†	1521828.0	48346 ug/L	22.5	48346 ppb	22.5	0.05%
QC value within limits for Si 251.611 Recovery = 96.69%						
Sn 189.927†	59773.4	10590 ug/L	74.0	10590 ppb	74.0	0.70%
QC value within limits for Sn 189.927 Recovery = 105.90%						
Sr 421.552†	1495936.8	9662.1 ug/L	131.64	9662.1 ppb	131.64	1.36%
QC value within limits for Sr 421.552 Recovery = 96.62%						
Ti 334.940†	6129345.3	9866.4 ug/L	118.73	9866.4 ppb	118.73	1.20%
QC value within limits for Ti 334.940 Recovery = 98.66%						
Tl 190.801†	31630.1	9764.0 ug/L	58.21	9764.0 ppb	58.21	0.60%
QC value within limits for Tl 190.801 Recovery = 97.64%						
U 409.014†	1140.3	-20.429 ug/L	0.7484	-20.429 ppb	0.7484	3.66%
V 292.402†	1477600.2	10214 ug/L	5.3	10214 ppb	5.3	0.05%
QC value within limits for V 292.402 Recovery = 102.14%						
Zn 213.857†	1504339.1	14140 ug/L	17.8	14140 ppb	17.8	0.13%
QC value within limits for Zn 213.857 Recovery = 94.27%						
SiO2†	1495962.4	101800 ug/L	1587.7	101800 ppb	1587.7	1.56%
QC value within limits for SiO2 Recovery = 95.14%						
All analyte(s) passed QC.						



Sequence No.: 13  
 Sample ID: CCV  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 7  
 Date Collected: 1/11/2010 16:24:25  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4845.6	4845.6	96.2 %		16:26:17
1	Y RADIAL	5193.6	5193.6	95.66 %		16:26:17
1	Al 396.153Radial†	6165.4	6407.5	4918.6 ug/L	4918.6 ppb	16:26:17
1	Ca 317.933Radial†	3100.6	3202.2	5123.9 ug/L	5123.9 ppb	16:26:37
1	Fe 238.204 Radial†	590.6	604.9	5249.7 ug/L	5249.7 ppb	16:26:37
1	K 766.490 Radial†	30409.6	29010.2	5301.3 ug/L	5301.3 ppb	16:26:17
1	Mg 279.077 IEC†	154.9	159.1	5315.7 ug/L	5315.7 ppb	16:26:37
1	Na 589.592 Radial†	32452.7	35003.8	10481 ug/L	10481 ppb	16:26:17
1	Sr 421.552†	74696.1	77640.3	501.43 ug/L	501.43 ppb	16:26:17
1	Sc 361.383	847993.6	847993.6	99.483 %		16:27:34
1	Y 371.029	707266.0	707266.0	97.869 %		16:27:34
1	Ag 328.068†	110454.8	110670.5	512.81 ug/L	512.81 ppb	16:27:39
1	As 188.979†	1203.5	1233.4	536.61 ug/L	536.61 ppb	16:27:59
1	B 249.677†	22887.1	23637.9	524.99 ug/L	524.99 ppb	16:27:39
1	Ba 233.527†	64157.9	64502.5	504.85 ug/L	504.85 ppb	16:27:39
1	Be 313.107†	1328475.5	1339960.8	511.70 ug/L	511.70 ppb	16:27:34
1	Cd 226.502†	45264.0	45703.2	507.02 ug/L	507.02 ppb	16:27:39
1	Co 228.616†	24528.7	24730.8	506.32 ug/L	506.32 ppb	16:27:39
1	Cr 267.716†	45211.9	45363.5	507.79 ug/L	507.79 ppb	16:27:39
1	Cu 324.752†	172347.3	166830.3	498.86 ug/L	498.86 ppb	16:27:39
1	Mn 257.610†	456024.6	457948.2	508.05 ug/L	508.05 ppb	16:27:34
1	Mo 202.031†	7195.0	7208.7	509.89 ug/L	509.89 ppb	16:27:59
1	Ni 231.604†	20385.6	20423.5	508.24 ug/L	508.24 ppb	16:27:39
1	P 214.914†	4304.6	4097.1	2398.2 ug/L	2398.2 ppb	16:27:59
1	Pb 220.353†	4045.2	4129.6	507.32 ug/L	507.32 ppb	16:27:59
1	S 181.975 Axial†	762.6	723.6	1023.1 ug/L	1023.1 ppb	16:27:59
1	Sb 206.836†	1541.9	1521.9	539.64 ug/L	539.64 ppb	16:27:59
1	Se 196.026†	743.6	779.5	520.86 ug/L	520.86 ppb	16:27:59
1	Si 251.611†	80888.8	80758.5	2565.8 ug/L	2565.8 ppb	16:27:39
1	Sn 189.927†	2878.7	2886.0	512.12 ug/L	512.12 ppb	16:27:59
1	Ti 334.940†	306785.6	309753.5	498.79 ug/L	498.79 ppb	16:27:39
1	Tl 190.801†	1616.3	1657.5	511.60 ug/L	511.60 ppb	16:27:59
1	U 409.014†	15342.7	17434.0	512.57 ug/L	512.57 ppb	16:27:39
1	V 292.402†	72166.7	73851.2	511.26 ug/L	511.26 ppb	16:27:39
1	Zn 213.857†	54020.2	53680.6	503.30 ug/L	503.30 ppb	16:27:39
1	SiO2†	80682.3	80529.6	5480.8 ug/L	5480.8 ppb	16:29:07
2	Sc Radial	4995.5	4995.5	99.2 %		16:26:42
2	Y RADIAL	5295.4	5295.4	97.53 %		16:26:42
2	Al 396.153Radial†	6349.7	6400.9	4913.2 ug/L	4913.2 ppb	16:26:42
2	Ca 317.933Radial†	3100.9	3105.8	4969.5 ug/L	4969.5 ppb	16:27:02
2	Fe 238.204 Radial†	587.8	583.6	5066.1 ug/L	5066.1 ppb	16:27:02
2	K 766.490 Radial†	30840.1	28495.6	5207.0 ug/L	5207.0 ppb	16:26:42
2	Mg 279.077 IEC†	155.1	154.5	5161.0 ug/L	5161.0 ppb	16:27:02
2	Na 589.592 Radial†	33113.8	34658.0	10377 ug/L	10377 ppb	16:26:42
2	Sr 421.552†	76746.9	77377.8	499.74 ug/L	499.74 ppb	16:26:42
2	Sc 361.383	840766.4	840766.4	98.635 %		16:28:05
2	Y 371.029	701355.4	701355.4	97.051 %		16:28:05
2	Ag 328.068†	111103.1	112282.2	520.19 ug/L	520.19 ppb	16:28:10
2	As 188.979†	1187.9	1227.9	534.21 ug/L	534.21 ppb	16:28:30
2	B 249.677†	23113.9	24065.6	534.52 ug/L	534.52 ppb	16:28:10
2	Ba 233.527†	64650.7	65556.6	513.08 ug/L	513.08 ppb	16:28:10
2	Be 313.107†	1314415.4	1337185.2	510.66 ug/L	510.66 ppb	16:28:05
2	Cd 226.502†	45475.1	46308.4	513.77 ug/L	513.77 ppb	16:28:10
2	Co 228.616†	24763.0	25180.3	515.52 ug/L	515.52 ppb	16:28:10
2	Cr 267.716†	45371.7	45916.1	513.96 ug/L	513.96 ppb	16:28:10
2	Cu 324.752†	173614.1	169603.8	507.14 ug/L	507.14 ppb	16:28:10
2	Mn 257.610†	451698.8	457503.0	507.54 ug/L	507.54 ppb	16:28:05
2	Mo 202.031†	7217.1	7293.2	515.85 ug/L	515.85 ppb	16:28:30
2	Ni 231.604†	20534.4	20750.6	516.38 ug/L	516.38 ppb	16:28:10



2	P 214.914†	4326.1	4156.0	2432.6 ug/L	2432.6 ppb	16:28:30
2	Pb 220.353†	4093.9	4213.9	517.67 ug/L	517.67 ppb	16:28:30
2	S 181.975 Axial†	770.8	738.5	1044.2 ug/L	1044.2 ppb	16:28:30
2	Sb 206.836†	1548.8	1542.3	546.88 ug/L	546.88 ppb	16:28:30
2	Se 196.026†	752.4	794.8	530.15 ug/L	530.15 ppb	16:28:30
2	Si 251.611†	81405.9	81981.6	2604.6 ug/L	2604.6 ppb	16:28:10
2	Sn 189.927†	2906.1	2938.6	521.41 ug/L	521.41 ppb	16:28:30
2	Ti 334.940†	309064.2	314714.5	506.77 ug/L	506.77 ppb	16:28:10
2	Tl 190.801†	1613.7	1668.9	515.09 ug/L	515.09 ppb	16:28:30
2	U 409.014†	15570.1	17797.1	523.28 ug/L	523.28 ppb	16:28:10
2	V 292.402†	72422.8	74734.4	517.41 ug/L	517.41 ppb	16:28:10
2	Zn 213.857†	54316.6	54447.8	510.51 ug/L	510.51 ppb	16:28:10
2	SiO2†	80842.8	81389.6	5539.3 ug/L	5539.3 ppb	16:29:12
3	Sc Radial	4867.2	4867.2	96.7 %		16:27:07
3	Y RADIAL	5186.1	5186.1	95.52 %		16:27:07
3	Al 396.153Radial†	6211.2	6426.4	4932.9 ug/L	4932.9 ppb	16:27:07
3	Ca 317.933Radial†	3097.6	3184.8	5096.0 ug/L	5096.0 ppb	16:27:27
3	Fe 238.204 Radial†	598.7	610.5	5298.4 ug/L	5298.4 ppb	16:27:27
3	K 766.490 Radial†	30160.6	28611.9	5228.3 ug/L	5228.3 ppb	16:27:07
3	Mg 279.077 IEC†	154.4	157.9	5274.8 ug/L	5274.8 ppb	16:27:27
3	Na 589.592 Radial†	32127.1	34516.9	10335 ug/L	10335 ppb	16:27:07
3	Sr 421.552†	74900.1	77506.1	500.57 ug/L	500.57 ppb	16:27:07
3	Sc 361.383	837940.2	837940.2	98.304 %		16:28:36
3	Y 371.029	699451.1	699451.1	96.787 %		16:28:36
3	Ag 328.068†	110448.3	111996.0	518.94 ug/L	518.94 ppb	16:28:41
3	As 188.979†	1184.4	1228.4	534.49 ug/L	534.49 ppb	16:29:01
3	B 249.677†	22973.9	24002.1	533.09 ug/L	533.09 ppb	16:28:41
3	Ba 233.527†	64324.5	65445.8	512.22 ug/L	512.22 ppb	16:28:41
3	Be 313.107†	1306491.0	1333618.5	509.30 ug/L	509.30 ppb	16:28:36
3	Cd 226.502†	45097.9	46080.1	511.21 ug/L	511.21 ppb	16:28:41
3	Co 228.616†	24563.8	25062.3	513.10 ug/L	513.10 ppb	16:28:41
3	Cr 267.716†	45147.3	45843.0	513.15 ug/L	513.15 ppb	16:28:41
3	Cu 324.752†	172911.7	169482.9	506.79 ug/L	506.79 ppb	16:28:41
3	Mn 257.610†	449517.1	456828.2	506.82 ug/L	506.82 ppb	16:28:36
3	Mo 202.031†	7164.5	7264.4	513.83 ug/L	513.83 ppb	16:29:01
3	Ni 231.604†	20294.3	20576.4	512.05 ug/L	512.05 ppb	16:28:41
3	P 214.914†	4263.9	4107.6	2402.8 ug/L	2402.8 ppb	16:29:01
3	Pb 220.353†	4036.0	4169.0	512.15 ug/L	512.15 ppb	16:29:01
3	S 181.975 Axial†	751.6	721.5	1020.2 ug/L	1020.2 ppb	16:29:01
3	Sb 206.836†	1536.8	1535.4	544.40 ug/L	544.40 ppb	16:29:01
3	Se 196.026†	749.9	794.8	530.91 ug/L	530.91 ppb	16:29:01
3	Si 251.611†	80849.5	81694.0	2595.5 ug/L	2595.5 ppb	16:28:41
3	Sn 189.927†	2867.3	2909.1	516.20 ug/L	516.20 ppb	16:29:01
3	Ti 334.940†	307295.1	313971.7	505.58 ug/L	505.58 ppb	16:28:41
3	Tl 190.801†	1599.9	1660.3	512.46 ug/L	512.46 ppb	16:29:01
3	U 409.014†	15506.0	17785.2	522.91 ug/L	522.91 ppb	16:28:41
3	V 292.402†	72025.9	74578.3	516.29 ug/L	516.29 ppb	16:28:41
3	Zn 213.857†	53817.0	54125.4	507.46 ug/L	507.46 ppb	16:28:41
3	SiO2†	81333.2	82164.9	5592.3 ug/L	5592.3 ppb	16:29:17

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	842233.4	98.808 %		0.6083			0.62%
Sc Radial	4902.8	97.4 %		1.61			1.65%
Y 371.029	702690.8	97.236 %		0.5639			0.58%
Y RADIAL	5225.0	96.24 %		1.125			1.17%
Ag 328.068†	111649.6	517.31 ug/L		3.950	517.31 ppb	3.950	0.76%
QC value within limits for Ag 328.068 Recovery = 103.46%							
Al 396.153Radial†	6411.6	4921.6 ug/L		10.20	4921.6 ppb	10.20	0.21%
QC value within limits for Al 396.153Radial Recovery = 98.43%							
As 188.979†	1229.9	535.11 ug/L		1.313	535.11 ppb	1.313	0.25%
QC value within limits for As 188.979 Recovery = 107.02%							
B 249.677†	23901.8	530.87 ug/L		5.138	530.87 ppb	5.138	0.97%
QC value within limits for B 249.677 Recovery = 106.17%							
Ba 233.527†	65168.3	510.05 ug/L		4.527	510.05 ppb	4.527	0.89%
QC value within limits for Ba 233.527 Recovery = 102.01%							
Be 313.107†	1336921.5	510.55 ug/L		1.204	510.55 ppb	1.204	0.24%
QC value within limits for Be 313.107 Recovery = 102.11%							
Ca 317.933Radial†	3164.3	5063.1 ug/L		82.24	5063.1 ppb	82.24	1.62%



QC value within limits for Ca 317.933 Radial Recovery = 101.26%

Cd 226.502†	46030.6	510.67 ug/L	3.403	510.67 ppb	3.403	0.67%
QC value within limits for Cd 226.502 Recovery = 102.13%						
Co 228.616†	24991.1	511.64 ug/L	4.770	511.64 ppb	4.770	0.93%
QC value within limits for Co 228.616 Recovery = 102.33%						
Cr 267.716†	45707.5	511.63 ug/L	3.357	511.63 ppb	3.357	0.66%
QC value within limits for Cr 267.716 Recovery = 102.33%						
Cu 324.752†	168639.0	504.26 ug/L	4.682	504.26 ppb	4.682	0.93%
QC value within limits for Cu 324.752 Recovery = 100.85%						
Fe 238.204 Radial†	599.6	5204.7 ug/L	122.48	5204.7 ppb	122.48	2.35%
QC value within limits for Fe 238.204 Radial Recovery = 104.09%						
K 766.490 Radial†	28705.9	5245.5 ug/L	49.45	5245.5 ppb	49.45	0.94%
QC value within limits for K 766.490 Radial Recovery = 104.91%						
Mg 279.077 IEC†	157.1	5250.5 ug/L	80.16	5250.5 ppb	80.16	1.53%
QC value within limits for Mg 279.077 IEC Recovery = 105.01%						
Mn 257.610†	457426.5	507.47 ug/L	0.621	507.47 ppb	0.621	0.12%
QC value within limits for Mn 257.610 Recovery = 101.49%						
Mo 202.031†	7255.4	513.19 ug/L	3.030	513.19 ppb	3.030	0.59%
QC value within limits for Mo 202.031 Recovery = 102.64%						
Na 589.592 Radial†	34726.2	10397 ug/L	75.0	10397 ppb	75.0	0.72%
QC value within limits for Na 589.592 Radial Recovery = 103.97%						
Ni 231.604†	20583.5	512.22 ug/L	4.072	512.22 ppb	4.072	0.79%
QC value within limits for Ni 231.604 Recovery = 102.44%						
P 214.914†	4120.3	2411.2 ug/L	18.68	2411.2 ppb	18.68	0.77%
QC value within limits for P 214.914 Recovery = 96.45%						
Pb 220.353†	4170.8	512.38 ug/L	5.177	512.38 ppb	5.177	1.01%
QC value within limits for Pb 220.353 Recovery = 102.48%						
S 181.975 Axial†	727.9	1029.1 ug/L	13.10	1029.1 ppb	13.10	1.27%
QC value within limits for S 181.975 Axial Recovery = 102.91%						
Sb 206.836†	1533.2	543.64 ug/L	3.678	543.64 ppb	3.678	0.68%
QC value within limits for Sb 206.836 Recovery = 108.73%						
Se 196.026†	789.7	527.31 ug/L	5.594	527.31 ppb	5.594	1.06%
QC value within limits for Se 196.026 Recovery = 105.46%						
Si 251.611†	81478.0	2588.6 ug/L	20.33	2588.6 ppb	20.33	0.79%
QC value within limits for Si 251.611 Recovery = 103.55%						
Sn 189.927†	2911.2	516.58 ug/L	4.655	516.58 ppb	4.655	0.90%
QC value within limits for Sn 189.927 Recovery = 103.32%						
Sr 421.552†	77508.0	500.58 ug/L	0.847	500.58 ppb	0.847	0.17%
QC value within limits for Sr 421.552 Recovery = 100.12%						
Ti 334.940†	312813.2	503.71 ug/L	4.305	503.71 ppb	4.305	0.85%
QC value within limits for Ti 334.940 Recovery = 100.74%						
Tl 190.801†	1662.2	513.05 ug/L	1.814	513.05 ppb	1.814	0.35%
QC value within limits for Tl 190.801 Recovery = 102.61%						
U 409.014†	17672.1	519.59 ug/L	6.082	519.59 ppb	6.082	1.17%
QC value within limits for U 409.014 Recovery = 103.92%						
V 292.402†	74388.0	514.99 ug/L	3.275	514.99 ppb	3.275	0.64%
QC value within limits for V 292.402 Recovery = 103.00%						
Zn 213.857†	54084.6	507.09 ug/L	3.620	507.09 ppb	3.620	0.71%
QC value within limits for Zn 213.857 Recovery = 101.42%						
SiO2†	81361.4	5537.4 ug/L	55.76	5537.4 ppb	55.76	1.01%
QC value within limits for SiO2 Recovery = 103.55%						

All analyte(s) passed QC.



Sequence No.: 14  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 8  
 Date Collected: 1/11/2010 16:31:27  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4938.2	4938.2	98.1 %		16:33:19
1	Y RADIAL	5358.4	5358.4	98.69 %		16:33:19
1	Al 396.153Radial†	-7.9	-7.4	-5.7335 ug/L	-5.7335 ppb	16:33:19
1	Ca 317.933Radial†	10.0	-9.6	-15.283 ug/L	-15.283 ppb	16:33:39
1	Fe 238.204 Radial†	9.0	0.3	2.1671 ug/L	2.1671 ppb	16:33:39
1	K 766.490 Radial†	3304.7	779.5	142.91 ug/L	142.91 ppb	16:33:19
1	Mg 279.077 IEC†	1.5	-0.4	-13.724 ug/L	-13.724 ppb	16:33:39
1	Na 589.592 Radial†	-1067.3	192.1	57.530 ug/L	57.530 ppb	16:33:19
1	Sr 421.552†	12.7	32.4	0.2097 ug/L	0.2097 ppb	16:33:19
1	Sc 361.383	830550.2	830550.2	97.437 %		16:34:36
1	Y 371.029	705478.2	705478.2	97.621 %		16:34:36
1	Ag 328.068†	391.2	43.5	0.2013 ug/L	0.2013 ppb	16:34:36
1	As 188.979†	3.6	27.3	11.834 ug/L	11.834 ppb	16:34:56
1	B 249.677†	142.2	777.8	17.341 ug/L	17.341 ppb	16:34:56
1	Ba 233.527†	-10.2	0.9	0.0055 ug/L	0.0055 ppb	16:34:56
1	Be 313.107†	-4533.5	-67.4	-0.0260 ug/L	-0.0260 ppb	16:34:36
1	Cd 226.502†	-171.4	28.2	0.3122 ug/L	0.3122 ppb	16:34:56
1	Co 228.616†	-91.6	-19.3	-0.3939 ug/L	-0.3939 ppb	16:34:56
1	Cr 267.716†	79.4	-1.8	-0.0200 ug/L	-0.0200 ppb	16:34:56
1	Cu 324.752†	6362.6	117.8	0.3542 ug/L	0.3542 ppb	16:34:36
1	Mn 257.610†	432.1	-1.4	-0.0007 ug/L	-0.0007 ppb	16:34:56
1	Mo 202.031†	28.8	5.8	0.4111 ug/L	0.4111 ppb	16:34:56
1	Ni 231.604†	68.4	2.3	0.0570 ug/L	0.0570 ppb	16:34:56
1	P 214.914†	221.9	-2.1	-1.3602 ug/L	-1.3602 ppb	16:34:56
1	Pb 220.353†	-25.0	37.7	4.6186 ug/L	4.6186 ppb	16:34:56
1	S 181.975 Axial†	43.3	1.4	1.9669 ug/L	1.9669 ppb	16:34:56
1	Sb 206.836†	63.9	37.6	12.917 ug/L	12.917 ppb	16:34:56
1	Se 196.026†	-34.5	-3.4	-2.2073 ug/L	-2.2073 ppb	16:34:56
1	Si 251.611†	585.6	50.5	1.6034 ug/L	1.6034 ppb	16:34:56
1	Sn 189.927†	8.8	1.3	0.2337 ug/L	0.2337 ppb	16:34:56
1	Ti 334.940†	-1415.5	-78.3	-0.1252 ug/L	-0.1252 ppb	16:34:36
1	Tl 190.801†	-35.1	-3.1	-0.9555 ug/L	-0.9555 ppb	16:34:56
1	U 409.014†	-2070.6	-113.5	-3.3477 ug/L	-3.3477 ppb	16:34:36
1	V 292.402†	-1380.6	-107.2	-0.7326 ug/L	-0.7326 ppb	16:34:36
1	Zn 213.857†	695.8	93.8	0.8864 ug/L	0.8864 ppb	16:34:56
1	SiO2†	660.4	106.1	7.2291 ug/L	7.2291 ppb	16:35:52
2	Sc Radial	4977.1	4977.1	98.8 %		16:33:44
2	Y RADIAL	5379.5	5379.5	99.08 %		16:33:44
2	Al 396.153Radial†	16.4	17.3	13.346 ug/L	13.346 ppb	16:33:44
2	Ca 317.933Radial†	13.4	-6.2	-9.9695 ug/L	-9.9695 ppb	16:34:05
2	Fe 238.204 Radial†	9.2	0.4	3.5666 ug/L	3.5666 ppb	16:34:05
2	K 766.490 Radial†	3248.7	696.5	127.69 ug/L	127.69 ppb	16:33:44
2	Mg 279.077 IEC†	1.8	-0.1	-2.8814 ug/L	-2.8814 ppb	16:34:05
2	Na 589.592 Radial†	-1037.9	230.4	68.993 ug/L	68.993 ppb	16:33:44
2	Sr 421.552†	29.1	49.0	0.3163 ug/L	0.3163 ppb	16:33:44
2	Sc 361.383	846971.0	846971.0	99.363 %		16:35:02
2	Y 371.029	719409.4	719409.4	99.549 %		16:35:02
2	Ag 328.068†	221.3	-135.3	-0.6237 ug/L	-0.6237 ppb	16:35:02
2	As 188.979†	-11.7	11.8	5.1352 ug/L	5.1352 ppb	16:35:22
2	B 249.677†	108.6	741.1	16.522 ug/L	16.522 ppb	16:35:22
2	Ba 233.527†	-17.9	-6.6	-0.0524 ug/L	-0.0524 ppb	16:35:22
2	Be 313.107†	-4604.5	-48.6	-0.0186 ug/L	-0.0186 ppb	16:35:02
2	Cd 226.502†	-183.7	19.2	0.2130 ug/L	0.2130 ppb	16:35:22
2	Co 228.616†	-83.3	-9.2	-0.1902 ug/L	-0.1902 ppb	16:35:22
2	Cr 267.716†	104.3	21.7	0.2422 ug/L	0.2422 ppb	16:35:22
2	Cu 324.752†	6577.4	207.3	0.6197 ug/L	0.6197 ppb	16:35:02
2	Mn 257.610†	434.9	-7.1	-0.0074 ug/L	-0.0074 ppb	16:35:22
2	Mo 202.031†	13.5	-10.2	-0.7188 ug/L	-0.7188 ppb	16:35:22
2	Ni 231.604†	74.8	7.3	0.1816 ug/L	0.1816 ppb	16:35:22



2	P 214.914†	222.0	-6.4	-4.0468 ug/L	-4.0468 ppb	16:35:22
2	Pb 220.353†	-52.1	10.9	1.3325 ug/L	1.3325 ppb	16:35:22
2	S 181.975 Axial†	46.0	3.3	4.6311 ug/L	4.6311 ppb	16:35:22
2	Sb 206.836†	60.8	33.2	11.395 ug/L	11.395 ppb	16:35:22
2	Se 196.026†	-27.3	4.5	2.9119 ug/L	2.9119 ppb	16:35:22
2	Si 251.611†	593.5	46.8	1.5009 ug/L	1.5009 ppb	16:35:22
2	Sn 189.927†	12.7	5.1	0.9018 ug/L	0.9018 ppb	16:35:22
2	Ti 334.940†	-1383.5	-17.9	-0.0302 ug/L	-0.0302 ppb	16:35:02
2	Tl 190.801†	-42.6	-10.0	-3.0756 ug/L	-3.0756 ppb	16:35:22
2	U 409.014†	-1968.8	30.2	0.8911 ug/L	0.8911 ppb	16:35:02
2	V 292.402†	-1349.2	-48.1	-0.3383 ug/L	-0.3383 ppb	16:35:02
2	Zn 213.857†	694.8	79.0	0.7452 ug/L	0.7452 ppb	16:35:22
2	SiO2†	603.2	35.4	2.4352 ug/L	2.4352 ppb	16:35:57
3	Sc Radial	4936.5	4936.5	98.0 %		16:34:10
3	Y RADIAL	5325.3	5325.3	98.08 %		16:34:10
3	Al 396.153Radial†	2.6	3.3	2.5634 ug/L	2.5634 ppb	16:34:10
3	Ca 317.933Radial†	13.6	-5.9	-9.3960 ug/L	-9.3960 ppb	16:34:30
3	Fe 238.204 Radial†	8.6	-0.1	-1.1579 ug/L	-1.1579 ppb	16:34:30
3	K 766.490 Radial†	3161.3	634.5	116.32 ug/L	116.32 ppb	16:34:10
3	Mg 279.077 IEC†	-1.9	-3.9	-129.81 ug/L	-129.81 ppb	16:34:30
3	Na 589.592 Radial†	-1104.9	153.5	45.952 ug/L	45.952 ppb	16:34:10
3	Sr 421.552†	-31.9	-13.0	-0.0842 ug/L	-0.0842 ppb	16:34:10
3	Sc 361.383	840442.8	840442.8	98.597 %		16:35:27
3	Y 371.029	714287.5	714287.5	98.840 %		16:35:27
3	Ag 328.068†	305.1	-48.6	-0.2213 ug/L	-0.2213 ppb	16:35:27
3	As 188.979†	-10.0	13.5	5.8431 ug/L	5.8431 ppb	16:35:47
3	B 249.677†	74.6	707.5	15.773 ug/L	15.773 ppb	16:35:47
3	Ba 233.527†	-12.8	-1.6	-0.0126 ug/L	-0.0126 ppb	16:35:47
3	Be 313.107†	-4499.3	22.0	0.0083 ug/L	0.0083 ppb	16:35:27
3	Cd 226.502†	-176.2	25.4	0.2813 ug/L	0.2813 ppb	16:35:47
3	Co 228.616†	-88.4	-15.0	-0.3063 ug/L	-0.3063 ppb	16:35:47
3	Cr 267.716†	95.4	13.5	0.1525 ug/L	0.1525 ppb	16:35:47
3	Cu 324.752†	6418.3	97.4	0.2934 ug/L	0.2934 ppb	16:35:27
3	Mn 257.610†	440.8	2.2	0.0076 ug/L	0.0076 ppb	16:35:47
3	Mo 202.031†	23.3	-0.1	-0.0083 ug/L	-0.0083 ppb	16:35:47
3	Ni 231.604†	78.6	11.8	0.2929 ug/L	0.2929 ppb	16:35:47
3	P 214.914†	214.4	-12.4	-7.6292 ug/L	-7.6292 ppb	16:35:47
3	Pb 220.353†	-53.3	9.3	1.1359 ug/L	1.1359 ppb	16:35:47
3	S 181.975 Axial†	47.1	4.7	6.6920 ug/L	6.6920 ppb	16:35:47
3	Sb 206.836†	52.6	25.4	8.7048 ug/L	8.7048 ppb	16:35:47
3	Se 196.026†	-39.6	-8.2	-5.2896 ug/L	-5.2896 ppb	16:35:47
3	Si 251.611†	561.4	19.0	0.6040 ug/L	0.6040 ppb	16:35:47
3	Sn 189.927†	10.8	3.3	0.5891 ug/L	0.5891 ppb	16:35:47
3	Ti 334.940†	-1374.1	-19.1	-0.0195 ug/L	-0.0195 ppb	16:35:27
3	Tl 190.801†	-30.3	2.1	0.6498 ug/L	0.6498 ppb	16:35:47
3	U 409.014†	-2124.1	-142.7	-4.2104 ug/L	-4.2104 ppb	16:35:27
3	V 292.402†	-1316.1	-25.1	-0.1819 ug/L	-0.1819 ppb	16:35:27
3	Zn 213.857†	697.1	86.8	0.8190 ug/L	0.8190 ppb	16:35:47
3	SiO2†	583.7	20.4	1.3897 ug/L	1.3897 ppb	16:36:02

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	839321.3	98.466 %	0.9699			0.99%
Sc Radial	4950.6	98.3 %	0.46			0.46%
Y 371.029	713058.4	98.670 %	0.9751			0.99%
Y RADIAL	5354.4	98.62 %	0.504			0.51%
Ag 328.068†	-46.8	-0.2146 ug/L	0.41254	-0.2146 ppb	0.41254	192.26%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	4.4	3.3920 ug/L	9.56669	3.3920 ppb	9.56669	282.04%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	17.5	7.6040 ug/L	3.68017	7.6040 ppb	3.68017	48.40%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	742.1	16.545 ug/L	0.7845	16.545 ppb	0.7845	4.74%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-2.4	-0.0198 ug/L	0.02961	-0.0198 ppb	0.02961	149.50%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-31.3	-0.0121 ug/L	0.01804	-0.0121 ppb	0.01804	149.45%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-7.2	-11.549 ug/L	3.2460	-11.549 ppb	3.2460	28.10%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	24.3	0.2688 ug/L	0.05076	0.2688 ppb	0.05076	18.88%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	-14.5	-0.2968 ug/L	0.10215	-0.2968 ppb	0.10215	34.42%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	11.2	0.1249 ug/L	0.13322	0.1249 ppb	0.13322	106.68%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	140.8	0.4225 ug/L	0.17351	0.4225 ppb	0.17351	41.07%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	0.2	1.5253 ug/L	2.42676	1.5253 ppb	2.42676	159.11%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	703.5	128.97 ug/L	13.341	128.97 ppb	13.341	10.34%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	-1.5	-48.807 ug/L	70.3643	-48.807 ppb	70.3643	144.17%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	-2.1	-0.0002 ug/L	0.00752	-0.0002 ppb	0.00752	>999.9%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	-1.5	-0.1053 ug/L	0.57117	-0.1053 ppb	0.57117	542.32%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	192.0	57.491 ug/L	11.5206	57.491 ppb	11.5206	20.04%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	7.1	0.1771 ug/L	0.11803	0.1771 ppb	0.11803	66.63%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-7.0	-4.3454 ug/L	3.14512	-4.3454 ppb	3.14512	72.38%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	19.3	2.3624 ug/L	1.95644	2.3624 ppb	1.95644	82.82%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	3.1	4.4300 ug/L	2.36900	4.4300 ppb	2.36900	53.48%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	32.1	11.006 ug/L	2.1330	11.006 ppb	2.1330	19.38%		
QC value greater than the upper limit for Sb 206.836 Recovery = Not calculated									
Se	196.026†	-2.4	-1.5283 ug/L	4.14268	-1.5283 ppb	4.14268	271.06%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	38.8	1.2361 ug/L	0.54983	1.2361 ppb	0.54983	44.48%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	3.3	0.5749 ug/L	0.33426	0.5749 ppb	0.33426	58.15%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	22.8	0.1473 ug/L	0.20740	0.1473 ppb	0.20740	140.84%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	-38.4	-0.0583 ug/L	0.05820	-0.0583 ppb	0.05820	99.84%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	-3.7	-1.1271 ug/L	1.86864	-1.1271 ppb	1.86864	165.79%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	-75.3	-2.2223 ug/L	2.73056	-2.2223 ppb	2.73056	122.87%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	-60.2	-0.4176 ug/L	0.28376	-0.4176 ppb	0.28376	67.95%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	86.6	0.8169 ug/L	0.07064	0.8169 ppb	0.07064	8.65%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		54.0	3.6847 ug/L	3.11377	3.6847 ppb	3.11377	84.51%		
QC value within limits for SiO2 Recovery = Not calculated									
QC Failed. Continue with analysis.									



User canceled analysis.

=====  
Analysis Begun

Start Time: 1/11/2010 16:38:46

Plasma On Time: 1/11/2010 06:15:31

Logged In Analyst: Optima3

Technique: ICP Continuous

Spectrometer Model: Optima 5300 DV, S/N 077C7090601Autosampler Model: S10

Sample Information File: C:\pe\Optima3\Sample Information\011110.sif

Batch ID:

Results Data Set: 011110A

Results Library: C:\pe\Optima3\Results\Results.mdb

=====  
Sequence No.: 13

Autosampler Location: 7

Sample ID: CCV

Date Collected: 1/11/2010 16:38:48

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4882.6	4882.6	97.0 %		16:40:39
1	Y RADIAL	5223.2	5223.2	96.20 %		16:40:39
1	Al 396.153Radial†	6253.5	6449.7	4951.3 ug/L	4951.3 ppb	16:40:39
1	Ca 317.933Radial†	3059.0	3134.9	5016.2 ug/L	5016.2 ppb	16:40:59
1	Fe 238.204 Radial†	576.8	585.9	5085.4 ug/L	5085.4 ppb	16:40:59
1	K 766.490 Radial†	29412.0	27741.6	5069.0 ug/L	5069.0 ppb	16:40:39
1	Mg 279.077 IEC†	152.5	155.3	5189.7 ug/L	5189.7 ppb	16:40:59
1	Na 589.592 Radial†	31106.7	33359.8	9988.3 ug/L	9988.3 ppb	16:40:39
1	Sr 421.552†	73905.9	76236.5	492.37 ug/L	492.37 ppb	16:40:39
1	Sc 361.383	845780.1	845780.1	99.224 %		16:41:57
1	Y 371.029	705843.2	705843.2	97.672 %		16:41:57
1	Ag 328.068†	108502.2	108993.2	505.01 ug/L	505.01 ppb	16:42:02
1	As 188.979†	1129.0	1161.4	505.37 ug/L	505.37 ppb	16:42:22
1	B 249.677†	21566.4	22367.0	496.70 ug/L	496.70 ppb	16:42:02
1	Ba 233.527†	63263.6	63770.0	499.11 ug/L	499.11 ppb	16:42:02
1	Be 313.107†	1321061.2	1335983.3	510.17 ug/L	510.17 ppb	16:41:57
1	Cd 226.502†	44316.2	44867.1	497.76 ug/L	497.76 ppb	16:42:02
1	Co 228.616†	24190.7	24454.7	500.68 ug/L	500.68 ppb	16:42:02
1	Cr 267.716†	44404.7	44668.9	500.01 ug/L	500.01 ppb	16:42:02
1	Cu 324.752†	169480.5	164394.5	491.57 ug/L	491.57 ppb	16:42:02
1	Mn 257.610†	453830.1	456936.2	506.92 ug/L	506.92 ppb	16:41:57
1	Mo 202.031†	7137.7	7169.9	507.13 ug/L	507.13 ppb	16:42:22
1	Ni 231.604†	20031.9	20120.7	500.71 ug/L	500.71 ppb	16:42:02
1	P 214.914†	4274.5	4078.1	2388.2 ug/L	2388.2 ppb	16:42:22
1	Pb 220.353†	4005.5	4100.2	503.74 ug/L	503.74 ppb	16:42:22
1	S 181.975 Axial†	759.0	721.9	1020.7 ug/L	1020.7 ppb	16:42:22
1	Sb 206.836†	1494.6	1478.4	524.59 ug/L	524.59 ppb	16:42:22
1	Se 196.026†	743.3	781.1	521.36 ug/L	521.36 ppb	16:42:22
1	Si 251.611†	79232.2	79301.7	2519.4 ug/L	2519.4 ppb	16:42:02
1	Sn 189.927†	2850.0	2864.7	508.32 ug/L	508.32 ppb	16:42:22
1	Ti 334.940†	301952.2	305689.3	492.24 ug/L	492.24 ppb	16:42:02
1	Tl 190.801†	1587.5	1632.8	503.99 ug/L	503.99 ppb	16:42:22
1	U 409.014†	14919.9	17048.3	501.22 ug/L	501.22 ppb	16:42:02
1	V 292.402†	70898.2	72762.7	503.80 ug/L	503.80 ppb	16:42:02
1	Zn 213.857†	52974.0	52768.2	494.74 ug/L	494.74 ppb	16:42:02
1	SiO2†	80240.9	80297.0	5465.0 ug/L	5465.0 ppb	16:43:29
2	Sc Radial	4869.0	4869.0	96.7 %		16:41:04
2	Y RADIAL	5223.7	5223.7	96.21 %		16:41:04
2	Al 396.153Radial†	6219.1	6432.2	4937.9 ug/L	4937.9 ppb	16:41:04
2	Ca 317.933Radial†	3097.5	3183.6	5094.0 ug/L	5094.0 ppb	16:41:24
2	Fe 238.204 Radial†	583.9	595.0	5164.1 ug/L	5164.1 ppb	16:41:24
2	K 766.490 Radial†	29527.0	27945.4	5106.4 ug/L	5106.4 ppb	16:41:04
2	Mg 279.077 IEC†	150.3	153.5	5129.5 ug/L	5129.5 ppb	16:41:24
2	Na 589.592 Radial†	31283.3	33632.3	10070 ug/L	10070 ppb	16:41:04
2	Sr 421.552†	74177.7	76730.8	495.56 ug/L	495.56 ppb	16:41:04
2	Sc 361.383	857147.9	857147.9	100.56 %		16:42:28



2	Y 371.029	715084.0	715084.0	98.951 %		16:42:28
2	Ag 328.068†	110354.2	109384.7	506.84 ug/L	506.84 ppb	16:42:33
2	As 188.979†	1145.2	1162.5	505.84 ug/L	505.84 ppb	16:42:53
2	B 249.677†	21931.9	22442.2	498.36 ug/L	498.36 ppb	16:42:33
2	Ba 233.527†	64151.9	63807.8	499.41 ug/L	499.41 ppb	16:42:33
2	Be 313.107†	1333477.0	1330672.9	508.14 ug/L	508.14 ppb	16:42:28
2	Cd 226.502†	45190.4	45144.1	500.82 ug/L	500.82 ppb	16:42:33
2	Co 228.616†	24545.1	24483.7	501.26 ug/L	501.26 ppb	16:42:33
2	Cr 267.716†	45142.8	44809.4	501.58 ug/L	501.58 ppb	16:42:33
2	Cu 324.752†	172257.5	164890.7	493.06 ug/L	493.06 ppb	16:42:33
2	Mn 257.610†	457824.2	454842.3	504.61 ug/L	504.61 ppb	16:42:28
2	Mo 202.031†	7181.0	7117.5	503.44 ug/L	503.44 ppb	16:42:53
2	Ni 231.604†	20361.3	20180.5	502.20 ug/L	502.20 ppb	16:42:33
2	P 214.914†	4307.4	4053.6	2372.8 ug/L	2372.8 ppb	16:42:53
2	Pb 220.353†	4036.2	4077.2	500.90 ug/L	500.90 ppb	16:42:53
2	S 181.975 Axial†	759.0	711.8	1006.4 ug/L	1006.4 ppb	16:42:53
2	Sb 206.836†	1502.1	1465.8	520.15 ug/L	520.15 ppb	16:42:53
2	Se 196.026†	747.7	775.6	518.03 ug/L	518.03 ppb	16:42:53
2	Si 251.611†	80567.2	79570.2	2528.0 ug/L	2528.0 ppb	16:42:33
2	Sn 189.927†	2863.5	2839.9	503.95 ug/L	503.95 ppb	16:42:53
2	Ti 334.940†	306689.7	306364.7	493.34 ug/L	493.34 ppb	16:42:33
2	Tl 190.801†	1602.6	1626.5	502.07 ug/L	502.07 ppb	16:42:53
2	U 409.014†	15377.6	17304.0	508.75 ug/L	508.75 ppb	16:42:33
2	V 292.402†	71992.3	72903.1	504.70 ug/L	504.70 ppb	16:42:33
2	Zn 213.857†	53815.4	52897.0	495.94 ug/L	495.94 ppb	16:42:33
2	SiO2†	79728.2	78714.7	5357.1 ug/L	5357.1 ppb	16:43:34
3	Sc Radial	4810.3	4810.3	95.5 %		16:41:30
3	Y RADIAL	5124.6	5124.6	94.38 %		16:41:30
3	Al 396.153Radial†	6306.8	6602.6	5068.9 ug/L	5068.9 ppb	16:41:30
3	Ca 317.933Radial†	3080.5	3204.9	5128.1 ug/L	5128.1 ppb	16:41:50
3	Fe 238.204 Radial†	588.4	607.0	5268.5 ug/L	5268.5 ppb	16:41:50
3	K 766.490 Radial†	29544.2	28336.3	5177.8 ug/L	5177.8 ppb	16:41:30
3	Mg 279.077 IEC†	157.6	163.1	5449.4 ug/L	5449.4 ppb	16:41:50
3	Na 589.592 Radial†	31435.3	34186.5	10236 ug/L	10236 ppb	16:41:30
3	Sr 421.552†	74786.5	78305.0	505.73 ug/L	505.73 ppb	16:41:30
3	Sc 361.383	839569.1	839569.1	98.495 %		16:42:59
3	Y 371.029	700329.4	700329.4	96.909 %		16:42:59
3	Ag 328.068†	110088.2	111412.4	516.24 ug/L	516.24 ppb	16:43:04
3	As 188.979†	1138.0	1179.0	513.05 ug/L	513.05 ppb	16:43:24
3	B 249.677†	22005.5	22973.6	510.17 ug/L	510.17 ppb	16:43:04
3	Ba 233.527†	64098.3	65089.1	509.43 ug/L	509.43 ppb	16:43:04
3	Be 313.107†	1304992.4	1329518.6	507.73 ug/L	507.73 ppb	16:42:59
3	Cd 226.502†	45083.5	45976.5	510.06 ug/L	510.06 ppb	16:43:04
3	Co 228.616†	24559.1	25009.1	512.01 ug/L	512.01 ppb	16:43:04
3	Cr 267.716†	44972.2	45576.1	510.17 ug/L	510.17 ppb	16:43:04
3	Cu 324.752†	172089.4	168306.7	503.27 ug/L	503.27 ppb	16:43:04
3	Mn 257.610†	449125.2	455543.1	505.38 ug/L	505.38 ppb	16:42:59
3	Mo 202.031†	7174.4	7260.3	513.54 ug/L	513.54 ppb	16:43:24
3	Ni 231.604†	20313.7	20556.1	511.54 ug/L	511.54 ppb	16:43:04
3	P 214.914†	4293.6	4129.3	2416.9 ug/L	2416.9 ppb	16:43:24
3	Pb 220.353†	4030.2	4155.2	510.49 ug/L	510.49 ppb	16:43:24
3	S 181.975 Axial†	757.6	726.1	1026.6 ug/L	1026.6 ppb	16:43:24
3	Sb 206.836†	1500.4	1495.4	530.64 ug/L	530.64 ppb	16:43:24
3	Se 196.026†	746.7	790.1	527.77 ug/L	527.77 ppb	16:43:24
3	Si 251.611†	80487.4	81166.8	2578.7 ug/L	2578.7 ppb	16:43:04
3	Sn 189.927†	2857.0	2893.0	513.35 ug/L	513.35 ppb	16:43:24
3	Ti 334.940†	306093.6	312145.3	502.63 ug/L	502.63 ppb	16:43:04
3	Tl 190.801†	1601.4	1658.8	511.96 ug/L	511.96 ppb	16:43:24
3	U 409.014†	15311.6	17557.2	516.19 ug/L	516.19 ppb	16:43:04
3	V 292.402†	71844.9	74252.4	514.06 ug/L	514.06 ppb	16:43:04
3	Zn 213.857†	53742.9	53943.9	505.76 ug/L	505.76 ppb	16:43:04
3	SiO2†	80273.2	80928.1	5507.9 ug/L	5507.9 ppb	16:43:40

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	847499.0	99.425 %	1.0458			1.05%
Sc Radial	4854.0	96.4 %	0.76			0.79%
Y 371.029	707085.5	97.844 %	1.0316			1.05%
Y RADIAL	5190.5	95.60 %	1.052			1.10%



Ag 328.068†	109930.1	509.36 ug/L	6.024	509.36 ppb	6.024	1.18%
QC value within limits for Ag 328.068 Recovery = 101.87%						
Al 396.153Radial†	6494.8	4986.0 ug/L	72.07	4986.0 ppb	72.07	1.45%
QC value within limits for Al 396.153Radial Recovery = 99.72%						
As 188.979†	1167.6	508.09 ug/L	4.305	508.09 ppb	4.305	0.85%
QC value within limits for As 188.979 Recovery = 101.62%						
B 249.677†	22594.3	501.74 ug/L	7.344	501.74 ppb	7.344	1.46%
QC value within limits for B 249.677 Recovery = 100.35%						
Ba 233.527†	64222.3	502.65 ug/L	5.877	502.65 ppb	5.877	1.17%
QC value within limits for Ba 233.527 Recovery = 100.53%						
Be 313.107†	1332058.3	508.68 ug/L	1.305	508.68 ppb	1.305	0.26%
QC value within limits for Be 313.107 Recovery = 101.74%						
Ca 317.933Radial†	3174.4	5079.4 ug/L	57.37	5079.4 ppb	57.37	1.13%
QC value within limits for Ca 317.933Radial Recovery = 101.59%						
Cd 226.502†	45329.2	502.88 ug/L	6.403	502.88 ppb	6.403	1.27%
QC value within limits for Cd 226.502 Recovery = 100.58%						
Co 228.616†	24649.2	504.65 ug/L	6.385	504.65 ppb	6.385	1.27%
QC value within limits for Co 228.616 Recovery = 100.93%						
Cr 267.716†	45018.2	503.92 ug/L	5.466	503.92 ppb	5.466	1.08%
QC value within limits for Cr 267.716 Recovery = 100.78%						
Cu 324.752†	165864.0	495.97 ug/L	6.370	495.97 ppb	6.370	1.28%
QC value within limits for Cu 324.752 Recovery = 99.19%						
Fe 238.204 Radial†	596.0	5172.7 ug/L	91.84	5172.7 ppb	91.84	1.78%
QC value within limits for Fe 238.204 Radial Recovery = 103.45%						
K 766.490 Radial†	28007.7	5117.7 ug/L	55.30	5117.7 ppb	55.30	1.08%
QC value within limits for K 766.490 Radial Recovery = 102.35%						
Mg 279.077 IEC†	157.3	5256.2 ug/L	170.00	5256.2 ppb	170.00	3.23%
QC value within limits for Mg 279.077 IEC Recovery = 105.12%						
Mn 257.610†	455773.9	505.64 ug/L	1.176	505.64 ppb	1.176	0.23%
QC value within limits for Mn 257.610 Recovery = 101.13%						
Mo 202.031†	7182.5	508.04 ug/L	5.112	508.04 ppb	5.112	1.01%
QC value within limits for Mo 202.031 Recovery = 101.61%						
Na 589.592 Radial†	33726.2	10098 ug/L	126.1	10098 ppb	126.1	1.25%
QC value within limits for Na 589.592 Radial Recovery = 100.98%						
Ni 231.604†	20285.8	504.82 ug/L	5.873	504.82 ppb	5.873	1.16%
QC value within limits for Ni 231.604 Recovery = 100.96%						
P 214.914†	4087.0	2392.6 ug/L	22.36	2392.6 ppb	22.36	0.93%
QC value within limits for P 214.914 Recovery = 95.71%						
Pb 220.353†	4110.9	505.04 ug/L	4.924	505.04 ppb	4.924	0.98%
QC value within limits for Pb 220.353 Recovery = 101.01%						
S 181.975 Axial†	719.9	1017.9 ug/L	10.40	1017.9 ppb	10.40	1.02%
QC value within limits for S 181.975 Axial Recovery = 101.79%						
Sb 206.836†	1479.9	525.12 ug/L	5.267	525.12 ppb	5.267	1.00%
QC value within limits for Sb 206.836 Recovery = 105.02%						
Se 196.026†	782.2	522.39 ug/L	4.947	522.39 ppb	4.947	0.95%
QC value within limits for Se 196.026 Recovery = 104.48%						
Si 251.611†	80012.9	2542.0 ug/L	32.06	2542.0 ppb	32.06	1.26%
QC value within limits for Si 251.611 Recovery = 101.68%						
Sn 189.927†	2865.9	508.54 ug/L	4.707	508.54 ppb	4.707	0.93%
QC value within limits for Sn 189.927 Recovery = 101.71%						
Sr 421.552†	77090.8	497.88 ug/L	6.976	497.88 ppb	6.976	1.40%
QC value within limits for Sr 421.552 Recovery = 99.58%						
Ti 334.940†	308066.5	496.07 ug/L	5.704	496.07 ppb	5.704	1.15%
QC value within limits for Ti 334.940 Recovery = 99.21%						
Tl 190.801†	1639.4	506.01 ug/L	5.246	506.01 ppb	5.246	1.04%
QC value within limits for Tl 190.801 Recovery = 101.20%						
U 409.014†	17303.2	508.72 ug/L	7.484	508.72 ppb	7.484	1.47%
QC value within limits for U 409.014 Recovery = 101.74%						
V 292.402†	73306.1	507.52 ug/L	5.678	507.52 ppb	5.678	1.12%
QC value within limits for V 292.402 Recovery = 101.50%						
Zn 213.857†	53203.0	498.81 ug/L	6.044	498.81 ppb	6.044	1.21%
QC value within limits for Zn 213.857 Recovery = 99.76%						
SiO2†	79979.9	5443.3 ug/L	77.67	5443.3 ppb	77.67	1.43%
QC value within limits for SiO2 Recovery = 101.79%						
All analyte(s) passed QC.						



Sequence No.: 14

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/11/2010 16:45:50

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4821.6	4821.6	95.8 %		16:47:42
1	Y RADIAL	5232.3	5232.3	96.37 %		16:47:42
1	Al 396.153Radial†	-11.8	-11.7	-8.9640 ug/L	-8.9640 ppb	16:47:42
1	Ca 317.933Radial†	17.7	-1.3	-2.0768 ug/L	-2.0768 ppb	16:48:02
1	Fe 238.204 Radial†	10.2	1.7	14.859 ug/L	14.859 ppb	16:48:02
1	K 766.490 Radial†	3051.9	597.0	109.49 ug/L	109.49 ppb	16:47:42
1	Mg 279.077 IEC†	1.3	-0.5	-18.276 ug/L	-18.276 ppb	16:48:02
1	Na 589.592 Radial†	-1271.9	-47.8	-14.311 ug/L	-14.311 ppb	16:47:42
1	Sr 421.552†	5.9	25.6	0.1655 ug/L	0.1655 ppb	16:47:42
1	Sc 361.383	841525.7	841525.7	98.724 %		16:48:59
1	Y 371.029	715554.7	715554.7	99.016 %		16:48:59
1	Ag 328.068†	323.2	-30.6	-0.1346 ug/L	-0.1346 ppb	16:48:59
1	As 188.979†	-18.8	4.6	2.0049 ug/L	2.0049 ppb	16:49:19
1	B 249.677†	-282.3	345.9	7.7098 ug/L	7.7098 ppb	16:49:19
1	Ba 233.527†	-12.7	-1.5	-0.0116 ug/L	-0.0116 ppb	16:49:19
1	Be 313.107†	-4552.1	-25.5	-0.0096 ug/L	-0.0096 ppb	16:48:59
1	Cd 226.502†	-186.4	15.3	0.1676 ug/L	0.1676 ppb	16:49:19
1	Co 228.616†	-84.8	-11.2	-0.2326 ug/L	-0.2326 ppb	16:49:19
1	Cr 267.716†	86.2	4.1	0.0467 ug/L	0.0467 ppb	16:49:19
1	Cu 324.752†	6436.7	107.6	0.3241 ug/L	0.3241 ppb	16:48:59
1	Mn 257.610†	416.7	-22.8	-0.0228 ug/L	-0.0228 ppb	16:49:19
1	Mo 202.031†	9.1	-14.5	-1.0240 ug/L	-1.0240 ppb	16:49:19
1	Ni 231.604†	63.7	-3.4	-0.0843 ug/L	-0.0843 ppb	16:49:19
1	P 214.914†	214.3	-12.8	-7.8928 ug/L	-7.8928 ppb	16:49:19
1	Pb 220.353†	-53.2	9.4	1.1493 ug/L	1.1493 ppb	16:49:19
1	S 181.975 Axial†	43.0	0.5	0.7238 ug/L	0.7238 ppb	16:49:19
1	Sb 206.836†	37.3	9.9	3.3534 ug/L	3.3534 ppb	16:49:19
1	Se 196.026†	-29.4	2.2	1.4795 ug/L	1.4795 ppb	16:49:19
1	Si 251.611†	537.7	-5.8	-0.1729 ug/L	-0.1729 ppb	16:49:19
1	Sn 189.927†	5.7	-1.9	-0.3300 ug/L	-0.3300 ppb	16:49:19
1	Ti 334.940†	-1328.3	29.0	0.0492 ug/L	0.0492 ppb	16:48:59
1	Tl 190.801†	-20.5	12.1	3.7103 ug/L	3.7103 ppb	16:49:19
1	U 409.014†	-2076.7	-91.9	-2.7131 ug/L	-2.7131 ppb	16:48:59
1	V 292.402†	-1322.2	-29.6	-0.2251 ug/L	-0.2251 ppb	16:48:59
1	Zn 213.857†	640.3	28.4	0.2671 ug/L	0.2671 ppb	16:49:19
1	SiO2†	524.6	-40.3	-2.7219 ug/L	-2.7219 ppb	16:50:15
2	Sc Radial	4944.4	4944.4	98.2 %		16:48:07
2	Y RADIAL	5363.5	5363.5	98.79 %		16:48:07
2	Al 396.153Radial†	-2.7	-2.1	-1.6010 ug/L	-1.6010 ppb	16:48:07
2	Ca 317.933Radial†	14.2	-5.3	-8.4304 ug/L	-8.4304 ppb	16:48:27
2	Fe 238.204 Radial†	9.3	0.6	4.8751 ug/L	4.8751 ppb	16:48:27
2	K 766.490 Radial†	2945.0	409.0	74.983 ug/L	74.983 ppb	16:48:07
2	Mg 279.077 IEC†	3.9	2.0	67.948 ug/L	67.948 ppb	16:48:27
2	Na 589.592 Radial†	-1212.0	46.2	13.819 ug/L	13.819 ppb	16:48:07
2	Sr 421.552†	0.7	20.2	0.1309 ug/L	0.1309 ppb	16:48:07
2	Sc 361.383	833346.4	833346.4	97.765 %		16:49:24
2	Y 371.029	708291.2	708291.2	98.011 %		16:49:24
2	Ag 328.068†	309.5	-41.5	-0.1903 ug/L	-0.1903 ppb	16:49:24
2	As 188.979†	-5.5	18.0	7.7871 ug/L	7.7871 ppb	16:49:44
2	B 249.677†	-299.8	325.2	7.2486 ug/L	7.2486 ppb	16:49:44
2	Ba 233.527†	-19.0	-8.0	-0.0637 ug/L	-0.0637 ppb	16:49:44
2	Be 313.107†	-4542.3	-60.8	-0.0233 ug/L	-0.0233 ppb	16:49:24
2	Cd 226.502†	-200.4	-0.9	-0.0103 ug/L	-0.0103 ppb	16:49:44
2	Co 228.616†	-78.0	-5.1	-0.1048 ug/L	-0.1048 ppb	16:49:44
2	Cr 267.716†	85.0	3.6	0.0404 ug/L	0.0404 ppb	16:49:44
2	Cu 324.752†	6402.2	136.4	0.4086 ug/L	0.4086 ppb	16:49:24
2	Mn 257.610†	421.6	-13.7	-0.0174 ug/L	-0.0174 ppb	16:49:44
2	Mo 202.031†	24.8	1.6	0.1158 ug/L	0.1158 ppb	16:49:44
2	Ni 231.604†	64.4	-2.1	-0.0527 ug/L	-0.0527 ppb	16:49:44



2	P 214.914†	234.2	9.7	5.8359 ug/L	5.8359 ppb	16:49:44
2	Pb 220.353†	-63.6	-1.7	-0.2065 ug/L	-0.2065 ppb	16:49:44
2	S 181.975 Axial†	53.0	11.2	15.884 ug/L	15.884 ppb	16:49:44
2	Sb 206.836†	37.6	10.5	3.6095 ug/L	3.6095 ppb	16:49:44
2	Se 196.026†	-27.3	4.1	2.6695 ug/L	2.6695 ppb	16:49:44
2	Si 251.611†	533.3	-4.9	-0.1584 ug/L	-0.1584 ppb	16:49:44
2	Sn 189.927†	9.7	2.2	0.3903 ug/L	0.3903 ppb	16:49:44
2	Ti 334.940†	-1379.2	-36.2	-0.0643 ug/L	-0.0643 ppb	16:49:24
2	Tl 190.801†	-43.6	-11.8	-3.6161 ug/L	-3.6161 ppb	16:49:44
2	U 409.014†	-2001.5	-35.7	-1.0528 ug/L	-1.0528 ppb	16:49:24
2	V 292.402†	-1354.0	-75.3	-0.5137 ug/L	-0.5137 ppb	16:49:24
2	Zn 213.857†	649.3	43.9	0.4145 ug/L	0.4145 ppb	16:49:44
2	SiO2†	532.3	-27.2	-1.8597 ug/L	-1.8597 ppb	16:50:20
3	Sc Radial	4889.1	4889.1	97.1 %		16:48:32
3	Y RADIAL	5263.1	5263.1	96.94 %		16:48:32
3	Al 396.153Radial†	2.7	3.5	2.6530 ug/L	2.6530 ppb	16:48:32
3	Ca 317.933Radial†	13.3	-6.1	-9.6929 ug/L	-9.6929 ppb	16:48:52
3	Fe 238.204 Radial†	10.5	1.9	16.443 ug/L	16.443 ppb	16:48:52
3	K 766.490 Radial†	2886.8	383.0	70.229 ug/L	70.229 ppb	16:48:32
3	Mg 279.077 IEC†	3.9	2.1	68.851 ug/L	68.851 ppb	16:48:52
3	Na 589.592 Radial†	-1260.2	-17.4	-5.2205 ug/L	-5.2205 ppb	16:48:32
3	Sr 421.552†	27.4	47.7	0.3082 ug/L	0.3082 ppb	16:48:32
3	Sc 361.383	840103.4	840103.4	98.558 %		16:49:50
3	Y 371.029	713031.9	713031.9	98.667 %		16:49:50
3	Ag 328.068†	251.5	-102.8	-0.4704 ug/L	-0.4704 ppb	16:49:50
3	As 188.979†	-20.0	3.4	1.4597 ug/L	1.4597 ppb	16:50:10
3	B 249.677†	-305.6	321.8	7.1715 ug/L	7.1715 ppb	16:50:10
3	Ba 233.527†	-15.5	-4.3	-0.0339 ug/L	-0.0339 ppb	16:50:10
3	Be 313.107†	-4547.9	-29.1	-0.0110 ug/L	-0.0110 ppb	16:49:50
3	Cd 226.502†	-184.4	17.0	0.1873 ug/L	0.1873 ppb	16:50:10
3	Co 228.616†	-66.0	7.7	0.1585 ug/L	0.1585 ppb	16:50:10
3	Cr 267.716†	75.0	-7.2	-0.0807 ug/L	-0.0807 ppb	16:50:10
3	Cu 324.752†	6412.0	93.7	0.2803 ug/L	0.2803 ppb	16:49:50
3	Mn 257.610†	417.7	-21.1	-0.0244 ug/L	-0.0244 ppb	16:50:10
3	Mo 202.031†	28.5	5.2	0.3676 ug/L	0.3676 ppb	16:50:10
3	Ni 231.604†	70.8	3.9	0.0977 ug/L	0.0977 ppb	16:50:10
3	P 214.914†	211.6	-15.2	-9.3652 ug/L	-9.3652 ppb	16:50:10
3	Pb 220.353†	-52.6	10.0	1.2274 ug/L	1.2274 ppb	16:50:10
3	S 181.975 Axial†	47.5	5.2	7.4133 ug/L	7.4133 ppb	16:50:10
3	Sb 206.836†	41.1	13.7	4.7078 ug/L	4.7078 ppb	16:50:10
3	Se 196.026†	-22.7	9.0	5.8487 ug/L	5.8487 ppb	16:50:10
3	Si 251.611†	539.2	-3.4	-0.1131 ug/L	-0.1131 ppb	16:50:10
3	Sn 189.927†	5.5	-2.1	-0.3663 ug/L	-0.3663 ppb	16:50:10
3	Ti 334.940†	-1325.3	29.8	0.0408 ug/L	0.0408 ppb	16:49:50
3	Tl 190.801†	-39.2	-6.9	-2.1238 ug/L	-2.1238 ppb	16:50:10
3	U 409.014†	-1943.8	39.4	1.1607 ug/L	1.1607 ppb	16:49:50
3	V 292.402†	-1337.5	-47.4	-0.3169 ug/L	-0.3169 ppb	16:49:50
3	Zn 213.857†	648.7	37.9	0.3562 ug/L	0.3562 ppb	16:50:10
3	SiO2†	528.8	-35.2	-2.4107 ug/L	-2.4107 ppb	16:50:25

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	838325.1	98.349 %	0.5127			0.52%
Sc Radial	4885.1	97.0 %	1.22			1.26%
Y 371.029	712292.6	98.564 %	0.5103			0.52%
Y RADIAL	5286.3	97.36 %	1.264			1.30%
Ag 328.068†	-58.3	-0.2651 ug/L	0.17994	-0.2651 ppb	0.17994	67.88%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	-3.4	-2.6374 ug/L	5.87742	-2.6374 ppb	5.87742	222.85%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	8.6	3.7505 ug/L	3.50634	3.7505 ppb	3.50634	93.49%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	330.9	7.3766 ug/L	0.29109	7.3766 ppb	0.29109	3.95%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-4.6	-0.0364 ug/L	0.02618	-0.0364 ppb	0.02618	71.94%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-38.5	-0.0146 ug/L	0.00753	-0.0146 ppb	0.00753	51.48%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-4.2	-6.7334 ug/L	4.08178	-6.7334 ppb	4.08178	60.62%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	10.5	0.1149 ug/L	0.10883	0.1149 ppb	0.10883	94.73%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	-2.9	-0.0596 ug/L	0.19944	-0.0596 ppb	0.19944	334.48%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	0.2	0.0021 ug/L	0.07181	0.0021 ppb	0.07181	>999.9%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	112.5	0.3376 ug/L	0.06521	0.3376 ppb	0.06521	19.31%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	1.4	12.059 ug/L	6.2716	12.059 ppb	6.2716	52.01%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	463.0	84.900 ug/L	21.4263	84.900 ppb	21.4263	25.24%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	1.2	39.507 ug/L	50.0440	39.507 ppb	50.0440	126.67%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	-19.2	-0.0215 ug/L	0.00367	-0.0215 ppb	0.00367	17.03%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	-2.6	-0.1802 ug/L	0.74151	-0.1802 ppb	0.74151	411.52%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	-6.4	-1.9044 ug/L	14.35517	-1.9044 ppb	14.35517	753.79%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	-0.5	-0.0131 ug/L	0.09724	-0.0131 ppb	0.09724	742.61%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-6.1	-3.8073 ug/L	8.38371	-3.8073 ppb	8.38371	220.20%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	5.9	0.7234 ug/L	0.80625	0.7234 ppb	0.80625	111.45%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	5.7	8.0070 ug/L	7.59738	8.0070 ppb	7.59738	94.88%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	11.4	3.8903 ug/L	0.71952	3.8903 ppb	0.71952	18.50%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	5.1	3.3326 ug/L	2.25879	3.3326 ppb	2.25879	67.78%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	-4.7	-0.1481 ug/L	0.03119	-0.1481 ppb	0.03119	21.05%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	-0.6	-0.1020 ug/L	0.42669	-0.1020 ppb	0.42669	418.38%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	31.2	0.2015 ug/L	0.09402	0.2015 ppb	0.09402	46.65%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	7.6	0.0086 ug/L	0.06327	0.0086 ppb	0.06327	738.97%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	-2.2	-0.6765 ug/L	3.87170	-0.6765 ppb	3.87170	572.28%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	-29.4	-0.8684 ug/L	1.94345	-0.8684 ppb	1.94345	223.79%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	-50.8	-0.3519 ug/L	0.14743	-0.3519 ppb	0.14743	41.89%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	36.7	0.3459 ug/L	0.07426	0.3459 ppb	0.07426	21.47%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		-34.2	-2.3307 ug/L	0.43664	-2.3307 ppb	0.43664	18.73%		
QC value within limits for SiO2 Recovery = Not calculated									

All analyte(s) passed QC.



Sequence No.: 15  
 Sample ID: LR1  
 Analyst: HSC  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 37  
 Date Collected: 1/11/2010 16:52:35  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: LR1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4777.8	4777.8	94.9 %		16:54:28
1	Y RADIAL	5095.9	5095.9	93.86 %		16:54:28
1	Al 396.153Radial†	-50.3	-52.3	-39.092 ug/L	-39.092 ppb	16:54:28
1	Ca 317.933Radial†	4.9	-14.7	-23.455 ug/L	-23.455 ppb	16:54:48
1	Fe 238.204 Radial†	40364.7	42530.9	368070 ug/L	368070 ppb	16:54:28
1	K 766.490 Radial†	2544.8	91.8	17.484 ug/L	17.484 ppb	16:54:28
1	Mg 279.077 IEC†	12.9	11.7	6.7228 ug/L	6.7228 ppb	16:54:48
1	Na 589.592 Radial†	-1204.3	11.3	3.3701 ug/L	3.3701 ppb	16:54:28
1	Sr 421.552†	54.9	77.3	0.4997 ug/L	0.4997 ppb	16:54:28
1	Sc 361.383	818966.7	818966.7	96.078 %		16:55:46
1	Y 371.029	688939.7	688939.7	95.333 %		16:55:46
1	Ag 328.068†	-24130.4	-25473.5	2.0432 ug/L	2.0432 ppb	16:55:46
1	As 188.979†	-200.7	-185.3	-7.8085 ug/L	-7.8085 ppb	16:56:06
1	B 249.677†	2067.2	2783.4	24.753 ug/L	24.753 ppb	16:55:46
1	Ba 233.527†	-1499.2	-1549.0	1.4702 ug/L	1.4702 ppb	16:55:46
1	Be 313.107†	-4472.3	-69.5	-0.0263 ug/L	-0.0263 ppb	16:55:46
1	Cd 226.502†	3072.4	3402.0	-0.2547 ug/L	-0.2547 ppb	16:55:46
1	Co 228.616†	165.2	246.6	-0.3410 ug/L	-0.3410 ppb	16:56:06
1	Cr 267.716†	-480.4	-583.2	0.7094 ug/L	0.7094 ppb	16:55:46
1	Cu 324.752†	1109.3	-5257.7	3.7230 ug/L	3.7230 ppb	16:55:46
1	Mn 257.610†	-30280.6	-31961.6	5.6541 ug/L	5.6541 ppb	16:55:46
1	Mo 202.031†	-335.3	-372.7	-1.1646 ug/L	-1.1646 ppb	16:55:46
1	Ni 231.604†	153.8	92.2	2.2920 ug/L	2.2920 ppb	16:56:06
1	P 214.914†	659.6	456.6	-13.871 ug/L	-13.871 ppb	16:56:06
1	Pb 220.353†	194.2	265.5	-2.7177 ug/L	-2.7177 ppb	16:56:06
1	S 181.975 Axial†	61.1	20.6	29.174 ug/L	29.174 ppb	16:56:06
1	Sb 206.836†	16.3	-10.9	-4.2280 ug/L	-4.2280 ppb	16:56:06
1	Se 196.026†	-1598.4	-1631.7	122.69 ug/L	122.69 ppb	16:56:06
1	Si 251.611†	-541.9	-1114.4	-35.169 ug/L	-35.169 ppb	16:55:46
1	Sn 189.927†	-22.0	-30.5	0.7785 ug/L	0.7785 ppb	16:56:06
1	Ti 334.940†	-1274.2	48.3	0.0161 ug/L	0.0161 ppb	16:55:46
1	Tl 190.801†	-46.2	-15.3	-4.9887 ug/L	-4.9887 ppb	16:56:06
1	U 409.014†	253.7	2275.6	25.185 ug/L	25.185 ppb	16:55:46
1	V 292.402†	7032.4	8629.2	2.4205 ug/L	2.4205 ppb	16:55:46
1	Zn 213.857†	4281.9	3836.4	0.5878 ug/L	0.5878 ppb	16:56:06
1	SiO2†	-450.1	-1040.2	-70.254 ug/L	-70.254 ppb	16:57:03
2	Sc Radial	4866.8	4866.8	96.7 %		16:54:53
2	Y RADIAL	5221.8	5221.8	96.18 %		16:54:53
2	Al 396.153Radial†	-37.8	-38.4	-28.382 ug/L	-28.382 ppb	16:54:53
2	Ca 317.933Radial†	0.8	-18.9	-30.269 ug/L	-30.269 ppb	16:55:13
2	Fe 238.204 Radial†	40766.9	42169.0	364940 ug/L	364940 ppb	16:54:53
2	K 766.490 Radial†	2544.0	41.9	8.3168 ug/L	8.3168 ppb	16:54:53
2	Mg 279.077 IEC†	10.6	9.1	-78.311 ug/L	-78.311 ppb	16:55:13
2	Na 589.592 Radial†	-1155.7	84.8	25.380 ug/L	25.380 ppb	16:54:53
2	Sr 421.552†	68.4	90.3	0.5833 ug/L	0.5833 ppb	16:54:53
2	Sc 361.383	829182.3	829182.3	97.276 %		16:56:12
2	Y 371.029	697004.5	697004.5	96.449 %		16:56:12
2	Ag 328.068†	-24523.8	-25568.4	0.5944 ug/L	0.5944 ppb	16:56:12
2	As 188.979†	-195.6	-177.5	-5.0286 ug/L	-5.0286 ppb	16:56:32
2	B 249.677†	2120.2	2811.4	25.694 ug/L	25.694 ppb	16:56:12
2	Ba 233.527†	-1466.1	-1495.7	1.7714 ug/L	1.7714 ppb	16:56:12
2	Be 313.107†	-4499.1	-39.7	-0.0153 ug/L	-0.0153 ppb	16:56:12
2	Cd 226.502†	3152.6	3445.0	0.5456 ug/L	0.5456 ppb	16:56:12
2	Co 228.616†	175.5	255.1	-0.1209 ug/L	-0.1209 ppb	16:56:32
2	Cr 267.716†	-487.2	-584.1	0.6397 ug/L	0.6397 ppb	16:56:12
2	Cu 324.752†	1142.3	-5237.9	3.6181 ug/L	3.6181 ppb	16:56:12
2	Mn 257.610†	-30582.1	-31883.2	5.3949 ug/L	5.3949 ppb	16:56:12
2	Mo 202.031†	-336.1	-369.3	-1.1378 ug/L	-1.1378 ppb	16:56:12
2	Ni 231.604†	131.9	67.6	1.6811 ug/L	1.6811 ppb	16:56:32



2	P 214.914†	676.9	465.9	-5.6765 ug/L	-5.6765 ppb	16:56:32
2	Pb 220.353†	220.9	290.4	0.6332 ug/L	0.6332 ppb	16:56:32
2	S 181.975 Axial†	62.0	20.8	29.382 ug/L	29.382 ppb	16:56:32
2	Sb 206.836†	15.4	-12.1	-4.6329 ug/L	-4.6329 ppb	16:56:32
2	Se 196.026†	-1598.1	-1610.8	126.14 ug/L	126.14 ppb	16:56:32
2	Si 251.611†	-519.6	-1084.6	-34.221 ug/L	-34.221 ppb	16:56:12
2	Sn 189.927†	-26.0	-34.3	0.0507 ug/L	0.0507 ppb	16:56:32
2	Ti 334.940†	-1370.9	-34.7	-0.1098 ug/L	-0.1098 ppb	16:56:12
2	Tl 190.801†	-59.8	-28.6	-9.0942 ug/L	-9.0942 ppb	16:56:32
2	U 409.014†	145.7	2161.4	22.173 ug/L	22.173 ppb	16:56:12
2	V 292.402†	7100.9	8609.4	2.7594 ug/L	2.7594 ppb	16:56:12
2	Zn 213.857†	4292.4	3792.4	0.4787 ug/L	0.4787 ppb	16:56:32
2	SiO2†	-566.8	-1154.3	-78.052 ug/L	-78.052 ppb	16:57:08
3	Sc Radial	4800.8	4800.8	95.3 %		16:55:18
3	Y RADIAL	5158.3	5158.3	95.01 %		16:55:18
3	Al 396.153Radial†	-18.9	-19.1	-13.529 ug/L	-13.529 ppb	16:55:18
3	Ca 317.933Radial†	1.3	-18.5	-29.528 ug/L	-29.528 ppb	16:55:38
3	Fe 238.204 Radial†	40311.5	42271.3	365820 ug/L	365820 ppb	16:55:18
3	K 766.490 Radial†	2604.4	141.5	26.583 ug/L	26.583 ppb	16:55:18
3	Mg 279.077 IEC†	12.7	11.4	-3.2079 ug/L	-3.2079 ppb	16:55:38
3	Na 589.592 Radial†	-1206.3	15.3	4.5686 ug/L	4.5686 ppb	16:55:18
3	Sr 421.552†	41.7	63.2	0.4085 ug/L	0.4085 ppb	16:55:18
3	Sc 361.383	829219.1	829219.1	97.281 %		16:56:38
3	Y 371.029	697536.2	697536.2	96.522 %		16:56:38
3	Ag 328.068†	-24469.1	-25511.1	1.1485 ug/L	1.1485 ppb	16:56:38
3	As 188.979†	-203.4	-185.4	-8.2984 ug/L	-8.2984 ppb	16:56:58
3	B 249.677†	2104.4	2795.1	25.241 ug/L	25.241 ppb	16:56:38
3	Ba 233.527†	-1455.6	-1484.9	1.8902 ug/L	1.8902 ppb	16:56:38
3	Be 313.107†	-4451.5	9.5	0.0035 ug/L	0.0035 ppb	16:56:38
3	Cd 226.502†	3124.6	3416.1	0.1330 ug/L	0.1330 ppb	16:56:38
3	Co 228.616†	169.2	248.6	-0.2640 ug/L	-0.2640 ppb	16:56:58
3	Cr 267.716†	-505.9	-603.2	0.4449 ug/L	0.4449 ppb	16:56:38
3	Cu 324.752†	1105.3	-5276.0	3.5514 ug/L	3.5514 ppb	16:56:38
3	Mn 257.610†	-30493.2	-31790.4	5.5936 ug/L	5.5936 ppb	16:56:38
3	Mo 202.031†	-326.2	-359.0	-0.3506 ug/L	-0.3506 ppb	16:56:38
3	Ni 231.604†	150.8	87.0	2.1641 ug/L	2.1641 ppb	16:56:58
3	P 214.914†	651.3	439.6	-22.474 ug/L	-22.474 ppb	16:56:58
3	Pb 220.353†	225.1	294.8	1.0868 ug/L	1.0868 ppb	16:56:58
3	S 181.975 Axial†	67.3	26.1	36.983 ug/L	36.983 ppb	16:56:58
3	Sb 206.836†	27.2	-0.0	-0.4637 ug/L	-0.4637 ppb	16:56:58
3	Se 196.026†	-1612.5	-1625.5	119.47 ug/L	119.47 ppb	16:56:58
3	Si 251.611†	-573.4	-1139.9	-35.992 ug/L	-35.992 ppb	16:56:38
3	Sn 189.927†	-23.8	-32.1	0.4652 ug/L	0.4652 ppb	16:56:58
3	Ti 334.940†	-1374.2	-38.1	-0.1212 ug/L	-0.1212 ppb	16:56:38
3	Tl 190.801†	-52.5	-21.1	-6.7740 ug/L	-6.7740 ppb	16:56:58
3	U 409.014†	135.7	2151.1	21.769 ug/L	21.769 ppb	16:56:38
3	V 292.402†	7232.4	8744.3	3.5566 ug/L	3.5566 ppb	16:56:38
3	Zn 213.857†	4297.9	3797.8	0.4413 ug/L	0.4413 ppb	16:56:58
3	SiO2†	-544.4	-1131.3	-76.497 ug/L	-76.497 ppb	16:57:13

## Mean Data: LR1

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Conc. Units	Std.Dev.	RSD
Sc 361.383	825789.4	96.878 %		0.6932			0.72%
Sc Radial	4815.2	95.6 %		0.92			0.96%
Y 371.029	694493.5	96.101 %		0.6666			0.69%
Y RADIAL	5158.7	95.01 %		1.160			1.22%
Ag 328.068†	-25517.6	1.2620 ug/L		0.73104	1.2620 ppb	0.73104	57.93%
Al 396.153Radial†	-36.6	-27.001 ug/L		12.8374	-27.001 ppb	12.8374	47.54%
As 188.979†	-182.7	-7.0452 ug/L		1.76352	-7.0452 ppb	1.76352	25.03%
B 249.677†	2796.6	25.229 ug/L		0.4711	25.229 ppb	0.4711	1.87%
Ba 233.527†	-1509.8	1.7106 ug/L		0.21652	1.7106 ppb	0.21652	12.66%
Be 313.107†	-33.2	-0.0127 ug/L		0.01504	-0.0127 ppb	0.01504	118.51%
Ca 317.933Radial†	-17.3	-27.751 ug/L		3.7384	-27.751 ppb	3.7384	13.47%
Cd 226.502†	3421.0	0.1413 ug/L		0.40020	0.1413 ppb	0.40020	283.23%
Co 228.616†	250.1	-0.2420 ug/L		0.11167	-0.2420 ppb	0.11167	46.15%
Cr 267.716†	-590.2	0.5980 ug/L		0.13708	0.5980 ppb	0.13708	22.92%
Cu 324.752†	-5257.2	3.6308 ug/L		0.08649	3.6308 ppb	0.08649	2.38%
Fe 238.204 Radial†	42323.7	366280 ug/L		1614.1	366280 ppb	1614.1	0.44%
K 766.490 Radial†	91.7	17.461 ug/L		9.1333	17.461 ppb	9.1333	52.31%



Mg 279.077 IEC†	10.7	-24.932 ug/L	46.4932	-24.932 ppb	46.4932	186.48%
Mn 257.610†	-31878.4	5.5475 ug/L	0.13558	5.5475 ppb	0.13558	2.44%
Mo 202.031†	-367.0	-0.8843 ug/L	0.46241	-0.8843 ppb	0.46241	52.29%
Na 589.592 Radial†	37.1	11.106 ug/L	12.3761	11.106 ppb	12.3761	111.43%
Ni 231.604†	82.3	2.0457 ug/L	0.32221	2.0457 ppb	0.32221	15.75%
P 214.914†	454.1	-14.007 ug/L	8.3993	-14.007 ppb	8.3993	59.97%
Pb 220.353†	283.6	-0.3325 ug/L	2.07800	-0.3325 ppb	2.07800	624.92%
S 181.975 Axial†	22.5	31.847 ug/L	4.4497	31.847 ppb	4.4497	13.97%
Sb 206.836†	-7.7	-3.1082 ug/L	2.29916	-3.1082 ppb	2.29916	73.97%
Se 196.026†	-1622.7	122.77 ug/L	3.335	122.77 ppb	3.335	2.72%
Si 251.611†	-1113.0	-35.127 ug/L	0.8860	-35.127 ppb	0.8860	2.52%
Sn 189.927†	-32.3	0.4315 ug/L	0.36508	0.4315 ppb	0.36508	84.61%
Sr 421.552†	76.9	0.4972 ug/L	0.08744	0.4972 ppb	0.08744	17.59%
Ti 334.940†	-8.2	-0.0717 ug/L	0.07619	-0.0717 ppb	0.07619	106.30%
Tl 190.801†	-21.7	-6.9523 ug/L	2.05856	-6.9523 ppb	2.05856	29.61%
U 409.014†	2196.1	23.042 ug/L	1.8667	23.042 ppb	1.8667	8.10%
V 292.402†	8661.0	2.9122 ug/L	0.58327	2.9122 ppb	0.58327	20.03%
Zn 213.857†	3808.9	0.5026 ug/L	0.07610	0.5026 ppb	0.07610	15.14%
SiO2†	-1108.6	-74.934 ug/L	4.1270	-74.934 ppb	4.1270	5.51%



Sequence No.: 16

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/11/2010 16:59:25

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4917.0	4917.0	97.7 %		17:01:17
1	Y RADIAL	5235.9	5235.9	96.43 %		17:01:17
1	Al 396.153Radial†	6169.6	6318.6	4850.2 ug/L	4850.2 ppb	17:01:17
1	Ca 317.933Radial†	3017.0	3069.8	4911.9 ug/L	4911.9 ppb	17:01:37
1	Fe 238.204 Radial†	566.0	570.7	4954.4 ug/L	4954.4 ppb	17:01:37
1	K 766.490 Radial†	28759.1	26860.8	4908.0 ug/L	4908.0 ppb	17:01:17
1	Mg 279.077 IEC†	147.7	149.3	4989.0 ug/L	4989.0 ppb	17:01:37
1	Na 589.592 Radial†	29743.6	31739.6	9503.2 ug/L	9503.2 ppb	17:01:17
1	Sr 421.552†	71970.1	73720.9	476.12 ug/L	476.12 ppb	17:01:17
1	Sc 361.383	838361.1	838361.1	98.353 %		17:02:34
1	Y 371.029	700105.7	700105.7	96.878 %		17:02:34
1	Ag 328.068†	108759.4	110222.4	510.64 ug/L	510.64 ppb	17:02:39
1	As 188.979†	1120.4	1162.8	505.94 ug/L	505.94 ppb	17:02:59
1	B 249.677†	21434.1	22424.8	497.99 ug/L	497.99 ppb	17:02:39
1	Ba 233.527†	63114.9	64183.1	502.33 ug/L	502.33 ppb	17:02:39
1	Be 313.107†	1277275.1	1303246.3	497.70 ug/L	497.70 ppb	17:02:34
1	Cd 226.502†	44324.9	45271.2	502.26 ug/L	502.26 ppb	17:02:39
1	Co 228.616†	24105.9	24584.2	503.32 ug/L	503.32 ppb	17:02:39
1	Cr 267.716†	44273.4	44931.5	502.95 ug/L	502.95 ppb	17:02:39
1	Cu 324.752†	169720.3	166149.8	496.81 ug/L	496.81 ppb	17:02:39
1	Mn 257.610†	438566.0	445464.1	494.19 ug/L	494.19 ppb	17:02:34
1	Mo 202.031†	7074.4	7169.1	507.07 ug/L	507.07 ppb	17:02:59
1	Ni 231.604†	20045.4	20313.1	505.50 ug/L	505.50 ppb	17:02:39
1	P 214.914†	4239.4	4080.5	2388.6 ug/L	2388.6 ppb	17:02:59
1	Pb 220.353†	3987.5	4117.6	505.85 ug/L	505.85 ppb	17:02:59
1	S 181.975 Axial†	751.3	720.9	1019.3 ug/L	1019.3 ppb	17:02:59
1	Sb 206.836†	1455.6	1452.0	515.57 ug/L	515.57 ppb	17:02:59
1	Se 196.026†	738.2	782.6	521.90 ug/L	521.90 ppb	17:02:59
1	Si 251.611†	79252.1	80028.6	2542.5 ug/L	2542.5 ppb	17:02:39
1	Sn 189.927†	2830.9	2870.6	509.35 ug/L	509.35 ppb	17:02:59
1	Ti 334.940†	301641.2	308066.2	496.07 ug/L	496.07 ppb	17:02:39
1	Tl 190.801†	1572.2	1631.4	503.52 ug/L	503.52 ppb	17:02:59
1	U 409.014†	15002.9	17265.8	507.65 ug/L	507.65 ppb	17:02:39
1	V 292.402†	70723.5	73217.4	506.93 ug/L	506.93 ppb	17:02:39
1	Zn 213.857†	52923.1	53189.0	498.70 ug/L	498.70 ppb	17:02:39
1	SiO2†	78526.7	79269.8	5394.9 ug/L	5394.9 ppb	17:04:07
2	Sc Radial	4995.4	4995.4	99.2 %		17:01:42
2	Y RADIAL	5325.1	5325.1	98.08 %		17:01:42
2	Al 396.153Radial†	6217.2	6267.6	4811.3 ug/L	4811.3 ppb	17:01:42
2	Ca 317.933Radial†	2980.8	2984.8	4776.0 ug/L	4776.0 ppb	17:02:02
2	Fe 238.204 Radial†	559.0	554.6	4814.1 ug/L	4814.1 ppb	17:02:02
2	K 766.490 Radial†	29154.8	26797.8	4896.6 ug/L	4896.6 ppb	17:01:42
2	Mg 279.077 IEC†	149.7	149.0	4977.5 ug/L	4977.5 ppb	17:02:02
2	Na 589.592 Radial†	30095.6	31616.7	9466.4 ug/L	9466.4 ppb	17:01:42
2	Sr 421.552†	73036.4	73639.8	475.60 ug/L	475.60 ppb	17:01:42
2	Sc 361.383	849459.0	849459.0	99.655 %		17:03:05
2	Y 371.029	708280.0	708280.0	98.009 %		17:03:05
2	Ag 328.068†	106948.3	106960.3	495.53 ug/L	495.53 ppb	17:03:10
2	As 188.979†	1106.1	1133.5	493.19 ug/L	493.19 ppb	17:03:30
2	B 249.677†	20943.1	21647.4	480.71 ug/L	480.71 ppb	17:03:10
2	Ba 233.527†	62014.2	62240.2	487.13 ug/L	487.13 ppb	17:03:10
2	Be 313.107†	1291972.2	1301027.6	496.82 ug/L	496.82 ppb	17:03:05
2	Cd 226.502†	43636.6	43991.7	488.06 ug/L	488.06 ppb	17:03:10
2	Co 228.616†	23754.8	23911.6	489.56 ug/L	489.56 ppb	17:03:10
2	Cr 267.716†	43616.9	43684.5	488.99 ug/L	488.99 ppb	17:03:10
2	Cu 324.752†	166097.1	160259.5	479.20 ug/L	479.20 ppb	17:03:10
2	Mn 257.610†	444472.6	445565.5	494.29 ug/L	494.29 ppb	17:03:05
2	Mo 202.031†	7023.4	7024.0	496.80 ug/L	496.80 ppb	17:03:30
2	Ni 231.604†	19633.6	19633.6	488.58 ug/L	488.58 ppb	17:03:10



2	P 214.914†	4212.9	3997.6	2341.7 ug/L	2341.7 ppb	17:03:30
2	Pb 220.353†	3957.3	4034.3	495.64 ug/L	495.64 ppb	17:03:30
2	S 181.975 Axial†	739.1	698.7	987.85 ug/L	987.85 ppb	17:03:30
2	Sb 206.836†	1462.2	1439.4	510.86 ug/L	510.86 ppb	17:03:30
2	Se 196.026†	727.7	762.2	508.29 ug/L	508.29 ppb	17:03:30
2	Si 251.611†	77732.2	77450.7	2460.6 ug/L	2460.6 ppb	17:03:10
2	Sn 189.927†	2800.8	2802.8	497.31 ug/L	497.31 ppb	17:03:30
2	Ti 334.940†	296140.6	298539.7	480.72 ug/L	480.72 ppb	17:03:10
2	Tl 190.801†	1564.5	1602.8	494.71 ug/L	494.71 ppb	17:03:30
2	U 409.014†	14725.2	16787.8	493.59 ug/L	493.59 ppb	17:03:10
2	V 292.402†	69532.2	71082.5	492.22 ug/L	492.22 ppb	17:03:10
2	Zn 213.857†	52101.8	51661.8	484.40 ug/L	484.40 ppb	17:03:10
2	SiO2†	78941.9	78643.3	5352.4 ug/L	5352.4 ppb	17:04:12
3	Sc Radial	4857.7	4857.7	96.5 %		17:02:07
3	Y RADIAL	5177.7	5177.7	95.36 %		17:02:07
3	Al 396.153Radial†	6085.9	6309.0	4843.4 ug/L	4843.4 ppb	17:02:07
3	Ca 317.933Radial†	2976.8	3065.8	4905.5 ug/L	4905.5 ppb	17:02:27
3	Fe 238.204 Radial†	556.5	567.9	4929.7 ug/L	4929.7 ppb	17:02:27
3	K 766.490 Radial†	28539.9	26992.9	4932.4 ug/L	4932.4 ppb	17:02:07
3	Mg 279.077 IEC†	147.6	151.1	5047.1 ug/L	5047.1 ppb	17:02:27
3	Na 589.592 Radial†	29197.5	31545.2	9445.0 ug/L	9445.0 ppb	17:02:07
3	Sr 421.552†	71175.3	73796.3	476.61 ug/L	476.61 ppb	17:02:07
3	Sc 361.383	847741.7	847741.7	99.454 %		17:03:36
3	Y 371.029	706758.6	706758.6	97.799 %		17:03:36
3	Ag 328.068†	106910.9	107140.2	496.40 ug/L	496.40 ppb	17:03:41
3	As 188.979†	1100.5	1130.1	491.76 ug/L	491.76 ppb	17:04:01
3	B 249.677†	21005.1	21752.3	483.04 ug/L	483.04 ppb	17:03:41
3	Ba 233.527†	62001.9	62353.8	488.02 ug/L	488.02 ppb	17:03:41
3	Be 313.107†	1288634.6	1300297.9	496.55 ug/L	496.55 ppb	17:03:36
3	Cd 226.502†	43589.9	44033.5	488.51 ug/L	488.51 ppb	17:03:41
3	Co 228.616†	23702.8	23907.7	489.47 ug/L	489.47 ppb	17:03:41
3	Cr 267.716†	43578.7	43734.8	489.55 ug/L	489.55 ppb	17:03:41
3	Cu 324.752†	166861.5	161365.8	482.51 ug/L	482.51 ppb	17:03:41
3	Mn 257.610†	443145.9	445135.1	493.82 ug/L	493.82 ppb	17:03:36
3	Mo 202.031†	6957.0	6971.5	493.10 ug/L	493.10 ppb	17:04:01
3	Ni 231.604†	19601.1	19640.8	488.76 ug/L	488.76 ppb	17:03:41
3	P 214.914†	4162.6	3955.6	2315.2 ug/L	2315.2 ppb	17:04:01
3	Pb 220.353†	3910.9	3995.8	490.91 ug/L	490.91 ppb	17:04:01
3	S 181.975 Axial†	717.5	678.4	959.20 ug/L	959.20 ppb	17:04:01
3	Sb 206.836†	1444.3	1424.3	505.54 ug/L	505.54 ppb	17:04:01
3	Se 196.026†	720.1	756.1	504.72 ug/L	504.72 ppb	17:04:01
3	Si 251.611†	77743.9	77620.5	2466.0 ug/L	2466.0 ppb	17:03:41
3	Sn 189.927†	2768.1	2775.6	492.52 ug/L	492.52 ppb	17:04:01
3	Ti 334.940†	296778.4	299783.0	482.73 ug/L	482.73 ppb	17:03:41
3	Tl 190.801†	1557.1	1598.5	493.41 ug/L	493.41 ppb	17:04:01
3	U 409.014†	14832.8	16925.9	497.65 ug/L	497.65 ppb	17:03:41
3	V 292.402†	69675.9	71368.3	494.10 ug/L	494.10 ppb	17:03:41
3	Zn 213.857†	51990.8	51656.1	484.33 ug/L	484.33 ppb	17:03:41
3	SiO2†	78042.5	77899.5	5301.8 ug/L	5301.8 ppb	17:04:17

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	845187.3	99.154 %	0.7008			0.71%
Sc Radial	4923.4	97.8 %	1.37			1.40%
Y 371.029	705048.1	97.562 %	0.6016			0.62%
Y RADIAL	5246.2	96.63 %	1.367			1.42%
Ag 328.068†	108107.6	500.85 ug/L	8.485	500.85 ppb	8.485	1.69%
QC value within limits for Ag 328.068 Recovery = 100.17%						
Al 396.153Radial†	6298.4	4834.9 ug/L	20.78	4834.9 ppb	20.78	0.43%
QC value within limits for Al 396.153Radial Recovery = 96.70%						
As 188.979†	1142.1	496.96 ug/L	7.805	496.96 ppb	7.805	1.57%
QC value within limits for As 188.979 Recovery = 99.39%						
B 249.677†	21941.5	487.25 ug/L	9.376	487.25 ppb	9.376	1.92%
QC value within limits for B 249.677 Recovery = 97.45%						
Ba 233.527†	62925.7	492.50 ug/L	8.532	492.50 ppb	8.532	1.73%
QC value within limits for Ba 233.527 Recovery = 98.50%						
Be 313.107†	1301524.0	497.02 ug/L	0.603	497.02 ppb	0.603	0.12%
QC value within limits for Be 313.107 Recovery = 99.40%						
Ca 317.933Radial†	3040.1	4864.5 ug/L	76.69	4864.5 ppb	76.69	1.58%



QC value within limits for Ca 317.933 Radial Recovery = 97.29%									
Cd	226.502†	44432.1	492.95 ug/L	8.069	492.95 ppb	8.069	1.64%		
QC value within limits for Cd 226.502 Recovery = 98.59%									
Co	228.616†	24134.5	494.12 ug/L	7.970	494.12 ppb	7.970	1.61%		
QC value within limits for Co 228.616 Recovery = 98.82%									
Cr	267.716†	44116.9	493.83 ug/L	7.901	493.83 ppb	7.901	1.60%		
QC value within limits for Cr 267.716 Recovery = 98.77%									
Cu	324.752†	162591.7	486.17 ug/L	9.360	486.17 ppb	9.360	1.93%		
QC value within limits for Cu 324.752 Recovery = 97.23%									
Fe	238.204 Radial†	564.4	4899.4 ug/L	74.92	4899.4 ppb	74.92	1.53%		
QC value within limits for Fe 238.204 Radial Recovery = 97.99%									
K	766.490 Radial†	26883.8	4912.3 ug/L	18.28	4912.3 ppb	18.28	0.37%		
QC value within limits for K 766.490 Radial Recovery = 98.25%									
Mg	279.077 IEC†	149.8	5004.5 ug/L	37.33	5004.5 ppb	37.33	0.75%		
QC value within limits for Mg 279.077 IEC Recovery = 100.09%									
Mn	257.610†	445388.2	494.10 ug/L	0.246	494.10 ppb	0.246	0.05%		
QC value within limits for Mn 257.610 Recovery = 98.82%									
Mo	202.031†	7054.9	498.99 ug/L	7.237	498.99 ppb	7.237	1.45%		
QC value within limits for Mo 202.031 Recovery = 99.80%									
Na	589.592 Radial†	31633.8	9471.5 ug/L	29.45	9471.5 ppb	29.45	0.31%		
QC value within limits for Na 589.592 Radial Recovery = 94.72%									
Ni	231.604†	19862.5	494.28 ug/L	9.712	494.28 ppb	9.712	1.96%		
QC value within limits for Ni 231.604 Recovery = 98.86%									
P	214.914†	4011.2	2348.5 ug/L	37.17	2348.5 ppb	37.17	1.58%		
QC value within limits for P 214.914 Recovery = 93.94%									
Pb	220.353†	4049.2	497.47 ug/L	7.639	497.47 ppb	7.639	1.54%		
QC value within limits for Pb 220.353 Recovery = 99.49%									
S	181.975 Axial†	699.3	988.77 ug/L	30.042	988.77 ppb	30.042	3.04%		
QC value within limits for S 181.975 Axial Recovery = 98.88%									
Sb	206.836†	1438.6	510.66 ug/L	5.019	510.66 ppb	5.019	0.98%		
QC value within limits for Sb 206.836 Recovery = 102.13%									
Se	196.026†	767.0	511.63 ug/L	9.063	511.63 ppb	9.063	1.77%		
QC value within limits for Se 196.026 Recovery = 102.33%									
Si	251.611†	78366.6	2489.7 ug/L	45.84	2489.7 ppb	45.84	1.84%		
QC value within limits for Si 251.611 Recovery = 99.59%									
Sn	189.927†	2816.3	499.73 ug/L	8.672	499.73 ppb	8.672	1.74%		
QC value within limits for Sn 189.927 Recovery = 99.95%									
Sr	421.552†	73719.0	476.11 ug/L	0.505	476.11 ppb	0.505	0.11%		
QC value within limits for Sr 421.552 Recovery = 95.22%									
Ti	334.940†	302129.6	486.51 ug/L	8.344	486.51 ppb	8.344	1.72%		
QC value within limits for Ti 334.940 Recovery = 97.30%									
Tl	190.801†	1610.9	497.21 ug/L	5.504	497.21 ppb	5.504	1.11%		
QC value within limits for Tl 190.801 Recovery = 99.44%									
U	409.014†	16993.1	499.63 ug/L	7.233	499.63 ppb	7.233	1.45%		
QC value within limits for U 409.014 Recovery = 99.93%									
V	292.402†	71889.4	497.75 ug/L	8.004	497.75 ppb	8.004	1.61%		
QC value within limits for V 292.402 Recovery = 99.55%									
Zn	213.857†	52169.0	489.14 ug/L	8.276	489.14 ppb	8.276	1.69%		
QC value within limits for Zn 213.857 Recovery = 97.83%									
SiO2†		78604.2	5349.7 ug/L	46.62	5349.7 ppb	46.62	0.87%		
QC value within limits for SiO2 Recovery = 100.04%									

All analyte(s) passed QC.



Sequence No.: 17  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 6  
 Date Collected: 1/11/2010 17:06:27  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4959.7	4959.7	98.5 %		17:08:18
1	Y RADIAL	5307.7	5307.7	97.76 %		17:08:18
1	Al 396.153Radial†	-4.9	-4.3	-3.3458 ug/L	-3.3458 ppb	17:08:18
1	Ca 317.933Radial†	19.8	0.3	0.4603 ug/L	0.4603 ppb	17:08:38
1	Fe 238.204 Radial†	9.5	0.7	6.1769 ug/L	6.1769 ppb	17:08:38
1	K 766.490 Radial†	2810.4	263.1	48.253 ug/L	48.253 ppb	17:08:18
1	Mg 279.077 IEC†	2.1	0.2	6.2400 ug/L	6.2400 ppb	17:08:38
1	Na 589.592 Radial†	-1295.3	-34.6	-10.370 ug/L	-10.370 ppb	17:08:18
1	Sr 421.552†	17.7	37.5	0.2423 ug/L	0.2423 ppb	17:08:18
1	Sc 361.383	837653.4	837653.4	98.270 %		17:09:35
1	Y 371.029	711362.6	711362.6	98.436 %		17:09:35
1	Ag 328.068†	346.0	-5.9	-0.0314 ug/L	-0.0314 ppb	17:09:35
1	As 188.979†	-19.8	3.5	1.5161 ug/L	1.5161 ppb	17:09:55
1	B 249.677†	-408.4	216.2	4.8206 ug/L	4.8206 ppb	17:09:55
1	Ba 233.527†	-26.8	-15.8	-0.1246 ug/L	-0.1246 ppb	17:09:55
1	Be 313.107†	-4542.8	-37.4	-0.0145 ug/L	-0.0145 ppb	17:09:35
1	Cd 226.502†	-183.5	17.4	0.1936 ug/L	0.1936 ppb	17:09:55
1	Co 228.616†	-86.9	-13.8	-0.2826 ug/L	-0.2826 ppb	17:09:55
1	Cr 267.716†	73.6	-8.4	-0.0963 ug/L	-0.0963 ppb	17:09:55
1	Cu 324.752†	6361.6	61.3	0.1808 ug/L	0.1808 ppb	17:09:35
1	Mn 257.610†	389.6	-48.4	-0.0533 ug/L	-0.0533 ppb	17:09:55
1	Mo 202.031†	22.1	-1.2	-0.0850 ug/L	-0.0850 ppb	17:09:55
1	Ni 231.604†	73.5	6.8	0.1706 ug/L	0.1706 ppb	17:09:55
1	P 214.914†	221.3	-4.7	-2.9009 ug/L	-2.9009 ppb	17:09:55
1	Pb 220.353†	-52.7	9.8	1.1934 ug/L	1.1934 ppb	17:09:55
1	S 181.975 Axial†	41.9	-0.4	-0.5198 ug/L	-0.5198 ppb	17:09:55
1	Sb 206.836†	32.4	5.1	1.7413 ug/L	1.7413 ppb	17:09:55
1	Se 196.026†	-31.4	0.0	0.0460 ug/L	0.0460 ppb	17:09:55
1	Si 251.611†	518.3	-23.0	-0.7330 ug/L	-0.7330 ppb	17:09:55
1	Sn 189.927†	11.8	4.4	0.7768 ug/L	0.7768 ppb	17:09:55
1	Ti 334.940†	-1421.1	-71.6	-0.1181 ug/L	-0.1181 ppb	17:09:35
1	Tl 190.801†	-34.6	-2.3	-0.7178 ug/L	-0.7178 ppb	17:09:55
1	U 409.014†	-1795.9	184.1	5.4311 ug/L	5.4311 ppb	17:09:35
1	V 292.402†	-1357.4	-71.5	-0.4799 ug/L	-0.4799 ppb	17:09:35
1	Zn 213.857†	621.8	12.5	0.1168 ug/L	0.1168 ppb	17:09:55
1	SiO2†	560.0	-1.9	-0.1242 ug/L	-0.1242 ppb	17:10:51
2	Sc Radial	4896.6	4896.6	97.2 %		17:08:43
2	Y RADIAL	5271.4	5271.4	97.09 %		17:08:43
2	Al 396.153Radial†	-10.4	-10.1	-7.7640 ug/L	-7.7640 ppb	17:08:43
2	Ca 317.933Radial†	15.3	-4.1	-6.5489 ug/L	-6.5489 ppb	17:09:03
2	Fe 238.204 Radial†	9.7	1.1	9.5272 ug/L	9.5272 ppb	17:09:03
2	K 766.490 Radial†	2927.0	419.8	76.971 ug/L	76.971 ppb	17:08:43
2	Mg 279.077 IEC†	2.3	0.5	16.572 ug/L	16.572 ppb	17:09:03
2	Na 589.592 Radial†	-1238.7	6.7	1.9955 ug/L	1.9955 ppb	17:08:43
2	Sr 421.552†	10.5	30.3	0.1958 ug/L	0.1958 ppb	17:08:43
2	Sc 361.383	843411.1	843411.1	98.946 %		17:10:00
2	Y 371.029	714722.4	714722.4	98.901 %		17:10:00
2	Ag 328.068†	311.8	-42.8	-0.1993 ug/L	-0.1993 ppb	17:10:00
2	As 188.979†	-15.2	8.2	3.5609 ug/L	3.5609 ppb	17:10:21
2	B 249.677†	-412.7	214.8	4.7872 ug/L	4.7872 ppb	17:10:21
2	Ba 233.527†	-17.4	-6.1	-0.0496 ug/L	-0.0496 ppb	17:10:21
2	Be 313.107†	-4553.8	-17.0	-0.0067 ug/L	-0.0067 ppb	17:10:00
2	Cd 226.502†	-193.1	8.9	0.0988 ug/L	0.0988 ppb	17:10:21
2	Co 228.616†	-73.3	0.6	0.0129 ug/L	0.0129 ppb	17:10:21
2	Cr 267.716†	74.6	-7.9	-0.0906 ug/L	-0.0906 ppb	17:10:21
2	Cu 324.752†	6431.1	87.4	0.2607 ug/L	0.2607 ppb	17:10:00
2	Mn 257.610†	398.2	-42.5	-0.0467 ug/L	-0.0467 ppb	17:10:21
2	Mo 202.031†	22.5	-1.0	-0.0689 ug/L	-0.0689 ppb	17:10:21
2	Ni 231.604†	83.4	16.4	0.4073 ug/L	0.4073 ppb	17:10:21



2	P 214.914†	224.9	-2.5	-1.6212 ug/L	-1.6212 ppb	17:10:21
2	Pb 220.353†	-60.9	1.8	0.2229 ug/L	0.2229 ppb	17:10:21
2	S 181.975 Axial†	44.0	1.5	2.0848 ug/L	2.0848 ppb	17:10:21
2	Sb 206.836†	38.1	10.6	3.6132 ug/L	3.6132 ppb	17:10:21
2	Se 196.026†	-33.3	-1.6	-1.0076 ug/L	-1.0076 ppb	17:10:21
2	Si 251.611†	524.7	-20.2	-0.6422 ug/L	-0.6422 ppb	17:10:21
2	Sn 189.927†	6.9	-0.7	-0.1207 ug/L	-0.1207 ppb	17:10:21
2	Ti 334.940†	-1414.5	-55.1	-0.0917 ug/L	-0.0917 ppb	17:10:00
2	Tl 190.801†	-31.9	0.6	0.1901 ug/L	0.1901 ppb	17:10:21
2	U 409.014†	-1916.5	74.7	2.2040 ug/L	2.2040 ppb	17:10:00
2	V 292.402†	-1430.0	-135.5	-0.9229 ug/L	-0.9229 ppb	17:10:00
2	Zn 213.857†	625.3	11.7	0.1068 ug/L	0.1068 ppb	17:10:21
2	SiO2†	536.0	-30.0	-2.0444 ug/L	-2.0444 ppb	17:10:56
3	Sc Radial	4974.8	4974.8	98.8 %		17:09:09
3	Y RADIAL	5378.8	5378.8	99.07 %		17:09:09
3	Al 396.153Radial†	-18.8	-18.4	-14.146 ug/L	-14.146 ppb	17:09:09
3	Ca 317.933Radial†	15.1	-4.5	-7.1798 ug/L	-7.1798 ppb	17:09:29
3	Fe 238.204 Radial†	9.7	1.0	8.2705 ug/L	8.2705 ppb	17:09:29
3	K 766.490 Radial†	2774.3	217.9	39.967 ug/L	39.967 ppb	17:09:09
3	Mg 279.077 IEC†	3.7	1.9	62.848 ug/L	62.848 ppb	17:09:29
3	Na 589.592 Radial†	-1258.0	7.2	2.1488 ug/L	2.1488 ppb	17:09:09
3	Sr 421.552†	-11.3	8.1	0.0522 ug/L	0.0522 ppb	17:09:09
3	Sc 361.383	844303.5	844303.5	99.050 %		17:10:26
3	Y 371.029	716237.9	716237.9	99.110 %		17:10:26
3	Ag 328.068†	314.4	-40.6	-0.1886 ug/L	-0.1886 ppb	17:10:26
3	As 188.979†	-17.9	5.5	2.3949 ug/L	2.3949 ppb	17:10:46
3	B 249.677†	-440.3	187.3	4.1753 ug/L	4.1753 ppb	17:10:46
3	Ba 233.527†	-21.7	-10.4	-0.0822 ug/L	-0.0822 ppb	17:10:46
3	Be 313.107†	-4533.0	8.9	0.0035 ug/L	0.0035 ppb	17:10:26
3	Cd 226.502†	-173.4	29.1	0.3224 ug/L	0.3224 ppb	17:10:46
3	Co 228.616†	-78.4	-4.4	-0.0930 ug/L	-0.0930 ppb	17:10:46
3	Cr 267.716†	76.4	-6.1	-0.0702 ug/L	-0.0702 ppb	17:10:46
3	Cu 324.752†	6457.0	106.7	0.3176 ug/L	0.3176 ppb	17:10:26
3	Mn 257.610†	394.1	-47.0	-0.0538 ug/L	-0.0538 ppb	17:10:46
3	Mo 202.031†	13.4	-10.1	-0.7159 ug/L	-0.7159 ppb	17:10:46
3	Ni 231.604†	73.8	6.5	0.1624 ug/L	0.1624 ppb	17:10:46
3	P 214.914†	212.3	-15.5	-9.5711 ug/L	-9.5711 ppb	17:10:46
3	Pb 220.353†	-51.4	11.5	1.3962 ug/L	1.3962 ppb	17:10:46
3	S 181.975 Axial†	45.6	3.0	4.3163 ug/L	4.3163 ppb	17:10:46
3	Sb 206.836†	32.2	4.6	1.5872 ug/L	1.5872 ppb	17:10:46
3	Se 196.026†	-37.1	-5.4	-3.4812 ug/L	-3.4812 ppb	17:10:46
3	Si 251.611†	531.5	-13.8	-0.4313 ug/L	-0.4313 ppb	17:10:46
3	Sn 189.927†	14.4	6.8	1.2111 ug/L	1.2111 ppb	17:10:46
3	Ti 334.940†	-1332.2	29.5	0.0401 ug/L	0.0401 ppb	17:10:26
3	Tl 190.801†	-43.1	-10.7	-3.2853 ug/L	-3.2853 ppb	17:10:46
3	U 409.014†	-1872.5	121.2	3.5749 ug/L	3.5749 ppb	17:10:26
3	V 292.402†	-1358.4	-61.7	-0.4250 ug/L	-0.4250 ppb	17:10:26
3	Zn 213.857†	635.8	21.7	0.2027 ug/L	0.2027 ppb	17:10:46
3	SiO2†	525.2	-41.4	-2.8052 ug/L	-2.8052 ppb	17:11:01

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	841789.4	98.755 %	0.4235			0.43%
Sc Radial	4943.7	98.2 %	0.82			0.84%
Y 371.029	714107.6	98.815 %	0.3453			0.35%
Y RADIAL	5319.3	97.97 %	1.006			1.03%
Ag 328.068†	-29.8	-0.1398 ug/L	0.09402	-0.1398 ppb	0.09402	67.27%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	-10.9	-8.4184 ug/L	5.42955	-8.4184 ppb	5.42955	64.50%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	5.7	2.4906 ug/L	1.02573	2.4906 ppb	1.02573	41.18%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	206.1	4.5944 ug/L	0.36331	4.5944 ppb	0.36331	7.91%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-10.8	-0.0855 ug/L	0.03759	-0.0855 ppb	0.03759	43.98%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-15.2	-0.0059 ug/L	0.00903	-0.0059 ppb	0.00903	153.14%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-2.8	-4.4228 ug/L	4.24064	-4.4228 ppb	4.24064	95.88%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	18.5	0.2049 ug/L	0.11223	0.2049 ppb	0.11223	54.76%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	-5.9	-0.1209 ug/L	0.14974	-0.1209 ppb	0.14974	123.85%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	-7.5	-0.0857 ug/L	0.01374	-0.0857 ppb	0.01374	16.03%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	85.2	0.2530 ug/L	0.06875	0.2530 ppb	0.06875	27.17%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	0.9	7.9915 ug/L	1.69250	7.9915 ppb	1.69250	21.18%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	300.3	55.064 ug/L	19.4196	55.064 ppb	19.4196	35.27%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	0.9	28.553 ug/L	30.1458	28.553 ppb	30.1458	105.58%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	-46.0	-0.0512 ug/L	0.00395	-0.0512 ppb	0.00395	7.72%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	-4.1	-0.2900 ug/L	0.36898	-0.2900 ppb	0.36898	127.25%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	-6.9	-2.0753 ug/L	7.18399	-2.0753 ppb	7.18399	346.16%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	9.9	0.2467 ug/L	0.13908	0.2467 ppb	0.13908	56.37%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-7.6	-4.6977 ug/L	4.26868	-4.6977 ppb	4.26868	90.87%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	7.7	0.9375 ug/L	0.62714	0.9375 ppb	0.62714	66.90%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	1.4	1.9604 ug/L	2.42045	1.9604 ppb	2.42045	123.46%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	6.7	2.3139 ug/L	1.12789	2.3139 ppb	1.12789	48.74%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	-2.3	-1.4809 ug/L	1.81058	-1.4809 ppb	1.81058	122.26%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	-19.0	-0.6022 ug/L	0.15479	-0.6022 ppb	0.15479	25.71%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	3.5	0.6224 ug/L	0.67922	0.6224 ppb	0.67922	109.13%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	25.3	0.1634 ug/L	0.09908	0.1634 ppb	0.09908	60.62%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	-32.4	-0.0566 ug/L	0.08476	-0.0566 ppb	0.08476	149.73%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	-4.1	-1.2710 ug/L	1.80250	-1.2710 ppb	1.80250	141.82%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	126.7	3.7367 ug/L	1.61963	3.7367 ppb	1.61963	43.34%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	-89.6	-0.6093 ug/L	0.27299	-0.6093 ppb	0.27299	44.81%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	15.3	0.1421 ug/L	0.05274	0.1421 ppb	0.05274	37.12%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		-24.4	-1.6579 ug/L	1.38166	-1.6579 ppb	1.38166	83.34%		
QC value within limits for SiO2 Recovery = Not calculated									

All analyte(s) passed QC.



Sequence No.: 24

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/11/2010 17:54:51

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4943.4	4943.4	98.2 %		17:56:43
1	Y RADIAL	5326.3	5326.3	98.10 %		17:56:43
1	Al 396.153Radial†	6221.6	6337.9	4865.1 ug/L	4865.1 ppb	17:56:43
1	Ca 317.933Radial†	3084.4	3121.9	4995.4 ug/L	4995.4 ppb	17:57:03
1	Fe 238.204 Radial†	585.8	587.8	5102.0 ug/L	5102.0 ppb	17:57:03
1	K 766.490 Radial†	29082.8	27033.0	4939.2 ug/L	4939.2 ppb	17:56:43
1	Mg 279.077 IEC†	154.5	155.5	5194.4 ug/L	5194.4 ppb	17:57:03
1	Na 589.592 Radial†	31924.6	33798.2	10120 ug/L	10120 ppb	17:56:43
1	Sr 421.552†	74675.0	76082.0	491.37 ug/L	491.37 ppb	17:56:43
1	Sc 361.383	845530.9	845530.9	99.194 %		17:58:00
1	Y 371.029	705679.4	705679.4	97.649 %		17:58:00
1	Ag 328.068†	110106.0	110642.2	512.63 ug/L	512.63 ppb	17:58:05
1	As 188.979†	1110.7	1143.3	497.56 ug/L	497.56 ppb	17:58:25
1	B 249.677†	21674.1	22482.0	499.24 ug/L	499.24 ppb	17:58:05
1	Ba 233.527†	63973.4	64504.3	504.85 ug/L	504.85 ppb	17:58:05
1	Be 313.107†	1297233.9	1312354.9	501.18 ug/L	501.18 ppb	17:58:00
1	Cd 226.502†	45043.4	45613.3	506.04 ug/L	506.04 ppb	17:58:05
1	Co 228.616†	24493.4	24767.0	507.05 ug/L	507.05 ppb	17:58:05
1	Cr 267.716†	44813.9	45094.7	504.78 ug/L	504.78 ppb	17:58:05
1	Cu 324.752†	172335.0	167322.5	500.32 ug/L	500.32 ppb	17:58:05
1	Mn 257.610†	444721.0	447888.0	496.89 ug/L	496.89 ppb	17:58:00
1	Mo 202.031†	7106.9	7141.0	505.09 ug/L	505.09 ppb	17:58:25
1	Ni 231.604†	20226.5	20322.8	505.74 ug/L	505.74 ppb	17:58:05
1	P 214.914†	4247.0	4051.7	2370.1 ug/L	2370.1 ppb	17:58:25
1	Pb 220.353†	3993.6	4089.4	502.39 ug/L	502.39 ppb	17:58:25
1	S 181.975 Axial†	773.7	736.9	1042.0 ug/L	1042.0 ppb	17:58:25
1	Sb 206.836†	1472.3	1456.4	516.97 ug/L	516.97 ppb	17:58:25
1	Se 196.026†	733.8	771.8	515.41 ug/L	515.41 ppb	17:58:25
1	Si 251.611†	80324.8	80426.7	2555.2 ug/L	2555.2 ppb	17:58:05
1	Sn 189.927†	2834.6	2849.9	505.70 ug/L	505.70 ppb	17:58:25
1	Ti 334.940†	305739.2	309596.8	498.53 ug/L	498.53 ppb	17:58:05
1	Tl 190.801†	1589.9	1635.7	504.84 ug/L	504.84 ppb	17:58:25
1	U 409.014†	15255.7	17391.2	511.33 ug/L	511.33 ppb	17:58:05
1	V 292.402†	71801.3	73694.1	510.14 ug/L	510.14 ppb	17:58:05
1	Zn 213.857†	53681.6	53497.4	501.59 ug/L	501.59 ppb	17:58:05
1	SiO2†	79690.8	79766.3	5428.8 ug/L	5428.8 ppb	17:59:33
2	Sc Radial	4980.6	4980.6	98.9 %		17:57:08
2	Y RADIAL	5296.3	5296.3	97.55 %		17:57:08
2	Al 396.153Radial†	6157.6	6225.8	4778.7 ug/L	4778.7 ppb	17:57:08
2	Ca 317.933Radial†	3058.1	3071.9	4915.3 ug/L	4915.3 ppb	17:57:28
2	Fe 238.204 Radial†	585.6	583.2	5061.8 ug/L	5061.8 ppb	17:57:28
2	K 766.490 Radial†	28944.9	26672.5	4873.1 ug/L	4873.1 ppb	17:57:08
2	Mg 279.077 IEC†	156.7	156.5	5228.2 ug/L	5228.2 ppb	17:57:28
2	Na 589.592 Radial†	31804.4	33434.0	10011 ug/L	10011 ppb	17:57:08
2	Sr 421.552†	74078.2	74911.0	483.81 ug/L	483.81 ppb	17:57:08
2	Sc 361.383	846831.5	846831.5	99.347 %		17:58:31
2	Y 371.029	705456.9	705456.9	97.618 %		17:58:31
2	Ag 328.068†	108118.4	108471.1	502.59 ug/L	502.59 ppb	17:58:36
2	As 188.979†	1117.1	1148.0	499.55 ug/L	499.55 ppb	17:58:56
2	B 249.677†	21349.6	22121.8	491.23 ug/L	491.23 ppb	17:58:36
2	Ba 233.527†	62954.3	63379.5	496.05 ug/L	496.05 ppb	17:58:36
2	Be 313.107†	1301692.7	1314834.6	502.10 ug/L	502.10 ppb	17:58:31
2	Cd 226.502†	44261.0	44756.0	496.52 ug/L	496.52 ppb	17:58:36
2	Co 228.616†	24150.7	24384.1	499.23 ug/L	499.23 ppb	17:58:36
2	Cr 267.716†	44168.1	44375.1	496.72 ug/L	496.72 ppb	17:58:36
2	Cu 324.752†	168771.4	163468.6	488.81 ug/L	488.81 ppb	17:58:36
2	Mn 257.610†	447518.7	450015.5	499.24 ug/L	499.24 ppb	17:58:31
2	Mo 202.031†	7101.8	7124.8	503.95 ug/L	503.95 ppb	17:58:56
2	Ni 231.604†	19954.2	20017.4	498.14 ug/L	498.14 ppb	17:58:36



2	P 214.914†	4241.2	4039.2	2365.0 ug/L	2365.0 ppb	17:58:56
2	Pb 220.353†	3977.7	4067.2	499.66 ug/L	499.66 ppb	17:58:56
2	S 181.975 Axial†	769.5	731.6	1034.4 ug/L	1034.4 ppb	17:58:56
2	Sb 206.836†	1481.5	1463.3	519.36 ug/L	519.36 ppb	17:58:56
2	Se 196.026†	733.7	770.5	514.46 ug/L	514.46 ppb	17:58:56
2	Si 251.611†	79005.7	78974.6	2509.0 ug/L	2509.0 ppb	17:58:36
2	Sn 189.927†	2847.3	2858.3	507.18 ug/L	507.18 ppb	17:58:56
2	Ti 334.940†	300290.7	303639.2	488.93 ug/L	488.93 ppb	17:58:36
2	Tl 190.801†	1587.8	1631.1	503.44 ug/L	503.44 ppb	17:58:56
2	U 409.014†	14775.6	16884.3	496.40 ug/L	496.40 ppb	17:58:36
2	V 292.402†	70573.4	72347.0	500.92 ug/L	500.92 ppb	17:58:36
2	Zn 213.857†	52831.6	52558.6	492.78 ug/L	492.78 ppb	17:58:36
2	SiO2†	79443.8	79394.3	5403.5 ug/L	5403.5 ppb	17:59:38
3	Sc Radial	4940.6	4940.6	98.1 %		17:57:33
3	Y RADIAL	5244.0	5244.0	96.59 %		17:57:33
3	Al 396.153Radial†	6201.9	6321.4	4852.6 ug/L	4852.6 ppb	17:57:33
3	Ca 317.933Radial†	3035.5	3074.0	4918.6 ug/L	4918.6 ppb	17:57:53
3	Fe 238.204 Radial†	573.3	575.4	4994.1 ug/L	4994.1 ppb	17:57:53
3	K 766.490 Radial†	29108.4	27076.3	4947.1 ug/L	4947.1 ppb	17:57:33
3	Mg 279.077 IEC†	153.8	154.8	5173.0 ug/L	5173.0 ppb	17:57:53
3	Na 589.592 Radial†	31837.3	33728.2	10099 ug/L	10099 ppb	17:57:33
3	Sr 421.552†	74383.3	75828.9	489.74 ug/L	489.74 ppb	17:57:33
3	Sc 361.383	845532.3	845532.3	99.195 %		17:59:02
3	Y 371.029	703814.3	703814.3	97.391 %		17:59:02
3	Ag 328.068†	108607.2	109131.1	505.61 ug/L	505.61 ppb	17:59:07
3	As 188.979†	1114.9	1147.6	499.35 ug/L	499.35 ppb	17:59:27
3	B 249.677†	21384.0	22189.5	492.75 ug/L	492.75 ppb	17:59:07
3	Ba 233.527†	63066.7	63590.2	497.70 ug/L	497.70 ppb	17:59:07
3	Be 313.107†	1297232.3	1312351.2	501.16 ug/L	501.16 ppb	17:59:02
3	Cd 226.502†	44292.5	44856.3	497.65 ug/L	497.65 ppb	17:59:07
3	Co 228.616†	24132.8	24403.4	499.62 ug/L	499.62 ppb	17:59:07
3	Cr 267.716†	44341.5	44618.3	499.44 ug/L	499.44 ppb	17:59:07
3	Cu 324.752†	169422.0	164385.5	491.54 ug/L	491.54 ppb	17:59:07
3	Mn 257.610†	446325.3	449504.7	498.67 ug/L	498.67 ppb	17:59:02
3	Mo 202.031†	7055.8	7089.4	501.44 ug/L	501.44 ppb	17:59:27
3	Ni 231.604†	19961.1	20055.2	499.08 ug/L	499.08 ppb	17:59:07
3	P 214.914†	4227.3	4031.7	2359.9 ug/L	2359.9 ppb	17:59:27
3	Pb 220.353†	3982.2	4077.9	500.98 ug/L	500.98 ppb	17:59:27
3	S 181.975 Axial†	762.9	726.1	1026.7 ug/L	1026.7 ppb	17:59:27
3	Sb 206.836†	1468.4	1452.4	515.48 ug/L	515.48 ppb	17:59:27
3	Se 196.026†	733.4	771.3	514.75 ug/L	514.75 ppb	17:59:27
3	Si 251.611†	79182.1	79274.6	2518.6 ug/L	2518.6 ppb	17:59:07
3	Sn 189.927†	2818.8	2834.0	502.87 ug/L	502.87 ppb	17:59:27
3	Ti 334.940†	301118.4	304938.0	491.02 ug/L	491.02 ppb	17:59:07
3	Tl 190.801†	1587.9	1633.6	504.21 ug/L	504.21 ppb	17:59:27
3	U 409.014†	15084.2	17218.3	506.25 ug/L	506.25 ppb	17:59:07
3	V 292.402†	70750.3	72634.5	502.87 ug/L	502.87 ppb	17:59:07
3	Zn 213.857†	52945.3	52755.0	494.64 ug/L	494.64 ppb	17:59:07
3	SiO2†	79380.6	79453.5	5407.6 ug/L	5407.6 ppb	17:59:43

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	845964.9	99.245 %		0.0880			0.09%
Sc Radial	4954.9	98.4 %		0.44			0.45%
Y 371.029	704983.6	97.553 %		0.1410			0.14%
Y RADIAL	5288.9	97.41 %		0.767			0.79%
Ag 328.068†	109414.8	506.94 ug/L		5.148	506.94 ppb	5.148	1.02%
QC value within limits for Ag 328.068 Recovery = 101.39%							
Al 396.153Radial†	6295.0	4832.1 ug/L		46.69	4832.1 ppb	46.69	0.97%
QC value within limits for Al 396.153Radial Recovery = 96.64%							
As 188.979†	1146.3	498.82 ug/L		1.096	498.82 ppb	1.096	0.22%
QC value within limits for As 188.979 Recovery = 99.76%							
B 249.677†	22264.4	494.41 ug/L		4.252	494.41 ppb	4.252	0.86%
QC value within limits for B 249.677 Recovery = 98.88%							
Ba 233.527†	63824.7	499.53 ug/L		4.680	499.53 ppb	4.680	0.94%
QC value within limits for Ba 233.527 Recovery = 99.91%							
Be 313.107†	1313180.3	501.48 ug/L		0.538	501.48 ppb	0.538	0.11%
QC value within limits for Be 313.107 Recovery = 100.30%							
Ca 317.933Radial†	3089.3	4943.1 ug/L		45.31	4943.1 ppb	45.31	0.92%



QC value within limits for Ca 317.933 Radial Recovery = 98.86%						
Cd 226.502†	45075.2	500.07 ug/L	5.201	500.07 ppb	5.201	1.04%
QC value within limits for Cd 226.502 Recovery = 100.01%						
Co 228.616†	24518.2	501.97 ug/L	4.407	501.97 ppb	4.407	0.88%
QC value within limits for Co 228.616 Recovery = 100.39%						
Cr 267.716†	44696.0	500.31 ug/L	4.097	500.31 ppb	4.097	0.82%
QC value within limits for Cr 267.716 Recovery = 100.06%						
Cu 324.752†	165058.9	493.56 ug/L	6.018	493.56 ppb	6.018	1.22%
QC value within limits for Cu 324.752 Recovery = 98.71%						
Fe 238.204 Radial†	582.1	5052.6 ug/L	54.49	5052.6 ppb	54.49	1.08%
QC value within limits for Fe 238.204 Radial Recovery = 101.05%						
K 766.490 Radial†	26927.3	4919.8 ug/L	40.63	4919.8 ppb	40.63	0.83%
QC value within limits for K 766.490 Radial Recovery = 98.40%						
Mg 279.077 IEC†	155.6	5198.5 ug/L	27.82	5198.5 ppb	27.82	0.54%
QC value within limits for Mg 279.077 IEC Recovery = 103.97%						
Mn 257.610†	449136.1	498.27 ug/L	1.227	498.27 ppb	1.227	0.25%
QC value within limits for Mn 257.610 Recovery = 99.65%						
Mo 202.031†	7118.4	503.49 ug/L	1.868	503.49 ppb	1.868	0.37%
QC value within limits for Mo 202.031 Recovery = 100.70%						
Na 589.592 Radial†	33653.5	10076 ug/L	57.9	10076 ppb	57.9	0.57%
QC value within limits for Na 589.592 Radial Recovery = 100.76%						
Ni 231.604†	20131.8	500.98 ug/L	4.143	500.98 ppb	4.143	0.83%
QC value within limits for Ni 231.604 Recovery = 100.20%						
P 214.914†	4040.9	2365.0 ug/L	5.11	2365.0 ppb	5.11	0.22%
QC value within limits for P 214.914 Recovery = 94.60%						
Pb 220.353†	4078.2	501.01 ug/L	1.365	501.01 ppb	1.365	0.27%
QC value within limits for Pb 220.353 Recovery = 100.20%						
S 181.975 Axial†	731.5	1034.4 ug/L	7.66	1034.4 ppb	7.66	0.74%
QC value within limits for S 181.975 Axial Recovery = 103.44%						
Sb 206.836†	1457.3	517.27 ug/L	1.954	517.27 ppb	1.954	0.38%
QC value within limits for Sb 206.836 Recovery = 103.45%						
Se 196.026†	771.2	514.87 ug/L	0.489	514.87 ppb	0.489	0.09%
QC value within limits for Se 196.026 Recovery = 102.97%						
Si 251.611†	79558.6	2527.6 ug/L	24.40	2527.6 ppb	24.40	0.97%
QC value within limits for Si 251.611 Recovery = 101.10%						
Sn 189.927†	2847.4	505.25 ug/L	2.188	505.25 ppb	2.188	0.43%
QC value within limits for Sn 189.927 Recovery = 101.05%						
Sr 421.552†	75607.3	488.30 ug/L	3.980	488.30 ppb	3.980	0.81%
QC value within limits for Sr 421.552 Recovery = 97.66%						
Ti 334.940†	306058.0	492.83 ug/L	5.049	492.83 ppb	5.049	1.02%
QC value within limits for Ti 334.940 Recovery = 98.57%						
Tl 190.801†	1633.5	504.16 ug/L	0.698	504.16 ppb	0.698	0.14%
QC value within limits for Tl 190.801 Recovery = 100.83%						
U 409.014†	17164.6	504.66 ug/L	7.591	504.66 ppb	7.591	1.50%
QC value within limits for U 409.014 Recovery = 100.93%						
V 292.402†	72891.9	504.64 ug/L	4.860	504.64 ppb	4.860	0.96%
QC value within limits for V 292.402 Recovery = 100.93%						
Zn 213.857†	52937.0	496.34 ug/L	4.645	496.34 ppb	4.645	0.94%
QC value within limits for Zn 213.857 Recovery = 99.27%						
SiO2†	79538.0	5413.3 ug/L	13.61	5413.3 ppb	13.61	0.25%
QC value within limits for SiO2 Recovery = 101.23%						
All analyte(s) passed QC.						



Sequence No.: 25

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 6

Date Collected: 1/11/2010 18:01:52

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: CCB

Rep#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5032.1	5032.1	99.9 %		18:03:44
1	Y RADIAL	5414.0	5414.0	99.72 %		18:03:44
1	Al 396.153Radial†	-15.3	-14.6	-11.291 ug/L	-11.291 ppb	18:03:44
1	Ca 317.933Radial†	17.7	-2.0	-3.2800 ug/L	-3.2800 ppb	18:04:04
1	Fe 238.204 Radial†	13.6	4.7	40.999 ug/L	40.999 ppb	18:04:04
1	K 766.490 Radial†	2764.5	176.1	32.254 ug/L	32.254 ppb	18:03:44
1	Mg 279.077 IEC†	0.7	-1.2	-39.898 ug/L	-39.898 ppb	18:04:04
1	Na 589.592 Radial†	-1075.7	204.0	61.089 ug/L	61.089 ppb	18:03:44
1	Sr 421.552†	41.1	60.7	0.3919 ug/L	0.3919 ppb	18:03:44
1	Sc 361.383	841942.6	841942.6	98.773 %		18:05:01
1	Y 371.029	716299.6	716299.6	99.119 %		18:05:01
1	Ag 328.068†	292.4	-62.0	-0.2711 ug/L	-0.2711 ppb	18:05:01
1	As 188.979†	-20.6	2.8	1.2194 ug/L	1.2194 ppb	18:05:21
1	B 249.677†	-432.2	194.3	4.3267 ug/L	4.3267 ppb	18:05:21
1	Ba 233.527†	-14.5	-3.3	-0.0244 ug/L	-0.0244 ppb	18:05:21
1	Be 313.107†	-4496.2	33.3	0.0129 ug/L	0.0129 ppb	18:05:01
1	Cd 226.502†	-196.1	5.5	0.0567 ug/L	0.0567 ppb	18:05:21
1	Co 228.616†	-79.0	-5.3	-0.1085 ug/L	-0.1085 ppb	18:05:21
1	Cr 267.716†	100.0	18.0	0.2021 ug/L	0.2021 ppb	18:05:21
1	Cu 324.752†	6346.0	12.6	0.0408 ug/L	0.0408 ppb	18:05:01
1	Mn 257.610†	417.3	-22.4	-0.0186 ug/L	-0.0186 ppb	18:05:21
1	Mo 202.031†	29.3	6.0	0.4237 ug/L	0.4237 ppb	18:05:21
1	Ni 231.604†	62.8	-4.4	-0.1101 ug/L	-0.1101 ppb	18:05:21
1	P 214.914†	215.4	-11.8	-7.2505 ug/L	-7.2505 ppb	18:05:21
1	Pb 220.353†	-64.2	-1.7	-0.2107 ug/L	-0.2107 ppb	18:05:21
1	S 181.975 Axial†	67.7	25.5	36.124 ug/L	36.124 ppb	18:05:21
1	Sb 206.836†	39.0	11.6	3.9684 ug/L	3.9684 ppb	18:05:21
1	Se 196.026†	-29.3	2.3	1.6428 ug/L	1.6428 ppb	18:05:21
1	Si 251.611†	551.3	7.7	0.2410 ug/L	0.2410 ppb	18:05:21
1	Sn 189.927†	5.1	-2.5	-0.4355 ug/L	-0.4355 ppb	18:05:21
1	Ti 334.940†	-1301.9	56.5	0.0945 ug/L	0.0945 ppb	18:05:01
1	Tl 190.801†	-29.2	3.3	1.0204 ug/L	1.0204 ppb	18:05:21
1	U 409.014†	-2040.2	-54.0	-1.5967 ug/L	-1.5967 ppb	18:05:01
1	V 292.402†	-1301.0	-7.4	-0.0547 ug/L	-0.0547 ppb	18:05:01
1	Zn 213.857†	634.9	22.6	0.2102 ug/L	0.2102 ppb	18:05:21
1	SiO2†	552.6	-12.2	-0.8472 ug/L	-0.8472 ppb	18:06:17
2	Sc Radial	5088.6	5088.6	101 %		18:04:09
2	Y RADIAL	5460.6	5460.6	100.6 %		18:04:09
2	Al 396.153Radial†	16.4	16.9	13.046 ug/L	13.046 ppb	18:04:09
2	Ca 317.933Radial†	18.1	-1.9	-3.0157 ug/L	-3.0157 ppb	18:04:30
2	Fe 238.204 Radial†	7.1	-1.9	-16.122 ug/L	-16.122 ppb	18:04:30
2	K 766.490 Radial†	2599.4	-18.0	-3.3445 ug/L	-3.3445 ppb	18:04:09
2	Mg 279.077 IEC†	5.9	3.9	131.67 ug/L	131.67 ppb	18:04:30
2	Na 589.592 Radial†	-1059.8	231.8	69.392 ug/L	69.392 ppb	18:04:09
2	Sr 421.552†	36.0	55.1	0.3561 ug/L	0.3561 ppb	18:04:09
2	Sc 361.383	827958.1	827958.1	97.133 %		18:05:27
2	Y 371.029	703295.6	703295.6	97.319 %		18:05:27
2	Ag 328.068†	285.1	-64.4	-0.3026 ug/L	-0.3026 ppb	18:05:27
2	As 188.979†	-19.3	3.8	1.6437 ug/L	1.6437 ppb	18:05:47
2	B 249.677†	-436.4	182.6	4.0715 ug/L	4.0715 ppb	18:05:47
2	Ba 233.527†	-12.6	-1.6	-0.0145 ug/L	-0.0145 ppb	18:05:47
2	Be 313.107†	-4441.1	13.2	0.0053 ug/L	0.0053 ppb	18:05:27
2	Cd 226.502†	-197.9	0.4	0.0053 ug/L	0.0053 ppb	18:05:47
2	Co 228.616†	-69.3	3.3	0.0670 ug/L	0.0670 ppb	18:05:47
2	Cr 267.716†	93.6	13.2	0.1465 ug/L	0.1465 ppb	18:05:47
2	Cu 324.752†	6334.7	109.4	0.3276 ug/L	0.3276 ppb	18:05:27
2	Mn 257.610†	419.5	-13.0	-0.0216 ug/L	-0.0216 ppb	18:05:47
2	Mo 202.031†	20.6	-2.5	-0.1779 ug/L	-0.1779 ppb	18:05:47
2	Ni 231.604†	67.7	1.7	0.0432 ug/L	0.0432 ppb	18:05:47



2	P 214.914†	220.5	-2.9	-1.8284 ug/L	-1.8284 ppb	18:05:47
2	Pb 220.353†	-48.4	13.5	1.6580 ug/L	1.6580 ppb	18:05:47
2	S 181.975 Axial†	55.3	13.9	19.705 ug/L	19.705 ppb	18:05:47
2	Sb 206.836†	41.8	15.1	5.1298 ug/L	5.1298 ppb	18:05:47
2	Se 196.026†	-37.8	-6.9	-4.4783 ug/L	-4.4783 ppb	18:05:47
2	Si 251.611†	528.5	-6.3	-0.1991 ug/L	-0.1991 ppb	18:05:47
2	Sn 189.927†	-2.9	-10.7	-1.8935 ug/L	-1.8935 ppb	18:05:47
2	Ti 334.940†	-1255.1	82.4	0.1225 ug/L	0.1225 ppb	18:05:27
2	Tl 190.801†	-31.5	0.4	0.1292 ug/L	0.1292 ppb	18:05:47
2	U 409.014†	-2026.4	-74.6	-2.2002 ug/L	-2.2002 ppb	18:05:27
2	V 292.402†	-1364.1	-94.7	-0.6482 ug/L	-0.6482 ppb	18:05:27
2	Zn 213.857†	617.7	15.7	0.1494 ug/L	0.1494 ppb	18:05:47
2	SiO2†	544.4	-11.2	-0.7600 ug/L	-0.7600 ppb	18:06:22
3	Sc Radial	4992.2	4992.2	99.1 %		18:04:35
3	Y RADIAL	5397.0	5397.0	99.40 %		18:04:35
3	Al 396.153Radial†	-1.3	-0.6	-0.4769 ug/L	-0.4769 ppb	18:04:35
3	Ca 317.933Radial†	15.3	-4.3	-6.9230 ug/L	-6.9230 ppb	18:04:55
3	Fe 238.204 Radial†	10.3	1.5	12.892 ug/L	12.892 ppb	18:04:55
3	K 766.490 Radial†	2660.8	93.6	17.140 ug/L	17.140 ppb	18:04:35
3	Mg 279.077 IEC†	-0.4	-2.4	-78.673 ug/L	-78.673 ppb	18:04:55
3	Na 589.592 Radial†	-1117.2	153.6	45.990 ug/L	45.990 ppb	18:04:35
3	Sr 421.552†	19.3	39.0	0.2517 ug/L	0.2517 ppb	18:04:35
3	Sc 361.383	835723.6	835723.6	98.044 %		18:05:52
3	Y 371.029	710110.9	710110.9	98.262 %		18:05:52
3	Ag 328.068†	317.7	-33.9	-0.1524 ug/L	-0.1524 ppb	18:05:52
3	As 188.979†	-23.8	-0.7	-0.2952 ug/L	-0.2952 ppb	18:06:12
3	B 249.677†	-447.7	175.3	3.9063 ug/L	3.9063 ppb	18:06:12
3	Ba 233.527†	-20.4	-9.4	-0.0743 ug/L	-0.0743 ppb	18:06:12
3	Be 313.107†	-4511.7	-16.3	-0.0064 ug/L	-0.0064 ppb	18:05:52
3	Cd 226.502†	-186.3	14.1	0.1550 ug/L	0.1550 ppb	18:06:12
3	Co 228.616†	-80.5	-7.4	-0.1528 ug/L	-0.1528 ppb	18:06:12
3	Cr 267.716†	99.4	18.1	0.2029 ug/L	0.2029 ppb	18:06:12
3	Cu 324.752†	6417.0	132.8	0.3989 ug/L	0.3989 ppb	18:05:52
3	Mn 257.610†	430.8	-5.4	-0.0014 ug/L	-0.0014 ppb	18:06:12
3	Mo 202.031†	17.9	-5.4	-0.3814 ug/L	-0.3814 ppb	18:06:12
3	Ni 231.604†	70.0	3.4	0.0845 ug/L	0.0845 ppb	18:06:12
3	P 214.914†	221.2	-4.3	-2.7203 ug/L	-2.7203 ppb	18:06:12
3	Pb 220.353†	-45.2	17.3	2.1165 ug/L	2.1165 ppb	18:06:12
3	S 181.975 Axial†	58.7	16.9	23.929 ug/L	23.929 ppb	18:06:12
3	Sb 206.836†	42.6	15.6	5.3268 ug/L	5.3268 ppb	18:06:12
3	Se 196.026†	-27.5	4.0	2.6010 ug/L	2.6010 ppb	18:06:12
3	Si 251.611†	541.0	1.3	0.0463 ug/L	0.0463 ppb	18:06:12
3	Sn 189.927†	7.3	-0.2	-0.0419 ug/L	-0.0419 ppb	18:06:12
3	Ti 334.940†	-1399.4	-52.8	-0.0785 ug/L	-0.0785 ppb	18:05:52
3	Tl 190.801†	-37.9	-5.8	-1.7945 ug/L	-1.7945 ppb	18:06:12
3	U 409.014†	-2040.8	-69.9	-2.0643 ug/L	-2.0643 ppb	18:05:52
3	V 292.402†	-1360.6	-78.1	-0.5460 ug/L	-0.5460 ppb	18:05:52
3	Zn 213.857†	617.9	10.0	0.0924 ug/L	0.0924 ppb	18:06:12
3	SiO2†	570.9	10.6	0.7314 ug/L	0.7314 ppb	18:06:27

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	835208.1	97.983 %	0.8220			0.84%
Sc Radial	5037.7	100 %	1.0			0.96%
Y 371.029	709902.0	98.234 %	0.9001			0.92%
Y RADIAL	5423.9	99.90 %	0.606			0.61%
Ag 328.068†	-53.5	-0.2420 ug/L	0.07922	-0.2420 ppb	0.07922	32.73%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	0.5	0.4259 ug/L	12.19337	0.4259 ppb	12.19337	>999.9%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	2.0	0.8560 ug/L	1.01923	0.8560 ppb	1.01923	119.07%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	184.0	4.1015 ug/L	0.21183	4.1015 ppb	0.21183	5.16%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-4.8	-0.0377 ug/L	0.03202	-0.0377 ppb	0.03202	84.87%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	10.0	0.0039 ug/L	0.00973	0.0039 ppb	0.00973	247.36%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-2.8	-4.4062 ug/L	2.18357	-4.4062 ppb	2.18357	49.56%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated						
Cd 226.502†	6.7	0.0723 ug/L	0.07602	0.0723 ppb	0.07602	105.10%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-3.1	-0.0648 ug/L	0.11624	-0.0648 ppb	0.11624	179.45%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	16.4	0.1838 ug/L	0.03237	0.1838 ppb	0.03237	17.61%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	84.9	0.2558 ug/L	0.18958	0.2558 ppb	0.18958	74.12%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	1.5	12.590 ug/L	28.5613	12.590 ppb	28.5613	226.86%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	83.9	15.350 ug/L	17.8665	15.350 ppb	17.8665	116.40%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	0.1	4.3650 ug/L	111.93789	4.3650 ppb	111.93789	>999.9%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	-13.6	-0.0139 ug/L	0.01092	-0.0139 ppb	0.01092	78.75%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	-0.7	-0.0452 ug/L	0.41864	-0.0452 ppb	0.41864	927.03%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	196.5	58.823 ug/L	11.8639	58.823 ppb	11.8639	20.17%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	0.2	0.0059 ug/L	0.10255	0.0059 ppb	0.10255	>999.9%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	-6.3	-3.9331 ug/L	2.90736	-3.9331 ppb	2.90736	73.92%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	9.7	1.1879 ug/L	1.23277	1.1879 ppb	1.23277	103.77%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	18.8	26.586 ug/L	8.5259	26.586 ppb	8.5259	32.07%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	14.1	4.8083 ug/L	0.73402	4.8083 ppb	0.73402	15.27%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-0.2	-0.0782 ug/L	3.84063	-0.0782 ppb	3.84063	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	0.9	0.0294 ug/L	0.22052	0.0294 ppb	0.22052	750.90%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	-4.5	-0.7903 ug/L	0.97541	-0.7903 ppb	0.97541	123.42%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	51.6	0.3332 ug/L	0.07283	0.3332 ppb	0.07283	21.85%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	28.7	0.0462 ug/L	0.10890	0.0462 ppb	0.10890	235.88%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	-0.7	-0.2150 ug/L	1.43867	-0.2150 ppb	1.43867	669.30%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-66.2	-1.9537 ug/L	0.31659	-1.9537 ppb	0.31659	16.20%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	-60.1	-0.4163 ug/L	0.31725	-0.4163 ppb	0.31725	76.21%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	16.1	0.1507 ug/L	0.05891	0.1507 ppb	0.05891	39.10%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	-4.3	-0.2919 ug/L	0.88728	-0.2919 ppb	0.88728	303.95%
QC value within limits for SiO2 Recovery = Not calculated						
All analyte(s) passed QC.						



Sequence No.: 33  
 Sample ID: CCV  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 1  
 Date Collected: 1/11/2010 18:58:03  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5144.6	5144.6	102 %		18:59:55
1	Y RADIAL	5507.0	5507.0	101.4 %		18:59:55
1	Al 396.153Radial†	6406.2	6270.7	4813.1 ug/L	4813.1 ppb	18:59:55
1	Ca 317.933Radial†	3114.2	3028.3	4845.5 ug/L	4845.5 ppb	19:00:15
1	Fe 238.204 Radial†	592.9	571.4	4960.0 ug/L	4960.0 ppb	19:00:15
1	K 766.490 Radial†	29692.5	26471.4	4836.2 ug/L	4836.2 ppb	18:59:55
1	Mg 279.077 IEC†	157.5	152.2	5085.6 ug/L	5085.6 ppb	19:00:15
1	Na 589.592 Radial†	32930.9	33511.6	10034 ug/L	10034 ppb	18:59:55
1	Sr 421.552†	76540.8	74933.9	483.95 ug/L	483.95 ppb	18:59:55
1	Sc 361.383	849883.4	849883.4	99.705 %		19:01:12
1	Y 371.029	708700.0	708700.0	98.067 %		19:01:12
1	Ag 328.068†	109742.0	109708.7	508.27 ug/L	508.27 ppb	19:01:17
1	As 188.979†	1136.7	1163.7	506.32 ug/L	506.32 ppb	19:01:38
1	B 249.677†	21497.9	22193.3	492.83 ug/L	492.83 ppb	19:01:17
1	Ba 233.527†	63727.5	63927.5	500.34 ug/L	500.34 ppb	19:01:17
1	Be 313.107†	1322793.7	1331292.9	508.38 ug/L	508.38 ppb	19:01:12
1	Cd 226.502†	44865.2	45202.1	501.49 ug/L	501.49 ppb	19:01:17
1	Co 228.616†	24369.9	24516.6	501.95 ug/L	501.95 ppb	19:01:17
1	Cr 267.716†	44675.4	44724.3	500.63 ug/L	500.63 ppb	19:01:17
1	Cu 324.752†	171998.3	166095.0	496.65 ug/L	496.65 ppb	19:01:17
1	Mn 257.610†	451883.5	452775.7	502.29 ug/L	502.29 ppb	19:01:12
1	Mo 202.031†	7199.3	7196.9	509.04 ug/L	509.04 ppb	19:01:38
1	Ni 231.604†	20128.7	20120.3	500.70 ug/L	500.70 ppb	19:01:17
1	P 214.914†	4345.1	4128.1	2417.8 ug/L	2417.8 ppb	19:01:38
1	Pb 220.353†	4038.4	4113.7	505.38 ug/L	505.38 ppb	19:01:38
1	S 181.975 Axial†	822.5	781.9	1105.7 ug/L	1105.7 ppb	19:01:38
1	Sb 206.836†	1510.2	1486.8	527.58 ug/L	527.58 ppb	19:01:38
1	Se 196.026†	758.2	792.4	528.28 ug/L	528.28 ppb	19:01:38
1	Si 251.611†	80267.6	79954.6	2540.2 ug/L	2540.2 ppb	19:01:17
1	Sn 189.927†	2889.1	2890.0	512.77 ug/L	512.77 ppb	19:01:38
1	Ti 334.940†	304788.1	307064.4	494.45 ug/L	494.45 ppb	19:01:17
1	Tl 190.801†	1606.7	1644.3	507.52 ug/L	507.52 ppb	19:01:38
1	U 409.014†	15207.6	17264.2	507.60 ug/L	507.60 ppb	19:01:17
1	V 292.402†	71520.5	73041.8	505.76 ug/L	505.76 ppb	19:01:17
1	Zn 213.857†	53506.3	53044.3	497.36 ug/L	497.36 ppb	19:01:17
1	SiO2†	81243.4	80912.1	5506.9 ug/L	5506.9 ppb	19:02:45
2	Sc Radial	5054.1	5054.1	100 %		19:00:20
2	Y RADIAL	5400.1	5400.1	99.46 %		19:00:20
2	Al 396.153Radial†	6372.3	6349.2	4873.4 ug/L	4873.4 ppb	19:00:20
2	Ca 317.933Radial†	3116.2	3084.9	4936.1 ug/L	4936.1 ppb	19:00:40
2	Fe 238.204 Radial†	597.5	586.4	5090.1 ug/L	5090.1 ppb	19:00:40
2	K 766.490 Radial†	29643.8	26943.4	4922.6 ug/L	4922.6 ppb	19:00:20
2	Mg 279.077 IEC†	155.6	153.1	5115.5 ug/L	5115.5 ppb	19:00:40
2	Na 589.592 Radial†	32617.7	33776.9	10113 ug/L	10113 ppb	19:00:20
2	Sr 421.552†	76232.5	75968.6	490.64 ug/L	490.64 ppb	19:00:20
2	Sc 361.383	841500.4	841500.4	98.722 %		19:01:43
2	Y 371.029	701064.2	701064.2	97.011 %		19:01:43
2	Ag 328.068†	111194.9	112276.9	520.18 ug/L	520.18 ppb	19:01:48
2	As 188.979†	1140.0	1178.3	512.74 ug/L	512.74 ppb	19:02:08
2	B 249.677†	22053.5	22971.0	510.12 ug/L	510.12 ppb	19:01:48
2	Ba 233.527†	64584.2	65432.0	512.11 ug/L	512.11 ppb	19:01:48
2	Be 313.107†	1302730.2	1324186.3	505.70 ug/L	505.70 ppb	19:01:43
2	Cd 226.502†	45568.8	46363.0	514.37 ug/L	514.37 ppb	19:01:48
2	Co 228.616†	24775.4	25170.9	515.32 ug/L	515.32 ppb	19:01:48
2	Cr 267.716†	45418.1	45923.0	514.05 ug/L	514.05 ppb	19:01:48
2	Cu 324.752†	174409.6	170256.0	509.09 ug/L	509.09 ppb	19:01:48
2	Mn 257.610†	446399.5	451735.6	501.16 ug/L	501.16 ppb	19:01:43
2	Mo 202.031†	7199.9	7269.4	514.17 ug/L	514.17 ppb	19:02:08
2	Ni 231.604†	20501.0	20698.6	515.09 ug/L	515.09 ppb	19:01:48



2	P 214.914†	4332.4	4158.7	2433.7 ug/L	2433.7 ppb	19:02:08
2	Pb 220.353†	4018.7	4134.1	507.87 ug/L	507.87 ppb	19:02:08
2	S 181.975 Axial†	824.6	792.3	1120.3 ug/L	1120.3 ppb	19:02:08
2	Sb 206.836†	1507.9	1499.5	532.04 ug/L	532.04 ppb	19:02:08
2	Se 196.026†	748.5	790.2	527.29 ug/L	527.29 ppb	19:02:08
2	Si 251.611†	81375.3	81878.6	2601.4 ug/L	2601.4 ppb	19:01:48
2	Sn 189.927†	2860.0	2889.4	512.69 ug/L	512.69 ppb	19:02:08
2	Ti 334.940†	308906.0	314280.9	506.07 ug/L	506.07 ppb	19:01:48
2	Tl 190.801†	1603.9	1657.5	511.56 ug/L	511.56 ppb	19:02:08
2	U 409.014†	15380.3	17591.1	517.20 ug/L	517.20 ppb	19:01:48
2	V 292.402†	72630.9	74881.2	518.38 ug/L	518.38 ppb	19:01:48
2	Zn 213.857†	54302.8	54385.8	509.92 ug/L	509.92 ppb	19:01:48
2	SiO2†	81061.5	81539.5	5549.6 ug/L	5549.6 ppb	19:02:50
3	Sc Radial	5031.9	5031.9	99.9 %		19:00:45
3	Y RADIAL	5396.5	5396.5	99.39 %		19:00:45
3	Al 396.153Radial†	6345.2	6350.2	4874.7 ug/L	4874.7 ppb	19:00:45
3	Ca 317.933Radial†	3113.6	3095.9	4953.8 ug/L	4953.8 ppb	19:01:05
3	Fe 238.204 Radial†	589.4	580.9	5041.8 ug/L	5041.8 ppb	19:01:05
3	K 766.490 Radial†	29541.1	26971.1	4927.8 ug/L	4927.8 ppb	19:00:45
3	Mg 279.077 IEC†	155.5	153.7	5135.4 ug/L	5135.4 ppb	19:01:05
3	Na 589.592 Radial†	32332.6	33635.2	10071 ug/L	10071 ppb	19:00:45
3	Sr 421.552†	75829.5	75900.8	490.20 ug/L	490.20 ppb	19:00:45
3	Sc 361.383	857935.6	857935.6	100.65 %		19:02:14
3	Y 371.029	715236.9	715236.9	98.972 %		19:02:14
3	Ag 328.068†	110051.9	108983.5	504.95 ug/L	504.95 ppb	19:02:19
3	As 188.979†	1139.0	1155.2	502.68 ug/L	502.68 ppb	19:02:39
3	B 249.677†	21674.8	22166.7	492.24 ug/L	492.24 ppb	19:02:19
3	Ba 233.527†	63825.4	63424.9	496.41 ug/L	496.41 ppb	19:02:19
3	Be 313.107†	1327030.1	1323050.1	505.23 ug/L	505.23 ppb	19:02:14
3	Cd 226.502†	44870.2	44784.7	496.85 ug/L	496.85 ppb	19:02:19
3	Co 228.616†	24430.9	24347.8	498.48 ug/L	498.48 ppb	19:02:19
3	Cr 267.716†	44855.9	44483.1	497.93 ug/L	497.93 ppb	19:02:19
3	Cu 324.752†	172448.3	164923.0	493.15 ug/L	493.15 ppb	19:02:19
3	Mn 257.610†	453941.4	450566.5	499.85 ug/L	499.85 ppb	19:02:14
3	Mo 202.031†	7182.9	7112.8	503.10 ug/L	503.10 ppb	19:02:39
3	Ni 231.604†	20189.2	19991.0	497.48 ug/L	497.48 ppb	19:02:19
3	P 214.914†	4314.1	4056.4	2374.6 ug/L	2374.6 ppb	19:02:39
3	Pb 220.353†	4039.8	4077.1	500.88 ug/L	500.88 ppb	19:02:39
3	S 181.975 Axial†	823.9	775.6	1096.7 ug/L	1096.7 ppb	19:02:39
3	Sb 206.836†	1502.9	1465.3	519.99 ug/L	519.99 ppb	19:02:39
3	Se 196.026†	739.8	767.0	512.15 ug/L	512.15 ppb	19:02:39
3	Si 251.611†	80305.3	79236.5	2517.4 ug/L	2517.4 ppb	19:02:19
3	Sn 189.927†	2871.7	2845.5	504.91 ug/L	504.91 ppb	19:02:39
3	Ti 334.940†	305241.9	304646.2	490.56 ug/L	490.56 ppb	19:02:19
3	Tl 190.801†	1617.4	1639.8	506.11 ug/L	506.11 ppb	19:02:39
3	U 409.014†	15197.1	17110.6	503.07 ug/L	503.07 ppb	19:02:19
3	V 292.402†	71738.1	72584.8	502.54 ug/L	502.54 ppb	19:02:19
3	Zn 213.857†	53694.1	52727.3	494.38 ug/L	494.38 ppb	19:02:19
3	SiO2†	80175.4	79086.2	5382.5 ug/L	5382.5 ppb	19:02:55

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	849773.1	99.692 %	0.9641			0.97%
Sc Radial	5076.9	101 %	1.2			1.18%
Y 371.029	708333.7	98.016 %	0.9816			1.00%
Y RADIAL	5434.5	100.1 %	1.16			1.16%
Ag 328.068†	110323.1	511.13 ug/L	8.009	511.13 ppb	8.009	1.57%
QC value within limits for Ag 328.068 Recovery = 102.23%						
Al 396.153Radial†	6323.4	4853.7 ug/L	35.21	4853.7 ppb	35.21	0.73%
QC value within limits for Al 396.153Radial Recovery = 97.07%						
As 188.979†	1165.8	507.25 ug/L	5.095	507.25 ppb	5.095	1.00%
QC value within limits for As 188.979 Recovery = 101.45%						
B 249.677†	22443.7	498.40 ug/L	10.155	498.40 ppb	10.155	2.04%
QC value within limits for B 249.677 Recovery = 99.68%						
Ba 233.527†	64261.5	502.95 ug/L	8.173	502.95 ppb	8.173	1.63%
QC value within limits for Ba 233.527 Recovery = 100.59%						
Be 313.107†	1326176.4	506.44 ug/L	1.699	506.44 ppb	1.699	0.34%
QC value within limits for Be 313.107 Recovery = 101.29%						
Ca 317.933Radial†	3069.7	4911.8 ug/L	58.07	4911.8 ppb	58.07	1.18%



QC value within limits for Ca 317.933 Radial Recovery = 98.24%							
Cd 226.502†	45449.9	504.23 ug/L	9.079	504.23 ppb	9.079	1.80%	
QC value within limits for Cd 226.502 Recovery = 100.85%							
Co 228.616†	24678.5	505.25 ug/L	8.893	505.25 ppb	8.893	1.76%	
QC value within limits for Co 228.616 Recovery = 101.05%							
Cr 267.716†	45043.5	504.20 ug/L	8.631	504.20 ppb	8.631	1.71%	
QC value within limits for Cr 267.716 Recovery = 100.84%							
Cu 324.752†	167091.3	499.63 ug/L	8.379	499.63 ppb	8.379	1.68%	
QC value within limits for Cu 324.752 Recovery = 99.93%							
Fe 238.204 Radial†	579.6	5030.6 ug/L	65.79	5030.6 ppb	65.79	1.31%	
QC value within limits for Fe 238.204 Radial Recovery = 100.61%							
K 766.490 Radial†	26795.3	4895.5 ug/L	51.48	4895.5 ppb	51.48	1.05%	
QC value within limits for K 766.490 Radial Recovery = 97.91%							
Mg 279.077 IEC†	153.0	5112.2 ug/L	25.03	5112.2 ppb	25.03	0.49%	
QC value within limits for Mg 279.077 IEC Recovery = 102.24%							
Mn 257.610†	451692.6	501.10 ug/L	1.222	501.10 ppb	1.222	0.24%	
QC value within limits for Mn 257.610 Recovery = 100.22%							
Mo 202.031†	7193.0	508.77 ug/L	5.539	508.77 ppb	5.539	1.09%	
QC value within limits for Mo 202.031 Recovery = 101.75%							
Na 589.592 Radial†	33641.2	10073 ug/L	39.7	10073 ppb	39.7	0.39%	
QC value within limits for Na 589.592 Radial Recovery = 100.73%							
Ni 231.604†	20269.9	504.42 ug/L	9.377	504.42 ppb	9.377	1.86%	
QC value within limits for Ni 231.604 Recovery = 100.88%							
P 214.914†	4114.4	2408.7 ug/L	30.57	2408.7 ppb	30.57	1.27%	
QC value within limits for P 214.914 Recovery = 96.35%							
Pb 220.353†	4108.3	504.71 ug/L	3.545	504.71 ppb	3.545	0.70%	
QC value within limits for Pb 220.353 Recovery = 100.94%							
S 181.975 Axial†	783.3	1107.6 ug/L	11.91	1107.6 ppb	11.91	1.08%	
QC value greater than the upper limit for S 181.975 Axial Recovery = 110.76%							
Sb 206.836†	1483.9	526.54 ug/L	6.094	526.54 ppb	6.094	1.16%	
QC value within limits for Sb 206.836 Recovery = 105.31%							
Se 196.026†	783.2	522.57 ug/L	9.039	522.57 ppb	9.039	1.73%	
QC value within limits for Se 196.026 Recovery = 104.51%							
Si 251.611†	80356.6	2553.0 ug/L	43.45	2553.0 ppb	43.45	1.70%	
QC value within limits for Si 251.611 Recovery = 102.12%							
Sn 189.927†	2875.0	510.13 ug/L	4.515	510.13 ppb	4.515	0.89%	
QC value within limits for Sn 189.927 Recovery = 102.03%							
Sr 421.552†	75601.1	488.26 ug/L	3.738	488.26 ppb	3.738	0.77%	
QC value within limits for Sr 421.552 Recovery = 97.65%							
Ti 334.940†	308663.8	497.03 ug/L	8.071	497.03 ppb	8.071	1.62%	
QC value within limits for Ti 334.940 Recovery = 99.41%							
Tl 190.801†	1647.2	508.40 ug/L	2.826	508.40 ppb	2.826	0.56%	
QC value within limits for Tl 190.801 Recovery = 101.68%							
U 409.014†	17322.0	509.29 ug/L	7.216	509.29 ppb	7.216	1.42%	
QC value within limits for U 409.014 Recovery = 101.86%							
V 292.402†	73502.6	508.89 ug/L	8.370	508.89 ppb	8.370	1.64%	
QC value within limits for V 292.402 Recovery = 101.78%							
Zn 213.857†	53385.8	500.55 ug/L	8.252	500.55 ppb	8.252	1.65%	
QC value within limits for Zn 213.857 Recovery = 100.11%							
SiO2†	80512.6	5479.7 ug/L	86.82	5479.7 ppb	86.82	1.58%	
QC value within limits for SiO2 Recovery = 102.47%							
QC Failed. Continue with analysis.							



Sequence No.: 34  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 6  
 Date Collected: 1/11/2010 19:05:04  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5140.9	5140.9	102 %		19:06:56
1	Y RADIAL	5525.1	5525.1	101.8 %		19:06:56
1	Al 396.153Radial†	-14.0	-13.1	-10.088 ug/L	-10.088 ppb	19:06:56
1	Ca 317.933Radial†	20.2	-0.0	-0.0067 ug/L	-0.0067 ppb	19:07:16
1	Fe 238.204 Radial†	8.6	-0.5	-4.3200 ug/L	-4.3200 ppb	19:07:16
1	K 766.490 Radial†	2641.6	-2.8	-0.5760 ug/L	-0.5760 ppb	19:06:56
1	Mg 279.077 IEC†	1.4	-0.6	-19.419 ug/L	-19.419 ppb	19:07:16
1	Na 589.592 Radial†	-966.2	334.1	100.04 ug/L	100.04 ppb	19:06:56
1	Sr 421.552†	9.0	28.3	0.1828 ug/L	0.1828 ppb	19:06:56
1	Sc 361.383	860728.5	860728.5	100.98 %		19:08:13
1	Y 371.029	729476.3	729476.3	100.94 %		19:08:13
1	Ag 328.068†	308.9	-52.1	-0.2434 ug/L	-0.2434 ppb	19:08:13
1	As 188.979†	-36.8	-12.9	-5.5758 ug/L	-5.5758 ppb	19:08:33
1	B 249.677†	-450.6	185.6	4.1364 ug/L	4.1364 ppb	19:08:33
1	Ba 233.527†	-23.0	-11.4	-0.0898 ug/L	-0.0898 ppb	19:08:33
1	Be 313.107†	-4540.4	88.9	0.0342 ug/L	0.0342 ppb	19:08:13
1	Cd 226.502†	-191.0	14.9	0.1665 ug/L	0.1665 ppb	19:08:33
1	Co 228.616†	-62.5	12.8	0.2617 ug/L	0.2617 ppb	19:08:33
1	Cr 267.716†	64.2	-19.7	-0.2208 ug/L	-0.2208 ppb	19:08:33
1	Cu 324.752†	6528.5	53.1	0.1579 ug/L	0.1579 ppb	19:08:13
1	Mn 257.610†	420.9	-28.0	-0.0308 ug/L	-0.0308 ppb	19:08:33
1	Mo 202.031†	24.0	0.1	0.0071 ug/L	0.0071 ppb	19:08:33
1	Ni 231.604†	72.4	3.7	0.0919 ug/L	0.0919 ppb	19:08:33
1	P 214.914†	227.2	-4.8	-2.9794 ug/L	-2.9794 ppb	19:08:33
1	Pb 220.353†	-63.9	0.1	0.0136 ug/L	0.0136 ppb	19:08:33
1	S 181.975 Axial†	93.5	49.6	70.188 ug/L	70.188 ppb	19:08:33
1	Sb 206.836†	42.4	14.1	4.8329 ug/L	4.8329 ppb	19:08:33
1	Se 196.026†	-31.3	1.0	0.6403 ug/L	0.6403 ppb	19:08:33
1	Si 251.611†	536.6	-19.1	-0.6071 ug/L	-0.6071 ppb	19:08:33
1	Sn 189.927†	10.7	2.9	0.5179 ug/L	0.5179 ppb	19:08:33
1	Ti 334.940†	-1306.8	80.4	0.1306 ug/L	0.1306 ppb	19:08:13
1	Tl 190.801†	-33.6	-0.4	-0.1358 ug/L	-0.1358 ppb	19:08:33
1	U 409.014†	-1988.7	42.1	1.2440 ug/L	1.2440 ppb	19:08:13
1	V 292.402†	-1366.9	-44.0	-0.2974 ug/L	-0.2974 ppb	19:08:13
1	Zn 213.857†	610.2	-15.9	-0.1509 ug/L	-0.1509 ppb	19:08:33
1	SiO2†	573.4	-3.8	-0.2598 ug/L	-0.2598 ppb	19:09:29
2	Sc Radial	5104.9	5104.9	101 %		19:07:21
2	Y RADIAL	5499.2	5499.2	101.3 %		19:07:21
2	Al 396.153Radial†	-21.9	-20.9	-16.126 ug/L	-16.126 ppb	19:07:21
2	Ca 317.933Radial†	18.2	-1.8	-2.9041 ug/L	-2.9041 ppb	19:07:41
2	Fe 238.204 Radial†	11.7	2.6	22.690 ug/L	22.690 ppb	19:07:41
2	K 766.490 Radial†	2658.0	31.6	5.7561 ug/L	5.7561 ppb	19:07:21
2	Mg 279.077 IEC†	5.0	3.0	100.96 ug/L	100.96 ppb	19:07:41
2	Na 589.592 Radial†	-1056.1	238.8	71.492 ug/L	71.492 ppb	19:07:21
2	Sr 421.552†	-9.0	10.6	0.0684 ug/L	0.0684 ppb	19:07:21
2	Sc 361.383	855326.4	855326.4	100.34 %		19:08:38
2	Y 371.029	724039.3	724039.3	100.19 %		19:08:38
2	Ag 328.068†	243.8	-115.0	-0.5270 ug/L	-0.5270 ppb	19:08:38
2	As 188.979†	-20.9	2.8	1.2258 ug/L	1.2258 ppb	19:08:58
2	B 249.677†	-448.2	185.2	4.1253 ug/L	4.1253 ppb	19:08:58
2	Ba 233.527†	-23.1	-11.6	-0.0913 ug/L	-0.0913 ppb	19:08:58
2	Be 313.107†	-4542.2	58.7	0.0224 ug/L	0.0224 ppb	19:08:38
2	Cd 226.502†	-202.2	2.6	0.0269 ug/L	0.0269 ppb	19:08:58
2	Co 228.616†	-64.2	10.7	0.2186 ug/L	0.2186 ppb	19:08:58
2	Cr 267.716†	72.9	-10.6	-0.1206 ug/L	-0.1206 ppb	19:08:58
2	Cu 324.752†	6447.0	12.7	0.0375 ug/L	0.0375 ppb	19:08:38
2	Mn 257.610†	408.7	-37.5	-0.0432 ug/L	-0.0432 ppb	19:08:58
2	Mo 202.031†	19.6	-4.2	-0.2942 ug/L	-0.2942 ppb	19:08:58
2	Ni 231.604†	84.0	15.8	0.3931 ug/L	0.3931 ppb	19:08:58



2	P 214.914†	225.8	-4.9	-3.0264 ug/L	-3.0264 ppb	19:08:58
2	Pb 220.353†	-77.8	-14.2	-1.7419 ug/L	-1.7419 ppb	19:08:58
2	S 181.975 Axial†	91.8	48.5	68.627 ug/L	68.627 ppb	19:08:58
2	Sb 206.836†	40.3	12.3	4.1838 ug/L	4.1838 ppb	19:08:58
2	Se 196.026†	-27.7	4.4	2.8931 ug/L	2.8931 ppb	19:08:58
2	Si 251.611†	508.7	-43.5	-1.3814 ug/L	-1.3814 ppb	19:08:58
2	Sn 189.927†	3.2	-4.5	-0.7906 ug/L	-0.7906 ppb	19:08:58
2	Ti 334.940†	-1386.3	-7.0	-0.0213 ug/L	-0.0213 ppb	19:08:38
2	Tl 190.801†	-34.3	-1.3	-0.4094 ug/L	-0.4094 ppb	19:08:58
2	U 409.014†	-1909.2	109.0	3.2133 ug/L	3.2133 ppb	19:08:38
2	V 292.402†	-1402.5	-88.0	-0.6001 ug/L	-0.6001 ppb	19:08:38
2	Zn 213.857†	610.6	-11.7	-0.1157 ug/L	-0.1157 ppb	19:08:58
2	SiO2†	574.0	0.3	0.0304 ug/L	0.0304 ppb	19:09:34
3	Sc Radial	5111.0	5111.0	102 %		19:07:46
3	Y RADIAL	5546.4	5546.4	102.2 %		19:07:46
3	Al 396.153Radial†	-15.3	-14.5	-11.128 ug/L	-11.128 ppb	19:07:46
3	Ca 317.933Radial†	14.0	-6.0	-9.6274 ug/L	-9.6274 ppb	19:08:06
3	Fe 238.204 Radial†	8.1	-1.0	-8.2299 ug/L	-8.2299 ppb	19:08:06
3	K 766.490 Radial†	2696.4	66.3	12.117 ug/L	12.117 ppb	19:07:46
3	Mg 279.077 IEC†	3.9	1.9	64.399 ug/L	64.399 ppb	19:08:06
3	Na 589.592 Radial†	-983.0	312.0	93.413 ug/L	93.413 ppb	19:07:46
3	Sr 421.552†	31.8	50.9	0.3287 ug/L	0.3287 ppb	19:07:46
3	Sc 361.383	844303.3	844303.3	99.050 %		19:09:03
3	Y 371.029	716469.9	716469.9	99.142 %		19:09:03
3	Ag 328.068†	416.8	62.8	0.2860 ug/L	0.2860 ppb	19:09:03
3	As 188.979†	-20.6	2.9	1.2376 ug/L	1.2376 ppb	19:09:23
3	B 249.677†	-487.9	139.3	3.1061 ug/L	3.1061 ppb	19:09:23
3	Ba 233.527†	-11.6	-0.3	-0.0033 ug/L	-0.0033 ppb	19:09:23
3	Be 313.107†	-4518.4	23.6	0.0094 ug/L	0.0094 ppb	19:09:03
3	Cd 226.502†	-187.4	14.9	0.1663 ug/L	0.1663 ppb	19:09:23
3	Co 228.616†	-74.8	-0.8	-0.0182 ug/L	-0.0182 ppb	19:09:23
3	Cr 267.716†	50.2	-32.6	-0.3646 ug/L	-0.3646 ppb	19:09:23
3	Cu 324.752†	6342.6	-8.8	-0.0264 ug/L	-0.0264 ppb	19:09:03
3	Mn 257.610†	421.8	-19.0	-0.0246 ug/L	-0.0246 ppb	19:09:23
3	Mo 202.031†	17.2	-6.3	-0.4465 ug/L	-0.4465 ppb	19:09:23
3	Ni 231.604†	78.5	11.3	0.2817 ug/L	0.2817 ppb	19:09:23
3	P 214.914†	201.2	-26.7	-16.326 ug/L	-16.326 ppb	19:09:23
3	Pb 220.353†	-43.1	19.8	2.4268 ug/L	2.4268 ppb	19:09:23
3	S 181.975 Axial†	86.7	44.6	63.063 ug/L	63.063 ppb	19:09:23
3	Sb 206.836†	41.3	13.8	4.7140 ug/L	4.7140 ppb	19:09:23
3	Se 196.026†	-35.7	-4.0	-2.6278 ug/L	-2.6278 ppb	19:09:23
3	Si 251.611†	527.6	-17.8	-0.5611 ug/L	-0.5611 ppb	19:09:23
3	Sn 189.927†	6.7	-0.9	-0.1535 ug/L	-0.1535 ppb	19:09:23
3	Ti 334.940†	-1253.1	109.4	0.1703 ug/L	0.1703 ppb	19:09:03
3	Tl 190.801†	-35.7	-3.2	-0.9833 ug/L	-0.9833 ppb	19:09:23
3	U 409.014†	-2013.6	-21.3	-0.6257 ug/L	-0.6257 ppb	19:09:03
3	V 292.402†	-1352.1	-55.3	-0.3831 ug/L	-0.3831 ppb	19:09:03
3	Zn 213.857†	607.1	-7.3	-0.0701 ug/L	-0.0701 ppb	19:09:23
3	SiO2†	563.6	-2.6	-0.1675 ug/L	-0.1675 ppb	19:09:39

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	853452.7	100.12 %		0.982			0.98%
Sc Radial	5118.9	102 %		0.4			0.38%
Y 371.029	723328.5	100.09 %		0.904			0.90%
Y RADIAL	5523.6	101.7 %		0.44			0.43%
Ag 328.068†	-34.7	-0.1615 ug/L		0.41266	-0.1615 ppb	0.41266	255.58%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-16.1	-12.447 ug/L		3.2278	-12.447 ppb	3.2278	25.93%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-2.4	-1.0375 ug/L		3.93034	-1.0375 ppb	3.93034	378.84%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	170.0	3.7893 ug/L		0.59168	3.7893 ppb	0.59168	15.61%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-7.8	-0.0615 ug/L		0.05038	-0.0615 ppb	0.05038	81.95%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	57.1	0.0220 ug/L		0.01238	0.0220 ppb	0.01238	56.33%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-2.6	-4.1794 ug/L		4.93552	-4.1794 ppb	4.93552	118.09%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	10.8	0.1199 ug/L	0.08057	0.1199 ppb	0.08057	67.20%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	7.6	0.1540 ug/L	0.15071	0.1540 ppb	0.15071	97.85%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	-20.9	-0.2353 ug/L	0.12266	-0.2353 ppb	0.12266	52.13%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	19.0	0.0563 ug/L	0.09362	0.0563 ppb	0.09362	166.19%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	0.4	3.3800 ug/L	16.83669	3.3800 ppb	16.83669	498.13%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	31.7	5.7658 ug/L	6.34665	5.7658 ppb	6.34665	110.07%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	1.5	48.647 ug/L	61.7173	48.647 ppb	61.7173	126.87%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	-28.2	-0.0329 ug/L	0.00948	-0.0329 ppb	0.00948	28.85%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	-3.5	-0.2445 ug/L	0.23086	-0.2445 ppb	0.23086	94.41%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	295.0	88.317 ug/L	14.9431	88.317 ppb	14.9431	16.92%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	10.3	0.2556 ug/L	0.15228	0.2556 ppb	0.15228	59.59%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-12.1	-7.4439 ug/L	7.69203	-7.4439 ppb	7.69203	103.33%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	1.9	0.2329 ug/L	2.09299	0.2329 ppb	2.09299	898.85%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	47.5	67.293 ug/L	3.7453	67.293 ppb	3.7453	5.57%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	13.4	4.5769 ug/L	0.34560	4.5769 ppb	0.34560	7.55%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	0.5	0.3019 ug/L	2.77596	0.3019 ppb	2.77596	919.57%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	-26.8	-0.8499 ug/L	0.46092	-0.8499 ppb	0.46092	54.23%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	-0.8	-0.1421 ug/L	0.65432	-0.1421 ppb	0.65432	460.51%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	29.9	0.1933 ug/L	0.13045	0.1933 ppb	0.13045	67.49%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	60.9	0.0932 ug/L	0.10112	0.0932 ppb	0.10112	108.48%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	-1.7	-0.5095 ug/L	0.43252	-0.5095 ppb	0.43252	84.89%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	43.3	1.2772 ug/L	1.91972	1.2772 ppb	1.91972	150.31%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	-62.4	-0.4269 ug/L	0.15602	-0.4269 ppb	0.15602	36.55%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	-11.7	-0.1123 ug/L	0.04052	-0.1123 ppb	0.04052	36.09%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†	-2.0	-0.1323 ug/L	0.14825	-0.1323 ppb	0.14825	112.04%			
QC value within limits for SiO2 Recovery = Not calculated									
All analyte(s) passed QC.									



Sequence No.: 44

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/11/2010 20:14:46

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5237.6	5237.6	104 %		20:16:38
1	Y RADIAL	5568.0	5568.0	102.6 %		20:16:38
1	Al 396.153Radial†	6326.0	6082.2	4668.0 ug/L	4668.0 ppb	20:16:38
1	Ca 317.933Radial†	3176.9	3034.4	4855.3 ug/L	4855.3 ppb	20:16:58
1	Fe 238.204 Radial†	596.5	564.6	4901.0 ug/L	4901.0 ppb	20:16:58
1	K 766.490 Radial†	29542.8	25811.4	4715.5 ug/L	4715.5 ppb	20:16:38
1	Mg 279.077 IEC†	163.7	155.4	5193.6 ug/L	5193.6 ppb	20:16:58
1	Na 589.592 Radial†	32100.0	32140.5	9623.2 ug/L	9623.2 ppb	20:16:38
1	Sr 421.552†	76092.0	73172.2	472.58 ug/L	472.58 ppb	20:16:38
1	Sc 361.383	867661.4	867661.4	101.79 %		20:17:55
1	Y 371.029	722396.9	722396.9	99.963 %		20:17:55
1	Ag 328.068†	112559.6	110221.6	510.63 ug/L	510.63 ppb	20:18:01
1	As 188.979†	1153.6	1157.0	503.46 ug/L	503.46 ppb	20:18:21
1	B 249.677†	22332.3	22571.3	501.25 ug/L	501.25 ppb	20:18:01
1	Ba 233.527†	65622.0	64479.0	504.65 ug/L	504.65 ppb	20:18:01
1	Be 313.107†	1343717.7	1324665.2	505.88 ug/L	505.88 ppb	20:17:55
1	Cd 226.502†	46013.6	45408.3	503.79 ug/L	503.79 ppb	20:18:01
1	Co 228.616†	25080.3	24713.8	505.95 ug/L	505.95 ppb	20:18:01
1	Cr 267.716†	45949.9	45058.4	504.37 ug/L	504.37 ppb	20:18:01
1	Cu 324.752†	176616.6	167097.5	499.64 ug/L	499.64 ppb	20:18:01
1	Mn 257.610†	460294.6	451752.5	501.15 ug/L	501.15 ppb	20:17:55
1	Mo 202.031†	7267.3	7115.7	503.29 ug/L	503.29 ppb	20:18:21
1	Ni 231.604†	20697.9	20265.8	504.32 ug/L	504.32 ppb	20:18:01
1	P 214.914†	4345.6	4039.3	2362.8 ug/L	2362.8 ppb	20:18:21
1	Pb 220.353†	4069.5	4061.2	498.90 ug/L	498.90 ppb	20:18:21
1	S 181.975 Axial†	768.1	711.6	1006.2 ug/L	1006.2 ppb	20:18:21
1	Sb 206.836†	1505.7	1451.3	515.15 ug/L	515.15 ppb	20:18:21
1	Se 196.026†	758.4	777.1	518.17 ug/L	518.17 ppb	20:18:21
1	Si 251.611†	83045.4	81034.0	2574.6 ug/L	2574.6 ppb	20:18:01
1	Sn 189.927†	2903.5	2844.8	504.77 ug/L	504.77 ppb	20:18:21
1	Ti 334.940†	318042.2	313821.9	505.32 ug/L	505.32 ppb	20:17:55
1	Tl 190.801†	1622.6	1626.9	502.20 ug/L	502.20 ppb	20:18:21
1	U 409.014†	15598.2	17335.5	509.71 ug/L	509.71 ppb	20:18:01
1	V 292.402†	73736.4	73749.0	510.51 ug/L	510.51 ppb	20:18:01
1	Zn 213.857†	55050.9	53462.2	501.29 ug/L	501.29 ppb	20:18:01
1	SiO2†	80857.2	78863.2	5367.3 ug/L	5367.3 ppb	20:19:28
2	Sc Radial	5100.6	5100.6	101 %		20:17:03
2	Y RADIAL	5471.6	5471.6	100.8 %		20:17:03
2	Al 396.153Radial†	6444.4	6362.6	4884.3 ug/L	4884.3 ppb	20:17:03
2	Ca 317.933Radial†	3213.8	3152.9	5045.0 ug/L	5045.0 ppb	20:17:23
2	Fe 238.204 Radial†	607.2	590.6	5125.7 ug/L	5125.7 ppb	20:17:23
2	K 766.490 Radial†	29669.9	26700.1	4878.2 ug/L	4878.2 ppb	20:17:03
2	Mg 279.077 IEC†	159.9	156.0	5210.7 ug/L	5210.7 ppb	20:17:23
2	Na 589.592 Radial†	32097.4	32967.2	9870.8 ug/L	9870.8 ppb	20:17:03
2	Sr 421.552†	76711.0	75748.9	489.22 ug/L	489.22 ppb	20:17:03
2	Sc 361.383	870941.8	870941.8	102.18 %		20:18:27
2	Y 371.029	726536.0	726536.0	100.54 %		20:18:27
2	Ag 328.068†	112058.8	109314.9	506.51 ug/L	506.51 ppb	20:18:32
2	As 188.979†	1154.9	1153.9	502.18 ug/L	502.18 ppb	20:18:52
2	B 249.677†	22133.4	22294.0	495.07 ug/L	495.07 ppb	20:18:32
2	Ba 233.527†	65126.9	63751.7	498.97 ug/L	498.97 ppb	20:18:32
2	Be 313.107†	1343579.8	1319558.2	503.93 ug/L	503.93 ppb	20:18:27
2	Cd 226.502†	45566.2	44800.1	497.01 ug/L	497.01 ppb	20:18:32
2	Co 228.616†	24857.4	24402.8	499.58 ug/L	499.58 ppb	20:18:32
2	Cr 267.716†	45745.5	44688.2	500.23 ug/L	500.23 ppb	20:18:32
2	Cu 324.752†	175848.4	165692.1	495.45 ug/L	495.45 ppb	20:18:32
2	Mn 257.610†	459636.9	449405.7	498.57 ug/L	498.57 ppb	20:18:27
2	Mo 202.031†	7284.2	7105.4	502.58 ug/L	502.58 ppb	20:18:52
2	Ni 231.604†	20535.3	20030.1	498.45 ug/L	498.45 ppb	20:18:32



2	P 214.914†	4369.0	4046.1	2367.7 ug/L	2367.7 ppb	20:18:52
2	Pb 220.353†	4094.4	4070.6	500.08 ug/L	500.08 ppb	20:18:52
2	S 181.975 Axial†	764.3	705.0	996.83 ug/L	996.83 ppb	20:18:52
2	Sb 206.836†	1517.5	1457.2	517.15 ug/L	517.15 ppb	20:18:52
2	Se 196.026†	746.7	762.8	509.69 ug/L	509.69 ppb	20:18:52
2	Si 251.611†	82414.0	80108.8	2545.2 ug/L	2545.2 ppb	20:18:32
2	Sn 189.927†	2910.4	2840.8	504.09 ug/L	504.09 ppb	20:18:52
2	Ti 334.940†	318495.5	313088.7	504.17 ug/L	504.17 ppb	20:18:27
2	Tl 190.801†	1612.4	1610.9	497.33 ug/L	497.33 ppb	20:18:52
2	U 409.014†	15408.1	17091.7	502.50 ug/L	502.50 ppb	20:18:32
2	V 292.402†	73264.0	73013.8	505.43 ug/L	505.43 ppb	20:18:32
2	Zn 213.857†	54613.2	52830.2	495.33 ug/L	495.33 ppb	20:18:32
2	SiO2†	81830.8	79516.8	5411.9 ug/L	5411.9 ppb	20:19:34
3	Sc Radial	5163.6	5163.6	103 %		20:17:28
3	Y RADIAL	5511.9	5511.9	101.5 %		20:17:28
3	Al 396.153Radial†	6562.2	6399.8	4913.2 ug/L	4913.2 ppb	20:17:28
3	Ca 317.933Radial†	3156.0	3057.8	4892.7 ug/L	4892.7 ppb	20:17:48
3	Fe 238.204 Radial†	599.8	576.0	5000.0 ug/L	5000.0 ppb	20:17:48
3	K 766.490 Radial†	30113.7	26775.4	4892.1 ug/L	4892.1 ppb	20:17:28
3	Mg 279.077 IEC†	159.1	153.2	5119.7 ug/L	5119.7 ppb	20:17:48
3	Na 589.592 Radial†	32409.5	32884.7	9846.1 ug/L	9846.1 ppb	20:17:28
3	Sr 421.552†	77800.5	75887.1	490.11 ug/L	490.11 ppb	20:17:28
3	Sc 361.383	876143.8	876143.8	102.79 %		20:18:58
3	Y 371.029	730772.1	730772.1	101.12 %		20:18:58
3	Ag 328.068†	112227.5	108827.8	504.22 ug/L	504.22 ppb	20:19:03
3	As 188.979†	1153.1	1145.5	498.52 ug/L	498.52 ppb	20:19:23
3	B 249.677†	22316.8	22343.8	496.20 ug/L	496.20 ppb	20:19:03
3	Ba 233.527†	65218.5	63462.3	496.70 ug/L	496.70 ppb	20:19:03
3	Be 313.107†	1358883.1	1326639.2	506.64 ug/L	506.64 ppb	20:18:58
3	Cd 226.502†	45661.0	44627.5	495.11 ug/L	495.11 ppb	20:19:03
3	Co 228.616†	24868.4	24269.1	496.83 ug/L	496.83 ppb	20:19:03
3	Cr 267.716†	45734.4	44411.6	497.13 ug/L	497.13 ppb	20:19:03
3	Cu 324.752†	175653.1	164480.3	491.82 ug/L	491.82 ppb	20:19:03
3	Mn 257.610†	463730.4	450717.2	500.02 ug/L	500.02 ppb	20:18:58
3	Mo 202.031†	7277.1	7056.2	499.10 ug/L	499.10 ppb	20:19:23
3	Ni 231.604†	20556.1	19931.0	495.99 ug/L	495.99 ppb	20:19:03
3	P 214.914†	4334.9	3987.6	2332.8 ug/L	2332.8 ppb	20:19:23
3	Pb 220.353†	4067.2	4020.4	493.94 ug/L	493.94 ppb	20:19:23
3	S 181.975 Axial†	769.1	705.3	997.17 ug/L	997.17 ppb	20:19:23
3	Sb 206.836†	1520.9	1451.8	515.11 ug/L	515.11 ppb	20:19:23
3	Se 196.026†	758.7	770.1	513.99 ug/L	513.99 ppb	20:19:23
3	Si 251.611†	82320.0	79538.4	2527.0 ug/L	2527.0 ppb	20:19:03
3	Sn 189.927†	2894.4	2808.3	498.31 ug/L	498.31 ppb	20:19:23
3	Ti 334.940†	321187.4	313856.9	505.39 ug/L	505.39 ppb	20:18:58
3	Tl 190.801†	1626.9	1615.7	498.82 ug/L	498.82 ppb	20:19:23
3	U 409.014†	15782.8	17366.6	510.63 ug/L	510.63 ppb	20:19:03
3	V 292.402†	73404.6	72724.8	503.44 ug/L	503.44 ppb	20:19:03
3	Zn 213.857†	54674.9	52572.9	492.93 ug/L	492.93 ppb	20:19:03
3	SiO2†	81900.4	79109.0	5384.1 ug/L	5384.1 ppb	20:19:39

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	871582.3	102.25 %	0.502			0.49%
Sc Radial	5167.3	103 %	1.4			1.33%
Y 371.029	726568.3	100.54 %	0.579			0.58%
Y RADIAL	5517.2	101.6 %	0.89			0.88%
Ag 328.068†	109454.8	507.12 ug/L	3.250	507.12 ppb	3.250	0.64%
QC value within limits for Ag 328.068 Recovery = 101.42%						
Al 396.153Radial†	6281.5	4821.8 ug/L	134.00	4821.8 ppb	134.00	2.78%
QC value within limits for Al 396.153Radial Recovery = 96.44%						
As 188.979†	1152.1	501.39 ug/L	2.564	501.39 ppb	2.564	0.51%
QC value within limits for As 188.979 Recovery = 100.28%						
B 249.677†	22403.0	497.51 ug/L	3.295	497.51 ppb	3.295	0.66%
QC value within limits for B 249.677 Recovery = 99.50%						
Ba 233.527†	63897.7	500.11 ug/L	4.095	500.11 ppb	4.095	0.82%
QC value within limits for Ba 233.527 Recovery = 100.02%						
Be 313.107†	1323620.8	505.48 ug/L	1.394	505.48 ppb	1.394	0.28%
QC value within limits for Be 313.107 Recovery = 101.10%						
Ca 317.933Radial†	3081.7	4931.0 ug/L	100.47	4931.0 ppb	100.47	2.04%



QC value within limits for Ca 317.933 Radial Recovery = 98.62%							
Cd 226.502†	44945.3	498.63 ug/L	4.562	498.63 ppb	4.562	0.91%	
QC value within limits for Cd 226.502 Recovery = 99.73%							
Co 228.616†	24461.9	500.79 ug/L	4.675	500.79 ppb	4.675	0.93%	
QC value within limits for Co 228.616 Recovery = 100.16%							
Cr 267.716†	44719.4	500.58 ug/L	3.632	500.58 ppb	3.632	0.73%	
QC value within limits for Cr 267.716 Recovery = 100.12%							
Cu 324.752†	165756.6	495.64 ug/L	3.914	495.64 ppb	3.914	0.79%	
QC value within limits for Cu 324.752 Recovery = 99.13%							
Fe 238.204 Radial†	577.1	5008.9 ug/L	112.62	5008.9 ppb	112.62	2.25%	
QC value within limits for Fe 238.204 Radial Recovery = 100.18%							
K 766.490 Radial†	26429.0	4828.6 ug/L	98.24	4828.6 ppb	98.24	2.03%	
QC value within limits for K 766.490 Radial Recovery = 96.57%							
Mg 279.077 IEC†	154.9	5174.6 ug/L	48.39	5174.6 ppb	48.39	0.94%	
QC value within limits for Mg 279.077 IEC Recovery = 103.49%							
Mn 257.610†	450625.1	499.91 ug/L	1.292	499.91 ppb	1.292	0.26%	
QC value within limits for Mn 257.610 Recovery = 99.98%							
Mo 202.031†	7092.4	501.66 ug/L	2.247	501.66 ppb	2.247	0.45%	
QC value within limits for Mo 202.031 Recovery = 100.33%							
Na 589.592 Radial†	32664.1	9780.0 ug/L	136.34	9780.0 ppb	136.34	1.39%	
QC value within limits for Na 589.592 Radial Recovery = 97.80%							
Ni 231.604†	20075.6	499.58 ug/L	4.280	499.58 ppb	4.280	0.86%	
QC value within limits for Ni 231.604 Recovery = 99.92%							
P 214.914†	4024.3	2354.4 ug/L	18.92	2354.4 ppb	18.92	0.80%	
QC value within limits for P 214.914 Recovery = 94.18%							
Pb 220.353†	4050.7	497.64 ug/L	3.260	497.64 ppb	3.260	0.66%	
QC value within limits for Pb 220.353 Recovery = 99.53%							
S 181.975 Axial†	707.3	1000.1 ug/L	5.29	1000.1 ppb	5.29	0.53%	
QC value within limits for S 181.975 Axial Recovery = 100.01%							
Sb 206.836†	1453.4	515.81 ug/L	1.168	515.81 ppb	1.168	0.23%	
QC value within limits for Sb 206.836 Recovery = 103.16%							
Se 196.026†	770.0	513.95 ug/L	4.241	513.95 ppb	4.241	0.83%	
QC value within limits for Se 196.026 Recovery = 102.79%							
Si 251.611†	80227.1	2548.9 ug/L	24.01	2548.9 ppb	24.01	0.94%	
QC value within limits for Si 251.611 Recovery = 101.96%							
Sn 189.927†	2831.3	502.39 ug/L	3.552	502.39 ppb	3.552	0.71%	
QC value within limits for Sn 189.927 Recovery = 100.48%							
Sr 421.552†	74936.1	483.97 ug/L	9.876	483.97 ppb	9.876	2.04%	
QC value within limits for Sr 421.552 Recovery = 96.79%							
Ti 334.940†	313589.2	504.96 ug/L	0.688	504.96 ppb	0.688	0.14%	
QC value within limits for Ti 334.940 Recovery = 100.99%							
Tl 190.801†	1617.8	499.45 ug/L	2.496	499.45 ppb	2.496	0.50%	
QC value within limits for Tl 190.801 Recovery = 99.89%							
U 409.014†	17264.6	507.61 ug/L	4.452	507.61 ppb	4.452	0.88%	
QC value within limits for U 409.014 Recovery = 101.52%							
V 292.402†	73162.5	506.46 ug/L	3.643	506.46 ppb	3.643	0.72%	
QC value within limits for V 292.402 Recovery = 101.29%							
Zn 213.857†	52955.1	496.52 ug/L	4.303	496.52 ppb	4.303	0.87%	
QC value within limits for Zn 213.857 Recovery = 99.30%							
SiO2†	79163.0	5387.8 ug/L	22.53	5387.8 ppb	22.53	0.42%	
QC value within limits for SiO2 Recovery = 100.75%							
All analyte(s) passed QC.							



Sequence No.: 45  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 6  
 Date Collected: 1/11/2010 20:21:48  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4981.7	4981.7	98.9 %			20:23:40
1	Y RADIAL	5295.3	5295.3	97.53 %			20:23:40
1	Al 396.153Radial†	-4.9	-4.3	-3.2854 ug/L	-3.2854 ppb		20:23:40
1	Ca 317.933Radial†	19.6	0.1	0.0805 ug/L	0.0805 ppb		20:24:00
1	Fe 238.204 Radial†	13.4	4.7	40.430 ug/L	40.430 ppb		20:24:00
1	K 766.490 Radial†	2785.7	225.5	41.360 ug/L	41.360 ppb		20:23:40
1	Mg 279.077 IEC†	2.1	0.2	7.2814 ug/L	7.2814 ppb		20:24:00
1	Na 589.592 Radial†	-1289.9	-23.4	-6.9958 ug/L	-6.9958 ppb		20:23:40
1	Sr 421.552†	10.0	29.6	0.1915 ug/L	0.1915 ppb		20:23:40
1	Sc 361.383	853011.8	853011.8	100.07 %			20:24:57
1	Y 371.029	723886.8	723886.8	100.17 %			20:24:57
1	Ag 328.068†	282.6	-75.6	-0.3395 ug/L	-0.3395 ppb		20:24:57
1	As 188.979†	-21.7	1.9	0.8546 ug/L	0.8546 ppb		20:25:17
1	B 249.677†	-380.9	251.2	5.5967 ug/L	5.5967 ppb		20:25:17
1	Ba 233.527†	-25.7	-14.2	-0.1109 ug/L	-0.1109 ppb		20:25:17
1	Be 313.107†	-4509.8	78.8	0.0307 ug/L	0.0307 ppb		20:24:57
1	Cd 226.502†	-186.6	17.6	0.1918 ug/L	0.1918 ppb		20:25:17
1	Co 228.616†	-80.1	-5.3	-0.1117 ug/L	-0.1117 ppb		20:25:17
1	Cr 267.716†	87.4	4.1	0.0446 ug/L	0.0446 ppb		20:25:17
1	Cu 324.752†	6367.1	-49.7	-0.1478 ug/L	-0.1478 ppb		20:24:57
1	Mn 257.610†	476.5	31.3	0.0389 ug/L	0.0389 ppb		20:25:17
1	Mo 202.031†	16.0	-7.7	-0.5414 ug/L	-0.5414 ppb		20:25:17
1	Ni 231.604†	80.1	12.1	0.3006 ug/L	0.3006 ppb		20:25:17
1	P 214.914†	214.8	-15.2	-9.3120 ug/L	-9.3120 ppb		20:25:17
1	Pb 220.353†	-51.2	12.2	1.4860 ug/L	1.4860 ppb		20:25:17
1	S 181.975 Axial†	52.8	9.7	13.798 ug/L	13.798 ppb		20:25:17
1	Sb 206.836†	34.7	6.7	2.2837 ug/L	2.2837 ppb		20:25:17
1	Se 196.026†	-34.8	-2.8	-1.6559 ug/L	-1.6559 ppb		20:25:17
1	Si 251.611†	727.1	176.1	5.6142 ug/L	5.6142 ppb		20:25:17
1	Sn 189.927†	2.6	-5.1	-0.9025 ug/L	-0.9025 ppb		20:25:17
1	Ti 334.940†	-1201.4	174.0	0.2786 ug/L	0.2786 ppb		20:24:57
1	Tl 190.801†	-34.5	-1.6	-0.4844 ug/L	-0.4844 ppb		20:25:17
1	U 409.014†	-1933.6	79.4	2.3382 ug/L	2.3382 ppb		20:24:57
1	V 292.402†	-1403.3	-92.6	-0.6421 ug/L	-0.6421 ppb		20:24:57
1	Zn 213.857†	620.0	-0.7	-0.0121 ug/L	-0.0121 ppb		20:25:17
1	SiO2†	689.5	117.4	8.0227 ug/L	8.0227 ppb		20:26:13
2	Sc Radial	5227.5	5227.5	104 %			20:24:05
2	Y RADIAL	5639.0	5639.0	103.9 %			20:24:05
2	Al 396.153Radial†	-20.4	-19.0	-14.640 ug/L	-14.640 ppb		20:24:05
2	Ca 317.933Radial†	15.4	-4.9	-7.8400 ug/L	-7.8400 ppb		20:24:25
2	Fe 238.204 Radial†	9.4	0.1	1.2286 ug/L	1.2286 ppb		20:24:25
2	K 766.490 Radial†	2616.4	-70.0	-12.827 ug/L	-12.827 ppb		20:24:05
2	Mg 279.077 IEC†	-1.9	-3.8	-126.32 ug/L	-126.32 ppb		20:24:25
2	Na 589.592 Radial†	-1307.7	20.8	6.2401 ug/L	6.2401 ppb		20:24:05
2	Sr 421.552†	48.0	65.7	0.4245 ug/L	0.4245 ppb		20:24:05
2	Sc 361.383	864825.1	864825.1	101.46 %			20:25:22
2	Y 371.029	733859.7	733859.7	101.55 %			20:25:22
2	Ag 328.068†	374.8	11.4	0.0484 ug/L	0.0484 ppb		20:25:22
2	As 188.979†	-20.5	3.4	1.4687 ug/L	1.4687 ppb		20:25:42
2	B 249.677†	-382.8	254.6	5.6754 ug/L	5.6754 ppb		20:25:42
2	Ba 233.527†	0.6	12.0	0.0928 ug/L	0.0928 ppb		20:25:42
2	Be 313.107†	-4504.8	145.3	0.0557 ug/L	0.0557 ppb		20:25:22
2	Cd 226.502†	-187.1	19.7	0.2197 ug/L	0.2197 ppb		20:25:42
2	Co 228.616†	-78.9	-3.1	-0.0634 ug/L	-0.0634 ppb		20:25:42
2	Cr 267.716†	86.4	1.9	0.0190 ug/L	0.0190 ppb		20:25:42
2	Cu 324.752†	6350.3	-153.1	-0.4600 ug/L	-0.4600 ppb		20:25:22
2	Mn 257.610†	473.6	21.9	0.0296 ug/L	0.0296 ppb		20:25:42
2	Mo 202.031†	23.1	-0.9	-0.0637 ug/L	-0.0637 ppb		20:25:42
2	Ni 231.604†	77.5	8.5	0.2108 ug/L	0.2108 ppb		20:25:42



2	P 214.914†	218.5	-14.5	-8.7715 ug/L	-8.7715 ppb	20:25:42
2	Pb 220.353†	-60.3	3.9	0.4776 ug/L	0.4776 ppb	20:25:42
2	S 181.975 Axial†	51.2	7.5	10.617 ug/L	10.617 ppb	20:25:42
2	Sb 206.836†	30.5	2.1	0.7130 ug/L	0.7130 ppb	20:25:42
2	Se 196.026†	-27.5	4.9	3.1416 ug/L	3.1416 ppb	20:25:42
2	Si 251.611†	704.9	144.3	4.5957 ug/L	4.5957 ppb	20:25:42
2	Sn 189.927†	2.7	-5.0	-0.8897 ug/L	-0.8897 ppb	20:25:42
2	Ti 334.940†	-1294.8	98.3	0.1661 ug/L	0.1661 ppb	20:25:22
2	Tl 190.801†	-36.8	-3.4	-1.0369 ug/L	-1.0369 ppb	20:25:42
2	U 409.014†	-1905.9	133.1	3.9266 ug/L	3.9266 ppb	20:25:22
2	V 292.402†	-1383.5	-53.9	-0.3641 ug/L	-0.3641 ppb	20:25:22
2	Zn 213.857†	614.4	-14.7	-0.1399 ug/L	-0.1399 ppb	20:25:42
2	SiO2†	700.1	118.4	8.0796 ug/L	8.0796 ppb	20:26:18
3	Sc Radial	5262.0	5262.0	105 %		20:24:30
3	Y RADIAL	5649.7	5649.7	104.1 %		20:24:30
3	Al 396.153Radial†	-18.3	-16.9	-12.989 ug/L	-12.989 ppb	20:24:30
3	Ca 317.933Radial†	15.0	-5.5	-8.7462 ug/L	-8.7462 ppb	20:24:50
3	Fe 238.204 Radial†	8.9	-0.4	-3.1283 ug/L	-3.1283 ppb	20:24:50
3	K 766.490 Radial†	2725.7	18.1	3.3111 ug/L	3.3111 ppb	20:24:30
3	Mg 279.077 IEC†	-2.0	-3.8	-128.50 ug/L	-128.50 ppb	20:24:50
3	Na 589.592 Radial†	-1272.7	62.6	18.739 ug/L	18.739 ppb	20:24:30
3	Sr 421.552†	9.2	28.3	0.1832 ug/L	0.1832 ppb	20:24:30
3	Sc 361.383	855729.8	855729.8	100.39 %		20:25:47
3	Y 371.029	728817.4	728817.4	100.85 %		20:25:47
3	Ag 328.068†	295.2	-63.9	-0.2973 ug/L	-0.2973 ppb	20:25:47
3	As 188.979†	-13.8	9.9	4.2994 ug/L	4.2994 ppb	20:26:07
3	B 249.677†	-390.3	243.0	5.4171 ug/L	5.4171 ppb	20:26:07
3	Ba 233.527†	0.2	11.6	0.0898 ug/L	0.0898 ppb	20:26:07
3	Be 313.107†	-4415.2	187.3	0.0716 ug/L	0.0716 ppb	20:25:47
3	Cd 226.502†	-191.0	13.8	0.1541 ug/L	0.1541 ppb	20:26:07
3	Co 228.616†	-51.2	23.6	0.4829 ug/L	0.4829 ppb	20:26:07
3	Cr 267.716†	90.7	7.1	0.0785 ug/L	0.0785 ppb	20:26:07
3	Cu 324.752†	6404.0	-33.1	-0.0999 ug/L	-0.0999 ppb	20:25:47
3	Mn 257.610†	472.1	25.4	0.0330 ug/L	0.0330 ppb	20:26:07
3	Mo 202.031†	20.0	-3.7	-0.2653 ug/L	-0.2653 ppb	20:26:07
3	Ni 231.604†	90.0	21.7	0.5401 ug/L	0.5401 ppb	20:26:07
3	P 214.914†	221.6	-9.2	-5.5903 ug/L	-5.5903 ppb	20:26:07
3	Pb 220.353†	-58.9	4.7	0.5729 ug/L	0.5729 ppb	20:26:07
3	S 181.975 Axial†	49.2	6.0	8.4500 ug/L	8.4500 ppb	20:26:07
3	Sb 206.836†	40.1	12.0	4.1074 ug/L	4.1074 ppb	20:26:07
3	Se 196.026†	-28.5	3.6	2.2897 ug/L	2.2897 ppb	20:26:07
3	Si 251.611†	670.7	117.6	3.7486 ug/L	3.7486 ppb	20:26:07
3	Sn 189.927†	4.3	-3.4	-0.6029 ug/L	-0.6029 ppb	20:26:07
3	Ti 334.940†	-1330.3	49.4	0.0885 ug/L	0.0885 ppb	20:25:47
3	Tl 190.801†	-43.8	-10.8	-3.3221 ug/L	-3.3221 ppb	20:26:07
3	U 409.014†	-1976.6	42.7	1.2606 ug/L	1.2606 ppb	20:25:47
3	V 292.402†	-1350.4	-35.5	-0.2457 ug/L	-0.2457 ppb	20:25:47
3	Zn 213.857†	618.1	-4.6	-0.0463 ug/L	-0.0463 ppb	20:26:07
3	SiO2†	723.9	149.4	10.203 ug/L	10.203 ppb	20:26:23

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	857855.5	100.64 %		0.726			0.72%
Sc Radial	5157.1	102 %		3.0			2.96%
Y 371.029	728854.7	100.86 %		0.690			0.68%
Y RADIAL	5528.0	101.8 %		3.71			3.65%
Ag 328.068†	-42.7	-0.1961 ug/L		0.21281	-0.1961 ppb	0.21281	108.50%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-13.4	-10.305 ug/L		6.1349	-10.305 ppb	6.1349	59.53%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	5.1	2.2076 ug/L		1.83740	2.2076 ppb	1.83740	83.23%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	249.6	5.5631 ug/L		0.13240	5.5631 ppb	0.13240	2.38%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	3.1	0.0239 ug/L		0.11674	0.0239 ppb	0.11674	489.17%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	137.1	0.0526 ug/L		0.02061	0.0526 ppb	0.02061	39.15%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-3.4	-5.5019 ug/L		4.85568	-5.5019 ppb	4.85568	88.25%



QC value within limits for Ca 317.933 Radial	Recovery = Not calculated		
Cd 226.502†	17.0 0.1885 ug/L	0.03294 0.1885 ppb	0.03294 17.47%
QC value within limits for Cd 226.502	Recovery = Not calculated		
Co 228.616†	5.1 0.1026 ug/L	0.33023 0.1026 ppb	0.33023 321.83%
QC value within limits for Co 228.616	Recovery = Not calculated		
Cr 267.716†	4.4 0.0474 ug/L	0.02986 0.0474 ppb	0.02986 63.03%
QC value within limits for Cr 267.716	Recovery = Not calculated		
Cu 324.752†	-78.7 -0.2359 ug/L	0.19558 -0.2359 ppb	0.19558 82.91%
QC value within limits for Cu 324.752	Recovery = Not calculated		
Fe 238.204 Radial†	1.5 12.843 ug/L	23.9896 12.843 ppb	23.9896 186.79%
QC value within limits for Fe 238.204 Radial	Recovery = Not calculated		
K 766.490 Radial†	57.9 10.615 ug/L	27.8222 10.615 ppb	27.8222 262.11%
QC value within limits for K 766.490 Radial	Recovery = Not calculated		
Mg 279.077 IEC†	-2.5 -82.515 ug/L	77.7739 -82.515 ppb	77.7739 94.25%
QC value within limits for Mg 279.077 IEC	Recovery = Not calculated		
Mn 257.610†	26.2 0.0338 ug/L	0.00474 0.0338 ppb	0.00474 14.01%
QC value within limits for Mn 257.610	Recovery = Not calculated		
Mo 202.031†	-4.1 -0.2901 ug/L	0.23983 -0.2901 ppb	0.23983 82.66%
QC value within limits for Mo 202.031	Recovery = Not calculated		
Na 589.592 Radial†	20.0 5.9945 ug/L	12.86916 5.9945 ppb	12.86916 214.68%
QC value within limits for Na 589.592 Radial	Recovery = Not calculated		
Ni 231.604†	14.1 0.3505 ug/L	0.17027 0.3505 ppb	0.17027 48.58%
QC value within limits for Ni 231.604	Recovery = Not calculated		
P 214.914†	-13.0 -7.8912 ug/L	2.01093 -7.8912 ppb	2.01093 25.48%
QC value within limits for P 214.914	Recovery = Not calculated		
Pb 220.353†	6.9 0.8455 ug/L	0.55672 0.8455 ppb	0.55672 65.84%
QC value within limits for Pb 220.353	Recovery = Not calculated		
S 181.975 Axial†	7.7 10.955 ug/L	2.6900 10.955 ppb	2.6900 24.55%
QC value within limits for S 181.975 Axial	Recovery = Not calculated		
Sb 206.836†	7.0 2.3680 ug/L	1.69880 2.3680 ppb	1.69880 71.74%
QC value within limits for Sb 206.836	Recovery = Not calculated		
Se 196.026†	1.9 1.2585 ug/L	2.55959 1.2585 ppb	2.55959 203.39%
QC value within limits for Se 196.026	Recovery = Not calculated		
Si 251.611†	146.0 4.6528 ug/L	0.93413 4.6528 ppb	0.93413 20.08%
QC value within limits for Si 251.611	Recovery = Not calculated		
Sn 189.927†	-4.5 -0.7984 ug/L	0.16938 -0.7984 ppb	0.16938 21.22%
QC value within limits for Sn 189.927	Recovery = Not calculated		
Sr 421.552†	41.2 0.2664 ug/L	0.13700 0.2664 ppb	0.13700 51.43%
QC value within limits for Sr 421.552	Recovery = Not calculated		
Ti 334.940†	107.2 0.1777 ug/L	0.09559 0.1777 ppb	0.09559 53.78%
QC value within limits for Ti 334.940	Recovery = Not calculated		
Tl 190.801†	-5.3 -1.6145 ug/L	1.50442 -1.6145 ppb	1.50442 93.18%
QC value within limits for Tl 190.801	Recovery = Not calculated		
U 409.014†	85.1 2.5085 ug/L	1.34114 2.5085 ppb	1.34114 53.46%
QC value within limits for U 409.014	Recovery = Not calculated		
V 292.402†	-60.7 -0.4173 ug/L	0.20345 -0.4173 ppb	0.20345 48.75%
QC value within limits for V 292.402	Recovery = Not calculated		
Zn 213.857†	-6.7 -0.0661 ug/L	0.06615 -0.0661 ppb	0.06615 100.13%
QC value within limits for Zn 213.857	Recovery = Not calculated		
SiO2†	128.4 8.7686 ug/L	1.24294 8.7686 ppb	1.24294 14.17%
QC value within limits for SiO2	Recovery = Not calculated		

All analyte(s) passed QC.



Sequence No.: 55  
 Sample ID: CCV  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 1  
 Date Collected: 1/11/2010 21:31:45  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5066.2	5066.2	101 %		21:33:37
1	Y RADIAL	5441.3	5441.3	100.2 %		21:33:37
1	Al 396.153Radial†	6383.7	6345.5	4871.0 ug/L	4871.0 ppb	21:33:37
1	Ca 317.933Radial†	3196.5	3157.3	5052.0 ug/L	5052.0 ppb	21:33:57
1	Fe 238.204 Radial†	606.4	593.8	5153.7 ug/L	5153.7 ppb	21:33:57
1	K 766.490 Radial†	29519.1	26749.0	4887.1 ug/L	4887.1 ppb	21:33:37
1	Mg 279.077 IEC†	159.7	156.8	5238.6 ug/L	5238.6 ppb	21:33:57
1	Na 589.592 Radial†	32360.9	33444.2	10014 ug/L	10014 ppb	21:33:37
1	Sr 421.552†	76677.6	76229.8	492.32 ug/L	492.32 ppb	21:33:37
1	Sc 361.383	875346.8	875346.8	102.69 %		21:34:55
1	Y 371.029	729099.0	729099.0	100.89 %		21:34:55
1	Ag 328.068†	112658.0	109346.5	506.66 ug/L	506.66 ppb	21:35:00
1	As 188.979†	1155.9	1149.2	500.10 ug/L	500.10 ppb	21:35:20
1	B 249.677†	22100.4	22152.9	491.91 ug/L	491.91 ppb	21:35:00
1	Ba 233.527†	65674.8	63964.4	500.63 ug/L	500.63 ppb	21:35:00
1	Be 313.107†	1358475.6	1327446.2	506.92 ug/L	506.92 ppb	21:34:55
1	Cd 226.502†	46031.0	45028.3	499.54 ug/L	499.54 ppb	21:35:00
1	Co 228.616†	25094.9	24511.7	501.83 ug/L	501.83 ppb	21:35:00
1	Cr 267.716†	46050.2	44759.7	501.03 ug/L	501.03 ppb	21:35:00
1	Cu 324.752†	176802.3	165754.9	495.64 ug/L	495.64 ppb	21:35:00
1	Mn 257.610†	464878.2	452245.7	501.72 ug/L	501.72 ppb	21:34:55
1	Mo 202.031†	7356.8	7140.2	505.04 ug/L	505.04 ppb	21:35:20
1	Ni 231.604†	20781.9	20169.1	501.91 ug/L	501.91 ppb	21:35:00
1	P 214.914†	4397.3	4052.2	2371.3 ug/L	2371.3 ppb	21:35:20
1	Pb 220.353†	4137.2	4092.1	502.72 ug/L	502.72 ppb	21:35:20
1	S 181.975 Axial†	783.5	720.0	1018.0 ug/L	1018.0 ppb	21:35:20
1	Sb 206.836†	1520.7	1452.9	515.75 ug/L	515.75 ppb	21:35:20
1	Se 196.026†	761.9	773.9	516.93 ug/L	516.93 ppb	21:35:20
1	Si 251.611†	82585.4	79869.8	2537.5 ug/L	2537.5 ppb	21:35:00
1	Sn 189.927†	2923.7	2839.3	503.84 ug/L	503.84 ppb	21:35:20
1	Ti 334.940†	314313.7	307447.9	495.07 ug/L	495.07 ppb	21:35:00
1	Tl 190.801†	1641.5	1631.3	503.54 ug/L	503.54 ppb	21:35:20
1	U 409.014†	15737.1	17336.2	509.70 ug/L	509.70 ppb	21:35:00
1	V 292.402†	73799.0	73174.0	506.58 ug/L	506.58 ppb	21:35:00
1	Zn 213.857†	54975.2	52913.7	496.10 ug/L	496.10 ppb	21:35:00
1	SiO2†	82106.4	79382.2	5402.6 ug/L	5402.6 ppb	21:36:27
2	Sc Radial	5209.2	5209.2	103 %		21:34:02
2	Y RADIAL	5586.2	5586.2	102.9 %		21:34:02
2	Al 396.153Radial†	6435.7	6221.5	4775.4 ug/L	4775.4 ppb	21:34:02
2	Ca 317.933Radial†	3194.7	3068.3	4909.6 ug/L	4909.6 ppb	21:34:22
2	Fe 238.204 Radial†	606.3	577.2	5009.9 ug/L	5009.9 ppb	21:34:22
2	K 766.490 Radial†	29846.0	26259.5	4797.5 ug/L	4797.5 ppb	21:34:02
2	Mg 279.077 IEC†	161.3	154.0	5145.9 ug/L	5145.9 ppb	21:34:22
2	Na 589.592 Radial†	32639.6	32830.4	9829.8 ug/L	9829.8 ppb	21:34:02
2	Sr 421.552†	77456.0	74889.6	483.67 ug/L	483.67 ppb	21:34:02
2	Sc 361.383	871437.5	871437.5	102.23 %		21:35:26
2	Y 371.029	726898.8	726898.8	100.59 %		21:35:26
2	Ag 328.068†	112636.2	109817.3	508.79 ug/L	508.79 ppb	21:35:31
2	As 188.979†	1165.3	1163.5	506.26 ug/L	506.26 ppb	21:35:51
2	B 249.677†	22161.1	22308.8	495.40 ug/L	495.40 ppb	21:35:31
2	Ba 233.527†	65521.6	64101.4	501.70 ug/L	501.70 ppb	21:35:31
2	Be 313.107†	1352406.9	1327444.5	506.92 ug/L	506.92 ppb	21:35:26
2	Cd 226.502†	45917.3	45118.2	500.55 ug/L	500.55 ppb	21:35:31
2	Co 228.616†	25042.2	24569.8	503.02 ug/L	503.02 ppb	21:35:31
2	Cr 267.716†	45965.9	44878.3	502.35 ug/L	502.35 ppb	21:35:31
2	Cu 324.752†	176633.0	166361.7	497.45 ug/L	497.45 ppb	21:35:31
2	Mn 257.610†	462563.7	452012.6	501.45 ug/L	501.45 ppb	21:35:26
2	Mo 202.031†	7318.1	7134.5	504.63 ug/L	504.63 ppb	21:35:51
2	Ni 231.604†	20700.4	20180.2	502.19 ug/L	502.19 ppb	21:35:31



2	P 214.914†	4371.4	4046.0	2367.3 ug/L	2367.3 ppb	21:35:51
2	Pb 220.353†	4092.2	4066.2	499.53 ug/L	499.53 ppb	21:35:51
2	S 181.975 Axial†	783.5	723.4	1022.8 ug/L	1022.8 ppb	21:35:51
2	Sb 206.836†	1502.5	1441.8	511.94 ug/L	511.94 ppb	21:35:51
2	Se 196.026†	760.7	776.1	517.90 ug/L	517.90 ppb	21:35:51
2	Si 251.611†	82471.6	80119.2	2545.5 ug/L	2545.5 ppb	21:35:31
2	Sn 189.927†	2912.3	2841.0	504.11 ug/L	504.11 ppb	21:35:51
2	Ti 334.940†	313626.5	308148.8	496.19 ug/L	496.19 ppb	21:35:31
2	Tl 190.801†	1627.1	1624.4	501.40 ug/L	501.40 ppb	21:35:51
2	U 409.014†	15756.8	17424.2	512.31 ug/L	512.31 ppb	21:35:31
2	V 292.402†	73580.2	73282.3	507.34 ug/L	507.34 ppb	21:35:31
2	Zn 213.857†	54868.9	53049.9	497.39 ug/L	497.39 ppb	21:35:31
2	SiO2†	81589.1	79234.8	5392.6 ug/L	5392.6 ppb	21:36:32
3	Sc Radial	5107.5	5107.5	101 %		21:34:27
3	Y RADIAL	5450.1	5450.1	100.4 %		21:34:27
3	Al 396.153Radial†	6461.6	6370.9	4890.3 ug/L	4890.3 ppb	21:34:27
3	Ca 317.933Radial†	3182.0	3117.3	4987.9 ug/L	4987.9 ppb	21:34:47
3	Fe 238.204 Radial†	609.7	592.2	5140.4 ug/L	5140.4 ppb	21:34:47
3	K 766.490 Radial†	29867.9	26855.4	4906.5 ug/L	4906.5 ppb	21:34:27
3	Mg 279.077 IEC†	158.8	154.6	5165.8 ug/L	5165.8 ppb	21:34:47
3	Na 589.592 Radial†	32598.1	33417.6	10006 ug/L	10006 ppb	21:34:27
3	Sr 421.552†	77241.7	76169.0	491.93 ug/L	491.93 ppb	21:34:27
3	Sc 361.383	862911.4	862911.4	101.23 %		21:35:57
3	Y 371.029	720012.6	720012.6	99.633 %		21:35:57
3	Ag 328.068†	111990.9	110268.5	510.92 ug/L	510.92 ppb	21:36:02
3	As 188.979†	1158.0	1167.5	508.03 ug/L	508.03 ppb	21:36:22
3	B 249.677†	22120.2	22482.5	499.25 ug/L	499.25 ppb	21:36:02
3	Ba 233.527†	65127.9	64345.8	503.62 ug/L	503.62 ppb	21:36:02
3	Be 313.107†	1339368.0	1327635.0	507.00 ug/L	507.00 ppb	21:35:57
3	Cd 226.502†	45605.2	45253.7	502.05 ug/L	502.05 ppb	21:36:02
3	Co 228.616†	24961.4	24732.0	506.35 ug/L	506.35 ppb	21:36:02
3	Cr 267.716†	45778.0	45137.0	505.25 ug/L	505.25 ppb	21:36:02
3	Cu 324.752†	175415.1	166865.7	498.96 ug/L	498.96 ppb	21:36:02
3	Mn 257.610†	458190.1	452162.8	501.63 ug/L	501.63 ppb	21:35:57
3	Mo 202.031†	7356.7	7243.3	512.33 ug/L	512.33 ppb	21:36:22
3	Ni 231.604†	20654.1	20334.5	506.03 ug/L	506.03 ppb	21:36:02
3	P 214.914†	4407.0	4123.4	2414.3 ug/L	2414.3 ppb	21:36:22
3	Pb 220.353†	4130.7	4143.7	509.06 ug/L	509.06 ppb	21:36:22
3	S 181.975 Axial†	778.8	726.3	1026.9 ug/L	1026.9 ppb	21:36:22
3	Sb 206.836†	1531.5	1484.9	527.05 ug/L	527.05 ppb	21:36:22
3	Se 196.026†	764.5	787.2	525.51 ug/L	525.51 ppb	21:36:22
3	Si 251.611†	81919.7	80371.2	2553.4 ug/L	2553.4 ppb	21:36:02
3	Sn 189.927†	2946.5	2903.0	515.10 ug/L	515.10 ppb	21:36:22
3	Ti 334.940†	311769.7	309345.7	498.13 ug/L	498.13 ppb	21:36:02
3	Tl 190.801†	1641.6	1654.5	510.64 ug/L	510.64 ppb	21:36:22
3	U 409.014†	15648.5	17469.4	513.63 ug/L	513.63 ppb	21:36:02
3	V 292.402†	73224.0	73641.5	509.89 ug/L	509.89 ppb	21:36:02
3	Zn 213.857†	54598.3	53312.9	499.84 ug/L	499.84 ppb	21:36:02
3	SiO2†	82326.4	80751.7	5495.9 ug/L	5495.9 ppb	21:36:37

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	869898.5	102.05 %	0.746			0.73%
Sc Radial	5127.6	102 %	1.5			1.44%
Y 371.029	725336.8	100.37 %	0.656			0.65%
Y RADIAL	5492.5	101.2 %	1.50			1.48%
Ag 328.068†	109810.7	508.79 ug/L	2.126	508.79 ppb	2.126	0.42%
QC value within limits for Ag 328.068 Recovery = 101.76%						
Al 396.153Radial†	6312.6	4845.5 ug/L	61.53	4845.5 ppb	61.53	1.27%
QC value within limits for Al 396.153Radial Recovery = 96.91%						
As 188.979†	1160.1	504.79 ug/L	4.162	504.79 ppb	4.162	0.82%
QC value within limits for As 188.979 Recovery = 100.96%						
B 249.677†	22314.7	495.52 ug/L	3.670	495.52 ppb	3.670	0.74%
QC value within limits for B 249.677 Recovery = 99.10%						
Ba 233.527†	64137.2	501.98 ug/L	1.512	501.98 ppb	1.512	0.30%
QC value within limits for Ba 233.527 Recovery = 100.40%						
Be 313.107†	1327508.5	506.95 ug/L	0.045	506.95 ppb	0.045	0.01%
QC value within limits for Be 313.107 Recovery = 101.39%						
Ca 317.933Radial†	3114.3	4983.1 ug/L	71.31	4983.1 ppb	71.31	1.43%



QC value within limits for Ca 317.933 Radial Recovery = 99.66%						
Cd 226.502†	45133.4	500.71 ug/L	1.260	500.71 ppb	1.260	0.25%
QC value within limits for Cd 226.502 Recovery = 100.14%						
Co 228.616†	24604.5	503.73 ug/L	2.343	503.73 ppb	2.343	0.47%
QC value within limits for Co 228.616 Recovery = 100.75%						
Cr 267.716†	44925.0	502.88 ug/L	2.159	502.88 ppb	2.159	0.43%
QC value within limits for Cr 267.716 Recovery = 100.58%						
Cu 324.752†	166327.4	497.35 ug/L	1.661	497.35 ppb	1.661	0.33%
QC value within limits for Cu 324.752 Recovery = 99.47%						
Fe 238.204 Radial†	587.7	5101.3 ug/L	79.42	5101.3 ppb	79.42	1.56%
QC value within limits for Fe 238.204 Radial Recovery = 102.03%						
K 766.490 Radial†	26621.3	4863.7 ug/L	58.18	4863.7 ppb	58.18	1.20%
QC value within limits for K 766.490 Radial Recovery = 97.27%						
Mg 279.077 IEC†	155.1	5183.4 ug/L	48.79	5183.4 ppb	48.79	0.94%
QC value within limits for Mg 279.077 IEC Recovery = 103.67%						
Mn 257.610†	452140.4	501.60 ug/L	0.138	501.60 ppb	0.138	0.03%
QC value within limits for Mn 257.610 Recovery = 100.32%						
Mo 202.031†	7172.7	507.34 ug/L	4.332	507.34 ppb	4.332	0.85%
QC value within limits for Mo 202.031 Recovery = 101.47%						
Na 589.592 Radial†	33230.7	9949.7 ug/L	103.88	9949.7 ppb	103.88	1.04%
QC value within limits for Na 589.592 Radial Recovery = 99.50%						
Ni 231.604†	20227.9	503.37 ug/L	2.300	503.37 ppb	2.300	0.46%
QC value within limits for Ni 231.604 Recovery = 100.67%						
P 214.914†	4073.9	2384.3 ug/L	26.06	2384.3 ppb	26.06	1.09%
QC value within limits for P 214.914 Recovery = 95.37%						
Pb 220.353†	4100.7	503.77 ug/L	4.850	503.77 ppb	4.850	0.96%
QC value within limits for Pb 220.353 Recovery = 100.75%						
S 181.975 Axial†	723.2	1022.6 ug/L	4.48	1022.6 ppb	4.48	0.44%
QC value within limits for S 181.975 Axial Recovery = 102.26%						
Sb 206.836†	1459.9	518.24 ug/L	7.859	518.24 ppb	7.859	1.52%
QC value within limits for Sb 206.836 Recovery = 103.65%						
Se 196.026†	779.1	520.11 ug/L	4.699	520.11 ppb	4.699	0.90%
QC value within limits for Se 196.026 Recovery = 104.02%						
Si 251.611†	80120.1	2545.5 ug/L	7.94	2545.5 ppb	7.94	0.31%
QC value within limits for Si 251.611 Recovery = 101.82%						
Sn 189.927†	2861.1	507.68 ug/L	6.424	507.68 ppb	6.424	1.27%
QC value within limits for Sn 189.927 Recovery = 101.54%						
Sr 421.552†	75762.8	489.31 ug/L	4.888	489.31 ppb	4.888	1.00%
QC value within limits for Sr 421.552 Recovery = 97.86%						
Ti 334.940†	308314.1	496.46 ug/L	1.545	496.46 ppb	1.545	0.31%
QC value within limits for Ti 334.940 Recovery = 99.29%						
Tl 190.801†	1636.7	505.19 ug/L	4.835	505.19 ppb	4.835	0.96%
QC value within limits for Tl 190.801 Recovery = 101.04%						
U 409.014†	17409.9	511.88 ug/L	1.997	511.88 ppb	1.997	0.39%
QC value within limits for U 409.014 Recovery = 102.38%						
V 292.402†	73366.0	507.94 ug/L	1.731	507.94 ppb	1.731	0.34%
QC value within limits for V 292.402 Recovery = 101.59%						
Zn 213.857†	53092.1	497.78 ug/L	1.902	497.78 ppb	1.902	0.38%
QC value within limits for Zn 213.857 Recovery = 99.56%						
SiO2†	79789.6	5430.4 ug/L	56.96	5430.4 ppb	56.96	1.05%
QC value within limits for SiO2 Recovery = 101.55%						
All analyte(s) passed QC.						



Sequence No.: 56  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 6  
 Date Collected: 1/11/2010 21:38:47  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5036.0	5036.0	100 %		21:40:39
1	Y RADIAL	5431.9	5431.9	100.0 %		21:40:39
1	Al 396.153Radial†	-25.1	-24.4	-18.838 ug/L	-18.838 ppb	21:40:39
1	Ca 317.933Radial†	14.8	-5.0	-7.9749 ug/L	-7.9749 ppb	21:40:59
1	Fe 238.204 Radial†	10.4	1.5	13.342 ug/L	13.342 ppb	21:40:59
1	K 766.490 Radial†	2643.8	53.3	9.7766 ug/L	9.7766 ppb	21:40:39
1	Mg 279.077 IEC†	0.2	-1.7	-55.846 ug/L	-55.846 ppb	21:40:59
1	Na 589.592 Radial†	-1324.6	-44.0	-13.176 ug/L	-13.176 ppb	21:40:39
1	Sr 421.552†	9.8	29.3	0.1892 ug/L	0.1892 ppb	21:40:39
1	Sc 361.383	858553.8	858553.8	100.72 %		21:41:56
1	Y 371.029	729508.5	729508.5	100.95 %		21:41:56
1	Ag 328.068†	269.3	-90.6	-0.4159 ug/L	-0.4159 ppb	21:41:56
1	As 188.979†	-17.3	6.4	2.7976 ug/L	2.7976 ppb	21:42:16
1	B 249.677†	-478.0	157.3	3.5058 ug/L	3.5058 ppb	21:42:16
1	Ba 233.527†	-11.0	0.4	0.0038 ug/L	0.0038 ppb	21:42:16
1	Be 313.107†	-4505.6	112.1	0.0431 ug/L	0.0431 ppb	21:41:56
1	Cd 226.502†	-182.1	23.3	0.2576 ug/L	0.2576 ppb	21:42:16
1	Co 228.616†	-77.9	-2.6	-0.0542 ug/L	-0.0542 ppb	21:42:16
1	Cr 267.716†	78.4	-5.4	-0.0617 ug/L	-0.0617 ppb	21:42:16
1	Cu 324.752†	6455.0	-3.5	-0.0115 ug/L	-0.0115 ppb	21:41:56
1	Mn 257.610†	416.7	-31.2	-0.0308 ug/L	-0.0308 ppb	21:42:16
1	Mo 202.031†	23.6	-0.3	-0.0213 ug/L	-0.0213 ppb	21:42:16
1	Ni 231.604†	76.2	7.7	0.1912 ug/L	0.1912 ppb	21:42:16
1	P 214.914†	219.4	-12.0	-7.3778 ug/L	-7.3778 ppb	21:42:16
1	Pb 220.353†	-52.5	11.2	1.3690 ug/L	1.3690 ppb	21:42:16
1	S 181.975 Axial†	46.6	3.3	4.6507 ug/L	4.6507 ppb	21:42:16
1	Sb 206.836†	35.8	7.6	2.6108 ug/L	2.6108 ppb	21:42:16
1	Se 196.026†	-31.9	0.3	0.2340 ug/L	0.2340 ppb	21:42:16
1	Si 251.611†	551.4	-3.1	-0.0972 ug/L	-0.0972 ppb	21:42:16
1	Sn 189.927†	5.8	-1.9	-0.3375 ug/L	-0.3375 ppb	21:42:16
1	Ti 334.940†	-1272.6	111.0	0.1811 ug/L	0.1811 ppb	21:41:56
1	Tl 190.801†	-32.4	0.7	0.2110 ug/L	0.2110 ppb	21:42:16
1	U 409.014†	-1913.0	112.3	3.3118 ug/L	3.3118 ppb	21:41:56
1	V 292.402†	-1329.0	-9.8	-0.0639 ug/L	-0.0639 ppb	21:41:56
1	Zn 213.857†	601.6	-23.0	-0.2196 ug/L	-0.2196 ppb	21:42:16
1	SiO2†	583.4	7.5	0.5136 ug/L	0.5136 ppb	21:43:12
2	Sc Radial	5141.4	5141.4	102 %		21:41:04
2	Y RADIAL	5519.8	5519.8	101.7 %		21:41:04
2	Al 396.153Radial†	-16.9	-15.9	-12.212 ug/L	-12.212 ppb	21:41:04
2	Ca 317.933Radial†	15.3	-4.8	-7.7466 ug/L	-7.7466 ppb	21:41:24
2	Fe 238.204 Radial†	9.1	-0.0	-0.0300 ug/L	-0.0300 ppb	21:41:24
2	K 766.490 Radial†	2551.3	-91.5	-16.772 ug/L	-16.772 ppb	21:41:04
2	Mg 279.077 IEC†	0.9	-1.0	-33.471 ug/L	-33.471 ppb	21:41:24
2	Na 589.592 Radial†	-1307.5	-0.1	-0.0182 ug/L	-0.0182 ppb	21:41:04
2	Sr 421.552†	13.1	32.4	0.2092 ug/L	0.2092 ppb	21:41:04
2	Sc 361.383	896670.4	896670.4	105.19 %		21:42:21
2	Y 371.029	762390.0	762390.0	105.50 %		21:42:21
2	Ag 328.068†	330.5	-43.8	-0.2068 ug/L	-0.2068 ppb	21:42:21
2	As 188.979†	-16.9	7.6	3.2850 ug/L	3.2850 ppb	21:42:41
2	B 249.677†	-488.9	167.1	3.7232 ug/L	3.7232 ppb	21:42:41
2	Ba 233.527†	-10.9	1.1	0.0081 ug/L	0.0081 ppb	21:42:41
2	Be 313.107†	-4505.2	302.6	0.1157 ug/L	0.1157 ppb	21:42:21
2	Cd 226.502†	-207.8	6.6	0.0743 ug/L	0.0743 ppb	21:42:41
2	Co 228.616†	-60.9	16.8	0.3409 ug/L	0.3409 ppb	21:42:41
2	Cr 267.716†	94.2	6.3	0.0682 ug/L	0.0682 ppb	21:42:41
2	Cu 324.752†	6372.1	-354.7	-1.0640 ug/L	-1.0640 ppb	21:42:21
2	Mn 257.610†	411.7	-53.5	-0.0580 ug/L	-0.0580 ppb	21:42:41
2	Mo 202.031†	10.6	-13.7	-0.9656 ug/L	-0.9656 ppb	21:42:41
2	Ni 231.604†	74.7	3.0	0.0754 ug/L	0.0754 ppb	21:42:41



2	P 214.914†	209.1	-31.1	-18.822 ug/L	-18.822 ppb	21:42:41
2	Pb 220.353†	-59.8	6.5	0.7931 ug/L	0.7931 ppb	21:42:41
2	S 181.975 Axial†	48.2	2.8	3.9710 ug/L	3.9710 ppb	21:42:41
2	Sb 206.836†	38.0	8.2	2.7546 ug/L	2.7546 ppb	21:42:41
2	Se 196.026†	-29.1	4.4	2.8147 ug/L	2.8147 ppb	21:42:41
2	Si 251.611†	579.5	0.5	0.0265 ug/L	0.0265 ppb	21:42:41
2	Sn 189.927†	-1.9	-9.4	-1.6725 ug/L	-1.6725 ppb	21:42:41
2	Ti 334.940†	-1333.2	107.1	0.1718 ug/L	0.1718 ppb	21:42:21
2	Tl 190.801†	-27.4	6.8	2.1005 ug/L	2.1005 ppb	21:42:41
2	U 409.014†	-1904.9	200.8	5.9222 ug/L	5.9222 ppb	21:42:21
2	V 292.402†	-1385.1	-7.0	-0.0518 ug/L	-0.0518 ppb	21:42:21
2	Zn 213.857†	615.9	-34.7	-0.3274 ug/L	-0.3274 ppb	21:42:41
2	SiO2†	587.0	-13.7	-0.9059 ug/L	-0.9059 ppb	21:43:17
3	Sc Radial	5157.0	5157.0	102 %		21:41:29
3	Y RADIAL	5520.8	5520.8	101.7 %		21:41:29
3	Al 396.153Radial†	-10.6	-9.7	-7.5096 ug/L	-7.5096 ppb	21:41:29
3	Ca 317.933Radial†	18.5	-1.7	-2.7649 ug/L	-2.7649 ppb	21:41:49
3	Fe 238.204 Radial†	11.2	2.1	17.749 ug/L	17.749 ppb	21:41:49
3	K 766.490 Radial†	2676.0	22.7	4.1773 ug/L	4.1773 ppb	21:41:29
3	Mg 279.077 IEC†	5.8	3.7	123.88 ug/L	123.88 ppb	21:41:49
3	Na 589.592 Radial†	-1401.1	-87.6	-26.223 ug/L	-26.223 ppb	21:41:29
3	Sr 421.552†	-16.2	3.7	0.0241 ug/L	0.0241 ppb	21:41:29
3	Sc 361.383	850118.4	850118.4	99.733 %		21:42:46
3	Y 371.029	721245.4	721245.4	99.803 %		21:42:46
3	Ag 328.068†	281.8	-75.4	-0.3458 ug/L	-0.3458 ppb	21:42:46
3	As 188.979†	-16.6	7.0	3.0346 ug/L	3.0346 ppb	21:43:06
3	B 249.677†	-490.9	139.7	3.1121 ug/L	3.1121 ppb	21:43:06
3	Ba 233.527†	4.0	15.4	0.1193 ug/L	0.1193 ppb	21:43:06
3	Be 313.107†	-4454.2	119.2	0.0456 ug/L	0.0456 ppb	21:42:46
3	Cd 226.502†	-185.5	18.1	0.1995 ug/L	0.1995 ppb	21:43:06
3	Co 228.616†	-76.9	-2.5	-0.0501 ug/L	-0.0501 ppb	21:43:06
3	Cr 267.716†	82.0	-1.0	-0.0132 ug/L	-0.0132 ppb	21:43:06
3	Cu 324.752†	6398.6	3.5	0.0104 ug/L	0.0104 ppb	21:42:46
3	Mn 257.610†	440.0	-3.7	-0.0071 ug/L	-0.0071 ppb	21:43:06
3	Mo 202.031†	28.8	5.1	0.3645 ug/L	0.3645 ppb	21:43:06
3	Ni 231.604†	77.2	9.4	0.2344 ug/L	0.2344 ppb	21:43:06
3	P 214.914†	215.4	-13.8	-8.4896 ug/L	-8.4896 ppb	21:43:06
3	Pb 220.353†	-69.1	-5.9	-0.7282 ug/L	-0.7282 ppb	21:43:06
3	S 181.975 Axial†	48.0	5.2	7.3212 ug/L	7.3212 ppb	21:43:06
3	Sb 206.836†	44.2	16.4	5.6220 ug/L	5.6220 ppb	21:43:06
3	Se 196.026†	-40.8	-8.9	-5.6819 ug/L	-5.6819 ppb	21:43:06
3	Si 251.611†	570.1	21.2	0.6694 ug/L	0.6694 ppb	21:43:06
3	Sn 189.927†	4.5	-3.1	-0.5560 ug/L	-0.5560 ppb	21:43:06
3	Ti 334.940†	-1325.8	45.2	0.0616 ug/L	0.0616 ppb	21:42:46
3	Tl 190.801†	-37.8	-5.0	-1.5435 ug/L	-1.5435 ppb	21:43:06
3	U 409.014†	-1942.5	63.9	1.8840 ug/L	1.8840 ppb	21:42:46
3	V 292.402†	-1407.9	-102.0	-0.6875 ug/L	-0.6875 ppb	21:42:46
3	Zn 213.857†	625.0	6.4	0.0577 ug/L	0.0577 ppb	21:43:06
3	SiO2†	555.9	-14.3	-0.9848 ug/L	-0.9848 ppb	21:43:22

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	868447.5	101.88 %		2.910			2.86%
Sc Radial	5111.5	102 %		1.3			1.29%
Y 371.029	737714.6	102.08 %		3.012			2.95%
Y RADIAL	5490.8	101.1 %		0.94			0.93%
Ag 328.068†	-70.0	-0.3228 ug/L		0.10644	-0.3228 ppb	0.10644	32.97%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-16.7	-12.853 ug/L		5.6914	-12.853 ppb	5.6914	44.28%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	7.0	3.0391 ug/L		0.24372	3.0391 ppb	0.24372	8.02%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	154.7	3.4470 ug/L		0.30976	3.4470 ppb	0.30976	8.99%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	5.6	0.0438 ug/L		0.06550	0.0438 ppb	0.06550	149.68%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	178.0	0.0681 ug/L		0.04121	0.0681 ppb	0.04121	60.49%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-3.9	-6.1622 ug/L		2.94432	-6.1622 ppb	2.94432	47.78%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd 226.502†	16.0	0.1771 ug/L	0.09368	0.1771 ppb	0.09368	52.89%			
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co 228.616†	3.9	0.0789 ug/L	0.22693	0.0789 ppb	0.22693	287.67%			
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr 267.716†	-0.0	-0.0022 ug/L	0.06563	-0.0022 ppb	0.06563	>999.9%			
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu 324.752†	-118.2	-0.3550 ug/L	0.61409	-0.3550 ppb	0.61409	172.97%			
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe 238.204 Radial†	1.2	10.354 ug/L	9.2586	10.354 ppb	9.2586	89.42%			
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K 766.490 Radial†	-5.2	-0.9394 ug/L	13.99436	-0.9394 ppb	13.99436	>999.9%			
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg 279.077 IEC†	0.3	11.521 ug/L	97.9465	11.521 ppb	97.9465	850.15%			
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn 257.610†	-29.4	-0.0320 ug/L	0.02543	-0.0320 ppb	0.02543	79.57%			
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo 202.031†	-2.9	-0.2075 ug/L	0.68432	-0.2075 ppb	0.68432	329.86%			
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na 589.592 Radial†	-43.9	-13.139 ug/L	13.1026	-13.139 ppb	13.1026	99.72%			
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni 231.604†	6.7	0.1670 ug/L	0.08223	0.1670 ppb	0.08223	49.24%			
QC value within limits for Ni 231.604 Recovery = Not calculated									
P 214.914†	-19.0	-11.563 ug/L	6.3108	-11.563 ppb	6.3108	54.58%			
QC value within limits for P 214.914 Recovery = Not calculated									
Pb 220.353†	3.9	0.4780 ug/L	1.08353	0.4780 ppb	1.08353	226.69%			
QC value within limits for Pb 220.353 Recovery = Not calculated									
S 181.975 Axial†	3.8	5.3143 ug/L	1.77095	5.3143 ppb	1.77095	33.32%			
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb 206.836†	10.7	3.6625 ug/L	1.69854	3.6625 ppb	1.69854	46.38%			
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se 196.026†	-1.4	-0.8777 ug/L	4.35607	-0.8777 ppb	4.35607	496.28%			
QC value within limits for Se 196.026 Recovery = Not calculated									
Si 251.611†	6.2	0.1995 ug/L	0.41157	0.1995 ppb	0.41157	206.25%			
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn 189.927†	-4.8	-0.8553 ug/L	0.71607	-0.8553 ppb	0.71607	83.72%			
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr 421.552†	21.8	0.1408 ug/L	0.10158	0.1408 ppb	0.10158	72.14%			
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti 334.940†	87.8	0.1382 ug/L	0.06650	0.1382 ppb	0.06650	48.13%			
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl 190.801†	0.8	0.2560 ug/L	1.82240	0.2560 ppb	1.82240	711.87%			
QC value within limits for Tl 190.801 Recovery = Not calculated									
U 409.014†	125.7	3.7060 ug/L	2.04774	3.7060 ppb	2.04774	55.25%			
QC value within limits for U 409.014 Recovery = Not calculated									
V 292.402†	-39.6	-0.2677 ug/L	0.36359	-0.2677 ppb	0.36359	135.80%			
QC value within limits for V 292.402 Recovery = Not calculated									
Zn 213.857†	-17.1	-0.1631 ug/L	0.19868	-0.1631 ppb	0.19868	121.84%			
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†	-6.8	-0.4590 ug/L	0.84325	-0.4590 ppb	0.84325	183.71%			
QC value within limits for SiO2 Recovery = Not calculated									
All analyte(s) passed QC.									



Sequence No.: 66  
 Sample ID: CCV  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 1  
 Date Collected: 1/11/2010 22:48:23  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5079.6	5079.6	101 %		22:50:15
1	Y RADIAL	5389.7	5389.7	99.27 %		22:50:15
1	Al 396.153Radial†	6424.9	6369.6	4889.6 ug/L	4889.6 ppb	22:50:15
1	Ca 317.933Radial†	3212.7	3165.0	5064.3 ug/L	5064.3 ppb	22:50:35
1	Fe 238.204 Radial†	616.0	601.8	5222.8 ug/L	5222.8 ppb	22:50:35
1	K 766.490 Radial†	29984.7	27133.3	4957.4 ug/L	4957.4 ppb	22:50:15
1	Mg 279.077 IEC†	159.7	156.4	5224.5 ug/L	5224.5 ppb	22:50:35
1	Na 589.592 Radial†	32827.0	33821.3	10127 ug/L	10127 ppb	22:50:15
1	Sr 421.552†	77561.5	76905.0	496.69 ug/L	496.69 ppb	22:50:15
1	Sc 361.383	869829.9	869829.9	102.05 %		22:51:33
1	Y 371.029	724813.4	724813.4	100.30 %		22:51:33
1	Ag 328.068†	112256.4	109648.7	508.08 ug/L	508.08 ppb	22:51:38
1	As 188.979†	1168.9	1169.1	508.75 ug/L	508.75 ppb	22:51:58
1	B 249.677†	21933.1	22125.4	491.29 ug/L	491.29 ppb	22:51:38
1	Ba 233.527†	65369.0	64070.4	501.47 ug/L	501.47 ppb	22:51:38
1	Be 313.107†	1354071.0	1331520.0	508.47 ug/L	508.47 ppb	22:51:33
1	Cd 226.502†	45934.7	45218.2	501.64 ug/L	501.64 ppb	22:51:38
1	Co 228.616†	25026.0	24599.2	503.62 ug/L	503.62 ppb	22:51:38
1	Cr 267.716†	45970.3	44965.7	503.33 ug/L	503.33 ppb	22:51:38
1	Cu 324.752†	175429.1	165501.2	494.88 ug/L	494.88 ppb	22:51:38
1	Mn 257.610†	463526.8	453792.6	503.45 ug/L	503.45 ppb	22:51:33
1	Mo 202.031†	7299.5	7129.5	504.29 ug/L	504.29 ppb	22:51:58
1	Ni 231.604†	20709.0	20226.1	503.33 ug/L	503.33 ppb	22:51:38
1	P 214.914†	4370.4	4053.0	2372.0 ug/L	2372.0 ppb	22:51:58
1	Pb 220.353†	4106.8	4087.9	502.19 ug/L	502.19 ppb	22:51:58
1	S 181.975 Axial†	768.6	710.2	1004.1 ug/L	1004.1 ppb	22:51:58
1	Sb 206.836†	1518.9	1460.5	518.37 ug/L	518.37 ppb	22:51:58
1	Se 196.026†	760.2	777.0	519.14 ug/L	519.14 ppb	22:51:58
1	Si 251.611†	82253.8	80054.9	2543.4 ug/L	2543.4 ppb	22:51:38
1	Sn 189.927†	2909.9	2843.9	504.65 ug/L	504.65 ppb	22:51:58
1	Ti 334.940†	312356.6	307471.3	495.11 ug/L	495.11 ppb	22:51:38
1	Tl 190.801†	1628.5	1628.7	502.72 ug/L	502.72 ppb	22:51:58
1	U 409.014†	15741.1	17437.2	512.67 ug/L	512.67 ppb	22:51:38
1	V 292.402†	73659.6	73493.1	508.74 ug/L	508.74 ppb	22:51:38
1	Zn 213.857†	54822.5	53103.5	497.88 ug/L	497.88 ppb	22:51:38
1	SiO2†	81679.8	79471.2	5408.7 ug/L	5408.7 ppb	22:53:05
2	Sc Radial	5126.2	5126.2	102 %		22:50:40
2	Y RADIAL	5453.9	5453.9	100.5 %		22:50:40
2	Al 396.153Radial†	6467.9	6353.8	4877.1 ug/L	4877.1 ppb	22:50:40
2	Ca 317.933Radial†	3210.7	3134.0	5014.6 ug/L	5014.6 ppb	22:51:00
2	Fe 238.204 Radial†	615.3	595.5	5168.6 ug/L	5168.6 ppb	22:51:00
2	K 766.490 Radial†	29977.3	26855.5	4906.5 ug/L	4906.5 ppb	22:50:40
2	Mg 279.077 IEC†	161.7	157.0	5244.3 ug/L	5244.3 ppb	22:51:00
2	Na 589.592 Radial†	33137.8	33830.6	10129 ug/L	10129 ppb	22:50:40
2	Sr 421.552†	77856.0	76494.8	494.04 ug/L	494.04 ppb	22:50:40
2	Sc 361.383	864920.1	864920.1	101.47 %		22:52:04
2	Y 371.029	721286.8	721286.8	99.809 %		22:52:04
2	Ag 328.068†	113153.8	111157.7	515.04 ug/L	515.04 ppb	22:52:09
2	As 188.979†	1176.2	1182.8	514.67 ug/L	514.67 ppb	22:52:29
2	B 249.677†	22081.8	22393.9	497.26 ug/L	497.26 ppb	22:52:09
2	Ba 233.527†	66001.5	65057.4	509.18 ug/L	509.18 ppb	22:52:09
2	Be 313.107†	1345862.7	1330963.1	508.28 ug/L	508.28 ppb	22:52:04
2	Cd 226.502†	46354.3	45887.3	509.08 ug/L	509.08 ppb	22:52:09
2	Co 228.616†	25269.5	24978.3	511.38 ug/L	511.38 ppb	22:52:09
2	Cr 267.716†	46342.6	45588.4	510.30 ug/L	510.30 ppb	22:52:09
2	Cu 324.752†	176991.5	168016.9	502.40 ug/L	502.40 ppb	22:52:09
2	Mn 257.610†	460670.0	453555.7	503.18 ug/L	503.18 ppb	22:52:04
2	Mo 202.031†	7347.9	7217.8	510.53 ug/L	510.53 ppb	22:52:29
2	Ni 231.604†	20861.9	20491.9	509.94 ug/L	509.94 ppb	22:52:09



2	P 214.914†	4411.4	4117.7	2410.0 ug/L	2410.0 ppb	22:52:29
2	Pb 220.353†	4134.5	4138.0	508.34 ug/L	508.34 ppb	22:52:29
2	S 181.975 Axial†	777.6	723.4	1022.8 ug/L	1022.8 ppb	22:52:29
2	Sb 206.836†	1524.0	1474.0	523.23 ug/L	523.23 ppb	22:52:29
2	Se 196.026†	772.7	793.5	529.65 ug/L	529.65 ppb	22:52:29
2	Si 251.611†	82963.5	81211.9	2580.2 ug/L	2580.2 ppb	22:52:09
2	Sn 189.927†	2939.7	2889.4	512.70 ug/L	512.70 ppb	22:52:29
2	Ti 334.940†	314944.4	311759.2	502.01 ug/L	502.01 ppb	22:52:09
2	Tl 190.801†	1647.8	1656.8	511.34 ug/L	511.34 ppb	22:52:29
2	U 409.014†	15606.3	17392.0	511.33 ug/L	511.33 ppb	22:52:09
2	V 292.402†	74135.2	74371.6	514.83 ug/L	514.83 ppb	22:52:09
2	Zn 213.857†	55314.7	53893.6	505.30 ug/L	505.30 ppb	22:52:09
2	SiO2†	82861.2	81089.9	5519.0 ug/L	5519.0 ppb	22:53:10
3	Sc Radial	4979.8	4979.8	98.9 %		22:51:05
3	Y RADIAL	5339.0	5339.0	98.33 %		22:51:05
3	Al 396.153Radial†	6320.0	6391.1	4906.0 ug/L	4906.0 ppb	22:51:05
3	Ca 317.933Radial†	3194.3	3210.1	5136.5 ug/L	5136.5 ppb	22:51:25
3	Fe 238.204 Radial†	611.6	609.6	5290.4 ug/L	5290.4 ppb	22:51:25
3	K 766.490 Radial†	29506.6	27245.4	4977.9 ug/L	4977.9 ppb	22:51:05
3	Mg 279.077 IEC†	158.4	158.2	5286.1 ug/L	5286.1 ppb	22:51:25
3	Na 589.592 Radial†	32402.2	34043.8	10193 ppb	10193 ppb	22:51:05
3	Sr 421.552†	76218.3	77087.4	497.86 ug/L	497.86 ppb	22:51:05
3	Sc 361.383	869477.7	869477.7	102.00 %		22:52:35
3	Y 371.029	723745.4	723745.4	100.15 %		22:52:35
3	Ag 328.068†	113071.7	110492.6	512.00 ug/L	512.00 ppb	22:52:40
3	As 188.979†	1162.3	1163.1	506.17 ug/L	506.17 ppb	22:53:00
3	B 249.677†	22328.5	22521.7	500.10 ug/L	500.10 ppb	22:52:40
3	Ba 233.527†	66096.7	64809.7	507.25 ug/L	507.25 ppb	22:52:40
3	Be 313.107†	1354396.0	1332376.2	508.81 ug/L	508.81 ppb	22:52:35
3	Cd 226.502†	46314.7	45609.0	505.98 ug/L	505.98 ppb	22:52:40
3	Co 228.616†	25237.0	24815.9	508.05 ug/L	508.05 ppb	22:52:40
3	Cr 267.716†	46299.4	45306.6	507.15 ug/L	507.15 ppb	22:52:40
3	Cu 324.752†	177407.6	167510.5	500.89 ug/L	500.89 ppb	22:52:40
3	Mn 257.610†	464762.2	455187.8	505.00 ug/L	505.00 ppb	22:52:35
3	Mo 202.031†	7342.6	7174.7	507.49 ug/L	507.49 ppb	22:53:00
3	Ni 231.604†	20871.1	20393.2	507.49 ug/L	507.49 ppb	22:52:40
3	P 214.914†	4385.3	4069.3	2380.6 ug/L	2380.6 ppb	22:53:00
3	Pb 220.353†	4133.4	4115.5	505.58 ug/L	505.58 ppb	22:53:00
3	S 181.975 Axial†	777.3	719.0	1016.6 ug/L	1016.6 ppb	22:53:00
3	Sb 206.836†	1516.3	1458.6	517.85 ug/L	517.85 ppb	22:53:00
3	Se 196.026†	758.0	775.2	518.20 ug/L	518.20 ppb	22:53:00
3	Si 251.611†	83161.4	80977.3	2572.8 ug/L	2572.8 ppb	22:52:40
3	Sn 189.927†	2938.1	2872.7	509.76 ug/L	509.76 ppb	22:53:00
3	Ti 334.940†	315694.6	310867.8	500.58 ug/L	500.58 ppb	22:52:40
3	Tl 190.801†	1638.4	1639.1	505.94 ug/L	505.94 ppb	22:53:00
3	U 409.014†	15879.4	17579.0	516.84 ug/L	516.84 ppb	22:52:40
3	V 292.402†	74064.2	73919.0	511.69 ug/L	511.69 ppb	22:52:40
3	Zn 213.857†	55358.9	53651.2	503.02 ug/L	503.02 ppb	22:52:40
3	SiO2†	82943.0	80742.0	5495.3 ug/L	5495.3 ppb	22:53:15

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	868075.9	101.84 %	0.321			0.32%
Sc Radial	5061.9	101 %	1.5			1.48%
Y 371.029	723281.8	100.08 %	0.250			0.25%
Y RADIAL	5394.2	99.35 %	1.061			1.07%
Ag 328.068†	110433.0	511.71 ug/L	3.487	511.71 ppb	3.487	0.68%
QC value within limits for Ag 328.068 Recovery = 102.34%						
Al 396.153Radial†	6371.5	4890.9 ug/L	14.49	4890.9 ppb	14.49	0.30%
QC value within limits for Al 396.153Radial Recovery = 97.82%						
As 188.979†	1171.7	509.86 ug/L	4.360	509.86 ppb	4.360	0.86%
QC value within limits for As 188.979 Recovery = 101.97%						
B 249.677†	22347.0	496.21 ug/L	4.499	496.21 ppb	4.499	0.91%
QC value within limits for B 249.677 Recovery = 99.24%						
Ba 233.527†	64645.8	505.97 ug/L	4.014	505.97 ppb	4.014	0.79%
QC value within limits for Ba 233.527 Recovery = 101.19%						
Be 313.107†	1331619.7	508.52 ug/L	0.271	508.52 ppb	0.271	0.05%
QC value within limits for Be 313.107 Recovery = 101.70%						
Ca 317.933Radial†	3169.7	5071.8 ug/L	61.31	5071.8 ppb	61.31	1.21%



QC value within limits for Ca 317.933Radial Recovery = 101.44%					
Cd 226.502†	45571.5	505.57 ug/L	3.734	505.57 ppb	3.734 0.74%
QC value within limits for Cd 226.502 Recovery = 101.11%					
Co 228.616†	24797.8	507.68 ug/L	3.894	507.68 ppb	3.894 0.77%
QC value within limits for Co 228.616 Recovery = 101.54%					
Cr 267.716†	45286.9	506.93 ug/L	3.490	506.93 ppb	3.490 0.69%
QC value within limits for Cr 267.716 Recovery = 101.39%					
Cu 324.752†	167009.5	499.39 ug/L	3.978	499.39 ppb	3.978 0.80%
QC value within limits for Cu 324.752 Recovery = 99.88%					
Fe 238.204 Radial†	602.3	5227.3 ug/L	61.00	5227.3 ppb	61.00 1.17%
QC value within limits for Fe 238.204 Radial Recovery = 104.55%					
K 766.490 Radial†	27078.1	4947.3 ug/L	36.78	4947.3 ppb	36.78 0.74%
QC value within limits for K 766.490 Radial Recovery = 98.95%					
Mg 279.077 IEC†	157.2	5251.6 ug/L	31.44	5251.6 ppb	31.44 0.60%
QC value within limits for Mg 279.077 IEC Recovery = 105.03%					
Mn 257.610†	454178.7	503.87 ug/L	0.983	503.87 ppb	0.983 0.20%
QC value within limits for Mn 257.610 Recovery = 100.77%					
Mo 202.031†	7174.0	507.44 ug/L	3.117	507.44 ppb	3.117 0.61%
QC value within limits for Mo 202.031 Recovery = 101.49%					
Na 589.592 Radial†	33898.6	10150 ug/L	37.7	10150 ppb	37.7 0.37%
QC value within limits for Na 589.592 Radial Recovery = 101.50%					
Ni 231.604†	20370.4	506.92 ug/L	3.344	506.92 ppb	3.344 0.66%
QC value within limits for Ni 231.604 Recovery = 101.38%					
P 214.914†	4080.0	2387.5 ug/L	19.95	2387.5 ppb	19.95 0.84%
QC value within limits for P 214.914 Recovery = 95.50%					
Pb 220.353†	4113.8	505.37 ug/L	3.079	505.37 ppb	3.079 0.61%
QC value within limits for Pb 220.353 Recovery = 101.07%					
S 181.975 Axial†	717.5	1014.5 ug/L	9.50	1014.5 ppb	9.50 0.94%
QC value within limits for S 181.975 Axial Recovery = 101.45%					
Sb 206.836†	1464.4	519.81 ug/L	2.969	519.81 ppb	2.969 0.57%
QC value within limits for Sb 206.836 Recovery = 103.96%					
Se 196.026†	781.9	522.33 ug/L	6.358	522.33 ppb	6.358 1.22%
QC value within limits for Se 196.026 Recovery = 104.47%					
Si 251.611†	80748.1	2565.5 ug/L	19.44	2565.5 ppb	19.44 0.76%
QC value within limits for Si 251.611 Recovery = 102.62%					
Sn 189.927†	2868.7	509.04 ug/L	4.076	509.04 ppb	4.076 0.80%
QC value within limits for Sn 189.927 Recovery = 101.81%					
Sr 421.552†	76829.1	496.19 ug/L	1.960	496.19 ppb	1.960 0.39%
QC value within limits for Sr 421.552 Recovery = 99.24%					
Ti 334.940†	310032.7	499.23 ug/L	3.642	499.23 ppb	3.642 0.73%
QC value within limits for Ti 334.940 Recovery = 99.85%					
Tl 190.801†	1641.5	506.67 ug/L	4.357	506.67 ppb	4.357 0.86%
QC value within limits for Tl 190.801 Recovery = 101.33%					
U 409.014†	17469.4	513.61 ug/L	2.874	513.61 ppb	2.874 0.56%
QC value within limits for U 409.014 Recovery = 102.72%					
V 292.402†	73927.9	511.75 ug/L	3.043	511.75 ppb	3.043 0.59%
QC value within limits for V 292.402 Recovery = 102.35%					
Zn 213.857†	53549.4	502.07 ug/L	3.803	502.07 ppb	3.803 0.76%
QC value within limits for Zn 213.857 Recovery = 100.41%					
SiO2†	80434.4	5474.4 ug/L	58.06	5474.4 ppb	58.06 1.06%
QC value within limits for SiO2 Recovery = 102.37%					
All analyte(s) passed QC.					



Sequence No.: 67

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 6

Date Collected: 1/11/2010 22:55:25

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5176.0	5176.0	103 %		22:57:17
1	Y RADIAL	5549.0	5549.0	102.2 %		22:57:17
1	Al 396.153Radial†	-7.0	-6.1	-4.7088 ug/L	-4.7088 ppb	22:57:17
1	Ca 317.933Radial†	25.5	5.1	8.1193 ug/L	8.1193 ppb	22:57:37
1	Fe 238.204 Radial†	8.2	-0.9	-7.9800 ug/L	-7.9800 ppb	22:57:37
1	K 766.490 Radial†	2872.1	203.9	37.406 ug/L	37.406 ppb	22:57:17
1	Mg 279.077 IEC†	0.2	-1.7	-56.871 ug/L	-56.871 ppb	22:57:37
1	Na 589.592 Radial†	-1369.8	-52.1	-15.593 ug/L	-15.593 ppb	22:57:17
1	Sr 421.552†	25.8	44.6	0.2880 ug/L	0.2880 ppb	22:57:17
1	Sc 361.383	882577.1	882577.1	103.54 %		22:58:34
1	Y 371.029	747252.0	747252.0	103.40 %		22:58:34
1	Ag 328.068†	406.5	34.6	0.1559 ug/L	0.1559 ppb	22:58:39
1	As 188.979†	-18.0	6.2	2.6961 ug/L	2.6961 ppb	22:58:59
1	B 249.677†	-447.7	199.5	4.4490 ug/L	4.4490 ppb	22:58:59
1	Ba 233.527†	-0.4	11.0	0.0858 ug/L	0.0858 ppb	22:58:59
1	Be 313.107†	-4454.0	283.7	0.1085 ug/L	0.1085 ppb	22:58:39
1	Cd 226.502†	-177.9	32.3	0.3591 ug/L	0.3591 ppb	22:58:59
1	Co 228.616†	-88.7	-11.0	-0.2264 ug/L	-0.2264 ppb	22:58:59
1	Cr 267.716†	81.9	-4.2	-0.0473 ug/L	-0.0473 ppb	22:58:59
1	Cu 324.752†	6341.0	-288.0	-0.8625 ug/L	-0.8625 ppb	22:58:39
1	Mn 257.610†	490.3	28.6	0.0332 ug/L	0.0332 ppb	22:58:59
1	Mo 202.031†	15.3	-8.9	-0.6306 ug/L	-0.6306 ppb	22:58:59
1	Ni 231.604†	77.0	6.5	0.1608 ug/L	0.1608 ppb	22:58:59
1	P 214.914†	211.7	-25.4	-15.358 ug/L	-15.358 ppb	22:58:59
1	Pb 220.353†	-74.1	-8.2	-1.0056 ug/L	-1.0056 ppb	22:58:59
1	S 181.975 Axial†	46.6	2.0	2.8781 ug/L	2.8781 ppb	22:58:59
1	Sb 206.836†	33.2	4.1	1.3879 ug/L	1.3879 ppb	22:58:59
1	Se 196.026†	-30.6	2.4	1.5296 ug/L	1.5296 ppb	22:58:59
1	Si 251.611†	572.3	2.3	0.0814 ug/L	0.0814 ppb	22:58:59
1	Sn 189.927†	1.2	-6.5	-1.1515 ug/L	-1.1515 ppb	22:58:59
1	Ti 334.940†	-1307.4	111.8	0.1851 ug/L	0.1851 ppb	22:58:39
1	Tl 190.801†	-30.5	3.4	1.0374 ug/L	1.0374 ppb	22:58:59
1	U 409.014†	-2033.9	47.2	1.3945 ug/L	1.3945 ppb	22:58:34
1	V 292.402†	-1342.3	13.3	0.0837 ug/L	0.0837 ppb	22:58:39
1	Zn 213.857†	604.8	-36.2	-0.3412 ug/L	-0.3412 ppb	22:58:59
1	SiO2†	642.5	48.9	3.3509 ug/L	3.3509 ppb	23:00:05
2	Sc Radial	5278.9	5278.9	105 %		22:57:42
2	Y RADIAL	5667.0	5667.0	104.4 %		22:57:42
2	Al 396.153Radial†	-9.2	-8.1	-6.2517 ug/L	-6.2517 ppb	22:57:42
2	Ca 317.933Radial†	18.9	-1.8	-2.8339 ug/L	-2.8339 ppb	22:58:02
2	Fe 238.204 Radial†	14.4	4.9	42.006 ug/L	42.006 ppb	22:58:02
2	K 766.490 Radial†	2740.5	23.9	4.3928 ug/L	4.3928 ppb	22:57:42
2	Mg 279.077 IEC†	-2.0	-3.8	-127.27 ug/L	-127.27 ppb	22:58:02
2	Na 589.592 Radial†	-1361.1	-17.9	-5.3478 ug/L	-5.3478 ppb	22:57:42
2	Sr 421.552†	-9.2	10.8	0.0696 ug/L	0.0696 ppb	22:57:42
2	Sc 361.383	869443.9	869443.9	102.00 %		22:59:04
2	Y 371.029	736966.7	736966.7	101.98 %		22:59:04
2	Ag 328.068†	386.0	20.4	0.1054 ug/L	0.1054 ppb	22:59:09
2	As 188.979†	-12.8	11.1	4.8225 ug/L	4.8225 ppb	22:59:29
2	B 249.677†	-461.1	179.8	4.0034 ug/L	4.0034 ppb	22:59:29
2	Ba 233.527†	7.5	18.8	0.1480 ug/L	0.1480 ppb	22:59:29
2	Be 313.107†	-4488.7	184.7	0.0706 ug/L	0.0706 ppb	22:59:09
2	Cd 226.502†	-198.7	9.3	0.0990 ug/L	0.0990 ppb	22:59:29
2	Co 228.616†	-76.8	-0.6	-0.0142 ug/L	-0.0142 ppb	22:59:29
2	Cr 267.716†	98.6	13.4	0.1498 ug/L	0.1498 ppb	22:59:29
2	Cu 324.752†	6443.6	-94.9	-0.2827 ug/L	-0.2827 ppb	22:59:09
2	Mn 257.610†	492.6	38.1	0.0521 ug/L	0.0521 ppb	22:59:29
2	Mo 202.031†	20.2	-3.9	-0.2746 ug/L	-0.2746 ppb	22:59:29
2	Ni 231.604†	78.9	9.4	0.2348 ug/L	0.2348 ppb	22:59:29



2	P 214.914†	209.8	-24.2	-14.789 ug/L	-14.789 ppb	22:59:29
2	Pb 220.353†	-59.9	4.6	0.5563 ug/L	0.5563 ppb	22:59:29
2	S 181.975 Axial†	47.7	3.8	5.3736 ug/L	5.3736 ppb	22:59:29
2	Sb 206.836†	38.3	9.6	3.2680 ug/L	3.2680 ppb	22:59:29
2	Se 196.026†	-30.0	2.6	1.8303 ug/L	1.8303 ppb	22:59:29
2	Si 251.611†	581.4	19.5	0.6251 ug/L	0.6251 ppb	22:59:29
2	Sn 189.927†	4.4	-3.4	-0.5994 ug/L	-0.5994 ppb	22:59:29
2	Ti 334.940†	-1323.3	77.1	0.1334 ug/L	0.1334 ppb	22:59:09
2	Tl 190.801†	-39.1	-5.5	-1.6930 ug/L	-1.6930 ppb	22:59:29
2	U 409.014†	-1983.2	67.3	1.9794 ug/L	1.9794 ppb	22:59:04
2	V 292.402†	-1362.9	-26.5	-0.1900 ug/L	-0.1900 ppb	22:59:09
2	Zn 213.857†	618.2	-14.2	-0.1390 ug/L	-0.1390 ppb	22:59:29
2	SiO2†	596.3	12.9	0.8906 ug/L	0.8906 ppb	23:00:10
3	Sc Radial	5283.7	5283.7	105 %		22:58:07
3	Y RADIAL	5664.1	5664.1	104.3 %		22:58:07
3	Al 396.153Radial†	-26.5	-24.6	-18.945 ug/L	-18.945 ppb	22:58:07
3	Ca 317.933Radial†	11.0	-9.3	-14.855 ug/L	-14.855 ppb	22:58:27
3	Fe 238.204 Radial†	11.2	1.8	15.484 ug/L	15.484 ppb	22:58:27
3	K 766.490 Radial†	2750.3	30.9	5.6781 ug/L	5.6781 ppb	22:58:07
3	Mg 279.077 IEC†	5.4	3.2	107.93 ug/L	107.93 ppb	22:58:27
3	Na 589.592 Radial†	-1389.9	-44.1	-13.198 ug/L	-13.198 ppb	22:58:07
3	Sr 421.552†	-25.9	-5.2	-0.0334 ug/L	-0.0334 ppb	22:58:07
3	Sc 361.383	882211.9	882211.9	103.50 %		22:59:35
3	Y 371.029	746007.1	746007.1	103.23 %		22:59:35
3	Ag 328.068†	319.6	-49.2	-0.2222 ug/L	-0.2222 ppb	22:59:40
3	As 188.979†	-20.1	4.2	1.8464 ug/L	1.8464 ppb	23:00:00
3	B 249.677†	-468.9	178.8	3.9857 ug/L	3.9857 ppb	23:00:00
3	Ba 233.527†	-1.5	10.0	0.0792 ug/L	0.0792 ppb	23:00:00
3	Be 313.107†	-4449.7	286.0	0.1093 ug/L	0.1093 ppb	22:59:40
3	Cd 226.502†	-184.3	26.0	0.2875 ug/L	0.2875 ppb	23:00:00
3	Co 228.616†	-86.2	-8.6	-0.1781 ug/L	-0.1781 ppb	23:00:00
3	Cr 267.716†	108.9	22.0	0.2454 ug/L	0.2454 ppb	23:00:00
3	Cu 324.752†	6332.4	-293.9	-0.8793 ug/L	-0.8793 ppb	22:59:40
3	Mn 257.610†	502.4	40.5	0.0423 ug/L	0.0423 ppb	23:00:00
3	Mo 202.031†	13.0	-11.1	-0.7839 ug/L	-0.7839 ppb	23:00:00
3	Ni 231.604†	72.2	1.8	0.0441 ug/L	0.0441 ppb	23:00:00
3	P 214.914†	217.0	-20.3	-12.226 ug/L	-12.226 ppb	23:00:00
3	Pb 220.353†	-59.0	6.3	0.7700 ug/L	0.7700 ppb	23:00:00
3	S 181.975 Axial†	40.7	-3.6	-5.1486 ug/L	-5.1486 ppb	23:00:00
3	Sb 206.836†	38.5	9.3	3.1362 ug/L	3.1362 ppb	23:00:00
3	Se 196.026†	-24.7	8.1	5.2687 ug/L	5.2687 ppb	23:00:00
3	Si 251.611†	574.4	4.5	0.1531 ug/L	0.1531 ppb	23:00:00
3	Sn 189.927†	-2.3	-9.9	-1.7616 ug/L	-1.7616 ppb	23:00:00
3	Ti 334.940†	-1337.2	82.5	0.1212 ug/L	0.1212 ppb	22:59:40
3	Tl 190.801†	-40.6	-6.4	-1.9568 ug/L	-1.9568 ppb	23:00:00
3	U 409.014†	-1990.8	88.1	2.5956 ug/L	2.5956 ppb	22:59:35
3	V 292.402†	-1299.4	54.3	0.3632 ug/L	0.3632 ppb	22:59:40
3	Zn 213.857†	621.5	-19.8	-0.1877 ug/L	-0.1877 ppb	23:00:00
3	SiO2†	595.3	3.5	0.2626 ug/L	0.2626 ppb	23:00:15

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	878077.7	103.01 %	0.877			0.85%
Sc Radial	5246.2	104 %	1.2			1.16%
Y 371.029	743408.6	102.87 %	0.777			0.76%
Y RADIAL	5626.7	103.6 %	1.24			1.20%
Ag 328.068†	1.9	0.0130 ug/L	0.20529	0.0130 ppb	0.20529	>999.9%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	-13.0	-9.9686 ug/L	7.81226	-9.9686 ppb	7.81226	78.37%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	7.2	3.1217 ug/L	1.53300	3.1217 ppb	1.53300	49.11%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	186.0	4.1460 ug/L	0.26249	4.1460 ppb	0.26249	6.33%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	13.3	0.1043 ug/L	0.03793	0.1043 ppb	0.03793	36.35%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	251.4	0.0961 ug/L	0.02208	0.0961 ppb	0.02208	22.97%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-2.0	-3.1898 ug/L	11.49121	-3.1898 ppb	11.49121	360.25%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	22.5	0.2485 ug/L	0.13437	0.2485 ppb	0.13437	54.07%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-6.7	-0.1396 ug/L	0.11120	-0.1396 ppb	0.11120	79.68%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	10.4	0.1160 ug/L	0.14926	0.1160 ppb	0.14926	128.68%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-225.6	-0.6748 ug/L	0.33974	-0.6748 ppb	0.33974	50.34%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	1.9	16.503 ug/L	25.0087	16.503 ppb	25.0087	151.54%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	86.2	15.826 ug/L	18.7001	15.826 ppb	18.7001	118.16%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	-0.8	-25.405 ug/L	120.7158	-25.405 ppb	120.7158	475.17%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	35.7	0.0425 ug/L	0.00947	0.0425 ppb	0.00947	22.27%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	-8.0	-0.5631 ug/L	0.26133	-0.5631 ppb	0.26133	46.41%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	-38.0	-11.380 ug/L	5.3591	-11.380 ppb	5.3591	47.09%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	5.9	0.1466 ug/L	0.09618	0.1466 ppb	0.09618	65.61%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-23.3	-14.124 ug/L	1.6683	-14.124 ppb	1.6683	11.81%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	0.9	0.1069 ug/L	0.96934	0.1069 ppb	0.96934	906.74%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	0.7	1.0344 ug/L	5.49808	1.0344 ppb	5.49808	531.54%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	7.7	2.5973 ug/L	1.04948	2.5973 ppb	1.04948	40.41%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	4.4	2.8762 ug/L	2.07738	2.8762 ppb	2.07738	72.23%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	8.8	0.2865 ug/L	0.29536	0.2865 ppb	0.29536	103.08%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	-6.6	-1.1708 ug/L	0.58132	-1.1708 ppb	0.58132	49.65%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	16.7	0.1080 ug/L	0.16414	0.1080 ppb	0.16414	151.93%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	90.5	0.1466 ug/L	0.03396	0.1466 ppb	0.03396	23.17%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	-2.8	-0.8708 ug/L	1.65785	-0.8708 ppb	1.65785	190.38%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	67.5	1.9898 ug/L	0.60061	1.9898 ppb	0.60061	30.18%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	13.7	0.0857 ug/L	0.27657	0.0857 ppb	0.27657	322.90%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	-23.4	-0.2226 ug/L	0.10550	-0.2226 ppb	0.10550	47.39%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	21.8	1.5014 ug/L	1.63225	1.5014 ppb	1.63225	108.72%	
QC value within limits for SiO2 Recovery = Not calculated							
All analyte(s) passed QC.							



Sequence No.: 76

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/11/2010 23:59:01

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5171.4	5171.4	103 %		00:00:53
1	Y RADIAL	5504.9	5504.9	101.4 %		00:00:53
1	Al 396.153Radial†	6468.8	6299.2	4835.4 ug/L	4835.4 ppb	00:00:53
1	Ca 317.933Radial†	3277.9	3171.9	5075.3 ug/L	5075.3 ppb	00:01:13
1	Fe 238.204 Radial†	630.7	605.2	5252.3 ug/L	5252.3 ppb	00:01:13
1	K 766.490 Radial†	30222.9	26837.2	4903.0 ug/L	4903.0 ppb	00:00:53
1	Mg 279.077 IEC†	163.6	157.4	5257.8 ug/L	5257.8 ppb	00:01:13
1	Na 589.592 Radial†	34025.6	34410.4	10303 ug/L	10303 ppb	00:00:53
1	Sr 421.552†	78867.7	76811.2	496.08 ug/L	496.08 ppb	00:00:53
1	Sc 361.383	885814.6	885814.6	103.92 %		00:02:11
1	Y 371.029	736563.1	736563.1	101.92 %		00:02:11
1	Ag 328.068†	112966.0	108346.5	502.08 ug/L	502.08 ppb	00:02:16
1	As 188.979†	1170.9	1150.3	500.69 ug/L	500.69 ppb	00:02:36
1	B 249.677†	21966.9	21770.1	483.38 ug/L	483.38 ppb	00:02:16
1	Ba 233.527†	66106.4	63624.0	497.97 ug/L	497.97 ppb	00:02:16
1	Be 313.107†	1384368.1	1336729.4	510.49 ug/L	510.49 ppb	00:02:11
1	Cd 226.502†	46498.1	44948.1	498.64 ug/L	498.64 ppb	00:02:16
1	Co 228.616†	25255.0	24376.9	499.03 ug/L	499.03 ppb	00:02:16
1	Cr 267.716†	46300.8	44470.9	497.80 ug/L	497.80 ppb	00:02:16
1	Cu 324.752†	176249.6	163188.5	487.98 ug/L	487.98 ppb	00:02:16
1	Mn 257.610†	475068.5	456702.0	506.67 ug/L	506.67 ppb	00:02:11
1	Mo 202.031†	7401.7	7098.8	502.12 ug/L	502.12 ppb	00:02:36
1	Ni 231.604†	20860.6	20005.7	497.84 ug/L	497.84 ppb	00:02:16
1	P 214.914†	4468.2	4069.7	2383.7 ug/L	2383.7 ppb	00:02:36
1	Pb 220.353†	4173.0	4078.9	501.08 ug/L	501.08 ppb	00:02:36
1	S 181.975 Axial†	798.9	725.8	1026.2 ug/L	1026.2 ppb	00:02:36
1	Sb 206.836†	1542.5	1456.4	516.87 ug/L	516.87 ppb	00:02:36
1	Se 196.026†	775.0	777.8	519.74 ug/L	519.74 ppb	00:02:36
1	Si 251.611†	83038.7	79355.7	2521.2 ug/L	2521.2 ppb	00:02:16
1	Sn 189.927†	2972.1	2852.4	506.15 ug/L	506.15 ppb	00:02:36
1	Ti 334.940†	328133.2	317129.2	510.68 ug/L	510.68 ppb	00:02:11
1	Tl 190.801†	1656.5	1626.8	502.30 ug/L	502.30 ppb	00:02:36
1	U 409.014†	15652.4	17073.6	501.95 ug/L	501.95 ppb	00:02:16
1	V 292.402†	74171.3	72682.9	503.14 ug/L	503.14 ppb	00:02:16
1	Zn 213.857†	55289.5	52583.5	493.00 ug/L	493.00 ppb	00:02:16
1	SiO2†	82534.3	78849.1	5366.3 ug/L	5366.3 ppb	00:03:44
2	Sc Radial	5097.9	5097.9	101 %		00:01:18
2	Y RADIAL	5437.9	5437.9	100.2 %		00:01:18
2	Al 396.153Radial†	6436.9	6358.5	4880.7 ug/L	4880.7 ppb	00:01:18
2	Ca 317.933Radial†	3244.0	3184.4	5095.3 ug/L	5095.3 ppb	00:01:38
2	Fe 238.204 Radial†	623.9	607.4	5271.6 ug/L	5271.6 ppb	00:01:38
2	K 766.490 Radial†	29994.1	27035.7	4939.3 ug/L	4939.3 ppb	00:01:18
2	Mg 279.077 IEC†	165.0	161.1	5382.1 ug/L	5382.1 ppb	00:01:38
2	Na 589.592 Radial†	33544.4	34413.1	10304 ug/L	10304 ppb	00:01:18
2	Sr 421.552†	78187.3	77247.1	498.89 ug/L	498.89 ppb	00:01:18
2	Sc 361.383	869801.0	869801.0	102.04 %		00:02:42
2	Y 371.029	724270.0	724270.0	100.22 %		00:02:42
2	Ag 328.068†	113175.2	110552.8	512.28 ug/L	512.28 ppb	00:02:47
2	As 188.979†	1175.5	1175.6	511.60 ug/L	511.60 ppb	00:03:07
2	B 249.677†	22113.2	22302.6	495.22 ug/L	495.22 ppb	00:02:47
2	Ba 233.527†	66099.5	64788.4	507.08 ug/L	507.08 ppb	00:02:47
2	Be 313.107†	1357609.0	1335031.4	509.84 ug/L	509.84 ppb	00:02:42
2	Cd 226.502†	46619.3	45890.6	509.10 ug/L	509.10 ppb	00:02:47
2	Co 228.616†	25319.2	24887.3	509.50 ug/L	509.50 ppb	00:02:47
2	Cr 267.716†	46458.5	45445.7	508.71 ug/L	508.71 ppb	00:02:47
2	Cu 324.752†	176893.0	166941.5	499.19 ug/L	499.19 ppb	00:02:47
2	Mn 257.610†	466029.2	456260.0	506.18 ug/L	506.18 ppb	00:02:42
2	Mo 202.031†	7416.1	7244.0	512.39 ug/L	512.39 ppb	00:03:07
2	Ni 231.604†	20974.0	20486.4	509.81 ug/L	509.81 ppb	00:02:47



2	P 214.914†	4450.5	4131.6	2419.2 ug/L	2419.2 ppb	00:03:07
2	Pb 220.353†	4167.5	4147.5	509.51 ug/L	509.51 ppb	00:03:07
2	S 181.975 Axial†	786.9	728.2	1029.5 ug/L	1029.5 ppb	00:03:07
2	Sb 206.836†	1547.7	1488.8	528.34 ug/L	528.34 ppb	00:03:07
2	Se 196.026†	776.4	792.9	529.57 ug/L	529.57 ppb	00:03:07
2	Si 251.611†	83070.1	80857.6	2568.9 ug/L	2568.9 ppb	00:02:47
2	Sn 189.927†	2969.6	2902.5	515.03 ug/L	515.03 ppb	00:03:07
2	Ti 334.940†	321752.0	316688.9	509.95 ug/L	509.95 ppb	00:02:42
2	Tl 190.801†	1670.1	1669.5	515.34 ug/L	515.34 ppb	00:03:07
2	U 409.014†	15898.9	17592.5	517.23 ug/L	517.23 ppb	00:02:47
2	V 292.402†	74312.2	74135.1	513.23 ug/L	513.23 ppb	00:02:47
2	Zn 213.857†	55432.8	53703.4	503.50 ug/L	503.50 ppb	00:02:47
2	SiO2†	82790.6	80562.5	5483.0 ug/L	5483.0 ppb	00:03:49
3	Sc Radial	5270.9	5270.9	105 %		00:01:43
3	Y RADIAL	5614.5	5614.5	103.4 %		00:01:43
3	Al 396.153Radial†	6648.6	6352.1	4875.9 ug/L	4875.9 ppb	00:01:43
3	Ca 317.933Radial†	3221.5	3057.7	4892.7 ug/L	4892.7 ppb	00:02:03
3	Fe 238.204 Radial†	623.0	586.3	5089.3 ug/L	5089.3 ppb	00:02:03
3	K 766.490 Radial†	30804.9	26837.9	4903.2 ug/L	4903.2 ppb	00:01:43
3	Mg 279.077 IEC†	165.6	156.2	5220.6 ug/L	5220.6 ppb	00:02:03
3	Na 589.592 Radial†	34698.7	34428.3	10308 ug/L	10308 ppb	00:01:43
3	Sr 421.552†	80835.6	77242.2	498.86 ug/L	498.86 ppb	00:01:43
3	Sc 361.383	871664.6	871664.6	102.26 %		00:03:13
3	Y 371.029	726041.6	726041.6	100.47 %		00:03:13
3	Ag 328.068†	113985.2	111107.7	514.78 ug/L	514.78 ppb	00:03:18
3	As 188.979†	1172.4	1170.1	509.21 ug/L	509.21 ppb	00:03:38
3	B 249.677†	22353.4	22491.2	499.43 ug/L	499.43 ppb	00:03:18
3	Ba 233.527†	66445.0	64987.7	508.64 ug/L	508.64 ppb	00:03:18
3	Be 313.107†	1362122.5	1336600.7	510.44 ug/L	510.44 ppb	00:03:13
3	Cd 226.502†	46771.9	45942.2	509.70 ug/L	509.70 ppb	00:03:18
3	Co 228.616†	25498.7	25009.8	512.00 ug/L	512.00 ppb	00:03:18
3	Cr 267.716†	46716.4	45600.6	510.43 ug/L	510.43 ppb	00:03:18
3	Cu 324.752†	178604.5	168244.6	503.07 ug/L	503.07 ppb	00:03:18
3	Mn 257.610†	467051.8	456283.6	506.19 ug/L	506.19 ppb	00:03:13
3	Mo 202.031†	7377.6	7190.8	508.61 ug/L	508.61 ppb	00:03:38
3	Ni 231.604†	21019.8	20487.2	509.83 ug/L	509.83 ppb	00:03:18
3	P 214.914†	4440.1	4112.1	2406.5 ug/L	2406.5 ppb	00:03:38
3	Pb 220.353†	4152.4	4123.9	506.62 ug/L	506.62 ppb	00:03:38
3	S 181.975 Axial†	777.0	716.8	1013.5 ug/L	1013.5 ppb	00:03:38
3	Sb 206.836†	1549.0	1486.9	527.57 ug/L	527.57 ppb	00:03:38
3	Se 196.026†	771.4	786.4	524.77 ug/L	524.77 ppb	00:03:38
3	Si 251.611†	83713.6	81312.8	2583.4 ug/L	2583.4 ppb	00:03:18
3	Sn 189.927†	2960.7	2887.6	512.37 ug/L	512.37 ppb	00:03:38
3	Ti 334.940†	322420.5	316668.5	509.90 ug/L	509.90 ppb	00:03:13
3	Tl 190.801†	1649.6	1646.0	508.11 ug/L	508.11 ppb	00:03:38
3	U 409.014†	16116.1	17771.5	522.53 ug/L	522.53 ppb	00:03:18
3	V 292.402†	74729.8	74387.7	514.93 ug/L	514.93 ppb	00:03:18
3	Zn 213.857†	55793.4	53939.9	505.75 ug/L	505.75 ppb	00:03:18
3	SiO2†	84213.5	81780.4	5566.2 ug/L	5566.2 ppb	00:03:54

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	875760.1	102.74 %	1.027			1.00%
Sc Radial	5180.1	103 %	1.7			1.68%
Y 371.029	728958.3	100.87 %	0.920			0.91%
Y RADIAL	5519.1	101.7 %	1.64			1.62%
Ag 328.068†	110002.3	509.71 ug/L	6.724	509.71 ppb	6.724	1.32%
QC value within limits for Ag 328.068 Recovery = 101.94%						
Al 396.153Radial†	6336.6	4864.0 ug/L	24.87	4864.0 ppb	24.87	0.51%
QC value within limits for Al 396.153Radial Recovery = 97.28%						
As 188.979†	1165.3	507.16 ug/L	5.735	507.16 ppb	5.735	1.13%
QC value within limits for As 188.979 Recovery = 101.43%						
B 249.677†	22188.0	492.67 ug/L	8.324	492.67 ppb	8.324	1.69%
QC value within limits for B 249.677 Recovery = 98.53%						
Ba 233.527†	64466.7	504.56 ug/L	5.762	504.56 ppb	5.762	1.14%
QC value within limits for Ba 233.527 Recovery = 100.91%						
Be 313.107†	1336120.5	510.26 ug/L	0.361	510.26 ppb	0.361	0.07%
QC value within limits for Be 313.107 Recovery = 102.05%						
Ca 317.933Radial†	3138.0	5021.1 ug/L	111.68	5021.1 ppb	111.68	2.22%



QC value within limits for Ca 317.933 Radial Recovery = 100.42%						
Cd 226.502†	45593.7	505.81 ug/L	6.221	505.81 ppb	6.221	1.23%
QC value within limits for Cd 226.502 Recovery = 101.16%						
Co 228.616†	24758.0	506.85 ug/L	6.882	506.85 ppb	6.882	1.36%
QC value within limits for Co 228.616 Recovery = 101.37%						
Cr 267.716†	45172.4	505.65 ug/L	6.851	505.65 ppb	6.851	1.35%
QC value within limits for Cr 267.716 Recovery = 101.13%						
Cu 324.752†	166124.9	496.75 ug/L	7.840	496.75 ppb	7.840	1.58%
QC value within limits for Cu 324.752 Recovery = 99.35%						
Fe 238.204 Radial†	599.6	5204.4 ug/L	100.17	5204.4 ppb	100.17	1.92%
QC value within limits for Fe 238.204 Radial Recovery = 104.09%						
K 766.490 Radial†	26903.6	4915.2 ug/L	20.92	4915.2 ppb	20.92	0.43%
QC value within limits for K 766.490 Radial Recovery = 98.30%						
Mg 279.077 IEC†	158.2	5286.8 ug/L	84.58	5286.8 ppb	84.58	1.60%
QC value within limits for Mg 279.077 IEC Recovery = 105.74%						
Mn 257.610†	456415.2	506.35 ug/L	0.281	506.35 ppb	0.281	0.06%
QC value within limits for Mn 257.610 Recovery = 101.27%						
Mo 202.031†	7177.8	507.71 ug/L	5.191	507.71 ppb	5.191	1.02%
QC value within limits for Mo 202.031 Recovery = 101.54%						
Na 589.592 Radial†	34417.2	10305 ug/L	2.9	10305 ppb	2.9	0.03%
QC value within limits for Na 589.592 Radial Recovery = 103.05%						
Ni 231.604†	20326.4	505.83 ug/L	6.912	505.83 ppb	6.912	1.37%
QC value within limits for Ni 231.604 Recovery = 101.17%						
P 214.914†	4104.5	2403.1 ug/L	17.97	2403.1 ppb	17.97	0.75%
QC value within limits for P 214.914 Recovery = 96.12%						
Pb 220.353†	4116.8	505.74 ug/L	4.283	505.74 ppb	4.283	0.85%
QC value within limits for Pb 220.353 Recovery = 101.15%						
S 181.975 Axial†	723.6	1023.1 ug/L	8.46	1023.1 ppb	8.46	0.83%
QC value within limits for S 181.975 Axial Recovery = 102.31%						
Sb 206.836†	1477.4	524.26 ug/L	6.409	524.26 ppb	6.409	1.22%
QC value within limits for Sb 206.836 Recovery = 104.85%						
Se 196.026†	785.7	524.69 ug/L	4.915	524.69 ppb	4.915	0.94%
QC value within limits for Se 196.026 Recovery = 104.94%						
Si 251.611†	80508.7	2557.8 ug/L	32.57	2557.8 ppb	32.57	1.27%
QC value within limits for Si 251.611 Recovery = 102.31%						
Sn 189.927†	2880.8	511.18 ug/L	4.560	511.18 ppb	4.560	0.89%
QC value within limits for Sn 189.927 Recovery = 102.24%						
Sr 421.552†	77100.1	497.95 ug/L	1.617	497.95 ppb	1.617	0.32%
QC value within limits for Sr 421.552 Recovery = 99.59%						
Ti 334.940†	316828.8	510.18 ug/L	0.434	510.18 ppb	0.434	0.09%
QC value within limits for Ti 334.940 Recovery = 102.04%						
Tl 190.801†	1647.5	508.58 ug/L	6.530	508.58 ppb	6.530	1.28%
QC value within limits for Tl 190.801 Recovery = 101.72%						
U 409.014†	17479.2	513.91 ug/L	10.685	513.91 ppb	10.685	2.08%
QC value within limits for U 409.014 Recovery = 102.78%						
V 292.402†	73735.2	510.44 ug/L	6.375	510.44 ppb	6.375	1.25%
QC value within limits for V 292.402 Recovery = 102.09%						
Zn 213.857†	53408.9	500.75 ug/L	6.805	500.75 ppb	6.805	1.36%
QC value within limits for Zn 213.857 Recovery = 100.15%						
SiO2†	80397.3	5471.8 ug/L	100.38	5471.8 ppb	100.38	1.83%
QC value within limits for SiO2 Recovery = 102.32%						
All analyte(s) passed QC.						



Sequence No.: 77  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 6  
 Date Collected: 1/12/2010 00:06:03  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4856.1	4856.1	96.4 %		00:07:55
1	Y RADIAL	5198.1	5198.1	95.74 %		00:07:55
1	Al 396.153Radial†	2.4	3.2	2.4705 ug/L	2.4705 ppb	00:07:55
1	Ca 317.933Radial†	14.8	-4.5	-7.1219 ug/L	-7.1219 ppb	00:08:15
1	Fe 238.204 Radial†	14.5	6.1	53.223 ug/L	53.223 ppb	00:08:15
1	K 766.490 Radial†	2783.9	296.5	54.379 ug/L	54.379 ppb	00:07:55
1	Mg 279.077 IEC†	3.9	2.1	71.426 ug/L	71.426 ppb	00:08:15
1	Na 589.592 Radial†	-1291.8	-59.0	-17.677 ug/L	-17.677 ppb	00:07:55
1	Sr 421.552†	29.1	49.7	0.3209 ug/L	0.3209 ppb	00:07:55
1	Sc 361.383	894686.7	894686.7	104.96 %		00:09:12
1	Y 371.029	757293.5	757293.5	104.79 %		00:09:12
1	Ag 328.068†	396.2	19.5	0.1031 ug/L	0.1031 ppb	00:09:17
1	As 188.979†	-18.9	5.6	2.4376 ug/L	2.4376 ppb	00:09:37
1	B 249.677†	-498.0	157.4	3.5032 ug/L	3.5032 ppb	00:09:37
1	Ba 233.527†	-25.7	-13.1	-0.0999 ug/L	-0.0999 ppb	00:09:37
1	Be 313.107†	-4578.0	223.7	0.0858 ug/L	0.0858 ppb	00:09:17
1	Cd 226.502†	-185.3	27.6	0.3017 ug/L	0.3017 ppb	00:09:37
1	Co 228.616†	-61.7	15.9	0.3215 ug/L	0.3215 ppb	00:09:37
1	Cr 267.716†	95.8	8.0	0.0888 ug/L	0.0888 ppb	00:09:37
1	Cu 324.752†	6435.2	-281.2	-0.8414 ug/L	-0.8414 ppb	00:09:17
1	Mn 257.610†	471.8	4.6	0.0082 ug/L	0.0082 ppb	00:09:37
1	Mo 202.031†	14.8	-9.6	-0.6780 ug/L	-0.6780 ppb	00:09:37
1	Ni 231.604†	68.2	-3.0	-0.0741 ug/L	-0.0741 ppb	00:09:37
1	P 214.914†	215.3	-24.8	-15.019 ug/L	-15.019 ppb	00:09:37
1	Pb 220.353†	-60.4	5.8	0.7027 ug/L	0.7027 ppb	00:09:37
1	S 181.975 Axial†	47.9	2.6	3.7238 ug/L	3.7238 ppb	00:09:37
1	Sb 206.836†	37.4	7.7	2.6143 ug/L	2.6143 ppb	00:09:37
1	Se 196.026†	-33.3	0.3	0.3294 ug/L	0.3294 ppb	00:09:37
1	Si 251.611†	550.1	-26.4	-0.8309 ug/L	-0.8309 ppb	00:09:37
1	Sn 189.927†	3.2	-4.6	-0.8184 ug/L	-0.8184 ppb	00:09:37
1	Ti 334.940†	-1287.2	148.2	0.2293 ug/L	0.2293 ppb	00:09:17
1	Tl 190.801†	-31.9	2.4	0.7458 ug/L	0.7458 ppb	00:09:37
1	U 409.014†	-1889.2	211.7	6.2388 ug/L	6.2388 ppb	00:09:12
1	V 292.402†	-1336.2	36.7	0.2452 ug/L	0.2452 ppb	00:09:17
1	Zn 213.857†	625.3	-24.5	-0.2357 ug/L	-0.2357 ppb	00:09:37
1	SiO2†	554.3	-43.6	-2.9567 ug/L	-2.9567 ppb	00:10:43
2	Sc Radial	5145.7	5145.7	102 %		00:08:20
2	Y RADIAL	5534.4	5534.4	101.9 %		00:08:20
2	Al 396.153Radial†	-12.7	-11.8	-9.1278 ug/L	-9.1278 ppb	00:08:20
2	Ca 317.933Radial†	17.0	-3.2	-5.0466 ug/L	-5.0466 ppb	00:08:40
2	Fe 238.204 Radial†	13.0	3.8	33.312 ug/L	33.312 ppb	00:08:40
2	K 766.490 Radial†	2788.1	138.1	25.327 ug/L	25.327 ppb	00:08:20
2	Mg 279.077 IEC†	2.2	0.3	9.7783 ug/L	9.7783 ppb	00:08:40
2	Na 589.592 Radial†	-1375.4	-65.4	-19.594 ug/L	-19.594 ppb	00:08:20
2	Sr 421.552†	4.9	24.3	0.1570 ug/L	0.1570 ppb	00:08:20
2	Sc 361.383	877558.5	877558.5	102.95 %		00:09:42
2	Y 371.029	742412.1	742412.1	102.73 %		00:09:42
2	Ag 328.068†	416.9	47.0	0.2229 ug/L	0.2229 ppb	00:09:47
2	As 188.979†	-23.8	0.5	0.2213 ug/L	0.2213 ppb	00:10:07
2	B 249.677†	-511.3	135.2	3.0105 ug/L	3.0105 ppb	00:10:07
2	Ba 233.527†	-10.1	1.6	0.0131 ug/L	0.0131 ppb	00:10:07
2	Be 313.107†	-4609.7	107.8	0.0415 ug/L	0.0415 ppb	00:09:47
2	Cd 226.502†	-207.1	3.0	0.0302 ug/L	0.0302 ppb	00:10:07
2	Co 228.616†	-77.8	-0.9	-0.0188 ug/L	-0.0188 ppb	00:10:07
2	Cr 267.716†	70.6	-14.6	-0.1649 ug/L	-0.1649 ppb	00:10:07
2	Cu 324.752†	6486.9	-111.3	-0.3333 ug/L	-0.3333 ppb	00:09:47
2	Mn 257.610†	469.3	11.0	0.0155 ug/L	0.0155 ppb	00:10:07
2	Mo 202.031†	28.1	3.5	0.2527 ug/L	0.2527 ppb	00:10:07
2	Ni 231.604†	69.4	-0.6	-0.0146 ug/L	-0.0146 ppb	00:10:07



2	P 214.914†	213.5	-22.5	-13.714 ug/L	-13.714 ppb	00:10:07
2	Pb 220.353†	-64.0	1.2	0.1460 ug/L	0.1460 ppb	00:10:07
2	S 181.975 Axial†	53.1	8.5	12.086 ug/L	12.086 ppb	00:10:07
2	Sb 206.836†	38.8	9.7	3.3179 ug/L	3.3179 ppb	00:10:07
2	Se 196.026†	-31.2	1.8	1.2356 ug/L	1.2356 ppb	00:10:07
2	Si 251.611†	533.7	-32.1	-1.0244 ug/L	-1.0244 ppb	00:10:07
2	Sn 189.927†	1.2	-6.5	-1.1499 ug/L	-1.1499 ppb	00:10:07
2	Ti 334.940†	-1293.5	118.1	0.1871 ug/L	0.1871 ppb	00:09:47
2	Tl 190.801†	-37.2	-3.3	-1.0095 ug/L	-1.0095 ppb	00:10:07
2	U 409.014†	-1926.4	140.5	4.1407 ug/L	4.1407 ppb	00:09:42
2	V 292.402†	-1384.0	-34.6	-0.2296 ug/L	-0.2296 ppb	00:09:47
2	Zn 213.857†	622.6	-15.5	-0.1493 ug/L	-0.1493 ppb	00:10:07
2	SiO2†	560.9	-26.9	-1.8422 ug/L	-1.8422 ppb	00:10:48
3	Sc Radial	5153.8	5153.8	102 %		00:08:45
3	Y RADIAL	5526.8	5526.8	101.8 %		00:08:45
3	Al 396.153Radial†	-11.2	-10.3	-7.9427 ug/L	-7.9427 ppb	00:08:45
3	Ca 317.933Radial†	18.2	-2.0	-3.2424 ug/L	-3.2424 ppb	00:09:05
3	Fe 238.204 Radial†	9.6	0.5	4.5530 ug/L	4.5530 ppb	00:09:05
3	K 766.490 Radial†	2800.9	146.4	26.850 ug/L	26.850 ppb	00:08:45
3	Mg 279.077 IEC†	1.7	-0.2	-7.8287 ug/L	-7.8287 ppb	00:09:05
3	Na 589.592 Radial†	-1378.0	-65.8	-19.707 ug/L	-19.707 ppb	00:08:45
3	Sr 421.552†	25.4	44.3	0.2861 ug/L	0.2861 ppb	00:08:45
3	Sc 361.383	877479.9	877479.9	102.94 %		00:10:13
3	Y 371.029	743999.9	743999.9	102.95 %		00:10:13
3	Ag 328.068†	316.4	-50.6	-0.2330 ug/L	-0.2330 ppb	00:10:18
3	As 188.979†	-18.7	5.5	2.3747 ug/L	2.3747 ppb	00:10:38
3	B 249.677†	-524.9	121.9	2.7169 ug/L	2.7169 ppb	00:10:38
3	Ba 233.527†	-1.9	9.6	0.0752 ug/L	0.0752 ppb	00:10:38
3	Be 313.107†	-4567.3	148.6	0.0571 ug/L	0.0571 ppb	00:10:18
3	Cd 226.502†	-185.7	23.8	0.2633 ug/L	0.2633 ppb	00:10:38
3	Co 228.616†	-72.2	4.5	0.0925 ug/L	0.0925 ppb	00:10:38
3	Cr 267.716†	86.3	0.5	0.0054 ug/L	0.0054 ppb	00:10:38
3	Cu 324.752†	6508.6	-89.6	-0.2687 ug/L	-0.2687 ppb	00:10:18
3	Mn 257.610†	452.9	-4.9	-0.0047 ug/L	-0.0047 ppb	00:10:38
3	Mo 202.031†	25.2	0.8	0.0558 ug/L	0.0558 ppb	00:10:38
3	Ni 231.604†	63.6	-6.2	-0.1533 ug/L	-0.1533 ppb	00:10:38
3	P 214.914†	225.3	-11.0	-6.6683 ug/L	-6.6683 ppb	00:10:38
3	Pb 220.353†	-46.8	17.9	2.1910 ug/L	2.1910 ppb	00:10:38
3	S 181.975 Axial†	45.5	1.2	1.7422 ug/L	1.7422 ppb	00:10:38
3	Sb 206.836†	37.6	8.6	2.9519 ug/L	2.9519 ppb	00:10:38
3	Se 196.026†	-24.6	8.1	5.2503 ug/L	5.2503 ppb	00:10:38
3	Si 251.611†	550.7	-15.5	-0.4939 ug/L	-0.4939 ppb	00:10:38
3	Sn 189.927†	9.5	1.5	0.2723 ug/L	0.2723 ppb	00:10:38
3	Ti 334.940†	-1284.6	126.6	0.2035 ug/L	0.2035 ppb	00:10:18
3	Tl 190.801†	-34.4	-0.5	-0.1640 ug/L	-0.1640 ppb	00:10:38
3	U 409.014†	-2005.9	63.0	1.8583 ug/L	1.8583 ppb	00:10:13
3	V 292.402†	-1341.1	7.0	0.0510 ug/L	0.0510 ppb	00:10:18
3	Zn 213.857†	630.0	-8.2	-0.0767 ug/L	-0.0767 ppb	00:10:38
3	SiO2†	569.2	-18.7	-1.2790 ug/L	-1.2790 ppb	00:10:53

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	883241.7	103.62 %		1.163			1.12%
Sc Radial	5051.9	100 %		3.4			3.36%
Y 371.029	747901.8	103.49 %		1.131			1.09%
Y RADIAL	5419.7	99.82 %		3.536			3.54%
Ag 328.068†	5.3	0.0310 ug/L		0.23634	0.0310 ppb	0.23634	762.39%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-6.3	-4.8667 ug/L		6.38175	-4.8667 ppb	6.38175	131.13%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	3.9	1.6779 ug/L		1.26183	1.6779 ppb	1.26183	75.20%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	138.2	3.0769 ug/L		0.39729	3.0769 ppb	0.39729	12.91%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-0.6	-0.0039 ug/L		0.08877	-0.0039 ppb	0.08877	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	160.1	0.0615 ug/L		0.02246	0.0615 ppb	0.02246	36.54%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-3.2	-5.1370 ug/L		1.94135	-5.1370 ppb	1.94135	37.79%



QC value within limits for Ca 317.933 Radial	Recovery = Not calculated		
Cd 226.502†	18.1 0.1984 ug/L	0.14693 0.1984 ppb	0.14693 74.05%
QC value within limits for Cd 226.502	Recovery = Not calculated		
Co 228.616†	6.5 0.1317 ug/L	0.17354 0.1317 ppb	0.17354 131.76%
QC value within limits for Co 228.616	Recovery = Not calculated		
Cr 267.716†	-2.0 -0.0235 ug/L	0.12932 -0.0235 ppb	0.12932 549.13%
QC value within limits for Cr 267.716	Recovery = Not calculated		
Cu 324.752†	-160.7 -0.4811 ug/L	0.31364 -0.4811 ppb	0.31364 65.19%
QC value within limits for Cu 324.752	Recovery = Not calculated		
Fe 238.204 Radial†	3.5 30.363 ug/L	24.4687 30.363 ppb	24.4687 80.59%
QC value within limits for Fe 238.204 Radial	Recovery = Not calculated		
K 766.490 Radial†	193.6 35.519 ug/L	16.3513 35.519 ppb	16.3513 46.04%
QC value within limits for K 766.490 Radial	Recovery = Not calculated		
Mg 279.077 IEC†	0.7 24.459 ug/L	41.6168 24.459 ppb	41.6168 170.15%
QC value within limits for Mg 279.077 IEC	Recovery = Not calculated		
Mn 257.610†	3.6 0.0063 ug/L	0.01020 0.0063 ppb	0.01020 160.90%
QC value within limits for Mn 257.610	Recovery = Not calculated		
Mo 202.031†	-1.8 -0.1232 ug/L	0.49044 -0.1232 ppb	0.49044 398.18%
QC value within limits for Mo 202.031	Recovery = Not calculated		
Na 589.592 Radial†	-63.4 -18.993 ug/L	1.1406 -18.993 ppb	1.1406 6.01%
QC value within limits for Na 589.592 Radial	Recovery = Not calculated		
Ni 231.604†	-3.2 -0.0807 ug/L	0.06957 -0.0807 ppb	0.06957 86.26%
QC value within limits for Ni 231.604	Recovery = Not calculated		
P 214.914†	-19.4 -11.800 ug/L	4.4921 -11.800 ppb	4.4921 38.07%
QC value within limits for P 214.914	Recovery = Not calculated		
Pb 220.353†	8.3 1.0132 ug/L	1.05727 1.0132 ppb	1.05727 104.35%
QC value within limits for Pb 220.353	Recovery = Not calculated		
S 181.975 Axial†	4.1 5.8506 ug/L	5.49002 5.8506 ppb	5.49002 93.84%
QC value within limits for S 181.975 Axial	Recovery = Not calculated		
Sb 206.836†	8.7 2.9614 ug/L	0.35191 2.9614 ppb	0.35191 11.88%
QC value within limits for Sb 206.836	Recovery = Not calculated		
Se 196.026†	3.4 2.2718 ug/L	2.61899 2.2718 ppb	2.61899 115.28%
QC value within limits for Se 196.026	Recovery = Not calculated		
Si 251.611†	-24.6 -0.7831 ug/L	0.26849 -0.7831 ppb	0.26849 34.29%
QC value within limits for Si 251.611	Recovery = Not calculated		
Sn 189.927†	-3.2 -0.5654 ug/L	0.74407 -0.5654 ppb	0.74407 131.61%
QC value within limits for Sn 189.927	Recovery = Not calculated		
Sr 421.552†	39.4 0.2547 ug/L	0.08635 0.2547 ppb	0.08635 33.90%
QC value within limits for Sr 421.552	Recovery = Not calculated		
Ti 334.940†	131.0 0.2066 ug/L	0.02128 0.2066 ppb	0.02128 10.30%
QC value within limits for Ti 334.940	Recovery = Not calculated		
Tl 190.801†	-0.5 -0.1426 ug/L	0.87784 -0.1426 ppb	0.87784 615.62%
QC value within limits for Tl 190.801	Recovery = Not calculated		
U 409.014†	138.4 4.0793 ug/L	2.19090 4.0793 ppb	2.19090 53.71%
QC value within limits for U 409.014	Recovery = Not calculated		
V 292.402†	3.0 0.0222 ug/L	0.23871 0.0222 ppb	0.23871 >999.9%
QC value within limits for V 292.402	Recovery = Not calculated		
Zn 213.857†	-16.1 -0.1539 ug/L	0.07959 -0.1539 ppb	0.07959 51.71%
QC value within limits for Zn 213.857	Recovery = Not calculated		
SiO2†	-29.7 -2.0260 ug/L	0.85383 -2.0260 ppb	0.85383 42.14%
QC value within limits for SiO2	Recovery = Not calculated		

All analyte(s) passed QC.



Sequence No.: 78

Sample ID: 1202004426|936808|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 86

Date Collected: 1/12/2010 00:13:03

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004426|936808|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5219.3	5219.3	104 %		00:14:57
1	Y RADIAL	5648.7	5648.7	104.0 %		00:14:57
1	Al 396.153Radial†	25.3	25.1	19.297 ug/L	19.297 ppb	00:14:57
1	Ca 317.933Radial†	23.6	2.9	4.7061 ug/L	4.7061 ppb	00:15:17
1	Fe 238.204 Radial†	16.9	7.4	64.115 ug/L	64.115 ppb	00:15:17
1	K 766.490 Radial†	2598.3	-83.5	-15.334 ug/L	-15.334 ppb	00:14:57
1	Mg 279.077 IEC†	-0.2	-2.1	-70.998 ug/L	-70.998 ppb	00:15:17
1	Na 589.592 Radial†	-1234.1	89.8	26.902 ug/L	26.902 ppb	00:14:57
1	Sr 421.552†	17.4	36.3	0.2346 ug/L	0.2346 ppb	00:14:57
1	Sc 361.383	857634.7	857634.7	100.61 %		00:16:13
1	Y 371.029	725814.9	725814.9	100.44 %		00:16:13
1	Ag 328.068†	283.8	-75.9	-0.3363 ug/L	-0.3363 ppb	00:16:13
1	As 188.979†	-20.2	3.5	1.5277 ug/L	1.5277 ppb	00:16:33
1	B 249.677†	-543.0	92.1	2.0474 ug/L	2.0474 ppb	00:16:33
1	Ba 233.527†	17.0	28.3	0.2226 ug/L	0.2226 ppb	00:16:33
1	Be 313.107†	-4524.7	88.3	0.0346 ug/L	0.0346 ppb	00:16:13
1	Cd 226.502†	-211.7	-6.3	-0.0744 ug/L	-0.0744 ppb	00:16:33
1	Co 228.616†	-82.6	-7.5	-0.1536 ug/L	-0.1536 ppb	00:16:33
1	Cr 267.716†	344.9	259.5	2.8979 ug/L	2.8979 ppb	00:16:33
1	Cu 324.752†	6421.4	-30.0	-0.0909 ug/L	-0.0909 ppb	00:16:13
1	Mn 257.610†	860.3	410.2	0.4648 ug/L	0.4648 ppb	00:16:33
1	Mo 202.031†	34.4	10.5	0.7462 ug/L	0.7462 ppb	00:16:33
1	Ni 231.604†	86.2	17.7	0.4412 ug/L	0.4412 ppb	00:16:33
1	P 214.914†	236.5	5.2	3.1415 ug/L	3.1415 ppb	00:16:33
1	Pb 220.353†	18.4	81.6	9.9942 ug/L	9.9942 ppb	00:16:33
1	S 181.975 Axial†	50.6	7.3	10.313 ug/L	10.313 ppb	00:16:33
1	Sb 206.836†	38.5	10.3	3.5452 ug/L	3.5452 ppb	00:16:33
1	Se 196.026†	-31.3	0.9	0.8085 ug/L	0.8085 ppb	00:16:33
1	Si 251.611†	1030.9	474.1	15.091 ug/L	15.091 ppb	00:16:33
1	Sn 189.927†	8.2	0.5	0.0953 ug/L	0.0953 ppb	00:16:33
1	Ti 334.940†	-1114.1	267.2	0.4321 ug/L	0.4321 ppb	00:16:13
1	Tl 190.801†	-37.0	-3.9	-1.1998 ug/L	-1.1998 ppb	00:16:33
1	U 409.014†	-1744.0	278.3	8.1952 ug/L	8.1952 ppb	00:16:13
1	V 292.402†	-1350.9	-33.0	-0.2110 ug/L	-0.2110 ppb	00:16:13
1	Zn 213.857†	848.8	223.4	2.1036 ug/L	2.1036 ppb	00:16:33
1	SiO2†	1063.7	485.5	33.109 ug/L	33.109 ppb	00:17:29
2	Sc Radial	5165.9	5165.9	103 %		00:15:22
2	Y RADIAL	5555.7	5555.7	102.3 %		00:15:22
2	Al 396.153Radial†	9.8	10.2	7.8020 ug/L	7.8020 ppb	00:15:22
2	Ca 317.933Radial†	27.1	6.6	10.634 ug/L	10.634 ppb	00:15:42
2	Fe 238.204 Radial†	15.2	5.9	50.905 ug/L	50.905 ppb	00:15:42
2	K 766.490 Radial†	2742.3	82.8	15.156 ug/L	15.156 ppb	00:15:22
2	Mg 279.077 IEC†	0.4	-1.5	-51.277 ug/L	-51.277 ppb	00:15:42
2	Na 589.592 Radial†	-1233.6	78.0	23.353 ug/L	23.353 ppb	00:15:22
2	Sr 421.552†	20.4	39.4	0.2545 ug/L	0.2545 ppb	00:15:22
2	Sc 361.383	869808.2	869808.2	102.04 %		00:16:39
2	Y 371.029	736453.0	736453.0	101.91 %		00:16:39
2	Ag 328.068†	227.8	-134.7	-0.6079 ug/L	-0.6079 ppb	00:16:39
2	As 188.979†	-34.6	-10.3	-4.4348 ug/L	-4.4348 ppb	00:16:59
2	B 249.677†	-521.0	121.3	2.6998 ug/L	2.6998 ppb	00:16:59
2	Ba 233.527†	11.2	22.3	0.1768 ug/L	0.1768 ppb	00:16:59
2	Be 313.107†	-4539.8	136.4	0.0532 ug/L	0.0532 ppb	00:16:39
2	Cd 226.502†	-196.8	11.2	0.1206 ug/L	0.1206 ppb	00:16:59
2	Co 228.616†	-87.0	-10.5	-0.2168 ug/L	-0.2168 ppb	00:16:59
2	Cr 267.716†	378.3	287.5	3.2121 ug/L	3.2121 ppb	00:16:59
2	Cu 324.752†	6413.6	-127.0	-0.3801 ug/L	-0.3801 ppb	00:16:39
2	Mn 257.610†	848.3	386.5	0.4362 ug/L	0.4362 ppb	00:16:59
2	Mo 202.031†	36.9	12.4	0.8811 ug/L	0.8811 ppb	00:16:59
2	Ni 231.604†	73.8	4.4	0.1098 ug/L	0.1098 ppb	00:16:59



2	P 214.914†	235.6	1.0	0.6689 ug/L	0.6689 ppb	00:16:59
2	Pb 220.353†	2.9	66.2	8.1013 ug/L	8.1013 ppb	00:16:59
2	S 181.975 Axial†	46.1	2.2	3.0833 ug/L	3.0833 ppb	00:16:59
2	Sb 206.836†	35.5	6.9	2.3955 ug/L	2.3955 ppb	00:16:59
2	Se 196.026†	-24.0	8.5	5.6149 ug/L	5.6149 ppb	00:16:59
2	Si 251.611†	1040.2	468.9	14.923 ug/L	14.923 ppb	00:16:59
2	Sn 189.927†	16.2	8.2	1.4497 ug/L	1.4497 ppb	00:16:59
2	Ti 334.940†	-1051.8	343.7	0.5556 ug/L	0.5556 ppb	00:16:39
2	Tl 190.801†	-35.6	-2.0	-0.6106 ug/L	-0.6106 ppb	00:16:59
2	U 409.014†	-1860.6	188.2	5.5401 ug/L	5.5401 ppb	00:16:39
2	V 292.402†	-1303.9	31.9	0.2312 ug/L	0.2312 ppb	00:16:39
2	Zn 213.857†	839.1	202.0	1.9056 ug/L	1.9056 ppb	00:16:59
2	SiO2†	1056.2	463.4	31.595 ug/L	31.595 ppb	00:17:34
3	Sc Radial	5217.4	5217.4	104 %		00:15:47
3	Y RADIAL	5599.3	5599.3	103.1 %		00:15:47
3	Al 396.153Radial†	3.5	4.0	3.0957 ug/L	3.0957 ppb	00:15:47
3	Ca 317.933Radial†	24.1	3.4	5.5019 ug/L	5.5019 ppb	00:16:07
3	Fe 238.204 Radial†	16.4	6.9	59.968 ug/L	59.968 ppb	00:16:07
3	K 766.490 Radial†	2787.5	100.0	18.320 ug/L	18.320 ppb	00:15:47
3	Mg 279.077 IEC†	2.8	0.8	27.945 ug/L	27.945 ppb	00:16:07
3	Na 589.592 Radial†	-1255.0	69.2	20.727 ug/L	20.727 ppb	00:15:47
3	Sr 421.552†	0.0	19.5	0.1261 ug/L	0.1261 ppb	00:15:47
3	Sc 361.383	867539.0	867539.0	101.78 %		00:17:04
3	Y 371.029	734746.2	734746.2	101.67 %		00:17:04
3	Ag 328.068†	298.5	-64.7	-0.2820 ug/L	-0.2820 ppb	00:17:04
3	As 188.979†	-19.8	4.2	1.8209 ug/L	1.8209 ppb	00:17:24
3	B 249.677†	-543.7	97.6	2.1707 ug/L	2.1707 ppb	00:17:24
3	Ba 233.527†	0.6	12.0	0.0947 ug/L	0.0947 ppb	00:17:24
3	Be 313.107†	-4527.2	137.2	0.0536 ug/L	0.0536 ppb	00:17:04
3	Cd 226.502†	-195.6	11.9	0.1262 ug/L	0.1262 ppb	00:17:24
3	Co 228.616†	-87.3	-11.1	-0.2304 ug/L	-0.2304 ppb	00:17:24
3	Cr 267.716†	362.1	272.5	3.0452 ug/L	3.0452 ppb	00:17:24
3	Cu 324.752†	6445.7	-79.0	-0.2339 ug/L	-0.2339 ppb	00:17:04
3	Mn 257.610†	865.9	405.9	0.4555 ug/L	0.4555 ppb	00:17:24
3	Mo 202.031†	28.1	3.9	0.2811 ug/L	0.2811 ppb	00:17:24
3	Ni 231.604†	69.0	-0.2	-0.0044 ug/L	-0.0044 ppb	00:17:24
3	P 214.914†	231.1	-2.8	-1.6836 ug/L	-1.6836 ppb	00:17:24
3	Pb 220.353†	3.2	66.6	8.1458 ug/L	8.1458 ppb	00:17:24
3	S 181.975 Axial†	58.6	14.5	20.586 ug/L	20.586 ppb	00:17:24
3	Sb 206.836†	34.2	5.7	1.9651 ug/L	1.9651 ppb	00:17:24
3	Se 196.026†	-27.2	5.3	3.6231 ug/L	3.6231 ppb	00:17:24
3	Si 251.611†	1025.1	456.7	14.542 ug/L	14.542 ppb	00:17:24
3	Sn 189.927†	9.1	1.3	0.2345 ug/L	0.2345 ppb	00:17:24
3	Ti 334.940†	-1021.8	370.6	0.5935 ug/L	0.5935 ppb	00:17:04
3	Tl 190.801†	-39.5	-6.0	-1.8338 ug/L	-1.8338 ppb	00:17:24
3	U 409.014†	-1989.9	56.4	1.6511 ug/L	1.6511 ppb	00:17:04
3	V 292.402†	-1411.0	-76.7	-0.5265 ug/L	-0.5265 ppb	00:17:04
3	Zn 213.857†	840.6	205.7	1.9403 ug/L	1.9403 ppb	00:17:24
3	SiO2†	1054.7	464.6	31.691 ug/L	31.691 ppb	00:17:39

Mean Data: 1202004426|936808|1

Analyte	Mean Corrected	Conc.	Calib.	Std.Dev.	Conc.	Sample	Std.Dev.	RSD
Sc 361.383	864994.0	101.48	%	0.759				0.75%
Sc Radial	5200.9	103	%	0.6				0.58%
Y 371.029	732338.0	101.34	%	0.791				0.78%
Y RADIAL	5601.2	103.2	%	0.86				0.83%
Ag 328.068†	-91.8	-0.4087	ug/L	0.17458	-0.4087	ppb	0.17458	42.72%
Al 396.153Radial†	13.1	10.065	ug/L	8.3342	10.065	ppb	8.3342	82.81%
As 188.979†	-0.9	-0.3621	ug/L	3.53013	-0.3621	ppb	3.53013	974.99%
B 249.677†	103.7	2.3060	ug/L	0.34657	2.3060	ppb	0.34657	15.03%
Ba 233.527†	20.9	0.1647	ug/L	0.06480	0.1647	ppb	0.06480	39.34%
Be 313.107†	120.6	0.0472	ug/L	0.01086	0.0472	ppb	0.01086	23.02%
Ca 317.933Radial†	4.3	6.9474	ug/L	3.21761	6.9474	ppb	3.21761	46.31%
Cd 226.502†	5.6	0.0575	ug/L	0.11426	0.0575	ppb	0.11426	198.88%
Co 228.616†	-9.7	-0.2003	ug/L	0.04096	-0.2003	ppb	0.04096	20.45%
Cr 267.716†	273.2	3.0518	ug/L	0.15719	3.0518	ppb	0.15719	5.15%
Cu 324.752†	-78.7	-0.2350	ug/L	0.14457	-0.2350	ppb	0.14457	61.53%
Fe 238.204 Radial†	6.7	58.329	ug/L	6.7555	58.329	ppb	6.7555	11.58%
K 766.490 Radial†	33.1	6.0477	ug/L	18.58428	6.0477	ppb	18.58428	307.29%



Mg 279.077 IEC†	-0.9	-31.443 ug/L	52.3687	-31.443 ppb	52.3687	166.55%
Mn 257.610†	400.8	0.4522 ug/L	0.01457	0.4522 ppb	0.01457	3.22%
Mo 202.031†	8.9	0.6361 ug/L	0.31480	0.6361 ppb	0.31480	49.49%
Na 589.592 Radial†	79.0	23.661 ug/L	3.0990	23.661 ppb	3.0990	13.10%
Ni 231.604†	7.3	0.1822 ug/L	0.23144	0.1822 ppb	0.23144	127.00%
P 214.914†	1.1	0.7089 ug/L	2.41283	0.7089 ppb	2.41283	340.35%
Pb 220.353†	71.4	8.7471 ug/L	1.08023	8.7471 ppb	1.08023	12.35%
S 181.975 Axial†	8.0	11.327 ug/L	8.7951	11.327 ppb	8.7951	77.64%
Sb 206.836†	7.6	2.6353 ug/L	0.81689	2.6353 ppb	0.81689	31.00%
Se 196.026†	4.9	3.3488 ug/L	2.41488	3.3488 ppb	2.41488	72.11%
Si 251.611†	466.6	14.852 ug/L	0.2810	14.852 ppb	0.2810	1.89%
Sn 189.927†	3.3	0.5932 ug/L	0.74507	0.5932 ppb	0.74507	125.61%
Sr 421.552†	31.8	0.2051 ug/L	0.06910	0.2051 ppb	0.06910	33.69%
Ti 334.940†	327.2	0.5271 ug/L	0.08439	0.5271 ppb	0.08439	16.01%
Tl 190.801†	-4.0	-1.2147 ug/L	0.61175	-1.2147 ppb	0.61175	50.36%
U 409.014†	174.3	5.1288 ug/L	3.29140	5.1288 ppb	3.29140	64.17%
V 292.402†	-25.9	-0.1688 ug/L	0.38064	-0.1688 ppb	0.38064	225.53%
Zn 213.857†	210.4	1.9832 ug/L	0.10573	1.9832 ppb	0.10573	5.33%
SiO2†	471.2	32.132 ug/L	0.8477	32.132 ppb	0.8477	2.64%



Sequence No.: 79

Sample ID: 1202004427|936808|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 87

Date Collected: 1/12/2010 00:19:51

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004427|936808|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5429.7	5429.7	108 %		00:22:05
1	Y RADIAL	6322.4	6322.4	116.4 %		00:22:05
1	Al 396.153Radial†	119799.4	111099.0	85688 ug/L	85688 ppb	00:21:45
1	Ca 317.933Radial†	63947.3	59283.0	94859 ug/L	94859 ppb	00:21:45
1	Fe 238.204 Radial†	23272.2	21573.1	186720 ug/L	186720 ppb	00:21:45
1	K 766.490 Radial†	236431.3	216669.2	39630 ug/L	39630 ppb	00:21:45
1	Mg 279.077 IEC†	1247.8	1155.3	38410 ug/L	38410 ppb	00:22:05
1	Na 589.592 Radial†	36207.0	34857.8	10437 ug/L	10437 ppb	00:21:45
1	Sr 421.552†	370861.9	343945.8	2220.8 ug/L	2220.8 ppb	00:21:45
1	Sc 361.383	889958.3	889958.3	104.41 %		00:23:07
1	Y 371.029	806857.2	806857.2	111.65 %		00:23:07
1	Ag 328.068†	58092.4	55282.7	318.52 ug/L	318.52 ppb	00:23:07
1	As 188.979†	2424.2	2345.5	1083.6 ug/L	1083.6 ppb	00:23:12
1	B 249.677†	67002.1	64806.2	1423.3 ug/L	1423.3 ppb	00:23:07
1	Ba 233.527†	259245.4	248315.5	1948.0 ug/L	1948.0 ppb	00:23:07
1	Be 313.107†	2096749.2	2012842.3	782.13 ug/L	782.13 ppb	00:23:07
1	Cd 226.502†	54999.8	52882.7	568.30 ug/L	568.30 ppb	00:23:12
1	Co 228.616†	45688.9	43835.2	881.54 ug/L	881.54 ppb	00:23:12
1	Cr 267.716†	210453.5	201488.2	2257.8 ug/L	2257.8 ppb	00:23:07
1	Cu 324.752†	639579.2	606173.8	1822.6 ug/L	1822.6 ppb	00:23:07
1	Mn 257.610†	4955476.6	4745888.3	5280.6 ug/L	5280.6 ppb	00:23:07
1	Mo 202.031†	7214.6	6886.4	500.59 ug/L	500.59 ppb	00:23:12
1	Ni 231.604†	52811.2	50514.4	1257.3 ug/L	1257.3 ppb	00:23:12
1	P 214.914†	14304.2	13470.6	7721.9 ug/L	7721.9 ppb	00:23:12
1	Pb 220.353†	7111.6	6874.8	844.18 ug/L	844.18 ppb	00:23:12
1	S 181.975 Axial†	3085.5	2912.3	4105.3 ug/L	4105.3 ppb	00:23:12
1	Sb 206.836†	3148.7	2987.9	1029.6 ug/L	1029.6 ppb	00:23:12
1	Se 196.026†	3959.2	3824.1	3066.0 ug/L	3066.0 ppb	00:23:12
1	Si 251.611†	1281765.8	1227119.1	39076 ug/L	39076 ppb	00:23:07
1	Sn 189.927†	6146.1	5879.1	1058.3 ug/L	1058.3 ppb	00:23:12
1	Ti 334.940†	4332928.2	4151433.7	6695.3 ug/L	6695.3 ppb	00:23:07
1	Tl 190.801†	3837.3	3708.2	1203.0 ug/L	1203.0 ppb	00:23:12
1	U 409.014†	-7344.3	-5022.7	-174.49 ug/L	-174.49 ppb	00:23:07
1	V 292.402†	186856.8	180280.3	1201.9 ug/L	1201.9 ppb	00:23:07
1	Zn 213.857†	668938.1	640085.6	6025.4 ug/L	6025.4 ppb	00:23:07
1	SiO2†	1283141.1	1228415.1	83803 ug/L	83803 ppb	00:23:46
2	Sc Radial	5472.1	5472.1	109 %		00:22:30
2	Y RADIAL	6379.5	6379.5	117.5 %		00:22:30
2	Al 396.153Radial†	120244.3	110646.9	85340 ug/L	85340 ppb	00:22:10
2	Ca 317.933Radial†	63998.6	58870.4	94198 ug/L	94198 ppb	00:22:10
2	Fe 238.204 Radial†	23335.1	21463.6	185770 ug/L	185770 ppb	00:22:10
2	K 766.490 Radial†	237092.7	215577.6	39430 ug/L	39430 ppb	00:22:10
2	Mg 279.077 IEC†	1252.9	1151.0	38267 ug/L	38267 ppb	00:22:30
2	Na 589.592 Radial†	36212.5	34602.5	10360 ug/L	10360 ppb	00:22:10
2	Sr 421.552†	371336.6	341715.7	2206.4 ug/L	2206.4 ppb	00:22:10
2	Sc 361.383	880514.5	880514.5	103.30 %		00:23:21
2	Y 371.029	800061.1	800061.1	110.71 %		00:23:21
2	Ag 328.068†	57440.1	55247.9	318.07 ug/L	318.07 ppb	00:23:21
2	As 188.979†	2282.1	2232.8	1034.6 ug/L	1034.6 ppb	00:23:26
2	B 249.677†	66193.0	64711.1	1421.3 ug/L	1421.3 ppb	00:23:21
2	Ba 233.527†	256349.3	248175.0	1946.9 ug/L	1946.9 ppb	00:23:21
2	Be 313.107†	2075918.1	2014215.5	782.64 ug/L	782.64 ppb	00:23:21
2	Cd 226.502†	53330.4	51831.5	556.71 ug/L	556.71 ppb	00:23:26
2	Co 228.616†	44122.1	42787.9	860.10 ug/L	860.10 ppb	00:23:26
2	Cr 267.716†	208382.3	201645.0	2259.5 ug/L	2259.5 ppb	00:23:21
2	Cu 324.752†	629941.4	603414.0	1814.3 ug/L	1814.3 ppb	00:23:21
2	Mn 257.610†	4896158.6	4739370.4	5273.3 ug/L	5273.3 ppb	00:23:21
2	Mo 202.031†	6948.5	6702.9	487.55 ug/L	487.55 ppb	00:23:26
2	Ni 231.604†	51046.4	49348.4	1228.3 ug/L	1228.3 ppb	00:23:26



2	P 214.914†	13756.9	13087.7	7490.0 ug/L	7490.0 ppb	00:23:26
2	Pb 220.353†	6858.2	6702.5	823.06 ug/L	823.06 ppb	00:23:26
2	S 181.975 Axial†	2975.1	2837.1	3999.0 ug/L	3999.0 ppb	00:23:26
2	Sb 206.836†	3012.3	2888.1	994.70 ug/L	994.70 ppb	00:23:26
2	Se 196.026†	3772.3	3683.8	2972.5 ug/L	2972.5 ppb	00:23:26
2	Si 251.611†	1265665.5	1224700.0	38999 ug/L	38999 ppb	00:23:21
2	Sn 189.927†	5917.4	5720.8	1030.1 ug/L	1030.1 ppb	00:23:26
2	Ti 334.940†	4280961.4	4145636.9	6685.9 ug/L	6685.9 ppb	00:23:21
2	Tl 190.801†	3722.9	3636.8	1181.1 ug/L	1181.1 ppb	00:23:26
2	U 409.014†	-7404.5	-5156.4	-178.33 ug/L	-178.33 ppb	00:23:21
2	V 292.402†	184898.9	180304.4	1202.0 ug/L	1202.0 ppb	00:23:21
2	Zn 213.857†	661207.4	639473.6	6019.9 ug/L	6019.9 ppb	00:23:21
2	SiO2†	1276274.8	1234949.3	84250 ug/L	84250 ppb	00:23:52
3	Sc Radial	5431.3	5431.3	108 %		00:22:56
3	Y RADIAL	6312.1	6312.1	116.3 %		00:22:56
3	Al 396.153Radial†	123015.6	114047.5	87963 ug/L	87963 ppb	00:22:36
3	Ca 317.933Radial†	65305.8	60524.8	96845 ug/L	96845 ppb	00:22:36
3	Fe 238.204 Radial†	23837.1	22090.3	191200 ug/L	191200 ppb	00:22:36
3	K 766.490 Radial†	242978.0	222672.9	40730 ug/L	40730 ppb	00:22:36
3	Mg 279.077 IEC†	1245.7	1152.9	38327 ug/L	38327 ppb	00:22:56
3	Na 589.592 Radial†	37207.0	35774.8	10711 ug/L	10711 ppb	00:22:36
3	Sr 421.552†	380979.8	353223.0	2280.7 ug/L	2280.7 ppb	00:22:36
3	Sc 361.383	891390.7	891390.7	104.57 %		00:23:35
3	Y 371.029	810302.3	810302.3	112.13 %		00:23:35
3	Ag 328.068†	58258.4	55352.0	320.27 ug/L	320.27 ppb	00:23:35
3	As 188.979†	2361.5	2281.8	1056.8 ug/L	1056.8 ppb	00:23:40
3	B 249.677†	67105.8	64802.2	1422.7 ug/L	1422.7 ppb	00:23:35
3	Ba 233.527†	259313.5	247981.5	1945.6 ug/L	1945.6 ppb	00:23:35
3	Be 313.107†	2102140.4	2014770.4	782.85 ug/L	782.85 ppb	00:23:35
3	Cd 226.502†	55035.2	52831.9	567.27 ug/L	567.27 ppb	00:23:40
3	Co 228.616†	45679.4	43755.9	879.86 ug/L	879.86 ppb	00:23:40
3	Cr 267.716†	210523.1	201230.8	2255.0 ug/L	2255.0 ppb	00:23:35
3	Cu 324.752†	639364.3	604983.9	1819.3 ug/L	1819.3 ppb	00:23:35
3	Mn 257.610†	4949901.4	4732929.6	5266.7 ug/L	5266.7 ppb	00:23:35
3	Mo 202.031†	7204.1	6865.2	499.43 ug/L	499.43 ppb	00:23:40
3	Ni 231.604†	52774.3	50397.8	1254.4 ug/L	1254.4 ppb	00:23:40
3	P 214.914†	14279.0	13424.5	7691.4 ug/L	7691.4 ppb	00:23:40
3	Pb 220.353†	7111.7	6863.9	842.94 ug/L	842.94 ppb	00:23:40
3	S 181.975 Axial†	3110.0	2930.9	4131.3 ug/L	4131.3 ppb	00:23:40
3	Sb 206.836†	3145.9	2980.4	1026.9 ug/L	1026.9 ppb	00:23:40
3	Se 196.026†	3933.3	3793.3	3060.6 ug/L	3060.6 ppb	00:23:40
3	Si 251.611†	1279134.5	1222630.0	38933 ug/L	38933 ppb	00:23:35
3	Sn 189.927†	6146.5	5870.0	1057.0 ug/L	1057.0 ppb	00:23:40
3	Ti 334.940†	4334466.3	4146235.3	6687.1 ug/L	6687.1 ppb	00:23:35
3	Tl 190.801†	3872.7	3736.1	1211.5 ug/L	1211.5 ppb	00:23:40
3	U 409.014†	-7325.3	-4993.2	-174.12 ug/L	-174.12 ppb	00:23:35
3	V 292.402†	187248.9	180367.7	1201.8 ug/L	1201.8 ppb	00:23:35
3	Zn 213.857†	667914.0	638076.8	6006.0 ug/L	6006.0 ppb	00:23:35
3	SiO2†	1285500.6	1228696.4	83823 ug/L	83823 ppb	00:23:58

Mean Data: 1202004427|936808|1

Analyte	Mean Corrected	Calib.	Std.Dev.	Sample	Std.Dev.	RSD
	Intensity	Conc. Units		Conc. Units		
Sc 361.383	887287.8	104.09 %	0.693			0.67%
Sc Radial	5444.3	108 %	0.5			0.44%
Y 371.029	805740.2	111.50 %	0.721			0.65%
Y RADIAL	6338.0	116.7 %	0.67			0.57%
Ag 328.068†	55294.2	318.95 ug/L	1.160	318.95 ppb	1.160	0.36%
Al 396.153Radial†	111931.1	86330 ug/L	1424.5	86330 ppb	1424.5	1.65%
As 188.979†	2286.7	1058.3 ug/L	24.55	1058.3 ppb	24.55	2.32%
B 249.677†	64773.2	1422.4 ug/L	1.01	1422.4 ppb	1.01	0.07%
Ba 233.527†	248157.4	1946.8 ug/L	1.22	1946.8 ppb	1.22	0.06%
Be 313.107†	2013942.8	782.54 ug/L	0.367	782.54 ppb	0.367	0.05%
Ca 317.933Radial†	59559.4	95301 ug/L	1377.9	95301 ppb	1377.9	1.45%
Cd 226.502†	52515.4	564.09 ug/L	6.413	564.09 ppb	6.413	1.14%
Co 228.616†	43459.7	873.84 ug/L	11.921	873.84 ppb	11.921	1.36%
Cr 267.716†	201454.7	2257.5 ug/L	2.28	2257.5 ppb	2.28	0.10%
Cu 324.752†	604857.3	1818.7 ug/L	4.18	1818.7 ppb	4.18	0.23%
Fe 238.204 Radial†	21709.0	187900 ug/L	2897.1	187900 ppb	2897.1	1.54%
K 766.490 Radial†	218306.6	39930 ug/L	700.0	39930 ppb	700.0	1.75%



Mg 279.077 IEC†	1153.1	38335 ug/L	72.2	38335 ppb	72.2	0.19%
Mn 257.610†	4739396.1	5273.5 ug/L	6.94	5273.5 ppb	6.94	0.13%
Mo 202.031†	6818.2	495.86 ug/L	7.217	495.86 ppb	7.217	1.46%
Na 589.592 Radial†	35078.3	10503 ug/L	184.6	10503 ppb	184.6	1.76%
Ni 231.604†	50086.9	1246.6 ug/L	15.98	1246.6 ppb	15.98	1.28%
P 214.914†	13327.6	7634.4 ug/L	126.02	7634.4 ppb	126.02	1.65%
Pb 220.353†	6813.8	836.73 ug/L	11.853	836.73 ppb	11.853	1.42%
S 181.975 Axial†	2893.4	4078.5 ug/L	70.11	4078.5 ppb	70.11	1.72%
Sb 206.836†	2952.1	1017.1 ug/L	19.41	1017.1 ppb	19.41	1.91%
Se 196.026†	3767.1	3033.0 ug/L	52.46	3033.0 ppb	52.46	1.73%
Si 251.611†	1224816.3	39003 ug/L	71.5	39003 ppb	71.5	0.18%
Sn 189.927†	5823.3	1048.5 ug/L	15.90	1048.5 ppb	15.90	1.52%
Sr 421.552†	346294.8	2236.0 ug/L	39.41	2236.0 ppb	39.41	1.76%
Ti 334.940†	4147768.6	6689.4 ug/L	5.10	6689.4 ppb	5.10	0.08%
Tl 190.801†	3693.7	1198.5 ug/L	15.68	1198.5 ppb	15.68	1.31%
U 409.014†	-5057.4	-175.65 ug/L	2.331	-175.65 ppb	2.331	1.33%
V 292.402†	180317.5	1201.9 ug/L	0.11	1201.9 ppb	0.11	0.01%
Zn 213.857†	639212.0	6017.1 ug/L	10.00	6017.1 ppb	10.00	0.17%
SiO2†	1230686.9	83959 ug/L	252.2	83959 ppb	252.2	0.30%



Sequence No.: 80

Sample ID: 243457001|936808|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 88

Date Collected: 1/12/2010 00:26:09

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 243457001|936808|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5205.6	5205.6	103 %		00:28:23
1	Y RADIAL	6086.7	6086.7	112.1 %		00:28:23
1	Al 396.153Radial†	102169.6	98827.5	76244 ug/L	76244 ppb	00:28:03
1	Ca 317.933Radial†	10526.3	10162.1	16260 ug/L	16260 ppb	00:28:03
1	Fe 238.204 Radial†	13848.1	13386.1	115850 ug/L	115850 ppb	00:28:03
1	K 766.490 Radial†	79614.2	74419.2	13614 ug/L	13614 ppb	00:28:03
1	Mg 279.077 IEC†	438.3	422.0	13980 ug/L	13980 ppb	00:28:23
1	Na 589.592 Radial†	881.9	2133.5	638.79 ug/L	638.79 ppb	00:28:03
1	Sr 421.552†	29719.7	28766.8	185.68 ug/L	185.68 ppb	00:28:03
1	Sc 361.383	883750.4	883750.4	103.68 %		00:29:21
1	Y 371.029	811431.6	811431.6	112.28 %		00:29:21
1	Ag 328.068†	-7740.6	-7823.9	2.4308 ug/L	2.4308 ppb	00:29:26
1	As 188.979†	-154.6	-125.5	2.1917 ug/L	2.1917 ppb	00:29:46
1	B 249.677†	1272.0	1858.7	29.533 ug/L	29.533 ppb	00:29:26
1	Ba 233.527†	142190.4	137157.4	1075.6 ug/L	1075.6 ppb	00:29:26
1	Be 313.107†	-28577.5	-22978.3	7.4050 ug/L	7.4050 ppb	00:29:26
1	Cd 226.502†	992.2	1161.1	0.9294 ug/L	0.9294 ppb	00:29:46
1	Co 228.616†	2928.0	2898.8	43.198 ug/L	43.198 ppb	00:29:46
1	Cr 267.716†	8629.6	8240.2	94.890 ug/L	94.890 ppb	00:29:26
1	Cu 324.752†	21189.3	14025.3	48.145 ug/L	48.145 ppb	00:29:26
1	Mn 257.610†	2242471.3	2162471.5	2409.7 ug/L	2409.7 ppb	00:29:21
1	Mo 202.031†	-38.6	-60.9	3.8098 ug/L	3.8098 ppb	00:29:46
1	Ni 231.604†	2527.0	2369.4	58.963 ug/L	58.963 ppb	00:29:46
1	P 214.914†	1327.9	1050.9	558.90 ug/L	558.90 ppb	00:29:46
1	Pb 220.353†	854.0	887.1	114.02 ug/L	114.02 ppb	00:29:46
1	S 181.975 Axial†	482.4	422.3	583.32 ug/L	583.32 ppb	00:29:46
1	Sb 206.836†	94.0	62.8	-3.8153 ug/L	-3.8153 ppb	00:29:46
1	Se 196.026†	-546.6	-495.2	54.391 ug/L	54.391 ppb	00:29:46
1	Si 251.611†	1224947.9	1180940.6	37611 ug/L	37611 ppb	00:29:21
1	Sn 189.927†	-124.1	-127.4	-18.288 ug/L	-18.288 ppb	00:29:46
1	Ti 334.940†	4579301.6	4418218.5	7119.0 ug/L	7119.0 ppb	00:29:21
1	Tl 190.801†	-276.2	-233.6	-12.608 ug/L	-12.608 ppb	00:29:46
1	U 409.014†	-6758.9	-4507.5	-146.38 ug/L	-146.38 ppb	00:29:26
1	V 292.402†	41614.3	41447.7	257.61 ug/L	257.61 ppb	00:29:26
1	Zn 213.857†	25232.1	23716.7	212.65 ug/L	212.65 ppb	00:29:26
1	SiO2†	1223831.6	1179842.7	80503 ug/L	80503 ppb	00:30:57
2	Sc Radial	5244.8	5244.8	104 %		00:28:48
2	Y RADIAL	6161.8	6161.8	113.5 %		00:28:48
2	Al 396.153Radial†	104140.0	99981.8	77135 ug/L	77135 ppb	00:28:28
2	Ca 317.933Radial†	10722.9	10274.9	16441 ug/L	16441 ppb	00:28:28
2	Fe 238.204 Radial†	14076.1	13505.1	116880 ug/L	116880 ppb	00:28:28
2	K 766.490 Radial†	80859.4	75040.1	13728 ug/L	13728 ppb	00:28:28
2	Mg 279.077 IEC†	439.0	419.6	13896 ug/L	13896 ppb	00:28:48
2	Na 589.592 Radial†	935.1	2178.2	652.19 ug/L	652.19 ppb	00:28:28
2	Sr 421.552†	30334.9	29142.9	188.11 ug/L	188.11 ppb	00:28:28
2	Sc 361.383	886129.2	886129.2	103.96 %		00:29:53
2	Y 371.029	815242.6	815242.6	112.81 %		00:29:53
2	Ag 328.068†	-7799.1	-7860.2	2.6035 ug/L	2.6035 ppb	00:29:58
2	As 188.979†	-164.1	-134.2	-1.4837 ug/L	-1.4837 ppb	00:30:18
2	B 249.677†	1339.2	1920.1	30.798 ug/L	30.798 ppb	00:29:58
2	Ba 233.527†	143781.2	138319.5	1084.7 ug/L	1084.7 ppb	00:29:58
2	Be 313.107†	-29068.4	-23376.5	7.2096 ug/L	7.2096 ppb	00:29:58
2	Cd 226.502†	978.7	1145.5	0.6503 ug/L	0.6503 ppb	00:30:18
2	Co 228.616†	2916.3	2880.0	42.843 ug/L	42.843 ppb	00:30:18
2	Cr 267.716†	8688.0	8274.1	95.293 ug/L	95.293 ppb	00:29:58
2	Cu 324.752†	21220.5	14000.5	48.125 ug/L	48.125 ppb	00:29:58
2	Mn 257.610†	2234175.8	2148685.2	2394.5 ug/L	2394.5 ppb	00:29:53
2	Mo 202.031†	-38.3	-60.6	3.9090 ug/L	3.9090 ppb	00:30:18
2	Ni 231.604†	2520.7	2356.8	58.649 ug/L	58.649 ppb	00:30:18



2	P 214.914†	1312.1	1032.3	546.96 ug/L	546.96 ppb	00:30:18
2	Pb 220.353†	835.7	867.3	111.69 ug/L	111.69 ppb	00:30:18
2	S 181.975 Axial†	486.8	425.2	587.31 ug/L	587.31 ppb	00:30:18
2	Sb 206.836†	99.5	67.8	-2.0284 ug/L	-2.0284 ppb	00:30:18
2	Se 196.026†	-544.6	-491.9	59.880 ug/L	59.880 ppb	00:30:18
2	Si 251.611†	1223266.3	1176151.2	37459 ug/L	37459 ppb	00:29:53
2	Sn 189.927†	-118.7	-121.8	-17.268 ug/L	-17.268 ppb	00:30:18
2	Ti 334.940†	4579231.5	4406293.9	7099.8 ug/L	7099.8 ppb	00:29:53
2	Tl 190.801†	-259.9	-217.2	-7.7712 ug/L	-7.7712 ppb	00:30:18
2	U 409.014†	-6761.8	-4492.8	-146.07 ug/L	-146.07 ppb	00:29:58
2	V 292.402†	42084.6	41792.3	259.82 ug/L	259.82 ppb	00:29:58
2	Zn 213.857†	25451.2	23862.1	213.92 ug/L	213.92 ppb	00:29:58
2	SiO2†	1229536.8	1182161.8	80661 ug/L	80661 ppb	00:31:03
3	Sc Radial	5295.4	5295.4	105 %		00:29:13
3	Y RADIAL	6200.0	6200.0	114.2 %		00:29:13
3	Al 396.153Radial†	103668.9	98578.4	76052 ug/L	76052 ppb	00:28:53
3	Ca 317.933Radial†	10648.3	10105.5	16170 ug/L	16170 ppb	00:28:53
3	Fe 238.204 Radial†	13958.9	13264.5	114790 ug/L	114790 ppb	00:28:53
3	K 766.490 Radial†	80639.0	74088.7	13553 ug/L	13553 ppb	00:28:53
3	Mg 279.077 IEC†	442.2	418.6	13865 ug/L	13865 ppb	00:29:13
3	Na 589.592 Radial†	978.9	2211.2	662.07 ug/L	662.07 ppb	00:28:53
3	Sr 421.552†	30212.2	28748.0	185.56 ug/L	185.56 ppb	00:28:53
3	Sc 361.383	884230.7	884230.7	103.73 %		00:30:25
3	Y 371.029	814380.6	814380.6	112.69 %		00:30:25
3	Ag 328.068†	-7635.0	-7718.1	2.5816 ug/L	2.5816 ppb	00:30:30
3	As 188.979†	-150.6	-121.6	3.4811 ug/L	3.4811 ppb	00:30:50
3	B 249.677†	1311.8	1896.4	30.479 ug/L	30.479 ppb	00:30:30
3	Ba 233.527†	142128.0	137022.8	1074.5 ug/L	1074.5 ppb	00:30:30
3	Be 313.107†	-29226.3	-23588.8	7.0757 ug/L	7.0757 ppb	00:30:30
3	Cd 226.502†	1003.5	1171.5	1.1532 ug/L	1.1532 ppb	00:30:50
3	Co 228.616†	2934.7	2903.7	43.402 ug/L	43.402 ppb	00:30:50
3	Cr 267.716†	8598.6	8205.8	94.486 ug/L	94.486 ppb	00:30:30
3	Cu 324.752†	21131.8	13958.8	47.891 ug/L	47.891 ppb	00:30:30
3	Mn 257.610†	2226971.9	2146355.1	2391.7 ug/L	2391.7 ppb	00:30:25
3	Mo 202.031†	-43.0	-65.1	3.4406 ug/L	3.4406 ppb	00:30:50
3	Ni 231.604†	2538.0	2378.6	59.193 ug/L	59.193 ppb	00:30:50
3	P 214.914†	1308.1	1031.1	547.66 ug/L	547.66 ppb	00:30:50
3	Pb 220.353†	853.1	885.8	113.92 ug/L	113.92 ppb	00:30:50
3	S 181.975 Axial†	489.6	429.0	592.80 ug/L	592.80 ppb	00:30:50
3	Sb 206.836†	96.1	64.7	-2.9953 ug/L	-2.9953 ppb	00:30:50
3	Se 196.026†	-531.4	-480.2	60.694 ug/L	60.694 ppb	00:30:50
3	Si 251.611†	1217241.5	1172869.8	37354 ug/L	37354 ppb	00:30:25
3	Sn 189.927†	-116.7	-120.1	-17.039 ug/L	-17.039 ppb	00:30:50
3	Ti 334.940†	4554368.3	4391783.6	7076.4 ug/L	7076.4 ppb	00:30:25
3	Tl 190.801†	-275.8	-233.0	-12.800 ug/L	-12.800 ppb	00:30:50
3	U 409.014†	-6807.1	-4550.4	-147.53 ug/L	-147.53 ppb	00:30:30
3	V 292.402†	41722.3	41530.0	258.37 ug/L	258.37 ppb	00:30:30
3	Zn 213.857†	25194.6	23667.3	212.28 ug/L	212.28 ppb	00:30:30
3	SiO2†	1224579.6	1179922.5	80508 ug/L	80508 ppb	00:31:08

Mean Data: 243457001|936808|1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	884703.4	103.79 %	0.148			0.14%
Sc Radial	5248.6	104 %	0.9			0.86%
Y 371.029	813684.9	112.59 %	0.277			0.25%
Y RADIAL	6149.5	113.3 %	1.06			0.94%
Ag 328.068†	-7800.7	2.5387 ug/L	0.09404	2.5387 ppb	0.09404	3.70%
Al 396.153Radial†	99129.2	76477 ug/L	577.7	76477 ppb	577.7	0.76%
As 188.979†	-127.1	1.3964 ug/L	2.57622	1.3964 ppb	2.57622	184.50%
B 249.677†	1891.7	30.270 ug/L	0.6578	30.270 ppb	0.6578	2.17%
Ba 233.527†	137499.9	1078.3 ug/L	5.60	1078.3 ppb	5.60	0.52%
Be 313.107†	-23314.5	7.2301 ug/L	0.16560	7.2301 ppb	0.16560	2.29%
Ca 317.933Radial†	10180.8	16290 ug/L	137.9	16290 ppb	137.9	0.85%
Cd 226.502†	1159.4	0.9110 ug/L	0.25195	0.9110 ppb	0.25195	27.66%
Co 228.616†	2894.2	43.148 ug/L	0.2829	43.148 ppb	0.2829	0.66%
Cr 267.716†	8240.0	94.890 ug/L	0.4032	94.890 ppb	0.4032	0.42%
Cu 324.752†	13994.9	48.054 ug/L	0.1411	48.054 ppb	0.1411	0.29%
Fe 238.204 Radial†	13385.2	115840 ug/L	1041.4	115840 ppb	1041.4	0.90%
K 766.490 Radial†	74516.0	13632 ug/L	88.5	13632 ppb	88.5	0.65%



Mg 279.077 IEC†	420.1	13914 ug/L	59.4	13914 ppb	59.4	0.43%
Mn 257.610†	2152503.9	2398.6 ug/L	9.67	2398.6 ppb	9.67	0.40%
Mo 202.031†	-62.2	3.7198 ug/L	0.24683	3.7198 ppb	0.24683	6.64%
Na 589.592 Radial†	2174.3	651.02 ug/L	11.682	651.02 ppb	11.682	1.79%
Ni 231.604†	2368.3	58.935 ug/L	0.2730	58.935 ppb	0.2730	0.46%
P 214.914†	1038.1	551.17 ug/L	6.699	551.17 ppb	6.699	1.22%
Pb 220.353†	880.0	113.21 ug/L	1.316	113.21 ppb	1.316	1.16%
S 181.975 Axial†	425.5	587.81 ug/L	4.762	587.81 ppb	4.762	0.81%
Sb 206.836†	65.1	-2.9464 ug/L	0.89447	-2.9464 ppb	0.89447	30.36%
Se 196.026†	-489.1	58.322 ug/L	3.4281	58.322 ppb	3.4281	5.88%
Si 251.611†	1176653.9	37475 ug/L	129.3	37475 ppb	129.3	0.34%
Sn 189.927†	-123.1	-17.532 ug/L	0.6647	-17.532 ppb	0.6647	3.79%
Sr 421.552†	28885.9	186.45 ug/L	1.438	186.45 ppb	1.438	0.77%
Ti 334.940†	4405432.0	7098.4 ug/L	21.33	7098.4 ppb	21.33	0.30%
Tl 190.801†	-227.9	-11.060 ug/L	2.8494	-11.060 ppb	2.8494	25.76%
U 409.014†	-4516.9	-146.66 ug/L	0.768	-146.66 ppb	0.768	0.52%
V 292.402†	41590.0	258.60 ug/L	1.125	258.60 ppb	1.125	0.44%
Zn 213.857†	23748.7	212.95 ug/L	0.863	212.95 ppb	0.863	0.41%
SiO2†	1180642.3	80557 ug/L	89.8	80557 ppb	89.8	0.11%



Sequence No.: 81  
 Sample ID: 243457002|936808|1  
 Analyst: HSC  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 89  
 Date Collected: 1/12/2010 00:33:20  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

Replicate Data: 243457002|936808|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5356.8	5356.8	106 %		00:35:33
1	Y RADIAL	6239.7	6239.7	114.9 %		00:35:33
1	Al 396.153Radial†	108451.8	101942.7	78647 ug/L	78647 ppb	00:35:13
1	Ca 317.933Radial†	22644.0	21265.0	34026 ug/L	34026 ppb	00:35:13
1	Fe 238.204 Radial†	15489.6	14551.0	125930 ug/L	125930 ppb	00:35:13
1	K 766.490 Radial†	93040.4	84865.5	15514 ug/L	15514 ppb	00:35:13
1	Mg 279.077 IEC†	581.6	544.7	18069 ug/L	18069 ppb	00:35:33
1	Na 589.592 Radial†	6165.3	7075.7	2118.6 ug/L	2118.6 ppb	00:35:13
1	Sr 421.552†	34171.7	32140.0	207.34 ug/L	207.34 ppb	00:35:13
1	Sc 361.383	903887.9	903887.9	106.04 %		00:36:30
1	Y 371.029	823681.1	823681.1	113.98 %		00:36:30
1	Ag 328.068†	-8129.2	-8024.1	4.2122 ug/L	4.2122 ppb	00:36:36
1	As 188.979†	-98.5	-69.3	15.328 ug/L	15.328 ppb	00:36:56
1	B 249.677†	1073.9	1644.5	23.811 ug/L	23.811 ppb	00:36:36
1	Ba 233.527†	164921.6	155538.3	1219.2 ug/L	1219.2 ppb	00:36:36
1	Be 313.107†	-13420.9	-8071.0	6.7760 ug/L	6.7760 ppb	00:36:36
1	Cd 226.502†	1001.4	1148.5	-0.2194 ug/L	-0.2194 ppb	00:36:56
1	Co 228.616†	1643.4	1624.5	22.818 ug/L	22.818 ppb	00:36:56
1	Cr 267.716†	23542.9	22118.5	250.06 ug/L	250.06 ppb	00:36:36
1	Cu 324.752†	17557.7	10145.3	37.155 ug/L	37.155 ppb	00:36:36
1	Mn 257.610†	3063308.4	2888362.4	3215.4 ug/L	3215.4 ppb	00:36:30
1	Mo 202.031†	79.2	51.0	12.624 ug/L	12.624 ppb	00:36:56
1	Ni 231.604†	6617.9	6172.9	153.69 ug/L	153.69 ppb	00:36:56
1	P 214.914†	1855.5	1519.9	840.68 ug/L	840.68 ppb	00:36:56
1	Pb 220.353†	336.5	380.7	51.917 ug/L	51.917 ppb	00:36:56
1	S 181.975 Axial†	337.5	275.3	374.85 ug/L	374.85 ppb	00:36:56
1	Sb 206.836†	93.6	60.3	4.3871 ug/L	4.3871 ppb	00:36:56
1	Se 196.026†	-579.4	-514.4	74.366 ug/L	74.366 ppb	00:36:56
1	Si 251.611†	1052435.7	991933.3	31591 ug/L	31591 ppb	00:36:30
1	Sn 189.927†	-150.1	-149.2	-19.451 ug/L	-19.451 ppb	00:36:56
1	Ti 334.940†	2854575.1	2693339.0	4341.7 ug/L	4341.7 ppb	00:36:30
1	Tl 190.801†	-224.1	-178.5	-10.418 ug/L	-10.418 ppb	00:36:56
1	U 409.014†	-12068.8	-9369.6	-291.31 ug/L	-291.31 ppb	00:36:30
1	V 292.402†	24466.9	24382.8	142.39 ug/L	142.39 ppb	00:36:36
1	Zn 213.857†	38032.3	35245.5	320.12 ug/L	320.12 ppb	00:36:36
1	SiO2†	1055124.4	994447.6	67853 ug/L	67853 ppb	00:38:04
2	Sc Radial	5288.8	5288.8	105 %		00:35:58
2	Y RADIAL	6160.0	6160.0	113.5 %		00:35:58
2	Al 396.153Radial†	108020.3	102843.4	79342 ug/L	79342 ppb	00:35:38
2	Ca 317.933Radial†	22417.4	21323.1	34119 ug/L	34119 ppb	00:35:38
2	Fe 238.204 Radial†	15350.7	14606.0	126400 ug/L	126400 ppb	00:35:38
2	K 766.490 Radial†	92258.5	85246.3	15584 ug/L	15584 ppb	00:35:38
2	Mg 279.077 IEC†	583.3	553.4	18359 ug/L	18359 ppb	00:35:58
2	Na 589.592 Radial†	6091.9	7080.4	2119.9 ug/L	2119.9 ppb	00:35:38
2	Sr 421.552†	33921.8	32315.4	208.47 ug/L	208.47 ppb	00:35:38
2	Sc 361.383	907229.3	907229.3	106.43 %		00:37:01
2	Y 371.029	824302.6	824302.6	114.06 %		00:37:01
2	Ag 328.068†	-7977.7	-7853.5	5.1287 ug/L	5.1287 ppb	00:37:07
2	As 188.979†	-96.6	-67.1	15.966 ug/L	15.966 ppb	00:37:27
2	B 249.677†	1084.4	1650.7	23.902 ug/L	23.902 ppb	00:37:07
2	Ba 233.527†	162922.5	153087.2	1200.1 ug/L	1200.1 ppb	00:37:07
2	Be 313.107†	-13652.2	-8241.7	6.5212 ug/L	6.5212 ppb	00:37:07
2	Cd 226.502†	997.1	1140.9	-0.3508 ug/L	-0.3508 ppb	00:37:27
2	Co 228.616†	1640.6	1616.1	22.806 ug/L	22.806 ppb	00:37:27
2	Cr 267.716†	23237.9	21750.2	245.94 ug/L	245.94 ppb	00:37:07
2	Cu 324.752†	17458.7	9991.4	36.715 ug/L	36.715 ppb	00:37:07
2	Mn 257.610†	3012612.7	2830090.9	3150.8 ug/L	3150.8 ppb	00:37:01
2	Mo 202.031†	69.0	41.1	11.959 ug/L	11.959 ppb	00:37:27
2	Ni 231.604†	6629.2	6160.6	153.38 ug/L	153.38 ppb	00:37:27



2	P 214.914†	1848.8	1507.2	832.77 ug/L	832.77 ppb	00:37:27
2	Pb 220.353†	344.5	387.1	52.804 ug/L	52.804 ppb	00:37:27
2	S 181.975 Axial†	342.6	278.9	379.86 ug/L	379.86 ppb	00:37:27
2	Sb 206.836†	84.2	51.2	1.5010 ug/L	1.5010 ppb	00:37:27
2	Se 196.026†	-597.7	-529.6	66.122 ug/L	66.122 ppb	00:37:27
2	Si 251.611†	1036714.1	973506.5	31005 ug/L	31005 ppb	00:37:01
2	Sn 189.927†	-141.4	-140.6	-17.895 ug/L	-17.895 ppb	00:37:27
2	Ti 334.940†	2809906.4	2641455.2	4258.1 ug/L	4258.1 ppb	00:37:01
2	Tl 190.801†	-238.2	-191.0	-15.124 ug/L	-15.124 ppb	00:37:27
2	U 409.014†	-11772.3	-9049.2	-281.90 ug/L	-281.90 ppb	00:37:01
2	V 292.402†	23955.5	23817.4	138.56 ug/L	138.56 ppb	00:37:07
2	Zn 213.857†	37565.7	34675.0	314.68 ug/L	314.68 ppb	00:37:07
2	SiO2†	1054272.4	989982.4	67548 ug/L	67548 ppb	00:38:10
3	Sc Radial	5358.9	5358.9	106 %		00:36:23
3	Y RADIAL	6224.3	6224.3	114.6 %		00:36:23
3	Al 396.153Radial†	106441.1	100015.0	77160 ug/L	77160 ppb	00:36:03
3	Ca 317.933Radial†	22206.2	20845.7	33355 ug/L	33355 ppb	00:36:03
3	Fe 238.204 Radial†	15145.2	14221.9	123080 ug/L	123080 ppb	00:36:03
3	K 766.490 Radial†	91410.4	83301.0	15227 ug/L	15227 ppb	00:36:03
3	Mg 279.077 IEC†	583.8	546.6	18136 ug/L	18136 ppb	00:36:23
3	Na 589.592 Radial†	5932.8	6855.0	2052.5 ug/L	2052.5 ppb	00:36:03
3	Sr 421.552†	33433.8	31434.6	202.78 ug/L	202.78 ppb	00:36:03
3	Sc 361.383	911177.4	911177.4	106.90 %		00:37:33
3	Y 371.029	831707.3	831707.3	115.09 %		00:37:33
3	Ag 328.068†	-8154.3	-7986.3	3.4670 ug/L	3.4670 ppb	00:37:38
3	As 188.979†	-102.7	-72.4	13.310 ug/L	13.310 ppb	00:37:58
3	B 249.677†	1175.6	1731.6	26.043 ug/L	26.043 ppb	00:37:38
3	Ba 233.527†	165833.5	155147.1	1216.0 ug/L	1216.0 ppb	00:37:38
3	Be 313.107†	-13743.5	-8271.6	6.6531 ug/L	6.6531 ppb	00:37:38
3	Cd 226.502†	1006.6	1145.7	0.0448 ug/L	0.0448 ppb	00:37:58
3	Co 228.616†	1626.4	1596.2	22.323 ug/L	22.323 ppb	00:37:58
3	Cr 267.716†	23623.1	22016.0	248.85 ug/L	248.85 ppb	00:37:38
3	Cu 324.752†	17794.6	10234.5	37.268 ug/L	37.268 ppb	00:37:38
3	Mn 257.610†	3069944.0	2871459.2	3196.3 ug/L	3196.3 ppb	00:37:33
3	Mo 202.031†	87.1	57.8	12.900 ug/L	12.900 ppb	00:37:58
3	Ni 231.604†	6624.0	6128.7	152.59 ug/L	152.59 ppb	00:37:58
3	P 214.914†	1853.3	1503.9	832.75 ug/L	832.75 ppb	00:37:58
3	Pb 220.353†	353.7	394.2	53.519 ug/L	53.519 ppb	00:37:58
3	S 181.975 Axial†	346.1	280.7	382.82 ug/L	382.82 ppb	00:37:58
3	Sb 206.836†	70.7	38.2	-3.0816 ug/L	-3.0816 ppb	00:37:58
3	Se 196.026†	-591.5	-521.3	60.714 ug/L	60.714 ppb	00:37:58
3	Si 251.611†	1056998.7	988262.0	31475 ug/L	31475 ppb	00:37:33
3	Sn 189.927†	-147.4	-145.6	-18.947 ug/L	-18.947 ppb	00:37:58
3	Ti 334.940†	2864003.6	2680623.2	4321.1 ug/L	4321.1 ppb	00:37:33
3	Tl 190.801†	-234.9	-186.9	-13.224 ug/L	-13.224 ppb	00:37:58
3	U 409.014†	-11944.8	-9162.6	-284.88 ug/L	-284.88 ppb	00:37:33
3	V 292.402†	24614.7	24336.6	142.55 ug/L	142.55 ppb	00:37:38
3	Zn 213.857†	38322.1	35229.7	320.26 ug/L	320.26 ppb	00:37:38
3	SiO2†	1049939.6	981637.1	66979 ug/L	66979 ppb	00:38:16

Mean Data: 243457002|936808|1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	907431.6	106.46 %	0.428			0.40%
Sc Radial	5334.8	106 %	0.8			0.75%
Y 371.029	826563.7	114.38 %	0.618			0.54%
Y RADIAL	6208.0	114.3 %	0.78			0.68%
Ag 328.068†	-7954.6	4.2693 ug/L	0.83232	4.2693 ppb	0.83232	19.50%
Al 396.153Radial†	101600.3	78383 ug/L	1114.8	78383 ppb	1114.8	1.42%
As 188.979†	-69.6	14.868 ug/L	1.3869	14.868 ppb	1.3869	9.33%
B 249.677†	1675.6	24.585 ug/L	1.2630	24.585 ppb	1.2630	5.14%
Ba 233.527†	154590.9	1211.8 ug/L	10.25	1211.8 ppb	10.25	0.85%
Be 313.107†	-8194.8	6.6501 ug/L	0.12743	6.6501 ppb	0.12743	1.92%
Ca 317.933Radial†	21144.6	33833 ug/L	416.8	33833 ppb	416.8	1.23%
Cd 226.502†	1145.0	-0.1751 ug/L	0.20148	-0.1751 ppb	0.20148	115.07%
Co 228.616†	1612.3	22.649 ug/L	0.2825	22.649 ppb	0.2825	1.25%
Cr 267.716†	21961.5	248.28 ug/L	2.117	248.28 ppb	2.117	0.85%
Cu 324.752†	10123.7	37.046 ug/L	0.2922	37.046 ppb	0.2922	0.79%
Fe 238.204 Radial†	14459.6	125140 ug/L	1797.7	125140 ppb	1797.7	1.44%
K 766.490 Radial†	84470.9	15442 ug/L	189.0	15442 ppb	189.0	1.22%



Mg 279.077 IEC†	548.3	18188 ug/L	151.8	18188 ppb	151.8	0.83%
Mn 257.610†	2863304.2	3187.5 ug/L	33.17	3187.5 ppb	33.17	1.04%
Mo 202.031†	50.0	12.494 ug/L	0.4836	12.494 ppb	0.4836	3.87%
Na 589.592 Radial†	7003.7	2097.0 ug/L	38.56	2097.0 ppb	38.56	1.84%
Ni 231.604†	6154.1	153.22 ug/L	0.568	153.22 ppb	0.568	0.37%
P 214.914†	1510.3	835.40 ug/L	4.573	835.40 ppb	4.573	0.55%
Pb 220.353†	387.3	52.747 ug/L	0.8027	52.747 ppb	0.8027	1.52%
S 181.975 Axial†	278.3	379.17 ug/L	4.027	379.17 ppb	4.027	1.06%
Sb 206.836†	49.9	0.9355 ug/L	3.76633	0.9355 ppb	3.76633	402.59%
Se 196.026†	-521.8	67.067 ug/L	6.8753	67.067 ppb	6.8753	10.25%
Si 251.611†	984567.3	31357 ug/L	310.6	31357 ppb	310.6	0.99%
Sn 189.927†	-145.1	-18.765 ug/L	0.7938	-18.765 ppb	0.7938	4.23%
Sr 421.552†	31963.4	206.20 ug/L	3.008	206.20 ppb	3.008	1.46%
Ti 334.940†	2671805.8	4307.0 ug/L	43.56	4307.0 ppb	43.56	1.01%
Tl 190.801†	-185.4	-12.922 ug/L	2.3677	-12.922 ppb	2.3677	18.32%
U 409.014†	-9193.8	-286.03 ug/L	4.809	-286.03 ppb	4.809	1.68%
V 292.402†	24178.9	141.17 ug/L	2.259	141.17 ppb	2.259	1.60%
Zn 213.857†	35050.1	318.35 ug/L	3.180	318.35 ppb	3.180	1.00%
SiO2†	988689.0	67460 ug/L	443.7	67460 ppb	443.7	0.66%



Sequence No.: 82

Sample ID: 243457003|936808|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 90

Date Collected: 1/12/2010 00:40:27

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 243457003|936808|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5273.4	5273.4	105 %		00:42:40
1	Y RADIAL	6269.6	6269.6	115.5 %		00:42:40
1	Al 396.153Radial†	139460.9	133165.0	102740 ug/L	102740 ppb	00:42:20
1	Ca 317.933Radial†	11755.9	11205.3	17930 ug/L	17930 ppb	00:42:20
1	Fe 238.204 Radial†	13844.6	13210.6	114330 ug/L	114330 ppb	00:42:20
1	K 766.490 Radial†	88341.6	81762.9	14964 ug/L	14964 ppb	00:42:20
1	Mg 279.077 IEC†	495.2	470.9	15614 ug/L	15614 ppb	00:42:40
1	Na 589.592 Radial†	1930.2	3123.5	935.22 ug/L	935.22 ppb	00:42:20
1	Sr 421.552†	32413.3	30969.4	199.89 ug/L	199.89 ppb	00:42:20
1	Sc 361.383	897652.0	897652.0	105.31 %		00:43:38
1	Y 371.029	834489.9	834489.9	115.47 %		00:43:38
1	Ag 328.068†	-7947.0	-7904.3	1.4843 ug/L	1.4843 ppb	00:43:44
1	As 188.979†	-148.6	-117.5	4.5483 ug/L	4.5483 ppb	00:44:04
1	B 249.677†	1013.0	1593.8	23.787 ug/L	23.787 ppb	00:43:44
1	Ba 233.527†	149638.4	142106.0	1114.1 ug/L	1114.1 ppb	00:43:44
1	Be 313.107†	-24628.8	-18801.8	8.6016 ug/L	8.6016 ppb	00:43:44
1	Cd 226.502†	996.3	1150.1	0.9627 ug/L	0.9627 ppb	00:44:04
1	Co 228.616†	2863.5	2793.8	41.450 ug/L	41.450 ppb	00:44:04
1	Cr 267.716†	9194.2	8647.4	99.385 ug/L	99.385 ppb	00:43:44
1	Cu 324.752†	22659.0	15104.5	51.307 ug/L	51.307 ppb	00:43:44
1	Mn 257.610†	1930231.4	1832476.3	2043.6 ug/L	2043.6 ppb	00:43:38
1	Mo 202.031†	-56.5	-77.4	2.5654 ug/L	2.5654 ppb	00:44:04
1	Ni 231.604†	2790.1	2581.5	64.245 ug/L	64.245 ppb	00:44:04
1	P 214.914†	1139.7	852.4	444.67 ug/L	444.67 ppb	00:44:04
1	Pb 220.353†	828.9	850.5	115.33 ug/L	115.33 ppb	00:44:04
1	S 181.975 Axial†	387.3	324.7	440.30 ug/L	440.30 ppb	00:44:04
1	Sb 206.836†	86.7	54.4	-6.8768 ug/L	-6.8768 ppb	00:44:04
1	Se 196.026†	-540.9	-481.7	59.660 ug/L	59.660 ppb	00:44:04
1	Si 251.611†	1237422.3	1174488.8	37406 ug/L	37406 ppb	00:43:38
1	Sn 189.927†	-121.4	-123.0	-17.298 ug/L	-17.298 ppb	00:44:04
1	Ti 334.940†	4537700.9	4310312.9	6945.2 ug/L	6945.2 ppb	00:43:38
1	Tl 190.801†	-277.4	-230.6	-14.559 ug/L	-14.559 ppb	00:44:04
1	U 409.014†	-7883.2	-5474.2	-174.74 ug/L	-174.74 ppb	00:43:38
1	V 292.402†	38775.1	38130.0	235.33 ug/L	235.33 ppb	00:43:44
1	Zn 213.857†	24270.2	22426.4	200.55 ug/L	200.55 ppb	00:43:44
1	SiO2†	1235924.4	1173045.1	80039 ug/L	80039 ppb	00:45:14
2	Sc Radial	5258.3	5258.3	104 %		00:43:05
2	Y RADIAL	6243.6	6243.6	115.0 %		00:43:05
2	Al 396.153Radial†	137686.2	131847.3	101720 ug/L	101720 ppb	00:42:45
2	Ca 317.933Radial†	11615.6	11103.1	17766 ug/L	17766 ppb	00:42:45
2	Fe 238.204 Radial†	13677.6	13088.6	113270 ug/L	113270 ppb	00:42:45
2	K 766.490 Radial†	87619.7	81313.4	14881 ug/L	14881 ppb	00:42:45
2	Mg 279.077 IEC†	496.6	473.6	15707 ug/L	15707 ppb	00:43:05
2	Na 589.592 Radial†	1853.3	3055.1	914.74 ug/L	914.74 ppb	00:42:45
2	Sr 421.552†	31877.9	30545.4	197.16 ug/L	197.16 ppb	00:42:45
2	Sc 361.383	896382.3	896382.3	105.16 %		00:44:10
2	Y 371.029	835151.5	835151.5	115.57 %		00:44:10
2	Ag 328.068†	-7721.4	-7700.5	2.0762 ug/L	2.0762 ppb	00:44:16
2	As 188.979†	-142.5	-111.9	7.1262 ug/L	7.1262 ppb	00:44:36
2	B 249.677†	1079.1	1658.0	25.324 ug/L	25.324 ppb	00:44:16
2	Ba 233.527†	148580.1	141300.9	1107.8 ug/L	1107.8 ppb	00:44:16
2	Be 313.107†	-24783.1	-18981.7	8.7129 ug/L	8.7129 ppb	00:44:16
2	Cd 226.502†	977.4	1133.5	0.8873 ug/L	0.8873 ppb	00:44:36
2	Co 228.616†	2893.7	2826.4	41.964 ug/L	41.964 ppb	00:44:36
2	Cr 267.716†	9067.2	8539.1	98.150 ug/L	98.150 ppb	00:44:16
2	Cu 324.752†	22483.0	14967.6	50.843 ug/L	50.843 ppb	00:44:16
2	Mn 257.610†	1949974.7	1853847.2	2067.2 ug/L	2067.2 ppb	00:44:10
2	Mo 202.031†	-46.8	-68.2	3.1408 ug/L	3.1408 ppb	00:44:36
2	Ni 231.604†	2797.4	2592.2	64.511 ug/L	64.511 ppb	00:44:36



2	P 214.914†	1139.7	853.9	446.28 ug/L	446.28 ppb	00:44:36
2	Pb 220.353†	819.9	843.1	114.31 ug/L	114.31 ppb	00:44:36
2	S 181.975 Axial†	387.1	325.1	441.02 ug/L	441.02 ppb	00:44:36
2	Sb 206.836†	101.4	68.5	-2.2912 ug/L	-2.2912 ppb	00:44:36
2	Se 196.026†	-554.9	-495.6	47.243 ug/L	47.243 ppb	00:44:36
2	Si 251.611†	1248968.2	1187132.6	37808 ug/L	37808 ppb	00:44:10
2	Sn 189.927†	-125.9	-127.4	-18.129 ug/L	-18.129 ppb	00:44:36
2	Ti 334.940†	4582984.0	4359477.8	7024.4 ug/L	7024.4 ppb	00:44:10
2	Tl 190.801†	-263.7	-217.9	-10.014 ug/L	-10.014 ppb	00:44:36
2	U 409.014†	-7931.1	-5530.3	-176.27 ug/L	-176.27 ppb	00:44:10
2	V 292.402†	38371.2	37798.1	233.15 ug/L	233.15 ppb	00:44:16
2	Zn 213.857†	24091.2	22288.9	199.35 ug/L	199.35 ppb	00:44:16
2	SiO2†	1240361.2	1178926.7	80440 ug/L	80440 ppb	00:45:20
3	Sc Radial	5260.9	5260.9	104 %		00:43:30
3	Y RADIAL	6219.6	6219.6	114.6 %		00:43:30
3	Al 396.153Radial†	140827.2	134788.0	103990 ug/L	103990 ppb	00:43:10
3	Ca 317.933Radial†	11863.8	11335.2	18137 ug/L	18137 ppb	00:43:10
3	Fe 238.204 Radial†	13979.8	13371.3	115720 ug/L	115720 ppb	00:43:10
3	K 766.490 Radial†	89472.0	83044.5	15198 ug/L	15198 ppb	00:43:10
3	Mg 279.077 IEC†	493.4	470.4	15594 ug/L	15594 ppb	00:43:30
3	Na 589.592 Radial†	1995.4	3190.3	955.20 ug/L	955.20 ppb	00:43:10
3	Sr 421.552†	32728.7	31344.5	202.32 ug/L	202.32 ppb	00:43:10
3	Sc 361.383	872971.2	872971.2	102.41 %		00:44:42
3	Y 371.029	814372.8	814372.8	112.69 %		00:44:42
3	Ag 328.068†	-7647.2	-7825.0	2.3204 ug/L	2.3204 ppb	00:44:48
3	As 188.979†	-143.4	-116.4	5.9496 ug/L	5.9496 ppb	00:45:08
3	B 249.677†	867.2	1478.6	21.073 ug/L	21.073 ppb	00:44:48
3	Ba 233.527†	148136.9	144657.2	1134.1 ug/L	1134.1 ppb	00:44:48
3	Be 313.107†	-24015.3	-18864.0	8.8923 ug/L	8.8923 ppb	00:44:48
3	Cd 226.502†	981.7	1162.6	0.9569 ug/L	0.9569 ppb	00:45:08
3	Co 228.616†	2883.0	2889.7	43.112 ug/L	43.112 ppb	00:45:08
3	Cr 267.716†	9072.7	8775.7	100.86 ug/L	100.86 ppb	00:44:48
3	Cu 324.752†	22309.5	15371.5	52.185 ug/L	52.185 ppb	00:44:48
3	Mn 257.610†	1914298.7	1868739.9	2084.0 ug/L	2084.0 ppb	00:44:42
3	Mo 202.031†	-55.5	-77.9	2.6218 ug/L	2.6218 ppb	00:45:08
3	Ni 231.604†	2795.7	2661.9	66.246 ug/L	66.246 ppb	00:45:08
3	P 214.914†	1142.6	885.8	464.09 ug/L	464.09 ppb	00:45:08
3	Pb 220.353†	829.5	873.3	118.27 ug/L	118.27 ppb	00:45:08
3	S 181.975 Axial†	390.3	338.1	459.00 ug/L	459.00 ppb	00:45:08
3	Sb 206.836†	79.5	49.7	-9.0008 ug/L	-9.0008 ppb	00:45:08
3	Se 196.026†	-542.0	-497.2	54.123 ug/L	54.123 ppb	00:45:08
3	Si 251.611†	1224855.7	1195439.3	38073 ug/L	38073 ppb	00:44:42
3	Sn 189.927†	-124.0	-128.8	-18.276 ug/L	-18.276 ppb	00:45:08
3	Ti 334.940†	4500961.0	4396262.2	7083.7 ug/L	7083.7 ppb	00:44:42
3	Tl 190.801†	-286.6	-247.0	-18.486 ug/L	-18.486 ppb	00:45:08
3	U 409.014†	-8054.9	-5853.5	-186.09 ug/L	-186.09 ppb	00:44:42
3	V 292.402†	38271.2	38679.0	238.70 ug/L	238.70 ppb	00:44:48
3	Zn 213.857†	24009.3	22823.3	204.16 ug/L	204.16 ppb	00:44:48
3	SiO2†	1215002.6	1185797.1	80909 ug/L	80909 ppb	00:45:26

Mean Data: 243457003|936808|1

Analyte	Mean Corrected	Calib.	Std.Dev.	Sample	Std.Dev.	RSD
	Intensity	Conc. Units		Conc. Units		
Sc 361.383	889001.8	104.29 %	1.630			1.56%
Sc Radial	5264.2	105 %	0.2			0.15%
Y 371.029	828004.7	114.58 %	1.634			1.43%
Y RADIAL	6244.3	115.0 %	0.46			0.40%
Ag 328.068†	-7809.9	1.9603 ug/L	0.42993	1.9603 ppb	0.42993	21.93%
Al 396.153Radial†	133266.8	102810 ug/L	1136.4	102810 ppb	1136.4	1.11%
As 188.979†	-115.2	5.8747 ug/L	1.29059	5.8747 ppb	1.29059	21.97%
B 249.677†	1576.8	23.395 ug/L	2.1523	23.395 ppb	2.1523	9.20%
Ba 233.527†	142688.0	1118.7 ug/L	13.73	1118.7 ppb	13.73	1.23%
Be 313.107†	-18882.5	8.7356 ug/L	0.14667	8.7356 ppb	0.14667	1.68%
Ca 317.933Radial†	11214.6	17944 ug/L	186.1	17944 ppb	186.1	1.04%
Cd 226.502†	1148.8	0.9356 ug/L	0.04193	0.9356 ppb	0.04193	4.48%
Co 228.616†	2836.6	42.175 ug/L	0.8509	42.175 ppb	0.8509	2.02%
Cr 267.716†	8654.1	99.463 ug/L	1.3548	99.463 ppb	1.3548	1.36%
Cu 324.752†	15147.9	51.445 ug/L	0.6819	51.445 ppb	0.6819	1.33%
Fe 238.204 Radial†	13223.5	114440 ug/L	1227.2	114440 ppb	1227.2	1.07%
K 766.490 Radial†	82040.3	15014 ug/L	164.5	15014 ppb	164.5	1.10%



Mg 279.077 IEC†	471.6	15638 ug/L	60.0	15638 ppb	60.0	0.38%
Mn 257.610†	1851687.8	2064.9 ug/L	20.27	2064.9 ppb	20.27	0.98%
Mo 202.031†	-74.5	2.7760 ug/L	0.31721	2.7760 ppb	0.31721	11.43%
Na 589.592 Radial†	3123.0	935.05 ug/L	20.230	935.05 ppb	20.230	2.16%
Ni 231.604†	2611.9	65.001 ug/L	1.0864	65.001 ppb	1.0864	1.67%
P 214.914†	864.0	451.68 ug/L	10.777	451.68 ppb	10.777	2.39%
Pb 220.353†	855.6	115.97 ug/L	2.055	115.97 ppb	2.055	1.77%
S 181.975 Axial†	329.3	446.77 ug/L	10.596	446.77 ppb	10.596	2.37%
Sb 206.836†	57.5	-6.0563 ug/L	3.42922	-6.0563 ppb	3.42922	56.62%
Se 196.026†	-491.5	53.675 ug/L	6.2208	53.675 ppb	6.2208	11.59%
Si 251.611†	1185686.9	37762 ug/L	336.0	37762 ppb	336.0	0.89%
Sn 189.927†	-126.4	-17.901 ug/L	0.5273	-17.901 ppb	0.5273	2.95%
Sr 421.552†	30953.1	199.79 ug/L	2.581	199.79 ppb	2.581	1.29%
Ti 334.940†	4355350.9	7017.8 ug/L	69.49	7017.8 ppb	69.49	0.99%
Tl 190.801†	-231.8	-14.353 ug/L	4.2399	-14.353 ppb	4.2399	29.54%
U 409.014†	-5619.3	-179.03 ug/L	6.159	-179.03 ppb	6.159	3.44%
V 292.402†	38202.4	235.73 ug/L	2.793	235.73 ppb	2.793	1.19%
Zn 213.857†	22512.8	201.35 ug/L	2.501	201.35 ppb	2.501	1.24%
SiO2†	1179256.3	80463 ug/L	435.5	80463 ppb	435.5	0.54%



Sequence No.: 83  
 Sample ID: 243457004|936808|1  
 Analyst: HSC  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 91  
 Date Collected: 1/12/2010 00:47:37  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

Replicate Data: 243457004|936808|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5304.0	5304.0	105 %		00:49:50
1	Y RADIAL	6131.6	6131.6	112.9 %		00:49:50
1	Al 396.153Radial†	93269.8	88544.9	68311 ug/L	68311 ppb	00:49:30
1	Ca 317.933Radial†	8402.6	7957.1	12732 ug/L	12732 ppb	00:49:50
1	Fe 238.204 Radial†	14676.6	13924.2	120500 ug/L	120500 ppb	00:49:30
1	K 766.490 Radial†	79266.5	72660.3	13297 ug/L	13297 ppb	00:49:30
1	Mg 279.077 IEC†	490.1	463.3	15355 ug/L	15355 ppb	00:49:50
1	Na 589.592 Radial†	6295.1	7256.6	2172.7 ug/L	2172.7 ppb	00:49:30
1	Sr 421.552†	22925.1	21783.1	140.60 ug/L	140.60 ppb	00:49:30
1	Sc 361.383	893214.2	893214.2	104.79 %		00:50:48
1	Y 371.029	811179.6	811179.6	112.25 %		00:50:48
1	Ag 328.068†	-7690.9	-7697.5	4.1118 ug/L	4.1118 ppb	00:50:53
1	As 188.979†	-87.3	-59.7	16.068 ug/L	16.068 ppb	00:51:13
1	B 249.677†	738.8	1336.9	17.472 ug/L	17.472 ppb	00:50:53
1	Ba 233.527†	82451.4	78695.2	619.06 ug/L	619.06 ppb	00:50:53
1	Be 313.107†	-15459.4	-10167.6	4.8506 ug/L	4.8506 ppb	00:50:53
1	Cd 226.502†	949.9	1110.6	-0.1069 ug/L	-0.1069 ppb	00:51:13
1	Co 228.616†	2175.7	2150.9	34.444 ug/L	34.444 ppb	00:51:13
1	Cr 267.716†	14509.6	13763.3	156.50 ug/L	156.50 ppb	00:50:53
1	Cu 324.752†	17917.5	10686.6	38.452 ug/L	38.452 ppb	00:50:53
1	Mn 257.610†	1820981.1	1737325.0	1938.8 ug/L	1938.8 ppb	00:50:48
1	Mo 202.031†	-19.7	-42.6	5.3861 ug/L	5.3861 ppb	00:51:13
1	Ni 231.604†	3945.2	3697.0	92.029 ug/L	92.029 ppb	00:51:13
1	P 214.914†	1484.7	1187.0	638.69 ug/L	638.69 ppb	00:51:13
1	Pb 220.353†	321.6	370.3	48.547 ug/L	48.547 ppb	00:51:13
1	S 181.975 Axial†	209.0	156.4	208.57 ug/L	208.57 ppb	00:51:13
1	Sb 206.836†	71.2	40.0	-0.6978 ug/L	-0.6978 ppb	00:51:13
1	Se 196.026†	-563.8	-506.0	61.886 ug/L	61.886 ppb	00:51:13
1	Si 251.611†	1023143.3	975839.4	31079 ug/L	31079 ppb	00:50:48
1	Sn 189.927†	-67.3	-71.9	-8.8839 ug/L	-8.8839 ppb	00:51:13
1	Ti 334.940†	2498108.6	2385329.9	3843.3 ug/L	3843.3 ppb	00:50:48
1	Tl 190.801†	-186.4	-145.0	-9.6263 ug/L	-9.6263 ppb	00:51:13
1	U 409.014†	-9701.2	-7246.3	-227.84 ug/L	-227.84 ppb	00:50:48
1	V 292.402†	20644.3	21010.7	120.73 ug/L	120.73 ppb	00:50:53
1	Zn 213.857†	36323.8	34043.7	309.67 ug/L	309.67 ppb	00:50:53
1	SiO2†	1023361.3	976026.3	66596 ug/L	66596 ppb	00:52:21
2	Sc Radial	5350.1	5350.1	106 %		00:50:15
2	Y RADIAL	6188.1	6188.1	114.0 %		00:50:15
2	Al 396.153Radial†	92625.5	87176.7	67256 ug/L	67256 ppb	00:49:55
2	Ca 317.933Radial†	8468.1	7950.1	12721 ug/L	12721 ppb	00:50:15
2	Fe 238.204 Radial†	14575.5	13709.1	118640 ug/L	118640 ppb	00:49:55
2	K 766.490 Radial†	78761.4	71537.5	13091 ug/L	13091 ppb	00:49:55
2	Mg 279.077 IEC†	492.7	461.8	15307 ug/L	15307 ppb	00:50:15
2	Na 589.592 Radial†	6259.5	7171.7	2147.3 ug/L	2147.3 ppb	00:49:55
2	Sr 421.552†	22737.8	21419.6	138.25 ug/L	138.25 ppb	00:49:55
2	Sc 361.383	892318.3	892318.3	104.68 %		00:51:19
2	Y 371.029	810786.2	810786.2	112.19 %		00:51:19
2	Ag 328.068†	-7837.5	-7844.8	2.8393 ug/L	2.8393 ppb	00:51:24
2	As 188.979†	-89.0	-61.4	14.954 ug/L	14.954 ppb	00:51:44
2	B 249.677†	884.6	1476.8	20.782 ug/L	20.782 ppb	00:51:24
2	Ba 233.527†	83450.6	79728.6	627.06 ug/L	627.06 ppb	00:51:24
2	Be 313.107†	-15478.2	-10200.4	4.8310 ug/L	4.8310 ppb	00:51:24
2	Cd 226.502†	952.2	1113.7	0.1186 ug/L	0.1186 ppb	00:51:44
2	Co 228.616†	2142.2	2121.0	33.871 ug/L	33.871 ppb	00:51:44
2	Cr 267.716†	14738.7	13996.1	159.07 ug/L	159.07 ppb	00:51:24
2	Cu 324.752†	18085.5	10864.2	38.886 ug/L	38.886 ppb	00:51:24
2	Mn 257.610†	1820372.7	1738488.5	1939.9 ug/L	1939.9 ppb	00:51:19
2	Mo 202.031†	-7.7	-31.1	6.0670 ug/L	6.0670 ppb	00:51:44
2	Ni 231.604†	3888.8	3646.8	90.780 ug/L	90.780 ppb	00:51:44



2	P 214.914†	1481.6	1185.5	638.88 ug/L	638.88 ppb	00:51:44
2	Pb 220.353†	356.5	403.9	52.620 ug/L	52.620 ppb	00:51:44
2	S 181.975 Axial†	184.4	133.2	175.88 ug/L	175.88 ppb	00:51:44
2	Sb 206.836†	75.3	44.0	0.8006 ug/L	0.8006 ppb	00:51:44
2	Se 196.026†	-552.2	-495.5	62.663 ug/L	62.663 ppb	00:51:44
2	Si 251.611†	1023575.2	977232.3	31123 ug/L	31123 ppb	00:51:19
2	Sn 189.927†	-49.1	-54.6	-5.8579 ug/L	-5.8579 ppb	00:51:44
2	Ti 334.940†	2493571.5	2383389.2	3840.1 ug/L	3840.1 ppb	00:51:19
2	Tl 190.801†	-197.9	-156.2	-13.084 ug/L	-13.084 ppb	00:51:44
2	U 409.014†	-9803.6	-7353.4	-230.80 ug/L	-230.80 ppb	00:51:19
2	V 292.402†	20873.7	21249.5	122.65 ug/L	122.65 ppb	00:51:24
2	Zn 213.857†	36880.9	34610.7	315.22 ug/L	315.22 ppb	00:51:24
2	SiO2†	1025354.2	978910.5	66793 ug/L	66793 ppb	00:52:27
3	Sc Radial	5347.0	5347.0	106 %		00:50:40
3	Y RADIAL	6180.6	6180.6	113.8 %		00:50:40
3	Al 396.153Radial†	93382.9	87939.9	67845 ug/L	67845 ppb	00:50:20
3	Ca 317.933Radial†	8449.6	7937.2	12700 ug/L	12700 ppb	00:50:40
3	Fe 238.204 Radial†	14748.4	13879.7	120120 ug/L	120120 ppb	00:50:20
3	K 766.490 Radial†	79370.9	72153.9	13204 ug/L	13204 ppb	00:50:20
3	Mg 279.077 IEC†	487.8	457.5	15160 ug/L	15160 ppb	00:50:40
3	Na 589.592 Radial†	6349.9	7260.1	2173.8 ug/L	2173.8 ppb	00:50:20
3	Sr 421.552†	22907.1	21591.3	139.36 ug/L	139.36 ppb	00:50:20
3	Sc 361.383	892496.7	892496.7	104.70 %		00:51:50
3	Y 371.029	810439.0	810439.0	112.15 %		00:51:50
3	Ag 328.068†	-7821.6	-7828.2	3.3954 ug/L	3.3954 ppb	00:51:55
3	As 188.979†	-81.4	-54.1	18.411 ug/L	18.411 ppb	00:52:15
3	B 249.677†	975.5	1563.6	22.564 ug/L	22.564 ppb	00:51:55
3	Ba 233.527†	83195.8	79469.4	625.09 ug/L	625.09 ppb	00:51:55
3	Be 313.107†	-15275.6	-10003.9	4.9134 ug/L	4.9134 ppb	00:51:55
3	Cd 226.502†	943.5	1105.2	-0.1283 ug/L	-0.1283 ppb	00:52:15
3	Co 228.616†	2171.7	2148.8	34.409 ug/L	34.409 ppb	00:52:15
3	Cr 267.716†	14668.4	13926.1	158.32 ug/L	158.32 ppb	00:51:55
3	Cu 324.752†	18119.3	10893.0	39.052 ug/L	39.052 ppb	00:51:55
3	Mn 257.610†	1821162.3	1738895.2	1940.5 ug/L	1940.5 ppb	00:51:50
3	Mo 202.031†	-14.7	-37.8	5.6979 ug/L	5.6979 ppb	00:52:15
3	Ni 231.604†	3903.3	3660.0	91.108 ug/L	91.108 ppb	00:52:15
3	P 214.914†	1481.1	1184.7	637.31 ug/L	637.31 ppb	00:52:15
3	Pb 220.353†	350.5	398.1	51.893 ug/L	51.893 ppb	00:52:15
3	S 181.975 Axial†	190.2	138.6	183.48 ug/L	183.48 ppb	00:52:15
3	Sb 206.836†	72.2	41.0	-0.3365 ug/L	-0.3365 ppb	00:52:15
3	Se 196.026†	-556.8	-499.8	64.672 ug/L	64.672 ppb	00:52:15
3	Si 251.611†	1023761.2	977214.6	31123 ug/L	31123 ppb	00:51:50
3	Sn 189.927†	-70.1	-74.6	-9.3766 ug/L	-9.3766 ppb	00:52:15
3	Ti 334.940†	2496219.0	2385441.9	3843.5 ug/L	3843.5 ppb	00:51:50
3	Tl 190.801†	-197.4	-155.7	-12.889 ug/L	-12.889 ppb	00:52:15
3	U 409.014†	-9875.1	-7419.8	-232.92 ug/L	-232.92 ppb	00:51:50
3	V 292.402†	20846.1	21219.2	122.20 ug/L	122.20 ppb	00:51:55
3	Zn 213.857†	36788.6	34515.5	314.18 ug/L	314.18 ppb	00:51:55
3	SiO2†	1017767.2	971468.7	66285 ug/L	66285 ppb	00:52:33

Mean Data: 243457004|936808|1

Analyte	Mean Corrected	Conc.	Calib.	Std.Dev.	Conc.	Sample	Std.Dev.	RSD
Sc 361.383	892676.4	104.73 %		0.056				0.05%
Sc Radial	5333.7	106 %		0.5				0.48%
Y 371.029	810801.6	112.20 %		0.051				0.05%
Y RADIAL	6166.8	113.6 %		0.57				0.50%
Ag 328.068†	-7790.2	3.4489 ug/L		0.63793	3.4489 ppb	0.63793	18.50%	
Al 396.153Radial†	87887.2	67804 ug/L		529.0	67804 ppb	529.0	0.78%	
As 188.979†	-58.4	16.477 ug/L		1.7645	16.477 ppb	1.7645	10.71%	
B 249.677†	1459.1	20.273 ug/L		2.5838	20.273 ppb	2.5838	12.75%	
Ba 233.527†	79297.7	623.73 ug/L		4.170	623.73 ppb	4.170	0.67%	
Be 313.107†	-10124.0	4.8650 ug/L		0.04302	4.8650 ppb	0.04302	0.88%	
Ca 317.933Radial†	7948.2	12718 ug/L		16.1	12718 ppb	16.1	0.13%	
Cd 226.502†	1109.8	-0.0389 ug/L		0.13678	-0.0389 ppb	0.13678	351.68%	
Co 228.616†	2140.2	34.241 ug/L		0.3214	34.241 ppb	0.3214	0.94%	
Cr 267.716†	13895.2	157.97 ug/L		1.321	157.97 ppb	1.321	0.84%	
Cu 324.752†	10814.6	38.797 ug/L		0.3098	38.797 ppb	0.3098	0.80%	
Fe 238.204 Radial†	13837.7	119750 ug/L		982.5	119750 ppb	982.5	0.82%	
K 766.490 Radial†	72117.2	13197 ug/L		103.1	13197 ppb	103.1	0.78%	



Mg 279.077 IEC†	460.9	15274 ug/L	101.7	15274 ppb	101.7	0.67%
Mn 257.610†	1738236.2	1939.8 ug/L	0.86	1939.8 ppb	0.86	0.04%
Mo 202.031†	-37.1	5.7170 ug/L	0.34087	5.7170 ppb	0.34087	5.96%
Na 589.592 Radial†	7229.5	2164.6 ug/L	15.00	2164.6 ppb	15.00	0.69%
Ni 231.604†	3667.9	91.306 ug/L	0.6474	91.306 ppb	0.6474	0.71%
P 214.914†	1185.7	638.29 ug/L	0.857	638.29 ppb	0.857	0.13%
Pb 220.353†	390.8	51.020 ug/L	2.1723	51.020 ppb	2.1723	4.26%
S 181.975 Axial†	142.7	189.31 ug/L	17.109	189.31 ppb	17.109	9.04%
Sb 206.836†	41.7	-0.0779 ug/L	0.78195	-0.0779 ppb	0.78195	>999.9%
Se 196.026†	-500.4	63.073 ug/L	1.4377	63.073 ppb	1.4377	2.28%
Si 251.611†	976762.1	31108 ug/L	25.4	31108 ppb	25.4	0.08%
Sn 189.927†	-67.0	-8.0394 ug/L	1.90530	-8.0394 ppb	1.90530	23.70%
Sr 421.552†	21598.0	139.40 ug/L	1.174	139.40 ppb	1.174	0.84%
Ti 334.940†	2384720.3	3842.3 ug/L	1.86	3842.3 ppb	1.86	0.05%
Tl 190.801†	-152.3	-11.867 ug/L	1.9425	-11.867 ppb	1.9425	16.37%
U 409.014†	-7339.8	-230.52 ug/L	2.551	-230.52 ppb	2.551	1.11%
V 292.402†	21159.8	121.86 ug/L	1.006	121.86 ppb	1.006	0.83%
Zn 213.857†	34390.0	313.02 ug/L	2.949	313.02 ppb	2.949	0.94%
SiO2†	975468.5	66558 ug/L	256.0	66558 ppb	256.0	0.38%



Sequence No.: 85

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/12/2010 01:01:49

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5098.8	5098.8	101 %		01:03:42
1	Y RADIAL	5390.1	5390.1	99.28 %		01:03:42
1	Al 396.153Radial†	6567.4	6486.3	4978.6 ug/L	4978.6 ppb	01:03:42
1	Ca 317.933Radial†	3258.2	3197.8	5116.9 ug/L	5116.9 ppb	01:04:02
1	Fe 238.204 Radial†	624.2	607.6	5273.6 ug/L	5273.6 ppb	01:04:02
1	K 766.490 Radial†	30383.1	27414.4	5008.5 ug/L	5008.5 ppb	01:03:42
1	Mg 279.077 IEC†	161.6	157.7	5270.0 ug/L	5270.0 ppb	01:04:02
1	Na 589.592 Radial†	33325.7	34191.0	10237 ug/L	10237 ppb	01:03:42
1	Sr 421.552†	78757.5	77795.9	502.44 ug/L	502.44 ppb	01:03:42
1	Sc 361.383	861945.3	861945.3	101.12 %		01:04:59
1	Y 371.029	717319.5	717319.5	99.260 %		01:04:59
1	Ag 328.068†	115908.6	114266.8	529.42 ug/L	529.42 ppb	01:05:05
1	As 188.979†	1186.6	1197.0	520.93 ug/L	520.93 ppb	01:05:25
1	B 249.677†	22724.7	23104.8	513.05 ug/L	513.05 ppb	01:05:05
1	Ba 233.527†	67545.0	66808.2	522.88 ug/L	522.88 ppb	01:05:05
1	Be 313.107†	1377764.2	1367088.9	522.09 ug/L	522.09 ppb	01:04:59
1	Cd 226.502†	47488.6	47166.7	523.28 ug/L	523.28 ppb	01:05:05
1	Co 228.616†	25889.6	25677.5	525.68 ug/L	525.68 ppb	01:05:05
1	Cr 267.716†	47279.1	46672.2	522.43 ug/L	522.43 ppb	01:05:05
1	Cu 324.752†	181455.9	173033.8	517.40 ug/L	517.40 ppb	01:05:05
1	Mn 257.610†	474592.8	468891.1	520.19 ug/L	520.19 ppb	01:04:59
1	Mo 202.031†	7552.2	7444.9	526.59 ug/L	526.59 ppb	01:05:25
1	Ni 231.604†	21354.7	21050.2	523.84 ug/L	523.84 ppb	01:05:05
1	P 214.914†	4516.6	4236.7	2479.6 ug/L	2479.6 ppb	01:05:25
1	Pb 220.353†	4250.3	4266.6	524.14 ug/L	524.14 ppb	01:05:25
1	S 181.975 Axial†	807.0	755.1	1067.6 ug/L	1067.6 ppb	01:05:25
1	Sb 206.836†	1543.3	1498.3	532.07 ug/L	532.07 ppb	01:05:25
1	Se 196.026†	777.2	800.6	534.59 ug/L	534.59 ppb	01:05:25
1	Si 251.611†	85139.9	83646.4	2657.5 ug/L	2657.5 ppb	01:05:05
1	Sn 189.927†	3013.5	2972.4	527.42 ug/L	527.42 ppb	01:05:25
1	Ti 334.940†	327541.4	325287.9	523.80 ug/L	523.80 ppb	01:04:59
1	Tl 190.801†	1676.6	1690.9	521.97 ug/L	521.97 ppb	01:05:25
1	U 409.014†	16470.1	18299.3	538.06 ug/L	538.06 ppb	01:05:05
1	V 292.402†	75789.9	76260.2	527.97 ug/L	527.97 ppb	01:05:05
1	Zn 213.857†	56569.0	55322.2	518.70 ug/L	518.70 ppb	01:05:05
1	SiO2†	84309.7	82804.2	5635.5 ug/L	5635.5 ppb	01:06:32
2	Sc Radial	5118.7	5118.7	102 %		01:04:07
2	Y RADIAL	5463.1	5463.1	100.6 %		01:04:07
2	Al 396.153Radial†	6668.7	6560.7	5036.0 ug/L	5036.0 ppb	01:04:07
2	Ca 317.933Radial†	3278.9	3205.7	5129.4 ug/L	5129.4 ppb	01:04:27
2	Fe 238.204 Radial†	631.5	612.3	5314.8 ug/L	5314.8 ppb	01:04:27
2	K 766.490 Radial†	30706.8	27616.3	5045.5 ug/L	5045.5 ppb	01:04:07
2	Mg 279.077 IEC†	167.5	162.9	5443.0 ug/L	5443.0 ppb	01:04:27
2	Na 589.592 Radial†	33583.3	34316.5	10275 ug/L	10275 ppb	01:04:07
2	Sr 421.552†	79896.0	78613.5	507.72 ug/L	507.72 ppb	01:04:07
2	Sc 361.383	852215.9	852215.9	99.979 %		01:05:30
2	Y 371.029	708783.1	708783.1	98.079 %		01:05:30
2	Ag 328.068†	114006.4	113672.7	526.69 ug/L	526.69 ppb	01:05:36
2	As 188.979†	1180.2	1204.1	524.01 ug/L	524.01 ppb	01:05:56
2	B 249.677†	22310.5	22947.2	509.54 ug/L	509.54 ppb	01:05:36
2	Ba 233.527†	66411.8	66437.4	519.99 ug/L	519.99 ppb	01:05:36
2	Be 313.107†	1365750.7	1370628.0	523.44 ug/L	523.44 ppb	01:05:30
2	Cd 226.502†	46670.4	46884.5	520.14 ug/L	520.14 ppb	01:05:36
2	Co 228.616†	25433.1	25513.2	522.32 ug/L	522.32 ppb	01:05:36
2	Cr 267.716†	46589.2	46515.9	520.68 ug/L	520.68 ppb	01:05:36
2	Cu 324.752†	178160.9	171786.8	513.67 ug/L	513.67 ppb	01:05:36
2	Mn 257.610†	470958.8	470614.6	522.10 ug/L	522.10 ppb	01:05:30
2	Mo 202.031†	7469.1	7447.0	526.74 ug/L	526.74 ppb	01:05:56
2	Ni 231.604†	21007.7	20944.3	521.20 ug/L	521.20 ppb	01:05:36



2	P 214.914†	4498.5	4269.6	2500.5 ug/L	2500.5 ppb	01:05:56
2	Pb 220.353†	4205.7	4270.0	524.56 ug/L	524.56 ppb	01:05:56
2	S 181.975 Axial†	797.3	754.5	1066.7 ug/L	1066.7 ppb	01:05:56
2	Sb 206.836†	1528.8	1501.2	533.05 ug/L	533.05 ppb	01:05:56
2	Se 196.026†	780.8	813.0	542.71 ug/L	542.71 ppb	01:05:56
2	Si 251.611†	83531.4	82998.8	2636.9 ug/L	2636.9 ppb	01:05:36
2	Sn 189.927†	2975.7	2968.7	526.77 ug/L	526.77 ppb	01:05:56
2	Ti 334.940†	325116.6	326560.6	525.84 ug/L	525.84 ppb	01:05:30
2	Tl 190.801†	1675.0	1708.2	527.31 ug/L	527.31 ppb	01:05:56
2	U 409.014†	16151.4	18166.5	534.14 ug/L	534.14 ppb	01:05:36
2	V 292.402†	74626.6	75952.2	525.86 ug/L	525.86 ppb	01:05:36
2	Zn 213.857†	55618.5	55010.1	515.76 ug/L	515.76 ppb	01:05:36
2	SiO2†	83052.4	82498.4	5614.7 ug/L	5614.7 ppb	01:06:37
3	Sc Radial	5179.2	5179.2	103 %		01:04:32
3	Y RADIAL	5471.6	5471.6	100.8 %		01:04:32
3	Al 396.153Radial†	6718.8	6532.9	5015.0 ug/L	5015.0 ppb	01:04:32
3	Ca 317.933Radial†	3234.8	3125.2	5000.6 ug/L	5000.6 ppb	01:04:52
3	Fe 238.204 Radial†	613.9	587.9	5103.4 ug/L	5103.4 ppb	01:04:52
3	K 766.490 Radial†	30891.9	27443.7	5014.1 ug/L	5014.1 ppb	01:04:32
3	Mg 279.077 IEC†	160.1	153.7	5136.4 ug/L	5136.4 ppb	01:04:52
3	Na 589.592 Radial†	33482.3	33832.7	10130 ug/L	10130 ppb	01:04:32
3	Sr 421.552†	80010.0	77807.2	502.51 ug/L	502.51 ppb	01:04:32
3	Sc 361.383	870721.9	870721.9	102.15 %		01:06:02
3	Y 371.029	724682.4	724682.4	100.28 %		01:06:02
3	Ag 328.068†	114641.7	111871.1	518.30 ug/L	518.30 ppb	01:06:07
3	As 188.979†	1182.8	1181.5	514.19 ug/L	514.19 ppb	01:06:27
3	B 249.677†	22394.9	22555.4	500.86 ug/L	500.86 ppb	01:06:07
3	Ba 233.527†	66760.5	65367.0	511.61 ug/L	511.61 ppb	01:06:07
3	Be 313.107†	1389334.0	1364681.6	521.17 ug/L	521.17 ppb	01:06:02
3	Cd 226.502†	46969.1	46184.8	512.39 ug/L	512.39 ppb	01:06:07
3	Co 228.616†	25538.5	25075.7	513.35 ug/L	513.35 ppb	01:06:07
3	Cr 267.716†	47017.5	45944.8	514.29 ug/L	514.29 ppb	01:06:07
3	Cu 324.752†	179184.2	169001.2	505.34 ug/L	505.34 ppb	01:06:07
3	Mn 257.610†	477661.9	467164.9	518.26 ug/L	518.26 ppb	01:06:02
3	Mo 202.031†	7496.1	7314.6	517.37 ug/L	517.37 ppb	01:06:27
3	Ni 231.604†	21147.6	20634.6	513.50 ug/L	513.50 ppb	01:06:07
3	P 214.914†	4488.7	4164.3	2438.0 ug/L	2438.0 ppb	01:06:27
3	Pb 220.353†	4209.3	4184.1	514.04 ug/L	514.04 ppb	01:06:27
3	S 181.975 Axial†	796.9	737.1	1042.2 ug/L	1042.2 ppb	01:06:27
3	Sb 206.836†	1540.6	1480.2	525.53 ug/L	525.53 ppb	01:06:27
3	Se 196.026†	789.5	804.9	536.77 ug/L	536.77 ppb	01:06:27
3	Si 251.611†	84003.8	81685.5	2595.2 ug/L	2595.2 ppb	01:06:07
3	Sn 189.927†	2995.5	2924.8	518.96 ug/L	518.96 ppb	01:06:27
3	Ti 334.940†	330906.5	325317.3	523.85 ug/L	523.85 ppb	01:06:02
3	Tl 190.801†	1669.9	1667.6	514.86 ug/L	514.86 ppb	01:06:27
3	U 409.014†	16159.7	17831.2	524.28 ug/L	524.28 ppb	01:06:07
3	V 292.402†	75057.2	74787.3	517.78 ug/L	517.78 ppb	01:06:07
3	Zn 213.857†	55985.4	54186.9	508.06 ug/L	508.06 ppb	01:06:07
3	SiO2†	82319.9	80015.9	5445.5 ug/L	5445.5 ppb	01:06:43

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	861627.7	101.08 %	1.086			1.07%
Sc Radial	5132.2	102 %	0.8			0.82%
Y 371.029	716928.3	99.206 %	1.1010			1.11%
Y RADIAL	5441.6	100.2 %	0.82			0.82%
Ag 328.068†	113270.2	524.80 ug/L	5.792	524.80 ppb	5.792	1.10%
QC value within limits for Ag 328.068 Recovery = 104.96%						
Al 396.153Radial†	6526.6	5009.8 ug/L	29.05	5009.8 ppb	29.05	0.58%
QC value within limits for Al 396.153Radial Recovery = 100.20%						
As 188.979†	1194.2	519.71 ug/L	5.025	519.71 ppb	5.025	0.97%
QC value within limits for As 188.979 Recovery = 103.94%						
B 249.677†	22869.1	507.82 ug/L	6.278	507.82 ppb	6.278	1.24%
QC value within limits for B 249.677 Recovery = 101.56%						
Ba 233.527†	66204.2	518.16 ug/L	5.858	518.16 ppb	5.858	1.13%
QC value within limits for Ba 233.527 Recovery = 103.63%						
Be 313.107†	1367466.2	522.24 ug/L	1.142	522.24 ppb	1.142	0.22%
QC value within limits for Be 313.107 Recovery = 104.45%						
Ca 317.933Radial†	3176.2	5082.3 ug/L	71.04	5082.3 ppb	71.04	1.40%



QC value within limits for Ca 317.933 Radial Recovery = 101.65%									
Cd 226.502†	46745.3	518.60 ug/L	5.604	518.60 ppb	5.604	1.08%			
QC value within limits for Cd 226.502 Recovery = 103.72%									
Co 228.616†	25422.2	520.45 ug/L	6.378	520.45 ppb	6.378	1.23%			
QC value within limits for Co 228.616 Recovery = 104.09%									
Cr 267.716†	46377.6	519.13 ug/L	4.288	519.13 ppb	4.288	0.83%			
QC value within limits for Cr 267.716 Recovery = 103.83%									
Cu 324.752†	171273.9	512.14 ug/L	6.175	512.14 ppb	6.175	1.21%			
QC value within limits for Cu 324.752 Recovery = 102.43%									
Fe 238.204 Radial†	602.6	5230.6 ug/L	112.07	5230.6 ppb	112.07	2.14%			
QC value within limits for Fe 238.204 Radial Recovery = 104.61%									
K 766.490 Radial†	27491.5	5022.7 ug/L	19.93	5022.7 ppb	19.93	0.40%			
QC value within limits for K 766.490 Radial Recovery = 100.45%									
Mg 279.077 IEC†	158.1	5283.1 ug/L	153.69	5283.1 ppb	153.69	2.91%			
QC value within limits for Mg 279.077 IEC Recovery = 105.66%									
Mn 257.610†	468890.2	520.18 ug/L	1.918	520.18 ppb	1.918	0.37%			
QC value within limits for Mn 257.610 Recovery = 104.04%									
Mo 202.031†	7402.1	523.56 ug/L	5.367	523.56 ppb	5.367	1.03%			
QC value within limits for Mo 202.031 Recovery = 104.71%									
Na 589.592 Radial†	34113.4	10214 ug/L	75.2	10214 ppb	75.2	0.74%			
QC value within limits for Na 589.592 Radial Recovery = 102.14%									
Ni 231.604†	20876.4	519.51 ug/L	5.374	519.51 ppb	5.374	1.03%			
QC value within limits for Ni 231.604 Recovery = 103.90%									
P 214.914†	4223.5	2472.7 ug/L	31.78	2472.7 ppb	31.78	1.29%			
QC value within limits for P 214.914 Recovery = 98.91%									
Pb 220.353†	4240.2	520.91 ug/L	5.955	520.91 ppb	5.955	1.14%			
QC value within limits for Pb 220.353 Recovery = 104.18%									
S 181.975 Axial†	748.9	1058.9 ug/L	14.43	1058.9 ppb	14.43	1.36%			
QC value within limits for S 181.975 Axial Recovery = 105.89%									
Sb 206.836†	1493.2	530.22 ug/L	4.088	530.22 ppb	4.088	0.77%			
QC value within limits for Sb 206.836 Recovery = 106.04%									
Se 196.026†	806.1	538.03 ug/L	4.201	538.03 ppb	4.201	0.78%			
QC value within limits for Se 196.026 Recovery = 107.61%									
Si 251.611†	82776.9	2629.9 ug/L	31.76	2629.9 ppb	31.76	1.21%			
QC value within limits for Si 251.611 Recovery = 105.19%									
Sn 189.927†	2955.3	524.38 ug/L	4.707	524.38 ppb	4.707	0.90%			
QC value within limits for Sn 189.927 Recovery = 104.88%									
Sr 421.552†	78072.2	504.22 ug/L	3.028	504.22 ppb	3.028	0.60%			
QC value within limits for Sr 421.552 Recovery = 100.84%									
Ti 334.940†	325721.9	524.50 ug/L	1.163	524.50 ppb	1.163	0.22%			
QC value within limits for Ti 334.940 Recovery = 104.90%									
Tl 190.801†	1688.9	521.38 ug/L	6.246	521.38 ppb	6.246	1.20%			
QC value within limits for Tl 190.801 Recovery = 104.28%									
U 409.014†	18099.0	532.16 ug/L	7.096	532.16 ppb	7.096	1.33%			
QC value within limits for U 409.014 Recovery = 106.43%									
V 292.402†	75666.6	523.87 ug/L	5.379	523.87 ppb	5.379	1.03%			
QC value within limits for V 292.402 Recovery = 104.77%									
Zn 213.857†	54839.8	514.17 ug/L	5.495	514.17 ppb	5.495	1.07%			
QC value within limits for Zn 213.857 Recovery = 102.83%									
SiO2†	81772.8	5565.2 ug/L	104.20	5565.2 ppb	104.20	1.87%			
QC value within limits for SiO2 Recovery = 104.07%									

All analyte(s) passed QC.



Sequence No.: 86

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/12/2010 01:08:52

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5207.8	5207.8	103 %		01:10:45
1	Y RADIAL	5584.2	5584.2	102.9 %		01:10:45
1	Al 396.153Radial†	-26.1	-24.6	-18.985 ug/L	-18.985 ppb	01:10:45
1	Ca 317.933Radial†	16.2	-4.1	-6.6397 ug/L	-6.6397 ppb	01:11:05
1	Fe 238.204 Radial†	10.6	1.4	11.932 ug/L	11.932 ppb	01:11:05
1	K 766.490 Radial†	2825.0	141.3	25.912 ug/L	25.912 ppb	01:10:45
1	Mg 279.077 IEC†	3.2	1.1	38.325 ug/L	38.325 ppb	01:11:05
1	Na 589.592 Radial†	-1322.2	2.0	0.6057 ug/L	0.6057 ppb	01:10:45
1	Sr 421.552†	-22.9	-2.6	-0.0170 ug/L	-0.0170 ppb	01:10:45
1	Sc 361.383	853415.9	853415.9	100.12 %		01:12:02
1	Y 371.029	723372.1	723372.1	100.10 %		01:12:02
1	Ag 328.068†	217.9	-140.3	-0.6493 ug/L	-0.6493 ppb	01:12:02
1	As 188.979†	-31.3	-7.6	-3.2919 ug/L	-3.2919 ppb	01:12:22
1	B 249.677†	-466.5	165.9	3.6963 ug/L	3.6963 ppb	01:12:22
1	Ba 233.527†	-12.2	-0.8	-0.0060 ug/L	-0.0060 ppb	01:12:22
1	Be 313.107†	-4588.6	2.2	0.0008 ug/L	0.0008 ppb	01:12:02
1	Cd 226.502†	-186.8	17.6	0.1951 ug/L	0.1951 ppb	01:12:22
1	Co 228.616†	-73.5	1.3	0.0267 ug/L	0.0267 ppb	01:12:22
1	Cr 267.716†	77.3	-6.1	-0.0708 ug/L	-0.0708 ppb	01:12:22
1	Cu 324.752†	6420.1	0.2	-0.0032 ug/L	-0.0032 ppb	01:12:02
1	Mn 257.610†	445.9	0.5	0.0004 ug/L	0.0004 ppb	01:12:22
1	Mo 202.031†	24.4	0.7	0.0476 ug/L	0.0476 ppb	01:12:22
1	Ni 231.604†	66.5	-1.6	-0.0386 ug/L	-0.0386 ppb	01:12:22
1	P 214.914†	220.3	-9.8	-6.0089 ug/L	-6.0089 ppb	01:12:22
1	Pb 220.353†	-75.1	-11.7	-1.4354 ug/L	-1.4354 ppb	01:12:22
1	S 181.975 Axial†	45.4	2.4	3.3828 ug/L	3.3828 ppb	01:12:22
1	Sb 206.836†	40.5	12.5	4.2770 ug/L	4.2770 ppb	01:12:22
1	Se 196.026†	-32.0	0.1	0.0981 ug/L	0.0981 ppb	01:12:22
1	Si 251.611†	518.4	-32.6	-1.0399 ug/L	-1.0399 ppb	01:12:22
1	Sn 189.927†	4.3	-3.4	-0.6009 ug/L	-0.6009 ppb	01:12:22
1	Ti 334.940†	-1389.1	-12.9	-0.0281 ug/L	-0.0281 ppb	01:12:02
1	Tl 190.801†	-31.6	1.3	0.3840 ug/L	0.3840 ppb	01:12:22
1	U 409.014†	-1745.3	268.4	7.9161 ug/L	7.9161 ppb	01:12:02
1	V 292.402†	-1328.6	-17.3	-0.1033 ug/L	-0.1033 ppb	01:12:02
1	Zn 213.857†	611.9	-9.1	-0.0868 ug/L	-0.0868 ppb	01:12:22
1	SiO2†	541.0	-31.3	-2.1376 ug/L	-2.1376 ppb	01:13:18
2	Sc Radial	5095.7	5095.7	101 %		01:11:10
2	Y RADIAL	5489.5	5489.5	101.1 %		01:11:10
2	Al 396.153Radial†	-15.3	-14.5	-11.169 ug/L	-11.169 ppb	01:11:10
2	Ca 317.933Radial†	14.3	-5.7	-9.0539 ug/L	-9.0539 ppb	01:11:30
2	Fe 238.204 Radial†	10.9	1.8	15.932 ug/L	15.932 ppb	01:11:30
2	K 766.490 Radial†	2686.9	64.9	11.898 ug/L	11.898 ppb	01:11:10
2	Mg 279.077 IEC†	2.7	0.7	24.711 ug/L	24.711 ppb	01:11:30
2	Na 589.592 Radial†	-1291.2	4.5	1.3594 ug/L	1.3594 ppb	01:11:10
2	Sr 421.552†	2.8	22.3	0.1440 ug/L	0.1440 ppb	01:11:10
2	Sc 361.383	846618.4	846618.4	99.322 %		01:12:27
2	Y 371.029	719089.1	719089.1	99.505 %		01:12:27
2	Ag 328.068†	281.0	-75.1	-0.3392 ug/L	-0.3392 ppb	01:12:27
2	As 188.979†	-17.5	6.0	2.5986 ug/L	2.5986 ppb	01:12:47
2	B 249.677†	-471.5	157.2	3.5022 ug/L	3.5022 ppb	01:12:47
2	Ba 233.527†	-10.4	1.0	0.0079 ug/L	0.0079 ppb	01:12:47
2	Be 313.107†	-4476.6	78.2	0.0296 ug/L	0.0296 ppb	01:12:27
2	Cd 226.502†	-192.7	10.1	0.1093 ug/L	0.1093 ppb	01:12:47
2	Co 228.616†	-76.8	-2.7	-0.0539 ug/L	-0.0539 ppb	01:12:47
2	Cr 267.716†	100.5	17.9	0.2012 ug/L	0.2012 ppb	01:12:47
2	Cu 324.752†	6325.3	-43.7	-0.1285 ug/L	-0.1285 ppb	01:12:27
2	Mn 257.610†	446.6	4.8	0.0061 ug/L	0.0061 ppb	01:12:47
2	Mo 202.031†	27.7	4.2	0.2946 ug/L	0.2946 ppb	01:12:47
2	Ni 231.604†	59.1	-8.5	-0.2113 ug/L	-0.2113 ppb	01:12:47



2	P 214.914†	217.8	-10.6	-6.4877 ug/L	-6.4877 ppb	01:12:47
2	Pb 220.353†	-64.0	-1.0	-0.1306 ug/L	-0.1306 ppb	01:12:47
2	S 181.975 Axial†	44.4	1.7	2.3992 ug/L	2.3992 ppb	01:12:47
2	Sb 206.836†	35.5	7.8	2.6593 ug/L	2.6593 ppb	01:12:47
2	Se 196.026†	-31.5	0.3	0.2524 ug/L	0.2524 ppb	01:12:47
2	Si 251.611†	506.9	-40.1	-1.2794 ug/L	-1.2794 ppb	01:12:47
2	Sn 189.927†	0.1	-7.5	-1.3327 ug/L	-1.3327 ppb	01:12:47
2	Ti 334.940†	-1424.8	-60.0	-0.0986 ug/L	-0.0986 ppb	01:12:27
2	Tl 190.801†	-45.4	-12.8	-3.9386 ug/L	-3.9386 ppb	01:12:47
2	U 409.014†	-2086.8	-89.5	-2.6416 ug/L	-2.6416 ppb	01:12:27
2	V 292.402†	-1329.3	-28.7	-0.1984 ug/L	-0.1984 ppb	01:12:27
2	Zn 213.857†	622.5	6.5	0.0616 ug/L	0.0616 ppb	01:12:47
2	SiO2†	535.8	-32.2	-2.2041 ug/L	-2.2041 ppb	01:13:23
3	Sc Radial	5106.8	5106.8	101 %		01:11:35
3	Y RADIAL	5506.5	5506.5	101.4 %		01:11:35
3	Al 396.153Radial†	-7.2	-6.5	-4.9928 ug/L	-4.9928 ppb	01:11:35
3	Ca 317.933Radial†	11.5	-8.4	-13.501 ug/L	-13.501 ppb	01:11:55
3	Fe 238.204 Radial†	10.4	1.4	11.898 ug/L	11.898 ppb	01:11:55
3	K 766.490 Radial†	2748.8	120.2	22.042 ug/L	22.042 ppb	01:11:35
3	Mg 279.077 IEC†	2.7	0.7	24.638 ug/L	24.638 ppb	01:11:55
3	Na 589.592 Radial†	-1311.6	-12.7	-3.8156 ug/L	-3.8156 ppb	01:11:35
3	Sr 421.552†	-5.7	13.9	0.0900 ug/L	0.0900 ppb	01:11:35
3	Sc 361.383	850728.9	850728.9	99.804 %		01:12:53
3	Y 371.029	721907.6	721907.6	99.895 %		01:12:53
3	Ag 328.068†	302.4	-55.0	-0.2501 ug/L	-0.2501 ppb	01:12:53
3	As 188.979†	-18.4	5.2	2.2358 ug/L	2.2358 ppb	01:13:13
3	B 249.677†	-500.4	130.4	2.9058 ug/L	2.9058 ppb	01:13:13
3	Ba 233.527†	-39.9	-28.6	-0.2229 ug/L	-0.2229 ppb	01:13:13
3	Be 313.107†	-4505.8	70.7	0.0267 ug/L	0.0267 ppb	01:12:53
3	Cd 226.502†	-184.6	19.2	0.2117 ug/L	0.2117 ppb	01:13:13
3	Co 228.616†	-66.0	8.6	0.1754 ug/L	0.1754 ppb	01:13:13
3	Cr 267.716†	87.5	4.4	0.0495 ug/L	0.0495 ppb	01:13:13
3	Cu 324.752†	6286.8	-113.1	-0.3377 ug/L	-0.3377 ppb	01:12:53
3	Mn 257.610†	456.5	12.5	0.0142 ug/L	0.0142 ppb	01:13:13
3	Mo 202.031†	24.4	0.8	0.0550 ug/L	0.0550 ppb	01:13:13
3	Ni 231.604†	68.3	0.5	0.0126 ug/L	0.0126 ppb	01:13:13
3	P 214.914†	227.6	-1.9	-1.0697 ug/L	-1.0697 ppb	01:13:13
3	Pb 220.353†	-58.0	5.3	0.6455 ug/L	0.6455 ppb	01:13:13
3	S 181.975 Axial†	51.5	8.6	12.106 ug/L	12.106 ppb	01:13:13
3	Sb 206.836†	26.9	-1.0	-0.3141 ug/L	-0.3141 ppb	01:13:13
3	Se 196.026†	-29.8	2.2	1.4408 ug/L	1.4408 ppb	01:13:13
3	Si 251.611†	510.6	-38.9	-1.2393 ug/L	-1.2393 ppb	01:13:13
3	Sn 189.927†	12.3	4.7	0.8252 ug/L	0.8252 ppb	01:13:13
3	Ti 334.940†	-1429.3	-57.6	-0.0966 ug/L	-0.0966 ppb	01:12:53
3	Tl 190.801†	-38.3	-5.5	-1.6875 ug/L	-1.6875 ppb	01:13:13
3	U 409.014†	-1995.2	12.5	0.3680 ug/L	0.3680 ppb	01:12:53
3	V 292.402†	-1332.2	-25.1	-0.1713 ug/L	-0.1713 ppb	01:12:53
3	Zn 213.857†	633.2	14.2	0.1332 ug/L	0.1332 ppb	01:13:13
3	SiO2†	512.7	-58.0	-3.9599 ug/L	-3.9599 ppb	01:13:28

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	850254.4	99.749 %		0.4016			0.40%
Sc Radial	5136.8	102 %		1.2			1.20%
Y 371.029	721456.3	99.832 %		0.3012			0.30%
Y RADIAL	5526.7	101.8 %		0.93			0.91%
Ag 328.068†	-90.1	-0.4129 ug/L		0.20956	-0.4129 ppb	0.20956	50.76%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-15.2	-11.715 ug/L		7.0119	-11.715 ppb	7.0119	59.85%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	1.2	0.5142 ug/L		3.30113	0.5142 ppb	3.30113	641.99%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	151.1	3.3681 ug/L		0.41195	3.3681 ppb	0.41195	12.23%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-9.5	-0.0737 ug/L		0.12945	-0.0737 ppb	0.12945	175.72%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	50.4	0.0190 ug/L		0.01585	0.0190 ppb	0.01585	83.27%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-6.1	-9.7316 ug/L		3.48049	-9.7316 ppb	3.48049	35.76%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated					
Cd 226.502†	15.6	0.1720 ug/L	0.05492	0.1720 ppb	0.05492 31.92%
QC value within limits for Cd 226.502 Recovery = Not calculated					
Co 228.616†	2.4	0.0494 ug/L	0.11635	0.0494 ppb	0.11635 235.56%
QC value within limits for Co 228.616 Recovery = Not calculated					
Cr 267.716†	5.4	0.0600 ug/L	0.13631	0.0600 ppb	0.13631 227.30%
QC value within limits for Cr 267.716 Recovery = Not calculated					
Cu 324.752†	-52.2	-0.1565 ug/L	0.16902	-0.1565 ppb	0.16902 108.03%
QC value within limits for Cu 324.752 Recovery = Not calculated					
Fe 238.204 Radial†	1.5	13.254 ug/L	2.3190	13.254 ppb	2.3190 17.50%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated					
K 766.490 Radial†	108.8	19.951 ug/L	7.2371	19.951 ppb	7.2371 36.27%
QC value within limits for K 766.490 Radial Recovery = Not calculated					
Mg 279.077 IEC†	0.9	29.225 ug/L	7.8812	29.225 ppb	7.8812 26.97%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated					
Mn 257.610†	5.9	0.0069 ug/L	0.00694	0.0069 ppb	0.00694 101.11%
QC value within limits for Mn 257.610 Recovery = Not calculated					
Mo 202.031†	1.9	0.1324 ug/L	0.14053	0.1324 ppb	0.14053 106.15%
QC value within limits for Mo 202.031 Recovery = Not calculated					
Na 589.592 Radial†	-2.1	-0.6168 ug/L	2.79572	-0.6168 ppb	2.79572 453.25%
QC value within limits for Na 589.592 Radial Recovery = Not calculated					
Ni 231.604†	-3.2	-0.0791 ug/L	0.11732	-0.0791 ppb	0.11732 148.29%
QC value within limits for Ni 231.604 Recovery = Not calculated					
P 214.914†	-7.4	-4.5221 ug/L	2.99940	-4.5221 ppb	2.99940 66.33%
QC value within limits for P 214.914 Recovery = Not calculated					
Pb 220.353†	-2.5	-0.3069 ug/L	1.05156	-0.3069 ppb	1.05156 342.70%
QC value within limits for Pb 220.353 Recovery = Not calculated					
S 181.975 Axial†	4.2	5.9626 ug/L	5.34285	5.9626 ppb	5.34285 89.61%
QC value within limits for S 181.975 Axial Recovery = Not calculated					
Sb 206.836†	6.4	2.2074 ug/L	2.32868	2.2074 ppb	2.32868 105.49%
QC value within limits for Sb 206.836 Recovery = Not calculated					
Se 196.026†	0.9	0.5971 ug/L	0.73474	0.5971 ppb	0.73474 123.06%
QC value within limits for Se 196.026 Recovery = Not calculated					
Si 251.611†	-37.2	-1.1862 ug/L	0.12829	-1.1862 ppb	0.12829 10.82%
QC value within limits for Si 251.611 Recovery = Not calculated					
Sn 189.927†	-2.1	-0.3695 ug/L	1.09740	-0.3695 ppb	1.09740 297.02%
QC value within limits for Sn 189.927 Recovery = Not calculated					
Sr 421.552†	11.2	0.0723 ug/L	0.08194	0.0723 ppb	0.08194 113.32%
QC value within limits for Sr 421.552 Recovery = Not calculated					
Ti 334.940†	-43.5	-0.0744 ug/L	0.04012	-0.0744 ppb	0.04012 53.90%
QC value within limits for Ti 334.940 Recovery = Not calculated					
Tl 190.801†	-5.7	-1.7474 ug/L	2.16194	-1.7474 ppb	2.16194 123.72%
QC value within limits for Tl 190.801 Recovery = Not calculated					
U 409.014†	63.8	1.8808 ug/L	5.43897	1.8808 ppb	5.43897 289.18%
QC value within limits for U 409.014 Recovery = Not calculated					
V 292.402†	-23.7	-0.1577 ug/L	0.04903	-0.1577 ppb	0.04903 31.10%
QC value within limits for V 292.402 Recovery = Not calculated					
Zn 213.857†	3.9	0.0360 ug/L	0.11225	0.0360 ppb	0.11225 311.83%
QC value within limits for Zn 213.857 Recovery = Not calculated					
SiO2†	-40.5	-2.7672 ug/L	1.03341	-2.7672 ppb	1.03341 37.35%
QC value within limits for SiO2 Recovery = Not calculated					
All analyte(s) passed QC.					



Sequence No.: 95

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/12/2010 02:12:15

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5217.5	5217.5	104 %		02:14:08
1	Y RADIAL	5548.4	5548.4	102.2 %		02:14:08
1	Al 396.153Radial†	6559.5	6331.0	4859.5 ug/L	4859.5 ppb	02:14:08
1	Ca 317.933Radial†	3238.1	3105.2	4968.6 ug/L	4968.6 ppb	02:14:28
1	Fe 238.204 Radial†	616.8	586.4	5090.0 ug/L	5090.0 ppb	02:14:28
1	K 766.490 Radial†	30193.7	26548.9	4850.4 ug/L	4850.4 ppb	02:14:08
1	Mg 279.077 IEC†	156.9	149.5	4995.4 ug/L	4995.4 ppb	02:14:28
1	Na 589.592 Radial†	32991.0	33119.2	9916.3 ug/L	9916.3 ppb	02:14:08
1	Sr 421.552†	78341.8	75625.0	488.42 ug/L	488.42 ppb	02:14:08
1	Sc 361.383	870004.3	870004.3	102.07 %		02:15:26
1	Y 371.029	725150.7	725150.7	100.34 %		02:15:26
1	Ag 328.068†	114337.2	111665.3	517.35 ug/L	517.35 ppb	02:15:31
1	As 188.979†	1175.7	1175.6	511.55 ug/L	511.55 ppb	02:15:51
1	B 249.677†	22233.4	22415.3	497.73 ug/L	497.73 ppb	02:15:31
1	Ba 233.527†	66454.0	65120.6	509.68 ug/L	509.68 ppb	02:15:31
1	Be 313.107†	1344233.2	1321615.4	504.73 ug/L	504.73 ppb	02:15:26
1	Cd 226.502†	46689.4	45948.6	509.77 ug/L	509.77 ppb	02:15:31
1	Co 228.616†	25518.1	25076.3	513.38 ug/L	513.38 ppb	02:15:31
1	Cr 267.716†	46620.8	45594.1	510.36 ug/L	510.36 ppb	02:15:31
1	Cu 324.752†	178726.7	168697.6	504.43 ug/L	504.43 ppb	02:15:31
1	Mn 257.610†	462415.3	452612.5	502.13 ug/L	502.13 ppb	02:15:26
1	Mo 202.031†	7425.2	7251.2	512.89 ug/L	512.89 ppb	02:15:51
1	Ni 231.604†	20990.4	20497.6	510.08 ug/L	510.08 ppb	02:15:31
1	P 214.914†	4455.4	4135.3	2420.4 ug/L	2420.4 ppb	02:15:51
1	Pb 220.353†	4161.3	4140.5	508.66 ug/L	508.66 ppb	02:15:51
1	S 181.975 Axial†	781.9	723.0	1022.3 ug/L	1022.3 ppb	02:15:51
1	Sb 206.836†	1534.9	1475.9	523.89 ug/L	523.89 ppb	02:15:51
1	Se 196.026†	769.8	786.2	524.67 ug/L	524.67 ppb	02:15:51
1	Si 251.611†	83773.1	81527.3	2590.2 ug/L	2590.2 ppb	02:15:31
1	Sn 189.927†	2946.8	2879.5	510.93 ug/L	510.93 ppb	02:15:51
1	Ti 334.940†	320190.3	315085.1	507.38 ug/L	507.38 ppb	02:15:26
1	Tl 190.801†	1640.6	1640.2	506.28 ug/L	506.28 ppb	02:15:51
1	U 409.014†	16204.4	17888.1	525.97 ug/L	525.97 ppb	02:15:31
1	V 292.402†	74841.2	74636.3	516.70 ug/L	516.70 ppb	02:15:31
1	Zn 213.857†	55604.3	53858.8	504.98 ug/L	504.98 ppb	02:15:31
1	SiO2†	83440.0	81179.7	5525.1 ug/L	5525.1 ppb	02:16:59
2	Sc Radial	5194.5	5194.5	103 %		02:14:33
2	Y RADIAL	5534.8	5534.8	101.9 %		02:14:33
2	Al 396.153Radial†	6700.8	6496.1	4986.6 ug/L	4986.6 ppb	02:14:33
2	Ca 317.933Radial†	3181.4	3064.1	4902.9 ug/L	4902.9 ppb	02:14:53
2	Fe 238.204 Radial†	609.4	581.8	5050.6 ug/L	5050.6 ppb	02:14:53
2	K 766.490 Radial†	30908.5	27371.0	5000.9 ug/L	5000.9 ppb	02:14:33
2	Mg 279.077 IEC†	160.9	154.1	5148.6 ug/L	5148.6 ppb	02:14:53
2	Na 589.592 Radial†	33672.3	33920.7	10156 ug/L	10156 ppb	02:14:33
2	Sr 421.552†	80208.7	77769.7	502.27 ug/L	502.27 ppb	02:14:33
2	Sc 361.383	870542.7	870542.7	102.13 %		02:15:57
2	Y 371.029	726980.3	726980.3	100.60 %		02:15:57
2	Ag 328.068†	114273.0	111533.2	516.73 ug/L	516.73 ppb	02:16:02
2	As 188.979†	1177.7	1176.8	512.10 ug/L	512.10 ppb	02:16:22
2	B 249.677†	22239.6	22407.9	497.58 ug/L	497.58 ppb	02:16:02
2	Ba 233.527†	66481.7	65107.5	509.57 ug/L	509.57 ppb	02:16:02
2	Be 313.107†	1370431.8	1346453.3	514.21 ug/L	514.21 ppb	02:15:57
2	Cd 226.502†	46753.9	45983.5	510.16 ug/L	510.16 ppb	02:16:02
2	Co 228.616†	25466.6	25010.4	512.03 ug/L	512.03 ppb	02:16:02
2	Cr 267.716†	46675.8	45619.6	510.65 ug/L	510.65 ppb	02:16:02
2	Cu 324.752†	178036.8	167913.7	502.08 ug/L	502.08 ppb	02:16:02
2	Mn 257.610†	469977.1	459736.5	510.02 ug/L	510.02 ppb	02:15:57
2	Mo 202.031†	7479.0	7299.4	516.29 ug/L	516.29 ppb	02:16:22
2	Ni 231.604†	20970.6	20465.5	509.29 ug/L	509.29 ppb	02:16:02



2	P 214.914†	4474.8	4151.6	2431.0 ug/L	2431.0 ppb	02:16:22
2	Pb 220.353†	4197.0	4172.9	512.66 ug/L	512.66 ppb	02:16:22
2	S 181.975 Axial†	785.9	726.5	1027.2 ug/L	1027.2 ppb	02:16:22
2	Sb 206.836†	1539.8	1479.8	525.33 ug/L	525.33 ppb	02:16:22
2	Se 196.026†	777.9	793.7	529.41 ug/L	529.41 ppb	02:16:22
2	Si 251.611†	83533.7	81242.1	2581.1 ug/L	2581.1 ppb	02:16:02
2	Sn 189.927†	2976.5	2906.8	515.76 ug/L	515.76 ppb	02:16:22
2	Ti 334.940†	325361.3	319954.4	515.20 ug/L	515.20 ppb	02:15:57
2	Tl 190.801†	1671.7	1669.7	515.43 ug/L	515.43 ppb	02:16:22
2	U 409.014†	16083.0	17759.4	522.18 ug/L	522.18 ppb	02:16:02
2	V 292.402†	74826.0	74576.1	516.33 ug/L	516.33 ppb	02:16:02
2	Zn 213.857†	55571.8	53793.3	504.37 ug/L	504.37 ppb	02:16:02
2	SiO2†	82668.6	80373.9	5470.0 ug/L	5470.0 ppb	02:17:04
3	Sc Radial	4911.2	4911.2	97.5 %		02:14:58
3	Y RADIAL	5174.6	5174.6	95.31 %		02:14:58
3	Al 396.153Radial†	6727.0	6897.6	5295.4 ug/L	5295.4 ppb	02:14:58
3	Ca 317.933Radial†	3238.8	3300.8	5281.6 ug/L	5281.6 ppb	02:15:18
3	Fe 238.204 Radial†	616.5	623.2	5409.4 ug/L	5409.4 ppb	02:15:18
3	K 766.490 Radial†	30674.7	28859.4	5272.9 ug/L	5272.9 ppb	02:14:58
3	Mg 279.077 IEC†	162.8	165.0	5511.8 ug/L	5511.8 ppb	02:15:18
3	Na 589.592 Radial†	33811.6	35946.2	10763 ug/L	10763 ppb	02:14:58
3	Sr 421.552†	80177.5	82222.4	531.03 ug/L	531.03 ppb	02:14:58
3	Sc 361.383	831435.7	831435.7	97.541 %		02:16:28
3	Y 371.029	693115.3	693115.3	95.911 %		02:16:28
3	Ag 328.068†	113756.4	116266.4	538.71 ug/L	538.71 ppb	02:16:33
3	As 188.979†	1172.3	1225.5	533.34 ug/L	533.34 ppb	02:16:53
3	B 249.677†	22075.8	23264.3	516.57 ug/L	516.57 ppb	02:16:33
3	Ba 233.527†	66288.7	67971.4	531.99 ug/L	531.99 ppb	02:16:33
3	Be 313.107†	1363291.6	1402248.5	535.52 ug/L	535.52 ppb	02:16:28
3	Cd 226.502†	46573.1	47951.5	531.98 ug/L	531.98 ppb	02:16:33
3	Co 228.616†	25376.3	26090.8	534.14 ug/L	534.14 ppb	02:16:33
3	Cr 267.716†	46566.3	47657.0	533.46 ug/L	533.46 ppb	02:16:33
3	Cu 324.752†	177178.0	175232.8	523.98 ug/L	523.98 ppb	02:16:33
3	Mn 257.610†	469128.0	480510.9	533.07 ug/L	533.07 ppb	02:16:28
3	Mo 202.031†	7426.7	7590.3	536.87 ug/L	536.87 ppb	02:16:53
3	Ni 231.604†	20983.0	21444.0	533.64 ug/L	533.64 ppb	02:16:33
3	P 214.914†	4440.3	4322.4	2530.6 ug/L	2530.6 ppb	02:16:53
3	Pb 220.353†	4148.1	4316.0	530.27 ug/L	530.27 ppb	02:16:53
3	S 181.975 Axial†	786.5	763.3	1079.2 ug/L	1079.2 ppb	02:16:53
3	Sb 206.836†	1522.3	1532.8	544.24 ug/L	544.24 ppb	02:16:53
3	Se 196.026†	775.6	827.2	552.20 ug/L	552.20 ppb	02:16:53
3	Si 251.611†	83135.4	84680.9	2690.3 ug/L	2690.3 ppb	02:16:33
3	Sn 189.927†	2968.6	3035.8	538.67 ug/L	538.67 ppb	02:16:53
3	Ti 334.940†	324795.9	334359.3	538.41 ug/L	538.41 ppb	02:16:28
3	Tl 190.801†	1642.0	1716.2	529.84 ug/L	529.84 ppb	02:16:53
3	U 409.014†	15913.4	18326.2	538.81 ug/L	538.81 ppb	02:16:33
3	V 292.402†	74505.6	77693.7	537.87 ug/L	537.87 ppb	02:16:33
3	Zn 213.857†	55436.1	56213.6	527.04 ug/L	527.04 ppb	02:16:33
3	SiO2†	84519.2	86078.4	5858.7 ug/L	5858.7 ppb	02:17:09

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	857327.5	100.58 %	2.631			2.62%
Sc Radial	5107.8	101 %	3.4			3.34%
Y 371.029	715082.1	98.950 %	2.6355			2.66%
Y RADIAL	5419.3	99.81 %	3.904			3.91%
Ag 328.068†	113155.0	524.26 ug/L	12.513	524.26 ppb	12.513	2.39%
QC value within limits for Ag 328.068 Recovery = 104.85%						
Al 396.153Radial†	6574.9	5047.2 ug/L	224.18	5047.2 ppb	224.18	4.44%
QC value within limits for Al 396.153Radial Recovery = 100.94%						
As 188.979†	1192.6	519.00 ug/L	12.426	519.00 ppb	12.426	2.39%
QC value within limits for As 188.979 Recovery = 103.80%						
B 249.677†	22695.8	503.96 ug/L	10.920	503.96 ppb	10.920	2.17%
QC value within limits for B 249.677 Recovery = 100.79%						
Ba 233.527†	66066.5	517.08 ug/L	12.913	517.08 ppb	12.913	2.50%
QC value within limits for Ba 233.527 Recovery = 103.42%						
Be 313.107†	1356772.4	518.15 ug/L	15.771	518.15 ppb	15.771	3.04%
QC value within limits for Be 313.107 Recovery = 103.63%						
Ca 317.933Radial†	3156.7	5051.0 ug/L	202.40	5051.0 ppb	202.40	4.01%



QC value within limits for Ca 317.933 Radial Recovery = 101.02%

Cd 226.502†	46627.9	517.30 ug/L	12.711	517.30 ppb	12.711	2.46%
QC value within limits for Cd 226.502 Recovery = 103.46%						
Co 228.616†	25392.5	519.85 ug/L	12.392	519.85 ppb	12.392	2.38%
QC value within limits for Co 228.616 Recovery = 103.97%						
Cr 267.716†	46290.3	518.16 ug/L	13.252	518.16 ppb	13.252	2.56%
QC value within limits for Cr 267.716 Recovery = 103.63%						
Cu 324.752†	170614.7	510.16 ug/L	12.022	510.16 ppb	12.022	2.36%
QC value within limits for Cu 324.752 Recovery = 102.03%						
Fe 238.204 Radial†	597.1	5183.3 ug/L	196.78	5183.3 ppb	196.78	3.80%
QC value within limits for Fe 238.204 Radial Recovery = 103.67%						
K 766.490 Radial†	27593.1	5041.4 ug/L	214.15	5041.4 ppb	214.15	4.25%
QC value within limits for K 766.490 Radial Recovery = 100.83%						
Mg 279.077 IEC†	156.2	5218.6 ug/L	265.19	5218.6 ppb	265.19	5.08%
QC value within limits for Mg 279.077 IEC Recovery = 104.37%						
Mn 257.610†	464286.6	515.08 ug/L	16.079	515.08 ppb	16.079	3.12%
QC value within limits for Mn 257.610 Recovery = 103.02%						
Mo 202.031†	7380.3	522.02 ug/L	12.979	522.02 ppb	12.979	2.49%
QC value within limits for Mo 202.031 Recovery = 104.40%						
Na 589.592 Radial†	34328.7	10278 ug/L	436.3	10278 ppb	436.3	4.24%
QC value within limits for Na 589.592 Radial Recovery = 102.78%						
Ni 231.604†	20802.4	517.67 ug/L	13.835	517.67 ppb	13.835	2.67%
QC value within limits for Ni 231.604 Recovery = 103.53%						
P 214.914†	4203.1	2460.7 ug/L	60.80	2460.7 ppb	60.80	2.47%
QC value within limits for P 214.914 Recovery = 98.43%						
Pb 220.353†	4209.8	517.20 ug/L	11.495	517.20 ppb	11.495	2.22%
QC value within limits for Pb 220.353 Recovery = 103.44%						
S 181.975 Axial†	737.6	1042.9 ug/L	31.55	1042.9 ppb	31.55	3.03%
QC value within limits for S 181.975 Axial Recovery = 104.29%						
Sb 206.836†	1496.1	531.15 ug/L	11.360	531.15 ppb	11.360	2.14%
QC value within limits for Sb 206.836 Recovery = 106.23%						
Se 196.026†	802.4	535.43 ug/L	14.717	535.43 ppb	14.717	2.75%
QC value within limits for Se 196.026 Recovery = 107.09%						
Si 251.611†	82483.5	2620.5 ug/L	60.62	2620.5 ppb	60.62	2.31%
QC value within limits for Si 251.611 Recovery = 104.82%						
Sn 189.927†	2940.7	521.79 ug/L	14.819	521.79 ppb	14.819	2.84%
QC value within limits for Sn 189.927 Recovery = 104.36%						
Sr 421.552†	78539.0	507.24 ug/L	21.735	507.24 ppb	21.735	4.28%
QC value within limits for Sr 421.552 Recovery = 101.45%						
Ti 334.940†	323132.9	520.33 ug/L	16.139	520.33 ppb	16.139	3.10%
QC value within limits for Ti 334.940 Recovery = 104.07%						
Tl 190.801†	1675.4	517.18 ug/L	11.880	517.18 ppb	11.880	2.30%
QC value within limits for Tl 190.801 Recovery = 103.44%						
U 409.014†	17991.2	528.99 ug/L	8.715	528.99 ppb	8.715	1.65%
QC value within limits for U 409.014 Recovery = 105.80%						
V 292.402†	75635.4	523.63 ug/L	12.330	523.63 ppb	12.330	2.35%
QC value within limits for V 292.402 Recovery = 104.73%						
Zn 213.857†	54621.9	512.13 ug/L	12.918	512.13 ppb	12.918	2.52%
QC value within limits for Zn 213.857 Recovery = 102.43%						
SiO2†	82544.0	5617.9 ug/L	210.31	5617.9 ppb	210.31	3.74%
QC value within limits for SiO2 Recovery = 105.06%						

All analyte(s) passed QC.



Sequence No.: 96

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/12/2010 02:19:19

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5083.1	5083.1	101 %		02:21:11
1	Y RADIAL	5456.5	5456.5	100.5 %		02:21:11
1	Al 396.153Radial†	-1.8	-1.2	-0.8923 ug/L	-0.8923 ppb	02:21:11
1	Ca 317.933Radial†	22.4	2.4	3.9101 ug/L	3.9101 ppb	02:21:31
1	Fe 238.204 Radial†	8.7	-0.2	-1.9018 ug/L	-1.9018 ppb	02:21:31
1	K 766.490 Radial†	2689.4	74.0	13.560 ug/L	13.560 ppb	02:21:11
1	Mg 279.077 IEC†	-1.2	-3.1	-104.58 ug/L	-104.58 ppb	02:21:31
1	Na 589.592 Radial†	-1285.9	6.6	1.9794 ug/L	1.9794 ppb	02:21:11
1	Sr 421.552†	17.3	36.7	0.2367 ug/L	0.2367 ppb	02:21:11
1	Sc 361.383	864412.7	864412.7	101.41 %		02:22:28
1	Y 371.029	732531.7	732531.7	101.36 %		02:22:28
1	Ag 328.068†	403.9	40.3	0.1765 ug/L	0.1765 ppb	02:22:33
1	As 188.979†	-20.7	3.2	1.3721 ug/L	1.3721 ppb	02:22:53
1	B 249.677†	-475.5	162.9	3.6319 ug/L	3.6319 ppb	02:22:53
1	Ba 233.527†	-14.0	-2.4	-0.0202 ug/L	-0.0202 ppb	02:22:53
1	Be 313.107†	-4469.5	178.0	0.0681 ug/L	0.0681 ppb	02:22:33
1	Cd 226.502†	-191.2	15.6	0.1748 ug/L	0.1748 ppb	02:22:53
1	Co 228.616†	-69.5	6.2	0.1259 ug/L	0.1259 ppb	02:22:53
1	Cr 267.716†	95.0	10.4	0.1127 ug/L	0.1127 ppb	02:22:53
1	Cu 324.752†	6260.9	-238.4	-0.7171 ug/L	-0.7171 ppb	02:22:33
1	Mn 257.610†	449.0	-2.1	0.0017 ug/L	0.0017 ppb	02:22:53
1	Mo 202.031†	23.8	-0.3	-0.0183 ug/L	-0.0183 ppb	02:22:53
1	Ni 231.604†	78.5	9.4	0.2342 ug/L	0.2342 ppb	02:22:53
1	P 214.914†	218.6	-14.4	-8.6190 ug/L	-8.6190 ppb	02:22:53
1	Pb 220.353†	-51.5	12.6	1.5434 ug/L	1.5434 ppb	02:22:53
1	S 181.975 Axial†	50.9	7.2	10.137 ug/L	10.137 ppb	02:22:53
1	Sb 206.836†	44.4	15.8	5.4221 ug/L	5.4221 ppb	02:22:53
1	Se 196.026†	-34.4	-1.9	-1.2107 ug/L	-1.2107 ppb	02:22:53
1	Si 251.611†	507.7	-49.8	-1.5855 ug/L	-1.5855 ppb	02:22:53
1	Sn 189.927†	7.9	0.1	0.0250 ug/L	0.0250 ppb	02:22:53
1	Ti 334.940†	-1316.6	76.2	0.1284 ug/L	0.1284 ppb	02:22:33
1	Tl 190.801†	-34.6	-1.3	-0.3832 ug/L	-0.3832 ppb	02:22:53
1	U 409.014†	-1779.3	257.1	7.5830 ug/L	7.5830 ppb	02:22:28
1	V 292.402†	-1415.6	-86.2	-0.5760 ug/L	-0.5760 ppb	02:22:33
1	Zn 213.857†	620.0	-8.8	-0.0837 ug/L	-0.0837 ppb	02:22:53
1	SiO2†	531.5	-47.6	-3.2465 ug/L	-3.2465 ppb	02:23:59
2	Sc Radial	4963.2	4963.2	98.6 %		02:21:36
2	Y RADIAL	5348.1	5348.1	98.50 %		02:21:36
2	Al 396.153Radial†	-22.7	-22.4	-17.290 ug/L	-17.290 ppb	02:21:36
2	Ca 317.933Radial†	13.3	-6.3	-10.104 ug/L	-10.104 ppb	02:21:57
2	Fe 238.204 Radial†	9.3	0.6	4.9482 ug/L	4.9482 ppb	02:21:57
2	K 766.490 Radial†	2746.9	196.7	36.073 ug/L	36.073 ppb	02:21:36
2	Mg 279.077 IEC†	1.7	-0.1	-4.9519 ug/L	-4.9519 ppb	02:21:57
2	Na 589.592 Radial†	-1288.3	-26.6	-7.9575 ug/L	-7.9575 ppb	02:21:36
2	Sr 421.552†	-3.4	16.1	0.1038 ug/L	0.1038 ppb	02:21:36
2	Sc 361.383	847934.4	847934.4	99.476 %		02:22:58
2	Y 371.029	719044.9	719044.9	99.499 %		02:22:58
2	Ag 328.068†	275.9	-80.6	-0.3736 ug/L	-0.3736 ppb	02:23:04
2	As 188.979†	-23.5	0.0	0.0053 ug/L	0.0053 ppb	02:23:24
2	B 249.677†	-500.8	128.4	2.8634 ug/L	2.8634 ppb	02:23:24
2	Ba 233.527†	-1.9	9.5	0.0726 ug/L	0.0726 ppb	02:23:24
2	Be 313.107†	-4554.8	6.6	0.0027 ug/L	0.0027 ppb	02:23:04
2	Cd 226.502†	-177.6	25.6	0.2840 ug/L	0.2840 ppb	02:23:24
2	Co 228.616†	-84.7	-10.5	-0.2151 ug/L	-0.2151 ppb	02:23:24
2	Cr 267.716†	88.0	5.2	0.0567 ug/L	0.0567 ppb	02:23:24
2	Cu 324.752†	6406.0	27.5	0.0813 ug/L	0.0813 ppb	02:23:04
2	Mn 257.610†	443.6	1.1	0.0020 ug/L	0.0020 ppb	02:23:24
2	Mo 202.031†	24.4	0.8	0.0579 ug/L	0.0579 ppb	02:23:24
2	Ni 231.604†	61.0	-6.6	-0.1649 ug/L	-0.1649 ppb	02:23:24



2	P 214.914†	221.0	-7.7	-4.7313 ug/L	-4.7313 ppb	02:23:24
2	Pb 220.353†	-42.5	20.7	2.5273 ug/L	2.5273 ppb	02:23:24
2	S 181.975 Axial†	48.4	5.6	7.9552 ug/L	7.9552 ppb	02:23:24
2	Sb 206.836†	46.7	19.0	6.5426 ug/L	6.5426 ppb	02:23:24
2	Se 196.026†	-21.7	10.2	6.5737 ug/L	6.5737 ppb	02:23:24
2	Si 251.611†	492.4	-55.5	-1.7668 ug/L	-1.7668 ppb	02:23:24
2	Sn 189.927†	14.9	7.3	1.2914 ug/L	1.2914 ppb	02:23:24
2	Ti 334.940†	-1314.5	53.1	0.0840 ug/L	0.0840 ppb	02:23:04
2	Tl 190.801†	-39.3	-6.7	-2.0436 ug/L	-2.0436 ppb	02:23:24
2	U 409.014†	-1933.1	68.4	2.0161 ug/L	2.0161 ppb	02:22:58
2	V 292.402†	-1393.0	-90.6	-0.6148 ug/L	-0.6148 ppb	02:23:04
2	Zn 213.857†	634.6	17.7	0.1674 ug/L	0.1674 ppb	02:23:24
2	SiO2†	526.7	-42.3	-2.8847 ug/L	-2.8847 ppb	02:24:04
3	Sc Radial	5196.4	5196.4	103 %		02:22:02
3	Y RADIAL	5564.7	5564.7	102.5 %		02:22:02
3	Al 396.153Radial†	-16.5	-15.3	-11.778 ug/L	-11.778 ppb	02:22:02
3	Ca 317.933Radial†	18.4	-2.0	-3.1831 ug/L	-3.1831 ppb	02:22:22
3	Fe 238.204 Radial†	7.6	-1.5	-12.841 ug/L	-12.841 ppb	02:22:22
3	K 766.490 Radial†	2747.7	72.4	13.271 ug/L	13.271 ppb	02:22:02
3	Mg 279.077 IEC†	1.9	-0.0	-0.6583 ug/L	-0.6583 ppb	02:22:22
3	Na 589.592 Radial†	-1281.5	38.7	11.593 ug/L	11.593 ppb	02:22:02
3	Sr 421.552†	-15.7	4.3	0.0278 ug/L	0.0278 ppb	02:22:02
3	Sc 361.383	867605.1	867605.1	101.78 %		02:23:29
3	Y 371.029	734643.5	734643.5	101.66 %		02:23:29
3	Ag 328.068†	364.4	-0.0	-0.0066 ug/L	-0.0066 ppb	02:23:34
3	As 188.979†	-21.8	2.2	0.9467 ug/L	0.9467 ppb	02:23:54
3	B 249.677†	-497.7	142.9	3.1875 ug/L	3.1875 ppb	02:23:54
3	Ba 233.527†	-18.6	-6.9	-0.0539 ug/L	-0.0539 ppb	02:23:54
3	Be 313.107†	-4545.5	119.6	0.0460 ug/L	0.0460 ppb	02:23:34
3	Cd 226.502†	-191.0	16.4	0.1843 ug/L	0.1843 ppb	02:23:54
3	Co 228.616†	-84.0	-7.8	-0.1610 ug/L	-0.1610 ppb	02:23:54
3	Cr 267.716†	60.7	-23.6	-0.2648 ug/L	-0.2648 ppb	02:23:54
3	Cu 324.752†	6397.7	-126.6	-0.3813 ug/L	-0.3813 ppb	02:23:34
3	Mn 257.610†	444.1	-8.5	-0.0109 ug/L	-0.0109 ppb	02:23:54
3	Mo 202.031†	19.2	-4.9	-0.3447 ug/L	-0.3447 ppb	02:23:54
3	Ni 231.604†	56.9	-12.1	-0.3004 ug/L	-0.3004 ppb	02:23:54
3	P 214.914†	219.7	-14.0	-8.4776 ug/L	-8.4776 ppb	02:23:54
3	Pb 220.353†	-68.4	-3.8	-0.4663 ug/L	-0.4663 ppb	02:23:54
3	S 181.975 Axial†	47.8	4.0	5.6180 ug/L	5.6180 ppb	02:23:54
3	Sb 206.836†	33.1	4.6	1.5856 ug/L	1.5856 ppb	02:23:54
3	Se 196.026†	-28.1	4.4	2.8237 ug/L	2.8237 ppb	02:23:54
3	Si 251.611†	508.0	-51.3	-1.6308 ug/L	-1.6308 ppb	02:23:54
3	Sn 189.927†	11.8	3.9	0.6988 ug/L	0.6988 ppb	02:23:54
3	Ti 334.940†	-1283.1	113.9	0.1817 ug/L	0.1817 ppb	02:23:34
3	Tl 190.801†	-43.0	-9.4	-2.8939 ug/L	-2.8939 ppb	02:23:54
3	U 409.014†	-1926.8	118.6	3.5004 ug/L	3.5004 ppb	02:23:29
3	V 292.402†	-1314.6	18.1	0.1272 ug/L	0.1272 ppb	02:23:34
3	Zn 213.857†	613.9	-17.1	-0.1585 ug/L	-0.1585 ppb	02:23:54
3	SiO2†	507.6	-73.0	-4.9717 ug/L	-4.9717 ppb	02:24:09

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	859984.0	100.89 %		1.238			1.23%
Sc Radial	5080.9	101 %		2.3			2.30%
Y 371.029	728740.0	100.84 %		1.171			1.16%
Y RADIAL	5456.4	100.5 %		2.00			1.99%
Ag 328.068†	-13.5	-0.0679 ug/L		0.28012	-0.0679 ppb	0.28012	412.50%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-13.0	-9.9868 ug/L		8.34448	-9.9868 ppb	8.34448	83.55%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	1.8	0.7747 ug/L		0.69945	0.7747 ppb	0.69945	90.29%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	144.8	3.2276 ug/L		0.38583	3.2276 ppb	0.38583	11.95%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	0.1	-0.0005 ug/L		0.06553	-0.0005 ppb	0.06553	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	101.4	0.0389 ug/L		0.03326	0.0389 ppb	0.03326	85.43%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-2.0	-3.1258 ug/L		7.00741	-3.1258 ppb	7.00741	224.18%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	19.2	0.2144 ug/L	0.06046	0.2144 ppb	0.06046	28.20%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-4.1	-0.0834 ug/L	0.18328	-0.0834 ppb	0.18328	219.65%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-2.6	-0.0318 ug/L	0.20371	-0.0318 ppb	0.20371	639.92%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-112.5	-0.3390 ug/L	0.40088	-0.3390 ppb	0.40088	118.25%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	-0.4	-3.2649 ug/L	8.97274	-3.2649 ppb	8.97274	274.82%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	114.3	20.968 ug/L	13.0823	20.968 ppb	13.0823	62.39%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	-1.1	-36.730 ug/L	58.7988	-36.730 ppb	58.7988	160.08%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-3.2	-0.0024 ug/L	0.00734	-0.0024 ppb	0.00734	308.89%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	-1.4	-0.1017 ug/L	0.21389	-0.1017 ppb	0.21389	210.32%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	6.3	1.8715 ug/L	9.77557	1.8715 ppb	9.77557	522.33%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	-3.1	-0.0770 ug/L	0.27791	-0.0770 ppb	0.27791	360.75%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-12.0	-7.2760 ug/L	2.20486	-7.2760 ppb	2.20486	30.30%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	9.8	1.2015 ug/L	1.52582	1.2015 ppb	1.52582	127.00%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	5.6	7.9035 ug/L	2.26015	7.9035 ppb	2.26015	28.60%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	13.2	4.5168 ug/L	2.59954	4.5168 ppb	2.59954	57.55%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	4.3	2.7289 ug/L	3.89304	2.7289 ppb	3.89304	142.66%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	-52.2	-1.6610 ug/L	0.09436	-1.6610 ppb	0.09436	5.68%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	3.8	0.6717 ug/L	0.63363	0.6717 ppb	0.63363	94.33%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	19.0	0.1228 ug/L	0.10573	0.1228 ppb	0.10573	86.11%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	81.1	0.1314 ug/L	0.04894	0.1314 ppb	0.04894	37.26%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	-5.8	-1.7736 ug/L	1.27695	-1.7736 ppb	1.27695	72.00%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	148.0	4.3665 ug/L	2.88273	4.3665 ppb	2.88273	66.02%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	-52.9	-0.3546 ug/L	0.41763	-0.3546 ppb	0.41763	117.79%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	-2.8	-0.0249 ug/L	0.17071	-0.0249 ppb	0.17071	685.27%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	-54.3	-3.7010 ug/L	1.11525	-3.7010 ppb	1.11525	30.13%	
QC value within limits for SiO2 Recovery = Not calculated							

All analyte(s) passed QC.



Sequence No.: 101

Sample ID: 1202004428|936808|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 105

Date Collected: 1/12/2010 02:54:49

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004428|936808|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5237.4	5237.4	104 %		02:56:42
1	Y RADIAL	6924.7	6924.7	127.5 %		02:56:42
1	Al 396.153Radial†	48337.9	46473.6	35853 ug/L	35853 ppb	02:56:42
1	Ca 317.933Radial†	5382.7	5155.3	8248.9 ug/L	8248.9 ppb	02:56:42
1	Fe 238.204 Radial†	9157.2	8795.0	76114 ug/L	76114 ppb	02:56:42
1	K 766.490 Radial†	31005.4	27219.1	4961.9 ug/L	4961.9 ppb	02:56:42
1	Mg 279.077 IEC†	212.8	202.6	6691.0 ug/L	6691.0 ppb	02:57:02
1	Na 589.592 Radial†	4224.4	5341.8	1599.4 ug/L	1599.4 ppb	02:56:42
1	Sr 421.552†	9768.2	9410.8	60.722 ug/L	60.722 ppb	02:56:42
1	Sc 361.383	875178.5	875178.5	102.67 %		02:58:00
1	Y 371.029	907660.0	907660.0	125.60 %		02:58:00
1	Ag 328.068†	-4708.3	-4943.8	2.3156 ug/L	2.3156 ppb	02:58:05
1	As 188.979†	-27.4	-3.1	23.885 ug/L	23.885 ppb	02:58:25
1	B 249.677†	179.3	806.5	10.213 ug/L	10.213 ppb	02:58:05
1	Ba 233.527†	51151.9	49831.8	391.99 ug/L	391.99 ppb	02:58:05
1	Be 313.107†	-7631.5	-2847.5	3.8278 ug/L	3.8278 ppb	02:58:05
1	Cd 226.502†	515.2	705.9	-0.0614 ug/L	-0.0614 ppb	02:58:25
1	Co 228.616†	919.7	970.4	14.383 ug/L	14.383 ppb	02:58:25
1	Cr 267.716†	10595.2	10236.1	116.14 ug/L	116.14 ppb	02:58:05
1	Cu 324.752†	16116.0	9284.3	31.939 ug/L	31.939 ppb	02:58:05
1	Mn 257.610†	2152063.0	2095601.1	2331.4 ug/L	2331.4 ppb	02:58:00
1	Mo 202.031†	138.9	111.6	13.188 ug/L	13.188 ppb	02:58:25
1	Ni 231.604†	1366.5	1262.9	31.435 ug/L	31.435 ppb	02:58:25
1	P 214.914†	1243.0	980.7	541.17 ug/L	541.17 ppb	02:58:25
1	Pb 220.353†	469.9	521.1	64.306 ug/L	64.306 ppb	02:58:25
1	S 181.975 Axial†	243.5	194.1	267.99 ug/L	267.99 ppb	02:58:25
1	Sb 206.836†	43.4	14.3	-2.9726 ug/L	-2.9726 ppb	02:58:25
1	Se 196.026†	-353.8	-312.5	43.304 ug/L	43.304 ppb	02:58:25
1	Si 251.611†	867997.0	844853.1	26907 ug/L	26907 ppb	02:58:00
1	Sn 189.927†	-46.1	-52.5	-6.8477 ug/L	-6.8477 ppb	02:58:25
1	Ti 334.940†	1377639.5	1343154.8	2164.4 ug/L	2164.4 ppb	02:58:00
1	Tl 190.801†	-158.2	-121.2	-11.650 ug/L	-11.650 ppb	02:58:25
1	U 409.014†	-11377.5	-9069.7	-276.49 ug/L	-276.49 ppb	02:58:00
1	V 292.402†	11865.1	12866.0	73.598 ug/L	73.598 ppb	02:58:05
1	Zn 213.857†	27516.7	26180.2	240.00 ug/L	240.00 ppb	02:58:05
1	SiO2†	874925.1	851579.6	58104 ug/L	58104 ppb	02:59:34
2	Sc Radial	5259.1	5259.1	104 %		02:57:08
2	Y RADIAL	6945.2	6945.2	127.9 %		02:57:08
2	Al 396.153Radial†	48418.0	46358.1	35764 ug/L	35764 ppb	02:57:08
2	Ca 317.933Radial†	5395.1	5145.7	8233.7 ug/L	8233.7 ppb	02:57:08
2	Fe 238.204 Radial†	9172.2	8773.0	75924 ug/L	75924 ppb	02:57:08
2	K 766.490 Radial†	30907.9	27002.4	4922.2 ug/L	4922.2 ppb	02:57:08
2	Mg 279.077 IEC†	211.5	200.6	6623.8 ug/L	6623.8 ppb	02:57:28
2	Na 589.592 Radial†	4263.8	5362.8	1605.7 ug/L	1605.7 ppb	02:57:08
2	Sr 421.552†	9716.3	9322.3	60.151 ug/L	60.151 ppb	02:57:08
2	Sc 361.383	878051.5	878051.5	103.01 %		02:58:31
2	Y 371.029	909732.4	909732.4	125.89 %		02:58:31
2	Ag 328.068†	-4793.3	-5011.2	1.9460 ug/L	1.9460 ppb	02:58:36
2	As 188.979†	-41.3	-16.5	18.040 ug/L	18.040 ppb	02:58:56
2	B 249.677†	217.1	842.6	11.036 ug/L	11.036 ppb	02:58:36
2	Ba 233.527†	51611.5	50115.0	394.19 ug/L	394.19 ppb	02:58:36
2	Be 313.107†	-7584.6	-2777.6	3.8492 ug/L	3.8492 ppb	02:58:36
2	Cd 226.502†	515.4	704.5	-0.0568 ug/L	-0.0568 ppb	02:58:56
2	Co 228.616†	933.5	980.9	14.607 ug/L	14.607 ppb	02:58:56
2	Cr 267.716†	10638.1	10244.0	116.23 ug/L	116.23 ppb	02:58:36
2	Cu 324.752†	16025.0	9144.6	31.511 ug/L	31.511 ppb	02:58:36
2	Mn 257.610†	2156784.1	2093325.9	2328.9 ug/L	2328.9 ppb	02:58:31
2	Mo 202.031†	148.2	120.1	13.782 ug/L	13.782 ppb	02:58:56
2	Ni 231.604†	1391.8	1283.2	31.939 ug/L	31.939 ppb	02:58:56



2	P 214.914†	1265.2	998.3	552.17 ug/L	552.17 ppb	02:58:56
2	Pb 220.353†	468.4	518.1	63.946 ug/L	63.946 ppb	02:58:56
2	S 181.975 Axial†	248.6	198.3	273.97 ug/L	273.97 ppb	02:58:56
2	Sb 206.836†	65.5	35.7	4.3944 ug/L	4.3944 ppb	02:58:56
2	Se 196.026†	-362.1	-319.5	38.213 ug/L	38.213 ppb	02:58:56
2	Si 251.611†	870496.0	844512.8	26896 ug/L	26896 ppb	02:58:31
2	Sn 189.927†	-36.4	-43.0	-5.1621 ug/L	-5.1621 ppb	02:58:56
2	Ti 334.940†	1380670.8	1341707.1	2162.1 ug/L	2162.1 ppb	02:58:31
2	Tl 190.801†	-160.9	-123.3	-12.314 ug/L	-12.314 ppb	02:58:56
2	U 409.014†	-11375.2	-9031.2	-275.33 ug/L	-275.33 ppb	02:58:31
2	V 292.402†	12038.6	12996.6	74.531 ug/L	74.531 ppb	02:58:36
2	Zn 213.857†	27763.4	26332.0	241.45 ug/L	241.45 ppb	02:58:36
2	SiO2†	869717.1	843735.4	57569 ug/L	57569 ppb	02:59:39
3	Sc Radial	5181.2	5181.2	103 %		02:57:33
3	Y RADIAL	6905.4	6905.4	127.2 %		02:57:33
3	Al 396.153Radial†	47956.2	46606.8	35956 ug/L	35956 ppb	02:57:33
3	Ca 317.933Radial†	5369.2	5198.3	8317.8 ug/L	8317.8 ppb	02:57:33
3	Fe 238.204 Radial†	9102.6	8837.5	76481 ug/L	76481 ppb	02:57:33
3	K 766.490 Radial†	30602.2	27150.5	4949.3 ug/L	4949.3 ppb	02:57:33
3	Mg 279.077 IEC†	209.1	201.3	6644.7 ug/L	6644.7 ppb	02:57:53
3	Na 589.592 Radial†	4196.8	5359.1	1604.6 ug/L	1604.6 ppb	02:57:33
3	Sr 421.552†	9718.8	9464.7	61.070 ug/L	61.070 ppb	02:57:33
3	Sc 361.383	878093.9	878093.9	103.01 %		02:59:02
3	Y 371.029	907800.2	907800.2	125.62 %		02:59:02
3	Ag 328.068†	-4772.3	-4990.7	2.2224 ug/L	2.2224 ppb	02:59:07
3	As 188.979†	-35.8	-11.1	20.482 ug/L	20.482 ppb	02:59:27
3	B 249.677†	232.6	857.7	11.317 ug/L	11.317 ppb	02:59:07
3	Ba 233.527†	51285.7	49796.3	391.73 ug/L	391.73 ppb	02:59:07
3	Be 313.107†	-7484.8	-2680.4	3.8984 ug/L	3.8984 ppb	02:59:07
3	Cd 226.502†	533.3	721.8	0.0776 ug/L	0.0776 ppb	02:59:27
3	Co 228.616†	917.0	964.9	14.256 ug/L	14.256 ppb	02:59:27
3	Cr 267.716†	10537.8	10146.2	115.15 ug/L	115.15 ppb	02:59:07
3	Cu 324.752†	15943.7	9064.9	31.304 ug/L	31.304 ppb	02:59:07
3	Mn 257.610†	2161866.7	2098158.7	2334.3 ug/L	2334.3 ppb	02:59:02
3	Mo 202.031†	130.4	102.9	12.599 ug/L	12.599 ppb	02:59:27
3	Ni 231.604†	1375.3	1267.1	31.539 ug/L	31.539 ppb	02:59:27
3	P 214.914†	1257.4	990.7	547.16 ug/L	547.16 ppb	02:59:27
3	Pb 220.353†	464.1	513.9	63.411 ug/L	63.411 ppb	02:59:27
3	S 181.975 Axial†	246.3	196.1	270.73 ug/L	270.73 ppb	02:59:27
3	Sb 206.836†	47.0	17.7	-1.8440 ug/L	-1.8440 ppb	02:59:27
3	Se 196.026†	-343.5	-301.4	51.635 ug/L	51.635 ppb	02:59:27
3	Si 251.611†	873232.4	847128.3	26980 ug/L	26980 ppb	02:59:02
3	Sn 189.927†	-47.0	-53.3	-6.9704 ug/L	-6.9704 ppb	02:59:27
3	Ti 334.940†	1384177.8	1345046.8	2167.5 ug/L	2167.5 ppb	02:59:02
3	Tl 190.801†	-148.1	-110.9	-8.4398 ug/L	-8.4398 ppb	02:59:27
3	U 409.014†	-11466.9	-9119.7	-278.00 ug/L	-278.00 ppb	02:59:02
3	V 292.402†	12043.7	13001.0	74.447 ug/L	74.447 ppb	02:59:07
3	Zn 213.857†	27522.5	26096.9	239.17 ug/L	239.17 ppb	02:59:07
3	SiO2†	875122.9	848942.3	57924 ug/L	57924 ppb	02:59:45

Mean Data: 1202004428|936808|1

Analyte	Mean Corrected	Conc. Units	Calib.	Std.Dev.	Sample	Std.Dev.	RSD
Sc 361.383	877107.9	102.90 %		0.196			0.19%
Sc Radial	5225.9	104 %		0.8			0.77%
Y 371.029	908397.5	125.70 %		0.160			0.13%
Y RADIAL	6925.1	127.5 %		0.37			0.29%
Ag 328.068†	-4981.9	2.1613 ug/L		0.19221	2.1613 ppb	0.19221	8.89%
Al 396.153Radial†	46479.5	35858 ug/L		96.0	35858 ppb	96.0	0.27%
As 188.979†	-10.2	20.802 ug/L		2.9357	20.802 ppb	2.9357	14.11%
B 249.677†	835.6	10.855 ug/L		0.5734	10.855 ppb	0.5734	5.28%
Ba 233.527†	49914.4	392.64 ug/L		1.355	392.64 ppb	1.355	0.35%
Be 313.107†	-2768.5	3.8585 ug/L		0.03620	3.8585 ppb	0.03620	0.94%
Ca 317.933Radial†	5166.4	8266.8 ug/L		44.80	8266.8 ppb	44.80	0.54%
Cd 226.502†	710.7	-0.0135 ug/L		0.07896	-0.0135 ppb	0.07896	584.37%
Co 228.616†	972.1	14.416 ug/L		0.1777	14.416 ppb	0.1777	1.23%
Cr 267.716†	10208.8	115.84 ug/L		0.601	115.84 ppb	0.601	0.52%
Cu 324.752†	9164.6	31.585 ug/L		0.3242	31.585 ppb	0.3242	1.03%
Fe 238.204 Radial†	8801.8	76173 ug/L		283.6	76173 ppb	283.6	0.37%
K 766.490 Radial†	27124.0	4944.5 ug/L		20.29	4944.5 ppb	20.29	0.41%



Mg 279.077 IEC†	201.5	6653.2 ug/L	34.41	6653.2 ppb	34.41	0.52%
Mn 257.610†	2095695.2	2331.5 ug/L	2.71	2331.5 ppb	2.71	0.12%
Mo 202.031†	111.5	13.190 ug/L	0.5913	13.190 ppb	0.5913	4.48%
Na 589.592 Radial†	5354.6	1603.2 ug/L	3.35	1603.2 ppb	3.35	0.21%
Ni 231.604†	1271.1	31.638 ug/L	0.2662	31.638 ppb	0.2662	0.84%
P 214.914†	989.9	546.83 ug/L	5.508	546.83 ppb	5.508	1.01%
Pb 220.353†	517.7	63.888 ug/L	0.4505	63.888 ppb	0.4505	0.71%
S 181.975 Axial†	196.2	270.90 ug/L	2.990	270.90 ppb	2.990	1.10%
Sb 206.836†	22.6	-0.1407 ug/L	3.96789	-0.1407 ppb	3.96789	>999.9%
Se 196.026†	-311.2	44.384 ug/L	6.7761	44.384 ppb	6.7761	15.27%
Si 251.611†	845498.1	26928 ug/L	45.3	26928 ppb	45.3	0.17%
Sn 189.927†	-49.6	-6.3268 ug/L	1.01048	-6.3268 ppb	1.01048	15.97%
Sr 421.552†	9399.3	60.647 ug/L	0.4641	60.647 ppb	0.4641	0.77%
Ti 334.940†	1343302.9	2164.7 ug/L	2.70	2164.7 ppb	2.70	0.12%
Tl 190.801†	-118.5	-10.802 ug/L	2.0721	-10.802 ppb	2.0721	19.18%
U 409.014†	-9073.6	-276.61 ug/L	1.340	-276.61 ppb	1.340	0.48%
V 292.402†	12954.5	74.192 ug/L	0.5164	74.192 ppb	0.5164	0.70%
Zn 213.857†	26203.0	240.20 ug/L	1.152	240.20 ppb	1.152	0.48%
SiO2†	848085.8	57866 ug/L	272.4	57866 ppb	272.4	0.47%



Sequence No.: 102

Sample ID: 1202004429|936808|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 106

Date Collected: 1/12/2010 03:01:57

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004429|936808|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5211.6	5211.6	104 %		03:04:10
1	Y RADIAL	7006.6	7006.6	129.0 %		03:04:10
1	Al 396.153Radial†	131568.2	127119.0	98047 ug/L	98047 ppb	03:03:50
1	Ca 317.933Radial†	10312.3	9943.7	15911 ug/L	15911 ppb	03:03:50
1	Fe 238.204 Radial†	12848.1	12404.6	107370 ug/L	107370 ppb	03:03:50
1	K 766.490 Radial†	83187.3	77783.7	14215 ug/L	14215 ppb	03:03:50
1	Mg 279.077 IEC†	574.6	553.3	18378 ug/L	18378 ppb	03:04:10
1	Na 589.592 Radial†	23058.4	23559.0	7053.8 ug/L	7053.8 ppb	03:03:50
1	Sr 421.552†	90530.6	87488.2	564.96 ug/L	564.96 ppb	03:03:50
1	Sc 361.383	870685.3	870685.3	102.15 %		03:05:09
1	Y 371.029	923496.1	923496.1	127.79 %		03:05:09
1	Ag 328.068†	101990.7	99490.6	494.93 ug/L	494.93 ppb	03:05:09
1	As 188.979†	1071.1	1072.2	499.23 ug/L	499.23 ppb	03:05:30
1	B 249.677†	21633.5	21811.0	473.95 ug/L	473.95 ppb	03:05:09
1	Ba 233.527†	115748.9	113329.2	889.99 ug/L	889.99 ppb	03:05:09
1	Be 313.107†	1319653.5	1296521.9	501.03 ug/L	501.03 ppb	03:05:09
1	Cd 226.502†	44418.5	43689.7	474.08 ug/L	474.08 ppb	03:05:09
1	Co 228.616†	24737.8	24292.9	490.49 ug/L	490.49 ppb	03:05:30
1	Cr 267.716†	60581.9	59226.3	665.04 ug/L	665.04 ppb	03:05:09
1	Cu 324.752†	192475.5	182020.7	549.88 ug/L	549.88 ppb	03:05:09
1	Mn 257.610†	2870133.5	2809406.4	3125.8 ug/L	3125.8 ppb	03:05:09
1	Mo 202.031†	6993.3	6822.7	489.72 ug/L	489.72 ppb	03:05:30
1	Ni 231.604†	21392.8	20875.5	519.50 ug/L	519.50 ppb	03:05:30
1	P 214.914†	2407.6	2127.2	1124.4 ug/L	1124.4 ppb	03:05:30
1	Pb 220.353†	4613.2	4579.7	572.56 ug/L	572.56 ppb	03:05:30
1	S 181.975 Axial†	3867.2	3742.9	5278.5 ug/L	5278.5 ppb	03:05:30
1	Sb 206.836†	1114.9	1063.6	370.62 ug/L	370.62 ppb	03:05:30
1	Se 196.026†	285.2	311.2	549.61 ug/L	549.61 ppb	03:05:30
1	Si 251.611†	1084867.8	1061531.6	33802 ug/L	33802 ppb	03:05:09
1	Sn 189.927†	2761.2	2695.6	481.64 ug/L	481.64 ppb	03:05:30
1	Ti 334.940†	1959413.4	1919633.8	3092.7 ug/L	3092.7 ppb	03:05:09
1	Tl 190.801†	1405.7	1409.0	465.24 ug/L	465.24 ppb	03:05:30
1	U 409.014†	3970.9	5899.1	160.30 ug/L	160.30 ppb	03:05:09
1	V 292.402†	90545.5	89953.4	601.97 ug/L	601.97 ppb	03:05:09
1	Zn 213.857†	85448.4	83033.4	770.88 ug/L	770.88 ppb	03:05:09
1	SiO2†	1096667.1	1073061.8	73204 ug/L	73204 ppb	03:06:31
2	Sc Radial	5153.9	5153.9	102 %		03:04:35
2	Y RADIAL	6947.1	6947.1	128.0 %		03:04:35
2	Al 396.153Radial†	130906.7	127895.8	98646 ug/L	98646 ppb	03:04:15
2	Ca 317.933Radial†	10215.2	9960.5	15938 ug/L	15938 ppb	03:04:15
2	Fe 238.204 Radial†	12725.7	12424.1	107530 ug/L	107530 ppb	03:04:15
2	K 766.490 Radial†	82355.8	77871.0	14231 ug/L	14231 ppb	03:04:15
2	Mg 279.077 IEC†	572.4	557.3	18512 ug/L	18512 ppb	03:04:35
2	Na 589.592 Radial†	22714.5	23472.4	7027.9 ug/L	7027.9 ppb	03:04:15
2	Sr 421.552†	89804.1	87757.6	566.70 ug/L	566.70 ppb	03:04:15
2	Sc 361.383	873599.8	873599.8	102.49 %		03:05:37
2	Y 371.029	924304.0	924304.0	127.90 %		03:05:37
2	Ag 328.068†	102572.3	99724.9	496.06 ug/L	496.06 ppb	03:05:37
2	As 188.979†	1061.2	1059.1	493.59 ug/L	493.59 ppb	03:05:57
2	B 249.677†	21846.6	21948.2	477.00 ug/L	477.00 ppb	03:05:37
2	Ba 233.527†	116232.4	113422.9	890.72 ug/L	890.72 ppb	03:05:37
2	Be 313.107†	1323767.4	1296225.7	500.93 ug/L	500.93 ppb	03:05:37
2	Cd 226.502†	44368.9	43496.2	471.91 ug/L	471.91 ppb	03:05:37
2	Co 228.616†	24700.8	24176.0	488.09 ug/L	488.09 ppb	03:05:57
2	Cr 267.716†	60644.7	59089.7	663.51 ug/L	663.51 ppb	03:05:37
2	Cu 324.752†	193650.3	182538.3	551.43 ug/L	551.43 ppb	03:05:37
2	Mn 257.610†	2882390.3	2811991.5	3128.6 ug/L	3128.6 ppb	03:05:37
2	Mo 202.031†	7013.1	6819.1	489.49 ug/L	489.49 ppb	03:05:57
2	Ni 231.604†	21369.6	20783.0	517.20 ug/L	517.20 ppb	03:05:57



2	P 214.914†	2416.9	2128.4	1124.8 ug/L	1124.8 ppb	03:05:57
2	Pb 220.353†	4621.1	4572.3	571.76 ug/L	571.76 ppb	03:05:57
2	S 181.975 Axial†	3848.1	3711.7	5234.2 ug/L	5234.2 ppb	03:05:57
2	Sb 206.836†	1116.2	1061.2	369.70 ug/L	369.70 ppb	03:05:57
2	Se 196.026†	286.5	311.5	550.41 ug/L	550.41 ppb	03:05:57
2	Si 251.611†	1090145.4	1063137.7	33853 ug/L	33853 ppb	03:05:37
2	Sn 189.927†	2750.7	2676.3	478.23 ug/L	478.23 ppb	03:05:57
2	Ti 334.940†	1969275.9	1922857.2	3097.9 ug/L	3097.9 ppb	03:05:37
2	Tl 190.801†	1420.2	1418.6	468.24 ug/L	468.24 ppb	03:05:57
2	U 409.014†	3969.2	5884.5	159.85 ug/L	159.85 ppb	03:05:37
2	V 292.402†	90757.1	89864.2	601.33 ug/L	601.33 ppb	03:05:37
2	Zn 213.857†	85785.5	83083.3	771.35 ug/L	771.35 ppb	03:05:37
2	SiO2†	1086586.6	1059644.1	72288 ug/L	72288 ppb	03:06:37
3	Sc Radial	5133.7	5133.7	102 %		03:05:01
3	Y RADIAL	6905.5	6905.5	127.2 %		03:05:01
3	Al 396.153Radial†	130518.5	128017.8	98740 ug/L	98740 ppb	03:04:41
3	Ca 317.933Radial†	10211.5	9996.0	15995 ug/L	15995 ppb	03:04:41
3	Fe 238.204 Radial†	12699.6	12447.3	107740 ug/L	107740 ppb	03:04:41
3	K 766.490 Radial†	82295.8	78128.4	14278 ug/L	14278 ppb	03:04:41
3	Mg 279.077 IEC†	569.0	556.2	18477 ug/L	18477 ppb	03:05:01
3	Na 589.592 Radial†	22626.8	23473.6	7028.3 ug/L	7028.3 ppb	03:04:41
3	Sr 421.552†	89547.0	87850.3	567.30 ug/L	567.30 ppb	03:04:41
3	Sc 361.383	872773.1	872773.1	102.39 %		03:06:04
3	Y 371.029	924048.7	924048.7	127.87 %		03:06:04
3	Ag 328.068†	101996.9	99257.8	493.97 ug/L	493.97 ppb	03:06:04
3	As 188.979†	1072.5	1071.1	498.83 ug/L	498.83 ppb	03:06:24
3	B 249.677†	21662.0	21788.1	473.40 ug/L	473.40 ppb	03:06:04
3	Ba 233.527†	116050.0	113352.2	890.18 ug/L	890.18 ppb	03:06:04
3	Be 313.107†	1321071.7	1294816.3	500.39 ug/L	500.39 ppb	03:06:04
3	Cd 226.502†	44292.5	43462.6	471.52 ug/L	471.52 ppb	03:06:04
3	Co 228.616†	24802.3	24298.0	490.59 ug/L	490.59 ppb	03:06:24
3	Cr 267.716†	60873.9	59369.5	666.64 ug/L	666.64 ppb	03:06:04
3	Cu 324.752†	193151.5	182230.1	550.52 ug/L	550.52 ppb	03:06:04
3	Mn 257.610†	2875044.6	2807481.0	3123.7 ug/L	3123.7 ppb	03:06:04
3	Mo 202.031†	7036.4	6848.4	491.57 ug/L	491.57 ppb	03:06:24
3	Ni 231.604†	21436.3	20867.9	519.31 ug/L	519.31 ppb	03:06:24
3	P 214.914†	2425.0	2138.5	1131.0 ug/L	1131.0 ppb	03:06:24
3	Pb 220.353†	4652.4	4607.2	576.04 ug/L	576.04 ppb	03:06:24
3	S 181.975 Axial†	3885.3	3751.6	5290.7 ug/L	5290.7 ppb	03:06:24
3	Sb 206.836†	1114.4	1060.5	369.52 ug/L	369.52 ppb	03:06:24
3	Se 196.026†	291.0	316.2	554.06 ug/L	554.06 ppb	03:06:24
3	Si 251.611†	1086934.9	1061009.7	33785 ug/L	33785 ppb	03:06:04
3	Sn 189.927†	2754.2	2682.3	479.30 ug/L	479.30 ppb	03:06:24
3	Ti 334.940†	1965782.3	1921265.1	3095.4 ug/L	3095.4 ppb	03:06:04
3	Tl 190.801†	1427.5	1427.0	470.77 ug/L	470.77 ppb	03:06:24
3	U 409.014†	3995.4	5913.7	160.69 ug/L	160.69 ppb	03:06:04
3	V 292.402†	90551.1	89746.8	600.53 ug/L	600.53 ppb	03:06:04
3	Zn 213.857†	85419.5	82805.1	768.69 ug/L	768.69 ppb	03:06:04
3	SiO2†	1087775.7	1061809.6	72436 ug/L	72436 ppb	03:06:42

Mean Data: 1202004429|936808|1

Analyte	Mean Corrected	Conc.	Calib.	Std.Dev.	Sample	Std.Dev.	RSD
	Intensity		Units		Conc. Units		
Sc 361.383	872352.7	102.34	%	0.176			0.17%
Sc Radial	5166.4	103	%	0.8			0.78%
Y 371.029	923949.6	127.85	%	0.057			0.04%
Y RADIAL	6953.1	128.1	%	0.94			0.73%
Ag 328.068†	99491.1	494.99	ug/L	1.047	494.99 ppb	1.047	0.21%
Al 396.153Radial†	127677.6	98478	ug/L	376.1	98478 ppb	376.1	0.38%
As 188.979†	1067.5	497.22	ug/L	3.150	497.22 ppb	3.150	0.63%
B 249.677†	21849.1	474.78	ug/L	1.938	474.78 ppb	1.938	0.41%
Ba 233.527†	113368.1	890.30	ug/L	0.382	890.30 ppb	0.382	0.04%
Be 313.107†	1295854.6	500.78	ug/L	0.346	500.78 ppb	0.346	0.07%
Ca 317.933Radial†	9966.7	15948	ug/L	42.7	15948 ppb	42.7	0.27%
Cd 226.502†	43549.5	472.50	ug/L	1.378	472.50 ppb	1.378	0.29%
Co 228.616†	24255.6	489.72	ug/L	1.418	489.72 ppb	1.418	0.29%
Cr 267.716†	59228.5	665.06	ug/L	1.565	665.06 ppb	1.565	0.24%
Cu 324.752†	182263.0	550.61	ug/L	0.782	550.61 ppb	0.782	0.14%
Fe 238.204 Radial†	12425.3	107550	ug/L	184.9	107550 ppb	184.9	0.17%
K 766.490 Radial†	77927.7	14241	ug/L	32.9	14241 ppb	32.9	0.23%



Mg 279.077 IEC†	555.6	18456 ug/L	69.5	18456 ppb	69.5	0.38%
Mn 257.610†	2809626.3	3126.0 ug/L	2.50	3126.0 ppb	2.50	0.08%
Mo 202.031†	6830.1	490.26 ug/L	1.141	490.26 ppb	1.141	0.23%
Na 589.592 Radial†	23501.7	7036.7 ug/L	14.87	7036.7 ppb	14.87	0.21%
Ni 231.604†	20842.1	518.67 ug/L	1.278	518.67 ppb	1.278	0.25%
P 214.914†	2131.3	1126.7 ug/L	3.72	1126.7 ppb	3.72	0.33%
Pb 220.353†	4586.4	573.45 ug/L	2.275	573.45 ppb	2.275	0.40%
S 181.975 Axial†	3735.4	5267.8 ug/L	29.72	5267.8 ppb	29.72	0.56%
Sb 206.836†	1061.7	369.95 ug/L	0.592	369.95 ppb	0.592	0.16%
Se 196.026†	313.0	551.36 ug/L	2.372	551.36 ppb	2.372	0.43%
Si 251.611†	1061893.0	33814 ug/L	35.3	33814 ppb	35.3	0.10%
Sn 189.927†	2684.7	479.72 ug/L	1.740	479.72 ppb	1.740	0.36%
Sr 421.552†	87698.7	566.32 ug/L	1.214	566.32 ppb	1.214	0.21%
Ti 334.940†	1921252.0	3095.3 ug/L	2.59	3095.3 ppb	2.59	0.08%
Tl 190.801†	1418.2	468.08 ug/L	2.772	468.08 ppb	2.772	0.59%
U 409.014†	5899.1	160.28 ug/L	0.417	160.28 ppb	0.417	0.26%
V 292.402†	89854.8	601.28 ug/L	0.721	601.28 ppb	0.721	0.12%
Zn 213.857†	82973.9	770.31 ug/L	1.422	770.31 ppb	1.422	0.18%
SiO2†	1064838.5	72642 ug/L	491.5	72642 ppb	491.5	0.68%



Sequence No.: 103

Sample ID: 1202004431|936808|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 107

Date Collected: 1/12/2010 03:08:54

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004431|936808|1

Rep#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4929.8	4929.8	97.9 %		03:11:07
1	Y RADIAL	6608.4	6608.4	121.7 %		03:11:07
1	Al 396.153Radial†	107553.2	109854.5	84728 ug/L	84728 ppb	03:10:47
1	Ca 317.933Radial†	8586.0	8749.9	14001 ug/L	14001 ppb	03:10:47
1	Fe 238.204 Radial†	11341.4	11575.1	100190 ug/L	100190 ppb	03:10:47
1	K 766.490 Radial†	74904.2	73916.3	13512 ug/L	13512 ppb	03:10:47
1	Mg 279.077 IEC†	476.1	484.4	16085 ug/L	16085 ppb	03:11:07
1	Na 589.592 Radial†	21457.1	23196.5	6945.3 ug/L	6945.3 ppb	03:10:47
1	Sr 421.552†	89705.4	91643.8	591.81 ug/L	591.81 ppb	03:10:47
1	Sc 361.383	876021.0	876021.0	102.77 %		03:12:06
1	Y 371.029	918427.8	918427.8	127.09 %		03:12:06
1	Ag 328.068†	104969.3	101780.6	503.09 ug/L	503.09 ppb	03:12:06
1	As 188.979†	1077.9	1072.5	497.91 ug/L	497.91 ppb	03:12:26
1	B 249.677†	22209.7	22242.7	484.29 ug/L	484.29 ppb	03:12:06
1	Ba 233.527†	119443.1	116233.5	912.36 ug/L	912.36 ppb	03:12:06
1	Be 313.107†	1344176.7	1312514.7	507.12 ug/L	507.12 ppb	03:12:06
1	Cd 226.502†	45301.0	44283.5	481.41 ug/L	481.41 ppb	03:12:06
1	Co 228.616†	24989.7	24390.4	492.60 ug/L	492.60 ppb	03:12:26
1	Cr 267.716†	64279.5	62462.9	701.03 ug/L	701.03 ppb	03:12:06
1	Cu 324.752†	194610.8	182950.6	552.26 ug/L	552.26 ppb	03:12:06
1	Mn 257.610†	2389111.1	2324240.9	2587.2 ug/L	2587.2 ppb	03:12:06
1	Mo 202.031†	7113.9	6898.3	494.56 ug/L	494.56 ppb	03:12:26
1	Ni 231.604†	21324.3	20681.3	514.67 ug/L	514.67 ppb	03:12:26
1	P 214.914†	2466.1	2169.8	1152.3 ug/L	1152.3 ppb	03:12:26
1	Pb 220.353†	4497.7	4439.8	553.26 ug/L	553.26 ppb	03:12:26
1	S 181.975 Axial†	3932.1	3783.1	5337.9 ug/L	5337.9 ppb	03:12:26
1	Sb 206.836†	1250.0	1188.3	413.94 ug/L	413.94 ppb	03:12:26
1	Se 196.026†	349.2	371.7	565.06 ug/L	565.06 ppb	03:12:26
1	Si 251.611†	1080747.5	1051053.4	33468 ug/L	33468 ppb	03:12:06
1	Sn 189.927†	2824.1	2740.3	489.17 ug/L	489.17 ppb	03:12:26
1	Ti 334.940†	1970308.2	1918550.9	3090.9 ug/L	3090.9 ppb	03:12:06
1	Tl 190.801†	1458.9	1452.4	476.01 ug/L	476.01 ppb	03:12:26
1	U 409.014†	5203.9	7075.2	195.73 ug/L	195.73 ppb	03:12:06
1	V 292.402†	88514.7	87437.5	585.98 ug/L	585.98 ppb	03:12:06
1	Zn 213.857†	83516.6	80644.2	749.01 ug/L	749.01 ppb	03:12:06
1	SiO2†	1074552.3	1045004.0	71289 ug/L	71289 ppb	03:13:28
2	Sc Radial	5185.2	5185.2	103 %		03:11:32
2	Y RADIAL	6908.9	6908.9	127.2 %		03:11:32
2	Al 396.153Radial†	108429.4	105296.0	81211 ug/L	81211 ppb	03:11:12
2	Ca 317.933Radial†	8647.3	8377.6	13405 ug/L	13405 ppb	03:11:12
2	Fe 238.204 Radial†	11450.9	11111.0	96171 ug/L	96171 ppb	03:11:12
2	K 766.490 Radial†	75598.9	70823.7	12945 ug/L	12945 ppb	03:11:12
2	Mg 279.077 IEC†	487.6	471.6	15660 ug/L	15660 ppb	03:11:32
2	Na 589.592 Radial†	21614.0	22269.7	6667.8 ug/L	6667.8 ppb	03:11:12
2	Sr 421.552†	90634.4	88034.2	568.51 ug/L	568.51 ppb	03:11:12
2	Sc 361.383	877623.1	877623.1	102.96 %		03:12:34
2	Y 371.029	921439.1	921439.1	127.51 %		03:12:34
2	Ag 328.068†	105252.9	101869.6	502.20 ug/L	502.20 ppb	03:12:34
2	As 188.979†	1076.2	1068.9	495.57 ug/L	495.57 ppb	03:12:54
2	B 249.677†	22302.6	22293.4	485.83 ug/L	485.83 ppb	03:12:34
2	Ba 233.527†	119776.2	116344.9	913.09 ug/L	913.09 ppb	03:12:34
2	Be 313.107†	1347180.6	1313044.6	507.32 ug/L	507.32 ppb	03:12:34
2	Cd 226.502†	45382.4	44282.1	481.81 ug/L	481.81 ppb	03:12:34
2	Co 228.616†	24960.5	24317.7	491.17 ug/L	491.17 ppb	03:12:54
2	Cr 267.716†	64351.7	62418.8	700.46 ug/L	700.46 ppb	03:12:34
2	Cu 324.752†	194739.1	182729.6	551.38 ug/L	551.38 ppb	03:12:34
2	Mn 257.610†	2390007.9	2320868.2	2583.0 ug/L	2583.0 ppb	03:12:34
2	Mo 202.031†	7123.1	6894.7	494.02 ug/L	494.02 ppb	03:12:54
2	Ni 231.604†	21335.5	20654.3	514.00 ug/L	514.00 ppb	03:12:54



2	P 214.914†	2460.0	2159.4	1148.5 ug/L	1148.5 ppb	03:12:54
2	Pb 220.353†	4528.4	4461.6	555.56 ug/L	555.56 ppb	03:12:54
2	S 181.975 Axial†	3946.4	3789.9	5348.2 ug/L	5348.2 ppb	03:12:54
2	Sb 206.836†	1246.3	1182.6	412.03 ug/L	412.03 ppb	03:12:54
2	Se 196.026†	352.9	374.7	553.99 ug/L	553.99 ppb	03:12:54
2	Si 251.611†	1081376.0	1049744.0	33427 ug/L	33427 ppb	03:12:34
2	Sn 189.927†	2818.9	2730.3	487.23 ug/L	487.23 ppb	03:12:54
2	Ti 334.940†	1973697.1	1918342.6	3090.6 ug/L	3090.6 ppb	03:12:34
2	Tl 190.801†	1451.6	1442.7	473.02 ug/L	473.02 ppb	03:12:54
2	U 409.014†	5370.4	7227.7	200.69 ug/L	200.69 ppb	03:12:34
2	V 292.402†	88794.0	87551.5	587.37 ug/L	587.37 ppb	03:12:34
2	Zn 213.857†	83754.9	80727.3	750.19 ug/L	750.19 ppb	03:12:34
2	SiO2†	1074074.8	1042631.5	71127 ug/L	71127 ppb	03:13:33
3	Sc Radial	5228.2	5228.2	104 %		03:11:58
3	Y RADIAL	6976.9	6976.9	128.5 %		03:11:58
3	Al 396.153Radial†	106359.4	102435.6	79004 ug/L	79004 ppb	03:11:38
3	Ca 317.933Radial†	8520.6	8186.4	13099 ug/L	13099 ppb	03:11:38
3	Fe 238.204 Radial†	11180.1	10758.7	93122 ug/L	93122 ppb	03:11:38
3	K 766.490 Radial†	74177.8	68850.7	12584 ug/L	12584 ppb	03:11:38
3	Mg 279.077 IEC†	490.2	470.2	15619 ug/L	15619 ppb	03:11:58
3	Na 589.592 Radial†	21025.2	21529.9	6446.3 ug/L	6446.3 ppb	03:11:38
3	Sr 421.552†	88336.9	85097.0	549.54 ug/L	549.54 ppb	03:11:38
3	Sc 361.383	873831.8	873831.8	102.51 %		03:13:01
3	Y 371.029	918411.9	918411.9	127.09 %		03:13:01
3	Ag 328.068†	104742.2	101815.0	500.97 ug/L	500.97 ppb	03:13:01
3	As 188.979†	1073.1	1070.4	495.63 ug/L	495.63 ppb	03:13:21
3	B 249.677†	22317.1	22401.6	488.55 ug/L	488.55 ppb	03:13:01
3	Ba 233.527†	118869.7	115965.4	910.01 ug/L	910.01 ppb	03:13:01
3	Be 313.107†	1342001.0	1313669.0	507.56 ug/L	507.56 ppb	03:13:01
3	Cd 226.502†	44998.1	44098.5	480.09 ug/L	480.09 ppb	03:13:01
3	Co 228.616†	24914.6	24378.1	492.45 ug/L	492.45 ppb	03:13:21
3	Cr 267.716†	63983.6	62330.9	699.42 ug/L	699.42 ppb	03:13:01
3	Cu 324.752†	194232.6	183056.2	552.20 ug/L	552.20 ppb	03:13:01
3	Mn 257.610†	2377485.4	2318724.3	2580.3 ug/L	2580.3 ppb	03:13:01
3	Mo 202.031†	7108.4	6910.3	494.91 ug/L	494.91 ppb	03:13:21
3	Ni 231.604†	21287.5	20697.4	515.07 ug/L	515.07 ppb	03:13:21
3	P 214.914†	2440.3	2150.6	1144.8 ug/L	1144.8 ppb	03:13:21
3	Pb 220.353†	4502.0	4455.0	554.57 ug/L	554.57 ppb	03:13:21
3	S 181.975 Axial†	3937.8	3798.2	5360.3 ug/L	5360.3 ppb	03:13:21
3	Sb 206.836†	1249.6	1191.0	415.01 ug/L	415.01 ppb	03:13:21
3	Se 196.026†	349.8	373.3	543.21 ug/L	543.21 ppb	03:13:21
3	Si 251.611†	1076503.0	1049547.5	33420 ug/L	33420 ppb	03:13:01
3	Sn 189.927†	2811.7	2735.1	488.00 ug/L	488.00 ppb	03:13:21
3	Ti 334.940†	1965386.8	1918553.2	3090.9 ug/L	3090.9 ppb	03:13:01
3	Tl 190.801†	1453.4	1450.6	475.43 ug/L	475.43 ppb	03:13:21
3	U 409.014†	5143.2	7028.6	195.17 ug/L	195.17 ppb	03:13:01
3	V 292.402†	88300.9	87444.7	587.11 ug/L	587.11 ppb	03:13:01
3	Zn 213.857†	83131.8	80472.4	748.06 ug/L	748.06 ppb	03:13:01
3	SiO2†	1077544.9	1050542.6	71667 ug/L	71667 ppb	03:13:39

Mean Data: 1202004431|936808|1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	875825.3	102.75 %	0.223			0.22%
Sc Radial	5114.4	102 %	3.2			3.15%
Y 371.029	919426.3	127.23 %	0.241			0.19%
Y RADIAL	6831.4	125.8 %	3.61			2.87%
Ag 328.068†	101821.8	502.09 ug/L	1.063	502.09 ppb	1.063	0.21%
Al 396.153Radial†	105862.1	81647 ug/L	2886.7	81647 ppb	2886.7	3.54%
As 188.979†	1070.6	496.37 ug/L	1.332	496.37 ppb	1.332	0.27%
B 249.677†	22312.5	486.23 ug/L	2.157	486.23 ppb	2.157	0.44%
Ba 233.527†	116181.3	911.82 ug/L	1.608	911.82 ppb	1.608	0.18%
Be 313.107†	1313076.1	507.34 ug/L	0.220	507.34 ppb	0.220	0.04%
Ca 317.933Radial†	8438.0	13502 ug/L	458.5	13502 ppb	458.5	3.40%
Cd 226.502†	44221.4	481.10 ug/L	0.902	481.10 ppb	0.902	0.19%
Co 228.616†	24362.1	492.08 ug/L	0.786	492.08 ppb	0.786	0.16%
Cr 267.716†	62404.2	700.30 ug/L	0.817	700.30 ppb	0.817	0.12%
Cu 324.752†	182912.1	551.95 ug/L	0.490	551.95 ppb	0.490	0.09%
Fe 238.204 Radial†	11148.3	96493 ug/L	3543.6	96493 ppb	3543.6	3.67%
K 766.490 Radial†	71196.9	13014 ug/L	467.9	13014 ppb	467.9	3.60%



Mg 279.077 IEC†	475.4	15788 ug/L	257.9	15788 ppb	257.9	1.63%
Mn 257.610†	2321277.8	2583.5 ug/L	3.47	2583.5 ppb	3.47	0.13%
Mo 202.031†	6901.1	494.49 ug/L	0.448	494.49 ppb	0.448	0.09%
Na 589.592 Radial†	22332.0	6686.5 ug/L	250.03	6686.5 ppb	250.03	3.74%
Ni 231.604†	20677.7	514.58 ug/L	0.541	514.58 ppb	0.541	0.11%
P 214.914†	2159.9	1148.5 ug/L	3.77	1148.5 ppb	3.77	0.33%
Pb 220.353†	4452.1	554.46 ug/L	1.152	554.46 ppb	1.152	0.21%
S 181.975 Axial†	3790.4	5348.8 ug/L	11.21	5348.8 ppb	11.21	0.21%
Sb 206.836†	1187.3	413.66 ug/L	1.510	413.66 ppb	1.510	0.37%
Se 196.026†	373.3	554.09 ug/L	10.928	554.09 ppb	10.928	1.97%
Si 251.611†	1050115.0	33438 ug/L	26.1	33438 ppb	26.1	0.08%
Sn 189.927†	2735.2	488.13 ug/L	0.974	488.13 ppb	0.974	0.20%
Sr 421.552†	88258.3	569.95 ug/L	21.176	569.95 ppb	21.176	3.72%
Ti 334.940†	1918482.2	3090.8 ug/L	0.20	3090.8 ppb	0.20	0.01%
Tl 190.801†	1448.6	474.82 ug/L	1.587	474.82 ppb	1.587	0.33%
U 409.014†	7110.5	197.20 ug/L	3.038	197.20 ppb	3.038	1.54%
V 292.402†	87477.9	586.82 ug/L	0.739	586.82 ppb	0.739	0.13%
Zn 213.857†	80614.7	749.09 ug/L	1.064	749.09 ppb	1.064	0.14%
SiO2†	1046059.4	71361 ug/L	277.0	71361 ppb	277.0	0.39%



Sequence No.: 104

Sample ID: 1202004430|936808|5

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 108

Date Collected: 1/12/2010 03:15:51

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004430|936808|5

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5037.7	5037.7	100 %		03:17:45
1	Y RADIAL	5614.2	5614.2	103.4 %		03:17:45
1	Al 396.153Radial†	10082.1	10078.0	7775.0 ug/L	7775.0 ppb	03:17:45
1	Ca 317.933Radial†	1071.6	1051.3	1682.2 ug/L	1682.2 ppb	03:18:05
1	Fe 238.204 Radial†	2045.4	2035.6	17616 ug/L	17616 ppb	03:18:05
1	K 766.490 Radial†	9186.3	6591.8	1203.2 ug/L	1203.2 ppb	03:17:45
1	Mg 279.077 IEC†	48.8	46.8	1546.8 ug/L	1546.8 ppb	03:18:05
1	Na 589.592 Radial†	-136.8	1143.8	342.45 ug/L	342.45 ppb	03:17:45
1	Sr 421.552†	2238.4	2256.8	14.564 ug/L	14.564 ppb	03:17:45
1	Sc 361.383	851704.5	851704.5	99.919 %		03:19:02
1	Y 371.029	747861.5	747861.5	103.49 %		03:19:02
1	Ag 328.068†	-807.2	-1165.8	0.4456 ug/L	0.4456 ppb	03:19:02
1	As 188.979†	-28.4	-4.8	4.2131 ug/L	4.2131 ppb	03:19:22
1	B 249.677†	-267.2	364.4	6.3214 ug/L	6.3214 ppb	03:19:02
1	Ba 233.527†	11797.0	11818.0	92.954 ug/L	92.954 ppb	03:19:02
1	Be 313.107†	-6037.2	-1456.8	0.8073 ug/L	0.8073 ppb	03:19:02
1	Cd 226.502†	-27.4	176.6	0.1355 ug/L	0.1355 ppb	03:19:22
1	Co 228.616†	246.7	321.6	5.1066 ug/L	5.1066 ppb	03:19:22
1	Cr 267.716†	2217.2	2135.7	24.275 ug/L	24.275 ppb	03:19:02
1	Cu 324.752†	8348.8	1943.4	6.7729 ug/L	6.7729 ppb	03:19:02
1	Mn 257.610†	394869.8	394746.4	439.52 ug/L	439.52 ppb	03:19:02
1	Mo 202.031†	39.2	15.6	2.3252 ug/L	2.3252 ppb	03:19:22
1	Ni 231.604†	405.1	337.5	8.3996 ug/L	8.3996 ppb	03:19:22
1	P 214.914†	518.9	289.5	163.46 ug/L	163.46 ppb	03:19:22
1	Pb 220.353†	60.7	124.1	15.199 ug/L	15.199 ppb	03:19:22
1	S 181.975 Axial†	109.8	66.8	93.136 ug/L	93.136 ppb	03:19:22
1	Sb 206.836†	46.4	18.5	4.1972 ug/L	4.1972 ppb	03:19:22
1	Se 196.026†	-93.3	-61.4	17.066 ug/L	17.066 ppb	03:19:22
1	Si 251.611†	173297.6	172888.3	5506.2 ug/L	5506.2 ppb	03:19:02
1	Sn 189.927†	-4.4	-12.0	-1.5932 ug/L	-1.5932 ppb	03:19:22
1	Ti 334.940†	370807.6	372484.0	600.19 ug/L	600.19 ppb	03:19:02
1	Tl 190.801†	-65.8	-33.0	-4.0309 ug/L	-4.0309 ppb	03:19:22
1	U 409.014†	-3805.6	-1797.1	-55.075 ug/L	-55.075 ppb	03:19:02
1	V 292.402†	2196.7	3508.2	20.556 ug/L	20.556 ppb	03:19:02
1	Zn 213.857†	6239.0	5623.9	51.421 ug/L	51.421 ppb	03:19:02
1	SiO2†	174557.5	174128.0	11881 ug/L	11881 ppb	03:20:19
2	Sc Radial	5200.0	5200.0	103 %		03:18:10
2	Y RADIAL	5801.0	5801.0	106.8 %		03:18:10
2	Al 396.153Radial†	10294.2	9968.7	7690.7 ug/L	7690.7 ppb	03:18:10
2	Ca 317.933Radial†	1077.7	1023.8	1638.1 ug/L	1638.1 ppb	03:18:30
2	Fe 238.204 Radial†	2061.6	1987.4	17199 ug/L	17199 ppb	03:18:30
2	K 766.490 Radial†	9226.8	6344.4	1157.8 ug/L	1157.8 ppb	03:18:10
2	Mg 279.077 IEC†	48.5	45.0	1487.0 ug/L	1487.0 ppb	03:18:30
2	Na 589.592 Radial†	-113.5	1170.6	350.48 ug/L	350.48 ppb	03:18:10
2	Sr 421.552†	2265.8	2213.6	14.285 ug/L	14.285 ppb	03:18:10
2	Sc 361.383	855769.3	855769.3	100.40 %		03:19:28
2	Y 371.029	751894.0	751894.0	104.04 %		03:19:28
2	Ag 328.068†	-883.9	-1238.4	-0.0227 ug/L	-0.0227 ppb	03:19:28
2	As 188.979†	-26.3	-2.6	5.1108 ug/L	5.1108 ppb	03:19:48
2	B 249.677†	-362.1	271.2	4.2859 ug/L	4.2859 ppb	03:19:28
2	Ba 233.527†	11872.4	11837.0	93.087 ug/L	93.087 ppb	03:19:28
2	Be 313.107†	-5994.9	-1385.9	0.8330 ug/L	0.8330 ppb	03:19:28
2	Cd 226.502†	-25.1	179.1	0.2058 ug/L	0.2058 ppb	03:19:48
2	Co 228.616†	235.5	309.2	4.8610 ug/L	4.8610 ppb	03:19:48
2	Cr 267.716†	2245.9	2153.8	24.469 ug/L	24.469 ppb	03:19:28
2	Cu 324.752†	8302.0	1857.1	6.4932 ug/L	6.4932 ppb	03:19:28
2	Mn 257.610†	396440.3	394433.7	439.13 ug/L	439.13 ppb	03:19:28
2	Mo 202.031†	44.1	20.2	2.6218 ug/L	2.6218 ppb	03:19:48
2	Ni 231.604†	393.6	324.1	8.0651 ug/L	8.0651 ppb	03:19:48



2	P 214.914†	534.0	302.1	171.53 ug/L	171.53 ppb	03:19:48
2	Pb 220.353†	75.8	138.8	17.020 ug/L	17.020 ppb	03:19:48
2	S 181.975 Axial†	105.2	61.8	86.039 ug/L	86.039 ppb	03:19:48
2	Sb 206.836†	41.4	13.3	2.4145 ug/L	2.4145 ppb	03:19:48
2	Se 196.026†	-93.1	-60.7	16.133 ug/L	16.133 ppb	03:19:48
2	Si 251.611†	174077.6	172841.4	5504.7 ug/L	5504.7 ppb	03:19:28
2	Sn 189.927†	-5.1	-12.7	-1.7330 ug/L	-1.7330 ppb	03:19:48
2	Ti 334.940†	372211.9	372120.1	599.61 ug/L	599.61 ppb	03:19:28
2	Tl 190.801†	-61.1	-28.0	-2.5134 ug/L	-2.5134 ppb	03:19:48
2	U 409.014†	-3839.0	-1812.2	-55.474 ug/L	-55.474 ppb	03:19:28
2	V 292.402†	2198.2	3499.3	20.563 ug/L	20.563 ppb	03:19:28
2	Zn 213.857†	6310.6	5665.5	51.858 ug/L	51.858 ppb	03:19:28
2	SiO2†	172931.7	171678.8	11714 ug/L	11714 ppb	03:20:24
3	Sc Radial	4996.8	4996.8	99.2 %		03:18:35
3	Y RADIAL	5610.1	5610.1	103.3 %		03:18:35
3	Al 396.153Radial†	9942.2	10019.4	7729.8 ug/L	7729.8 ppb	03:18:35
3	Ca 317.933Radial†	1071.1	1059.6	1695.5 ug/L	1695.5 ppb	03:18:55
3	Fe 238.204 Radial†	2044.4	2051.2	17752 ug/L	17752 ppb	03:18:55
3	K 766.490 Radial†	9043.5	6523.0	1190.6 ug/L	1190.6 ppb	03:18:35
3	Mg 279.077 IEC†	47.4	45.8	1512.2 ug/L	1512.2 ppb	03:18:55
3	Na 589.592 Radial†	-171.3	1107.8	331.70 ug/L	331.70 ppb	03:18:35
3	Sr 421.552†	2187.1	2223.5	14.349 ug/L	14.349 ppb	03:18:35
3	Sc 361.383	858004.5	858004.5	100.66 %		03:19:53
3	Y 371.029	754877.1	754877.1	104.46 %		03:19:53
3	Ag 328.068†	-844.0	-1196.4	0.3426 ug/L	0.3426 ppb	03:19:53
3	As 188.979†	-32.3	-8.5	2.6425 ug/L	2.6425 ppb	03:20:13
3	B 249.677†	-374.7	259.5	3.9699 ug/L	3.9699 ppb	03:19:53
3	Ba 233.527†	11877.2	11811.0	92.904 ug/L	92.904 ppb	03:19:53
3	Be 313.107†	-6024.3	-1399.6	0.8270 ug/L	0.8270 ppb	03:19:53
3	Cd 226.502†	-33.9	170.4	0.0531 ug/L	0.0531 ppb	03:20:13
3	Co 228.616†	236.7	309.8	4.8655 ug/L	4.8655 ppb	03:20:13
3	Cr 267.716†	2316.6	2218.2	25.197 ug/L	25.197 ppb	03:19:53
3	Cu 324.752†	8362.8	1895.9	6.6345 ug/L	6.6345 ppb	03:19:53
3	Mn 257.610†	396861.5	393823.4	438.52 ug/L	438.52 ppb	03:19:53
3	Mo 202.031†	44.0	20.0	2.6478 ug/L	2.6478 ppb	03:20:13
3	Ni 231.604†	382.9	312.4	7.7750 ug/L	7.7750 ppb	03:20:13
3	P 214.914†	519.9	286.7	161.66 ug/L	161.66 ppb	03:20:13
3	Pb 220.353†	59.6	122.6	14.992 ug/L	14.992 ppb	03:20:13
3	S 181.975 Axial†	112.1	68.4	95.281 ug/L	95.281 ppb	03:20:13
3	Sb 206.836†	41.5	13.3	2.4198 ug/L	2.4198 ppb	03:20:13
3	Se 196.026†	-102.3	-69.6	12.168 ug/L	12.168 ppb	03:20:13
3	Si 251.611†	174193.1	172504.4	5494.0 ug/L	5494.0 ppb	03:19:53
3	Sn 189.927†	-3.6	-11.3	-1.4582 ug/L	-1.4582 ppb	03:20:13
3	Ti 334.940†	372954.3	371891.8	599.24 ug/L	599.24 ppb	03:19:53
3	Tl 190.801†	-60.3	-27.0	-2.2075 ug/L	-2.2075 ppb	03:20:13
3	U 409.014†	-3605.7	-1570.5	-48.408 ug/L	-48.408 ppb	03:19:53
3	V 292.402†	2192.7	3488.1	20.416 ug/L	20.416 ppb	03:19:53
3	Zn 213.857†	6292.2	5630.9	51.478 ug/L	51.478 ppb	03:19:53
3	SiO2†	172358.3	170660.3	11644 ug/L	11644 ppb	03:20:29

Mean Data: 1202004430|936808|5

Analyte	Mean Corrected	Conc.	Calib.	Std.Dev.	Sample	Std.Dev.	RSD
	Intensity	Units			Conc. Units		
Sc 361.383	855159.4	100.32 %		0.375			0.37%
Sc Radial	5078.2	101 %		2.1			2.12%
Y 371.029	751544.2	104.00 %		0.487			0.47%
Y RADIAL	5675.1	104.5 %		2.01			1.92%
Ag 328.068†	-1200.2	0.2552 ug/L		0.24611	0.2552 ppb	0.24611	96.44%
Al 396.153Radial†	10022.0	7731.8 ug/L		42.18	7731.8 ppb	42.18	0.55%
As 188.979†	-5.3	3.9888 ug/L		1.24935	3.9888 ppb	1.24935	31.32%
B 249.677†	298.4	4.8590 ug/L		1.27622	4.8590 ppb	1.27622	26.26%
Ba 233.527†	11822.0	92.982 ug/L		0.0946	92.982 ppb	0.0946	0.10%
Be 313.107†	-1414.1	0.8225 ug/L		0.01343	0.8225 ppb	0.01343	1.63%
Ca 317.933Radial†	1044.9	1671.9 ug/L		30.03	1671.9 ppb	30.03	1.80%
Cd 226.502†	175.4	0.1315 ug/L		0.07642	0.1315 ppb	0.07642	58.12%
Co 228.616†	313.6	4.9444 ug/L		0.14050	4.9444 ppb	0.14050	2.84%
Cr 267.716†	2169.2	24.647 ug/L		0.4860	24.647 ppb	0.4860	1.97%
Cu 324.752†	1898.8	6.6336 ug/L		0.13984	6.6336 ppb	0.13984	2.11%
Fe 238.204 Radial†	2024.7	17522 ug/L		288.0	17522 ppb	288.0	1.64%
K 766.490 Radial†	6486.4	1183.8 ug/L		23.41	1183.8 ppb	23.41	1.98%



Mg 279.077 IEC†	45.9	1515.3 ug/L	30.01	1515.3 ppb	30.01	1.98%
Mn 257.610†	394334.5	439.06 ug/L	0.508	439.06 ppb	0.508	0.12%
Mo 202.031†	18.6	2.5316 ug/L	0.17921	2.5316 ppb	0.17921	7.08%
Na 589.592 Radial†	1140.7	341.54 ug/L	9.423	341.54 ppb	9.423	2.76%
Ni 231.604†	324.6	8.0799 ug/L	0.31259	8.0799 ppb	0.31259	3.87%
P 214.914†	292.7	165.55 ug/L	5.257	165.55 ppb	5.257	3.18%
Pb 220.353†	128.5	15.737 ug/L	1.1160	15.737 ppb	1.1160	7.09%
S 181.975 Axial†	65.7	91.485 ug/L	4.8374	91.485 ppb	4.8374	5.29%
Sb 206.836†	15.0	3.0105 ug/L	1.02769	3.0105 ppb	1.02769	34.14%
Se 196.026†	-63.9	15.122 ug/L	2.6008	15.122 ppb	2.6008	17.20%
Si 251.611†	172744.7	5501.6 ug/L	6.67	5501.6 ppb	6.67	0.12%
Sn 189.927†	-12.0	-1.5948 ug/L	0.13738	-1.5948 ppb	0.13738	8.61%
Sr 421.552†	2231.3	14.399 ug/L	0.1463	14.399 ppb	0.1463	1.02%
Ti 334.940†	372165.3	599.68 ug/L	0.481	599.68 ppb	0.481	0.08%
Tl 190.801†	-29.4	-2.9173 ug/L	0.97652	-2.9173 ppb	0.97652	33.47%
U 409.014†	-1726.6	-52.986 ug/L	3.9696	-52.986 ppb	3.9696	7.49%
V 292.402†	3498.5	20.512 ug/L	0.0829	20.512 ppb	0.0829	0.40%
Zn 213.857†	5640.1	51.586 ug/L	0.2375	51.586 ppb	0.2375	0.46%
SiO2†	172155.7	11746 ug/L	121.6	11746 ppb	121.6	1.04%



Sequence No.: 105  
 Sample ID: CCV  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 7  
 Date Collected: 1/12/2010 03:22:41  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5045.3	5045.3	100 %		03:24:33
1	Y RADIAL	5404.9	5404.9	99.55 %		03:24:33
1	Al 396.153Radial†	6601.7	6589.3	5057.7 ug/L	5057.7 ppb	03:24:33
1	Ca 317.933Radial†	3228.4	3202.2	5123.8 ug/L	5123.8 ppb	03:24:53
1	Fe 238.204 Radial†	615.0	604.9	5250.6 ug/L	5250.6 ppb	03:24:53
1	K 766.490 Radial†	30514.5	27863.8	5090.8 ug/L	5090.8 ppb	03:24:33
1	Mg 279.077 IEC†	162.4	160.2	5352.3 ug/L	5352.3 ppb	03:24:53
1	Na 589.592 Radial†	33213.8	34428.4	10308 ug/L	10308 ppb	03:24:33
1	Sr 421.552†	79031.3	78894.1	509.53 ug/L	509.53 ppb	03:24:33
1	Sc 361.383	844293.8	844293.8	99.049 %		03:25:51
1	Y 371.029	703084.9	703084.9	97.290 %		03:25:51
1	Ag 328.068†	114065.7	114802.6	531.89 ug/L	531.89 ppb	03:25:56
1	As 188.979†	1182.2	1217.2	529.62 ug/L	529.62 ppb	03:26:16
1	B 249.677†	22197.9	23042.8	511.67 ug/L	511.67 ppb	03:25:56
1	Ba 233.527†	66436.9	67086.1	525.06 ug/L	525.06 ppb	03:25:56
1	Be 313.107†	1357961.2	1375581.3	525.31 ug/L	525.31 ppb	03:25:51
1	Cd 226.502†	46737.3	47390.0	525.76 ug/L	525.76 ppb	03:25:56
1	Co 228.616†	25424.1	25742.9	527.05 ug/L	527.05 ppb	03:25:56
1	Cr 267.716†	46688.6	47053.5	526.70 ug/L	526.70 ppb	03:25:56
1	Cu 324.752†	177541.6	172833.6	516.80 ug/L	516.80 ppb	03:25:56
1	Mn 257.610†	467865.7	471911.7	523.53 ug/L	523.53 ppb	03:25:51
1	Mo 202.031†	7491.8	7540.0	533.31 ug/L	533.31 ppb	03:26:16
1	Ni 231.604†	21063.3	21197.5	527.50 ug/L	527.50 ppb	03:25:56
1	P 214.914†	4476.2	4289.3	2512.0 ug/L	2512.0 ppb	03:26:16
1	Pb 220.353†	4191.4	4295.0	527.65 ug/L	527.65 ppb	03:26:16
1	S 181.975 Axial†	796.9	761.6	1076.8 ug/L	1076.8 ppb	03:26:16
1	Sb 206.836†	1534.5	1521.3	540.20 ug/L	540.20 ppb	03:26:16
1	Se 196.026†	779.1	818.6	546.12 ug/L	546.12 ppb	03:26:16
1	Si 251.611†	83702.1	83955.1	2667.3 ug/L	2667.3 ppb	03:25:56
1	Sn 189.927†	2984.1	3005.1	533.22 ug/L	533.22 ppb	03:26:16
1	Ti 334.940†	317254.4	321674.2	517.97 ug/L	517.97 ppb	03:25:56
1	Tl 190.801†	1664.4	1713.2	528.78 ug/L	528.78 ppb	03:26:16
1	U 409.014†	15973.3	18138.2	533.30 ug/L	533.30 ppb	03:25:56
1	V 292.402†	74624.7	76650.7	530.73 ug/L	530.73 ppb	03:25:56
1	Zn 213.857†	55623.0	55536.7	520.70 ug/L	520.70 ppb	03:25:56
1	SiO2†	84458.4	84697.4	5764.5 ug/L	5764.5 ppb	03:27:23
2	Sc Radial	5011.9	5011.9	99.5 %		03:24:58
2	Y RADIAL	5374.7	5374.7	98.99 %		03:24:58
2	Al 396.153Radial†	6591.3	6622.6	5083.5 ug/L	5083.5 ppb	03:24:58
2	Ca 317.933Radial†	3244.9	3240.3	5184.7 ug/L	5184.7 ppb	03:25:18
2	Fe 238.204 Radial†	620.7	614.7	5335.5 ug/L	5335.5 ppb	03:25:18
2	K 766.490 Radial†	30246.6	27797.4	5078.6 ug/L	5078.6 ppb	03:24:58
2	Mg 279.077 IEC†	166.3	165.1	5517.3 ug/L	5517.3 ppb	03:25:18
2	Na 589.592 Radial†	32954.0	34388.0	10296 ug/L	10296 ppb	03:24:58
2	Sr 421.552†	78787.7	79174.3	511.34 ug/L	511.34 ppb	03:24:58
2	Sc 361.383	846990.3	846990.3	99.366 %		03:26:22
2	Y 371.029	706257.1	706257.1	97.729 %		03:26:22
2	Ag 328.068†	114761.2	115135.9	533.46 ug/L	533.46 ppb	03:26:27
2	As 188.979†	1176.2	1207.3	525.35 ug/L	525.35 ppb	03:26:47
2	B 249.677†	22471.2	23246.5	516.20 ug/L	516.20 ppb	03:26:27
2	Ba 233.527†	66784.3	67222.1	526.13 ug/L	526.13 ppb	03:26:27
2	Be 313.107†	1362260.1	1375543.0	525.30 ug/L	525.30 ppb	03:26:22
2	Cd 226.502†	46938.5	47442.3	526.33 ug/L	526.33 ppb	03:26:27
2	Co 228.616†	25567.0	25804.9	528.31 ug/L	528.31 ppb	03:26:27
2	Cr 267.716†	46930.5	47146.9	527.75 ug/L	527.75 ppb	03:26:27
2	Cu 324.752†	179084.2	173815.3	519.74 ug/L	519.74 ppb	03:26:27
2	Mn 257.610†	468520.5	471067.0	522.60 ug/L	522.60 ppb	03:26:22
2	Mo 202.031†	7487.9	7512.0	531.33 ug/L	531.33 ppb	03:26:47
2	Ni 231.604†	21100.2	21167.0	526.74 ug/L	526.74 ppb	03:26:27



2	P 214.914†	4482.2	4281.0	2506.2 ug/L	2506.2 ppb	03:26:47
2	Pb 220.353†	4196.1	4286.3	526.57 ug/L	526.57 ppb	03:26:47
2	S 181.975 Axial†	788.5	750.5	1061.1 ug/L	1061.1 ppb	03:26:47
2	Sb 206.836†	1533.0	1514.8	537.94 ug/L	537.94 ppb	03:26:47
2	Se 196.026†	785.4	822.4	548.87 ug/L	548.87 ppb	03:26:47
2	Si 251.611†	84198.0	84185.1	2674.6 ug/L	2674.6 ppb	03:26:27
2	Sn 189.927†	2988.9	3000.3	532.37 ug/L	532.37 ppb	03:26:47
2	Ti 334.940†	319431.3	322845.2	519.85 ug/L	519.85 ppb	03:26:27
2	Tl 190.801†	1677.0	1720.6	531.04 ug/L	531.04 ppb	03:26:47
2	U 409.014†	16221.5	18336.7	539.14 ug/L	539.14 ppb	03:26:27
2	V 292.402†	75200.3	76990.2	533.02 ug/L	533.02 ppb	03:26:27
2	Zn 213.857†	56062.3	55800.0	523.19 ug/L	523.19 ppb	03:26:27
2	SiO2†	84912.8	84883.3	5777.3 ug/L	5777.3 ppb	03:27:28
3	Sc Radial	4987.5	4987.5	99.1 %		03:25:24
3	Y RADIAL	5294.0	5294.0	97.51 %		03:25:24
3	Al 396.153Radial†	6560.7	6624.2	5084.9 ug/L	5084.9 ppb	03:25:24
3	Ca 317.933Radial†	3230.4	3241.6	5186.9 ug/L	5186.9 ppb	03:25:44
3	Fe 238.204 Radial†	613.6	610.6	5300.0 ug/L	5300.0 ppb	03:25:44
3	K 766.490 Radial†	30082.8	27780.9	5075.7 ug/L	5075.7 ppb	03:25:24
3	Mg 279.077 IEC†	161.2	160.8	5373.9 ug/L	5373.9 ppb	03:25:44
3	Na 589.592 Radial†	32527.3	34119.5	10216 ug/L	10216 ppb	03:25:24
3	Sr 421.552†	77652.9	78416.5	506.45 ug/L	506.45 ppb	03:25:24
3	Sc 361.383	849291.1	849291.1	99.636 %		03:26:53
3	Y 371.029	709062.9	709062.9	98.117 %		03:26:53
3	Ag 328.068†	114591.9	114653.1	531.22 ug/L	531.22 ppb	03:26:58
3	As 188.979†	1173.6	1201.6	522.87 ug/L	522.87 ppb	03:27:18
3	B 249.677†	22399.3	23113.1	513.23 ug/L	513.23 ppb	03:26:58
3	Ba 233.527†	66820.7	67076.5	524.99 ug/L	524.99 ppb	03:26:58
3	Be 313.107†	1367681.3	1377270.0	525.96 ug/L	525.96 ppb	03:26:53
3	Cd 226.502†	47009.7	47385.8	525.71 ug/L	525.71 ppb	03:26:58
3	Co 228.616†	25566.8	25735.0	526.87 ug/L	526.87 ppb	03:26:58
3	Cr 267.716†	47028.9	47117.7	527.42 ug/L	527.42 ppb	03:26:58
3	Cu 324.752†	178831.3	173073.3	517.52 ug/L	517.52 ppb	03:26:58
3	Mn 257.610†	468389.9	469658.5	521.04 ug/L	521.04 ppb	03:26:53
3	Mo 202.031†	7473.9	7477.5	528.89 ug/L	528.89 ppb	03:27:18
3	Ni 231.604†	21134.5	21143.9	526.17 ug/L	526.17 ppb	03:26:58
3	P 214.914†	4474.9	4261.4	2494.7 ug/L	2494.7 ppb	03:27:18
3	Pb 220.353†	4207.1	4285.9	526.52 ug/L	526.52 ppb	03:27:18
3	S 181.975 Axial†	788.6	748.5	1058.3 ug/L	1058.3 ppb	03:27:18
3	Sb 206.836†	1529.9	1507.5	535.37 ug/L	535.37 ppb	03:27:18
3	Se 196.026†	781.3	816.1	544.69 ug/L	544.69 ppb	03:27:18
3	Si 251.611†	84226.6	83984.3	2668.3 ug/L	2668.3 ppb	03:26:58
3	Sn 189.927†	2990.8	2994.0	531.26 ug/L	531.26 ppb	03:27:18
3	Ti 334.940†	319686.3	322230.3	518.87 ug/L	518.87 ppb	03:26:58
3	Tl 190.801†	1674.3	1713.3	528.80 ug/L	528.80 ppb	03:27:18
3	U 409.014†	16237.4	18308.4	538.31 ug/L	538.31 ppb	03:26:58
3	V 292.402†	75263.4	76848.4	532.02 ug/L	532.02 ppb	03:26:58
3	Zn 213.857†	55879.4	55463.6	520.02 ug/L	520.02 ppb	03:26:58
3	SiO2†	83080.1	82812.3	5636.0 ug/L	5636.0 ppb	03:27:34

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	846858.4	99.350 %	0.2934			0.30%
Sc Radial	5014.9	99.6 %	0.58			0.58%
Y 371.029	706135.0	97.712 %	0.4139			0.42%
Y RADIAL	5357.9	98.68 %	1.055			1.07%
Ag 328.068†	114863.9	532.19 ug/L	1.148	532.19 ppb	1.148	0.22%
QC value within limits for Ag 328.068 Recovery = 106.44%						
Al 396.153Radial†	6612.0	5075.4 ug/L	15.32	5075.4 ppb	15.32	0.30%
QC value within limits for Al 396.153Radial Recovery = 101.51%						
As 188.979†	1208.7	525.95 ug/L	3.417	525.95 ppb	3.417	0.65%
QC value within limits for As 188.979 Recovery = 105.19%						
B 249.677†	23134.1	513.70 ug/L	2.300	513.70 ppb	2.300	0.45%
QC value within limits for B 249.677 Recovery = 102.74%						
Ba 233.527†	67128.2	525.39 ug/L	0.639	525.39 ppb	0.639	0.12%
QC value within limits for Ba 233.527 Recovery = 105.08%						
Be 313.107†	1376131.4	525.52 ug/L	0.376	525.52 ppb	0.376	0.07%
QC value within limits for Be 313.107 Recovery = 105.10%						
Ca 317.933Radial†	3228.0	5165.1 ug/L	35.79	5165.1 ppb	35.79	0.69%



QC value within limits for Ca 317.933 Radial Recovery = 103.30%									
Cd	226.502†	47406.0	525.93 ug/L	0.346	525.93 ppb	0.346	0.07%		
QC value within limits for Cd 226.502 Recovery = 105.19%									
Co	228.616†	25760.9	527.41 ug/L	0.783	527.41 ppb	0.783	0.15%		
QC value within limits for Co 228.616 Recovery = 105.48%									
Cr	267.716†	47106.0	527.29 ug/L	0.535	527.29 ppb	0.535	0.10%		
QC value within limits for Cr 267.716 Recovery = 105.46%									
Cu	324.752†	173240.7	518.02 ug/L	1.531	518.02 ppb	1.531	0.30%		
QC value within limits for Cu 324.752 Recovery = 103.60%									
Fe	238.204 Radial†	610.1	5295.4 ug/L	42.65	5295.4 ppb	42.65	0.81%		
QC value within limits for Fe 238.204 Radial Recovery = 105.91%									
K	766.490 Radial†	27814.0	5081.7 ug/L	8.01	5081.7 ppb	8.01	0.16%		
QC value within limits for K 766.490 Radial Recovery = 101.63%									
Mg	279.077 IEC†	162.1	5414.5 ug/L	89.69	5414.5 ppb	89.69	1.66%		
QC value within limits for Mg 279.077 IEC Recovery = 108.29%									
Mn	257.610†	470879.1	522.39 ug/L	1.260	522.39 ppb	1.260	0.24%		
QC value within limits for Mn 257.610 Recovery = 104.48%									
Mo	202.031†	7509.8	531.18 ug/L	2.211	531.18 ppb	2.211	0.42%		
QC value within limits for Mo 202.031 Recovery = 106.24%									
Na	589.592 Radial†	34311.9	10273 ug/L	50.3	10273 ppb	50.3	0.49%		
QC value within limits for Na 589.592 Radial Recovery = 102.73%									
Ni	231.604†	21169.4	526.80 ug/L	0.670	526.80 ppb	0.670	0.13%		
QC value within limits for Ni 231.604 Recovery = 105.36%									
P	214.914†	4277.2	2504.3 ug/L	8.80	2504.3 ppb	8.80	0.35%		
QC value within limits for P 214.914 Recovery = 100.17%									
Pb	220.353†	4289.1	526.92 ug/L	0.639	526.92 ppb	0.639	0.12%		
QC value within limits for Pb 220.353 Recovery = 105.38%									
S	181.975 Axial†	753.5	1065.4 ug/L	9.95	1065.4 ppb	9.95	0.93%		
QC value within limits for S 181.975 Axial Recovery = 106.54%									
Sb	206.836†	1514.5	537.84 ug/L	2.416	537.84 ppb	2.416	0.45%		
QC value within limits for Sb 206.836 Recovery = 107.57%									
Se	196.026†	819.0	546.56 ug/L	2.123	546.56 ppb	2.123	0.39%		
QC value within limits for Se 196.026 Recovery = 109.31%									
Si	251.611†	84041.5	2670.1 ug/L	3.99	2670.1 ppb	3.99	0.15%		
QC value within limits for Si 251.611 Recovery = 106.80%									
Sn	189.927†	2999.8	532.28 ug/L	0.980	532.28 ppb	0.980	0.18%		
QC value within limits for Sn 189.927 Recovery = 106.46%									
Sr	421.552†	78828.3	509.11 ug/L	2.475	509.11 ppb	2.475	0.49%		
QC value within limits for Sr 421.552 Recovery = 101.82%									
Ti	334.940†	322249.9	518.90 ug/L	0.939	518.90 ppb	0.939	0.18%		
QC value within limits for Ti 334.940 Recovery = 103.78%									
Tl	190.801†	1715.7	529.54 ug/L	1.301	529.54 ppb	1.301	0.25%		
QC value within limits for Tl 190.801 Recovery = 105.91%									
U	409.014†	18261.1	536.92 ug/L	3.161	536.92 ppb	3.161	0.59%		
QC value within limits for U 409.014 Recovery = 107.38%									
V	292.402†	76829.7	531.92 ug/L	1.146	531.92 ppb	1.146	0.22%		
QC value within limits for V 292.402 Recovery = 106.38%									
Zn	213.857†	55600.1	521.30 ug/L	1.668	521.30 ppb	1.668	0.32%		
QC value within limits for Zn 213.857 Recovery = 104.26%									
SiO2†		84131.0	5725.9 ug/L	78.13	5725.9 ppb	78.13	1.36%		
QC value within limits for SiO2 Recovery = 107.08%									
All analyte(s) passed QC.									



Sequence No.: 106

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/12/2010 03:29:43

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5068.8	5068.8	101 %		03:31:36
1	Y RADIAL	5413.4	5413.4	99.70 %		03:31:36
1	Al 396.153Radial†	-16.4	-15.6	-12.006 ug/L	-12.006 ppb	03:31:36
1	Ca 317.933Radial†	12.5	-7.4	-11.831 ug/L	-11.831 ppb	03:31:56
1	Fe 238.204 Radial†	12.0	3.0	26.099 ug/L	26.099 ppb	03:31:56
1	K 766.490 Radial†	2793.1	184.5	33.844 ug/L	33.844 ppb	03:31:36
1	Mg 279.077 IEC†	2.9	1.0	34.003 ug/L	34.003 ppb	03:31:56
1	Na 589.592 Radial†	-1297.2	-8.1	-2.4374 ug/L	-2.4374 ppb	03:31:36
1	Sr 421.552†	32.4	51.7	0.3340 ug/L	0.3340 ppb	03:31:36
1	Sc 361.383	841433.7	841433.7	98.714 %		03:32:53
1	Y 371.029	713597.1	713597.1	98.745 %		03:32:53
1	Ag 328.068†	385.1	32.1	0.1548 ug/L	0.1548 ppb	03:32:53
1	As 188.979†	-19.2	4.2	1.8278 ug/L	1.8278 ppb	03:33:13
1	B 249.677†	-418.3	208.1	4.6370 ug/L	4.6370 ppb	03:33:13
1	Ba 233.527†	-6.5	4.8	0.0385 ug/L	0.0385 ppb	03:33:13
1	Be 313.107†	-4511.9	14.7	0.0057 ug/L	0.0057 ppb	03:32:53
1	Cd 226.502†	-195.3	6.3	0.0677 ug/L	0.0677 ppb	03:33:13
1	Co 228.616†	-76.2	-2.5	-0.0529 ug/L	-0.0529 ppb	03:33:13
1	Cr 267.716†	76.9	-5.3	-0.0597 ug/L	-0.0597 ppb	03:33:13
1	Cu 324.752†	6355.7	26.3	0.0787 ug/L	0.0787 ppb	03:32:53
1	Mn 257.610†	424.0	-15.3	-0.0155 ug/L	-0.0155 ppb	03:33:13
1	Mo 202.031†	13.9	-9.6	-0.6802 ug/L	-0.6802 ppb	03:33:13
1	Ni 231.604†	73.6	6.6	0.1636 ug/L	0.1636 ppb	03:33:13
1	P 214.914†	219.8	-7.2	-4.4456 ug/L	-4.4456 ppb	03:33:13
1	Pb 220.353†	-66.9	-4.4	-0.5464 ug/L	-0.5464 ppb	03:33:13
1	S 181.975 Axial†	43.7	1.2	1.7418 ug/L	1.7418 ppb	03:33:13
1	Sb 206.836†	39.0	11.6	3.9592 ug/L	3.9592 ppb	03:33:13
1	Se 196.026†	-19.9	11.8	7.7146 ug/L	7.7146 ppb	03:33:13
1	Si 251.611†	623.2	80.8	2.5823 ug/L	2.5823 ppb	03:33:13
1	Sn 189.927†	7.7	0.1	0.0161 ug/L	0.0161 ppb	03:33:13
1	Ti 334.940†	-1336.4	20.7	0.0283 ug/L	0.0283 ppb	03:32:53
1	Tl 190.801†	-43.2	-10.9	-3.3366 ug/L	-3.3366 ppb	03:33:13
1	U 409.014†	-1908.4	78.4	2.3100 ug/L	2.3100 ppb	03:32:53
1	V 292.402†	-1292.3	0.6	-0.0050 ug/L	-0.0050 ppb	03:32:53
1	Zn 213.857†	628.2	16.2	0.1492 ug/L	0.1492 ppb	03:33:13
1	SiO2†	618.9	55.3	3.7920 ug/L	3.7920 ppb	03:34:09
2	Sc Radial	5079.4	5079.4	101 %		03:32:01
2	Y RADIAL	5459.4	5459.4	100.6 %		03:32:01
2	Al 396.153Radial†	-12.5	-11.7	-9.0396 ug/L	-9.0396 ppb	03:32:01
2	Ca 317.933Radial†	15.5	-4.4	-7.0327 ug/L	-7.0327 ppb	03:32:21
2	Fe 238.204 Radial†	6.8	-2.1	-18.189 ug/L	-18.189 ppb	03:32:21
2	K 766.490 Radial†	2745.2	131.2	24.065 ug/L	24.065 ppb	03:32:01
2	Mg 279.077 IEC†	1.0	-0.9	-29.856 ug/L	-29.856 ppb	03:32:21
2	Na 589.592 Radial†	-1314.4	-22.6	-6.7659 ug/L	-6.7659 ppb	03:32:01
2	Sr 421.552†	-7.4	12.1	0.0785 ug/L	0.0785 ppb	03:32:01
2	Sc 361.383	843036.6	843036.6	98.902 %		03:33:18
2	Y 371.029	716130.9	716130.9	99.095 %		03:33:18
2	Ag 328.068†	297.8	-56.9	-0.2692 ug/L	-0.2692 ppb	03:33:18
2	As 188.979†	-28.9	-5.6	-2.4371 ug/L	-2.4371 ppb	03:33:38
2	B 249.677†	-421.8	205.4	4.5807 ug/L	4.5807 ppb	03:33:38
2	Ba 233.527†	-5.8	5.6	0.0426 ug/L	0.0426 ppb	03:33:38
2	Be 313.107†	-4522.1	13.0	0.0049 ug/L	0.0049 ppb	03:33:18
2	Cd 226.502†	-170.6	31.6	0.3531 ug/L	0.3531 ppb	03:33:38
2	Co 228.616†	-77.0	-3.2	-0.0654 ug/L	-0.0654 ppb	03:33:38
2	Cr 267.716†	94.4	12.2	0.1357 ug/L	0.1357 ppb	03:33:38
2	Cu 324.752†	6267.5	-75.1	-0.2262 ug/L	-0.2262 ppb	03:33:18
2	Mn 257.610†	421.3	-18.9	-0.0217 ug/L	-0.0217 ppb	03:33:38
2	Mo 202.031†	20.6	-2.9	-0.2031 ug/L	-0.2031 ppb	03:33:38
2	Ni 231.604†	61.0	-6.2	-0.1554 ug/L	-0.1554 ppb	03:33:38



2	P 214.914†	219.2	-8.2	-4.9482 ug/L	-4.9482 ppb	03:33:38
2	Pb 220.353†	-57.0	5.7	0.6952 ug/L	0.6952 ppb	03:33:38
2	S 181.975 Axial†	51.1	8.7	12.268 ug/L	12.268 ppb	03:33:38
2	Sb 206.836†	39.0	11.5	3.9219 ug/L	3.9219 ppb	03:33:38
2	Se 196.026†	-28.5	3.2	1.9967 ug/L	1.9967 ppb	03:33:38
2	Si 251.611†	619.0	75.4	2.4028 ug/L	2.4028 ppb	03:33:38
2	Sn 189.927†	6.7	-0.9	-0.1672 ug/L	-0.1672 ppb	03:33:38
2	Ti 334.940†	-1364.6	-5.3	-0.0075 ug/L	-0.0075 ppb	03:33:18
2	Tl 190.801†	-27.7	4.9	1.4898 ug/L	1.4898 ppb	03:33:38
2	U 409.014†	-1945.4	44.6	1.3181 ug/L	1.3181 ppb	03:33:18
2	V 292.402†	-1308.0	-12.8	-0.0858 ug/L	-0.0858 ppb	03:33:18
2	Zn 213.857†	620.3	6.9	0.0686 ug/L	0.0686 ppb	03:33:38
2	SiO2†	671.8	107.6	7.3477 ug/L	7.3477 ppb	03:34:14
3	Sc Radial	5032.9	5032.9	100.0 %		03:32:26
3	Y RADIAL	5432.7	5432.7	100.1 %		03:32:26
3	Al 396.153Radial†	14.3	15.0	11.534 ug/L	11.534 ppb	03:32:26
3	Ca 317.933Radial†	16.6	-3.2	-5.0511 ug/L	-5.0511 ppb	03:32:46
3	Fe 238.204 Radial†	9.0	0.1	1.2048 ug/L	1.2048 ppb	03:32:46
3	K 766.490 Radial†	2645.7	56.9	10.430 ug/L	10.430 ppb	03:32:26
3	Mg 279.077 IEC†	2.9	1.0	32.475 ug/L	32.475 ppb	03:32:46
3	Na 589.592 Radial†	-1321.2	-41.3	-12.379 ug/L	-12.379 ppb	03:32:26
3	Sr 421.552†	12.3	31.8	0.2053 ug/L	0.2053 ppb	03:32:26
3	Sc 361.383	841037.1	841037.1	98.667 %		03:33:44
3	Y 371.029	715401.7	715401.7	98.995 %		03:33:44
3	Ag 328.068†	314.3	-39.4	-0.1866 ug/L	-0.1866 ppb	03:33:44
3	As 188.979†	-18.9	4.5	1.9384 ug/L	1.9384 ppb	03:34:04
3	B 249.677†	-419.8	206.4	4.6014 ug/L	4.6014 ppb	03:34:04
3	Ba 233.527†	-17.5	-6.3	-0.0513 ug/L	-0.0513 ppb	03:34:04
3	Be 313.107†	-4437.9	87.5	0.0337 ug/L	0.0337 ppb	03:33:44
3	Cd 226.502†	-177.8	23.9	0.2661 ug/L	0.2661 ppb	03:34:04
3	Co 228.616†	-83.6	-10.1	-0.2052 ug/L	-0.2052 ppb	03:34:04
3	Cr 267.716†	96.4	14.4	0.1588 ug/L	0.1588 ppb	03:34:04
3	Cu 324.752†	6258.1	-69.6	-0.2094 ug/L	-0.2094 ppb	03:33:44
3	Mn 257.610†	435.1	-3.9	-0.0055 ug/L	-0.0055 ppb	03:34:04
3	Mo 202.031†	30.8	7.5	0.5310 ug/L	0.5310 ppb	03:34:04
3	Ni 231.604†	71.3	4.3	0.1080 ug/L	0.1080 ppb	03:34:04
3	P 214.914†	237.8	11.2	6.8783 ug/L	6.8783 ppb	03:34:04
3	Pb 220.353†	-63.0	-0.5	-0.0601 ug/L	-0.0601 ppb	03:34:04
3	S 181.975 Axial†	49.3	7.0	9.8506 ug/L	9.8506 ppb	03:34:04
3	Sb 206.836†	34.3	6.8	2.3337 ug/L	2.3337 ppb	03:34:04
3	Se 196.026†	-26.0	5.6	3.6377 ug/L	3.6377 ppb	03:34:04
3	Si 251.611†	617.7	75.6	2.4003 ug/L	2.4003 ppb	03:34:04
3	Sn 189.927†	7.1	-0.5	-0.0880 ug/L	-0.0880 ppb	03:34:04
3	Ti 334.940†	-1253.5	104.1	0.1634 ug/L	0.1634 ppb	03:33:44
3	Tl 190.801†	-35.1	-2.7	-0.8337 ug/L	-0.8337 ppb	03:34:04
3	U 409.014†	-1902.2	83.7	2.4698 ug/L	2.4698 ppb	03:33:44
3	V 292.402†	-1429.9	-139.5	-0.9393 ug/L	-0.9393 ppb	03:33:44
3	Zn 213.857†	634.8	23.2	0.2187 ug/L	0.2187 ppb	03:34:04
3	SiO2†	662.0	99.2	6.7554 ug/L	6.7554 ppb	03:34:19

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	841835.8	98.761 %		0.1242			0.13%
Sc Radial	5060.4	100 %		0.5			0.48%
Y 371.029	715043.2	98.945 %		0.1805			0.18%
Y RADIAL	5435.1	100.1 %		0.43			0.42%
Ag 328.068†	-21.4	-0.1003 ug/L		0.22477	-0.1003 ppb	0.22477	224.07%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-4.1	-3.1706 ug/L		12.82070	-3.1706 ppb	12.82070	404.37%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	1.0	0.4430 ug/L		2.49490	0.4430 ppb	2.49490	563.16%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	206.6	4.6064 ug/L		0.02847	4.6064 ppb	0.02847	0.62%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	1.4	0.0099 ug/L		0.05304	0.0099 ppb	0.05304	533.68%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	38.4	0.0148 ug/L		0.01642	0.0148 ppb	0.01642	111.10%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-5.0	-7.9715 ug/L		3.48585	-7.9715 ppb	3.48585	43.73%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	20.6	0.2290 ug/L	0.14627	0.2290 ppb	0.14627	63.88%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-5.2	-0.1079 ug/L	0.08453	-0.1079 ppb	0.08453	78.38%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	7.1	0.0783 ug/L	0.12002	0.0783 ppb	0.12002	153.34%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-39.5	-0.1190 ug/L	0.17142	-0.1190 ppb	0.17142	144.10%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	0.4	3.0383 ug/L	22.20094	3.0383 ppb	22.20094	730.70%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	124.2	22.779 ug/L	11.7595	22.779 ppb	11.7595	51.62%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	0.4	12.207 ug/L	36.4361	12.207 ppb	36.4361	298.48%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-12.7	-0.0142 ug/L	0.00820	-0.0142 ppb	0.00820	57.69%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	-1.7	-0.1175 ug/L	0.61014	-0.1175 ppb	0.61014	519.45%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	-24.0	-7.1942 ug/L	4.98484	-7.1942 ppb	4.98484	69.29%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	1.6	0.0387 ug/L	0.17038	0.0387 ppb	0.17038	439.84%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-1.4	-0.8385 ug/L	6.68764	-0.8385 ppb	6.68764	797.57%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	0.3	0.0296 ug/L	0.62564	0.0296 ppb	0.62564	>999.9%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	5.6	7.9535 ug/L	5.51358	7.9535 ppb	5.51358	69.32%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	9.9	3.4049 ug/L	0.92791	3.4049 ppb	0.92791	27.25%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	6.9	4.4497 ug/L	2.94418	4.4497 ppb	2.94418	66.17%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	77.3	2.4618 ug/L	0.10438	2.4618 ppb	0.10438	4.24%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	-0.4	-0.0797 ug/L	0.09195	-0.0797 ppb	0.09195	115.37%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	31.9	0.2060 ug/L	0.12777	0.2060 ppb	0.12777	62.04%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	39.9	0.0614 ug/L	0.09012	0.0614 ppb	0.09012	146.81%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	-2.9	-0.8935 ug/L	2.41377	-0.8935 ppb	2.41377	270.14%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	68.9	2.0326 ug/L	0.62393	2.0326 ppb	0.62393	30.70%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	-50.6	-0.3434 ug/L	0.51766	-0.3434 ppb	0.51766	150.75%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	15.4	0.1455 ug/L	0.07515	0.1455 ppb	0.07515	51.65%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	87.4	5.9650 ug/L	1.90506	5.9650 ppb	1.90506	31.94%	
QC value within limits for SiO2 Recovery = Not calculated							

All analyte(s) passed QC.



1/14/2010 09:58:48 Hg ReAlign... Actual peak offset (nm): -0.009  
Drift (nm): -0.000 Slit adjustment: 5

## Analysis Begun

Start Time: 1/14/2010 10:00:33

Plasma On Time: 1/11/2010 06:15:31

Logged In Analyst: Optima3

Technique: ICP Continuous

Spectrometer Model: Optima 5300 DV, S/N 077C7090601 Autosampler Model: S10

Sample Information File: C:\pe\Optima3\Sample Information\011410.sif

Batch ID:

Results Data Set: 011410

Results Library: C:\pe\Optima3\Results\Results.mdb

## Method Loaded

Method Name: General Eng.2AX

Method Last Saved: 1/13/2010 13:20:34

IEC File: 011110.iec

MSF File:

Method Description:

Analyte	Calibration Equation	Processing	View	Internal Standard	IEC
Ag 328.068	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Al 396.153Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
As 188.979	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
B 249.677	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Ba 233.527	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Be 313.107	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Ca 317.933Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	No
Cd 226.502	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Co 228.616	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Cr 267.716	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Cu 324.752	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Fe 238.204 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
K 766.490 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Mg 279.077 IEC	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Mn 257.610	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Mo 202.031	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Na 589.592 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	No
Ni 231.604	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
P 214.914	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Pb 220.353	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
S 181.975 Axial	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sb 206.836	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sc 361.383	Lin Thru 0	Peak Area	Axial	n/a	n/a
Sc Radial	Lin, Calc Int	Peak Area	Radial	n/a	n/a
Se 196.026	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Si 251.611	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sn 189.927	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sr 421.552	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Ti 334.940	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Tl 190.801	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
U 409.014	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
V 292.402	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Y 371.029	Lin, Calc Int	Peak Area	Axial	n/a	n/a
Zn 213.857	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Y RADIAL	Lin, Calc Int	Peak Area	Radial	n/a	n/a
SiO2	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes

Sequence No.: 1

Autosampler Location: 8

Sample ID: S0

Date Collected: 1/14/2010 10:00:35

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

Replicate Data: S0

Net

Corrected

Calib.

Analysis



Repl#	Analyte	Intensity	Intensity	Conc. Units	Time
1	Sc Radial	4932.2	4932.2	103 %	10:02:28
1	Y RADIAL	5261.2	5261.2	102.6 %	10:02:28
1	Al 396.153Radial†	-7.8	-7.6	[0.00] ug/L	10:02:28
1	Ca 317.933Radial†	16.3	15.8	[0.00] ug/L	10:02:48
1	Fe 238.204 Radial†	8.9	8.6	[0.00] ug/L	10:02:48
1	K 766.490 Radial†	2718.4	2640.8	[0.00] ug/L	10:02:28
1	Mg 279.077 IEC†	-0.9	-0.9	[0.00] ug/L	10:02:48
1	Na 589.592 Radial†	-1571.2	-1526.4	[0.00] ug/L	10:02:28
1	Sr 421.552†	12.7	12.4	[0.00] ug/L	10:02:28
1	Sc 361.383	832827.7	832827.7	102.33 %	10:03:44
1	Y 371.029	701724.3	701724.3	102.30 %	10:03:44
1	Ag 328.068†	297.6	290.8	[0.00] ug/L	10:03:44
1	As 188.979†	-17.5	-17.1	[0.00] ug/L	10:04:04
1	B 249.677†	-522.9	-511.0	[0.00] ug/L	10:04:04
1	Ba 233.527†	-2.6	-2.6	[0.00] ug/L	10:04:04
1	Be 313.107†	-4305.8	-4207.8	[0.00] ug/L	10:03:44
1	Cd 226.502†	-196.0	-191.6	[0.00] ug/L	10:04:04
1	Co 228.616†	-70.4	-68.8	[0.00] ug/L	10:04:04
1	Cr 267.716†	98.2	95.9	[0.00] ug/L	10:04:04
1	Cu 324.752†	6282.2	6139.2	[0.00] ug/L	10:03:44
1	Mn 257.610†	401.9	392.7	[0.00] ug/L	10:04:04
1	Mo 202.031†	18.7	18.2	[0.00] ug/L	10:04:04
1	Ni 231.604†	81.1	79.3	[0.00] ug/L	10:04:04
1	P 214.914†	234.2	228.9	[0.00] ug/L	10:04:04
1	Pb 220.353†	-63.3	-61.9	[0.00] ug/L	10:04:04
1	S 181.975 Axial†	44.1	43.1	[0.00] ug/L	10:04:04
1	Sb 206.836†	38.8	37.9	[0.00] ug/L	10:04:04
1	Se 196.026†	-37.7	-36.8	[0.00] ug/L	10:04:04
1	Si 251.611†	455.1	444.7	[0.00] ug/L	10:04:04
1	Sn 189.927†	8.2	8.0	[0.00] ug/L	10:04:04
1	Ti 334.940†	-1420.0	-1387.7	[0.00] ug/L	10:03:44
1	Tl 190.801†	-42.9	-41.9	[0.00] ug/L	10:04:04
1	U 409.014†	-1985.4	-1940.2	[0.00] ug/L	10:03:44
1	V 292.402†	-1388.2	-1356.6	[0.00] ug/L	10:03:44
1	Zn 213.857†	840.0	820.9	[0.00] ug/L	10:04:04
1	SiO2†	437.7	427.7	[0.00] ug/L	10:05:00
2	Sc Radial	4791.8	4791.8	100 %	10:02:53
2	Y RADIAL	5129.8	5129.8	100.0 %	10:02:53
2	Al 396.153Radial†	9.0	9.0	[0.00] ug/L	10:02:53
2	Ca 317.933Radial†	16.0	16.0	[0.00] ug/L	10:03:13
2	Fe 238.204 Radial†	9.4	9.4	[0.00] ug/L	10:03:13
2	K 766.490 Radial†	2747.3	2747.0	[0.00] ug/L	10:02:53
2	Mg 279.077 IEC†	2.9	2.9	[0.00] ug/L	10:03:13
2	Na 589.592 Radial†	-1583.6	-1583.4	[0.00] ug/L	10:02:53
2	Sr 421.552†	39.6	39.6	[0.00] ug/L	10:02:53
2	Sc 361.383	807814.0	807814.0	99.256 %	10:04:10
2	Y 371.029	680196.8	680196.8	99.160 %	10:04:10
2	Ag 328.068†	231.7	233.4	[0.00] ug/L	10:04:10
2	As 188.979†	-24.5	-24.7	[0.00] ug/L	10:04:30
2	B 249.677†	-502.7	-506.4	[0.00] ug/L	10:04:30
2	Ba 233.527†	17.5	17.6	[0.00] ug/L	10:04:30
2	Be 313.107†	-4286.9	-4319.0	[0.00] ug/L	10:04:10
2	Cd 226.502†	-195.2	-196.7	[0.00] ug/L	10:04:30
2	Co 228.616†	-74.9	-75.5	[0.00] ug/L	10:04:30
2	Cr 267.716†	93.2	93.9	[0.00] ug/L	10:04:30
2	Cu 324.752†	6375.5	6423.2	[0.00] ug/L	10:04:10
2	Mn 257.610†	403.8	406.9	[0.00] ug/L	10:04:30
2	Mo 202.031†	21.5	21.7	[0.00] ug/L	10:04:30
2	Ni 231.604†	65.5	66.0	[0.00] ug/L	10:04:30
2	P 214.914†	226.7	228.4	[0.00] ug/L	10:04:30
2	Pb 220.353†	-71.2	-71.7	[0.00] ug/L	10:04:30
2	S 181.975 Axial†	46.3	46.6	[0.00] ug/L	10:04:30
2	Sb 206.836†	31.8	32.0	[0.00] ug/L	10:04:30
2	Se 196.026†	-27.8	-28.0	[0.00] ug/L	10:04:30
2	Si 251.611†	443.7	447.0	[0.00] ug/L	10:04:30
2	Sn 189.927†	3.7	3.7	[0.00] ug/L	10:04:30
2	Ti 334.940†	-1403.0	-1413.5	[0.00] ug/L	10:04:10
2	Tl 190.801†	-49.5	-49.8	[0.00] ug/L	10:04:30
2	U 409.014†	-2107.3	-2123.1	[0.00] ug/L	10:04:10
2	V 292.402†	-1387.8	-1398.2	[0.00] ug/L	10:04:10



2	Zn 213.857†	866.0	872.4	[0.00]	ug/L	10:04:30
2	SiO2†	456.3	459.8	[0.00]	ug/L	10:05:05
3	Sc Radial	4649.9	4649.9	97.0	%	10:03:18
3	Y RADIAL	4997.5	4997.5	97.43	%	10:03:18
3	Al 396.153Radial†	-10.8	-11.1	[0.00]	ug/L	10:03:18
3	Ca 317.933Radial†	13.2	13.6	[0.00]	ug/L	10:03:38
3	Fe 238.204 Radial†	11.3	11.7	[0.00]	ug/L	10:03:38
3	K 766.490 Radial†	2886.7	2974.5	[0.00]	ug/L	10:03:18
3	Mg 279.077 IEC†	2.4	2.5	[0.00]	ug/L	10:03:38
3	Na 589.592 Radial†	-1544.0	-1591.0	[0.00]	ug/L	10:03:18
3	Sr 421.552†	-0.3	-0.3	[0.00]	ug/L	10:03:18
3	Sc 361.383	800955.3	800955.3	98.414	%	10:04:35
3	Y 371.029	675961.5	675961.5	98.542	%	10:04:35
3	Ag 328.068†	315.4	320.5	[0.00]	ug/L	10:04:35
3	As 188.979†	-14.5	-14.7	[0.00]	ug/L	10:04:55
3	B 249.677†	-529.6	-538.2	[0.00]	ug/L	10:04:55
3	Ba 233.527†	-10.4	-10.6	[0.00]	ug/L	10:04:55
3	Be 313.107†	-4340.0	-4410.0	[0.00]	ug/L	10:04:35
3	Cd 226.502†	-201.2	-204.4	[0.00]	ug/L	10:04:55
3	Co 228.616†	-72.6	-73.8	[0.00]	ug/L	10:04:55
3	Cr 267.716†	95.8	97.4	[0.00]	ug/L	10:04:55
3	Cu 324.752†	6231.4	6331.8	[0.00]	ug/L	10:04:35
3	Mn 257.610†	406.7	413.3	[0.00]	ug/L	10:04:55
3	Mo 202.031†	17.8	18.1	[0.00]	ug/L	10:04:55
3	Ni 231.604†	78.9	80.1	[0.00]	ug/L	10:04:55
3	P 214.914†	222.8	226.4	[0.00]	ug/L	10:04:55
3	Pb 220.353†	-59.2	-60.1	[0.00]	ug/L	10:04:55
3	S 181.975 Axial†	48.8	49.6	[0.00]	ug/L	10:04:55
3	Sb 206.836†	27.8	28.2	[0.00]	ug/L	10:04:55
3	Se 196.026†	-25.8	-26.3	[0.00]	ug/L	10:04:55
3	Si 251.611†	438.8	445.9	[0.00]	ug/L	10:04:55
3	Sn 189.927†	6.6	6.7	[0.00]	ug/L	10:04:55
3	Ti 334.940†	-1338.3	-1359.8	[0.00]	ug/L	10:04:35
3	Tl 190.801†	-39.3	-39.9	[0.00]	ug/L	10:04:55
3	U 409.014†	-2026.9	-2059.5	[0.00]	ug/L	10:04:35
3	V 292.402†	-1443.4	-1466.7	[0.00]	ug/L	10:04:35
3	Zn 213.857†	873.6	887.7	[0.00]	ug/L	10:04:55
3	SiO2†	473.6	481.2	[0.00]	ug/L	10:05:10

## Mean Data: S0

Analyte	Mean Corrected			Calib	
	Intensity	Std.Dev.	RSD	Conc.	Units
Sc 361.383	813865.7	16775.85	2.06%	100.00	%
Sc Radial	4791.3	141.16	2.95%	100	%
Y 371.029	685960.9	13814.83	2.01%	100.00	%
Y RADIAL	5129.5	131.87	2.57%	100.0	%
Ag 328.068†	281.6	44.28	15.72%	[0.00]	ug/L
Al 396.153Radial†	-3.2	10.73	330.84%	[0.00]	ug/L
As 188.979†	-18.8	5.17	27.44%	[0.00]	ug/L
B 249.677†	-518.5	17.16	3.31%	[0.00]	ug/L
Ba 233.527†	1.5	14.54	984.68%	[0.00]	ug/L
Be 313.107†	-4312.2	101.26	2.35%	[0.00]	ug/L
Ca 317.933Radial†	15.1	1.36	8.95%	[0.00]	ug/L
Cd 226.502†	-197.6	6.48	3.28%	[0.00]	ug/L
Co 228.616†	-72.7	3.45	4.75%	[0.00]	ug/L
Cr 267.716†	95.7	1.76	1.83%	[0.00]	ug/L
Cu 324.752†	6298.1	145.00	2.30%	[0.00]	ug/L
Fe 238.204 Radial†	9.9	1.58	16.03%	[0.00]	ug/L
K 766.490 Radial†	2787.4	170.52	6.12%	[0.00]	ug/L
Mg 279.077 IEC†	1.5	2.09	138.88%	[0.00]	ug/L
Mn 257.610†	404.3	10.52	2.60%	[0.00]	ug/L
Mo 202.031†	19.3	2.03	10.49%	[0.00]	ug/L
Na 589.592 Radial†	-1566.9	35.34	2.26%	[0.00]	ug/L
Ni 231.604†	75.1	7.95	10.58%	[0.00]	ug/L
P 214.914†	227.9	1.33	0.58%	[0.00]	ug/L
Pb 220.353†	-64.6	6.25	9.67%	[0.00]	ug/L
S 181.975 Axial†	46.5	3.27	7.03%	[0.00]	ug/L
Sb 206.836†	32.7	4.88	14.92%	[0.00]	ug/L
Se 196.026†	-30.4	5.67	18.67%	[0.00]	ug/L
Si 251.611†	445.9	1.12	0.25%	[0.00]	ug/L



Sn 189.927†	6.1	2.19	35.85%	[0.00]	ug/L
Sr 421.552†	17.2	20.42	118.60%	[0.00]	ug/L
Ti 334.940†	-1387.0	26.86	1.94%	[0.00]	ug/L
Tl 190.801†	-43.9	5.24	11.95%	[0.00]	ug/L
U 409.014†	-2041.0	92.87	4.55%	[0.00]	ug/L
V 292.402†	-1407.1	55.58	3.95%	[0.00]	ug/L
Zn 213.857†	860.3	35.02	4.07%	[0.00]	ug/L
SiO2†	456.2	26.92	5.90%	[0.00]	ug/L



Sequence No.: 2

Sample ID: S0.1

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 2

Date Collected: 1/14/2010 10:07:21

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: S0.1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib. Units	Analysis Time
1	Sc Radial	4980.0	4980.0	104 %		10:09:19
1	Y RADIAL	5307.1	5307.1	103.5 %		10:09:19
1	K 766.490 Radial†	7918.1	4830.8	[1000] ug/L		10:09:13
1	Sr 421.552†	14610.2	14039.5	[100] ug/L		10:09:19
1	Sc 361.383	837270.7	837270.7	102.88 %		10:09:45
1	Y 371.029	701767.9	701767.9	102.30 %		10:09:45
1	Ag 328.068†	21370.5	20491.6	[100] ug/L		10:09:45
1	As 188.979†	194.1	207.6	[100] ug/L		10:10:06
1	B 249.677†	3466.3	3887.9	[100] ug/L		10:09:45
1	Ba 233.527†	12482.1	12131.7	[100] ug/L		10:09:45
1	Be 313.107†	252539.9	249792.7	[100] ug/L		10:09:45
1	Cd 226.502†	8609.2	8566.1	[100] ug/L		10:09:45
1	Co 228.616†	4577.8	4522.5	[100] ug/L		10:10:06
1	Cr 267.716†	8714.4	8375.1	[100] ug/L		10:09:45
1	Cu 324.752†	37947.5	30588.7	[100] ug/L		10:09:45
1	Mn 257.610†	89195.1	86297.5	[100] ug/L		10:09:45
1	Mo 202.031†	1376.9	1319.1	[100] ug/L		10:10:06
1	Ni 231.604†	3914.8	3730.2	[100] ug/L		10:10:06
1	P 214.914†	1011.4	755.2	[500] ug/L		10:10:06
1	Pb 220.353†	733.9	778.0	[100] ug/L		10:10:06
1	S 181.975 Axial†	175.5	124.2	[200] ug/L		10:10:06
1	Sb 206.836†	305.9	264.6	[100] ug/L		10:10:06
1	Se 196.026†	120.0	147.0	[100] ug/L		10:10:06
1	Si 251.611†	15372.6	14497.0	[500] ug/L		10:09:45
1	Sn 189.927†	556.5	534.8	[100] ug/L		10:10:06
1	Ti 334.940†	57611.8	57388.3	[100] ug/L		10:09:45
1	Tl 190.801†	289.2	325.0	[100] ug/L		10:10:06
1	U 409.014†	1383.3	3385.6	[100] ug/L		10:09:45
1	V 292.402†	12484.9	13543.0	[100] ug/L		10:09:45
1	Zn 213.857†	11245.7	10071.0	[100] ug/L		10:09:45
1	SiO2†	15354.0	14468.6	[1069.5] ug/L		10:11:02
2	Sc Radial	5529.1	5529.1	115 %		10:09:29
2	Y RADIAL	5928.0	5928.0	115.6 %		10:09:29
2	K 766.490 Radial†	8050.8	4189.1	[1000] ug/L		10:09:24
2	Sr 421.552†	14313.1	12385.9	[100] ug/L		10:09:29
2	Sc 361.383	832734.2	832734.2	102.32 %		10:10:11
2	Y 371.029	698577.3	698577.3	101.84 %		10:10:11
2	Ag 328.068†	21291.7	20527.7	[100] ug/L		10:10:11
2	As 188.979†	197.2	211.6	[100] ug/L		10:10:31
2	B 249.677†	3455.5	3895.8	[100] ug/L		10:10:11
2	Ba 233.527†	12395.8	12113.5	[100] ug/L		10:10:11
2	Be 313.107†	251821.6	250427.9	[100] ug/L		10:10:11
2	Cd 226.502†	8631.5	8633.5	[100] ug/L		10:10:11
2	Co 228.616†	4599.0	4567.4	[100] ug/L		10:10:31
2	Cr 267.716†	8700.5	8407.7	[100] ug/L		10:10:11
2	Cu 324.752†	37968.5	30810.1	[100] ug/L		10:10:11
2	Mn 257.610†	88708.7	86294.4	[100] ug/L		10:10:11
2	Mo 202.031†	1391.7	1340.9	[100] ug/L		10:10:31
2	Ni 231.604†	3938.1	3773.8	[100] ug/L		10:10:31
2	P 214.914†	1007.6	756.9	[500] ug/L		10:10:31
2	Pb 220.353†	742.9	790.6	[100] ug/L		10:10:31
2	S 181.975 Axial†	176.2	125.8	[200] ug/L		10:10:31
2	Sb 206.836†	312.7	272.9	[100] ug/L		10:10:31
2	Se 196.026†	119.4	147.1	[100] ug/L		10:10:31
2	Si 251.611†	15342.8	14549.2	[500] ug/L		10:10:11
2	Sn 189.927†	551.0	532.4	[100] ug/L		10:10:31
2	Ti 334.940†	57404.7	57491.0	[100] ug/L		10:10:11
2	Tl 190.801†	283.1	320.6	[100] ug/L		10:10:31
2	U 409.014†	1102.9	3118.9	[100] ug/L		10:10:11



2	V 292.402†	12557.3	13679.9	[100]	ug/L	10:10:11
2	Zn 213.857†	11200.1	10086.0	[100]	ug/L	10:10:11
2	SiO2†	15330.9	14527.3	[1069.5]	ug/L	10:11:07
3	Sc Radial	5123.1	5123.1	107	%	10:09:39
3	Y RADIAL	5481.5	5481.5	106.9	%	10:09:39
3	K 766.490 Radial†	7885.8	4587.7	[1000]	ug/L	10:09:34
3	Sr 421.552†	14844.1	13865.4	[100]	ug/L	10:09:39
3	Sc 361.383	816241.6	816241.6	100.29	%	10:10:37
3	Y 371.029	685532.0	685532.0	99.937	%	10:10:37
3	Ag 328.068†	20944.5	20601.9	[100]	ug/L	10:10:37
3	As 188.979†	204.6	222.8	[100]	ug/L	10:10:57
3	B 249.677†	3451.3	3959.8	[100]	ug/L	10:10:37
3	Ba 233.527†	12220.9	12183.9	[100]	ug/L	10:10:37
3	Be 313.107†	247937.0	251527.5	[100]	ug/L	10:10:37
3	Cd 226.502†	8450.9	8623.9	[100]	ug/L	10:10:37
3	Co 228.616†	4528.4	4587.9	[100]	ug/L	10:10:57
3	Cr 267.716†	8574.0	8453.3	[100]	ug/L	10:10:37
3	Cu 324.752†	37299.3	30892.6	[100]	ug/L	10:10:37
3	Mn 257.610†	87464.8	86806.0	[100]	ug/L	10:10:37
3	Mo 202.031†	1376.5	1353.2	[100]	ug/L	10:10:57
3	Ni 231.604†	3869.5	3783.1	[100]	ug/L	10:10:57
3	P 214.914†	985.0	754.3	[500]	ug/L	10:10:57
3	Pb 220.353†	739.1	801.6	[100]	ug/L	10:10:57
3	S 181.975 Axial†	183.5	136.5	[200]	ug/L	10:10:57
3	Sb 206.836†	305.3	271.7	[100]	ug/L	10:10:57
3	Se 196.026†	122.2	152.3	[100]	ug/L	10:10:57
3	Si 251.611†	15075.9	14586.2	[500]	ug/L	10:10:37
3	Sn 189.927†	550.4	542.7	[100]	ug/L	10:10:57
3	Ti 334.940†	56613.6	57835.9	[100]	ug/L	10:10:37
3	Tl 190.801†	282.8	325.9	[100]	ug/L	10:10:57
3	U 409.014†	1143.5	3181.1	[100]	ug/L	10:10:37
3	V 292.402†	12363.5	13734.6	[100]	ug/L	10:10:37
3	Zn 213.857†	11042.7	10150.2	[100]	ug/L	10:10:37
3	SiO2†	15409.6	14908.5	[1069.5]	ug/L	10:11:12

## Mean Data: S0.1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	828748.8	11066.56	1.34%	101.83 %
Sc Radial	5210.7	284.87	5.47%	109 %
Y 371.029	695292.4	8602.01	1.24%	101.36 %
Y RADIAL	5572.2	320.23	5.75%	108.6 %
Ag 328.068†	20540.4	56.27	0.27%	[100] ug/L
As 188.979†	214.0	7.90	3.69%	[100] ug/L
B 249.677†	3914.5	39.44	1.01%	[100] ug/L
Ba 233.527†	12143.0	36.54	0.30%	[100] ug/L
Be 313.107†	250582.7	877.71	0.35%	[100] ug/L
Cd 226.502†	8607.8	36.48	0.42%	[100] ug/L
Co 228.616†	4559.3	33.47	0.73%	[100] ug/L
Cr 267.716†	8412.0	39.30	0.47%	[100] ug/L
Cu 324.752†	30763.8	157.19	0.51%	[100] ug/L
K 766.490 Radial†	4535.8	323.96	7.14%	[1000] ug/L
Mn 257.610†	86466.0	294.45	0.34%	[100] ug/L
Mo 202.031†	1337.7	17.25	1.29%	[100] ug/L
Ni 231.604†	3762.4	28.22	0.75%	[100] ug/L
P 214.914†	755.5	1.32	0.18%	[500] ug/L
Pb 220.353†	790.1	11.80	1.49%	[100] ug/L
S 181.975 Axial†	128.8	6.71	5.21%	[200] ug/L
Sb 206.836†	269.7	4.47	1.66%	[100] ug/L
Se 196.026†	148.8	3.00	2.02%	[100] ug/L
Si 251.611†	14544.1	44.82	0.31%	[500] ug/L
Sn 189.927†	536.6	5.40	1.01%	[100] ug/L
Sr 421.552†	13430.3	908.65	6.77%	[100] ug/L
Ti 334.940†	57571.7	234.43	0.41%	[100] ug/L
Tl 190.801†	323.9	2.85	0.88%	[100] ug/L
U 409.014†	3228.5	139.51	4.32%	[100] ug/L
V 292.402†	13652.5	98.69	0.72%	[100] ug/L
Zn 213.857†	10102.4	42.08	0.42%	[100] ug/L
SiO2†	14634.8	238.87	1.63%	[1069.5] ug/L



Sequence No.: 3  
 Sample ID: S0.5  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 3  
 Date Collected: 1/14/2010 10:13:22  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: S0.5

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib.	Analysis Time
1	Sc Radial	4929.8	4929.8	103 %		10:15:14
1	Y RADIAL	5190.6	5190.6	101.2 %		10:15:14
1	Al 396.153Radial†	6303.0	6129.1	[5000] ug/L		10:15:14
1	Ca 317.933Radial†	2996.8	2897.4	[5000] ug/L		10:15:34
1	K 766.490 Radial†	28647.2	25054.8	[5000] ug/L		10:15:14
1	Mg 279.077 IEC†	152.8	147.0	[5000] ug/L		10:15:34
1	Sr 421.552†	73885.3	71791.9	[500] ug/L		10:15:14
1	Sc 361.383	830892.7	830892.7	102.09 %		10:16:32
1	Y 371.029	689236.5	689236.5	100.48 %		10:16:32
1	Ag 328.068†	104357.3	101937.2	[500] ug/L		10:16:37
1	As 188.979†	1102.7	1099.0	[500] ug/L		10:16:57
1	B 249.677†	20425.2	20525.2	[500] ug/L		10:16:37
1	Ba 233.527†	61818.7	60550.4	[500] ug/L		10:16:37
1	Be 313.107†	1294357.2	1272144.9	[500] ug/L		10:16:32
1	Cd 226.502†	44022.9	43318.4	[500] ug/L		10:16:37
1	Co 228.616†	23705.0	23291.9	[500] ug/L		10:16:37
1	Cr 267.716†	43629.2	42639.4	[500] ug/L		10:16:37
1	Cu 324.752†	165248.6	155564.2	[500] ug/L		10:16:37
1	Mn 257.610†	438168.5	428785.1	[500] ug/L		10:16:32
1	Mo 202.031†	6899.3	6738.6	[500] ug/L		10:16:57
1	Ni 231.604†	19726.4	19247.0	[500] ug/L		10:16:37
1	P 214.914†	4192.8	3879.0	[2500] ug/L		10:16:57
1	Pb 220.353†	3922.4	3906.6	[500] ug/L		10:16:57
1	S 181.975 Axial†	745.0	683.3	[1000] ug/L		10:16:57
1	Sb 206.836†	1412.1	1350.4	[500] ug/L		10:16:57
1	Se 196.026†	735.8	751.1	[500] ug/L		10:16:57
1	Si 251.611†	77658.3	75621.0	[2500] ug/L		10:16:37
1	Sn 189.927†	2793.3	2730.0	[500] ug/L		10:16:57
1	Ti 334.940†	294381.6	289736.0	[500] ug/L		10:16:37
1	Tl 190.801†	1567.8	1579.6	[500] ug/L		10:16:57
1	U 409.014†	14121.0	15872.6	[500] ug/L		10:16:37
1	V 292.402†	69514.8	69497.4	[500] ug/L		10:16:37
1	Zn 213.857†	53133.5	51184.4	[500] ug/L		10:16:37
1	SiO2†	77763.0	75713.2	[5347.5] ug/L		10:18:04
2	Sc Radial	4777.1	4777.1	99.7 %		10:15:39
2	Y RADIAL	5100.6	5100.6	99.44 %		10:15:39
2	Al 396.153Radial†	6154.2	6175.7	[5000] ug/L		10:15:39
2	Ca 317.933Radial†	3002.0	2995.8	[5000] ug/L		10:15:59
2	K 766.490 Radial†	27999.5	25295.4	[5000] ug/L		10:15:39
2	Mg 279.077 IEC†	150.9	149.8	[5000] ug/L		10:15:59
2	Sr 421.552†	72148.4	72345.9	[500] ug/L		10:15:39
2	Sc 361.383	813390.3	813390.3	99.942 %		10:17:03
2	Y 371.029	674675.2	674675.2	98.355 %		10:17:03
2	Ag 328.068†	101748.0	101525.9	[500] ug/L		10:17:08
2	As 188.979†	1119.8	1139.3	[500] ug/L		10:17:28
2	B 249.677†	20227.6	20757.9	[500] ug/L		10:17:08
2	Ba 233.527†	61227.8	61262.1	[500] ug/L		10:17:08
2	Be 313.107†	1262980.3	1268030.8	[500] ug/L		10:17:03
2	Cd 226.502†	43477.3	43700.3	[500] ug/L		10:17:08
2	Co 228.616†	23499.6	23586.0	[500] ug/L		10:17:08
2	Cr 267.716†	43151.2	43080.7	[500] ug/L		10:17:08
2	Cu 324.752†	163492.3	157289.8	[500] ug/L		10:17:08
2	Mn 257.610†	428858.8	428705.2	[500] ug/L		10:17:03
2	Mo 202.031†	6898.6	6883.3	[500] ug/L		10:17:28
2	Ni 231.604†	19540.8	19477.1	[500] ug/L		10:17:08
2	P 214.914†	4206.1	3980.7	[2500] ug/L		10:17:28
2	Pb 220.353†	3897.2	3964.0	[500] ug/L		10:17:28
2	S 181.975 Axial†	731.7	685.6	[1000] ug/L		10:17:28
2	Sb 206.836†	1417.2	1385.3	[500] ug/L		10:17:28



2	Se 196.026†	749.8	780.6	[500]	ug/L	10:17:28
2	Si 251.611†	76540.6	76139.4	[2500]	ug/L	10:17:08
2	Sn 189.927†	2789.8	2785.3	[500]	ug/L	10:17:28
2	Ti 334.940†	291309.0	292866.3	[500]	ug/L	10:17:08
2	Tl 190.801†	1556.7	1601.5	[500]	ug/L	10:17:28
2	U 409.014†	14027.3	16076.5	[500]	ug/L	10:17:08
2	V 292.402†	68775.6	70223.0	[500]	ug/L	10:17:08
2	Zn 213.857†	52288.1	51458.4	[500]	ug/L	10:17:08
2	SiO2†	77113.5	76702.4	[5347.5]	ug/L	10:18:09
3	Sc Radial	4874.5	4874.5	102	%	10:16:04
3	Y RADIAL	5184.3	5184.3	101.1	%	10:16:04
3	Al 396.153Radial†	6210.4	6107.7	[5000]	ug/L	10:16:04
3	Ca 317.933Radial†	3057.7	2990.4	[5000]	ug/L	10:16:24
3	K 766.490 Radial†	28049.8	24783.6	[5000]	ug/L	10:16:04
3	Mg 279.077 IEC†	155.0	150.9	[5000]	ug/L	10:16:24
3	Sr 421.552†	72713.9	71455.6	[500]	ug/L	10:16:04
3	Sc 361.383	826948.9	826948.9	101.61	%	10:17:33
3	Y 371.029	686247.5	686247.5	100.04	%	10:17:33
3	Ag 328.068†	102096.8	100200.0	[500]	ug/L	10:17:39
3	As 188.979†	1110.1	1111.4	[500]	ug/L	10:17:59
3	B 249.677†	20441.9	20637.0	[500]	ug/L	10:17:39
3	Ba 233.527†	61754.6	60776.1	[500]	ug/L	10:17:39
3	Be 313.107†	1286750.3	1270704.7	[500]	ug/L	10:17:33
3	Cd 226.502†	43825.7	43329.9	[500]	ug/L	10:17:39
3	Co 228.616†	23631.5	23330.3	[500]	ug/L	10:17:39
3	Cr 267.716†	43486.2	42702.4	[500]	ug/L	10:17:39
3	Cu 324.752†	165207.2	156295.4	[500]	ug/L	10:17:39
3	Mn 257.610†	435511.7	428217.1	[500]	ug/L	10:17:33
3	Mo 202.031†	6888.2	6759.9	[500]	ug/L	10:17:59
3	Ni 231.604†	19679.5	19293.0	[500]	ug/L	10:17:39
3	P 214.914†	4189.0	3894.9	[2500]	ug/L	10:17:59
3	Pb 220.353†	3901.8	3904.6	[500]	ug/L	10:17:59
3	S 181.975 Axial†	731.1	673.1	[1000]	ug/L	10:17:59
3	Sb 206.836†	1422.3	1367.1	[500]	ug/L	10:17:59
3	Se 196.026†	737.7	756.4	[500]	ug/L	10:17:59
3	Si 251.611†	77299.4	75630.6	[2500]	ug/L	10:17:39
3	Sn 189.927†	2784.4	2734.2	[500]	ug/L	10:17:59
3	Ti 334.940†	293777.6	290516.7	[500]	ug/L	10:17:39
3	Tl 190.801†	1550.5	1569.9	[500]	ug/L	10:17:59
3	U 409.014†	14287.5	16102.4	[500]	ug/L	10:17:39
3	V 292.402†	69478.9	69786.9	[500]	ug/L	10:17:39
3	Zn 213.857†	52806.6	51110.8	[500]	ug/L	10:17:39
3	SiO2†	76942.4	75268.9	[5347.5]	ug/L	10:18:14

## Mean Data: S0.5

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	823744.0	9180.84	1.11%	101.21 %
Sc Radial	4860.5	77.33	1.59%	101 %
Y 371.029	683386.4	7690.73	1.13%	99.625 %
Y RADIAL	5158.5	50.27	0.97%	100.6 %
Ag 328.068†	101221.0	907.86	0.90%	[500] ug/L
Al 396.153Radial†	6137.5	34.81	0.57%	[5000] ug/L
As 188.979†	1116.6	20.66	1.85%	[500] ug/L
B 249.677†	20640.0	116.42	0.56%	[500] ug/L
Ba 233.527†	60862.9	363.69	0.60%	[500] ug/L
Be 313.107†	1270293.5	2087.65	0.16%	[500] ug/L
Ca 317.933Radial†	2961.2	55.30	1.87%	[5000] ug/L
Cd 226.502†	43449.5	217.26	0.50%	[500] ug/L
Co 228.616†	23402.8	159.89	0.68%	[500] ug/L
Cr 267.716†	42807.5	238.67	0.56%	[500] ug/L
Cu 324.752†	156383.1	866.17	0.55%	[500] ug/L
K 766.490 Radial†	25044.6	256.04	1.02%	[5000] ug/L
Mg 279.077 IEC†	149.2	2.01	1.35%	[5000] ug/L
Mn 257.610†	428569.1	307.43	0.07%	[500] ug/L
Mo 202.031†	6794.0	78.11	1.15%	[500] ug/L
Ni 231.604†	19339.0	121.75	0.63%	[500] ug/L
P 214.914†	3918.2	54.72	1.40%	[2500] ug/L
Pb 220.353†	3925.1	33.72	0.86%	[500] ug/L
S 181.975 Axial†	680.7	6.68	0.98%	[1000] ug/L



Sb 206.836†	1367.6	17.44	1.27%	[500] ug/L
Se 196.026†	762.7	15.73	2.06%	[500] ug/L
Si 251.611†	75797.0	296.59	0.39%	[2500] ug/L
Sn 189.927†	2749.8	30.78	1.12%	[500] ug/L
Sr 421.552†	71864.4	449.59	0.63%	[500] ug/L
Ti 334.940†	291039.6	1629.36	0.56%	[500] ug/L
Tl 190.801†	1583.7	16.20	1.02%	[500] ug/L
U 409.014†	16017.2	125.86	0.79%	[500] ug/L
V 292.402†	69835.8	365.24	0.52%	[500] ug/L
Zn 213.857†	51251.2	183.16	0.36%	[500] ug/L
SiO2†	75894.8	733.81	0.97%	[5347.5] ug/L



Sequence No.: 4  
 Sample ID: SCAL  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 4  
 Date Collected: 1/14/2010 10:20:25  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: SCAL

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib.	Analysis Time
1	Sc Radial	4690.2	4690.2	97.9	%	10:22:18
1	Y RADIAL	4982.5	4982.5	97.13	%	10:22:18
1	Al 396.153Radial†	11982.9	12244.5	[10000]	ug/L	10:22:18
1	Ca 317.933Radial†	5870.5	5982.0	[10000]	ug/L	10:22:18
1	Fe 238.204 Radial†	1078.9	1092.3	[10000]	ug/L	10:22:38
1	K 766.490 Radial†	51623.6	49949.3	[10000]	ug/L	10:22:18
1	Mg 279.077 IEC†	297.8	302.7	[10000]	ug/L	10:22:38
1	Na 589.592 Radial†	27020.8	29170.4	[10000]	ug/L	10:22:18
1	Sr 421.552†	136168.3	139087.2	[1000]	ug/L	10:22:18
1	Sc 361.383	814439.6	814439.6	100.07	%	10:23:37
1	Y 371.029	673675.1	673675.1	98.209	%	10:23:37
1	Ag 328.068†	204177.8	203752.3	[1000]	ug/L	10:23:37
1	As 188.979†	2200.8	2218.1	[1000]	ug/L	10:23:57
1	B 249.677†	40456.6	40946.7	[1000]	ug/L	10:23:37
1	Ba 233.527†	120600.9	120514.5	[1000]	ug/L	10:23:37
1	Be 313.107†	2508196.4	2510741.4	[1000]	ug/L	10:23:37
1	Cd 226.502†	84759.2	84897.1	[1000]	ug/L	10:23:37
1	Co 228.616†	45819.2	45859.6	[1000]	ug/L	10:23:37
1	Cr 267.716†	84726.1	84570.6	[1000]	ug/L	10:23:37
1	Cu 324.752†	319831.2	313307.8	[1000]	ug/L	10:23:37
1	Mn 257.610†	852948.2	851942.9	[1000]	ug/L	10:23:37
1	Mo 202.031†	13413.0	13384.3	[1000]	ug/L	10:23:57
1	Ni 231.604†	37945.9	37844.1	[1000]	ug/L	10:23:37
1	P 214.914†	8055.5	7822.0	[5000]	ug/L	10:23:57
1	Pb 220.353†	7685.7	7744.8	[1000]	ug/L	10:23:57
1	S 181.975 Axial†	1371.1	1323.7	[2000]	ug/L	10:23:57
1	Sb 206.836†	2764.6	2729.9	[1000]	ug/L	10:23:57
1	Se 196.026†	1460.7	1490.0	[1000]	ug/L	10:23:57
1	Si 251.611†	148140.7	147590.4	[5000]	ug/L	10:23:37
1	Sn 189.927†	5374.6	5364.6	[1000]	ug/L	10:23:57
1	Ti 334.940†	582360.0	583336.7	[1000]	ug/L	10:23:37
1	Tl 190.801†	3076.8	3118.6	[1000]	ug/L	10:23:57
1	U 409.014†	29281.6	31301.9	[1000]	ug/L	10:23:37
1	V 292.402†	137033.4	138344.0	[1000]	ug/L	10:23:37
1	Zn 213.857†	100708.8	99777.5	[1000]	ug/L	10:23:37
1	SiO2†	148537.3	147976.4	[10695]	ug/L	10:24:58
2	Sc Radial	4873.3	4873.3	102	%	10:22:43
2	Y RADIAL	5174.4	5174.4	100.9	%	10:22:43
2	Al 396.153Radial†	12498.1	12291.1	[10000]	ug/L	10:22:43
2	Ca 317.933Radial†	6084.7	5967.1	[10000]	ug/L	10:22:43
2	Fe 238.204 Radial†	1069.3	1041.4	[10000]	ug/L	10:23:03
2	K 766.490 Radial†	53520.3	49832.4	[10000]	ug/L	10:22:43
2	Mg 279.077 IEC†	295.9	289.4	[10000]	ug/L	10:23:03
2	Na 589.592 Radial†	28231.5	29323.4	[10000]	ug/L	10:22:43
2	Sr 421.552†	142182.7	139773.2	[1000]	ug/L	10:22:43
2	Sc 361.383	813929.7	813929.7	100.01	%	10:24:05
2	Y 371.029	672867.5	672867.5	98.091	%	10:24:05
2	Ag 328.068†	204607.6	204309.9	[1000]	ug/L	10:24:05
2	As 188.979†	2208.4	2227.1	[1000]	ug/L	10:24:25
2	B 249.677†	40698.6	41214.0	[1000]	ug/L	10:24:05
2	Ba 233.527†	120544.6	120533.6	[1000]	ug/L	10:24:05
2	Be 313.107†	2508154.4	2512269.3	[1000]	ug/L	10:24:05
2	Cd 226.502†	84839.9	85030.8	[1000]	ug/L	10:24:05
2	Co 228.616†	45918.6	45987.7	[1000]	ug/L	10:24:05
2	Cr 267.716†	84754.0	84651.6	[1000]	ug/L	10:24:05
2	Cu 324.752†	320965.6	314642.3	[1000]	ug/L	10:24:05
2	Mn 257.610†	854103.8	853632.3	[1000]	ug/L	10:24:05
2	Mo 202.031†	13509.4	13489.0	[1000]	ug/L	10:24:25
2	Ni 231.604†	37906.7	37828.6	[1000]	ug/L	10:24:05



2	P 214.914†	8100.6	7872.1	[5000]	ug/L	10:24:25
2	Pb 220.353†	7779.2	7843.2	[1000]	ug/L	10:24:25
2	S 181.975 Axial†	1390.3	1343.8	[2000]	ug/L	10:24:25
2	Sb 206.836†	2780.7	2747.8	[1000]	ug/L	10:24:25
2	Se 196.026†	1464.7	1495.0	[1000]	ug/L	10:24:25
2	Si 251.611†	148405.5	147948.0	[5000]	ug/L	10:24:05
2	Sn 189.927†	5409.7	5403.1	[1000]	ug/L	10:24:25
2	Ti 334.940†	583495.0	584836.1	[1000]	ug/L	10:24:05
2	Tl 190.801†	3089.7	3133.3	[1000]	ug/L	10:24:25
2	U 409.014†	29091.9	31130.6	[1000]	ug/L	10:24:05
2	V 292.402†	137117.4	138513.7	[1000]	ug/L	10:24:05
2	Zn 213.857†	100718.8	99850.6	[1000]	ug/L	10:24:05
2	SiO2†	150196.0	149728.0	[10695]	ug/L	10:25:04
3	Sc Radial	4785.6	4785.6	99.9	%	10:23:08
3	Y RADIAL	5070.7	5070.7	98.85	%	10:23:08
3	Al 396.153Radial†	12308.5	12326.3	[10000]	ug/L	10:23:08
3	Ca 317.933Radial†	5970.0	5961.9	[10000]	ug/L	10:23:08
3	Fe 238.204 Radial†	1075.4	1066.8	[10000]	ug/L	10:23:28
3	K 766.490 Radial†	52691.3	49966.3	[10000]	ug/L	10:23:08
3	Mg 279.077 IEC†	296.6	295.5	[10000]	ug/L	10:23:28
3	Na 589.592 Radial†	27587.6	29187.2	[10000]	ug/L	10:23:08
3	Sr 421.552†	139476.2	139624.1	[1000]	ug/L	10:23:08
3	Sc 361.383	814815.0	814815.0	100.12	%	10:24:33
3	Y 371.029	675692.6	675692.6	98.503	%	10:24:33
3	Ag 328.068†	203870.0	203350.9	[1000]	ug/L	10:24:33
3	As 188.979†	2198.1	2214.4	[1000]	ug/L	10:24:53
3	B 249.677†	40542.1	41013.4	[1000]	ug/L	10:24:33
3	Ba 233.527†	120022.4	119881.1	[1000]	ug/L	10:24:33
3	Be 313.107†	2512305.1	2513690.1	[1000]	ug/L	10:24:33
3	Cd 226.502†	84731.6	84830.4	[1000]	ug/L	10:24:33
3	Co 228.616†	45717.8	45737.2	[1000]	ug/L	10:24:33
3	Cr 267.716†	84637.7	84443.3	[1000]	ug/L	10:24:33
3	Cu 324.752†	319021.3	312351.6	[1000]	ug/L	10:24:33
3	Mn 257.610†	850524.5	849129.2	[1000]	ug/L	10:24:33
3	Mo 202.031†	13491.7	13456.6	[1000]	ug/L	10:24:53
3	Ni 231.604†	37903.0	37783.7	[1000]	ug/L	10:24:33
3	P 214.914†	8053.5	7816.2	[5000]	ug/L	10:24:53
3	Pb 220.353†	7743.1	7798.6	[1000]	ug/L	10:24:53
3	S 181.975 Axial†	1386.7	1338.6	[2000]	ug/L	10:24:53
3	Sb 206.836†	2769.6	2733.7	[1000]	ug/L	10:24:53
3	Se 196.026†	1449.6	1478.3	[1000]	ug/L	10:24:53
3	Si 251.611†	147574.4	146956.5	[5000]	ug/L	10:24:33
3	Sn 189.927†	5398.5	5386.1	[1000]	ug/L	10:24:53
3	Ti 334.940†	580657.5	581368.0	[1000]	ug/L	10:24:33
3	Tl 190.801†	3051.7	3092.1	[1000]	ug/L	10:24:53
3	U 409.014†	28922.5	30929.8	[1000]	ug/L	10:24:33
3	V 292.402†	137028.9	138276.4	[1000]	ug/L	10:24:33
3	Zn 213.857†	100453.4	99476.1	[1000]	ug/L	10:24:33
3	SiO2†	148591.1	147961.7	[10695]	ug/L	10:25:09

## Mean Data: SCAL

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	814394.8	444.37	0.05%	100.07 %
Sc Radial	4783.0	91.59	1.91%	99.8 %
Y 371.029	674078.4	1455.09	0.22%	98.268 %
Y RADIAL	5075.9	96.06	1.89%	98.95 %
Ag 328.068†	203804.4	481.64	0.24%	[1000] ug/L
Al 396.153Radial†	12287.3	41.01	0.33%	[10000] ug/L
As 188.979†	2219.9	6.54	0.29%	[1000] ug/L
B 249.677†	41058.0	139.12	0.34%	[1000] ug/L
Ba 233.527†	120309.7	371.35	0.31%	[1000] ug/L
Be 313.107†	2512233.6	1474.72	0.06%	[1000] ug/L
Ca 317.933Radial†	5970.3	10.42	0.17%	[10000] ug/L
Cd 226.502†	84919.4	102.02	0.12%	[1000] ug/L
Co 228.616†	45861.5	125.26	0.27%	[1000] ug/L
Cr 267.716†	84555.2	104.97	0.12%	[1000] ug/L
Cu 324.752†	313433.9	1150.59	0.37%	[1000] ug/L
Fe 238.204 Radial†	1066.8	25.42	2.38%	[10000] ug/L
K 766.490 Radial†	49916.0	72.91	0.15%	[10000] ug/L



Mg 279.077 IEC†	295.8	6.68	2.26%	[10000]	ug/L
Mn 257.610†	851568.1	2274.80	0.27%	[1000]	ug/L
Mo 202.031†	13443.3	53.63	0.40%	[1000]	ug/L
Na 589.592 Radial†	29227.0	83.93	0.29%	[10000]	ug/L
Ni 231.604†	37818.8	31.32	0.08%	[1000]	ug/L
P 214.914†	7836.7	30.71	0.39%	[5000]	ug/L
Pb 220.353†	7795.5	49.25	0.63%	[1000]	ug/L
S 181.975 Axial†	1335.4	10.40	0.78%	[2000]	ug/L
Sb 206.836†	2737.1	9.40	0.34%	[1000]	ug/L
Se 196.026†	1487.8	8.58	0.58%	[1000]	ug/L
Si 251.611†	147498.3	502.08	0.34%	[5000]	ug/L
Sn 189.927†	5384.6	19.28	0.36%	[1000]	ug/L
Sr 421.552†	139494.8	360.84	0.26%	[1000]	ug/L
Ti 334.940†	583180.3	1739.35	0.30%	[1000]	ug/L
Tl 190.801†	3114.7	20.89	0.67%	[1000]	ug/L
U 409.014†	31120.8	186.24	0.60%	[1000]	ug/L
V 292.402†	138378.0	122.30	0.09%	[1000]	ug/L
Zn 213.857†	99701.4	198.51	0.20%	[1000]	ug/L
SiO2†	148555.4	1015.55	0.68%	[10695]	ug/L



Sequence No.: 5

Sample ID: S10

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 5

Date Collected: 1/14/2010 10:27:20

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: S10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Analysis Time
1	Sc Radial	4711.4	4711.4	98.3 %	10:29:33
1	Y RADIAL	5017.2	5017.2	97.81 %	10:29:33
1	Al 396.153Radial†	61120.5	62159.8	[50000] ug/L	10:29:13
1	Ca 317.933Radial†	29136.2	29615.0	[50000] ug/L	10:29:13
1	Fe 238.204 Radial†	2111.7	2137.6	[20000] ug/L	10:29:33
1	Mg 279.077 IEC†	1405.9	1428.2	[50000] ug/L	10:29:33
1	Na 589.592 Radial†	60084.1	62669.5	[20000] ug/L	10:29:13
1	Sc 361.383	788766.2	788766.2	96.916 %	10:30:30
1	Y 371.029	651054.6	651054.6	94.911 %	10:30:30
2	Sc Radial	4718.6	4718.6	98.5 %	10:29:58
2	Y RADIAL	4988.8	4988.8	97.26 %	10:29:58
2	Al 396.153Radial†	62059.7	63019.7	[50000] ug/L	10:29:38
2	Ca 317.933Radial†	29491.9	29931.4	[50000] ug/L	10:29:38
2	Fe 238.204 Radial†	2105.7	2128.3	[20000] ug/L	10:29:58
2	Mg 279.077 IEC†	1402.5	1422.6	[50000] ug/L	10:29:58
2	Na 589.592 Radial†	60640.6	63142.4	[20000] ug/L	10:29:38
2	Sc 361.383	796056.9	796056.9	97.812 %	10:30:36
2	Y 371.029	656001.4	656001.4	95.632 %	10:30:36
3	Sc Radial	4726.9	4726.9	98.7 %	10:30:23
3	Y RADIAL	5015.9	5015.9	97.79 %	10:30:23
3	Al 396.153Radial†	61091.2	61927.3	[50000] ug/L	10:30:03
3	Ca 317.933Radial†	29131.3	29513.3	[50000] ug/L	10:30:03
3	Fe 238.204 Radial†	2093.3	2112.0	[20000] ug/L	10:30:23
3	Mg 279.077 IEC†	1395.7	1413.3	[50000] ug/L	10:30:23
3	Na 589.592 Radial†	59447.9	61825.3	[20000] ug/L	10:30:03
3	Sc 361.383	821640.9	821640.9	100.96 %	10:30:42
3	Y 371.029	678212.4	678212.4	98.870 %	10:30:42

## Mean Data: S10

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	802154.7	17264.79	2.15%	98.561 %
Sc Radial	4719.0	7.72	0.16%	98.5 %
Y 371.029	661756.2	14464.60	2.19%	96.471 %
Y RADIAL	5007.3	16.01	0.32%	97.62 %
Al 396.153Radial†	62368.9	575.46	0.92%	[50000] ug/L
Ca 317.933Radial†	29686.5	218.08	0.73%	[50000] ug/L
Fe 238.204 Radial†	2126.0	12.97	0.61%	[20000] ug/L
Mg 279.077 IEC†	1421.3	7.54	0.53%	[50000] ug/L
Na 589.592 Radial†	62545.7	667.22	1.07%	[20000] ug/L

## Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	3	Lin Thru 0	0.0	203.5	0.00000	0.999996	
Al 396.153Radial	3	Lin Thru 0	0.0	1.246	0.00000	0.999995	
As 188.979	3	Lin Thru 0	0.0	2.222	0.00000	0.999992	
B 249.677	3	Lin Thru 0	0.0	41.09	0.00000	0.999989	
Ba 233.527	3	Lin Thru 0	0.0	120.6	0.00000	0.999989	
Be 313.107	3	Lin Thru 0	0.0	2518	0.00000	0.999990	
Ca 317.933Radial	3	Lin Thru 0	0.0	0.5938	0.00000	0.999999	
Cd 226.502	3	Lin Thru 0	0.0	85.32	0.00000	0.999957	
Co 228.616	3	Lin Thru 0	0.0	46.05	0.00000	0.999966	
Cr 267.716	3	Lin Thru 0	0.0	84.76	0.00000	0.999987	
Cu 324.752	3	Lin Thru 0	0.0	313.3	0.00000	0.999998	
Fe 238.204 Radia	2	Lin Thru 0	0.0	0.1064	0.00000	0.999999	
K 766.490 Radial	3	Lin Thru 0	0.0	4.991	0.00000	0.999966	



Mg 279.077 IEC	3	Lin Thru 0	0.0	0.0285	0.00000	0.999959
Mn 257.610	3	Lin Thru 0	0.0	852.8	0.00000	0.999996
Mo 202.031	3	Lin Thru 0	0.0	13.47	0.00000	0.999991
Na 589.592 Radia	2	Lin Thru 0	0.0	3.086	0.00000	0.999649
Ni 231.604	3	Lin Thru 0	0.0	37.99	0.00000	0.999959
P 214.914	3	Lin Thru 0	0.0	1.567	0.00000	0.999995
Pb 220.353	3	Lin Thru 0	0.0	7.807	0.00000	0.999996
S 181.975 Axial	3	Lin Thru 0	0.0	0.6701	0.00000	0.999964
Sb 206.836	3	Lin Thru 0	0.0	2.736	0.00000	0.999999
Se 196.026	3	Lin Thru 0	0.0	1.495	0.00000	0.999950
Si 251.611	3	Lin Thru 0	0.0	29.66	0.00000	0.999938
Sn 189.927	3	Lin Thru 0	0.0	5.407	0.00000	0.999964
Sr 421.552	3	Lin Thru 0	0.0	140.3	0.00000	0.999920
Ti 334.940	3	Lin Thru 0	0.0	582.9	0.00000	0.999999
Tl 190.801	3	Lin Thru 0	0.0	3.126	0.00000	0.999972
U 409.014	3	Lin Thru 0	0.0	31.31	0.00000	0.999929
V 292.402	3	Lin Thru 0	0.0	138.6	0.00000	0.999992
Zn 213.857	3	Lin Thru 0	0.0	100.3	0.00000	0.999938
SiO2	3	Lin Thru 0	0.0	13.95	0.00000	0.999961



Sequence No.: 6

Sample ID: ICV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 9

Date Collected: 1/14/2010 10:32:53

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4815.0	4815.0	100 %		10:34:46
1	Y RADIAL	5123.2	5123.2	99.88 %		10:34:46
1	Al 396.153Radial†	6201.2	6173.9	4927.0 ug/L	4927.0 ppb	10:34:46
1	Ca 317.933Radial†	2992.4	2962.6	4988.8 ug/L	4988.8 ppb	10:35:06
1	Fe 238.204 Radial†	563.9	551.3	5197.5 ug/L	5197.5 ppb	10:35:06
1	K 766.490 Radial†	15365.7	12502.7	2501.4 ug/L	2501.4 ppb	10:34:46
1	Mg 279.077 IEC†	155.1	152.8	5364.9 ug/L	5364.9 ppb	10:35:06
1	Na 589.592 Radial†	5981.5	7519.0	2436.2 ug/L	2436.2 ppb	10:34:46
1	Sr 421.552†	74307.3	73924.6	526.89 ug/L	526.89 ppb	10:34:46
1	Sc 361.383	821629.7	821629.7	100.95 %		10:36:03
1	Y 371.029	684525.5	684525.5	99.791 %		10:36:03
1	Ag 328.068†	53958.2	53166.7	264.45 ug/L	264.45 ppb	10:36:03
1	As 188.979†	1037.2	1046.3	475.17 ug/L	475.17 ppb	10:36:23
1	B 249.677†	21021.2	21341.1	517.13 ug/L	517.13 ppb	10:36:03
1	Ba 233.527†	62441.8	61850.3	514.13 ug/L	514.13 ppb	10:36:03
1	Be 313.107†	663319.7	661363.9	263.81 ug/L	263.81 ppb	10:36:03
1	Cd 226.502†	42106.2	41905.9	491.03 ug/L	491.03 ppb	10:36:23
1	Co 228.616†	23380.0	23231.8	504.68 ug/L	504.68 ppb	10:36:23
1	Cr 267.716†	42161.7	41667.6	492.20 ug/L	492.20 ppb	10:36:03
1	Cu 324.752†	167293.5	159414.6	508.89 ug/L	508.89 ppb	10:36:03
1	Mn 257.610†	443801.3	439203.3	515.32 ug/L	515.32 ppb	10:36:03
1	Mo 202.031†	7324.0	7235.4	537.56 ug/L	537.56 ppb	10:36:23
1	Ni 231.604†	19277.3	19020.0	500.38 ug/L	500.38 ppb	10:36:23
1	P 214.914†	4198.8	3931.2	2410.0 ug/L	2410.0 ppb	10:36:23
1	Pb 220.353†	3896.5	3924.3	504.35 ug/L	504.35 ppb	10:36:23
1	S 181.975 Axial†	1723.6	1660.9	2477.7 ug/L	2477.7 ppb	10:36:23
1	Sb 206.836†	1409.8	1363.7	517.88 ug/L	517.88 ppb	10:36:23
1	Se 196.026†	3835.0	3829.2	2579.8 ug/L	2579.8 ppb	10:36:23
1	Si 251.611†	146847.9	145014.4	4882.8 ug/L	4882.8 ppb	10:36:03
1	Sn 189.927†	2934.2	2900.4	537.23 ug/L	537.23 ppb	10:36:23
1	Ti 334.940†	293673.7	292285.6	501.26 ug/L	501.26 ppb	10:36:03
1	Tl 190.801†	1605.4	1634.2	526.20 ug/L	526.20 ppb	10:36:23
1	U 409.014†	13827.4	15737.6	500.93 ug/L	500.93 ppb	10:36:03
1	V 292.402†	69615.6	70364.9	514.80 ug/L	514.80 ppb	10:36:03
1	Zn 213.857†	53394.7	52029.8	514.53 ug/L	514.53 ppb	10:36:03
1	SiO2†	144889.8	143064.5	10242 ug/L	10242 ppb	10:37:21
2	Sc Radial	4796.4	4796.4	100 %		10:35:11
2	Y RADIAL	5108.2	5108.2	99.59 %		10:35:11
2	Al 396.153Radial†	6173.7	6170.4	4923.8 ug/L	4923.8 ppb	10:35:11
2	Ca 317.933Radial†	2983.3	2964.9	4992.8 ug/L	4992.8 ppb	10:35:31
2	Fe 238.204 Radial†	559.1	548.6	5172.3 ug/L	5172.3 ppb	10:35:31
2	K 766.490 Radial†	15422.2	12618.4	2524.6 ug/L	2524.6 ppb	10:35:11
2	Mg 279.077 IEC†	154.5	152.9	5366.6 ug/L	5366.6 ppb	10:35:31
2	Na 589.592 Radial†	5918.6	7479.2	2423.3 ug/L	2423.3 ppb	10:35:11
2	Sr 421.552†	74132.7	74036.6	527.69 ug/L	527.69 ppb	10:35:11
2	Sc 361.383	812833.2	812833.2	99.873 %		10:36:29
2	Y 371.029	678506.5	678506.5	98.913 %		10:36:29
2	Ag 328.068†	53088.5	52874.4	263.01 ug/L	263.01 ppb	10:36:29
2	As 188.979†	1049.4	1069.6	485.61 ug/L	485.61 ppb	10:36:49
2	B 249.677†	20678.3	21223.1	514.25 ug/L	514.25 ppb	10:36:29
2	Ba 233.527†	61481.3	61557.9	511.71 ug/L	511.71 ppb	10:36:29
2	Be 313.107†	654550.4	659694.1	263.15 ug/L	263.15 ppb	10:36:29
2	Cd 226.502†	42140.4	42391.5	496.73 ug/L	496.73 ppb	10:36:49
2	Co 228.616†	23395.2	23497.6	510.48 ug/L	510.48 ppb	10:36:49
2	Cr 267.716†	41649.1	41606.3	491.48 ug/L	491.48 ppb	10:36:29
2	Cu 324.752†	164944.5	158856.0	507.11 ug/L	507.11 ppb	10:36:29
2	Mn 257.610†	436789.7	436940.2	512.66 ug/L	512.66 ppb	10:36:29
2	Mo 202.031†	7363.5	7353.5	546.32 ug/L	546.32 ppb	10:36:49
2	Ni 231.604†	19297.8	19247.2	506.36 ug/L	506.36 ppb	10:36:49



2	P 214.914†	4179.6	3957.0	2426.8 ug/L	2426.8 ppb	10:36:49
2	Pb 220.353†	3868.1	3937.6	506.08 ug/L	506.08 ppb	10:36:49
2	S 181.975 Axial†	1731.6	1687.3	2517.2 ug/L	2517.2 ppb	10:36:49
2	Sb 206.836†	1407.8	1376.8	522.93 ug/L	522.93 ppb	10:36:49
2	Se 196.026†	3840.6	3875.8	2610.9 ug/L	2610.9 ppb	10:36:49
2	Si 251.611†	144552.0	144289.7	4858.2 ug/L	4858.2 ppb	10:36:29
2	Sn 189.927†	2928.3	2925.9	541.95 ug/L	541.95 ppb	10:36:49
2	Ti 334.940†	289483.7	291238.5	499.47 ug/L	499.47 ppb	10:36:29
2	Tl 190.801†	1615.7	1661.7	534.95 ug/L	534.95 ppb	10:36:49
2	U 409.014†	13556.5	15614.7	497.01 ug/L	497.01 ppb	10:36:29
2	V 292.402†	68818.7	70313.2	514.55 ug/L	514.55 ppb	10:36:29
2	Zn 213.857†	52539.5	51745.9	511.66 ug/L	511.66 ppb	10:36:29
2	SiO2†	148430.1	148162.4	10607 ug/L	10607 ppb	10:37:26
3	Sc Radial	4795.3	4795.3	100 %		10:35:36
3	Y RADIAL	5103.0	5103.0	99.48 %		10:35:36
3	Al 396.153Radial†	6222.3	6220.3	4964.3 ug/L	4964.3 ppb	10:35:36
3	Ca 317.933Radial†	2977.1	2959.5	4983.6 ug/L	4983.6 ppb	10:35:56
3	Fe 238.204 Radial†	560.6	550.3	5187.9 ug/L	5187.9 ppb	10:35:56
3	K 766.490 Radial†	15391.5	12591.3	2519.1 ug/L	2519.1 ppb	10:35:36
3	Mg 279.077 IEC†	153.3	151.7	5324.7 ug/L	5324.7 ppb	10:35:56
3	Na 589.592 Radial†	6003.2	7565.1	2451.1 ug/L	2451.1 ppb	10:35:36
3	Sr 421.552†	74362.8	74283.5	529.45 ug/L	529.45 ppb	10:35:36
3	Sc 361.383	822630.3	822630.3	101.08 %		10:36:55
3	Y 371.029	686689.9	686689.9	100.11 %		10:36:55
3	Ag 328.068†	53835.1	52979.9	263.53 ug/L	263.53 ppb	10:36:55
3	As 188.979†	1034.0	1041.9	473.16 ug/L	473.16 ppb	10:37:15
3	B 249.677†	21054.6	21348.8	517.33 ug/L	517.33 ppb	10:36:55
3	Ba 233.527†	62372.3	61706.3	512.94 ug/L	512.94 ppb	10:36:55
3	Be 313.107†	664062.4	661299.4	263.78 ug/L	263.78 ppb	10:36:55
3	Cd 226.502†	41973.5	41723.8	488.90 ug/L	488.90 ppb	10:37:15
3	Co 228.616†	23287.6	23112.2	502.09 ug/L	502.09 ppb	10:37:15
3	Cr 267.716†	42087.5	41543.4	490.74 ug/L	490.74 ppb	10:36:55
3	Cu 324.752†	167329.5	159248.6	508.36 ug/L	508.36 ppb	10:36:55
3	Mn 257.610†	442831.7	437709.3	513.57 ug/L	513.57 ppb	10:36:55
3	Mo 202.031†	7322.5	7225.2	536.80 ug/L	536.80 ppb	10:37:15
3	Ni 231.604†	19216.7	18936.9	498.20 ug/L	498.20 ppb	10:37:15
3	P 214.914†	4176.0	3903.7	2392.5 ug/L	2392.5 ppb	10:37:15
3	Pb 220.353†	3872.9	3896.2	500.76 ug/L	500.76 ppb	10:37:15
3	S 181.975 Axial†	1716.8	1652.0	2464.5 ug/L	2464.5 ppb	10:37:15
3	Sb 206.836†	1404.0	1356.3	515.12 ug/L	515.12 ppb	10:37:15
3	Se 196.026†	3813.7	3803.4	2562.5 ug/L	2562.5 ppb	10:37:15
3	Si 251.611†	146562.0	144554.6	4867.3 ug/L	4867.3 ppb	10:36:55
3	Sn 189.927†	2934.5	2897.1	536.62 ug/L	536.62 ppb	10:37:15
3	Ti 334.940†	293171.3	291434.7	499.81 ug/L	499.81 ppb	10:36:55
3	Tl 190.801†	1613.1	1639.8	528.00 ug/L	528.00 ppb	10:37:15
3	U 409.014†	13894.9	15787.8	502.53 ug/L	502.53 ppb	10:36:55
3	V 292.402†	69647.6	70312.7	514.42 ug/L	514.42 ppb	10:36:55
3	Zn 213.857†	53211.7	51784.4	512.10 ug/L	512.10 ppb	10:36:55
3	SiO2†	146388.9	144373.0	10336 ug/L	10336 ppb	10:37:31

## Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	819031.1	100.63 %	0.662			0.66%
Sc Radial	4802.2	100 %	0.2			0.23%
Y 371.029	683240.6	99.603 %	0.6182			0.62%
Y RADIAL	5111.5	99.65 %	0.204			0.21%
Ag 328.068†	53007.0	263.67 ug/L	0.731	263.67 ppb	0.731	0.28%
QC value within limits for Ag 328.068 Recovery = 105.47%						
Al 396.153Radial†	6188.2	4938.4 ug/L	22.54	4938.4 ppb	22.54	0.46%
QC value within limits for Al 396.153Radial Recovery = 98.77%						
As 188.979†	1052.6	477.98 ug/L	6.682	477.98 ppb	6.682	1.40%
QC value within limits for As 188.979 Recovery = 95.60%						
B 249.677†	21304.3	516.23 ug/L	1.725	516.23 ppb	1.725	0.33%
QC value within limits for B 249.677 Recovery = 103.25%						
Ba 233.527†	61704.8	512.93 ug/L	1.213	512.93 ppb	1.213	0.24%
QC value within limits for Ba 233.527 Recovery = 102.59%						
Be 313.107†	660785.8	263.58 ug/L	0.377	263.58 ppb	0.377	0.14%
QC value within limits for Be 313.107 Recovery = 105.43%						
Ca 317.933Radial†	2962.3	4988.4 ug/L	4.60	4988.4 ppb	4.60	0.09%



QC value within limits for Ca 317.933 Radial Recovery = 99.77%							
Cd 226.502†	42007.1	492.22 ug/L	4.048	492.22 ppb	4.048	0.82%	
QC value within limits for Cd 226.502 Recovery = 98.44%							
Co 228.616†	23280.5	505.75 ug/L	4.297	505.75 ppb	4.297	0.85%	
QC value within limits for Co 228.616 Recovery = 101.15%							
Cr 267.716†	41605.7	491.47 ug/L	0.733	491.47 ppb	0.733	0.15%	
QC value within limits for Cr 267.716 Recovery = 98.29%							
Cu 324.752†	159173.1	508.12 ug/L	0.915	508.12 ppb	0.915	0.18%	
QC value within limits for Cu 324.752 Recovery = 101.62%							
Fe 238.204 Radial†	550.0	5185.9 ug/L	12.69	5185.9 ppb	12.69	0.24%	
QC value within limits for Fe 238.204 Radial Recovery = 103.72%							
K 766.490 Radial†	12570.8	2515.0 ug/L	12.12	2515.0 ppb	12.12	0.48%	
QC value within limits for K 766.490 Radial Recovery = 100.60%							
Mg 279.077 IEC†	152.4	5352.1 ug/L	23.70	5352.1 ppb	23.70	0.44%	
QC value within limits for Mg 279.077 IEC Recovery = 107.04%							
Mn 257.610†	437950.9	513.85 ug/L	1.350	513.85 ppb	1.350	0.26%	
QC value within limits for Mn 257.610 Recovery = 102.77%							
Mo 202.031†	7271.4	540.22 ug/L	5.292	540.22 ppb	5.292	0.98%	
QC value within limits for Mo 202.031 Recovery = 108.04%							
Na 589.592 Radial†	7521.1	2436.9 ug/L	13.92	2436.9 ppb	13.92	0.57%	
QC value within limits for Na 589.592 Radial Recovery = 97.48%							
Ni 231.604†	19068.0	501.65 ug/L	4.226	501.65 ppb	4.226	0.84%	
QC value within limits for Ni 231.604 Recovery = 100.33%							
P 214.914†	3930.6	2409.8 ug/L	17.17	2409.8 ppb	17.17	0.71%	
QC value within limits for P 214.914 Recovery = 96.39%							
Pb 220.353†	3919.4	503.73 ug/L	2.711	503.73 ppb	2.711	0.54%	
QC value within limits for Pb 220.353 Recovery = 100.75%							
S 181.975 Axial†	1666.7	2486.5 ug/L	27.42	2486.5 ppb	27.42	1.10%	
QC value within limits for S 181.975 Axial Recovery = 99.46%							
Sb 206.836†	1365.6	518.65 ug/L	3.961	518.65 ppb	3.961	0.76%	
QC value within limits for Sb 206.836 Recovery = 103.73%							
Se 196.026†	3836.1	2584.4 ug/L	24.52	2584.4 ppb	24.52	0.95%	
QC value within limits for Se 196.026 Recovery = 103.38%							
Si 251.611†	144619.6	4869.4 ug/L	12.41	4869.4 ppb	12.41	0.25%	
QC value within limits for Si 251.611 Recovery = 97.39%							
Sn 189.927†	2907.8	538.60 ug/L	2.920	538.60 ppb	2.920	0.54%	
QC value within limits for Sn 189.927 Recovery = 107.72%							
Sr 421.552†	74081.6	528.01 ug/L	1.309	528.01 ppb	1.309	0.25%	
QC value within limits for Sr 421.552 Recovery = 105.60%							
Ti 334.940†	291652.9	500.18 ug/L	0.954	500.18 ppb	0.954	0.19%	
QC value within limits for Ti 334.940 Recovery = 100.04%							
Tl 190.801†	1645.2	529.72 ug/L	4.619	529.72 ppb	4.619	0.87%	
QC value within limits for Tl 190.801 Recovery = 105.94%							
U 409.014†	15713.4	500.16 ug/L	2.843	500.16 ppb	2.843	0.57%	
QC value within limits for U 409.014 Recovery = 100.03%							
V 292.402†	70330.3	514.59 ug/L	0.194	514.59 ppb	0.194	0.04%	
QC value within limits for V 292.402 Recovery = 102.92%							
Zn 213.857†	51853.4	512.76 ug/L	1.544	512.76 ppb	1.544	0.30%	
QC value within limits for Zn 213.857 Recovery = 102.55%							
SiO2†	145200.0	10395 ug/L	189.7	10395 ppb	189.7	1.82%	
QC value within limits for SiO2 Recovery = 97.19%							
All analyte(s) passed QC.							



Sequence No.: 7

Sample ID: ICB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 10

Date Collected: 1/14/2010 10:39:42

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: ICB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4602.3	4602.3	96.1 %		10:41:35
1	Y RADIAL	4941.5	4941.5	96.33 %		10:41:35
1	Al 396.153Radial†	6.0	9.5	7.5623 ug/L	7.5623 ppb	10:41:35
1	Ca 317.933Radial†	13.6	-1.0	-1.6550 ug/L	-1.6550 ppb	10:41:55
1	Fe 238.204 Radial†	9.6	0.1	0.8017 ug/L	0.8017 ppb	10:41:55
1	K 766.490 Radial†	2972.8	307.4	61.606 ug/L	61.606 ppb	10:41:35
1	Mg 279.077 IEC†	2.0	0.6	19.859 ug/L	19.859 ppb	10:41:55
1	Na 589.592 Radial†	-1615.1	-114.5	-37.113 ug/L	-37.113 ppb	10:41:35
1	Sr 421.552†	46.5	31.2	0.2221 ug/L	0.2221 ppb	10:41:35
1	Sc 361.383	806946.5	806946.5	99.150 %		10:42:52
1	Y 371.029	679464.3	679464.3	99.053 %		10:42:52
1	Ag 328.068†	417.5	139.6	0.6813 ug/L	0.6813 ppb	10:42:52
1	As 188.979†	-26.5	-7.9	-3.5520 ug/L	-3.5520 ppb	10:43:12
1	B 249.677†	-221.0	295.6	7.1947 ug/L	7.1947 ppb	10:43:12
1	Ba 233.527†	6.0	4.6	0.0379 ug/L	0.0379 ppb	10:43:12
1	Be 313.107†	-4255.5	20.2	0.0087 ug/L	0.0087 ppb	10:42:52
1	Cd 226.502†	-181.9	14.1	0.1661 ug/L	0.1661 ppb	10:43:12
1	Co 228.616†	-64.5	7.6	0.1671 ug/L	0.1671 ppb	10:43:12
1	Cr 267.716†	108.1	13.3	0.1547 ug/L	0.1547 ppb	10:43:12
1	Cu 324.752†	6348.0	104.4	0.3303 ug/L	0.3303 ppb	10:42:52
1	Mn 257.610†	485.8	85.6	0.0997 ug/L	0.0997 ppb	10:43:12
1	Mo 202.031†	34.6	15.5	1.1537 ug/L	1.1537 ppb	10:43:12
1	Ni 231.604†	94.1	19.8	0.5213 ug/L	0.5213 ppb	10:43:12
1	P 214.914†	227.4	1.5	0.8962 ug/L	0.8962 ppb	10:43:12
1	Pb 220.353†	-78.7	-14.8	-1.8947 ug/L	-1.8947 ppb	10:43:12
1	S 181.975 Axial†	45.4	-0.7	-0.9831 ug/L	-0.9831 ppb	10:43:12
1	Sb 206.836†	45.7	13.3	4.9037 ug/L	4.9037 ppb	10:43:12
1	Se 196.026†	-29.7	0.4	0.3016 ug/L	0.3016 ppb	10:43:12
1	Si 251.611†	488.3	46.6	1.5571 ug/L	1.5571 ppb	10:43:12
1	Sn 189.927†	8.3	2.3	0.4242 ug/L	0.4242 ppb	10:43:12
1	Ti 334.940†	-1207.0	169.7	0.2869 ug/L	0.2869 ppb	10:42:52
1	Tl 190.801†	-40.7	2.8	0.9053 ug/L	0.9053 ppb	10:43:12
1	U 409.014†	-1859.0	166.0	5.3014 ug/L	5.3014 ppb	10:42:52
1	V 292.402†	-1405.5	-10.4	-0.0489 ug/L	-0.0489 ppb	10:42:52
1	Zn 213.857†	936.6	84.3	0.8364 ug/L	0.8364 ppb	10:43:12
1	SiO2†	479.1	27.0	1.9051 ug/L	1.9051 ppb	10:44:08
2	Sc Radial	4831.4	4831.4	101 %		10:42:00
2	Y RADIAL	5186.3	5186.3	101.1 %		10:42:00
2	Al 396.153Radial†	7.7	10.9	8.6975 ug/L	8.6975 ppb	10:42:00
2	Ca 317.933Radial†	12.7	-2.6	-4.3546 ug/L	-4.3546 ppb	10:42:20
2	Fe 238.204 Radial†	9.2	-0.8	-7.0680 ug/L	-7.0680 ppb	10:42:20
2	K 766.490 Radial†	2722.7	-87.3	-17.483 ug/L	-17.483 ppb	10:42:00
2	Mg 279.077 IEC†	1.3	-0.2	-6.4266 ug/L	-6.4266 ppb	10:42:20
2	Na 589.592 Radial†	-1600.0	-19.8	-6.4098 ug/L	-6.4098 ppb	10:42:00
2	Sr 421.552†	-2.7	-19.8	-0.1415 ug/L	-0.1415 ppb	10:42:00
2	Sc 361.383	824688.3	824688.3	101.33 %		10:43:17
2	Y 371.029	694557.0	694557.0	101.25 %		10:43:17
2	Ag 328.068†	291.1	5.7	0.0301 ug/L	0.0301 ppb	10:43:17
2	As 188.979†	-21.7	-2.6	-1.1639 ug/L	-1.1639 ppb	10:43:37
2	B 249.677†	-232.9	288.7	7.0280 ug/L	7.0280 ppb	10:43:37
2	Ba 233.527†	7.4	5.9	0.0492 ug/L	0.0492 ppb	10:43:37
2	Be 313.107†	-4308.5	60.3	0.0246 ug/L	0.0246 ppb	10:43:17
2	Cd 226.502†	-186.8	13.2	0.1556 ug/L	0.1556 ppb	10:43:37
2	Co 228.616†	-71.6	2.0	0.0439 ug/L	0.0439 ppb	10:43:37
2	Cr 267.716†	94.2	-2.8	-0.0314 ug/L	-0.0314 ppb	10:43:37
2	Cu 324.752†	6393.4	11.5	0.0382 ug/L	0.0382 ppb	10:43:17
2	Mn 257.610†	479.8	69.2	0.0807 ug/L	0.0807 ppb	10:43:37
2	Mo 202.031†	24.4	4.7	0.3499 ug/L	0.3499 ppb	10:43:37
2	Ni 231.604†	115.9	39.3	1.0343 ug/L	1.0343 ppb	10:43:37



2	P 214.914†	209.3	-21.3	-13.587 ug/L	-13.587 ppb	10:43:37
2	Pb 220.353†	-63.2	2.2	0.2803 ug/L	0.2803 ppb	10:43:37
2	S 181.975 Axial†	51.5	4.4	6.5482 ug/L	6.5482 ppb	10:43:37
2	Sb 206.836†	35.6	2.4	0.8931 ug/L	0.8931 ppb	10:43:37
2	Se 196.026†	-30.1	0.6	0.4062 ug/L	0.4062 ppb	10:43:37
2	Si 251.611†	490.3	38.0	1.2772 ug/L	1.2772 ppb	10:43:37
2	Sn 189.927†	12.0	5.7	1.0617 ug/L	1.0617 ppb	10:43:37
2	Ti 334.940†	-1229.2	174.0	0.2999 ug/L	0.2999 ppb	10:43:17
2	Tl 190.801†	-35.2	9.1	2.9247 ug/L	2.9247 ppb	10:43:37
2	U 409.014†	-2176.7	-107.1	-3.4212 ug/L	-3.4212 ppb	10:43:17
2	V 292.402†	-1372.2	53.0	0.3811 ug/L	0.3811 ppb	10:43:17
2	Zn 213.857†	935.6	63.0	0.6222 ug/L	0.6222 ppb	10:43:37
2	SiO2†	483.7	21.1	1.5052 ug/L	1.5052 ppb	10:44:13
3	Sc Radial	4845.4	4845.4	101 %		10:42:25
3	Y RADIAL	5156.5	5156.5	100.5 %		10:42:25
3	Al 396.153Radial†	-4.6	-1.3	-1.0698 ug/L	-1.0698 ppb	10:42:25
3	Ca 317.933Radial†	18.5	3.1	5.2827 ug/L	5.2827 ppb	10:42:45
3	Fe 238.204 Radial†	7.5	-2.5	-23.449 ug/L	-23.449 ppb	10:42:45
3	K 766.490 Radial†	2823.8	4.9	0.9772 ug/L	0.9772 ppb	10:42:25
3	Mg 279.077 IEC†	1.8	0.3	10.499 ug/L	10.499 ppb	10:42:45
3	Na 589.592 Radial†	-1635.8	-50.6	-16.386 ug/L	-16.386 ppb	10:42:25
3	Sr 421.552†	19.4	1.9	0.0137 ug/L	0.0137 ppb	10:42:25
3	Sc 361.383	806645.9	806645.9	99.113 %		10:43:42
3	Y 371.029	680613.7	680613.7	99.220 %		10:43:42
3	Ag 328.068†	360.6	82.2	0.3989 ug/L	0.3989 ppb	10:43:42
3	As 188.979†	-17.6	1.1	0.4757 ug/L	0.4757 ppb	10:44:02
3	B 249.677†	-274.2	241.9	5.8920 ug/L	5.8920 ppb	10:44:02
3	Ba 233.527†	6.0	4.6	0.0376 ug/L	0.0376 ppb	10:44:02
3	Be 313.107†	-4173.3	101.6	0.0408 ug/L	0.0408 ppb	10:43:42
3	Cd 226.502†	-189.9	6.0	0.0722 ug/L	0.0722 ppb	10:44:02
3	Co 228.616†	-79.5	-7.5	-0.1616 ug/L	-0.1616 ppb	10:44:02
3	Cr 267.716†	95.2	0.3	0.0047 ug/L	0.0047 ppb	10:44:02
3	Cu 324.752†	6354.4	113.2	0.3615 ug/L	0.3615 ppb	10:43:42
3	Mn 257.610†	484.0	84.0	0.0958 ug/L	0.0958 ppb	10:44:02
3	Mo 202.031†	26.1	7.0	0.5168 ug/L	0.5168 ppb	10:44:02
3	Ni 231.604†	96.0	21.7	0.5713 ug/L	0.5713 ppb	10:44:02
3	P 214.914†	223.2	-2.7	-1.7710 ug/L	-1.7710 ppb	10:44:02
3	Pb 220.353†	-71.1	-7.1	-0.9086 ug/L	-0.9086 ppb	10:44:02
3	S 181.975 Axial†	44.3	-1.8	-2.6532 ug/L	-2.6532 ppb	10:44:02
3	Sb 206.836†	38.0	5.6	2.0666 ug/L	2.0666 ppb	10:44:02
3	Se 196.026†	-31.5	-1.4	-1.0284 ug/L	-1.0284 ppb	10:44:02
3	Si 251.611†	478.0	36.4	1.2221 ug/L	1.2221 ppb	10:44:02
3	Sn 189.927†	13.0	7.0	1.3021 ug/L	1.3021 ppb	10:44:02
3	Ti 334.940†	-1271.4	104.2	0.1797 ug/L	0.1797 ppb	10:43:42
3	Tl 190.801†	-34.9	8.7	2.7887 ug/L	2.7887 ppb	10:44:02
3	U 409.014†	-2100.1	-77.9	-2.4860 ug/L	-2.4860 ppb	10:43:42
3	V 292.402†	-1377.1	17.7	0.1337 ug/L	0.1337 ppb	10:43:42
3	Zn 213.857†	942.3	90.4	0.8999 ug/L	0.8999 ppb	10:44:02
3	SiO2†	468.3	16.2	1.1503 ug/L	1.1503 ppb	10:44:18

## Mean Data: ICB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	812760.2	99.864 %		1.2694			1.27%
Sc Radial	4759.7	99.3 %		2.85			2.87%
Y 371.029	684878.3	99.842 %		1.2248			1.23%
Y RADIAL	5094.8	99.32 %		2.604			2.62%
Ag 328.068†	75.8	0.3701 ug/L		0.32653	0.3701 ppb	0.32653	88.23%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	6.4	5.0633 ug/L		5.34168	5.0633 ppb	5.34168	105.50%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-3.1	-1.4134 ug/L		2.02542	-1.4134 ppb	2.02542	143.30%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	275.4	6.7049 ug/L		0.70891	6.7049 ppb	0.70891	10.57%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	5.0	0.0415 ug/L		0.00663	0.0415 ppb	0.00663	15.96%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	60.7	0.0247 ug/L		0.01604	0.0247 ppb	0.01604	64.93%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-0.1	-0.2423 ug/L		4.97151	-0.2423 ppb	4.97151	>999.9%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd 226.502†	11.1	0.1313 ug/L	0.05146	0.1313 ppb	0.05146	39.20%			
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co 228.616†	0.7	0.0165 ug/L	0.16611	0.0165 ppb	0.16611	>999.9%			
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr 267.716†	3.6	0.0426 ug/L	0.09868	0.0426 ppb	0.09868	231.44%			
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu 324.752†	76.4	0.2433 ug/L	0.17836	0.2433 ppb	0.17836	73.30%			
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe 238.204 Radial†	-1.1	-9.9050 ug/L	12.37172	-9.9050 ppb	12.37172	124.90%			
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K 766.490 Radial†	75.0	15.033 ug/L	41.3757	15.033 ppb	41.3757	275.22%			
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg 279.077 IEC†	0.2	7.9770 ug/L	13.32295	7.9770 ppb	13.32295	167.02%			
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn 257.610†	79.6	0.0921 ug/L	0.01001	0.0921 ppb	0.01001	10.87%			
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo 202.031†	9.1	0.6735 ug/L	0.42418	0.6735 ppb	0.42418	62.98%			
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na 589.592 Radial†	-61.6	-19.970 ug/L	15.6622	-19.970 ppb	15.6622	78.43%			
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni 231.604†	26.9	0.7090 ug/L	0.28285	0.7090 ppb	0.28285	39.90%			
QC value within limits for Ni 231.604 Recovery = Not calculated									
P 214.914†	-7.5	-4.8205 ug/L	7.70810	-4.8205 ppb	7.70810	159.90%			
QC value within limits for P 214.914 Recovery = Not calculated									
Pb 220.353†	-6.6	-0.8410 ug/L	1.08907	-0.8410 ppb	1.08907	129.50%			
QC value within limits for Pb 220.353 Recovery = Not calculated									
S 181.975 Axial†	0.7	0.9706 ug/L	4.90199	0.9706 ppb	4.90199	505.03%			
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb 206.836†	7.1	2.6212 ug/L	2.06200	2.6212 ppb	2.06200	78.67%			
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se 196.026†	-0.1	-0.1069 ug/L	0.79981	-0.1069 ppb	0.79981	748.33%			
QC value within limits for Se 196.026 Recovery = Not calculated									
Si 251.611†	40.3	1.3522 ug/L	0.17965	1.3522 ppb	0.17965	13.29%			
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn 189.927†	5.0	0.9293 ug/L	0.45364	0.9293 ppb	0.45364	48.81%			
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr 421.552†	4.4	0.0315 ug/L	0.18244	0.0315 ppb	0.18244	579.65%			
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti 334.940†	149.3	0.2555 ug/L	0.06594	0.2555 ppb	0.06594	25.81%			
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl 190.801†	6.9	2.2062 ug/L	1.12868	2.2062 ppb	1.12868	51.16%			
QC value within limits for Tl 190.801 Recovery = Not calculated									
U 409.014†	-6.4	-0.2019 ug/L	4.78889	-0.2019 ppb	4.78889	>999.9%			
QC value within limits for U 409.014 Recovery = Not calculated									
V 292.402†	20.1	0.1553 ug/L	0.21582	0.1553 ppb	0.21582	139.00%			
QC value within limits for V 292.402 Recovery = Not calculated									
Zn 213.857†	79.2	0.7861 ug/L	0.14551	0.7861 ppb	0.14551	18.51%			
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†	21.5	1.5202 ug/L	0.37763	1.5202 ppb	0.37763	24.84%			
QC value within limits for SiO2 Recovery = Not calculated									
All analyte(s) passed QC.									



Sequence No.: 8

Sample ID: PQL

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 11

Date Collected: 1/14/2010 10:46:28

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: PQL

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4881.8	4881.8	102 %		10:48:21
1	Y RADIAL	5210.0	5210.0	101.6 %		10:48:21
1	Al 396.153Radial†	256.4	254.9	203.98 ug/L	203.98 ppb	10:48:21
1	Ca 317.933Radial†	146.0	128.1	215.78 ug/L	215.78 ppb	10:48:41
1	Fe 238.204 Radial†	24.0	13.7	128.51 ug/L	128.51 ppb	10:48:41
1	K 766.490 Radial†	3515.7	663.1	132.64 ug/L	132.64 ppb	10:48:21
1	Mg 279.077 IEC†	8.5	6.8	239.93 ug/L	239.93 ppb	10:48:41
1	Na 589.592 Radial†	-641.7	937.2	303.64 ug/L	303.64 ppb	10:48:21
1	Sr 421.552†	763.9	732.5	5.2197 ug/L	5.2197 ppb	10:48:21
1	Sc 361.383	818126.7	818126.7	100.52 %		10:49:38
1	Y 371.029	689868.0	689868.0	100.57 %		10:49:38
1	Ag 328.068†	1399.9	1111.0	5.4695 ug/L	5.4695 ppb	10:49:38
1	As 188.979†	46.6	65.2	29.413 ug/L	29.413 ppb	10:49:58
1	B 249.677†	1643.7	2153.7	52.382 ug/L	52.382 ppb	10:49:38
1	Ba 233.527†	623.8	619.0	5.1469 ug/L	5.1469 ppb	10:49:58
1	Be 313.107†	8600.7	12868.2	5.1227 ug/L	5.1227 ppb	10:49:38
1	Cd 226.502†	244.8	441.1	5.1712 ug/L	5.1712 ppb	10:49:58
1	Co 228.616†	169.4	241.3	5.2500 ug/L	5.2500 ppb	10:49:58
1	Cr 267.716†	486.6	388.3	4.5682 ug/L	4.5682 ppb	10:49:58
1	Cu 324.752†	9634.5	3286.3	10.466 ug/L	10.466 ppb	10:49:38
1	Mn 257.610†	9544.9	9090.9	10.663 ug/L	10.663 ppb	10:49:38
1	Mo 202.031†	152.9	132.8	9.8720 ug/L	9.8720 ppb	10:49:58
1	Ni 231.604†	281.4	204.8	5.3891 ug/L	5.3891 ppb	10:49:58
1	P 214.914†	451.4	221.1	139.10 ug/L	139.10 ppb	10:49:58
1	Pb 220.353†	18.7	83.2	10.710 ug/L	10.710 ppb	10:49:58
1	S 181.975 Axial†	116.6	69.5	103.70 ug/L	103.70 ppb	10:49:58
1	Sb 206.836†	58.1	25.1	9.5169 ug/L	9.5169 ppb	10:49:58
1	Se 196.026†	27.1	57.3	38.804 ug/L	38.804 ppb	10:49:58
1	Si 251.611†	3398.0	2934.4	98.817 ug/L	98.817 ppb	10:49:58
1	Sn 189.927†	61.5	55.1	10.226 ug/L	10.226 ppb	10:49:58
1	Ti 334.940†	1649.6	3028.0	5.1778 ug/L	5.1778 ppb	10:49:38
1	Tl 190.801†	27.9	71.6	22.971 ug/L	22.971 ppb	10:49:58
1	U 409.014†	-282.7	1759.8	56.177 ug/L	56.177 ppb	10:49:38
1	V 292.402†	-782.2	629.0	4.7630 ug/L	4.7630 ppb	10:49:38
1	Zn 213.857†	1720.4	851.1	8.4274 ug/L	8.4274 ppb	10:49:58
1	SiO2†	3565.2	3090.4	221.29 ug/L	221.29 ppb	10:50:54
2	Sc Radial	4889.2	4889.2	102 %		10:48:46
2	Y RADIAL	5225.5	5225.5	101.9 %		10:48:46
2	Al 396.153Radial†	245.6	244.0	195.24 ug/L	195.24 ppb	10:48:46
2	Ca 317.933Radial†	142.8	124.7	210.06 ug/L	210.06 ppb	10:49:06
2	Fe 238.204 Radial†	21.4	11.1	104.51 ug/L	104.51 ppb	10:49:06
2	K 766.490 Radial†	3646.8	786.3	157.33 ug/L	157.33 ppb	10:48:46
2	Mg 279.077 IEC†	13.8	12.0	420.84 ug/L	420.84 ppb	10:49:06
2	Na 589.592 Radial†	-636.9	942.8	305.46 ug/L	305.46 ppb	10:48:46
2	Sr 421.552†	756.0	723.6	5.1564 ug/L	5.1564 ppb	10:48:46
2	Sc 361.383	817289.1	817289.1	100.42 %		10:50:04
2	Y 371.029	689757.6	689757.6	100.55 %		10:50:04
2	Ag 328.068†	1340.4	1053.3	5.1810 ug/L	5.1810 ppb	10:50:04
2	As 188.979†	39.6	58.3	26.276 ug/L	26.276 ppb	10:50:24
2	B 249.677†	1635.6	2147.2	52.229 ug/L	52.229 ppb	10:50:04
2	Ba 233.527†	625.8	621.7	5.1695 ug/L	5.1695 ppb	10:50:24
2	Be 313.107†	8674.3	12950.2	5.1553 ug/L	5.1553 ppb	10:50:04
2	Cd 226.502†	246.2	442.7	5.1923 ug/L	5.1923 ppb	10:50:24
2	Co 228.616†	166.5	238.5	5.1901 ug/L	5.1901 ppb	10:50:24
2	Cr 267.716†	507.0	409.2	4.8145 ug/L	4.8145 ppb	10:50:24
2	Cu 324.752†	9595.7	3257.5	10.374 ug/L	10.374 ppb	10:50:04
2	Mn 257.610†	9494.4	9050.3	10.606 ug/L	10.606 ppb	10:50:04
2	Mo 202.031†	153.0	133.0	9.8844 ug/L	9.8844 ppb	10:50:24
2	Ni 231.604†	281.6	205.3	5.4002 ug/L	5.4002 ppb	10:50:24



2	P 214.914†	437.5	207.8	130.58 ug/L	130.58 ppb	10:50:24
2	Pb 220.353†	19.2	83.7	10.778 ug/L	10.778 ppb	10:50:24
2	S 181.975 Axial†	109.7	62.7	93.602 ug/L	93.602 ppb	10:50:24
2	Sb 206.836†	58.5	25.5	9.6630 ug/L	9.6630 ppb	10:50:24
2	Se 196.026†	15.0	45.3	30.654 ug/L	30.654 ppb	10:50:24
2	Si 251.611†	3371.3	2911.3	98.038 ug/L	98.038 ppb	10:50:24
2	Sn 189.927†	54.1	47.8	8.8647 ug/L	8.8647 ppb	10:50:24
2	Ti 334.940†	1670.8	3050.8	5.2018 ug/L	5.2018 ppb	10:50:04
2	Tl 190.801†	30.1	73.9	23.699 ug/L	23.699 ppb	10:50:24
2	U 409.014†	-323.3	1719.0	54.878 ug/L	54.878 ppb	10:50:04
2	V 292.402†	-711.6	698.5	5.2694 ug/L	5.2694 ppb	10:50:04
2	Zn 213.857†	1689.6	822.2	8.1415 ug/L	8.1415 ppb	10:50:24
2	SiO2†	3521.6	3050.6	218.44 ug/L	218.44 ppb	10:50:59
3	Sc Radial	4955.8	4955.8	103 %		10:49:12
3	Y RADIAL	5308.9	5308.9	103.5 %		10:49:12
3	Al 396.153Radial†	240.4	235.6	188.54 ug/L	188.54 ppb	10:49:12
3	Ca 317.933Radial†	135.6	116.0	195.30 ug/L	195.30 ppb	10:49:32
3	Fe 238.204 Radial†	22.3	11.7	109.68 ug/L	109.68 ppb	10:49:32
3	K 766.490 Radial†	3467.9	565.4	113.06 ug/L	113.06 ppb	10:49:12
3	Mg 279.077 IEC†	11.2	9.4	328.53 ug/L	328.53 ppb	10:49:32
3	Na 589.592 Radial†	-600.8	986.0	319.48 ug/L	319.48 ppb	10:49:12
3	Sr 421.552†	765.0	722.4	5.1476 ug/L	5.1476 ppb	10:49:12
3	Sc 361.383	821831.7	821831.7	100.98 %		10:50:29
3	Y 371.029	694000.9	694000.9	101.17 %		10:50:29
3	Ag 328.068†	1461.9	1166.1	5.7418 ug/L	5.7418 ppb	10:50:29
3	As 188.979†	53.8	72.1	32.488 ug/L	32.488 ppb	10:50:49
3	B 249.677†	1682.9	2185.1	53.150 ug/L	53.150 ppb	10:50:29
3	Ba 233.527†	624.7	617.2	5.1324 ug/L	5.1324 ppb	10:50:49
3	Be 313.107†	8653.4	12881.7	5.1281 ug/L	5.1281 ppb	10:50:29
3	Cd 226.502†	250.1	445.2	5.2199 ug/L	5.2199 ppb	10:50:49
3	Co 228.616†	151.0	222.2	4.8365 ug/L	4.8365 ppb	10:50:49
3	Cr 267.716†	527.4	426.6	5.0222 ug/L	5.0222 ppb	10:50:49
3	Cu 324.752†	9733.0	3340.6	10.642 ug/L	10.642 ppb	10:50:29
3	Mn 257.610†	9529.7	9033.1	10.590 ug/L	10.590 ppb	10:50:29
3	Mo 202.031†	157.8	136.9	10.175 ug/L	10.175 ppb	10:50:49
3	Ni 231.604†	279.3	201.5	5.3013 ug/L	5.3013 ppb	10:50:49
3	P 214.914†	434.4	202.4	127.07 ug/L	127.07 ppb	10:50:49
3	Pb 220.353†	6.9	71.4	9.1949 ug/L	9.1949 ppb	10:50:49
3	S 181.975 Axial†	112.5	64.9	96.894 ug/L	96.894 ppb	10:50:49
3	Sb 206.836†	57.7	24.4	9.2859 ug/L	9.2859 ppb	10:50:49
3	Se 196.026†	21.4	51.6	34.891 ug/L	34.891 ppb	10:50:49
3	Si 251.611†	3381.6	2902.9	97.752 ug/L	97.752 ppb	10:50:49
3	Sn 189.927†	60.0	53.3	9.8883 ug/L	9.8883 ppb	10:50:49
3	Ti 334.940†	1665.6	3036.5	5.1845 ug/L	5.1845 ppb	10:50:29
3	Tl 190.801†	27.4	71.1	22.791 ug/L	22.791 ppb	10:50:49
3	U 409.014†	-454.0	1591.3	50.800 ug/L	50.800 ppb	10:50:29
3	V 292.402†	-677.6	736.1	5.5343 ug/L	5.5343 ppb	10:50:29
3	Zn 213.857†	1706.0	829.2	8.2108 ug/L	8.2108 ppb	10:50:49
3	SiO2†	3498.3	3008.2	215.39 ug/L	215.39 ppb	10:51:05

## Mean Data: PQL

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	819082.5	100.64 %	0.297			0.30%
Sc Radial	4908.9	102 %	0.9			0.83%
Y 371.029	691208.9	100.77 %	0.353			0.35%
Y RADIAL	5248.1	102.3 %	1.04			1.01%
Ag 328.068†	1110.1	5.4641 ug/L	0.28046	5.4641 ppb	0.28046	5.13%
QC value within limits for Ag 328.068 Recovery = 109.28%						
Al 396.153Radial†	244.8	195.92 ug/L	7.742	195.92 ppb	7.742	3.95%
QC value within limits for Al 396.153Radial Recovery = 97.96%						
As 188.979†	65.2	29.392 ug/L	3.1061	29.392 ppb	3.1061	10.57%
QC value within limits for As 188.979 Recovery = 97.97%						
B 249.677†	2162.0	52.587 ug/L	0.4938	52.587 ppb	0.4938	0.94%
QC value within limits for B 249.677 Recovery = 105.17%						
Ba 233.527†	619.3	5.1496 ug/L	0.01869	5.1496 ppb	0.01869	0.36%
QC value within limits for Ba 233.527 Recovery = 102.99%						
Be 313.107†	12900.0	5.1354 ug/L	0.01750	5.1354 ppb	0.01750	0.34%
QC value within limits for Be 313.107 Recovery = 102.71%						
Ca 317.933Radial†	123.0	207.05 ug/L	10.567	207.05 ppb	10.567	5.10%



QC value within limits for Ca 317.933 Radial Recovery = 103.52%								
Cd	226.502†	443.0	5.1945 ug/L	0.02445	5.1945 ppb	0.02445	0.47%	
QC value within limits for Cd 226.502 Recovery = 103.89%								
Co	228.616†	234.0	5.0922 ug/L	0.22346	5.0922 ppb	0.22346	4.39%	
QC value within limits for Co 228.616 Recovery = 101.84%								
Cr	267.716†	408.0	4.8017 ug/L	0.22727	4.8017 ppb	0.22727	4.73%	
QC value within limits for Cr 267.716 Recovery = 96.03%								
Cu	324.752†	3294.8	10.494 ug/L	0.1360	10.494 ppb	0.1360	1.30%	
QC value within limits for Cu 324.752 Recovery = 104.94%								
Fe	238.204 Radial†	12.1	114.23 ug/L	12.635	114.23 ppb	12.635	11.06%	
QC value within limits for Fe 238.204 Radial Recovery = 114.23%								
K	766.490 Radial†	671.6	134.35 ug/L	22.181	134.35 ppb	22.181	16.51%	
QC value within limits for K 766.490 Radial Recovery = 89.56%								
Mg	279.077 IEC†	9.4	329.77 ug/L	90.465	329.77 ppb	90.465	27.43%	
QC value within limits for Mg 279.077 IEC Recovery = 109.92%								
Mn	257.610†	9058.1	10.620 ug/L	0.0385	10.620 ppb	0.0385	0.36%	
QC value within limits for Mn 257.610 Recovery = 106.20%								
Mo	202.031†	134.3	9.9772 ug/L	0.17155	9.9772 ppb	0.17155	1.72%	
QC value within limits for Mo 202.031 Recovery = 99.77%								
Na	589.592 Radial†	955.3	309.53 ug/L	8.667	309.53 ppb	8.667	2.80%	
QC value within limits for Na 589.592 Radial Recovery = 103.18%								
Ni	231.604†	203.9	5.3635 ug/L	0.05419	5.3635 ppb	0.05419	1.01%	
QC value within limits for Ni 231.604 Recovery = 107.27%								
P	214.914†	210.4	132.25 ug/L	6.182	132.25 ppb	6.182	4.67%	
QC value within limits for P 214.914 Recovery = 88.17%								
Pb	220.353†	79.4	10.228 ug/L	0.8952	10.228 ppb	0.8952	8.75%	
QC value within limits for Pb 220.353 Recovery = 102.28%								
S	181.975 Axial†	65.7	98.065 ug/L	5.1497	98.065 ppb	5.1497	5.25%	
QC value within limits for S 181.975 Axial Recovery = 98.07%								
Sb	206.836†	25.0	9.4886 ug/L	0.19010	9.4886 ppb	0.19010	2.00%	
QC value within limits for Sb 206.836 Recovery = 94.89%								
Se	196.026†	51.4	34.783 ug/L	4.0762	34.783 ppb	4.0762	11.72%	
QC value within limits for Se 196.026 Recovery = 115.94%								
Si	251.611†	2916.2	98.202 ug/L	0.5515	98.202 ppb	0.5515	0.56%	
QC value within limits for Si 251.611 Recovery = 98.20%								
Sn	189.927†	52.1	9.6596 ug/L	0.70884	9.6596 ppb	0.70884	7.34%	
QC value within limits for Sn 189.927 Recovery = 96.60%								
Sr	421.552†	726.2	5.1746 ug/L	0.03928	5.1746 ppb	0.03928	0.76%	
QC value within limits for Sr 421.552 Recovery = 103.49%								
Ti	334.940†	3038.5	5.1880 ug/L	0.01240	5.1880 ppb	0.01240	0.24%	
QC value within limits for Ti 334.940 Recovery = 103.76%								
Tl	190.801†	72.2	23.154 ug/L	0.4809	23.154 ppb	0.4809	2.08%	
QC value within limits for Tl 190.801 Recovery = 115.77%								
U	409.014†	1690.0	53.952 ug/L	2.8057	53.952 ppb	2.8057	5.20%	
QC value within limits for U 409.014 Recovery = 107.90%								
V	292.402†	687.9	5.1889 ug/L	0.39186	5.1889 ppb	0.39186	7.55%	
QC value within limits for V 292.402 Recovery = 103.78%								
Zn	213.857†	834.2	8.2599 ug/L	0.14914	8.2599 ppb	0.14914	1.81%	
QC value within limits for Zn 213.857 Recovery = 82.60%								
SiO2†	3049.7	218.37 ug/L	2.952	218.37 ppb	2.952	1.35%		
QC value within limits for SiO2 Recovery = 102.52%								

All analyte(s) passed QC.



Sequence No.: 9  
 Sample ID: ICSA  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 13  
 Date Collected: 1/14/2010 10:53:16  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: ICSA

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4366.7	4366.7	91.1 %		10:55:14
1	Y RADIAL	4625.6	4625.6	90.18 %		10:55:14
1	Al 396.153Radial†	574461.5	630327.7	505690 ug/L	505690 ppb	10:55:09
1	Ca 317.933Radial†	256832.4	281792.6	474520 ug/L	474520 ppb	10:55:09
1	Fe 238.204 Radial†	18550.9	20345.0	191260 ug/L	191260 ppb	10:55:14
1	K 766.490 Radial†	2355.5	-202.9	-199.36 ug/L	-199.36 ppb	10:55:09
1	Mg 279.077 IEC†	12742.9	13980.5	490610 ug/L	490610 ppb	10:55:14
1	Na 589.592 Radial†	-1387.6	44.4	14.384 ug/L	14.384 ppb	10:55:14
1	Sr 421.552†	506.2	538.2	0.2927 ug/L	0.2927 ppb	10:55:14
1	Sc 361.383	698776.5	698776.5	85.859 %		10:55:42
1	Y 371.029	575182.3	575182.3	83.851 %		10:55:42
1	Ag 328.068†	-9042.5	-10813.4	2.4098 ug/L	2.4098 ppb	10:55:42
1	As 188.979†	-82.7	-77.5	9.7499 ug/L	9.7499 ppb	10:56:02
1	B 249.677†	313.5	883.6	-9.5557 ug/L	-9.5557 ppb	10:55:42
1	Ba 233.527†	-474.0	-553.5	1.2676 ug/L	1.2676 ppb	10:56:02
1	Be 313.107†	-3983.9	-327.9	-0.1843 ug/L	-0.1843 ppb	10:55:42
1	Cd 226.502†	1230.3	1630.5	-0.6369 ug/L	-0.6369 ppb	10:56:02
1	Co 228.616†	-20.1	49.2	-1.6919 ug/L	-1.6919 ppb	10:56:02
1	Cr 267.716†	-58.6	-164.0	1.7952 ug/L	1.7952 ppb	10:56:02
1	Cu 324.752†	3675.8	-2016.8	3.6692 ug/L	3.6692 ppb	10:55:42
1	Mn 257.610†	848.2	583.6	-0.4937 ug/L	-0.4937 ppb	10:55:42
1	Mo 202.031†	-217.1	-272.2	0.2876 ug/L	0.2876 ppb	10:56:02
1	Ni 231.604†	207.8	166.9	4.3920 ug/L	4.3920 ppb	10:56:02
1	P 214.914†	160.8	-40.6	-53.371 ug/L	-53.371 ppb	10:56:02
1	Pb 220.353†	-756.7	-816.7	-5.9433 ug/L	-5.9433 ppb	10:56:02
1	S 181.975 Axial†	68.0	32.8	-45.830 ug/L	-45.830 ppb	10:56:02
1	Sb 206.836†	77.6	57.6	10.694 ug/L	10.694 ppb	10:56:02
1	Se 196.026†	-849.2	-958.7	11.376 ug/L	11.376 ppb	10:56:02
1	Si 251.611†	477.6	110.4	3.9716 ug/L	3.9716 ppb	10:56:02
1	Sn 189.927†	-367.5	-434.2	-4.9656 ug/L	-4.9656 ppb	10:56:02
1	Ti 334.940†	-13124.2	-13898.7	-0.2982 ug/L	-0.2982 ppb	10:55:42
1	Tl 190.801†	-79.4	-48.6	-15.780 ug/L	-15.780 ppb	10:56:02
1	U 409.014†	-983.1	895.9	6.8149 ug/L	6.8149 ppb	10:55:42
1	V 292.402†	874.5	2425.7	-1.0820 ug/L	-1.0820 ppb	10:56:02
1	Zn 213.857†	2891.5	2507.5	6.4355 ug/L	6.4355 ppb	10:56:02
1	SiO2†	475.5	97.5	7.5434 ug/L	7.5434 ppb	10:56:58
2	Sc Radial	4319.9	4319.9	90.2 %		10:55:25
2	Y RADIAL	4632.0	4632.0	90.30 %		10:55:25
2	Al 396.153Radial†	572941.8	635472.8	509820 ug/L	509820 ppb	10:55:20
2	Ca 317.933Radial†	256332.4	284291.9	478730 ug/L	478730 ppb	10:55:20
2	Fe 238.204 Radial†	18371.7	20366.8	191460 ug/L	191460 ppb	10:55:25
2	K 766.490 Radial†	2331.6	-201.3	-200.46 ug/L	-200.46 ppb	10:55:20
2	Mg 279.077 IEC†	12673.0	14054.5	493210 ug/L	493210 ppb	10:55:25
2	Na 589.592 Radial†	-1411.7	1.2	0.3903 ug/L	0.3903 ppb	10:55:25
2	Sr 421.552†	480.3	515.5	0.0999 ug/L	0.0999 ppb	10:55:25
2	Sc 361.383	703297.6	703297.6	86.414 %		10:56:07
2	Y 371.029	577230.9	577230.9	84.149 %		10:56:07
2	Ag 328.068†	-9262.6	-11000.4	1.5012 ug/L	1.5012 ppb	10:56:07
2	As 188.979†	-74.9	-67.8	14.163 ug/L	14.163 ppb	10:56:27
2	B 249.677†	215.8	768.2	-12.398 ug/L	-12.398 ppb	10:56:07
2	Ba 233.527†	-449.7	-521.9	1.5370 ug/L	1.5370 ppb	10:56:27
2	Be 313.107†	-4076.4	-405.0	-0.2146 ug/L	-0.2146 ppb	10:56:07
2	Cd 226.502†	1236.4	1628.4	-0.6835 ug/L	-0.6835 ppb	10:56:27
2	Co 228.616†	-12.5	58.3	-1.4914 ug/L	-1.4914 ppb	10:56:27
2	Cr 267.716†	-55.5	-159.9	1.8483 ug/L	1.8483 ppb	10:56:27
2	Cu 324.752†	3698.5	-2018.1	3.6759 ug/L	3.6759 ppb	10:56:07
2	Mn 257.610†	1064.3	827.3	-0.2938 ug/L	-0.2938 ppb	10:56:07
2	Mo 202.031†	-180.8	-228.6	3.5929 ug/L	3.5929 ppb	10:56:27
2	Ni 231.604†	185.5	139.5	3.6715 ug/L	3.6715 ppb	10:56:27



2	P 214.914†	185.9	-12.8	-34.707 ug/L	-34.707 ppb	10:56:27
2	Pb 220.353†	-766.8	-822.8	-5.7744 ug/L	-5.7744 ppb	10:56:27
2	S 181.975 Axial†	72.4	37.4	-39.791 ug/L	-39.791 ppb	10:56:27
2	Sb 206.836†	45.2	19.6	-3.2091 ug/L	-3.2091 ppb	10:56:27
2	Se 196.026†	-860.9	-965.9	7.4821 ug/L	7.4821 ppb	10:56:27
2	Si 251.611†	479.3	108.8	3.8760 ug/L	3.8760 ppb	10:56:27
2	Sn 189.927†	-362.3	-425.4	-2.6994 ug/L	-2.6994 ppb	10:56:27
2	Ti 334.940†	-13134.5	-13812.4	0.2021 ug/L	0.2021 ppb	10:56:07
2	Tl 190.801†	-85.9	-55.5	-17.994 ug/L	-17.994 ppb	10:56:27
2	U 409.014†	-985.7	900.3	6.9290 ug/L	6.9290 ppb	10:56:07
2	V 292.402†	916.7	2468.0	-0.7111 ug/L	-0.7111 ppb	10:56:27
2	Zn 213.857†	2867.9	2458.5	5.9318 ug/L	5.9318 ppb	10:56:27
2	SiO2†	444.3	58.0	4.6197 ug/L	4.6197 ppb	10:57:03
3	Sc Radial	4408.3	4408.3	92.0 %		10:55:35
3	Y RADIAL	4696.8	4696.8	91.57 %		10:55:35
3	Al 396.153Radial†	579777.9	630148.8	505540 ug/L	505540 ppb	10:55:30
3	Ca 317.933Radial†	258804.1	281272.3	473650 ug/L	473650 ppb	10:55:30
3	Fe 238.204 Radial†	18540.1	20140.9	189340 ug/L	189340 ppb	10:55:35
3	K 766.490 Radial†	2323.8	-261.8	-210.87 ug/L	-210.87 ppb	10:55:30
3	Mg 279.077 IEC†	12823.0	13935.5	489030 ug/L	489030 ppb	10:55:35
3	Na 589.592 Radial†	-1415.0	29.0	9.3941 ug/L	9.3941 ppb	10:55:35
3	Sr 421.552†	517.5	545.2	0.3495 ug/L	0.3495 ppb	10:55:35
3	Sc 361.383	705583.6	705583.6	86.695 %		10:56:33
3	Y 371.029	579570.7	579570.7	84.490 %		10:56:33
3	Ag 328.068†	-9249.1	-10950.1	1.1250 ug/L	1.1250 ppb	10:56:33
3	As 188.979†	-66.7	-58.1	18.048 ug/L	18.048 ppb	10:56:53
3	B 249.677†	403.6	984.1	-6.7994 ug/L	-6.7994 ppb	10:56:33
3	Ba 233.527†	-463.9	-536.6	1.3493 ug/L	1.3493 ppb	10:56:53
3	Be 313.107†	-4109.2	-427.6	-0.2238 ug/L	-0.2238 ppb	10:56:33
3	Cd 226.502†	1235.8	1623.1	-0.5265 ug/L	-0.5265 ppb	10:56:53
3	Co 228.616†	-7.6	63.9	-1.3446 ug/L	-1.3446 ppb	10:56:53
3	Cr 267.716†	-88.9	-198.3	1.3516 ug/L	1.3516 ppb	10:56:53
3	Cu 324.752†	3729.8	-1995.8	3.6328 ug/L	3.6328 ppb	10:56:33
3	Mn 257.610†	861.2	589.0	-0.6122 ug/L	-0.6122 ppb	10:56:33
3	Mo 202.031†	-214.2	-266.3	0.5636 ug/L	0.5636 ppb	10:56:53
3	Ni 231.604†	150.1	98.0	2.5785 ug/L	2.5785 ppb	10:56:53
3	P 214.914†	182.3	-17.5	-37.132 ug/L	-37.132 ppb	10:56:53
3	Pb 220.353†	-749.9	-800.4	-3.7086 ug/L	-3.7086 ppb	10:56:53
3	S 181.975 Axial†	62.5	25.6	-56.542 ug/L	-56.542 ppb	10:56:53
3	Sb 206.836†	66.9	44.4	5.8282 ug/L	5.8282 ppb	10:56:53
3	Se 196.026†	-883.0	-988.1	-14.597 ug/L	-14.597 ppb	10:56:53
3	Si 251.611†	504.3	135.8	4.8235 ug/L	4.8235 ppb	10:56:53
3	Sn 189.927†	-369.5	-432.3	-4.7871 ug/L	-4.7871 ppb	10:56:53
3	Ti 334.940†	-13209.7	-13849.9	-0.2044 ug/L	-0.2044 ppb	10:56:33
3	Tl 190.801†	-62.8	-28.6	-9.3744 ug/L	-9.3744 ppb	10:56:53
3	U 409.014†	-899.6	1003.3	10.462 ug/L	10.462 ppb	10:56:33
3	V 292.402†	852.2	2390.1	-1.0771 ug/L	-1.0771 ppb	10:56:53
3	Zn 213.857†	2896.0	2480.1	6.3604 ug/L	6.3604 ppb	10:56:53
3	SiO2†	480.4	97.9	7.5578 ug/L	7.5578 ppb	10:57:08

## Mean Data: ICSA

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	702552.5	86.323 %		0.4256			0.49%
Sc Radial	4365.0	91.1 %		0.92			1.01%
Y 371.029	577328.0	84.163 %		0.3201			0.38%
Y RADIAL	4651.5	90.68 %		0.768			0.85%
Ag 328.068†	-10921.3	1.6787 ug/L		0.66053	1.6787 ppb	0.66053	39.35%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	631983.1	507020 ug/L		2425.5	507020 ppb	2425.5	0.48%
QC value within limits for Al 396.153Radial Recovery = 101.40%							
As 188.979†	-67.8	13.987 ug/L		4.1518	13.987 ppb	4.1518	29.68%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	878.7	-9.5844 ug/L		2.79937	-9.5844 ppb	2.79937	29.21%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-537.3	1.3847 ug/L		0.13812	1.3847 ppb	0.13812	9.98%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	-386.8	-0.2076 ug/L		0.02063	-0.2076 ppb	0.02063	9.94%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	282452.3	475640 ug/L		2718.4	475640 ppb	2718.4	0.57%



QC value within limits for Ca 317.933 Radial Recovery = 95.13%									
Cd	226.502†	1627.3	-0.6156 ug/L	0.08065	-0.6156 ppb	0.08065	13.10%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	57.1	-1.5093 ug/L	0.17432	-1.5093 ppb	0.17432	11.55%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	-174.1	1.6651 ug/L	0.27273	1.6651 ppb	0.27273	16.38%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	-2010.2	3.6593 ug/L	0.02318	3.6593 ppb	0.02318	0.63%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	20284.2	190690 ug/L	1171.5	190690 ppb	1171.5	0.61%		
QC value within limits for Fe 238.204 Radial Recovery = 95.34%									
K	766.490 Radial†	-222.0	-203.56 ug/L	6.355	-203.56 ppb	6.355	3.12%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	13990.2	490950 ug/L	2108.6	490950 ppb	2108.6	0.43%		
QC value within limits for Mg 279.077 IEC Recovery = 98.19%									
Mn	257.610†	666.6	-0.4666 ug/L	0.16090	-0.4666 ppb	0.16090	34.48%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	-255.7	1.4814 ug/L	1.83384	1.4814 ppb	1.83384	123.79%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	24.9	8.0560 ug/L	7.09195	8.0560 ppb	7.09195	88.03%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	134.8	3.5473 ug/L	0.91310	3.5473 ppb	0.91310	25.74%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-23.7	-41.737 ug/L	10.1485	-41.737 ppb	10.1485	24.32%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	-813.3	-5.1421 ug/L	1.24434	-5.1421 ppb	1.24434	24.20%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	31.9	-47.388 ug/L	8.4834	-47.388 ppb	8.4834	17.90%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	40.5	4.4378 ug/L	7.05519	4.4378 ppb	7.05519	158.98%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	-970.9	1.4203 ug/L	14.00713	1.4203 ppb	14.00713	986.19%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	118.3	4.2237 ug/L	0.52167	4.2237 ppb	0.52167	12.35%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	-430.6	-4.1507 ug/L	1.26003	-4.1507 ppb	1.26003	30.36%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	533.0	0.2474 ug/L	0.13080	0.2474 ppb	0.13080	52.88%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	-13853.7	-0.1002 ug/L	0.26592	-0.1002 ppb	0.26592	265.45%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	-44.2	-14.383 ug/L	4.4765	-14.383 ppb	4.4765	31.12%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	933.2	8.0686 ug/L	2.07336	8.0686 ppb	2.07336	25.70%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	2427.9	-0.9567 ug/L	0.21274	-0.9567 ppb	0.21274	22.24%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	2482.0	6.2425 ug/L	0.27174	6.2425 ppb	0.27174	4.35%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		84.5	6.5736 ug/L	1.69219	6.5736 ppb	1.69219	25.74%		
QC value within limits for SiO2 Recovery = Not calculated									

All analyte(s) passed QC.



Sequence No.: 10  
 Sample ID: ICSAB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 14  
 Date Collected: 1/14/2010 10:59:19  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: ICSAB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4460.9	4460.9	93.1 %		11:01:17
1	Y RADIAL	4775.6	4775.6	93.10 %		11:01:17
1	Al 396.153Radial†	585220.9	628572.4	504250 ug/L	504250 ppb	11:01:12
1	Ca 317.933Radial†	262712.9	282157.3	475140 ug/L	475140 ppb	11:01:12
1	Fe 238.204 Radial†	19382.3	20808.1	195620 ug/L	195620 ppb	11:01:17
1	K 766.490 Radial†	28032.5	27321.5	5311.7 ug/L	5311.7 ppb	11:01:12
1	Mg 279.077 IEC†	13268.2	14249.5	500050 ug/L	500050 ppb	11:01:17
1	Na 589.592 Radial†	15710.1	18440.7	5974.9 ug/L	5974.9 ppb	11:01:17
1	Sr 421.552†	69506.1	74637.3	528.46 ug/L	528.46 ppb	11:01:12
1	Sc 361.383	707414.6	707414.6	86.920 %		11:01:45
1	Y 371.029	579258.3	579258.3	84.445 %		11:01:45
1	Ag 328.068†	39878.4	45597.7	282.60 ug/L	282.60 ppb	11:01:45
1	As 188.979†	927.4	1085.8	537.65 ug/L	537.65 ppb	11:02:05
1	B 249.677†	19301.2	22724.1	520.00 ug/L	520.00 ppb	11:01:45
1	Ba 233.527†	52370.3	60249.5	506.70 ug/L	506.70 ppb	11:01:45
1	Be 313.107†	543489.6	629585.6	251.19 ug/L	251.19 ppb	11:01:45
1	Cd 226.502†	36003.4	41618.7	467.98 ug/L	467.98 ppb	11:02:05
1	Co 228.616†	18289.4	21114.3	455.83 ug/L	455.83 ppb	11:02:05
1	Cr 267.716†	36065.7	41397.1	492.73 ug/L	492.73 ppb	11:01:45
1	Cu 324.752†	156888.0	174198.3	566.15 ug/L	566.15 ppb	11:01:45
1	Mn 257.610†	364441.9	418878.5	490.06 ug/L	490.06 ppb	11:01:45
1	Mo 202.031†	5707.5	6547.1	506.83 ug/L	506.83 ppb	11:02:05
1	Ni 231.604†	15193.2	17404.4	457.88 ug/L	457.88 ppb	11:02:05
1	P 214.914†	3694.0	4022.0	2428.6 ug/L	2428.6 ppb	11:02:05
1	Pb 220.353†	2418.8	2847.4	463.61 ug/L	463.61 ppb	11:02:05
1	S 181.975 Axial†	1670.9	1875.8	2705.0 ug/L	2705.0 ppb	11:02:05
1	Sb 206.836†	1326.4	1493.3	553.76 ug/L	553.76 ppb	11:02:05
1	Se 196.026†	2481.9	2885.7	2598.2 ug/L	2598.2 ppb	11:02:05
1	Si 251.611†	138667.6	159088.3	5357.9 ug/L	5357.9 ppb	11:01:45
1	Sn 189.927†	1989.0	2282.1	497.54 ug/L	497.54 ppb	11:02:05
1	Ti 334.940†	251423.8	290644.8	521.07 ug/L	521.07 ppb	11:01:45
1	Tl 190.801†	1200.8	1425.4	459.43 ug/L	459.43 ppb	11:02:05
1	U 409.014†	12896.9	16878.5	515.66 ug/L	515.66 ppb	11:01:45
1	V 292.402†	62529.6	73346.2	517.48 ug/L	517.48 ppb	11:01:45
1	Zn 213.857†	46968.8	53176.3	507.70 ug/L	507.70 ppb	11:01:45
1	SiO2†	140558.6	161253.5	11547 ug/L	11547 ppb	11:03:02
2	Sc Radial	4360.5	4360.5	91.0 %		11:01:27
2	Y RADIAL	4660.4	4660.4	90.86 %		11:01:27
2	Al 396.153Radial†	589026.8	647223.0	519220 ug/L	519220 ppb	11:01:22
2	Ca 317.933Radial†	264513.5	290631.0	489410 ug/L	489410 ppb	11:01:22
2	Fe 238.204 Radial†	18934.4	20795.2	195500 ug/L	195500 ppb	11:01:27
2	K 766.490 Radial†	28175.2	28171.4	5477.2 ug/L	5477.2 ppb	11:01:22
2	Mg 279.077 IEC†	12927.9	14203.6	498440 ug/L	498440 ppb	11:01:27
2	Na 589.592 Radial†	15140.5	18203.2	5897.9 ug/L	5897.9 ppb	11:01:27
2	Sr 421.552†	69837.7	76720.1	543.20 ug/L	543.20 ppb	11:01:22
2	Sc 361.383	717232.5	717232.5	88.127 %		11:02:11
2	Y 371.029	587543.3	587543.3	85.653 %		11:02:11
2	Ag 328.068†	40543.4	45724.3	282.99 ug/L	282.99 ppb	11:02:11
2	As 188.979†	921.2	1064.2	527.92 ug/L	527.92 ppb	11:02:31
2	B 249.677†	19451.9	22591.3	516.80 ug/L	516.80 ppb	11:02:11
2	Ba 233.527†	53020.9	60163.0	505.98 ug/L	505.98 ppb	11:02:11
2	Be 313.107†	552046.9	630736.8	251.64 ug/L	251.64 ppb	11:02:11
2	Cd 226.502†	35940.8	40980.7	460.51 ug/L	460.51 ppb	11:02:31
2	Co 228.616†	18294.9	20832.4	449.69 ug/L	449.69 ppb	11:02:31
2	Cr 267.716†	36631.5	41471.1	493.60 ug/L	493.60 ppb	11:02:11
2	Cu 324.752†	159307.1	174472.6	567.01 ug/L	567.01 ppb	11:02:11
2	Mn 257.610†	369695.0	419099.9	490.37 ug/L	490.37 ppb	11:02:11
2	Mo 202.031†	5685.2	6431.8	498.44 ug/L	498.44 ppb	11:02:31
2	Ni 231.604†	15200.8	17173.7	451.81 ug/L	451.81 ppb	11:02:31



2	P 214.914†	3686.0	3954.8	2389.3 ug/L	2389.3 ppb	11:02:31
2	Pb 220.353†	2411.9	2801.5	461.18 ug/L	461.18 ppb	11:02:31
2	S 181.975 Axial†	1678.3	1857.9	2675.5 ug/L	2675.5 ppb	11:02:31
2	Sb 206.836†	1344.2	1492.6	552.84 ug/L	552.84 ppb	11:02:31
2	Se 196.026†	2474.0	2837.6	2566.4 ug/L	2566.4 ppb	11:02:31
2	Si 251.611†	140703.5	159214.6	5362.3 ug/L	5362.3 ppb	11:02:11
2	Sn 189.927†	1990.7	2252.8	494.29 ug/L	494.29 ppb	11:02:31
2	Ti 334.940†	255073.5	290826.7	523.43 ug/L	523.43 ppb	11:02:11
2	Tl 190.801†	1208.7	1415.4	456.28 ug/L	456.28 ppb	11:02:31
2	U 409.014†	13231.4	17055.0	521.31 ug/L	521.31 ppb	11:02:11
2	V 292.402†	63547.3	73516.2	518.58 ug/L	518.58 ppb	11:02:11
2	Zn 213.857†	47600.3	53153.2	507.52 ug/L	507.52 ppb	11:02:11
2	SiO2†	139548.6	157893.8	11307 ug/L	11307 ppb	11:03:07
3	Sc Radial	4483.3	4483.3	93.6 %		11:01:37
3	Y RADIAL	4768.3	4768.3	92.96 %		11:01:37
3	Al 396.153Radial†	578241.7	617976.6	495750 ug/L	495750 ppb	11:01:32
3	Ca 317.933Radial†	259443.2	277254.7	466880 ug/L	466880 ppb	11:01:32
3	Fe 238.204 Radial†	19333.8	20652.3	194160 ug/L	194160 ppb	11:01:37
3	K 766.490 Radial†	27684.1	26798.9	5209.8 ug/L	5209.8 ppb	11:01:32
3	Mg 279.077 IEC†	13193.1	14098.1	494740 ug/L	494740 ppb	11:01:37
3	Na 589.592 Radial†	15495.3	18126.9	5873.2 ug/L	5873.2 ppb	11:01:37
3	Sr 421.552†	68428.1	73112.7	517.65 ug/L	517.65 ppb	11:01:32
3	Sc 361.383	714085.4	714085.4	87.740 %		11:02:37
3	Y 371.029	586060.1	586060.1	85.436 %		11:02:37
3	Ag 328.068†	40371.8	45731.4	282.92 ug/L	282.92 ppb	11:02:37
3	As 188.979†	925.5	1073.6	531.85 ug/L	531.85 ppb	11:02:57
3	B 249.677†	19408.9	22639.4	518.18 ug/L	518.18 ppb	11:02:37
3	Ba 233.527†	52966.5	60366.1	507.63 ug/L	507.63 ppb	11:02:37
3	Be 313.107†	552868.3	634433.7	253.11 ug/L	253.11 ppb	11:02:37
3	Cd 226.502†	36232.3	41492.7	466.65 ug/L	466.65 ppb	11:02:57
3	Co 228.616†	18383.5	21025.0	453.90 ug/L	453.90 ppb	11:02:57
3	Cr 267.716†	36579.0	41594.5	495.03 ug/L	495.03 ppb	11:02:37
3	Cu 324.752†	158681.3	174556.0	567.21 ug/L	567.21 ppb	11:02:37
3	Mn 257.610†	369046.1	420209.2	491.69 ug/L	491.69 ppb	11:02:37
3	Mo 202.031†	5711.2	6489.9	502.38 ug/L	502.38 ppb	11:02:57
3	Ni 231.604†	15311.6	17376.0	457.13 ug/L	457.13 ppb	11:02:57
3	P 214.914†	3733.5	4027.3	2430.8 ug/L	2430.8 ppb	11:02:57
3	Pb 220.353†	2456.4	2864.2	463.92 ug/L	463.92 ppb	11:02:57
3	S 181.975 Axial†	1674.7	1862.2	2686.2 ug/L	2686.2 ppb	11:02:57
3	Sb 206.836†	1316.4	1467.6	544.54 ug/L	544.54 ppb	11:02:57
3	Se 196.026†	2505.0	2885.4	2592.7 ug/L	2592.7 ppb	11:02:57
3	Si 251.611†	140307.7	159467.2	5370.8 ug/L	5370.8 ppb	11:02:37
3	Sn 189.927†	2022.0	2298.4	499.27 ug/L	499.27 ppb	11:02:57
3	Ti 334.940†	254318.1	291241.3	521.42 ug/L	521.42 ppb	11:02:37
3	Tl 190.801†	1209.4	1422.3	458.46 ug/L	458.46 ppb	11:02:57
3	U 409.014†	12930.2	16777.9	512.61 ug/L	512.61 ppb	11:02:37
3	V 292.402†	63542.6	73828.6	521.00 ug/L	521.00 ppb	11:02:37
3	Zn 213.857†	47567.1	53353.4	509.61 ug/L	509.61 ppb	11:02:37
3	SiO2†	140776.2	159990.8	11457 ug/L	11457 ppb	11:03:13

## Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	712910.8	87.596 %		0.6160			0.70%
Sc Radial	4434.9	92.6 %		1.36			1.47%
Y 371.029	584287.3	85.178 %		0.6440			0.76%
Y RADIAL	4734.8	92.31 %		1.257			1.36%
Ag 328.068†	45684.5	282.84 ug/L		0.206	282.84 ppb	0.206	0.07%
QC value within limits for Ag 328.068 Recovery = 113.14%							
Al 396.153Radial†	631257.3	506410 ug/L		11879.1	506410 ppb	11879.1	2.35%
QC value within limits for Al 396.153Radial Recovery = 101.28%							
As 188.979†	1074.5	532.48 ug/L		4.895	532.48 ppb	4.895	0.92%
QC value within limits for As 188.979 Recovery = 106.50%							
B 249.677†	22651.6	518.33 ug/L		1.603	518.33 ppb	1.603	0.31%
QC value within limits for B 249.677 Recovery = 103.67%							
Ba 233.527†	60259.5	506.77 ug/L		0.826	506.77 ppb	0.826	0.16%
QC value within limits for Ba 233.527 Recovery = 101.35%							
Be 313.107†	631585.4	251.98 ug/L		1.007	251.98 ppb	1.007	0.40%
QC value within limits for Be 313.107 Recovery = 100.79%							
Ca 317.933Radial†	283347.7	477140 ug/L		11395.5	477140 ppb	11395.5	2.39%



QC value within limits for Ca 317.933 Radial Recovery = 95.43%							
Cd 226.502†	41364.0	465.05 ug/L	3.984	465.05 ppb	3.984	0.86%	
QC value within limits for Cd 226.502 Recovery = 93.01%							
Co 228.616†	20990.6	453.14 ug/L	3.140	453.14 ppb	3.140	0.69%	
QC value within limits for Co 228.616 Recovery = 90.63%							
Cr 267.716†	41487.6	493.79 ug/L	1.165	493.79 ppb	1.165	0.24%	
QC value within limits for Cr 267.716 Recovery = 98.76%							
Cu 324.752†	174409.0	566.79 ug/L	0.567	566.79 ppb	0.567	0.10%	
QC value within limits for Cu 324.752 Recovery = 113.36%							
Fe 238.204 Radial†	20751.9	195100 ug/L	812.5	195100 ppb	812.5	0.42%	
QC value within limits for Fe 238.204 Radial Recovery = 97.55%							
K 766.490 Radial†	27430.6	5332.9 ug/L	134.97	5332.9 ppb	134.97	2.53%	
QC value within limits for K 766.490 Radial Recovery = 106.66%							
Mg 279.077 IEC†	14183.7	497740 ug/L	2724.5	497740 ppb	2724.5	0.55%	
QC value within limits for Mg 279.077 IEC Recovery = 99.55%							
Mn 257.610†	419395.8	490.71 ug/L	0.867	490.71 ppb	0.867	0.18%	
QC value within limits for Mn 257.610 Recovery = 98.14%							
Mo 202.031†	6489.6	502.55 ug/L	4.199	502.55 ppb	4.199	0.84%	
QC value within limits for Mo 202.031 Recovery = 100.51%							
Na 589.592 Radial†	18257.0	5915.4 ug/L	53.02	5915.4 ppb	53.02	0.90%	
QC value within limits for Na 589.592 Radial Recovery = 118.31%							
Ni 231.604†	17318.0	455.61 ug/L	3.309	455.61 ppb	3.309	0.73%	
QC value within limits for Ni 231.604 Recovery = 91.12%							
P 214.914†	4001.4	2416.2 ug/L	23.36	2416.2 ppb	23.36	0.97%	
QC value within limits for P 214.914 Recovery = 96.65%							
Pb 220.353†	2837.7	462.91 ug/L	1.499	462.91 ppb	1.499	0.32%	
QC value within limits for Pb 220.353 Recovery = 92.58%							
S 181.975 Axial†	1865.3	2688.9 ug/L	14.94	2688.9 ppb	14.94	0.56%	
QC value within limits for S 181.975 Axial Recovery = 107.56%							
Sb 206.836†	1484.5	550.38 ug/L	5.077	550.38 ppb	5.077	0.92%	
QC value within limits for Sb 206.836 Recovery = 110.08%							
Se 196.026†	2869.6	2585.8 ug/L	17.00	2585.8 ppb	17.00	0.66%	
QC value within limits for Se 196.026 Recovery = 103.43%							
Si 251.611†	159256.7	5363.7 ug/L	6.52	5363.7 ppb	6.52	0.12%	
QC value within limits for Si 251.611 Recovery = 107.27%							
Sn 189.927†	2277.8	497.03 ug/L	2.533	497.03 ppb	2.533	0.51%	
QC value within limits for Sn 189.927 Recovery = 99.41%							
Sr 421.552†	74823.4	529.77 ug/L	12.823	529.77 ppb	12.823	2.42%	
QC value within limits for Sr 421.552 Recovery = 105.95%							
Ti 334.940†	290904.3	521.97 ug/L	1.270	521.97 ppb	1.270	0.24%	
QC value within limits for Ti 334.940 Recovery = 104.39%							
Tl 190.801†	1421.0	458.06 ug/L	1.612	458.06 ppb	1.612	0.35%	
QC value within limits for Tl 190.801 Recovery = 91.61%							
U 409.014†	16903.8	516.53 ug/L	4.414	516.53 ppb	4.414	0.85%	
QC value within limits for U 409.014 Recovery = 103.31%							
V 292.402†	73563.7	519.02 ug/L	1.802	519.02 ppb	1.802	0.35%	
QC value within limits for V 292.402 Recovery = 103.80%							
Zn 213.857†	53227.6	508.27 ug/L	1.159	508.27 ppb	1.159	0.23%	
QC value within limits for Zn 213.857 Recovery = 101.65%							
SiO2†	159712.7	11437 ug/L	121.5	11437 ppb	121.5	1.06%	
QC value within limits for SiO2 Recovery = 106.94%							

All analyte(s) passed QC.



Sequence No.: 11  
 Sample ID: LR1  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 15  
 Date Collected: 1/14/2010 11:05:22  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: LR1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4325.4	4325.4	90.3 %		11:07:20
1	Y RADIAL	4609.2	4609.2	89.86 %		11:07:20
1	Al 396.153Radial†	559046.9	619270.0	496820 ug/L	496820 ppb	11:07:15
1	Ca 317.933Radial†	249788.9	276680.8	465920 ug/L	465920 ppb	11:07:15
1	Fe 238.204 Radial†	41978.5	46490.5	437040 ug/L	437040 ppb	11:07:20
1	K 766.490 Radial†	2824.3	341.1	-287.48 ug/L	-287.48 ppb	11:07:15
1	Mg 279.077 IEC†	12241.7	13558.9	475550 ug/L	475550 ppb	11:07:20
1	Na 589.592 Radial†	1427323.1	1582639.6	512780 ug/L	512780 ppb	11:07:15
1	Sr 421.552†	724.6	785.4	2.1193 ug/L	2.1193 ppb	11:07:20
1	Sc 361.383	690936.1	690936.1	84.896 %		11:07:48
1	Y 371.029	567787.9	567787.9	82.773 %		11:07:48
1	Ag 328.068†	-21540.8	-25654.9	-2.9059 ug/L	-2.9059 ppb	11:07:48
1	As 188.979†	-193.5	-209.1	8.1587 ug/L	8.1587 ppb	11:08:08
1	B 249.677†	1388.5	2154.1	-18.563 ug/L	-18.563 ppb	11:07:48
1	Ba 233.527†	-1359.0	-1602.3	0.0791 ug/L	0.0791 ppb	11:08:08
1	Be 313.107†	-10412.7	-7953.1	-3.2138 ug/L	-3.2138 ppb	11:07:48
1	Cd 226.502†	3121.5	3874.4	3.1787 ug/L	3.1787 ppb	11:08:08
1	Co 228.616†	175.4	279.3	-0.3000 ug/L	-0.3000 ppb	11:08:08
1	Cr 267.716†	24.7	-66.6	1.8297 ug/L	1.8297 ppb	11:08:08
1	Cu 324.752†	1105.4	-4996.0	-1.0854 ug/L	-1.0854 ppb	11:07:48
1	Mn 257.610†	-19920.2	-23868.6	-4.2867 ug/L	-4.2867 ppb	11:07:48
1	Mo 202.031†	-469.3	-572.1	-3.0002 ug/L	-3.0002 ppb	11:08:08
1	Ni 231.604†	277.5	251.7	6.6221 ug/L	6.6221 ppb	11:08:08
1	P 214.914†	517.5	381.6	17.781 ug/L	17.781 ppb	11:08:08
1	Pb 220.353†	-517.5	-545.0	3.2731 ug/L	3.2731 ppb	11:08:08
1	S 181.975 Axial†	94.8	65.3	4.2973 ug/L	4.2973 ppb	11:08:08
1	Sb 206.836†	41.5	16.1	1.4223 ug/L	1.4223 ppb	11:08:08
1	Se 196.026†	-1984.5	-2307.2	-86.069 ug/L	-86.069 ppb	11:08:08
1	Si 251.611†	-420.3	-941.0	-31.205 ug/L	-31.205 ppb	11:08:08
1	Sn 189.927†	-397.0	-473.7	-9.4483 ug/L	-9.4483 ppb	11:08:08
1	Ti 334.940†	-13182.8	-14141.2	-7.2072 ug/L	-7.2072 ppb	11:07:48
1	Tl 190.801†	-109.5	-85.1	-27.634 ug/L	-27.634 ppb	11:08:08
1	U 409.014†	395335.8	467713.8	14888 ug/L	14888 ppb	11:07:48
1	V 292.402†	2458.6	4303.2	4.5976 ug/L	4.5976 ppb	11:08:08
1	Zn 213.857†	5470.3	5583.2	13.267 ug/L	13.267 ppb	11:08:08
1	SiO2†	-339.0	-855.5	-60.175 ug/L	-60.175 ppb	11:09:05
2	Sc Radial	4318.7	4318.7	90.1 %		11:07:31
2	Y RADIAL	4643.3	4643.3	90.52 %		11:07:31
2	Al 396.153Radial†	553258.3	613799.2	492430 ug/L	492430 ppb	11:07:26
2	Ca 317.933Radial†	246625.0	273595.6	460720 ug/L	460720 ppb	11:07:26
2	Fe 238.204 Radial†	42397.6	47026.8	442090 ug/L	442090 ppb	11:07:31
2	K 766.490 Radial†	2838.6	361.8	-278.50 ug/L	-278.50 ppb	11:07:26
2	Mg 279.077 IEC†	12382.8	13736.2	481770 ug/L	481770 ppb	11:07:31
2	Na 589.592 Radial†	1402980.3	1558061.8	504820 ug/L	504820 ppb	11:07:26
2	Sr 421.552†	722.4	784.2	2.1494 ug/L	2.1494 ppb	11:07:31
2	Sc 361.383	699514.9	699514.9	85.950 %		11:08:14
2	Y 371.029	574789.6	574789.6	83.793 %		11:08:14
2	Ag 328.068†	-21766.2	-25605.9	-0.9759 ug/L	-0.9759 ppb	11:08:14
2	As 188.979†	-183.5	-194.6	15.858 ug/L	15.858 ppb	11:08:34
2	B 249.677†	1369.5	2111.9	-20.406 ug/L	-20.406 ppb	11:08:14
2	Ba 233.527†	-1327.8	-1546.3	0.6956 ug/L	0.6956 ppb	11:08:34
2	Be 313.107†	-10552.1	-7964.8	-3.2176 ug/L	-3.2176 ppb	11:08:14
2	Cd 226.502†	3113.3	3819.8	2.0207 ug/L	2.0207 ppb	11:08:34
2	Co 228.616†	155.1	253.2	-0.9391 ug/L	-0.9391 ppb	11:08:34
2	Cr 267.716†	20.2	-72.2	1.8556 ug/L	1.8556 ppb	11:08:34
2	Cu 324.752†	1029.4	-5100.4	-1.1593 ug/L	-1.1593 ppb	11:08:14
2	Mn 257.610†	-19969.7	-23638.4	-3.7733 ug/L	-3.7733 ppb	11:08:14
2	Mo 202.031†	-460.8	-555.5	-1.4325 ug/L	-1.4325 ppb	11:08:34
2	Ni 231.604†	265.1	233.3	6.1394 ug/L	6.1394 ppb	11:08:34



2	P 214.914†	521.1	378.4	10.605 ug/L	10.605 ppb	11:08:34
2	Pb 220.353†	-522.5	-543.4	1.9640 ug/L	1.9640 ppb	11:08:34
2	S 181.975 Axial†	80.2	46.9	-22.321 ug/L	-22.321 ppb	11:08:34
2	Sb 206.836†	62.0	39.4	10.219 ug/L	10.219 ppb	11:08:34
2	Se 196.026†	-1968.2	-2259.6	-37.933 ug/L	-37.933 ppb	11:08:34
2	Si 251.611†	-414.3	-927.9	-30.778 ug/L	-30.778 ppb	11:08:34
2	Sn 189.927†	-395.5	-466.3	-8.7798 ug/L	-8.7798 ppb	11:08:34
2	Ti 334.940†	-13153.0	-13916.1	-8.0325 ug/L	-8.0325 ppb	11:08:14
2	Tl 190.801†	-95.7	-67.5	-22.001 ug/L	-22.001 ppb	11:08:34
2	U 409.014†	400616.1	468146.5	14901 ug/L	14901 ppb	11:08:14
2	V 292.402†	2407.1	4207.8	3.3387 ug/L	3.3387 ppb	11:08:34
2	Zn 213.857†	5411.1	5435.3	11.306 ug/L	11.306 ppb	11:08:34
2	SiO2†	-427.2	-953.3	-67.222 ug/L	-67.222 ppb	11:09:10
3	Sc Radial	4365.1	4365.1	91.1 %		11:07:41
3	Y RADIAL	4692.6	4692.6	91.48 %		11:07:41
3	Al 396.153Radial†	557491.9	611933.7	490930 ug/L	490930 ppb	11:07:36
3	Ca 317.933Radial†	248919.6	273211.2	460070 ug/L	460070 ppb	11:07:36
3	Fe 238.204 Radial†	42954.3	47138.9	443140 ug/L	443140 ppb	11:07:41
3	K 766.490 Radial†	2995.6	500.7	-250.02 ug/L	-250.02 ppb	11:07:36
3	Mg 279.077 IEC†	12537.6	13760.4	482620 ug/L	482620 ppb	11:07:41
3	Na 589.592 Radial†	1414898.3	1554628.6	503710 ug/L	503710 ppb	11:07:36
3	Sr 421.552†	728.9	782.8	2.1444 ug/L	2.1444 ppb	11:07:41
3	Sc 361.383	693608.2	693608.2	85.224 %		11:08:40
3	Y 371.029	569680.0	569680.0	83.048 %		11:08:40
3	Ag 328.068†	-21486.9	-25493.9	-0.0219 ug/L	-0.0219 ppb	11:08:40
3	As 188.979†	-180.9	-193.5	16.620 ug/L	16.620 ppb	11:09:00
3	B 249.677†	1331.4	2080.7	-21.338 ug/L	-21.338 ppb	11:08:40
3	Ba 233.527†	-1333.0	-1565.6	0.5674 ug/L	0.5674 ppb	11:09:00
3	Be 313.107†	-10495.9	-8003.4	-3.2329 ug/L	-3.2329 ppb	11:08:40
3	Cd 226.502†	3110.9	3847.9	2.2279 ug/L	2.2279 ppb	11:09:00
3	Co 228.616†	161.1	261.7	-0.7697 ug/L	-0.7697 ppb	11:09:00
3	Cr 267.716†	64.9	-19.5	2.5236 ug/L	2.5236 ppb	11:09:00
3	Cu 324.752†	1112.1	-4993.2	-0.7250 ug/L	-0.7250 ppb	11:08:40
3	Mn 257.610†	-19946.5	-23809.1	-3.9041 ug/L	-3.9041 ppb	11:08:40
3	Mo 202.031†	-462.5	-562.0	-1.8397 ug/L	-1.8397 ppb	11:09:00
3	Ni 231.604†	258.9	228.7	6.0174 ug/L	6.0174 ppb	11:09:00
3	P 214.914†	507.1	367.1	2.1257 ug/L	2.1257 ppb	11:09:00
3	Pb 220.353†	-535.2	-563.4	-1.0297 ug/L	-1.0297 ppb	11:09:00
3	S 181.975 Axial†	79.4	46.7	-22.358 ug/L	-22.358 ppb	11:09:00
3	Sb 206.836†	69.5	48.8	13.661 ug/L	13.661 ppb	11:09:00
3	Se 196.026†	-1976.4	-2288.7	-53.994 ug/L	-53.994 ppb	11:09:00
3	Si 251.611†	-414.9	-932.7	-30.934 ug/L	-30.934 ppb	11:09:00
3	Sn 189.927†	-404.3	-480.5	-11.490 ug/L	-11.490 ppb	11:09:00
3	Ti 334.940†	-13027.3	-13898.9	-8.1307 ug/L	-8.1307 ppb	11:08:40
3	Tl 190.801†	-106.5	-81.1	-26.365 ug/L	-26.365 ppb	11:09:00
3	U 409.014†	395488.0	466098.4	14835 ug/L	14835 ppb	11:08:40
3	V 292.402†	2400.5	4223.9	3.1857 ug/L	3.1857 ppb	11:09:00
3	Zn 213.857†	5425.3	5505.6	11.906 ug/L	11.906 ppb	11:09:00
3	SiO2†	-431.3	-962.3	-67.854 ug/L	-67.854 ppb	11:09:15

## Mean Data: LRI

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Conc. Units	Sample	Std.Dev.	RSD
Sc 361.383	694686.4	85.356 %		0.5394				0.63%
Sc Radial	4336.4	90.5 %		0.52				0.58%
Y 371.029	570752.5	83.205 %		0.5280				0.63%
Y RADIAL	4648.4	90.62 %		0.818				0.90%
Ag 328.068†	-25584.9	-1.3012 ug/L		1.46931	-1.3012 ppb		1.46931	112.92%
Al 396.153Radial†	615001.0	493390 ug/L		3059.0	493390 ppb		3059.0	0.62%
QC value within limits for Al 396.153Radial Recovery = 98.68%								
As 188.979†	-199.1	13.545 ug/L		4.6806	13.545 ppb		4.6806	34.55%
B 249.677†	2115.6	-20.102 ug/L		1.4121	-20.102 ppb		1.4121	7.02%
Ba 233.527†	-1571.4	0.4474 ug/L		0.32531	0.4474 ppb		0.32531	72.71%
Be 313.107†	-7973.8	-3.2214 ug/L		0.01008	-3.2214 ppb		0.01008	0.31%
Ca 317.933Radial†	274495.9	462240 ug/L		3202.8	462240 ppb		3202.8	0.69%
QC value within limits for Ca 317.933Radial Recovery = 92.45%								
Cd 226.502†	3847.3	2.4758 ug/L		0.61749	2.4758 ppb		0.61749	24.94%
Co 228.616†	264.7	-0.6696 ug/L		0.33111	-0.6696 ppb		0.33111	49.45%
Cr 267.716†	-52.8	2.0696 ug/L		0.39339	2.0696 ppb		0.39339	19.01%
Cu 324.752†	-5029.9	-0.9899 ug/L		0.23234	-0.9899 ppb		0.23234	23.47%



Fe 238.204 Radial†	46885.4	440760 ug/L	3257.9	440760 ppb	3257.9	0.74%
QC value less than the lower limit for Fe 238.204 Radial Recovery = 88.15%						
K 766.490 Radial†	401.2	-272.00 ug/L	19.557	-272.00 ppb	19.557	7.19%
Mg 279.077 IEC†	13685.2	479980 ug/L	3859.9	479980 ppb	3859.9	0.80%
QC value within limits for Mg 279.077 IEC Recovery = 96.00%						
Mn 257.610†	-23772.0	-3.9880 ug/L	0.26676	-3.9880 ppb	0.26676	6.69%
Mo 202.031†	-563.2	-2.0908 ug/L	0.81349	-2.0908 ppb	0.81349	38.91%
Na 589.592 Radial†	1565110.0	507100 ug/L	4950.1	507100 ppb	4950.1	0.98%
QC value within limits for Na 589.592 Radial Recovery = 101.42%						
Ni 231.604†	237.9	6.2596 ug/L	0.31974	6.2596 ppb	0.31974	5.11%
P 214.914†	375.7	10.171 ug/L	7.8368	10.171 ppb	7.8368	77.05%
Pb 220.353†	-550.6	1.4024 ug/L	2.20569	1.4024 ppb	2.20569	157.27%
S 181.975 Axial†	52.9	-13.460 ug/L	15.3787	-13.460 ppb	15.3787	114.25%
Sb 206.836†	34.8	8.4341 ug/L	6.31147	8.4341 ppb	6.31147	74.83%
Se 196.026†	-2285.2	-59.332 ug/L	24.5082	-59.332 ppb	24.5082	41.31%
Si 251.611†	-933.9	-30.972 ug/L	0.2160	-30.972 ppb	0.2160	0.70%
Sn 189.927†	-473.5	-9.9059 ug/L	1.41175	-9.9059 ppb	1.41175	14.25%
Sr 421.552†	784.1	2.1377 ug/L	0.01615	2.1377 ppb	0.01615	0.76%
Ti 334.940†	-13985.4	-7.7901 ug/L	0.50720	-7.7901 ppb	0.50720	6.51%
Tl 190.801†	-77.9	-25.334 ug/L	2.9548	-25.334 ppb	2.9548	11.66%
U 409.014†	467319.6	14875 ug/L	34.6	14875 ppb	34.6	0.23%
QC value within limits for U 409.014 Recovery = 99.16%						
V 292.402†	4244.9	3.7073 ug/L	0.77478	3.7073 ppb	0.77478	20.90%
Zn 213.857†	5508.0	12.160 ug/L	1.0048	12.160 ppb	1.0048	8.26%
SiO2†	-923.7	-65.083 ug/L	4.2626	-65.083 ppb	4.2626	6.55%

QC Failed. Continue with analysis.



Sequence No.: 12  
 Sample ID: LR2  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 16  
 Date Collected: 1/14/2010 11:11:26  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: LR2

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4833.5	4833.5	101 %		11:13:24
1	Y RADIAL	5126.8	5126.8	99.95 %		11:13:24
1	Al 396.153Radial†	548.9	547.4	-42.692 ug/L	-42.692 ppb	11:13:24
1	Ca 317.933Radial†	26.7	11.4	19.131 ug/L	19.131 ppb	11:13:44
1	Fe 238.204 Radial†	-15.6	-25.4	50.089 ug/L	50.089 ppb	11:13:44
1	K 766.490 Radial†	1467235.0	1451652.4	290810 ug/L	290810 ppb	11:13:19
1	Mg 279.077 IEC†	-6.3	-7.8	-168.60 ug/L	-168.60 ppb	11:13:44
1	Na 589.592 Radial†	-679.2	893.6	289.54 ug/L	289.54 ppb	11:13:24
1	Sr 421.552†	1386069.3	1373964.8	9793.5 ug/L	9793.5 ppb	11:13:19
1	Sc 361.383	796153.9	796153.9	97.824 %		11:15:01
1	Y 371.029	651907.6	651907.6	95.036 %		11:15:01
1	Ag 328.068†	-7670.8	-8123.0	0.5984 ug/L	0.5984 ppb	11:15:06
1	As 188.979†	22203.8	22716.6	10286 ug/L	10286 ppb	11:15:06
1	B 249.677†	203325.9	208367.8	5043.9 ug/L	5043.9 ppb	11:15:01
1	Ba 233.527†	1697903.5	1735674.8	14414 ug/L	14414 ppb	11:15:01
1	Be 313.107†	7215609.0	7380444.5	2953.9 ug/L	2953.9 ppb	11:14:55
1	Cd 226.502†	810860.2	829096.7	9723.6 ug/L	9723.6 ppb	11:15:01
1	Co 228.616†	434202.7	443935.0	9639.4 ug/L	9639.4 ppb	11:15:06
1	Cr 267.716†	1998704.4	2043073.2	24118 ug/L	24118 ppb	11:15:01
1	Cu 324.752†	6226475.9	6358696.2	20299 ug/L	20299 ppb	11:14:55
1	Mn 257.610†	7962178.6	8138906.2	9544.0 ug/L	9544.0 ppb	11:14:55
1	Mo 202.031†	130960.8	133854.9	9936.2 ug/L	9936.2 ppb	11:15:06
1	Ni 231.604†	363867.2	371886.9	9783.8 ug/L	9783.8 ppb	11:15:06
1	P 214.914†	29181.4	29602.7	14960 ug/L	14960 ppb	11:15:06
1	Pb 220.353†	187396.7	191630.2	24558 ug/L	24558 ppb	11:15:06
1	S 181.975 Axial†	34708.0	35433.7	52881 ug/L	52881 ppb	11:15:06
1	Sb 206.836†	28463.5	29064.0	10993 ug/L	10993 ppb	11:15:06
1	Se 196.026†	15102.4	15468.7	10375 ug/L	10375 ppb	11:15:06
1	Si 251.611†	1410028.2	1440950.7	48462 ug/L	48462 ppb	11:15:01
1	Sn 189.927†	56050.8	57291.7	10595 ug/L	10595 ppb	11:15:06
1	Ti 334.940†	5687630.8	5815548.7	9968.2 ug/L	9968.2 ppb	11:14:55
1	Tl 190.801†	29649.5	30353.0	9776.8 ug/L	9776.8 ppb	11:15:06
1	U 409.014†	-1035.8	982.1	-22.548 ug/L	-22.548 ppb	11:15:06
1	V 292.402†	1360318.8	1391988.6	10163 ug/L	10163 ppb	11:15:01
1	Zn 213.857†	1401405.8	1431722.1	14189 ug/L	14189 ppb	11:15:01
1	SiO2†	1448559.9	1480329.4	105860 ug/L	105860 ppb	11:15:52
2	Sc Radial	4588.2	4588.2	95.8 %		11:13:54
2	Y RADIAL	4864.5	4864.5	94.83 %		11:13:54
2	Al 396.153Radial†	540.8	568.0	-17.243 ug/L	-17.243 ppb	11:13:54
2	Ca 317.933Radial†	24.7	10.7	17.993 ug/L	17.993 ppb	11:14:14
2	Fe 238.204 Radial†	-18.9	-29.6	5.1614 ug/L	5.1614 ppb	11:14:14
2	K 766.490 Radial†	1468925.8	1531153.5	306740 ug/L	306740 ppb	11:13:49
2	Mg 279.077 IEC†	-3.0	-4.7	-62.016 ug/L	-62.016 ppb	11:14:14
2	Na 589.592 Radial†	-709.9	825.6	267.51 ug/L	267.51 ppb	11:13:54
2	Sr 421.552†	1382801.8	1443987.9	10293 ug/L	10293 ppb	11:13:49
2	Sc 361.383	813805.6	813805.6	99.993 %		11:15:21
2	Y 371.029	665730.3	665730.3	97.051 %		11:15:21
2	Ag 328.068†	-7720.5	-8002.6	1.1554 ug/L	1.1554 ppb	11:15:26
2	As 188.979†	22291.8	22312.3	10103 ug/L	10103 ppb	11:15:26
2	B 249.677†	208484.5	209018.4	5060.2 ug/L	5060.2 ppb	11:15:21
2	Ba 233.527†	1732440.2	1732566.6	14388 ug/L	14388 ppb	11:15:21
2	Be 313.107†	7222926.3	7227771.7	2892.9 ug/L	2892.9 ppb	11:15:14
2	Cd 226.502†	828294.4	828553.1	9717.1 ug/L	9717.1 ppb	11:15:21
2	Co 228.616†	436065.1	436170.0	9470.8 ug/L	9470.8 ppb	11:15:26
2	Cr 267.716†	2039566.6	2039621.4	24077 ug/L	24077 ppb	11:15:21
2	Cu 324.752†	6241955.9	6236118.6	19907 ug/L	19907 ppb	11:15:14
2	Mn 257.610†	7969154.5	7969338.4	9345.1 ug/L	9345.1 ppb	11:15:14
2	Mo 202.031†	131385.1	131375.5	9752.1 ug/L	9752.1 ppb	11:15:26
2	Ni 231.604†	365837.9	365789.8	9623.4 ug/L	9623.4 ppb	11:15:26



2	P 214.914†	29367.9	29142.2	14743 ug/L	14743 ppb	11:15:26
2	Pb 220.353†	188598.2	188676.7	24180 ug/L	24180 ppb	11:15:26
2	S 181.975 Axial†	34984.4	34940.5	52145 ug/L	52145 ppb	11:15:26
2	Sb 206.836†	28586.7	28556.0	10801 ug/L	10801 ppb	11:15:26
2	Se 196.026†	15149.6	15181.0	10182 ug/L	10182 ppb	11:15:26
2	Si 251.611†	1443549.2	1443209.9	48540 ug/L	48540 ppb	11:15:21
2	Sn 189.927†	56442.9	56441.0	10438 ug/L	10438 ppb	11:15:26
2	Ti 334.940†	5699387.1	5701194.8	9772.0 ug/L	9772.0 ppb	11:15:14
2	Tl 190.801†	29827.4	29873.5	9621.6 ug/L	9621.6 ppb	11:15:26
2	U 409.014†	-967.2	1073.7	-19.525 ug/L	-19.525 ppb	11:15:26
2	V 292.402†	1389817.1	1391326.8	10156 ug/L	10156 ppb	11:15:21
2	Zn 213.857†	1427537.8	1426782.8	14142 ug/L	14142 ppb	11:15:21
2	SiO2†	1466183.4	1465835.4	104820 ug/L	104820 ppb	11:15:58
3	Sc Radial	4781.1	4781.1	99.8 %		11:14:25
3	Y RADIAL	5052.2	5052.2	98.49 %		11:14:25
3	Al 396.153Radial†	555.2	559.6	-30.859 ug/L	-30.859 ppb	11:14:25
3	Ca 317.933Radial†	25.3	10.2	17.197 ug/L	17.197 ppb	11:14:45
3	Fe 238.204 Radial†	-21.5	-31.4	-8.6483 ug/L	-8.6483 ppb	11:14:45
3	K 766.490 Radial†	1464717.0	1465046.9	293500 ug/L	293500 ppb	11:14:20
3	Mg 279.077 IEC†	-4.1	-5.6	-92.186 ug/L	-92.186 ppb	11:14:45
3	Na 589.592 Radial†	-715.7	849.7	275.30 ug/L	275.30 ppb	11:14:25
3	Sr 421.552†	1376656.2	1379568.9	9833.4 ug/L	9833.4 ppb	11:14:20
3	Sc 361.383	808471.7	808471.7	99.337 %		11:15:41
3	Y 371.029	662634.1	662634.1	96.599 %		11:15:41
3	Ag 328.068†	-7577.4	-7909.5	1.6246 ug/L	1.6246 ppb	11:15:46
3	As 188.979†	22420.3	22588.7	10228 ug/L	10228 ppb	11:15:46
3	B 249.677†	206693.8	208591.4	5049.5 ug/L	5049.5 ppb	11:15:41
3	Ba 233.527†	1719540.9	1731011.9	14375 ug/L	14375 ppb	11:15:41
3	Be 313.107†	7278978.3	7331855.0	2934.5 ug/L	2934.5 ppb	11:15:34
3	Cd 226.502†	821978.0	827659.7	9706.7 ug/L	9706.7 ppb	11:15:41
3	Co 228.616†	438152.9	441148.9	9579.0 ug/L	9579.0 ppb	11:15:46
3	Cr 267.716†	2026596.9	2040022.4	24082 ug/L	24082 ppb	11:15:41
3	Cu 324.752†	6277520.3	6313105.0	20153 ug/L	20153 ppb	11:15:34
3	Mn 257.610†	8010463.9	8063504.4	9455.6 ug/L	9455.6 ppb	11:15:34
3	Mo 202.031†	132428.4	133292.7	9894.4 ug/L	9894.4 ppb	11:15:46
3	Ni 231.604†	367354.5	369730.3	9727.1 ug/L	9727.1 ppb	11:15:46
3	P 214.914†	29388.7	29356.9	14832 ug/L	14832 ppb	11:15:46
3	Pb 220.353†	189199.8	190526.7	24417 ug/L	24417 ppb	11:15:46
3	S 181.975 Axial†	35264.6	35453.5	52910 ug/L	52910 ppb	11:15:46
3	Sb 206.836†	28749.5	28908.6	10934 ug/L	10934 ppb	11:15:46
3	Se 196.026†	15188.3	15320.0	10275 ug/L	10275 ppb	11:15:46
3	Si 251.611†	1429840.0	1438933.8	48394 ug/L	48394 ppb	11:15:41
3	Sn 189.927†	56596.7	56968.2	10535 ug/L	10535 ppb	11:15:46
3	Ti 334.940†	5728567.8	5768175.0	9886.9 ug/L	9886.9 ppb	11:15:34
3	Tl 190.801†	30059.5	30303.9	9760.3 ug/L	9760.3 ppb	11:15:46
3	U 409.014†	-841.9	1193.4	-15.712 ug/L	-15.712 ppb	11:15:46
3	V 292.402†	1381399.1	1392022.8	10163 ug/L	10163 ppb	11:15:41
3	Zn 213.857†	1417945.8	1426545.8	14138 ug/L	14138 ppb	11:15:41
3	SiO2†	1451848.1	1461078.4	104480 ug/L	104480 ppb	11:16:04

## Mean Data: LR2

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	806143.7	99.051 %	1.1124			1.12%
Sc Radial	4734.3	98.8 %	2.70			2.73%
Y 371.029	660090.6	96.229 %	1.0575			1.10%
Y RADIAL	5014.5	97.76 %	2.634			2.69%
Ag 328.068†	-8011.7	1.1261 ug/L	0.51372	1.1261 ppb	0.51372	45.62%
Al 396.153Radial†	558.3	-30.265 ug/L	12.7351	-30.265 ppb	12.7351	42.08%
As 188.979†	22539.2	10206 ug/L	93.6	10206 ppb	93.6	0.92%
QC value within limits for As 188.979 Recovery = 102.06%						
B 249.677†	208659.2	5051.2 ug/L	8.29	5051.2 ppb	8.29	0.16%
QC value within limits for B 249.677 Recovery = 101.02%						
Ba 233.527†	1733084.4	14393 ug/L	19.7	14393 ppb	19.7	0.14%
QC value within limits for Ba 233.527 Recovery = 95.95%						
Be 313.107†	7313357.1	2927.1 ug/L	31.20	2927.1 ppb	31.20	1.07%
QC value within limits for Be 313.107 Recovery = 97.57%						
Ca 317.933Radial†	10.8	18.107 ug/L	0.9722	18.107 ppb	0.9722	5.37%
Cd 226.502†	828436.5	9715.8 ug/L	8.51	9715.8 ppb	8.51	0.09%
QC value within limits for Cd 226.502 Recovery = 97.16%						



Co 228.616†	440417.9	9563.1 ug/L	85.44	9563.1 ppb	85.44	0.89%
QC value within limits for Co 228.616 Recovery = 95.63%						
Cr 267.716†	2040905.7	24092 ug/L	22.3	24092 ppb	22.3	0.09%
QC value within limits for Cr 267.716 Recovery = 96.37%						
Cu 324.752†	6302639.9	20120 ug/L	197.8	20120 ppb	197.8	0.98%
QC value within limits for Cu 324.752 Recovery = 100.60%						
Fe 238.204 Radial†	-28.8	15.534 ug/L	30.7117	15.534 ppb	30.7117	197.71%
K 766.490 Radial†	1482617.6	297020 ug/L	8527.5	297020 ppb	8527.5	2.87%
QC value within limits for K 766.490 Radial Recovery = 99.01%						
Mg 279.077 IEC†	-6.0	-107.60 ug/L	54.938	-107.60 ppb	54.938	51.06%
Mn 257.610†	8057249.7	9448.2 ug/L	99.63	9448.2 ppb	99.63	1.05%
QC value within limits for Mn 257.610 Recovery = 94.48%						
Mo 202.031†	132841.0	9860.9 ug/L	96.50	9860.9 ppb	96.50	0.98%
QC value within limits for Mo 202.031 Recovery = 98.61%						
Na 589.592 Radial†	856.3	277.45 ug/L	11.175	277.45 ppb	11.175	4.03%
Ni 231.604†	369135.7	9711.5 ug/L	81.34	9711.5 ppb	81.34	0.84%
QC value within limits for Ni 231.604 Recovery = 97.11%						
P 214.914†	29367.2	14845 ug/L	109.4	14845 ppb	109.4	0.74%
QC value within limits for P 214.914 Recovery = 98.97%						
Pb 220.353†	190277.9	24385 ug/L	191.3	24385 ppb	191.3	0.78%
QC value within limits for Pb 220.353 Recovery = 97.54%						
S 181.975 Axial†	35275.9	52645 ug/L	433.7	52645 ppb	433.7	0.82%
QC value within limits for S 181.975 Axial Recovery = 105.29%						
Sb 206.836†	28842.9	10909 ug/L	98.1	10909 ppb	98.1	0.90%
QC value within limits for Sb 206.836 Recovery = 109.09%						
Se 196.026†	15323.3	10277 ug/L	96.6	10277 ppb	96.6	0.94%
QC value within limits for Se 196.026 Recovery = 102.77%						
Si 251.611†	1441031.5	48465 ug/L	73.0	48465 ppb	73.0	0.15%
QC value within limits for Si 251.611 Recovery = 96.93%						
Sn 189.927†	56900.3	10523 ug/L	79.4	10523 ppb	79.4	0.75%
QC value within limits for Sn 189.927 Recovery = 105.23%						
Sr 421.552†	1399173.8	9973.2 ug/L	277.35	9973.2 ppb	277.35	2.78%
QC value within limits for Sr 421.552 Recovery = 99.73%						
Ti 334.940†	5761639.5	9875.7 ug/L	98.57	9875.7 ppb	98.57	1.00%
QC value within limits for Ti 334.940 Recovery = 98.76%						
Tl 190.801†	30176.8	9719.6 ug/L	85.25	9719.6 ppb	85.25	0.88%
QC value within limits for Tl 190.801 Recovery = 97.20%						
U 409.014†	1083.1	-19.262 ug/L	3.4255	-19.262 ppb	3.4255	17.78%
V 292.402†	1391779.4	10160 ug/L	4.1	10160 ppb	4.1	0.04%
QC value within limits for V 292.402 Recovery = 101.60%						
Zn 213.857†	1428350.2	14156 ug/L	28.6	14156 ppb	28.6	0.20%
QC value within limits for Zn 213.857 Recovery = 94.38%						
SiO2†	1469081.1	105050 ug/L	717.6	105050 ppb	717.6	0.68%
QC value within limits for SiO2 Recovery = 98.18%						
All analyte(s) passed QC.						



## =====

## Analysis Begun

Start Time: 1/14/2010 11:33:29

Plasma On Time: 1/11/2010 06:15:31

Logged In Analyst: Optima3

Technique: ICP Continuous

Spectrometer Model: Optima 5300 DV, S/N 077C7090601 Autosampler Model: S10

Sample Information File: C:\pe\Optima3\Sample Information\011410.sif

Batch ID:

Results Data Set: 011410

Results Library: C:\pe\Optima3\Results\Results.mdb

## =====

## Method Loaded

Method Name: General Eng.2AX

Method Last Saved: 1/14/2010 10:05:12

IEC File: 011110.iec

MSF File:

Method Description:

Analyte	Calibration Equation	Processing	View	Internal Standard	IEC
Ag 328.068	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Al 396.153Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
As 188.979	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
B 249.677	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Ba 233.527	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Be 313.107	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Ca 317.933Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	No
Cd 226.502	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Co 228.616	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Cr 267.716	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Cu 324.752	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Fe 238.204 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
K 766.490 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Mg 279.077 IEC	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Mn 257.610	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Mo 202.031	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Na 589.592 Radial	Lin Thru 0	Peak Area	Radial	Sc Radial	No
Ni 231.604	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
P 214.914	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Pb 220.353	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
S 181.975 Axial	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sb 206.836	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sc 361.383	Lin Thru 0	Peak Area	Axial	n/a	n/a
Sc Radial	Lin, Calc Int	Peak Area	Radial	n/a	n/a
Se 196.026	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Si 251.611	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sn 189.927	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Sr 421.552	Lin Thru 0	Peak Area	Radial	Sc Radial	Yes
Ti 334.940	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Tl 190.801	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
U 409.014	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
V 292.402	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Y 371.029	Lin, Calc Int	Peak Area	Axial	n/a	n/a
Zn 213.857	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes
Y RADIAL	Lin, Calc Int	Peak Area	Radial	n/a	n/a
SiO2	Lin Thru 0	Peak Area	Axial	Sc 361.383	Yes

=====

Sequence No.: 1

Autosampler Location: 7

Sample ID: CCV

Date Collected: 1/14/2010 11:33:30

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4918.2	4918.2	103 %		11:35:22
1	Y RADIAL	5241.8	5241.8	102.2 %		11:35:22
1	Al 396.153Radial†	6325.5	6165.5	4921.9 ug/L	4921.9 ppb	11:35:22



1	Ca 317.933Radial†	3138.9	3042.7	5123.8 ug/L	5123.8 ppb	11:35:42
1	Fe 238.204 Radial†	593.8	568.6	5360.5 ug/L	5360.5 ppb	11:35:42
1	K 766.490 Radial†	29392.8	25846.9	5171.7 ug/L	5171.7 ppb	11:35:22
1	Mg 279.077 IEC†	160.5	154.9	5436.4 ug/L	5436.4 ppb	11:35:42
1	Na 589.592 Radial†	31648.7	32398.9	10497 ug/L	10497 ppb	11:35:22
1	Sr 421.552†	74493.4	72553.9	517.12 ug/L	517.12 ppb	11:35:22
1	Sc 361.383	844802.9	844802.9	103.80 %		11:36:40
1	Y 371.029	699607.3	699607.3	101.99 %		11:36:40
1	Ag 328.068†	103672.1	99594.0	492.56 ug/L	492.56 ppb	11:36:45
1	As 188.979†	1157.0	1133.5	514.48 ug/L	514.48 ppb	11:37:05
1	B 249.677†	21404.9	21139.6	512.19 ug/L	512.19 ppb	11:36:45
1	Ba 233.527†	63034.7	60724.9	504.79 ug/L	504.79 ppb	11:36:45
1	Be 313.107†	1322500.6	1278382.0	508.86 ug/L	508.86 ppb	11:36:40
1	Cd 226.502†	44770.3	43328.4	507.69 ug/L	507.69 ppb	11:36:45
1	Co 228.616†	24163.1	23350.9	507.19 ug/L	507.19 ppb	11:36:45
1	Cr 267.716†	44245.7	42529.6	502.36 ug/L	502.36 ppb	11:36:45
1	Cu 324.752†	167986.8	155537.0	496.52 ug/L	496.52 ppb	11:36:45
1	Mn 257.610†	447547.4	430753.6	505.42 ug/L	505.42 ppb	11:36:40
1	Mo 202.031†	7075.6	6797.2	505.04 ug/L	505.04 ppb	11:37:05
1	Ni 231.604†	20015.1	19207.0	505.30 ug/L	505.30 ppb	11:36:45
1	P 214.914†	4340.4	3953.5	2426.3 ug/L	2426.3 ppb	11:37:05
1	Pb 220.353†	4008.2	3926.0	504.49 ug/L	504.49 ppb	11:37:05
1	S 181.975 Axial†	768.1	693.5	1034.0 ug/L	1034.0 ppb	11:37:05
1	Sb 206.836†	1468.8	1382.3	523.61 ug/L	523.61 ppb	11:37:05
1	Se 196.026†	769.5	771.7	535.43 ug/L	535.43 ppb	11:37:05
1	Si 251.611†	78797.2	75465.8	2538.2 ug/L	2538.2 ppb	11:36:45
1	Sn 189.927†	2875.2	2763.8	512.00 ug/L	512.00 ppb	11:37:05
1	Ti 334.940†	299002.1	289439.4	496.39 ug/L	496.39 ppb	11:36:45
1	Tl 190.801†	1595.7	1581.2	509.17 ug/L	509.17 ppb	11:37:05
1	U 409.014†	14455.8	15967.4	508.22 ug/L	508.22 ppb	11:36:45
1	V 292.402†	70575.4	69398.0	507.36 ug/L	507.36 ppb	11:36:45
1	Zn 213.857†	54075.5	51234.9	506.57 ug/L	506.57 ppb	11:36:45
1	SiO2†	79133.3	75779.2	5419.0 ug/L	5419.0 ppb	11:38:12
2	Sc Radial	5043.4	5043.4	105 %		11:35:47
2	Y RADIAL	5344.9	5344.9	104.2 %		11:35:47
2	Al 396.153Radial†	6382.8	6067.0	4842.5 ug/L	4842.5 ppb	11:35:47
2	Ca 317.933Radial†	3123.9	2952.6	4972.0 ug/L	4972.0 ppb	11:36:07
2	Fe 238.204 Radial†	587.6	548.4	5170.3 ug/L	5170.3 ppb	11:36:07
2	K 766.490 Radial†	29923.4	25640.1	5130.3 ug/L	5130.3 ppb	11:35:47
2	Mg 279.077 IEC†	159.1	149.7	5253.7 ug/L	5253.7 ppb	11:36:07
2	Na 589.592 Radial†	32154.8	32114.3	10405 ug/L	10405 ppb	11:35:47
2	Sr 421.552†	75781.2	71975.6	513.00 ug/L	513.00 ppb	11:35:47
2	Sc 361.383	829636.7	829636.7	101.94 %		11:37:11
2	Y 371.029	686474.6	686474.6	100.07 %		11:37:11
2	Ag 328.068†	103869.7	101613.6	502.43 ug/L	502.43 ppb	11:37:16
2	As 188.979†	1147.3	1144.3	519.35 ug/L	519.35 ppb	11:37:36
2	B 249.677†	21136.5	21253.2	514.98 ug/L	514.98 ppb	11:37:16
2	Ba 233.527†	62365.4	61178.4	508.55 ug/L	508.55 ppb	11:37:16
2	Be 313.107†	1294277.8	1273986.5	507.13 ug/L	507.13 ppb	11:37:11
2	Cd 226.502†	44300.5	43656.0	511.56 ug/L	511.56 ppb	11:37:16
2	Co 228.616†	23880.7	23499.5	510.43 ug/L	510.43 ppb	11:37:16
2	Cr 267.716†	43856.9	42927.5	507.05 ug/L	507.05 ppb	11:37:16
2	Cu 324.752†	166247.1	156788.8	500.50 ug/L	500.50 ppb	11:37:16
2	Mn 257.610†	439774.8	431010.6	505.71 ug/L	505.71 ppb	11:37:11
2	Mo 202.031†	7041.3	6888.1	511.77 ug/L	511.77 ppb	11:37:36
2	Ni 231.604†	19846.2	19393.8	510.22 ug/L	510.22 ppb	11:37:16
2	P 214.914†	4307.8	3998.1	2454.1 ug/L	2454.1 ppb	11:37:36
2	Pb 220.353†	4002.0	3990.5	512.75 ug/L	512.75 ppb	11:37:36
2	S 181.975 Axial†	755.2	694.4	1035.4 ug/L	1035.4 ppb	11:37:36
2	Sb 206.836†	1473.8	1413.1	535.01 ug/L	535.01 ppb	11:37:36
2	Se 196.026†	762.7	778.6	539.40 ug/L	539.40 ppb	11:37:36
2	Si 251.611†	78029.0	76099.8	2559.5 ug/L	2559.5 ppb	11:37:16
2	Sn 189.927†	2830.3	2770.4	513.19 ug/L	513.19 ppb	11:37:36
2	Ti 334.940†	296376.5	292129.5	500.99 ug/L	500.99 ppb	11:37:16
2	Tl 190.801†	1599.9	1613.4	519.50 ug/L	519.50 ppb	11:37:36
2	U 409.014†	14501.1	16266.4	517.78 ug/L	517.78 ppb	11:37:16
2	V 292.402†	69862.3	69941.4	511.41 ug/L	511.41 ppb	11:37:16
2	Zn 213.857†	53368.7	51493.9	509.14 ug/L	509.14 ppb	11:37:16
2	SiO2†	78809.6	76855.3	5496.0 ug/L	5496.0 ppb	11:38:17
3	Sc Radial	4885.7	4885.7	102 %		11:36:12
3	Y RADIAL	5228.6	5228.6	101.9 %		11:36:12



3	Al 396.153Radial†	6273.0	6155.1	4913.6 ug/L	4913.6 ppb	11:36:12
3	Ca 317.933Radial†	3131.5	3055.8	5145.9 ug/L	5145.9 ppb	11:36:32
3	Fe 238.204 Radial†	596.8	575.4	5424.1 ug/L	5424.1 ppb	11:36:32
3	K 766.490 Radial†	29306.7	25953.2	5193.0 ug/L	5193.0 ppb	11:36:12
3	Mg 279.077 IEC†	160.0	155.4	5455.6 ug/L	5455.6 ppb	11:36:32
3	Na 589.592 Radial†	31242.6	32206.0	10435 ug/L	10435 ppb	11:36:12
3	Sr 421.552†	73882.8	72438.4	516.30 ug/L	516.30 ppb	11:36:12
3	Sc 361.383	851135.9	851135.9	104.58 %		11:37:42
3	Y 371.029	704218.2	704218.2	102.66 %		11:37:42
3	Ag 328.068†	103264.1	98460.7	486.99 ug/L	486.99 ppb	11:37:47
3	As 188.979†	1148.8	1117.3	507.18 ug/L	507.18 ppb	11:38:07
3	B 249.677†	21215.1	20804.6	504.06 ug/L	504.06 ppb	11:37:47
3	Ba 233.527†	62428.3	59693.2	496.22 ug/L	496.22 ppb	11:37:47
3	Be 313.107†	1332401.1	1278369.0	508.84 ug/L	508.84 ppb	11:37:42
3	Cd 226.502†	44406.1	42659.2	499.84 ug/L	499.84 ppb	11:37:47
3	Co 228.616†	23893.4	22919.8	497.84 ug/L	497.84 ppb	11:37:47
3	Cr 267.716†	43954.7	41934.3	495.33 ug/L	495.33 ppb	11:37:47
3	Cu 324.752†	167040.1	153427.5	489.79 ug/L	489.79 ppb	11:37:47
3	Mn 257.610†	450850.9	430704.4	505.37 ug/L	505.37 ppb	11:37:42
3	Mo 202.031†	7105.1	6774.7	503.37 ug/L	503.37 ppb	11:38:07
3	Ni 231.604†	19870.1	18924.9	497.88 ug/L	497.88 ppb	11:37:47
3	P 214.914†	4323.5	3906.3	2397.4 ug/L	2397.4 ppb	11:38:07
3	Pb 220.353†	4024.1	3912.5	502.74 ug/L	502.74 ppb	11:38:07
3	S 181.975 Axial†	761.5	681.7	1016.4 ug/L	1016.4 ppb	11:38:07
3	Sb 206.836†	1483.5	1385.8	524.81 ug/L	524.81 ppb	11:38:07
3	Se 196.026†	771.4	768.0	533.16 ug/L	533.16 ppb	11:38:07
3	Si 251.611†	78231.6	74360.1	2501.0 ug/L	2501.0 ppb	11:37:47
3	Sn 189.927†	2880.3	2748.1	509.09 ug/L	509.09 ppb	11:38:07
3	Ti 334.940†	297363.4	285729.2	490.03 ug/L	490.03 ppb	11:37:47
3	Tl 190.801†	1595.3	1569.4	505.39 ug/L	505.39 ppb	11:38:07
3	U 409.014†	14445.7	15854.1	504.61 ug/L	504.61 ppb	11:37:47
3	V 292.402†	70178.9	68513.0	500.94 ug/L	500.94 ppb	11:37:47
3	Zn 213.857†	53539.4	50334.6	497.64 ug/L	497.64 ppb	11:37:47
3	SiO2†	78908.0	74996.5	5363.0 ug/L	5363.0 ppb	11:38:22

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	841858.5	103.44 %	1.357			1.31%
Sc Radial	4949.1	103 %	1.7			1.68%
Y 371.029	696766.7	101.58 %	1.342			1.32%
Y RADIAL	5271.8	102.8 %	1.24			1.21%
Ag 328.068†	99889.5	494.00 ug/L	7.820	494.00 ppb	7.820	1.58%
QC value within limits for Ag 328.068 Recovery = 98.80%						
Al 396.153Radial†	6129.2	4892.6 ug/L	43.63	4892.6 ppb	43.63	0.89%
QC value within limits for Al 396.153Radial Recovery = 97.85%						
As 188.979†	1131.7	513.67 ug/L	6.127	513.67 ppb	6.127	1.19%
QC value within limits for As 188.979 Recovery = 102.73%						
B 249.677†	21065.8	510.41 ug/L	5.675	510.41 ppb	5.675	1.11%
QC value within limits for B 249.677 Recovery = 102.08%						
Ba 233.527†	60532.1	503.19 ug/L	6.319	503.19 ppb	6.319	1.26%
QC value within limits for Ba 233.527 Recovery = 100.64%						
Be 313.107†	1276912.5	508.28 ug/L	0.996	508.28 ppb	0.996	0.20%
QC value within limits for Be 313.107 Recovery = 101.66%						
Ca 317.933Radial†	3017.0	5080.5 ug/L	94.65	5080.5 ppb	94.65	1.86%
QC value within limits for Ca 317.933Radial Recovery = 101.61%						
Cd 226.502†	43214.5	506.36 ug/L	5.972	506.36 ppb	5.972	1.18%
QC value within limits for Cd 226.502 Recovery = 101.27%						
Co 228.616†	23256.7	505.15 ug/L	6.537	505.15 ppb	6.537	1.29%
QC value within limits for Co 228.616 Recovery = 101.03%						
Cr 267.716†	42463.8	501.58 ug/L	5.900	501.58 ppb	5.900	1.18%
QC value within limits for Cr 267.716 Recovery = 100.32%						
Cu 324.752†	155251.1	495.60 ug/L	5.413	495.60 ppb	5.413	1.09%
QC value within limits for Cu 324.752 Recovery = 99.12%						
Fe 238.204 Radial†	564.1	5318.3 ug/L	132.08	5318.3 ppb	132.08	2.48%
QC value within limits for Fe 238.204 Radial Recovery = 106.37%						
K 766.490 Radial†	25813.4	5165.0 ug/L	31.86	5165.0 ppb	31.86	0.62%
QC value within limits for K 766.490 Radial Recovery = 103.30%						
Mg 279.077 IEC†	153.3	5381.9 ug/L	111.44	5381.9 ppb	111.44	2.07%
QC value within limits for Mg 279.077 IEC Recovery = 107.64%						



Mn 257.610†	430822.9	505.50 ug/L	0.184	505.50 ppb	0.184	0.04%
QC value within limits for Mn 257.610 Recovery = 101.10%						
Mo 202.031†	6820.0	506.73 ug/L	4.447	506.73 ppb	4.447	0.88%
QC value within limits for Mo 202.031 Recovery = 101.35%						
Na 589.592 Radial†	32239.7	10446 ug/L	47.1	10446 ppb	47.1	0.45%
QC value within limits for Na 589.592 Radial Recovery = 104.46%						
Ni 231.604†	19175.2	504.47 ug/L	6.211	504.47 ppb	6.211	1.23%
QC value within limits for Ni 231.604 Recovery = 100.89%						
P 214.914†	3952.6	2425.9 ug/L	28.34	2425.9 ppb	28.34	1.17%
QC value within limits for P 214.914 Recovery = 97.04%						
Pb 220.353†	3943.0	506.66 ug/L	5.348	506.66 ppb	5.348	1.06%
QC value within limits for Pb 220.353 Recovery = 101.33%						
S 181.975 Axial†	689.8	1028.6 ug/L	10.57	1028.6 ppb	10.57	1.03%
QC value within limits for S 181.975 Axial Recovery = 102.86%						
Sb 206.836†	1393.7	527.81 ug/L	6.263	527.81 ppb	6.263	1.19%
QC value within limits for Sb 206.836 Recovery = 105.56%						
Se 196.026†	772.8	536.00 ug/L	3.159	536.00 ppb	3.159	0.59%
QC value within limits for Se 196.026 Recovery = 107.20%						
Si 251.611†	75308.5	2532.9 ug/L	29.64	2532.9 ppb	29.64	1.17%
QC value within limits for Si 251.611 Recovery = 101.32%						
Sn 189.927†	2760.8	511.43 ug/L	2.109	511.43 ppb	2.109	0.41%
QC value within limits for Sn 189.927 Recovery = 102.29%						
Sr 421.552†	72322.6	515.47 ug/L	2.181	515.47 ppb	2.181	0.42%
QC value within limits for Sr 421.552 Recovery = 103.09%						
Ti 334.940†	289099.4	495.80 ug/L	5.505	495.80 ppb	5.505	1.11%
QC value within limits for Ti 334.940 Recovery = 99.16%						
Tl 190.801†	1588.0	511.35 ug/L	7.304	511.35 ppb	7.304	1.43%
QC value within limits for Tl 190.801 Recovery = 102.27%						
U 409.014†	16029.3	510.21 ug/L	6.806	510.21 ppb	6.806	1.33%
QC value within limits for U 409.014 Recovery = 102.04%						
V 292.402†	69284.1	506.57 ug/L	5.277	506.57 ppb	5.277	1.04%
QC value within limits for V 292.402 Recovery = 101.31%						
Zn 213.857†	51021.1	504.45 ug/L	6.033	504.45 ppb	6.033	1.20%
QC value within limits for Zn 213.857 Recovery = 100.89%						
SiO2†	75877.0	5426.0 ug/L	66.79	5426.0 ppb	66.79	1.23%
QC value within limits for SiO2 Recovery = 101.47%						
All analyte(s) passed QC.						



Sequence No.: 2

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/14/2010 11:40:33

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5114.8	5114.8	107 %		11:42:25
1	Y RADIAL	5501.5	5501.5	107.3 %		11:42:25
1	Al 396.153Radial†	-4.3	-0.8	-0.6493 ug/L	-0.6493 ppb	11:42:25
1	Ca 317.933Radial†	12.0	-3.9	-6.5561 ug/L	-6.5561 ppb	11:42:45
1	Fe 238.204 Radial†	8.9	-1.5	-14.331 ug/L	-14.331 ppb	11:42:45
1	K 766.490 Radial†	3206.1	215.9	43.230 ug/L	43.230 ppb	11:42:25
1	Mg 279.077 IEC†	1.9	0.3	10.676 ug/L	10.676 ppb	11:42:45
1	Na 589.592 Radial†	-1467.1	192.6	62.393 ug/L	62.393 ppb	11:42:25
1	Sr 421.552†	-34.8	-49.8	-0.3550 ug/L	-0.3550 ppb	11:42:25
1	Sc 361.383	837733.1	837733.1	102.93 %		11:43:42
1	Y 371.029	704879.0	704879.0	102.76 %		11:43:42
1	Ag 328.068†	444.1	149.9	0.7307 ug/L	0.7307 ppb	11:43:42
1	As 188.979†	-11.5	7.7	3.4441 ug/L	3.4441 ppb	11:44:02
1	B 249.677†	25.9	543.7	13.234 ug/L	13.234 ppb	11:44:02
1	Ba 233.527†	-7.1	-8.4	-0.0685 ug/L	-0.0685 ppb	11:44:02
1	Be 313.107†	-4320.6	114.7	0.0460 ug/L	0.0460 ppb	11:43:42
1	Cd 226.502†	-163.4	38.8	0.4576 ug/L	0.4576 ppb	11:44:02
1	Co 228.616†	-68.0	6.6	0.1455 ug/L	0.1455 ppb	11:44:02
1	Cr 267.716†	72.0	-25.8	-0.3056 ug/L	-0.3056 ppb	11:44:02
1	Cu 324.752†	6404.5	-76.1	-0.2460 ug/L	-0.2460 ppb	11:43:42
1	Mn 257.610†	401.4	-14.3	-0.0187 ug/L	-0.0187 ppb	11:44:02
1	Mo 202.031†	32.0	11.7	0.8700 ug/L	0.8700 ppb	11:44:02
1	Ni 231.604†	87.5	9.9	0.2609 ug/L	0.2609 ppb	11:44:02
1	P 214.914†	217.4	-16.7	-10.579 ug/L	-10.579 ppb	11:44:02
1	Pb 220.353†	-61.0	5.3	0.6785 ug/L	0.6785 ppb	11:44:02
1	S 181.975 Axial†	45.0	-2.7	-4.0114 ug/L	-4.0114 ppb	11:44:02
1	Sb 206.836†	36.5	2.7	1.0110 ug/L	1.0110 ppb	11:44:02
1	Se 196.026†	-23.6	7.5	4.9609 ug/L	4.9609 ppb	11:44:02
1	Si 251.611†	485.5	25.8	0.8602 ug/L	0.8602 ppb	11:44:02
1	Sn 189.927†	8.7	2.3	0.4291 ug/L	0.4291 ppb	11:44:02
1	Ti 334.940†	-1310.7	113.6	0.1913 ug/L	0.1913 ppb	11:43:42
1	Tl 190.801†	-30.8	14.0	4.4715 ug/L	4.4715 ppb	11:44:02
1	U 409.014†	-1958.0	138.8	4.4347 ug/L	4.4347 ppb	11:43:42
1	V 292.402†	-1357.2	88.6	0.6624 ug/L	0.6624 ppb	11:43:42
1	Zn 213.857†	916.5	30.0	0.2995 ug/L	0.2995 ppb	11:44:02
1	SiO2†	477.0	7.2	0.4943 ug/L	0.4943 ppb	11:44:58
2	Sc Radial	5112.9	5112.9	107 %		11:42:51
2	Y RADIAL	5482.4	5482.4	106.9 %		11:42:51
2	Al 396.153Radial†	-16.1	-11.8	-9.5320 ug/L	-9.5320 ppb	11:42:51
2	Ca 317.933Radial†	14.3	-1.7	-2.8738 ug/L	-2.8738 ppb	11:43:11
2	Fe 238.204 Radial†	10.0	-0.5	-4.7665 ug/L	-4.7665 ppb	11:43:11
2	K 766.490 Radial†	3300.3	305.3	61.140 ug/L	61.140 ppb	11:42:51
2	Mg 279.077 IEC†	3.2	1.5	52.817 ug/L	52.817 ppb	11:43:11
2	Na 589.592 Radial†	-1484.4	175.9	56.996 ug/L	56.996 ppb	11:42:51
2	Sr 421.552†	-12.0	-28.5	-0.2029 ug/L	-0.2029 ppb	11:42:51
2	Sc 361.383	828673.0	828673.0	101.82 %		11:44:08
2	Y 371.029	698218.2	698218.2	101.79 %		11:44:08
2	Ag 328.068†	492.3	202.0	0.9890 ug/L	0.9890 ppb	11:44:08
2	As 188.979†	-18.9	0.3	0.1233 ug/L	0.1233 ppb	11:44:28
2	B 249.677†	46.9	564.6	13.743 ug/L	13.743 ppb	11:44:28
2	Ba 233.527†	-0.6	-2.1	-0.0170 ug/L	-0.0170 ppb	11:44:28
2	Be 313.107†	-4261.3	127.1	0.0504 ug/L	0.0504 ppb	11:44:08
2	Cd 226.502†	-158.8	41.6	0.4887 ug/L	0.4887 ppb	11:44:28
2	Co 228.616†	-78.6	-4.5	-0.0959 ug/L	-0.0959 ppb	11:44:28
2	Cr 267.716†	95.1	-2.4	-0.0289 ug/L	-0.0289 ppb	11:44:28
2	Cu 324.752†	6418.7	6.0	0.0175 ug/L	0.0175 ppb	11:44:08
2	Mn 257.610†	438.1	26.0	0.0278 ug/L	0.0278 ppb	11:44:28
2	Mo 202.031†	28.5	8.7	0.6432 ug/L	0.6432 ppb	11:44:28
2	Ni 231.604†	89.8	13.1	0.3452 ug/L	0.3452 ppb	11:44:28



2	P 214.914†	205.7	-25.9	-16.504 ug/L	-16.504 ppb	11:44:28
2	Pb 220.353†	-71.6	-5.7	-0.7326 ug/L	-0.7326 ppb	11:44:28
2	S 181.975 Axial†	47.2	-0.1	-0.0801 ug/L	-0.0801 ppb	11:44:28
2	Sb 206.836†	44.0	10.5	3.8510 ug/L	3.8510 ppb	11:44:28
2	Se 196.026†	-21.4	9.3	6.2301 ug/L	6.2301 ppb	11:44:28
2	Si 251.611†	467.4	13.1	0.4352 ug/L	0.4352 ppb	11:44:28
2	Sn 189.927†	8.3	2.1	0.3793 ug/L	0.3793 ppb	11:44:28
2	Ti 334.940†	-1444.6	-31.8	-0.0602 ug/L	-0.0602 ppb	11:44:08
2	Tl 190.801†	-21.9	22.3	7.1458 ug/L	7.1458 ppb	11:44:28
2	U 409.014†	-2001.4	75.3	2.4059 ug/L	2.4059 ppb	11:44:08
2	V 292.402†	-1423.0	9.5	0.0843 ug/L	0.0843 ppb	11:44:08
2	Zn 213.857†	908.8	32.3	0.3200 ug/L	0.3200 ppb	11:44:28
2	SiO2†	485.8	20.9	1.4797 ug/L	1.4797 ppb	11:45:03
3	Sc Radial	5028.6	5028.6	105 %		11:43:16
3	Y RADIAL	5399.2	5399.2	105.3 %		11:43:16
3	Al 396.153Radial†	-13.1	-9.2	-7.4088 ug/L	-7.4088 ppb	11:43:16
3	Ca 317.933Radial†	13.5	-2.3	-3.8875 ug/L	-3.8875 ppb	11:43:36
3	Fe 238.204 Radial†	10.4	0.1	0.5238 ug/L	0.5238 ppb	11:43:36
3	K 766.490 Radial†	3289.9	347.2	69.544 ug/L	69.544 ppb	11:43:16
3	Mg 279.077 IEC†	2.0	0.4	14.575 ug/L	14.575 ppb	11:43:36
3	Na 589.592 Radial†	-1440.1	194.8	63.122 ug/L	63.122 ppb	11:43:16
3	Sr 421.552†	-19.8	-36.0	-0.2569 ug/L	-0.2569 ppb	11:43:16
3	Sc 361.383	839676.6	839676.6	103.17 %		11:44:33
3	Y 371.029	706695.5	706695.5	103.02 %		11:44:33
3	Ag 328.068†	317.2	25.8	0.1293 ug/L	0.1293 ppb	11:44:33
3	As 188.979†	-7.2	11.8	5.3241 ug/L	5.3241 ppb	11:44:53
3	B 249.677†	1.5	520.0	12.655 ug/L	12.655 ppb	11:44:53
3	Ba 233.527†	-10.6	-11.8	-0.0957 ug/L	-0.0957 ppb	11:44:53
3	Be 313.107†	-4308.3	136.3	0.0543 ug/L	0.0543 ppb	11:44:33
3	Cd 226.502†	-173.3	29.6	0.3471 ug/L	0.3471 ppb	11:44:53
3	Co 228.616†	-82.5	-7.3	-0.1565 ug/L	-0.1565 ppb	11:44:53
3	Cr 267.716†	88.0	-10.4	-0.1225 ug/L	-0.1225 ppb	11:44:53
3	Cu 324.752†	6518.2	19.8	0.0623 ug/L	0.0623 ppb	11:44:33
3	Mn 257.610†	387.1	-29.1	-0.0347 ug/L	-0.0347 ppb	11:44:53
3	Mo 202.031†	29.3	9.1	0.6768 ug/L	0.6768 ppb	11:44:53
3	Ni 231.604†	79.0	1.4	0.0381 ug/L	0.0381 ppb	11:44:53
3	P 214.914†	220.4	-14.3	-9.1245 ug/L	-9.1245 ppb	11:44:53
3	Pb 220.353†	-49.8	16.3	2.0932 ug/L	2.0932 ppb	11:44:53
3	S 181.975 Axial†	46.7	-1.2	-1.8190 ug/L	-1.8190 ppb	11:44:53
3	Sb 206.836†	44.8	10.7	3.8832 ug/L	3.8832 ppb	11:44:53
3	Se 196.026†	-27.5	3.7	2.4623 ug/L	2.4623 ppb	11:44:53
3	Si 251.611†	504.5	43.1	1.4459 ug/L	1.4459 ppb	11:44:53
3	Sn 189.927†	-2.7	-8.8	-1.6205 ug/L	-1.6205 ppb	11:44:53
3	Ti 334.940†	-1383.3	46.2	0.0770 ug/L	0.0770 ppb	11:44:33
3	Tl 190.801†	-37.0	8.1	2.5833 ug/L	2.5833 ppb	11:44:53
3	U 409.014†	-2061.1	43.2	1.3801 ug/L	1.3801 ppb	11:44:33
3	V 292.402†	-1335.2	113.0	0.8276 ug/L	0.8276 ppb	11:44:33
3	Zn 213.857†	905.8	17.6	0.1754 ug/L	0.1754 ppb	11:44:53
3	SiO2†	514.6	42.5	3.0319 ug/L	3.0319 ppb	11:45:08

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	835360.9	102.64 %		0.722			0.70%
Sc Radial	5085.4	106 %		1.0			0.97%
Y 371.029	703264.2	102.52 %		0.651			0.63%
Y RADIAL	5461.0	106.5 %		1.06			1.00%
Ag 328.068†	125.9	0.6163 ug/L		0.44110	0.6163 ppb	0.44110	71.57%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-7.3	-5.8633 ug/L		4.63863	-5.8633 ppb	4.63863	79.11%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	6.6	2.9638 ug/L		2.63342	2.9638 ppb	2.63342	88.85%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	542.7	13.211 ug/L		0.5440	13.211 ppb	0.5440	4.12%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-7.4	-0.0604 ug/L		0.03995	-0.0604 ppb	0.03995	66.11%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	126.1	0.0502 ug/L		0.00416	0.0502 ppb	0.00416	8.28%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	-2.6	-4.4391 ug/L		1.90215	-4.4391 ppb	1.90215	42.85%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	36.7	0.4311 ug/L	0.07444	0.4311 ppb	0.07444	17.27%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-1.7	-0.0356 ug/L	0.15973	-0.0356 ppb	0.15973	448.20%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-12.9	-0.1523 ug/L	0.14073	-0.1523 ppb	0.14073	92.39%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-16.8	-0.0554 ug/L	0.16661	-0.0554 ppb	0.16661	300.75%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	-0.7	-6.1911 ug/L	7.52903	-6.1911 ppb	7.52903	121.61%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	289.5	57.971 ug/L	13.4403	57.971 ppb	13.4403	23.18%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	0.7	26.023 ug/L	23.2864	26.023 ppb	23.2864	89.49%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-5.8	-0.0085 ug/L	0.03248	-0.0085 ppb	0.03248	381.65%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	9.8	0.7300 ug/L	0.12243	0.7300 ppb	0.12243	16.77%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	187.8	60.837 ug/L	3.3460	60.837 ppb	3.3460	5.50%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	8.2	0.2147 ug/L	0.15866	0.2147 ppb	0.15866	73.89%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-18.9	-12.069 ug/L	3.9088	-12.069 ppb	3.9088	32.39%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	5.3	0.6797 ug/L	1.41289	0.6797 ppb	1.41289	207.87%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	-1.3	-1.9702 ug/L	1.96999	-1.9702 ppb	1.96999	99.99%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	7.9	2.9151 ug/L	1.64901	2.9151 ppb	1.64901	56.57%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	6.8	4.5511 ug/L	1.91699	4.5511 ppb	1.91699	42.12%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	27.4	0.9138 ug/L	0.50744	0.9138 ppb	0.50744	55.53%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	-1.5	-0.2707 ug/L	1.16922	-0.2707 ppb	1.16922	431.92%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	-38.1	-0.2716 ug/L	0.07710	-0.2716 ppb	0.07710	28.39%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	42.7	0.0694 ug/L	0.12596	0.0694 ppb	0.12596	181.56%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	14.8	4.7335 ug/L	2.29247	4.7335 ppb	2.29247	48.43%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	85.8	2.7403 ug/L	1.55453	2.7403 ppb	1.55453	56.73%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	70.4	0.5248 ug/L	0.39030	0.5248 ppb	0.39030	74.37%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	26.6	0.2650 ug/L	0.07826	0.2650 ppb	0.07826	29.53%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	23.6	1.6686 ug/L	1.27928	1.6686 ppb	1.27928	76.67%	
QC value within limits for SiO2 Recovery = Not calculated							

All analyte(s) passed QC.



Sequence No.: 3  
 Sample ID: LR1  
 Analyst: HSC  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 37  
 Date Collected: 1/14/2010 11:47:19  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: LR1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4966.1	4966.1	104 %		11:49:12
1	Y RADIAL	5321.4	5321.4	103.7 %		11:49:12
1	Al 396.153Radial†	-42.3	-37.5	-28.874 ug/L	-28.874 ppb	11:49:12
1	Ca 317.933Radial†	11.4	-4.2	-7.0398 ug/L	-7.0398 ppb	11:49:32
1	Fe 238.204 Radial†	41146.6	39688.1	373100 ug/L	373100 ppb	11:49:12
1	K 766.490 Radial†	2902.3	12.7	2.5651 ug/L	2.5651 ppb	11:49:12
1	Mg 279.077 IEC†	13.2	11.2	3.9784 ug/L	3.9784 ppb	11:49:32
1	Na 589.592 Radial†	-1371.4	243.9	79.009 ug/L	79.009 ppb	11:49:12
1	Sr 421.552†	32.2	13.8	0.0985 ug/L	0.0985 ppb	11:49:12
1	Sc 361.383	841285.3	841285.3	103.37 %		11:50:30
1	Y 371.029	700674.3	700674.3	102.14 %		11:50:30
1	Ag 328.068†	-25045.8	-24511.1	0.5890 ug/L	0.5890 ppb	11:50:30
1	As 188.979†	-200.0	-174.6	8.8681 ug/L	8.8681 ppb	11:50:50
1	B 249.677†	2257.2	2702.2	5.1608 ug/L	5.1608 ppb	11:50:30
1	Ba 233.527†	-1720.2	-1665.6	-2.3305 ug/L	-2.3305 ppb	11:50:30
1	Be 313.107†	-4217.1	232.6	0.0926 ug/L	0.0926 ppb	11:50:30
1	Cd 226.502†	3186.6	3280.3	-0.0773 ug/L	-0.0773 ppb	11:50:30
1	Co 228.616†	209.1	275.0	0.5197 ug/L	0.5197 ppb	11:50:50
1	Cr 267.716†	-551.2	-629.0	-0.1131 ug/L	-0.1131 ppb	11:50:30
1	Cu 324.752†	367.2	-5942.8	0.7397 ug/L	0.7397 ppb	11:50:30
1	Mn 257.610†	-33094.8	-32420.5	-1.1843 ug/L	-1.1843 ppb	11:50:30
1	Mo 202.031†	-333.9	-342.4	3.5484 ug/L	3.5484 ppb	11:50:30
1	Ni 231.604†	182.7	101.6	2.6707 ug/L	2.6707 ppb	11:50:50
1	P 214.914†	678.4	428.5	-23.357 ug/L	-23.357 ppb	11:50:50
1	Pb 220.353†	224.5	281.8	0.3842 ug/L	0.3842 ppb	11:50:50
1	S 181.975 Axial†	59.9	11.5	17.177 ug/L	17.177 ppb	11:50:50
1	Sb 206.836†	30.4	-3.3	7.7399 ug/L	7.7399 ppb	11:50:50
1	Se 196.026†	-1774.0	-1685.8	94.375 ug/L	94.375 ppb	11:50:50
1	Si 251.611†	-654.3	-1078.9	-36.064 ug/L	-36.064 ppb	11:50:30
1	Sn 189.927†	-26.3	-31.5	0.4478 ug/L	0.4478 ppb	11:50:50
1	Ti 334.940†	-1366.7	64.8	0.0513 ug/L	0.0513 ppb	11:50:30
1	Tl 190.801†	-40.6	4.6	1.1696 ug/L	1.1696 ppb	11:50:50
1	U 409.014†	60.9	2099.8	24.546 ug/L	24.546 ppb	11:50:30
1	V 292.402†	6929.4	8110.7	3.9513 ug/L	3.9513 ppb	11:50:30
1	Zn 213.857†	4503.8	3496.7	-1.3099 ug/L	-1.3099 ppb	11:50:50
1	SiO2†	-618.3	-1054.4	-74.900 ug/L	-74.900 ppb	11:51:47
2	Sc Radial	4950.1	4950.1	103 %		11:49:37
2	Y RADIAL	5306.0	5306.0	103.4 %		11:49:37
2	Al 396.153Radial†	0.9	4.1	4.5442 ug/L	4.5442 ppb	11:49:37
2	Ca 317.933Radial†	11.1	-4.4	-7.4159 ug/L	-7.4159 ppb	11:49:57
2	Fe 238.204 Radial†	40949.7	39626.4	372520 ug/L	372520 ppb	11:49:37
2	K 766.490 Radial†	2879.0	-0.8	-0.1406 ug/L	-0.1406 ppb	11:49:37
2	Mg 279.077 IEC†	11.5	9.6	-52.343 ug/L	-52.343 ppb	11:49:57
2	Na 589.592 Radial†	-1389.2	222.3	72.017 ug/L	72.017 ppb	11:49:37
2	Sr 421.552†	89.3	69.2	0.4936 ug/L	0.4936 ppb	11:49:37
2	Sc 361.383	829050.3	829050.3	101.87 %		11:50:56
2	Y 371.029	691272.5	691272.5	100.77 %		11:50:56
2	Ag 328.068†	-24770.8	-24598.7	-0.0302 ug/L	-0.0302 ppb	11:50:56
2	As 188.979†	-207.0	-184.4	4.3291 ug/L	4.3291 ppb	11:51:16
2	B 249.677†	2090.6	2570.8	2.0612 ug/L	2.0612 ppb	11:50:56
2	Ba 233.527†	-1650.0	-1621.3	-1.9797 ug/L	-1.9797 ppb	11:50:56
2	Be 313.107†	-4244.7	145.2	0.0577 ug/L	0.0577 ppb	11:50:56
2	Cd 226.502†	3109.4	3250.0	-0.3710 ug/L	-0.3710 ppb	11:50:56
2	Co 228.616†	165.0	234.6	-0.3497 ug/L	-0.3497 ppb	11:51:16
2	Cr 267.716†	-505.0	-591.5	0.3164 ug/L	0.3164 ppb	11:50:56
2	Cu 324.752†	297.5	-6006.0	0.5051 ug/L	0.5051 ppb	11:50:56
2	Mn 257.610†	-32936.4	-32737.5	-1.6110 ug/L	-1.6110 ppb	11:50:56
2	Mo 202.031†	-342.2	-355.3	2.5456 ug/L	2.5456 ppb	11:50:56
2	Ni 231.604†	187.6	109.0	2.8668 ug/L	2.8668 ppb	11:51:16



2	P 214.914†	666.9	426.8	-23.898 ug/L	-23.898 ppb	11:51:16
2	Pb 220.353†	229.9	290.2	1.5301 ug/L	1.5301 ppb	11:51:16
2	S 181.975 Axial†	68.0	20.3	30.347 ug/L	30.347 ppb	11:51:16
2	Sb 206.836†	38.6	5.2	10.750 ug/L	10.750 ppb	11:51:16
2	Se 196.026†	-1764.2	-1701.5	81.968 ug/L	81.968 ppb	11:51:16
2	Si 251.611†	-621.1	-1055.6	-35.268 ug/L	-35.268 ppb	11:50:56
2	Sn 189.927†	-40.0	-45.4	-2.1314 ug/L	-2.1314 ppb	11:51:16
2	Ti 334.940†	-1420.2	-7.1	-0.0696 ug/L	-0.0696 ppb	11:50:56
2	Tl 190.801†	-49.8	-5.0	-1.9241 ug/L	-1.9241 ppb	11:51:16
2	U 409.014†	196.5	2233.9	28.893 ug/L	28.893 ppb	11:50:56
2	V 292.402†	6910.1	8190.7	4.6062 ug/L	4.6062 ppb	11:50:56
2	Zn 213.857†	4489.8	3547.3	-0.7502 ug/L	-0.7502 ppb	11:51:16
2	SiO2†	-697.7	-1141.1	-81.091 ug/L	-81.091 ppb	11:51:52
3	Sc Radial	5015.9	5015.9	105 %		11:50:02
3	Y RADIAL	5373.2	5373.2	104.8 %		11:50:02
3	Al 396.153Radial†	-22.9	-18.6	-13.710 ug/L	-13.710 ppb	11:50:02
3	Ca 317.933Radial†	5.7	-9.7	-16.363 ug/L	-16.363 ppb	11:50:22
3	Fe 238.204 Radial†	41422.1	39557.6	371870 ug/L	371870 ppb	11:50:02
3	K 766.490 Radial†	2915.2	-2.7	-0.5205 ug/L	-0.5205 ppb	11:50:02
3	Mg 279.077 IEC†	11.5	9.5	-56.564 ug/L	-56.564 ppb	11:50:22
3	Na 589.592 Radial†	-1424.8	206.0	66.729 ug/L	66.729 ppb	11:50:02
3	Sr 421.552†	124.0	101.3	0.7220 ug/L	0.7220 ppb	11:50:02
3	Sc 361.383	825054.9	825054.9	101.37 %		11:51:22
3	Y 371.029	690074.2	690074.2	100.60 %		11:51:22
3	Ag 328.068†	-24681.2	-24628.1	-0.3821 ug/L	-0.3821 ppb	11:51:22
3	As 188.979†	-197.5	-176.0	7.9699 ug/L	7.9699 ppb	11:51:42
3	B 249.677†	2166.4	2655.5	4.2284 ug/L	4.2284 ppb	11:51:22
3	Ba 233.527†	-1598.1	-1577.9	-1.6418 ug/L	-1.6418 ppb	11:51:22
3	Be 313.107†	-4258.6	111.4	0.0443 ug/L	0.0443 ppb	11:51:22
3	Cd 226.502†	3165.4	3320.0	0.5146 ug/L	0.5146 ppb	11:51:22
3	Co 228.616†	154.3	224.9	-0.5484 ug/L	-0.5484 ppb	11:51:42
3	Cr 267.716†	-623.7	-711.0	-1.1038 ug/L	-1.1038 ppb	11:51:22
3	Cu 324.752†	275.5	-6026.3	0.4104 ug/L	0.4104 ppb	11:51:22
3	Mn 257.610†	-32921.8	-32879.6	-1.8414 ug/L	-1.8414 ppb	11:51:22
3	Mo 202.031†	-322.6	-337.5	3.8129 ug/L	3.8129 ppb	11:51:22
3	Ni 231.604†	193.4	115.7	3.0425 ug/L	3.0425 ppb	11:51:42
3	P 214.914†	696.4	459.1	-2.7333 ug/L	-2.7333 ppb	11:51:42
3	Pb 220.353†	199.3	261.2	-2.1312 ug/L	-2.1312 ppb	11:51:42
3	S 181.975 Axial†	65.3	18.0	26.824 ug/L	26.824 ppb	11:51:42
3	Sb 206.836†	17.5	-15.5	3.2538 ug/L	3.2538 ppb	11:51:42
3	Se 196.026†	-1765.8	-1711.4	73.232 ug/L	73.232 ppb	11:51:42
3	Si 251.611†	-693.7	-1130.2	-37.797 ug/L	-37.797 ppb	11:51:22
3	Sn 189.927†	-24.2	-30.0	0.7046 ug/L	0.7046 ppb	11:51:42
3	Ti 334.940†	-1388.5	17.3	-0.0244 ug/L	-0.0244 ppb	11:51:22
3	Tl 190.801†	-56.8	-12.1	-4.1884 ug/L	-4.1884 ppb	11:51:42
3	U 409.014†	-56.6	1985.1	21.025 ug/L	21.025 ppb	11:51:22
3	V 292.402†	6720.4	8036.4	3.5913 ug/L	3.5913 ppb	11:51:22
3	Zn 213.857†	4485.1	3564.0	-0.5221 ug/L	-0.5221 ppb	11:51:42
3	SiO2†	-653.8	-1101.1	-78.261 ug/L	-78.261 ppb	11:51:57

## Mean Data: LR1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	831796.8	102.20 %		1.039			1.02%
Sc Radial	4977.4	104 %		0.7			0.69%
Y 371.029	694007.0	101.17 %		0.846			0.84%
Y RADIAL	5333.6	104.0 %		0.69			0.66%
Ag 328.068†	-24579.3	0.0589 ug/L		0.49165	0.0589 ppb	0.49165	834.52%
Al 396.153Radial†	-17.4	-12.680 ug/L		16.7329	-12.680 ppb	16.7329	131.96%
As 188.979†	-178.3	7.0557 ug/L		2.40359	7.0557 ppb	2.40359	34.07%
B 249.677†	2642.8	3.8168 ug/L		1.59028	3.8168 ppb	1.59028	41.67%
Ba 233.527†	-1621.6	-1.9840 ug/L		0.34438	-1.9840 ppb	0.34438	17.36%
Be 313.107†	163.1	0.0649 ug/L		0.02495	0.0649 ppb	0.02495	38.46%
Ca 317.933Radial†	-6.1	-10.273 ug/L		5.2774	-10.273 ppb	5.2774	51.37%
Cd 226.502†	3283.4	0.0221 ug/L		0.45108	0.0221 ppb	0.45108	>999.9%
Co 228.616†	244.8	-0.1262 ug/L		0.56807	-0.1262 ppb	0.56807	450.28%
Cr 267.716†	-643.8	-0.3002 ug/L		0.72835	-0.3002 ppb	0.72835	242.65%
Cu 324.752†	-5991.7	0.5518 ug/L		0.16951	0.5518 ppb	0.16951	30.72%
Fe 238.204 Radial†	39624.0	372490 ug/L		613.8	372490 ppb	613.8	0.16%
K 766.490 Radial†	3.1	0.6347 ug/L		1.68256	0.6347 ppb	1.68256	265.10%



Mg 279.077 IEC†	10.1	-34.976 ug/L	33.8016	-34.976 ppb	33.8016	96.64%
Mn 257.610†	-32679.2	-1.5456 ug/L	0.33339	-1.5456 ppb	0.33339	21.57%
Mo 202.031†	-345.1	3.3023 ug/L	0.66850	3.3023 ppb	0.66850	20.24%
Na 589.592 Radial†	224.0	72.585 ug/L	6.1595	72.585 ppb	6.1595	8.49%
Ni 231.604†	108.8	2.8600 ug/L	0.18602	2.8600 ppb	0.18602	6.50%
P 214.914†	438.1	-16.663 ug/L	12.0663	-16.663 ppb	12.0663	72.41%
Pb 220.353†	277.7	-0.0723 ug/L	1.87287	-0.0723 ppb	1.87287	>999.9%
S 181.975 Axial†	16.6	24.783 ug/L	6.8181	24.783 ppb	6.8181	27.51%
Sb 206.836†	-4.5	7.2479 ug/L	3.77233	7.2479 ppb	3.77233	52.05%
Se 196.026†	-1699.6	83.192 ug/L	10.6240	83.192 ppb	10.6240	12.77%
Si 251.611†	-1088.2	-36.376 ug/L	1.2930	-36.376 ppb	1.2930	3.55%
Sn 189.927†	-35.6	-0.3264 ug/L	1.56849	-0.3264 ppb	1.56849	480.60%
Sr 421.552†	61.4	0.4380 ug/L	0.31547	0.4380 ppb	0.31547	72.02%
Ti 334.940†	25.0	-0.0143 ug/L	0.06110	-0.0143 ppb	0.06110	428.68%
Tl 190.801†	-4.2	-1.6476 ug/L	2.68971	-1.6476 ppb	2.68971	163.25%
U 409.014†	2106.3	24.821 ug/L	3.9413	24.821 ppb	3.9413	15.88%
V 292.402†	8112.6	4.0496 ug/L	0.51453	4.0496 ppb	0.51453	12.71%
Zn 213.857†	3536.0	-0.8607 ug/L	0.40538	-0.8607 ppb	0.40538	47.10%
SiO2†	-1098.9	-78.084 ug/L	3.0992	-78.084 ppb	3.0992	3.97%



Sequence No.: 4

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/14/2010 11:54:10

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5063.6	5063.6	106 %		11:56:02
1	Y RADIAL	5366.5	5366.5	104.6 %		11:56:02
1	Al 396.153Radial†	6391.3	6050.9	4829.5 ug/L	4829.5 ppb	11:56:02
1	Ca 317.933Radial†	3109.2	2926.8	4928.6 ug/L	4928.6 ppb	11:56:22
1	Fe 238.204 Radial†	587.5	546.0	5148.7 ug/L	5148.7 ppb	11:56:22
1	K 766.490 Radial†	29400.0	25031.8	5008.6 ug/L	5008.6 ppb	11:56:02
1	Mg 279.077 IEC†	159.9	149.8	5258.6 ug/L	5258.6 ppb	11:56:22
1	Na 589.592 Radial†	31342.3	31224.0	10117 ug/L	10117 ppb	11:56:02
1	Sr 421.552†	75150.4	71092.5	506.70 ug/L	506.70 ppb	11:56:02
1	Sc 361.383	829412.1	829412.1	101.91 %		11:57:20
1	Y 371.029	686324.3	686324.3	100.05 %		11:57:20
1	Ag 328.068†	104712.6	102468.3	506.66 ug/L	506.66 ppb	11:57:25
1	As 188.979†	1143.1	1140.5	517.70 ug/L	517.70 ppb	11:57:45
1	B 249.677†	21543.9	21658.6	524.82 ug/L	524.82 ppb	11:57:25
1	Ba 233.527†	63387.8	62198.1	517.03 ug/L	517.03 ppb	11:57:25
1	Be 313.107†	1329417.5	1308811.2	520.98 ug/L	520.98 ppb	11:57:20
1	Cd 226.502†	45026.5	44380.1	520.05 ug/L	520.05 ppb	11:57:25
1	Co 228.616†	24316.1	23933.0	519.83 ug/L	519.83 ppb	11:57:25
1	Cr 267.716†	44647.4	43714.8	516.35 ug/L	516.35 ppb	11:57:25
1	Cu 324.752†	169781.3	160300.9	511.70 ug/L	511.70 ppb	11:57:25
1	Mn 257.610†	450884.7	442029.0	518.63 ug/L	518.63 ppb	11:57:20
1	Mo 202.031†	7064.0	6912.3	513.56 ug/L	513.56 ppb	11:57:45
1	Ni 231.604†	20174.0	19720.7	518.82 ug/L	518.82 ppb	11:57:25
1	P 214.914†	4328.6	4019.6	2465.7 ug/L	2465.7 ppb	11:57:45
1	Pb 220.353†	3989.0	3978.8	511.25 ug/L	511.25 ppb	11:57:45
1	S 181.975 Axial†	753.3	692.7	1032.9 ug/L	1032.9 ppb	11:57:45
1	Sb 206.836†	1461.3	1401.2	530.86 ug/L	530.86 ppb	11:57:45
1	Se 196.026†	770.0	785.9	544.26 ug/L	544.26 ppb	11:57:45
1	Si 251.611†	79580.9	77643.3	2611.6 ug/L	2611.6 ppb	11:57:25
1	Sn 189.927†	2880.2	2820.1	522.36 ug/L	522.36 ppb	11:57:45
1	Ti 334.940†	301886.2	297614.7	510.39 ug/L	510.39 ppb	11:57:25
1	Tl 190.801†	1591.3	1605.4	517.01 ug/L	517.01 ppb	11:57:45
1	U 409.014†	14801.7	16565.2	527.31 ug/L	527.31 ppb	11:57:25
1	V 292.402†	71289.6	71360.5	521.68 ug/L	521.68 ppb	11:57:25
1	Zn 213.857†	54385.9	52506.2	519.16 ug/L	519.16 ppb	11:57:25
1	SiO2†	79256.1	77314.3	5528.9 ug/L	5528.9 ppb	11:58:52
2	Sc Radial	5076.8	5076.8	106 %		11:56:28
2	Y RADIAL	5367.0	5367.0	104.6 %		11:56:28
2	Al 396.153Radial†	6432.4	6073.8	4847.4 ug/L	4847.4 ppb	11:56:28
2	Ca 317.933Radial†	3104.7	2915.0	4908.7 ug/L	4908.7 ppb	11:56:48
2	Fe 238.204 Radial†	585.1	542.3	5114.1 ug/L	5114.1 ppb	11:56:48
2	K 766.490 Radial†	29439.1	24995.9	5001.3 ug/L	5001.3 ppb	11:56:28
2	Mg 279.077 IEC†	157.2	146.8	5154.3 ug/L	5154.3 ppb	11:56:48
2	Na 589.592 Radial†	31544.3	31337.1	10153 ug/L	10153 ppb	11:56:28
2	Sr 421.552†	75470.2	71208.4	507.53 ug/L	507.53 ppb	11:56:28
2	Sc 361.383	816006.9	816006.9	100.26 %		11:57:51
2	Y 371.029	676270.6	676270.6	98.587 %		11:57:51
2	Ag 328.068†	105307.0	104749.1	517.89 ug/L	517.89 ppb	11:57:56
2	As 188.979†	1153.3	1169.2	530.67 ug/L	530.67 ppb	11:58:16
2	B 249.677†	21570.3	22032.3	533.88 ug/L	533.88 ppb	11:57:56
2	Ba 233.527†	63871.3	63702.3	529.53 ug/L	529.53 ppb	11:57:56
2	Be 313.107†	1317518.4	1318373.4	524.81 ug/L	524.81 ppb	11:57:51
2	Cd 226.502†	45359.6	45438.1	532.47 ug/L	532.47 ppb	11:57:56
2	Co 228.616†	24558.5	24566.7	533.59 ug/L	533.59 ppb	11:57:56
2	Cr 267.716†	44919.3	44705.7	528.05 ug/L	528.05 ppb	11:57:56
2	Cu 324.752†	171225.1	164477.7	525.03 ug/L	525.03 ppb	11:57:56
2	Mn 257.610†	446327.9	444752.5	521.83 ug/L	521.83 ppb	11:57:51
2	Mo 202.031†	7099.3	7061.4	524.63 ug/L	524.63 ppb	11:58:16
2	Ni 231.604†	20336.5	20208.0	531.64 ug/L	531.64 ppb	11:57:56



2	P 214.914†	4342.3	4103.0	2516.4 ug/L	2516.4 ppb	11:58:16
2	Pb 220.353†	4041.4	4095.3	526.21 ug/L	526.21 ppb	11:58:16
2	S 181.975 Axial†	766.8	718.4	1071.2 ug/L	1071.2 ppb	11:58:16
2	Sb 206.836†	1457.6	1421.0	538.43 ug/L	538.43 ppb	11:58:16
2	Se 196.026†	769.8	798.1	552.32 ug/L	552.32 ppb	11:58:16
2	Si 251.611†	80113.1	79457.0	2672.6 ug/L	2672.6 ppb	11:57:56
2	Sn 189.927†	2869.9	2856.2	529.05 ug/L	529.05 ppb	11:58:16
2	Ti 334.940†	304552.1	305140.0	523.29 ug/L	523.29 ppb	11:57:56
2	Tl 190.801†	1605.9	1645.6	529.92 ug/L	529.92 ppb	11:58:16
2	U 409.014†	14953.5	16955.3	539.75 ug/L	539.75 ppb	11:57:56
2	V 292.402†	71732.5	72951.4	533.32 ug/L	533.32 ppb	11:57:56
2	Zn 213.857†	54658.0	53654.3	530.52 ug/L	530.52 ppb	11:57:56
2	SiO2†	79169.7	78505.8	5614.0 ug/L	5614.0 ppb	11:58:58
3	Sc Radial	4980.1	4980.1	104 %		11:56:53
3	Y RADIAL	5323.0	5323.0	103.8 %		11:56:53
3	Al 396.153Radial†	6516.6	6272.8	5007.3 ug/L	5007.3 ppb	11:56:53
3	Ca 317.933Radial†	3120.0	2986.6	5029.2 ug/L	5029.2 ppb	11:57:13
3	Fe 238.204 Radial†	592.7	560.4	5283.7 ug/L	5283.7 ppb	11:57:13
3	K 766.490 Radial†	29329.6	25430.3	5088.3 ug/L	5088.3 ppb	11:56:53
3	Mg 279.077 IEC†	161.6	154.0	5405.7 ug/L	5405.7 ppb	11:57:13
3	Na 589.592 Radial†	31354.6	31732.9	10282 ug/L	10282 ppb	11:56:53
3	Sr 421.552†	75478.3	72599.8	517.45 ug/L	517.45 ppb	11:56:53
3	Sc 361.383	828986.7	828986.7	101.86 %		11:58:22
3	Y 371.029	686727.3	686727.3	100.11 %		11:58:22
3	Ag 328.068†	105256.9	103055.4	509.59 ug/L	509.59 ppb	11:58:27
3	As 188.979†	1153.3	1151.1	522.52 ug/L	522.52 ppb	11:58:47
3	B 249.677†	21536.4	21662.1	524.88 ug/L	524.88 ppb	11:58:27
3	Ba 233.527†	63394.3	62236.5	517.35 ug/L	517.35 ppb	11:58:27
3	Be 313.107†	1330915.8	1310951.7	521.83 ug/L	521.83 ppb	11:58:22
3	Cd 226.502†	45036.4	44412.5	520.42 ug/L	520.42 ppb	11:58:27
3	Co 228.616†	24372.8	24000.9	521.31 ug/L	521.31 ppb	11:58:27
3	Cr 267.716†	44643.7	43733.7	516.58 ug/L	516.58 ppb	11:58:27
3	Cu 324.752†	170254.1	160850.6	513.47 ug/L	513.47 ppb	11:58:27
3	Mn 257.610†	450413.7	441793.7	518.36 ug/L	518.36 ppb	11:58:22
3	Mo 202.031†	7125.0	6975.7	518.28 ug/L	518.28 ppb	11:58:47
3	Ni 231.604†	20224.9	19780.8	520.40 ug/L	520.40 ppb	11:58:27
3	P 214.914†	4365.6	4058.1	2489.8 ug/L	2489.8 ppb	11:58:47
3	Pb 220.353†	4024.3	4015.5	515.99 ug/L	515.99 ppb	11:58:47
3	S 181.975 Axial†	761.9	701.5	1046.0 ug/L	1046.0 ppb	11:58:47
3	Sb 206.836†	1472.5	1412.9	535.25 ug/L	535.25 ppb	11:58:47
3	Se 196.026†	782.8	798.9	553.39 ug/L	553.39 ppb	11:58:47
3	Si 251.611†	79617.4	77719.3	2614.1 ug/L	2614.1 ppb	11:58:27
3	Sn 189.927†	2886.8	2828.0	523.86 ug/L	523.86 ppb	11:58:47
3	Ti 334.940†	302504.8	298374.0	511.69 ug/L	511.69 ppb	11:58:27
3	Tl 190.801†	1589.5	1604.4	516.71 ug/L	516.71 ppb	11:58:47
3	U 409.014†	14741.2	16513.2	525.63 ug/L	525.63 ppb	11:58:27
3	V 292.402†	71354.7	71460.3	522.44 ug/L	522.44 ppb	11:58:27
3	Zn 213.857†	54398.7	52546.1	519.54 ug/L	519.54 ppb	11:58:27
3	SiO2†	80775.7	78846.1	5638.5 ug/L	5638.5 ppb	11:59:03

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	824801.9	101.34 %		0.936			0.92%
Sc Radial	5040.2	105 %		1.1			1.04%
Y 371.029	683107.4	99.584 %		0.8636			0.87%
Y RADIAL	5352.2	104.3 %		0.49			0.47%
Ag 328.068†	103424.3	511.38 ug/L		5.825	511.38 ppb	5.825	1.14%
QC value within limits for Ag 328.068 Recovery = 102.28%							
Al 396.153Radial†	6132.5	4894.7 ug/L		97.89	4894.7 ppb	97.89	2.00%
QC value within limits for Al 396.153Radial Recovery = 97.89%							
As 188.979†	1153.6	523.63 ug/L		6.553	523.63 ppb	6.553	1.25%
QC value within limits for As 188.979 Recovery = 104.73%							
B 249.677†	21784.3	527.86 ug/L		5.214	527.86 ppb	5.214	0.99%
QC value within limits for B 249.677 Recovery = 105.57%							
Ba 233.527†	62712.3	521.30 ug/L		7.123	521.30 ppb	7.123	1.37%
QC value within limits for Ba 233.527 Recovery = 104.26%							
Be 313.107†	1312712.1	522.54 ug/L		2.009	522.54 ppb	2.009	0.38%
QC value within limits for Be 313.107 Recovery = 104.51%							
Ca 317.933Radial†	2942.8	4955.5 ug/L		64.62	4955.5 ppb	64.62	1.30%



QC value within limits for Ca 317.933 Radial Recovery = 99.11%

Cd 226.502†	44743.6	524.31 ug/L	7.064	524.31 ppb	7.064	1.35%
QC value within limits for Cd 226.502 Recovery = 104.86%						
Co 228.616†	24166.9	524.91 ug/L	7.555	524.91 ppb	7.555	1.44%
QC value within limits for Co 228.616 Recovery = 104.98%						
Cr 267.716†	44051.4	520.33 ug/L	6.691	520.33 ppb	6.691	1.29%
QC value within limits for Cr 267.716 Recovery = 104.07%						
Cu 324.752†	161876.4	516.73 ug/L	7.238	516.73 ppb	7.238	1.40%
QC value within limits for Cu 324.752 Recovery = 103.35%						
Fe 238.204 Radial†	549.6	5182.1 ug/L	89.63	5182.1 ppb	89.63	1.73%
QC value within limits for Fe 238.204 Radial Recovery = 103.64%						
K 766.490 Radial†	25152.7	5032.7 ug/L	48.25	5032.7 ppb	48.25	0.96%
QC value within limits for K 766.490 Radial Recovery = 100.65%						
Mg 279.077 IEC†	150.2	5272.9 ug/L	126.32	5272.9 ppb	126.32	2.40%
QC value within limits for Mg 279.077 IEC Recovery = 105.46%						
Mn 257.610†	442858.4	519.61 ug/L	1.927	519.61 ppb	1.927	0.37%
QC value within limits for Mn 257.610 Recovery = 103.92%						
Mo 202.031†	6983.1	518.82 ug/L	5.553	518.82 ppb	5.553	1.07%
QC value within limits for Mo 202.031 Recovery = 103.76%						
Na 589.592 Radial†	31431.3	10184 ug/L	86.6	10184 ppb	86.6	0.85%
QC value within limits for Na 589.592 Radial Recovery = 101.84%						
Ni 231.604†	19903.2	523.62 ug/L	6.990	523.62 ppb	6.990	1.33%
QC value within limits for Ni 231.604 Recovery = 104.72%						
P 214.914†	4060.2	2490.6 ug/L	25.35	2490.6 ppb	25.35	1.02%
QC value within limits for P 214.914 Recovery = 99.62%						
Pb 220.353†	4029.9	517.82 ug/L	7.642	517.82 ppb	7.642	1.48%
QC value within limits for Pb 220.353 Recovery = 103.56%						
S 181.975 Axial†	704.2	1050.0 ug/L	19.44	1050.0 ppb	19.44	1.85%
QC value within limits for S 181.975 Axial Recovery = 105.00%						
Sb 206.836†	1411.7	534.85 ug/L	3.802	534.85 ppb	3.802	0.71%
QC value within limits for Sb 206.836 Recovery = 106.97%						
Se 196.026†	794.3	549.99 ug/L	4.993	549.99 ppb	4.993	0.91%
QC value within limits for Se 196.026 Recovery = 110.00%						
Si 251.611†	78273.2	2632.7 ug/L	34.53	2632.7 ppb	34.53	1.31%
QC value within limits for Si 251.611 Recovery = 105.31%						
Sn 189.927†	2834.8	525.09 ug/L	3.510	525.09 ppb	3.510	0.67%
QC value within limits for Sn 189.927 Recovery = 105.02%						
Sr 421.552†	71633.5	510.56 ug/L	5.978	510.56 ppb	5.978	1.17%
QC value within limits for Sr 421.552 Recovery = 102.11%						
Ti 334.940†	300376.2	515.12 ug/L	7.105	515.12 ppb	7.105	1.38%
QC value within limits for Ti 334.940 Recovery = 103.02%						
Tl 190.801†	1618.5	521.22 ug/L	7.543	521.22 ppb	7.543	1.45%
QC value within limits for Tl 190.801 Recovery = 104.24%						
U 409.014†	16677.9	530.90 ug/L	7.709	530.90 ppb	7.709	1.45%
QC value within limits for U 409.014 Recovery = 106.18%						
V 292.402†	71924.1	525.81 ug/L	6.512	525.81 ppb	6.512	1.24%
QC value within limits for V 292.402 Recovery = 105.16%						
Zn 213.857†	52902.2	523.07 ug/L	6.450	523.07 ppb	6.450	1.23%
QC value within limits for Zn 213.857 Recovery = 104.61%						
SiO2†	78222.1	5593.8 ug/L	57.56	5593.8 ppb	57.56	1.03%
QC value within limits for SiO2 Recovery = 104.61%						

All analyte(s) passed QC.



Sequence No.: 5

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/14/2010 12:01:12

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5039.4	5039.4	105 %		12:03:05
1	Y RADIAL	5419.9	5419.9	105.7 %		12:03:05
1	Al 396.153Radial†	-11.5	-7.7	-6.1915 ug/L	-6.1915 ppb	12:03:05
1	Ca 317.933Radial†	9.8	-5.8	-9.8013 ug/L	-9.8013 ppb	12:03:25
1	Fe 238.204 Radial†	9.2	-1.1	-10.382 ug/L	-10.382 ppb	12:03:25
1	K 766.490 Radial†	3143.6	201.4	40.348 ug/L	40.348 ppb	12:03:05
1	Mg 279.077 IEC†	3.0	1.4	47.818 ug/L	47.818 ppb	12:03:25
1	Na 589.592 Radial†	-1559.3	84.4	27.336 ug/L	27.336 ppb	12:03:05
1	Sr 421.552†	-14.7	-31.2	-0.2225 ug/L	-0.2225 ppb	12:03:05
1	Sc 361.383	845694.0	845694.0	103.91 %		12:04:22
1	Y 371.029	711161.0	711161.0	103.67 %		12:04:22
1	Ag 328.068†	460.5	161.6	0.7921 ug/L	0.7921 ppb	12:04:22
1	As 188.979†	-13.7	5.7	2.5626 ug/L	2.5626 ppb	12:04:42
1	B 249.677†	-146.1	378.0	9.2006 ug/L	9.2006 ppb	12:04:42
1	Ba 233.527†	-10.9	-11.9	-0.0975 ug/L	-0.0975 ppb	12:04:42
1	Be 313.107†	-4349.8	126.1	0.0504 ug/L	0.0504 ppb	12:04:22
1	Cd 226.502†	-191.2	13.6	0.1611 ug/L	0.1611 ppb	12:04:42
1	Co 228.616†	-75.8	-0.2	-0.0033 ug/L	-0.0033 ppb	12:04:42
1	Cr 267.716†	59.3	-38.7	-0.4567 ug/L	-0.4567 ppb	12:04:42
1	Cu 324.752†	6533.8	-10.2	-0.0345 ug/L	-0.0345 ppb	12:04:22
1	Mn 257.610†	400.8	-18.6	-0.0248 ug/L	-0.0248 ppb	12:04:42
1	Mo 202.031†	28.1	7.8	0.5762 ug/L	0.5762 ppb	12:04:42
1	Ni 231.604†	88.0	9.5	0.2505 ug/L	0.2505 ppb	12:04:42
1	P 214.914†	217.2	-18.9	-12.037 ug/L	-12.037 ppb	12:04:42
1	Pb 220.353†	-61.4	5.5	0.7057 ug/L	0.7057 ppb	12:04:42
1	S 181.975 Axial†	54.8	6.2	9.3139 ug/L	9.3139 ppb	12:04:42
1	Sb 206.836†	36.9	2.8	1.0282 ug/L	1.0282 ppb	12:04:42
1	Se 196.026†	-31.7	-0.2	-0.1402 ug/L	-0.1402 ppb	12:04:42
1	Si 251.611†	458.3	-4.8	-0.1684 ug/L	-0.1684 ppb	12:04:42
1	Sn 189.927†	7.3	0.9	0.1705 ug/L	0.1705 ppb	12:04:42
1	Ti 334.940†	-1362.7	75.6	0.1236 ug/L	0.1236 ppb	12:04:22
1	Tl 190.801†	-32.5	12.6	4.0332 ug/L	4.0332 ppb	12:04:42
1	U 409.014†	-2040.3	77.4	2.4755 ug/L	2.4755 ppb	12:04:22
1	V 292.402†	-1347.0	110.8	0.8147 ug/L	0.8147 ppb	12:04:22
1	Zn 213.857†	869.2	-23.9	-0.2385 ug/L	-0.2385 ppb	12:04:42
1	SiO2†	451.8	-21.4	-1.5516 ug/L	-1.5516 ppb	12:05:38
2	Sc Radial	5125.1	5125.1	107 %		12:03:30
2	Y RADIAL	5468.2	5468.2	106.6 %		12:03:30
2	Al 396.153Radial†	11.4	13.9	11.122 ug/L	11.122 ppb	12:03:30
2	Ca 317.933Radial†	17.8	1.5	2.5212 ug/L	2.5212 ppb	12:03:50
2	Fe 238.204 Radial†	9.3	-1.2	-11.076 ug/L	-11.076 ppb	12:03:50
2	K 766.490 Radial†	3017.8	33.8	6.7504 ug/L	6.7504 ppb	12:03:30
2	Mg 279.077 IEC†	2.6	0.9	31.858 ug/L	31.858 ppb	12:03:50
2	Na 589.592 Radial†	-1486.0	177.7	57.578 ug/L	57.578 ppb	12:03:30
2	Sr 421.552†	9.6	-8.3	-0.0589 ug/L	-0.0589 ppb	12:03:30
2	Sc 361.383	839886.4	839886.4	103.20 %		12:04:47
2	Y 371.029	707032.6	707032.6	103.07 %		12:04:47
2	Ag 328.068†	330.6	38.8	0.1871 ug/L	0.1871 ppb	12:04:47
2	As 188.979†	-18.1	1.3	0.5708 ug/L	0.5708 ppb	12:05:07
2	B 249.677†	-105.3	416.5	10.139 ug/L	10.139 ppb	12:05:07
2	Ba 233.527†	-6.6	-7.8	-0.0646 ug/L	-0.0646 ppb	12:05:07
2	Be 313.107†	-4336.2	110.4	0.0440 ug/L	0.0440 ppb	12:04:47
2	Cd 226.502†	-179.2	23.9	0.2816 ug/L	0.2816 ppb	12:05:07
2	Co 228.616†	-70.3	4.6	0.1011 ug/L	0.1011 ppb	12:05:07
2	Cr 267.716†	92.3	-6.3	-0.0752 ug/L	-0.0752 ppb	12:05:07
2	Cu 324.752†	6568.7	67.1	0.2127 ug/L	0.2127 ppb	12:04:47
2	Mn 257.610†	389.4	-27.0	-0.0340 ug/L	-0.0340 ppb	12:05:07
2	Mo 202.031†	25.5	5.4	0.4020 ug/L	0.4020 ppb	12:05:07
2	Ni 231.604†	94.2	16.1	0.4248 ug/L	0.4248 ppb	12:05:07



2	P 214.914†	224.8	-10.0	-6.4222 ug/L	-6.4222 ppb	12:05:07
2	Pb 220.353†	-53.2	13.1	1.6766 ug/L	1.6766 ppb	12:05:07
2	S 181.975 Axial†	43.6	-4.2	-6.2772 ug/L	-6.2772 ppb	12:05:07
2	Sb 206.836†	39.0	5.0	1.8512 ug/L	1.8512 ppb	12:05:07
2	Se 196.026†	-24.1	7.0	4.6470 ug/L	4.6470 ppb	12:05:07
2	Si 251.611†	448.7	-11.1	-0.3785 ug/L	-0.3785 ppb	12:05:07
2	Sn 189.927†	10.1	3.7	0.6831 ug/L	0.6831 ppb	12:05:07
2	Ti 334.940†	-1388.1	41.9	0.0689 ug/L	0.0689 ppb	12:04:47
2	Tl 190.801†	-39.4	5.7	1.8298 ug/L	1.8298 ppb	12:05:07
2	U 409.014†	-2053.7	50.9	1.6263 ug/L	1.6263 ppb	12:04:47
2	V 292.402†	-1406.4	44.3	0.3305 ug/L	0.3305 ppb	12:04:47
2	Zn 213.857†	886.0	-1.8	-0.0196 ug/L	-0.0196 ppb	12:05:07
2	SiO2†	440.4	-29.5	-2.1241 ug/L	-2.1241 ppb	12:05:43
3	Sc Radial	5037.6	5037.6	105 %		12:03:55
3	Y RADIAL	5418.8	5418.8	105.6 %		12:03:55
3	Al 396.153Radial†	-20.1	-15.8	-12.742 ug/L	-12.742 ppb	12:03:55
3	Ca 317.933Radial†	14.2	-1.6	-2.7610 ug/L	-2.7610 ppb	12:04:15
3	Fe 238.204 Radial†	10.5	0.1	1.4058 ug/L	1.4058 ppb	12:04:15
3	K 766.490 Radial†	3036.4	100.5	20.115 ug/L	20.115 ppb	12:03:55
3	Mg 279.077 IEC†	0.5	-1.0	-36.847 ug/L	-36.847 ppb	12:04:15
3	Na 589.592 Radial†	-1529.1	112.6	36.494 ug/L	36.494 ppb	12:03:55
3	Sr 421.552†	-4.6	-21.6	-0.1537 ug/L	-0.1537 ppb	12:03:55
3	Sc 361.383	837886.7	837886.7	102.95 %		12:05:12
3	Y 371.029	706163.9	706163.9	102.95 %		12:05:12
3	Ag 328.068†	480.5	185.1	0.9167 ug/L	0.9167 ppb	12:05:12
3	As 188.979†	-17.3	2.1	0.9314 ug/L	0.9314 ppb	12:05:32
3	B 249.677†	-84.3	436.6	10.627 ug/L	10.627 ppb	12:05:32
3	Ba 233.527†	3.5	1.9	0.0188 ug/L	0.0188 ppb	12:05:32
3	Be 313.107†	-4269.0	165.6	0.0656 ug/L	0.0656 ppb	12:05:12
3	Cd 226.502†	-190.1	13.0	0.1513 ug/L	0.1513 ppb	12:05:32
3	Co 228.616†	-72.4	2.4	0.0540 ug/L	0.0540 ppb	12:05:32
3	Cr 267.716†	66.2	-31.5	-0.3686 ug/L	-0.3686 ppb	12:05:32
3	Cu 324.752†	6403.3	-78.3	-0.2489 ug/L	-0.2489 ppb	12:05:12
3	Mn 257.610†	382.4	-32.9	-0.0369 ug/L	-0.0369 ppb	12:05:32
3	Mo 202.031†	31.6	11.4	0.8458 ug/L	0.8458 ppb	12:05:32
3	Ni 231.604†	80.2	2.8	0.0725 ug/L	0.0725 ppb	12:05:32
3	P 214.914†	227.9	-6.5	-4.1238 ug/L	-4.1238 ppb	12:05:32
3	Pb 220.353†	-83.5	-16.5	-2.1149 ug/L	-2.1149 ppb	12:05:32
3	S 181.975 Axial†	51.7	3.7	5.5824 ug/L	5.5824 ppb	12:05:32
3	Sb 206.836†	45.9	11.9	4.3542 ug/L	4.3542 ppb	12:05:32
3	Se 196.026†	-25.0	6.1	4.0962 ug/L	4.0962 ppb	12:05:32
3	Si 251.611†	459.1	0.1	-0.0076 ug/L	-0.0076 ppb	12:05:32
3	Sn 189.927†	3.2	-3.0	-0.5496 ug/L	-0.5496 ppb	12:05:32
3	Ti 334.940†	-1473.7	-44.4	-0.0725 ug/L	-0.0725 ppb	12:05:12
3	Tl 190.801†	-31.4	13.4	4.2913 ug/L	4.2913 ppb	12:05:32
3	U 409.014†	-2165.7	-62.6	-1.9994 ug/L	-1.9994 ppb	12:05:12
3	V 292.402†	-1273.2	170.5	1.2371 ug/L	1.2371 ppb	12:05:12
3	Zn 213.857†	884.9	-0.8	-0.0079 ug/L	-0.0079 ppb	12:05:32
3	SiO2†	460.7	-8.7	-0.6465 ug/L	-0.6465 ppb	12:05:48

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	841155.7	103.35 %	0.498			0.48%
Sc Radial	5067.4	106 %	1.0			0.99%
Y 371.029	708119.2	103.23 %	0.389			0.38%
Y RADIAL	5435.6	106.0 %	0.55			0.52%
Ag 328.068†	128.5	0.6319 ug/L	0.39026	0.6319 ppb	0.39026	61.76%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	-3.2	-2.6040 ug/L	12.33005	-2.6040 ppb	12.33005	473.51%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	3.0	1.3549 ug/L	1.06130	1.3549 ppb	1.06130	78.33%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	410.4	9.9888 ug/L	0.72480	9.9888 ppb	0.72480	7.26%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-5.9	-0.0478 ug/L	0.05992	-0.0478 ppb	0.05992	125.44%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	134.0	0.0533 ug/L	0.01111	0.0533 ppb	0.01111	20.83%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-2.0	-3.3471 ug/L	6.18211	-3.3471 ppb	6.18211	184.70%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated					
Cd 226.502†	16.8	0.1980 ug/L	0.07254	0.1980 ppb	0.07254 36.63%
QC value within limits for Cd 226.502 Recovery = Not calculated					
Co 228.616†	2.3	0.0506 ug/L	0.05225	0.0506 ppb	0.05225 103.30%
QC value within limits for Co 228.616 Recovery = Not calculated					
Cr 267.716†	-25.5	-0.3002 ug/L	0.19976	-0.3002 ppb	0.19976 66.55%
QC value within limits for Cr 267.716 Recovery = Not calculated					
Cu 324.752†	-7.1	-0.0235 ug/L	0.23099	-0.0235 ppb	0.23099 981.03%
QC value within limits for Cu 324.752 Recovery = Not calculated					
Fe 238.204 Radial†	-0.7	-6.6840 ug/L	7.01461	-6.6840 ppb	7.01461 104.95%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated					
K 766.490 Radial†	111.9	22.405 ug/L	16.9156	22.405 ppb	16.9156 75.50%
QC value within limits for K 766.490 Radial Recovery = Not calculated					
Mg 279.077 IEC†	0.4	14.276 ug/L	44.9872	14.276 ppb	44.9872 315.12%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated					
Mn 257.610†	-26.1	-0.0319 ug/L	0.00630	-0.0319 ppb	0.00630 19.76%
QC value within limits for Mn 257.610 Recovery = Not calculated					
Mo 202.031†	8.2	0.6080 ug/L	0.22359	0.6080 ppb	0.22359 36.78%
QC value within limits for Mo 202.031 Recovery = Not calculated					
Na 589.592 Radial†	124.9	40.469 ug/L	15.5080	40.469 ppb	15.5080 38.32%
QC value within limits for Na 589.592 Radial Recovery = Not calculated					
Ni 231.604†	9.5	0.2493 ug/L	0.17612	0.2493 ppb	0.17612 70.65%
QC value within limits for Ni 231.604 Recovery = Not calculated					
P 214.914†	-11.8	-7.5276 ug/L	4.07075	-7.5276 ppb	4.07075 54.08%
QC value within limits for P 214.914 Recovery = Not calculated					
Pb 220.353†	0.7	0.0891 ug/L	1.96951	0.0891 ppb	1.96951 >999.9%
QC value within limits for Pb 220.353 Recovery = Not calculated					
S 181.975 Axial†	1.9	2.8730 ug/L	8.14105	2.8730 ppb	8.14105 283.36%
QC value within limits for S 181.975 Axial Recovery = Not calculated					
Sb 206.836†	6.6	2.4112 ug/L	1.73227	2.4112 ppb	1.73227 71.84%
QC value within limits for Sb 206.836 Recovery = Not calculated					
Se 196.026†	4.3	2.8677 ug/L	2.61939	2.8677 ppb	2.61939 91.34%
QC value within limits for Se 196.026 Recovery = Not calculated					
Si 251.611†	-5.3	-0.1848 ug/L	0.18602	-0.1848 ppb	0.18602 100.65%
QC value within limits for Si 251.611 Recovery = Not calculated					
Sn 189.927†	0.6	0.1013 ug/L	0.61928	0.1013 ppb	0.61928 611.23%
QC value within limits for Sn 189.927 Recovery = Not calculated					
Sr 421.552†	-20.4	-0.1450 ug/L	0.08214	-0.1450 ppb	0.08214 56.63%
QC value within limits for Sr 421.552 Recovery = Not calculated					
Ti 334.940†	24.4	0.0400 ug/L	0.10118	0.0400 ppb	0.10118 253.00%
QC value within limits for Ti 334.940 Recovery = Not calculated					
Tl 190.801†	10.6	3.3848 ug/L	1.35283	3.3848 ppb	1.35283 39.97%
QC value within limits for Tl 190.801 Recovery = Not calculated					
U 409.014†	21.9	0.7008 ug/L	2.37669	0.7008 ppb	2.37669 339.14%
QC value within limits for U 409.014 Recovery = Not calculated					
V 292.402†	108.5	0.7941 ug/L	0.45365	0.7941 ppb	0.45365 57.13%
QC value within limits for V 292.402 Recovery = Not calculated					
Zn 213.857†	-8.8	-0.0886 ug/L	0.12988	-0.0886 ppb	0.12988 146.52%
QC value within limits for Zn 213.857 Recovery = Not calculated					
SiO2†	-19.9	-1.4407 ug/L	0.74504	-1.4407 ppb	0.74504 51.71%
QC value within limits for SiO2 Recovery = Not calculated					
All analyte(s) passed QC.					



Sequence No.: 13

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/14/2010 12:56:37

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5080.6	5080.6	106 %		12:58:29
1	Y RADIAL	5380.4	5380.4	104.9 %		12:58:29
1	Al 396.153Radial†	6507.0	6139.8	4901.0 ug/L	4901.0 ppb	12:58:29
1	Ca 317.933Radial†	3156.1	2961.3	4986.6 ug/L	4986.6 ppb	12:58:49
1	Fe 238.204 Radial†	597.4	553.5	5218.4 ug/L	5218.4 ppb	12:58:49
1	K 766.490 Radial†	29634.5	25159.8	5034.1 ug/L	5034.1 ppb	12:58:29
1	Mg 279.077 IEC†	159.2	148.6	5216.5 ug/L	5216.5 ppb	12:58:49
1	Na 589.592 Radial†	32363.8	32088.0	10397 ug/L	10397 ppb	12:58:29
1	Sr 421.552†	76641.7	72260.7	515.03 ug/L	515.03 ppb	12:58:29
1	Sc 361.383	849249.7	849249.7	104.35 %		12:59:46
1	Y 371.029	702077.5	702077.5	102.35 %		12:59:46
1	Ag 328.068†	105680.6	100995.8	499.42 ug/L	499.42 ppb	12:59:52
1	As 188.979†	1158.5	1129.1	512.54 ug/L	512.54 ppb	13:00:12
1	B 249.677†	21496.9	21119.8	511.71 ug/L	511.71 ppb	12:59:52
1	Ba 233.527†	64066.6	61395.8	510.36 ug/L	510.36 ppb	12:59:52
1	Be 313.107†	1328516.2	1277475.7	508.52 ug/L	508.52 ppb	12:59:46
1	Cd 226.502†	45474.6	43777.4	512.98 ug/L	512.98 ppb	12:59:52
1	Co 228.616†	24661.8	23707.0	514.92 ug/L	514.92 ppb	12:59:52
1	Cr 267.716†	44904.7	42938.0	507.18 ug/L	507.18 ppb	12:59:52
1	Cu 324.752†	172012.6	158547.6	506.11 ug/L	506.11 ppb	12:59:52
1	Mn 257.610†	451814.7	432585.5	507.57 ug/L	507.57 ppb	12:59:46
1	Mo 202.031†	7168.7	6850.7	509.00 ug/L	509.00 ppb	13:00:12
1	Ni 231.604†	20328.4	19406.3	510.55 ug/L	510.55 ppb	12:59:52
1	P 214.914†	4426.4	4014.1	2463.1 ug/L	2463.1 ppb	13:00:12
1	Pb 220.353†	4085.9	3980.2	511.43 ug/L	511.43 ppb	13:00:12
1	S 181.975 Axial†	760.9	682.7	1018.0 ug/L	1018.0 ppb	13:00:12
1	Sb 206.836†	1483.8	1389.2	526.22 ug/L	526.22 ppb	13:00:12
1	Se 196.026†	802.3	799.2	553.36 ug/L	553.36 ppb	13:00:12
1	Si 251.611†	80538.0	76736.5	2581.0 ug/L	2581.0 ppb	12:59:52
1	Sn 189.927†	2891.9	2765.3	512.24 ug/L	512.24 ppb	13:00:12
1	Ti 334.940†	305591.4	294245.9	504.62 ug/L	504.62 ppb	12:59:52
1	Tl 190.801†	1621.2	1597.5	514.42 ug/L	514.42 ppb	13:00:12
1	U 409.014†	14944.0	16362.3	520.84 ug/L	520.84 ppb	12:59:52
1	V 292.402†	71858.1	70271.3	513.74 ug/L	513.74 ppb	12:59:52
1	Zn 213.857†	54888.1	51740.8	511.58 ug/L	511.58 ppb	12:59:52
1	SiO2†	79966.4	76178.4	5447.5 ug/L	5447.5 ppb	13:01:19
2	Sc Radial	5092.3	5092.3	106 %		12:58:54
2	Y RADIAL	5383.9	5383.9	105.0 %		12:58:54
2	Al 396.153Radial†	6534.5	6151.5	4910.5 ug/L	4910.5 ppb	12:58:54
2	Ca 317.933Radial†	3190.1	2986.4	5028.9 ug/L	5028.9 ppb	12:59:14
2	Fe 238.204 Radial†	599.8	554.5	5228.2 ug/L	5228.2 ppb	12:59:14
2	K 766.490 Radial†	29776.8	25229.3	5048.0 ug/L	5048.0 ppb	12:58:54
2	Mg 279.077 IEC†	160.4	149.4	5244.6 ug/L	5244.6 ppb	12:59:14
2	Na 589.592 Radial†	32318.8	31975.4	10360 ug/L	10360 ppb	12:58:54
2	Sr 421.552†	76821.6	72263.4	515.05 ug/L	515.05 ppb	12:58:54
2	Sc 361.383	853746.4	853746.4	104.90 %		13:00:17
2	Y 371.029	704533.1	704533.1	102.71 %		13:00:17
2	Ag 328.068†	106314.8	101066.9	499.78 ug/L	499.78 ppb	13:00:23
2	As 188.979†	1162.7	1127.2	511.73 ug/L	511.73 ppb	13:00:43
2	B 249.677†	21883.9	21380.2	518.04 ug/L	518.04 ppb	13:00:23
2	Ba 233.527†	64755.6	61729.2	513.13 ug/L	513.13 ppb	13:00:23
2	Be 313.107†	1327782.3	1270070.3	505.59 ug/L	505.59 ppb	13:00:17
2	Cd 226.502†	45921.1	43973.6	515.28 ug/L	515.28 ppb	13:00:23
2	Co 228.616†	24876.5	23787.2	516.65 ug/L	516.65 ppb	13:00:23
2	Cr 267.716†	45315.6	43103.1	509.13 ug/L	509.13 ppb	13:00:23
2	Cu 324.752†	174499.0	160049.6	510.91 ug/L	510.91 ppb	13:00:23
2	Mn 257.610†	452811.9	431255.5	506.01 ug/L	506.01 ppb	13:00:17
2	Mo 202.031†	7169.8	6815.6	506.39 ug/L	506.39 ppb	13:00:43
2	Ni 231.604†	20527.6	19493.5	512.84 ug/L	512.84 ppb	13:00:23



2	P 214.914†	4389.3	3956.4	2425.3 ug/L	2425.3 ppb	13:00:43
2	Pb 220.353†	4045.7	3921.3	503.88 ug/L	503.88 ppb	13:00:43
2	S 181.975 Axial†	781.7	698.7	1041.9 ug/L	1041.9 ppb	13:00:43
2	Sb 206.836†	1482.1	1380.1	522.77 ug/L	522.77 ppb	13:00:43
2	Se 196.026†	782.4	776.3	538.04 ug/L	538.04 ppb	13:00:43
2	Si 251.611†	81597.1	77339.6	2601.4 ug/L	2601.4 ppb	13:00:23
2	Sn 189.927†	2887.0	2746.0	508.69 ug/L	508.69 ppb	13:00:43
2	Ti 334.940†	309321.3	296259.1	508.08 ug/L	508.08 ppb	13:00:23
2	Tl 190.801†	1621.9	1590.0	512.04 ug/L	512.04 ppb	13:00:43
2	U 409.014†	15111.5	16446.5	523.53 ug/L	523.53 ppb	13:00:23
2	V 292.402†	72592.8	70608.9	516.14 ug/L	516.14 ppb	13:00:23
2	Zn 213.857†	55389.3	51941.6	513.56 ug/L	513.56 ppb	13:00:23
2	SiO2†	80432.2	76218.8	5450.5 ug/L	5450.5 ppb	13:01:24
3	Sc Radial	5142.0	5142.0	107 %		12:59:19
3	Y RADIAL	5465.4	5465.4	106.5 %		12:59:19
3	Al 396.153Radial†	6633.0	6183.8	4936.6 ug/L	4936.6 ppb	12:59:19
3	Ca 317.933Radial†	3165.0	2934.0	4940.7 ug/L	4940.7 ppb	12:59:39
3	Fe 238.204 Radial†	594.2	543.8	5127.6 ug/L	5127.6 ppb	12:59:39
3	K 766.490 Radial†	30044.7	25208.2	5043.8 ug/L	5043.8 ppb	12:59:19
3	Mg 279.077 IEC†	163.3	150.7	5289.9 ug/L	5289.9 ppb	12:59:39
3	Na 589.592 Radial†	32594.9	31938.9	10348 ug/L	10348 ppb	12:59:19
3	Sr 421.552†	77620.7	72309.7	515.38 ug/L	515.38 ppb	12:59:19
3	Sc 361.383	856662.7	856662.7	105.26 %		13:00:48
3	Y 371.029	708557.2	708557.2	103.29 %		13:00:48
3	Ag 328.068†	107652.8	101993.2	504.30 ug/L	504.30 ppb	13:00:53
3	As 188.979†	1159.2	1120.1	508.50 ug/L	508.50 ppb	13:01:14
3	B 249.677†	21767.1	21198.2	513.63 ug/L	513.63 ppb	13:00:53
3	Ba 233.527†	64600.5	61371.7	510.16 ug/L	510.16 ppb	13:00:53
3	Be 313.107†	1335950.0	1273521.1	506.95 ug/L	506.95 ppb	13:00:48
3	Cd 226.502†	45973.1	43874.0	514.12 ug/L	514.12 ppb	13:00:53
3	Co 228.616†	24867.3	23697.7	514.71 ug/L	514.71 ppb	13:00:53
3	Cr 267.716†	45301.7	42942.8	507.24 ug/L	507.24 ppb	13:00:53
3	Cu 324.752†	173686.9	158711.8	506.64 ug/L	506.64 ppb	13:00:53
3	Mn 257.610†	453916.2	430835.3	505.50 ug/L	505.50 ppb	13:00:48
3	Mo 202.031†	7171.4	6793.8	504.77 ug/L	504.77 ppb	13:01:14
3	Ni 231.604†	20545.3	19443.8	511.53 ug/L	511.53 ppb	13:00:53
3	P 214.914†	4394.1	3946.7	2420.1 ug/L	2420.1 ppb	13:01:14
3	Pb 220.353†	4055.2	3917.2	503.37 ug/L	503.37 ppb	13:01:14
3	S 181.975 Axial†	770.4	685.5	1022.1 ug/L	1022.1 ppb	13:01:14
3	Sb 206.836†	1490.2	1383.0	523.78 ug/L	523.78 ppb	13:01:14
3	Se 196.026†	792.3	783.0	542.24 ug/L	542.24 ppb	13:01:14
3	Si 251.611†	81272.0	76765.9	2582.1 ug/L	2582.1 ppb	13:00:53
3	Sn 189.927†	2894.7	2743.9	508.29 ug/L	508.29 ppb	13:01:14
3	Ti 334.940†	308645.2	294613.0	505.24 ug/L	505.24 ppb	13:00:53
3	Tl 190.801†	1610.6	1574.1	506.92 ug/L	506.92 ppb	13:01:14
3	U 409.014†	14887.3	16184.6	515.18 ug/L	515.18 ppb	13:00:53
3	V 292.402†	72649.4	70427.2	514.81 ug/L	514.81 ppb	13:00:53
3	Zn 213.857†	55308.3	51684.9	511.03 ug/L	511.03 ppb	13:00:53
3	SiO2†	79701.5	75263.6	5382.1 ug/L	5382.1 ppb	13:01:29

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	853219.6	104.84 %	0.459			0.44%
Sc Radial	5105.0	107 %	0.7			0.64%
Y 371.029	705055.9	102.78 %	0.477			0.46%
Y RADIAL	5409.9	105.5 %	0.94			0.89%
Ag 328.068†	101352.0	501.17 ug/L	2.720	501.17 ppb	2.720	0.54%
QC value within limits for Ag 328.068 Recovery = 100.23%						
Al 396.153Radial†	6158.4	4916.1 ug/L	18.40	4916.1 ppb	18.40	0.37%
QC value within limits for Al 396.153Radial Recovery = 98.32%						
As 188.979†	1125.5	510.92 ug/L	2.139	510.92 ppb	2.139	0.42%
QC value within limits for As 188.979 Recovery = 102.18%						
B 249.677†	21232.7	514.46 ug/L	3.246	514.46 ppb	3.246	0.63%
QC value within limits for B 249.677 Recovery = 102.89%						
Ba 233.527†	61498.9	511.22 ug/L	1.660	511.22 ppb	1.660	0.32%
QC value within limits for Ba 233.527 Recovery = 102.24%						
Be 313.107†	1273689.0	507.02 ug/L	1.468	507.02 ppb	1.468	0.29%
QC value within limits for Be 313.107 Recovery = 101.40%						
Ca 317.933Radial†	2960.6	4985.4 ug/L	44.12	4985.4 ppb	44.12	0.89%



QC value within limits for Ca 317.933 Radial Recovery = 99.71%

Cd 226.502†	43875.0	514.12 ug/L	1.150	514.12 ppb	1.150	0.22%
QC value within limits for Cd 226.502 Recovery = 102.82%						
Co 228.616†	23730.6	515.42 ug/L	1.064	515.42 ppb	1.064	0.21%
QC value within limits for Co 228.616 Recovery = 103.08%						
Cr 267.716†	42994.6	507.85 ug/L	1.109	507.85 ppb	1.109	0.22%
QC value within limits for Cr 267.716 Recovery = 101.57%						
Cu 324.752†	159103.0	507.89 ug/L	2.630	507.89 ppb	2.630	0.52%
QC value within limits for Cu 324.752 Recovery = 101.58%						
Fe 238.204 Radial†	550.6	5191.4 ug/L	55.45	5191.4 ppb	55.45	1.07%
QC value within limits for Fe 238.204 Radial Recovery = 103.83%						
K 766.490 Radial†	25199.1	5042.0 ug/L	7.15	5042.0 ppb	7.15	0.14%
QC value within limits for K 766.490 Radial Recovery = 100.84%						
Mg 279.077 IEC†	149.6	5250.3 ug/L	37.00	5250.3 ppb	37.00	0.70%
QC value within limits for Mg 279.077 IEC Recovery = 105.01%						
Mn 257.610†	431558.8	506.36 ug/L	1.076	506.36 ppb	1.076	0.21%
QC value within limits for Mn 257.610 Recovery = 101.27%						
Mo 202.031†	6820.0	506.72 ug/L	2.134	506.72 ppb	2.134	0.42%
QC value within limits for Mo 202.031 Recovery = 101.34%						
Na 589.592 Radial†	32000.8	10368 ug/L	25.2	10368 ppb	25.2	0.24%
QC value within limits for Na 589.592 Radial Recovery = 103.68%						
Ni 231.604†	19447.9	511.64 ug/L	1.152	511.64 ppb	1.152	0.23%
QC value within limits for Ni 231.604 Recovery = 102.33%						
P 214.914†	3972.4	2436.2 ug/L	23.49	2436.2 ppb	23.49	0.96%
QC value within limits for P 214.914 Recovery = 97.45%						
Pb 220.353†	3939.5	506.22 ug/L	4.518	506.22 ppb	4.518	0.89%
QC value within limits for Pb 220.353 Recovery = 101.24%						
S 181.975 Axial†	689.0	1027.3 ug/L	12.78	1027.3 ppb	12.78	1.24%
QC value within limits for S 181.975 Axial Recovery = 102.73%						
Sb 206.836†	1384.1	524.26 ug/L	1.769	524.26 ppb	1.769	0.34%
QC value within limits for Sb 206.836 Recovery = 104.85%						
Se 196.026†	786.2	544.55 ug/L	7.919	544.55 ppb	7.919	1.45%
QC value within limits for Se 196.026 Recovery = 108.91%						
Si 251.611†	76947.3	2588.2 ug/L	11.47	2588.2 ppb	11.47	0.44%
QC value within limits for Si 251.611 Recovery = 103.53%						
Sn 189.927†	2751.7	509.74 ug/L	2.174	509.74 ppb	2.174	0.43%
QC value within limits for Sn 189.927 Recovery = 101.95%						
Sr 421.552†	72277.9	515.15 ug/L	0.197	515.15 ppb	0.197	0.04%
QC value within limits for Sr 421.552 Recovery = 103.03%						
Ti 334.940†	295039.3	505.98 ug/L	1.842	505.98 ppb	1.842	0.36%
QC value within limits for Ti 334.940 Recovery = 101.20%						
Tl 190.801†	1587.2	511.13 ug/L	3.833	511.13 ppb	3.833	0.75%
QC value within limits for Tl 190.801 Recovery = 102.23%						
U 409.014†	16331.1	519.85 ug/L	4.263	519.85 ppb	4.263	0.82%
QC value within limits for U 409.014 Recovery = 103.97%						
V 292.402†	70435.8	514.90 ug/L	1.202	514.90 ppb	1.202	0.23%
QC value within limits for V 292.402 Recovery = 102.98%						
Zn 213.857†	51789.1	512.06 ug/L	1.333	512.06 ppb	1.333	0.26%
QC value within limits for Zn 213.857 Recovery = 102.41%						
SiO2†	75886.9	5426.7 ug/L	38.68	5426.7 ppb	38.68	0.71%
QC value within limits for SiO2 Recovery = 101.48%						

All analyte(s) passed QC.



Sequence No.: 14

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/14/2010 13:03:39

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4987.0	4987.0	104 %		13:05:32
1	Y RADIAL	5370.5	5370.5	104.7 %		13:05:32
1	Al 396.153Radial†	8.8	11.7	9.3202 ug/L	9.3202 ppb	13:05:32
1	Ca 317.933Radial†	14.3	-1.4	-2.3378 ug/L	-2.3378 ppb	13:05:52
1	Fe 238.204 Radial†	10.0	-0.3	-2.9480 ug/L	-2.9480 ppb	13:05:52
1	K 766.490 Radial†	3048.2	141.1	28.234 ug/L	28.234 ppb	13:05:32
1	Mg 279.077 IEC†	2.6	0.9	33.258 ug/L	33.258 ppb	13:05:52
1	Na 589.592 Radial†	-1312.7	305.7	99.050 ug/L	99.050 ppb	13:05:32
1	Sr 421.552†	19.4	1.4	0.0101 ug/L	0.0101 ppb	13:05:32
1	Sc 361.383	827537.7	827537.7	101.68 %		13:06:49
1	Y 371.029	696029.9	696029.9	101.47 %		13:06:49
1	Ag 328.068†	481.6	192.1	0.9458 ug/L	0.9458 ppb	13:06:49
1	As 188.979†	-21.3	-2.1	-0.9391 ug/L	-0.9391 ppb	13:07:09
1	B 249.677†	-247.9	274.7	6.6860 ug/L	6.6860 ppb	13:07:09
1	Ba 233.527†	-7.7	-9.0	-0.0739 ug/L	-0.0739 ppb	13:07:09
1	Be 313.107†	-4347.7	36.4	0.0150 ug/L	0.0150 ppb	13:06:49
1	Cd 226.502†	-175.2	25.3	0.2965 ug/L	0.2965 ppb	13:07:09
1	Co 228.616†	-74.1	-0.2	-0.0022 ug/L	-0.0022 ppb	13:07:09
1	Cr 267.716†	69.8	-27.1	-0.3183 ug/L	-0.3183 ppb	13:07:09
1	Cu 324.752†	6445.9	41.4	0.1325 ug/L	0.1325 ppb	13:06:49
1	Mn 257.610†	380.2	-30.4	-0.0373 ug/L	-0.0373 ppb	13:07:09
1	Mo 202.031†	31.9	12.1	0.8965 ug/L	0.8965 ppb	13:07:09
1	Ni 231.604†	88.1	11.5	0.3039 ug/L	0.3039 ppb	13:07:09
1	P 214.914†	221.7	-9.8	-6.2871 ug/L	-6.2871 ppb	13:07:09
1	Pb 220.353†	-68.7	-3.0	-0.3809 ug/L	-0.3809 ppb	13:07:09
1	S 181.975 Axial†	43.7	-3.5	-5.1640 ug/L	-5.1640 ppb	13:07:09
1	Sb 206.836†	37.9	4.5	1.6848 ug/L	1.6848 ppb	13:07:09
1	Se 196.026†	-31.4	-0.5	-0.3561 ug/L	-0.3561 ppb	13:07:09
1	Si 251.611†	436.3	-16.8	-0.5763 ug/L	-0.5763 ppb	13:07:09
1	Sn 189.927†	7.7	1.5	0.2716 ug/L	0.2716 ppb	13:07:09
1	Ti 334.940†	-1259.2	148.6	0.2525 ug/L	0.2525 ppb	13:06:49
1	Tl 190.801†	-26.9	17.4	5.5829 ug/L	5.5829 ppb	13:07:09
1	U 409.014†	-2107.1	-31.4	-1.0007 ug/L	-1.0007 ppb	13:06:49
1	V 292.402†	-1352.1	77.4	0.5701 ug/L	0.5701 ppb	13:06:49
1	Zn 213.857†	852.9	-21.5	-0.2164 ug/L	-0.2164 ppb	13:07:09
1	SiO2†	447.0	-16.6	-1.2124 ug/L	-1.2124 ppb	13:08:05
2	Sc Radial	5127.0	5127.0	107 %		13:05:57
2	Y RADIAL	5537.0	5537.0	107.9 %		13:05:57
2	Al 396.153Radial†	10.7	13.3	10.608 ug/L	10.608 ppb	13:05:57
2	Ca 317.933Radial†	12.9	-3.1	-5.2095 ug/L	-5.2095 ppb	13:06:17
2	Fe 238.204 Radial†	11.9	1.2	11.585 ug/L	11.585 ppb	13:06:17
2	K 766.490 Radial†	2916.5	-61.9	-12.438 ug/L	-12.438 ppb	13:05:57
2	Mg 279.077 IEC†	4.1	2.3	81.643 ug/L	81.643 ppb	13:06:17
2	Na 589.592 Radial†	-1370.2	286.5	92.818 ug/L	92.818 ppb	13:05:57
2	Sr 421.552†	4.5	-13.0	-0.0924 ug/L	-0.0924 ppb	13:05:57
2	Sc 361.383	850529.5	850529.5	104.50 %		13:07:14
2	Y 371.029	714886.0	714886.0	104.22 %		13:07:14
2	Ag 328.068†	392.9	94.4	0.4665 ug/L	0.4665 ppb	13:07:14
2	As 188.979†	-22.0	-2.2	-0.9730 ug/L	-0.9730 ppb	13:07:34
2	B 249.677†	-232.7	295.9	7.1993 ug/L	7.1993 ppb	13:07:34
2	Ba 233.527†	-13.3	-14.2	-0.1155 ug/L	-0.1155 ppb	13:07:34
2	Be 313.107†	-4394.5	107.2	0.0429 ug/L	0.0429 ppb	13:07:14
2	Cd 226.502†	-170.2	34.7	0.4064 ug/L	0.4064 ppb	13:07:34
2	Co 228.616†	-77.6	-1.6	-0.0323 ug/L	-0.0323 ppb	13:07:34
2	Cr 267.716†	87.4	-12.1	-0.1431 ug/L	-0.1431 ppb	13:07:34
2	Cu 324.752†	6299.7	-269.9	-0.8644 ug/L	-0.8644 ppb	13:07:14
2	Mn 257.610†	436.2	13.1	0.0132 ug/L	0.0132 ppb	13:07:34
2	Mo 202.031†	32.6	11.9	0.8820 ug/L	0.8820 ppb	13:07:34
2	Ni 231.604†	82.1	3.4	0.0894 ug/L	0.0894 ppb	13:07:34



2	P 214.914†	231.5	-6.4	-3.9080 ug/L	-3.9080 ppb	13:07:34
2	Pb 220.353†	-64.5	2.8	0.3673 ug/L	0.3673 ppb	13:07:34
2	S 181.975 Axial†	51.0	2.4	3.5500 ug/L	3.5500 ppb	13:07:34
2	Sb 206.836†	45.1	10.4	3.8114 ug/L	3.8114 ppb	13:07:34
2	Se 196.026†	-32.6	-0.9	-0.5380 ug/L	-0.5380 ppb	13:07:34
2	Si 251.611†	454.4	-11.1	-0.3854 ug/L	-0.3854 ppb	13:07:34
2	Sn 189.927†	3.1	-3.2	-0.5836 ug/L	-0.5836 ppb	13:07:34
2	Ti 334.940†	-1368.4	77.6	0.1232 ug/L	0.1232 ppb	13:07:14
2	Tl 190.801†	-30.8	14.4	4.6029 ug/L	4.6029 ppb	13:07:34
2	U 409.014†	-1932.3	191.9	6.1290 ug/L	6.1290 ppb	13:07:14
2	V 292.402†	-1328.5	135.9	1.0044 ug/L	1.0044 ppb	13:07:14
2	Zn 213.857†	860.7	-36.7	-0.3666 ug/L	-0.3666 ppb	13:07:34
2	SiO2†	483.1	6.1	0.4101 ug/L	0.4101 ppb	13:08:10
3	Sc Radial	5101.5	5101.5	106 %		13:06:22
3	Y RADIAL	5480.6	5480.6	106.8 %		13:06:22
3	Al 396.153Radial†	-4.9	-1.4	-1.0971 ug/L	-1.0971 ppb	13:06:22
3	Ca 317.933Radial†	16.0	-0.1	-0.1339 ug/L	-0.1339 ppb	13:06:42
3	Fe 238.204 Radial†	9.7	-0.8	-7.4898 ug/L	-7.4898 ppb	13:06:42
3	K 766.490 Radial†	2946.3	-20.3	-4.1110 ug/L	-4.1110 ppb	13:06:22
3	Mg 279.077 IEC†	3.2	1.5	53.318 ug/L	53.318 ppb	13:06:42
3	Na 589.592 Radial†	-1243.5	399.1	129.30 ug/L	129.30 ppb	13:06:22
3	Sr 421.552†	16.0	-2.2	-0.0155 ug/L	-0.0155 ppb	13:06:22
3	Sc 361.383	854914.3	854914.3	105.04 %		13:07:39
3	Y 371.029	718778.0	718778.0	104.78 %		13:07:39
3	Ag 328.068†	370.7	71.3	0.3440 ug/L	0.3440 ppb	13:07:39
3	As 188.979†	-17.3	2.4	1.0608 ug/L	1.0608 ppb	13:07:59
3	B 249.677†	-237.0	292.9	7.1295 ug/L	7.1295 ppb	13:07:59
3	Ba 233.527†	-10.5	-11.5	-0.0946 ug/L	-0.0946 ppb	13:07:59
3	Be 313.107†	-4327.1	192.9	0.0773 ug/L	0.0773 ppb	13:07:39
3	Cd 226.502†	-179.8	26.4	0.3113 ug/L	0.3113 ppb	13:07:59
3	Co 228.616†	-76.0	0.3	0.0068 ug/L	0.0068 ppb	13:07:59
3	Cr 267.716†	83.6	-16.2	-0.1929 ug/L	-0.1929 ppb	13:07:59
3	Cu 324.752†	6412.3	-193.6	-0.6222 ug/L	-0.6222 ppb	13:07:39
3	Mn 257.610†	407.8	-16.0	-0.0217 ug/L	-0.0217 ppb	13:07:59
3	Mo 202.031†	18.8	-1.4	-0.1081 ug/L	-0.1081 ppb	13:07:59
3	Ni 231.604†	84.6	5.4	0.1431 ug/L	0.1431 ppb	13:07:59
3	P 214.914†	218.0	-20.4	-12.856 ug/L	-12.856 ppb	13:07:59
3	Pb 220.353†	-56.3	11.0	1.4107 ug/L	1.4107 ppb	13:07:59
3	S 181.975 Axial†	41.3	-7.1	-10.600 ug/L	-10.600 ppb	13:07:59
3	Sb 206.836†	39.9	5.3	1.9291 ug/L	1.9291 ppb	13:07:59
3	Se 196.026†	-25.8	5.8	3.8715 ug/L	3.8715 ppb	13:07:59
3	Si 251.611†	444.8	-22.4	-0.7545 ug/L	-0.7545 ppb	13:07:59
3	Sn 189.927†	9.8	3.2	0.5928 ug/L	0.5928 ppb	13:07:59
3	Ti 334.940†	-1283.1	165.5	0.2766 ug/L	0.2766 ppb	13:07:39
3	Tl 190.801†	-35.3	10.3	3.3075 ug/L	3.3075 ppb	13:07:59
3	U 409.014†	-1918.3	214.8	6.8610 ug/L	6.8610 ppb	13:07:39
3	V 292.402†	-1424.5	51.0	0.3814 ug/L	0.3814 ppb	13:07:39
3	Zn 213.857†	870.7	-31.4	-0.3126 ug/L	-0.3126 ppb	13:07:59
3	SiO2†	467.5	-11.2	-0.7987 ug/L	-0.7987 ppb	13:08:15

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	844327.2	103.74 %	1.807			1.74%
Sc Radial	5071.8	106 %	1.6			1.47%
Y 371.029	709898.0	103.49 %	1.774			1.71%
Y RADIAL	5462.7	106.5 %	1.65			1.55%
Ag 328.068†	119.3	0.5854 ug/L	0.31803	0.5854 ppb	0.31803	54.33%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	7.9	6.2771 ug/L	6.41864	6.2771 ppb	6.41864	102.26%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-0.6	-0.2838 ug/L	1.16453	-0.2838 ppb	1.16453	410.36%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	287.8	7.0049 ug/L	0.27842	7.0049 ppb	0.27842	3.97%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-11.6	-0.0947 ug/L	0.02083	-0.0947 ppb	0.02083	22.01%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	112.2	0.0451 ug/L	0.03118	0.0451 ppb	0.03118	69.19%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-1.5	-2.5604 ug/L	2.54515	-2.5604 ppb	2.54515	99.40%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	28.8	0.3381 ug/L	0.05966	0.3381 ppb	0.05966	17.65%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	-0.5	-0.0093 ug/L	0.02048	-0.0093 ppb	0.02048	220.99%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	-18.4	-0.2181 ug/L	0.09028	-0.2181 ppb	0.09028	41.39%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	-140.7	-0.4513 ug/L	0.51994	-0.4513 ppb	0.51994	115.20%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	0.0	0.3822 ug/L	9.96375	0.3822 ppb	9.96375	>999.9%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	19.6	3.8950 ug/L	21.48524	3.8950 ppb	21.48524	551.61%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	1.6	56.073 ug/L	24.3103	56.073 ppb	24.3103	43.35%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	-11.1	-0.0153 ug/L	0.02586	-0.0153 ppb	0.02586	169.23%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	7.5	0.5568 ug/L	0.57588	0.5568 ppb	0.57588	103.43%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	330.4	107.06 ug/L	19.514	107.06 ppb	19.514	18.23%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	6.8	0.1788 ug/L	0.11161	0.1788 ppb	0.11161	62.42%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-12.2	-7.6838 ug/L	4.63482	-7.6838 ppb	4.63482	60.32%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	3.6	0.4657 ug/L	0.89983	0.4657 ppb	0.89983	193.21%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	-2.7	-4.0713 ug/L	7.13795	-4.0713 ppb	7.13795	175.32%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	6.7	2.4751 ug/L	1.16372	2.4751 ppb	1.16372	47.02%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	1.5	0.9925 ug/L	2.49497	0.9925 ppb	2.49497	251.38%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	-16.8	-0.5721 ug/L	0.18458	-0.5721 ppb	0.18458	32.26%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	0.5	0.0936 ug/L	0.60806	0.0936 ppb	0.60806	649.65%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	-4.6	-0.0326 ug/L	0.05335	-0.0326 ppb	0.05335	163.58%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	130.6	0.2174 ug/L	0.08252	0.2174 ppb	0.08252	37.96%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	14.1	4.4978 ug/L	1.14135	4.4978 ppb	1.14135	25.38%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	125.1	3.9964 ug/L	4.34310	3.9964 ppb	4.34310	108.67%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	88.1	0.6520 ug/L	0.31950	0.6520 ppb	0.31950	49.01%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	-29.9	-0.2985 ug/L	0.07610	-0.2985 ppb	0.07610	25.49%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		-7.2	-0.5336 ug/L	0.84312	-0.5336 ppb	0.84312	157.99%		
QC value within limits for SiO2 Recovery = Not calculated									

All analyte(s) passed QC.



User canceled analysis.

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Analysis Begun

Start Time: 1/14/2010 14:19:45

Plasma On Time: 1/11/2010 06:15:31

Logged In Analyst: Optima3

Technique: ICP Continuous

Spectrometer Model: Optima 5300 DV, S/N 077C7090601Autosampler Model: S10

Sample Information File: C:\pe\Optima3\Sample Information\011410.sif

Batch ID:

Results Data Set: 011410

Results Library: C:\pe\Optima3\Results\Results.mdb

Sequence No.: 8

Autosampler Location: 7

Sample ID: CCV

Date Collected: 1/14/2010 14:19:46

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

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Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5299.2	5299.2	111 %		14:21:38
1	Y RADIAL	5597.1	5597.1	109.1 %		14:21:38
1	Al 396.153Radial†	6499.8	5880.1	4693.7 ug/L	4693.7 ppb	14:21:38
1	Ca 317.933Radial†	3184.5	2864.2	4823.1 ug/L	4823.1 ppb	14:21:58
1	Fe 238.204 Radial†	593.9	527.1	4969.9 ug/L	4969.9 ppb	14:21:58
1	K 766.490 Radial†	29695.7	24062.2	4814.5 ug/L	4814.5 ppb	14:21:38
1	Mg 279.077 IEC†	157.3	140.7	4938.7 ug/L	4938.7 ppb	14:21:58
1	Na 589.592 Radial†	32039.0	30535.3	9893.6 ug/L	9893.6 ppb	14:21:38
1	Sr 421.552†	76899.3	69512.1	495.44 ug/L	495.44 ppb	14:21:38
1	Sc 361.383	884305.8	884305.8	108.66 %		14:22:56
1	Y 371.029	730225.6	730225.6	106.45 %		14:22:56
1	Ag 328.068†	107664.7	98807.0	488.53 ug/L	488.53 ppb	14:23:01
1	As 188.979†	1165.5	1091.5	495.49 ug/L	495.49 ppb	14:23:21
1	B 249.677†	21705.0	20494.6	496.58 ug/L	496.58 ppb	14:23:01
1	Ba 233.527†	64479.2	59341.5	493.29 ug/L	493.29 ppb	14:23:01
1	Be 313.107†	1339129.0	1236771.8	492.33 ug/L	492.33 ppb	14:22:56
1	Cd 226.502†	45442.1	42019.9	492.39 ug/L	492.39 ppb	14:23:01
1	Co 228.616†	24864.3	22956.4	498.60 ug/L	498.60 ppb	14:23:01
1	Cr 267.716†	45240.4	41541.0	490.67 ug/L	490.67 ppb	14:23:01
1	Cu 324.752†	174942.6	154709.3	493.85 ug/L	493.85 ppb	14:23:01
1	Mn 257.610†	455171.9	418510.5	491.05 ug/L	491.05 ppb	14:22:56
1	Mo 202.031†	7167.4	6577.1	488.67 ug/L	488.67 ppb	14:23:21
1	Ni 231.604†	20482.3	18775.6	493.95 ug/L	493.95 ppb	14:23:01
1	P 214.914†	4382.8	3805.8	2332.6 ug/L	2332.6 ppb	14:23:21
1	Pb 220.353†	4040.8	3783.5	486.17 ug/L	486.17 ppb	14:23:21
1	S 181.975 Axial†	773.6	665.6	992.41 ug/L	992.41 ppb	14:23:21
1	Sb 206.836†	1494.5	1342.7	508.43 ug/L	508.43 ppb	14:23:21
1	Se 196.026†	776.2	744.8	516.07 ug/L	516.07 ppb	14:23:21
1	Si 251.611†	81310.2	74387.5	2502.1 ug/L	2502.1 ppb	14:23:01
1	Sn 189.927†	2879.1	2643.6	489.72 ug/L	489.72 ppb	14:23:21
1	Ti 334.940†	309731.8	286446.9	491.25 ug/L	491.25 ppb	14:23:01
1	Tl 190.801†	1627.8	1542.0	496.58 ug/L	496.58 ppb	14:23:21
1	U 409.014†	15387.1	16202.4	515.80 ug/L	515.80 ppb	14:23:01
1	V 292.402†	72457.5	68093.0	497.78 ug/L	497.78 ppb	14:23:01
1	Zn 213.857†	55167.2	49912.5	493.50 ug/L	493.50 ppb	14:23:01
1	SiO2†	80213.4	73367.7	5246.6 ug/L	5246.6 ppb	14:24:28
2	Sc Radial	5320.4	5320.4	111 %		14:22:03
2	Y RADIAL	5674.7	5674.7	110.6 %		14:22:03
2	Al 396.153Radial†	6540.6	5893.4	4704.2 ug/L	4704.2 ppb	14:22:03
2	Ca 317.933Radial†	3169.2	2838.8	4780.4 ug/L	4780.4 ppb	14:22:23
2	Fe 238.204 Radial†	592.6	523.8	4939.0 ug/L	4939.0 ppb	14:22:23
2	K 766.490 Radial†	29566.9	23839.0	4769.8 ug/L	4769.8 ppb	14:22:03
2	Mg 279.077 IEC†	160.0	142.6	5006.0 ug/L	5006.0 ppb	14:22:23
2	Na 589.592 Radial†	31893.6	30288.7	9813.7 ug/L	9813.7 ppb	14:22:03
2	Sr 421.552†	76846.6	69186.9	493.12 ug/L	493.12 ppb	14:22:03
2	Sc 361.383	878170.1	878170.1	107.90 %		14:23:26



2	Y 371.029	725074.6	725074.6	105.70 %		14:23:26
2	Ag 328.068†	107229.6	99096.1	489.95 ug/L	489.95 ppb	14:23:32
2	As 188.979†	1144.6	1079.6	490.15 ug/L	490.15 ppb	14:23:52
2	B 249.677†	21655.4	20588.2	498.87 ug/L	498.87 ppb	14:23:32
2	Ba 233.527†	64349.9	59636.4	495.74 ug/L	495.74 ppb	14:23:32
2	Be 313.107†	1333400.6	1240074.0	493.64 ug/L	493.64 ppb	14:23:26
2	Cd 226.502†	45296.2	42176.9	494.24 ug/L	494.24 ppb	14:23:32
2	Co 228.616†	24699.3	22963.4	498.76 ug/L	498.76 ppb	14:23:32
2	Cr 267.716†	45139.9	41738.7	493.01 ug/L	493.01 ppb	14:23:32
2	Cu 324.752†	174556.7	155476.7	496.30 ug/L	496.30 ppb	14:23:32
2	Mn 257.610†	453256.0	419661.8	492.39 ug/L	492.39 ppb	14:23:26
2	Mo 202.031†	7167.5	6623.3	492.09 ug/L	492.09 ppb	14:23:52
2	Ni 231.604†	20442.3	18870.3	496.45 ug/L	496.45 ppb	14:23:32
2	P 214.914†	4363.0	3815.6	2338.4 ug/L	2338.4 ppb	14:23:52
2	Pb 220.353†	4028.9	3798.5	488.10 ug/L	488.10 ppb	14:23:52
2	S 181.975 Axial†	763.6	661.3	985.97 ug/L	985.97 ppb	14:23:52
2	Sb 206.836†	1487.5	1345.8	509.66 ug/L	509.66 ppb	14:23:52
2	Se 196.026†	782.5	755.6	523.23 ug/L	523.23 ppb	14:23:52
2	Si 251.611†	81051.1	74670.2	2511.6 ug/L	2511.6 ppb	14:23:32
2	Sn 189.927†	2868.8	2652.6	491.37 ug/L	491.37 ppb	14:23:52
2	Ti 334.940†	309374.9	288107.8	494.09 ug/L	494.09 ppb	14:23:32
2	Tl 190.801†	1614.0	1539.7	495.87 ug/L	495.87 ppb	14:23:52
2	U 409.014†	15395.7	16309.3	519.21 ug/L	519.21 ppb	14:23:32
2	V 292.402†	72461.6	68562.7	501.23 ug/L	501.23 ppb	14:23:32
2	Zn 213.857†	55040.1	50149.5	495.84 ug/L	495.84 ppb	14:23:32
2	SiO2†	81544.2	75116.9	5371.9 ug/L	5371.9 ppb	14:24:33
3	Sc Radial	5241.9	5241.9	109 %		14:22:28
3	Y RADIAL	5584.5	5584.5	108.9 %		14:22:28
3	Al 396.153Radial†	6452.4	5901.1	4710.6 ug/L	4710.6 ppb	14:22:28
3	Ca 317.933Radial†	3122.3	2838.7	4780.3 ug/L	4780.3 ppb	14:22:48
3	Fe 238.204 Radial†	583.8	523.8	4938.4 ug/L	4938.4 ppb	14:22:48
3	K 766.490 Radial†	29233.5	23933.3	4788.7 ug/L	4788.7 ppb	14:22:28
3	Mg 279.077 IEC†	157.3	142.3	4995.7 ug/L	4995.7 ppb	14:22:48
3	Na 589.592 Radial†	31557.7	30412.1	9853.7 ug/L	9853.7 ppb	14:22:28
3	Sr 421.552†	76113.8	69554.3	495.74 ug/L	495.74 ppb	14:22:28
3	Sc 361.383	883226.4	883226.4	108.52 %		14:23:57
3	Y 371.029	730246.7	730246.7	106.46 %		14:23:57
3	Ag 328.068†	104918.0	96397.1	476.66 ug/L	476.66 ppb	14:24:03
3	As 188.979†	1150.8	1079.3	489.92 ug/L	489.92 ppb	14:24:23
3	B 249.677†	21313.1	20157.9	488.42 ug/L	488.42 ppb	14:24:03
3	Ba 233.527†	63364.8	58387.2	485.36 ug/L	485.36 ppb	14:24:03
3	Be 313.107†	1343105.2	1241942.0	494.36 ug/L	494.36 ppb	14:23:57
3	Cd 226.502†	44641.6	41333.4	484.34 ug/L	484.34 ppb	14:24:03
3	Co 228.616†	24372.0	22530.7	489.37 ug/L	489.37 ppb	14:24:03
3	Cr 267.716†	44452.4	40865.7	482.70 ug/L	482.70 ppb	14:24:03
3	Cu 324.752†	170965.7	151241.5	482.78 ug/L	482.78 ppb	14:24:03
3	Mn 257.610†	454989.9	418854.8	491.45 ug/L	491.45 ppb	14:23:57
3	Mo 202.031†	7141.6	6561.5	487.50 ug/L	487.50 ppb	14:24:23
3	Ni 231.604†	20126.9	18471.2	485.95 ug/L	485.95 ppb	14:24:03
3	P 214.914†	4313.7	3747.1	2297.3 ug/L	2297.3 ppb	14:24:23
3	Pb 220.353†	4020.0	3768.9	484.31 ug/L	484.31 ppb	14:24:23
3	S 181.975 Axial†	766.0	659.4	983.17 ug/L	983.17 ppb	14:24:23
3	Sb 206.836†	1483.2	1334.0	505.15 ug/L	505.15 ppb	14:24:23
3	Se 196.026†	769.7	739.6	512.52 ug/L	512.52 ppb	14:24:23
3	Si 251.611†	79525.8	72834.7	2449.7 ug/L	2449.7 ppb	14:24:03
3	Sn 189.927†	2844.2	2614.7	484.36 ug/L	484.36 ppb	14:24:23
3	Ti 334.940†	303939.9	281458.2	482.69 ug/L	482.69 ppb	14:24:03
3	Tl 190.801†	1608.8	1526.3	491.56 ug/L	491.56 ppb	14:24:23
3	U 409.014†	15089.8	15945.7	507.62 ug/L	507.62 ppb	14:24:03
3	V 292.402†	71260.8	67071.8	490.40 ug/L	490.40 ppb	14:24:03
3	Zn 213.857†	54067.4	48961.1	484.08 ug/L	484.08 ppb	14:24:03
3	SiO2†	80978.6	74163.0	5303.6 ug/L	5303.6 ppb	14:24:38

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	881900.8	108.36 %	0.402			0.37%
Sc Radial	5287.2	110 %	0.8			0.77%
Y 371.029	728515.6	106.20 %	0.434			0.41%
Y RADIAL	5618.8	109.5 %	0.95			0.87%



Ag 328.068†	98100.1	485.05 ug/L	7.299	485.05 ppb	7.299	1.50%
QC value within limits for Ag 328.068 Recovery = 97.01%						
Al 396.153Radial†	5891.5	4702.8 ug/L	8.53	4702.8 ppb	8.53	0.18%
QC value within limits for Al 396.153Radial Recovery = 94.06%						
As 188.979†	1083.5	491.85 ug/L	3.152	491.85 ppb	3.152	0.64%
QC value within limits for As 188.979 Recovery = 98.37%						
B 249.677†	20413.6	494.62 ug/L	5.492	494.62 ppb	5.492	1.11%
QC value within limits for B 249.677 Recovery = 98.92%						
Ba 233.527†	59121.7	491.46 ug/L	5.426	491.46 ppb	5.426	1.10%
QC value within limits for Ba 233.527 Recovery = 98.29%						
Be 313.107†	1239595.9	493.44 ug/L	1.032	493.44 ppb	1.032	0.21%
QC value within limits for Be 313.107 Recovery = 98.69%						
Ca 317.933Radial†	2847.2	4794.6 ug/L	24.69	4794.6 ppb	24.69	0.51%
QC value within limits for Ca 317.933Radial Recovery = 95.89%						
Cd 226.502†	41843.4	490.32 ug/L	5.262	490.32 ppb	5.262	1.07%
QC value within limits for Cd 226.502 Recovery = 98.06%						
Co 228.616†	22816.9	495.58 ug/L	5.374	495.58 ppb	5.374	1.08%
QC value within limits for Co 228.616 Recovery = 99.12%						
Cr 267.716†	41381.8	488.80 ug/L	5.406	488.80 ppb	5.406	1.11%
QC value within limits for Cr 267.716 Recovery = 97.76%						
Cu 324.752†	153809.2	490.98 ug/L	7.200	490.98 ppb	7.200	1.47%
QC value within limits for Cu 324.752 Recovery = 98.20%						
Fe 238.204 Radial†	524.9	4949.1 ug/L	18.04	4949.1 ppb	18.04	0.36%
QC value within limits for Fe 238.204 Radial Recovery = 98.98%						
K 766.490 Radial†	23944.9	4791.0 ug/L	22.43	4791.0 ppb	22.43	0.47%
QC value within limits for K 766.490 Radial Recovery = 95.82%						
Mg 279.077 IEC†	141.9	4980.1 ug/L	36.25	4980.1 ppb	36.25	0.73%
QC value within limits for Mg 279.077 IEC Recovery = 99.60%						
Mn 257.610†	419009.0	491.63 ug/L	0.690	491.63 ppb	0.690	0.14%
QC value within limits for Mn 257.610 Recovery = 98.33%						
Mo 202.031†	6587.3	489.42 ug/L	2.387	489.42 ppb	2.387	0.49%
QC value within limits for Mo 202.031 Recovery = 97.88%						
Na 589.592 Radial†	30412.0	9853.7 ug/L	39.95	9853.7 ppb	39.95	0.41%
QC value within limits for Na 589.592 Radial Recovery = 98.54%						
Ni 231.604†	18705.7	492.12 ug/L	5.486	492.12 ppb	5.486	1.11%
QC value within limits for Ni 231.604 Recovery = 98.42%						
P 214.914†	3789.5	2322.8 ug/L	22.25	2322.8 ppb	22.25	0.96%
QC value within limits for P 214.914 Recovery = 92.91%						
Pb 220.353†	3783.6	486.20 ug/L	1.896	486.20 ppb	1.896	0.39%
QC value within limits for Pb 220.353 Recovery = 97.24%						
S 181.975 Axial†	662.1	987.18 ug/L	4.737	987.18 ppb	4.737	0.48%
QC value within limits for S 181.975 Axial Recovery = 98.72%						
Sb 206.836†	1340.8	507.75 ug/L	2.331	507.75 ppb	2.331	0.46%
QC value within limits for Sb 206.836 Recovery = 101.55%						
Se 196.026†	746.7	517.27 ug/L	5.455	517.27 ppb	5.455	1.05%
QC value within limits for Se 196.026 Recovery = 103.45%						
Si 251.611†	73964.1	2487.8 ug/L	33.30	2487.8 ppb	33.30	1.34%
QC value within limits for Si 251.611 Recovery = 99.51%						
Sn 189.927†	2637.0	488.48 ug/L	3.663	488.48 ppb	3.663	0.75%
QC value within limits for Sn 189.927 Recovery = 97.70%						
Sr 421.552†	69417.8	494.77 ug/L	1.433	494.77 ppb	1.433	0.29%
QC value within limits for Sr 421.552 Recovery = 98.95%						
Ti 334.940†	285337.6	489.34 ug/L	5.934	489.34 ppb	5.934	1.21%
QC value within limits for Ti 334.940 Recovery = 97.87%						
Tl 190.801†	1536.0	494.67 ug/L	2.721	494.67 ppb	2.721	0.55%
QC value within limits for Tl 190.801 Recovery = 98.93%						
U 409.014†	16152.5	514.21 ug/L	5.955	514.21 ppb	5.955	1.16%
QC value within limits for U 409.014 Recovery = 102.84%						
V 292.402†	67909.2	496.47 ug/L	5.531	496.47 ppb	5.531	1.11%
QC value within limits for V 292.402 Recovery = 99.29%						
Zn 213.857†	49674.4	491.14 ug/L	6.227	491.14 ppb	6.227	1.27%
QC value within limits for Zn 213.857 Recovery = 98.23%						
SiO2†	74215.9	5307.4 ug/L	62.74	5307.4 ppb	62.74	1.18%
QC value within limits for SiO2 Recovery = 99.25%						
All analyte(s) passed QC.						



Sequence No.: 9  
 Sample ID: PQL  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 11  
 Date Collected: 1/14/2010 14:26:49  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: PQL

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5329.2	5329.2	111 %		14:28:42
1	Y RADIAL	5698.1	5698.1	111.1 %		14:28:42
1	Al 396.153Radial†	240.3	219.3	175.46 ug/L	175.46 ppb	14:28:42
1	Ca 317.933Radial†	150.4	120.1	202.23 ug/L	202.23 ppb	14:29:02
1	Fe 238.204 Radial†	22.9	10.7	100.45 ug/L	100.45 ppb	14:29:02
1	K 766.490 Radial†	3645.3	490.0	97.913 ug/L	97.913 ppb	14:28:42
1	Mg 279.077 IEC†	11.0	8.4	293.54 ug/L	293.54 ppb	14:29:02
1	Na 589.592 Radial†	-282.0	1313.4	425.55 ug/L	425.55 ppb	14:28:42
1	Sr 421.552†	779.6	683.7	4.8717 ug/L	4.8717 ppb	14:28:42
1	Sc 361.383	895366.8	895366.8	110.01 %		14:29:59
1	Y 371.029	752624.5	752624.5	109.72 %		14:29:59
1	Ag 328.068†	1493.2	1075.7	5.2877 ug/L	5.2877 ppb	14:29:59
1	As 188.979†	49.4	63.8	28.757 ug/L	28.757 ppb	14:30:19
1	B 249.677†	1914.9	2259.1	54.953 ug/L	54.953 ppb	14:29:59
1	Ba 233.527†	646.5	586.2	4.8766 ug/L	4.8766 ppb	14:30:19
1	Be 313.107†	9192.6	12668.1	5.0435 ug/L	5.0435 ppb	14:29:59
1	Cd 226.502†	269.8	442.8	5.1954 ug/L	5.1954 ppb	14:30:19
1	Co 228.616†	175.9	232.5	5.0605 ug/L	5.0605 ppb	14:30:19
1	Cr 267.716†	537.4	392.7	4.6188 ug/L	4.6188 ppb	14:30:19
1	Cu 324.752†	9904.8	2705.1	8.6063 ug/L	8.6063 ppb	14:29:59
1	Mn 257.610†	9996.7	8682.5	10.179 ug/L	10.179 ppb	14:29:59
1	Mo 202.031†	165.9	131.5	9.7716 ug/L	9.7716 ppb	14:30:19
1	Ni 231.604†	300.9	198.4	5.2204 ug/L	5.2204 ppb	14:30:19
1	P 214.914†	452.5	183.5	115.42 ug/L	115.42 ppb	14:30:19
1	Pb 220.353†	17.0	80.0	10.298 ug/L	10.298 ppb	14:30:19
1	S 181.975 Axial†	119.1	61.8	92.150 ug/L	92.150 ppb	14:30:19
1	Sb 206.836†	66.5	27.7	10.481 ug/L	10.481 ppb	14:30:19
1	Se 196.026†	25.8	53.8	36.351 ug/L	36.351 ppb	14:30:19
1	Si 251.611†	3781.1	2991.0	100.73 ug/L	100.73 ppb	14:29:59
1	Sn 189.927†	65.5	53.5	9.9195 ug/L	9.9195 ppb	14:30:19
1	Ti 334.940†	1893.3	3108.0	5.3060 ug/L	5.3060 ppb	14:29:59
1	Tl 190.801†	36.6	77.2	24.757 ug/L	24.757 ppb	14:30:19
1	U 409.014†	-98.8	1951.1	62.292 ug/L	62.292 ppb	14:29:59
1	V 292.402†	-648.3	817.8	6.1406 ug/L	6.1406 ppb	14:29:59
1	Zn 213.857†	1763.3	742.5	7.3506 ug/L	7.3506 ppb	14:30:19
1	SiO2†	3717.7	2923.1	209.30 ug/L	209.30 ppb	14:31:15
2	Sc Radial	5330.3	5330.3	111 %		14:29:07
2	Y RADIAL	5708.1	5708.1	111.3 %		14:29:07
2	Al 396.153Radial†	279.2	254.2	203.47 ug/L	203.47 ppb	14:29:07
2	Ca 317.933Radial†	153.2	122.6	206.38 ug/L	206.38 ppb	14:29:27
2	Fe 238.204 Radial†	20.6	8.7	81.470 ug/L	81.470 ppb	14:29:27
2	K 766.490 Radial†	3635.8	480.7	96.065 ug/L	96.065 ppb	14:29:07
2	Mg 279.077 IEC†	11.7	9.0	316.87 ug/L	316.87 ppb	14:29:27
2	Na 589.592 Radial†	-354.0	1248.8	404.61 ug/L	404.61 ppb	14:29:07
2	Sr 421.552†	819.2	719.1	5.1243 ug/L	5.1243 ppb	14:29:07
2	Sc 361.383	901922.6	901922.6	110.82 %		14:30:24
2	Y 371.029	757947.1	757947.1	110.49 %		14:30:24
2	Ag 328.068†	1464.9	1040.3	5.1020 ug/L	5.1020 ppb	14:30:24
2	As 188.979†	50.8	64.7	29.150 ug/L	29.150 ppb	14:30:44
2	B 249.677†	1929.5	2259.6	54.970 ug/L	54.970 ppb	14:30:24
2	Ba 233.527†	643.9	579.6	4.8209 ug/L	4.8209 ppb	14:30:44
2	Be 313.107†	9291.8	12696.9	5.0548 ug/L	5.0548 ppb	14:30:24
2	Cd 226.502†	264.2	436.0	5.1176 ug/L	5.1176 ppb	14:30:44
2	Co 228.616†	165.7	222.2	4.8360 ug/L	4.8360 ppb	14:30:44
2	Cr 267.716†	525.9	378.9	4.4523 ug/L	4.4523 ppb	14:30:44
2	Cu 324.752†	9988.7	2715.5	8.6352 ug/L	8.6352 ppb	14:30:24
2	Mn 257.610†	10022.9	8640.1	10.127 ug/L	10.127 ppb	14:30:24
2	Mo 202.031†	168.7	132.9	9.8737 ug/L	9.8737 ppb	14:30:44
2	Ni 231.604†	285.7	182.7	4.8071 ug/L	4.8071 ppb	14:30:44



2	P 214.914†	464.3	191.1	120.33 ug/L	120.33 ppb	14:30:44
2	Pb 220.353†	31.8	93.2	12.001 ug/L	12.001 ppb	14:30:44
2	S 181.975 Axial†	121.1	62.8	93.711 ug/L	93.711 ppb	14:30:44
2	Sb 206.836†	72.3	32.5	12.225 ug/L	12.225 ppb	14:30:44
2	Se 196.026†	17.5	46.2	31.191 ug/L	31.191 ppb	14:30:44
2	Si 251.611†	3803.9	2986.6	100.58 ug/L	100.58 ppb	14:30:24
2	Sn 189.927†	62.7	50.4	9.3625 ug/L	9.3625 ppb	14:30:44
2	Ti 334.940†	1859.4	3064.9	5.2284 ug/L	5.2284 ppb	14:30:24
2	Tl 190.801†	35.6	76.0	24.375 ug/L	24.375 ppb	14:30:44
2	U 409.014†	96.2	2127.8	67.936 ug/L	67.936 ppb	14:30:24
2	V 292.402†	-681.6	792.1	5.9706 ug/L	5.9706 ppb	14:30:24
2	Zn 213.857†	1760.1	727.9	7.2096 ug/L	7.2096 ppb	14:30:44
2	SiO2†	3774.6	2949.8	211.21 ug/L	211.21 ppb	14:31:20
3	Sc Radial	5441.1	5441.1	114 %		14:29:32
3	Y RADIAL	5814.8	5814.8	113.4 %		14:29:32
3	Al 396.153Radial†	251.2	224.5	179.60 ug/L	179.60 ppb	14:29:32
3	Ca 317.933Radial†	153.3	119.9	201.87 ug/L	201.87 ppb	14:29:52
3	Fe 238.204 Radial†	24.1	11.3	106.61 ug/L	106.61 ppb	14:29:52
3	K 766.490 Radial†	3596.7	379.8	75.840 ug/L	75.840 ppb	14:29:32
3	Mg 279.077 IEC†	12.4	9.4	331.64 ug/L	331.64 ppb	14:29:52
3	Na 589.592 Radial†	-317.2	1287.6	417.19 ug/L	417.19 ppb	14:29:32
3	Sr 421.552†	825.9	710.0	5.0596 ug/L	5.0596 ppb	14:29:32
3	Sc 361.383	889612.0	889612.0	109.31 %		14:30:50
3	Y 371.029	749218.6	749218.6	109.22 %		14:30:50
3	Ag 328.068†	1511.4	1101.1	5.4175 ug/L	5.4175 ppb	14:30:50
3	As 188.979†	50.3	64.9	29.250 ug/L	29.250 ppb	14:31:10
3	B 249.677†	1941.2	2294.5	55.813 ug/L	55.813 ppb	14:30:50
3	Ba 233.527†	648.6	591.9	4.9251 ug/L	4.9251 ppb	14:31:10
3	Be 313.107†	9118.5	12654.3	5.0381 ug/L	5.0381 ppb	14:30:50
3	Cd 226.502†	260.7	436.0	5.1142 ug/L	5.1142 ppb	14:31:10
3	Co 228.616†	175.4	233.2	5.0759 ug/L	5.0759 ppb	14:31:10
3	Cr 267.716†	525.7	385.2	4.5316 ug/L	4.5316 ppb	14:31:10
3	Cu 324.752†	9952.2	2806.8	8.9319 ug/L	8.9319 ppb	14:30:50
3	Mn 257.610†	9864.1	8619.9	10.105 ug/L	10.105 ppb	14:30:50
3	Mo 202.031†	172.1	138.1	10.262 ug/L	10.262 ppb	14:31:10
3	Ni 231.604†	279.1	180.2	4.7410 ug/L	4.7410 ppb	14:31:10
3	P 214.914†	468.7	200.9	126.51 ug/L	126.51 ppb	14:31:10
3	Pb 220.353†	14.1	77.5	9.9782 ug/L	9.9782 ppb	14:31:10
3	S 181.975 Axial†	122.7	65.8	98.131 ug/L	98.131 ppb	14:31:10
3	Sb 206.836†	70.0	31.3	11.791 ug/L	11.791 ppb	14:31:10
3	Se 196.026†	18.5	47.3	32.048 ug/L	32.048 ppb	14:31:10
3	Si 251.611†	3726.9	2963.7	99.799 ug/L	99.799 ppb	14:30:50
3	Sn 189.927†	60.8	49.5	9.1832 ug/L	9.1832 ppb	14:31:10
3	Ti 334.940†	1891.6	3117.5	5.3198 ug/L	5.3198 ppb	14:30:50
3	Tl 190.801†	32.2	73.3	23.520 ug/L	23.520 ppb	14:31:10
3	U 409.014†	-139.6	1913.3	61.083 ug/L	61.083 ppb	14:30:50
3	V 292.402†	-560.1	894.7	6.6999 ug/L	6.6999 ppb	14:30:50
3	Zn 213.857†	1769.7	758.6	7.5135 ug/L	7.5135 ppb	14:31:10
3	SiO2†	3764.1	2987.3	213.89 ug/L	213.89 ppb	14:31:25

## Mean Data: PQL

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	895633.8	110.05 %	0.757			0.69%
Sc Radial	5366.9	112 %	1.3			1.20%
Y 371.029	753263.4	109.81 %	0.641			0.58%
Y RADIAL	5740.4	111.9 %	1.26			1.13%
Ag 328.068†	1072.4	5.2691 ug/L	0.15855	5.2691 ppb	0.15855	3.01%
QC value within limits for Ag 328.068 Recovery = 105.38%						
Al 396.153Radial†	232.7	186.18 ug/L	15.116	186.18 ppb	15.116	8.12%
QC value within limits for Al 396.153Radial Recovery = 93.09%						
As 188.979†	64.5	29.052 ug/L	0.2608	29.052 ppb	0.2608	0.90%
QC value within limits for As 188.979 Recovery = 96.84%						
B 249.677†	2271.1	55.245 ug/L	0.4916	55.245 ppb	0.4916	0.89%
QC value within limits for B 249.677 Recovery = 110.49%						
Ba 233.527†	585.9	4.8742 ug/L	0.05214	4.8742 ppb	0.05214	1.07%
QC value within limits for Ba 233.527 Recovery = 97.48%						
Be 313.107†	12673.1	5.0455 ug/L	0.00851	5.0455 ppb	0.00851	0.17%
QC value within limits for Be 313.107 Recovery = 100.91%						
Ca 317.933Radial†	120.8	203.49 ug/L	2.507	203.49 ppb	2.507	1.23%



QC value within limits for Ca 317.933 Radial Recovery = 101.75%							
Cd 226.502†	438.3	5.1424 ug/L	0.04591	5.1424 ppb	0.04591	0.89%	
QC value within limits for Cd 226.502 Recovery = 102.85%							
Co 228.616†	229.3	4.9908 ug/L	0.13429	4.9908 ppb	0.13429	2.69%	
QC value within limits for Co 228.616 Recovery = 99.82%							
Cr 267.716†	385.6	4.5342 ug/L	0.08326	4.5342 ppb	0.08326	1.84%	
QC value within limits for Cr 267.716 Recovery = 90.68%							
Cu 324.752†	2742.5	8.7245 ug/L	0.18020	8.7245 ppb	0.18020	2.07%	
QC value within limits for Cu 324.752 Recovery = 87.24%							
Fe 238.204 Radial†	10.2	96.175 ug/L	13.1019	96.175 ppb	13.1019	13.62%	
QC value within limits for Fe 238.204 Radial Recovery = 96.18%							
K 766.490 Radial†	450.2	89.939 ug/L	12.2455	89.939 ppb	12.2455	13.62%	
QC value less than the lower limit for K 766.490 Radial Recovery = 59.96%							
Mg 279.077 IEC†	8.9	314.01 ug/L	19.211	314.01 ppb	19.211	6.12%	
QC value within limits for Mg 279.077 IEC Recovery = 104.67%							
Mn 257.610†	8647.5	10.137 ug/L	0.0382	10.137 ppb	0.0382	0.38%	
QC value within limits for Mn 257.610 Recovery = 101.37%							
Mo 202.031†	134.2	9.9690 ug/L	0.25857	9.9690 ppb	0.25857	2.59%	
QC value within limits for Mo 202.031 Recovery = 99.69%							
Na 589.592 Radial†	1283.3	415.78 ug/L	10.542	415.78 ppb	10.542	2.54%	
QC value greater than the upper limit for Na 589.592 Radial Recovery = 138.59%							
Ni 231.604†	187.1	4.9228 ug/L	0.25981	4.9228 ppb	0.25981	5.28%	
QC value within limits for Ni 231.604 Recovery = 98.46%							
P 214.914†	191.8	120.75 ug/L	5.558	120.75 ppb	5.558	4.60%	
QC value within limits for P 214.914 Recovery = 80.50%							
Pb 220.353†	83.6	10.759 ug/L	1.0873	10.759 ppb	1.0873	10.11%	
QC value within limits for Pb 220.353 Recovery = 107.59%							
S 181.975 Axial†	63.5	94.664 ug/L	3.1024	94.664 ppb	3.1024	3.28%	
QC value within limits for S 181.975 Axial Recovery = 94.66%							
Sb 206.836†	30.5	11.499 ug/L	0.9079	11.499 ppb	0.9079	7.90%	
QC value within limits for Sb 206.836 Recovery = 114.99%							
Se 196.026†	49.1	33.197 ug/L	2.7652	33.197 ppb	2.7652	8.33%	
QC value within limits for Se 196.026 Recovery = 110.66%							
Si 251.611†	2980.4	100.37 ug/L	0.498	100.37 ppb	0.498	0.50%	
QC value within limits for Si 251.611 Recovery = 100.37%							
Sn 189.927†	51.1	9.4884 ug/L	0.38393	9.4884 ppb	0.38393	4.05%	
QC value within limits for Sn 189.927 Recovery = 94.88%							
Sr 421.552†	704.3	5.0185 ug/L	0.13121	5.0185 ppb	0.13121	2.61%	
QC value within limits for Sr 421.552 Recovery = 100.37%							
Ti 334.940†	3096.8	5.2847 ug/L	0.04929	5.2847 ppb	0.04929	0.93%	
QC value within limits for Ti 334.940 Recovery = 105.69%							
Tl 190.801†	75.5	24.217 ug/L	0.6333	24.217 ppb	0.6333	2.61%	
QC value within limits for Tl 190.801 Recovery = 121.09%							
U 409.014†	1997.4	63.770 ug/L	3.6579	63.770 ppb	3.6579	5.74%	
QC value within limits for U 409.014 Recovery = 127.54%							
V 292.402†	834.9	6.2704 ug/L	0.38158	6.2704 ppb	0.38158	6.09%	
QC value within limits for V 292.402 Recovery = 125.41%							
Zn 213.857†	743.0	7.3579 ug/L	0.15211	7.3579 ppb	0.15211	2.07%	
QC value within limits for Zn 213.857 Recovery = 73.58%							
SiO2†	2953.4	211.47 ug/L	2.306	211.47 ppb	2.306	1.09%	
QC value within limits for SiO2 Recovery = 99.28%							
QC Failed. Continue with analysis.							



Sequence No.: 10  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 8  
 Date Collected: 1/14/2010 14:33:36  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5495.7	5495.7	115 %		14:35:28
1	Y RADIAL	5892.5	5892.5	114.9 %		14:35:28
1	Al 396.153Radial†	6.9	9.2	7.4120 ug/L	7.4120 ppb	14:35:28
1	Ca 317.933Radial†	24.3	6.1	10.189 ug/L	10.189 ppb	14:35:48
1	Fe 238.204 Radial†	12.4	1.0	9.0056 ug/L	9.0056 ppb	14:35:48
1	K 766.490 Radial†	2767.1	-375.0	-75.179 ug/L	-75.179 ppb	14:35:28
1	Mg 279.077 IEC†	1.5	-0.2	-6.2703 ug/L	-6.2703 ppb	14:35:48
1	Na 589.592 Radial†	-1355.8	384.9	124.71 ug/L	124.71 ppb	14:35:28
1	Sr 421.552†	21.1	1.2	0.0085 ug/L	0.0085 ppb	14:35:28
1	Sc 361.383	888911.9	888911.9	109.22 %		14:36:45
1	Y 371.029	747538.3	747538.3	108.98 %		14:36:45
1	Ag 328.068†	341.1	30.7	0.1491 ug/L	0.1491 ppb	14:36:45
1	As 188.979†	-24.0	-3.1	-1.3881 ug/L	-1.3881 ppb	14:37:05
1	B 249.677†	-347.1	200.7	4.8832 ug/L	4.8832 ppb	14:37:05
1	Ba 233.527†	5.9	3.9	0.0348 ug/L	0.0348 ppb	14:37:05
1	Be 313.107†	-4319.9	357.1	0.1426 ug/L	0.1426 ppb	14:36:45
1	Cd 226.502†	-176.2	36.2	0.4258 ug/L	0.4258 ppb	14:37:05
1	Co 228.616†	-67.5	10.9	0.2358 ug/L	0.2358 ppb	14:37:05
1	Cr 267.716†	69.3	-32.2	-0.3829 ug/L	-0.3829 ppb	14:37:05
1	Cu 324.752†	6464.9	-379.0	-1.2151 ug/L	-1.2151 ppb	14:36:45
1	Mn 257.610†	414.4	-24.9	-0.0281 ug/L	-0.0281 ppb	14:37:05
1	Mo 202.031†	22.1	0.9	0.0681 ug/L	0.0681 ppb	14:37:05
1	Ni 231.604†	76.0	-5.6	-0.1469 ug/L	-0.1469 ppb	14:37:05
1	P 214.914†	215.0	-31.0	-19.547 ug/L	-19.547 ppb	14:37:05
1	Pb 220.353†	-73.5	-2.8	-0.3510 ug/L	-0.3510 ppb	14:37:05
1	S 181.975 Axial†	46.9	-3.5	-5.2386 ug/L	-5.2386 ppb	14:37:05
1	Sb 206.836†	50.4	13.4	4.9078 ug/L	4.9078 ppb	14:37:05
1	Se 196.026†	-29.0	3.8	2.5919 ug/L	2.5919 ppb	14:37:05
1	Si 251.611†	534.2	43.2	1.4572 ug/L	1.4572 ppb	14:37:05
1	Sn 189.927†	6.9	0.2	0.0315 ug/L	0.0315 ppb	14:37:05
1	Ti 334.940†	-1296.3	200.2	0.3409 ug/L	0.3409 ppb	14:36:45
1	Tl 190.801†	-38.1	9.0	2.8908 ug/L	2.8908 ppb	14:37:05
1	U 409.014†	-1875.5	323.8	10.342 ug/L	10.342 ppb	14:36:45
1	V 292.402†	-1385.6	138.6	1.0187 ug/L	1.0187 ppb	14:36:45
1	Zn 213.857†	818.8	-110.7	-1.1019 ug/L	-1.1019 ppb	14:37:05
1	SiO2†	544.1	42.0	3.0079 ug/L	3.0079 ppb	14:38:01
2	Sc Radial	5532.6	5532.6	115 %		14:35:53
2	Y RADIAL	5901.3	5901.3	115.0 %		14:35:53
2	Al 396.153Radial†	-0.9	2.5	1.9305 ug/L	1.9305 ppb	14:35:53
2	Ca 317.933Radial†	25.0	6.5	10.971 ug/L	10.971 ppb	14:36:13
2	Fe 238.204 Radial†	9.1	-2.0	-18.491 ug/L	-18.491 ppb	14:36:13
2	K 766.490 Radial†	2687.7	-459.8	-92.173 ug/L	-92.173 ppb	14:35:53
2	Mg 279.077 IEC†	3.4	1.4	50.720 ug/L	50.720 ppb	14:36:13
2	Na 589.592 Radial†	-1361.4	387.9	125.69 ug/L	125.69 ppb	14:35:53
2	Sr 421.552†	-14.1	-29.4	-0.2096 ug/L	-0.2096 ppb	14:35:53
2	Sc 361.383	899671.4	899671.4	110.54 %		14:37:11
2	Y 371.029	756888.9	756888.9	110.34 %		14:37:11
2	Ag 328.068†	359.7	43.8	0.2031 ug/L	0.2031 ppb	14:37:11
2	As 188.979†	-14.4	5.8	2.6007 ug/L	2.6007 ppb	14:37:31
2	B 249.677†	-325.5	224.1	5.4567 ug/L	5.4567 ppb	14:37:31
2	Ba 233.527†	-11.7	-12.1	-0.0978 ug/L	-0.0978 ppb	14:37:31
2	Be 313.107†	-4373.3	356.0	0.1423 ug/L	0.1423 ppb	14:37:11
2	Cd 226.502†	-181.3	33.6	0.3979 ug/L	0.3979 ppb	14:37:31
2	Co 228.616†	-78.7	1.5	0.0345 ug/L	0.0345 ppb	14:37:31
2	Cr 267.716†	74.2	-28.6	-0.3411 ug/L	-0.3411 ppb	14:37:31
2	Cu 324.752†	6494.7	-422.8	-1.3584 ug/L	-1.3584 ppb	14:37:11
2	Mn 257.610†	435.3	-10.5	-0.0162 ug/L	-0.0162 ppb	14:37:31
2	Mo 202.031†	32.7	10.3	0.7634 ug/L	0.7634 ppb	14:37:31
2	Ni 231.604†	84.3	1.1	0.0298 ug/L	0.0298 ppb	14:37:31



2	P 214.914†	210.3	-37.6	-23.739 ug/L	-23.739 ppb	14:37:31
2	Pb 220.353†	-59.6	10.7	1.3708 ug/L	1.3708 ppb	14:37:31
2	S 181.975 Axial†	50.5	-0.8	-1.1940 ug/L	-1.1940 ppb	14:37:31
2	Sb 206.836†	38.4	2.0	0.7503 ug/L	0.7503 ppb	14:37:31
2	Se 196.026†	-23.9	8.7	5.7643 ug/L	5.7643 ppb	14:37:31
2	Si 251.611†	513.2	18.4	0.6111 ug/L	0.6111 ppb	14:37:31
2	Sn 189.927†	10.1	3.0	0.5631 ug/L	0.5631 ppb	14:37:31
2	Ti 334.940†	-1275.3	233.3	0.3915 ug/L	0.3915 ppb	14:37:11
2	Tl 190.801†	-33.5	13.6	4.3422 ug/L	4.3422 ppb	14:37:31
2	U 409.014†	-1768.3	441.3	14.096 ug/L	14.096 ppb	14:37:11
2	V 292.402†	-1345.0	190.4	1.4147 ug/L	1.4147 ppb	14:37:11
2	Zn 213.857†	813.1	-124.8	-1.2410 ug/L	-1.2410 ppb	14:37:31
2	SiO2†	550.5	41.8	2.9755 ug/L	2.9755 ppb	14:38:06
3	Sc Radial	5506.7	5506.7	115 %		14:36:19
3	Y RADIAL	5927.1	5927.1	115.5 %		14:36:19
3	Al 396.153Radial†	0.5	3.7	2.9593 ug/L	2.9593 ppb	14:36:19
3	Ca 317.933Radial†	23.1	4.9	8.3156 ug/L	8.3156 ppb	14:36:39
3	Fe 238.204 Radial†	10.8	-0.5	-4.3327 ug/L	-4.3327 ppb	14:36:39
3	K 766.490 Radial†	2831.9	-323.4	-64.847 ug/L	-64.847 ppb	14:36:19
3	Mg 279.077 IEC†	0.7	-0.9	-30.126 ug/L	-30.126 ppb	14:36:39
3	Na 589.592 Radial†	-1387.6	359.6	116.52 ug/L	116.52 ppb	14:36:19
3	Sr 421.552†	-2.6	-19.4	-0.1387 ug/L	-0.1387 ppb	14:36:19
3	Sc 361.383	896520.6	896520.6	110.16 %		14:37:36
3	Y 371.029	755611.4	755611.4	110.15 %		14:37:36
3	Ag 328.068†	263.1	-42.8	-0.2154 ug/L	-0.2154 ppb	14:37:36
3	As 188.979†	-20.9	-0.1	-0.0519 ug/L	-0.0519 ppb	14:37:56
3	B 249.677†	-338.4	211.3	5.1430 ug/L	5.1430 ppb	14:37:56
3	Ba 233.527†	6.7	4.6	0.0410 ug/L	0.0410 ppb	14:37:56
3	Be 313.107†	-4401.6	316.4	0.1265 ug/L	0.1265 ppb	14:37:36
3	Cd 226.502†	-182.5	31.9	0.3762 ug/L	0.3762 ppb	14:37:56
3	Co 228.616†	-70.1	9.0	0.1956 ug/L	0.1956 ppb	14:37:56
3	Cr 267.716†	76.7	-26.1	-0.3106 ug/L	-0.3106 ppb	14:37:56
3	Cu 324.752†	6518.4	-380.6	-1.2210 ug/L	-1.2210 ppb	14:37:36
3	Mn 257.610†	429.5	-14.3	-0.0160 ug/L	-0.0160 ppb	14:37:56
3	Mo 202.031†	21.7	0.3	0.0251 ug/L	0.0251 ppb	14:37:56
3	Ni 231.604†	91.3	7.7	0.2036 ug/L	0.2036 ppb	14:37:56
3	P 214.914†	210.4	-36.9	-23.274 ug/L	-23.274 ppb	14:37:56
3	Pb 220.353†	-66.9	3.9	0.4972 ug/L	0.4972 ppb	14:37:56
3	S 181.975 Axial†	45.1	-5.5	-8.2040 ug/L	-8.2040 ppb	14:37:56
3	Sb 206.836†	35.3	-0.7	-0.2547 ug/L	-0.2547 ppb	14:37:56
3	Se 196.026†	-26.5	6.3	4.2218 ug/L	4.2218 ppb	14:37:56
3	Si 251.611†	512.6	19.5	0.6565 ug/L	0.6565 ppb	14:37:56
3	Sn 189.927†	8.8	1.8	0.3394 ug/L	0.3394 ppb	14:37:56
3	Ti 334.940†	-1301.2	205.8	0.3520 ug/L	0.3520 ppb	14:37:36
3	Tl 190.801†	-27.6	18.8	6.0197 ug/L	6.0197 ppb	14:37:56
3	U 409.014†	-1881.1	333.3	10.646 ug/L	10.646 ppb	14:37:36
3	V 292.402†	-1364.3	168.6	1.2370 ug/L	1.2370 ppb	14:37:36
3	Zn 213.857†	819.9	-116.0	-1.1561 ug/L	-1.1561 ppb	14:37:56
3	SiO2†	560.8	52.8	3.7878 ug/L	3.7878 ppb	14:38:11

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	895034.6	109.97 %	0.680			0.62%
Sc Radial	5511.7	115 %	0.4			0.34%
Y 371.029	753346.2	109.82 %	0.739			0.67%
Y RADIAL	5907.0	115.2 %	0.35			0.30%
Ag 328.068†	10.6	0.0456 ug/L	0.22763	0.0456 ppb	0.22763	498.93%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	5.1	4.1006 ug/L	2.91352	4.1006 ppb	2.91352	71.05%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	0.9	0.3869 ug/L	2.03028	0.3869 ppb	2.03028	524.74%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	212.0	5.1610 ug/L	0.28717	5.1610 ppb	0.28717	5.56%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-1.2	-0.0073 ug/L	0.07844	-0.0073 ppb	0.07844	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	343.2	0.1371 ug/L	0.00923	0.1371 ppb	0.00923	6.73%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	5.8	9.8252 ug/L	1.36458	9.8252 ppb	1.36458	13.89%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	33.9	0.4000 ug/L	0.02484	0.4000 ppb	0.02484	6.21%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	7.1	0.1553 ug/L	0.10654	0.1553 ppb	0.10654	68.60%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-29.0	-0.3448 ug/L	0.03626	-0.3448 ppb	0.03626	10.52%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-394.1	-1.2649 ug/L	0.08109	-1.2649 ppb	0.08109	6.41%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	-0.5	-4.6061 ug/L	13.75039	-4.6061 ppb	13.75039	298.53%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	-386.1	-77.400 ug/L	13.7979	-77.400 ppb	13.7979	17.83%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	0.1	4.7744 ug/L	41.53913	4.7744 ppb	41.53913	870.03%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-16.6	-0.0201 ug/L	0.00691	-0.0201 ppb	0.00691	34.38%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	3.9	0.2856 ug/L	0.41440	0.2856 ppb	0.41440	145.12%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	377.5	122.31 ug/L	5.034	122.31 ppb	5.034	4.12%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	1.1	0.0288 ug/L	0.17527	0.0288 ppb	0.17527	608.16%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-35.2	-22.187 ug/L	2.2975	-22.187 ppb	2.2975	10.36%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	3.9	0.5057 ug/L	0.86094	0.5057 ppb	0.86094	170.25%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	-3.3	-4.8788 ug/L	3.51881	-4.8788 ppb	3.51881	72.12%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	4.9	1.8011 ug/L	2.73701	1.8011 ppb	2.73701	151.96%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	6.3	4.1927 ug/L	1.58640	4.1927 ppb	1.58640	37.84%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	27.0	0.9082 ug/L	0.47594	0.9082 ppb	0.47594	52.40%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	1.7	0.3113 ug/L	0.26688	0.3113 ppb	0.26688	85.73%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	-15.9	-0.1133 ug/L	0.11123	-0.1133 ppb	0.11123	98.20%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	213.1	0.3615 ug/L	0.02662	0.3615 ppb	0.02662	7.36%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	13.8	4.4176 ug/L	1.56582	4.4176 ppb	1.56582	35.45%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	366.1	11.694 ug/L	2.0851	11.694 ppb	2.0851	17.83%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	165.9	1.2234 ug/L	0.19835	1.2234 ppb	0.19835	16.21%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	-117.1	-1.1663 ug/L	0.07009	-1.1663 ppb	0.07009	6.01%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	45.5	3.2571 ug/L	0.45991	3.2571 ppb	0.45991	14.12%	
QC value within limits for SiO2 Recovery = Not calculated							
All analyte(s) passed QC.							



## =====

Analysis Begun

Start Time: 1/14/2010 15:04:17

Plasma On Time: 1/11/2010 06:15:31

Logged In Analyst: Optima3

Technique: ICP Continuous

Spectrometer Model: Optima 5300 DV, S/N 077C7090601Autosampler Model: S10

Sample Information File: C:\pe\Optima3\Sample Information\011410A.sif

Batch ID:

Results Data Set: 011410

Results Library: C:\pe\Optima3\Results\Results.mdb

=====

Sequence No.: 1

Autosampler Location: 7

Sample ID: CCV

Date Collected: 1/14/2010 15:04:18

Analyst:

Data Type: Original

Initial Sample Wt:

Initial Sample Vol:

Dilution:

Sample Prep Vol:

## -----

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5393.2	5393.2	113 %		15:06:10
1	Y RADIAL	5721.8	5721.8	111.5 %		15:06:10
1	Al 396.153Radial†	6562.4	5833.2	4653.8 ug/L	4653.8 ppb	15:06:10
1	Ca 317.933Radial†	3162.3	2794.2	4705.3 ug/L	4705.3 ppb	15:06:30
1	Fe 238.204 Radial†	587.8	512.3	4831.9 ug/L	4831.9 ppb	15:06:30
1	K 766.490 Radial†	29827.7	23711.4	4744.3 ug/L	4744.3 ppb	15:06:10
1	Mg 279.077 IEC†	161.7	142.2	4991.7 ug/L	4991.7 ppb	15:06:30
1	Na 589.592 Radial†	31619.5	29657.7	9609.2 ug/L	9609.2 ppb	15:06:10
1	Sr 421.552†	76700.1	68123.0	485.54 ug/L	485.54 ppb	15:06:10
1	Sc 361.383	808099.6	808099.6	99.292 %		15:07:28
1	Y 371.029	670449.2	670449.2	97.739 %		15:07:28
1	Ag 328.068†	105432.3	105903.0	523.49 ug/L	523.49 ppb	15:07:33
1	As 188.979†	1172.2	1199.4	544.26 ug/L	544.26 ppb	15:07:53
1	B 249.677†	20952.6	21620.6	523.90 ug/L	523.90 ppb	15:07:33
1	Ba 233.527†	64121.9	64578.0	536.79 ug/L	536.79 ppb	15:07:33
1	Be 313.107†	1226025.1	1239085.5	493.33 ug/L	493.33 ppb	15:07:28
1	Cd 226.502†	45122.5	45642.0	534.89 ug/L	534.89 ppb	15:07:33
1	Co 228.616†	24563.6	24811.6	538.92 ug/L	538.92 ppb	15:07:33
1	Cr 267.716†	44927.0	45151.8	533.32 ug/L	533.32 ppb	15:07:33
1	Cu 324.752†	172001.4	166930.6	532.84 ug/L	532.84 ppb	15:07:33
1	Mn 257.610†	418840.5	421424.8	494.45 ug/L	494.45 ppb	15:07:28
1	Mo 202.031†	7181.6	7213.6	535.90 ug/L	535.90 ppb	15:07:53
1	Ni 231.604†	20360.1	20430.3	537.49 ug/L	537.49 ppb	15:07:33
1	P 214.914†	4387.0	4190.4	2570.8 ug/L	2570.8 ppb	15:07:53
1	Pb 220.353†	4058.4	4151.9	533.46 ug/L	533.46 ppb	15:07:53
1	S 181.975 Axial†	760.2	719.1	1072.3 ug/L	1072.3 ppb	15:07:53
1	Sb 206.836†	1505.9	1484.0	561.80 ug/L	561.80 ppb	15:07:53
1	Se 196.026†	781.7	817.7	564.52 ug/L	564.52 ppb	15:07:53
1	Si 251.611†	79955.2	80079.8	2693.4 ug/L	2693.4 ppb	15:07:33
1	Sn 189.927†	2894.8	2909.3	538.84 ug/L	538.84 ppb	15:07:53
1	Ti 334.940†	306032.4	309603.1	530.93 ug/L	530.93 ppb	15:07:33
1	Tl 190.801†	1624.3	1679.8	540.74 ug/L	540.74 ppb	15:07:53
1	U 409.014†	14978.4	17126.3	545.23 ug/L	545.23 ppb	15:07:33
1	V 292.402†	71889.2	73809.4	539.71 ug/L	539.71 ppb	15:07:33
1	Zn 213.857†	54122.9	53648.8	530.44 ug/L	530.44 ppb	15:07:33
1	SiO2†	80124.7	80240.2	5738.0 ug/L	5738.0 ppb	15:09:01
2	Sc Radial	5242.8	5242.8	109 %		15:06:35
2	Y RADIAL	5583.5	5583.5	108.9 %		15:06:35
2	Al 396.153Radial†	6394.1	5846.7	4666.9 ug/L	4666.9 ppb	15:06:35
2	Ca 317.933Radial†	3166.7	2878.8	4847.8 ug/L	4847.8 ppb	15:06:55
2	Fe 238.204 Radial†	582.0	522.0	4922.1 ug/L	4922.1 ppb	15:06:55
2	K 766.490 Radial†	29139.7	23842.8	4770.6 ug/L	4770.6 ppb	15:06:35
2	Mg 279.077 IEC†	157.8	142.7	5010.2 ug/L	5010.2 ppb	15:06:55
2	Na 589.592 Radial†	30721.0	29642.3	9604.3 ug/L	9604.3 ppb	15:06:35
2	Sr 421.552†	74654.8	68208.4	486.15 ug/L	486.15 ppb	15:06:35
2	Sc 361.383	884833.7	884833.7	108.72 %		15:07:59
2	Y 371.029	732103.3	732103.3	106.73 %		15:07:59



2	Ag 328.068†	106254.5	97450.8	481.84 ug/L	481.84 ppb	15:08:04
2	As 188.979†	1153.6	1079.9	490.23 ug/L	490.23 ppb	15:08:24
2	B 249.677†	21428.1	20228.0	490.11 ug/L	490.11 ppb	15:08:04
2	Ba 233.527†	64131.9	58986.7	490.34 ug/L	490.34 ppb	15:08:04
2	Be 313.107†	1323294.0	1221471.6	486.24 ug/L	486.24 ppb	15:07:59
2	Cd 226.502†	45304.5	41868.4	490.62 ug/L	490.62 ppb	15:08:04
2	Co 228.616†	24637.7	22734.3	493.79 ug/L	493.79 ppb	15:08:04
2	Cr 267.716†	44882.9	41187.3	486.50 ug/L	486.50 ppb	15:08:04
2	Cu 324.752†	173248.5	153055.0	488.57 ug/L	488.57 ppb	15:08:04
2	Mn 257.610†	449754.3	413277.5	484.91 ug/L	484.91 ppb	15:07:59
2	Mo 202.031†	7168.9	6574.6	488.48 ug/L	488.48 ppb	15:08:24
2	Ni 231.604†	20325.1	18619.8	489.86 ug/L	489.86 ppb	15:08:04
2	P 214.914†	4362.2	3784.4	2320.0 ug/L	2320.0 ppb	15:08:24
2	Pb 220.353†	4015.6	3758.1	482.92 ug/L	482.92 ppb	15:08:24
2	S 181.975 Axial†	762.4	654.8	976.40 ug/L	976.40 ppb	15:08:24
2	Sb 206.836†	1496.8	1344.0	508.90 ug/L	508.90 ppb	15:08:24
2	Se 196.026†	787.7	754.9	522.70 ug/L	522.70 ppb	15:08:24
2	Si 251.611†	80602.5	73691.9	2478.6 ug/L	2478.6 ppb	15:08:04
2	Sn 189.927†	2880.3	2643.2	489.63 ug/L	489.63 ppb	15:08:24
2	Ti 334.940†	306954.2	283721.9	486.58 ug/L	486.58 ppb	15:08:04
2	Tl 190.801†	1619.7	1533.7	493.88 ug/L	493.88 ppb	15:08:24
2	U 409.014†	15055.0	15888.5	505.79 ug/L	505.79 ppb	15:08:04
2	V 292.402†	71936.1	67573.6	494.03 ug/L	494.03 ppb	15:08:04
2	Zn 213.857†	54877.4	49615.7	490.57 ug/L	490.57 ppb	15:08:04
2	SiO2†	80616.9	73694.9	5270.0 ug/L	5270.0 ppb	15:09:06
3	Sc Radial	5517.4	5517.4	115 %		15:07:01
3	Y RADIAL	5866.5	5866.5	114.4 %		15:07:01
3	Al 396.153Radial†	6573.8	5711.9	4559.0 ug/L	4559.0 ppb	15:07:01
3	Ca 317.933Radial†	3161.4	2730.2	4597.5 ug/L	4597.5 ppb	15:07:21
3	Fe 238.204 Radial†	581.8	495.4	4671.2 ug/L	4671.2 ppb	15:07:21
3	K 766.490 Radial†	30144.4	23390.1	4680.1 ug/L	4680.1 ppb	15:07:01
3	Mg 279.077 IEC†	159.7	137.1	4814.7 ug/L	4814.7 ppb	15:07:21
3	Na 589.592 Radial†	31672.7	29071.6	9419.4 ug/L	9419.4 ppb	15:07:01
3	Sr 421.552†	76866.2	66733.7	475.64 ug/L	475.64 ppb	15:07:01
3	Sc 361.383	894749.4	894749.4	109.94 %		15:08:30
3	Y 371.029	741475.5	741475.5	108.09 %		15:08:30
3	Ag 328.068†	106229.4	96344.9	476.31 ug/L	476.31 ppb	15:08:35
3	As 188.979†	1157.1	1071.3	486.23 ug/L	486.23 ppb	15:08:55
3	B 249.677†	21235.6	19834.4	480.60 ug/L	480.60 ppb	15:08:35
3	Ba 233.527†	63719.7	57958.0	481.78 ug/L	481.78 ppb	15:08:35
3	Be 313.107†	1337354.0	1220771.9	485.94 ug/L	485.94 ppb	15:08:30
3	Cd 226.502†	45133.7	41251.3	483.40 ug/L	483.40 ppb	15:08:35
3	Co 228.616†	24473.5	22333.8	485.10 ug/L	485.10 ppb	15:08:35
3	Cr 267.716†	44805.8	40659.7	480.26 ug/L	480.26 ppb	15:08:35
3	Cu 324.752†	171478.0	149678.7	477.79 ug/L	477.79 ppb	15:08:35
3	Mn 257.610†	452644.7	411322.2	482.60 ug/L	482.60 ppb	15:08:30
3	Mo 202.031†	7182.5	6513.9	483.95 ug/L	483.95 ppb	15:08:55
3	Ni 231.604†	20205.6	18303.9	481.54 ug/L	481.54 ppb	15:08:35
3	P 214.914†	4368.5	3745.7	2297.6 ug/L	2297.6 ppb	15:08:55
3	Pb 220.353†	4043.1	3742.2	480.87 ug/L	480.87 ppb	15:08:55
3	S 181.975 Axial†	774.7	658.2	981.41 ug/L	981.41 ppb	15:08:55
3	Sb 206.836†	1505.7	1336.9	506.13 ug/L	506.13 ppb	15:08:55
3	Se 196.026†	777.7	737.8	510.38 ug/L	510.38 ppb	15:08:55
3	Si 251.611†	80022.1	72342.3	2433.2 ug/L	2433.2 ppb	15:08:35
3	Sn 189.927†	2880.8	2614.3	484.24 ug/L	484.24 ppb	15:08:55
3	Ti 334.940†	304810.7	278643.4	477.86 ug/L	477.86 ppb	15:08:35
3	Tl 190.801†	1621.6	1518.9	489.12 ug/L	489.12 ppb	15:08:55
3	U 409.014†	15032.7	15714.7	500.28 ug/L	500.28 ppb	15:08:35
3	V 292.402†	71664.0	66592.9	486.92 ug/L	486.92 ppb	15:08:35
3	Zn 213.857†	54487.1	48701.2	481.54 ug/L	481.54 ppb	15:08:35
3	SiO2†	79818.6	72146.9	5159.2 ug/L	5159.2 ppb	15:09:11

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	862560.9	105.98 %	5.827			5.50%
Sc Radial	5384.5	112 %	2.9			2.55%
Y 371.029	714676.0	104.19 %	5.625			5.40%
Y RADIAL	5723.9	111.6 %	2.76			2.47%
Ag 328.068†	99899.6	493.88 ug/L	25.791	493.88 ppb	25.791	5.22%



QC value within limits for Ag 328.068 Recovery = 98.78%					
Al 396.153Radial†	5797.3	4626.6 ug/L	58.87	4626.6 ppb	58.87 1.27%
QC value within limits for Al 396.153Radial Recovery = 92.53%					
As 188.979†	1116.9	506.91 ug/L	32.414	506.91 ppb	32.414 6.39%
QC value within limits for As 188.979 Recovery = 101.38%					
B 249.677†	20561.0	498.20 ug/L	22.752	498.20 ppb	22.752 4.57%
QC value within limits for B 249.677 Recovery = 99.64%					
Ba 233.527†	60507.6	502.97 ug/L	29.602	502.97 ppb	29.602 5.89%
QC value within limits for Ba 233.527 Recovery = 100.59%					
Be 313.107†	1227109.7	488.50 ug/L	4.186	488.50 ppb	4.186 0.86%
QC value within limits for Be 313.107 Recovery = 97.70%					
Ca 317.933Radial†	2801.1	4716.9 ug/L	125.53	4716.9 ppb	125.53 2.66%
QC value within limits for Ca 317.933Radial Recovery = 94.34%					
Cd 226.502†	42920.5	502.97 ug/L	27.879	502.97 ppb	27.879 5.54%
QC value within limits for Cd 226.502 Recovery = 100.59%					
Co 228.616†	23293.3	505.94 ug/L	28.894	505.94 ppb	28.894 5.71%
QC value within limits for Co 228.616 Recovery = 101.19%					
Cr 267.716†	42333.0	500.03 ug/L	28.999	500.03 ppb	28.999 5.80%
QC value within limits for Cr 267.716 Recovery = 100.01%					
Cu 324.752†	156554.8	499.73 ug/L	29.175	499.73 ppb	29.175 5.84%
QC value within limits for Cu 324.752 Recovery = 99.95%					
Fe 238.204 Radial†	509.9	4808.4 ug/L	127.09	4808.4 ppb	127.09 2.64%
QC value within limits for Fe 238.204 Radial Recovery = 96.17%					
K 766.490 Radial†	23648.1	4731.7 ug/L	46.57	4731.7 ppb	46.57 0.98%
QC value within limits for K 766.490 Radial Recovery = 94.63%					
Mg 279.077 IEC†	140.7	4938.9 ug/L	107.94	4938.9 ppb	107.94 2.19%
QC value within limits for Mg 279.077 IEC Recovery = 98.78%					
Mn 257.610†	415341.5	487.32 ug/L	6.285	487.32 ppb	6.285 1.29%
QC value within limits for Mn 257.610 Recovery = 97.46%					
Mo 202.031†	6767.4	502.78 ug/L	28.775	502.78 ppb	28.775 5.72%
QC value within limits for Mo 202.031 Recovery = 100.56%					
Na 589.592 Radial†	29457.2	9544.3 ug/L	108.21	9544.3 ppb	108.21 1.13%
QC value within limits for Na 589.592 Radial Recovery = 95.44%					
Ni 231.604†	19118.0	502.96 ug/L	30.187	502.96 ppb	30.187 6.00%
QC value within limits for Ni 231.604 Recovery = 100.59%					
P 214.914†	3906.9	2396.1 ug/L	151.71	2396.1 ppb	151.71 6.33%
QC value within limits for P 214.914 Recovery = 95.85%					
Pb 220.353†	3884.1	499.08 ug/L	29.787	499.08 ppb	29.787 5.97%
QC value within limits for Pb 220.353 Recovery = 99.82%					
S 181.975 Axial†	677.4	1010.0 ug/L	54.00	1010.0 ppb	54.00 5.35%
QC value within limits for S 181.975 Axial Recovery = 101.00%					
Sb 206.836†	1388.3	525.61 ug/L	31.376	525.61 ppb	31.376 5.97%
QC value within limits for Sb 206.836 Recovery = 105.12%					
Se 196.026†	770.1	532.53 ug/L	28.379	532.53 ppb	28.379 5.33%
QC value within limits for Se 196.026 Recovery = 106.51%					
Si 251.611†	75371.4	2535.1 ug/L	139.00	2535.1 ppb	139.00 5.48%
QC value within limits for Si 251.611 Recovery = 101.40%					
Sn 189.927†	2722.3	504.24 ug/L	30.084	504.24 ppb	30.084 5.97%
QC value within limits for Sn 189.927 Recovery = 100.85%					
Sr 421.552†	67688.4	482.44 ug/L	5.900	482.44 ppb	5.900 1.22%
QC value within limits for Sr 421.552 Recovery = 96.49%					
Ti 334.940†	290656.2	498.46 ug/L	28.460	498.46 ppb	28.460 5.71%
QC value within limits for Ti 334.940 Recovery = 99.69%					
Tl 190.801†	1577.5	507.92 ug/L	28.525	507.92 ppb	28.525 5.62%
QC value within limits for Tl 190.801 Recovery = 101.58%					
U 409.014†	16243.2	517.10 ug/L	24.514	517.10 ppb	24.514 4.74%
QC value within limits for U 409.014 Recovery = 103.42%					
V 292.402†	69325.3	506.89 ug/L	28.645	506.89 ppb	28.645 5.65%
QC value within limits for V 292.402 Recovery = 101.38%					
Zn 213.857†	50655.2	500.85 ug/L	26.019	500.85 ppb	26.019 5.19%
QC value within limits for Zn 213.857 Recovery = 100.17%					
SiO2†	75360.7	5389.1 ug/L	307.22	5389.1 ppb	307.22 5.70%
QC value within limits for SiO2 Recovery = 100.78%					
All analyte(s) passed QC.					



Sequence No.: 2  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 8  
 Date Collected: 1/14/2010 15:11:20  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5318.2	5318.2	111 %		15:13:13
1	Y RADIAL	5716.9	5716.9	111.5 %		15:13:13
1	Al 396.153Radial†	-11.2	-6.9	-5.5406 ug/L	-5.5406 ppb	15:13:13
1	Ca 317.933Radial†	21.4	4.1	6.9170 ug/L	6.9170 ppb	15:13:33
1	Fe 238.204 Radial†	7.0	-3.6	-33.607 ug/L	-33.607 ppb	15:13:33
1	K 766.490 Radial†	2747.4	-312.2	-62.601 ug/L	-62.601 ppb	15:13:13
1	Mg 279.077 IEC†	-0.6	-2.0	-70.813 ug/L	-70.813 ppb	15:13:33
1	Na 589.592 Radial†	-1368.4	334.1	108.27 ug/L	108.27 ppb	15:13:13
1	Sr 421.552†	-2.4	-19.4	-0.1380 ug/L	-0.1380 ppb	15:13:13
1	Sc 361.383	879394.6	879394.6	108.05 %		15:14:30
1	Y 371.029	738335.7	738335.7	107.64 %		15:14:30
1	Ag 328.068†	391.1	80.4	0.3801 ug/L	0.3801 ppb	15:14:30
1	As 188.979†	-27.2	-6.3	-2.8418 ug/L	-2.8418 ppb	15:14:50
1	B 249.677†	-394.9	153.0	3.7300 ug/L	3.7300 ppb	15:14:50
1	Ba 233.527†	-16.7	-16.9	-0.1391 ug/L	-0.1391 ppb	15:14:50
1	Be 313.107†	-4379.7	258.9	0.1038 ug/L	0.1038 ppb	15:14:30
1	Cd 226.502†	-192.8	19.2	0.2298 ug/L	0.2298 ppb	15:14:50
1	Co 228.616†	-79.2	-0.7	-0.0126 ug/L	-0.0126 ppb	15:14:50
1	Cr 267.716†	81.3	-20.5	-0.2447 ug/L	-0.2447 ppb	15:14:50
1	Cu 324.752†	6453.8	-325.2	-1.0451 ug/L	-1.0451 ppb	15:14:30
1	Mn 257.610†	395.4	-38.3	-0.0454 ug/L	-0.0454 ppb	15:14:50
1	Mo 202.031†	33.0	11.2	0.8283 ug/L	0.8283 ppb	15:14:50
1	Ni 231.604†	84.9	3.4	0.0897 ug/L	0.0897 ppb	15:14:50
1	P 214.914†	213.1	-30.7	-19.356 ug/L	-19.356 ppb	15:14:50
1	Pb 220.353†	-71.0	-1.1	-0.1369 ug/L	-0.1369 ppb	15:14:50
1	S 181.975 Axial†	48.7	-1.4	-2.0725 ug/L	-2.0725 ppb	15:14:50
1	Sb 206.836†	48.1	11.8	4.3197 ug/L	4.3197 ppb	15:14:50
1	Se 196.026†	-31.9	0.8	0.4529 ug/L	0.4529 ppb	15:14:50
1	Si 251.611†	477.5	-3.9	-0.1428 ug/L	-0.1428 ppb	15:14:50
1	Sn 189.927†	3.6	-2.7	-0.5074 ug/L	-0.5074 ppb	15:14:50
1	Ti 334.940†	-1227.9	250.6	0.4326 ug/L	0.4326 ppb	15:14:30
1	Tl 190.801†	-31.6	14.7	4.6887 ug/L	4.6887 ppb	15:14:50
1	U 409.014†	-1887.2	294.4	9.4068 ug/L	9.4068 ppb	15:14:30
1	V 292.402†	-1381.5	128.6	0.9607 ug/L	0.9607 ppb	15:14:30
1	Zn 213.857†	817.2	-104.0	-1.0331 ug/L	-1.0331 ppb	15:14:50
1	SiO2†	478.0	-13.8	-1.0118 ug/L	-1.0118 ppb	15:15:46
2	Sc Radial	5371.2	5371.2	112 %		15:13:38
2	Y RADIAL	5762.4	5762.4	112.3 %		15:13:38
2	Al 396.153Radial†	3.0	5.9	4.7564 ug/L	4.7564 ppb	15:13:38
2	Ca 317.933Radial†	23.7	6.0	10.076 ug/L	10.076 ppb	15:13:58
2	Fe 238.204 Radial†	9.1	-1.8	-16.554 ug/L	-16.554 ppb	15:13:58
2	K 766.490 Radial†	2756.1	-328.9	-65.938 ug/L	-65.938 ppb	15:13:38
2	Mg 279.077 IEC†	1.0	-0.6	-20.917 ug/L	-20.917 ppb	15:13:58
2	Na 589.592 Radial†	-1376.1	339.4	109.95 ug/L	109.95 ppb	15:13:38
2	Sr 421.552†	-12.0	-27.9	-0.1989 ug/L	-0.1989 ppb	15:13:38
2	Sc 361.383	885556.4	885556.4	108.81 %		15:14:55
2	Y 371.029	743465.9	743465.9	108.38 %		15:14:55
2	Ag 328.068†	343.8	34.4	0.1636 ug/L	0.1636 ppb	15:14:55
2	As 188.979†	-21.0	-0.5	-0.2131 ug/L	-0.2131 ppb	15:15:15
2	B 249.677†	-375.1	173.8	4.2313 ug/L	4.2313 ppb	15:15:15
2	Ba 233.527†	-1.5	-2.9	-0.0226 ug/L	-0.0226 ppb	15:15:15
2	Be 313.107†	-4524.5	154.0	0.0619 ug/L	0.0619 ppb	15:14:55
2	Cd 226.502†	-186.8	25.9	0.3057 ug/L	0.3057 ppb	15:15:15
2	Co 228.616†	-70.3	8.1	0.1757 ug/L	0.1757 ppb	15:15:15
2	Cr 267.716†	60.4	-40.2	-0.4748 ug/L	-0.4748 ppb	15:15:15
2	Cu 324.752†	6467.6	-354.1	-1.1337 ug/L	-1.1337 ppb	15:14:55
2	Mn 257.610†	415.9	-22.1	-0.0266 ug/L	-0.0266 ppb	15:15:15
2	Mo 202.031†	23.5	2.3	0.1666 ug/L	0.1666 ppb	15:15:15
2	Ni 231.604†	85.3	3.3	0.0870 ug/L	0.0870 ppb	15:15:15



2	P 214.914†	209.5	-35.4	-22.333 ug/L	-22.333 ppb	15:15:15
2	Pb 220.353†	-64.2	5.6	0.7169 ug/L	0.7169 ppb	15:15:15
2	S 181.975 Axial†	41.0	-8.8	-13.100 ug/L	-13.100 ppb	15:15:15
2	Sb 206.836†	37.9	2.1	0.7644 ug/L	0.7644 ppb	15:15:15
2	Se 196.026†	-23.7	8.6	5.7101 ug/L	5.7101 ppb	15:15:15
2	Si 251.611†	491.1	5.5	0.1837 ug/L	0.1837 ppb	15:15:15
2	Sn 189.927†	6.0	-0.6	-0.1129 ug/L	-0.1129 ppb	15:15:15
2	Ti 334.940†	-1313.1	180.2	0.3105 ug/L	0.3105 ppb	15:14:55
2	Tl 190.801†	-34.0	12.7	4.0549 ug/L	4.0549 ppb	15:15:15
2	U 409.014†	-2069.7	138.8	4.4371 ug/L	4.4371 ppb	15:14:55
2	V 292.402†	-1399.0	121.4	0.8887 ug/L	0.8887 ppb	15:14:55
2	Zn 213.857†	831.0	-96.6	-0.9611 ug/L	-0.9611 ppb	15:15:15
2	SiO2†	518.7	20.5	1.4672 ug/L	1.4672 ppb	15:15:51
3	Sc Radial	5368.5	5368.5	112 %		15:14:03
3	Y RADIAL	5754.2	5754.2	112.2 %		15:14:03
3	Al 396.153Radial†	-14.0	-9.2	-7.4208 ug/L	-7.4208 ppb	15:14:03
3	Ca 317.933Radial†	21.1	3.7	6.2056 ug/L	6.2056 ppb	15:14:23
3	Fe 238.204 Radial†	12.0	0.8	7.4565 ug/L	7.4565 ppb	15:14:23
3	K 766.490 Radial†	2746.9	-335.9	-67.340 ug/L	-67.340 ppb	15:14:03
3	Mg 279.077 IEC†	0.6	-1.0	-35.658 ug/L	-35.658 ppb	15:14:23
3	Na 589.592 Radial†	-1346.0	365.7	118.48 ug/L	118.48 ppb	15:14:03
3	Sr 421.552†	51.9	29.1	0.2076 ug/L	0.2076 ppb	15:14:03
3	Sc 361.383	875213.3	875213.3	107.54 %		15:15:20
3	Y 371.029	735677.8	735677.8	107.25 %		15:15:20
3	Ag 328.068†	340.9	35.5	0.1711 ug/L	0.1711 ppb	15:15:20
3	As 188.979†	-20.3	-0.0	-0.0177 ug/L	-0.0177 ppb	15:15:40
3	B 249.677†	-423.9	124.3	3.0243 ug/L	3.0243 ppb	15:15:40
3	Ba 233.527†	11.9	9.6	0.0818 ug/L	0.0818 ppb	15:15:40
3	Be 313.107†	-4427.3	195.3	0.0781 ug/L	0.0781 ppb	15:15:20
3	Cd 226.502†	-189.9	21.0	0.2477 ug/L	0.2477 ppb	15:15:40
3	Co 228.616†	-68.2	9.3	0.2020 ug/L	0.2020 ppb	15:15:40
3	Cr 267.716†	77.9	-23.3	-0.2779 ug/L	-0.2779 ppb	15:15:40
3	Cu 324.752†	6534.7	-221.4	-0.7128 ug/L	-0.7128 ppb	15:15:20
3	Mn 257.610†	436.5	1.6	0.0041 ug/L	0.0041 ppb	15:15:40
3	Mo 202.031†	29.9	8.5	0.6284 ug/L	0.6284 ppb	15:15:40
3	Ni 231.604†	79.9	-0.8	-0.0217 ug/L	-0.0217 ppb	15:15:40
3	P 214.914†	205.3	-37.0	-23.488 ug/L	-23.488 ppb	15:15:40
3	Pb 220.353†	-84.0	-13.5	-1.7296 ug/L	-1.7296 ppb	15:15:40
3	S 181.975 Axial†	46.2	-3.4	-5.1468 ug/L	-5.1468 ppb	15:15:40
3	Sb 206.836†	47.4	11.3	4.1576 ug/L	4.1576 ppb	15:15:40
3	Se 196.026†	-32.8	-0.1	-0.0402 ug/L	-0.0402 ppb	15:15:40
3	Si 251.611†	483.5	3.7	0.1183 ug/L	0.1183 ppb	15:15:40
3	Sn 189.927†	5.8	-0.7	-0.1280 ug/L	-0.1280 ppb	15:15:40
3	Ti 334.940†	-1334.2	146.3	0.2499 ug/L	0.2499 ppb	15:15:20
3	Tl 190.801†	-30.4	15.6	4.9983 ug/L	4.9983 ppb	15:15:40
3	U 409.014†	-1812.5	355.5	11.355 ug/L	11.355 ppb	15:15:20
3	V 292.402†	-1371.4	131.9	0.9802 ug/L	0.9802 ppb	15:15:20
3	Zn 213.857†	815.9	-101.7	-1.0135 ug/L	-1.0135 ppb	15:15:40
3	SiO2†	494.2	3.3	0.2216 ug/L	0.2216 ppb	15:15:56

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	880054.8	108.13 %		0.639			0.59%
Sc Radial	5352.6	112 %		0.6			0.56%
Y 371.029	739159.8	107.76 %		0.577			0.54%
Y RADIAL	5744.5	112.0 %		0.47			0.42%
Ag 328.068†	50.1	0.2382 ug/L		0.12289	0.2382 ppb	0.12289	51.58%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-3.4	-2.7350 ug/L		6.55551	-2.7350 ppb	6.55551	239.69%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-2.3	-1.0242 ug/L		1.57716	-1.0242 ppb	1.57716	153.99%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	150.4	3.6618 ug/L		0.60636	3.6618 ppb	0.60636	16.56%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-3.4	-0.0267 ug/L		0.11051	-0.0267 ppb	0.11051	414.48%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	202.7	0.0813 ug/L		0.02113	0.0813 ppb	0.02113	26.01%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	4.6	7.7329 ug/L		2.06014	7.7329 ppb	2.06014	26.64%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	22.0	0.2611 ug/L	0.03968	0.2611 ppb	0.03968	15.20%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	5.6	0.1217 ug/L	0.11701	0.1217 ppb	0.11701	96.16%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	-28.0	-0.3325 ug/L	0.12441	-0.3325 ppb	0.12441	37.42%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	-300.2	-0.9638 ug/L	0.22190	-0.9638 ppb	0.22190	23.02%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	-1.5	-14.235 ug/L	20.6296	-14.235 ppb	20.6296	144.93%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	-325.7	-65.293 ug/L	2.4345	-65.293 ppb	2.4345	3.73%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	-1.2	-42.462 ug/L	25.6345	-42.462 ppb	25.6345	60.37%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	-19.6	-0.0226 ug/L	0.02498	-0.0226 ppb	0.02498	110.31%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	7.3	0.5411 ug/L	0.33939	0.5411 ppb	0.33939	62.72%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	346.4	112.23 ug/L	5.476	112.23 ppb	5.476	4.88%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	2.0	0.0516 ug/L	0.06356	0.0516 ppb	0.06356	123.09%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-34.4	-21.726 ug/L	2.1317	-21.726 ppb	2.1317	9.81%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	-3.0	-0.3832 ug/L	1.24170	-0.3832 ppb	1.24170	324.05%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	-4.5	-6.7732 ug/L	5.69095	-6.7732 ppb	5.69095	84.02%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	8.4	3.0806 ug/L	2.00751	3.0806 ppb	2.00751	65.17%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	3.1	2.0409 ug/L	3.18715	2.0409 ppb	3.18715	156.16%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	1.8	0.0531 ug/L	0.17273	0.0531 ppb	0.17273	325.44%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	-1.4	-0.2494 ug/L	0.22351	-0.2494 ppb	0.22351	89.60%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	-6.0	-0.0431 ug/L	0.21922	-0.0431 ppb	0.21922	508.65%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	192.4	0.3310 ug/L	0.09307	0.3310 ppb	0.09307	28.12%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	14.3	4.5806 ug/L	0.48087	4.5806 ppb	0.48087	10.50%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	262.9	8.3995 ug/L	3.56711	8.3995 ppb	3.56711	42.47%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	127.3	0.9432 ug/L	0.04820	0.9432 ppb	0.04820	5.11%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	-100.8	-1.0026 ug/L	0.03722	-1.0026 ppb	0.03722	3.71%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		3.4	0.2257 ug/L	1.23948	0.2257 ppb	1.23948	549.25%		
QC value within limits for SiO2 Recovery = Not calculated									

All analyte(s) passed QC.



Sequence No.: 7

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/14/2010 15:45:46

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5272.2	5272.2	110 %		15:47:38
1	Y RADIAL	5550.7	5550.7	108.2 %		15:47:38
1	Al 396.153Radial†	6480.8	5892.9	4703.9 ug/L	4703.9 ppb	15:47:38
1	Ca 317.933Radial†	3088.7	2791.8	4701.2 ug/L	4701.2 ppb	15:47:58
1	Fe 238.204 Radial†	576.6	514.1	4847.6 ug/L	4847.6 ppb	15:47:58
1	K 766.490 Radial†	29458.3	23983.9	4798.9 ug/L	4798.9 ppb	15:47:38
1	Mg 279.077 IEC†	155.1	139.4	4894.6 ug/L	4894.6 ppb	15:47:58
1	Na 589.592 Radial†	30855.3	29607.9	9593.1 ug/L	9593.1 ppb	15:47:38
1	Sr 421.552†	75525.1	68619.2	489.08 ug/L	489.08 ppb	15:47:38
1	Sc 361.383	877672.9	877672.9	107.84 %		15:48:55
1	Y 371.029	726579.4	726579.4	105.92 %		15:48:55
1	Ag 328.068†	105009.5	97093.7	480.06 ug/L	480.06 ppb	15:49:00
1	As 188.979†	1149.7	1084.9	492.47 ug/L	492.47 ppb	15:49:20
1	B 249.677†	21211.8	20188.2	489.16 ug/L	489.16 ppb	15:49:00
1	Ba 233.527†	63505.5	58887.2	489.51 ug/L	489.51 ppb	15:49:00
1	Be 313.107†	1320423.8	1228740.6	489.12 ug/L	489.12 ppb	15:48:55
1	Cd 226.502†	44725.9	41671.9	488.32 ug/L	488.32 ppb	15:49:00
1	Co 228.616†	24392.2	22691.6	492.87 ug/L	492.87 ppb	15:49:00
1	Cr 267.716†	44466.6	41138.1	485.92 ug/L	485.92 ppb	15:49:00
1	Cu 324.752†	171314.2	152561.5	486.99 ug/L	486.99 ppb	15:49:00
1	Mn 257.610†	450224.8	417089.0	489.37 ug/L	489.37 ppb	15:48:55
1	Mo 202.031†	7122.9	6585.7	489.30 ug/L	489.30 ppb	15:49:20
1	Ni 231.604†	20086.4	18551.0	488.04 ug/L	488.04 ppb	15:49:00
1	P 214.914†	4344.4	3800.7	2330.8 ug/L	2330.8 ppb	15:49:20
1	Pb 220.353†	4030.2	3801.8	488.53 ug/L	488.53 ppb	15:49:20
1	S 181.975 Axial†	759.1	657.5	980.36 ug/L	980.36 ppb	15:49:20
1	Sb 206.836†	1479.5	1339.2	507.23 ug/L	507.23 ppb	15:49:20
1	Se 196.026†	777.3	751.1	519.93 ug/L	519.93 ppb	15:49:20
1	Si 251.611†	79738.0	73495.1	2472.0 ug/L	2472.0 ppb	15:49:00
1	Sn 189.927†	2876.7	2661.5	493.00 ug/L	493.00 ppb	15:49:20
1	Ti 334.940†	304335.3	283597.0	486.36 ug/L	486.36 ppb	15:49:00
1	Tl 190.801†	1613.6	1540.2	495.98 ug/L	495.98 ppb	15:49:20
1	U 409.014†	15059.4	16005.5	509.54 ug/L	509.54 ppb	15:49:00
1	V 292.402†	71363.9	67582.9	494.12 ug/L	494.12 ppb	15:49:00
1	Zn 213.857†	54149.8	49352.8	487.97 ug/L	487.97 ppb	15:49:00
1	SiO2†	78960.5	72763.9	5203.3 ug/L	5203.3 ppb	15:50:28
2	Sc Radial	5184.5	5184.5	108 %		15:48:03
2	Y RADIAL	5528.7	5528.7	107.8 %		15:48:03
2	Al 396.153Radial†	6290.1	5816.4	4642.7 ug/L	4642.7 ppb	15:48:03
2	Ca 317.933Radial†	3112.1	2860.9	4817.7 ug/L	4817.7 ppb	15:48:23
2	Fe 238.204 Radial†	575.8	522.2	4924.0 ug/L	4924.0 ppb	15:48:23
2	K 766.490 Radial†	28705.0	23740.6	4750.2 ug/L	4750.2 ppb	15:48:03
2	Mg 279.077 IEC†	156.8	143.4	5033.6 ug/L	5033.6 ppb	15:48:23
2	Na 589.592 Radial†	29979.7	29273.0	9484.6 ug/L	9484.6 ppb	15:48:03
2	Sr 421.552†	73397.4	67813.7	483.33 ug/L	483.33 ppb	15:48:03
2	Sc 361.383	876326.5	876326.5	107.67 %		15:49:26
2	Y 371.029	726682.4	726682.4	105.94 %		15:49:26
2	Ag 328.068†	104067.0	96367.9	476.52 ug/L	476.52 ppb	15:49:31
2	As 188.979†	1127.9	1066.4	484.10 ug/L	484.10 ppb	15:49:51
2	B 249.677†	21078.3	20094.5	486.87 ug/L	486.87 ppb	15:49:31
2	Ba 233.527†	63232.7	58724.3	488.15 ug/L	488.15 ppb	15:49:31
2	Be 313.107†	1322048.1	1232130.4	490.46 ug/L	490.46 ppb	15:49:26
2	Cd 226.502†	44766.4	41773.2	489.50 ug/L	489.50 ppb	15:49:31
2	Co 228.616†	24254.1	22598.0	490.83 ug/L	490.83 ppb	15:49:31
2	Cr 267.716†	44305.7	41052.0	484.90 ug/L	484.90 ppb	15:49:31
2	Cu 324.752†	169384.0	151012.9	482.06 ug/L	482.06 ppb	15:49:31
2	Mn 257.610†	448400.1	416035.7	488.14 ug/L	488.14 ppb	15:49:26
2	Mo 202.031†	7067.8	6544.7	486.26 ug/L	486.26 ppb	15:49:51
2	Ni 231.604†	20032.7	18529.7	487.49 ug/L	487.49 ppb	15:49:31



2	P 214.914†	4312.8	3777.6	2316.9 ug/L	2316.9 ppb	15:49:51
2	Pb 220.353†	4004.6	3783.8	486.20 ug/L	486.20 ppb	15:49:51
2	S 181.975 Axial†	749.3	649.4	968.33 ug/L	968.33 ppb	15:49:51
2	Sb 206.836†	1470.6	1333.1	504.85 ug/L	504.85 ppb	15:49:51
2	Se 196.026†	775.6	750.7	519.84 ug/L	519.84 ppb	15:49:51
2	Si 251.611†	79033.3	72954.3	2453.8 ug/L	2453.8 ppb	15:49:31
2	Sn 189.927†	2843.7	2634.8	488.09 ug/L	488.09 ppb	15:49:51
2	Ti 334.940†	301938.5	281804.6	483.29 ug/L	483.29 ppb	15:49:31
2	Tl 190.801†	1586.9	1517.7	488.77 ug/L	488.77 ppb	15:49:51
2	U 409.014†	14835.5	15819.0	503.57 ug/L	503.57 ppb	15:49:31
2	V 292.402†	70966.2	67315.2	492.13 ug/L	492.13 ppb	15:49:31
2	Zn 213.857†	53937.1	49232.4	486.77 ug/L	486.77 ppb	15:49:31
2	SiO2†	79254.7	73149.5	5231.0 ug/L	5231.0 ppb	15:50:33
3	Sc Radial	5184.0	5184.0	108 %		15:48:28
3	Y RADIAL	5521.1	5521.1	107.6 %		15:48:28
3	Al 396.153Radial†	6410.0	5927.6	4732.0 ug/L	4732.0 ppb	15:48:28
3	Ca 317.933Radial†	3121.6	2870.0	4832.9 ug/L	4832.9 ppb	15:48:48
3	Fe 238.204 Radial†	579.8	526.0	4959.7 ug/L	4959.7 ppb	15:48:48
3	K 766.490 Radial†	29139.4	24144.3	4831.0 ug/L	4831.0 ppb	15:48:28
3	Mg 279.077 IEC†	158.8	145.3	5100.2 ug/L	5100.2 ppb	15:48:48
3	Na 589.592 Radial†	30320.3	29590.1	9587.4 ug/L	9587.4 ppb	15:48:28
3	Sr 421.552†	74504.0	68842.2	490.66 ug/L	490.66 ppb	15:48:28
3	Sc 361.383	876646.0	876646.0	107.71 %		15:49:57
3	Y 371.029	727449.0	727449.0	106.05 %		15:49:57
3	Ag 328.068†	105114.4	97305.1	481.14 ug/L	481.14 ppb	15:50:02
3	As 188.979†	1126.9	1065.1	483.57 ug/L	483.57 ppb	15:50:22
3	B 249.677†	21397.1	20383.3	493.88 ug/L	493.88 ppb	15:50:02
3	Ba 233.527†	63848.6	59274.6	492.73 ug/L	492.73 ppb	15:50:02
3	Be 313.107†	1317962.7	1227890.0	488.79 ug/L	488.79 ppb	15:49:57
3	Cd 226.502†	45198.9	42159.6	494.03 ug/L	494.03 ppb	15:50:02
3	Co 228.616†	24546.4	22861.3	496.54 ug/L	496.54 ppb	15:50:02
3	Cr 267.716†	44734.9	41435.6	489.43 ug/L	489.43 ppb	15:50:02
3	Cu 324.752†	171681.8	153088.8	488.68 ug/L	488.68 ppb	15:50:02
3	Mn 257.610†	447503.0	415051.1	486.99 ug/L	486.99 ppb	15:49:57
3	Mo 202.031†	7063.8	6538.6	485.81 ug/L	485.81 ppb	15:50:22
3	Ni 231.604†	20267.2	18740.7	493.04 ug/L	493.04 ppb	15:50:02
3	P 214.914†	4311.8	3775.1	2314.0 ug/L	2314.0 ppb	15:50:22
3	Pb 220.353†	3999.8	3778.0	485.47 ug/L	485.47 ppb	15:50:22
3	S 181.975 Axial†	756.8	656.1	978.34 ug/L	978.34 ppb	15:50:22
3	Sb 206.836†	1465.0	1327.4	502.76 ug/L	502.76 ppb	15:50:22
3	Se 196.026†	769.3	744.6	515.89 ug/L	515.89 ppb	15:50:22
3	Si 251.611†	80033.1	73855.7	2484.2 ug/L	2484.2 ppb	15:50:02
3	Sn 189.927†	2845.2	2635.4	488.19 ug/L	488.19 ppb	15:50:22
3	Ti 334.940†	305155.5	284689.1	488.23 ug/L	488.23 ppb	15:50:02
3	Tl 190.801†	1601.7	1530.9	492.98 ug/L	492.98 ppb	15:50:22
3	U 409.014†	15148.3	16104.5	512.68 ug/L	512.68 ppb	15:50:02
3	V 292.402†	71614.7	67893.2	496.30 ug/L	496.30 ppb	15:50:02
3	Zn 213.857†	54416.7	49659.3	490.98 ug/L	490.98 ppb	15:50:02
3	SiO2†	78801.3	72701.8	5198.9 ug/L	5198.9 ppb	15:50:38

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	876881.8	107.74 %		0.086			0.08%
Sc Radial	5213.6	109 %		1.1			0.97%
Y 371.029	726903.6	105.97 %		0.069			0.07%
Y RADIAL	5533.5	107.9 %		0.30			0.28%
Ag 328.068†	96922.2	479.24 ug/L		2.419	479.24 ppb	2.419	0.50%
QC value within limits for Ag 328.068 Recovery = 95.85%							
Al 396.153Radial†	5879.0	4692.9 ug/L		45.67	4692.9 ppb	45.67	0.97%
QC value within limits for Al 396.153Radial Recovery = 93.86%							
As 188.979†	1072.1	486.71 ug/L		4.988	486.71 ppb	4.988	1.02%
QC value within limits for As 188.979 Recovery = 97.34%							
B 249.677†	20222.0	489.97 ug/L		3.574	489.97 ppb	3.574	0.73%
QC value within limits for B 249.677 Recovery = 97.99%							
Ba 233.527†	58962.0	490.13 ug/L		2.350	490.13 ppb	2.350	0.48%
QC value within limits for Ba 233.527 Recovery = 98.03%							
Be 313.107†	1229587.0	489.46 ug/L		0.885	489.46 ppb	0.885	0.18%
QC value within limits for Be 313.107 Recovery = 97.89%							
Ca 317.933Radial†	2840.9	4783.9 ug/L		72.03	4783.9 ppb	72.03	1.51%



QC value within limits for Ca 317.933 Radial Recovery = 95.68%

Cd 226.502†	41868.2	490.62 ug/L	3.014	490.62 ppb	3.014	0.61%
QC value within limits for Cd 226.502 Recovery = 98.12%						
Co 228.616†	22717.0	493.41 ug/L	2.891	493.41 ppb	2.891	0.59%
QC value within limits for Co 228.616 Recovery = 98.68%						
Cr 267.716†	41208.6	486.75 ug/L	2.376	486.75 ppb	2.376	0.49%
QC value within limits for Cr 267.716 Recovery = 97.35%						
Cu 324.752†	152221.1	485.91 ug/L	3.442	485.91 ppb	3.442	0.71%
QC value within limits for Cu 324.752 Recovery = 97.18%						
Fe 238.204 Radial†	520.8	4910.4 ug/L	57.28	4910.4 ppb	57.28	1.17%
QC value within limits for Fe 238.204 Radial Recovery = 98.21%						
K 766.490 Radial†	23956.3	4793.4 ug/L	40.71	4793.4 ppb	40.71	0.85%
QC value within limits for K 766.490 Radial Recovery = 95.87%						
Mg 279.077 IEC†	142.7	5009.5 ug/L	104.86	5009.5 ppb	104.86	2.09%
QC value within limits for Mg 279.077 IEC Recovery = 100.19%						
Mn 257.610†	416058.6	488.17 ug/L	1.194	488.17 ppb	1.194	0.24%
QC value within limits for Mn 257.610 Recovery = 97.63%						
Mo 202.031†	6556.4	487.12 ug/L	1.897	487.12 ppb	1.897	0.39%
QC value within limits for Mo 202.031 Recovery = 97.42%						
Na 589.592 Radial†	29490.3	9555.0 ug/L	61.04	9555.0 ppb	61.04	0.64%
QC value within limits for Na 589.592 Radial Recovery = 95.55%						
Ni 231.604†	18607.1	489.52 ug/L	3.056	489.52 ppb	3.056	0.62%
QC value within limits for Ni 231.604 Recovery = 97.90%						
P 214.914†	3784.5	2320.6 ug/L	8.99	2320.6 ppb	8.99	0.39%
QC value within limits for P 214.914 Recovery = 92.82%						
Pb 220.353†	3787.8	486.73 ug/L	1.598	486.73 ppb	1.598	0.33%
QC value within limits for Pb 220.353 Recovery = 97.35%						
S 181.975 Axial†	654.4	975.68 ug/L	6.440	975.68 ppb	6.440	0.66%
QC value within limits for S 181.975 Axial Recovery = 97.57%						
Sb 206.836†	1333.2	504.95 ug/L	2.237	504.95 ppb	2.237	0.44%
QC value within limits for Sb 206.836 Recovery = 100.99%						
Se 196.026†	748.8	518.56 ug/L	2.306	518.56 ppb	2.306	0.44%
QC value within limits for Se 196.026 Recovery = 103.71%						
Si 251.611†	73435.0	2470.0 ug/L	15.30	2470.0 ppb	15.30	0.62%
QC value within limits for Si 251.611 Recovery = 98.80%						
Sn 189.927†	2643.9	489.76 ug/L	2.803	489.76 ppb	2.803	0.57%
QC value within limits for Sn 189.927 Recovery = 97.95%						
Sr 421.552†	68425.1	487.69 ug/L	3.857	487.69 ppb	3.857	0.79%
QC value within limits for Sr 421.552 Recovery = 97.54%						
Ti 334.940†	283363.6	485.96 ug/L	2.494	485.96 ppb	2.494	0.51%
QC value within limits for Ti 334.940 Recovery = 97.19%						
Tl 190.801†	1529.6	492.58 ug/L	3.623	492.58 ppb	3.623	0.74%
QC value within limits for Tl 190.801 Recovery = 98.52%						
U 409.014†	15976.3	508.60 ug/L	4.623	508.60 ppb	4.623	0.91%
QC value within limits for U 409.014 Recovery = 101.72%						
V 292.402†	67597.1	494.19 ug/L	2.086	494.19 ppb	2.086	0.42%
QC value within limits for V 292.402 Recovery = 98.84%						
Zn 213.857†	49414.8	488.58 ug/L	2.169	488.58 ppb	2.169	0.44%
QC value within limits for Zn 213.857 Recovery = 97.72%						
SiO2†	72871.7	5211.1 ug/L	17.40	5211.1 ppb	17.40	0.33%
QC value within limits for SiO2 Recovery = 97.45%						

All analyte(s) passed QC.



Sequence No.: 8

Sample ID: PQL

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 11

Date Collected: 1/14/2010 15:52:47

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: PQL

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5145.5	5145.5	107 %		15:54:40
1	Y RADIAL	5509.8	5509.8	107.4 %		15:54:40
1	Al 396.153Radial†	247.8	233.9	187.24 ug/L	187.24 ppb	15:54:40
1	Ca 317.933Radial†	141.2	116.3	195.84 ug/L	195.84 ppb	15:55:01
1	Fe 238.204 Radial†	21.1	9.7	91.581 ug/L	91.581 ppb	15:55:01
1	K 766.490 Radial†	3478.4	451.6	90.232 ug/L	90.232 ppb	15:54:40
1	Mg 279.077 IEC†	13.2	10.8	379.23 ug/L	379.23 ppb	15:55:01
1	Na 589.592 Radial†	-342.4	1248.1	404.39 ug/L	404.39 ppb	15:54:40
1	Sr 421.552†	740.4	672.3	4.7903 ug/L	4.7903 ppb	15:54:40
1	Sc 361.383	860600.3	860600.3	105.74 %		15:55:57
1	Y 371.029	723958.9	723958.9	105.54 %		15:55:57
1	Ag 328.068†	1422.6	1063.8	5.2241 ug/L	5.2241 ppb	15:55:57
1	As 188.979†	53.5	69.4	31.286 ug/L	31.286 ppb	15:56:17
1	B 249.677†	1662.1	2090.4	50.849 ug/L	50.849 ppb	15:55:57
1	Ba 233.527†	636.6	600.6	4.9943 ug/L	4.9943 ppb	15:56:17
1	Be 313.107†	8564.5	12411.6	4.9413 ug/L	4.9413 ppb	15:55:57
1	Cd 226.502†	251.3	435.2	5.1069 ug/L	5.1069 ppb	15:56:17
1	Co 228.616†	153.8	218.2	4.7480 ug/L	4.7480 ppb	15:56:17
1	Cr 267.716†	484.5	362.5	4.2614 ug/L	4.2614 ppb	15:56:17
1	Cu 324.752†	9710.8	2885.4	9.1817 ug/L	9.1817 ppb	15:55:57
1	Mn 257.610†	9589.7	8664.6	10.154 ug/L	10.154 ppb	15:55:57
1	Mo 202.031†	151.9	124.3	9.2359 ug/L	9.2359 ppb	15:56:17
1	Ni 231.604†	272.1	182.2	4.7922 ug/L	4.7922 ppb	15:56:17
1	P 214.914†	459.9	207.0	130.36 ug/L	130.36 ppb	15:56:17
1	Pb 220.353†	39.6	102.0	13.115 ug/L	13.115 ppb	15:56:17
1	S 181.975 Axial†	114.8	62.1	92.662 ug/L	92.662 ppb	15:56:17
1	Sb 206.836†	67.6	31.2	11.722 ug/L	11.722 ppb	15:56:17
1	Se 196.026†	22.2	51.4	34.683 ug/L	34.683 ppb	15:56:17
1	Si 251.611†	3449.4	2816.2	94.840 ug/L	94.840 ppb	15:56:17
1	Sn 189.927†	61.6	52.1	9.6680 ug/L	9.6680 ppb	15:56:17
1	Ti 334.940†	1733.9	3026.8	5.1592 ug/L	5.1592 ppb	15:55:57
1	Tl 190.801†	27.6	70.0	22.462 ug/L	22.462 ppb	15:56:17
1	U 409.014†	-108.2	1938.7	61.896 ug/L	61.896 ppb	15:55:57
1	V 292.402†	-708.5	737.1	5.5532 ug/L	5.5532 ppb	15:55:57
1	Zn 213.857†	1722.3	768.4	7.6115 ug/L	7.6115 ppb	15:56:17
1	SiO2†	3581.7	2931.0	209.88 ug/L	209.88 ppb	15:57:14
2	Sc Radial	5275.4	5275.4	110 %		15:55:06
2	Y RADIAL	5650.5	5650.5	110.2 %		15:55:06
2	Al 396.153Radial†	260.8	240.1	192.14 ug/L	192.14 ppb	15:55:06
2	Ca 317.933Radial†	145.2	116.7	196.53 ug/L	196.53 ppb	15:55:26
2	Fe 238.204 Radial†	21.7	9.9	92.939 ug/L	92.939 ppb	15:55:26
2	K 766.490 Radial†	3509.6	400.1	79.917 ug/L	79.917 ppb	15:55:06
2	Mg 279.077 IEC†	11.1	8.6	302.17 ug/L	302.17 ppb	15:55:26
2	Na 589.592 Radial†	-389.6	1213.1	393.04 ug/L	393.04 ppb	15:55:06
2	Sr 421.552†	743.9	658.4	4.6916 ug/L	4.6916 ppb	15:55:06
2	Sc 361.383	884317.2	884317.2	108.66 %		15:56:23
2	Y 371.029	743753.6	743753.6	108.43 %		15:56:23
2	Ag 328.068†	1414.1	1019.9	5.0117 ug/L	5.0117 ppb	15:56:23
2	As 188.979†	39.0	54.7	24.674 ug/L	24.674 ppb	15:56:43
2	B 249.677†	1706.2	2088.8	50.810 ug/L	50.810 ppb	15:56:23
2	Ba 233.527†	631.2	579.5	4.8210 ug/L	4.8210 ppb	15:56:43
2	Be 313.107†	8669.1	12290.7	4.8934 ug/L	4.8934 ppb	15:56:23
2	Cd 226.502†	251.3	428.9	5.0321 ug/L	5.0321 ppb	15:56:43
2	Co 228.616†	157.7	217.9	4.7429 ug/L	4.7429 ppb	15:56:43
2	Cr 267.716†	498.2	362.8	4.2660 ug/L	4.2660 ppb	15:56:43
2	Cu 324.752†	9844.5	2762.1	8.7882 ug/L	8.7882 ppb	15:56:23
2	Mn 257.610†	9742.3	8561.9	10.037 ug/L	10.037 ppb	15:56:23
2	Mo 202.031†	168.8	136.0	10.106 ug/L	10.106 ppb	15:56:43
2	Ni 231.604†	285.8	187.9	4.9424 ug/L	4.9424 ppb	15:56:43



2	P 214.914†	450.8	187.0	117.66 ug/L	117.66 ppb	15:56:43
2	Pb 220.353†	20.4	83.4	10.735 ug/L	10.735 ppb	15:56:43
2	S 181.975 Axial†	113.9	58.4	87.087 ug/L	87.087 ppb	15:56:43
2	Sb 206.836†	66.6	28.5	10.774 ug/L	10.774 ppb	15:56:43
2	Se 196.026†	27.7	55.9	37.705 ug/L	37.705 ppb	15:56:43
2	Si 251.611†	3419.1	2700.9	90.940 ug/L	90.940 ppb	15:56:43
2	Sn 189.927†	57.3	46.6	8.6452 ug/L	8.6452 ppb	15:56:43
2	Ti 334.940†	1799.2	3042.9	5.1932 ug/L	5.1932 ppb	15:56:23
2	Tl 190.801†	32.6	73.9	23.695 ug/L	23.695 ppb	15:56:43
2	U 409.014†	-110.3	1939.5	61.921 ug/L	61.921 ppb	15:56:23
2	V 292.402†	-619.7	836.8	6.2833 ug/L	6.2833 ppb	15:56:23
2	Zn 213.857†	1688.9	694.0	6.8691 ug/L	6.8691 ppb	15:56:43
2	SiO2†	3529.5	2792.1	199.90 ug/L	199.90 ppb	15:57:19
3	Sc Radial	5273.9	5273.9	110 %		15:55:31
3	Y RADIAL	5677.7	5677.7	110.7 %		15:55:31
3	Al 396.153Radial†	258.3	238.0	190.39 ug/L	190.39 ppb	15:55:31
3	Ca 317.933Radial†	145.3	116.8	196.75 ug/L	196.75 ppb	15:55:51
3	Fe 238.204 Radial†	23.8	11.7	110.56 ug/L	110.56 ppb	15:55:51
3	K 766.490 Radial†	3552.8	440.3	87.971 ug/L	87.971 ppb	15:55:31
3	Mg 279.077 IEC†	11.9	9.3	326.13 ug/L	326.13 ppb	15:55:51
3	Na 589.592 Radial†	-343.9	1254.5	406.48 ug/L	406.48 ppb	15:55:31
3	Sr 421.552†	753.8	667.6	4.7568 ug/L	4.7568 ppb	15:55:31
3	Sc 361.383	869022.1	869022.1	106.78 %		15:56:48
3	Y 371.029	731616.2	731616.2	106.66 %		15:56:48
3	Ag 328.068†	1414.6	1043.2	5.1289 ug/L	5.1289 ppb	15:56:48
3	As 188.979†	52.2	67.8	30.552 ug/L	30.552 ppb	15:57:08
3	B 249.677†	1655.0	2068.5	50.312 ug/L	50.312 ppb	15:56:48
3	Ba 233.527†	615.4	574.9	4.7826 ug/L	4.7826 ppb	15:57:08
3	Be 313.107†	8597.2	12363.8	4.9225 ug/L	4.9225 ppb	15:56:48
3	Cd 226.502†	249.2	431.0	5.0551 ug/L	5.0551 ppb	15:57:08
3	Co 228.616†	160.8	223.3	4.8603 ug/L	4.8603 ppb	15:57:08
3	Cr 267.716†	525.9	396.8	4.6661 ug/L	4.6661 ppb	15:57:08
3	Cu 324.752†	9786.0	2866.8	9.1219 ug/L	9.1219 ppb	15:56:48
3	Mn 257.610†	9672.0	8653.8	10.145 ug/L	10.145 ppb	15:56:48
3	Mo 202.031†	170.9	140.8	10.461 ug/L	10.461 ppb	15:57:08
3	Ni 231.604†	277.7	185.0	4.8664 ug/L	4.8664 ppb	15:57:08
3	P 214.914†	459.9	202.8	127.68 ug/L	127.68 ppb	15:57:08
3	Pb 220.353†	18.9	82.3	10.591 ug/L	10.591 ppb	15:57:08
3	S 181.975 Axial†	114.8	61.1	91.099 ug/L	91.099 ppb	15:57:08
3	Sb 206.836†	70.8	33.6	12.627 ug/L	12.627 ppb	15:57:08
3	Se 196.026†	25.8	54.5	36.875 ug/L	36.875 ppb	15:57:08
3	Si 251.611†	3448.5	2783.8	93.731 ug/L	93.731 ppb	15:57:08
3	Sn 189.927†	61.6	51.5	9.5605 ug/L	9.5605 ppb	15:57:08
3	Ti 334.940†	1808.1	3080.4	5.2544 ug/L	5.2544 ppb	15:56:48
3	Tl 190.801†	38.5	80.0	25.636 ug/L	25.636 ppb	15:57:08
3	U 409.014†	-30.4	2012.5	64.252 ug/L	64.252 ppb	15:56:48
3	V 292.402†	-658.9	790.1	5.9533 ug/L	5.9533 ppb	15:56:48
3	Zn 213.857†	1719.7	750.2	7.4283 ug/L	7.4283 ppb	15:57:08
3	SiO2†	3550.8	2869.2	205.41 ug/L	205.41 ppb	15:57:24

## Mean Data: PQL

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	871313.2	107.06 %	1.477			1.38%
Sc Radial	5231.6	109 %	1.6			1.43%
Y 371.029	733109.5	106.87 %	1.455			1.36%
Y RADIAL	5612.7	109.4 %	1.76			1.61%
Ag 328.068†	1042.3	5.1216 ug/L	0.10639	5.1216 ppb	0.10639	2.08%
QC value within limits for Ag 328.068 Recovery = 102.43%						
Al 396.153Radial†	237.3	189.92 ug/L	2.483	189.92 ppb	2.483	1.31%
QC value within limits for Al 396.153Radial Recovery = 94.96%						
As 188.979†	64.0	28.837 ug/L	3.6241	28.837 ppb	3.6241	12.57%
QC value within limits for As 188.979 Recovery = 96.12%						
B 249.677†	2082.6	50.657 ug/L	0.2992	50.657 ppb	0.2992	0.59%
QC value within limits for B 249.677 Recovery = 101.31%						
Ba 233.527†	585.0	4.8660 ug/L	0.11280	4.8660 ppb	0.11280	2.32%
QC value within limits for Ba 233.527 Recovery = 97.32%						
Be 313.107†	12355.4	4.9191 ug/L	0.02416	4.9191 ppb	0.02416	0.49%
QC value within limits for Be 313.107 Recovery = 98.38%						
Ca 317.933Radial†	116.6	196.37 ug/L	0.478	196.37 ppb	0.478	0.24%



QC value within limits for Ca 317.933 Radial Recovery = 98.19%							
Cd 226.502†	431.7	5.0647 ug/L	0.03832	5.0647 ppb	0.03832	0.76%	
QC value within limits for Cd 226.502 Recovery = 101.29%							
Co 228.616†	219.8	4.7837 ug/L	0.06633	4.7837 ppb	0.06633	1.39%	
QC value within limits for Co 228.616 Recovery = 95.67%							
Cr 267.716†	374.0	4.3978 ug/L	0.23233	4.3978 ppb	0.23233	5.28%	
QC value within limits for Cr 267.716 Recovery = 87.96%							
Cu 324.752†	2838.1	9.0306 ug/L	0.21204	9.0306 ppb	0.21204	2.35%	
QC value within limits for Cu 324.752 Recovery = 90.31%							
Fe 238.204 Radial†	10.4	98.361 ug/L	10.5880	98.361 ppb	10.5880	10.76%	
QC value within limits for Fe 238.204 Radial Recovery = 98.36%							
K 766.490 Radial†	430.7	86.040 ug/L	5.4214	86.040 ppb	5.4214	6.30%	
QC value less than the lower limit for K 766.490 Radial Recovery = 57.36%							
Mg 279.077 IEC†	9.6	335.84 ug/L	39.435	335.84 ppb	39.435	11.74%	
QC value within limits for Mg 279.077 IEC Recovery = 111.95%							
Mn 257.610†	8626.8	10.112 ug/L	0.0653	10.112 ppb	0.0653	0.65%	
QC value within limits for Mn 257.610 Recovery = 101.12%							
Mo 202.031†	133.7	9.9345 ug/L	0.63052	9.9345 ppb	0.63052	6.35%	
QC value within limits for Mo 202.031 Recovery = 99.34%							
Na 589.592 Radial†	1238.6	401.30 ug/L	7.231	401.30 ppb	7.231	1.80%	
QC value greater than the upper limit for Na 589.592 Radial Recovery = 133.77%							
Ni 231.604†	185.0	4.8670 ug/L	0.07506	4.8670 ppb	0.07506	1.54%	
QC value within limits for Ni 231.604 Recovery = 97.34%							
P 214.914†	199.0	125.24 ug/L	6.692	125.24 ppb	6.692	5.34%	
QC value within limits for P 214.914 Recovery = 83.49%							
Pb 220.353†	89.2	11.480 ug/L	1.4178	11.480 ppb	1.4178	12.35%	
QC value within limits for Pb 220.353 Recovery = 114.80%							
S 181.975 Axial†	60.5	90.283 ug/L	2.8758	90.283 ppb	2.8758	3.19%	
QC value within limits for S 181.975 Axial Recovery = 90.28%							
Sb 206.836†	31.1	11.708 ug/L	0.9266	11.708 ppb	0.9266	7.91%	
QC value within limits for Sb 206.836 Recovery = 117.08%							
Se 196.026†	53.9	36.421 ug/L	1.5614	36.421 ppb	1.5614	4.29%	
QC value within limits for Se 196.026 Recovery = 121.40%							
Si 251.611†	2767.0	93.170 ug/L	2.0097	93.170 ppb	2.0097	2.16%	
QC value within limits for Si 251.611 Recovery = 93.17%							
Sn 189.927†	50.1	9.2912 ug/L	0.56207	9.2912 ppb	0.56207	6.05%	
QC value within limits for Sn 189.927 Recovery = 92.91%							
Sr 421.552†	666.1	4.7462 ug/L	0.05021	4.7462 ppb	0.05021	1.06%	
QC value within limits for Sr 421.552 Recovery = 94.92%							
Ti 334.940†	3050.0	5.2023 ug/L	0.04826	5.2023 ppb	0.04826	0.93%	
QC value within limits for Ti 334.940 Recovery = 104.05%							
Tl 190.801†	74.6	23.931 ug/L	1.6002	23.931 ppb	1.6002	6.69%	
QC value within limits for Tl 190.801 Recovery = 119.66%							
U 409.014†	1963.6	62.690 ug/L	1.3527	62.690 ppb	1.3527	2.16%	
QC value within limits for U 409.014 Recovery = 125.38%							
V 292.402†	788.0	5.9300 ug/L	0.36561	5.9300 ppb	0.36561	6.17%	
QC value within limits for V 292.402 Recovery = 118.60%							
Zn 213.857†	737.5	7.3030 ug/L	0.38678	7.3030 ppb	0.38678	5.30%	
QC value within limits for Zn 213.857 Recovery = 73.03%							
SiO2†	2864.1	205.06 ug/L	4.999	205.06 ppb	4.999	2.44%	
QC value within limits for SiO2 Recovery = 96.27%							
QC Failed. Continue with analysis.							



Sequence No.: 9

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/14/2010 15:59:35

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4659.4	4659.4	97.2 %		16:01:27
1	Y RADIAL	5007.5	5007.5	97.62 %		16:01:27
1	Al 396.153Radial†	-10.2	-7.2	-5.8051 ug/L	-5.8051 ppb	16:01:27
1	Ca 317.933Radial†	18.9	4.3	7.2543 ug/L	7.2543 ppb	16:01:47
1	Fe 238.204 Radial†	8.0	-1.7	-15.719 ug/L	-15.719 ppb	16:01:47
1	K 766.490 Radial†	2779.1	70.3	14.065 ug/L	14.065 ppb	16:01:27
1	Mg 279.077 IEC†	0.7	-0.8	-29.417 ug/L	-29.417 ppb	16:01:47
1	Na 589.592 Radial†	-1362.2	166.1	53.833 ug/L	53.833 ppb	16:01:27
1	Sr 421.552†	11.4	-5.5	-0.0392 ug/L	-0.0392 ppb	16:01:27
1	Sc 361.383	866021.4	866021.4	106.41 %		16:02:44
1	Y 371.029	728495.4	728495.4	106.20 %		16:02:44
1	Ag 328.068†	339.5	37.5	0.1786 ug/L	0.1786 ppb	16:02:44
1	As 188.979†	-20.8	-0.7	-0.2960 ug/L	-0.2960 ppb	16:03:04
1	B 249.677†	-450.9	94.8	2.3095 ug/L	2.3095 ppb	16:03:04
1	Ba 233.527†	5.6	3.8	0.0326 ug/L	0.0326 ppb	16:03:04
1	Be 313.107†	-4421.1	157.4	0.0632 ug/L	0.0632 ppb	16:02:44
1	Cd 226.502†	-169.1	38.6	0.4554 ug/L	0.4554 ppb	16:03:04
1	Co 228.616†	-71.8	5.2	0.1147 ug/L	0.1147 ppb	16:03:04
1	Cr 267.716†	67.2	-32.6	-0.3853 ug/L	-0.3853 ppb	16:03:04
1	Cu 324.752†	6477.5	-210.7	-0.6758 ug/L	-0.6758 ppb	16:02:44
1	Mn 257.610†	415.1	-14.2	-0.0170 ug/L	-0.0170 ppb	16:03:04
1	Mo 202.031†	26.2	5.3	0.3956 ug/L	0.3956 ppb	16:03:04
1	Ni 231.604†	91.0	10.4	0.2745 ug/L	0.2745 ppb	16:03:04
1	P 214.914†	227.7	-13.9	-8.7010 ug/L	-8.7010 ppb	16:03:04
1	Pb 220.353†	-69.8	-1.0	-0.1272 ug/L	-0.1272 ppb	16:03:04
1	S 181.975 Axial†	45.0	-4.2	-6.2508 ug/L	-6.2508 ppb	16:03:04
1	Sb 206.836†	38.6	3.6	1.3250 ug/L	1.3250 ppb	16:03:04
1	Se 196.026†	-27.4	4.7	3.0652 ug/L	3.0652 ppb	16:03:04
1	Si 251.611†	475.4	0.9	0.0257 ug/L	0.0257 ppb	16:03:04
1	Sn 189.927†	10.4	3.6	0.6747 ug/L	0.6747 ppb	16:03:04
1	Ti 334.940†	-1301.9	163.5	0.2821 ug/L	0.2821 ppb	16:02:44
1	Tl 190.801†	-36.6	9.5	3.0463 ug/L	3.0463 ppb	16:03:04
1	U 409.014†	-2023.1	139.7	4.4642 ug/L	4.4642 ppb	16:02:44
1	V 292.402†	-1377.0	113.1	0.8317 ug/L	0.8317 ppb	16:02:44
1	Zn 213.857†	767.1	-139.4	-1.3898 ug/L	-1.3898 ppb	16:03:04
1	SiO2†	472.9	-11.8	-0.8576 ug/L	-0.8576 ppb	16:04:00
2	Sc Radial	5392.2	5392.2	113 %		16:01:52
2	Y RADIAL	5770.9	5770.9	112.5 %		16:01:52
2	Al 396.153Radial†	-1.0	2.3	1.8315 ug/L	1.8315 ppb	16:01:52
2	Ca 317.933Radial†	21.4	3.8	6.4600 ug/L	6.4600 ppb	16:02:12
2	Fe 238.204 Radial†	8.7	-2.1	-20.074 ug/L	-20.074 ppb	16:02:12
2	K 766.490 Radial†	2800.6	-298.9	-59.923 ug/L	-59.923 ppb	16:01:52
2	Mg 279.077 IEC†	1.8	0.1	2.9598 ug/L	2.9598 ppb	16:02:12
2	Na 589.592 Radial†	-1400.6	322.4	104.46 ug/L	104.46 ppb	16:01:52
2	Sr 421.552†	28.1	7.8	0.0552 ug/L	0.0552 ppb	16:01:52
2	Sc 361.383	861825.1	861825.1	105.89 %		16:03:09
2	Y 371.029	726215.3	726215.3	105.87 %		16:03:09
2	Ag 328.068†	319.1	19.8	0.0856 ug/L	0.0856 ppb	16:03:09
2	As 188.979†	-23.7	-3.6	-1.6058 ug/L	-1.6058 ppb	16:03:29
2	B 249.677†	-462.9	81.3	1.9827 ug/L	1.9827 ppb	16:03:29
2	Ba 233.527†	-16.6	-17.2	-0.1409 ug/L	-0.1409 ppb	16:03:29
2	Be 313.107†	-4400.2	156.9	0.0631 ug/L	0.0631 ppb	16:03:09
2	Cd 226.502†	-179.0	28.5	0.3387 ug/L	0.3387 ppb	16:03:29
2	Co 228.616†	-68.8	7.7	0.1694 ug/L	0.1694 ppb	16:03:29
2	Cr 267.716†	76.2	-23.8	-0.2841 ug/L	-0.2841 ppb	16:03:29
2	Cu 324.752†	6433.2	-222.9	-0.7188 ug/L	-0.7188 ppb	16:03:09
2	Mn 257.610†	418.4	-9.1	-0.0128 ug/L	-0.0128 ppb	16:03:29
2	Mo 202.031†	29.6	8.6	0.6392 ug/L	0.6392 ppb	16:03:29
2	Ni 231.604†	81.4	1.8	0.0462 ug/L	0.0462 ppb	16:03:29



2	P 214.914†	214.8	-25.0	-15.847 ug/L	-15.847 ppb	16:03:29
2	Pb 220.353†	-51.3	16.2	2.0754 ug/L	2.0754 ppb	16:03:29
2	S 181.975 Axial†	48.0	-1.2	-1.7421 ug/L	-1.7421 ppb	16:03:29
2	Sb 206.836†	31.6	-2.9	-1.0694 ug/L	-1.0694 ppb	16:03:29
2	Se 196.026†	-28.7	3.2	2.0994 ug/L	2.0994 ppb	16:03:29
2	Si 251.611†	479.3	6.7	0.2194 ug/L	0.2194 ppb	16:03:29
2	Sn 189.927†	-5.5	-11.4	-2.0993 ug/L	-2.0993 ppb	16:03:29
2	Ti 334.940†	-1264.5	192.9	0.3266 ug/L	0.3266 ppb	16:03:09
2	Tl 190.801†	-30.5	15.1	4.8186 ug/L	4.8186 ppb	16:03:29
2	U 409.014†	-1784.7	355.6	11.359 ug/L	11.359 ppb	16:03:09
2	V 292.402†	-1334.2	147.2	1.0953 ug/L	1.0953 ppb	16:03:09
2	Zn 213.857†	781.4	-122.4	-1.2179 ug/L	-1.2179 ppb	16:03:29
2	SiO2†	487.9	4.5	0.3057 ug/L	0.3057 ppb	16:04:05
3	Sc Radial	5260.1	5260.1	110 %		16:02:17
3	Y RADIAL	5637.3	5637.3	109.9 %		16:02:17
3	Al 396.153Radial†	-15.6	-10.9	-8.7458 ug/L	-8.7458 ppb	16:02:17
3	Ca 317.933Radial†	24.1	6.8	11.428 ug/L	11.428 ppb	16:02:37
3	Fe 238.204 Radial†	10.6	-0.2	-2.0976 ug/L	-2.0976 ppb	16:02:37
3	K 766.490 Radial†	2639.1	-383.5	-76.889 ug/L	-76.889 ppb	16:02:17
3	Mg 279.077 IEC†	-0.4	-1.9	-65.704 ug/L	-65.704 ppb	16:02:37
3	Na 589.592 Radial†	-1327.1	358.1	116.02 ug/L	116.02 ppb	16:02:17
3	Sr 421.552†	-6.5	-23.1	-0.1647 ug/L	-0.1647 ppb	16:02:17
3	Sc 361.383	868535.1	868535.1	106.72 %		16:03:34
3	Y 371.029	730952.8	730952.8	106.56 %		16:03:34
3	Ag 328.068†	391.0	84.8	0.4121 ug/L	0.4121 ppb	16:03:34
3	As 188.979†	-21.7	-1.5	-0.6640 ug/L	-0.6640 ppb	16:03:54
3	B 249.677†	-462.0	85.6	2.0843 ug/L	2.0843 ppb	16:03:54
3	Ba 233.527†	6.0	4.1	0.0359 ug/L	0.0359 ppb	16:03:54
3	Be 313.107†	-4385.5	202.8	0.0812 ug/L	0.0812 ppb	16:03:34
3	Cd 226.502†	-186.4	22.9	0.2699 ug/L	0.2699 ppb	16:03:54
3	Co 228.616†	-80.9	-3.1	-0.0688 ug/L	-0.0688 ppb	16:03:54
3	Cr 267.716†	68.6	-31.5	-0.3733 ug/L	-0.3733 ppb	16:03:54
3	Cu 324.752†	6325.9	-370.3	-1.1867 ug/L	-1.1867 ppb	16:03:34
3	Mn 257.610†	399.4	-30.1	-0.0328 ug/L	-0.0328 ppb	16:03:54
3	Mo 202.031†	13.9	-6.3	-0.4644 ug/L	-0.4644 ppb	16:03:54
3	Ni 231.604†	72.1	-7.6	-0.1992 ug/L	-0.1992 ppb	16:03:54
3	P 214.914†	235.3	-7.4	-4.4881 ug/L	-4.4881 ppb	16:03:54
3	Pb 220.353†	-51.9	15.9	2.0393 ug/L	2.0393 ppb	16:03:54
3	S 181.975 Axial†	39.9	-9.1	-13.569 ug/L	-13.569 ppb	16:03:54
3	Sb 206.836†	30.5	-4.1	-1.5002 ug/L	-1.5002 ppb	16:03:54
3	Se 196.026†	-37.4	-4.7	-3.1537 ug/L	-3.1537 ppb	16:03:54
3	Si 251.611†	490.4	13.6	0.4650 ug/L	0.4650 ppb	16:03:54
3	Sn 189.927†	14.8	7.8	1.4382 ug/L	1.4382 ppb	16:03:54
3	Ti 334.940†	-1308.7	160.6	0.2791 ug/L	0.2791 ppb	16:03:34
3	Tl 190.801†	-34.9	11.2	3.5679 ug/L	3.5679 ppb	16:03:54
3	U 409.014†	-1907.5	253.6	8.0989 ug/L	8.0989 ppb	16:03:34
3	V 292.402†	-1398.1	97.0	0.7078 ug/L	0.7078 ppb	16:03:34
3	Zn 213.857†	788.6	-121.3	-1.2070 ug/L	-1.2070 ppb	16:03:54
3	SiO2†	490.1	3.0	0.2286 ug/L	0.2286 ppb	16:04:10

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	865460.5	106.34 %	0.417			0.39%
Sc Radial	5103.9	107 %	8.2			7.65%
Y 371.029	728554.5	106.21 %	0.345			0.33%
Y RADIAL	5471.9	106.7 %	7.95			7.45%
Ag 328.068†	47.4	0.2254 ug/L	0.16820	0.2254 ppb	0.16820	74.62%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	-5.3	-4.2398 ug/L	5.45962	-4.2398 ppb	5.45962	128.77%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-1.9	-0.8552 ug/L	0.67551	-0.8552 ppb	0.67551	78.99%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	87.3	2.1255 ug/L	0.16723	2.1255 ppb	0.16723	7.87%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-3.1	-0.0241 ug/L	0.10113	-0.0241 ppb	0.10113	418.94%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	172.4	0.0691 ug/L	0.01042	0.0691 ppb	0.01042	15.07%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	5.0	8.3806 ug/L	2.66843	8.3806 ppb	2.66843	31.84%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	30.0	0.3546 ug/L	0.09376	0.3546 ppb	0.09376	26.44%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	3.3	0.0718 ug/L	0.12478	0.0718 ppb	0.12478	173.87%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-29.3	-0.3476 ug/L	0.05531	-0.3476 ppb	0.05531	15.91%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-267.9	-0.8604 ug/L	0.28339	-0.8604 ppb	0.28339	32.94%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	-1.3	-12.630 ug/L	9.3780	-12.630 ppb	9.3780	74.25%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	-204.0	-40.916 ug/L	48.3645	-40.916 ppb	48.3645	118.21%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	-0.9	-30.721 ug/L	34.3506	-30.721 ppb	34.3506	111.82%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-17.8	-0.0209 ug/L	0.01053	-0.0209 ppb	0.01053	50.44%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	2.6	0.1901 ug/L	0.57975	0.1901 ppb	0.57975	304.91%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	282.2	91.438 ug/L	33.0764	91.438 ppb	33.0764	36.17%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	1.5	0.0405 ug/L	0.23689	0.0405 ppb	0.23689	584.90%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-15.4	-9.6788 ug/L	5.74231	-9.6788 ppb	5.74231	59.33%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	10.4	1.3292 ug/L	1.26137	1.3292 ppb	1.26137	94.90%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	-4.8	-7.1872 ug/L	5.96870	-7.1872 ppb	5.96870	83.05%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	-1.1	-0.4149 ug/L	1.52209	-0.4149 ppb	1.52209	366.85%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	1.1	0.6703 ug/L	3.34674	0.6703 ppb	3.34674	499.29%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	7.1	0.2367 ug/L	0.22015	0.2367 ppb	0.22015	93.01%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	0.0	0.0045 ug/L	1.86154	0.0045 ppb	1.86154	>999.9%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	-6.9	-0.0496 ug/L	0.11033	-0.0496 ppb	0.11033	222.65%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	172.3	0.2959 ug/L	0.02661	0.2959 ppb	0.02661	8.99%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	11.9	3.8110 ug/L	0.91080	3.8110 ppb	0.91080	23.90%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	249.6	7.9740 ug/L	3.44894	7.9740 ppb	3.44894	43.25%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	119.1	0.8783 ug/L	0.19795	0.8783 ppb	0.19795	22.54%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	-127.7	-1.2716 ug/L	0.10252	-1.2716 ppb	0.10252	8.06%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	-1.4	-0.1077 ug/L	0.65051	-0.1077 ppb	0.65051	603.75%	
QC value within limits for SiO2 Recovery = Not calculated							

All analyte(s) passed QC.



Sequence No.: 18

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/14/2010 17:01:21

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5210.5	5210.5	109 %		17:03:13
1	Y RADIAL	5523.1	5523.1	107.7 %		17:03:13
1	Al 396.153Radial†	6451.1	5935.4	4737.9 ug/L	4737.9 ppb	17:03:13
1	Ca 317.933Radial†	3091.3	2827.4	4761.2 ug/L	4761.2 ppb	17:03:33
1	Fe 238.204 Radial†	568.7	513.0	4838.1 ug/L	4838.1 ppb	17:03:33
1	K 766.490 Radial†	29286.1	24142.5	4830.7 ug/L	4830.7 ppb	17:03:13
1	Mg 279.077 IEC†	153.7	139.9	4909.8 ug/L	4909.8 ppb	17:03:33
1	Na 589.592 Radial†	30090.7	29236.7	9472.8 ug/L	9472.8 ppb	17:03:13
1	Sr 421.552†	74178.7	68193.5	486.04 ug/L	486.04 ppb	17:03:13
1	Sc 361.383	863186.9	863186.9	106.06 %		17:04:30
1	Y 371.029	716352.1	716352.1	104.43 %		17:04:30
1	Ag 328.068†	105650.3	99332.0	491.10 ug/L	491.10 ppb	17:04:35
1	As 188.979†	1136.3	1090.2	494.92 ug/L	494.92 ppb	17:04:55
1	B 249.677†	21404.2	20699.7	501.58 ug/L	501.58 ppb	17:04:35
1	Ba 233.527†	64025.4	60365.6	501.80 ug/L	501.80 ppb	17:04:35
1	Be 313.107†	1311167.7	1240561.8	493.85 ug/L	493.85 ppb	17:04:30
1	Cd 226.502†	45211.3	42825.6	501.86 ug/L	501.86 ppb	17:04:35
1	Co 228.616†	24534.3	23205.1	504.00 ug/L	504.00 ppb	17:04:35
1	Cr 267.716†	44829.8	42172.6	498.13 ug/L	498.13 ppb	17:04:35
1	Cu 324.752†	172907.8	156730.1	500.29 ug/L	500.29 ppb	17:04:35
1	Mn 257.610†	445099.9	419263.3	491.92 ug/L	491.92 ppb	17:04:30
1	Mo 202.031†	7040.2	6618.6	491.74 ug/L	491.74 ppb	17:04:55
1	Ni 231.604†	20293.1	19058.4	501.40 ug/L	501.40 ppb	17:04:35
1	P 214.914†	4302.9	3829.2	2346.3 ug/L	2346.3 ppb	17:04:55
1	Pb 220.353†	3982.8	3819.8	490.85 ug/L	490.85 ppb	17:04:55
1	S 181.975 Axial†	749.4	660.1	984.21 ug/L	984.21 ppb	17:04:55
1	Sb 206.836†	1459.5	1343.4	508.80 ug/L	508.80 ppb	17:04:55
1	Se 196.026†	784.6	770.1	532.62 ug/L	532.62 ppb	17:04:55
1	Si 251.611†	80354.8	75317.6	2533.4 ug/L	2533.4 ppb	17:04:35
1	Sn 189.927†	2827.0	2659.3	492.61 ug/L	492.61 ppb	17:04:55
1	Ti 334.940†	306556.7	290427.5	498.07 ug/L	498.07 ppb	17:04:35
1	Tl 190.801†	1568.2	1522.5	490.37 ug/L	490.37 ppb	17:04:55
1	U 409.014†	15300.1	16466.9	524.25 ug/L	524.25 ppb	17:04:35
1	V 292.402†	72085.3	69373.6	507.09 ug/L	507.09 ppb	17:04:35
1	Zn 213.857†	54651.9	50668.8	501.00 ug/L	501.00 ppb	17:04:35
1	SiO2†	79267.8	74282.4	5312.1 ug/L	5312.1 ppb	17:06:03
2	Sc Radial	5329.7	5329.7	111 %		17:03:38
2	Y RADIAL	5727.5	5727.5	111.7 %		17:03:38
2	Al 396.153Radial†	6423.0	5777.5	4611.3 ug/L	4611.3 ppb	17:03:38
2	Ca 317.933Radial†	3033.4	2711.8	4566.6 ug/L	4566.6 ppb	17:03:58
2	Fe 238.204 Radial†	558.9	492.6	4645.6 ug/L	4645.6 ppb	17:03:58
2	K 766.490 Radial†	29412.1	23653.7	4732.9 ug/L	4732.9 ppb	17:03:38
2	Mg 279.077 IEC†	151.8	134.9	4737.4 ug/L	4737.4 ppb	17:03:58
2	Na 589.592 Radial†	30314.8	28819.5	9337.7 ug/L	9337.7 ppb	17:03:38
2	Sr 421.552†	74656.1	67097.6	478.23 ug/L	478.23 ppb	17:03:38
2	Sc 361.383	862358.1	862358.1	105.96 %		17:05:01
2	Y 371.029	714611.9	714611.9	104.18 %		17:05:01
2	Ag 328.068†	104039.6	97907.6	484.02 ug/L	484.02 ppb	17:05:06
2	As 188.979†	1128.0	1083.5	491.78 ug/L	491.78 ppb	17:05:26
2	B 249.677†	21027.9	20364.0	493.46 ug/L	493.46 ppb	17:05:06
2	Ba 233.527†	62788.0	59255.8	492.57 ug/L	492.57 ppb	17:05:06
2	Be 313.107†	1304703.2	1235648.9	491.88 ug/L	491.88 ppb	17:05:01
2	Cd 226.502†	44458.8	42156.3	494.02 ug/L	494.02 ppb	17:05:06
2	Co 228.616†	24131.3	22847.1	496.24 ug/L	496.24 ppb	17:05:06
2	Cr 267.716†	43932.3	41366.2	488.61 ug/L	488.61 ppb	17:05:06
2	Cu 324.752†	169255.3	153439.6	489.78 ug/L	489.78 ppb	17:05:06
2	Mn 257.610†	444607.9	419202.3	491.84 ug/L	491.84 ppb	17:05:01
2	Mo 202.031†	7020.1	6606.0	490.79 ug/L	490.79 ppb	17:05:26
2	Ni 231.604†	19936.4	18740.2	493.02 ug/L	493.02 ppb	17:05:06



2	P 214.914†	4270.3	3802.3	2331.4 ug/L	2331.4 ppb	17:05:26
2	Pb 220.353†	3957.8	3799.8	488.27 ug/L	488.27 ppb	17:05:26
2	S 181.975 Axial†	760.2	671.0	1000.6 ug/L	1000.6 ppb	17:05:26
2	Sb 206.836†	1451.4	1337.0	506.45 ug/L	506.45 ppb	17:05:26
2	Se 196.026†	752.5	740.5	512.18 ug/L	512.18 ppb	17:05:26
2	Si 251.611†	78888.5	74006.5	2489.2 ug/L	2489.2 ppb	17:05:06
2	Sn 189.927†	2828.0	2662.9	493.23 ug/L	493.23 ppb	17:05:26
2	Ti 334.940†	300878.0	285346.0	489.35 ug/L	489.35 ppb	17:05:06
2	Tl 190.801†	1576.9	1532.2	493.43 ug/L	493.43 ppb	17:05:26
2	U 409.014†	14883.9	16087.9	512.19 ug/L	512.19 ppb	17:05:06
2	V 292.402†	70748.8	68177.6	498.46 ug/L	498.46 ppb	17:05:06
2	Zn 213.857†	53625.7	49749.9	491.92 ug/L	491.92 ppb	17:05:06
2	SiO2†	78450.4	73582.7	5261.9 ug/L	5261.9 ppb	17:06:08
3	Sc Radial	5234.3	5234.3	109 %		17:04:03
3	Y RADIAL	5582.3	5582.3	108.8 %		17:04:03
3	Al 396.153Radial†	6348.8	5814.7	4641.4 ug/L	4641.4 ppb	17:04:03
3	Ca 317.933Radial†	3112.5	2833.9	4772.2 ug/L	4772.2 ppb	17:04:23
3	Fe 238.204 Radial†	573.8	515.4	4859.7 ug/L	4859.7 ppb	17:04:23
3	K 766.490 Radial†	29151.9	23897.0	4781.6 ug/L	4781.6 ppb	17:04:03
3	Mg 279.077 IEC†	159.0	144.0	5056.9 ug/L	5056.9 ppb	17:04:23
3	Na 589.592 Radial†	29562.5	28627.2	9275.4 ug/L	9275.4 ppb	17:04:03
3	Sr 421.552†	73455.8	67221.2	479.11 ug/L	479.11 ppb	17:04:03
3	Sc 361.383	870366.0	870366.0	106.94 %		17:05:32
3	Y 371.029	720440.4	720440.4	105.03 %		17:05:32
3	Ag 328.068†	102646.8	95701.8	473.22 ug/L	473.22 ppb	17:05:37
3	As 188.979†	1115.7	1062.1	482.16 ug/L	482.16 ppb	17:05:57
3	B 249.677†	20849.1	20014.2	484.94 ug/L	484.94 ppb	17:05:37
3	Ba 233.527†	62547.3	58485.5	486.17 ug/L	486.17 ppb	17:05:37
3	Be 313.107†	1311841.7	1230995.0	490.01 ug/L	490.01 ppb	17:05:32
3	Cd 226.502†	44165.8	41496.3	486.26 ug/L	486.26 ppb	17:05:37
3	Co 228.616†	23962.7	22479.8	488.27 ug/L	488.27 ppb	17:05:37
3	Cr 267.716†	43786.4	40848.2	482.49 ug/L	482.49 ppb	17:05:37
3	Cu 324.752†	168056.1	150848.6	481.52 ug/L	481.52 ppb	17:05:37
3	Mn 257.610†	446514.2	417124.2	489.41 ug/L	489.41 ppb	17:05:32
3	Mo 202.031†	7005.8	6531.7	485.29 ug/L	485.29 ppb	17:05:57
3	Ni 231.604†	19852.5	18488.6	486.41 ug/L	486.41 ppb	17:05:37
3	P 214.914†	4253.4	3749.4	2299.1 ug/L	2299.1 ppb	17:05:57
3	Pb 220.353†	3970.7	3777.5	485.41 ug/L	485.41 ppb	17:05:57
3	S 181.975 Axial†	753.7	658.3	981.58 ug/L	981.58 ppb	17:05:57
3	Sb 206.836†	1460.0	1332.5	504.60 ug/L	504.60 ppb	17:05:57
3	Se 196.026†	759.9	740.9	513.11 ug/L	513.11 ppb	17:05:57
3	Si 251.611†	78320.8	72790.7	2448.3 ug/L	2448.3 ppb	17:05:37
3	Sn 189.927†	2824.3	2634.8	488.08 ug/L	488.08 ppb	17:05:57
3	Ti 334.940†	299153.6	281120.9	482.11 ug/L	482.11 ppb	17:05:37
3	Tl 190.801†	1577.4	1518.9	489.17 ug/L	489.17 ppb	17:05:57
3	U 409.014†	14944.2	16015.0	509.85 ug/L	509.85 ppb	17:05:37
3	V 292.402†	70402.1	67239.1	491.59 ug/L	491.59 ppb	17:05:37
3	Zn 213.857†	53355.1	49031.2	484.78 ug/L	484.78 ppb	17:05:37
3	SiO2†	79182.0	73585.6	5262.3 ug/L	5262.3 ppb	17:06:13

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	865303.7	106.32 %		0.541			0.51%
Sc Radial	5258.2	110 %		1.3			1.20%
Y 371.029	717134.8	104.54 %		0.436			0.42%
Y RADIAL	5611.0	109.4 %		2.05			1.87%
Ag 328.068†	97647.1	482.78 ug/L		9.003	482.78 ppb	9.003	1.86%
QC value within limits for Ag 328.068 Recovery = 96.56%							
Al 396.153Radial†	5842.5	4663.5 ug/L		66.15	4663.5 ppb	66.15	1.42%
QC value within limits for Al 396.153Radial Recovery = 93.27%							
As 188.979†	1078.6	489.62 ug/L		6.648	489.62 ppb	6.648	1.36%
QC value within limits for As 188.979 Recovery = 97.92%							
B 249.677†	20359.3	493.33 ug/L		8.322	493.33 ppb	8.322	1.69%
QC value within limits for B 249.677 Recovery = 98.67%							
Ba 233.527†	59369.0	493.51 ug/L		7.854	493.51 ppb	7.854	1.59%
QC value within limits for Ba 233.527 Recovery = 98.70%							
Be 313.107†	1235735.2	491.91 ug/L		1.918	491.91 ppb	1.918	0.39%
QC value within limits for Be 313.107 Recovery = 98.38%							
Ca 317.933Radial†	2791.1	4700.0 ug/L		115.65	4700.0 ppb	115.65	2.46%



QC value within limits for Ca 317.933 Radial Recovery = 94.00%							
Cd 226.502†	42159.4	494.05 ug/L	7.797	494.05 ppb	7.797	1.58%	
QC value within limits for Cd 226.502 Recovery = 98.81%							
Co 228.616†	22844.0	496.17 ug/L	7.867	496.17 ppb	7.867	1.59%	
QC value within limits for Co 228.616 Recovery = 99.23%							
Cr 267.716†	41462.3	489.75 ug/L	7.882	489.75 ppb	7.882	1.61%	
QC value within limits for Cr 267.716 Recovery = 97.95%							
Cu 324.752†	153672.8	490.53 ug/L	9.406	490.53 ppb	9.406	1.92%	
QC value within limits for Cu 324.752 Recovery = 98.11%							
Fe 238.204 Radial†	507.0	4781.1 ug/L	117.86	4781.1 ppb	117.86	2.47%	
QC value within limits for Fe 238.204 Radial Recovery = 95.62%							
K 766.490 Radial†	23897.7	4781.8 ug/L	48.90	4781.8 ppb	48.90	1.02%	
QC value within limits for K 766.490 Radial Recovery = 95.64%							
Mg 279.077 IEC†	139.6	4901.4 ug/L	159.93	4901.4 ppb	159.93	3.26%	
QC value within limits for Mg 279.077 IEC Recovery = 98.03%							
Mn 257.610†	418529.9	491.05 ug/L	1.427	491.05 ppb	1.427	0.29%	
QC value within limits for Mn 257.610 Recovery = 98.21%							
Mo 202.031†	6585.4	489.27 ug/L	3.482	489.27 ppb	3.482	0.71%	
QC value within limits for Mo 202.031 Recovery = 97.85%							
Na 589.592 Radial†	28894.5	9362.0 ug/L	100.95	9362.0 ppb	100.95	1.08%	
QC value within limits for Na 589.592 Radial Recovery = 93.62%							
Ni 231.604†	18762.4	493.61 ug/L	7.512	493.61 ppb	7.512	1.52%	
QC value within limits for Ni 231.604 Recovery = 98.72%							
P 214.914†	3793.6	2325.6 ug/L	24.17	2325.6 ppb	24.17	1.04%	
QC value within limits for P 214.914 Recovery = 93.02%							
Pb 220.353†	3799.0	488.18 ug/L	2.722	488.18 ppb	2.722	0.56%	
QC value within limits for Pb 220.353 Recovery = 97.64%							
S 181.975 Axial†	663.1	988.79 ug/L	10.299	988.79 ppb	10.299	1.04%	
QC value within limits for S 181.975 Axial Recovery = 98.88%							
Sb 206.836†	1337.6	506.62 ug/L	2.104	506.62 ppb	2.104	0.42%	
QC value within limits for Sb 206.836 Recovery = 101.32%							
Se 196.026†	750.5	519.30 ug/L	11.541	519.30 ppb	11.541	2.22%	
QC value within limits for Se 196.026 Recovery = 103.86%							
Si 251.611†	74038.3	2490.3 ug/L	42.57	2490.3 ppb	42.57	1.71%	
QC value within limits for Si 251.611 Recovery = 99.61%							
Sn 189.927†	2652.3	491.31 ug/L	2.810	491.31 ppb	2.810	0.57%	
QC value within limits for Sn 189.927 Recovery = 98.26%							
Sr 421.552†	67504.1	481.13 ug/L	4.278	481.13 ppb	4.278	0.89%	
QC value within limits for Sr 421.552 Recovery = 96.23%							
Ti 334.940†	285631.4	489.84 ug/L	7.994	489.84 ppb	7.994	1.63%	
QC value within limits for Ti 334.940 Recovery = 97.97%							
Tl 190.801†	1524.5	490.99 ug/L	2.197	490.99 ppb	2.197	0.45%	
QC value within limits for Tl 190.801 Recovery = 98.20%							
U 409.014†	16189.9	515.43 ug/L	7.726	515.43 ppb	7.726	1.50%	
QC value within limits for U 409.014 Recovery = 103.09%							
V 292.402†	68263.4	499.05 ug/L	7.764	499.05 ppb	7.764	1.56%	
QC value within limits for V 292.402 Recovery = 99.81%							
Zn 213.857†	49816.6	492.56 ug/L	8.126	492.56 ppb	8.126	1.65%	
QC value within limits for Zn 213.857 Recovery = 98.51%							
SiO2†	73816.9	5278.8 ug/L	28.84	5278.8 ppb	28.84	0.55%	
QC value within limits for SiO2 Recovery = 98.71%							

All analyte(s) passed QC.



Sequence No.: 19

Sample ID: PQL

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 11

Date Collected: 1/14/2010 17:08:23

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: PQL

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5205.9	5205.9	109 %		17:10:16
1	Y RADIAL	5551.4	5551.4	108.2 %		17:10:16
1	Al 396.153Radial†	244.4	228.1	182.53 ug/L	182.53 ppb	17:10:16
1	Ca 317.933Radial†	144.8	118.1	198.88 ug/L	198.88 ppb	17:10:36
1	Fe 238.204 Radial†	21.4	9.8	92.655 ug/L	92.655 ppb	17:10:36
1	K 766.490 Radial†	3578.2	505.8	101.09 ug/L	101.09 ppb	17:10:16
1	Mg 279.077 IEC†	12.6	10.1	354.07 ug/L	354.07 ppb	17:10:36
1	Na 589.592 Radial†	-309.7	1281.9	415.35 ug/L	415.35 ppb	17:10:16
1	Sr 421.552†	756.1	678.7	4.8361 ug/L	4.8361 ppb	17:10:16
1	Sc 361.383	864686.2	864686.2	106.24 %		17:11:33
1	Y 371.029	727912.6	727912.6	106.12 %		17:11:33
1	Ag 328.068†	1500.8	1131.0	5.5575 ug/L	5.5575 ppb	17:11:33
1	As 188.979†	46.5	62.6	28.239 ug/L	28.239 ppb	17:11:53
1	B 249.677†	1792.6	2205.8	53.656 ug/L	53.656 ppb	17:11:33
1	Ba 233.527†	622.8	584.7	4.8638 ug/L	4.8638 ppb	17:11:53
1	Be 313.107†	8726.9	12526.3	4.9869 ug/L	4.9869 ppb	17:11:33
1	Cd 226.502†	262.8	444.9	5.2201 ug/L	5.2201 ppb	17:11:53
1	Co 228.616†	165.0	228.0	4.9640 ug/L	4.9640 ppb	17:11:53
1	Cr 267.716†	517.9	391.7	4.6072 ug/L	4.6072 ppb	17:11:53
1	Cu 324.752†	9883.1	3004.1	9.5614 ug/L	9.5614 ppb	17:11:33
1	Mn 257.610†	9666.9	8694.4	10.190 ug/L	10.190 ppb	17:11:33
1	Mo 202.031†	166.7	137.6	10.222 ug/L	10.222 ppb	17:11:53
1	Ni 231.604†	283.1	191.4	5.0345 ug/L	5.0345 ppb	17:11:53
1	P 214.914†	456.6	201.9	126.99 ug/L	126.99 ppb	17:11:53
1	Pb 220.353†	14.1	77.8	10.022 ug/L	10.022 ppb	17:11:53
1	S 181.975 Axial†	120.5	66.9	99.862 ug/L	99.862 ppb	17:11:53
1	Sb 206.836†	66.4	29.8	11.223 ug/L	11.223 ppb	17:11:53
1	Se 196.026†	19.5	48.7	32.934 ug/L	32.934 ppb	17:11:53
1	Si 251.611†	3541.5	2887.5	97.231 ug/L	97.231 ppb	17:11:33
1	Sn 189.927†	53.9	44.6	8.2756 ug/L	8.2756 ppb	17:11:53
1	Ti 334.940†	1749.2	3033.5	5.1735 ug/L	5.1735 ppb	17:11:33
1	Tl 190.801†	38.2	79.9	25.608 ug/L	25.608 ppb	17:11:53
1	U 409.014†	-149.7	1900.0	60.661 ug/L	60.661 ppb	17:11:33
1	V 292.402†	-644.3	800.7	6.0232 ug/L	6.0232 ppb	17:11:33
1	Zn 213.857†	1740.1	777.5	7.7002 ug/L	7.7002 ppb	17:11:53
1	SiO2†	3553.7	2888.7	206.82 ug/L	206.82 ppb	17:12:49
2	Sc Radial	5301.1	5301.1	111 %		17:10:41
2	Y RADIAL	5651.3	5651.3	110.2 %		17:10:41
2	Al 396.153Radial†	274.6	251.4	201.20 ug/L	201.20 ppb	17:10:41
2	Ca 317.933Radial†	145.6	116.4	196.02 ug/L	196.02 ppb	17:11:01
2	Fe 238.204 Radial†	22.6	10.6	99.458 ug/L	99.458 ppb	17:11:01
2	K 766.490 Radial†	3616.5	481.3	96.185 ug/L	96.185 ppb	17:10:41
2	Mg 279.077 IEC†	15.5	12.5	437.73 ug/L	437.73 ppb	17:11:01
2	Na 589.592 Radial†	-340.9	1258.8	407.86 ug/L	407.86 ppb	17:10:41
2	Sr 421.552†	769.5	678.3	4.8335 ug/L	4.8335 ppb	17:10:41
2	Sc 361.383	866616.2	866616.2	106.48 %		17:11:58
2	Y 371.029	729585.0	729585.0	106.36 %		17:11:58
2	Ag 328.068†	1506.6	1133.3	5.5700 ug/L	5.5700 ppb	17:11:58
2	As 188.979†	41.6	57.9	26.107 ug/L	26.107 ppb	17:12:18
2	B 249.677†	1782.9	2192.9	53.344 ug/L	53.344 ppb	17:11:58
2	Ba 233.527†	636.2	596.0	4.9568 ug/L	4.9568 ppb	17:12:18
2	Be 313.107†	8730.1	12511.0	4.9809 ug/L	4.9809 ppb	17:11:58
2	Cd 226.502†	279.8	460.4	5.4003 ug/L	5.4003 ppb	17:12:18
2	Co 228.616†	145.5	209.3	4.5570 ug/L	4.5570 ppb	17:12:18
2	Cr 267.716†	507.6	380.9	4.4799 ug/L	4.4799 ppb	17:12:18
2	Cu 324.752†	9752.8	2861.1	9.1050 ug/L	9.1050 ppb	17:11:58
2	Mn 257.610†	9682.0	8688.4	10.180 ug/L	10.180 ppb	17:11:58
2	Mo 202.031†	166.6	137.2	10.191 ug/L	10.191 ppb	17:12:18
2	Ni 231.604†	282.7	190.4	5.0081 ug/L	5.0081 ppb	17:12:18



2	P 214.914†	460.1	204.2	128.58 ug/L	128.58 ppb	17:12:18
2	Pb 220.353†	14.8	78.5	10.109 ug/L	10.109 ppb	17:12:18
2	S 181.975 Axial†	122.5	68.6	102.29 ug/L	102.29 ppb	17:12:18
2	Sb 206.836†	65.1	28.4	10.737 ug/L	10.737 ppb	17:12:18
2	Se 196.026†	14.9	44.4	30.039 ug/L	30.039 ppb	17:12:18
2	Si 251.611†	3569.0	2905.9	97.852 ug/L	97.852 ppb	17:11:58
2	Sn 189.927†	65.0	54.9	10.191 ug/L	10.191 ppb	17:12:18
2	Ti 334.940†	1774.1	3053.1	5.2001 ug/L	5.2001 ppb	17:11:58
2	Tl 190.801†	36.5	78.1	25.057 ug/L	25.057 ppb	17:12:18
2	U 409.014†	-151.1	1899.1	60.629 ug/L	60.629 ppb	17:11:58
2	V 292.402†	-689.6	759.5	5.7257 ug/L	5.7257 ppb	17:11:58
2	Zn 213.857†	1740.0	773.8	7.6631 ug/L	7.6631 ppb	17:12:18
2	SiO2†	3596.2	2921.0	209.14 ug/L	209.14 ppb	17:12:54
3	Sc Radial	5246.6	5246.6	110 %		17:11:06
3	Y RADIAL	5626.2	5626.2	109.7 %		17:11:06
3	Al 396.153Radial†	246.0	227.9	182.35 ug/L	182.35 ppb	17:11:06
3	Ca 317.933Radial†	140.6	113.2	190.71 ug/L	190.71 ppb	17:11:26
3	Fe 238.204 Radial†	22.1	10.3	96.788 ug/L	96.788 ppb	17:11:26
3	K 766.490 Radial†	3554.9	458.9	91.713 ug/L	91.713 ppb	17:11:06
3	Mg 279.077 IEC†	9.2	6.9	241.60 ug/L	241.60 ppb	17:11:26
3	Na 589.592 Radial†	-394.7	1206.5	390.90 ug/L	390.90 ppb	17:11:06
3	Sr 421.552†	723.7	643.7	4.5866 ug/L	4.5866 ppb	17:11:06
3	Sc 361.383	875140.8	875140.8	107.53 %		17:12:24
3	Y 371.029	734809.4	734809.4	107.12 %		17:12:24
3	Ag 328.068†	1517.2	1129.4	5.5490 ug/L	5.5490 ppb	17:12:24
3	As 188.979†	50.0	65.3	29.450 ug/L	29.450 ppb	17:12:44
3	B 249.677†	1753.5	2149.2	52.280 ug/L	52.280 ppb	17:12:24
3	Ba 233.527†	632.5	586.8	4.8822 ug/L	4.8822 ppb	17:12:44
3	Be 313.107†	8655.0	12361.3	4.9213 ug/L	4.9213 ppb	17:12:24
3	Cd 226.502†	266.0	445.0	5.2211 ug/L	5.2211 ppb	17:12:44
3	Co 228.616†	157.5	219.2	4.7713 ug/L	4.7713 ppb	17:12:44
3	Cr 267.716†	508.2	376.9	4.4311 ug/L	4.4311 ppb	17:12:44
3	Cu 324.752†	9855.5	2867.4	9.1225 ug/L	9.1225 ppb	17:12:24
3	Mn 257.610†	9715.9	8631.4	10.121 ug/L	10.121 ppb	17:12:24
3	Mo 202.031†	168.0	136.9	10.172 ug/L	10.172 ppb	17:12:44
3	Ni 231.604†	293.1	197.4	5.1938 ug/L	5.1938 ppb	17:12:44
3	P 214.914†	452.8	193.2	121.55 ug/L	121.55 ppb	17:12:44
3	Pb 220.353†	17.5	80.9	10.411 ug/L	10.411 ppb	17:12:44
3	S 181.975 Axial†	114.7	60.2	89.840 ug/L	89.840 ppb	17:12:44
3	Sb 206.836†	59.6	22.7	8.6320 ug/L	8.6320 ppb	17:12:44
3	Se 196.026†	24.1	52.8	35.643 ug/L	35.643 ppb	17:12:44
3	Si 251.611†	3610.4	2911.7	98.049 ug/L	98.049 ppb	17:12:24
3	Sn 189.927†	58.5	48.3	8.9633 ug/L	8.9633 ppb	17:12:44
3	Ti 334.940†	1747.3	3012.0	5.1427 ug/L	5.1427 ppb	17:12:24
3	Tl 190.801†	23.3	65.5	21.018 ug/L	21.018 ppb	17:12:44
3	U 409.014†	10.2	2050.4	65.465 ug/L	65.465 ppb	17:12:24
3	V 292.402†	-577.3	870.3	6.5304 ug/L	6.5304 ppb	17:12:24
3	Zn 213.857†	1732.2	750.6	7.4313 ug/L	7.4313 ppb	17:12:44
3	SiO2†	3511.2	2809.1	201.12 ug/L	201.12 ppb	17:12:59

## Mean Data: PQL

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	868814.4	106.75 %	0.684			0.64%
Sc Radial	5251.2	110 %	1.0			0.91%
Y 371.029	730769.0	106.53 %	0.524			0.49%
Y RADIAL	5609.7	109.4 %	1.01			0.93%
Ag 328.068†	1131.2	5.5589 ug/L	0.01055	5.5589 ppb	0.01055	0.19%
QC value within limits for Ag 328.068 Recovery = 111.18%						
Al 396.153Radial†	235.8	188.70 ug/L	10.831	188.70 ppb	10.831	5.74%
QC value within limits for Al 396.153Radial Recovery = 94.35%						
As 188.979†	62.0	27.932 ug/L	1.6925	27.932 ppb	1.6925	6.06%
QC value within limits for As 188.979 Recovery = 93.11%						
B 249.677†	2182.6	53.093 ug/L	0.7216	53.093 ppb	0.7216	1.36%
QC value within limits for B 249.677 Recovery = 106.19%						
Ba 233.527†	589.1	4.9009 ug/L	0.04927	4.9009 ppb	0.04927	1.01%
QC value within limits for Ba 233.527 Recovery = 98.02%						
Be 313.107†	12466.2	4.9630 ug/L	0.03627	4.9630 ppb	0.03627	0.73%
QC value within limits for Be 313.107 Recovery = 99.26%						
Ca 317.933Radial†	115.9	195.20 ug/L	4.149	195.20 ppb	4.149	2.13%



QC value within limits for Ca 317.933 Radial Recovery = 97.60%

Cd 226.502†	450.1	5.2805 ug/L	0.10375	5.2805 ppb	0.10375	1.96%
QC value within limits for Cd 226.502 Recovery = 105.61%						
Co 228.616†	218.8	4.7641 ug/L	0.20355	4.7641 ppb	0.20355	4.27%
QC value within limits for Co 228.616 Recovery = 95.28%						
Cr 267.716†	383.2	4.5061 ug/L	0.09090	4.5061 ppb	0.09090	2.02%
QC value within limits for Cr 267.716 Recovery = 90.12%						
Cu 324.752†	2910.9	9.2630 ug/L	0.25857	9.2630 ppb	0.25857	2.79%
QC value within limits for Cu 324.752 Recovery = 92.63%						
Fe 238.204 Radial†	10.2	96.300 ug/L	3.4275	96.300 ppb	3.4275	3.56%
QC value within limits for Fe 238.204 Radial Recovery = 96.30%						
K 766.490 Radial†	482.0	96.329 ug/L	4.6887	96.329 ppb	4.6887	4.87%
QC value less than the lower limit for K 766.490 Radial Recovery = 64.22%						
Mg 279.077 IEC†	9.8	344.47 ug/L	98.414	344.47 ppb	98.414	28.57%
QC value within limits for Mg 279.077 IEC Recovery = 114.82%						
Mn 257.610†	8671.4	10.164 ug/L	0.0373	10.164 ppb	0.0373	0.37%
QC value within limits for Mn 257.610 Recovery = 101.64%						
Mo 202.031†	137.2	10.195 ug/L	0.0251	10.195 ppb	0.0251	0.25%
QC value within limits for Mo 202.031 Recovery = 101.95%						
Na 589.592 Radial†	1249.1	404.70 ug/L	12.526	404.70 ppb	12.526	3.10%
QC value greater than the upper limit for Na 589.592 Radial Recovery = 134.90%						
Ni 231.604†	193.0	5.0788 ug/L	0.10046	5.0788 ppb	0.10046	1.98%
QC value within limits for Ni 231.604 Recovery = 101.58%						
P 214.914†	199.8	125.71 ug/L	3.690	125.71 ppb	3.690	2.94%
QC value within limits for P 214.914 Recovery = 83.80%						
Pb 220.353†	79.1	10.181 ug/L	0.2039	10.181 ppb	0.2039	2.00%
QC value within limits for Pb 220.353 Recovery = 101.81%						
S 181.975 Axial†	65.2	97.330 ug/L	6.5993	97.330 ppb	6.5993	6.78%
QC value within limits for S 181.975 Axial Recovery = 97.33%						
Sb 206.836†	26.9	10.197 ug/L	1.3773	10.197 ppb	1.3773	13.51%
QC value within limits for Sb 206.836 Recovery = 101.97%						
Se 196.026†	48.6	32.872 ug/L	2.8025	32.872 ppb	2.8025	8.53%
QC value within limits for Se 196.026 Recovery = 109.57%						
Si 251.611†	2901.7	97.711 ug/L	0.4269	97.711 ppb	0.4269	0.44%
QC value within limits for Si 251.611 Recovery = 97.71%						
Sn 189.927†	49.3	9.1435 ug/L	0.97052	9.1435 ppb	0.97052	10.61%
QC value within limits for Sn 189.927 Recovery = 91.43%						
Sr 421.552†	666.9	4.7521 ug/L	0.14333	4.7521 ppb	0.14333	3.02%
QC value within limits for Sr 421.552 Recovery = 95.04%						
Ti 334.940†	3032.9	5.1721 ug/L	0.02872	5.1721 ppb	0.02872	0.56%
QC value within limits for Ti 334.940 Recovery = 103.44%						
Tl 190.801†	74.5	23.894 ug/L	2.5065	23.894 ppb	2.5065	10.49%
QC value within limits for Tl 190.801 Recovery = 119.47%						
U 409.014†	1949.8	62.252 ug/L	2.7827	62.252 ppb	2.7827	4.47%
QC value within limits for U 409.014 Recovery = 124.50%						
V 292.402†	810.2	6.0931 ug/L	0.40685	6.0931 ppb	0.40685	6.68%
QC value within limits for V 292.402 Recovery = 121.86%						
Zn 213.857†	767.3	7.5982 ug/L	0.14572	7.5982 ppb	0.14572	1.92%
QC value within limits for Zn 213.857 Recovery = 75.98%						
SiO2†	2872.9	205.69 ug/L	4.128	205.69 ppb	4.128	2.01%
QC value within limits for SiO2 Recovery = 96.57%						

QC Failed. Continue with analysis.



Sequence No.: 20

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/14/2010 17:15:09

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5426.6	5426.6	113 %		17:17:02
1	Y RADIAL	5825.5	5825.5	113.6 %		17:17:02
1	Al 396.153Radial†	9.2	11.3	9.0757 ug/L	9.0757 ppb	17:17:02
1	Ca 317.933Radial†	24.7	6.7	11.231 ug/L	11.231 ppb	17:17:22
1	Fe 238.204 Radial†	9.1	-1.8	-16.993 ug/L	-16.993 ppb	17:17:22
1	K 766.490 Radial†	2777.4	-335.2	-67.204 ug/L	-67.204 ppb	17:17:02
1	Mg 279.077 IEC†	3.4	1.5	52.155 ug/L	52.155 ppb	17:17:22
1	Na 589.592 Radial†	-1346.9	377.7	122.39 ug/L	122.39 ppb	17:17:02
1	Sr 421.552†	-33.6	-46.9	-0.3342 ug/L	-0.3342 ppb	17:17:02
1	Sc 361.383	863368.4	863368.4	106.08 %		17:18:19
1	Y 371.029	726742.2	726742.2	105.95 %		17:18:19
1	Ag 328.068†	426.4	120.4	0.5834 ug/L	0.5834 ppb	17:18:19
1	As 188.979†	-22.5	-2.3	-1.0546 ug/L	-1.0546 ppb	17:18:39
1	B 249.677†	-378.4	161.8	3.9412 ug/L	3.9412 ppb	17:18:39
1	Ba 233.527†	-13.9	-14.6	-0.1189 ug/L	-0.1189 ppb	17:18:39
1	Be 313.107†	-4316.1	243.6	0.0974 ug/L	0.0974 ppb	17:18:19
1	Cd 226.502†	-171.5	35.9	0.4239 ug/L	0.4239 ppb	17:18:39
1	Co 228.616†	-75.3	1.7	0.0373 ug/L	0.0373 ppb	17:18:39
1	Cr 267.716†	72.4	-27.5	-0.3268 ug/L	-0.3268 ppb	17:18:39
1	Cu 324.752†	6507.0	-164.2	-0.5296 ug/L	-0.5296 ppb	17:18:19
1	Mn 257.610†	421.3	-7.2	-0.0122 ug/L	-0.0122 ppb	17:18:39
1	Mo 202.031†	27.4	6.5	0.4841 ug/L	0.4841 ppb	17:18:39
1	Ni 231.604†	83.3	3.4	0.0882 ug/L	0.0882 ppb	17:18:39
1	P 214.914†	225.8	-15.0	-9.4595 ug/L	-9.4595 ppb	17:18:39
1	Pb 220.353†	-72.3	-3.5	-0.4474 ug/L	-0.4474 ppb	17:18:39
1	S 181.975 Axial†	51.2	1.9	2.7657 ug/L	2.7657 ppb	17:18:39
1	Sb 206.836†	38.8	3.8	1.4300 ug/L	1.4300 ppb	17:18:39
1	Se 196.026†	-28.3	3.7	2.3912 ug/L	2.3912 ppb	17:18:39
1	Si 251.611†	493.3	19.1	0.6381 ug/L	0.6381 ppb	17:18:39
1	Sn 189.927†	11.3	4.5	0.8328 ug/L	0.8328 ppb	17:18:39
1	Ti 334.940†	-1294.2	167.0	0.2801 ug/L	0.2801 ppb	17:18:19
1	Tl 190.801†	-35.2	10.7	3.4250 ug/L	3.4250 ppb	17:18:39
1	U 409.014†	-1885.9	263.1	8.4070 ug/L	8.4070 ppb	17:18:19
1	V 292.402†	-1325.6	157.5	1.1628 ug/L	1.1628 ppb	17:18:19
1	Zn 213.857†	791.4	-114.3	-1.1379 ug/L	-1.1379 ppb	17:18:39
1	SiO2†	492.9	8.5	0.5927 ug/L	0.5927 ppb	17:19:35
2	Sc Radial	5116.3	5116.3	107 %		17:17:27
2	Y RADIAL	5514.6	5514.6	107.5 %		17:17:27
2	Al 396.153Radial†	12.7	15.1	12.133 ug/L	12.133 ppb	17:17:27
2	Ca 317.933Radial†	16.8	0.6	1.0399 ug/L	1.0399 ppb	17:17:47
2	Fe 238.204 Radial†	12.8	2.1	19.640 ug/L	19.640 ppb	17:17:47
2	K 766.490 Radial†	2769.7	-193.7	-38.835 ug/L	-38.835 ppb	17:17:27
2	Mg 279.077 IEC†	5.0	3.2	111.73 ug/L	111.73 ppb	17:17:47
2	Na 589.592 Radial†	-1369.3	284.6	92.206 ug/L	92.206 ppb	17:17:27
2	Sr 421.552†	9.4	-8.4	-0.0597 ug/L	-0.0597 ppb	17:17:27
2	Sc 361.383	859149.6	859149.6	105.56 %		17:18:44
2	Y 371.029	723438.0	723438.0	105.46 %		17:18:44
2	Ag 328.068†	308.9	11.0	0.0602 ug/L	0.0602 ppb	17:18:44
2	As 188.979†	-23.8	-3.7	-1.6442 ug/L	-1.6442 ppb	17:19:04
2	B 249.677†	-404.9	135.0	3.2825 ug/L	3.2825 ppb	17:19:04
2	Ba 233.527†	12.0	9.9	0.0845 ug/L	0.0845 ppb	17:19:04
2	Be 313.107†	-4374.3	168.5	0.0671 ug/L	0.0671 ppb	17:18:44
2	Cd 226.502†	-189.5	18.0	0.2101 ug/L	0.2101 ppb	17:19:04
2	Co 228.616†	-74.9	1.7	0.0360 ug/L	0.0360 ppb	17:19:04
2	Cr 267.716†	80.2	-19.8	-0.2334 ug/L	-0.2334 ppb	17:19:04
2	Cu 324.752†	6455.2	-183.1	-0.5859 ug/L	-0.5859 ppb	17:18:44
2	Mn 257.610†	445.1	17.4	0.0177 ug/L	0.0177 ppb	17:19:04
2	Mo 202.031†	16.2	-3.9	-0.2906 ug/L	-0.2906 ppb	17:19:04
2	Ni 231.604†	83.6	4.0	0.1063 ug/L	0.1063 ppb	17:19:04



2	P 214.914†	222.0	-17.6	-11.135 ug/L	-11.135 ppb	17:19:04
2	Pb 220.353†	-64.8	3.2	0.4077 ug/L	0.4077 ppb	17:19:04
2	S 181.975 Axial†	42.0	-6.7	-9.9916 ug/L	-9.9916 ppb	17:19:04
2	Sb 206.836†	45.8	10.6	3.8791 ug/L	3.8791 ppb	17:19:04
2	Se 196.026†	-28.6	3.3	2.2567 ug/L	2.2567 ppb	17:19:04
2	Si 251.611†	470.1	-0.5	-0.0149 ug/L	-0.0149 ppb	17:19:04
2	Sn 189.927†	7.8	1.3	0.2349 ug/L	0.2349 ppb	17:19:04
2	Ti 334.940†	-1415.4	46.2	0.0685 ug/L	0.0685 ppb	17:18:44
2	Tl 190.801†	-38.7	7.2	2.3153 ug/L	2.3153 ppb	17:19:04
2	U 409.014†	-2015.3	131.9	4.2112 ug/L	4.2112 ppb	17:18:44
2	V 292.402†	-1370.8	108.6	0.7869 ug/L	0.7869 ppb	17:18:44
2	Zn 213.857†	807.3	-95.6	-0.9554 ug/L	-0.9554 ppb	17:19:04
2	SiO2†	502.5	19.8	1.4304 ug/L	1.4304 ppb	17:19:40
3	Sc Radial	5117.3	5117.3	107 %		17:17:52
3	Y RADIAL	5495.2	5495.2	107.1 %		17:17:52
3	Al 396.153Radial†	-4.8	-1.2	-0.9730 ug/L	-0.9730 ppb	17:17:52
3	Ca 317.933Radial†	23.0	6.3	10.679 ug/L	10.679 ppb	17:18:12
3	Fe 238.204 Radial†	11.6	1.0	9.1162 ug/L	9.1162 ppb	17:18:12
3	K 766.490 Radial†	2796.4	-169.2	-33.929 ug/L	-33.929 ppb	17:17:52
3	Mg 279.077 IEC†	4.4	2.7	93.131 ug/L	93.131 ppb	17:18:12
3	Na 589.592 Radial†	-1416.5	240.7	77.984 ug/L	77.984 ppb	17:17:52
3	Sr 421.552†	-13.0	-29.3	-0.2092 ug/L	-0.2092 ppb	17:17:52
3	Sc 361.383	851964.8	851964.8	104.68 %		17:19:09
3	Y 371.029	716804.3	716804.3	104.50 %		17:19:09
3	Ag 328.068†	318.6	22.7	0.1140 ug/L	0.1140 ppb	17:19:09
3	As 188.979†	-25.2	-5.3	-2.3686 ug/L	-2.3686 ppb	17:19:29
3	B 249.677†	-378.1	157.4	3.8273 ug/L	3.8273 ppb	17:19:29
3	Ba 233.527†	-4.1	-5.4	-0.0423 ug/L	-0.0423 ppb	17:19:29
3	Be 313.107†	-4376.5	131.4	0.0528 ug/L	0.0528 ppb	17:19:09
3	Cd 226.502†	-158.2	46.4	0.5439 ug/L	0.5439 ppb	17:19:29
3	Co 228.616†	-60.7	14.7	0.3183 ug/L	0.3183 ppb	17:19:29
3	Cr 267.716†	74.3	-24.8	-0.2931 ug/L	-0.2931 ppb	17:19:29
3	Cu 324.752†	6346.7	-235.2	-0.7531 ug/L	-0.7531 ppb	17:19:09
3	Mn 257.610†	423.6	0.3	-0.0025 ug/L	-0.0025 ppb	17:19:29
3	Mo 202.031†	20.7	0.5	0.0370 ug/L	0.0370 ppb	17:19:29
3	Ni 231.604†	76.4	-2.1	-0.0556 ug/L	-0.0556 ppb	17:19:29
3	P 214.914†	229.8	-8.3	-5.1628 ug/L	-5.1628 ppb	17:19:29
3	Pb 220.353†	-70.1	-2.4	-0.3094 ug/L	-0.3094 ppb	17:19:29
3	S 181.975 Axial†	45.4	-3.1	-4.6162 ug/L	-4.6162 ppb	17:19:29
3	Sb 206.836†	26.4	-7.5	-2.7281 ug/L	-2.7281 ppb	17:19:29
3	Se 196.026†	-31.2	0.5	0.3892 ug/L	0.3892 ppb	17:19:29
3	Si 251.611†	474.5	7.4	0.2506 ug/L	0.2506 ppb	17:19:29
3	Sn 189.927†	9.0	2.5	0.4627 ug/L	0.4627 ppb	17:19:29
3	Ti 334.940†	-1301.8	143.4	0.2377 ug/L	0.2377 ppb	17:19:09
3	Tl 190.801†	-36.2	9.3	2.9842 ug/L	2.9842 ppb	17:19:29
3	U 409.014†	-1967.4	161.5	5.1577 ug/L	5.1577 ppb	17:19:09
3	V 292.402†	-1342.8	124.4	0.9079 ug/L	0.9079 ppb	17:19:09
3	Zn 213.857†	791.5	-104.2	-1.0390 ug/L	-1.0390 ppb	17:19:29
3	SiO2†	523.4	43.8	3.1362 ug/L	3.1362 ppb	17:19:45

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	858161.0	105.44 %		0.708			0.67%
Sc Radial	5220.1	109 %		3.7			3.43%
Y 371.029	722328.2	105.30 %		0.738			0.70%
Y RADIAL	5611.7	109.4 %		3.61			3.30%
Ag 328.068†	51.4	0.2525 ug/L		0.28785	0.2525 ppb	0.28785	113.99%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	8.4	6.7452 ug/L		6.85671	6.7452 ppb	6.85671	101.65%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-3.8	-1.6891 ug/L		0.65811	-1.6891 ppb	0.65811	38.96%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	151.4	3.6837 ug/L		0.35208	3.6837 ppb	0.35208	9.56%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-3.3	-0.0256 ug/L		0.10272	-0.0256 ppb	0.10272	401.49%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	181.2	0.0724 ug/L		0.02280	0.0724 ppb	0.02280	31.47%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	4.5	7.6500 ug/L		5.73121	7.6500 ppb	5.73121	74.92%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	33.4	0.3926 ug/L	0.16907	0.3926 ppb	0.16907	43.06%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	6.0	0.1305 ug/L	0.16264	0.1305 ppb	0.16264	124.60%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-24.0	-0.2845 ug/L	0.04731	-0.2845 ppb	0.04731	16.63%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-194.2	-0.6229 ug/L	0.11624	-0.6229 ppb	0.11624	18.66%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	0.4	3.9211 ug/L	18.86072	3.9211 ppb	18.86072	481.00%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	-232.7	-46.656 ug/L	17.9634	-46.656 ppb	17.9634	38.50%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	2.4	85.674 ug/L	30.4816	85.674 ppb	30.4816	35.58%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	3.5	0.0010 ug/L	0.01527	0.0010 ppb	0.01527	>999.9%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	1.0	0.0768 ug/L	0.38885	0.0768 ppb	0.38885	506.15%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	301.0	97.526 ug/L	22.6760	97.526 ppb	22.6760	23.25%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	1.8	0.0463 ug/L	0.08872	0.0463 ppb	0.08872	191.55%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-13.7	-8.5859 ug/L	3.08061	-8.5859 ppb	3.08061	35.88%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	-0.9	-0.1164 ug/L	0.45907	-0.1164 ppb	0.45907	394.46%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	-2.6	-3.9474 ug/L	6.40491	-3.9474 ppb	6.40491	162.26%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	2.3	0.8603 ug/L	3.34021	0.8603 ppb	3.34021	388.24%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	2.5	1.6790 ug/L	1.11901	1.6790 ppb	1.11901	66.65%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	8.7	0.2912 ug/L	0.32839	0.2912 ppb	0.32839	112.76%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	2.8	0.5101 ug/L	0.30174	0.5101 ppb	0.30174	59.15%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	-28.2	-0.2010 ug/L	0.13741	-0.2010 ppb	0.13741	68.35%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	118.9	0.1954 ug/L	0.11196	0.1954 ppb	0.11196	57.29%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	9.1	2.9082 ug/L	0.55875	2.9082 ppb	0.55875	19.21%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	185.5	5.9253 ug/L	2.20071	5.9253 ppb	2.20071	37.14%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	130.2	0.9525 ug/L	0.19186	0.9525 ppb	0.19186	20.14%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	-104.7	-1.0441 ug/L	0.09132	-1.0441 ppb	0.09132	8.75%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	24.0	1.7198 ug/L	1.29619	1.7198 ppb	1.29619	75.37%	
QC value within limits for SiO2 Recovery = Not calculated							
All analyte(s) passed QC.							



Sequence No.: 30

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/14/2010 18:23:01

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5122.8	5122.8	107 %		18:24:54
1	Y RADIAL	5442.9	5442.9	106.1 %		18:24:54
1	Al 396.153Radial†	6220.4	5821.2	4646.6 ug/L	4646.6 ppb	18:24:54
1	Ca 317.933Radial†	3149.3	2930.3	4934.5 ug/L	4934.5 ppb	18:25:14
1	Fe 238.204 Radial†	585.1	537.4	5066.5 ug/L	5066.5 ppb	18:25:14
1	K 766.490 Radial†	28535.2	23901.2	4782.3 ug/L	4782.3 ppb	18:24:54
1	Mg 279.077 IEC†	162.5	150.5	5282.3 ug/L	5282.3 ppb	18:25:14
1	Na 589.592 Radial†	29547.8	29202.6	9461.8 ug/L	9461.8 ppb	18:24:54
1	Sr 421.552†	72128.9	67444.1	480.70 ug/L	480.70 ppb	18:24:54
1	Sc 361.383	874426.5	874426.5	107.44 %		18:26:11
1	Y 371.029	725162.4	725162.4	105.71 %		18:26:11
1	Ag 328.068†	103788.6	96318.9	476.33 ug/L	476.33 ppb	18:26:16
1	As 188.979†	1136.1	1076.3	488.62 ug/L	488.62 ppb	18:26:36
1	B 249.677†	21126.1	20181.5	488.96 ug/L	488.96 ppb	18:26:16
1	Ba 233.527†	63441.8	59046.5	490.84 ug/L	490.84 ppb	18:26:16
1	Be 313.107†	1326970.9	1239380.0	493.35 ug/L	493.35 ppb	18:26:11
1	Cd 226.502†	44978.5	42060.9	492.86 ug/L	492.86 ppb	18:26:16
1	Co 228.616†	24276.3	22667.7	492.34 ug/L	492.34 ppb	18:26:16
1	Cr 267.716†	44415.0	41243.2	487.16 ug/L	487.16 ppb	18:26:16
1	Cu 324.752†	170304.9	152211.9	485.89 ug/L	485.89 ppb	18:26:16
1	Mn 257.610†	450103.7	418526.2	491.06 ug/L	491.06 ppb	18:26:11
1	Mo 202.031†	7043.7	6536.6	485.67 ug/L	485.67 ppb	18:26:36
1	Ni 231.604†	20093.6	18626.9	490.04 ug/L	490.04 ppb	18:26:16
1	P 214.914†	4309.0	3782.7	2319.3 ug/L	2319.3 ppb	18:26:36
1	Pb 220.353†	3967.8	3757.6	482.83 ug/L	482.83 ppb	18:26:36
1	S 181.975 Axial†	753.5	654.9	976.47 ug/L	976.47 ppb	18:26:36
1	Sb 206.836†	1457.9	1324.2	501.59 ug/L	501.59 ppb	18:26:36
1	Se 196.026†	773.0	749.9	519.77 ug/L	519.77 ppb	18:26:36
1	Si 251.611†	79497.0	73545.3	2473.7 ug/L	2473.7 ppb	18:26:16
1	Sn 189.927†	2836.8	2634.2	488.00 ug/L	488.00 ppb	18:26:36
1	Ti 334.940†	303027.9	283427.9	486.07 ug/L	486.07 ppb	18:26:16
1	Tl 190.801†	1584.3	1518.5	489.04 ug/L	489.04 ppb	18:26:36
1	U 409.014†	14884.7	15894.8	505.97 ug/L	505.97 ppb	18:26:16
1	V 292.402†	71330.9	67797.8	495.59 ug/L	495.59 ppb	18:26:16
1	Zn 213.857†	54153.2	49542.3	489.83 ug/L	489.83 ppb	18:26:16
1	SiO2†	78300.0	72420.9	5178.8 ug/L	5178.8 ppb	18:27:44
2	Sc Radial	5125.9	5125.9	107 %		18:25:19
2	Y RADIAL	5478.7	5478.7	106.8 %		18:25:19
2	Al 396.153Radial†	6458.8	6040.4	4822.0 ug/L	4822.0 ppb	18:25:19
2	Ca 317.933Radial†	3072.4	2856.7	4810.5 ug/L	4810.5 ppb	18:25:39
2	Fe 238.204 Radial†	572.6	525.3	4953.3 ug/L	4953.3 ppb	18:25:39
2	K 766.490 Radial†	29406.6	24699.4	4942.2 ug/L	4942.2 ppb	18:25:19
2	Mg 279.077 IEC†	153.5	142.0	4984.0 ug/L	4984.0 ppb	18:25:39
2	Na 589.592 Radial†	30667.9	30232.7	9795.6 ug/L	9795.6 ppb	18:25:19
2	Sr 421.552†	74897.8	69990.9	498.85 ug/L	498.85 ppb	18:25:19
2	Sc 361.383	862187.1	862187.1	105.94 %		18:26:42
2	Y 371.029	714944.2	714944.2	104.23 %		18:26:42
2	Ag 328.068†	106755.4	100490.7	496.83 ug/L	496.83 ppb	18:26:47
2	As 188.979†	1149.0	1103.4	500.92 ug/L	500.92 ppb	18:27:07
2	B 249.677†	21515.9	20828.6	504.69 ug/L	504.69 ppb	18:26:47
2	Ba 233.527†	64166.5	60568.8	503.49 ug/L	503.49 ppb	18:26:47
2	Be 313.107†	1306570.2	1237655.5	492.70 ug/L	492.70 ppb	18:26:42
2	Cd 226.502†	45517.2	43163.8	505.81 ug/L	505.81 ppb	18:26:47
2	Co 228.616†	24623.0	23315.7	506.40 ug/L	506.40 ppb	18:26:47
2	Cr 267.716†	44905.7	42293.2	499.56 ug/L	499.56 ppb	18:26:47
2	Cu 324.752†	173056.2	157059.2	501.35 ug/L	501.35 ppb	18:26:47
2	Mn 257.610†	444509.0	419192.2	491.85 ug/L	491.85 ppb	18:26:42
2	Mo 202.031†	7057.4	6642.5	493.52 ug/L	493.52 ppb	18:27:07
2	Ni 231.604†	20386.1	19168.4	504.29 ug/L	504.29 ppb	18:26:47



2	P 214.914†	4283.6	3815.6	2337.5 ug/L	2337.5 ppb	18:27:07
2	Pb 220.353†	3985.3	3826.5	491.72 ug/L	491.72 ppb	18:27:07
2	S 181.975 Axial†	759.5	670.5	999.77 ug/L	999.77 ppb	18:27:07
2	Sb 206.836†	1467.1	1352.2	512.12 ug/L	512.12 ppb	18:27:07
2	Se 196.026†	766.9	754.3	522.39 ug/L	522.39 ppb	18:27:07
2	Si 251.611†	80552.6	75592.1	2542.6 ug/L	2542.6 ppb	18:26:47
2	Sn 189.927†	2852.6	2686.6	497.66 ug/L	497.66 ppb	18:27:07
2	Ti 334.940†	307131.5	291305.3	499.58 ug/L	499.58 ppb	18:26:47
2	Tl 190.801†	1593.0	1547.6	498.39 ug/L	498.39 ppb	18:27:07
2	U 409.014†	15198.8	16387.9	521.71 ug/L	521.71 ppb	18:26:47
2	V 292.402†	72138.9	69503.0	508.02 ug/L	508.02 ppb	18:26:47
2	Zn 213.857†	54912.4	50974.5	504.01 ug/L	504.01 ppb	18:26:47
2	SiO2†	78752.0	73882.1	5283.3 ug/L	5283.3 ppb	18:27:49
3	Sc Radial	5017.1	5017.1	105 %		18:25:44
3	Y RADIAL	5313.9	5313.9	103.6 %		18:25:44
3	Al 396.153Radial†	6276.0	5996.7	4787.2 ug/L	4787.2 ppb	18:25:44
3	Ca 317.933Radial†	3084.4	2930.4	4934.6 ug/L	4934.6 ppb	18:26:04
3	Fe 238.204 Radial†	572.5	536.9	5062.1 ug/L	5062.1 ppb	18:26:04
3	K 766.490 Radial†	28753.5	24671.7	4936.6 ug/L	4936.6 ppb	18:25:44
3	Mg 279.077 IEC†	161.0	152.3	5346.2 ug/L	5346.2 ppb	18:26:04
3	Na 589.592 Radial†	29698.4	29928.5	9697.0 ug/L	9697.0 ppb	18:25:44
3	Sr 421.552†	72956.4	69655.1	496.46 ug/L	496.46 ppb	18:25:44
3	Sc 361.383	865484.7	865484.7	106.34 %		18:27:13
3	Y 371.029	717838.0	717838.0	104.65 %		18:27:13
3	Ag 328.068†	104635.4	98113.2	485.17 ug/L	485.17 ppb	18:27:18
3	As 188.979†	1126.7	1078.4	489.64 ug/L	489.64 ppb	18:27:38
3	B 249.677†	21378.1	20621.6	499.66 ug/L	499.66 ppb	18:27:18
3	Ba 233.527†	63663.2	59864.8	497.64 ug/L	497.64 ppb	18:27:18
3	Be 313.107†	1308976.4	1235219.1	491.72 ug/L	491.72 ppb	18:27:13
3	Cd 226.502†	45072.6	42581.9	498.97 ug/L	498.97 ppb	18:27:18
3	Co 228.616†	24380.1	22998.7	499.52 ug/L	499.52 ppb	18:27:18
3	Cr 267.716†	44641.0	41882.8	494.72 ug/L	494.72 ppb	18:27:18
3	Cu 324.752†	171861.3	155313.1	495.78 ug/L	495.78 ppb	18:27:18
3	Mn 257.610†	445285.0	418323.1	490.82 ug/L	490.82 ppb	18:27:13
3	Mo 202.031†	7038.4	6599.3	490.33 ug/L	490.33 ppb	18:27:38
3	Ni 231.604†	20265.0	18981.3	499.37 ug/L	499.37 ppb	18:27:18
3	P 214.914†	4305.8	3821.2	2341.9 ug/L	2341.9 ppb	18:27:38
3	Pb 220.353†	3964.9	3793.0	487.40 ug/L	487.40 ppb	18:27:38
3	S 181.975 Axial†	763.7	671.7	1001.6 ug/L	1001.6 ppb	18:27:38
3	Sb 206.836†	1470.7	1350.3	511.28 ug/L	511.28 ppb	18:27:38
3	Se 196.026†	757.5	742.7	514.97 ug/L	514.97 ppb	18:27:38
3	Si 251.611†	79948.4	74734.2	2513.8 ug/L	2513.8 ppb	18:27:18
3	Sn 189.927†	2831.2	2656.2	492.07 ug/L	492.07 ppb	18:27:38
3	Ti 334.940†	305279.9	288459.5	494.68 ug/L	494.68 ppb	18:27:18
3	Tl 190.801†	1581.8	1531.3	493.19 ug/L	493.19 ppb	18:27:38
3	U 409.014†	15203.6	16337.8	520.10 ug/L	520.10 ppb	18:27:18
3	V 292.402†	71689.1	68820.6	503.05 ug/L	503.05 ppb	18:27:18
3	Zn 213.857†	54416.5	50310.7	497.42 ug/L	497.42 ppb	18:27:18
3	SiO2†	77978.3	72871.4	5211.0 ug/L	5211.0 ppb	18:27:54

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	867366.1	106.57 %	0.778			0.73%
Sc Radial	5088.6	106 %	1.3			1.22%
Y 371.029	719314.8	104.86 %	0.768			0.73%
Y RADIAL	5411.8	105.5 %	1.69			1.60%
Ag 328.068†	98307.6	486.11 ug/L	10.281	486.11 ppb	10.281	2.12%
QC value within limits for Ag 328.068 Recovery = 97.22%						
Al 396.153Radial†	5952.7	4751.9 ug/L	92.90	4751.9 ppb	92.90	1.96%
QC value within limits for Al 396.153Radial Recovery = 95.04%						
As 188.979†	1086.0	493.06 ug/L	6.828	493.06 ppb	6.828	1.38%
QC value within limits for As 188.979 Recovery = 98.61%						
B 249.677†	20543.9	497.77 ug/L	8.031	497.77 ppb	8.031	1.61%
QC value within limits for B 249.677 Recovery = 99.55%						
Ba 233.527†	59826.7	497.32 ug/L	6.329	497.32 ppb	6.329	1.27%
QC value within limits for Ba 233.527 Recovery = 99.46%						
Be 313.107†	1237418.2	492.59 ug/L	0.822	492.59 ppb	0.822	0.17%
QC value within limits for Be 313.107 Recovery = 98.52%						
Ca 317.933Radial†	2905.8	4893.2 ug/L	71.63	4893.2 ppb	71.63	1.46%



QC value within limits for Ca 317.933 Radial Recovery = 97.86%									
Cd	226.502†	42602.2	499.21 ug/L	6.478	499.21 ppb	6.478	1.30%		
QC value within limits for Cd 226.502 Recovery = 99.84%									
Co	228.616†	22994.0	499.42 ug/L	7.033	499.42 ppb	7.033	1.41%		
QC value within limits for Co 228.616 Recovery = 99.88%									
Cr	267.716†	41806.4	493.81 ug/L	6.247	493.81 ppb	6.247	1.27%		
QC value within limits for Cr 267.716 Recovery = 98.76%									
Cu	324.752†	154861.4	494.34 ug/L	7.830	494.34 ppb	7.830	1.58%		
QC value within limits for Cu 324.752 Recovery = 98.87%									
Fe	238.204 Radial†	533.2	5027.3 ug/L	64.11	5027.3 ppb	64.11	1.28%		
QC value within limits for Fe 238.204 Radial Recovery = 100.55%									
K	766.490 Radial†	24424.1	4887.0 ug/L	90.71	4887.0 ppb	90.71	1.86%		
QC value within limits for K 766.490 Radial Recovery = 97.74%									
Mg	279.077 IEC†	148.2	5204.2 ug/L	193.36	5204.2 ppb	193.36	3.72%		
QC value within limits for Mg 279.077 IEC Recovery = 104.08%									
Mn	257.610†	418680.5	491.24 ug/L	0.535	491.24 ppb	0.535	0.11%		
QC value within limits for Mn 257.610 Recovery = 98.25%									
Mo	202.031†	6592.8	489.84 ug/L	3.950	489.84 ppb	3.950	0.81%		
QC value within limits for Mo 202.031 Recovery = 97.97%									
Na	589.592 Radial†	29787.9	9651.4 ug/L	171.47	9651.4 ppb	171.47	1.78%		
QC value within limits for Na 589.592 Radial Recovery = 96.51%									
Ni	231.604†	18925.5	497.90 ug/L	7.236	497.90 ppb	7.236	1.45%		
QC value within limits for Ni 231.604 Recovery = 99.58%									
P	214.914†	3806.5	2332.9 ug/L	12.00	2332.9 ppb	12.00	0.51%		
QC value within limits for P 214.914 Recovery = 93.32%									
Pb	220.353†	3792.4	487.32 ug/L	4.446	487.32 ppb	4.446	0.91%		
QC value within limits for Pb 220.353 Recovery = 97.46%									
S	181.975 Axial†	665.7	992.61 ug/L	14.000	992.61 ppb	14.000	1.41%		
QC value within limits for S 181.975 Axial Recovery = 99.26%									
Sb	206.836†	1342.2	508.33 ug/L	5.851	508.33 ppb	5.851	1.15%		
QC value within limits for Sb 206.836 Recovery = 101.67%									
Se	196.026†	748.9	519.04 ug/L	3.767	519.04 ppb	3.767	0.73%		
QC value within limits for Se 196.026 Recovery = 103.81%									
Si	251.611†	74623.9	2510.0 ug/L	34.61	2510.0 ppb	34.61	1.38%		
QC value within limits for Si 251.611 Recovery = 100.40%									
Sn	189.927†	2659.0	492.57 ug/L	4.851	492.57 ppb	4.851	0.98%		
QC value within limits for Sn 189.927 Recovery = 98.51%									
Sr	421.552†	69030.0	492.00 ug/L	9.863	492.00 ppb	9.863	2.00%		
QC value within limits for Sr 421.552 Recovery = 98.40%									
Ti	334.940†	287730.9	493.44 ug/L	6.840	493.44 ppb	6.840	1.39%		
QC value within limits for Ti 334.940 Recovery = 98.69%									
Tl	190.801†	1532.5	493.54 ug/L	4.686	493.54 ppb	4.686	0.95%		
QC value within limits for Tl 190.801 Recovery = 98.71%									
U	409.014†	16206.8	515.93 ug/L	8.658	515.93 ppb	8.658	1.68%		
QC value within limits for U 409.014 Recovery = 103.19%									
V	292.402†	68707.1	502.22 ug/L	6.258	502.22 ppb	6.258	1.25%		
QC value within limits for V 292.402 Recovery = 100.44%									
Zn	213.857†	50275.8	497.09 ug/L	7.097	497.09 ppb	7.097	1.43%		
QC value within limits for Zn 213.857 Recovery = 99.42%									
SiO2†		73058.1	5224.4 ug/L	53.54	5224.4 ppb	53.54	1.02%		
QC value within limits for SiO2 Recovery = 97.70%									

All analyte(s) passed QC.



Sequence No.: 31

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/14/2010 18:30:04

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5180.7	5180.7	108 %		18:31:56
1	Y RADIAL	5555.6	5555.6	108.3 %		18:31:56
1	Al 396.153Radial†	-2.6	0.8	0.6239 ug/L	0.6239 ppb	18:31:56
1	Ca 317.933Radial†	19.4	2.8	4.7177 ug/L	4.7177 ppb	18:32:16
1	Fe 238.204 Radial†	9.3	-1.3	-12.106 ug/L	-12.106 ppb	18:32:16
1	K 766.490 Radial†	2881.1	-122.9	-24.677 ug/L	-24.677 ppb	18:31:56
1	Mg 279.077 IEC†	0.2	-1.3	-45.550 ug/L	-45.550 ppb	18:32:16
1	Na 589.592 Radial†	-1277.6	385.4	124.87 ug/L	124.87 ppb	18:31:56
1	Sr 421.552†	23.3	4.3	0.0310 ug/L	0.0310 ppb	18:31:56
1	Sc 361.383	859008.3	859008.3	105.55 %		18:33:13
1	Y 371.029	724046.7	724046.7	105.55 %		18:33:13
1	Ag 328.068†	374.9	73.6	0.3547 ug/L	0.3547 ppb	18:33:13
1	As 188.979†	-18.9	1.0	0.4375 ug/L	0.4375 ppb	18:33:33
1	B 249.677†	-310.3	224.6	5.4667 ug/L	5.4667 ppb	18:33:33
1	Ba 233.527†	-13.2	-14.0	-0.1147 ug/L	-0.1147 ppb	18:33:33
1	Be 313.107†	-4302.2	236.2	0.0942 ug/L	0.0942 ppb	18:33:13
1	Cd 226.502†	-186.1	21.3	0.2518 ug/L	0.2518 ppb	18:33:33
1	Co 228.616†	-65.7	10.4	0.2278 ug/L	0.2278 ppb	18:33:33
1	Cr 267.716†	93.7	-6.9	-0.0839 ug/L	-0.0839 ppb	18:33:33
1	Cu 324.752†	6499.0	-140.6	-0.4540 ug/L	-0.4540 ppb	18:33:13
1	Mn 257.610†	420.9	-5.5	-0.0058 ug/L	-0.0058 ppb	18:33:33
1	Mo 202.031†	28.7	7.9	0.5855 ug/L	0.5855 ppb	18:33:33
1	Ni 231.604†	70.4	-8.4	-0.2212 ug/L	-0.2212 ppb	18:33:33
1	P 214.914†	215.7	-23.5	-14.886 ug/L	-14.886 ppb	18:33:33
1	Pb 220.353†	-79.1	-10.4	-1.3265 ug/L	-1.3265 ppb	18:33:33
1	S 181.975 Axial†	48.6	-0.4	-0.6586 ug/L	-0.6586 ppb	18:33:33
1	Sb 206.836†	47.5	12.3	4.5082 ug/L	4.5082 ppb	18:33:33
1	Se 196.026†	-26.8	5.0	3.2904 ug/L	3.2904 ppb	18:33:33
1	Si 251.611†	476.9	5.9	0.1923 ug/L	0.1923 ppb	18:33:33
1	Sn 189.927†	12.5	5.8	1.0647 ug/L	1.0647 ppb	18:33:33
1	Ti 334.940†	-1351.6	106.4	0.1834 ug/L	0.1834 ppb	18:33:13
1	Tl 190.801†	-26.1	19.1	6.1170 ug/L	6.1170 ppb	18:33:33
1	U 409.014†	-1887.1	253.1	8.0834 ug/L	8.0834 ppb	18:33:13
1	V 292.402†	-1354.1	124.2	0.9203 ug/L	0.9203 ppb	18:33:13
1	Zn 213.857†	832.9	-71.2	-0.7072 ug/L	-0.7072 ppb	18:33:33
1	SiO2†	492.5	10.4	0.7296 ug/L	0.7296 ppb	18:34:29
2	Sc Radial	4960.7	4960.7	104 %		18:32:21
2	Y RADIAL	5331.3	5331.3	103.9 %		18:32:21
2	Al 396.153Radial†	15.0	17.7	14.197 ug/L	14.197 ppb	18:32:21
2	Ca 317.933Radial†	27.0	10.9	18.384 ug/L	18.384 ppb	18:32:41
2	Fe 238.204 Radial†	8.1	-2.0	-19.001 ug/L	-19.001 ppb	18:32:41
2	K 766.490 Radial†	2885.8	-0.2	-0.0788 ug/L	-0.0788 ppb	18:32:21
2	Mg 279.077 IEC†	2.8	1.2	42.014 ug/L	42.014 ppb	18:32:41
2	Na 589.592 Radial†	-1289.7	321.3	104.09 ug/L	104.09 ppb	18:32:21
2	Sr 421.552†	4.2	-13.1	-0.0937 ug/L	-0.0937 ppb	18:32:21
2	Sc 361.383	858682.7	858682.7	105.51 %		18:33:38
2	Y 371.029	722636.1	722636.1	105.35 %		18:33:38
2	Ag 328.068†	399.3	96.9	0.4678 ug/L	0.4678 ppb	18:33:38
2	As 188.979†	-27.7	-7.4	-3.3175 ug/L	-3.3175 ppb	18:33:58
2	B 249.677†	-320.9	214.4	5.2217 ug/L	5.2217 ppb	18:33:58
2	Ba 233.527†	-5.1	-6.3	-0.0507 ug/L	-0.0507 ppb	18:33:58
2	Be 313.107†	-4351.1	188.2	0.0752 ug/L	0.0752 ppb	18:33:38
2	Cd 226.502†	-174.3	32.4	0.3829 ug/L	0.3829 ppb	18:33:58
2	Co 228.616†	-72.4	4.1	0.0900 ug/L	0.0900 ppb	18:33:58
2	Cr 267.716†	98.5	-2.4	-0.0295 ug/L	-0.0295 ppb	18:33:58
2	Cu 324.752†	6443.8	-190.6	-0.6129 ug/L	-0.6129 ppb	18:33:38
2	Mn 257.610†	437.2	10.1	0.0082 ug/L	0.0082 ppb	18:33:58
2	Mo 202.031†	27.7	7.0	0.5169 ug/L	0.5169 ppb	18:33:58
2	Ni 231.604†	84.8	5.2	0.1372 ug/L	0.1372 ppb	18:33:58



2	P 214.914†	213.2	-25.8	-16.304 ug/L	-16.304 ppb	18:33:58
2	Pb 220.353†	-68.7	-0.6	-0.0646 ug/L	-0.0646 ppb	18:33:58
2	S 181.975 Axial†	51.0	1.9	2.8228 ug/L	2.8228 ppb	18:33:58
2	Sb 206.836†	44.5	9.5	3.4732 ug/L	3.4732 ppb	18:33:58
2	Se 196.026†	-25.9	5.9	3.8569 ug/L	3.8569 ppb	18:33:58
2	Si 251.611†	483.7	12.6	0.4180 ug/L	0.4180 ppb	18:33:58
2	Sn 189.927†	5.7	-0.7	-0.1221 ug/L	-0.1221 ppb	18:33:58
2	Ti 334.940†	-1337.1	119.7	0.2015 ug/L	0.2015 ppb	18:33:38
2	Tl 190.801†	-27.2	18.1	5.7938 ug/L	5.7938 ppb	18:33:58
2	U 409.014†	-1942.8	199.6	6.3757 ug/L	6.3757 ppb	18:33:38
2	V 292.402†	-1360.8	117.4	0.8698 ug/L	0.8698 ppb	18:33:38
2	Zn 213.857†	833.3	-70.5	-0.7015 ug/L	-0.7015 ppb	18:33:58
2	SiO2†	493.8	11.9	0.8356 ug/L	0.8356 ppb	18:34:34
3	Sc Radial	5139.3	5139.3	107 %		18:32:46
3	Y RADIAL	5523.7	5523.7	107.7 %		18:32:46
3	Al 396.153Radial†	-3.8	-0.3	-0.2771 ug/L	-0.2771 ppb	18:32:46
3	Ca 317.933Radial†	19.8	3.3	5.6098 ug/L	5.6098 ppb	18:33:06
3	Fe 238.204 Radial†	9.1	-1.4	-13.220 ug/L	-13.220 ppb	18:33:06
3	K 766.490 Radial†	3015.8	24.2	4.8016 ug/L	4.8016 ppb	18:32:46
3	Mg 279.077 IEC†	2.3	0.7	23.752 ug/L	23.752 ppb	18:33:06
3	Na 589.592 Radial†	-1309.7	345.9	112.08 ug/L	112.08 ppb	18:32:46
3	Sr 421.552†	13.8	-4.4	-0.0314 ug/L	-0.0314 ppb	18:32:46
3	Sc 361.383	859526.1	859526.1	105.61 %		18:34:04
3	Y 371.029	723946.5	723946.5	105.54 %		18:34:04
3	Ag 328.068†	476.9	170.0	0.8295 ug/L	0.8295 ppb	18:34:04
3	As 188.979†	-33.4	-12.8	-5.7482 ug/L	-5.7482 ppb	18:34:24
3	B 249.677†	-354.2	183.1	4.4595 ug/L	4.4595 ppb	18:34:24
3	Ba 233.527†	-9.7	-10.7	-0.0864 ug/L	-0.0864 ppb	18:34:24
3	Be 313.107†	-4375.9	168.8	0.0676 ug/L	0.0676 ppb	18:34:04
3	Cd 226.502†	-164.3	42.0	0.4957 ug/L	0.4957 ppb	18:34:24
3	Co 228.616†	-74.1	2.5	0.0543 ug/L	0.0543 ppb	18:34:24
3	Cr 267.716†	80.8	-19.2	-0.2280 ug/L	-0.2280 ppb	18:34:24
3	Cu 324.752†	6429.6	-210.0	-0.6753 ug/L	-0.6753 ppb	18:34:04
3	Mn 257.610†	421.8	-4.9	-0.0080 ug/L	-0.0080 ppb	18:34:24
3	Mo 202.031†	24.3	3.7	0.2745 ug/L	0.2745 ppb	18:34:24
3	Ni 231.604†	89.8	9.9	0.2600 ug/L	0.2600 ppb	18:34:24
3	P 214.914†	221.0	-18.6	-11.716 ug/L	-11.716 ppb	18:34:24
3	Pb 220.353†	-66.4	1.7	0.2238 ug/L	0.2238 ppb	18:34:24
3	S 181.975 Axial†	45.8	-3.1	-4.5587 ug/L	-4.5587 ppb	18:34:24
3	Sb 206.836†	36.7	2.0	0.7688 ug/L	0.7688 ppb	18:34:24
3	Se 196.026†	-24.1	7.6	5.0223 ug/L	5.0223 ppb	18:34:24
3	Si 251.611†	465.7	-5.0	-0.1705 ug/L	-0.1705 ppb	18:34:24
3	Sn 189.927†	12.3	5.5	1.0191 ug/L	1.0191 ppb	18:34:24
3	Ti 334.940†	-1303.0	153.2	0.2583 ug/L	0.2583 ppb	18:34:04
3	Tl 190.801†	-36.6	9.3	2.9626 ug/L	2.9626 ppb	18:34:24
3	U 409.014†	-1901.3	240.7	7.6891 ug/L	7.6891 ppb	18:34:04
3	V 292.402†	-1312.5	164.4	1.2065 ug/L	1.2065 ppb	18:34:04
3	Zn 213.857†	811.4	-92.0	-0.9169 ug/L	-0.9169 ppb	18:34:24
3	SiO2†	506.8	23.6	1.6863 ug/L	1.6863 ppb	18:34:39

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	859072.4	105.55 %	0.052			0.05%
Sc Radial	5093.6	106 %	2.4			2.30%
Y 371.029	723543.1	105.48 %	0.115			0.11%
Y RADIAL	5470.2	106.6 %	2.37			2.22%
Ag 328.068†	113.5	0.5507 ug/L	0.24797	0.5507 ppb	0.24797	45.03%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	6.1	4.8478 ug/L	8.10883	4.8478 ppb	8.10883	167.27%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-6.4	-2.8761 ug/L	3.11637	-2.8761 ppb	3.11637	108.36%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	207.4	5.0493 ug/L	0.52530	5.0493 ppb	0.52530	10.40%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-10.3	-0.0839 ug/L	0.03204	-0.0839 ppb	0.03204	38.18%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	197.7	0.0790 ug/L	0.01369	0.0790 ppb	0.01369	17.32%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	5.7	9.5704 ug/L	7.64551	9.5704 ppb	7.64551	79.89%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	31.9	0.3768 ug/L	0.12205	0.3768 ppb	0.12205	32.39%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	5.7	0.1240 ug/L	0.09161	0.1240 ppb	0.09161	73.85%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	-9.5	-0.1138 ug/L	0.10261	-0.1138 ppb	0.10261	90.16%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	-180.4	-0.5807 ug/L	0.11415	-0.5807 ppb	0.11415	19.66%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	-1.6	-14.776 ug/L	3.7011	-14.776 ppb	3.7011	25.05%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	-33.0	-6.6514 ug/L	15.80024	-6.6514 ppb	15.80024	237.55%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	0.2	6.7388 ug/L	46.19459	6.7388 ppb	46.19459	685.50%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	-0.1	-0.0019 ug/L	0.00880	-0.0019 ppb	0.00880	472.96%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	6.2	0.4590 ug/L	0.16340	0.4590 ppb	0.16340	35.60%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	350.9	113.68 ug/L	10.481	113.68 ppb	10.481	9.22%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	2.2	0.0587 ug/L	0.25003	0.0587 ppb	0.25003	425.96%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-22.6	-14.302 ug/L	2.3495	-14.302 ppb	2.3495	16.43%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	-3.1	-0.3891 ug/L	0.82454	-0.3891 ppb	0.82454	211.90%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	-0.5	-0.7982 ug/L	3.69270	-0.7982 ppb	3.69270	462.63%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	7.9	2.9167 ug/L	1.93083	2.9167 ppb	1.93083	66.20%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	6.1	4.0565 ug/L	0.88305	4.0565 ppb	0.88305	21.77%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	4.5	0.1466 ug/L	0.29691	0.1466 ppb	0.29691	202.54%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	3.5	0.6539 ug/L	0.67244	0.6539 ppb	0.67244	102.83%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	-4.4	-0.0314 ug/L	0.06235	-0.0314 ppb	0.06235	198.62%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	126.4	0.2144 ug/L	0.03910	0.2144 ppb	0.03910	18.23%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	15.5	4.9578 ug/L	1.73541	4.9578 ppb	1.73541	35.00%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	231.1	7.3827 ug/L	0.89411	7.3827 ppb	0.89411	12.11%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	135.3	0.9989 ug/L	0.18156	0.9989 ppb	0.18156	18.18%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	-77.9	-0.7752 ug/L	0.12275	-0.7752 ppb	0.12275	15.83%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		15.3	1.0838 ug/L	0.52444	1.0838 ppb	0.52444	48.39%		
QC value within limits for SiO2 Recovery = Not calculated									
All analyte(s) passed QC.									



Sequence No.: 41  
 Sample ID: CCV  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 7  
 Date Collected: 1/14/2010 19:40:44  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5325.3	5325.3	111 %		19:42:36
1	Y RADIAL	5682.8	5682.8	110.8 %		19:42:36
1	Al 396.153Radial†	6403.7	5764.8	4601.4 ug/L	4601.4 ppb	19:42:36
1	Ca 317.933Radial†	3136.9	2807.2	4727.2 ug/L	4727.2 ppb	19:42:56
1	Fe 238.204 Radial†	584.2	515.8	4863.3 ug/L	4863.3 ppb	19:42:56
1	K 766.490 Radial†	29044.0	23344.2	4670.8 ug/L	4670.8 ppb	19:42:36
1	Mg 279.077 IEC†	155.8	138.7	4868.4 ug/L	4868.4 ppb	19:42:56
1	Na 589.592 Radial†	30595.6	29094.6	9426.8 ug/L	9426.8 ppb	19:42:36
1	Sr 421.552†	74527.5	67037.1	477.80 ug/L	477.80 ppb	19:42:36
1	Sc 361.383	884922.0	884922.0	108.73 %		19:43:54
1	Y 371.029	733826.4	733826.4	106.98 %		19:43:54
1	Ag 328.068†	107120.2	98237.2	485.71 ug/L	485.71 ppb	19:43:59
1	As 188.979†	1128.6	1056.9	479.90 ug/L	479.90 ppb	19:44:19
1	B 249.677†	21367.2	20170.0	488.70 ug/L	488.70 ppb	19:43:59
1	Ba 233.527†	64870.7	59660.3	495.94 ug/L	495.94 ppb	19:43:59
1	Be 313.107†	1331984.8	1229343.1	489.38 ug/L	489.38 ppb	19:43:54
1	Cd 226.502†	45805.4	42325.0	495.98 ug/L	495.98 ppb	19:43:59
1	Co 228.616†	24806.5	22887.3	497.09 ug/L	497.09 ppb	19:43:59
1	Cr 267.716†	45480.4	41732.8	492.94 ug/L	492.94 ppb	19:43:59
1	Cu 324.752†	175093.5	154736.0	493.93 ug/L	493.93 ppb	19:43:59
1	Mn 257.610†	451225.1	414588.9	486.44 ug/L	486.44 ppb	19:43:54
1	Mo 202.031†	7101.1	6511.6	483.80 ug/L	483.80 ppb	19:44:19
1	Ni 231.604†	20544.7	18819.9	495.12 ug/L	495.12 ppb	19:43:59
1	P 214.914†	4317.7	3743.1	2292.6 ug/L	2292.6 ppb	19:44:19
1	Pb 220.353†	3992.7	3736.7	480.15 ug/L	480.15 ppb	19:44:19
1	S 181.975 Axial†	764.5	656.6	979.10 ug/L	979.10 ppb	19:44:19
1	Sb 206.836†	1459.0	1309.2	495.98 ug/L	495.98 ppb	19:44:19
1	Se 196.026†	762.2	731.4	506.75 ug/L	506.75 ppb	19:44:19
1	Si 251.611†	81499.0	74509.0	2506.2 ug/L	2506.2 ppb	19:43:59
1	Sn 189.927†	2840.9	2606.7	482.87 ug/L	482.87 ppb	19:44:19
1	Ti 334.940†	311116.9	287522.2	493.09 ug/L	493.09 ppb	19:43:59
1	Tl 190.801†	1583.3	1500.0	483.15 ug/L	483.15 ppb	19:44:19
1	U 409.014†	15585.7	16375.2	521.33 ug/L	521.33 ppb	19:43:59
1	V 292.402†	73269.9	68793.7	502.79 ug/L	502.79 ppb	19:43:59
1	Zn 213.857†	55477.7	50162.7	495.99 ug/L	495.99 ppb	19:43:59
1	SiO2†	79319.4	72494.1	5184.1 ug/L	5184.1 ppb	19:45:26
2	Sc Radial	5097.2	5097.2	106 %		19:43:01
2	Y RADIAL	5456.3	5456.3	106.4 %		19:43:01
2	Al 396.153Radial†	6382.9	6003.1	4791.2 ug/L	4791.2 ppb	19:43:01
2	Ca 317.933Radial†	3125.1	2922.4	4921.2 ug/L	4921.2 ppb	19:43:21
2	Fe 238.204 Radial†	585.4	540.4	5095.6 ug/L	5095.6 ppb	19:43:21
2	K 766.490 Radial†	28938.3	24414.2	4884.9 ug/L	4884.9 ppb	19:43:01
2	Mg 279.077 IEC†	159.4	148.3	5206.1 ug/L	5206.1 ppb	19:43:21
2	Na 589.592 Radial†	30649.6	30377.2	9842.4 ug/L	9842.4 ppb	19:43:01
2	Sr 421.552†	74180.9	69712.0	496.86 ug/L	496.86 ppb	19:43:01
2	Sc 361.383	833860.0	833860.0	102.46 %		19:44:25
2	Y 371.029	692653.7	692653.7	100.98 %		19:44:25
2	Ag 328.068†	105357.2	102549.3	507.04 ug/L	507.04 ppb	19:44:30
2	As 188.979†	1140.8	1132.3	513.99 ug/L	513.99 ppb	19:44:50
2	B 249.677†	20989.0	21004.2	508.91 ug/L	508.91 ppb	19:44:30
2	Ba 233.527†	63713.7	62184.5	516.92 ug/L	516.92 ppb	19:44:30
2	Be 313.107†	1339709.7	1311898.3	522.21 ug/L	522.21 ppb	19:44:25
2	Cd 226.502†	44989.5	44108.3	516.87 ug/L	516.87 ppb	19:44:30
2	Co 228.616†	24408.7	23896.1	519.02 ug/L	519.02 ppb	19:44:30
2	Cr 267.716†	44826.7	43656.1	515.66 ug/L	515.66 ppb	19:44:30
2	Cu 324.752†	171028.1	160629.1	512.75 ug/L	512.75 ppb	19:44:30
2	Mn 257.610†	452904.7	441640.7	518.17 ug/L	518.17 ppb	19:44:25
2	Mo 202.031†	7096.6	6907.1	513.17 ug/L	513.17 ppb	19:44:50
2	Ni 231.604†	20193.9	19634.6	516.55 ug/L	516.55 ppb	19:44:30



2	P 214.914†	4317.3	3985.9	2443.9 ug/L	2443.9 ppb	19:44:50
2	Pb 220.353†	4014.9	3983.2	511.82 ug/L	511.82 ppb	19:44:50
2	S 181.975 Axial†	758.7	694.1	1035.0 ug/L	1035.0 ppb	19:44:50
2	Sb 206.836†	1456.7	1389.1	526.26 ug/L	526.26 ppb	19:44:50
2	Se 196.026†	764.5	776.5	537.81 ug/L	537.81 ppb	19:44:50
2	Si 251.611†	79775.4	77416.7	2603.9 ug/L	2603.9 ppb	19:44:30
2	Sn 189.927†	2844.6	2770.2	513.15 ug/L	513.15 ppb	19:44:50
2	Ti 334.940†	304307.6	298397.9	511.73 ug/L	511.73 ppb	19:44:30
2	Tl 190.801†	1597.1	1602.7	516.16 ug/L	516.16 ppb	19:44:50
2	U 409.014†	14953.5	16635.9	529.57 ug/L	529.57 ppb	19:44:30
2	V 292.402†	71712.9	71400.5	521.97 ug/L	521.97 ppb	19:44:30
2	Zn 213.857†	54462.1	52295.9	517.08 ug/L	517.08 ppb	19:44:30
2	SiO2†	79715.8	77348.2	5531.3 ug/L	5531.3 ppb	19:45:31
3	Sc Radial	4784.1	4784.1	99.8 %		19:43:26
3	Y RADIAL	5092.0	5092.0	99.27 %		19:43:26
3	Al 396.153Radial†	6504.9	6518.0	5205.2 ug/L	5205.2 ppb	19:43:26
3	Ca 317.933Radial†	3112.5	3102.1	5223.7 ug/L	5223.7 ppb	19:43:46
3	Fe 238.204 Radial†	578.9	569.9	5372.4 ug/L	5372.4 ppb	19:43:46
3	K 766.490 Radial†	29304.3	26561.1	5314.7 ug/L	5314.7 ppb	19:43:26
3	Mg 279.077 IEC†	157.2	155.9	5472.9 ug/L	5472.9 ppb	19:43:46
3	Na 589.592 Radial†	31229.5	32843.5	10641 ug/L	10641 ppb	19:43:26
3	Sr 421.552†	75847.4	75944.6	541.29 ug/L	541.29 ppb	19:43:26
3	Sc 361.383	866538.3	866538.3	106.47 %		19:44:55
3	Y 371.029	719364.3	719364.3	104.87 %		19:44:55
3	Ag 328.068†	104626.1	97984.9	484.64 ug/L	484.64 ppb	19:45:01
3	As 188.979†	1152.9	1101.6	500.17 ug/L	500.17 ppb	19:45:21
3	B 249.677†	21134.6	20368.4	493.44 ug/L	493.44 ppb	19:45:01
3	Ba 233.527†	63912.3	60025.9	498.99 ug/L	498.99 ppb	19:45:01
3	Be 313.107†	1345815.8	1268322.5	504.87 ug/L	504.87 ppb	19:44:55
3	Cd 226.502†	45244.4	42691.8	500.23 ug/L	500.23 ppb	19:45:01
3	Co 228.616†	24486.1	23070.4	501.08 ug/L	501.08 ppb	19:45:01
3	Cr 267.716†	44865.9	42043.0	496.61 ug/L	496.61 ppb	19:45:01
3	Cu 324.752†	172213.2	155447.1	496.23 ug/L	496.23 ppb	19:45:01
3	Mn 257.610†	455480.8	427390.1	501.48 ug/L	501.48 ppb	19:44:55
3	Mo 202.031†	7098.0	6647.2	493.91 ug/L	493.91 ppb	19:45:21
3	Ni 231.604†	20289.9	18981.5	499.37 ug/L	499.37 ppb	19:45:01
3	P 214.914†	4319.7	3829.2	2346.9 ug/L	2346.9 ppb	19:45:21
3	Pb 220.353†	4016.9	3837.3	493.15 ug/L	493.15 ppb	19:45:21
3	S 181.975 Axial†	761.3	668.6	996.86 ug/L	996.86 ppb	19:45:21
3	Sb 206.836†	1470.3	1348.2	510.66 ug/L	510.66 ppb	19:45:21
3	Se 196.026†	765.8	749.6	520.66 ug/L	520.66 ppb	19:45:21
3	Si 251.611†	80336.4	75007.3	2522.9 ug/L	2522.9 ppb	19:45:01
3	Sn 189.927†	2857.2	2677.4	496.03 ug/L	496.03 ppb	19:45:21
3	Ti 334.940†	306200.8	288975.4	495.60 ug/L	495.60 ppb	19:45:01
3	Tl 190.801†	1591.0	1538.2	495.42 ug/L	495.42 ppb	19:45:21
3	U 409.014†	15156.8	16276.5	518.11 ug/L	518.11 ppb	19:45:01
3	V 292.402†	72059.2	69086.2	504.97 ug/L	504.97 ppb	19:45:01
3	Zn 213.857†	54727.7	50540.7	499.68 ug/L	499.68 ppb	19:45:01
3	SiO2†	78655.1	73417.8	5250.0 ug/L	5250.0 ppb	19:45:36

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	861773.4	105.89 %	3.178			3.00%
Sc Radial	5068.9	106 %	5.7			5.36%
Y 371.029	715281.5	104.27 %	3.045			2.92%
Y RADIAL	5410.4	105.5 %	5.81			5.51%
Ag 328.068†	99590.5	492.47 ug/L	12.633	492.47 ppb	12.633	2.57%
QC value within limits for Ag 328.068 Recovery = 98.49%						
Al 396.153Radial†	6095.3	4865.9 ug/L	308.73	4865.9 ppb	308.73	6.34%
QC value within limits for Al 396.153Radial Recovery = 97.32%						
As 188.979†	1096.9	498.02 ug/L	17.143	498.02 ppb	17.143	3.44%
QC value within limits for As 188.979 Recovery = 99.60%						
B 249.677†	20514.2	497.02 ug/L	10.566	497.02 ppb	10.566	2.13%
QC value within limits for B 249.677 Recovery = 99.40%						
Ba 233.527†	60623.6	503.95 ug/L	11.334	503.95 ppb	11.334	2.25%
QC value within limits for Ba 233.527 Recovery = 100.79%						
Be 313.107†	1269854.6	505.49 ug/L	16.424	505.49 ppb	16.424	3.25%
QC value within limits for Be 313.107 Recovery = 101.10%						
Ca 317.933Radial†	2943.9	4957.4 ug/L	250.22	4957.4 ppb	250.22	5.05%



QC value within limits for Ca 317.933 Radial Recovery = 99.15%						
Cd 226.502†	43041.7	504.36 ug/L	11.042	504.36 ppb	11.042	2.19%
QC value within limits for Cd 226.502 Recovery = 100.87%						
Co 228.616†	23284.6	505.73 ug/L	11.684	505.73 ppb	11.684	2.31%
QC value within limits for Co 228.616 Recovery = 101.15%						
Cr 267.716†	42477.3	501.74 ug/L	12.195	501.74 ppb	12.195	2.43%
QC value within limits for Cr 267.716 Recovery = 100.35%						
Cu 324.752†	156937.4	500.97 ug/L	10.267	500.97 ppb	10.267	2.05%
QC value within limits for Cu 324.752 Recovery = 100.19%						
Fe 238.204 Radial†	542.0	5110.5 ug/L	254.88	5110.5 ppb	254.88	4.99%
QC value within limits for Fe 238.204 Radial Recovery = 102.21%						
K 766.490 Radial†	24773.2	4956.8 ug/L	327.87	4956.8 ppb	327.87	6.61%
QC value within limits for K 766.490 Radial Recovery = 99.14%						
Mg 279.077 IEC†	147.6	5182.5 ug/L	302.97	5182.5 ppb	302.97	5.85%
QC value within limits for Mg 279.077 IEC Recovery = 103.65%						
Mn 257.610†	427873.2	502.03 ug/L	15.873	502.03 ppb	15.873	3.16%
QC value within limits for Mn 257.610 Recovery = 100.41%						
Mo 202.031†	6688.7	496.96 ug/L	14.925	496.96 ppb	14.925	3.00%
QC value within limits for Mo 202.031 Recovery = 99.39%						
Na 589.592 Radial†	30771.8	9970.2 ug/L	617.34	9970.2 ppb	617.34	6.19%
QC value within limits for Na 589.592 Radial Recovery = 99.70%						
Ni 231.604†	19145.3	503.68 ug/L	11.348	503.68 ppb	11.348	2.25%
QC value within limits for Ni 231.604 Recovery = 100.74%						
P 214.914†	3852.8	2361.1 ug/L	76.68	2361.1 ppb	76.68	3.25%
QC value within limits for P 214.914 Recovery = 94.44%						
Pb 220.353†	3852.4	495.04 ug/L	15.918	495.04 ppb	15.918	3.22%
QC value within limits for Pb 220.353 Recovery = 99.01%						
S 181.975 Axial†	673.1	1003.6 ug/L	28.55	1003.6 ppb	28.55	2.84%
QC value within limits for S 181.975 Axial Recovery = 100.36%						
Sb 206.836†	1348.8	510.97 ug/L	15.143	510.97 ppb	15.143	2.96%
QC value within limits for Sb 206.836 Recovery = 102.19%						
Se 196.026†	752.5	521.74 ug/L	15.559	521.74 ppb	15.559	2.98%
QC value within limits for Se 196.026 Recovery = 104.35%						
Si 251.611†	75644.3	2544.4 ug/L	52.25	2544.4 ppb	52.25	2.05%
QC value within limits for Si 251.611 Recovery = 101.77%						
Sn 189.927†	2684.8	497.35 ug/L	15.183	497.35 ppb	15.183	3.05%
QC value within limits for Sn 189.927 Recovery = 99.47%						
Sr 421.552†	70897.9	505.32 ug/L	32.577	505.32 ppb	32.577	6.45%
QC value within limits for Sr 421.552 Recovery = 101.06%						
Ti 334.940†	291631.8	500.14 ug/L	10.118	500.14 ppb	10.118	2.02%
QC value within limits for Ti 334.940 Recovery = 100.03%						
Tl 190.801†	1547.0	498.24 ug/L	16.688	498.24 ppb	16.688	3.35%
QC value within limits for Tl 190.801 Recovery = 99.65%						
U 409.014†	16429.2	523.00 ug/L	5.915	523.00 ppb	5.915	1.13%
QC value within limits for U 409.014 Recovery = 104.60%						
V 292.402†	69760.1	509.91 ug/L	10.502	509.91 ppb	10.502	2.06%
QC value within limits for V 292.402 Recovery = 101.98%						
Zn 213.857†	50999.8	504.25 ug/L	11.264	504.25 ppb	11.264	2.23%
QC value within limits for Zn 213.857 Recovery = 100.85%						
SiO2†	74420.0	5321.8 ug/L	184.39	5321.8 ppb	184.39	3.46%
QC value within limits for SiO2 Recovery = 99.52%						
All analyte(s) passed QC.						



Sequence No.: 42

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/14/2010 19:47:47

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5077.1	5077.1	106 %		19:49:39
1	Y RADIAL	5453.2	5453.2	106.3 %		19:49:39
1	Al 396.153Radial†	-11.7	-7.8	-6.2491 ug/L	-6.2491 ppb	19:49:39
1	Ca 317.933Radial†	22.0	5.6	9.4228 ug/L	9.4228 ppb	19:50:00
1	Fe 238.204 Radial†	11.3	0.7	6.9516 ug/L	6.9516 ppb	19:50:00
1	K 766.490 Radial†	2811.1	-134.6	-26.994 ug/L	-26.994 ppb	19:49:39
1	Mg 279.077 IEC†	2.3	0.6	22.347 ug/L	22.347 ppb	19:50:00
1	Na 589.592 Radial†	-1437.5	210.3	68.154 ug/L	68.154 ppb	19:49:39
1	Sr 421.552†	-7.2	-24.0	-0.1711 ug/L	-0.1711 ppb	19:49:39
1	Sc 361.383	852089.0	852089.0	104.70 %		19:50:56
1	Y 371.029	722835.8	722835.8	105.38 %		19:50:56
1	Ag 328.068†	407.3	107.4	0.5246 ug/L	0.5246 ppb	19:50:56
1	As 188.979†	-24.0	-4.1	-1.8492 ug/L	-1.8492 ppb	19:51:16
1	B 249.677†	-458.6	80.5	1.9581 ug/L	1.9581 ppb	19:51:16
1	Ba 233.527†	6.2	4.4	0.0382 ug/L	0.0382 ppb	19:51:16
1	Be 313.107†	-4343.2	163.9	0.0657 ug/L	0.0657 ppb	19:50:56
1	Cd 226.502†	-191.2	15.0	0.1767 ug/L	0.1767 ppb	19:51:16
1	Co 228.616†	-88.3	-11.6	-0.2515 ug/L	-0.2515 ppb	19:51:16
1	Cr 267.716†	80.0	-19.3	-0.2308 ug/L	-0.2308 ppb	19:51:16
1	Cu 324.752†	6464.0	-124.0	-0.4011 ug/L	-0.4011 ppb	19:50:56
1	Mn 257.610†	469.9	44.5	0.0520 ug/L	0.0520 ppb	19:51:16
1	Mo 202.031†	28.0	7.4	0.5506 ug/L	0.5506 ppb	19:51:16
1	Ni 231.604†	93.5	14.2	0.3732 ug/L	0.3732 ppb	19:51:16
1	P 214.914†	217.3	-20.3	-12.899 ug/L	-12.899 ppb	19:51:16
1	Pb 220.353†	-73.0	-5.1	-0.6594 ug/L	-0.6594 ppb	19:51:16
1	S 181.975 Axial†	46.4	-2.2	-3.2184 ug/L	-3.2184 ppb	19:51:16
1	Sb 206.836†	35.8	1.4	0.5329 ug/L	0.5329 ppb	19:51:16
1	Se 196.026†	-24.2	7.2	4.8630 ug/L	4.8630 ppb	19:51:16
1	Si 251.611†	496.2	28.1	0.9403 ug/L	0.9403 ppb	19:51:16
1	Sn 189.927†	5.6	-0.8	-0.1491 ug/L	-0.1491 ppb	19:51:16
1	Ti 334.940†	-1285.3	159.3	0.2685 ug/L	0.2685 ppb	19:50:56
1	Tl 190.801†	-36.3	9.2	2.9503 ug/L	2.9503 ppb	19:51:16
1	U 409.014†	-1807.0	315.0	10.061 ug/L	10.061 ppb	19:50:56
1	V 292.402†	-1373.1	95.6	0.7159 ug/L	0.7159 ppb	19:50:56
1	Zn 213.857†	834.8	-62.9	-0.6302 ug/L	-0.6302 ppb	19:51:16
1	SiO2†	514.6	35.3	2.5180 ug/L	2.5180 ppb	19:52:12
2	Sc Radial	5109.3	5109.3	107 %		19:50:05
2	Y RADIAL	5477.6	5477.6	106.8 %		19:50:05
2	Al 396.153Radial†	-25.5	-20.7	-16.654 ug/L	-16.654 ppb	19:50:05
2	Ca 317.933Radial†	22.6	6.0	10.178 ug/L	10.178 ppb	19:50:25
2	Fe 238.204 Radial†	8.6	-1.8	-17.138 ug/L	-17.138 ppb	19:50:25
2	K 766.490 Radial†	2971.0	-1.4	-0.3101 ug/L	-0.3101 ppb	19:50:05
2	Mg 279.077 IEC†	3.6	1.9	66.641 ug/L	66.641 ppb	19:50:25
2	Na 589.592 Radial†	-1432.8	223.3	72.343 ug/L	72.343 ppb	19:50:05
2	Sr 421.552†	-12.4	-28.8	-0.2057 ug/L	-0.2057 ppb	19:50:05
2	Sc 361.383	854522.3	854522.3	105.00 %		19:51:22
2	Y 371.029	725851.8	725851.8	105.82 %		19:51:22
2	Ag 328.068†	423.0	121.3	0.5901 ug/L	0.5901 ppb	19:51:22
2	As 188.979†	-20.9	-1.0	-0.4669 ug/L	-0.4669 ppb	19:51:42
2	B 249.677†	-468.4	72.4	1.7655 ug/L	1.7655 ppb	19:51:42
2	Ba 233.527†	-11.4	-12.3	-0.1011 ug/L	-0.1011 ppb	19:51:42
2	Be 313.107†	-4353.4	165.9	0.0668 ug/L	0.0668 ppb	19:51:22
2	Cd 226.502†	-190.8	15.8	0.1880 ug/L	0.1880 ppb	19:51:42
2	Co 228.616†	-81.1	-4.5	-0.0966 ug/L	-0.0966 ppb	19:51:42
2	Cr 267.716†	89.4	-10.6	-0.1261 ug/L	-0.1261 ppb	19:51:42
2	Cu 324.752†	6509.1	-98.6	-0.3178 ug/L	-0.3178 ppb	19:51:22
2	Mn 257.610†	454.8	28.8	0.0294 ug/L	0.0294 ppb	19:51:42
2	Mo 202.031†	34.5	13.6	1.0074 ug/L	1.0074 ppb	19:51:42
2	Ni 231.604†	103.4	23.4	0.6148 ug/L	0.6148 ppb	19:51:42



2	P 214.914†	217.8	-20.4	-12.978 ug/L	-12.978 ppb	19:51:42
2	Pb 220.353†	-56.5	10.8	1.3797 ug/L	1.3797 ppb	19:51:42
2	S 181.975 Axial†	45.5	-3.2	-4.7150 ug/L	-4.7150 ppb	19:51:42
2	Sb 206.836†	39.9	5.2	1.9270 ug/L	1.9270 ppb	19:51:42
2	Se 196.026†	-25.1	6.4	4.2389 ug/L	4.2389 ppb	19:51:42
2	Si 251.611†	501.7	31.9	1.0635 ug/L	1.0635 ppb	19:51:42
2	Sn 189.927†	1.9	-4.3	-0.7913 ug/L	-0.7913 ppb	19:51:42
2	Ti 334.940†	-1208.7	235.8	0.3990 ug/L	0.3990 ppb	19:51:22
2	Tl 190.801†	-33.9	11.6	3.7009 ug/L	3.7009 ppb	19:51:42
2	U 409.014†	-2022.2	115.0	3.6739 ug/L	3.6739 ppb	19:51:22
2	V 292.402†	-1368.7	103.5	0.7716 ug/L	0.7716 ppb	19:51:22
2	Zn 213.857†	815.9	-83.2	-0.8317 ug/L	-0.8317 ppb	19:51:42
2	SiO2†	566.3	83.2	5.9364 ug/L	5.9364 ppb	19:52:17
3	Sc Radial	5086.3	5086.3	106 %		19:50:30
3	Y RADIAL	5471.4	5471.4	106.7 %		19:50:30
3	Al 396.153Radial†	20.6	22.6	18.154 ug/L	18.154 ppb	19:50:30
3	Ca 317.933Radial†	23.5	7.0	11.748 ug/L	11.748 ppb	19:50:50
3	Fe 238.204 Radial†	10.3	-0.2	-1.5915 ug/L	-1.5915 ppb	19:50:50
3	K 766.490 Radial†	2863.1	-90.4	-18.142 ug/L	-18.142 ppb	19:50:30
3	Mg 279.077 IEC†	3.3	1.6	56.683 ug/L	56.683 ppb	19:50:50
3	Na 589.592 Radial†	-1473.6	178.8	57.926 ug/L	57.926 ppb	19:50:30
3	Sr 421.552†	0.2	-17.0	-0.1216 ug/L	-0.1216 ppb	19:50:30
3	Sc 361.383	855272.4	855272.4	105.09 %		19:51:47
3	Y 371.029	725851.5	725851.5	105.82 %		19:51:47
3	Ag 328.068†	377.5	77.7	0.3801 ug/L	0.3801 ppb	19:51:47
3	As 188.979†	-28.4	-8.2	-3.6858 ug/L	-3.6858 ppb	19:52:07
3	B 249.677†	-467.1	74.0	1.8026 ug/L	1.8026 ppb	19:52:07
3	Ba 233.527†	-4.1	-5.3	-0.0430 ug/L	-0.0430 ppb	19:52:07
3	Be 313.107†	-4339.0	183.3	0.0737 ug/L	0.0737 ppb	19:51:47
3	Cd 226.502†	-180.8	25.5	0.3001 ug/L	0.3001 ppb	19:52:07
3	Co 228.616†	-92.1	-14.9	-0.3239 ug/L	-0.3239 ppb	19:52:07
3	Cr 267.716†	74.3	-25.0	-0.2963 ug/L	-0.2963 ppb	19:52:07
3	Cu 324.752†	6493.9	-118.6	-0.3809 ug/L	-0.3809 ppb	19:51:47
3	Mn 257.610†	463.2	36.5	0.0403 ug/L	0.0403 ppb	19:52:07
3	Mo 202.031†	25.3	4.7	0.3516 ug/L	0.3516 ppb	19:52:07
3	Ni 231.604†	83.1	3.9	0.1040 ug/L	0.1040 ppb	19:52:07
3	P 214.914†	214.2	-24.1	-15.281 ug/L	-15.281 ppb	19:52:07
3	Pb 220.353†	-69.1	-1.2	-0.1421 ug/L	-0.1421 ppb	19:52:07
3	S 181.975 Axial†	43.5	-5.1	-7.6003 ug/L	-7.6003 ppb	19:52:07
3	Sb 206.836†	32.8	-1.6	-0.5613 ug/L	-0.5613 ppb	19:52:07
3	Se 196.026†	-25.1	6.5	4.3567 ug/L	4.3567 ppb	19:52:07
3	Si 251.611†	505.4	35.0	1.1765 ug/L	1.1765 ppb	19:52:07
3	Sn 189.927†	7.7	1.2	0.2328 ug/L	0.2328 ppb	19:52:07
3	Ti 334.940†	-1216.4	229.5	0.3889 ug/L	0.3889 ppb	19:51:47
3	Tl 190.801†	-30.8	14.6	4.6700 ug/L	4.6700 ppb	19:52:07
3	U 409.014†	-2004.1	133.9	4.2774 ug/L	4.2774 ppb	19:51:47
3	V 292.402†	-1385.6	88.7	0.6538 ug/L	0.6538 ppb	19:51:47
3	Zn 213.857†	821.2	-78.9	-0.7870 ug/L	-0.7870 ppb	19:52:07
3	SiO2†	512.0	31.0	2.2102 ug/L	2.2102 ppb	19:52:22

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Conc. Units	Sample	Std.Dev.	RSD
Sc 361.383	853961.2	104.93 %		0.204				0.19%
Sc Radial	5090.9	106 %		0.3				0.33%
Y 371.029	724846.4	105.67 %		0.254				0.24%
Y RADIAL	5467.4	106.6 %		0.25				0.23%
Ag 328.068†	102.1	0.4983 ug/L		0.10744	0.4983 ppb		0.10744	21.56%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153Radial†	-1.9	-1.5832 ug/L		17.86686	-1.5832 ppb		17.86686	>999.9%
QC value within limits for Al 396.153Radial Recovery = Not calculated								
As 188.979†	-4.4	-2.0006 ug/L		1.61474	-2.0006 ppb		1.61474	80.71%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	75.6	1.8420 ug/L		0.10218	1.8420 ppb		0.10218	5.55%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-4.4	-0.0353 ug/L		0.07000	-0.0353 ppb		0.07000	198.33%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	171.1	0.0688 ug/L		0.00433	0.0688 ppb		0.00433	6.29%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 317.933Radial†	6.2	10.450 ug/L		1.1864	10.450 ppb		1.1864	11.35%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	18.8	0.2216 ug/L	0.06819	0.2216 ppb	0.06819	30.77%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	-10.4	-0.2240 ug/L	0.11615	-0.2240 ppb	0.11615	51.86%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	-18.3	-0.2177 ug/L	0.08584	-0.2177 ppb	0.08584	39.43%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	-113.7	-0.3666 ug/L	0.04344	-0.3666 ppb	0.04344	11.85%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	-0.4	-3.9258 ug/L	12.21303	-3.9258 ppb	12.21303	311.10%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	-75.5	-15.149 ug/L	13.5916	-15.149 ppb	13.5916	89.72%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	1.4	48.557 ug/L	23.2378	48.557 ppb	23.2378	47.86%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	36.6	0.0406 ug/L	0.01127	0.0406 ppb	0.01127	27.79%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	8.6	0.6365 ug/L	0.33621	0.6365 ppb	0.33621	52.82%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	204.1	66.141 ug/L	7.4165	66.141 ppb	7.4165	11.21%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	13.8	0.3640 ug/L	0.25554	0.3640 ppb	0.25554	70.21%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-21.6	-13.719 ug/L	1.3529	-13.719 ppb	1.3529	9.86%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	1.5	0.1927 ug/L	1.05998	0.1927 ppb	1.05998	549.98%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	-3.5	-5.1779 ug/L	2.22732	-5.1779 ppb	2.22732	43.02%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	1.7	0.6329 ug/L	1.24716	0.6329 ppb	1.24716	197.07%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	6.7	4.4862 ug/L	0.33159	4.4862 ppb	0.33159	7.39%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	31.7	1.0601 ug/L	0.11813	1.0601 ppb	0.11813	11.14%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	-1.3	-0.2359 ug/L	0.51753	-0.2359 ppb	0.51753	219.40%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	-23.3	-0.1661 ug/L	0.04228	-0.1661 ppb	0.04228	25.46%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	208.2	0.3521 ug/L	0.07261	0.3521 ppb	0.07261	20.62%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	11.8	3.7737 ug/L	0.86217	3.7737 ppb	0.86217	22.85%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	188.0	6.0040 ug/L	3.52617	6.0040 ppb	3.52617	58.73%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	95.9	0.7138 ug/L	0.05894	0.7138 ppb	0.05894	8.26%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	-75.0	-0.7496 ug/L	0.10579	-0.7496 ppb	0.10579	14.11%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		49.8	3.5549 ug/L	2.06818	3.5549 ppb	2.06818	58.18%		
QC value within limits for SiO2 Recovery = Not calculated									

All analyte(s) passed QC.



Sequence No.: 51

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/14/2010 20:50:52

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4980.6	4980.6	104 %		20:52:44
1	Y RADIAL	5319.8	5319.8	103.7 %		20:52:44
1	Al 396.153Radial†	6541.7	6296.2	5026.2 ug/L	5026.2 ppb	20:52:44
1	Ca 317.933Radial†	3177.7	3041.7	5122.1 ug/L	5122.1 ppb	20:53:04
1	Fe 238.204 Radial†	593.8	561.4	5292.9 ug/L	5292.9 ppb	20:53:04
1	K 766.490 Radial†	29562.9	25651.6	5132.6 ug/L	5132.6 ppb	20:52:44
1	Mg 279.077 IEC†	159.8	152.2	5344.2 ug/L	5344.2 ppb	20:53:04
1	Na 589.592 Radial†	31339.9	31715.4	10276 ug/L	10276 ppb	20:52:44
1	Sr 421.552†	76457.3	73533.4	524.10 ug/L	524.10 ppb	20:52:44
1	Sc 361.383	846924.0	846924.0	104.06 %		20:54:02
1	Y 371.029	703196.0	703196.0	102.51 %		20:54:02
1	Ag 328.068†	104645.2	100278.9	495.96 ug/L	495.96 ppb	20:54:07
1	As 188.979†	1160.4	1134.0	514.86 ug/L	514.86 ppb	20:54:27
1	B 249.677†	21417.1	21099.7	511.19 ug/L	511.19 ppb	20:54:07
1	Ba 233.527†	65082.9	62541.0	519.89 ug/L	519.89 ppb	20:54:07
1	Be 313.107†	1349422.3	1301061.9	517.92 ug/L	517.92 ppb	20:54:02
1	Cd 226.502†	46112.0	44509.7	521.56 ug/L	521.56 ppb	20:54:07
1	Co 228.616†	24926.0	24025.7	521.83 ug/L	521.83 ppb	20:54:07
1	Cr 267.716†	45729.5	43848.8	517.94 ug/L	517.94 ppb	20:54:07
1	Cu 324.752†	174383.4	161278.6	514.83 ug/L	514.83 ppb	20:54:07
1	Mn 257.610†	455789.5	437594.2	513.44 ug/L	513.44 ppb	20:54:02
1	Mo 202.031†	7257.0	6954.4	516.70 ug/L	516.70 ppb	20:54:27
1	Ni 231.604†	20629.9	19749.5	519.58 ug/L	519.58 ppb	20:54:07
1	P 214.914†	4416.9	4016.6	2463.1 ug/L	2463.1 ppb	20:54:27
1	Pb 220.353†	4102.9	4007.3	514.94 ug/L	514.94 ppb	20:54:27
1	S 181.975 Axial†	780.9	703.9	1049.6 ug/L	1049.6 ppb	20:54:27
1	Sb 206.836†	1507.3	1415.7	536.13 ug/L	536.13 ppb	20:54:27
1	Se 196.026†	787.9	787.5	545.79 ug/L	545.79 ppb	20:54:27
1	Si 251.611†	81527.3	77899.1	2620.1 ug/L	2620.1 ppb	20:54:07
1	Sn 189.927†	2920.1	2800.0	518.69 ug/L	518.69 ppb	20:54:27
1	Ti 334.940†	314065.7	303193.7	519.97 ug/L	519.97 ppb	20:54:02
1	Tl 190.801†	1628.9	1609.2	518.28 ug/L	518.28 ppb	20:54:27
1	U 409.014†	15381.1	16821.7	535.48 ug/L	535.48 ppb	20:54:07
1	V 292.402†	73454.6	71994.6	526.28 ug/L	526.28 ppb	20:54:07
1	Zn 213.857†	55622.5	52591.0	519.99 ug/L	519.99 ppb	20:54:07
1	SiO2†	81812.6	78163.0	5589.6 ug/L	5589.6 ppb	20:55:35
2	Sc Radial	5033.0	5033.0	105 %		20:53:09
2	Y RADIAL	5346.0	5346.0	104.2 %		20:53:09
2	Al 396.153Radial†	6561.5	6249.7	4989.3 ug/L	4989.3 ppb	20:53:09
2	Ca 317.933Radial†	3173.4	3005.9	5061.7 ug/L	5061.7 ppb	20:53:29
2	Fe 238.204 Radial†	591.2	552.9	5212.8 ug/L	5212.8 ppb	20:53:29
2	K 766.490 Radial†	29821.9	25602.6	5122.8 ug/L	5122.8 ppb	20:53:09
2	Mg 279.077 IEC†	159.7	150.5	5284.2 ug/L	5284.2 ppb	20:53:29
2	Na 589.592 Radial†	31459.4	31515.9	10211 ug/L	10211 ppb	20:53:09
2	Sr 421.552†	76746.4	73044.3	520.61 ug/L	520.61 ppb	20:53:09
2	Sc 361.383	857036.0	857036.0	105.30 %		20:54:33
2	Y 371.029	711389.6	711389.6	103.71 %		20:54:33
2	Ag 328.068†	103850.7	98337.9	486.35 ug/L	486.35 ppb	20:54:38
2	As 188.979†	1164.8	1124.9	510.79 ug/L	510.79 ppb	20:54:58
2	B 249.677†	20969.0	20431.3	494.99 ug/L	494.99 ppb	20:54:38
2	Ba 233.527†	63719.1	60508.0	502.99 ug/L	502.99 ppb	20:54:38
2	Be 313.107†	1361539.7	1297268.9	516.42 ug/L	516.42 ppb	20:54:33
2	Cd 226.502†	45161.9	43084.6	504.85 ug/L	504.85 ppb	20:54:38
2	Co 228.616†	24358.8	23204.5	503.97 ug/L	503.97 ppb	20:54:38
2	Cr 267.716†	44937.1	42577.8	502.93 ug/L	502.93 ppb	20:54:38
2	Cu 324.752†	171138.4	156219.8	498.69 ug/L	498.69 ppb	20:54:38
2	Mn 257.610†	459708.9	436148.3	511.74 ug/L	511.74 ppb	20:54:33
2	Mo 202.031†	7215.6	6832.8	507.67 ug/L	507.67 ppb	20:54:58
2	Ni 231.604†	20262.6	19166.8	504.25 ug/L	504.25 ppb	20:54:38



2	P 214.914†	4375.3	3927.0	2409.0 ug/L	2409.0 ppb	20:54:58
2	Pb 220.353†	4061.3	3921.3	503.91 ug/L	503.91 ppb	20:54:58
2	S 181.975 Axial†	766.3	681.2	1015.7 ug/L	1015.7 ppb	20:54:58
2	Sb 206.836†	1487.8	1380.2	522.70 ug/L	522.70 ppb	20:54:58
2	Se 196.026†	782.8	773.7	536.28 ug/L	536.28 ppb	20:54:58
2	Si 251.611†	79908.3	75437.3	2537.3 ug/L	2537.3 ppb	20:54:38
2	Sn 189.927†	2879.4	2728.3	505.41 ug/L	505.41 ppb	20:54:58
2	Ti 334.940†	317056.5	302472.9	518.75 ug/L	518.75 ppb	20:54:33
2	Tl 190.801†	1617.2	1579.6	508.90 ug/L	508.90 ppb	20:54:58
2	U 409.014†	14979.2	16265.7	517.77 ug/L	517.77 ppb	20:54:38
2	V 292.402†	71908.5	69693.5	509.54 ug/L	509.54 ppb	20:54:38
2	Zn 213.857†	54634.2	51021.9	504.46 ug/L	504.46 ppb	20:54:38
2	SiO2†	80185.5	75690.2	5412.6 ug/L	5412.6 ppb	20:55:40
3	Sc Radial	5008.4	5008.4	105 %		20:53:34
3	Y RADIAL	5353.9	5353.9	104.4 %		20:53:34
3	Al 396.153Radial†	6605.3	6322.2	5047.3 ug/L	5047.3 ppb	20:53:34
3	Ca 317.933Radial†	3184.2	3031.1	5104.2 ug/L	5104.2 ppb	20:53:54
3	Fe 238.204 Radial†	589.7	554.3	5225.9 ug/L	5225.9 ppb	20:53:54
3	K 766.490 Radial†	29638.1	25565.9	5115.5 ug/L	5115.5 ppb	20:53:34
3	Mg 279.077 IEC†	161.7	153.2	5378.0 ug/L	5378.0 ppb	20:53:54
3	Na 589.592 Radial†	31323.2	31532.3	10217 ug/L	10217 ppb	20:53:34
3	Sr 421.552†	76663.2	73322.6	522.60 ug/L	522.60 ppb	20:53:34
3	Sc 361.383	850254.0	850254.0	104.47 %		20:55:04
3	Y 371.029	705411.6	705411.6	102.84 %		20:55:04
3	Ag 328.068†	103502.0	98790.8	488.59 ug/L	488.59 ppb	20:55:09
3	As 188.979†	1145.1	1114.9	506.27 ug/L	506.27 ppb	20:55:29
3	B 249.677†	21045.8	20663.7	500.62 ug/L	500.62 ppb	20:55:09
3	Ba 233.527†	64084.3	61340.2	509.90 ug/L	509.90 ppb	20:55:09
3	Be 313.107†	1345388.5	1292122.1	514.37 ug/L	514.37 ppb	20:55:04
3	Cd 226.502†	45162.9	43427.6	508.88 ug/L	508.88 ppb	20:55:09
3	Co 228.616†	24455.8	23481.8	510.00 ug/L	510.00 ppb	20:55:09
3	Cr 267.716†	45068.5	43044.0	508.43 ug/L	508.43 ppb	20:55:09
3	Cu 324.752†	171419.4	157785.1	503.68 ug/L	503.68 ppb	20:55:09
3	Mn 257.610†	454861.0	434990.0	510.38 ug/L	510.38 ppb	20:55:04
3	Mo 202.031†	7190.2	6863.1	509.92 ug/L	509.92 ppb	20:55:29
3	Ni 231.604†	20316.5	19371.9	509.64 ug/L	509.64 ppb	20:55:09
3	P 214.914†	4360.2	3945.7	2420.0 ug/L	2420.0 ppb	20:55:29
3	Pb 220.353†	4065.0	3955.6	508.32 ug/L	508.32 ppb	20:55:29
3	S 181.975 Axial†	768.8	689.4	1027.9 ug/L	1027.9 ppb	20:55:29
3	Sb 206.836†	1474.6	1378.7	522.34 ug/L	522.34 ppb	20:55:29
3	Se 196.026†	778.3	775.4	537.45 ug/L	537.45 ppb	20:55:29
3	Si 251.611†	80109.5	76235.1	2564.1 ug/L	2564.1 ppb	20:55:09
3	Sn 189.927†	2887.0	2757.3	510.78 ug/L	510.78 ppb	20:55:29
3	Ti 334.940†	313861.7	301816.3	517.61 ug/L	517.61 ppb	20:55:04
3	Tl 190.801†	1603.7	1579.0	508.65 ug/L	508.65 ppb	20:55:29
3	U 409.014†	15019.7	16417.9	522.61 ug/L	522.61 ppb	20:55:09
3	V 292.402†	72107.1	70428.3	514.88 ug/L	514.88 ppb	20:55:09
3	Zn 213.857†	54625.3	51427.2	508.46 ug/L	508.46 ppb	20:55:09
3	SiO2†	81154.3	77224.9	5522.5 ug/L	5522.5 ppb	20:55:45

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	851404.7	104.61 %	0.633			0.61%
Sc Radial	5007.3	105 %	0.5			0.52%
Y 371.029	706665.7	103.02 %	0.618			0.60%
Y RADIAL	5339.9	104.1 %	0.35			0.33%
Ag 328.068†	99135.9	490.30 ug/L	5.029	490.30 ppb	5.029	1.03%
QC value within limits for Ag 328.068 Recovery = 98.06%						
Al 396.153Radial†	6289.4	5020.9 ug/L	29.38	5020.9 ppb	29.38	0.59%
QC value within limits for Al 396.153Radial Recovery = 100.42%						
As 188.979†	1124.6	510.64 ug/L	4.297	510.64 ppb	4.297	0.84%
QC value within limits for As 188.979 Recovery = 102.13%						
B 249.677†	20731.6	502.27 ug/L	8.226	502.27 ppb	8.226	1.64%
QC value within limits for B 249.677 Recovery = 100.45%						
Ba 233.527†	61463.1	510.93 ug/L	8.495	510.93 ppb	8.495	1.66%
QC value within limits for Ba 233.527 Recovery = 102.19%						
Be 313.107†	1296817.6	516.24 ug/L	1.785	516.24 ppb	1.785	0.35%
QC value within limits for Be 313.107 Recovery = 103.25%						
Ca 317.933Radial†	3026.2	5096.0 ug/L	30.99	5096.0 ppb	30.99	0.61%



QC value within limits for Ca 317.933 Radial Recovery = 101.92%

Cd 226.502†	43674.0	511.76 ug/L	8.720	511.76 ppb	8.720	1.70%
QC value within limits for Cd 226.502 Recovery = 102.35%						
Co 228.616†	23570.7	511.93 ug/L	9.081	511.93 ppb	9.081	1.77%
QC value within limits for Co 228.616 Recovery = 102.39%						
Cr 267.716†	43156.9	509.77 ug/L	7.594	509.77 ppb	7.594	1.49%
QC value within limits for Cr 267.716 Recovery = 101.95%						
Cu 324.752†	158427.8	505.73 ug/L	8.265	505.73 ppb	8.265	1.63%
QC value within limits for Cu 324.752 Recovery = 101.15%						
Fe 238.204 Radial†	556.2	5243.9 ug/L	42.96	5243.9 ppb	42.96	0.82%
QC value within limits for Fe 238.204 Radial Recovery = 104.88%						
K 766.490 Radial†	25606.7	5123.6 ug/L	8.60	5123.6 ppb	8.60	0.17%
QC value within limits for K 766.490 Radial Recovery = 102.47%						
Mg 279.077 IEC†	152.0	5335.4 ug/L	47.51	5335.4 ppb	47.51	0.89%
QC value within limits for Mg 279.077 IEC Recovery = 106.71%						
Mn 257.610†	436244.1	511.86 ug/L	1.534	511.86 ppb	1.534	0.30%
QC value within limits for Mn 257.610 Recovery = 102.37%						
Mo 202.031†	6883.4	511.43 ug/L	4.701	511.43 ppb	4.701	0.92%
QC value within limits for Mo 202.031 Recovery = 102.29%						
Na 589.592 Radial†	31587.9	10235 ug/L	35.9	10235 ppb	35.9	0.35%
QC value within limits for Na 589.592 Radial Recovery = 102.35%						
Ni 231.604†	19429.4	511.16 ug/L	7.776	511.16 ppb	7.776	1.52%
QC value within limits for Ni 231.604 Recovery = 102.23%						
P 214.914†	3963.1	2430.7 ug/L	28.57	2430.7 ppb	28.57	1.18%
QC value within limits for P 214.914 Recovery = 97.23%						
Pb 220.353†	3961.4	509.06 ug/L	5.552	509.06 ppb	5.552	1.09%
QC value within limits for Pb 220.353 Recovery = 101.81%						
S 181.975 Axial†	691.5	1031.1 ug/L	17.16	1031.1 ppb	17.16	1.66%
QC value within limits for S 181.975 Axial Recovery = 103.11%						
Sb 206.836†	1391.5	527.06 ug/L	7.861	527.06 ppb	7.861	1.49%
QC value within limits for Sb 206.836 Recovery = 105.41%						
Se 196.026†	778.8	539.84 ug/L	5.184	539.84 ppb	5.184	0.96%
QC value within limits for Se 196.026 Recovery = 107.97%						
Si 251.611†	76523.9	2573.8 ug/L	42.29	2573.8 ppb	42.29	1.64%
QC value within limits for Si 251.611 Recovery = 102.95%						
Sn 189.927†	2761.9	511.63 ug/L	6.682	511.63 ppb	6.682	1.31%
QC value within limits for Sn 189.927 Recovery = 102.33%						
Sr 421.552†	73300.1	522.44 ug/L	1.749	522.44 ppb	1.749	0.33%
QC value within limits for Sr 421.552 Recovery = 104.49%						
Ti 334.940†	302494.3	518.78 ug/L	1.180	518.78 ppb	1.180	0.23%
QC value within limits for Ti 334.940 Recovery = 103.76%						
Tl 190.801†	1589.3	511.94 ug/L	5.489	511.94 ppb	5.489	1.07%
QC value within limits for Tl 190.801 Recovery = 102.39%						
U 409.014†	16501.8	525.29 ug/L	9.155	525.29 ppb	9.155	1.74%
QC value within limits for U 409.014 Recovery = 105.06%						
V 292.402†	70705.5	516.90 ug/L	8.553	516.90 ppb	8.553	1.65%
QC value within limits for V 292.402 Recovery = 103.38%						
Zn 213.857†	51680.0	510.97 ug/L	8.059	510.97 ppb	8.059	1.58%
QC value within limits for Zn 213.857 Recovery = 102.19%						
SiO2†	77026.0	5508.2 ug/L	89.38	5508.2 ppb	89.38	1.62%
QC value within limits for SiO2 Recovery = 103.01%						

All analyte(s) passed QC.



Sequence No.: 52

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 6

Date Collected: 1/14/2010 20:57:54

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5110.9	5110.9	107 %		20:59:46
1	Y RADIAL	5467.2	5467.2	106.6 %		20:59:46
1	Al 396.153Radial†	-6.4	-2.7	-2.1821 ug/L	-2.1821 ppb	20:59:46
1	Ca 317.933Radial†	14.6	-1.5	-2.5042 ug/L	-2.5042 ppb	21:00:06
1	Fe 238.204 Radial†	12.6	1.9	17.784 ug/L	17.784 ppb	21:00:06
1	K 766.490 Radial†	2848.3	-117.2	-23.501 ug/L	-23.501 ppb	20:59:46
1	Mg 279.077 IEC†	1.5	-0.1	-4.8809 ug/L	-4.8809 ppb	21:00:06
1	Na 589.592 Radial†	-1544.9	118.6	38.443 ug/L	38.443 ppb	20:59:46
1	Sr 421.552†	-16.5	-32.7	-0.2331 ug/L	-0.2331 ppb	20:59:46
1	Sc 361.383	852111.4	852111.4	104.70 %		21:01:03
1	Y 371.029	717851.2	717851.2	104.65 %		21:01:03
1	Ag 328.068†	481.2	178.0	0.8822 ug/L	0.8822 ppb	21:01:03
1	As 188.979†	-23.5	-3.6	-1.6013 ug/L	-1.6013 ppb	21:01:23
1	B 249.677†	-447.9	90.7	2.2047 ug/L	2.2047 ppb	21:01:23
1	Ba 233.527†	8.5	6.7	0.0586 ug/L	0.0586 ppb	21:01:23
1	Be 313.107†	-4380.5	128.3	0.0514 ug/L	0.0514 ppb	21:01:03
1	Cd 226.502†	-181.6	24.1	0.2821 ug/L	0.2821 ppb	21:01:23
1	Co 228.616†	-80.1	-3.9	-0.0845 ug/L	-0.0845 ppb	21:01:23
1	Cr 267.716†	72.5	-26.5	-0.3117 ug/L	-0.3117 ppb	21:01:23
1	Cu 324.752†	6398.9	-186.4	-0.5964 ug/L	-0.5964 ppb	21:01:03
1	Mn 257.610†	423.0	-0.3	0.0016 ug/L	0.0016 ppb	21:01:23
1	Mo 202.031†	18.6	-1.5	-0.1113 ug/L	-0.1113 ppb	21:01:23
1	Ni 231.604†	90.1	11.0	0.2889 ug/L	0.2889 ppb	21:01:23
1	P 214.914†	221.7	-16.1	-10.179 ug/L	-10.179 ppb	21:01:23
1	Pb 220.353†	-73.0	-5.2	-0.6643 ug/L	-0.6643 ppb	21:01:23
1	S 181.975 Axial†	37.9	-10.3	-15.300 ug/L	-15.300 ppb	21:01:23
1	Sb 206.836†	44.0	9.3	3.3862 ug/L	3.3862 ppb	21:01:23
1	Se 196.026†	-23.3	8.1	5.4933 ug/L	5.4933 ppb	21:01:23
1	Si 251.611†	453.9	-12.4	-0.4154 ug/L	-0.4154 ppb	21:01:23
1	Sn 189.927†	6.4	-0.0	-0.0034 ug/L	-0.0034 ppb	21:01:23
1	Ti 334.940†	-1337.9	109.1	0.1856 ug/L	0.1856 ppb	21:01:03
1	Tl 190.801†	-29.0	16.2	5.1755 ug/L	5.1755 ppb	21:01:23
1	U 409.014†	-2000.0	130.7	4.1727 ug/L	4.1727 ppb	21:01:03
1	V 292.402†	-1281.3	183.4	1.3266 ug/L	1.3266 ppb	21:01:03
1	Zn 213.857†	853.8	-44.8	-0.4498 ug/L	-0.4498 ppb	21:01:23
1	SiO2†	486.0	8.0	0.5779 ug/L	0.5779 ppb	21:02:19
2	Sc Radial	5058.5	5058.5	106 %		21:00:11
2	Y RADIAL	5443.7	5443.7	106.1 %		21:00:11
2	Al 396.153Radial†	-10.3	-6.6	-5.3000 ug/L	-5.3000 ppb	21:00:11
2	Ca 317.933Radial†	19.3	3.2	5.3166 ug/L	5.3166 ppb	21:00:31
2	Fe 238.204 Radial†	9.3	-1.1	-10.389 ug/L	-10.389 ppb	21:00:31
2	K 766.490 Radial†	2857.1	-81.2	-16.300 ug/L	-16.300 ppb	21:00:11
2	Mg 279.077 IEC†	1.3	-0.3	-9.6980 ug/L	-9.6980 ppb	21:00:31
2	Na 589.592 Radial†	-1439.1	203.9	66.059 ug/L	66.059 ppb	21:00:11
2	Sr 421.552†	-5.2	-22.1	-0.1579 ug/L	-0.1579 ppb	21:00:11
2	Sc 361.383	847762.9	847762.9	104.16 %		21:01:28
2	Y 371.029	715284.0	715284.0	104.27 %		21:01:28
2	Ag 328.068†	443.2	143.9	0.7025 ug/L	0.7025 ppb	21:01:28
2	As 188.979†	-23.3	-3.6	-1.6086 ug/L	-1.6086 ppb	21:01:48
2	B 249.677†	-443.4	92.9	2.2623 ug/L	2.2623 ppb	21:01:48
2	Ba 233.527†	-8.4	-9.6	-0.0775 ug/L	-0.0775 ppb	21:01:48
2	Be 313.107†	-4319.1	165.9	0.0663 ug/L	0.0663 ppb	21:01:28
2	Cd 226.502†	-205.4	0.3	0.0067 ug/L	0.0067 ppb	21:01:48
2	Co 228.616†	-72.2	3.3	0.0746 ug/L	0.0746 ppb	21:01:48
2	Cr 267.716†	96.1	-3.5	-0.0422 ug/L	-0.0422 ppb	21:01:48
2	Cu 324.752†	6428.7	-126.4	-0.4075 ug/L	-0.4075 ppb	21:01:28
2	Mn 257.610†	418.9	-2.1	-0.0031 ug/L	-0.0031 ppb	21:01:48
2	Mo 202.031†	33.0	12.4	0.9191 ug/L	0.9191 ppb	21:01:48
2	Ni 231.604†	97.8	18.8	0.4946 ug/L	0.4946 ppb	21:01:48



2	P 214.914†	207.4	-28.8	-18.290 ug/L	-18.290 ppb	21:01:48
2	Pb 220.353†	-52.2	14.5	1.8548 ug/L	1.8548 ppb	21:01:48
2	S 181.975 Axial†	37.9	-10.1	-15.044 ug/L	-15.044 ppb	21:01:48
2	Sb 206.836†	41.6	7.2	2.6671 ug/L	2.6671 ppb	21:01:48
2	Se 196.026†	-26.3	5.1	3.4066 ug/L	3.4066 ppb	21:01:48
2	Si 251.611†	461.2	-3.1	-0.1154 ug/L	-0.1154 ppb	21:01:48
2	Sn 189.927†	5.9	-0.4	-0.0819 ug/L	-0.0819 ppb	21:01:48
2	Ti 334.940†	-1337.4	103.1	0.1756 ug/L	0.1756 ppb	21:01:28
2	Tl 190.801†	-38.3	7.1	2.2675 ug/L	2.2675 ppb	21:01:48
2	U 409.014†	-1916.5	201.1	6.4225 ug/L	6.4225 ppb	21:01:28
2	V 292.402†	-1320.5	139.4	1.0321 ug/L	1.0321 ppb	21:01:28
2	Zn 213.857†	853.0	-41.4	-0.4147 ug/L	-0.4147 ppb	21:01:48
2	SiO2†	496.9	20.8	1.4693 ug/L	1.4693 ppb	21:02:24
3	Sc Radial	5074.9	5074.9	106 %		21:00:36
3	Y RADIAL	5443.4	5443.4	106.1 %		21:00:36
3	Al 396.153Radial†	-15.2	-11.1	-8.9224 ug/L	-8.9224 ppb	21:00:36
3	Ca 317.933Radial†	15.1	-0.9	-1.4533 ug/L	-1.4533 ppb	21:00:56
3	Fe 238.204 Radial†	13.0	2.4	22.804 ug/L	22.804 ppb	21:00:56
3	K 766.490 Radial†	2940.9	-10.9	-2.1914 ug/L	-2.1914 ppb	21:00:36
3	Mg 279.077 IEC†	3.6	1.9	67.462 ug/L	67.462 ppb	21:00:56
3	Na 589.592 Radial†	-1588.0	67.7	21.923 ug/L	21.923 ppb	21:00:36
3	Sr 421.552†	35.5	16.3	0.1161 ug/L	0.1161 ppb	21:00:36
3	Sc 361.383	858263.2	858263.2	105.46 %		21:01:53
3	Y 371.029	724020.8	724020.8	105.55 %		21:01:53
3	Ag 328.068†	409.8	107.0	0.5337 ug/L	0.5337 ppb	21:01:53
3	As 188.979†	-26.4	-6.2	-2.8006 ug/L	-2.8006 ppb	21:02:14
3	B 249.677†	-454.3	87.7	2.1307 ug/L	2.1307 ppb	21:02:14
3	Ba 233.527†	-2.2	-3.5	-0.0259 ug/L	-0.0259 ppb	21:02:14
3	Be 313.107†	-4313.7	221.7	0.0885 ug/L	0.0885 ppb	21:01:53
3	Cd 226.502†	-191.2	16.3	0.1899 ug/L	0.1899 ppb	21:02:14
3	Co 228.616†	-79.3	-2.5	-0.0526 ug/L	-0.0526 ppb	21:02:14
3	Cr 267.716†	91.5	-9.0	-0.1057 ug/L	-0.1057 ppb	21:02:14
3	Cu 324.752†	6362.3	-264.9	-0.8473 ug/L	-0.8473 ppb	21:01:53
3	Mn 257.610†	411.5	-14.1	-0.0170 ug/L	-0.0170 ppb	21:02:14
3	Mo 202.031†	34.2	13.1	0.9738 ug/L	0.9738 ppb	21:02:14
3	Ni 231.604†	98.0	17.8	0.4697 ug/L	0.4697 ppb	21:02:14
3	P 214.914†	211.8	-27.1	-17.110 ug/L	-17.110 ppb	21:02:14
3	Pb 220.353†	-73.6	-5.2	-0.6723 ug/L	-0.6723 ppb	21:02:14
3	S 181.975 Axial†	41.4	-7.2	-10.744 ug/L	-10.744 ppb	21:02:14
3	Sb 206.836†	34.8	0.3	0.1390 ug/L	0.1390 ppb	21:02:14
3	Se 196.026†	-17.0	14.2	9.5829 ug/L	9.5829 ppb	21:02:14
3	Si 251.611†	460.0	-9.7	-0.3374 ug/L	-0.3374 ppb	21:02:14
3	Sn 189.927†	11.2	4.5	0.8322 ug/L	0.8322 ppb	21:02:14
3	Ti 334.940†	-1344.5	112.1	0.1843 ug/L	0.1843 ppb	21:01:53
3	Tl 190.801†	-40.3	5.6	1.8050 ug/L	1.8050 ppb	21:02:14
3	U 409.014†	-1980.9	162.5	5.1883 ug/L	5.1883 ppb	21:01:53
3	V 292.402†	-1311.7	163.3	1.1997 ug/L	1.1997 ppb	21:01:53
3	Zn 213.857†	849.0	-55.3	-0.5554 ug/L	-0.5554 ppb	21:02:14
3	SiO2†	438.0	-40.8	-2.9542 ug/L	-2.9542 ppb	21:02:29

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	852712.5	104.77 %		0.648			0.62%
Sc Radial	5081.4	106 %		0.6			0.53%
Y 371.029	719052.0	104.82 %		0.655			0.62%
Y RADIAL	5451.4	106.3 %		0.27			0.25%
Ag 328.068†	143.0	0.7061 ug/L		0.17428	0.7061 ppb	0.17428	24.68%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-6.8	-5.4682 ug/L		3.37329	-5.4682 ppb	3.37329	61.69%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-4.5	-2.0035 ug/L		0.69031	-2.0035 ppb	0.69031	34.46%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	90.4	2.1992 ug/L		0.06597	2.1992 ppb	0.06597	3.00%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-2.1	-0.0149 ug/L		0.06869	-0.0149 ppb	0.06869	460.16%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	172.0	0.0687 ug/L		0.01866	0.0687 ppb	0.01866	27.16%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	0.3	0.4530 ug/L		4.24461	0.4530 ppb	4.24461	937.00%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	13.6	0.1596 ug/L	0.14020	0.1596 ppb	0.14020	87.87%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-1.0	-0.0208 ug/L	0.08421	-0.0208 ppb	0.08421	404.29%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-13.0	-0.1532 ug/L	0.14090	-0.1532 ppb	0.14090	91.98%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-192.6	-0.6171 ug/L	0.22066	-0.6171 ppb	0.22066	35.76%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	1.1	10.066 ug/L	17.8916	10.066 ppb	17.8916	177.74%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	-69.8	-13.997 ug/L	10.8397	-13.997 ppb	10.8397	77.44%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	0.5	17.628 ug/L	43.2247	17.628 ppb	43.2247	245.21%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-5.5	-0.0062 ug/L	0.00969	-0.0062 ppb	0.00969	156.62%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	8.0	0.5939 ug/L	0.61130	0.5939 ppb	0.61130	102.94%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	130.1	42.142 ug/L	22.2996	42.142 ppb	22.2996	52.92%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	15.9	0.4177 ug/L	0.11229	0.4177 ppb	0.11229	26.88%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-24.0	-15.193 ug/L	4.3821	-15.193 ppb	4.3821	28.84%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	1.4	0.1727 ug/L	1.45671	0.1727 ppb	1.45671	843.44%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	-9.2	-13.696 ug/L	2.5594	-13.696 ppb	2.5594	18.69%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	5.6	2.0641 ug/L	1.70553	2.0641 ppb	1.70553	82.63%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	9.2	6.1610 ug/L	3.14181	6.1610 ppb	3.14181	51.00%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	-8.4	-0.2894 ug/L	0.15567	-0.2894 ppb	0.15567	53.79%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	1.3	0.2490 ug/L	0.50663	0.2490 ppb	0.50663	203.48%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	-12.9	-0.0916 ug/L	0.18381	-0.0916 ppb	0.18381	200.61%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	108.1	0.1818 ug/L	0.00543	0.1818 ppb	0.00543	2.99%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	9.6	3.0827 ug/L	1.82713	3.0827 ppb	1.82713	59.27%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	164.8	5.2612 ug/L	1.12667	5.2612 ppb	1.12667	21.41%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	162.0	1.1861 ug/L	0.14771	1.1861 ppb	0.14771	12.45%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	-47.2	-0.4733 ug/L	0.07325	-0.4733 ppb	0.07325	15.47%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	-4.0	-0.3023 ug/L	2.33945	-0.3023 ppb	2.33945	773.86%	
QC value within limits for SiO2 Recovery = Not calculated							

All analyte(s) passed QC.



Sequence No.: 53  
 Sample ID: 1202014118|941050|1  
 Analyst: HSC  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 64  
 Date Collected: 1/14/2010 21:04:38  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

Replicate Data: 1202014118|941050|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5075.2	5075.2	106 %		21:06:31
1	Y RADIAL	5459.8	5459.8	106.4 %		21:06:31
1	Al 396.153Radial†	42.1	43.0	34.475 ug/L	34.475 ppb	21:06:31
1	Ca 317.933Radial†	24.3	7.8	13.093 ug/L	13.093 ppb	21:06:51
1	Fe 238.204 Radial†	14.0	3.3	31.327 ug/L	31.327 ppb	21:06:51
1	K 766.490 Radial†	2794.8	-148.9	-29.870 ug/L	-29.870 ppb	21:06:31
1	Mg 279.077 IEC†	2.9	1.3	44.436 ug/L	44.436 ppb	21:06:51
1	Na 589.592 Radial†	-1430.5	216.4	70.128 ug/L	70.128 ppb	21:06:31
1	Sr 421.552†	40.4	20.9	0.1488 ug/L	0.1488 ppb	21:06:31
1	Sc 361.383	854683.9	854683.9	105.02 %		21:07:48
1	Y 371.029	720814.5	720814.5	105.08 %		21:07:48
1	Ag 328.068†	352.8	54.3	0.2756 ug/L	0.2756 ppb	21:07:48
1	As 188.979†	-19.1	0.6	0.2976 ug/L	0.2976 ppb	21:08:08
1	B 249.677†	-504.1	38.5	0.9332 ug/L	0.9332 ppb	21:08:08
1	Ba 233.527†	-5.0	-6.2	-0.0488 ug/L	-0.0488 ppb	21:08:08
1	Be 313.107†	-4391.6	130.4	0.0528 ug/L	0.0528 ppb	21:07:48
1	Cd 226.502†	-201.0	6.2	0.0706 ug/L	0.0706 ppb	21:08:08
1	Co 228.616†	-78.1	-1.7	-0.0379 ug/L	-0.0379 ppb	21:08:08
1	Cr 267.716†	128.6	26.7	0.3150 ug/L	0.3150 ppb	21:08:08
1	Cu 324.752†	6549.6	-61.2	-0.1970 ug/L	-0.1970 ppb	21:07:48
1	Mn 257.610†	938.9	489.7	0.5756 ug/L	0.5756 ppb	21:08:08
1	Mo 202.031†	21.3	1.0	0.0756 ug/L	0.0756 ppb	21:08:08
1	Ni 231.604†	81.2	2.2	0.0582 ug/L	0.0582 ppb	21:08:08
1	P 214.914†	208.9	-28.9	-18.455 ug/L	-18.455 ppb	21:08:08
1	Pb 220.353†	-54.5	12.7	1.6277 ug/L	1.6277 ppb	21:08:08
1	S 181.975 Axial†	52.8	3.8	5.7236 ug/L	5.7236 ppb	21:08:08
1	Sb 206.836†	27.2	-6.8	-2.5081 ug/L	-2.5081 ppb	21:08:08
1	Se 196.026†	-29.9	1.9	1.3884 ug/L	1.3884 ppb	21:08:08
1	Si 251.611†	691.2	212.3	7.1578 ug/L	7.1578 ppb	21:08:08
1	Sn 189.927†	3.3	-3.0	-0.5565 ug/L	-0.5565 ppb	21:08:08
1	Ti 334.940†	-1179.5	263.8	0.4481 ug/L	0.4481 ppb	21:07:48
1	Tl 190.801†	-46.8	-0.7	-0.2056 ug/L	-0.2056 ppb	21:08:08
1	U 409.014†	-1952.6	181.6	5.7968 ug/L	5.7968 ppb	21:07:48
1	V 292.402†	-1355.5	116.4	0.8475 ug/L	0.8475 ppb	21:07:48
1	Zn 213.857†	785.7	-112.2	-1.1218 ug/L	-1.1218 ppb	21:08:08
1	SiO2†	677.7	189.1	13.553 ug/L	13.553 ppb	21:09:04
2	Sc Radial	5084.4	5084.4	106 %		21:06:56
2	Y RADIAL	5449.7	5449.7	106.2 %		21:06:56
2	Al 396.153Radial†	64.0	63.5	50.952 ug/L	50.952 ppb	21:06:56
2	Ca 317.933Radial†	22.8	6.4	10.733 ug/L	10.733 ppb	21:07:16
2	Fe 238.204 Radial†	13.2	2.6	24.172 ug/L	24.172 ppb	21:07:16
2	K 766.490 Radial†	2836.9	-114.1	-22.882 ug/L	-22.882 ppb	21:06:56
2	Mg 279.077 IEC†	3.4	1.7	60.509 ug/L	60.509 ppb	21:07:16
2	Na 589.592 Radial†	-1472.4	179.4	58.127 ug/L	58.127 ppb	21:06:56
2	Sr 421.552†	25.6	6.9	0.0489 ug/L	0.0489 ppb	21:06:56
2	Sc 361.383	857305.8	857305.8	105.34 %		21:08:13
2	Y 371.029	723608.8	723608.8	105.49 %		21:08:13
2	Ag 328.068†	316.8	19.2	0.0970 ug/L	0.0970 ppb	21:08:13
2	As 188.979†	-25.3	-5.1	-2.2990 ug/L	-2.2990 ppb	21:08:33
2	B 249.677†	-494.0	49.5	1.2021 ug/L	1.2021 ppb	21:08:33
2	Ba 233.527†	-1.1	-2.6	-0.0180 ug/L	-0.0180 ppb	21:08:33
2	Be 313.107†	-4344.4	187.9	0.0760 ug/L	0.0760 ppb	21:08:13
2	Cd 226.502†	-200.7	7.1	0.0829 ug/L	0.0829 ppb	21:08:33
2	Co 228.616†	-88.4	-11.2	-0.2453 ug/L	-0.2453 ppb	21:08:33
2	Cr 267.716†	138.4	35.7	0.4182 ug/L	0.4182 ppb	21:08:33
2	Cu 324.752†	6574.9	-56.3	-0.1849 ug/L	-0.1849 ppb	21:08:13
2	Mn 257.610†	945.1	493.0	0.5780 ug/L	0.5780 ppb	21:08:33
2	Mo 202.031†	20.1	-0.2	-0.0155 ug/L	-0.0155 ppb	21:08:33
2	Ni 231.604†	102.7	22.4	0.5892 ug/L	0.5892 ppb	21:08:33



2	P 214.914†	223.7	-15.5	-9.8725 ug/L	-9.8725 ppb	21:08:33
2	Pb 220.353†	-59.7	7.9	1.0234 ug/L	1.0234 ppb	21:08:33
2	S 181.975 Axial†	49.4	0.5	0.6781 ug/L	0.6781 ppb	21:08:33
2	Sb 206.836†	38.7	4.0	1.4597 ug/L	1.4597 ppb	21:08:33
2	Se 196.026†	-30.0	1.9	1.3618 ug/L	1.3618 ppb	21:08:33
2	Si 251.611†	663.0	183.5	6.1870 ug/L	6.1870 ppb	21:08:33
2	Sn 189.927†	7.1	0.7	0.1246 ug/L	0.1246 ppb	21:08:33
2	Ti 334.940†	-1094.8	347.7	0.5877 ug/L	0.5877 ppb	21:08:13
2	Tl 190.801†	-42.1	4.0	1.2762 ug/L	1.2762 ppb	21:08:33
2	U 409.014†	-1764.0	366.4	11.697 ug/L	11.697 ppb	21:08:13
2	V 292.402†	-1317.6	156.3	1.1464 ug/L	1.1464 ppb	21:08:13
2	Zn 213.857†	779.4	-120.4	-1.2070 ug/L	-1.2070 ppb	21:08:33
2	SiO2†	677.0	186.4	13.366 ug/L	13.366 ppb	21:09:09
3	Sc Radial	5078.9	5078.9	106 %		21:07:21
3	Y RADIAL	5409.6	5409.6	105.5 %		21:07:21
3	Al 396.153Radial†	45.2	45.8	36.770 ug/L	36.770 ppb	21:07:21
3	Ca 317.933Radial†	28.7	12.0	20.132 ug/L	20.132 ppb	21:07:41
3	Fe 238.204 Radial†	14.2	3.5	33.055 ug/L	33.055 ppb	21:07:41
3	K 766.490 Radial†	2772.7	-171.7	-34.434 ug/L	-34.434 ppb	21:07:21
3	Mg 279.077 IEC†	-2.1	-3.4	-121.14 ug/L	-121.14 ppb	21:07:41
3	Na 589.592 Radial†	-1449.0	199.9	64.777 ug/L	64.777 ppb	21:07:21
3	Sr 421.552†	-7.5	-24.3	-0.1733 ug/L	-0.1733 ppb	21:07:21
3	Sc 361.383	843421.8	843421.8	103.63 %		21:08:38
3	Y 371.029	711890.5	711890.5	103.78 %		21:08:38
3	Ag 328.068†	317.0	24.4	0.1288 ug/L	0.1288 ppb	21:08:38
3	As 188.979†	-13.2	6.1	2.7702 ug/L	2.7702 ppb	21:08:58
3	B 249.677†	-517.4	19.2	0.4628 ug/L	0.4628 ppb	21:08:58
3	Ba 233.527†	12.0	10.1	0.0861 ug/L	0.0861 ppb	21:08:58
3	Be 313.107†	-4283.1	179.3	0.0725 ug/L	0.0725 ppb	21:08:38
3	Cd 226.502†	-184.3	19.7	0.2282 ug/L	0.2282 ppb	21:08:58
3	Co 228.616†	-70.2	4.9	0.1050 ug/L	0.1050 ppb	21:08:58
3	Cr 267.716†	151.6	50.5	0.5960 ug/L	0.5960 ppb	21:08:58
3	Cu 324.752†	6392.1	-129.9	-0.4152 ug/L	-0.4152 ppb	21:08:38
3	Mn 257.610†	957.3	519.5	0.6174 ug/L	0.6174 ppb	21:08:58
3	Mo 202.031†	21.9	1.8	0.1388 ug/L	0.1388 ppb	21:08:58
3	Ni 231.604†	97.4	18.9	0.4973 ug/L	0.4973 ppb	21:08:58
3	P 214.914†	228.5	-7.4	-4.6653 ug/L	-4.6653 ppb	21:08:58
3	Pb 220.353†	-57.9	8.7	1.1158 ug/L	1.1158 ppb	21:08:58
3	S 181.975 Axial†	45.1	-2.9	-4.3397 ug/L	-4.3397 ppb	21:08:58
3	Sb 206.836†	39.1	5.0	1.8541 ug/L	1.8541 ppb	21:08:58
3	Se 196.026†	-39.0	-7.2	-4.7177 ug/L	-4.7177 ppb	21:08:58
3	Si 251.611†	670.0	200.6	6.7631 ug/L	6.7631 ppb	21:08:58
3	Sn 189.927†	12.4	5.9	1.0862 ug/L	1.0862 ppb	21:08:58
3	Ti 334.940†	-1102.7	322.9	0.5647 ug/L	0.5647 ppb	21:08:38
3	Tl 190.801†	-39.0	6.3	2.0118 ug/L	2.0118 ppb	21:08:58
3	U 409.014†	-1989.3	121.4	3.8713 ug/L	3.8713 ppb	21:08:38
3	V 292.402†	-1390.8	65.1	0.4707 ug/L	0.4707 ppb	21:08:38
3	Zn 213.857†	767.6	-119.6	-1.1987 ug/L	-1.1987 ppb	21:08:58
3	SiO2†	706.4	225.4	16.159 ug/L	16.159 ppb	21:09:14

Mean Data: 1202014118|941050|1

Analyte	Mean Corrected	Calib.	Std.Dev.	Sample	Std.Dev.	RSD
	Intensity	Conc. Units		Conc. Units		
Sc 361.383	851803.8	104.66 %	0.906			0.87%
Sc Radial	5079.5	106 %	0.1			0.09%
Y 371.029	718771.3	104.78 %	0.892			0.85%
Y RADIAL	5439.7	106.0 %	0.52			0.49%
Ag 328.068†	32.6	0.1671 ug/L	0.09527	0.1671 ppb	0.09527	57.00%
Al 396.153Radial†	50.8	40.732 ug/L	8.9244	40.732 ppb	8.9244	21.91%
As 188.979†	0.5	0.2563 ug/L	2.53485	0.2563 ppb	2.53485	989.05%
B 249.677†	35.8	0.8660 ug/L	0.37421	0.8660 ppb	0.37421	43.21%
Ba 233.527†	0.4	0.0064 ug/L	0.07070	0.0064 ppb	0.07070	>999.9%
Be 313.107†	165.9	0.0671 ug/L	0.01249	0.0671 ppb	0.01249	18.61%
Ca 317.933Radial†	8.7	14.652 ug/L	4.8897	14.652 ppb	4.8897	33.37%
Cd 226.502†	11.0	0.1273 ug/L	0.08766	0.1273 ppb	0.08766	68.88%
Co 228.616†	-2.7	-0.0594 ug/L	0.17612	-0.0594 ppb	0.17612	296.53%
Cr 267.716†	37.6	0.4431 ug/L	0.14216	0.4431 ppb	0.14216	32.08%
Cu 324.752†	-82.5	-0.2657 ug/L	0.12962	-0.2657 ppb	0.12962	48.79%
Fe 238.204 Radial†	3.1	29.518 ug/L	4.7098	29.518 ppb	4.7098	15.96%
K 766.490 Radial†	-144.9	-29.062 ug/L	5.8183	-29.062 ppb	5.8183	20.02%



Mg 279.077 IEC†	-0.2	-5.3974 ug/L	100.55483	-5.3974 ppb	100.55483 >999.9%
Mn 257.610†	500.7	0.5903 ug/L	0.02347	0.5903 ppb	0.02347 3.98%
Mo 202.031†	0.9	0.0663 ug/L	0.07756	0.0663 ppb	0.07756 116.97%
Na 589.592 Radial†	198.6	64.344 ug/L	6.0121	64.344 ppb	6.0121 9.34%
Ni 231.604†	14.5	0.3816 ug/L	0.28382	0.3816 ppb	0.28382 74.38%
P 214.914†	-17.3	-10.998 ug/L	6.9632	-10.998 ppb	6.9632 63.32%
Pb 220.353†	9.8	1.2557 ug/L	0.32551	1.2557 ppb	0.32551 25.92%
S 181.975 Axial†	0.5	0.6873 ug/L	5.03166	0.6873 ppb	5.03166 732.05%
Sb 206.836†	0.7	0.2686 ug/L	2.41278	0.2686 ppb	2.41278 898.41%
Se 196.026†	-1.1	-0.6558 ug/L	3.51768	-0.6558 ppb	3.51768 536.37%
Si 251.611†	198.8	6.7026 ug/L	0.48820	6.7026 ppb	0.48820 7.28%
Sn 189.927†	1.2	0.2181 ug/L	0.82531	0.2181 ppb	0.82531 378.36%
Sr 421.552†	1.2	0.0081 ug/L	0.16487	0.0081 ppb	0.16487 >999.9%
Ti 334.940†	311.5	0.5335 ug/L	0.07487	0.5335 ppb	0.07487 14.03%
Tl 190.801†	3.2	1.0275 ug/L	1.12943	1.0275 ppb	1.12943 109.92%
U 409.014†	223.1	7.1216 ug/L	4.07742	7.1216 ppb	4.07742 57.25%
V 292.402†	112.6	0.8215 ug/L	0.33861	0.8215 ppb	0.33861 41.22%
Zn 213.857†	-117.4	-1.1758 ug/L	0.04697	-1.1758 ppb	0.04697 3.99%
SiO2†	200.3	14.359 ug/L	1.5609	14.359 ppb	1.5609 10.87%



Sequence No.: 54

Sample ID: 1202014119|941050|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 65

Date Collected: 1/14/2010 21:11:24

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202014119|941050|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5237.7	5237.7	109 %		21:13:38
1	Y RADIAL	6136.5	6136.5	119.6 %		21:13:38
1	Al 396.153Radial†	111383.4	101894.1	81721 ug/L	81721 ppb	21:13:18
1	Ca 317.933Radial†	61963.0	56667.1	95425 ug/L	95425 ppb	21:13:18
1	Fe 238.204 Radial†	21270.0	19447.4	182850 ug/L	182850 ppb	21:13:18
1	K 766.490 Radial†	226924.7	204797.6	40992 ug/L	40992 ppb	21:13:18
1	Mg 279.077 IEC†	1164.1	1063.3	37144 ug/L	37144 ppb	21:13:38
1	Na 589.592 Radial†	31448.4	30335.2	9828.8 ug/L	9828.8 ppb	21:13:18
1	Sr 421.552†	348530.5	318809.8	2271.7 ug/L	2271.7 ppb	21:13:18
1	Sc 361.383	869683.0	869683.0	106.86 %		21:14:39
1	Y 371.029	788130.7	788130.7	114.89 %		21:14:39
1	Ag 328.068†	57235.6	53280.6	324.81 ug/L	324.81 ppb	21:14:39
1	As 188.979†	2382.2	2248.1	1102.6 ug/L	1102.6 ppb	21:14:44
1	B 249.677†	63788.6	60213.1	1433.2 ug/L	1433.2 ppb	21:14:39
1	Ba 233.527†	243251.6	227638.0	1895.8 ug/L	1895.8 ppb	21:14:39
1	Be 313.107†	2057959.6	1930189.5	779.49 ug/L	779.49 ppb	21:14:39
1	Cd 226.502†	52809.9	49618.0	563.43 ug/L	563.43 ppb	21:14:44
1	Co 228.616†	44681.1	41886.1	896.18 ug/L	896.18 ppb	21:14:44
1	Cr 267.716†	204463.7	191245.2	2261.6 ug/L	2261.6 ppb	21:14:39
1	Cu 324.752†	610809.2	565308.7	1814.4 ug/L	1814.4 ppb	21:14:39
1	Mn 257.610†	4821515.9	4511660.7	5307.1 ug/L	5307.1 ppb	21:14:39
1	Mo 202.031†	7155.9	6677.3	510.99 ug/L	510.99 ppb	21:14:44
1	Ni 231.604†	51171.0	47811.7	1258.1 ug/L	1258.1 ppb	21:14:44
1	P 214.914†	14431.2	13277.1	7998.1 ug/L	7998.1 ppb	21:14:44
1	Pb 220.353†	6860.3	6484.6	832.58 ug/L	832.58 ppb	21:14:44
1	S 181.975 Axial†	2788.7	2563.3	3810.1 ug/L	3810.1 ppb	21:14:44
1	Sb 206.836†	5198.7	4832.3	1780.6 ug/L	1780.6 ppb	21:14:44
1	Se 196.026†	3823.6	3608.5	3017.8 ug/L	3017.8 ppb	21:14:44
1	Si 251.611†	373545.4	349124.9	11765 ug/L	11765 ppb	21:14:39
1	Sn 189.927†	6090.2	5693.2	1070.5 ug/L	1070.5 ppb	21:14:44
1	Ti 334.940†	3530695.0	3305477.7	5679.7 ug/L	5679.7 ppb	21:14:39
1	Tl 190.801†	3747.2	3550.6	1201.8 ug/L	1201.8 ppb	21:14:44
1	U 409.014†	-7494.6	-4972.6	-184.70 ug/L	-184.70 ppb	21:14:39
1	V 292.402†	181986.3	171713.3	1212.7 ug/L	1212.7 ppb	21:14:39
1	Zn 213.857†	612102.3	571956.5	5676.1 ug/L	5676.1 ppb	21:14:39
1	SiO2†	375228.5	350689.6	25128 ug/L	25128 ppb	21:15:18
2	Sc Radial	5256.8	5256.8	110 %		21:14:03
2	Y RADIAL	6138.8	6138.8	119.7 %		21:14:03
2	Al 396.153Radial†	111063.7	101231.9	81191 ug/L	81191 ppb	21:13:43
2	Ca 317.933Radial†	61688.1	56210.3	94655 ug/L	94655 ppb	21:13:43
2	Fe 238.204 Radial†	21127.4	19246.7	180960 ug/L	180960 ppb	21:13:43
2	K 766.490 Radial†	226183.1	203366.6	40705 ug/L	40705 ppb	21:13:43
2	Mg 279.077 IEC†	1159.9	1055.7	36878 ug/L	36878 ppb	21:14:03
2	Na 589.592 Radial†	31149.4	29957.9	9706.5 ug/L	9706.5 ppb	21:13:43
2	Sr 421.552†	346069.6	315407.0	2247.5 ug/L	2247.5 ppb	21:13:43
2	Sc 361.383	875856.4	875856.4	107.62 %		21:14:53
2	Y 371.029	794170.2	794170.2	115.77 %		21:14:53
2	Ag 328.068†	57429.8	53083.5	323.22 ug/L	323.22 ppb	21:14:53
2	As 188.979†	2354.8	2207.0	1083.6 ug/L	1083.6 ppb	21:14:58
2	B 249.677†	64308.4	60275.4	1435.1 ug/L	1435.1 ppb	21:14:53
2	Ba 233.527†	244426.2	227124.9	1891.5 ug/L	1891.5 ppb	21:14:53
2	Be 313.107†	2070607.7	1928368.0	778.75 ug/L	778.75 ppb	21:14:53
2	Cd 226.502†	52250.6	48750.0	553.44 ug/L	553.44 ppb	21:14:58
2	Co 228.616†	44226.9	41169.3	880.64 ug/L	880.64 ppb	21:14:58
2	Cr 267.716†	205355.1	190724.9	2255.4 ug/L	2255.4 ppb	21:14:53
2	Cu 324.752†	614546.7	564752.7	1812.5 ug/L	1812.5 ppb	21:14:53
2	Mn 257.610†	4843439.9	4500230.2	5293.5 ug/L	5293.5 ppb	21:14:53
2	Mo 202.031†	7057.1	6538.3	500.52 ug/L	500.52 ppb	21:14:58
2	Ni 231.604†	50591.0	46935.2	1235.0 ug/L	1235.0 ppb	21:14:58



2	P 214.914†	14318.3	13077.1	7871.9 ug/L	7871.9 ppb	21:14:58
2	Pb 220.353†	6819.5	6401.4	821.96 ug/L	821.96 ppb	21:14:58
2	S 181.975 Axial†	2755.6	2514.1	3736.8 ug/L	3736.8 ppb	21:14:58
2	Sb 206.836†	5167.9	4769.4	1757.0 ug/L	1757.0 ppb	21:14:58
2	Se 196.026†	3792.4	3554.4	2975.4 ug/L	2975.4 ppb	21:14:58
2	Si 251.611†	374507.8	347555.3	11712 ug/L	11712 ppb	21:14:53
2	Sn 189.927†	5981.5	5552.0	1044.2 ug/L	1044.2 ppb	21:14:58
2	Ti 334.940†	3550846.0	3300913.9	5671.8 ug/L	5671.8 ppb	21:14:53
2	Tl 190.801†	3763.7	3541.2	1198.8 ug/L	1198.8 ppb	21:14:58
2	U 409.014†	-7339.2	-4778.8	-178.28 ug/L	-178.28 ppb	21:14:53
2	V 292.402†	182650.7	171130.3	1208.6 ug/L	1208.6 ppb	21:14:53
2	Zn 213.857†	614248.5	569913.4	5656.1 ug/L	5656.1 ppb	21:14:53
2	SiO2†	370819.6	344117.8	24657 ug/L	24657 ppb	21:15:24
3	Sc Radial	5269.7	5269.7	110 %		21:14:28
3	Y RADIAL	6155.7	6155.7	120.0 %		21:14:28
3	Al 396.153Radial†	110456.9	100432.9	80549 ug/L	80549 ppb	21:14:08
3	Ca 317.933Radial†	61418.5	55827.8	94011 ug/L	94011 ppb	21:14:08
3	Fe 238.204 Radial†	21112.6	19186.1	180390 ug/L	180390 ppb	21:14:08
3	K 766.490 Radial†	224571.2	201397.3	40311 ug/L	40311 ppb	21:14:08
3	Mg 279.077 IEC†	1170.1	1062.4	37114 ug/L	37114 ppb	21:14:28
3	Na 589.592 Radial†	31026.6	29777.0	9647.9 ug/L	9647.9 ppb	21:14:08
3	Sr 421.552†	344074.0	312821.9	2229.1 ug/L	2229.1 ppb	21:14:08
3	Sc 361.383	865899.0	865899.0	106.39 %		21:15:07
3	Y 371.029	787149.4	787149.4	114.75 %		21:15:07
3	Ag 328.068†	57081.6	53369.9	324.46 ug/L	324.46 ppb	21:15:07
3	As 188.979†	2367.7	2244.3	1100.3 ug/L	1100.3 ppb	21:15:12
3	B 249.677†	63504.8	60207.2	1433.5 ug/L	1433.5 ppb	21:15:07
3	Ba 233.527†	241800.5	227268.8	1892.7 ug/L	1892.7 ppb	21:15:07
3	Be 313.107†	2052866.2	1933818.3	780.93 ug/L	780.93 ppb	21:15:07
3	Cd 226.502†	52539.7	49580.0	563.24 ug/L	563.24 ppb	21:15:12
3	Co 228.616†	44357.7	41764.9	893.58 ug/L	893.58 ppb	21:15:12
3	Cr 267.716†	203591.2	191261.3	2261.8 ug/L	2261.8 ppb	21:15:07
3	Cu 324.752†	607980.4	565147.8	1813.7 ug/L	1813.7 ppb	21:15:07
3	Mn 257.610†	4794095.5	4505605.9	5299.7 ug/L	5299.7 ppb	21:15:07
3	Mo 202.031†	7073.2	6628.8	507.18 ug/L	507.18 ppb	21:15:12
3	Ni 231.604†	50979.4	47840.8	1258.8 ug/L	1258.8 ppb	21:15:12
3	P 214.914†	14337.2	13247.8	7981.2 ug/L	7981.2 ppb	21:15:12
3	Pb 220.353†	6869.1	6520.9	837.18 ug/L	837.18 ppb	21:15:12
3	S 181.975 Axial†	2757.1	2544.9	3782.9 ug/L	3782.9 ppb	21:15:12
3	Sb 206.836†	5167.1	4823.8	1777.4 ug/L	1777.4 ppb	21:15:12
3	Se 196.026†	3791.7	3594.2	3000.1 ug/L	3000.1 ppb	21:15:12
3	Si 251.611†	370785.0	348058.0	11729 ug/L	11729 ppb	21:15:07
3	Sn 189.927†	6052.8	5683.0	1068.3 ug/L	1068.3 ppb	21:15:12
3	Ti 334.940†	3514493.0	3304688.2	5678.2 ug/L	5678.2 ppb	21:15:07
3	Tl 190.801†	3740.1	3559.3	1204.6 ug/L	1204.6 ppb	21:15:12
3	U 409.014†	-7356.4	-4873.4	-181.25 ug/L	-181.25 ppb	21:15:07
3	V 292.402†	181032.5	171561.1	1211.9 ug/L	1211.9 ppb	21:15:07
3	Zn 213.857†	608490.3	571064.8	5667.4 ug/L	5667.4 ppb	21:15:07
3	SiO2†	374388.0	351434.2	25182 ug/L	25182 ppb	21:15:29

Mean Data: 1202014119|941050|1

Analyte	Mean Corrected	Calib.	Std.Dev.	Sample	Std.Dev.	RSD
	Intensity	Conc. Units		Conc. Units		
Sc 361.383	870479.5	106.96 %	0.618			0.58%
Sc Radial	5254.7	110 %	0.3			0.31%
Y 371.029	789816.8	115.14 %	0.554			0.48%
Y RADIAL	6143.7	119.8 %	0.20			0.17%
Ag 328.068†	53244.7	324.16 ug/L	0.837	324.16 ppb	0.837	0.26%
Al 396.153Radial†	101186.3	81154 ug/L	586.9	81154 ppb	586.9	0.72%
As 188.979†	2233.1	1095.5 ug/L	10.37	1095.5 ppb	10.37	0.95%
B 249.677†	60231.9	1433.9 ug/L	1.01	1433.9 ppb	1.01	0.07%
Ba 233.527†	227343.9	1893.4 ug/L	2.23	1893.4 ppb	2.23	0.12%
Be 313.107†	1930791.9	779.72 ug/L	1.108	779.72 ppb	1.108	0.14%
Ca 317.933Radial†	56235.1	94697 ug/L	707.6	94697 ppb	707.6	0.75%
Cd 226.502†	49316.0	560.03 ug/L	5.715	560.03 ppb	5.715	1.02%
Co 228.616†	41606.8	890.13 ug/L	8.326	890.13 ppb	8.326	0.94%
Cr 267.716†	191077.1	2259.6 ug/L	3.61	2259.6 ppb	3.61	0.16%
Cu 324.752†	565069.7	1813.5 ug/L	0.95	1813.5 ppb	0.95	0.05%
Fe 238.204 Radial†	19293.4	181400 ug/L	1285.8	181400 ppb	1285.8	0.71%
K 766.490 Radial†	203187.2	40669 ug/L	341.8	40669 ppb	341.8	0.84%



Mg 279.077 IEC†	1060.5	37045 ug/L	145.7	37045 ppb	145.7	0.39%
Mn 257.610†	4505832.3	5300.1 ug/L	6.80	5300.1 ppb	6.80	0.13%
Mo 202.031†	6614.8	506.23 ug/L	5.300	506.23 ppb	5.300	1.05%
Na 589.592 Radial†	30023.4	9727.7 ug/L	92.28	9727.7 ppb	92.28	0.95%
Ni 231.604†	47529.2	1250.6 ug/L	13.54	1250.6 ppb	13.54	1.08%
P 214.914†	13200.7	7950.4 ug/L	68.49	7950.4 ppb	68.49	0.86%
Pb 220.353†	6469.0	830.57 ug/L	7.807	830.57 ppb	7.807	0.94%
S 181.975 Axial†	2540.8	3776.6 ug/L	37.08	3776.6 ppb	37.08	0.98%
Sb 206.836†	4808.5	1771.6 ug/L	12.82	1771.6 ppb	12.82	0.72%
Se 196.026†	3585.7	2997.8 ug/L	21.33	2997.8 ppb	21.33	0.71%
Si 251.611†	348246.1	11736 ug/L	27.0	11736 ppb	27.0	0.23%
Sn 189.927†	5642.7	1061.0 ug/L	14.58	1061.0 ppb	14.58	1.37%
Sr 421.552†	315679.6	2249.4 ug/L	21.40	2249.4 ppb	21.40	0.95%
Ti 334.940†	3303693.3	5676.6 ug/L	4.19	5676.6 ppb	4.19	0.07%
Tl 190.801†	3550.4	1201.7 ug/L	2.89	1201.7 ppb	2.89	0.24%
U 409.014†	-4874.9	-181.41 ug/L	3.213	-181.41 ppb	3.213	1.77%
V 292.402†	171468.2	1211.1 ug/L	2.15	1211.1 ppb	2.15	0.18%
Zn 213.857†	570978.2	5666.5 ug/L	10.05	5666.5 ppb	10.05	0.18%
SiO2†	348747.2	24989 ug/L	288.5	24989 ppb	288.5	1.15%



Sequence No.: 55  
 Sample ID: 243457001|941050|1  
 Analyst: HSC  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 66  
 Date Collected: 1/14/2010 21:17:39  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

Replicate Data: 243457001|941050|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5147.2	5147.2	107 %		21:19:52
1	Y RADIAL	5989.9	5989.9	116.8 %		21:19:52
1	Al 396.153Radial†	86060.4	80113.0	64272 ug/L	64272 ppb	21:19:32
1	Ca 317.933Radial†	8772.4	8150.7	13725 ug/L	13725 ppb	21:19:32
1	Fe 238.204 Radial†	11915.6	11081.8	104180 ug/L	104180 ppb	21:19:32
1	K 766.490 Radial†	71337.3	63617.2	12740 ug/L	12740 ppb	21:19:32
1	Mg 279.077 IEC†	396.9	368.0	12810 ug/L	12810 ppb	21:19:52
1	Na 589.592 Radial†	297.8	1844.2	597.52 ug/L	597.52 ppb	21:19:32
1	Sr 421.552†	25393.7	23620.6	168.26 ug/L	168.26 ppb	21:19:32
1	Sc 361.383	841443.0	841443.0	103.39 %		21:20:49
1	Y 371.029	769816.0	769816.0	112.22 %		21:20:49
1	Ag 328.068†	-6326.2	-6400.4	3.2235 ug/L	3.2235 ppb	21:20:55
1	As 188.979†	-74.3	-53.1	42.415 ug/L	42.415 ppb	21:21:15
1	B 249.677†	1033.6	1518.2	19.883 ug/L	19.883 ppb	21:20:55
1	Ba 233.527†	122527.8	118510.6	986.39 ug/L	986.39 ppb	21:20:55
1	Be 313.107†	-14408.8	-9624.3	7.1534 ug/L	7.1534 ppb	21:20:55
1	Cd 226.502†	792.0	963.6	0.5400 ug/L	0.5400 ppb	21:21:15
1	Co 228.616†	2437.0	2429.8	41.565 ug/L	41.565 ppb	21:21:15
1	Cr 267.716†	6935.7	6612.7	80.445 ug/L	80.445 ppb	21:20:55
1	Cu 324.752†	18765.5	11852.4	43.429 ug/L	43.429 ppb	21:20:55
1	Mn 257.610†	1916177.6	1852972.7	2182.6 ug/L	2182.6 ppb	21:20:49
1	Mo 202.031†	-34.8	-53.0	4.3156 ug/L	4.3156 ppb	21:21:15
1	Ni 231.604†	2238.4	2089.9	54.983 ug/L	54.983 ppb	21:21:15
1	P 214.914†	1100.0	836.1	458.03 ug/L	458.03 ppb	21:21:15
1	Pb 220.353†	703.3	744.8	99.406 ug/L	99.406 ppb	21:21:15
1	S 181.975 Axial†	415.1	355.0	517.77 ug/L	517.77 ppb	21:21:15
1	Sb 206.836†	89.8	54.1	5.0472 ug/L	5.0472 ppb	21:21:15
1	Se 196.026†	-501.6	-454.8	40.370 ug/L	40.370 ppb	21:21:15
1	Si 251.611†	348947.0	337064.7	11365 ug/L	11365 ppb	21:20:55
1	Sn 189.927†	-102.4	-105.1	-15.603 ug/L	-15.603 ppb	21:21:15
1	Ti 334.940†	2912175.0	2818118.7	4835.5 ug/L	4835.5 ppb	21:20:49
1	Tl 190.801†	-196.4	-146.1	3.0681 ug/L	3.0681 ppb	21:21:15
1	U 409.014†	-6695.3	-4434.9	-153.69 ug/L	-153.69 ppb	21:20:55
1	V 292.402†	34027.8	34319.7	227.18 ug/L	227.18 ppb	21:20:55
1	Zn 213.857†	20471.3	18940.0	178.39 ug/L	178.39 ppb	21:20:55
1	SiO2†	355564.8	343455.3	24623 ug/L	24623 ppb	21:22:22
2	Sc Radial	5145.3	5145.3	107 %		21:20:17
2	Y RADIAL	6011.5	6011.5	117.2 %		21:20:17
2	Al 396.153Radial†	86396.8	80456.3	64547 ug/L	64547 ppb	21:19:57
2	Ca 317.933Radial†	8832.5	8209.7	13825 ug/L	13825 ppb	21:19:57
2	Fe 238.204 Radial†	11868.3	11041.9	103800 ug/L	103800 ppb	21:19:57
2	K 766.490 Radial†	71371.8	63674.3	12751 ug/L	12751 ppb	21:19:57
2	Mg 279.077 IEC†	397.7	368.8	12840 ug/L	12840 ppb	21:20:17
2	Na 589.592 Radial†	240.7	1791.1	580.32 ug/L	580.32 ppb	21:19:57
2	Sr 421.552†	25362.5	23600.5	168.12 ug/L	168.12 ppb	21:19:57
2	Sc 361.383	855968.8	855968.8	105.17 %		21:21:20
2	Y 371.029	781056.6	781056.6	113.86 %		21:21:20
2	Ag 328.068†	-6444.0	-6408.6	3.0561 ug/L	3.0561 ppb	21:21:26
2	As 188.979†	-82.0	-59.1	38.445 ug/L	38.445 ppb	21:21:46
2	B 249.677†	1030.8	1498.6	19.469 ug/L	19.469 ppb	21:21:26
2	Ba 233.527†	124259.4	118145.9	983.36 ug/L	983.36 ppb	21:21:26
2	Be 313.107†	-14466.0	-9442.2	6.9183 ug/L	6.9183 ppb	21:21:26
2	Cd 226.502†	778.7	937.9	0.2774 ug/L	0.2774 ppb	21:21:46
2	Co 228.616†	2432.1	2385.2	40.884 ug/L	40.884 ppb	21:21:46
2	Cr 267.716†	7050.3	6607.7	80.378 ug/L	80.378 ppb	21:21:26
2	Cu 324.752†	18969.3	11738.2	43.045 ug/L	43.045 ppb	21:21:26
2	Mn 257.610†	1893808.7	1800252.4	2120.8 ug/L	2120.8 ppb	21:21:20
2	Mo 202.031†	-29.1	-47.0	4.7319 ug/L	4.7319 ppb	21:21:46
2	Ni 231.604†	2236.3	2051.2	53.965 ug/L	53.965 ppb	21:21:46



2	P 214.914†	1116.3	833.5	456.82 ug/L	456.82 ppb	21:21:46
2	Pb 220.353†	688.8	719.5	96.252 ug/L	96.252 ppb	21:21:46
2	S 181.975 Axial†	390.6	325.0	472.89 ug/L	472.89 ppb	21:21:46
2	Sb 206.836†	74.0	37.7	-0.5151 ug/L	-0.5151 ppb	21:21:46
2	Se 196.026†	-495.8	-441.0	48.333 ug/L	48.333 ppb	21:21:46
2	Si 251.611†	353335.3	335509.7	11312 ug/L	11312 ppb	21:21:26
2	Sn 189.927†	-99.9	-101.1	-14.851 ug/L	-14.851 ppb	21:21:46
2	Ti 334.940†	2879430.1	2739184.7	4700.0 ug/L	4700.0 ppb	21:21:20
2	Tl 190.801†	-190.3	-137.0	4.5652 ug/L	4.5652 ppb	21:21:46
2	U 409.014†	-6842.1	-4464.6	-154.59 ug/L	-154.59 ppb	21:21:26
2	V 292.402†	34433.8	34147.2	226.14 ug/L	226.14 ppb	21:21:26
2	Zn 213.857†	20745.0	18864.3	177.68 ug/L	177.68 ppb	21:21:26
2	SiO2†	356585.2	338589.4	24274 ug/L	24274 ppb	21:22:27
3	Sc Radial	5191.1	5191.1	108 %		21:20:42
3	Y RADIAL	6043.7	6043.7	117.8 %		21:20:42
3	Al 396.153Radial†	85698.9	79102.6	63461 ug/L	63461 ppb	21:20:22
3	Ca 317.933Radial†	8744.2	8055.7	13565 ug/L	13565 ppb	21:20:22
3	Fe 238.204 Radial†	11799.2	10880.7	102290 ug/L	102290 ppb	21:20:22
3	K 766.490 Radial†	70670.3	62440.6	12504 ug/L	12504 ppb	21:20:22
3	Mg 279.077 IEC†	399.3	367.0	12778 ug/L	12778 ppb	21:20:42
3	Na 589.592 Radial†	227.3	1776.7	575.66 ug/L	575.66 ppb	21:20:22
3	Sr 421.552†	25137.2	23184.2	165.15 ug/L	165.15 ppb	21:20:22
3	Sc 361.383	880526.6	880526.6	108.19 %		21:21:51
3	Y 371.029	802666.5	802666.5	117.01 %		21:21:51
3	Ag 328.068†	-6337.0	-6138.8	3.8487 ug/L	3.8487 ppb	21:21:57
3	As 188.979†	-84.7	-59.4	37.591 ug/L	37.591 ppb	21:22:17
3	B 249.677†	1073.7	1510.9	20.021 ug/L	20.021 ppb	21:21:57
3	Ba 233.527†	122806.2	113507.6	944.83 ug/L	944.83 ppb	21:21:57
3	Be 313.107†	-14679.0	-9255.4	6.9001 ug/L	6.9001 ppb	21:21:57
3	Cd 226.502†	782.0	920.3	0.2286 ug/L	0.2286 ppb	21:22:17
3	Co 228.616†	2410.6	2300.8	39.137 ug/L	39.137 ppb	21:22:17
3	Cr 267.716†	7022.4	6395.0	77.822 ug/L	77.822 ppb	21:21:57
3	Cu 324.752†	18812.9	11090.6	40.892 ug/L	40.892 ppb	21:21:57
3	Mn 257.610†	1927943.4	1781582.6	2098.7 ug/L	2098.7 ppb	21:21:51
3	Mo 202.031†	-51.9	-67.3	3.1091 ug/L	3.1091 ppb	21:22:17
3	Ni 231.604†	2231.2	1987.2	52.281 ug/L	52.281 ppb	21:22:17
3	P 214.914†	1088.9	778.6	423.14 ug/L	423.14 ppb	21:22:17
3	Pb 220.353†	670.0	683.9	91.598 ug/L	91.598 ppb	21:22:17
3	S 181.975 Axial†	401.7	324.9	472.94 ug/L	472.94 ppb	21:22:17
3	Sb 206.836†	73.9	35.6	-1.2381 ug/L	-1.2381 ppb	21:22:17
3	Se 196.026†	-491.2	-423.6	54.955 ug/L	54.955 ppb	21:22:17
3	Si 251.611†	348971.2	322106.2	10860 ug/L	10860 ppb	21:21:57
3	Sn 189.927†	-111.4	-109.1	-16.392 ug/L	-16.392 ppb	21:22:17
3	Ti 334.940†	2936380.4	2715466.4	4659.3 ug/L	4659.3 ppb	21:21:51
3	Tl 190.801†	-197.5	-138.6	3.6307 ug/L	3.6307 ppb	21:22:17
3	U 409.014†	-6701.3	-4153.0	-144.47 ug/L	-144.47 ppb	21:21:57
3	V 292.402†	34028.9	32859.9	217.11 ug/L	217.11 ppb	21:21:57
3	Zn 213.857†	20477.2	18066.6	169.88 ug/L	169.88 ppb	21:21:57
3	SiO2†	358774.9	331157.4	23742 ug/L	23742 ppb	21:22:33

Mean Data: 243457001|941050|1

Analyte	Mean Corrected	Conc.	Calib.	Std.Dev.	Conc.	Sample	Std.Dev.	RSD
Sc 361.383	859312.8	105.58	%	2.427				2.30%
Sc Radial	5161.2	108	%	0.5				0.50%
Y 371.029	784513.0	114.37	%	2.434				2.13%
Y RADIAL	6015.1	117.3	%	0.53				0.45%
Ag 328.068†	-6315.9	3.3761	ug/L	0.41775	3.3761	ppb	0.41775	12.37%
Al 396.153Radial†	79890.7	64093	ug/L	564.5	64093	ppb	564.5	0.88%
As 188.979†	-57.2	39.483	ug/L	2.5747	39.483	ppb	2.5747	6.52%
B 249.677†	1509.3	19.791	ug/L	0.2870	19.791	ppb	0.2870	1.45%
Ba 233.527†	116721.4	971.53	ug/L	23.171	971.53	ppb	23.171	2.38%
Be 313.107†	-9440.7	6.9906	ug/L	0.14128	6.9906	ppb	0.14128	2.02%
Ca 317.933Radial†	8138.7	13705	ug/L	130.9	13705	ppb	130.9	0.96%
Cd 226.502†	940.6	0.3487	ug/L	0.16746	0.3487	ppb	0.16746	48.03%
Co 228.616†	2371.9	40.529	ug/L	1.2523	40.529	ppb	1.2523	3.09%
Cr 267.716†	6538.5	79.548	ug/L	1.4957	79.548	ppb	1.4957	1.88%
Cu 324.752†	11560.4	42.455	ug/L	1.3674	42.455	ppb	1.3674	3.22%
Fe 238.204 Radial†	11001.5	103420	ug/L	1000.8	103420	ppb	1000.8	0.97%
K 766.490 Radial†	63244.0	12665	ug/L	139.5	12665	ppb	139.5	1.10%



Mg 279.077 IEC†	367.9	12809 ug/L	30.8	12809 ppb	30.8	0.24%
Mn 257.610†	1811602.6	2134.0 ug/L	43.50	2134.0 ppb	43.50	2.04%
Mo 202.031†	-55.8	4.0522 ug/L	0.84285	4.0522 ppb	0.84285	20.80%
Na 589.592 Radial†	1804.0	584.50 ug/L	11.517	584.50 ppb	11.517	1.97%
Ni 231.604†	2042.8	53.743 ug/L	1.3646	53.743 ppb	1.3646	2.54%
P 214.914†	816.1	446.00 ug/L	19.802	446.00 ppb	19.802	4.44%
Pb 220.353†	716.1	95.752 ug/L	3.9278	95.752 ppb	3.9278	4.10%
S 181.975 Axial†	334.9	487.86 ug/L	25.899	487.86 ppb	25.899	5.31%
Sb 206.836†	42.5	1.0980 ug/L	3.43916	1.0980 ppb	3.43916	313.22%
Se 196.026†	-439.8	47.886 ug/L	7.3030	47.886 ppb	7.3030	15.25%
Si 251.611†	331560.2	11179 ug/L	277.3	11179 ppb	277.3	2.48%
Sn 189.927†	-105.1	-15.616 ug/L	0.7709	-15.616 ppb	0.7709	4.94%
Sr 421.552†	23468.4	167.18 ug/L	1.755	167.18 ppb	1.755	1.05%
Ti 334.940†	2757589.9	4731.6 ug/L	92.21	4731.6 ppb	92.21	1.95%
Tl 190.801†	-140.6	3.7547 ug/L	0.75621	3.7547 ppb	0.75621	20.14%
U 409.014†	-4350.8	-150.92 ug/L	5.605	-150.92 ppb	5.605	3.71%
V 292.402†	33775.6	223.48 ug/L	5.536	223.48 ppb	5.536	2.48%
Zn 213.857†	18623.7	175.31 ug/L	4.719	175.31 ppb	4.719	2.69%
SiO2†	337734.0	24213 ug/L	444.0	24213 ppb	444.0	1.83%



Sequence No.: 56

Sample ID: 243457002|941050|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 67

Date Collected: 1/14/2010 21:24:43

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 243457002|941050|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5129.0	5129.0	107 %		21:26:56
1	Y RADIAL	5839.9	5839.9	113.8 %		21:26:56
1	Al 396.153Radial†	89555.5	83662.3	67119 ug/L	67119 ppb	21:26:36
1	Ca 317.933Radial†	17870.1	16678.4	28086 ug/L	28086 ppb	21:26:36
1	Fe 238.204 Radial†	13078.1	12207.1	114760 ug/L	114760 ppb	21:26:36
1	K 766.490 Radial†	77136.8	69270.7	13867 ug/L	13867 ppb	21:26:36
1	Mg 279.077 IEC†	489.1	455.4	15868 ug/L	15868 ppb	21:26:56
1	Na 589.592 Radial†	4635.8	5897.5	1910.8 ug/L	1910.8 ppb	21:26:36
1	Sr 421.552†	30515.5	28489.1	202.86 ug/L	202.86 ppb	21:26:36
1	Sc 361.383	867899.3	867899.3	106.64 %		21:27:54
1	Y 371.029	769021.9	769021.9	112.11 %		21:27:54
1	Ag 328.068†	-7066.4	-6908.0	3.6377 ug/L	3.6377 ppb	21:27:59
1	As 188.979†	-47.1	-25.4	34.165 ug/L	34.165 ppb	21:28:19
1	B 249.677†	809.8	1277.9	12.393 ug/L	12.393 ppb	21:27:59
1	Ba 233.527†	166303.4	155948.2	1296.9 ug/L	1296.9 ppb	21:27:59
1	Be 313.107†	4166.9	8219.7	8.1649 ug/L	8.1649 ppb	21:27:59
1	Cd 226.502†	822.8	969.1	-0.4430 ug/L	-0.4430 ppb	21:28:19
1	Co 228.616†	1208.8	1206.2	20.528 ug/L	20.528 ppb	21:28:19
1	Cr 267.716†	23349.6	21800.2	259.73 ug/L	259.73 ppb	21:27:59
1	Cu 324.752†	15866.4	8580.5	33.592 ug/L	33.592 ppb	21:27:59
1	Mn 257.610†	2020120.4	1893947.5	2231.6 ug/L	2231.6 ppb	21:27:54
1	Mo 202.031†	40.0	18.2	10.592 ug/L	10.592 ppb	21:28:19
1	Ni 231.604†	6238.3	5774.8	152.00 ug/L	152.00 ppb	21:28:19
1	P 214.914†	1268.1	961.3	532.18 ug/L	532.18 ppb	21:28:19
1	Pb 220.353†	263.7	311.9	43.837 ug/L	43.837 ppb	21:28:19
1	S 181.975 Axial†	365.8	296.5	429.96 ug/L	429.96 ppb	21:28:19
1	Sb 206.836†	70.7	33.5	6.4554 ug/L	6.4554 ppb	21:28:19
1	Se 196.026†	-533.9	-470.3	64.775 ug/L	64.775 ppb	21:28:19
1	Si 251.611†	404091.3	378487.5	12761 ug/L	12761 ppb	21:27:54
1	Sn 189.927†	-114.6	-113.6	-14.809 ug/L	-14.809 ppb	21:28:19
1	Ti 334.940†	1340225.2	1258172.5	2160.9 ug/L	2160.9 ppb	21:27:54
1	Tl 190.801†	-150.6	-97.4	-3.0217 ug/L	-3.0217 ppb	21:28:19
1	U 409.014†	-9815.3	-7163.3	-242.43 ug/L	-242.43 ppb	21:27:54
1	V 292.402†	20705.6	20823.7	131.02 ug/L	131.02 ppb	21:27:59
1	Zn 213.857†	33552.9	30603.7	293.08 ug/L	293.08 ppb	21:27:59
1	SiO2†	408517.7	382628.0	27431 ug/L	27431 ppb	21:29:27
2	Sc Radial	5118.2	5118.2	107 %		21:27:21
2	Y RADIAL	5832.2	5832.2	113.7 %		21:27:21
2	Al 396.153Radial†	90091.4	84340.3	67663 ug/L	67663 ppb	21:27:01
2	Ca 317.933Radial†	17889.6	16731.8	28176 ug/L	28176 ppb	21:27:01
2	Fe 238.204 Radial†	13136.6	12287.6	115510 ug/L	115510 ppb	21:27:01
2	K 766.490 Radial†	77392.5	69661.7	13945 ug/L	13945 ppb	21:27:01
2	Mg 279.077 IEC†	492.0	459.0	15994 ug/L	15994 ppb	21:27:21
2	Na 589.592 Radial†	4537.9	5815.0	1884.1 ug/L	1884.1 ppb	21:27:01
2	Sr 421.552†	30604.5	28632.5	203.88 ug/L	203.88 ppb	21:27:01
2	Sc 361.383	876856.0	876856.0	107.74 %		21:28:25
2	Y 371.029	777928.1	777928.1	113.41 %		21:28:25
2	Ag 328.068†	-7024.2	-6801.1	4.4050 ug/L	4.4050 ppb	21:28:30
2	As 188.979†	-43.1	-21.1	36.176 ug/L	36.176 ppb	21:28:50
2	B 249.677†	910.5	1363.6	14.357 ug/L	14.357 ppb	21:28:30
2	Ba 233.527†	167563.7	155525.1	1293.4 ug/L	1293.4 ppb	21:28:30
2	Be 313.107†	4178.8	8190.9	8.1350 ug/L	8.1350 ppb	21:28:30
2	Cd 226.502†	804.9	944.6	-0.8081 ug/L	-0.8081 ppb	21:28:50
2	Co 228.616†	1193.4	1180.4	19.972 ug/L	19.972 ppb	21:28:50
2	Cr 267.716†	23562.6	21774.2	259.43 ug/L	259.43 ppb	21:28:30
2	Cu 324.752†	15999.0	8551.7	33.538 ug/L	33.538 ppb	21:28:30
2	Mn 257.610†	2030339.5	1884082.6	2220.1 ug/L	2220.1 ppb	21:28:25
2	Mo 202.031†	45.1	22.5	10.973 ug/L	10.973 ppb	21:28:50
2	Ni 231.604†	6254.9	5730.4	150.83 ug/L	150.83 ppb	21:28:50



2	P 214.914†	1247.0	929.6	511.44 ug/L	511.44 ppb	21:28:50
2	Pb 220.353†	264.5	310.1	43.651 ug/L	43.651 ppb	21:28:50
2	S 181.975 Axial†	347.3	275.9	399.08 ug/L	399.08 ppb	21:28:50
2	Sb 206.836†	57.8	21.0	1.8494 ug/L	1.8494 ppb	21:28:50
2	Se 196.026†	-558.4	-488.0	55.483 ug/L	55.483 ppb	21:28:50
2	Si 251.611†	404932.7	375397.9	12657 ug/L	12657 ppb	21:28:25
2	Sn 189.927†	-131.4	-128.1	-17.458 ug/L	-17.458 ppb	21:28:50
2	Ti 334.940†	1348961.2	1253443.5	2152.8 ug/L	2152.8 ppb	21:28:25
2	Tl 190.801†	-151.7	-96.9	-2.9879 ug/L	-2.9879 ppb	21:28:50
2	U 409.014†	-9795.5	-7050.9	-238.93 ug/L	-238.93 ppb	21:28:25
2	V 292.402†	20968.7	20869.5	131.26 ug/L	131.26 ppb	21:28:30
2	Zn 213.857†	33742.8	30458.5	291.57 ug/L	291.57 ppb	21:28:30
2	SiO2†	398770.0	369667.5	26502 ug/L	26502 ppb	21:29:32
3	Sc Radial	5142.8	5142.8	107 %		21:27:47
3	Y RADIAL	5828.0	5828.0	113.6 %		21:27:47
3	Al 396.153Radial†	89813.0	83678.4	67132 ug/L	67132 ppb	21:27:26
3	Ca 317.933Radial†	17938.1	16697.0	28117 ug/L	28117 ppb	21:27:26
3	Fe 238.204 Radial†	13093.7	12189.0	114590 ug/L	114590 ppb	21:27:26
3	K 766.490 Radial†	76609.1	68586.2	13730 ug/L	13730 ppb	21:27:26
3	Mg 279.077 IEC†	487.7	452.9	15779 ug/L	15779 ppb	21:27:47
3	Na 589.592 Radial†	4491.0	5751.0	1863.4 ug/L	1863.4 ppb	21:27:26
3	Sr 421.552†	30328.0	28238.1	201.07 ug/L	201.07 ppb	21:27:26
3	Sc 361.383	875700.0	875700.0	107.60 %		21:28:56
3	Y 371.029	776734.3	776734.3	113.23 %		21:28:56
3	Ag 328.068†	-7100.7	-6880.9	3.7218 ug/L	3.7218 ppb	21:29:01
3	As 188.979†	-41.2	-19.4	36.706 ug/L	36.706 ppb	21:29:21
3	B 249.677†	790.5	1253.2	11.820 ug/L	11.820 ppb	21:29:01
3	Ba 233.527†	169388.3	157426.1	1309.2 ug/L	1309.2 ppb	21:29:01
3	Be 313.107†	4189.4	8205.8	8.1343 ug/L	8.1343 ppb	21:29:01
3	Cd 226.502†	825.3	964.6	-0.4789 ug/L	-0.4789 ppb	21:29:21
3	Co 228.616†	1193.3	1181.7	20.029 ug/L	20.029 ppb	21:29:21
3	Cr 267.716†	23785.5	22010.3	262.20 ug/L	262.20 ppb	21:29:01
3	Cu 324.752†	16194.3	8752.7	34.132 ug/L	34.132 ppb	21:29:01
3	Mn 257.610†	2024576.8	1881214.4	2216.7 ug/L	2216.7 ppb	21:28:56
3	Mo 202.031†	59.6	36.1	11.911 ug/L	11.911 ppb	21:29:21
3	Ni 231.604†	6247.3	5731.0	150.85 ug/L	150.85 ppb	21:29:21
3	P 214.914†	1265.2	948.0	523.69 ug/L	523.69 ppb	21:29:21
3	Pb 220.353†	263.7	309.7	43.580 ug/L	43.580 ppb	21:29:21
3	S 181.975 Axial†	352.9	281.6	407.62 ug/L	407.62 ppb	21:29:21
3	Sb 206.836†	62.7	25.5	3.5035 ug/L	3.5035 ppb	21:29:21
3	Se 196.026†	-549.7	-480.5	57.426 ug/L	57.426 ppb	21:29:21
3	Si 251.611†	402343.2	373487.3	12593 ug/L	12593 ppb	21:28:56
3	Sn 189.927†	-143.8	-139.8	-19.653 ug/L	-19.653 ppb	21:29:21
3	Ti 334.940†	1345344.1	1251734.6	2149.9 ug/L	2149.9 ppb	21:28:56
3	Tl 190.801†	-138.8	-85.1	0.7245 ug/L	0.7245 ppb	21:29:21
3	U 409.014†	-9832.7	-7097.5	-240.32 ug/L	-240.32 ppb	21:28:56
3	V 292.402†	21187.6	21098.7	133.06 ug/L	133.06 ppb	21:29:01
3	Zn 213.857†	34183.3	30909.2	296.15 ug/L	296.15 ppb	21:29:01
3	SiO2†	394874.2	366535.4	26278 ug/L	26278 ppb	21:29:38

Mean Data: 243457002|941050|1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	873485.1	107.33 %	0.599			0.56%
Sc Radial	5130.0	107 %	0.3			0.24%
Y 371.029	774561.4	112.92 %	0.705			0.62%
Y RADIAL	5833.4	113.7 %	0.12			0.10%
Ag 328.068†	-6863.3	3.9215 ug/L	0.42084	3.9215 ppb	0.42084	10.73%
Al 396.153Radial†	83893.7	67304 ug/L	310.4	67304 ppb	310.4	0.46%
As 188.979†	-22.0	35.682 ug/L	1.3406	35.682 ppb	1.3406	3.76%
B 249.677†	1298.3	12.857 ug/L	1.3306	12.857 ppb	1.3306	10.35%
Ba 233.527†	156299.8	1299.9 ug/L	8.27	1299.9 ppb	8.27	0.64%
Be 313.107†	8205.5	8.1448 ug/L	0.01746	8.1448 ppb	0.01746	0.21%
Ca 317.933Radial†	16702.4	28126 ug/L	45.7	28126 ppb	45.7	0.16%
Cd 226.502†	959.4	-0.5767 ug/L	0.20123	-0.5767 ppb	0.20123	34.89%
Co 228.616†	1189.5	20.176 ug/L	0.3055	20.176 ppb	0.3055	1.51%
Cr 267.716†	21861.6	260.45 ug/L	1.522	260.45 ppb	1.522	0.58%
Cu 324.752†	8628.3	33.754 ug/L	0.3282	33.754 ppb	0.3282	0.97%
Fe 238.204 Radial†	12227.9	114950 ug/L	493.5	114950 ppb	493.5	0.43%
K 766.490 Radial†	69172.9	13847 ug/L	109.0	13847 ppb	109.0	0.79%



Mg 279.077 IEC†	455.8	15881 ug/L	107.8	15881 ppb	107.8	0.68%
Mn 257.610†	1886414.8	2222.8 ug/L	7.83	2222.8 ppb	7.83	0.35%
Mo 202.031†	25.6	11.159 ug/L	0.6788	11.159 ppb	0.6788	6.08%
Na 589.592 Radial†	5821.2	1886.1 ug/L	23.80	1886.1 ppb	23.80	1.26%
Ni 231.604†	5745.4	151.23 ug/L	0.669	151.23 ppb	0.669	0.44%
P 214.914†	946.3	522.43 ug/L	10.427	522.43 ppb	10.427	2.00%
Pb 220.353†	310.5	43.689 ug/L	0.1328	43.689 ppb	0.1328	0.30%
S 181.975 Axial†	284.7	412.22 ug/L	15.941	412.22 ppb	15.941	3.87%
Sb 206.836†	26.7	3.9361 ug/L	2.33330	3.9361 ppb	2.33330	59.28%
Se 196.026†	-479.6	59.228 ug/L	4.9014	59.228 ppb	4.9014	8.28%
Si 251.611†	375790.9	12670 ug/L	85.1	12670 ppb	85.1	0.67%
Sn 189.927†	-127.2	-17.307 ug/L	2.4253	-17.307 ppb	2.4253	14.01%
Sr 421.552†	28453.2	202.60 ug/L	1.423	202.60 ppb	1.423	0.70%
Ti 334.940†	1254450.2	2154.5 ug/L	5.72	2154.5 ppb	5.72	0.27%
Tl 190.801†	-93.1	-1.7617 ug/L	2.15319	-1.7617 ppb	2.15319	122.22%
U 409.014†	-7103.9	-240.56 ug/L	1.765	-240.56 ppb	1.765	0.73%
V 292.402†	20930.6	131.78 ug/L	1.115	131.78 ppb	1.115	0.85%
Zn 213.857†	30657.1	293.60 ug/L	2.336	293.60 ppb	2.336	0.80%
SiO2†	372943.7	26737 ug/L	611.7	26737 ppb	611.7	2.29%



Sequence No.: 57  
 Sample ID: 243457003|941050|1  
 Analyst: HSC  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 68  
 Date Collected: 1/14/2010 21:31:48  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

Replicate Data: 243457003|941050|1

Rep#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5086.0	5086.0	106 %		21:34:01
1	Y RADIAL	6020.4	6020.4	117.4 %		21:34:01
1	Al 396.153Radial†	136108.0	128224.6	102870 ug/L	102870 ppb	21:33:41
1	Ca 317.933Radial†	11716.3	11022.3	18561 ug/L	18561 ppb	21:33:41
1	Fe 238.204 Radial†	13144.9	12373.4	116320 ug/L	116320 ppb	21:33:41
1	K 766.490 Radial†	85992.9	78222.7	15664 ug/L	15664 ppb	21:33:41
1	Mg 279.077 IEC†	489.5	459.7	16016 ug/L	16016 ppb	21:34:01
1	Na 589.592 Radial†	1433.9	2917.7	945.36 ug/L	945.36 ppb	21:33:41
1	Sr 421.552†	31564.2	29718.0	211.69 ug/L	211.69 ppb	21:33:41
1	Sc 361.383	881685.5	881685.5	108.33 %		21:34:59
1	Y 371.029	809829.6	809829.6	118.06 %		21:34:59
1	Ag 328.068†	-7177.1	-6906.6	4.6342 ug/L	4.6342 ppb	21:35:04
1	As 188.979†	-65.9	-42.0	46.116 ug/L	46.116 ppb	21:35:24
1	B 249.677†	837.4	1291.5	12.374 ug/L	12.374 ppb	21:35:04
1	Ba 233.527†	144184.2	133092.0	1107.7 ug/L	1107.7 ppb	21:35:04
1	Be 313.107†	-6873.5	-2032.6	9.0911 ug/L	9.0911 ppb	21:35:04
1	Cd 226.502†	864.6	995.6	-0.3391 ug/L	-0.3391 ppb	21:35:24
1	Co 228.616†	2903.5	2752.9	49.450 ug/L	49.450 ppb	21:35:24
1	Cr 267.716†	8262.5	7531.2	91.532 ug/L	91.532 ppb	21:35:04
1	Cu 324.752†	20316.2	12455.4	46.012 ug/L	46.012 ppb	21:35:04
1	Mn 257.610†	2242870.0	2069942.7	2438.1 ug/L	2438.1 ppb	21:34:59
1	Mo 202.031†	-54.5	-69.6	4.0836 ug/L	4.0836 ppb	21:35:24
1	Ni 231.604†	2660.1	2380.4	62.625 ug/L	62.625 ppb	21:35:24
1	P 214.914†	1099.6	787.1	426.23 ug/L	426.23 ppb	21:35:24
1	Pb 220.353†	821.7	823.1	116.60 ug/L	116.60 ppb	21:35:24
1	S 181.975 Axial†	385.4	309.3	442.29 ug/L	442.29 ppb	21:35:24
1	Sb 206.836†	78.2	39.5	0.5111 ug/L	0.5111 ppb	21:35:24
1	Se 196.026†	-548.7	-476.1	67.843 ug/L	67.843 ppb	21:35:24
1	Si 251.611†	325961.6	300442.6	10130 ug/L	10130 ppb	21:35:04
1	Sn 189.927†	-109.8	-107.5	-15.105 ug/L	-15.105 ppb	21:35:24
1	Ti 334.940†	2751752.5	2541472.9	4361.2 ug/L	4361.2 ppb	21:34:59
1	Tl 190.801†	-200.3	-141.0	1.9544 ug/L	1.9544 ppb	21:35:24
1	U 409.014†	-7989.4	-5333.9	-183.81 ug/L	-183.81 ppb	21:34:59
1	V 292.402†	35946.2	34588.4	227.84 ug/L	227.84 ppb	21:35:04
1	Zn 213.857†	22084.8	19525.7	183.00 ug/L	183.00 ppb	21:35:04
1	SiO2†	327159.6	301538.1	21618 ug/L	21618 ppb	21:36:32
2	Sc Radial	5263.8	5263.8	110 %		21:34:27
2	Y RADIAL	6207.8	6207.8	121.0 %		21:34:27
2	Al 396.153Radial†	134956.3	122844.9	98554 ug/L	98554 ppb	21:34:07
2	Ca 317.933Radial†	11570.4	10516.6	17709 ug/L	17709 ppb	21:34:07
2	Fe 238.204 Radial†	12968.5	11794.5	110880 ug/L	110880 ppb	21:34:07
2	K 766.490 Radial†	85063.0	74639.7	14946 ug/L	14946 ppb	21:34:07
2	Mg 279.077 IEC†	473.7	429.7	14970 ug/L	14970 ppb	21:34:27
2	Na 589.592 Radial†	1349.2	2795.0	905.59 ug/L	905.59 ppb	21:34:07
2	Sr 421.552†	31148.6	28335.3	201.84 ug/L	201.84 ppb	21:34:07
2	Sc 361.383	834439.3	834439.3	102.53 %		21:35:30
2	Y 371.029	772534.5	772534.5	112.62 %		21:35:30
2	Ag 328.068†	-7329.3	-7430.2	0.4067 ug/L	0.4067 ppb	21:35:35
2	As 188.979†	-73.8	-53.1	42.669 ug/L	42.669 ppb	21:35:55
2	B 249.677†	864.1	1361.3	14.949 ug/L	14.949 ppb	21:35:35
2	Ba 233.527†	147495.7	143857.6	1196.8 ug/L	1196.8 ppb	21:35:35
2	Be 313.107†	-7097.8	-2610.6	9.6030 ug/L	9.6030 ppb	21:35:35
2	Cd 226.502†	863.5	1039.7	0.7393 ug/L	0.7393 ppb	21:35:55
2	Co 228.616†	2880.7	2882.4	51.697 ug/L	51.697 ppb	21:35:55
2	Cr 267.716†	8466.2	8161.7	98.899 ug/L	98.899 ppb	21:35:35
2	Cu 324.752†	20552.5	13747.7	49.857 ug/L	49.857 ppb	21:35:35
2	Mn 257.610†	2281163.2	2224515.4	2618.9 ug/L	2618.9 ppb	21:35:30
2	Mo 202.031†	-51.3	-69.4	3.6668 ug/L	3.6668 ppb	21:35:55
2	Ni 231.604†	2650.5	2510.0	66.037 ug/L	66.037 ppb	21:35:55



2	P 214.914†	1076.4	822.0	450.96 ug/L	450.96 ppb	21:35:55
2	Pb 220.353†	835.3	879.2	123.37 ug/L	123.37 ppb	21:35:55
2	S 181.975 Axial†	399.7	343.4	494.01 ug/L	494.01 ppb	21:35:55
2	Sb 206.836†	89.2	54.2	4.8232 ug/L	4.8232 ppb	21:35:55
2	Se 196.026†	-546.8	-503.0	31.826 ug/L	31.826 ppb	21:35:55
2	Si 251.611†	333068.8	324410.9	10938 ug/L	10938 ppb	21:35:35
2	Sn 189.927†	-119.7	-122.9	-18.171 ug/L	-18.171 ppb	21:35:55
2	Ti 334.940†	2799476.4	2731840.6	4687.8 ug/L	4687.8 ppb	21:35:30
2	Tl 190.801†	-192.8	-144.2	4.4463 ug/L	4.4463 ppb	21:35:55
2	U 409.014†	-8009.7	-5771.2	-197.17 ug/L	-197.17 ppb	21:35:30
2	V 292.402†	36974.4	37470.0	249.02 ug/L	249.02 ppb	21:35:35
2	Zn 213.857†	22588.6	21171.4	199.91 ug/L	199.91 ppb	21:35:35
2	SiO2†	331212.3	322589.8	23127 ug/L	23127 ppb	21:36:37
3	Sc Radial	5304.3	5304.3	111 %		21:34:52
3	Y RADIAL	6258.9	6258.9	122.0 %		21:34:52
3	Al 396.153Radial†	130905.9	118249.4	94867 ug/L	94867 ppb	21:34:32
3	Ca 317.933Radial†	11228.4	10127.4	17054 ug/L	17054 ppb	21:34:32
3	Fe 238.204 Radial†	12627.8	11396.7	107140 ug/L	107140 ppb	21:34:32
3	K 766.490 Radial†	82622.9	71845.1	14387 ug/L	14387 ppb	21:34:32
3	Mg 279.077 IEC†	474.6	427.2	14885 ug/L	14885 ppb	21:34:52
3	Na 589.592 Radial†	1260.9	2705.8	876.71 ug/L	876.71 ppb	21:34:32
3	Sr 421.552†	30082.6	27156.1	193.44 ug/L	193.44 ppb	21:34:32
3	Sc 361.383	886116.3	886116.3	108.88 %		21:36:01
3	Y 371.029	813276.4	813276.4	118.56 %		21:36:01
3	Ag 328.068†	-6952.6	-6667.2	2.8386 ug/L	2.8386 ppb	21:36:06
3	As 188.979†	-70.1	-45.5	41.984 ug/L	41.984 ppb	21:36:26
3	B 249.677†	767.7	1223.6	12.213 ug/L	12.213 ppb	21:36:06
3	Ba 233.527†	141909.9	130337.6	1084.5 ug/L	1084.5 ppb	21:36:06
3	Be 313.107†	-7038.7	-2152.6	8.9363 ug/L	8.9363 ppb	21:36:06
3	Cd 226.502†	859.9	987.3	0.5123 ug/L	0.5123 ppb	21:36:26
3	Co 228.616†	2900.6	2736.8	49.320 ug/L	49.320 ppb	21:36:26
3	Cr 267.716†	8173.4	7411.2	89.931 ug/L	89.931 ppb	21:36:06
3	Cu 324.752†	20058.6	12125.0	44.472 ug/L	44.472 ppb	21:36:06
3	Mn 257.610†	2230307.5	2048052.3	2411.6 ug/L	2411.6 ppb	21:36:01
3	Mo 202.031†	-69.6	-83.2	2.3430 ug/L	2.3430 ppb	21:36:26
3	Ni 231.604†	2693.3	2398.6	63.105 ug/L	63.105 ppb	21:36:26
3	P 214.914†	1085.8	769.4	420.50 ug/L	420.50 ppb	21:36:26
3	Pb 220.353†	807.4	806.1	113.56 ug/L	113.56 ppb	21:36:26
3	S 181.975 Axial†	398.1	319.2	458.57 ug/L	458.57 ppb	21:36:26
3	Sb 206.836†	74.9	36.1	-0.6102 ug/L	-0.6102 ppb	21:36:26
3	Se 196.026†	-555.5	-479.9	34.858 ug/L	34.858 ppb	21:36:26
3	Si 251.611†	321251.0	294611.6	9933.4 ug/L	9933.4 ppb	21:36:06
3	Sn 189.927†	-104.7	-102.3	-14.528 ug/L	-14.528 ppb	21:36:26
3	Ti 334.940†	2735619.4	2513954.3	4313.9 ug/L	4313.9 ppb	21:36:01
3	Tl 190.801†	-191.5	-132.0	4.3262 ug/L	4.3262 ppb	21:36:26
3	U 409.014†	-8039.9	-5343.4	-183.06 ug/L	-183.06 ppb	21:36:01
3	V 292.402†	35420.8	33939.9	224.51 ug/L	224.51 ppb	21:36:06
3	Zn 213.857†	21794.7	19157.3	180.21 ug/L	180.21 ppb	21:36:06
3	SiO2†	333085.0	305470.3	21900 ug/L	21900 ppb	21:36:42

Mean Data: 243457003|941050|1

Analyte	Mean Corrected	Conc. Units	Calib.	Std.Dev.	Conc. Units	Sample	Std.Dev.	RSD
Sc 361.383	867413.7	106.58 %		3.519				3.30%
Sc Radial	5218.0	109 %		2.4				2.23%
Y 371.029	798546.9	116.41 %		3.294				2.83%
Y RADIAL	6162.3	120.1 %		2.45				2.04%
Ag 328.068†	-7001.3	2.6265 ug/L		2.12175	2.6265 ppb		2.12175	80.78%
Al 396.153Radial†	123106.3	98763 ug/L		4005.4	98763 ppb		4005.4	4.06%
As 188.979†	-46.9	43.590 ug/L		2.2146	43.590 ppb		2.2146	5.08%
B 249.677†	1292.2	13.178 ug/L		1.5351	13.178 ppb		1.5351	11.65%
Ba 233.527†	135762.4	1129.7 ug/L		59.28	1129.7 ppb		59.28	5.25%
Be 313.107†	-2265.2	9.2102 ug/L		0.34892	9.2102 ppb		0.34892	3.79%
Ca 317.933Radial†	10555.4	17775 ug/L		755.6	17775 ppb		755.6	4.25%
Cd 226.502†	1007.6	0.3042 ug/L		0.56853	0.3042 ppb		0.56853	186.92%
Co 228.616†	2790.7	50.156 ug/L		1.3366	50.156 ppb		1.3366	2.66%
Cr 267.716†	7701.4	93.454 ug/L		4.7831	93.454 ppb		4.7831	5.12%
Cu 324.752†	12776.1	46.780 ug/L		2.7738	46.780 ppb		2.7738	5.93%
Fe 238.204 Radial†	11854.9	111450 ug/L		4616.9	111450 ppb		4616.9	4.14%
K 766.490 Radial†	74902.5	14999 ug/L		640.2	14999 ppb		640.2	4.27%



Mg 279.077 IEC†	438.8	15290 ug/L	630.0	15290 ppb	630.0	4.12%
Mn 257.610†	2114170.1	2489.5 ug/L	112.80	2489.5 ppb	112.80	4.53%
Mo 202.031†	-74.1	3.3644 ug/L	0.90879	3.3644 ppb	0.90879	27.01%
Na 589.592 Radial†	2806.2	909.22 ug/L	34.469	909.22 ppb	34.469	3.79%
Ni 231.604†	2429.7	63.922 ug/L	1.8470	63.922 ppb	1.8470	2.89%
P 214.914†	792.8	432.56 ug/L	16.185	432.56 ppb	16.185	3.74%
Pb 220.353†	836.2	117.84 ug/L	5.022	117.84 ppb	5.022	4.26%
S 181.975 Axial†	324.0	464.96 ug/L	26.446	464.96 ppb	26.446	5.69%
Sb 206.836†	43.3	1.5747 ug/L	2.86863	1.5747 ppb	2.86863	182.17%
Se 196.026†	-486.3	44.842 ug/L	19.9769	44.842 ppb	19.9769	44.55%
Si 251.611†	306488.3	10334 ug/L	532.5	10334 ppb	532.5	5.15%
Sn 189.927†	-110.9	-15.935 ug/L	1.9584	-15.935 ppb	1.9584	12.29%
Sr 421.552†	28403.2	202.32 ug/L	9.134	202.32 ppb	9.134	4.51%
Ti 334.940†	2595755.9	4454.3 ug/L	203.58	4454.3 ppb	203.58	4.57%
Tl 190.801†	-139.0	3.5756 ug/L	1.40529	3.5756 ppb	1.40529	39.30%
U 409.014†	-5482.8	-188.02 ug/L	7.940	-188.02 ppb	7.940	4.22%
V 292.402†	35332.7	233.79 ug/L	13.296	233.79 ppb	13.296	5.69%
Zn 213.857†	19951.4	187.71 ug/L	10.660	187.71 ppb	10.660	5.68%
SiO2†	309866.1	22215 ug/L	802.5	22215 ppb	802.5	3.61%



Sequence No.: 58

Sample ID: 243457004|941050|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 69

Date Collected: 1/14/2010 21:38:54

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 243457004|941050|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4950.9	4950.9	103 %		21:41:07
1	Y RADIAL	5689.8	5689.8	110.9 %		21:41:07
1	Al 396.153Radial†	83688.0	80993.1	64978 ug/L	64978 ppb	21:40:47
1	Ca 317.933Radial†	7172.7	6926.3	11663 ug/L	11663 ppb	21:41:07
1	Fe 238.204 Radial†	13228.3	12791.9	120250 ug/L	120250 ppb	21:40:47
1	K 766.490 Radial†	70500.5	65440.1	13105 ug/L	13105 ppb	21:40:47
1	Mg 279.077 IEC†	412.4	397.6	13831 ug/L	13831 ppb	21:41:07
1	Na 589.592 Radial†	4292.0	5720.6	1853.5 ug/L	1853.5 ppb	21:40:47
1	Sr 421.552†	21415.2	20707.6	147.51 ug/L	147.51 ppb	21:40:47
1	Sc 361.383	867137.7	867137.7	106.55 %		21:42:04
1	Y 371.029	778780.4	778780.4	113.53 %		21:42:04
1	Ag 328.068†	-7083.2	-6929.6	5.5496 ug/L	5.5496 ppb	21:42:10
1	As 188.979†	-52.3	-30.3	41.371 ug/L	41.371 ppb	21:42:30
1	B 249.677†	627.9	1107.8	7.3193 ug/L	7.3193 ppb	21:42:10
1	Ba 233.527†	87022.1	81674.5	681.25 ug/L	681.25 ppb	21:42:10
1	Be 313.107†	-7221.5	-2465.6	6.0485 ug/L	6.0485 ppb	21:42:10
1	Cd 226.502†	834.4	980.7	-0.9160 ug/L	-0.9160 ppb	21:42:30
1	Co 228.616†	1907.2	1862.7	32.496 ug/L	32.496 ppb	21:42:30
1	Cr 267.716†	10822.7	10062.1	121.35 ug/L	121.35 ppb	21:42:10
1	Cu 324.752†	16921.9	9584.3	37.064 ug/L	37.064 ppb	21:42:10
1	Mn 257.610†	1743424.4	1635914.0	1929.6 ug/L	1929.6 ppb	21:42:04
1	Mo 202.031†	-26.5	-44.1	6.1973 ug/L	6.1973 ppb	21:42:30
1	Ni 231.604†	3088.6	2823.7	74.308 ug/L	74.308 ppb	21:42:30
1	P 214.914†	1244.2	939.9	513.02 ug/L	513.02 ppb	21:42:30
1	Pb 220.353†	391.5	432.0	57.918 ug/L	57.918 ppb	21:42:30
1	S 181.975 Axial†	212.0	152.6	215.51 ug/L	215.51 ppb	21:42:30
1	Sb 206.836†	50.9	15.0	-3.2035 ug/L	-3.2035 ppb	21:42:30
1	Se 196.026†	-546.1	-482.2	74.697 ug/L	74.697 ppb	21:42:30
1	Si 251.611†	316415.8	296531.1	9998.1 ug/L	9998.1 ppb	21:42:10
1	Sn 189.927†	-60.7	-63.1	-7.8772 ug/L	-7.8772 ppb	21:42:30
1	Ti 334.940†	1921033.6	1804403.1	3096.0 ug/L	3096.0 ppb	21:42:04
1	Tl 190.801†	-148.8	-95.8	3.7257 ug/L	3.7257 ppb	21:42:30
1	U 409.014†	-8398.5	-5841.6	-200.54 ug/L	-200.54 ppb	21:42:04
1	V 292.402†	22468.7	22495.5	141.31 ug/L	141.31 ppb	21:42:10
1	Zn 213.857†	32033.5	29205.2	279.09 ug/L	279.09 ppb	21:42:10
1	SiO2†	324732.8	304326.8	21818 ug/L	21818 ppb	21:43:37
2	Sc Radial	5063.1	5063.1	106 %		21:41:32
2	Y RADIAL	5813.0	5813.0	113.3 %		21:41:32
2	Al 396.153Radial†	83671.8	79182.9	63525 ug/L	63525 ppb	21:41:12
2	Ca 317.933Radial†	7385.5	6973.9	11744 ug/L	11744 ppb	21:41:32
2	Fe 238.204 Radial†	13188.9	12470.9	117240 ug/L	117240 ppb	21:41:12
2	K 766.490 Radial†	70317.2	63754.6	12767 ug/L	12767 ppb	21:41:12
2	Mg 279.077 IEC†	419.7	395.7	13769 ug/L	13769 ppb	21:41:32
2	Na 589.592 Radial†	4212.8	5553.6	1799.4 ug/L	1799.4 ppb	21:41:12
2	Sr 421.552†	21330.9	20168.4	143.67 ug/L	143.67 ppb	21:41:12
2	Sc 361.383	867159.1	867159.1	106.55 %		21:42:35
2	Y 371.029	779859.6	779859.6	113.69 %		21:42:35
2	Ag 328.068†	-7017.9	-6868.1	4.8792 ug/L	4.8792 ppb	21:42:40
2	As 188.979†	-61.0	-38.4	36.963 ug/L	36.963 ppb	21:43:01
2	B 249.677†	638.4	1117.7	8.0466 ug/L	8.0466 ppb	21:42:40
2	Ba 233.527†	86585.0	81262.3	677.74 ug/L	677.74 ppb	21:42:40
2	Be 313.107†	-7278.4	-2518.8	6.0176 ug/L	6.0176 ppb	21:42:40
2	Cd 226.502†	836.9	983.0	-0.5781 ug/L	-0.5781 ppb	21:43:01
2	Co 228.616†	1939.0	1892.5	33.197 ug/L	33.197 ppb	21:43:01
2	Cr 267.716†	10774.1	10016.3	120.75 ug/L	120.75 ppb	21:42:40
2	Cu 324.752†	16972.0	9630.9	37.056 ug/L	37.056 ppb	21:42:40
2	Mn 257.610†	1739638.8	1632320.6	1925.1 ug/L	1925.1 ppb	21:42:35
2	Mo 202.031†	-16.0	-34.4	6.6903 ug/L	6.6903 ppb	21:43:01
2	Ni 231.604†	3118.0	2851.2	75.032 ug/L	75.032 ppb	21:43:01



2	P 214.914†	1250.1	945.4	518.53 ug/L	518.53 ppb	21:43:01
2	Pb 220.353†	397.0	437.2	58.565 ug/L	58.565 ppb	21:43:01
2	S 181.975 Axial†	213.0	153.5	217.18 ug/L	217.18 ppb	21:43:01
2	Sb 206.836†	65.2	28.5	1.6933 ug/L	1.6933 ppb	21:43:01
2	Se 196.026†	-547.8	-483.7	63.727 ug/L	63.727 ppb	21:43:01
2	Si 251.611†	315428.5	295597.2	9966.6 ug/L	9966.6 ppb	21:42:40
2	Sn 189.927†	-71.8	-73.5	-9.8391 ug/L	-9.8391 ppb	21:43:01
2	Ti 334.940†	1918424.1	1801909.5	3091.8 ug/L	3091.8 ppb	21:42:35
2	Tl 190.801†	-173.0	-118.5	-3.5999 ug/L	-3.5999 ppb	21:43:01
2	U 409.014†	-8587.4	-6018.7	-205.85 ug/L	-205.85 ppb	21:42:35
2	V 292.402†	22521.3	22544.3	142.11 ug/L	142.11 ppb	21:42:40
2	Zn 213.857†	31857.4	29039.2	277.73 ug/L	277.73 ppb	21:42:40
2	SiO2†	323052.6	302742.4	21704 ug/L	21704 ppb	21:43:42
3	Sc Radial	5098.6	5098.6	106 %		21:41:57
3	Y RADIAL	5861.5	5861.5	114.3 %		21:41:57
3	Al 396.153Radial†	83803.1	78755.0	63182 ug/L	63182 ppb	21:41:37
3	Ca 317.933Radial†	7470.3	7004.9	11796 ug/L	11796 ppb	21:41:57
3	Fe 238.204 Radial†	13228.6	12421.4	116770 ug/L	116770 ppb	21:41:37
3	K 766.490 Radial†	70548.3	63508.4	12718 ug/L	12718 ppb	21:41:37
3	Mg 279.077 IEC†	422.8	395.8	13775 ug/L	13775 ppb	21:41:57
3	Na 589.592 Radial†	4250.7	5561.4	1801.9 ug/L	1801.9 ppb	21:41:37
3	Sr 421.552†	21355.6	20051.1	142.83 ug/L	142.83 ppb	21:41:37
3	Sc 361.383	868690.0	868690.0	106.74 %		21:43:06
3	Y 371.029	781485.3	781485.3	113.93 %		21:43:06
3	Ag 328.068†	-7104.8	-6938.0	4.3884 ug/L	4.3884 ppb	21:43:11
3	As 188.979†	-68.1	-44.9	33.902 ug/L	33.902 ppb	21:43:32
3	B 249.677†	657.3	1134.3	8.5280 ug/L	8.5280 ppb	21:43:11
3	Ba 233.527†	87415.7	81897.3	683.00 ug/L	683.00 ppb	21:43:11
3	Be 313.107†	-7238.6	-2469.5	6.0339 ug/L	6.0339 ppb	21:43:11
3	Cd 226.502†	833.7	978.6	-0.5815 ug/L	-0.5815 ppb	21:43:32
3	Co 228.616†	1935.1	1885.7	33.058 ug/L	33.058 ppb	21:43:32
3	Cr 267.716†	10921.7	10136.7	122.17 ug/L	122.17 ppb	21:43:11
3	Cu 324.752†	16945.9	9578.4	36.863 ug/L	36.863 ppb	21:43:11
3	Mn 257.610†	1744354.8	1633861.7	1926.9 ug/L	1926.9 ppb	21:43:06
3	Mo 202.031†	-28.5	-46.0	5.7877 ug/L	5.7877 ppb	21:43:32
3	Ni 231.604†	3103.5	2832.5	74.540 ug/L	74.540 ppb	21:43:32
3	P 214.914†	1241.8	935.6	512.61 ug/L	512.61 ppb	21:43:32
3	Pb 220.353†	395.0	434.6	58.202 ug/L	58.202 ppb	21:43:32
3	S 181.975 Axial†	205.4	146.0	206.06 ug/L	206.06 ppb	21:43:32
3	Sb 206.836†	63.0	26.2	0.8834 ug/L	0.8834 ppb	21:43:32
3	Se 196.026†	-551.2	-486.0	60.654 ug/L	60.654 ppb	21:43:32
3	Si 251.611†	316895.3	296449.7	9995.3 ug/L	9995.3 ppb	21:43:11
3	Sn 189.927†	-62.0	-64.2	-8.1135 ug/L	-8.1135 ppb	21:43:32
3	Ti 334.940†	1920919.0	1801074.0	3090.3 ug/L	3090.3 ppb	21:43:06
3	Tl 190.801†	-161.9	-107.8	-0.1608 ug/L	-0.1608 ppb	21:43:32
3	U 409.014†	-8530.7	-5951.4	-203.65 ug/L	-203.65 ppb	21:43:06
3	V 292.402†	22769.7	22739.8	143.58 ug/L	143.58 ppb	21:43:11
3	Zn 213.857†	32159.2	29269.3	280.07 ug/L	280.07 ppb	21:43:11
3	SiO2†	322702.0	301879.6	21642 ug/L	21642 ppb	21:43:48

Mean Data: 243457004|941050|1

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	867662.3	106.61 %		0.109			0.10%
Sc Radial	5037.6	105 %		1.6			1.53%
Y 371.029	780041.8	113.72 %		0.199			0.17%
Y RADIAL	5788.1	112.8 %		1.73			1.53%
Ag 328.068†	-6911.9	4.9391 ug/L		0.58294	4.9391 ppb	0.58294	11.80%
Al 396.153Radial†	79643.7	63895 ug/L		953.2	63895 ppb	953.2	1.49%
As 188.979†	-37.9	37.412 ug/L		3.7545	37.412 ppb	3.7545	10.04%
B 249.677†	1119.9	7.9646 ug/L		0.60853	7.9646 ppb	0.60853	7.64%
Ba 233.527†	81611.4	680.67 ug/L		2.676	680.67 ppb	2.676	0.39%
Be 313.107†	-2484.6	6.0333 ug/L		0.01544	6.0333 ppb	0.01544	0.26%
Ca 317.933Radial†	6968.3	11734 ug/L		66.7	11734 ppb	66.7	0.57%
Cd 226.502†	980.8	-0.6918 ug/L		0.19409	-0.6918 ppb	0.19409	28.05%
Co 228.616†	1880.3	32.917 ug/L		0.3713	32.917 ppb	0.3713	1.13%
Cr 267.716†	10071.7	121.42 ug/L		0.709	121.42 ppb	0.709	0.58%
Cu 324.752†	9597.8	36.994 ug/L		0.1140	36.994 ppb	0.1140	0.31%
Fe 238.204 Radial†	12561.4	118090 ug/L		1891.0	118090 ppb	1891.0	1.60%
K 766.490 Radial†	64234.4	12864 ug/L		210.7	12864 ppb	210.7	1.64%



Mg 279.077 IEC†	396.4	13791 ug/L	34.6	13791 ppb	34.6	0.25%
Mn 257.610†	1634032.1	1927.2 ug/L	2.27	1927.2 ppb	2.27	0.12%
Mo 202.031†	-41.5	6.2251 ug/L	0.45192	6.2251 ppb	0.45192	7.26%
Na 589.592 Radial†	5611.9	1818.3 ug/L	30.53	1818.3 ppb	30.53	1.68%
Ni 231.604†	2835.8	74.627 ug/L	0.3698	74.627 ppb	0.3698	0.50%
P 214.914†	940.3	514.72 ug/L	3.305	514.72 ppb	3.305	0.64%
Pb 220.353†	434.6	58.228 ug/L	0.3243	58.228 ppb	0.3243	0.56%
S 181.975 Axial†	150.7	212.92 ug/L	6.000	212.92 ppb	6.000	2.82%
Sb 206.836†	23.2	-0.2089 ug/L	2.62484	-0.2089 ppb	2.62484	>999.9%
Se 196.026†	-484.0	66.359 ug/L	7.3821	66.359 ppb	7.3821	11.12%
Si 251.611†	296192.7	9986.7 ug/L	17.45	9986.7 ppb	17.45	0.17%
Sn 189.927†	-66.9	-8.6100 ug/L	1.07103	-8.6100 ppb	1.07103	12.44%
Sr 421.552†	20309.1	144.67 ug/L	2.496	144.67 ppb	2.496	1.73%
Ti 334.940†	1802462.2	3092.7 ug/L	2.96	3092.7 ppb	2.96	0.10%
Tl 190.801†	-107.4	-0.0116 ug/L	3.66508	-0.0116 ppb	3.66508	>999.9%
U 409.014†	-5937.2	-203.35 ug/L	2.669	-203.35 ppb	2.669	1.31%
V 292.402†	22593.2	142.33 ug/L	1.150	142.33 ppb	1.150	0.81%
Zn 213.857†	29171.2	278.96 ug/L	1.177	278.96 ppb	1.177	0.42%
SiO2†	302982.9	21722 ug/L	89.0	21722 ppb	89.0	0.41%



Sequence No.: 61  
 Sample ID: CCV  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 1  
 Date Collected: 1/14/2010 22:00:06  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5011.8	5011.8	105 %		22:01:58
1	Y RADIAL	5315.2	5315.2	103.6 %		22:01:58
1	Al 396.153Radial†	6549.5	6264.6	5001.2 ug/L	5001.2 ppb	22:01:58
1	Ca 317.933Radial†	3178.6	3023.6	5091.6 ug/L	5091.6 ppb	22:02:18
1	Fe 238.204 Radial†	604.2	567.7	5352.5 ug/L	5352.5 ppb	22:02:18
1	K 766.490 Radial†	29719.9	25625.0	5127.0 ug/L	5127.0 ppb	22:01:58
1	Mg 279.077 IEC†	159.6	151.0	5301.9 ug/L	5301.9 ppb	22:02:18
1	Na 589.592 Radial†	33642.6	33729.6	10929 ug/L	10929 ppb	22:01:58
1	Sr 421.552†	78402.9	74936.7	534.10 ug/L	534.10 ppb	22:01:58
1	Sc 361.383	846375.7	846375.7	103.99 %		22:03:16
1	Y 371.029	702990.8	702990.8	102.48 %		22:03:16
1	Ag 328.068†	104725.2	100421.0	496.65 ug/L	496.65 ppb	22:03:21
1	As 188.979†	1151.0	1125.7	511.06 ug/L	511.06 ppb	22:03:41
1	B 249.677†	21206.0	20910.0	506.58 ug/L	506.58 ppb	22:03:21
1	Ba 233.527†	64286.9	61816.1	513.86 ug/L	513.86 ppb	22:03:21
1	Be 313.107†	1361620.9	1313632.0	522.89 ug/L	522.89 ppb	22:03:16
1	Cd 226.502†	45490.7	43940.9	514.88 ug/L	514.88 ppb	22:03:21
1	Co 228.616†	24626.5	23753.2	515.91 ug/L	515.91 ppb	22:03:21
1	Cr 267.716†	45144.2	43314.4	511.63 ug/L	511.63 ppb	22:03:21
1	Cu 324.752†	172541.3	159615.7	509.53 ug/L	509.53 ppb	22:03:21
1	Mn 257.610†	459954.1	441882.6	518.48 ug/L	518.48 ppb	22:03:16
1	Mo 202.031†	7139.2	6845.7	508.64 ug/L	508.64 ppb	22:03:41
1	Ni 231.604†	20390.5	19532.2	513.86 ug/L	513.86 ppb	22:03:21
1	P 214.914†	4368.4	3972.8	2436.0 ug/L	2436.0 ppb	22:03:41
1	Pb 220.353†	4044.9	3954.1	508.10 ug/L	508.10 ppb	22:03:41
1	S 181.975 Axial†	765.1	689.3	1027.7 ug/L	1027.7 ppb	22:03:41
1	Sb 206.836†	1464.8	1375.8	521.25 ug/L	521.25 ppb	22:03:41
1	Se 196.026†	776.2	776.8	538.81 ug/L	538.81 ppb	22:03:41
1	Si 251.611†	80580.1	77039.1	2591.2 ug/L	2591.2 ppb	22:03:21
1	Sn 189.927†	2859.3	2743.4	508.21 ug/L	508.21 ppb	22:03:41
1	Ti 334.940†	306829.2	296430.6	508.37 ug/L	508.37 ppb	22:03:21
1	Tl 190.801†	1608.9	1591.0	512.42 ug/L	512.42 ppb	22:03:41
1	U 409.014†	15113.0	16573.4	527.56 ug/L	527.56 ppb	22:03:21
1	V 292.402†	72394.1	71020.5	519.13 ug/L	519.13 ppb	22:03:21
1	Zn 213.857†	54988.8	52016.3	514.29 ug/L	514.29 ppb	22:03:21
1	SiO2†	80593.9	77042.0	5509.5 ug/L	5509.5 ppb	22:04:48
2	Sc Radial	5493.1	5493.1	115 %		22:02:23
2	Y RADIAL	5856.8	5856.8	114.2 %		22:02:23
2	Al 396.153Radial†	6445.5	5625.3	4487.8 ug/L	4487.8 ppb	22:02:23
2	Ca 317.933Radial†	3188.7	2766.2	4658.1 ug/L	4658.1 ppb	22:02:43
2	Fe 238.204 Radial†	605.3	518.1	4885.3 ug/L	4885.3 ppb	22:02:43
2	K 766.490 Radial†	29684.4	23104.6	4622.6 ug/L	4622.6 ppb	22:02:23
2	Mg 279.077 IEC†	164.0	141.5	4968.6 ug/L	4968.6 ppb	22:02:43
2	Na 589.592 Radial†	33565.0	30843.8	9993.6 ug/L	9993.6 ppb	22:02:23
2	Sr 421.552†	77885.4	67917.9	484.08 ug/L	484.08 ppb	22:02:23
2	Sc 361.383	843201.9	843201.9	103.60 %		22:03:47
2	Y 371.029	698608.9	698608.9	101.84 %		22:03:47
2	Ag 328.068†	102571.9	98721.7	488.13 ug/L	488.13 ppb	22:03:52
2	As 188.979†	1168.2	1146.4	520.17 ug/L	520.17 ppb	22:04:12
2	B 249.677†	20632.1	20432.8	495.07 ug/L	495.07 ppb	22:03:52
2	Ba 233.527†	62777.9	60592.3	503.68 ug/L	503.68 ppb	22:03:52
2	Be 313.107†	1358816.2	1315853.4	523.75 ug/L	523.75 ppb	22:03:47
2	Cd 226.502†	44659.7	43303.5	507.45 ug/L	507.45 ppb	22:03:52
2	Co 228.616†	24104.8	23338.9	506.96 ug/L	506.96 ppb	22:03:52
2	Cr 267.716†	44332.2	42694.0	504.29 ug/L	504.29 ppb	22:03:52
2	Cu 324.752†	167623.5	155493.6	496.35 ug/L	496.35 ppb	22:03:52
2	Mn 257.610†	460454.0	444029.9	520.96 ug/L	520.96 ppb	22:03:47
2	Mo 202.031†	7241.7	6970.4	517.85 ug/L	517.85 ppb	22:04:12
2	Ni 231.604†	20029.5	19257.5	506.63 ug/L	506.63 ppb	22:03:52



2	P 214.914†	4406.4	4025.2	2472.4 ug/L	2472.4 ppb	22:04:12
2	Pb 220.353†	4109.7	4031.3	517.95 ug/L	517.95 ppb	22:04:12
2	S 181.975 Axial†	758.6	685.8	1022.6 ug/L	1022.6 ppb	22:04:12
2	Sb 206.836†	1494.1	1409.4	533.89 ug/L	533.89 ppb	22:04:12
2	Se 196.026†	786.0	789.1	545.48 ug/L	545.48 ppb	22:04:12
2	Si 251.611†	78596.1	75415.8	2536.4 ug/L	2536.4 ppb	22:03:52
2	Sn 189.927†	2908.7	2801.4	518.87 ug/L	518.87 ppb	22:04:12
2	Ti 334.940†	299385.5	290356.5	497.93 ug/L	497.93 ppb	22:03:52
2	Tl 190.801†	1648.1	1634.6	526.36 ug/L	526.36 ppb	22:04:12
2	U 409.014†	14645.4	16176.8	514.96 ug/L	514.96 ppb	22:03:52
2	V 292.402†	70792.4	69736.5	510.05 ug/L	510.05 ppb	22:03:52
2	Zn 213.857†	53713.9	50984.8	504.11 ug/L	504.11 ppb	22:03:52
2	SiO2†	80853.1	77583.9	5548.1 ug/L	5548.1 ppb	22:04:53
3	Sc Radial	4958.4	4958.4	103 %		22:02:49
3	Y RADIAL	5273.9	5273.9	102.8 %		22:02:49
3	Al 396.153Radial†	6455.2	6240.9	4981.9 ug/L	4981.9 ppb	22:02:49
3	Ca 317.933Radial†	3182.2	3059.8	5152.6 ug/L	5152.6 ppb	22:03:09
3	Fe 238.204 Radial†	612.9	582.4	5490.7 ug/L	5490.7 ppb	22:03:09
3	K 766.490 Radial†	29324.1	25548.5	5111.7 ug/L	5111.7 ppb	22:02:49
3	Mg 279.077 IEC†	161.4	154.4	5420.9 ug/L	5420.9 ppb	22:03:09
3	Na 589.592 Radial†	32990.5	33445.8	10837 ug/L	10837 ppb	22:02:49
3	Sr 421.552†	77290.7	74669.0	532.20 ug/L	532.20 ppb	22:02:49
3	Sc 361.383	843191.6	843191.6	103.60 %		22:04:18
3	Y 371.029	700291.7	700291.7	102.09 %		22:04:18
3	Ag 328.068†	104923.2	100992.4	499.53 ug/L	499.53 ppb	22:04:23
3	As 188.979†	1155.9	1134.5	515.12 ug/L	515.12 ppb	22:04:43
3	B 249.677†	21567.6	21336.0	516.91 ug/L	516.91 ppb	22:04:23
3	Ba 233.527†	64889.9	62631.6	520.65 ug/L	520.65 ppb	22:04:23
3	Be 313.107†	1340082.2	1297786.8	516.61 ug/L	516.61 ppb	22:04:18
3	Cd 226.502†	45984.0	44582.2	522.39 ug/L	522.39 ppb	22:04:23
3	Co 228.616†	24866.3	24074.1	522.88 ug/L	522.88 ppb	22:04:23
3	Cr 267.716†	45718.9	44033.1	520.12 ug/L	520.12 ppb	22:04:23
3	Cu 324.752†	173978.8	161629.8	515.96 ug/L	515.96 ppb	22:04:23
3	Mn 257.610†	453135.1	436970.9	512.73 ug/L	512.73 ppb	22:04:18
3	Mo 202.031†	7179.6	6910.6	513.46 ug/L	513.46 ppb	22:04:43
3	Ni 231.604†	20612.4	19820.4	521.44 ug/L	521.44 ppb	22:04:23
3	P 214.914†	4348.0	3968.9	2432.1 ug/L	2432.1 ppb	22:04:43
3	Pb 220.353†	4088.7	4011.1	515.39 ug/L	515.39 ppb	22:04:43
3	S 181.975 Axial†	758.2	685.4	1021.9 ug/L	1021.9 ppb	22:04:43
3	Sb 206.836†	1473.1	1389.1	526.29 ug/L	526.29 ppb	22:04:43
3	Se 196.026†	783.4	786.5	545.77 ug/L	545.77 ppb	22:04:43
3	Si 251.611†	81480.9	78201.1	2630.4 ug/L	2630.4 ppb	22:04:23
3	Sn 189.927†	2872.3	2766.2	512.45 ug/L	512.45 ppb	22:04:43
3	Ti 334.940†	309809.3	300421.3	515.21 ug/L	515.21 ppb	22:04:23
3	Tl 190.801†	1611.2	1599.1	514.97 ug/L	514.97 ppb	22:04:43
3	U 409.014†	15413.7	16918.6	538.55 ug/L	538.55 ppb	22:04:23
3	V 292.402†	73247.5	72107.1	527.03 ug/L	527.03 ppb	22:04:23
3	Zn 213.857†	55464.2	52674.9	520.79 ug/L	520.79 ppb	22:04:23
3	SiO2†	81247.1	77965.1	5575.5 ug/L	5575.5 ppb	22:04:59

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	844256.4	103.73 %	0.226			0.22%
Sc Radial	5154.4	108 %	6.1			5.71%
Y 371.029	700630.5	102.14 %	0.322			0.32%
Y RADIAL	5482.0	106.9 %	6.34			5.93%
Ag 328.068†	100045.0	494.77 ug/L	5.926	494.77 ppb	5.926	1.20%
QC value within limits for Ag 328.068 Recovery = 98.95%						
Al 396.153Radial†	6043.6	4823.7 ug/L	290.99	4823.7 ppb	290.99	6.03%
QC value within limits for Al 396.153Radial Recovery = 96.47%						
As 188.979†	1135.5	515.45 ug/L	4.566	515.45 ppb	4.566	0.89%
QC value within limits for As 188.979 Recovery = 103.09%						
B 249.677†	20892.9	506.19 ug/L	10.924	506.19 ppb	10.924	2.16%
QC value within limits for B 249.677 Recovery = 101.24%						
Ba 233.527†	61680.0	512.73 ug/L	8.540	512.73 ppb	8.540	1.67%
QC value within limits for Ba 233.527 Recovery = 102.55%						
Be 313.107†	1309090.7	521.08 ug/L	3.896	521.08 ppb	3.896	0.75%
QC value within limits for Be 313.107 Recovery = 104.22%						
Ca 317.933Radial†	2949.9	4967.4 ug/L	269.60	4967.4 ppb	269.60	5.43%



QC value within limits for Ca 317.933 Radial Recovery = 99.35%						
Cd 226.502†	43942.2	514.91 ug/L	7.469	514.91 ppb	7.469	1.45%
QC value within limits for Cd 226.502 Recovery = 102.98%						
Co 228.616†	23722.1	515.25 ug/L	7.977	515.25 ppb	7.977	1.55%
QC value within limits for Co 228.616 Recovery = 103.05%						
Cr 267.716†	43347.2	512.01 ug/L	7.919	512.01 ppb	7.919	1.55%
QC value within limits for Cr 267.716 Recovery = 102.40%						
Cu 324.752†	158913.0	507.28 ug/L	9.995	507.28 ppb	9.995	1.97%
QC value within limits for Cu 324.752 Recovery = 101.46%						
Fe 238.204 Radial†	556.1	5242.8 ug/L	317.28	5242.8 ppb	317.28	6.05%
QC value within limits for Fe 238.204 Radial Recovery = 104.86%						
K 766.490 Radial†	24759.4	4953.8 ug/L	286.93	4953.8 ppb	286.93	5.79%
QC value within limits for K 766.490 Radial Recovery = 99.08%						
Mg 279.077 IEC†	149.0	5230.5 ug/L	234.47	5230.5 ppb	234.47	4.48%
QC value within limits for Mg 279.077 IEC Recovery = 104.61%						
Mn 257.610†	440961.1	517.39 ug/L	4.225	517.39 ppb	4.225	0.82%
QC value within limits for Mn 257.610 Recovery = 103.48%						
Mo 202.031†	6908.9	513.32 ug/L	4.610	513.32 ppb	4.610	0.90%
QC value within limits for Mo 202.031 Recovery = 102.66%						
Na 589.592 Radial†	32673.1	10586 ug/L	515.3	10586 ppb	515.3	4.87%
QC value within limits for Na 589.592 Radial Recovery = 105.86%						
Ni 231.604†	19536.7	513.98 ug/L	7.405	513.98 ppb	7.405	1.44%
QC value within limits for Ni 231.604 Recovery = 102.80%						
P 214.914†	3988.9	2446.8 ug/L	22.22	2446.8 ppb	22.22	0.91%
QC value within limits for P 214.914 Recovery = 97.87%						
Pb 220.353†	3998.8	513.81 ug/L	5.113	513.81 ppb	5.113	1.00%
QC value within limits for Pb 220.353 Recovery = 102.76%						
S 181.975 Axial†	686.8	1024.1 ug/L	3.20	1024.1 ppb	3.20	0.31%
QC value within limits for S 181.975 Axial Recovery = 102.41%						
Sb 206.836†	1391.5	527.14 ug/L	6.359	527.14 ppb	6.359	1.21%
QC value within limits for Sb 206.836 Recovery = 105.43%						
Se 196.026†	784.1	543.35 ug/L	3.939	543.35 ppb	3.939	0.73%
QC value within limits for Se 196.026 Recovery = 108.67%						
Si 251.611†	76885.3	2586.0 ug/L	47.20	2586.0 ppb	47.20	1.83%
QC value within limits for Si 251.611 Recovery = 103.44%						
Sn 189.927†	2770.3	513.18 ug/L	5.363	513.18 ppb	5.363	1.05%
QC value within limits for Sn 189.927 Recovery = 102.64%						
Sr 421.552†	72507.9	516.79 ug/L	28.348	516.79 ppb	28.348	5.49%
QC value within limits for Sr 421.552 Recovery = 103.36%						
Ti 334.940†	295736.1	507.17 ug/L	8.702	507.17 ppb	8.702	1.72%
QC value within limits for Ti 334.940 Recovery = 101.43%						
Tl 190.801†	1608.2	517.92 ug/L	7.419	517.92 ppb	7.419	1.43%
QC value within limits for Tl 190.801 Recovery = 103.58%						
U 409.014†	16556.3	527.02 ug/L	11.802	527.02 ppb	11.802	2.24%
QC value within limits for U 409.014 Recovery = 105.40%						
V 292.402†	70954.7	518.74 ug/L	8.497	518.74 ppb	8.497	1.64%
QC value within limits for V 292.402 Recovery = 103.75%						
Zn 213.857†	51892.0	513.07 ug/L	8.405	513.07 ppb	8.405	1.64%
QC value within limits for Zn 213.857 Recovery = 102.61%						
SiO2†	77530.3	5544.3 ug/L	33.18	5544.3 ppb	33.18	0.60%
QC value within limits for SiO2 Recovery = 103.68%						
All analyte(s) passed QC.						



Sequence No.: 62  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 6  
 Date Collected: 1/14/2010 22:07:09  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4710.9	4710.9	98.3 %		22:09:00
1	Y RADIAL	5083.1	5083.1	99.10 %		22:09:00
1	Al 396.153Radial†	-26.7	-23.9	-19.246 ug/L	-19.246 ppb	22:09:00
1	Ca 317.933Radial†	16.8	1.9	3.2821 ug/L	3.2821 ppb	22:09:20
1	Fe 238.204 Radial†	9.5	-0.2	-1.9292 ug/L	-1.9292 ppb	22:09:20
1	K 766.490 Radial†	2963.1	226.3	45.326 ug/L	45.326 ppb	22:09:00
1	Mg 279.077 IEC†	-0.0	-1.5	-54.203 ug/L	-54.203 ppb	22:09:20
1	Na 589.592 Radial†	-1492.0	49.5	16.024 ug/L	16.024 ppb	22:09:00
1	Sr 421.552†	18.0	1.1	0.0079 ug/L	0.0079 ppb	22:09:00
1	Sc 361.383	845770.8	845770.8	103.92 %		22:10:17
1	Y 371.029	713609.8	713609.8	104.03 %		22:10:17
1	Ag 328.068†	417.2	119.9	0.5877 ug/L	0.5877 ppb	22:10:17
1	As 188.979†	-25.3	-5.5	-2.4641 ug/L	-2.4641 ppb	22:10:37
1	B 249.677†	-425.6	109.0	2.6533 ug/L	2.6533 ppb	22:10:37
1	Ba 233.527†	3.6	2.0	0.0173 ug/L	0.0173 ppb	22:10:37
1	Be 313.107†	-4298.6	175.8	0.0701 ug/L	0.0701 ppb	22:10:17
1	Cd 226.502†	-194.7	10.2	0.1211 ug/L	0.1211 ppb	22:10:37
1	Co 228.616†	-72.1	3.3	0.0756 ug/L	0.0756 ppb	22:10:37
1	Cr 267.716†	68.1	-30.2	-0.3571 ug/L	-0.3571 ppb	22:10:37
1	Cu 324.752†	6308.8	-227.3	-0.7275 ug/L	-0.7275 ppb	22:10:17
1	Mn 257.610†	408.6	-11.1	-0.0110 ug/L	-0.0110 ppb	22:10:37
1	Mo 202.031†	37.4	16.7	1.2402 ug/L	1.2402 ppb	22:10:37
1	Ni 231.604†	96.2	17.5	0.4602 ug/L	0.4602 ppb	22:10:37
1	P 214.914†	206.4	-29.3	-18.543 ug/L	-18.543 ppb	22:10:37
1	Pb 220.353†	-72.2	-4.9	-0.6323 ug/L	-0.6323 ppb	22:10:37
1	S 181.975 Axial†	41.9	-6.2	-9.1888 ug/L	-9.1888 ppb	22:10:37
1	Sb 206.836†	50.4	15.7	5.7695 ug/L	5.7695 ppb	22:10:37
1	Se 196.026†	-25.7	5.6	3.7482 ug/L	3.7482 ppb	22:10:37
1	Si 251.611†	493.0	28.5	0.9464 ug/L	0.9464 ppb	22:10:37
1	Sn 189.927†	4.4	-1.9	-0.3477 ug/L	-0.3477 ppb	22:10:37
1	Ti 334.940†	-1372.7	66.1	0.1170 ug/L	0.1170 ppb	22:10:17
1	Tl 190.801†	-37.8	7.6	2.4173 ug/L	2.4173 ppb	22:10:37
1	U 409.014†	-2013.0	103.9	3.3197 ug/L	3.3197 ppb	22:10:17
1	V 292.402†	-1383.9	75.5	0.5677 ug/L	0.5677 ppb	22:10:17
1	Zn 213.857†	854.5	-38.0	-0.3810 ug/L	-0.3810 ppb	22:10:37
1	SiO2†	513.1	37.5	2.6557 ug/L	2.6557 ppb	22:11:33
2	Sc Radial	4868.0	4868.0	102 %		22:09:25
2	Y RADIAL	5211.9	5211.9	101.6 %		22:09:25
2	Al 396.153Radial†	7.9	11.0	8.7877 ug/L	8.7877 ppb	22:09:25
2	Ca 317.933Radial†	17.1	1.6	2.7493 ug/L	2.7493 ppb	22:09:45
2	Fe 238.204 Radial†	12.5	2.4	22.855 ug/L	22.855 ppb	22:09:45
2	K 766.490 Radial†	2913.0	79.6	15.939 ug/L	15.939 ppb	22:09:25
2	Mg 279.077 IEC†	1.5	-0.0	-0.3618 ug/L	-0.3618 ppb	22:09:45
2	Na 589.592 Radial†	-1498.2	92.3	29.912 ug/L	29.912 ppb	22:09:25
2	Sr 421.552†	-16.8	-33.8	-0.2410 ug/L	-0.2410 ppb	22:09:25
2	Sc 361.383	853964.1	853964.1	104.93 %		22:10:42
2	Y 371.029	720217.9	720217.9	104.99 %		22:10:42
2	Ag 328.068†	439.2	137.0	0.6820 ug/L	0.6820 ppb	22:10:42
2	As 188.979†	-24.4	-4.4	-1.9732 ug/L	-1.9732 ppb	22:11:02
2	B 249.677†	-411.1	126.7	3.0810 ug/L	3.0810 ppb	22:11:02
2	Ba 233.527†	-17.2	-17.9	-0.1467 ug/L	-0.1467 ppb	22:11:02
2	Be 313.107†	-4336.9	179.0	0.0717 ug/L	0.0717 ppb	22:10:42
2	Cd 226.502†	-195.6	11.1	0.1282 ug/L	0.1282 ppb	22:11:02
2	Co 228.616†	-76.2	0.0	0.0005 ug/L	0.0005 ppb	22:11:02
2	Cr 267.716†	89.6	-10.3	-0.1210 ug/L	-0.1210 ppb	22:11:02
2	Cu 324.752†	6274.6	-318.1	-1.0144 ug/L	-1.0144 ppb	22:10:42
2	Mn 257.610†	434.6	9.9	0.0139 ug/L	0.0139 ppb	22:11:02
2	Mo 202.031†	25.7	5.2	0.3865 ug/L	0.3865 ppb	22:11:02
2	Ni 231.604†	88.4	9.1	0.2404 ug/L	0.2404 ppb	22:11:02



2	P 214.914†	214.4	-23.5	-14.825 ug/L	-14.825 ppb	22:11:02
2	Pb 220.353†	-66.7	1.0	0.1252 ug/L	0.1252 ppb	22:11:02
2	S 181.975 Axial†	40.8	-7.5	-11.243 ug/L	-11.243 ppb	22:11:02
2	Sb 206.836†	41.3	6.6	2.4158 ug/L	2.4158 ppb	22:11:02
2	Se 196.026†	-24.9	6.7	4.5472 ug/L	4.5472 ppb	22:11:02
2	Si 251.611†	460.9	-6.6	-0.2272 ug/L	-0.2272 ppb	22:11:02
2	Sn 189.927†	4.5	-1.8	-0.3326 ug/L	-0.3326 ppb	22:11:02
2	Ti 334.940†	-1290.8	156.8	0.2693 ug/L	0.2693 ppb	22:10:42
2	Tl 190.801†	-26.6	18.5	5.9203 ug/L	5.9203 ppb	22:11:02
2	U 409.014†	-2127.4	13.4	0.4258 ug/L	0.4258 ppb	22:10:42
2	V 292.402†	-1413.8	59.7	0.4333 ug/L	0.4333 ppb	22:10:42
2	Zn 213.857†	865.5	-35.5	-0.3563 ug/L	-0.3563 ppb	22:11:02
2	SiO2†	482.2	3.3	0.2282 ug/L	0.2282 ppb	22:11:38
3	Sc Radial	5012.4	5012.4	105 %		22:09:50
3	Y RADIAL	5403.8	5403.8	105.3 %		22:09:50
3	Al 396.153Radial†	-11.9	-8.1	-6.5114 ug/L	-6.5114 ppb	22:09:50
3	Ca 317.933Radial†	16.6	0.7	1.2170 ug/L	1.2170 ppb	22:10:10
3	Fe 238.204 Radial†	11.6	1.2	11.179 ug/L	11.179 ppb	22:10:10
3	K 766.490 Radial†	2845.2	-67.7	-13.580 ug/L	-13.580 ppb	22:09:50
3	Mg 279.077 IEC†	2.7	1.1	38.420 ug/L	38.420 ppb	22:10:10
3	Na 589.592 Radial†	-1553.5	81.9	26.551 ug/L	26.551 ppb	22:09:50
3	Sr 421.552†	28.6	10.2	0.0723 ug/L	0.0723 ppb	22:09:50
3	Sc 361.383	871233.0	871233.0	107.05 %		22:11:08
3	Y 371.029	735842.2	735842.2	107.27 %		22:11:08
3	Ag 328.068†	369.7	63.8	0.3153 ug/L	0.3153 ppb	22:11:08
3	As 188.979†	-25.1	-4.6	-2.0669 ug/L	-2.0669 ppb	22:11:28
3	B 249.677†	-383.3	160.5	3.9040 ug/L	3.9040 ppb	22:11:28
3	Ba 233.527†	-11.1	-11.9	-0.0959 ug/L	-0.0959 ppb	22:11:28
3	Be 313.107†	-4314.1	282.2	0.1126 ug/L	0.1126 ppb	22:11:08
3	Cd 226.502†	-188.0	22.0	0.2577 ug/L	0.2577 ppb	22:11:28
3	Co 228.616†	-77.7	0.1	0.0032 ug/L	0.0032 ppb	22:11:28
3	Cr 267.716†	89.9	-11.8	-0.1398 ug/L	-0.1398 ppb	22:11:28
3	Cu 324.752†	6280.2	-431.3	-1.3804 ug/L	-1.3804 ppb	22:11:08
3	Mn 257.610†	435.0	2.1	0.0020 ug/L	0.0020 ppb	22:11:28
3	Mo 202.031†	27.2	6.1	0.4551 ug/L	0.4551 ppb	22:11:28
3	Ni 231.604†	78.1	-2.2	-0.0582 ug/L	-0.0582 ppb	22:11:28
3	P 214.914†	219.7	-22.6	-14.187 ug/L	-14.187 ppb	22:11:28
3	Pb 220.353†	-66.6	2.4	0.3059 ug/L	0.3059 ppb	22:11:28
3	S 181.975 Axial†	42.8	-6.5	-9.6372 ug/L	-9.6372 ppb	22:11:28
3	Sb 206.836†	29.9	-4.8	-1.7366 ug/L	-1.7366 ppb	22:11:28
3	Se 196.026†	-30.5	1.9	1.2903 ug/L	1.2903 ppb	22:11:28
3	Si 251.611†	466.0	-10.6	-0.3623 ug/L	-0.3623 ppb	22:11:28
3	Sn 189.927†	4.2	-2.2	-0.4057 ug/L	-0.4057 ppb	22:11:28
3	Ti 334.940†	-1334.5	140.4	0.2348 ug/L	0.2348 ppb	22:11:08
3	Tl 190.801†	-41.1	5.5	1.7465 ug/L	1.7465 ppb	22:11:28
3	U 409.014†	-1945.0	224.0	7.1540 ug/L	7.1540 ppb	22:11:08
3	V 292.402†	-1354.2	142.1	1.0445 ug/L	1.0445 ppb	22:11:08
3	Zn 213.857†	853.6	-63.0	-0.6268 ug/L	-0.6268 ppb	22:11:28
3	SiO2†	470.8	-16.4	-1.1862 ug/L	-1.1862 ppb	22:11:43

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	856989.3	105.30 %	1.597			1.52%
Sc Radial	4863.8	102 %	3.1			3.10%
Y 371.029	723223.3	105.43 %	1.664			1.58%
Y RADIAL	5232.9	102.0 %	3.15			3.08%
Ag 328.068†	106.9	0.5283 ug/L	0.19045	0.5283 ppb	0.19045	36.05%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	-7.0	-5.6566 ug/L	14.03647	-5.6566 ppb	14.03647	248.14%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-4.8	-2.1681 ug/L	0.26059	-2.1681 ppb	0.26059	12.02%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	132.1	3.2128 ug/L	0.63566	3.2128 ppb	0.63566	19.79%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-9.3	-0.0751 ug/L	0.08398	-0.0751 ppb	0.08398	111.83%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	212.3	0.0848 ug/L	0.02412	0.0848 ppb	0.02412	28.44%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	1.4	2.4161 ug/L	1.07209	2.4161 ppb	1.07209	44.37%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated									
Cd	226.502†	14.4	0.1690 ug/L	0.07693	0.1690 ppb	0.07693	45.52%		
QC value within limits for Cd 226.502 Recovery = Not calculated									
Co	228.616†	1.2	0.0264 ug/L	0.04261	0.0264 ppb	0.04261	161.33%		
QC value within limits for Co 228.616 Recovery = Not calculated									
Cr	267.716†	-17.4	-0.2060 ug/L	0.13123	-0.2060 ppb	0.13123	63.71%		
QC value within limits for Cr 267.716 Recovery = Not calculated									
Cu	324.752†	-325.6	-1.0407 ug/L	0.32724	-1.0407 ppb	0.32724	31.44%		
QC value within limits for Cu 324.752 Recovery = Not calculated									
Fe	238.204 Radial†	1.1	10.702 ug/L	12.3989	10.702 ppb	12.3989	115.86%		
QC value within limits for Fe 238.204 Radial Recovery = Not calculated									
K	766.490 Radial†	79.4	15.895 ug/L	29.4530	15.895 ppb	29.4530	185.30%		
QC value within limits for K 766.490 Radial Recovery = Not calculated									
Mg	279.077 IEC†	-0.2	-5.3815 ug/L	46.51529	-5.3815 ppb	46.51529	864.36%		
QC value within limits for Mg 279.077 IEC Recovery = Not calculated									
Mn	257.610†	0.3	0.0016 ug/L	0.01245	0.0016 ppb	0.01245	769.55%		
QC value within limits for Mn 257.610 Recovery = Not calculated									
Mo	202.031†	9.3	0.6940 ug/L	0.47430	0.6940 ppb	0.47430	68.35%		
QC value within limits for Mo 202.031 Recovery = Not calculated									
Na	589.592 Radial†	74.6	24.163 ug/L	7.2455	24.163 ppb	7.2455	29.99%		
QC value within limits for Na 589.592 Radial Recovery = Not calculated									
Ni	231.604†	8.1	0.2142 ug/L	0.26022	0.2142 ppb	0.26022	121.51%		
QC value within limits for Ni 231.604 Recovery = Not calculated									
P	214.914†	-25.1	-15.851 ug/L	2.3527	-15.851 ppb	2.3527	14.84%		
QC value within limits for P 214.914 Recovery = Not calculated									
Pb	220.353†	-0.5	-0.0671 ug/L	0.49781	-0.0671 ppb	0.49781	742.29%		
QC value within limits for Pb 220.353 Recovery = Not calculated									
S	181.975 Axial†	-6.7	-10.023 ug/L	1.0801	-10.023 ppb	1.0801	10.78%		
QC value within limits for S 181.975 Axial Recovery = Not calculated									
Sb	206.836†	5.9	2.1496 ug/L	3.76012	2.1496 ppb	3.76012	174.92%		
QC value within limits for Sb 206.836 Recovery = Not calculated									
Se	196.026†	4.7	3.1953 ug/L	1.69741	3.1953 ppb	1.69741	53.12%		
QC value within limits for Se 196.026 Recovery = Not calculated									
Si	251.611†	3.8	0.1190 ug/L	0.71978	0.1190 ppb	0.71978	604.99%		
QC value within limits for Si 251.611 Recovery = Not calculated									
Sn	189.927†	-2.0	-0.3620 ug/L	0.03857	-0.3620 ppb	0.03857	10.66%		
QC value within limits for Sn 189.927 Recovery = Not calculated									
Sr	421.552†	-7.5	-0.0536 ug/L	0.16545	-0.0536 ppb	0.16545	308.80%		
QC value within limits for Sr 421.552 Recovery = Not calculated									
Ti	334.940†	121.1	0.2071 ug/L	0.07986	0.2071 ppb	0.07986	38.57%		
QC value within limits for Ti 334.940 Recovery = Not calculated									
Tl	190.801†	10.5	3.3614 ug/L	2.24131	3.3614 ppb	2.24131	66.68%		
QC value within limits for Tl 190.801 Recovery = Not calculated									
U	409.014†	113.8	3.6332 ug/L	3.37502	3.6332 ppb	3.37502	92.90%		
QC value within limits for U 409.014 Recovery = Not calculated									
V	292.402†	92.4	0.6818 ug/L	0.32115	0.6818 ppb	0.32115	47.10%		
QC value within limits for V 292.402 Recovery = Not calculated									
Zn	213.857†	-45.5	-0.4547 ug/L	0.14956	-0.4547 ppb	0.14956	32.90%		
QC value within limits for Zn 213.857 Recovery = Not calculated									
SiO2†		8.2	0.5659 ug/L	1.94307	0.5659 ppb	1.94307	343.37%		
QC value within limits for SiO2 Recovery = Not calculated									

All analyte(s) passed QC.



Sequence No.: 71

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/14/2010 23:10:18

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5027.5	5027.5	105 %		23:12:10
1	Y RADIAL	5334.7	5334.7	104.0 %		23:12:10
1	Al 396.153Radial†	6615.1	6307.6	5035.1 ug/L	5035.1 ppb	23:12:10
1	Ca 317.933Radial†	3141.5	2978.8	5016.1 ug/L	5016.1 ppb	23:12:30
1	Fe 238.204 Radial†	572.7	535.9	5053.4 ug/L	5053.4 ppb	23:12:30
1	K 766.490 Radial†	29887.0	25695.6	5141.6 ug/L	5141.6 ppb	23:12:10
1	Mg 279.077 IEC†	157.6	148.7	5219.3 ug/L	5219.3 ppb	23:12:30
1	Na 589.592 Radial†	30035.5	30191.4	9782.2 ug/L	9782.2 ppb	23:12:10
1	Sr 421.552†	75282.2	71728.5	511.24 ug/L	511.24 ppb	23:12:10
1	Sc 361.383	844385.1	844385.1	103.75 %		23:13:28
1	Y 371.029	700071.8	700071.8	102.06 %		23:13:28
1	Ag 328.068†	106365.7	102239.7	505.52 ug/L	505.52 ppb	23:13:33
1	As 188.979†	1177.5	1153.8	523.72 ug/L	523.72 ppb	23:13:53
1	B 249.677†	21637.4	21373.9	517.89 ug/L	517.89 ppb	23:13:33
1	Ba 233.527†	65391.2	63026.2	523.91 ug/L	523.91 ppb	23:13:33
1	Be 313.107†	1349385.5	1304925.5	519.46 ug/L	519.46 ppb	23:13:28
1	Cd 226.502†	46320.6	44844.0	525.51 ug/L	525.51 ppb	23:13:33
1	Co 228.616†	25045.2	24212.7	525.90 ug/L	525.90 ppb	23:13:33
1	Cr 267.716†	45893.2	44138.7	521.36 ug/L	521.36 ppb	23:13:33
1	Cu 324.752†	175507.7	162866.1	519.88 ug/L	519.88 ppb	23:13:33
1	Mn 257.610†	457790.2	440839.5	517.23 ug/L	517.23 ppb	23:13:28
1	Mo 202.031†	7301.5	7018.3	521.42 ug/L	521.42 ppb	23:13:53
1	Ni 231.604†	20775.1	19949.1	524.83 ug/L	524.83 ppb	23:13:33
1	P 214.914†	4459.7	4070.7	2496.8 ug/L	2496.8 ppb	23:13:53
1	Pb 220.353†	4126.2	4041.7	519.37 ug/L	519.37 ppb	23:13:53
1	S 181.975 Axial†	773.0	698.6	1041.6 ug/L	1041.6 ppb	23:13:53
1	Sb 206.836†	1508.4	1421.1	538.26 ug/L	538.26 ppb	23:13:53
1	Se 196.026†	790.9	792.6	548.47 ug/L	548.47 ppb	23:13:53
1	Si 251.611†	82257.2	78838.2	2651.8 ug/L	2651.8 ppb	23:13:33
1	Sn 189.927†	2926.4	2814.5	521.35 ug/L	521.35 ppb	23:13:53
1	Ti 334.940†	314331.2	304357.0	521.96 ug/L	521.96 ppb	23:13:28
1	Tl 190.801†	1643.0	1627.5	524.13 ug/L	524.13 ppb	23:13:53
1	U 409.014†	15479.4	16960.9	539.95 ug/L	539.95 ppb	23:13:33
1	V 292.402†	73608.1	72354.7	528.98 ug/L	528.98 ppb	23:13:33
1	Zn 213.857†	55862.1	52982.7	523.88 ug/L	523.88 ppb	23:13:33
1	SiO2†	80952.7	77570.5	5547.0 ug/L	5547.0 ppb	23:15:01
2	Sc Radial	5019.4	5019.4	105 %		23:12:35
2	Y RADIAL	5351.5	5351.5	104.3 %		23:12:35
2	Al 396.153Radial†	6637.1	6338.8	5060.4 ug/L	5060.4 ppb	23:12:35
2	Ca 317.933Radial†	3145.2	2987.1	5030.2 ug/L	5030.2 ppb	23:12:55
2	Fe 238.204 Radial†	574.6	538.6	5078.8 ug/L	5078.8 ppb	23:12:55
2	K 766.490 Radial†	30089.9	25935.3	5189.6 ug/L	5189.6 ppb	23:12:35
2	Mg 279.077 IEC†	155.8	147.2	5167.7 ug/L	5167.7 ppb	23:12:55
2	Na 589.592 Radial†	30101.9	30301.1	9817.7 ug/L	9817.7 ppb	23:12:35
2	Sr 421.552†	75623.5	72170.0	514.38 ug/L	514.38 ppb	23:12:35
2	Sc 361.383	849923.7	849923.7	104.43 %		23:13:59
2	Y 371.029	704076.3	704076.3	102.64 %		23:13:59
2	Ag 328.068†	104758.5	100032.6	494.66 ug/L	494.66 ppb	23:14:04
2	As 188.979†	1159.7	1129.3	512.74 ug/L	512.74 ppb	23:14:24
2	B 249.677†	21455.7	21063.9	510.37 ug/L	510.37 ppb	23:14:04
2	Ba 233.527†	64573.2	61832.2	513.99 ug/L	513.99 ppb	23:14:04
2	Be 313.107†	1354705.8	1301544.6	518.12 ug/L	518.12 ppb	23:13:59
2	Cd 226.502†	45721.5	43979.4	515.36 ug/L	515.36 ppb	23:14:04
2	Co 228.616†	24775.2	23796.8	516.85 ug/L	516.85 ppb	23:14:04
2	Cr 267.716†	45437.0	43413.6	512.80 ug/L	512.80 ppb	23:14:04
2	Cu 324.752†	173991.5	160311.8	511.73 ug/L	511.73 ppb	23:14:04
2	Mn 257.610†	460251.1	440320.6	516.63 ug/L	516.63 ppb	23:13:59
2	Mo 202.031†	7245.9	6919.2	514.07 ug/L	514.07 ppb	23:14:24
2	Ni 231.604†	20490.5	19546.1	514.23 ug/L	514.23 ppb	23:14:04



2	P 214.914†	4405.2	3990.4	2447.1 ug/L	2447.1 ppb	23:14:24
2	Pb 220.353†	4093.6	3984.5	512.05 ug/L	512.05 ppb	23:14:24
2	S 181.975 Axial†	760.6	681.9	1016.7 ug/L	1016.7 ppb	23:14:24
2	Sb 206.836†	1485.5	1389.8	526.50 ug/L	526.50 ppb	23:14:24
2	Se 196.026†	789.9	786.8	544.62 ug/L	544.62 ppb	23:14:24
2	Si 251.611†	81310.7	77415.2	2603.9 ug/L	2603.9 ppb	23:14:04
2	Sn 189.927†	2905.1	2775.7	514.18 ug/L	514.18 ppb	23:14:24
2	Ti 334.940†	316446.1	304407.9	522.06 ug/L	522.06 ppb	23:13:59
2	Tl 190.801†	1641.9	1616.2	520.56 ug/L	520.56 ppb	23:14:24
2	U 409.014†	15244.3	16638.5	529.67 ug/L	529.67 ppb	23:14:04
2	V 292.402†	72841.7	71158.5	520.23 ug/L	520.23 ppb	23:14:04
2	Zn 213.857†	55284.5	52078.7	514.94 ug/L	514.94 ppb	23:14:04
2	SiO2†	81595.4	77677.5	5554.9 ug/L	5554.9 ppb	23:15:06
3	Sc Radial	4972.8	4972.8	104 %		23:13:00
3	Y RADIAL	5306.9	5306.9	103.5 %		23:13:00
3	Al 396.153Radial†	6586.9	6349.7	5069.1 ug/L	5069.1 ppb	23:13:00
3	Ca 317.933Radial†	3115.8	2987.0	5029.9 ug/L	5029.9 ppb	23:13:20
3	Fe 238.204 Radial†	571.9	541.1	5102.2 ug/L	5102.2 ppb	23:13:20
3	K 766.490 Radial†	29840.7	25964.3	5195.5 ug/L	5195.5 ppb	23:13:00
3	Mg 279.077 IEC†	157.5	150.3	5275.0 ug/L	5275.0 ppb	23:13:20
3	Na 589.592 Radial†	29604.6	30091.1	9749.7 ug/L	9749.7 ppb	23:13:00
3	Sr 421.552†	74628.5	71887.7	512.37 ug/L	512.37 ppb	23:13:00
3	Sc 361.383	850186.0	850186.0	104.46 %		23:14:30
3	Y 371.029	705312.6	705312.6	102.82 %		23:14:30
3	Ag 328.068†	104771.4	100014.0	494.57 ug/L	494.57 ppb	23:14:35
3	As 188.979†	1175.1	1143.7	519.23 ug/L	519.23 ppb	23:14:55
3	B 249.677†	21182.6	20796.2	503.86 ug/L	503.86 ppb	23:14:35
3	Ba 233.527†	64155.0	61412.8	510.51 ug/L	510.51 ppb	23:14:35
3	Be 313.107†	1354658.7	1301099.3	517.94 ug/L	517.94 ppb	23:14:30
3	Cd 226.502†	45532.8	43785.2	513.08 ug/L	513.08 ppb	23:14:35
3	Co 228.616†	24591.2	23613.4	512.87 ug/L	512.87 ppb	23:14:35
3	Cr 267.716†	45152.7	43128.0	509.42 ug/L	509.42 ppb	23:14:35
3	Cu 324.752†	171483.6	157859.7	503.91 ug/L	503.91 ppb	23:14:35
3	Mn 257.610†	459221.3	439198.9	515.31 ug/L	515.31 ppb	23:14:30
3	Mo 202.031†	7273.7	6943.6	515.89 ug/L	515.89 ppb	23:14:55
3	Ni 231.604†	20457.4	19508.3	513.23 ug/L	513.23 ppb	23:14:35
3	P 214.914†	4411.4	3995.1	2451.6 ug/L	2451.6 ppb	23:14:55
3	Pb 220.353†	4111.6	4000.5	514.10 ug/L	514.10 ppb	23:14:55
3	S 181.975 Axial†	771.6	692.2	1032.1 ug/L	1032.1 ppb	23:14:55
3	Sb 206.836†	1501.6	1404.7	532.05 ug/L	532.05 ppb	23:14:55
3	Se 196.026†	783.7	780.6	540.56 ug/L	540.56 ppb	23:14:55
3	Si 251.611†	80523.9	76638.0	2577.6 ug/L	2577.6 ppb	23:14:35
3	Sn 189.927†	2926.8	2795.6	517.86 ug/L	517.86 ppb	23:14:55
3	Ti 334.940†	316161.6	304042.0	521.43 ug/L	521.43 ppb	23:14:30
3	Tl 190.801†	1632.9	1607.1	517.67 ug/L	517.67 ppb	23:14:55
3	U 409.014†	15011.3	16411.0	522.41 ug/L	522.41 ppb	23:14:35
3	V 292.402†	72313.9	70631.7	516.44 ug/L	516.44 ppb	23:14:35
3	Zn 213.857†	54781.4	51580.8	509.98 ug/L	509.98 ppb	23:14:35
3	SiO2†	81202.6	77277.3	5526.1 ug/L	5526.1 ppb	23:15:11

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Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	848165.0	104.21 %		0.403			0.39%
Sc Radial	5006.5	104 %		0.6			0.59%
Y 371.029	703153.6	102.51 %		0.399			0.39%
Y RADIAL	5331.0	103.9 %		0.44			0.42%
Ag 328.068†	100762.1	498.25 ug/L		6.298	498.25 ppb	6.298	1.26%
QC value within limits for Ag 328.068 Recovery = 99.65%							
Al 396.153Radial†	6332.0	5054.9 ug/L		17.70	5054.9 ppb	17.70	0.35%
QC value within limits for Al 396.153Radial Recovery = 101.10%							
As 188.979†	1142.3	518.56 ug/L		5.523	518.56 ppb	5.523	1.07%
QC value within limits for As 188.979 Recovery = 103.71%							
B 249.677†	21078.0	510.71 ug/L		7.022	510.71 ppb	7.022	1.37%
QC value within limits for B 249.677 Recovery = 102.14%							
Ba 233.527†	62090.4	516.14 ug/L		6.955	516.14 ppb	6.955	1.35%
QC value within limits for Ba 233.527 Recovery = 103.23%							
Be 313.107†	1302523.1	518.51 ug/L		0.831	518.51 ppb	0.831	0.16%
QC value within limits for Be 313.107 Recovery = 103.70%							
Ca 317.933Radial†	2984.3	5025.4 ug/L		8.05	5025.4 ppb	8.05	0.16%



QC value within limits for Ca 317.933Radial Recovery = 100.51%									
Cd 226.502†	44202.8	517.98 ug/L	6.615	517.98 ppb	6.615	1.28%			
QC value within limits for Cd 226.502 Recovery = 103.60%									
Co 228.616†	23874.3	518.54 ug/L	6.677	518.54 ppb	6.677	1.29%			
QC value within limits for Co 228.616 Recovery = 103.71%									
Cr 267.716†	43560.1	514.53 ug/L	6.152	514.53 ppb	6.152	1.20%			
QC value within limits for Cr 267.716 Recovery = 102.91%									
Cu 324.752†	160345.9	511.84 ug/L	7.985	511.84 ppb	7.985	1.56%			
QC value within limits for Cu 324.752 Recovery = 102.37%									
Fe 238.204 Radial†	538.5	5078.1 ug/L	24.43	5078.1 ppb	24.43	0.48%			
QC value within limits for Fe 238.204 Radial Recovery = 101.56%									
K 766.490 Radial†	25865.0	5175.6 ug/L	29.55	5175.6 ppb	29.55	0.57%			
QC value within limits for K 766.490 Radial Recovery = 103.51%									
Mg 279.077 IEC†	148.7	5220.6 ug/L	53.67	5220.6 ppb	53.67	1.03%			
QC value within limits for Mg 279.077 IEC Recovery = 104.41%									
Mn 257.610†	440119.7	516.39 ug/L	0.982	516.39 ppb	0.982	0.19%			
QC value within limits for Mn 257.610 Recovery = 103.28%									
Mo 202.031†	6960.4	517.13 ug/L	3.831	517.13 ppb	3.831	0.74%			
QC value within limits for Mo 202.031 Recovery = 103.43%									
Na 589.592 Radial†	30194.5	9783.2 ug/L	34.03	9783.2 ppb	34.03	0.35%			
QC value within limits for Na 589.592 Radial Recovery = 97.83%									
Ni 231.604†	19667.8	517.43 ug/L	6.428	517.43 ppb	6.428	1.24%			
QC value within limits for Ni 231.604 Recovery = 103.49%									
P 214.914†	4018.7	2465.2 ug/L	27.46	2465.2 ppb	27.46	1.11%			
QC value within limits for P 214.914 Recovery = 98.61%									
Pb 220.353†	4008.9	515.17 ug/L	3.779	515.17 ppb	3.779	0.73%			
QC value within limits for Pb 220.353 Recovery = 103.03%									
S 181.975 Axial†	690.9	1030.2 ug/L	12.58	1030.2 ppb	12.58	1.22%			
QC value within limits for S 181.975 Axial Recovery = 103.02%									
Sb 206.836†	1405.2	532.27 ug/L	5.884	532.27 ppb	5.884	1.11%			
QC value within limits for Sb 206.836 Recovery = 106.45%									
Se 196.026†	786.7	544.55 ug/L	3.958	544.55 ppb	3.958	0.73%			
QC value within limits for Se 196.026 Recovery = 108.91%									
Si 251.611†	77630.5	2611.1 ug/L	37.58	2611.1 ppb	37.58	1.44%			
QC value within limits for Si 251.611 Recovery = 104.44%									
Sn 189.927†	2795.3	517.79 ug/L	3.586	517.79 ppb	3.586	0.69%			
QC value within limits for Sn 189.927 Recovery = 103.56%									
Sr 421.552†	71928.7	512.66 ug/L	1.594	512.66 ppb	1.594	0.31%			
QC value within limits for Sr 421.552 Recovery = 102.53%									
Ti 334.940†	304269.0	521.82 ug/L	0.340	521.82 ppb	0.340	0.07%			
QC value within limits for Ti 334.940 Recovery = 104.36%									
Tl 190.801†	1616.9	520.79 ug/L	3.236	520.79 ppb	3.236	0.62%			
QC value within limits for Tl 190.801 Recovery = 104.16%									
U 409.014†	16670.1	530.67 ug/L	8.813	530.67 ppb	8.813	1.66%			
QC value within limits for U 409.014 Recovery = 106.13%									
V 292.402†	71381.7	521.89 ug/L	6.433	521.89 ppb	6.433	1.23%			
QC value within limits for V 292.402 Recovery = 104.38%									
Zn 213.857†	52214.1	516.27 ug/L	7.040	516.27 ppb	7.040	1.36%			
QC value within limits for Zn 213.857 Recovery = 103.25%									
SiO2†	77508.4	5542.7 ug/L	14.85	5542.7 ppb	14.85	0.27%			
QC value within limits for SiO2 Recovery = 103.65%									
All analyte(s) passed QC.									



Sequence No.: 72

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 6

Date Collected: 1/14/2010 23:17:20

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5102.1	5102.1	106 %		23:19:12
1	Y RADIAL	5459.0	5459.0	106.4 %		23:19:12
1	Al 396.153Radial†	-4.4	-0.9	-0.7835 ug/L	-0.7835 ppb	23:19:12
1	Ca 317.933Radial†	19.4	3.1	5.1661 ug/L	5.1661 ppb	23:19:32
1	Fe 238.204 Radial†	10.6	0.1	1.0961 ug/L	1.0961 ppb	23:19:32
1	K 766.490 Radial†	2757.6	-197.8	-39.647 ug/L	-39.647 ppb	23:19:12
1	Mg 279.077 IEC†	3.1	1.4	49.341 ug/L	49.341 ppb	23:19:32
1	Na 589.592 Radial†	-1504.7	153.9	49.871 ug/L	49.871 ppb	23:19:12
1	Sr 421.552†	-6.9	-23.7	-0.1691 ug/L	-0.1691 ppb	23:19:12
1	Sc 361.383	837691.9	837691.9	102.93 %		23:20:29
1	Y 371.029	707536.8	707536.8	103.15 %		23:20:29
1	Ag 328.068†	280.2	-9.3	-0.0463 ug/L	-0.0463 ppb	23:20:29
1	As 188.979†	-25.6	-6.0	-2.7001 ug/L	-2.7001 ppb	23:20:49
1	B 249.677†	-439.1	91.9	2.2379 ug/L	2.2379 ppb	23:20:49
1	Ba 233.527†	5.8	4.2	0.0367 ug/L	0.0367 ppb	23:20:49
1	Be 313.107†	-4428.1	10.1	0.0044 ug/L	0.0044 ppb	23:20:29
1	Cd 226.502†	-187.0	15.9	0.1868 ug/L	0.1868 ppb	23:20:49
1	Co 228.616†	-84.0	-8.9	-0.1926 ug/L	-0.1926 ppb	23:20:49
1	Cr 267.716†	96.2	-2.2	-0.0271 ug/L	-0.0271 ppb	23:20:49
1	Cu 324.752†	6232.0	-243.3	-0.7796 ug/L	-0.7796 ppb	23:20:29
1	Mn 257.610†	433.8	17.1	0.0182 ug/L	0.0182 ppb	23:20:49
1	Mo 202.031†	32.1	11.8	0.8782 ug/L	0.8782 ppb	23:20:49
1	Ni 231.604†	81.9	4.5	0.1182 ug/L	0.1182 ppb	23:20:49
1	P 214.914†	206.3	-27.4	-17.341 ug/L	-17.341 ppb	23:20:49
1	Pb 220.353†	-61.3	5.0	0.6450 ug/L	0.6450 ppb	23:20:49
1	S 181.975 Axial†	48.5	0.7	0.9899 ug/L	0.9899 ppb	23:20:49
1	Sb 206.836†	38.7	4.9	1.8363 ug/L	1.8363 ppb	23:20:49
1	Se 196.026†	-26.0	5.1	3.4053 ug/L	3.4053 ppb	23:20:49
1	Si 251.611†	470.7	11.4	0.3735 ug/L	0.3735 ppb	23:20:49
1	Sn 189.927†	15.4	8.8	1.6273 ug/L	1.6273 ppb	23:20:49
1	Ti 334.940†	-1320.1	104.5	0.1736 ug/L	0.1736 ppb	23:20:29
1	Tl 190.801†	-42.7	2.4	0.7617 ug/L	0.7617 ppb	23:20:49
1	U 409.014†	-1934.1	161.8	5.1681 ug/L	5.1681 ppb	23:20:29
1	V 292.402†	-1325.6	119.3	0.8833 ug/L	0.8833 ppb	23:20:29
1	Zn 213.857†	828.1	-55.8	-0.5563 ug/L	-0.5563 ppb	23:20:49
1	SiO2†	461.9	-7.5	-0.5590 ug/L	-0.5590 ppb	23:21:45
2	Sc Radial	4998.4	4998.4	104 %		23:19:37
2	Y RADIAL	5400.1	5400.1	105.3 %		23:19:37
2	Al 396.153Radial†	8.5	11.4	9.1402 ug/L	9.1402 ppb	23:19:37
2	Ca 317.933Radial†	15.9	0.1	0.1589 ug/L	0.1589 ppb	23:19:57
2	Fe 238.204 Radial†	9.7	-0.6	-5.3208 ug/L	-5.3208 ppb	23:19:57
2	K 766.490 Radial†	2849.6	-55.9	-11.224 ug/L	-11.224 ppb	23:19:37
2	Mg 279.077 IEC†	1.2	-0.3	-11.481 ug/L	-11.481 ppb	23:19:57
2	Na 589.592 Radial†	-1444.0	182.8	59.224 ug/L	59.224 ppb	23:19:37
2	Sr 421.552†	-10.3	-27.1	-0.1930 ug/L	-0.1930 ppb	23:19:37
2	Sc 361.383	838309.2	838309.2	103.00 %		23:20:54
2	Y 371.029	707533.6	707533.6	103.14 %		23:20:54
2	Ag 328.068†	392.3	99.3	0.4870 ug/L	0.4870 ppb	23:20:54
2	As 188.979†	-16.2	3.1	1.4072 ug/L	1.4072 ppb	23:21:14
2	B 249.677†	-441.6	89.8	2.1877 ug/L	2.1877 ppb	23:21:14
2	Ba 233.527†	-4.1	-5.4	-0.0430 ug/L	-0.0430 ppb	23:21:14
2	Be 313.107†	-4346.5	92.5	0.0372 ug/L	0.0372 ppb	23:20:54
2	Cd 226.502†	-179.4	23.4	0.2758 ug/L	0.2758 ppb	23:21:14
2	Co 228.616†	-78.2	-3.2	-0.0686 ug/L	-0.0686 ppb	23:21:14
2	Cr 267.716†	87.1	-11.1	-0.1315 ug/L	-0.1315 ppb	23:21:14
2	Cu 324.752†	6410.7	-74.3	-0.2395 ug/L	-0.2395 ppb	23:20:54
2	Mn 257.610†	414.7	-1.7	-0.0020 ug/L	-0.0020 ppb	23:21:14
2	Mo 202.031†	25.4	5.3	0.3939 ug/L	0.3939 ppb	23:21:14
2	Ni 231.604†	67.6	-9.5	-0.2513 ug/L	-0.2513 ppb	23:21:14



2	P 214.914†	222.3	-12.0	-7.6153 ug/L	-7.6153 ppb	23:21:14
2	Pb 220.353†	-66.2	0.4	0.0490 ug/L	0.0490 ppb	23:21:14
2	S 181.975 Axial†	49.1	1.3	1.8777 ug/L	1.8777 ppb	23:21:14
2	Sb 206.836†	39.3	5.4	1.9855 ug/L	1.9855 ppb	23:21:14
2	Se 196.026†	-32.5	-1.1	-0.7797 ug/L	-0.7797 ppb	23:21:14
2	Si 251.611†	483.9	23.9	0.8019 ug/L	0.8019 ppb	23:21:14
2	Sn 189.927†	7.1	0.8	0.1511 ug/L	0.1511 ppb	23:21:14
2	Ti 334.940†	-1308.4	116.8	0.1998 ug/L	0.1998 ppb	23:20:54
2	Tl 190.801†	-41.1	4.0	1.2645 ug/L	1.2645 ppb	23:21:14
2	U 409.014†	-1987.9	111.1	3.5477 ug/L	3.5477 ppb	23:20:54
2	V 292.402†	-1309.9	135.4	0.9897 ug/L	0.9897 ppb	23:20:54
2	Zn 213.857†	851.8	-33.3	-0.3300 ug/L	-0.3300 ppb	23:21:14
2	SiO2†	507.4	36.4	2.5957 ug/L	2.5957 ppb	23:21:50
3	Sc Radial	5045.7	5045.7	105 %		23:20:02
3	Y RADIAL	5431.7	5431.7	105.9 %		23:20:02
3	Al 396.153Radial†	-8.7	-5.0	-4.0522 ug/L	-4.0522 ppb	23:20:02
3	Ca 317.933Radial†	16.5	0.5	0.8831 ug/L	0.8831 ppb	23:20:22
3	Fe 238.204 Radial†	9.6	-0.8	-7.2634 ug/L	-7.2634 ppb	23:20:22
3	K 766.490 Radial†	2718.3	-206.2	-41.326 ug/L	-41.326 ppb	23:20:02
3	Mg 279.077 IEC†	0.8	-0.7	-24.992 ug/L	-24.992 ppb	23:20:22
3	Na 589.592 Radial†	-1469.3	171.7	55.631 ug/L	55.631 ppb	23:20:02
3	Sr 421.552†	23.1	4.8	0.0339 ug/L	0.0339 ppb	23:20:02
3	Sc 361.383	832681.4	832681.4	102.31 %		23:21:19
3	Y 371.029	702592.1	702592.1	102.42 %		23:21:19
3	Ag 328.068†	480.2	187.8	0.9196 ug/L	0.9196 ppb	23:21:19
3	As 188.979†	-21.9	-2.6	-1.1700 ug/L	-1.1700 ppb	23:21:40
3	B 249.677†	-439.5	88.9	2.1655 ug/L	2.1655 ppb	23:21:40
3	Ba 233.527†	1.4	-0.1	0.0006 ug/L	0.0006 ppb	23:21:40
3	Be 313.107†	-4355.3	55.4	0.0225 ug/L	0.0225 ppb	23:21:19
3	Cd 226.502†	-181.0	20.7	0.2436 ug/L	0.2436 ppb	23:21:40
3	Co 228.616†	-76.1	-1.7	-0.0357 ug/L	-0.0357 ppb	23:21:40
3	Cr 267.716†	77.2	-20.3	-0.2400 ug/L	-0.2400 ppb	23:21:40
3	Cu 324.752†	6388.5	-54.0	-0.1751 ug/L	-0.1751 ppb	23:21:19
3	Mn 257.610†	425.1	11.2	0.0135 ug/L	0.0135 ppb	23:21:40
3	Mo 202.031†	27.8	7.8	0.5817 ug/L	0.5817 ppb	23:21:40
3	Ni 231.604†	68.5	-8.2	-0.2153 ug/L	-0.2153 ppb	23:21:40
3	P 214.914†	227.8	-5.2	-3.2724 ug/L	-3.2724 ppb	23:21:40
3	Pb 220.353†	-74.8	-8.5	-1.0891 ug/L	-1.0891 ppb	23:21:40
3	S 181.975 Axial†	41.2	-6.2	-9.2224 ug/L	-9.2224 ppb	23:21:40
3	Sb 206.836†	36.2	2.6	0.9687 ug/L	0.9687 ppb	23:21:40
3	Se 196.026†	-28.0	3.0	1.9552 ug/L	1.9552 ppb	23:21:40
3	Si 251.611†	478.3	21.6	0.7223 ug/L	0.7223 ppb	23:21:40
3	Sn 189.927†	6.4	0.1	0.0267 ug/L	0.0267 ppb	23:21:40
3	Ti 334.940†	-1279.3	136.6	0.2347 ug/L	0.2347 ppb	23:21:19
3	Tl 190.801†	-34.7	9.9	3.1824 ug/L	3.1824 ppb	23:21:40
3	U 409.014†	-1947.2	137.7	4.4006 ug/L	4.4006 ppb	23:21:19
3	V 292.402†	-1334.6	102.7	0.7576 ug/L	0.7576 ppb	23:21:19
3	Zn 213.857†	844.1	-35.3	-0.3502 ug/L	-0.3502 ppb	23:21:40
3	SiO2†	516.5	48.6	3.4712 ug/L	3.4712 ppb	23:21:55

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Conc. Units	Std.Dev.	RSD
Sc 361.383	836227.5	102.75 %		0.379			0.37%
Sc Radial	5048.7	105 %		1.1			1.03%
Y 371.029	705887.5	102.90 %		0.416			0.40%
Y RADIAL	5430.3	105.9 %		0.57			0.54%
Ag 328.068†	92.6	0.4535 ug/L		0.48382	0.4535 ppb	0.48382	106.70%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	1.8	1.4348 ug/L		6.87028	1.4348 ppb	6.87028	478.82%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-1.8	-0.8210 ug/L		2.07573	-0.8210 ppb	2.07573	252.84%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	90.2	2.1971 ug/L		0.03709	2.1971 ppb	0.03709	1.69%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-0.4	-0.0019 ug/L		0.03991	-0.0019 ppb	0.03991	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	52.6	0.0214 ug/L		0.01642	0.0214 ppb	0.01642	76.85%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	1.2	2.0694 ug/L		2.70621	2.0694 ppb	2.70621	130.77%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	20.0	0.2354 ug/L	0.04503	0.2354 ppb	0.04503	19.13%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-4.6	-0.0990 ug/L	0.08276	-0.0990 ppb	0.08276	83.61%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-11.2	-0.1328 ug/L	0.10646	-0.1328 ppb	0.10646	80.15%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-123.9	-0.3981 ug/L	0.33199	-0.3981 ppb	0.33199	83.40%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	-0.4	-3.8294 ug/L	4.37476	-3.8294 ppb	4.37476	114.24%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	-153.3	-30.733 ug/L	16.9155	-30.733 ppb	16.9155	55.04%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	0.1	4.2893 ug/L	39.59659	4.2893 ppb	39.59659	923.15%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	8.9	0.0099 ug/L	0.01059	0.0099 ppb	0.01059	107.22%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	8.3	0.6179 ug/L	0.24418	0.6179 ppb	0.24418	39.52%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	169.5	54.909 ug/L	4.7179	54.909 ppb	4.7179	8.59%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	-4.4	-0.1161 ug/L	0.20372	-0.1161 ppb	0.20372	175.40%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-14.9	-9.4096 ug/L	7.20392	-9.4096 ppb	7.20392	76.56%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	-1.0	-0.1317 ug/L	0.88104	-0.1317 ppb	0.88104	669.14%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	-1.4	-2.1183 ug/L	6.16833	-2.1183 ppb	6.16833	291.20%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	4.3	1.5968 ug/L	0.54906	1.5968 ppb	0.54906	34.38%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	2.3	1.5269 ug/L	2.12510	1.5269 ppb	2.12510	139.17%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	19.0	0.6326 ug/L	0.22786	0.6326 ppb	0.22786	36.02%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	3.3	0.6017 ug/L	0.89040	0.6017 ppb	0.89040	147.98%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	-15.3	-0.1094 ug/L	0.12467	-0.1094 ppb	0.12467	113.98%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	119.3	0.2027 ug/L	0.03065	0.2027 ppb	0.03065	15.12%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	5.4	1.7362 ug/L	1.27741	1.7362 ppb	1.27741	73.57%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	136.9	4.3722 ug/L	0.81056	4.3722 ppb	0.81056	18.54%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	119.1	0.8769 ug/L	0.11618	0.8769 ppb	0.11618	13.25%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	-41.5	-0.4121 ug/L	0.12523	-0.4121 ppb	0.12523	30.38%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	25.8	1.8360 ug/L	2.11982	1.8360 ppb	2.11982	115.46%	
QC value within limits for SiO2 Recovery = Not calculated							

All analyte(s) passed QC.



Sequence No.: 76

Sample ID: 1202004428|941050|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 83

Date Collected: 1/14/2010 23:45:18

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004428|941050|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5170.1	5170.1	108 %		23:47:12
1	Y RADIAL	6693.0	6693.0	130.5 %		23:47:12
1	Al 396.153Radial†	40092.2	37157.8	29810 ug/L	29810 ppb	23:47:12
1	Ca 317.933Radial†	4646.0	4290.5	7224.9 ug/L	7224.9 ppb	23:47:12
1	Fe 238.204 Radial†	8133.6	7527.7	70767 ug/L	70767 ppb	23:47:12
1	K 766.490 Radial†	27096.7	22323.9	4468.7 ug/L	4468.7 ppb	23:47:12
1	Mg 279.077 IEC†	172.9	158.7	5498.8 ug/L	5498.8 ppb	23:47:32
1	Na 589.592 Radial†	3022.4	4367.9	1415.2 ug/L	1415.2 ppb	23:47:12
1	Sr 421.552†	8481.2	7842.6	55.847 ug/L	55.847 ppb	23:47:12
1	Sc 361.383	867783.1	867783.1	106.62 %		23:48:29
1	Y 371.029	875848.2	875848.2	127.68 %		23:48:29
1	Ag 328.068†	-4387.6	-4396.5	1.7732 ug/L	1.7732 ppb	23:48:34
1	As 188.979†	-25.3	-4.8	27.440 ug/L	27.440 ppb	23:48:54
1	B 249.677†	59.5	574.4	2.4313 ug/L	2.4313 ppb	23:48:34
1	Ba 233.527†	41392.0	38818.7	324.23 ug/L	324.23 ppb	23:48:34
1	Be 313.107†	-1107.5	3273.5	4.7248 ug/L	4.7248 ppb	23:48:34
1	Cd 226.502†	440.2	610.4	-0.1840 ug/L	-0.1840 ppb	23:48:54
1	Co 228.616†	882.9	900.7	15.489 ug/L	15.489 ppb	23:48:54
1	Cr 267.716†	13886.8	12928.2	154.12 ug/L	154.12 ppb	23:48:34
1	Cu 324.752†	14276.0	7091.0	26.516 ug/L	26.516 ppb	23:48:34
1	Mn 257.610†	1800130.0	1687879.3	1986.0 ug/L	1986.0 ppb	23:48:29
1	Mo 202.031†	163.7	134.2	15.545 ug/L	15.545 ppb	23:48:54
1	Ni 231.604†	1270.5	1116.4	29.377 ug/L	29.377 ppb	23:48:54
1	P 214.914†	1523.5	1201.0	712.36 ug/L	712.36 ppb	23:48:54
1	Pb 220.353†	395.8	435.8	55.574 ug/L	55.574 ppb	23:48:54
1	S 181.975 Axial†	246.3	184.5	269.79 ug/L	269.79 ppb	23:48:54
1	Sb 206.836†	50.6	14.7	1.7441 ug/L	1.7441 ppb	23:48:54
1	Se 196.026†	-335.1	-283.9	43.451 ug/L	43.451 ppb	23:48:54
1	Si 251.611†	224617.8	210215.9	7087.7 ug/L	7087.7 ppb	23:48:34
1	Sn 189.927†	-35.1	-39.0	-4.9278 ug/L	-4.9278 ppb	23:48:54
1	Ti 334.940†	936066.4	879293.3	1509.0 ug/L	1509.0 ppb	23:48:29
1	Tl 190.801†	-136.8	-84.4	-5.2678 ug/L	-5.2678 ppb	23:48:54
1	U 409.014†	-10232.6	-7555.9	-249.72 ug/L	-249.72 ppb	23:48:29
1	V 292.402†	11530.0	12220.7	75.986 ug/L	75.986 ppb	23:48:34
1	Zn 213.857†	24979.3	22567.0	217.99 ug/L	217.99 ppb	23:48:34
1	SiO2†	224182.6	209797.4	15041 ug/L	15041 ppb	23:50:02
2	Sc Radial	5016.7	5016.7	105 %		23:47:37
2	Y RADIAL	6523.9	6523.9	127.2 %		23:47:37
2	Al 396.153Radial†	39098.3	37344.7	29960 ug/L	29960 ppb	23:47:37
2	Ca 317.933Radial†	4542.9	4323.6	7280.8 ug/L	7280.8 ppb	23:47:37
2	Fe 238.204 Radial†	7861.7	7498.6	70493 ug/L	70493 ppb	23:47:37
2	K 766.490 Radial†	26245.4	22278.7	4459.6 ug/L	4459.6 ppb	23:47:37
2	Mg 279.077 IEC†	173.1	163.8	5678.1 ug/L	5678.1 ppb	23:47:57
2	Na 589.592 Radial†	2942.2	4376.9	1418.1 ug/L	1418.1 ppb	23:47:37
2	Sr 421.552†	8216.8	7830.4	55.760 ug/L	55.760 ppb	23:47:37
2	Sc 361.383	875496.9	875496.9	107.57 %		23:49:00
2	Y 371.029	880951.0	880951.0	128.43 %		23:49:00
2	Ag 328.068†	-4252.4	-4234.6	2.4803 ug/L	2.4803 ppb	23:49:05
2	As 188.979†	-17.6	2.5	30.686 ug/L	30.686 ppb	23:49:25
2	B 249.677†	56.6	571.2	2.3994 ug/L	2.3994 ppb	23:49:05
2	Ba 233.527†	41675.6	38740.4	323.57 ug/L	323.57 ppb	23:49:05
2	Be 313.107†	-1034.9	3350.2	4.7621 ug/L	4.7621 ppb	23:49:05
2	Cd 226.502†	437.0	603.8	-0.2335 ug/L	-0.2335 ppb	23:49:25
2	Co 228.616†	873.9	885.0	15.148 ug/L	15.148 ppb	23:49:25
2	Cr 267.716†	13943.8	12866.5	153.39 ug/L	153.39 ppb	23:49:05
2	Cu 324.752†	14378.6	7068.3	26.431 ug/L	26.431 ppb	23:49:05
2	Mn 257.610†	1819922.8	1691403.7	1990.1 ug/L	1990.1 ppb	23:49:00
2	Mo 202.031†	174.8	143.2	16.188 ug/L	16.188 ppb	23:49:25
2	Ni 231.604†	1302.5	1135.7	29.885 ug/L	29.885 ppb	23:49:25



2	P 214.914†	1527.2	1191.9	706.78 ug/L	706.78 ppb	23:49:25
2	Pb 220.353†	403.8	440.0	56.170 ug/L	56.170 ppb	23:49:25
2	S 181.975 Axial†	243.5	179.9	262.89 ug/L	262.89 ppb	23:49:25
2	Sb 206.836†	50.6	14.3	1.5679 ug/L	1.5679 ppb	23:49:25
2	Se 196.026†	-342.3	-287.8	39.976 ug/L	39.976 ppb	23:49:25
2	Si 251.611†	225808.5	209466.6	7062.4 ug/L	7062.4 ppb	23:49:05
2	Sn 189.927†	-40.3	-43.6	-5.7735 ug/L	-5.7735 ppb	23:49:25
2	Ti 334.940†	946270.5	881044.1	1512.0 ug/L	1512.0 ppb	23:49:00
2	Tl 190.801†	-122.3	-69.8	-0.5535 ug/L	-0.5535 ppb	23:49:25
2	U 409.014†	-10438.4	-7662.7	-253.10 ug/L	-253.10 ppb	23:49:00
2	V 292.402†	11577.3	12169.5	75.659 ug/L	75.659 ppb	23:49:05
2	Zn 213.857†	25286.7	22646.3	218.80 ug/L	218.80 ppb	23:49:05
2	SiO2†	225657.2	209315.6	15006 ug/L	15006 ppb	23:50:07
3	Sc Radial	5139.1	5139.1	107 %		23:48:02
3	Y RADIAL	6690.8	6690.8	130.4 %		23:48:02
3	Al 396.153Radial†	39938.9	37239.0	29875 ug/L	29875 ppb	23:48:02
3	Ca 317.933Radial†	4583.3	4258.0	7170.2 ug/L	7170.2 ppb	23:48:02
3	Fe 238.204 Radial†	8060.7	7505.3	70556 ug/L	70556 ppb	23:48:02
3	K 766.490 Radial†	26914.7	22305.6	4465.1 ug/L	4465.1 ppb	23:48:02
3	Mg 279.077 IEC†	169.1	156.2	5408.9 ug/L	5408.9 ppb	23:48:22
3	Na 589.592 Radial†	3013.7	4376.7	1418.1 ug/L	1418.1 ppb	23:48:02
3	Sr 421.552†	8396.9	7811.3	55.625 ug/L	55.625 ppb	23:48:02
3	Sc 361.383	865226.5	865226.5	106.31 %		23:49:31
3	Y 371.029	871649.7	871649.7	127.07 %		23:49:31
3	Ag 328.068†	-4323.8	-4348.7	1.9359 ug/L	1.9359 ppb	23:49:36
3	As 188.979†	-27.4	-7.0	26.438 ug/L	26.438 ppb	23:49:56
3	B 249.677†	79.6	593.4	2.9293 ug/L	2.9293 ppb	23:49:36
3	Ba 233.527†	41050.4	38612.2	322.51 ug/L	322.51 ppb	23:49:36
3	Be 313.107†	-1182.9	3199.5	4.6945 ug/L	4.6945 ppb	23:49:36
3	Cd 226.502†	442.0	613.3	-0.1273 ug/L	-0.1273 ppb	23:49:56
3	Co 228.616†	883.3	903.6	15.556 ug/L	15.556 ppb	23:49:56
3	Cr 267.716†	13763.2	12850.4	153.20 ug/L	153.20 ppb	23:49:36
3	Cu 324.752†	14206.8	7065.4	26.422 ug/L	26.422 ppb	23:49:36
3	Mn 257.610†	1794601.1	1687667.2	1985.8 ug/L	1985.8 ppb	23:49:31
3	Mo 202.031†	170.9	141.5	16.063 ug/L	16.063 ppb	23:49:56
3	Ni 231.604†	1296.1	1144.0	30.104 ug/L	30.104 ppb	23:49:56
3	P 214.914†	1528.1	1209.5	717.98 ug/L	717.98 ppb	23:49:56
3	Pb 220.353†	394.6	435.7	55.601 ug/L	55.601 ppb	23:49:56
3	S 181.975 Axial†	237.9	177.3	259.05 ug/L	259.05 ppb	23:49:56
3	Sb 206.836†	53.8	17.8	2.8905 ug/L	2.8905 ppb	23:49:56
3	Se 196.026†	-342.6	-291.9	37.448 ug/L	37.448 ppb	23:49:56
3	Si 251.611†	221428.7	207838.6	7007.5 ug/L	7007.5 ppb	23:49:36
3	Sn 189.927†	-30.8	-35.1	-4.2203 ug/L	-4.2203 ppb	23:49:56
3	Ti 334.940†	933063.6	879062.9	1508.6 ug/L	1508.6 ppb	23:49:31
3	Tl 190.801†	-120.5	-69.5	-0.4962 ug/L	-0.4962 ppb	23:49:56
3	U 409.014†	-10182.3	-7536.9	-249.09 ug/L	-249.09 ppb	23:49:31
3	V 292.402†	11348.5	12082.0	75.023 ug/L	75.023 ppb	23:49:36
3	Zn 213.857†	24830.6	22496.3	217.30 ug/L	217.30 ppb	23:49:36
3	SiO2†	225817.6	211956.6	15195 ug/L	15195 ppb	23:50:12

Mean Data: 1202004428|941050|1

Analyte	Mean Corrected	Conc.	Calib.	Std.Dev.	Conc.	Sample	Std.Dev.	RSD
Sc 361.383	869502.2	106.84 %		0.657				0.61%
Sc Radial	5108.7	107 %		1.7				1.59%
Y 371.029	876149.7	127.73 %		0.679				0.53%
Y RADIAL	6635.9	129.4 %		1.89				1.46%
Ag 328.068†	-4326.6	2.0631 ug/L		0.37035	2.0631 ppb	0.37035		17.95%
Al 396.153Radial†	37247.2	29881 ug/L		75.2	29881 ppb	75.2		0.25%
As 188.979†	-3.1	28.188 ug/L		2.2208	28.188 ppb	2.2208		7.88%
B 249.677†	579.7	2.5867 ug/L		0.29718	2.5867 ppb	0.29718		11.49%
Ba 233.527†	38723.8	323.43 ug/L		0.869	323.43 ppb	0.869		0.27%
Be 313.107†	3274.4	4.7271 ug/L		0.03384	4.7271 ppb	0.03384		0.72%
Ca 317.933Radial†	4290.7	7225.3 ug/L		55.28	7225.3 ppb	55.28		0.77%
Cd 226.502†	609.2	-0.1816 ug/L		0.05314	-0.1816 ppb	0.05314		29.26%
Co 228.616†	896.4	15.398 ug/L		0.2190	15.398 ppb	0.2190		1.42%
Cr 267.716†	12881.7	153.57 ug/L		0.488	153.57 ppb	0.488		0.32%
Cu 324.752†	7074.9	26.456 ug/L		0.0516	26.456 ppb	0.0516		0.19%
Fe 238.204 Radial†	7510.5	70605 ug/L		143.6	70605 ppb	143.6		0.20%
K 766.490 Radial†	22302.7	4464.5 ug/L		4.56	4464.5 ppb	4.56		0.10%



Mg 279.077 IEC†	159.6	5528.6 ug/L	137.06	5528.6 ppb	137.06	2.48%
Mn 257.610†	1688983.4	1987.3 ug/L	2.45	1987.3 ppb	2.45	0.12%
Mo 202.031†	139.6	15.932 ug/L	0.3412	15.932 ppb	0.3412	2.14%
Na 589.592 Radial†	4373.8	1417.1 ug/L	1.67	1417.1 ppb	1.67	0.12%
Ni 231.604†	1132.1	29.789 ug/L	0.3731	29.789 ppb	0.3731	1.25%
P 214.914†	1200.8	712.37 ug/L	5.596	712.37 ppb	5.596	0.79%
Pb 220.353†	437.2	55.782 ug/L	0.3363	55.782 ppb	0.3363	0.60%
S 181.975 Axial†	180.6	263.91 ug/L	5.446	263.91 ppb	5.446	2.06%
Sb 206.836†	15.6	2.0675 ug/L	0.71814	2.0675 ppb	0.71814	34.73%
Se 196.026†	-287.9	40.292 ug/L	3.0135	40.292 ppb	3.0135	7.48%
Si 251.611†	209173.7	7052.5 ug/L	40.98	7052.5 ppb	40.98	0.58%
Sn 189.927†	-39.3	-4.9739 ug/L	0.77761	-4.9739 ppb	0.77761	15.63%
Sr 421.552†	7828.1	55.744 ug/L	0.1120	55.744 ppb	0.1120	0.20%
Ti 334.940†	879800.1	1509.9 ug/L	1.86	1509.9 ppb	1.86	0.12%
Tl 190.801†	-74.5	-2.1058 ug/L	2.73847	-2.1058 ppb	2.73847	130.04%
U 409.014†	-7585.2	-250.64 ug/L	2.155	-250.64 ppb	2.155	0.86%
V 292.402†	12157.4	75.556 ug/L	0.4894	75.556 ppb	0.4894	0.65%
Zn 213.857†	22569.8	218.03 ug/L	0.753	218.03 ppb	0.753	0.35%
SiO2†	210356.5	15081 ug/L	100.8	15081 ppb	100.8	0.67%



Sequence No.: 77

Sample ID: 1202004429|941050|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 84

Date Collected: 1/14/2010 23:52:24

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004429|941050|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5091.0	5091.0	106 %		23:54:37
1	Y RADIAL	6942.0	6942.0	135.3 %		23:54:37
1	Al 396.153Radial†	72448.0	68185.8	54680 ug/L	54680 ppb	23:54:17
1	Ca 317.933Radial†	6837.1	6419.4	10810 ug/L	10810 ppb	23:54:37
1	Fe 238.204 Radial†	8648.3	8129.2	76434 ug/L	76434 ppb	23:54:17
1	K 766.490 Radial†	57264.1	51105.1	10231 ug/L	10231 ppb	23:54:17
1	Mg 279.077 IEC†	366.1	343.0	11967 ug/L	11967 ppb	23:54:37
1	Na 589.592 Radial†	18429.6	18911.5	6127.4 ug/L	6127.4 ppb	23:54:17
1	Sr 421.552†	80807.4	76032.5	541.87 ug/L	541.87 ppb	23:54:17
1	Sc 361.383	883865.0	883865.0	108.60 %		23:55:36
1	Y 371.029	940381.8	940381.8	137.09 %		23:55:36
1	Ag 328.068†	100180.8	91965.2	478.40 ug/L	478.40 ppb	23:55:36
1	As 188.979†	1084.0	1017.0	491.19 ug/L	491.19 ppb	23:55:56
1	B 249.677†	20304.7	19215.2	453.93 ug/L	453.93 ppb	23:55:36
1	Ba 233.527†	98752.5	90930.2	757.49 ug/L	757.49 ppb	23:55:36
1	Be 313.107†	1294617.3	1196399.9	479.55 ug/L	479.55 ppb	23:55:36
1	Cd 226.502†	42210.9	39065.5	450.32 ug/L	450.32 ppb	23:55:56
1	Co 228.616†	23291.4	21519.5	463.38 ug/L	463.38 ppb	23:55:56
1	Cr 267.716†	52740.3	48467.7	573.96 ug/L	573.96 ppb	23:55:36
1	Cu 324.752†	179800.5	159262.8	512.33 ug/L	512.33 ppb	23:55:36
1	Mn 257.610†	2365377.1	2177642.3	2560.6 ug/L	2560.6 ppb	23:55:36
1	Mo 202.031†	6778.3	6222.2	467.94 ug/L	467.94 ppb	23:55:56
1	Ni 231.604†	20219.5	18543.1	487.85 ug/L	487.85 ppb	23:55:56
1	P 214.914†	2136.3	1739.3	965.50 ug/L	965.50 ppb	23:55:56
1	Pb 220.353†	4225.2	3955.2	512.05 ug/L	512.05 ppb	23:55:56
1	S 181.975 Axial†	3692.4	3353.5	4994.5 ug/L	4994.5 ppb	23:55:56
1	Sb 206.836†	1354.0	1214.1	456.38 ug/L	456.38 ppb	23:55:56
1	Se 196.026†	400.3	399.0	521.35 ug/L	521.35 ppb	23:55:56
1	Si 251.611†	302431.4	278033.9	9368.7 ug/L	9368.7 ppb	23:55:36
1	Sn 189.927†	2754.2	2530.0	470.81 ug/L	470.81 ppb	23:55:56
1	Ti 334.940†	1219007.5	1123852.9	1928.2 ug/L	1928.2 ppb	23:55:36
1	Tl 190.801†	1432.1	1362.6	461.01 ug/L	461.01 ppb	23:55:56
1	U 409.014†	5412.3	7024.6	214.36 ug/L	214.36 ppb	23:55:56
1	V 292.402†	79221.0	74354.1	530.19 ug/L	530.19 ppb	23:55:36
1	Zn 213.857†	77442.1	70448.6	691.40 ug/L	691.40 ppb	23:55:36
1	SiO2†	306793.3	282040.0	20207 ug/L	20207 ppb	23:56:56
2	Sc Radial	5050.4	5050.4	105 %		23:55:02
2	Y RADIAL	6886.2	6886.2	134.2 %		23:55:02
2	Al 396.153Radial†	70871.0	67238.5	53920 ug/L	53920 ppb	23:54:42
2	Ca 317.933Radial†	6758.3	6396.5	10771 ug/L	10771 ppb	23:55:02
2	Fe 238.204 Radial†	8456.8	8013.1	75343 ug/L	75343 ppb	23:54:42
2	K 766.490 Radial†	56222.2	50550.6	10120 ug/L	10120 ppb	23:54:42
2	Mg 279.077 IEC†	361.8	341.7	11922 ug/L	11922 ppb	23:55:02
2	Na 589.592 Radial†	18009.0	18652.0	6043.4 ug/L	6043.4 ppb	23:54:42
2	Sr 421.552†	79214.7	75133.7	535.47 ug/L	535.47 ppb	23:54:42
2	Sc 361.383	865610.1	865610.1	106.36 %		23:56:03
2	Y 371.029	924063.0	924063.0	134.71 %		23:56:03
2	Ag 328.068†	100371.8	94090.2	488.54 ug/L	488.54 ppb	23:56:03
2	As 188.979†	1084.0	1038.0	500.85 ug/L	500.85 ppb	23:56:23
2	B 249.677†	20322.1	19625.8	464.08 ug/L	464.08 ppb	23:56:03
2	Ba 233.527†	99299.5	93362.1	777.65 ug/L	777.65 ppb	23:56:03
2	Be 313.107†	1298853.1	1225522.6	491.23 ug/L	491.23 ppb	23:56:03
2	Cd 226.502†	41710.0	39414.2	454.53 ug/L	454.53 ppb	23:56:23
2	Co 228.616†	23076.1	21769.4	468.73 ug/L	468.73 ppb	23:56:23
2	Cr 267.716†	52981.2	49718.4	588.71 ug/L	588.71 ppb	23:56:03
2	Cu 324.752†	180332.3	163254.4	525.01 ug/L	525.01 ppb	23:56:03
2	Mn 257.610†	2379558.2	2236908.7	2630.0 ug/L	2630.0 ppb	23:56:03
2	Mo 202.031†	6707.3	6287.0	472.67 ug/L	472.67 ppb	23:56:23
2	Ni 231.604†	19992.5	18722.3	492.57 ug/L	492.57 ppb	23:56:23



2	P 214.914†	2116.2	1761.8	978.07 ug/L	978.07 ppb	23:56:23
2	Pb 220.353†	4192.2	4006.1	518.52 ug/L	518.52 ppb	23:56:23
2	S 181.975 Axial†	3651.5	3386.7	5044.2 ug/L	5044.2 ppb	23:56:23
2	Sb 206.836†	1339.7	1226.9	461.10 ug/L	461.10 ppb	23:56:23
2	Se 196.026†	391.0	398.0	517.08 ug/L	517.08 ppb	23:56:23
2	Si 251.611†	303486.6	284898.9	9600.1 ug/L	9600.1 ppb	23:56:03
2	Sn 189.927†	2717.2	2548.6	474.23 ug/L	474.23 ppb	23:56:23
2	Ti 334.940†	1225103.6	1153256.4	1978.6 ug/L	1978.6 ppb	23:56:03
2	Tl 190.801†	1413.7	1373.0	465.07 ug/L	465.07 ppb	23:56:23
2	U 409.014†	5499.5	7211.7	220.42 ug/L	220.42 ppb	23:56:03
2	V 292.402†	79596.4	76245.5	544.02 ug/L	544.02 ppb	23:56:03
2	Zn 213.857†	77756.2	72247.8	709.40 ug/L	709.40 ppb	23:56:03
2	SiO2†	305593.5	286869.5	20554 ug/L	20554 ppb	23:57:01
3	Sc Radial	5076.6	5076.6	106 %		23:55:27
3	Y RADIAL	6942.9	6942.9	135.4 %		23:55:27
3	Al 396.153Radial†	70978.7	66993.0	53723 ug/L	53723 ppb	23:55:07
3	Ca 317.933Radial†	6779.8	6383.7	10750 ug/L	10750 ppb	23:55:27
3	Fe 238.204 Radial†	8456.6	7971.4	74951 ug/L	74951 ppb	23:55:07
3	K 766.490 Radial†	56507.9	50544.8	10119 ug/L	10119 ppb	23:55:07
3	Mg 279.077 IEC†	367.2	345.1	12042 ug/L	12042 ppb	23:55:27
3	Na 589.592 Radial†	18071.1	18622.4	6033.8 ug/L	6033.8 ppb	23:55:07
3	Sr 421.552†	79420.9	74940.3	534.09 ug/L	534.09 ppb	23:55:07
3	Sc 361.383	866701.0	866701.0	106.49 %		23:56:30
3	Y 371.029	925522.6	925522.6	134.92 %		23:56:30
3	Ag 328.068†	100504.6	94096.2	488.43 ug/L	488.43 ppb	23:56:30
3	As 188.979†	1081.9	1034.8	499.28 ug/L	499.28 ppb	23:56:50
3	B 249.677†	20453.0	19724.7	466.55 ug/L	466.55 ppb	23:56:30
3	Ba 233.527†	99389.7	93329.3	777.37 ug/L	777.37 ppb	23:56:30
3	Be 313.107†	1300093.5	1225150.2	491.09 ug/L	491.09 ppb	23:56:30
3	Cd 226.502†	41962.7	39602.1	456.77 ug/L	456.77 ppb	23:56:50
3	Co 228.616†	23223.4	21880.3	471.16 ug/L	471.16 ppb	23:56:50
3	Cr 267.716†	52950.4	49626.7	587.62 ug/L	587.62 ppb	23:56:30
3	Cu 324.752†	180840.2	163517.9	525.83 ug/L	525.83 ppb	23:56:30
3	Mn 257.610†	2379966.3	2234476.0	2627.1 ug/L	2627.1 ppb	23:56:30
3	Mo 202.031†	6761.5	6330.0	475.83 ug/L	475.83 ppb	23:56:50
3	Ni 231.604†	20089.5	18789.7	494.34 ug/L	494.34 ppb	23:56:50
3	P 214.914†	2108.2	1751.8	971.85 ug/L	971.85 ppb	23:56:50
3	Pb 220.353†	4206.9	4015.0	519.66 ug/L	519.66 ppb	23:56:50
3	S 181.975 Axial†	3668.2	3398.1	5061.3 ug/L	5061.3 ppb	23:56:50
3	Sb 206.836†	1350.5	1235.5	464.36 ug/L	464.36 ppb	23:56:50
3	Se 196.026†	392.5	398.9	516.44 ug/L	516.44 ppb	23:56:50
3	Si 251.611†	305299.7	286242.3	9645.4 ug/L	9645.4 ppb	23:56:30
3	Sn 189.927†	2746.6	2573.1	478.75 ug/L	478.75 ppb	23:56:50
3	Ti 334.940†	1226856.4	1153452.6	1978.9 ug/L	1978.9 ppb	23:56:30
3	Tl 190.801†	1425.0	1382.0	467.93 ug/L	467.93 ppb	23:56:50
3	U 409.014†	5697.2	7390.8	226.19 ug/L	226.19 ppb	23:56:30
3	V 292.402†	79624.9	76178.0	543.64 ug/L	543.64 ppb	23:56:30
3	Zn 213.857†	77803.7	72200.4	708.95 ug/L	708.95 ppb	23:56:30
3	SiO2†	311054.1	291635.6	20895 ug/L	20895 ppb	23:57:06

Mean Data: 1202004429|941050|1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	872058.7	107.15 %	1.258			1.17%
Sc Radial	5072.7	106 %	0.4			0.41%
Y 371.029	929989.1	135.57 %	1.316			0.97%
Y RADIAL	6923.7	135.0 %	0.63			0.47%
Ag 328.068†	93383.8	485.12 ug/L	5.823	485.12 ppb	5.823	1.20%
Al 396.153Radial†	67472.5	54108 ug/L	505.5	54108 ppb	505.5	0.93%
As 188.979†	1029.9	497.11 ug/L	5.183	497.11 ppb	5.183	1.04%
B 249.677†	19521.9	461.52 ug/L	6.689	461.52 ppb	6.689	1.45%
Ba 233.527†	92540.5	770.84 ug/L	11.559	770.84 ppb	11.559	1.50%
Be 313.107†	1215690.9	487.29 ug/L	6.702	487.29 ppb	6.702	1.38%
Ca 317.933Radial†	6399.8	10777 ug/L	30.5	10777 ppb	30.5	0.28%
Cd 226.502†	39360.6	453.87 ug/L	3.274	453.87 ppb	3.274	0.72%
Co 228.616†	21723.1	467.76 ug/L	3.978	467.76 ppb	3.978	0.85%
Cr 267.716†	49270.9	583.43 ug/L	8.219	583.43 ppb	8.219	1.41%
Cu 324.752†	162011.7	521.06 ug/L	7.568	521.06 ppb	7.568	1.45%
Fe 238.204 Radial†	8037.9	75576 ug/L	768.5	75576 ppb	768.5	1.02%
K 766.490 Radial†	50733.5	10157 ug/L	64.5	10157 ppb	64.5	0.63%



Mg 279.077 IEC†	343.3	11977 ug/L	60.7	11977 ppb	60.7	0.51%
Mn 257.610†	2216342.3	2605.9 ug/L	39.25	2605.9 ppb	39.25	1.51%
Mo 202.031†	6279.7	472.14 ug/L	3.971	472.14 ppb	3.971	0.84%
Na 589.592 Radial†	18728.7	6068.2 ug/L	51.53	6068.2 ppb	51.53	0.85%
Ni 231.604†	18685.0	491.59 ug/L	3.353	491.59 ppb	3.353	0.68%
P 214.914†	1751.0	971.80 ug/L	6.287	971.80 ppb	6.287	0.65%
Pb 220.353†	3992.1	516.74 ug/L	4.105	516.74 ppb	4.105	0.79%
S 181.975 Axial†	3379.5	5033.3 ug/L	34.68	5033.3 ppb	34.68	0.69%
Sb 206.836†	1225.5	460.61 ug/L	4.011	460.61 ppb	4.011	0.87%
Se 196.026†	398.6	518.29 ug/L	2.669	518.29 ppb	2.669	0.52%
Si 251.611†	283058.4	9538.0 ug/L	148.40	9538.0 ppb	148.40	1.56%
Sn 189.927†	2550.6	474.60 ug/L	3.981	474.60 ppb	3.981	0.84%
Sr 421.552†	75368.8	537.14 ug/L	4.154	537.14 ppb	4.154	0.77%
Ti 334.940†	1143520.6	1961.9 ug/L	29.21	1961.9 ppb	29.21	1.49%
Tl 190.801†	1372.5	464.67 ug/L	3.475	464.67 ppb	3.475	0.75%
U 409.014†	7209.1	220.32 ug/L	5.918	220.32 ppb	5.918	2.69%
V 292.402†	75592.5	539.28 ug/L	7.876	539.28 ppb	7.876	1.46%
Zn 213.857†	71632.2	703.25 ug/L	10.267	703.25 ppb	10.267	1.46%
SiO2†	286848.4	20552 ug/L	343.9	20552 ppb	343.9	1.67%



Sequence No.: 78

Sample ID: 1202004431|941050|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 85

Date Collected: 1/14/2010 23:59:18

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004431|941050|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5056.1	5056.1	106 %			00:01:31
1	Y RADIAL	6699.3	6699.3	130.6 %			00:01:31
1	Al 396.153Radial†	83480.2	79111.5	63445 ug/L		63445 ppb	00:01:11
1	Ca 317.933Radial†	7676.7	7259.5	12225 ug/L		12225 ppb	00:01:31
1	Fe 238.204 Radial†	9455.7	8950.6	84157 ug/L		84157 ppb	00:01:11
1	K 766.490 Radial†	60992.0	55010.4	11013 ug/L		11013 ppb	00:01:11
1	Mg 279.077 IEC†	410.7	387.7	13526 ug/L		13526 ppb	00:01:31
1	Na 589.592 Radial†	18634.5	19225.5	6229.2 ug/L		6229.2 ppb	00:01:11
1	Sr 421.552†	80680.9	76438.4	544.75 ug/L		544.75 ppb	00:01:11
1	Sc 361.383	861826.7	861826.7	105.89 %			00:02:30
1	Y 371.029	894712.6	894712.6	130.43 %			00:02:30
1	Ag 328.068†	100886.9	94990.9	495.87 ug/L		495.87 ppb	00:02:30
1	As 188.979†	1079.7	1038.4	505.29 ug/L		505.29 ppb	00:02:51
1	B 249.677†	20697.2	20063.9	473.29 ug/L		473.29 ppb	00:02:30
1	Ba 233.527†	102652.4	96938.3	807.62 ug/L		807.62 ppb	00:02:30
1	Be 313.107†	1312767.6	1244023.7	499.16 ug/L		499.16 ppb	00:02:30
1	Cd 226.502†	43232.4	41024.1	472.49 ug/L		472.49 ppb	00:02:30
1	Co 228.616†	23386.7	22157.9	476.54 ug/L		476.54 ppb	00:02:51
1	Cr 267.716†	52533.1	49513.9	586.50 ug/L		586.50 ppb	00:02:30
1	Cu 324.752†	182788.0	166317.7	535.26 ug/L		535.26 ppb	00:02:30
1	Mn 257.610†	2213080.8	2089517.5	2458.0 ug/L		2458.0 ppb	00:02:30
1	Mo 202.031†	6736.5	6342.3	477.47 ug/L		477.47 ppb	00:02:51
1	Ni 231.604†	20244.2	19042.5	500.99 ug/L		500.99 ppb	00:02:51
1	P 214.914†	2304.1	1948.0	1090.3 ug/L		1090.3 ppb	00:02:51
1	Pb 220.353†	4240.2	4068.8	527.78 ug/L		527.78 ppb	00:02:51
1	S 181.975 Axial†	3688.7	3437.0	5117.4 ug/L		5117.4 ppb	00:02:51
1	Sb 206.836†	1344.2	1236.7	464.03 ug/L		464.03 ppb	00:02:51
1	Se 196.026†	372.5	382.1	535.88 ug/L		535.88 ppb	00:02:51
1	Si 251.611†	331822.7	312910.7	10545 ug/L		10545 ppb	00:02:30
1	Sn 189.927†	2745.6	2586.7	481.65 ug/L		481.65 ppb	00:02:51
1	Ti 334.940†	1377156.1	1301903.7	2233.7 ug/L		2233.7 ppb	00:02:30
1	Tl 190.801†	1421.8	1386.6	470.61 ug/L		470.61 ppb	00:02:51
1	U 409.014†	5598.3	7327.7	223.13 ug/L		223.13 ppb	00:02:30
1	V 292.402†	81936.0	78783.3	560.87 ug/L		560.87 ppb	00:02:30
1	Zn 213.857†	78686.3	73447.0	720.44 ug/L		720.44 ppb	00:02:30
1	SiO2†	332056.4	313121.1	22435 ug/L		22435 ppb	00:03:51
2	Sc Radial	5051.2	5051.2	105 %			00:01:56
2	Y RADIAL	6695.7	6695.7	130.5 %			00:01:56
2	Al 396.153Radial†	83472.7	79180.7	63501 ug/L		63501 ppb	00:01:36
2	Ca 317.933Radial†	7637.7	7229.6	12174 ug/L		12174 ppb	00:01:56
2	Fe 238.204 Radial†	9439.7	8944.1	84095 ug/L		84095 ppb	00:01:36
2	K 766.490 Radial†	60826.8	54909.4	10993 ug/L		10993 ppb	00:01:36
2	Mg 279.077 IEC†	407.4	385.0	13432 ug/L		13432 ppb	00:01:56
2	Na 589.592 Radial†	18463.3	19080.1	6182.1 ug/L		6182.1 ppb	00:01:36
2	Sr 421.552†	80633.3	76467.0	544.96 ug/L		544.96 ppb	00:01:36
2	Sc 361.383	870830.9	870830.9	107.00 %			00:02:58
2	Y 371.029	903023.0	903023.0	131.64 %			00:02:58
2	Ag 328.068†	101847.1	94903.3	495.42 ug/L		495.42 ppb	00:02:58
2	As 188.979†	1072.4	1021.1	497.51 ug/L		497.51 ppb	00:03:18
2	B 249.677†	20874.9	20027.9	472.45 ug/L		472.45 ppb	00:02:58
2	Ba 233.527†	103736.7	96949.3	807.71 ug/L		807.71 ppb	00:02:58
2	Be 313.107†	1326008.6	1243580.2	498.99 ug/L		498.99 ppb	00:02:58
2	Cd 226.502†	43611.0	40955.7	471.69 ug/L		471.69 ppb	00:02:58
2	Co 228.616†	23241.3	21793.7	468.60 ug/L		468.60 ppb	00:03:18
2	Cr 267.716†	52949.3	49389.9	585.03 ug/L		585.03 ppb	00:02:58
2	Cu 324.752†	184966.4	166568.8	536.06 ug/L		536.06 ppb	00:02:58
2	Mn 257.610†	2236771.4	2090049.1	2458.6 ug/L		2458.6 ppb	00:02:58
2	Mo 202.031†	6672.7	6216.9	468.16 ug/L		468.16 ppb	00:03:18
2	Ni 231.604†	20126.5	18734.8	492.89 ug/L		492.89 ppb	00:03:18



2	P 214.914†	2300.5	1922.1	1073.6 ug/L	1073.6 ppb	00:03:18
2	Pb 220.353†	4241.3	4028.4	522.59 ug/L	522.59 ppb	00:03:18
2	S 181.975 Axial†	3679.8	3392.6	5051.2 ug/L	5051.2 ppb	00:03:18
2	Sb 206.836†	1345.3	1224.6	459.25 ug/L	459.25 ppb	00:03:18
2	Se 196.026†	357.6	364.5	523.88 ug/L	523.88 ppb	00:03:18
2	Si 251.611†	336328.0	313881.3	10577 ug/L	10577 ppb	00:02:58
2	Sn 189.927†	2711.1	2527.6	470.71 ug/L	470.71 ppb	00:03:18
2	Ti 334.940†	1393765.1	1303979.2	2237.3 ug/L	2237.3 ppb	00:02:58
2	Tl 190.801†	1425.2	1375.8	467.24 ug/L	467.24 ppb	00:03:18
2	U 409.014†	5669.9	7340.0	223.53 ug/L	223.53 ppb	00:02:58
2	V 292.402†	82885.4	78870.6	561.37 ug/L	561.37 ppb	00:02:58
2	Zn 213.857†	79424.7	73368.8	719.71 ug/L	719.71 ppb	00:02:58
2	SiO2†	333913.0	311613.9	22328 ug/L	22328 ppb	00:03:56
3	Sc Radial	5046.0	5046.0	105 %		00:02:22
3	Y RADIAL	6702.4	6702.4	130.7 %		00:02:22
3	Al 396.153Radial†	83869.8	79639.7	63869 ug/L	63869 ppb	00:02:02
3	Ca 317.933Radial†	7663.4	7261.5	12228 ug/L	12228 ppb	00:02:22
3	Fe 238.204 Radial†	9427.2	8941.4	84070 ug/L	84070 ppb	00:02:02
3	K 766.490 Radial†	61254.1	55374.8	11086 ug/L	11086 ppb	00:02:02
3	Mg 279.077 IEC†	410.4	388.2	13546 ug/L	13546 ppb	00:02:22
3	Na 589.592 Radial†	18500.0	19133.2	6199.3 ug/L	6199.3 ppb	00:02:02
3	Sr 421.552†	80981.9	76877.1	547.88 ug/L	547.88 ppb	00:02:02
3	Sc 361.383	852288.7	852288.7	104.72 %		00:03:25
3	Y 371.029	884559.0	884559.0	128.95 %		00:03:25
3	Ag 328.068†	99617.3	94844.7	495.12 ug/L	495.12 ppb	00:03:25
3	As 188.979†	1063.1	1034.0	503.26 ug/L	503.26 ppb	00:03:45
3	B 249.677†	20427.2	20024.9	472.34 ug/L	472.34 ppb	00:03:25
3	Ba 233.527†	101416.5	96842.9	806.82 ug/L	806.82 ppb	00:03:25
3	Be 313.107†	1293867.4	1239849.4	497.50 ug/L	497.50 ppb	00:03:25
3	Cd 226.502†	42553.8	40832.9	470.26 ug/L	470.26 ppb	00:03:25
3	Co 228.616†	23323.6	22344.8	480.61 ug/L	480.61 ppb	00:03:45
3	Cr 267.716†	51778.1	49348.1	584.54 ug/L	584.54 ppb	00:03:25
3	Cu 324.752†	180609.8	166169.5	534.78 ug/L	534.78 ppb	00:03:25
3	Mn 257.610†	2184586.1	2085696.0	2453.5 ug/L	2453.5 ppb	00:03:25
3	Mo 202.031†	6732.2	6409.4	482.45 ug/L	482.45 ppb	00:03:45
3	Ni 231.604†	20248.2	19260.3	506.72 ug/L	506.72 ppb	00:03:45
3	P 214.914†	2284.8	1953.9	1094.4 ug/L	1094.4 ppb	00:03:45
3	Pb 220.353†	4210.2	4085.0	529.96 ug/L	529.96 ppb	00:03:45
3	S 181.975 Axial†	3693.1	3480.1	5181.7 ug/L	5181.7 ppb	00:03:45
3	Sb 206.836†	1347.7	1254.2	470.58 ug/L	470.58 ppb	00:03:45
3	Se 196.026†	352.9	367.4	525.75 ug/L	525.75 ppb	00:03:45
3	Si 251.611†	329320.5	314028.2	10582 ug/L	10582 ppb	00:03:25
3	Sn 189.927†	2724.8	2595.8	483.33 ug/L	483.33 ppb	00:03:45
3	Ti 334.940†	1360661.0	1300706.5	2231.6 ug/L	2231.6 ppb	00:03:25
3	Tl 190.801†	1418.4	1398.3	474.32 ug/L	474.32 ppb	00:03:45
3	U 409.014†	5474.4	7268.6	221.25 ug/L	221.25 ppb	00:03:25
3	V 292.402†	80896.0	78656.2	560.03 ug/L	560.03 ppb	00:03:25
3	Zn 213.857†	77516.3	73161.4	717.56 ug/L	717.56 ppb	00:03:25
3	SiO2†	332272.9	316837.1	22702 ug/L	22702 ppb	00:04:01

Mean Data: 1202004431|941050|1

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	861648.8	105.87 %		1.139			1.08%
Sc Radial	5051.1	105 %		0.1			0.10%
Y 371.029	894098.2	130.34 %		1.348			1.03%
Y RADIAL	6699.1	130.6 %		0.07			0.05%
Ag 328.068†	94913.0	495.47 ug/L		0.377	495.47 ppb	0.377	0.08%
Al 396.153Radial†	79310.7	63605 ug/L		230.1	63605 ppb	230.1	0.36%
As 188.979†	1031.2	502.02 ug/L		4.033	502.02 ppb	4.033	0.80%
B 249.677†	20038.9	472.69 ug/L		0.520	472.69 ppb	0.520	0.11%
Ba 233.527†	96910.2	807.38 ug/L		0.487	807.38 ppb	0.487	0.06%
Be 313.107†	1242484.4	498.55 ug/L		0.915	498.55 ppb	0.915	0.18%
Ca 317.933Radial†	7250.2	12209 ug/L		30.1	12209 ppb	30.1	0.25%
Cd 226.502†	40937.6	471.48 ug/L		1.129	471.48 ppb	1.129	0.24%
Co 228.616†	22098.8	475.25 ug/L		6.109	475.25 ppb	6.109	1.29%
Cr 267.716†	49417.3	585.36 ug/L		1.018	585.36 ppb	1.018	0.17%
Cu 324.752†	166352.0	535.36 ug/L		0.644	535.36 ppb	0.644	0.12%
Fe 238.204 Radial†	8945.4	84107 ug/L		44.4	84107 ppb	44.4	0.05%
K 766.490 Radial†	55098.2	11031 ug/L		49.0	11031 ppb	49.0	0.44%



Mg 279.077 IEC†	386.9	13501 ug/L	60.9	13501 ppb	60.9	0.45%
Mn 257.610†	2088420.8	2456.7 ug/L	2.79	2456.7 ppb	2.79	0.11%
Mo 202.031†	6322.9	476.03 ug/L	7.253	476.03 ppb	7.253	1.52%
Na 589.592 Radial†	19146.3	6203.5 ug/L	23.84	6203.5 ppb	23.84	0.38%
Ni 231.604†	19012.5	500.20 ug/L	6.947	500.20 ppb	6.947	1.39%
P 214.914†	1941.4	1086.1 ug/L	11.03	1086.1 ppb	11.03	1.02%
Pb 220.353†	4060.8	526.78 ug/L	3.781	526.78 ppb	3.781	0.72%
S 181.975 Axial†	3436.6	5116.8 ug/L	65.29	5116.8 ppb	65.29	1.28%
Sb 206.836†	1238.5	464.62 ug/L	5.689	464.62 ppb	5.689	1.22%
Se 196.026†	371.3	528.50 ug/L	6.453	528.50 ppb	6.453	1.22%
Si 251.611†	313606.7	10568 ug/L	20.5	10568 ppb	20.5	0.19%
Sn 189.927†	2570.0	478.56 ug/L	6.854	478.56 ppb	6.854	1.43%
Sr 421.552†	76594.1	545.86 ug/L	1.749	545.86 ppb	1.749	0.32%
Ti 334.940†	1302196.5	2234.2 ug/L	2.84	2234.2 ppb	2.84	0.13%
Tl 190.801†	1386.9	470.72 ug/L	3.538	470.72 ppb	3.538	0.75%
U 409.014†	7312.1	222.64 ug/L	1.215	222.64 ppb	1.215	0.55%
V 292.402†	78770.1	560.76 ug/L	0.675	560.76 ppb	0.675	0.12%
Zn 213.857†	73325.7	719.24 ug/L	1.496	719.24 ppb	1.496	0.21%
SiO2†	313857.4	22488 ug/L	192.5	22488 ppb	192.5	0.86%



Sequence No.: 79

Sample ID: 1202004430|941050|5

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 86

Date Collected: 1/15/2010 00:06:13

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202004430|941050|5

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5071.1	5071.1	106 %		00:08:07
1	Y RADIAL	5677.8	5677.8	110.7 %		00:08:07
1	Al 396.153Radial†	8633.4	8160.4	6546.7 ug/L	6546.7 ppb	00:08:07
1	Ca 317.933Radial†	1031.0	959.0	1614.9 ug/L	1614.9 ppb	00:08:27
1	Fe 238.204 Radial†	1682.0	1579.4	14847 ug/L	14847 ppb	00:08:27
1	K 766.490 Radial†	8008.6	4779.4	956.68 ug/L	956.68 ppb	00:08:07
1	Mg 279.077 IEC†	41.6	37.8	1311.8 ug/L	1311.8 ppb	00:08:27
1	Na 589.592 Radial†	-471.0	1121.9	363.51 ug/L	363.51 ppb	00:08:07
1	Sr 421.552†	1796.9	1680.5	11.967 ug/L	11.967 ppb	00:08:07
1	Sc 361.383	856137.4	856137.4	105.19 %		00:09:24
1	Y 371.029	748163.1	748163.1	109.07 %		00:09:24
1	Ag 328.068†	-594.7	-847.0	0.7392 ug/L	0.7392 ppb	00:09:24
1	As 188.979†	-26.8	-6.6	3.1246 ug/L	3.1246 ppb	00:09:44
1	B 249.677†	-288.8	244.0	3.5156 ug/L	3.5156 ppb	00:09:24
1	Ba 233.527†	9504.3	9033.6	75.398 ug/L	75.398 ppb	00:09:24
1	Be 313.107†	-3582.2	906.9	1.0499 ug/L	1.0499 ppb	00:09:24
1	Cd 226.502†	-54.2	146.1	0.1728 ug/L	0.1728 ppb	00:09:44
1	Co 228.616†	126.0	192.5	3.3600 ug/L	3.3600 ppb	00:09:44
1	Cr 267.716†	1948.6	1756.7	21.058 ug/L	21.058 ppb	00:09:24
1	Cu 324.752†	8088.6	1391.1	5.2535 ug/L	5.2535 ppb	00:09:24
1	Mn 257.610†	363777.5	345411.7	406.46 ug/L	406.46 ppb	00:09:24
1	Mo 202.031†	41.0	19.7	2.6325 ug/L	2.6325 ppb	00:09:44
1	Ni 231.604†	330.2	238.8	6.2829 ug/L	6.2829 ppb	00:09:44
1	P 214.914†	446.6	196.7	114.31 ug/L	114.31 ppb	00:09:44
1	Pb 220.353†	34.3	97.1	12.455 ug/L	12.455 ppb	00:09:44
1	S 181.975 Axial†	88.5	37.7	55.000 ug/L	55.000 ppb	00:09:44
1	Sb 206.836†	34.6	0.1	-0.7050 ug/L	-0.7050 ppb	00:09:44
1	Se 196.026†	-93.1	-58.1	10.081 ug/L	10.081 ppb	00:09:44
1	Si 251.611†	47969.8	45155.4	1522.5 ug/L	1522.5 ppb	00:09:24
1	Sn 189.927†	-7.1	-12.8	-1.8782 ug/L	-1.8782 ppb	00:09:44
1	Ti 334.940†	184816.5	177078.2	303.91 ug/L	303.91 ppb	00:09:24
1	Tl 190.801†	-55.4	-8.8	1.5933 ug/L	1.5933 ppb	00:09:44
1	U 409.014†	-3739.3	-1513.8	-50.084 ug/L	-50.084 ppb	00:09:24
1	V 292.402†	1202.7	2550.4	15.861 ug/L	15.861 ppb	00:09:24
1	Zn 213.857†	6041.6	4883.0	47.213 ug/L	47.213 ppb	00:09:24
1	SiO2†	46572.7	43817.0	3141.3 ug/L	3141.3 ppb	00:10:40
2	Sc Radial	5093.4	5093.4	106 %		00:08:32
2	Y RADIAL	5691.1	5691.1	110.9 %		00:08:32
2	Al 396.153Radial†	8611.6	8104.1	6501.5 ug/L	6501.5 ppb	00:08:32
2	Ca 317.933Radial†	1034.0	957.5	1612.3 ug/L	1612.3 ppb	00:08:52
2	Fe 238.204 Radial†	1680.9	1571.3	14771 ug/L	14771 ppb	00:08:52
2	K 766.490 Radial†	7890.9	4635.4	927.84 ug/L	927.84 ppb	00:08:32
2	Mg 279.077 IEC†	41.9	37.9	1314.4 ug/L	1314.4 ppb	00:08:52
2	Na 589.592 Radial†	-467.9	1126.7	365.07 ug/L	365.07 ppb	00:08:32
2	Sr 421.552†	1821.9	1696.6	12.081 ug/L	12.081 ppb	00:08:32
2	Sc 361.383	852203.7	852203.7	104.71 %		00:09:49
2	Y 371.029	745007.4	745007.4	108.61 %		00:09:49
2	Ag 328.068†	-637.7	-890.6	0.4970 ug/L	0.4970 ppb	00:09:49
2	As 188.979†	-22.5	-2.6	4.9179 ug/L	4.9179 ppb	00:10:09
2	B 249.677†	-267.7	262.9	3.9878 ug/L	3.9878 ppb	00:09:49
2	Ba 233.527†	9485.1	9056.9	75.588 ug/L	75.588 ppb	00:09:49
2	Be 313.107†	-3646.1	830.2	1.0196 ug/L	1.0196 ppb	00:09:49
2	Cd 226.502†	-53.4	146.5	0.1868 ug/L	0.1868 ppb	00:10:09
2	Co 228.616†	110.8	178.5	3.0572 ug/L	3.0572 ppb	00:10:09
2	Cr 267.716†	1930.5	1747.9	20.952 ug/L	20.952 ppb	00:09:49
2	Cu 324.752†	8104.1	1441.5	5.4089 ug/L	5.4089 ppb	00:09:49
2	Mn 257.610†	362275.2	345573.3	406.64 ug/L	406.64 ppb	00:09:49
2	Mo 202.031†	38.4	17.4	2.4577 ug/L	2.4577 ppb	00:10:09
2	Ni 231.604†	329.5	239.5	6.3034 ug/L	6.3034 ppb	00:10:09



2	P 214.914†	452.7	204.4	119.27 ug/L	119.27 ppb	00:10:09
2	Pb 220.353†	21.4	85.0	10.893 ug/L	10.893 ppb	00:10:09
2	S 181.975 Axial†	94.2	43.5	63.672 ug/L	63.672 ppb	00:10:09
2	Sb 206.836†	37.8	3.4	0.4893 ug/L	0.4893 ppb	00:10:09
2	Se 196.026†	-97.3	-62.6	6.8540 ug/L	6.8540 ppb	00:10:09
2	Si 251.611†	47970.1	45366.1	1529.6 ug/L	1529.6 ppb	00:09:49
2	Sn 189.927†	-2.4	-8.4	-1.0679 ug/L	-1.0679 ppb	00:10:09
2	Ti 334.940†	184016.7	177125.4	303.99 ug/L	303.99 ppb	00:09:49
2	Tl 190.801†	-47.9	-1.8	3.8263 ug/L	3.8263 ppb	00:10:09
2	U 409.014†	-3650.6	-1445.4	-47.894 ug/L	-47.894 ppb	00:09:49
2	V 292.402†	1146.4	2502.0	15.524 ug/L	15.524 ppb	00:09:49
2	Zn 213.857†	6073.5	4939.9	47.788 ug/L	47.788 ppb	00:09:49
2	SiO2†	47582.4	44985.6	3225.1 ug/L	3225.1 ppb	00:10:45
3	Sc Radial	5145.6	5145.6	107 %		00:08:57
3	Y RADIAL	5766.6	5766.6	112.4 %		00:08:57
3	Al 396.153Radial†	8652.0	8059.5	6465.8 ug/L	6465.8 ppb	00:08:57
3	Ca 317.933Radial†	1037.5	950.9	1601.2 ug/L	1601.2 ppb	00:09:17
3	Fe 238.204 Radial†	1680.5	1554.9	14617 ug/L	14617 ppb	00:09:17
3	K 766.490 Radial†	7935.1	4601.3	921.01 ug/L	921.01 ppb	00:08:57
3	Mg 279.077 IEC†	39.1	34.9	1209.9 ug/L	1209.9 ppb	00:09:17
3	Na 589.592 Radial†	-496.3	1104.8	357.96 ug/L	357.96 ppb	00:08:57
3	Sr 421.552†	1752.6	1614.7	11.498 ug/L	11.498 ppb	00:08:57
3	Sc 361.383	844202.9	844202.9	103.73 %		00:10:15
3	Y 371.029	739351.6	739351.6	107.78 %		00:10:15
3	Ag 328.068†	-688.9	-945.7	0.1752 ug/L	0.1752 ppb	00:10:15
3	As 188.979†	-17.9	1.6	6.7572 ug/L	6.7572 ppb	00:10:35
3	B 249.677†	-308.8	220.8	2.9891 ug/L	2.9891 ppb	00:10:15
3	Ba 233.527†	9361.5	9023.6	75.308 ug/L	75.308 ppb	00:10:15
3	Be 313.107†	-3465.6	971.2	1.0736 ug/L	1.0736 ppb	00:10:15
3	Cd 226.502†	-42.9	156.2	0.3167 ug/L	0.3167 ppb	00:10:35
3	Co 228.616†	108.6	177.4	3.0351 ug/L	3.0351 ppb	00:10:35
3	Cr 267.716†	1934.7	1769.4	21.202 ug/L	21.202 ppb	00:10:15
3	Cu 324.752†	7932.5	1349.4	5.1056 ug/L	5.1056 ppb	00:10:15
3	Mn 257.610†	357677.4	344419.7	405.27 ug/L	405.27 ppb	00:10:15
3	Mo 202.031†	36.2	15.6	2.3134 ug/L	2.3134 ppb	00:10:35
3	Ni 231.604†	342.0	254.5	6.6984 ug/L	6.6984 ppb	00:10:35
3	P 214.914†	430.0	186.7	108.10 ug/L	108.10 ppb	00:10:35
3	Pb 220.353†	26.3	89.9	11.533 ug/L	11.533 ppb	00:10:35
3	S 181.975 Axial†	89.4	39.7	58.017 ug/L	58.017 ppb	00:10:35
3	Sb 206.836†	30.8	-3.0	-1.8723 ug/L	-1.8723 ppb	00:10:35
3	Se 196.026†	-101.3	-67.3	3.2103 ug/L	3.2103 ppb	00:10:35
3	Si 251.611†	46973.2	44839.3	1511.8 ug/L	1511.8 ppb	00:10:15
3	Sn 189.927†	-8.7	-14.5	-2.1928 ug/L	-2.1928 ppb	00:10:35
3	Ti 334.940†	181759.5	176614.8	303.12 ug/L	303.12 ppb	00:10:15
3	Tl 190.801†	-52.0	-6.2	2.3999 ug/L	2.3999 ppb	00:10:35
3	U 409.014†	-3536.4	-1368.4	-45.415 ug/L	-45.415 ppb	00:10:15
3	V 292.402†	1162.2	2527.6	15.733 ug/L	15.733 ppb	00:10:15
3	Zn 213.857†	5942.8	4868.9	47.093 ug/L	47.093 ppb	00:10:15
3	SiO2†	47080.6	44932.5	3221.3 ug/L	3221.3 ppb	00:10:50

Mean Data: 1202004430|941050|5

Analyte	Mean Corrected	Conc.	Calib.	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Sc 361.383	850848.0	104.54	%	0.747				0.71%
Sc Radial	5103.4	107	%	0.8				0.75%
Y 371.029	744174.0	108.49	%	0.651				0.60%
Y RADIAL	5711.8	111.4	%	0.93				0.84%
Ag 328.068†	-894.4	0.4705	ug/L	0.28292	0.4705	ppb	0.28292	60.14%
Al 396.153Radial†	8108.0	6504.7	ug/L	40.54	6504.7	ppb	40.54	0.62%
As 188.979†	-2.5	4.9332	ug/L	1.81636	4.9332	ppb	1.81636	36.82%
B 249.677†	242.6	3.4975	ug/L	0.49962	3.4975	ppb	0.49962	14.29%
Ba 233.527†	9038.0	75.431	ug/L	0.1430	75.431	ppb	0.1430	0.19%
Be 313.107†	902.8	1.0477	ug/L	0.02707	1.0477	ppb	0.02707	2.58%
Ca 317.933Radial†	955.8	1609.5	ug/L	7.27	1609.5	ppb	7.27	0.45%
Cd 226.502†	149.6	0.2254	ug/L	0.07932	0.2254	ppb	0.07932	35.19%
Co 228.616†	182.8	3.1508	ug/L	0.18152	3.1508	ppb	0.18152	5.76%
Cr 267.716†	1758.0	21.071	ug/L	0.1257	21.071	ppb	0.1257	0.60%
Cu 324.752†	1394.0	5.2560	ug/L	0.15170	5.2560	ppb	0.15170	2.89%
Fe 238.204 Radial†	1568.5	14745	ug/L	117.2	14745	ppb	117.2	0.80%
K 766.490 Radial†	4672.0	935.17	ug/L	18.935	935.17	ppb	18.935	2.02%



Mg 279.077 IEC†	36.9	1278.7 ug/L	59.62	1278.7 ppb	59.62	4.66%
Mn 257.610†	345134.9	406.12 ug/L	0.740	406.12 ppb	0.740	0.18%
Mo 202.031†	17.6	2.4679 ug/L	0.15976	2.4679 ppb	0.15976	6.47%
Na 589.592 Radial†	1117.8	362.18 ug/L	3.738	362.18 ppb	3.738	1.03%
Ni 231.604†	244.3	6.4282 ug/L	0.23419	6.4282 ppb	0.23419	3.64%
P 214.914†	195.9	113.89 ug/L	5.600	113.89 ppb	5.600	4.92%
Pb 220.353†	90.7	11.627 ug/L	0.7852	11.627 ppb	0.7852	6.75%
S 181.975 Axial†	40.3	58.896 ug/L	4.4021	58.896 ppb	4.4021	7.47%
Sb 206.836†	0.2	-0.6960 ug/L	1.18083	-0.6960 ppb	1.18083	169.66%
Se 196.026†	-62.7	6.7151 ug/L	3.43743	6.7151 ppb	3.43743	51.19%
Si 251.611†	45120.3	1521.3 ug/L	8.94	1521.3 ppb	8.94	0.59%
Sn 189.927†	-11.9	-1.7130 ug/L	0.58038	-1.7130 ppb	0.58038	33.88%
Sr 421.552†	1664.0	11.849 ug/L	0.3092	11.849 ppb	0.3092	2.61%
Ti 334.940†	176939.5	303.67 ug/L	0.481	303.67 ppb	0.481	0.16%
Tl 190.801†	-5.6	2.6065 ug/L	1.13070	2.6065 ppb	1.13070	43.38%
U 409.014†	-1442.5	-47.798 ug/L	2.3363	-47.798 ppb	2.3363	4.89%
V 292.402†	2526.7	15.706 ug/L	0.1699	15.706 ppb	0.1699	1.08%
Zn 213.857†	4897.3	47.365 ug/L	0.3717	47.365 ppb	0.3717	0.78%
SiO2†	44578.4	3195.9 ug/L	47.31	3195.9 ppb	47.31	1.48%



Sequence No.: 80

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/15/2010 00:13:02

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

## Replicate Data: CCV

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	5001.0	5001.0	104 %		00:14:53
1	Y RADIAL	5344.0	5344.0	104.2 %		00:14:53
1	Al 396.153Radial†	6503.4	6234.0	4976.4 ug/L	4976.4 ppb	00:14:53
1	Ca 317.933Radial†	3177.6	3029.2	5101.1 ug/L	5101.1 ppb	00:15:13
1	Fe 238.204 Radial†	591.9	557.2	5253.9 ug/L	5253.9 ppb	00:15:13
1	K 766.490 Radial†	29677.3	25645.4	5131.4 ug/L	5131.4 ppb	00:14:53
1	Mg 279.077 IEC†	158.8	150.6	5286.7 ug/L	5286.7 ppb	00:15:13
1	Na 589.592 Radial†	31026.7	31292.7	10139 ug/L	10139 ppb	00:14:53
1	Sr 421.552†	75515.3	72331.7	515.53 ug/L	515.53 ppb	00:14:53
1	Sc 361.383	852356.1	852356.1	104.73 %		00:16:11
1	Y 371.029	708980.7	708980.7	103.36 %		00:16:11
1	Ag 328.068†	107431.3	102298.4	505.86 ug/L	505.86 ppb	00:16:16
1	As 188.979†	1171.1	1137.0	516.16 ug/L	516.16 ppb	00:16:36
1	B 249.677†	21641.3	21182.5	513.22 ug/L	513.22 ppb	00:16:16
1	Ba 233.527†	65122.3	62180.0	516.89 ug/L	516.89 ppb	00:16:16
1	Be 313.107†	1364223.1	1306930.1	520.24 ug/L	520.24 ppb	00:16:11
1	Cd 226.502†	46379.4	44482.6	521.25 ug/L	521.25 ppb	00:16:16
1	Co 228.616†	24971.7	23916.7	519.47 ug/L	519.47 ppb	00:16:16
1	Cr 267.716†	45866.1	43699.2	516.17 ug/L	516.17 ppb	00:16:16
1	Cu 324.752†	174525.9	160346.6	511.85 ug/L	511.85 ppb	00:16:16
1	Mn 257.610†	460004.1	438827.1	514.89 ug/L	514.89 ppb	00:16:11
1	Mo 202.031†	7272.6	6924.9	514.51 ug/L	514.51 ppb	00:16:36
1	Ni 231.604†	20809.4	19794.5	520.76 ug/L	520.76 ppb	00:16:16
1	P 214.914†	4439.1	4010.8	2459.9 ug/L	2459.9 ppb	00:16:36
1	Pb 220.353†	4117.7	3996.4	513.53 ug/L	513.53 ppb	00:16:36
1	S 181.975 Axial†	781.1	699.3	1042.7 ug/L	1042.7 ppb	00:16:36
1	Sb 206.836†	1497.9	1397.5	529.43 ug/L	529.43 ppb	00:16:36
1	Se 196.026†	786.2	781.1	541.38 ug/L	541.38 ppb	00:16:36
1	Si 251.611†	82660.1	78481.5	2639.8 ug/L	2639.8 ppb	00:16:16
1	Sn 189.927†	2928.7	2790.3	516.88 ug/L	516.88 ppb	00:16:36
1	Ti 334.940†	310814.3	298165.7	511.35 ug/L	511.35 ppb	00:16:16
1	Tl 190.801†	1632.3	1602.4	516.06 ug/L	516.06 ppb	00:16:36
1	U 409.014†	15279.7	16630.7	529.39 ug/L	529.39 ppb	00:16:16
1	V 292.402†	73628.8	71711.1	524.21 ug/L	524.21 ppb	00:16:16
1	Zn 213.857†	55801.0	52420.8	518.29 ug/L	518.29 ppb	00:16:16
1	SiO2†	81906.6	77751.7	5560.2 ug/L	5560.2 ppb	00:17:43
2	Sc Radial	5013.9	5013.9	105 %		00:15:18
2	Y RADIAL	5357.1	5357.1	104.4 %		00:15:18
2	Al 396.153Radial†	6568.3	6279.9	5013.3 ug/L	5013.3 ppb	00:15:18
2	Ca 317.933Radial†	3146.1	2991.3	5037.1 ug/L	5037.1 ppb	00:15:39
2	Fe 238.204 Radial†	581.9	546.2	5149.7 ug/L	5149.7 ppb	00:15:39
2	K 766.490 Radial†	29759.9	25651.0	5132.6 ug/L	5132.6 ppb	00:15:18
2	Mg 279.077 IEC†	156.6	148.2	5202.1 ug/L	5202.1 ppb	00:15:39
2	Na 589.592 Radial†	31176.4	31358.9	10160 ug/L	10160 ppb	00:15:18
2	Sr 421.552†	75895.1	72507.8	516.79 ug/L	516.79 ppb	00:15:18
2	Sc 361.383	854416.6	854416.6	104.98 %		00:16:42
2	Y 371.029	708353.8	708353.8	103.26 %		00:16:42
2	Ag 328.068†	104210.9	98983.5	489.52 ug/L	489.52 ppb	00:16:47
2	As 188.979†	1167.5	1130.9	513.32 ug/L	513.32 ppb	00:17:07
2	B 249.677†	21270.2	20779.2	503.44 ug/L	503.44 ppb	00:16:47
2	Ba 233.527†	64331.2	61276.5	509.37 ug/L	509.37 ppb	00:16:47
2	Be 313.107†	1361579.0	1301270.2	517.97 ug/L	517.97 ppb	00:16:42
2	Cd 226.502†	45659.1	43689.7	511.96 ug/L	511.96 ppb	00:16:47
2	Co 228.616†	24656.6	23559.1	511.71 ug/L	511.71 ppb	00:16:47
2	Cr 267.716†	45210.9	42969.5	507.55 ug/L	507.55 ppb	00:16:47
2	Cu 324.752†	171792.4	157341.0	502.26 ug/L	502.26 ppb	00:16:47
2	Mn 257.610†	461881.8	439556.4	515.74 ug/L	515.74 ppb	00:16:42
2	Mo 202.031†	7245.9	6882.7	511.36 ug/L	511.36 ppb	00:17:07
2	Ni 231.604†	20441.6	19396.3	510.29 ug/L	510.29 ppb	00:16:47



2	P 214.914†	4433.1	3994.8	2451.6 ug/L	2451.6 ppb	00:17:07
2	Pb 220.353†	4087.4	3958.0	508.62 ug/L	508.62 ppb	00:17:07
2	S 181.975 Axial†	778.9	695.5	1036.9 ug/L	1036.9 ppb	00:17:07
2	Sb 206.836†	1502.4	1398.3	529.56 ug/L	529.56 ppb	00:17:07
2	Se 196.026†	785.1	778.2	539.09 ug/L	539.09 ppb	00:17:07
2	Si 251.611†	81270.5	76967.5	2588.8 ug/L	2588.8 ppb	00:16:47
2	Sn 189.927†	2897.7	2754.1	510.17 ug/L	510.17 ppb	00:17:07
2	Ti 334.940†	306906.3	293727.4	503.74 ug/L	503.74 ppb	00:16:47
2	Tl 190.801†	1636.6	1602.8	516.17 ug/L	516.17 ppb	00:17:07
2	U 409.014†	15021.3	16349.3	520.43 ug/L	520.43 ppb	00:16:47
2	V 292.402†	72420.4	70390.4	514.64 ug/L	514.64 ppb	00:16:47
2	Zn 213.857†	55038.5	51566.0	509.85 ug/L	509.85 ppb	00:16:47
2	SiO2†	82668.2	78288.5	5598.8 ug/L	5598.8 ppb	00:17:49
3	Sc Radial	5039.0	5039.0	105 %		00:15:44
3	Y RADIAL	5393.4	5393.4	105.1 %		00:15:44
3	Al 396.153Radial†	6589.5	6268.8	5004.2 ug/L	5004.2 ppb	00:15:44
3	Ca 317.933Radial†	3181.6	3010.1	5068.8 ug/L	5068.8 ppb	00:16:04
3	Fe 238.204 Radial†	591.1	552.2	5206.2 ug/L	5206.2 ppb	00:16:04
3	K 766.490 Radial†	29863.9	25608.3	5124.0 ug/L	5124.0 ppb	00:15:44
3	Mg 279.077 IEC†	160.2	150.8	5293.3 ug/L	5293.3 ppb	00:16:04
3	Na 589.592 Radial†	31147.2	31182.9	10103 ug/L	10103 ppb	00:15:44
3	Sr 421.552†	76320.7	72551.5	517.10 ug/L	517.10 ppb	00:15:44
3	Sc 361.383	851042.9	851042.9	104.57 %		00:17:13
3	Y 371.029	706610.8	706610.8	103.01 %		00:17:13
3	Ag 328.068†	104238.6	99403.4	491.60 ug/L	491.60 ppb	00:17:18
3	As 188.979†	1171.9	1139.5	517.24 ug/L	517.24 ppb	00:17:38
3	B 249.677†	21316.1	20903.4	506.45 ug/L	506.45 ppb	00:17:18
3	Ba 233.527†	64522.7	61702.6	512.92 ug/L	512.92 ppb	00:17:18
3	Be 313.107†	1354547.6	1299687.4	517.35 ug/L	517.35 ppb	00:17:13
3	Cd 226.502†	45686.4	43888.2	514.28 ug/L	514.28 ppb	00:17:18
3	Co 228.616†	24668.1	23663.1	513.98 ug/L	513.98 ppb	00:17:18
3	Cr 267.716†	45378.1	43300.1	511.46 ug/L	511.46 ppb	00:17:18
3	Cu 324.752†	171904.9	158097.3	504.67 ug/L	504.67 ppb	00:17:18
3	Mn 257.610†	459202.2	438738.0	514.78 ug/L	514.78 ppb	00:17:13
3	Mo 202.031†	7276.9	6939.7	515.61 ug/L	515.61 ppb	00:17:38
3	Ni 231.604†	20511.8	19540.6	514.08 ug/L	514.08 ppb	00:17:18
3	P 214.914†	4434.1	4012.6	2462.5 ug/L	2462.5 ppb	00:17:38
3	Pb 220.353†	4122.4	4006.9	514.90 ug/L	514.90 ppb	00:17:38
3	S 181.975 Axial†	776.1	695.7	1037.4 ug/L	1037.4 ppb	00:17:38
3	Sb 206.836†	1494.1	1396.1	528.94 ug/L	528.94 ppb	00:17:38
3	Se 196.026†	787.7	783.7	542.97 ug/L	542.97 ppb	00:17:38
3	Si 251.611†	81327.6	77329.0	2600.9 ug/L	2600.9 ppb	00:17:18
3	Sn 189.927†	2925.3	2791.4	517.08 ug/L	517.08 ppb	00:17:38
3	Ti 334.940†	307297.2	295260.2	506.37 ug/L	506.37 ppb	00:17:18
3	Tl 190.801†	1641.9	1614.0	519.76 ug/L	519.76 ppb	00:17:38
3	U 409.014†	15107.6	16488.6	524.87 ug/L	524.87 ppb	00:17:18
3	V 292.402†	72574.5	70811.3	517.74 ug/L	517.74 ppb	00:17:18
3	Zn 213.857†	55071.2	51805.1	512.21 ug/L	512.21 ppb	00:17:18
3	SiO2†	81509.4	77492.5	5541.6 ug/L	5541.6 ppb	00:17:54

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	852605.2	104.76 %	0.209			0.20%
Sc Radial	5018.0	105 %	0.4			0.39%
Y 371.029	707981.8	103.21 %	0.179			0.17%
Y RADIAL	5364.8	104.6 %	0.50			0.48%
Ag 328.068†	100228.4	495.66 ug/L	8.898	495.66 ppb	8.898	1.80%
QC value within limits for Ag 328.068 Recovery = 99.13%						
Al 396.153Radial†	6260.9	4998.0 ug/L	19.27	4998.0 ppb	19.27	0.39%
QC value within limits for Al 396.153Radial Recovery = 99.96%						
As 188.979†	1135.8	515.57 ug/L	2.025	515.57 ppb	2.025	0.39%
QC value within limits for As 188.979 Recovery = 103.11%						
B 249.677†	20955.1	507.70 ug/L	5.008	507.70 ppb	5.008	0.99%
QC value within limits for B 249.677 Recovery = 101.54%						
Ba 233.527†	61719.7	513.06 ug/L	3.760	513.06 ppb	3.760	0.73%
QC value within limits for Ba 233.527 Recovery = 102.61%						
Be 313.107†	1302629.2	518.52 ug/L	1.520	518.52 ppb	1.520	0.29%
QC value within limits for Be 313.107 Recovery = 103.70%						
Ca 317.933Radial†	3010.2	5069.0 ug/L	31.96	5069.0 ppb	31.96	0.63%



QC value within limits for Ca 317.933 Radial Recovery = 101.38%

Cd 226.502†	44020.2	515.83 ug/L	4.835	515.83 ppb	4.835	0.94%
QC value within limits for Cd 226.502 Recovery = 103.17%						
Co 228.616†	23713.0	515.05 ug/L	3.989	515.05 ppb	3.989	0.77%
QC value within limits for Co 228.616 Recovery = 103.01%						
Cr 267.716†	43322.9	511.73 ug/L	4.317	511.73 ppb	4.317	0.84%
QC value within limits for Cr 267.716 Recovery = 102.35%						
Cu 324.752†	158595.0	506.26 ug/L	4.991	506.26 ppb	4.991	0.99%
QC value within limits for Cu 324.752 Recovery = 101.25%						
Fe 238.204 Radial†	551.9	5203.3 ug/L	52.13	5203.3 ppb	52.13	1.00%
QC value within limits for Fe 238.204 Radial Recovery = 104.07%						
K 766.490 Radial†	25634.9	5129.3 ug/L	4.64	5129.3 ppb	4.64	0.09%
QC value within limits for K 766.490 Radial Recovery = 102.59%						
Mg 279.077 IEC†	149.9	5260.7 ug/L	50.85	5260.7 ppb	50.85	0.97%
QC value within limits for Mg 279.077 IEC Recovery = 105.21%						
Mn 257.610†	439040.5	515.13 ug/L	0.524	515.13 ppb	0.524	0.10%
QC value within limits for Mn 257.610 Recovery = 103.03%						
Mo 202.031†	6915.8	513.83 ug/L	2.201	513.83 ppb	2.201	0.43%
QC value within limits for Mo 202.031 Recovery = 102.77%						
Na 589.592 Radial†	31278.2	10134 ug/L	28.8	10134 ppb	28.8	0.28%
QC value within limits for Na 589.592 Radial Recovery = 101.34%						
Ni 231.604†	19577.2	515.04 ug/L	5.305	515.04 ppb	5.305	1.03%
QC value within limits for Ni 231.604 Recovery = 103.01%						
P 214.914†	4006.0	2458.0 ug/L	5.68	2458.0 ppb	5.68	0.23%
QC value within limits for P 214.914 Recovery = 98.32%						
Pb 220.353†	3987.1	512.35 ug/L	3.299	512.35 ppb	3.299	0.64%
QC value within limits for Pb 220.353 Recovery = 102.47%						
S 181.975 Axial†	696.8	1039.0 ug/L	3.23	1039.0 ppb	3.23	0.31%
QC value within limits for S 181.975 Axial Recovery = 103.90%						
Sb 206.836†	1397.3	529.31 ug/L	0.329	529.31 ppb	0.329	0.06%
QC value within limits for Sb 206.836 Recovery = 105.86%						
Se 196.026†	781.0	541.15 ug/L	1.952	541.15 ppb	1.952	0.36%
QC value within limits for Se 196.026 Recovery = 108.23%						
Si 251.611†	77592.7	2609.8 ug/L	26.65	2609.8 ppb	26.65	1.02%
QC value within limits for Si 251.611 Recovery = 104.39%						
Sn 189.927†	2778.6	514.71 ug/L	3.932	514.71 ppb	3.932	0.76%
QC value within limits for Sn 189.927 Recovery = 102.94%						
Sr 421.552†	72463.6	516.48 ug/L	0.830	516.48 ppb	0.830	0.16%
QC value within limits for Sr 421.552 Recovery = 103.30%						
Ti 334.940†	295717.8	507.15 ug/L	3.865	507.15 ppb	3.865	0.76%
QC value within limits for Ti 334.940 Recovery = 101.43%						
Tl 190.801†	1606.4	517.33 ug/L	2.107	517.33 ppb	2.107	0.41%
QC value within limits for Tl 190.801 Recovery = 103.47%						
U 409.014†	16489.5	524.90 ug/L	4.477	524.90 ppb	4.477	0.85%
QC value within limits for U 409.014 Recovery = 104.98%						
V 292.402†	70970.9	518.86 ug/L	4.880	518.86 ppb	4.880	0.94%
QC value within limits for V 292.402 Recovery = 103.77%						
Zn 213.857†	51930.6	513.45 ug/L	4.353	513.45 ppb	4.353	0.85%
QC value within limits for Zn 213.857 Recovery = 102.69%						
SiO2†	77844.3	5566.8 ug/L	29.17	5566.8 ppb	29.17	0.52%
QC value within limits for SiO2 Recovery = 104.10%						

All analyte(s) passed QC.



Sequence No.: 81  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 6  
 Date Collected: 1/15/2010 00:20:04  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: CCB

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4957.9	4957.9	103 %		00:21:55
1	Y RADIAL	5303.2	5303.2	103.4 %		00:21:55
1	Al 396.153Radial†	-18.7	-14.9	-11.942 ug/L	-11.942 ppb	00:21:55
1	Ca 317.933Radial†	19.5	3.7	6.2363 ug/L	6.2363 ppb	00:22:15
1	Fe 238.204 Radial†	11.5	1.2	11.412 ug/L	11.412 ppb	00:22:15
1	K 766.490 Radial†	2826.4	-56.0	-11.240 ug/L	-11.240 ppb	00:21:55
1	Mg 279.077 IEC†	-0.0	-1.6	-54.605 ug/L	-54.605 ppb	00:22:15
1	Na 589.592 Radial†	-1511.8	106.0	34.335 ug/L	34.335 ppb	00:21:55
1	Sr 421.552†	65.2	45.8	0.3264 ug/L	0.3264 ppb	00:21:55
1	Sc 361.383	829467.5	829467.5	101.92 %		00:23:12
1	Y 371.029	700108.1	700108.1	102.06 %		00:23:12
1	Ag 328.068†	356.1	67.8	0.3375 ug/L	0.3375 ppb	00:23:12
1	As 188.979†	-28.6	-9.2	-4.1371 ug/L	-4.1371 ppb	00:23:32
1	B 249.677†	-386.5	139.3	3.3889 ug/L	3.3889 ppb	00:23:32
1	Ba 233.527†	-2.8	-4.3	-0.0334 ug/L	-0.0334 ppb	00:23:32
1	Be 313.107†	-4367.9	26.5	0.0108 ug/L	0.0108 ppb	00:23:12
1	Cd 226.502†	-173.7	27.2	0.3178 ug/L	0.3178 ppb	00:23:32
1	Co 228.616†	-77.1	-2.9	-0.0628 ug/L	-0.0628 ppb	00:23:32
1	Cr 267.716†	70.1	-26.9	-0.3177 ug/L	-0.3177 ppb	00:23:32
1	Cu 324.752†	6299.4	-117.1	-0.3747 ug/L	-0.3747 ppb	00:23:12
1	Mn 257.610†	425.5	13.2	0.0189 ug/L	0.0189 ppb	00:23:32
1	Mo 202.031†	25.4	5.6	0.4141 ug/L	0.4141 ppb	00:23:32
1	Ni 231.604†	88.6	11.8	0.3114 ug/L	0.3114 ppb	00:23:32
1	P 214.914†	220.2	-11.8	-7.5054 ug/L	-7.5054 ppb	00:23:32
1	Pb 220.353†	-50.8	14.7	1.8850 ug/L	1.8850 ppb	00:23:32
1	S 181.975 Axial†	34.7	-12.4	-18.481 ug/L	-18.481 ppb	00:23:32
1	Sb 206.836†	39.1	5.7	2.0635 ug/L	2.0635 ppb	00:23:32
1	Se 196.026†	-40.5	-9.4	-6.2467 ug/L	-6.2467 ppb	00:23:32
1	Si 251.611†	626.2	168.5	5.6776 ug/L	5.6776 ppb	00:23:32
1	Sn 189.927†	-1.8	-7.9	-1.4542 ug/L	-1.4542 ppb	00:23:32
1	Ti 334.940†	-1348.2	64.2	0.1143 ug/L	0.1143 ppb	00:23:12
1	Tl 190.801†	-42.3	2.4	0.7726 ug/L	0.7726 ppb	00:23:32
1	U 409.014†	-1994.7	83.7	2.6739 ug/L	2.6739 ppb	00:23:12
1	V 292.402†	-1337.4	94.9	0.6928 ug/L	0.6928 ppb	00:23:12
1	Zn 213.857†	856.6	-19.9	-0.2009 ug/L	-0.2009 ppb	00:23:32
1	SiO2†	640.3	172.0	12.319 ug/L	12.319 ppb	00:24:28
2	Sc Radial	5004.1	5004.1	104 %		00:22:21
2	Y RADIAL	5390.2	5390.2	105.1 %		00:22:21
2	Al 396.153Radial†	-6.2	-2.7	-2.2166 ug/L	-2.2166 ppb	00:22:21
2	Ca 317.933Radial†	19.3	3.3	5.6296 ug/L	5.6296 ppb	00:22:41
2	Fe 238.204 Radial†	13.5	3.1	29.028 ug/L	29.028 ppb	00:22:41
2	K 766.490 Radial†	2864.1	-45.1	-9.0552 ug/L	-9.0552 ppb	00:22:21
2	Mg 279.077 IEC†	2.5	0.9	30.757 ug/L	30.757 ppb	00:22:41
2	Na 589.592 Radial†	-1494.7	135.8	43.995 ug/L	43.995 ppb	00:22:21
2	Sr 421.552†	-9.7	-26.5	-0.1888 ug/L	-0.1888 ppb	00:22:21
2	Sc 361.383	819793.9	819793.9	100.73 %		00:23:38
2	Y 371.029	692279.2	692279.2	100.92 %		00:23:38
2	Ag 328.068†	310.1	26.3	0.1401 ug/L	0.1401 ppb	00:23:38
2	As 188.979†	-15.5	3.5	1.5716 ug/L	1.5716 ppb	00:23:58
2	B 249.677†	-371.3	149.9	3.6453 ug/L	3.6453 ppb	00:23:58
2	Ba 233.527†	-8.3	-9.7	-0.0785 ug/L	-0.0785 ppb	00:23:58
2	Be 313.107†	-4282.0	61.2	0.0251 ug/L	0.0251 ppb	00:23:38
2	Cd 226.502†	-170.0	28.8	0.3354 ug/L	0.3354 ppb	00:23:58
2	Co 228.616†	-80.6	-7.3	-0.1575 ug/L	-0.1575 ppb	00:23:58
2	Cr 267.716†	99.9	3.5	0.0422 ug/L	0.0422 ppb	00:23:58
2	Cu 324.752†	6194.4	-148.5	-0.4725 ug/L	-0.4725 ppb	00:23:38
2	Mn 257.610†	428.0	20.6	0.0258 ug/L	0.0258 ppb	00:23:58
2	Mo 202.031†	29.6	10.1	0.7535 ug/L	0.7535 ppb	00:23:58
2	Ni 231.604†	103.7	27.9	0.7338 ug/L	0.7338 ppb	00:23:58



2	P 214.914†	217.0	-12.4	-7.8387 ug/L	-7.8387 ppb	00:23:58
2	Pb 220.353†	-45.9	19.1	2.4401 ug/L	2.4401 ppb	00:23:58
2	S 181.975 Axial†	43.2	-3.6	-5.3403 ug/L	-5.3403 ppb	00:23:58
2	Sb 206.836†	30.4	-2.6	-0.9174 ug/L	-0.9174 ppb	00:23:58
2	Se 196.026†	-38.7	-8.0	-5.2777 ug/L	-5.2777 ppb	00:23:58
2	Si 251.611†	638.5	188.0	6.3312 ug/L	6.3312 ppb	00:23:58
2	Sn 189.927†	7.3	1.1	0.2110 ug/L	0.2110 ppb	00:23:58
2	Ti 334.940†	-1191.4	204.2	0.3486 ug/L	0.3486 ppb	00:23:38
2	Tl 190.801†	-33.4	10.8	3.4491 ug/L	3.4491 ppb	00:23:58
2	U 409.014†	-2054.6	1.2	0.0355 ug/L	0.0355 ppb	00:23:38
2	V 292.402†	-1357.8	59.2	0.4338 ug/L	0.4338 ppb	00:23:38
2	Zn 213.857†	829.8	-36.6	-0.3717 ug/L	-0.3717 ppb	00:23:58
2	SiO2†	636.4	175.5	12.564 ug/L	12.564 ppb	00:24:33
3	Sc Radial	4943.3	4943.3	103 %		00:22:46
3	Y RADIAL	5298.4	5298.4	103.3 %		00:22:46
3	Al 396.153Radial†	-22.4	-18.5	-14.822 ug/L	-14.822 ppb	00:22:46
3	Ca 317.933Radial†	12.7	-2.9	-4.8025 ug/L	-4.8025 ppb	00:23:06
3	Fe 238.204 Radial†	11.3	1.1	10.047 ug/L	10.047 ppb	00:23:06
3	K 766.490 Radial†	2875.5	-0.4	-0.0766 ug/L	-0.0766 ppb	00:22:46
3	Mg 279.077 IEC†	1.5	-0.1	-2.6843 ug/L	-2.6843 ppb	00:23:06
3	Na 589.592 Radial†	-1557.1	57.7	18.693 ug/L	18.693 ppb	00:22:46
3	Sr 421.552†	-10.7	-27.6	-0.1965 ug/L	-0.1965 ppb	00:22:46
3	Sc 361.383	830742.8	830742.8	102.07 %		00:24:03
3	Y 371.029	702703.1	702703.1	102.44 %		00:24:03
3	Ag 328.068†	355.9	67.1	0.3361 ug/L	0.3361 ppb	00:24:03
3	As 188.979†	-33.6	-14.1	-6.3221 ug/L	-6.3221 ppb	00:24:23
3	B 249.677†	-351.9	173.8	4.2296 ug/L	4.2296 ppb	00:24:23
3	Ba 233.527†	-8.0	-9.3	-0.0743 ug/L	-0.0743 ppb	00:24:23
3	Be 313.107†	-4294.5	104.9	0.0418 ug/L	0.0418 ppb	00:24:03
3	Cd 226.502†	-187.4	14.0	0.1637 ug/L	0.1637 ppb	00:24:23
3	Co 228.616†	-86.5	-12.1	-0.2626 ug/L	-0.2626 ppb	00:24:23
3	Cr 267.716†	83.1	-14.3	-0.1677 ug/L	-0.1677 ppb	00:24:23
3	Cu 324.752†	6274.0	-151.5	-0.4838 ug/L	-0.4838 ppb	00:24:03
3	Mn 257.610†	418.2	5.4	0.0074 ug/L	0.0074 ppb	00:24:23
3	Mo 202.031†	21.9	2.2	0.1633 ug/L	0.1633 ppb	00:24:23
3	Ni 231.604†	102.0	24.8	0.6536 ug/L	0.6536 ppb	00:24:23
3	P 214.914†	208.3	-23.8	-15.089 ug/L	-15.089 ppb	00:24:23
3	Pb 220.353†	-54.3	11.4	1.4562 ug/L	1.4562 ppb	00:24:23
3	S 181.975 Axial†	39.5	-7.8	-11.601 ug/L	-11.601 ppb	00:24:23
3	Sb 206.836†	40.9	7.4	2.7134 ug/L	2.7134 ppb	00:24:23
3	Se 196.026†	-24.7	6.2	4.1906 ug/L	4.1906 ppb	00:24:23
3	Si 251.611†	616.2	157.8	5.3182 ug/L	5.3182 ppb	00:24:23
3	Sn 189.927†	9.4	3.1	0.5669 ug/L	0.5669 ppb	00:24:23
3	Ti 334.940†	-1395.0	20.4	0.0340 ug/L	0.0340 ppb	00:24:03
3	Tl 190.801†	-36.8	7.8	2.5083 ug/L	2.5083 ppb	00:24:23
3	U 409.014†	-2039.7	42.7	1.3627 ug/L	1.3627 ppb	00:24:03
3	V 292.402†	-1292.3	141.1	1.0213 ug/L	1.0213 ppb	00:24:03
3	Zn 213.857†	866.3	-11.7	-0.1209 ug/L	-0.1209 ppb	00:24:23
3	SiO2†	634.5	165.4	11.856 ug/L	11.856 ppb	00:24:38

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	826668.1	101.57 %		0.736			0.72%
Sc Radial	4968.4	104 %		0.7			0.64%
Y 371.029	698363.5	101.81 %		0.791			0.78%
Y RADIAL	5330.6	103.9 %		1.01			0.97%
Ag 328.068†	53.8	0.2713 ug/L		0.11356	0.2713 ppb	0.11356	41.87%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-12.0	-9.6599 ug/L		6.60498	-9.6599 ppb	6.60498	68.38%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-6.6	-2.9625 ug/L		4.07581	-2.9625 ppb	4.07581	137.58%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	154.4	3.7546 ug/L		0.43087	3.7546 ppb	0.43087	11.48%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-7.7	-0.0621 ug/L		0.02490	-0.0621 ppb	0.02490	40.11%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	64.2	0.0259 ug/L		0.01550	0.0259 ppb	0.01550	59.89%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	1.4	2.3545 ug/L		6.20555	2.3545 ppb	6.20555	263.57%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	23.3	0.2723 ug/L	0.09447	0.2723 ppb	0.09447	34.69%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-7.4	-0.1610 ug/L	0.09996	-0.1610 ppb	0.09996	62.09%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-12.6	-0.1478 ug/L	0.18078	-0.1478 ppb	0.18078	122.35%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	-139.0	-0.4437 ug/L	0.05998	-0.4437 ppb	0.05998	13.52%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	1.8	16.829 ug/L	10.5866	16.829 ppb	10.5866	62.91%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	-33.8	-6.7905 ug/L	5.91615	-6.7905 ppb	5.91615	87.12%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	-0.3	-8.8438 ug/L	43.01307	-8.8438 ppb	43.01307	486.36%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	13.1	0.0174 ug/L	0.00927	0.0174 ppb	0.00927	53.38%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	6.0	0.4436 ug/L	0.29622	0.4436 ppb	0.29622	66.78%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	99.8	32.341 ug/L	12.7684	32.341 ppb	12.7684	39.48%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	21.5	0.5662 ug/L	0.22432	0.5662 ppb	0.22432	39.62%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	-16.0	-10.144 ug/L	4.2855	-10.144 ppb	4.2855	42.24%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	15.1	1.9271 ug/L	0.49332	1.9271 ppb	0.49332	25.60%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	-7.9	-11.808 ug/L	6.5730	-11.808 ppb	6.5730	55.67%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	3.5	1.2865 ug/L	1.93610	1.2865 ppb	1.93610	150.50%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	-3.7	-2.4446 ug/L	5.76662	-2.4446 ppb	5.76662	235.89%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	171.5	5.7757 ug/L	0.51355	5.7757 ppb	0.51355	8.89%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	-1.2	-0.2254 ug/L	1.07893	-0.2254 ppb	1.07893	478.61%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	-2.7	-0.0196 ug/L	0.29969	-0.0196 ppb	0.29969	>999.9%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	96.3	0.1656 ug/L	0.16346	0.1656 ppb	0.16346	98.68%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	7.0	2.2433 ug/L	1.35777	2.2433 ppb	1.35777	60.52%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	42.6	1.3574 ug/L	1.31918	1.3574 ppb	1.31918	97.19%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	98.4	0.7160 ug/L	0.29444	0.7160 ppb	0.29444	41.12%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	-22.7	-0.2312 ug/L	0.12809	-0.2312 ppb	0.12809	55.42%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	171.0	12.246 ug/L	0.3599	12.246 ppb	0.3599	2.94%	
QC value within limits for SiO2 Recovery = Not calculated							

All analyte(s) passed QC.



## ICPMS #6 Daily Performance Report

### Sample ID: Sample

Sample Date/Time: Monday, January 11, 2010 23:20:35

Sample Description:

Method File: C:\elandata\Method\Daily2.mth

Dataset File: c:\elandata\Dataset\091212\Sample.251

Tuning File: c:\elandata\Tuning\default2.tun

Optimization File: c:\elandata\Optimize\default.dac

Dual Detector Mode: Pulse

Acq. Dead Time(ns): 35

Current Dead Time (ns): 35

Number of Replicates: 5

### Summary

Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
Be	9.0	2768.1	2768.068	71.036	2.6
Mg	24.0	69802.7	69802.742	915.546	1.3
Co	58.9	48113.1	48113.089	408.939	0.8
Rh	102.9	83606.7	83606.743	372.541	0.4
In	114.9	99581.9	99581.885	627.615	0.6
Pb	208.0	61853.2	61853.224	599.487	1.0
[> Ba	137.9	96105.6	96105.580	872.981	0.9
[ Ba++	69.0	2358.6	0.025	0.000	1.1
[> Ce	139.9	118452.7	118452.685	971.257	0.8
[ CeO	155.9	2554.5	0.022	0.000	1.6
Bkgd	220.0	25.6	25.600	2.275	8.9

### Current Optimization File Data

Current Value	Description
0.83	Nebulizer Gas Flow
13.25	Lens Voltage
1450.00	ICP RF Power
-1781.25	Analog Stage Voltage
900.00	Pulse Stage Voltage
30.00	Discriminator Threshold
-6.00	AC Rod Offset

### Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	17	9.8	4729.4
Co	59	17	10.5	70359.8
In	115	17	11.8	118105.5



## ICPMS #6 Instrument Tuning Report

File Name: default2.tun  
File Path: c:\elandata\Tuning

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width
He	3.0	3.0	578	2080	0.651
Be	9.0	9.0	2028	2080	0.663
Mg	24.0	24.0	5686	2120	0.623
Mg	25.0	24.9	5905	2080	0.697
Mg	26.0	26.0	6162	2120	0.691
Co	58.9	59.0	14181	2170	0.632
Rh	102.9	102.8	24853	2230	0.695
In	114.9	114.8	27774	2260	0.682
Ce	139.9	139.9	33843	2280	0.733
Pb	206.0	206.0	49948	2430	0.679
Pb	207.0	207.0	50135	2385	0.643
Pb	208.0	208.0	50451	2430	0.689
U	238.1	238.0	57731	2470	0.673



## ICPMS#6 - Summary Report

Sample ID: Blank

Sample Date/Time: Tuesday, January 12, 2010 11:19:58

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\Blank.113

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7		ug/L		106	
Be	9		ug/L		12	
B	11		ug/L		791	
Na	23		ug/L		20682	
Mg	24		ug/L		3334	
Al	27		ug/L		7335	
P	31		ug/L		6990	
K	39		ug/L		618456	
Ca	43		ug/L		473	
> Sc	45		ug/L		1187102	
V	51		ug/L		1868	
Cr	52		ug/L		2071	
Cr	53		ug/L		115098	
Mn	55		ug/L		1646	
Fe	57		ug/L		4399	
Co	59		ug/L		193	
Ni	60		ug/L		73	
Cu	63		ug/L		349	
Cu	65		ug/L		96	
Zn	66		ug/L		184	
Zn	67		ug/L		10133	
Zn	68		ug/L		924	
> Ge	74		ug/L		260902	
As	75		ug/L		366	
Se	77		ug/L		5122	
Se	82		ug/L		-23	
Kr	83		ug/L		93	
Sr	88		ug/L		162	
Y	89		ug/L		84	
Ag	107		ug/L		55	
Cd	111		ug/L		22	
Cd	114		ug/L		31	
> In	115		ug/L		135688	
Sn	120		ug/L		217	
Sb	121		ug/L		360	
Sb	123		ug/L		297	
Ba	135		ug/L		32	
Ba	137		ug/L		50	
Ho	165		ug/L		17	
> Lu	175		ug/L		195997	
Tl	205		ug/L		649	
Pb	208		ug/L		516	
Bi	209		ug/L		18	
U	238		ug/L		171	



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	0.9999
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate Rel. % Difference
[	Li		7				
	Be		9				
	B		11				
	Na		23				
	Mg		24				
	Al		27				
	P		31				
	K		39				
	Ca		43				
>	Sc		45				
	V		51				
	Cr		52				
	Cr		53				
	Mn		55				
	Fe		57				
	Co		59				
	Ni		60				
	Cu		63				
	Cu		65				
[	Zn		66				
	Zn		67				
	Zn		68				
>	Ge		74				
	As		75				
	Se		77				
	Se		82				
	Kr		83				
[	Sr		88				
	Y		89				
	Ag		107				
	Cd		111				
	Cd		114				
>	In		115				
	Sn		120				
	Sb		121				
	Sb		123				
[	Ba		135				
	Ba		137				
	Ho		165				
>	Lu		175				
	Tl		205				
	Pb		208				
	Bi		209				
	U		238				

## QC Out Of Limits

Measurement Type Analyte

Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



# ICPMS#6 - Summary Report

Sample ID: Standard 1

Sample Date/Time: Tuesday, January 12, 2010 11:25:52

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\Standard 1.114

## Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	10.000	ug/L	0.957	13060	0.011
Be	9	10.000	ug/L	1.492	4958	0.004
B	11	20.000	ug/L	1.280	9061	0.007
Na	23	1000.000	ug/L	5.635	4865431	4.058
Mg	24	1000.000	ug/L	6.867	3173090	2.654
Al	27	1000.000	ug/L	6.859	4307709	3.601
P	31	1000.000	ug/L	0.972	219306	0.178
K	39	1000.000	ug/L	2.975	5923646	4.440
Ca	43	1000.000	ug/L	2.769	11198	0.009
> Sc	45		ug/L		1194003	1194003.004
V	51	10.000	ug/L	2.027	44708	0.036
Cr	52	10.000	ug/L	0.806	40664	0.032
Cr	53		ug/L		100158	-0.013
Mn	55	10.000	ug/L	0.189	63469	0.052
Fe	57	1000.000	ug/L	1.260	126731	0.102
Co	59	10.000	ug/L	0.404	45240	0.038
Ni	60	10.000	ug/L	0.673	9476	0.008
Cu	63		ug/L		21996	0.018
Cu	65	10.000	ug/L	1.331	10357	0.009
Zn	66	10.000	ug/L	0.492	7181	0.027
Zn	67		ug/L		8733	-0.005
Zn	68		ug/L		5633	0.018
> Ge	74		ug/L		257434	257434.138
As	75	10.000	ug/L	3.745	7842	0.029
Se	77		ug/L		4602	-0.002
Se	82	10.000	ug/L	0.638	655	0.003
Kr	83		ug/L		92	0.000
Sr	88	10.000	ug/L	0.127	85888	0.628
Y	89		ug/L		75	-0.000
Ag	107	10.000	ug/L	2.072	31778	0.233
Cd	111	10.000	ug/L	1.912	7582	0.055
Cd	114		ug/L		17638	0.129
> In	115		ug/L		136427	136427.297
Sn	120	10.000	ug/L	1.172	31202	0.227
Sb	121	10.000	ug/L	12.039	24313	0.176
Sb	123		ug/L		19048	0.137
Ba	135		ug/L		7675	0.039
Ba	137	10.000	ug/L	0.744	13510	0.069
Ho	165		ug/L		14	-0.000
> Lu	175		ug/L		193768	193768.251
Tl	205	10.000	ug/L	1.052	67358	0.344
Pb	208	10.000	ug/L	0.162	102482	0.526
Bi	209		ug/L		56	0.000
U	238	10.000	ug/L	1.383	102749	0.529



# Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	1.0000
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7				
	Be	9				
	B	11				
	Na	23				
	Mg	24				
	Al	27				
	P	31				
	K	39				
	Ca	43				
>	Sc	45				
	V	51				
	Cr	52				
	Cr	53				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	63				
	Cu	65				
	Zn	66				
	Zn	67				
	Zn	68				
>	Ge	74				
	As	75				
	Se	77				
	Se	82				
	Kr	83				
	Sr	88				
	Y	89				
	Ag	107				
	Cd	111				
	Cd	114				
>	In	115				
	Sn	120				
	Sb	121				
	Sb	123				
	Ba	135				
	Ba	137				
	Ho	165				
>	Lu	175				
	Tl	205				
	Pb	208				
	Bi	209				
	U	238				

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: Standard 2

Sample Date/Time: Tuesday, January 12, 2010 11:31:44

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 noirs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\Standard 2.115

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	99.964	ug/L	2.001	120305	0.105
Be	9	99.993	ug/L	0.337	47246	0.041
B	11	200.033	ug/L	1.571	81615	0.070
Na	23	9999.518	ug/L	2.151	46414989	40.385
Mg	24	9998.827	ug/L	3.853	30136326	26.231
Al	27	9998.664	ug/L	9.289	40830540	35.531
P	31	10002.139	ug/L	4.136	2094378	1.817
K	39	10008.168	ug/L	6.611	56178716	48.387
Ca	43	10001.746	ug/L	0.613	105461	0.091
> Sc	45		ug/L		1148663	1148663.372
V	51	100.059	ug/L	0.406	439841	0.381
Cr	52	100.029	ug/L	1.968	384134	0.333
Cr	53		ug/L		139049	0.024
Mn	55	100.005	ug/L	1.509	599497	0.521
Fe	57	9996.812	ug/L	0.859	1144123	0.992
Co	59	99.996	ug/L	0.928	431832	0.376
Ni	60	99.999	ug/L	1.780	90392	0.079
Cu	63		ug/L		208815	0.182
Cu	65	100.006	ug/L	2.260	99428	0.086
Zn	66	100.004	ug/L	0.642	68541	0.273
Zn	67		ug/L		17900	0.033
Zn	68		ug/L		49060	0.193
> Ge	74		ug/L		250317	250316.774
As	75	100.012	ug/L	2.660	74006	0.294
Se	77		ug/L		9426	0.018
Se	82	100.053	ug/L	3.528	6939	0.028
Kr	83		ug/L		130	0.000
Sr	88	100.002	ug/L	1.142	824533	6.296
Y	89		ug/L		145	0.000
Ag	107	100.013	ug/L	1.000	308784	2.358
Cd	111	100.020	ug/L	1.314	74101	0.566
Cd	114		ug/L		170540	1.302
> In	115		ug/L		130947	130946.869
Sn	120	100.020	ug/L	2.192	303771	2.319
Sb	121	100.129	ug/L	4.869	264441	2.017
Sb	123		ug/L		206304	1.574
Ba	135		ug/L		75938	0.405
Ba	137	100.024	ug/L	2.559	133524	0.712
Ho	165		ug/L		26	0.000
> Lu	175		ug/L		187561	187561.454
Tl	205	99.993	ug/L	0.667	641814	3.419
Pb	208	99.988	ug/L	1.910	975853	5.200
Bi	209		ug/L		305	0.002
U	238	99.982	ug/L	1.260	975913	5.202



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
[	Li	7				
	Be	9				
	B	11				
	Na	23				
	Mg	24				
	Al	27				
	P	31				
	K	39				
	Ca	43				
>	Sc	45				
	V	51				
	Cr	52				
	Cr	53				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	63				
	Cu	65				
	Zn	66				
	Zn	67				
	Zn	68				
>	Ge	74				
	As	75				
	Se	77				
	Se	82				
	Kr	83				
	Sr	88				
	Y	89				
	Ag	107				
	Cd	111				
	Cd	114				
>	In	115				
	Sn	120				
	Sb	121				
	Sb	123				
	Ba	135				
	Ba	137				
	Ho	165				
>	Lu	175				
	Tl	205				
	Pb	208				
	Bi	209				
	U	238				

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 1

Sample Date/Time: Tuesday, January 12, 2010 11:37:37

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 1.116

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	47.604	ug/L	1.320	58259	0.050
Be	9	49.223	ug/L	0.490	23634	0.020
B	11	100.125	ug/L	3.189	41888	0.035
Na	23	4394.238	ug/L	7.927	20723885	17.747
Mg	24	4996.178	ug/L	4.524	15295577	13.107
Al	27	4744.259	ug/L	4.539	19679142	16.859
P	31	4724.570	ug/L	1.140	1008491	0.858
K	39	4178.677	ug/L	1.680	24182891	20.203
Ca	43	4726.275	ug/L	2.064	50875	0.043
> Sc	45		ug/L		1166977	1166977.181
V	51	48.959	ug/L	1.146	219601	0.187
Cr	52	49.841	ug/L	1.113	195498	0.166
Cr	53		ug/L		131387	0.016
Mn	55	49.571	ug/L	0.650	302734	0.258
Fe	57	4908.803	ug/L	1.670	572969	0.487
Co	59	48.139	ug/L	0.373	211315	0.181
Ni	60	49.905	ug/L	0.697	45871	0.039
Cu	63		ug/L		105121	0.090
Cu	65	49.706	ug/L	0.376	50259	0.043
Zn	66	49.511	ug/L	2.109	34302	0.135
Zn	67		ug/L		13766	0.016
Zn	68		ug/L		24604	0.094
> Ge	74		ug/L		252364	252364.128
As	75	46.175	ug/L	1.274	34651	0.136
Se	77		ug/L		8037	0.012
Se	82	47.956	ug/L	3.879	3344	0.013
Kr	83		ug/L		104	0.000
Sr	88	50.393	ug/L	1.065	424337	3.173
Y	89		ug/L		82	-0.000
Ag	107	48.002	ug/L	0.889	151355	1.132
Cd	111	48.546	ug/L	0.648	36735	0.275
Cd	114		ug/L		85402	0.639
> In	115		ug/L		133696	133696.149
Sn	120	49.171	ug/L	0.368	152602	1.140
Sb	121	49.575	ug/L	5.481	133878	0.999
Sb	123		ug/L		104646	0.781
Ba	135		ug/L		37895	0.199
Ba	137	49.212	ug/L	2.616	66733	0.350
Ho	165		ug/L		24	0.000
> Lu	175		ug/L		190544	190544.372
Tl	205	46.805	ug/L	2.603	305369	1.600
Pb	208	49.255	ug/L	3.669	488278	2.562
Bi	209		ug/L		115	0.001
U	238	52.168	ug/L	2.814	517120	2.714



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate Rel. % Difference
Li	7	95.209				
Be	9	98.446				
B	11	100.125				
Na	23	87.885				
Mg	24	99.924				
Al	27	93.946				
P	31	94.491				
K	39	83.574				
Ca	43	94.526				
> Sc	45		98.3			
V	51	97.919				
Cr	52	99.681				
Cr	53					
Mn	55	99.143				
Fe	57	98.176				
Co	59	96.278				
Ni	60	99.810				
Cu	63					
Cu	65	99.413				
Zn	66	99.022				
Zn	67					
Zn	68					
> Ge	74		96.7			
As	75	92.350				
Se	77					
Se	82	95.911				
Kr	83					
Sr	88	100.786				
Y	89					
Ag	107	96.003				
Cd	111	97.093				
Cd	114					
> In	115		98.5			
Sn	120	98.342				
Sb	121	99.150				
Sb	123					
Ba	135					
Ba	137	98.425				
Ho	165					
> Lu	175		97.2			
Tl	205	93.610				
Pb	208	98.511				
Bi	209					
U	238	104.336				

## QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	ICV is out of limits (+/- 10%)
QC Std 1	K	39	ICV is out of limits (+/- 10%)

## QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 2

Sample Date/Time: Tuesday, January 12, 2010 11:43:32

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 2.117

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	-0.004	ug/L	60.170	103	-0.000
Be	9	0.002	ug/L	108.179	13	0.000
B	11	2.102	ug/L	22.384	1691	0.001
Na	23	1.256	ug/L	91.902	27026	0.005
Mg	24	0.624	ug/L	147.955	5335	0.002
Al	27	-0.335	ug/L	251.151	6002	-0.001
P	31	-1.015	ug/L	188.726	6859	-0.000
K	39	-7.924	ug/L	98.297	580606	-0.038
Ca	43	-2.690	ug/L	97.485	450	-0.000
> Sc	45		ug/L		1203147	1203147.454
V	51	-0.205	ug/L	172.463	943	-0.001
Cr	52	0.589	ug/L	2.247	4456	0.002
Cr	53		ug/L		123796	0.006
Mn	55	-0.039	ug/L	22.408	1425	-0.000
Fe	57	5.207	ug/L	41.551	5079	0.001
Co	59	0.007	ug/L	47.631	226	0.000
Ni	60	0.002	ug/L	281.268	76	0.000
Cu	63		ug/L		362	0.000
Cu	65	0.006	ug/L	41.419	104	0.000
Zn	66	-0.001	ug/L	1118.168	186	-0.000
Zn	67		ug/L		9742	-0.002
Zn	68		ug/L		897	-0.000
> Ge	74		ug/L		265322	265321.914
As	75	-0.440	ug/L	26.493	28	-0.001
Se	77		ug/L		6422	0.005
Se	82	0.015	ug/L	998.557	-22	0.000
Kr	83		ug/L		87	-0.000
Sr	88	0.002	ug/L	71.523	186	0.000
Y	89		ug/L		57	-0.000
Ag	107	-0.001	ug/L	139.348	52	-0.000
Cd	111	-0.001	ug/L	2781.754	22	-0.000
Cd	114		ug/L		41	0.000
> In	115		ug/L		140571	140570.953
Sn	120	0.092	ug/L	11.819	524	0.002
Sb	121	0.937	ug/L	21.441	3029	0.019
Sb	123		ug/L		2443	0.015
Ba	135		ug/L		28	-0.000
Ba	137	-0.003	ug/L	87.758	47	-0.000
Ho	165		ug/L		18	0.000
> Lu	175		ug/L		199711	199711.060
Tl	205	0.232	ug/L	15.049	2241	0.008
Pb	208	-0.001	ug/L	195.980	512	-0.000
Bi	209		ug/L		18	-0.000
U	238	0.065	ug/L	26.405	847	0.003



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate	Rel. % Difference
[	Li	7						
	Be	9						
	B	11						
	Na	23						
	Mg	24						
	Al	27						
	P	31						
	K	39						
	Ca	43						
>	Sc	45			101.4			
	V	51						
	Cr	52						
	Cr	53						
	Mn	55						
	Fe	57						
	Co	59						
	Ni	60						
	Cu	63						
	Cu	65						
	Zn	66						
	Zn	67						
	Zn	68						
>	Ge	74			101.7			
	As	75						
	Se	77						
	Se	82						
	Kr	83						
	Sr	88						
	Y	89						
	Ag	107						
	Cd	111						
	Cd	114						
>	In	115			103.6			
	Sn	120						
	Sb	121						
	Sb	123						
	Ba	135						
	Ba	137						
	Ho	165						
>	Lu	175			101.9			
	Tl	205						
	Pb	208						
	Bi	209						
	U	238						

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Tuesday, January 12, 2010 11:49:27

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtlimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 3.118

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	10.917	ug/L	1.548	13524	0.011
Be	9	0.528	ug/L	6.214	267	0.000
B	11	16.601	ug/L	1.217	7643	0.006
Na	23	269.611	ug/L	6.294	1298940	1.089
Mg	24	17.689	ug/L	11.268	57784	0.046
Al	27	32.774	ug/L	16.031	144068	0.116
P	31	49.337	ug/L	1.693	17439	0.009
K	39	298.743	ug/L	4.575	2307838	1.444
Ca	43	209.698	ug/L	1.419	2719	0.002
> Sc	45		ug/L		1174276	1174276.068
V	51	10.888	ug/L	0.553	50577	0.041
Cr	52	11.246	ug/L	1.171	45974	0.037
Cr	53		ug/L		105839	-0.007
Mn	55	5.697	ug/L	0.843	36451	0.030
Fe	57	115.752	ug/L	2.361	17846	0.011
Co	59	1.121	ug/L	2.198	5136	0.004
Ni	60	2.277	ug/L	3.738	2175	0.002
Cu	63		ug/L		2861	0.002
Cu	65	1.232	ug/L	2.405	1346	0.001
Zn	66	11.278	ug/L	1.053	8075	0.031
Zn	67		ug/L		8500	-0.006
Zn	68		ug/L		6288	0.021
> Ge	74		ug/L		256309	256309.466
As	75	5.339	ug/L	10.027	4388	0.016
Se	77		ug/L		4997	-0.000
Se	82	5.414	ug/L	7.674	363	0.002
Kr	83		ug/L		89	-0.000
Sr	88	11.513	ug/L	1.484	99088	0.725
Y	89		ug/L		53	-0.000
Ag	107	1.018	ug/L	1.483	3330	0.024
Cd	111	1.119	ug/L	3.824	886	0.006
Cd	114		ug/L		1960	0.014
> In	115		ug/L		136492	136491.799
Sn	120	5.133	ug/L	1.481	16458	0.119
Sb	121	2.697	ug/L	12.405	7776	0.054
Sb	123		ug/L		5912	0.041
Ba	135		ug/L		1721	0.009
Ba	137	2.162	ug/L	2.782	3007	0.015
Ho	165		ug/L		18	0.000
> Lu	175		ug/L		192363	192363.071
Tl	205	1.134	ug/L	0.966	8097	0.039
Pb	208	2.221	ug/L	0.837	22727	0.116
Bi	209		ug/L		26	0.000
U	238	0.237	ug/L	2.102	2545	0.012



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



### QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dil	Duplicate Rel. % Difference
Li	7	109.167				
Be	9	105.514				
B	11	110.675				
Na	23	107.844				
Mg	24	117.925				
Al	27	109.245				
P	31	98.673				
K	39	99.581				
Ca	43	104.849				
> Sc	45		98.9			
V	51	108.880				
Cr	52	112.464				
Cr	53					
Mn	55	113.936				
Fe	57	115.752				
Co	59	112.051				
Ni	60	113.852				
Cu	63					
Cu	65	123.205				
Zn	66	112.777				
Zn	67					
Zn	68					
> Ge	74		98.2			
As	75	106.786				
Se	77					
Se	82	108.282				
Kr	83					
Sr	88	115.126				
Y	89					
Ag	107	101.777				
Cd	111	111.927				
Cd	114					
> In	115		100.6			
Sn	120	102.657				
Sb	121	89.891				
Sb	123					
Ba	135					
Ba	137	108.088				
Ho	165					
> Lu	175		98.1			
Tl	205	113.433				
Pb	208	111.050				
Bi	209					
U	238	118.720				

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 4

Sample Date/Time: Tuesday, January 12, 2010 11:55:20

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 4.119

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.208	ug/L	5.965	342	0.000
Be	9	0.061	ug/L	17.987	39	0.000
B	11	0.843	ug/L	9.726	1071	0.000
Na	23	89556.240	ug/L	1.548	402100375	361.687
Mg	24	99503.451	ug/L	2.238	290233366	261.039
Al	27	95157.848	ug/L	5.522	375850355	338.152
P	31	95373.888	ug/L	2.218	19267668	17.327
K	39	83428.559	ug/L	5.774	448871661	403.353
Ca	43	88252.325	ug/L	1.210	897191	0.807
Sc	45		ug/L		1111747	1111747.407
V	51	0.104	ug/L	267.185	2190	0.000
Cr	52	2.760	ug/L	1.833	12148	0.009
Cr	53		ug/L		84601	-0.021
Mn	55	5.534	ug/L	2.370	33569	0.029
Fe	57	92073.055	ug/L	1.006	10165595	9.140
Co	59	0.295	ug/L	3.424	1415	0.001
Ni	60	3.052	ug/L	2.305	2736	0.002
Cu	63		ug/L		5500	0.005
Cu	65	3.500	ug/L	2.254	3455	0.003
Zn	66	4.053	ug/L	2.732	2812	0.011
Zn	67		ug/L		6811	-0.010
Zn	68		ug/L		1119	0.001
Ge	74		ug/L		238791	238790.640
As	75	-0.611	ug/L	54.335	-95	-0.002
Se	77		ug/L		6166	0.006
Se	82	-1.463	ug/L	8.887	-118	-0.000
Kr	83		ug/L		236	0.001
Sr	88	1.121	ug/L	2.059	9184	0.071
Y	89		ug/L		300	0.002
Ag	107	0.256	ug/L	36.396	825	0.006
Cd	111	1.071	ug/L	36.936	798	0.006
Cd	114		ug/L		5072	0.039
In	115		ug/L		127915	127915.499
Sn	120	0.115	ug/L	1.827	546	0.003
Sb	121	0.226	ug/L	26.507	922	0.005
Sb	123		ug/L		726	0.003
Ba	135		ug/L		611	0.003
Ba	137	0.757	ug/L	4.512	1011	0.005
Ho	165		ug/L		447	0.002
Lu	175		ug/L		179109	179108.758
Tl	205	0.024	ug/L	11.065	737	0.001
Pb	208	0.176	ug/L	3.918	2109	0.009
Bi	209		ug/L		300	0.002
U	238	-0.005	ug/L	23.332	112	-0.000



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate	Rel. % Difference
[	Li	7						
	Be	9						
	B	11						
	Na	23	89.556					
	Mg	24	99.503					
	Al	27	95.158					
	P	31	95.374					
	K	39	83.429					
	Ca	43	88.252					
>	Sc	45		93.7				
	V	51						
	Cr	52	74.607					
	Cr	53						
	Mn	55	95.420					
	Fe	57	92.073					
	Co	59	118.135					
	Ni	60	113.031					
	Cu	63						
	Cu	65	120.694					
	Zn	66	112.579					
	Zn	67						
	Zn	68						
>	Ge	74		91.5				
	As	75						
	Se	77						
	Se	82						
	Kr	83						
	Sr	88	93.445					
	Y	89						
	Ag	107						
	Cd	111	267.862					
	Cd	114						
>	In	115		94.3				
	Sn	120						
	Sb	121	225.713					
	Sb	123						
	Ba	135						
	Ba	137	113.048					
	Ho	165						
>	Lu	175		91.4				
	Tl	205						
	Pb	208	87.893					
	Bi	209						
	U	238						

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



# ICPMS#6 - Summary Report

Sample ID: QC Std 5

Sample Date/Time: Tuesday, January 12, 2010 12:01:14

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nolrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 5.120

## Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	18.165	ug/L	0.990	20795	0.019
Be	9	18.614	ug/L	1.086	8344	0.008
B	11	18.637	ug/L	2.805	7864	0.007
Na	23	88774.817	ug/L	2.939	390374483	358.531
Mg	24	99736.947	ug/L	4.762	284754034	261.651
Al	27	93618.042	ug/L	3.835	362065686	332.680
P	31	97094.749	ug/L	0.923	19207237	17.639
K	39	84186.030	ug/L	6.794	443663039	407.015
Ca	43	89401.314	ug/L	0.855	889872	0.817
> Sc	45		ug/L		1088563	1088563.402
V	51	20.606	ug/L	0.539	87200	0.079
Cr	52	22.716	ug/L	0.622	84144	0.076
Cr	53		ug/L		88587	-0.016
Mn	55	25.345	ug/L	0.542	145118	0.132
Fe	57	94516.573	ug/L	3.778	10215425	9.383
Co	59	19.867	ug/L	2.303	81442	0.075
Ni	60	22.450	ug/L	2.440	19283	0.018
Cu	63		ug/L		41581	0.038
Cu	65	22.632	ug/L	1.647	21393	0.020
Zn	66	22.987	ug/L	1.471	14845	0.063
Zn	67		ug/L		8619	-0.002
Zn	68		ug/L		9644	0.038
> Ge	74		ug/L		233841	233840.891
As	75	20.752	ug/L	1.959	14613	0.061
Se	77		ug/L		6772	0.009
Se	82	19.368	ug/L	3.423	1239	0.005
Kr	83		ug/L		218	0.001
Sr	88	21.524	ug/L	0.821	170654	1.355
Y	89		ug/L		287	0.002
Ag	107	19.066	ug/L	1.237	56604	0.449
Cd	111	19.224	ug/L	1.499	13703	0.109
Cd	114		ug/L		35856	0.285
> In	115		ug/L		125818	125818.331
Sn	120	19.984	ug/L	0.459	58483	0.463
Sb	121	20.873	ug/L	0.431	53243	0.421
Sb	123		ug/L		41404	0.327
Ba	135		ug/L		14822	0.083
Ba	137	20.563	ug/L	1.506	25998	0.146
Ho	165		ug/L		437	0.002
> Lu	175		ug/L		177409	177408.986
Tl	205	17.325	ug/L	2.489	105683	0.592
Pb	208	19.072	ug/L	1.230	176432	0.992
Bi	209		ug/L		416	0.002
U	238	21.448	ug/L	1.566	198128	1.116



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate Rel. % Difference
Li	7	90.826				
Be	9	93.070				
B	11	93.184				
Na	23	88.775				
Mg	24	99.737				
Al	27	93.618				
P	31	97.095				
K	39	84.186				
Ca	43	89.401				
> Sc	45		91.7			
V	51	103.028				
Cr	52	95.847				
Cr	53					
Mn	55	98.235				
Fe	57	94.517				
Co	59	98.107				
Ni	60	98.899				
Cu	63					
Cu	65	98.832				
Zn	66	97.404				
Zn	67					
Zn	68					
> Ge	74		89.6			
As	75	103.758				
Se	77					
Se	82	96.839				
Kr	83					
Sr	88	101.530				
Y	89					
Ag	107	95.328				
Cd	111	94.237				
Cd	114					
> In	115		92.7			
Sn	120	99.918				
Sb	121	103.844				
Sb	123					
Ba	135					
Ba	137	99.481				
Ho	165					
> Lu	175		90.5			
Tl	205	86.624				
Pb	208	94.417				
Bi	209					
U	238	107.241				

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



# ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Tuesday, January 12, 2010 12:07:08

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 6.121

## Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	44.341	ug/L	2.474	53670	0.046
Be	9	46.622	ug/L	0.969	22138	0.019
B	11	91.597	ug/L	0.266	37968	0.032
Na	23	4373.197	ug/L	17.548	20400711	17.662
Mg	24	4850.085	ug/L	2.351	14688248	12.724
Al	27	4620.320	ug/L	2.805	18956647	16.419
P	31	4743.946	ug/L	0.297	1001453	0.862
K	39	3997.264	ug/L	6.337	22906895	19.326
Ca	43	4696.906	ug/L	1.537	50005	0.043
> Sc	45		ug/L		1154101	1154100.799
V	51	49.703	ug/L	2.287	220441	0.189
Cr	52	50.181	ug/L	1.432	194646	0.167
Cr	53		ug/L		128807	0.015
Mn	55	49.351	ug/L	0.687	298076	0.257
Fe	57	4949.525	ug/L	1.774	571333	0.491
Co	59	48.731	ug/L	0.768	211552	0.183
Ni	60	50.152	ug/L	0.738	45588	0.039
Cu	63		ug/L		104278	0.090
Cu	65	50.105	ug/L	0.410	50103	0.043
Zn	66	48.744	ug/L	0.643	33738	0.133
Zn	67		ug/L		13297	0.014
Zn	68		ug/L		24263	0.093
> Ge	74		ug/L		252087	252086.897
As	75	46.240	ug/L	1.921	34664	0.136
Se	77		ug/L		8584	0.014
Se	82	47.547	ug/L	2.123	3311	0.013
Kr	83		ug/L		82	-0.000
Sr	88	50.151	ug/L	2.190	418647	3.157
Y	89		ug/L		84	0.000
Ag	107	48.923	ug/L	0.196	152933	1.153
Cd	111	47.732	ug/L	0.935	35809	0.270
Cd	114		ug/L		83323	0.628
> In	115		ug/L		132547	132547.343
Sn	120	49.187	ug/L	1.968	151339	1.140
Sb	121	48.206	ug/L	5.981	129069	0.971
Sb	123		ug/L		101073	0.760
Ba	135		ug/L		37637	0.203
Ba	137	50.639	ug/L	2.260	66676	0.360
Ho	165		ug/L		22	0.000
> Lu	175		ug/L		184958	184957.589
Tl	205	47.616	ug/L	1.657	301663	1.628
Pb	208	49.762	ug/L	1.051	479133	2.588
Bi	209		ug/L		107	0.000
U	238	52.564	ug/L	1.838	505939	2.735



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



### QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate Rel. % Difference
Li	7	88.682				
Be	9	93.243				
B	11	91.597				
Na	23	87.464				
Mg	24	97.002				
Al	27	91.491				
P	31	94.879				
K	39	79.945				
Ca	43	93.938				
> Sc	45		97.2			
V	51	99.405				
Cr	52	100.361				
Cr	53					
Mn	55	98.702				
Fe	57	98.991				
Co	59	97.463				
Ni	60	100.303				
Cu	63					
Cu	65	100.210				
Zn	66	97.488				
Zn	67					
Zn	68					
> Ge	74		96.6			
As	75	92.481				
Se	77					
Se	82	95.094				
Kr	83					
Sr	88	100.302				
Y	89					
Ag	107	97.846				
Cd	111	95.465				
Cd	114					
> In	115		97.7			
Sn	120	98.375				
Sb	121	96.412				
Sb	123					
Ba	135					
Ba	137	101.277				
Ho	165					
> Lu	175		94.4			
Tl	205	95.233				
Pb	208	99.525				
Bi	209					
U	238	105.128				

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Li	7	CCV is out of limits (+/- 10%)
QC Std 6	Na	23	CCV is out of limits (+/- 10%)
QC Std 6	K	39	CCV is out of limits (+/- 10%)

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Tuesday, January 12, 2010 12:13:03

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 7.122

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.040	ug/L	35.888	157	0.000
Be	9	0.004	ug/L	53.352	14	0.000
B	11	1.256	ug/L	35.686	1330	0.000
Na	23	2.921	ug/L	28.361	35043	0.012
Mg	24	0.731	ug/L	50.411	5668	0.002
Al	27	0.530	ug/L	128.137	9670	0.002
P	31	-2.011	ug/L	53.828	6624	-0.000
K	39	2.084	ug/L	367.027	636934	0.010
Ca	43	-1.661	ug/L	69.219	460	-0.000
> Sc	45		ug/L		1199294	1199293.648
V	51	-0.353	ug/L	85.293	275	-0.001
Cr	52	0.304	ug/L	8.229	3303	0.001
Cr	53		ug/L		125572	0.008
Mn	55	-0.068	ug/L	8.115	1238	-0.000
Fe	57	10.980	ug/L	7.504	5752	0.001
Co	59	0.002	ug/L	112.149	203	0.000
Ni	60	0.009	ug/L	34.578	82	0.000
Cu	63		ug/L		308	-0.000
Cu	65	0.023	ug/L	10.954	121	0.000
Zn	66	-0.016	ug/L	123.050	176	-0.000
Zn	67		ug/L		8947	-0.005
Zn	68		ug/L		824	-0.000
> Ge	74		ug/L		267511	267511.234
As	75	-0.417	ug/L	75.776	48	-0.001
Se	77		ug/L		7417	0.008
Se	82	0.070	ug/L	456.610	-18	0.000
Kr	83		ug/L		86	-0.000
Sr	88	-0.001	ug/L	102.113	156	-0.000
Y	89		ug/L		50	-0.000
Ag	107	0.003	ug/L	41.549	64	0.000
Cd	111	-0.008	ug/L	72.653	16	-0.000
Cd	114		ug/L		43	0.000
> In	115		ug/L		138831	138831.097
Sn	120	0.067	ug/L	9.240	438	0.002
Sb	121	0.722	ug/L	26.006	2391	0.015
Sb	123		ug/L		1946	0.012
Ba	135		ug/L		39	0.000
Ba	137	0.007	ug/L	100.712	59	0.000
Ho	165		ug/L		20	0.000
> Lu	175		ug/L		196177	196177.411
Tl	205	0.253	ug/L	15.048	2347	0.009
Pb	208	-0.003	ug/L	61.892	485	-0.000
Bi	209		ug/L		26	0.000
U	238	0.048	ug/L	17.027	665	0.003



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
	Li		7				
	Be		9				
	B		11				
	Na		23				
	Mg		24				
	Al		27				
	P		31				
	K		39				
	Ca		43				
>	Sc		45		101.0		
	V		51				
	Cr		52				
	Cr		53				
	Mn		55				
	Fe		57				
	Co		59				
	Ni		60				
	Cu		63				
	Cu		65				
	Zn		66				
	Zn		67				
	Zn		68				
>	Ge		74		102.5		
	As		75				
	Se		77				
	Se		82				
	Kr		83				
	Sr		88				
	Y		89				
	Ag		107				
	Cd		111				
	Cd		114				
>	In		115		102.3		
	Sn		120				
	Sb		121				
	Sb		123				
	Ba		135				
	Ba		137				
	Ho		165				
>	Lu		175		100.1		
	Tl		205				
	Pb		208				
	Bi		209				
	U		238				

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: 1202004420

Sample Date/Time: Tuesday, January 12, 2010 12:18:59

Sample Type:

Sample Description: LANL 6020 MB

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\1202004420.123

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	-0.019	ug/L	39.427	93	-0.000
Be	9	-0.002	ug/L	324.920	12	-0.000
B	11	0.012	ug/L	816.647	901	0.000
Na	23	6.089	ug/L	8.330	56445	0.025
Mg	24	1.581	ug/L	42.214	9337	0.004
Al	27	2.037	ug/L	45.784	18012	0.007
P	31	21.662	ug/L	10.508	13199	0.004
K	39	-15.176	ug/L	39.565	601077	-0.073
Ca	43	-0.651	ug/L	859.096	527	-0.000
> Sc	45		ug/L		1343330	1343329.559
V	51	0.204	ug/L	110.147	3160	0.001
Cr	52	0.464	ug/L	9.081	4416	0.002
Cr	53		ug/L		96320	-0.025
Mn	55	0.127	ug/L	5.574	2750	0.001
Fe	57	17.175	ug/L	11.723	7267	0.002
Co	59	-0.004	ug/L	88.239	201	-0.000
Ni	60	0.128	ug/L	9.842	218	0.000
Cu	63		ug/L		592	0.000
Cu	65	0.143	ug/L	3.861	275	0.000
Zn	66	0.960	ug/L	3.653	966	0.003
Zn	67		ug/L		7037	-0.015
Zn	68		ug/L		1265	0.001
> Ge	74		ug/L		290427	290427.104
As	75	-0.646	ug/L	55.248	-146	-0.002
Se	77		ug/L		5053	-0.002
Se	82	0.216	ug/L	47.609	-8	0.000
Kr	83		ug/L		73	-0.000
Sr	88	0.021	ug/L	11.289	390	0.001
Y	89		ug/L		69	-0.000
Ag	107	0.023	ug/L	20.703	147	0.001
Cd	111	0.086	ug/L	45.495	101	0.000
Cd	114		ug/L		28	-0.000
> In	115		ug/L		156316	156315.806
Sn	120	0.088	ug/L	11.560	568	0.002
Sb	121	0.071	ug/L	44.290	638	0.001
Sb	123		ug/L		506	0.001
Ba	135		ug/L		253	0.001
Ba	137	0.248	ug/L	5.546	437	0.002
Ho	165		ug/L		18	-0.000
> Lu	175		ug/L		216644	216643.889
Tl	205	0.171	ug/L	25.014	1983	0.006
Pb	208	0.035	ug/L	5.918	965	0.002
Bi	209		ug/L		46	0.000
U	238	0.006	ug/L	32.283	252	0.000



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dif	Duplicate Rel. % Difference
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		113.2			
V	51					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					
Zn	66					
Zn	67					
Zn	68					
> Ge	74		111.3			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Ag	107					
Cd	111					
Cd	114					
> In	115		115.2			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		110.5			
Tl	205					
Pb	208					
Bi	209					
U	238					

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: 1202004421

Sample Date/Time: Tuesday, January 12, 2010 12:30:51

Sample Type:

Sample Description: LANL 6020 LCS

Number of Replicates: 3

Batch ID: 936805[40]rmj

Method File: c:\elandata\Method\6020 nolrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\1202004421.125

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	2.272	ug/L	1.163	2960	0.002
Be	9	18.754	ug/L	0.659	9261	0.008
B	11	38.728	ug/L	3.192	17144	0.014
Na	23	230.464	ug/L	4.208	1137259	0.931
Mg	24	1113.832	ug/L	3.056	3507522	2.922
Al	27	3014.261	ug/L	5.387	12854968	10.711
P	31	197.526	ug/L	1.574	50098	0.036
K	39	991.067	ug/L	10.183	6371262	4.792
Ca	43	2455.795	ug/L	0.928	27396	0.022
> Sc	45		ug/L		1199238	1199238.300
V	51	27.739	ug/L	0.093	128670	0.106
Cr	52	62.757	ug/L	0.730	252417	0.209
Cr	53		ug/L		148785	0.027
Mn	55	137.459	ug/L	1.526	859713	0.716
Fe	57	4190.036	ug/L	0.477	503262	0.416
Co	59	24.137	ug/L	0.763	108979	0.091
Ni	60	35.955	ug/L	2.358	33979	0.028
Cu	63		ug/L		96579	0.080
Cu	65	44.238	ug/L	2.585	45973	0.038
Zn	66	145.235	ug/L	1.754	103991	0.397
Zn	67		ug/L		24506	0.055
Zn	68		ug/L		73503	0.277
> Ge	74		ug/L		261698	261697.653
As	75	25.349	ug/L	3.501	19892	0.075
Se	77		ug/L		10469	0.020
Se	82	67.867	ug/L	2.070	4916	0.019
Kr	83		ug/L		88	-0.000
Sr	88	58.585	ug/L	0.266	507781	3.688
Y	89		ug/L		27976	0.203
Ag	107	5.149	ug/L	1.834	16762	0.121
Cd	111	14.950	ug/L	2.037	11660	0.085
Cd	114		ug/L		27278	0.198
> In	115		ug/L		137622	137622.306
Sn	120	8.141	ug/L	0.373	26192	0.189
Sb	121	16.893	ug/L	0.957	47204	0.340
Sb	123		ug/L		36403	0.262
Ba	135		ug/L		38621	0.196
Ba	137	48.856	ug/L	1.732	68396	0.348
Ho	165		ug/L		1397	0.007
> Lu	175		ug/L		196609	196608.970
Tl	205	27.593	ug/L	3.336	186114	0.943
Pb	208	20.517	ug/L	0.692	210318	1.067
Bi	209		ug/L		1729	0.009
U	238	0.500	ug/L	3.102	5283	0.026



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dif	Duplicate Rel. % Difference
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		101.0			
V	51					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					
Zn	66					
Zn	67					
Zn	68					
> Ge	74		100.3			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Ag	107					
Cd	111					
Cd	114					
> In	115		101.4			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		100.3			
Tl	205					
Pb	208					
Bi	209					
U	238					

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Tuesday, January 12, 2010 12:36:46

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 6.126

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	43.431	ug/L	1.219	54469	0.045
Be	9	45.882	ug/L	2.211	22573	0.019
B	11	93.786	ug/L	3.538	40254	0.033
Na	23	4471.712	ug/L	10.354	21604345	18.060
Mg	24	4854.918	ug/L	0.409	15234041	12.736
Al	27	4685.487	ug/L	0.888	19919066	16.650
P	31	4579.902	ug/L	0.868	1002030	0.832
K	39	4332.219	ug/L	4.188	25671069	20.945
Ca	43	4547.905	ug/L	1.495	50183	0.042
> Sc	45		ug/L		1195851	1195850.933
V	51	47.984	ug/L	0.378	220573	0.183
Cr	52	48.545	ug/L	1.245	195166	0.161
Cr	53		ug/L		133996	0.015
Mn	55	47.840	ug/L	1.445	299464	0.249
Fe	57	4867.292	ug/L	0.230	582248	0.483
Co	59	47.769	ug/L	0.433	214875	0.180
Ni	60	49.549	ug/L	1.509	46668	0.039
Cu	63		ug/L		104615	0.087
Cu	65	47.953	ug/L	1.467	49687	0.041
Zn	66	47.303	ug/L	0.507	33754	0.129
Zn	67		ug/L		13536	0.013
Zn	68		ug/L		24344	0.090
> Ge	74		ug/L		259847	259846.685
As	75	45.936	ug/L	2.404	35491	0.135
Se	77		ug/L		8697	0.014
Se	82	45.741	ug/L	1.559	3282	0.013
Kr	83		ug/L		91	-0.000
Sr	88	47.163	ug/L	0.979	413526	2.969
Y	89		ug/L		77	-0.000
Ag	107	46.500	ug/L	2.037	152659	1.096
Cd	111	45.031	ug/L	1.398	35482	0.255
Cd	114		ug/L		83546	0.600
> In	115		ug/L		139215	139215.046
Sn	120	46.448	ug/L	1.270	150104	1.077
Sb	121	47.313	ug/L	6.739	133075	0.953
Sb	123		ug/L		102991	0.738
Ba	135		ug/L		37347	0.191
Ba	137	47.108	ug/L	1.322	65471	0.335
Ho	165		ug/L		29	0.000
> Lu	175		ug/L		195200	195199.981
Tl	205	45.700	ug/L	1.627	305587	1.562
Pb	208	46.582	ug/L	2.544	473338	2.423
Bi	209		ug/L		104	0.000
U	238	49.267	ug/L	1.988	500475	2.563



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate Rel. % Difference
Li	7	86.861				
Be	9	91.765				
B	11	93.786				
Na	23	89.434				
Mg	24	97.098				
Al	27	92.782				
P	31	91.598				
K	39	86.644				
Ca	43	90.958				
> Sc	45		100.7			
V	51	95.968				
Cr	52	97.090				
Cr	53					
Mn	55	95.681				
Fe	57	97.346				
Co	59	95.538				
Ni	60	99.099				
Cu	63					
Cu	65	95.907				
Zn	66	94.606				
Zn	67					
Zn	68					
> Ge	74		99.6			
As	75	91.871				
Se	77					
Se	82	91.482				
Kr	83					
Sr	88	94.326				
Y	89					
Ag	107	93.001				
Cd	111	90.062				
Cd	114					
> In	115		102.6			
Sn	120	92.895				
Sb	121	94.627				
Sb	123					
Ba	135					
Ba	137	94.217				
Ho	165					
> Lu	175		99.6			
Tl	205	91.400				
Pb	208	93.164				
Bi	209					
U	238	98.534				

## QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Li	7	7CCV is out of limits (+/- 10%)
QC Std 6	Na	23	23CCV is out of limits (+/- 10%)
QC Std 6	K	39	39CCV is out of limits (+/- 10%)

## QC Action

QC Action Line: Continue



# ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Tuesday, January 12, 2010 12:42:40

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 noirs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 7.127

## Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	-0.009	ug/L	72.532	99	-0.000
Be	9	0.005	ug/L	165.642	15	0.000
B	11	1.392	ug/L	37.685	1434	0.000
Na	23	0.080	ug/L	882.628	22017	0.000
Mg	24	0.876	ug/L	21.317	6335	0.002
Al	27	0.981	ug/L	79.152	12005	0.003
P	31	-2.568	ug/L	10.817	6729	-0.000
K	39	-9.905	ug/L	8.736	587157	-0.048
Ca	43	-4.350	ug/L	82.847	445	-0.000
> Sc	45		ug/L		1241149	1241148.836
V	51	0.022	ug/L	2279.535	2064	0.000
Cr	52	0.537	ug/L	4.079	4383	0.002
Cr	53		ug/L		126388	0.005
Mn	55	-0.073	ug/L	2.883	1250	-0.000
Fe	57	3.331	ug/L	55.403	5009	0.000
Co	59	0.001	ug/L	173.836	207	0.000
Ni	60	0.002	ug/L	341.058	78	0.000
Cu	63		ug/L		256	-0.000
Cu	65	0.009	ug/L	85.161	110	0.000
Zn	66	-0.031	ug/L	6.778	167	-0.000
Zn	67		ug/L		9032	-0.005
Zn	68		ug/L		810	-0.001
> Ge	74		ug/L		270038	270037.729
As	75	-0.715	ug/L	23.637	-189	-0.002
Se	77		ug/L		7516	0.008
Se	82	0.435	ug/L	56.788	9	0.000
Kr	83		ug/L		74	-0.000
Sr	88	0.000	ug/L	181.507	171	0.000
Y	89		ug/L		48	-0.000
Ag	107	0.001	ug/L	706.899	59	0.000
Cd	111	-0.003	ug/L	400.600	21	-0.000
Cd	114		ug/L		39	0.000
> In	115		ug/L		142231	142231.295
Sn	120	0.053	ug/L	21.811	403	0.001
Sb	121	0.477	ug/L	33.077	1741	0.010
Sb	123		ug/L		1342	0.007
Ba	135		ug/L		36	0.000
Ba	137	0.001	ug/L	961.775	52	0.000
Ho	165		ug/L		21	0.000
> Lu	175		ug/L		196854	196853.554
Tl	205	0.556	ug/L	10.915	4390	0.019
Pb	208	-0.006	ug/L	48.816	457	-0.000
Bi	209		ug/L		25	0.000
U	238	0.046	ug/L	30.127	640	0.002



## Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	43					
>	Sc	45			104.6		
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74			103.5		
	As	75					
	Se	77					
	Se	82					
	Kr	83					
	Sr	88					
	Y	89					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115			104.8		
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
	Ho	165					
>	Lu	175			100.4		
	Tl	205					
	Pb	208					
	Bi	209					
	U	238					

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: 243457001

Sample Date/Time: Tuesday, January 12, 2010 12:48:37

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\6020 nolrs tht\mozr.mth

Dataset File: C:\elandata\Dataset\100111\243457001.128

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	79.833	ug/L	1.521	114536	0.084
Be	9	5.331	ug/L	1.793	3015	0.002
B	11	21.377	ug/L	1.128	11212	0.008
Na	23	683.157	ug/L	10.166	3801754	2.759
Mg	24	11630.711	ug/L	4.170	41779906	30.512
Al	27	92812.938	ug/L	4.043	451578793	329.819
P	31	431.852	ug/L	0.346	115475	0.078
K	39	10965.114	ug/L	3.683	73292762	53.013
Ca	43	9392.273	ug/L	0.560	118075	0.086
> Sc	45		ug/L		1369104	1369104.184
V	51	97.038	ug/L	1.071	508495	0.370
Cr	52	47.335	ug/L	0.327	217949	0.157
Cr	53		ug/L		97638	-0.026
Mn	55	1212.144	ug/L	0.634	8640557	6.310
Fe	57	53188.504	ug/L	0.768	7233989	5.280
Co	59	25.260	ug/L	0.565	130193	0.095
Ni	60	36.755	ug/L	1.577	39656	0.029
Cu	63		ug/L		72932	0.053
Cu	65	30.265	ug/L	0.795	35946	0.026
Zn	66	120.158	ug/L	1.372	89419	0.328
Zn	67		ug/L		22600	0.044
Zn	68		ug/L		70642	0.256
> Ge	74		ug/L		271917	271917.175
As	75	9.221	ug/L	2.940	7759	0.027
Se	77		ug/L		3521	-0.007
Se	82	-1.239	ug/L	9.602	-118	-0.000
Kr	83		ug/L		327	0.001
Sr	88	121.165	ug/L	0.562	1122575	7.629
Y	89		ug/L		591372	4.019
Ag	107	0.453	ug/L	3.622	1630	0.011
Cd	111	1.684	ug/L	4.377	1425	0.010
Cd	114		ug/L		651	0.004
> In	115		ug/L		147131	147131.411
Sn	120	0.907	ug/L	0.862	3328	0.021
Sb	121	0.401	ug/L	8.871	1580	0.008
Sb	123		ug/L		1234	0.006
Ba	135		ug/L		576007	2.604
Ba	137	629.066	ug/L	1.936	990221	4.476
Ho	165		ug/L		29486	0.133
> Lu	175		ug/L		221228	221228.104
Tl	205	1.460	ug/L	3.083	11773	0.050
Pb	208	65.291	ug/L	1.371	751749	3.396
Bi	209		ug/L		10163	0.046
U	238	14.450	ug/L	1.636	166502	0.752



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		115.3			
V	51					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					
Zn	66					
Zn	67					
Zn	68					
> Ge	74		104.2			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Ag	107					
Cd	111					
Cd	114					
> In	115		108.4			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		112.9			
Tl	205					
Pb	208					
Bi	209					
U	238					

## QC Out Of Limits

### Measurement Type Analyte

Al 27 Upper, S, EEE Al

Mn 55 Upper, S, EEE Mn

Fe 57 Upper, S, EEE Fe

### Mass Out of Limits Message

27 Sample is out of limits (over linear range)

55 Sample is out of limits (over linear range)

57 Sample is out of limits (over linear range)

## QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 243457002

Sample Date/Time: Tuesday, January 12, 2010 12:54:34

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\6020 nolrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\243457002.129

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	67.654	ug/L	1.779	100679	0.071
Be	9	3.781	ug/L	3.111	2222	0.002
B	11	15.111	ug/L	0.113	8497	0.005
Na	23	1198.767	ug/L	9.415	6898631	4.841
Mg	24	9789.068	ug/L	2.192	36471803	25.681
Al	27	60684.685	ug/L	3.899	306229050	215.648
P	31	321.650	ug/L	0.316	91340	0.058
K	39	8542.068	ug/L	10.758	59341094	41.298
Ca	43	13272.496	ug/L	0.549	172835	0.121
> Sc	45		ug/L		1420045	1420044.790
V	51	64.465	ug/L	1.701	351086	0.246
Cr	52	46.698	ug/L	1.595	223024	0.155
Cr	53		ug/L		97541	-0.028
Mn	55	963.085	ug/L	0.764	7120808	5.013
Fe	57	47709.857	ug/L	0.956	6730632	4.736
Co	59	12.154	ug/L	1.492	65096	0.046
Ni	60	34.947	ug/L	1.265	39111	0.027
Cu	63		ug/L		41491	0.029
Cu	65	16.387	ug/L	1.869	20237	0.014
Zn	66	115.143	ug/L	1.935	87059	0.314
Zn	67		ug/L		22386	0.042
Zn	68		ug/L		72085	0.257
> Ge	74		ug/L		276253	276253.118
As	75	6.429	ug/L	4.171	5613	0.019
Se	77		ug/L		3549	-0.007
Se	82	-0.964	ug/L	7.773	-99	-0.000
Kr	83		ug/L		258	0.001
Sr	88	101.071	ug/L	2.280	985867	6.363
Y	89		ug/L		559702	3.613
Ag	107	0.345	ug/L	1.640	1321	0.008
Cd	111	1.364	ug/L	14.218	1220	0.008
Cd	114		ug/L		237	0.001
> In	115		ug/L		154912	154911.622
Sn	120	1.334	ug/L	2.265	5037	0.031
Sb	121	0.138	ug/L	13.696	843	0.003
Sb	123		ug/L		663	0.002
Ba	135		ug/L		671990	3.028
Ba	137	719.964	ug/L	0.147	1136844	5.123
Ho	165		ug/L		29829	0.134
> Lu	175		ug/L		221914	221914.259
Tl	205	0.768	ug/L	3.675	6563	0.026
Pb	208	20.141	ug/L	0.873	233033	1.047
Bi	209		ug/L		3014	0.013
U	238	1.683	ug/L	0.524	19631	0.088

Sample ID: 243457002

Report Date/Time: Tuesday, January 12, 2010 12:57:06



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		119.6			
V	51					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					
Zn	66					
Zn	67					
Zn	68					
> Ge	74		105.9			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Ag	107					
Cd	111					
Cd	114					
> In	115		114.2			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		113.2			
Tl	205					
Pb	208					
Bi	209					
U	238					

## QC Out Of Limits

Measurement Type Analyte  
Al 27 Upper, S, EEE Al

Mass Out of Limits Message  
27 Sample is out of limits (over linear range)

## QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 243457003

Sample Date/Time: Tuesday, January 12, 2010 13:00:29

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\6020 nolrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\243457003.130

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	84.529	ug/L	1.927	125508	0.088
Be	9	5.049	ug/L	2.130	2957	0.002
B	11	17.855	ug/L	1.751	9847	0.006
Na	23	699.711	ug/L	8.087	4028231	2.826
Mg	24	10498.305	ug/L	5.187	39040240	27.541
Al	27	108205.342	ug/L	0.389	544930668	384.517
P	31	274.988	ug/L	0.767	79140	0.050
K	39	10261.471	ug/L	8.255	71060495	49.611
Ca	43	9140.624	ug/L	1.188	118954	0.084
> Sc	45		ug/L		1417121	1417120.678
V	51	87.639	ug/L	1.035	475541	0.334
Cr	52	42.035	ug/L	1.804	200587	0.140
Cr	53		ug/L		92123	-0.032
Mn	55	778.381	ug/L	2.117	5743418	4.052
Fe	57	50854.984	ug/L	1.670	7159004	5.048
Co	59	19.429	ug/L	0.851	103702	0.073
Ni	60	32.533	ug/L	0.231	36344	0.026
Cu	63		ug/L		64052	0.045
Cu	65	25.244	ug/L	1.716	31049	0.022
Zn	66	99.796	ug/L	2.562	75507	0.273
Zn	67		ug/L		19733	0.033
Zn	68		ug/L		60072	0.214
> Ge	74		ug/L		276354	276354.403
As	75	8.199	ug/L	3.845	7054	0.024
Se	77		ug/L		3248	-0.008
Se	82	-2.202	ug/L	20.991	-193	-0.001
Kr	83		ug/L		359	0.001
Sr	88	111.106	ug/L	1.925	1042557	6.995
Y	89		ug/L		496013	3.328
Ag	107	0.444	ug/L	3.806	1620	0.010
Cd	111	1.656	ug/L	15.265	1422	0.009
Cd	114		ug/L		436	0.003
> In	115		ug/L		149045	149044.542
Sn	120	0.678	ug/L	3.784	2580	0.016
Sb	121	0.156	ug/L	5.838	864	0.003
Sb	123		ug/L		677	0.002
Ba	135		ug/L		481379	2.201
Ba	137	538.861	ug/L	0.927	838695	3.834
Ho	165		ug/L		24175	0.110
> Lu	175		ug/L		218736	218736.079
Tl	205	0.982	ug/L	3.381	8071	0.034
Pb	208	53.532	ug/L	0.744	609553	2.784
Bi	209		ug/L		8576	0.039
U	238	5.878	ug/L	1.415	67092	0.306



# Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		119.4			
V	51					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					
Zn	66					
Zn	67					
Zn	68					
> Ge	74		105.9			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Ag	107					
Cd	111					
Cd	114					
> In	115		109.8			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		111.6			
Tl	205					
Pb	208					
Bi	209					
U	238					

## QC Out Of Limits

Measurement Type Analyte

Al 27 Upper, S, EEEAl

Fe 57 Upper, S, EEEFe

Mass Out of Limits Message

27Sample is out of limits (over linear range)

57Sample is out of limits (over linear range)

## QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 243457004

Sample Date/Time: Tuesday, January 12, 2010 13:06:26

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 936805[2][rm]

Method File: c:\elandata\Method\6020 nolrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\243457004.131

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	70.655	ug/L	1.752	104917	0.074
Be	9	3.035	ug/L	1.686	1782	0.001
B	11	11.316	ug/L	2.751	6587	0.004
Na	23	1538.465	ug/L	3.472	8827500	6.213
Mg	24	9211.585	ug/L	6.735	34245825	24.166
Al	27	55380.144	ug/L	1.789	278834200	196.798
P	31	313.592	ug/L	0.373	89061	0.057
K	39	8637.880	ug/L	9.200	59899161	41.762
Ca	43	5817.224	ug/L	0.442	75897	0.053
> Sc	45		ug/L		1416837	1416836.783
V	51	59.299	ug/L	0.722	322435	0.226
Cr	52	40.979	ug/L	0.910	195594	0.136
Cr	53		ug/L		91819	-0.032
Mn	55	830.131	ug/L	0.285	6124354	4.321
Fe	57	50640.386	ug/L	0.889	7127856	5.027
Co	59	16.074	ug/L	1.366	85819	0.060
Ni	60	27.919	ug/L	1.228	31194	0.022
Cu	63		ug/L		43840	0.031
Cu	65	17.286	ug/L	0.511	21295	0.015
Zn	66	144.367	ug/L	1.008	107818	0.394
Zn	67		ug/L		23434	0.047
Zn	68		ug/L		78655	0.285
> Ge	74		ug/L		272971	272970.916
As	75	7.864	ug/L	2.822	6701	0.023
Se	77		ug/L		3130	-0.008
Se	82	-0.869	ug/L	39.234	-90	-0.000
Kr	83		ug/L		272	0.001
Sr	88	70.370	ug/L	1.073	659953	4.430
Y	89		ug/L		601210	4.036
Ag	107	0.486	ug/L	3.141	1765	0.011
Cd	111	1.631	ug/L	3.944	1397	0.009
Cd	114		ug/L		239	0.001
> In	115		ug/L		148932	148931.675
Sn	120	2.105	ug/L	2.917	7503	0.049
Sb	121	0.186	ug/L	13.963	954	0.004
Sb	123		ug/L		719	0.003
Ba	135		ug/L		274351	1.242
Ba	137	306.676	ug/L	2.459	482015	2.182
Ho	165		ug/L		31507	0.143
> Lu	175		ug/L		220955	220955.439
Tl	205	0.646	ug/L	0.443	5610	0.022
Pb	208	21.650	ug/L	1.813	249314	1.126
Bi	209		ug/L		2819	0.013
U	238	2.029	ug/L	2.218	23516	0.106



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	43					
>	Sc	45		119.4			
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		104.6			
	As	75					
	Se	77					
	Se	82					
	Kr	83					
	Sr	88					
	Y	89					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		109.8			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
	Ho	165					
>	Lu	175		112.7			
	Tl	205					
	Pb	208					
	Bi	209					
	U	238					

## QC Out Of Limits

Measurement Type Analyte

Al 27 Upper, S, EEE Al

Fe 57 Upper, S, EEE Fe

Mass Out of Limits Message

27 Sample is out of limits (over linear range)

57 Sample is out of limits (over linear range)

## QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Tuesday, January 12, 2010 13:36:07

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 6.136

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	49.379	ug/L	3.202	60987	0.052
Be	9	49.803	ug/L	1.097	24132	0.020
B	11	98.899	ug/L	1.428	41767	0.035
Na	23	4865.003	ug/L	8.386	23146422	19.648
Mg	24	5009.716	ug/L	1.893	15480183	13.143
Al	27	5106.414	ug/L	3.771	21374962	18.146
P	31	4735.820	ug/L	0.989	1020103	0.860
K	39	4369.646	ug/L	7.706	25485047	21.126
Ca	43	4693.277	ug/L	0.234	50986	0.043
> Sc	45		ug/L		1177638	1177638.214
V	51	49.684	ug/L	0.754	224853	0.189
Cr	52	50.616	ug/L	0.629	200317	0.168
Cr	53		ug/L		123613	0.008
Mn	55	49.870	ug/L	1.171	307342	0.260
Fe	57	4978.289	ug/L	1.703	586297	0.494
Co	59	49.270	ug/L	2.360	218218	0.185
Ni	60	50.844	ug/L	1.519	47155	0.040
Cu	63		ug/L		105735	0.089
Cu	65	49.065	ug/L	1.142	50065	0.042
Zn	66	49.025	ug/L	2.045	34714	0.134
Zn	67		ug/L		13736	0.014
Zn	68		ug/L		25000	0.093
> Ge	74		ug/L		257922	257922.150
As	75	47.309	ug/L	1.297	36275	0.139
Se	77		ug/L		7351	0.009
Se	82	46.751	ug/L	1.313	3331	0.013
Kr	83		ug/L		128	0.000
Sr	88	49.885	ug/L	2.231	419510	3.141
Y	89		ug/L		152	0.001
Ag	107	48.445	ug/L	0.466	152569	1.142
Cd	111	48.101	ug/L	0.539	36357	0.272
Cd	114		ug/L		84610	0.633
> In	115		ug/L		133542	133542.476
Sn	120	48.653	ug/L	1.232	150814	1.128
Sb	121	50.360	ug/L	6.596	135777	1.015
Sb	123		ug/L		104947	0.784
Ba	135		ug/L		37441	0.199
Ba	137	49.297	ug/L	1.947	65856	0.351
Ho	165		ug/L		28	0.000
> Lu	175		ug/L		187651	187651.440
Tl	205	46.862	ug/L	1.984	301240	1.602
Pb	208	48.739	ug/L	1.121	476160	2.535
Bi	209		ug/L		124	0.001
U	238	51.816	ug/L	1.969	506047	2.696



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte	Mass	QC Std	% Recovery	Int Std	% Recovery	Spike	% Recovery	Dilution	% Dil	Duplicate	Rel. % Difference
	Li	7		98.758								
	Be	9		99.605								
	B	11		98.899								
	Na	23		97.300								
	Mg	24		100.194								
	Al	27		101.117								
	P	31		94.716								
	K	39		87.393								
	Ca	43		93.866								
>	Sc	45				99.2						
	V	51		99.367								
	Cr	52		101.232								
	Cr	53										
	Mn	55		99.739								
	Fe	57		99.566								
	Co	59		98.540								
	Ni	60		101.688								
	Cu	63										
	Cu	65		98.131								
	Zn	66		98.050								
	Zn	67										
	Zn	68										
>	Ge	74				98.9						
	As	75		94.619								
	Se	77										
	Se	82		93.503								
	Kr	83										
	Sr	88		99.770								
	Y	89										
	Ag	107		96.890								
	Cd	111		96.202								
	Cd	114										
>	In	115				98.4						
	Sn	120		97.307								
	Sb	121		100.720								
	Sb	123										
	Ba	135										
	Ba	137		98.593								
	Ho	165										
>	Lu	175				95.7						
	Tl	205		93.724								
	Pb	208		97.477								
	Bi	209										
	U	238		103.632								

## QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits	Message
QC Std 6	K	39	CCV	is out of limits (+/- 10%)

## QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Tuesday, January 12, 2010 13:42:02

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 7.137

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.046	ug/L	11.846	164	0.000
Be	9	0.005	ug/L	160.812	14	0.000
B	11	1.312	ug/L	26.396	1344	0.000
Na	23	0.675	ug/L	129.417	24021	0.003
Mg	24	0.322	ug/L	256.163	4334	0.001
Al	27	0.777	ug/L	73.031	10671	0.003
P	31	-0.154	ug/L	331.001	6982	-0.000
K	39	5.562	ug/L	79.536	652579	0.027
Ca	43	0.876	ug/L	442.494	485	0.000
> Sc	45		ug/L		1191505	1191504.696
V	51	-0.547	ug/L	16.610	-612	-0.002
Cr	52	0.432	ug/L	4.551	3790	0.001
Cr	53		ug/L		116972	0.001
Mn	55	0.080	ug/L	15.976	2150	0.000
Fe	57	9.380	ug/L	17.224	5524	0.001
Co	59	0.001	ug/L	312.559	200	0.000
Ni	60	0.001	ug/L	2000.622	74	0.000
Cu	63		ug/L		501	0.000
Cu	65	0.008	ug/L	197.842	105	0.000
Zn	66	0.022	ug/L	191.846	198	0.000
Zn	67		ug/L		9761	-0.001
Zn	68		ug/L		881	-0.000
> Ge	74		ug/L		259668	259668.102
As	75	-0.436	ug/L	140.194	33	-0.001
Se	77		ug/L		5690	0.002
Se	82	0.200	ug/L	109.614	-9	0.000
Kr	83		ug/L		98	0.000
Sr	88	0.004	ug/L	40.476	194	0.000
Y	89		ug/L		84	0.000
Ag	107	0.003	ug/L	126.507	65	0.000
Cd	111	0.024	ug/L	21.935	40	0.000
Cd	114		ug/L		32	0.000
> In	115		ug/L		134374	134373.566
Sn	120	0.057	ug/L	26.183	392	0.001
Sb	121	0.471	ug/L	29.314	1630	0.009
Sb	123		ug/L		1247	0.007
Ba	135		ug/L		34	0.000
Ba	137	-0.001	ug/L	193.934	46	-0.000
Ho	165		ug/L		20	0.000
> Lu	175		ug/L		188692	188691.594
Tl	205	0.206	ug/L	20.750	1952	0.007
Pb	208	-0.000	ug/L	634.842	496	-0.000
Bi	209		ug/L		23	0.000
U	238	0.043	ug/L	38.046	588	0.002



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
[	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	43					
>	Sc	45		100.4			
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
>	Ge	74		99.5			
	As	75					
	Se	77					
	Se	82					
	Kr	83					
	Sr	88					
	Y	89					
	Ag	107					
	Cd	111					
	Cd	114					
>	In	115		99.0			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
	Ho	165					
>	Lu	175		96.3			
	Tl	205					
	Pb	208					
	Bi	209					
	U	238					

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Tuesday, January 12, 2010 14:35:22

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 noirs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 6.146

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	54.503	ug/L	1.583	65615	0.057
Be	9	53.312	ug/L	1.923	25185	0.022
B	11	103.791	ug/L	1.735	42703	0.037
Na	23	4701.779	ug/L	3.002	21823188	18.989
Mg	24	5306.178	ug/L	1.288	15988519	13.920
Al	27	5103.325	ug/L	6.101	20832409	18.135
P	31	4769.153	ug/L	0.231	1001678	0.866
K	39	5152.109	ug/L	7.598	29205491	24.909
Ca	43	4926.888	ug/L	0.814	52166	0.045
> Sc	45		ug/L		1148303	1148303.429
V	51	50.018	ug/L	1.463	220712	0.191
Cr	52	50.788	ug/L	0.899	195985	0.169
Cr	53		ug/L		115769	0.004
Mn	55	51.703	ug/L	1.097	310630	0.269
Fe	57	5137.370	ug/L	1.462	589865	0.510
Co	59	49.943	ug/L	0.610	215711	0.188
Ni	60	50.875	ug/L	1.594	46010	0.040
Cu	63		ug/L		103247	0.090
Cu	65	49.676	ug/L	1.028	49426	0.043
Zn	66	49.520	ug/L	1.140	33950	0.135
Zn	67		ug/L		13291	0.014
Zn	68		ug/L		24779	0.096
> Ge	74		ug/L		249715	249715.222
As	75	47.421	ug/L	1.132	35203	0.140
Se	77		ug/L		6833	0.008
Se	82	47.055	ug/L	2.909	3245	0.013
Kr	83		ug/L		120	0.000
Sr	88	51.189	ug/L	1.017	419770	3.223
Y	89		ug/L		238	0.001
Ag	107	48.946	ug/L	0.489	150300	1.154
Cd	111	49.587	ug/L	1.608	36540	0.280
Cd	114		ug/L		84116	0.646
> In	115		ug/L		130205	130204.635
Sn	120	50.272	ug/L	1.645	151930	1.165
Sb	121	50.654	ug/L	6.241	133185	1.021
Sb	123		ug/L		104633	0.802
Ba	135		ug/L		36728	0.196
Ba	137	48.625	ug/L	1.264	64715	0.346
Ho	165		ug/L		40	0.000
> Lu	175		ug/L		186929	186929.024
Tl	205	46.753	ug/L	0.276	299406	1.598
Pb	208	49.410	ug/L	0.879	480834	2.570
Bi	209		ug/L		102	0.000
U	238	51.969	ug/L	2.368	505551	2.704



# Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate Rel. %	Difference
Li	7	109.007					
Be	9	106.623					
B	11	103.791					
Na	23	94.036					
Mg	24	106.124					
Al	27	101.056					
P	31	95.383					
K	39	103.042					
Ca	43	98.538					
> Sc	45		96.7				
V	51	100.036					
Cr	52	101.576					
Cr	53						
Mn	55	103.406					
Fe	57	102.747					
Co	59	99.885					
Ni	60	101.749					
Cu	63						
Cu	65	99.352					
Zn	66	99.041					
Zn	67						
Zn	68						
> Ge	74		95.7				
As	75	94.842					
Se	77						
Se	82	94.110					
Kr	83						
Sr	88	102.377					
Y	89						
Ag	107	97.893					
Cd	111	99.174					
Cd	114						
> In	115		96.0				
Sn	120	100.544					
Sb	121	101.308					
Sb	123						
Ba	135						
Ba	137	97.250					
Ho	165						
> Lu	175		95.4				
Tl	205	93.506					
Pb	208	98.821					
Bi	209						
U	238	103.939					

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Tuesday, January 12, 2010 14:41:17

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 7.147

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.070	ug/L	20.607	197	0.000
Be	9	0.007	ug/L	84.124	16	0.000
B	11	1.151	ug/L	34.736	1300	0.000
Na	23	0.248	ug/L	263.258	22351	0.001
Mg	24	1.336	ug/L	118.021	7669	0.004
Al	27	1.511	ug/L	41.060	14007	0.005
P	31	-1.959	ug/L	73.505	6712	-0.000
K	39	-14.607	ug/L	51.307	546290	-0.071
Ca	43	-7.553	ug/L	38.579	400	-0.000
> Sc	45		ug/L		1213114	1213113.997
V	51	-0.705	ug/L	70.672	-1345	-0.003
Cr	52	0.224	ug/L	17.159	3019	0.001
Cr	53		ug/L		107970	-0.008
Mn	55	0.033	ug/L	22.532	1889	0.000
Fe	57	3.370	ug/L	38.969	4902	0.000
Co	59	0.002	ug/L	154.231	207	0.000
Ni	60	0.001	ug/L	397.783	76	0.000
Cu	63		ug/L		391	0.000
Cu	65	0.007	ug/L	214.310	106	0.000
Zn	66	-0.008	ug/L	159.912	181	-0.000
Zn	67		ug/L		9435	-0.003
Zn	68		ug/L		813	-0.000
> Ge	74		ug/L		265000	265000.058
As	75	-0.295	ug/L	131.579	142	-0.001
Se	77		ug/L		5265	0.000
Se	82	0.156	ug/L	142.244	-12	0.000
Kr	83		ug/L		84	-0.000
Sr	88	0.002	ug/L	21.382	182	0.000
Y	89		ug/L		91	0.000
Ag	107	-0.001	ug/L	228.838	53	-0.000
Cd	111	-0.006	ug/L	274.898	18	-0.000
Cd	114		ug/L		36	0.000
> In	115		ug/L		138382	138381.719
Sn	120	0.048	ug/L	23.840	376	0.001
Sb	121	0.523	ug/L	37.170	1819	0.011
Sb	123		ug/L		1403	0.008
Ba	135		ug/L		36	0.000
Ba	137	0.001	ug/L	205.115	51	0.000
Ho	165		ug/L		17	0.000
> Lu	175		ug/L		196655	196655.142
Tl	205	0.142	ug/L	28.106	1600	0.005
Pb	208	-0.003	ug/L	109.445	486	-0.000
Bi	209		ug/L		27	0.000
U	238	0.042	ug/L	21.767	606	0.002



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dif	Duplicate Rel. % Difference
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		102.2			
V	51					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					
Zn	66					
Zn	67					
Zn	68					
> Ge	74		101.6			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Ag	107					
Cd	111					
Cd	114					
> In	115		102.0			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		100.3			
Tl	205					
Pb	208					
Bi	209					
U	238					

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



# ICPMS#6 - Summary Report

Sample ID: 1202004422

Sample Date/Time: Tuesday, January 12, 2010 14:53:05

Sample Type:

Sample Description: LANL 6020 DUP

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\6020 nolrs thtlimozr.mth

Dataset File: C:\elandata\Dataset\100111\1202004422.149

## Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	37.134	ug/L	1.314	51030	0.039
Be	9	3.426	ug/L	1.697	1858	0.001
B	11	8.635	ug/L	2.812	4853	0.003
Na	23	994.257	ug/L	7.007	5282759	4.015
Mg	24	5529.701	ug/L	5.551	19003757	14.507
Al	27	37181.088	ug/L	5.109	173093571	132.126
P	31	272.217	ug/L	1.960	72487	0.049
K	39	3652.546	ug/L	13.405	23810847	17.659
Ca	43	4080.599	ug/L	1.276	49373	0.037
> Sc	45		ug/L		1309834	1309834.483
V	51	38.365	ug/L	1.410	193581	0.146
Cr	52	37.539	ug/L	1.521	165830	0.125
Cr	53		ug/L		83840	-0.033
Mn	55	771.846	ug/L	0.476	5264394	4.018
Fe	57	26342.833	ug/L	0.878	3430176	2.615
Co	59	8.169	ug/L	0.498	40425	0.031
Ni	60	17.813	ug/L	0.864	18429	0.014
Cu	63		ug/L		35320	0.027
Cu	65	15.061	ug/L	1.146	17167	0.013
Zn	66	98.003	ug/L	2.569	70250	0.268
Zn	67		ug/L		17432	0.028
Zn	68		ug/L		51609	0.194
> Ge	74		ug/L		261809	261809.416
As	75	4.989	ug/L	4.979	4213	0.015
Se	77		ug/L		2681	-0.009
Se	82	-0.183	ug/L	71.066	-36	-0.000
Kr	83		ug/L		209	0.000
Sr	88	31.986	ug/L	1.027	290279	2.014
Y	89		ug/L		808559	5.612
Ag	107	0.186	ug/L	4.829	688	0.004
Cd	111	0.858	ug/L	6.822	722	0.005
Cd	114		ug/L		192	0.001
> In	115		ug/L		144061	144060.647
Sn	120	0.733	ug/L	3.250	2680	0.017
Sb	121	0.181	ug/L	3.756	908	0.004
Sb	123		ug/L		738	0.003
Ba	135		ug/L		150358	0.678
Ba	137	166.448	ug/L	1.825	262619	1.184
Ho	165		ug/L		41390	0.187
> Lu	175		ug/L		221737	221736.675
Tl	205	0.344	ug/L	1.672	3343	0.012
Pb	208	23.558	ug/L	0.836	272246	1.225
Bi	209		ug/L		2895	0.013
U	238	2.594	ug/L	1.389	30113	0.135



# Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
[	Li	7				
	Be	9				
	B	11				
	Na	23				
	Mg	24				
	Al	27				
	P	31				
	K	39				
	Ca	43				
>	Sc	45	110.3			
	V	51				
	Cr	52				
	Cr	53				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	63				
	Cu	65				
	Zn	66				
	Zn	67				
	Zn	68				
>	Ge	74	100.3			
	As	75				
	Se	77				
	Se	82				
	Kr	83				
	Sr	88				
	Y	89				
	Ag	107				
	Cd	111				
	Cd	114				
>	In	115	106.2			
	Sn	120				
	Sb	121				
	Sb	123				
	Ba	135				
	Ba	137				
	Ho	165				
>	Lu	175	113.1			
	Tl	205				
	Pb	208				
	Bi	209				
	U	238				

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: 1202004423

Sample Date/Time: Tuesday, January 12, 2010 14:58:59

Sample Type:

Sample Description: LANL 6020 MS

Number of Replicates: 3

Batch ID: 936805|2|rmj

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\1202004423.150

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	72.047	ug/L	2.445	98485	0.075
Be	9	30.147	ug/L	0.604	16186	0.012
B	11	64.013	ug/L	2.090	30251	0.023
Na	23	1904.537	ug/L	0.805	10056581	7.692
Mg	24	6077.558	ug/L	5.023	20809690	15.944
Al	27	38201.254	ug/L	2.185	177106829	135.751
P	31	1281.651	ug/L	0.491	311429	0.233
K	39	5173.842	ug/L	7.347	33297981	25.014
Ca	43	4614.193	ug/L	1.162	55533	0.042
> Sc	45		ug/L		1304542	1304541.998
V	51	65.794	ug/L	1.039	329198	0.251
Cr	52	70.154	ug/L	0.375	306687	0.233
Cr	53		ug/L		98460	-0.021
Mn	55	1008.028	ug/L	1.385	6846522	5.247
Fe	57	26479.419	ug/L	1.109	3433781	2.629
Co	59	33.097	ug/L	0.524	162471	0.124
Ni	60	40.797	ug/L	0.316	41933	0.032
Cu	63		ug/L		87134	0.067
Cu	65	36.801	ug/L	0.597	41623	0.032
Zn	66	125.654	ug/L	0.461	89059	0.343
Zn	67		ug/L		21035	0.042
Zn	68		ug/L		66776	0.254
> Ge	74		ug/L		258968	258968.101
As	75	41.660	ug/L	1.581	32118	0.123
Se	77		ug/L		2959	-0.008
Se	82	8.257	ug/L	3.657	572	0.002
Kr	83		ug/L		225	0.001
Sr	88	59.171	ug/L	0.920	537994	3.725
Y	89		ug/L		843912	5.845
Ag	107	23.510	ug/L	1.728	80074	0.554
Cd	111	6.490	ug/L	4.274	5325	0.037
Cd	114		ug/L		9297	0.064
> In	115		ug/L		144375	144374.777
Sn	120	13.592	ug/L	1.065	45717	0.315
Sb	121	54.327	ug/L	0.654	158402	1.095
Sb	123		ug/L		124310	0.859
Ba	135		ug/L		280666	1.266
Ba	137	306.479	ug/L	0.877	483294	2.181
Ho	165		ug/L		43326	0.195
> Lu	175		ug/L		221603	221602.764
Tl	205	42.510	ug/L	3.175	322767	1.453
Pb	208	115.484	ug/L	0.722	1331564	6.006
Bi	209		ug/L		2942	0.013
U	238	27.519	ug/L	1.627	317483	1.432



## Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dif	Duplicate Rel. % Difference
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45			109.9		
V	51					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					
Zn	66					
Zn	67					
Zn	68					
> Ge	74			99.3		
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Ag	107					
Cd	111					
Cd	114					
> In	115			106.4		
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175			113.1		
Tl	205					
Pb	208					
Bi	209					
U	238					

## QC Out Of Limits

Measurement Type Analyte  
Mn 55 Upper, S, EEMn

Mass Out of Limits Message  
55Sample is out of limits (over linear range)

## QC Action

QC Action Line: Continue



# ICPMS#6 - Summary Report

Sample ID: 1202004425

Sample Date/Time: Tuesday, January 12, 2010 15:04:53

Sample Type:

Sample Description: LANL 6020 MSD

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\6020 nolrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\1202004425.151

## Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	62.920	ug/L	1.656	84026	0.066
Be	9	27.178	ug/L	0.924	14253	0.011
B	11	60.368	ug/L	3.322	27916	0.021
Na	23	1552.832	ug/L	14.095	8013202	6.271
Mg	24	5962.483	ug/L	1.557	19932140	15.642
Al	27	40112.278	ug/L	7.675	181643556	142.542
P	31	1175.728	ug/L	0.978	279648	0.214
K	39	4784.133	ug/L	3.418	30135603	23.130
Ca	43	4093.572	ug/L	1.247	48178	0.037
> Sc	45		ug/L		1274083	1274083.328
V	51	63.611	ug/L	1.195	310885	0.242
Cr	52	55.157	ug/L	1.379	235968	0.183
Cr	53		ug/L		91236	-0.025
Mn	55	632.497	ug/L	0.256	4196570	3.292
Fe	57	24383.478	ug/L	0.287	3088752	2.421
Co	59	31.883	ug/L	1.399	152875	0.120
Ni	60	37.303	ug/L	0.456	37454	0.029
Cu	63		ug/L		78466	0.061
Cu	65	33.693	ug/L	1.629	37226	0.029
Zn	66	103.952	ug/L	0.658	74179	0.284
Zn	67		ug/L		18292	0.031
Zn	68		ug/L		54698	0.206
> Ge	74		ug/L		260628	260627.911
As	75	36.653	ug/L	0.976	28482	0.108
Se	77		ug/L		3013	-0.008
Se	82	6.744	ug/L	2.003	466	0.002
Kr	83		ug/L		227	0.001
Sr	88	55.927	ug/L	0.405	498099	3.521
Y	89		ug/L		663039	4.688
Ag	107	21.854	ug/L	2.214	72905	0.515
Cd	111	5.560	ug/L	1.613	4470	0.031
Cd	114		ug/L		8421	0.059
> In	115		ug/L		141413	141413.454
Sn	120	12.221	ug/L	0.541	40286	0.283
Sb	121	46.691	ug/L	1.423	133384	0.941
Sb	123		ug/L		105400	0.743
Ba	135		ug/L		182419	0.833
Ba	137	204.117	ug/L	0.697	318003	1.452
Ho	165		ug/L		34572	0.158
> Lu	175		ug/L		218923	218923.212
Tl	205	38.814	ug/L	2.564	291234	1.327
Pb	208	105.814	ug/L	1.268	1205396	5.503
Bi	209		ug/L		2889	0.013
U	238	24.883	ug/L	0.167	283630	1.295



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dil	Duplicate Rel. % Difference
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		107.3			
V	51					
Cr	52					
Cr	53					
Mn	55					
Fe	57					
Co	59					
Ni	60					
Cu	63					
Cu	65					
Zn	66					
Zn	67					
Zn	68					
> Ge	74		99.9			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Ag	107					
Cd	111					
Cd	114					
> In	115		104.2			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		111.7			
Tl	205					
Pb	208					
Bi	209					
U	238					

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: 1202004424

Sample Date/Time: Tuesday, January 12, 2010 15:10:47

Sample Type:

Sample Description: LANL 6020 SDILT

Number of Replicates: 3

Batch ID: 936805|10|rmj

Method File: c:\elandata\Method\6020 noirs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\1202004424.152

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	8.044	ug/L	0.605	9876	0.008
Be	9	0.598	ug/L	11.021	297	0.000
B	11	2.135	ug/L	9.534	1646	0.001
Na	23	168.420	ug/L	2.021	809653	0.680
Mg	24	912.761	ug/L	4.096	2782473	2.395
Al	27	5258.253	ug/L	8.426	21702130	18.686
P	31	64.774	ug/L	1.067	20491	0.012
K	39	612.941	ug/L	4.336	4043077	2.963
Ca	43	602.717	ug/L	3.286	6855	0.006
> Sc	45		ug/L		1160567	1160567.441
V	51	5.844	ug/L	12.344	27665	0.022
Cr	52	7.913	ug/L	0.339	32570	0.026
Cr	53		ug/L		87052	-0.022
Mn	55	186.201	ug/L	0.139	1126496	0.969
Fe	57	4498.015	ug/L	0.932	522536	0.447
Co	59	1.130	ug/L	1.393	5118	0.004
Ni	60	2.968	ug/L	2.794	2780	0.002
Cu	63		ug/L		5906	0.005
Cu	65	2.676	ug/L	1.436	2781	0.002
Zn	66	26.417	ug/L	0.585	18275	0.072
Zn	67		ug/L		10984	0.005
Zn	68		ug/L		13642	0.051
> Ge	74		ug/L		250829	250828.686
As	75	0.705	ug/L	33.659	872	0.002
Se	77		ug/L		3406	-0.006
Se	82	-0.144	ug/L	165.701	-32	-0.000
Kr	83		ug/L		111	0.000
Sr	88	4.635	ug/L	0.792	39670	0.292
Y	89		ug/L		159753	1.179
Ag	107	0.026	ug/L	15.305	138	0.001
Cd	111	0.111	ug/L	17.139	106	0.001
Cd	114		ug/L		42	0.000
> In	115		ug/L		135384	135384.182
Sn	120	0.185	ug/L	8.413	798	0.004
Sb	121	0.025	ug/L	30.280	427	0.001
Sb	123		ug/L		360	0.000
Ba	135		ug/L		20769	0.105
Ba	137	25.513	ug/L	2.139	36056	0.182
Ho	165		ug/L		7977	0.040
> Lu	175		ug/L		198385	198385.098
Tl	205	0.786	ug/L	16.562	5990	0.027
Pb	208	4.301	ug/L	1.611	44896	0.224
Bi	209		ug/L		376	0.002
U	238	0.483	ug/L	2.139	5163	0.025



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate Rel. % Difference
[	Li	7				
	Be	9				
	B	11				
	Na	23				
	Mg	24				
	Al	27				
	P	31				
	K	39				
	Ca	43				
>	Sc	45	97.8			
	V	51				
	Cr	52				
	Cr	53				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	63				
	Cu	65				
	Zn	66				
	Zn	67				
	Zn	68				
>	Ge	74	96.1			
	As	75				
	Se	77				
	Se	82				
	Kr	83				
	Sr	88				
	Y	89				
	Ag	107				
	Cd	111				
	Cd	114				
>	In	115	99.8			
	Sn	120				
	Sb	121				
	Sb	123				
	Ba	135				
	Ba	137				
	Ho	165				
>	Lu	175	101.2			
	Tl	205				
	Pb	208				
	Bi	209				
	U	238				

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Tuesday, January 12, 2010 15:16:38

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nohrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 6.153

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	54.688	ug/L	1.883	64367	0.057
Be	9	53.142	ug/L	1.417	24546	0.022
B	11	102.116	ug/L	0.580	41095	0.036
Na	23	4813.144	ug/L	1.571	21843545	19.439
Mg	24	5257.160	ug/L	1.474	15488209	13.792
Al	27	4719.780	ug/L	4.604	18844865	16.772
P	31	4641.138	ug/L	1.283	953230	0.843
K	39	4210.019	ug/L	2.139	23438802	20.354
Ca	43	4732.492	ug/L	1.147	49010	0.043
Sc	45		ug/L		1122801	1122800.715
V	51	48.172	ug/L	0.369	207912	0.184
Cr	52	48.744	ug/L	0.422	184004	0.162
Cr	53		ug/L		108582	-0.000
Mn	55	48.918	ug/L	0.633	287456	0.255
Fe	57	4901.436	ug/L	1.226	550461	0.487
Co	59	48.086	ug/L	1.056	203081	0.181
Ni	60	49.348	ug/L	0.545	43643	0.039
Cu	63		ug/L		99116	0.088
Cu	65	47.651	ug/L	0.644	46362	0.041
Zn	66	46.799	ug/L	1.553	31958	0.128
Zn	67		ug/L		12909	0.013
Zn	68		ug/L		23551	0.091
Ge	74		ug/L		248659	248659.066
As	75	44.591	ug/L	1.676	32982	0.131
Se	77		ug/L		6057	0.005
Se	82	46.184	ug/L	3.006	3171	0.013
Kr	83		ug/L		115	0.000
Sr	88	49.081	ug/L	1.098	397526	3.090
Y	89		ug/L		187	0.001
Ag	107	47.630	ug/L	0.788	144451	1.123
Cd	111	48.221	ug/L	0.836	35098	0.273
Cd	114		ug/L		80487	0.626
In	115		ug/L		128597	128596.775
Sn	120	48.778	ug/L	1.405	145602	1.131
Sb	121	48.492	ug/L	6.246	125943	0.977
Sb	123		ug/L		97471	0.756
Ba	135		ug/L		36377	0.194
Ba	137	47.543	ug/L	1.469	63483	0.338
Ho	165		ug/L		31	0.000
Lu	175		ug/L		187535	187535.464
Tl	205	45.581	ug/L	1.878	292848	1.558
Pb	208	48.484	ug/L	0.913	473373	2.522
Bi	209		ug/L		96	0.000
U	238	50.732	ug/L	0.748	495181	2.640



# Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte	Mass	QC Std	% Recovery	Int Std	% Recovery	Spike	% Recovery	Dilution	% Dil	Duplicate	Rel. % Difference
	Li	7		109.375								
	Be	9		106.284								
	B	11		102.116								
	Na	23		96.263								
	Mg	24		105.143								
	Al	27		93.461								
	P	31		92.823								
	K	39		84.200								
	Ca	43		94.650								
>	Sc	45					94.6					
	V	51		96.344								
	Cr	52		97.488								
	Cr	53										
	Mn	55		97.837								
	Fe	57		98.029								
	Co	59		96.173								
	Ni	60		98.696								
	Cu	63										
	Cu	65		95.301								
	Zn	66		93.598								
	Zn	67										
	Zn	68										
>	Ge	74					95.3					
	As	75		89.181								
	Se	77										
	Se	82		92.369								
	Kr	83										
	Sr	88		98.163								
	Y	89										
	Ag	107		95.259								
	Cd	111		96.443								
	Cd	114										
>	In	115					94.8					
	Sn	120		97.557								
	Sb	121		96.985								
	Sb	123										
	Ba	135										
	Ba	137		95.086								
	Ho	165										
>	Lu	175					95.7					
	Tl	205		91.161								
	Pb	208		96.968								
	Bi	209										
	U	238		101.464								

## QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	K	39	CCV is out of limits (+/- 10%)
QC Std 6	As	75	CCV is out of limits (+/- 10%)

## QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Tuesday, January 12, 2010 15:22:33

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020 nolrs thtimozr.mth

Dataset File: C:\elandata\Dataset\100111\QC Std 7.154

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.033	ug/L	34.671	142	0.000
Be	9	0.011	ug/L	40.946	17	0.000
B	11	1.467	ug/L	28.855	1357	0.001
Na	23	-0.065	ug/L	2213.643	19681	-0.000
Mg	24	0.812	ug/L	46.530	5668	0.002
Al	27	0.388	ug/L	71.488	8669	0.001
P	31	0.284	ug/L	693.680	6812	0.000
K	39	-6.677	ug/L	189.224	560563	-0.032
Ca	43	-7.062	ug/L	33.276	383	-0.000
> Sc	45		ug/L		1146956	1146955.730
V	51	0.115	ug/L	358.140	2305	0.000
Cr	52	0.199	ug/L	38.236	2762	0.001
Cr	53		ug/L		97981	-0.012
Mn	55	0.010	ug/L	82.259	1648	0.000
Fe	57	1.641	ug/L	56.923	4437	0.000
Co	59	0.003	ug/L	73.573	200	0.000
Ni	60	-0.004	ug/L	207.311	67	-0.000
Cu	63		ug/L		351	0.000
Cu	65	-0.004	ug/L	181.222	89	-0.000
Zn	66	-0.007	ug/L	50.876	171	-0.000
Zn	67		ug/L		9208	-0.002
Zn	68		ug/L		815	-0.000
> Ge	74		ug/L		249258	249257.916
As	75	0.073	ug/L	698.456	402	0.000
Se	77		ug/L		4408	-0.002
Se	82	0.059	ug/L	308.016	-18	0.000
Kr	83		ug/L		84	-0.000
Sr	88	0.004	ug/L	31.638	194	0.000
Y	89		ug/L		76	-0.000
Ag	107	0.000	ug/L	810.754	54	0.000
Cd	111	-0.001	ug/L	2722.216	21	-0.000
Cd	114		ug/L		38	0.000
> In	115		ug/L		132035	132035.497
Sn	120	0.053	ug/L	28.320	373	0.001
Sb	121	0.595	ug/L	22.792	1937	0.012
Sb	123		ug/L		1514	0.009
Ba	135		ug/L		34	0.000
Ba	137	0.005	ug/L	165.824	56	0.000
Ho	165		ug/L		13	-0.000
> Lu	175		ug/L		193171	193170.996
Tl	205	0.306	ug/L	11.274	2661	0.010
Pb	208	-0.002	ug/L	75.434	492	-0.000
Bi	209		ug/L		24	0.000
U	238	0.041	ug/L	31.020	580	0.002



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Be	9Linear Thru Zero	1.0000
B	11Linear Thru Zero	1.0000
Na	23Linear Thru Zero	1.0000
Mg	24Linear Thru Zero	1.0000
Al	27Linear Thru Zero	1.0000
P	31Linear Thru Zero	1.0000
K	39Linear Thru Zero	1.0000
Ca	43Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
V	51Linear Thru Zero	1.0000
Cr	52Linear Thru Zero	1.0000
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	1.0000
Fe	57Linear Thru Zero	1.0000
Co	59Linear Thru Zero	1.0000
Ni	60Linear Thru Zero	1.0000
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	1.0000
Zn	66Linear Thru Zero	1.0000
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	1.0000
Y	89Linear Thru Zero	
Ag	107Linear Thru Zero	1.0000
Cd	111Linear Thru Zero	1.0000
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	1.0000
Sb	121Linear Thru Zero	0.9999
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	1.0000
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
Pb	208Linear Thru Zero	1.0000
Bi	209Linear Thru Zero	
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
	Be	9					
	B	11					
	Na	23					
	Mg	24					
	Al	27					
	P	31					
	K	39					
	Ca	43					
	> Sc	45		96.6			
	V	51					
	Cr	52					
	Cr	53					
	Mn	55					
	Fe	57					
	Co	59					
	Ni	60					
	Cu	63					
	Cu	65					
	Zn	66					
	Zn	67					
	Zn	68					
	> Ge	74		95.5			
	As	75					
	Se	77					
	Se	82					
	Kr	83					
	Sr	88					
	Y	89					
	Ag	107					
	Cd	111					
	Cd	114					
	> In	115		97.3			
	Sn	120					
	Sb	121					
	Sb	123					
	Ba	135					
	Ba	137					
	Ho	165					
	> Lu	175		98.6			
	Tl	205					
	Pb	208					
	Bi	209					
	U	238					

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS #6 Daily Performance Report

### Sample ID: Sample

Sample Date/Time: Wednesday, January 13, 2010 20:57:07

Sample Description:

Method File: C:\elandata\Method\Daily2.mth

Dataset File: c:\elandata\Dataset\091212\Sample.253

Tuning File: c:\elandata\Tuning\default2.tun

Optimization File: c:\elandata\Optimize\default.dac

Dual Detector Mode: Pulse

Acq. Dead Time(ns): 35

Current Dead Time (ns): 35

Number of Replicates: 5

### Summary

Analyte	Mass	Meas. Intens.	Mean	Net Intens.	Mean	Net Intens. SD	Net Intens. RSD
Be	9.0		1350.3		1350.264	59.715	4.4
Mg	24.0		21710.1		21710.085	198.441	0.9
Co	58.9		35532.9		35532.939	346.878	1.0
Rh	102.9		71212.3		71212.257	487.557	0.7
In	114.9		79251.2		79251.233	730.355	0.9
Pb	208.0		47871.9		47871.877	217.644	0.5
[> Ba	137.9		74019.4		74019.382	314.317	0.4
[ Ba++	69.0		2339.2		0.032	0.000	1.0
[> Ce	139.9		94879.4		94879.437	473.097	0.5
[ CeO	155.9		1513.3		0.016	0.000	1.5
Bkgd	220.0		23.1		23.100	1.517	6.6

### Current Optimization File Data

Current Value	Description
0.84	Nebulizer Gas Flow
13.25	Lens Voltage
1450.00	ICP RF Power
-1781.25	Analog Stage Voltage
900.00	Pulse Stage Voltage
30.00	Discriminator Threshold
-6.00	AC Rod Offset

### Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	25	11.3	2876.6
Co	59	25	12.5	34989.5
In	115	25	14.0	76766.4



## ICPMS #6 Instrument Tuning Report

File Name: default2.tun  
File Path: c:\elandata\Tuning

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas. Pk. Width
He	3.0	3.0	588	2080	0.658
Be	9.0	9.0	2039	2080	0.673
Mg	24.0	24.0	5686	2120	0.635
Mg	25.0	25.0	5929	2080	0.698
Mg	26.0	26.0	6162	2120	0.689
Co	58.9	59.0	14181	2170	0.640
Rh	102.9	102.8	24853	2230	0.702
In	114.9	114.9	27786	2260	0.690
Ce	139.9	139.9	33855	2280	0.747
Pb	206.0	206.0	49948	2430	0.693
Pb	207.0	207.0	50135	2385	0.676
Pb	208.0	208.0	50463	2430	0.715
U	238.1	238.0	57731	2470	0.711



## ICPMS#6 - Summary Report

Sample ID: Blank

Sample Date/Time: Wednesday, January 13, 2010 21:04:36

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\Blank.001

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	ug/L		107	
[>	Sc	45	ug/L		1244138	
[>	Ge	74	ug/L		311061	
	As	75	ug/L		900	
	Se	77	ug/L		6448	
	Se	82	ug/L		-20	
	Kr	83	ug/L		114	
[>	Lu	175	ug/L		213630	
	Tl	205	ug/L		740	
	U	238	ug/L		977	



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Simple Linear	
Sc	45Simple Linear	
Ge	74Simple Linear	
As	75Simple Linear	
Se	77Simple Linear	
Se	82Simple Linear	
Kr	83Simple Linear	
Lu	175Simple Linear	
Tl	205Simple Linear	
U	238Simple Linear	



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dif	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45					
[>	Ge	74					
	As	75					
	Se	77					
	Se	82					
[	Kr	83					
[>	Lu	175					
	Tl	205					
[	U	238					

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: Standard 1

Sample Date/Time: Wednesday, January 13, 2010 21:08:38

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\Standard 1.002

### Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	10.000	ug/L	6.334	7134	0.006
[>	Sc	45		ug/L		1269930	1269929.783
[>	Ge	74		ug/L		327042	327042.387
	As	75	10.000	ug/L	4.522	9644	0.027
	Se	77		ug/L		6905	0.000
	Se	82	10.000	ug/L	2.762	703	0.002
[	Kr	83		ug/L		113	-0.000
[>	Lu	175		ug/L		221759	221758.845
	Tl	205	10.000	ug/L	0.981	66470	0.296
[	U	238	10.000	ug/L	1.403	114801	0.513



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
[	Li		7				
[>	Sc		45				
[>	Ge		74				
	As		75				
	Se		77				
	Se		82				
[	Kr		83				
[>	Lu		175				
	Tl		205				
[	U		238				

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: Standard 2

Sample Date/Time: Wednesday, January 13, 2010 21:12:38

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\Standard 2.003

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li 7	99.978	ug/L	4.404	72714	0.054
[>	Sc 45		ug/L		1340170	1340169.764
[>	Ge 74		ug/L		327000	326999.807
	As 75	99.981	ug/L	1.312	86311	0.261
	Se 77		ug/L		11689	0.015
	Se 82	99.994	ug/L	1.050	7176	0.022
	Kr 83		ug/L		135	0.000
[>	Lu 175		ug/L		220314	220313.691
	Tl 205	99.979	ug/L	1.056	639922	2.901
[	U 238	99.943	ug/L	1.875	1070038	4.853



## Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7				
[>	Sc	45				
[>	Ge	74				
	As	75				
	Se	77				
	Se	82				
	Kr	83				
[>	Lu	175				
	Tl	205				
	U	238				

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 1

Sample Date/Time: Wednesday, January 13, 2010 21:16:39

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 1.004

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	51.970 ug/L	6.913	37733	0.028
[>	Sc	45	ug/L		1337586	1337585.616
[>	Ge	74	ug/L		326070	326069.928
	As	75	46.431 ug/L	0.289	40474	0.121
	Se	77	ug/L		9208	0.008
	Se	82	50.393 ug/L	1.102	3595	0.011
[	Kr	83	ug/L		125	0.000
[>	Lu	175	ug/L		219508	219508.438
	Tl	205	49.446 ug/L	1.338	315737	1.435
[	U	238	54.095 ug/L	3.403	577542	2.627



## Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7	103.940				
[>	Sc	45		107.5			
[>	Ge	74		104.8			
	As	75	92.862				
	Se	77					
	Se	82	100.785				
	Kr	83					
[>	Lu	175		102.8			
	Tl	205	98.893				
	U	238	108.191				

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 2

Sample Date/Time: Wednesday, January 13, 2010 21:20:42

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 2.005

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	-0.043 ug/L	30.644	87	-0.000
[>	Sc	45	ug/L		1385670	1385669.946
[>	Ge	74	ug/L		332328	332328.334
	As	75	0.214 ug/L	253.235	1149	0.001
	Se	77	ug/L		7346	0.001
	Se	82	-0.257 ug/L	58.493	-41	-0.000
	Kr	83	ug/L		134	0.000
[>	Lu	175	ug/L		224163	224163.432
	Tl	205	0.096 ug/L	5.380	1398	0.003
	U	238	-0.000 ug/L	1681.503	1022	-0.000



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45			111.4		
[>	Ge	74			106.8		
	As	75					
	Se	77					
	Se	82					
	Kr	83					
[>	Lu	175			104.9		
	Tl	205					
	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Wednesday, January 13, 2010 21:24:45

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 3.006

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	10.960 ug/L	4.821	8289	0.006
[>	Sc	45	ug/L		1376511	1376510.611
[>	Ge	74	ug/L		329375	329374.593
	As	75	5.574 ug/L	5.628	5749	0.015
	Se	77	ug/L		7314	0.001
	Se	82	5.440 ug/L	6.303	373	0.001
	Kr	83	ug/L		127	0.000
[>	Lu	175	ug/L		218470	218469.827
	Tl	205	1.063 ug/L	3.792	7499	0.031
	U	238	0.175 ug/L	4.822	2853	0.008



## Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7	109.604				
[>	Sc	45		110.6			
[>	Ge	74		105.9			
	As	75	111.479				
	Se	77					
	Se	82	108.796				
	Kr	83					
[>	Lu	175		102.3			
	Tl	205	106.339				
	U	238	87.417				

### QC Out Of Limits

Measurement Type   Analyte                      Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 4

Sample Date/Time: Wednesday, January 13, 2010 21:28:46

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 4.007

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.367	ug/L	3.747	397	0.000
[> Sc	45		ug/L		1396175	1396175.131
[> Ge	74		ug/L		315800	315800.414
As	75	-0.074	ug/L	418.489	854	-0.000
Se	77		ug/L		6837	0.001
Se	82	-1.489	ug/L	12.412	-124	-0.000
[ Kr	83		ug/L		254	0.000
[> Lu	175		ug/L		217203	217203.050
Tl	205	-0.001	ug/L	54.328	743	-0.000
[ U	238	-0.067	ug/L	3.176	286	-0.003



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45		112.2			
[>	Ge	74		101.5			
	As	75					
	Se	77					
	Se	82					
[	Kr	83					
[>	Lu	175		101.7			
	Tl	205					
[	U	238					

### QC Out Of Limits

Measurement Type   Analyte                      Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 5

Sample Date/Time: Wednesday, January 13, 2010 21:32:48

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 5.008

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	22.634 ug/L	2.036	17206	0.012
[>	Sc	45	ug/L		1394265	1394265.362
[>	Ge	74	ug/L		313041	313040.732
	As	75	19.627 ug/L	3.664	16948	0.051
	Se	77	ug/L		7718	0.004
	Se	82	18.417 ug/L	3.823	1249	0.004
[	Kr	83	ug/L		249	0.000
[>	Lu	175	ug/L		215632	215632.092
	Tl	205	17.901 ug/L	0.384	112765	0.519
[	U	238	20.879 ug/L	2.307	219572	1.014



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7	113.171				
[>	Sc	45		112.1			
[>	Ge	74		100.6			
	As	75	98.134				
	Se	77					
	Se	82	92.084				
	Kr	83					
[>	Lu	175		100.9			
	Tl	205	89.505				
	U	238	104.394				

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 13, 2010 21:36:49

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 6.009

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	52.050 ug/L	3.890	41178	0.028
[>	Sc	45	ug/L		1456247	1456247.116
[>	Ge	74	ug/L		327225	327225.208
	As	75	45.481 ug/L	2.725	39800	0.119
	Se	77	ug/L		8932	0.007
	Se	82	50.525 ug/L	0.224	3618	0.011
	Kr	83	ug/L		121	0.000
[>	Lu	175	ug/L		215715	215714.607
	Tl	205	48.286 ug/L	1.795	302965	1.401
	U	238	52.917 ug/L	3.195	555042	2.569



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution %	Duplicate Rel. % Difference
[	Li	7	104.100				
[>	Sc	45		117.0			
[>	Ge	74		105.2			
	As	75	90.962				
	Se	77					
	Se	82	101.051				
[	Kr	83					
[>	Lu	175		101.0			
	Tl	205	96.573				
[	U	238	105.834				

### QC Out Of Limits

Measurement Type   Analyte                      Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 13, 2010 21:40:52

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 7.010

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	-0.048 ug/L	22.569	90	-0.000
[>	Sc	45	ug/L		1512322	1512322.247
[>	Ge	74	ug/L		335466	335466.258
	As	75	0.029 ug/L	2037.103	994	0.000
	Se	77	ug/L		7348	0.001
	Se	82	-0.663 ug/L	160.386	-71	-0.000
[	Kr	83	ug/L		160	0.000
[>	Lu	175	ug/L		221381	221381.360
	Tl	205	0.061 ug/L	3.924	1156	0.002
[	U	238	-0.025 ug/L	17.641	745	-0.001



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45		121.6			
[>	Ge	74		107.8			
	As	75					
	Se	77					
	Se	82					
	Kr	83					
[>	Lu	175		103.6			
	Tl	205					
	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for QC Sc		45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 1202004420

Sample Date/Time: Wednesday, January 13, 2010 21:44:56

Sample Type:

Sample Description: LANL 6020 MB

Number of Replicates: 3

Batch ID: 936805|2|rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\1202004420.011

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	-0.076 ug/L	11.877	72	-0.000
[>	Sc	45	ug/L		1628251	1628251.353
[>	Ge	74	ug/L		351418	351417.913
	As	75	-0.377 ug/L	93.174	673	-0.001
	Se	77	ug/L		5551	-0.005
	Se	82	0.041 ug/L	600.561	-20	0.000
[	Kr	83	ug/L		113	-0.000
[>	Lu	175	ug/L		237573	237572.511
	Tl	205	0.075 ug/L	11.457	1340	0.002
[	U	238	-0.031 ug/L	3.668	734	-0.001



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45			130.9		
[>	Ge	74			113.0		
	As	75					
	Se	77					
	Se	82					
	Kr	83					
[>	Lu	175			111.2		
	Tl	205					
	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for sam	Sc	45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 1202004421

Sample Date/Time: Wednesday, January 13, 2010 21:53:05

Sample Type:

Sample Description: LANL 6020 LCS

Number of Replicates: 3

Batch ID: 936805|40|rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\1202004421.013

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li 7	2.631	ug/L	5.112	2341	0.001
[>	Sc 45		ug/L		1550093	1550093.242
[>	Ge 74		ug/L		334221	334221.204
	As 75	27.172	ug/L	0.429	24678	0.071
	Se 77		ug/L		11786	0.015
	Se 82	75.970	ug/L	2.537	5566	0.017
[	Kr 83		ug/L		128	0.000
[>	Lu 175		ug/L		219829	219828.991
	Tl 205	29.974	ug/L	3.374	191910	0.870
[	U 238	0.495	ug/L	1.993	6286	0.024



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45		124.6			
[>	Ge	74		107.4			
	As	75					
	Se	77					
	Se	82					
[	Kr	83					
[>	Lu	175		102.9			
	Tl	205					
[	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for sam	Sc	45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 13, 2010 21:57:07

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 6.014

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	52.667 ug/L	3.758	43105	0.029
[>	Sc	45	ug/L		1506154	1506154.012
[>	Ge	74	ug/L		326972	326971.559
	As	75	47.609 ug/L	1.956	41593	0.124
	Se	77	ug/L		9489	0.008
	Se	82	51.358 ug/L	2.834	3675	0.011
[	Kr	83	ug/L		111	-0.000
[>	Lu	175	ug/L		215418	215418.100
	Tl	205	50.045 ug/L	1.664	313572	1.452
[	U	238	53.971 ug/L	1.349	565446	2.621



## Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7	105.334				
[>	Sc	45		121.1			
[>	Ge	74		105.1			
	As	75	95.217				
	Se	77					
	Se	82	102.716				
[	Kr	83					
[>	Lu	175		100.8			
	Tl	205	100.089				
[	U	238	107.941				

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits	Message
Sc 45 Int Std for QC Sc		45		

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 13, 2010 22:01:10

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 7.015

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	-0.071 ug/L	4.147	75	-0.000
[>	Sc	45	ug/L		1574534	1574533.639
[>	Ge	74	ug/L		336734	336733.777
	As	75	-0.430 ug/L	27.183	597	-0.001
	Se	77	ug/L		7716	0.002
	Se	82	-0.062 ug/L	357.047	-27	-0.000
	Kr	83	ug/L		123	-0.000
[>	Lu	175	ug/L		221932	221931.725
	Tl	205	0.312 ug/L	2.673	2778	0.009
[	U	238	-0.031 ug/L	17.127	676	-0.002



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7				
[>	Sc	45		126.6		
[>	Ge	74		108.3		
	As	75				
	Se	77				
	Se	82				
	Kr	83				
[>	Lu	175		103.9		
	Tl	205				
	U	238				

### QC Out Of Limits

Measurement Type	Analyte	Mass Out of Limits Message
Sc 45 Int Std for QC Sc		45

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 243457001

Sample Date/Time: Wednesday, January 13, 2010 22:05:15

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\243457001.016

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	99.226 ug/L	1.836	91335	0.054
[>	Sc	45	ug/L		1696282	1696282.164
[>	Ge	74	ug/L		329878	329877.884
	As	75	10.362 ug/L	3.246	9882	0.027
	Se	77	ug/L		4341	-0.008
	Se	82	-1.540 ug/L	25.755	-133	-0.000
[	Kr	83	ug/L		375	0.001
[>	Lu	175	ug/L		236103	236102.719
	Tl	205	1.533 ug/L	1.838	11318	0.044
[	U	238	16.120 ug/L	3.198	185815	0.783



## Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dilution	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45			136.3		
[>	Ge	74			106.0		
	As	75					
	Se	77					
	Se	82					
[	Kr	83					
[>	Lu	175			110.5		
	Tl	205					
[	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for sarrSc		45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 243457002

Sample Date/Time: Wednesday, January 13, 2010 22:09:20

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\243457002.017

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	86.082 ug/L	5.705	81159	0.047
[>	Sc	45	ug/L		1738477	1738477.312
[>	Ge	74	ug/L		333740	333739.776
	As	75	ug/L	2.133	7376	0.019
	Se	77	ug/L		4303	-0.008
	Se	82	-0.461 ug/L	47.101	-56	-0.000
[	Kr	83	ug/L		264	0.000
[>	Lu	175	ug/L		237228	237227.791
	Tl	205	0.819 ug/L	2.469	6458	0.024
[	U	238	1.868 ug/L	2.067	22604	0.091



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dil	Duplicate	Rel. % Difference
[	Li	7						
[>	Sc	45		139.7				
[>	Ge	74		107.3				
	As	75						
	Se	77						
	Se	82						
	Kr	83						
[>	Lu	175		111.0				
	Tl	205						
	U	238						

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits	Message
Sc 45 Int Std for sarrSc		45		

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 243457003

Sample Date/Time: Wednesday, January 13, 2010 22:13:24

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 936805|2|rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\243457003.018

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[ Li	7	107.141	ug/L	5.258	99207	0.058
[> Sc	45		ug/L		1708909	1708909.315
[> Ge	74		ug/L		329583	329582.540
As	75	9.262	ug/L	0.996	8925	0.024
Se	77		ug/L		3946	-0.009
Se	82	-2.153	ug/L	10.643	-178	-0.000
[ Kr	83		ug/L		380	0.001
[> Lu	175		ug/L		233113	233112.749
Tl	205	1.103	ug/L	1.976	8266	0.032
[ U	238	6.477	ug/L	3.293	74363	0.315



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45			137.4		
[>	Ge	74			106.0		
	As	75					
	Se	77					
	Se	82					
[	Kr	83					
[>	Lu	175			109.1		
	Tl	205					
[	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for sam	Sc	45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 243457004

Sample Date/Time: Wednesday, January 13, 2010 22:17:29

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 936805|2|rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\243457004.019

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	87.745 ug/L	4.479	81445	0.048
[>	Sc	45	ug/L		1711095	1711095.231
[>	Ge	74	ug/L		335023	335023.139
	As	75	8.626 ug/L	4.584	8511	0.023
	Se	77	ug/L		3900	-0.009
	Se	82	-0.265 ug/L	252.829	-42	-0.000
[	Kr	83	ug/L		260	0.000
[>	Lu	175	ug/L		238272	238271.647
	Tl	205	0.645 ug/L	0.434	5284	0.019
[	U	238	2.215 ug/L	2.847	26704	0.108



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45		137.5			
[>	Ge	74		107.7			
	As	75					
	Se	77					
	Se	82					
	Kr	83					
[>	Lu	175		111.5			
	Ti	205					
	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for sam	Sc	45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 13, 2010 22:37:50

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 6.024

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	56.829 ug/L	1.873	48166	0.031
[>	Sc	45	ug/L		1560264	1560264.145
[>	Ge	74	ug/L		323821	323820.851
	As	75	46.388 ug/L	2.707	40158	0.121
	Se	77	ug/L		8477	0.005
	Se	82	51.039 ug/L	3.875	3617	0.011
[	Kr	83	ug/L		131	0.000
[>	Lu	175	ug/L		211394	211393.508
	Tl	205	48.718 ug/L	0.940	299567	1.414
[	U	238	53.835 ug/L	1.870	553404	2.614



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std	% Recovery	Int Std	% Recovery	Spike	% Recov	Dilution	% Dif	Duplicate	Rel. % Difference
[	Li	7		113.659								
[>	Sc	45				125.4						
[>	Ge	74				104.1						
	As	75		92.775								
	Se	77										
	Se	82		102.078								
	Kr	83										
[>	Lu	175				99.0						
	Tl	205		97.435								
	U	238		107.670								

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Li		7CCV is out of limits (+/- 10%)
Sc 45 Int Std for QC Sc		45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 13, 2010 22:41:53

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 7.025

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	-0.003 ug/L	352.396	133	-0.000
[>	Sc	45	ug/L		1586082	1586082.366
[>	Ge	74	ug/L		334249	334249.273
	As	75	-0.565 ug/L	50.820	473	-0.001
	Se	77	ug/L		6641	-0.001
	Se	82	-0.017 ug/L	954.753	-23	-0.000
[	Kr	83	ug/L		119	-0.000
[>	Lu	175	ug/L		218570	218569.540
	Tl	205	0.024 ug/L	1.700	907	0.001
[	U	238	-0.044 ug/L	11.214	537	-0.002



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel.	% Difference
[	Li	7					
[>	Sc	45		127.5			
[>	Ge	74		107.5			
	As	75					
	Se	77					
	Se	82					
[	Kr	83					
[>	Lu	175		102.3			
	Tl	205					
[	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass Out of Limits Message
Sc 45 Int Std for QC Sc		45

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 13, 2010 23:14:26

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 6.033

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	61.350 ug/L	5.999	50740	0.033
[>	Sc	45	ug/L		1523592	1523591.922
[>	Ge	74	ug/L		311484	311484.123
	As	75	47.020 ug/L	1.338	39139	0.123
	Se	77	ug/L		8002	0.005
	Se	82	51.325 ug/L	3.599	3500	0.011
[	Kr	83	ug/L		126	0.000
[>	Lu	175	ug/L		207084	207084.416
	Tl	205	48.479 ug/L	1.529	292020	1.407
[	U	238	53.303 ug/L	2.228	536803	2.588



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7	122.699				
[>	Sc	45		122.5			
[>	Ge	74		100.1			
	As	75	94.041				
	Se	77					
	Se	82	102.650				
	Kr	83					
[>	Lu	175		96.9			
	Tl	205	96.957				
	U	238	106.605				

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Li		7CCV is out of limits (+/- 10%)
Sc 45 Int Std for QC Sc		45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 13, 2010 23:18:29

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 7.034

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li 7	0.013	ug/L	125.113	145	0.000
[>	Sc 45		ug/L		1568889	1568888.628
[>	Ge 74		ug/L		322341	322340.982
	As 75	-0.468	ug/L	56.145	539	-0.001
	Se 77		ug/L		5958	-0.002
	Se 82	0.071	ug/L	280.400	-16	0.000
[	Kr 83		ug/L		110	-0.000
[>	Lu 175		ug/L		209245	209244.769
	Tl 205	0.019	ug/L	28.032	842	0.001
[	U 238	-0.038	ug/L	5.315	566	-0.002



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel.	% Difference
[	Li	7					
[>	Sc	45		126.1			
[>	Ge	74		103.6			
	As	75					
	Se	77					
	Se	82					
	Kr	83					
[>	Lu	175		97.9			
	Tl	205					
	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass Out of Limits Message
Sc 45 Int Std for QC Sc		45

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 1202004422

Sample Date/Time: Wednesday, January 13, 2010 23:30:35

Sample Type:

Sample Description: LANL 6020 DUP

Number of Replicates: 3

Batch ID: 936805[2|rm]

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\1202004422.037

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	42.117 ug/L	4.341	39625	0.023
[>	Sc	45	ug/L		1731289	1731288.789
[>	Ge	74	ug/L		321355	321354.936
	As	75	4.933 ug/L	5.903	5068	0.013
	Se	77	ug/L		3705	-0.009
	Se	82	0.294 ug/L	150.007	-0	0.000
	Kr	83	ug/L		225	0.000
[>	Lu	175	ug/L		226928	226927.515
	Tl	205	0.343 ug/L	1.274	3041	0.010
	U	238	2.780 ug/L	2.871	31669	0.135



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recov	Dilution % Di	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45			139.2		
[>	Ge	74			103.3		
	As	75					
	Se	77					
	Se	82					
	Kr	83					
[>	Lu	175			106.2		
	Tl	205					
	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for sarrSc		45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 1202004423

Sample Date/Time: Wednesday, January 13, 2010 23:34:37

Sample Type:

Sample Description: LANL 6020 MS

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\1202004423.038

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	83.154 ug/L	3.670	77330	0.045
[>	Sc	45	ug/L		1713168	1713167.781
[>	Ge	74	ug/L		317769	317769.020
	As	75	45.030 ug/L	1.111	38279	0.118
	Se	77	ug/L		4062	-0.008
	Se	82	9.754 ug/L	5.910	661	0.002
[	Kr	83	ug/L		241	0.000
[>	Lu	175	ug/L		226977	226977.096
	Tl	205	47.368 ug/L	0.960	312808	1.375
[	U	238	30.047 ug/L	1.695	332163	1.459



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
>	Sc	45			137.7		
>	Ge	74			102.2		
	As	75					
	Se	77					
	Se	82					
	Kr	83					
>	Lu	175			106.2		
	Tl	205					
	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for sam	Sc	45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 1202004425

Sample Date/Time: Wednesday, January 13, 2010 23:38:39

Sample Type:

Sample Description: LANL 6020 MSD

Number of Replicates: 3

Batch ID: 936805[2]rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\1202004425.039

### Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	76.414	ug/L	3.730	70035	0.041
[>	Sc	45		ug/L		1688538	1688538.442
[>	Ge	74		ug/L		317704	317704.044
	As	75	40.013	ug/L	0.687	34111	0.104
	Se	77		ug/L		4189	-0.008
	Se	82	8.923	ug/L	3.421	603	0.002
[	Kr	83		ug/L		214	0.000
[>	Lu	175		ug/L		224292	224292.476
	Tl	205	43.465	ug/L	2.194	283682	1.261
[	U	238	27.859	ug/L	2.881	304359	1.353



## Calibration

Analyte	Mass Curve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7				
[>	Sc	45		135.7		
[>	Ge	74		102.1		
	As	75				
	Se	77				
	Se	82				
[	Kr	83				
[>	Lu	175		105.0		
	Tl	205				
[	U	238				

### QC Out Of Limits

Measurement Type	Analyte	Mass Out of Limits Message
Sc 45 Int Std for sam	Sc	45

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: 1202004424

Sample Date/Time: Wednesday, January 13, 2010 23:42:41

Sample Type:

Sample Description: LANL 6020 SDILT

Number of Replicates: 3

Batch ID: 936805[10]rmj

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\1202004424.040

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[ Li	7	9.330	ug/L	5.475	7968	0.005
[> Sc	45		ug/L		1551347	1551347.211
[> Ge	74		ug/L		310211	310210.808
As	75	0.271	ug/L	113.490	1120	0.001
Se	77		ug/L		5028	-0.005
Se	82	-0.004	ug/L	7078.913	-20	-0.000
[ Kr	83		ug/L		131	0.000
[> Lu	175		ug/L		209282	209282.407
Tl	205	0.581	ug/L	8.345	4256	0.017
[ U	238	0.455	ug/L	3.262	5577	0.022



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45			124.7		
[>	Ge	74			99.7		
	As	75					
	Se	77					
	Se	82					
	Kr	83					
[>	Lu	175			98.0		
	Tl	205					
	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for sam	Sc	45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 13, 2010 23:46:42

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 6.041

### Concentration Results

	Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	64.921	ug/L	5.851	52900	0.035
[>	Sc	45		ug/L		1501387	1501386.856
[>	Ge	74		ug/L		304339	304338.929
	As	75	45.871	ug/L	0.843	37334	0.120
	Se	77		ug/L		7450	0.004
	Se	82	51.487	ug/L	3.481	3428	0.011
[	Kr	83		ug/L		115	0.000
[>	Lu	175		ug/L		200410	200410.067
	Tl	205	48.623	ug/L	1.088	283471	1.411
[	U	238	52.903	ug/L	2.436	515636	2.569



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std	% Recovery	Int Std	% Recovery	Spike	% Recov	Dilution	% Dil	Duplicate	Rel. % Difference
[	Li	7		129.841								
[>	Sc	45				120.7						
[>	Ge	74				97.8						
	As	75		91.741								
	Se	77										
	Se	82		102.973								
	Kr	83										
[>	Lu	175				93.8						
	Tl	205		97.247								
	U	238		105.805								

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Li		7CCV is out of limits (+/- 10%)
Sc 45 Int Std for QC Sc		45	

### QC Action

QC Action Line: Continue



## ICPMS#6 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 13, 2010 23:50:44

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\936805.mth

Dataset File: C:\elandata\Dataset\100113\QC Std 7.042

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Li	7	0.010 ug/L	46.713	140	0.000
[>	Sc	45	ug/L		1534583	1534582.543
[>	Ge	74	ug/L		311057	311056.993
	As	75	-0.384 ug/L	84.094	587	-0.001
	Se	77	ug/L		5528	-0.003
	Se	82	-0.131 ug/L	32.782	-29	-0.000
	Kr	83	ug/L		111	-0.000
[>	Lu	175	ug/L		204010	204009.854
	Tl	205	0.128 ug/L	3.132	1465	0.004
	U	238	-0.035 ug/L	16.701	585	-0.002



## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	1.0000
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	1.0000
Kr	83Linear Thru Zero	
Lu	175Linear Thru Zero	
Ti	205Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Dil	Duplicate Rel. % Difference
[	Li	7					
[>	Sc	45			123.3		
[>	Ge	74			100.0		
	As	75					
	Se	77					
	Se	82					
[	Kr	83					
[>	Lu	175			95.5		
	Tl	205					
[	U	238					

### QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sc 45 Int Std for QC Sc		45	

### QC Action

QC Action Line: Continue



Method Name: SOIL  
 Method Description: 7471A, ILM04 ANALYST JXL1  
 Element: Hg

Date: 01/07/2010  
 Technique: FI-MHS  
 Calibration Type:  
 Hg, Calc. Intercept : Linear  
 Wavelength: 253.7 nm  
 Sample Info Name: 010710S1.SIF

Results Data Set Name: 010710S2

Element: Hg Seq. No.: 1 AS Loc.: 1 Date: 01/07/2010  
 Sample ID: Calib Blank

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1			0.0034	0.0034	10:15:26	No
2			0.0035	0.0035	10:16:01	No
Mean:			0.0034			
SD :			0.0000			
%RSD:			1.1933			

Auto-zero performed.

Element: Hg Seq. No.: 2 AS Loc.: 2 Date: 01/07/2010  
 Sample ID: S0.2

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1			0.0024	0.0058	10:17:24	No
2			0.0021	0.0055	10:17:59	No
Mean:			0.0023			
SD :			0.0002			
%RSD:			10.1161			

[Hg] Standard number 1 applied. [0.200]

Correlation Coefficient: 1.00000

Slope: 0.01126

Intercept : 0.00000

Element: Hg Seq. No.: 3 AS Loc.: 3 Date: 01/07/2010  
 Sample ID: S0.5

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1			0.0050	0.0084	10:19:22	No
2			0.0040	0.0074	10:19:58	No
Mean:			0.0045			
SD :			0.0007			
%RSD:			16.5462			

[Hg] Standard number 2 applied. [0.500]

Correlation Coefficient: 0.99318

Slope: 0.00886

Intercept : 0.00018

Element: Hg Seq. No.: 4 AS Loc.: 4 Date: 01/07/2010  
 Sample ID: S2.0

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1			0.0188	0.0222	10:21:22	No
2			0.0195	0.0229	10:21:57	No
Mean:			0.0191			
SD :			0.0005			
%RSD:			2.5139			

[Hg] Standard number 3 applied. [2.000]



Correlation Coefficient: 0.99956  
Intercept : 0.00004

Slope: 0.00952

=====

Element: Hg Seq. No.: 5 AS Loc.: 5 Date: 01/07/2010  
Sample ID: S5.0

-----

Repl #	SampleConc µg/L	StndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1			0.0478	0.0512	10:23:22	No
2			0.0466	0.0500	10:23:57	No
Mean:			0.0472			
SD :			0.0008			
%RSD:			1.7801			

[Hg] Standard number 4 applied. [5.000]  
Correlation Coefficient: 0.99993 Slope: 0.00942  
Intercept : 0.00009

=====

Element: Hg Seq. No.: 6 AS Loc.: 6 Date: 01/07/2010  
Sample ID: S10

-----

Repl #	SampleConc µg/L	StndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1			0.0897	0.0931	10:25:23	No
2			0.0899	0.0933	10:25:58	No
Mean:			0.0898			
SD :			0.0001			
%RSD:			0.1097			

[Hg] Standard number 5 applied. [10.00]  
Correlation Coefficient: 0.99967 Slope: 0.00901  
Intercept : 0.00056

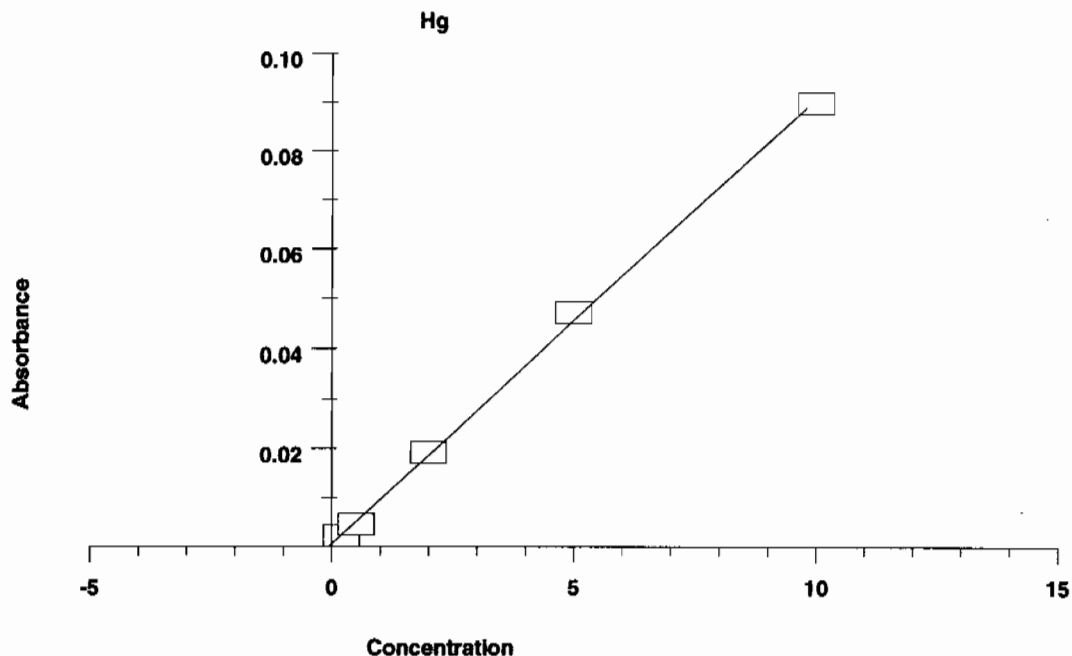
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Calibration data for Hg

Standard ID	Mean Signal (Pk Height)	Entered Concentration (µg/L)	Calculated Concentration (µg/L)	Standard Deviation	%RSD
Calib Blank	0.0034	---	---	---	---
S0.2	0.0023	0.200	0.188	0.0002	10.1
S0.5	0.0045	0.500	0.436	0.0007	16.5
S2.0	0.0191	2.000	2.061	0.0005	2.5
S5.0	0.0472	5.000	5.173	0.0008	1.8
S10	0.0898	10.000	9.905	0.0001	0.1
Correlation Coefficient: 0.99967		Slope:	0.00901	Intercept:	0.0006

-----





=====  
 Element: Hg Seq. No.: 7 AS Loc.: 9 Date: 01/07/2010  
 Sample ID: ICV

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	5.017	5.017	0.0458	0.0492	10:27:27	No
2	5.079	5.079	0.0463	0.0497	10:28:02	No
Mean:	5.048	5.048	0.0460			
SD :	0.0436	0.0436	0.0004			
%RSD:	0.9	0.9	0.8525			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 8 AS Loc.: 10 Date: 01/07/2010  
 Sample ID: ICB

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	-0.077	-0.077	-0.0001	0.0033	10:29:24	No
2	-0.069	-0.069	-0.0001	0.0034	10:29:58	No
Mean:	-0.073	-0.073	-0.0001			
SD :	0.0061	0.0061	0.0001			
%RSD:	8.4	8.4	57.6697			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 9 AS Loc.: 11 Date: 01/07/2010  
 Sample ID: CRDL

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.212	0.212	0.0025	0.0059	10:31:21	No
2	0.190	0.190	0.0023	0.0057	10:31:56	No
Mean:	0.201	0.201	0.0024			
SD :	0.0158	0.0158	0.0001			
%RSD:	7.8	7.8	5.9868			



QC value within specified limits.

=====

Element: Hg Seq. No.: 10 AS Loc.: 7 Date: 01/07/2010

Sample ID: CCV

-----

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	5.068	5.068	0.0462	0.0496	10:33:21	No
2	4.958	4.958	0.0452	0.0486	10:33:55	No
Mean:	5.013	5.013	0.0457			
SD :	0.0782	0.0782	0.0007			
%RSD:	1.6	1.6	1.5400			

QC value within specified limits.

=====

Element: Hg Seq. No.: 11 AS Loc.: 8 Date: 01/07/2010

Sample ID: CCB

-----

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	-0.081	-0.081	-0.0002	0.0033	10:35:23	No
2	-0.073	-0.073	-0.0001	0.0033	10:35:58	No
Mean:	-0.077	-0.077	-0.0001			
SD :	0.0058	0.0058	0.0001			
%RSD:	7.5	7.5	39.2466			

QC value within specified limits.

=====

Element: Hg Seq. No.: 12 AS Loc.: 12 Date: 01/07/2010

Sample ID: 1202006434|i||937632|MB

-----

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.015	0.015	0.0007	0.0041	10:37:24	No
2	0.012	0.012	0.0007	0.0041	10:37:59	No
Mean:	0.014	0.014	0.0007			
SD :	0.0017	0.0017	0.0000			
%RSD:	12.2	12.2	2.1895			

=====

Element: Hg Seq. No.: 13 AS Loc.: 13 Date: 01/07/2010

Sample ID: 1202006439|i|10||LCS

-----

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	2.964	2.964	0.0273	0.0307	10:39:23	No
2	3.060	3.060	0.0281	0.0315	10:39:58	No
Mean:	3.012	3.012	0.0277			
SD :	0.0677	0.0677	0.0006			
%RSD:	2.2	2.2	2.2031			

=====

Element: Hg Seq. No.: 14 AS Loc.: 14 Date: 01/07/2010

Sample ID: 243385001|i|||

-----

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.280	0.280	0.0031	0.0065	10:41:24	No
2	0.269	0.269	0.0030	0.0064	10:41:59	No
Mean:	0.274	0.274	0.0030			
SD :	0.0081	0.0081	0.0001			
%RSD:	2.9	2.9	2.3995			

=====

Element: Hg Seq. No.: 15 AS Loc.: 15 Date: 01/07/2010

Sample ID: 1202006435|i|||DUP



%RSD: 3.5 3.5 3.0607

=====  
 Element: Hg Seq. No.: 21 AS Loc.: 21 Date: 01/07/2010  
 Sample ID: 243385004|i|||

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	0.513	0.513	0.0052	0.0086	10:55:13	No
2	0.349	0.349	0.0037	0.0071	10:55:48	No
Mean:	0.431	0.431	0.0044			
SD :	0.1163	0.1163	0.0010			
%RSD:	27.0	27.0	23.5798			

=====  
 Element: Hg Seq. No.: 22 AS Loc.: 7 Date: 01/07/2010  
 Sample ID: CCV

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	5.266	5.266	0.0480	0.0514	10:57:12	No
2	5.299	5.299	0.0483	0.0517	10:57:47	No
Mean:	5.283	5.283	0.0481			
SD :	0.0232	0.0232	0.0002			
%RSD:	0.4	0.4	0.4345			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 23 AS Loc.: 8 Date: 01/07/2010  
 Sample ID: CCB

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	-0.121	-0.121	-0.0005	0.0029	10:59:14	No
2	-0.118	-0.118	-0.0005	0.0029	10:59:49	No
Mean:	-0.119	-0.119	-0.0005			
SD :	0.0023	0.0023	0.0000			
%RSD:	1.9	1.9	4.0037			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 24 AS Loc.: 22 Date: 01/07/2010  
 Sample ID: 243385005|i|||

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	0.496	0.496	0.0050	0.0084	11:01:14	No
2	0.355	0.355	0.0038	0.0072	11:01:49	No
Mean:	0.425	0.425	0.0044			
SD :	0.0993	0.0993	0.0009			
%RSD:	23.4	23.4	20.3771			

=====  
 Element: Hg Seq. No.: 25 AS Loc.: 23 Date: 01/07/2010  
 Sample ID: 243385006|i|||

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	0.297	0.297	0.0032	0.0067	11:03:12	No
2	0.239	0.239	0.0027	0.0061	11:03:47	No
Mean:	0.268	0.268	0.0030			
SD :	0.0412	0.0412	0.0004			
%RSD:	15.4	15.4	12.4851			

=====  
 Element: Hg Seq. No.: 26 AS Loc.: 24 Date: 01/07/2010  
 Sample ID: 243385007|i|||



Repl #	SampleConc µg/L	StdndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1	0.471	0.471	0.0048	0.0082	11:05:12	No
2	0.466	0.466	0.0048	0.0082	11:05:47	No
Mean:	0.468	0.468	0.0048			
SD :	0.0034	0.0034	0.0000			
%RSD:	0.7	0.7	0.6406			

=====

Element: Hg Seq. No.: 27 AS Loc.: 25 Date: 01/07/2010  
Sample ID: 243385008|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1	0.264	0.264	0.0029	0.0064	11:07:11	No
2	0.247	0.247	0.0028	0.0062	11:07:46	No
Mean:	0.255	0.255	0.0029			
SD :	0.0119	0.0119	0.0001			
%RSD:	4.7	4.7	3.7399			

=====

Element: Hg Seq. No.: 28 AS Loc.: 26 Date: 01/07/2010  
Sample ID: 243385009|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1	0.169	0.169	0.0021	0.0055	11:09:11	No
2	0.186	0.186	0.0022	0.0057	11:09:46	No
Mean:	0.178	0.178	0.0022			
SD :	0.0115	0.0115	0.0001			
%RSD:	6.5	6.5	4.8151			

=====

Element: Hg Seq. No.: 29 AS Loc.: 27 Date: 01/07/2010  
Sample ID: 243385010|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1	0.165	0.165	0.0020	0.0055	11:11:10	No
2	0.177	0.177	0.0022	0.0056	11:11:45	No
Mean:	0.171	0.171	0.0021			
SD :	0.0085	0.0085	0.0001			
%RSD:	5.0	5.0	3.6475			

=====

Element: Hg Seq. No.: 30 AS Loc.: 28 Date: 01/07/2010  
Sample ID: 243385011|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1	0.320	0.320	0.0034	0.0069	11:13:10	No
2	0.291	0.291	0.0032	0.0066	11:13:45	No
Mean:	0.306	0.306	0.0033			
SD :	0.0207	0.0207	0.0002			
%RSD:	6.8	6.8	5.6384			

=====

Element: Hg Seq. No.: 31 AS Loc.: 29 Date: 01/07/2010  
Sample ID: 1202006448|i||937638|MB

Repl #	SampleConc µg/L	StdndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1	-0.041	-0.041	0.0002	0.0036	11:15:11	No
2	-0.048	-0.048	0.0001	0.0035	11:15:46	No
Mean:	-0.045	-0.045	0.0002			
SD :	0.0050	0.0050	0.0000			



%RSD: 11.1 11.1 28.9448

=====  
 Element: Hg Seq. No.: 32 AS Loc.: 30 Date: 01/07/2010  
 Sample ID: 1202006453|i|10||LCS  
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	4.321	4.321	0.0395	0.0429	11:17:13	No
2	4.436	4.436	0.0405	0.0439	11:17:49	No
Mean:	4.379	4.379	0.0400			
SD :	0.0814	0.0814	0.0007			
%RSD:	1.9	1.9	1.8329			

=====  
 Element: Hg Seq. No.: 33 AS Loc.: 31 Date: 01/07/2010  
 Sample ID: 243457001|i|||  
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.216	0.216	0.0025	0.0059	11:19:16	No
2	0.194	0.194	0.0023	0.0057	11:19:51	No
Mean:	0.205	0.205	0.0024			
SD :	0.0157	0.0157	0.0001			
%RSD:	7.7	7.7	5.8916			

=====  
 Element: Hg Seq. No.: 34 AS Loc.: 7 Date: 01/07/2010  
 Sample ID: CCV  
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	5.476	5.476	0.0499	0.0533	11:21:18	No
2	5.459	5.459	0.0497	0.0532	11:21:53	No
Mean:	5.468	5.468	0.0498			
SD :	0.0118	0.0118	0.0001			
%RSD:	0.2	0.2	0.2141			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 35 AS Loc.: 8 Date: 01/07/2010  
 Sample ID: CCB  
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	-0.150	-0.150	-0.0008	0.0026	11:23:21	No
2	-0.146	-0.146	-0.0008	0.0027	11:23:56	No
Mean:	-0.148	-0.148	-0.0008			
SD :	0.0031	0.0031	0.0000			
%RSD:	2.1	2.1	3.6014			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 36 AS Loc.: 32 Date: 01/07/2010  
 Sample ID: 1202006449|i|||DUP  
 =====

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.188	0.188	0.0023	0.0057	11:25:20	No
2	0.160	0.160	0.0020	0.0054	11:25:55	No
Mean:	0.174	0.174	0.0021			
SD :	0.0196	0.0196	0.0002			
%RSD:	11.2	11.2	8.2869			

=====  
 Element: Hg Seq. No.: 37 AS Loc.: 33 Date: 01/07/2010  
 Sample ID: 1202006451|i|||MS  
 =====



Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	2.575	2.575	0.0238	0.0272	11:27:16	No
2	2.478	2.478	0.0229	0.0263	11:27:51	No
Mean:	2.526	2.526	0.0233			
SD :	0.0685	0.0685	0.0006			
%RSD:	2.7	2.7	2.6467			

=====  
 Element: Hg Seq. No.: 38 AS Loc.: 34 Date: 01/07/2010  
 Sample ID: 1202006452|i|||MSD

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	2.600	2.600	0.0240	0.0274	11:29:11	No
2	2.585	2.585	0.0238	0.0273	11:29:46	No
Mean:	2.593	2.593	0.0239			
SD :	0.0106	0.0106	0.0001			
%RSD:	0.4	0.4	0.3982			

=====  
 Element: Hg Seq. No.: 39 AS Loc.: 35 Date: 01/07/2010  
 Sample ID: 1202006450|i|5||SDILT

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	-0.142	-0.142	-0.0007	0.0027	11:31:08	No
2	-0.154	-0.154	-0.0008	0.0026	11:31:43	No
Mean:	-0.148	-0.148	-0.0008			
SD :	0.0085	0.0085	0.0001			
%RSD:	5.7	5.7	9.8499			

=====  
 Element: Hg Seq. No.: 40 AS Loc.: 36 Date: 01/07/2010  
 Sample ID: 243457002|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.489	0.489	0.0050	0.0084	11:33:05	No
2	0.474	0.474	0.0048	0.0083	11:33:40	No
Mean:	0.482	0.482	0.0049			
SD :	0.0103	0.0103	0.0001			
%RSD:	2.1	2.1	1.8967			

=====  
 Element: Hg Seq. No.: 41 AS Loc.: 37 Date: 01/07/2010  
 Sample ID: 243457003|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.280	0.280	0.0031	0.0065	11:35:02	No
2	0.247	0.247	0.0028	0.0062	11:35:37	No
Mean:	0.263	0.263	0.0029			
SD :	0.0231	0.0231	0.0002			
%RSD:	8.8	8.8	7.1080			

=====  
 Element: Hg Seq. No.: 42 AS Loc.: 38 Date: 01/07/2010  
 Sample ID: 243457004|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.223	0.223	0.0026	0.0060	11:36:58	No
2	0.212	0.212	0.0025	0.0059	11:37:33	No
Mean:	0.218	0.218	0.0025			
SD :	0.0078	0.0078	0.0001			



%RSD: 3.6 3.6 2.7838

=====  
 Element: Hg Seq. No.: 43 AS Loc.: 39 Date: 01/07/2010  
 Sample ID: 243472001|i|||

-----  

Repl #	SampleConc µg/L	StdndConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	0.005	0.005	0.0006	0.0040	11:38:56	No
2	0.016	0.016	0.0007	0.0041	11:39:31	No
Mean:	0.010	0.010	0.0007			
SD :	0.0079	0.0079	0.0001			
%RSD:	75.7	75.7	10.9212			

=====  
 Element: Hg Seq. No.: 44 AS Loc.: 40 Date: 01/07/2010  
 Sample ID: 243472002|i|||

-----  

Repl #	SampleConc µg/L	StdndConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	-0.006	-0.006	0.0005	0.0039	11:40:55	No
2	-0.020	-0.020	0.0004	0.0038	11:41:29	No
Mean:	-0.013	-0.013	0.0004			
SD :	0.0097	0.0097	0.0001			
%RSD:	75.8	75.8	19.5298			

=====  
 Element: Hg Seq. No.: 45 AS Loc.: 41 Date: 01/07/2010  
 Sample ID: 243472003|i|||

-----  

Repl #	SampleConc µg/L	StdndConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	-0.018	-0.018	0.0004	0.0038	11:42:53	No
2	-0.029	-0.029	0.0003	0.0037	11:43:28	No
Mean:	-0.024	-0.024	0.0003			
SD :	0.0076	0.0076	0.0001			
%RSD:	31.9	31.9	19.8760			

=====  
 Element: Hg Seq. No.: 46 AS Loc.: 7 Date: 01/07/2010  
 Sample ID: CCV

-----  

Repl #	SampleConc µg/L	StdndConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	5.455	5.455	0.0497	0.0531	11:44:53	No
2	5.509	5.509	0.0502	0.0536	11:45:28	No
Mean:	5.482	5.482	0.0499			
SD :	0.0377	0.0377	0.0003			
%RSD:	0.7	0.7	0.6795			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 47 AS Loc.: 8 Date: 01/07/2010  
 Sample ID: CCB

-----  

Repl #	SampleConc µg/L	StdndConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	-0.165	-0.165	-0.0009	0.0025	11:46:56	No
2	-0.162	-0.162	-0.0009	0.0025	11:47:31	No
Mean:	-0.164	-0.164	-0.0009			
SD :	0.0023	0.0023	0.0000			
%RSD:	1.4	1.4	2.3130			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 48 AS Loc.: 42 Date: 01/07/2010  
 Sample ID: 243521001|i|||



# Miscellaneous



# Prep LogBook

Analyst: FGA  
 Batch: 936804  
 Lab SOP: GL-MA-E-009 REV# 19

Verified by: \_\_\_\_\_

Type	Sample Id	Lot Id	Spike Amount	Spike Units
LCS	1202004421	UI062540-MS	.501	g
MS	1202004423	UI091015-A	.5	mL
MS	1202004423	UI091015-B	.5	mL
MSD	1202004425	UI091015-A	.5	mL
MSD	1202004425	UI091015-B	.5	mL

Sample Type	Sample ID	Parent Sample ID	Method	Prep Date	Initial Wt.	Final Volume	Prep Factor	Matrix
MB	1202004420		SW846 3050B	29-DEC-2009 13:00	0.503 g	50 mL	99.40358	SOIL
LCS	1202004421		SW846 3050B	29-DEC-2009 13:00	0.501 g	50 mL	99.8004	SOIL
SAMPLE	243457001		SW846 3050B	29-DEC-2009 13:00	0.5 g	50 mL	100	SOIL
SAMPLE	243457002		SW846 3050B	29-DEC-2009 13:00	0.51 g	50 mL	98.03922	SOIL
SAMPLE	243457003		SW846 3050B	29-DEC-2009 13:00	0.506 g	50 mL	98.81423	SOIL
SAMPLE	243457004		SW846 3050B	29-DEC-2009 13:00	0.51 g	50 mL	98.03922	SOIL
SAMPLE	243472001		SW846 3050B	29-DEC-2009 13:00	0.509 g	50 mL	98.23183	SOIL
SAMPLE	243472002		SW846 3050B	29-DEC-2009 13:00	0.513 g	50 mL	97.46589	SOIL
SAMPLE	243472003		SW846 3050B	29-DEC-2009 13:00	0.507 g	50 mL	98.61933	SOIL
SAMPLE	243492001		SW846 3050B	29-DEC-2009 13:00	0.509 g	50 mL	98.23183	SOIL
SAMPLE	243492002		SW846 3050B	29-DEC-2009 13:00	0.5 g	50 mL	100	SOIL
SAMPLE	243492003		SW846 3050B	29-DEC-2009 13:00	0.507 g	50 mL	98.61933	SOIL
SAMPLE	243492004		SW846 3050B	29-DEC-2009 13:00	0.5 g	50 mL	100	SOIL
SAMPLE	243492005		SW846 3050B	29-DEC-2009 13:00	0.516 g	50 mL	96.89922	SOIL
SAMPLE	243492006		SW846 3050B	29-DEC-2009 13:00	0.507 g	50 mL	98.61933	SOIL
SAMPLE	243492007		SW846 3050B	29-DEC-2009 13:00	0.509 g	50 mL	98.23183	SOIL
SAMPLE	243547002		SW846 3050B	29-DEC-2009 13:00	0.521 g	50 mL	95.96929	SOIL
SAMPLE	243547003		SW846 3050B	29-DEC-2009 13:00	0.507 g	50 mL	98.61933	SOIL
SAMPLE	243549002		SW846 3050B	29-DEC-2009 13:00	0.503 g	50 mL	99.40358	SOIL
DUP	1202004422	243549002	SW846 3050B	29-DEC-2009 13:00	0.515 g	50 mL	97.08738	SOIL
MS	1202004423	243549002	SW846 3050B	29-DEC-2009 13:00	0.517 g	50 mL	96.7118	SOIL
MSD	1202004425	243549002	SW846 3050B	29-DEC-2009 13:00	0.507 g	50 mL	98.61933	SOIL
SDILT	1202004424	243549002	SW846 3050B	29-DEC-2009 13:00	0.503 g	50 mL	99.40358	SOIL

Comments: Clumpy,gray soil.

Reagent/Solvent Lot ID	Amount	Description
1203655-02	1.5 mL	Hydrogen Peroxide 30%
123-4886	5 mL	Nitric Acid CONC.



# Prep LogBook

Analyst: FGA Verified by: \_\_\_\_\_

Batch: 936807

Lab SOP: GL-MA-E-009 REV# 19

Type	Sample Id	Lot. Id	Spike Amount	Spike Units
LCS	1202004427	U1062540-I	.503	g
MS	1202004429	U1091124-01	.25	mL
MS	1202004429	U1091124-06	.25	mL
MSD	1202004431	U1091124-01	.25	mL
MSD	1202004431	U1091124-06	.25	mL

Sample Type	Sample ID	Parent Sample ID	Method	Prep Date	Initial Wt.	Final Volume	Prep Factor	Matrix
MB	1202004426		SW846 3050B	29-DEC-2009 13:00	0.505 g	50 mL	99.0099	SOIL
LCS	1202004427		SW846 3050B	29-DEC-2009 13:00	0.503 g	50 mL	99.40358	SOIL
SAMPLE	243457001		SW846 3050B	29-DEC-2009 13:00	0.503 g	50 mL	99.40358	SOIL
SAMPLE	243457002		SW846 3050B	29-DEC-2009 13:00	0.501 g	50 mL	99.8004	SOIL
SAMPLE	243457003		SW846 3050B	29-DEC-2009 13:00	0.501 g	50 mL	99.8004	SOIL
SAMPLE	243457004		SW846 3050B	29-DEC-2009 13:00	0.505 g	50 mL	99.0099	SOIL
SAMPLE	243472001		SW846 3050B	29-DEC-2009 13:00	0.507 g	50 mL	98.61933	SOIL
SAMPLE	243472002		SW846 3050B	29-DEC-2009 13:00	0.508 g	50 mL	98.4252	SOIL
SAMPLE	243472003		SW846 3050B	29-DEC-2009 13:00	0.511 g	50 mL	97.84736	SOIL
SAMPLE	243492001		SW846 3050B	29-DEC-2009 13:00	0.525 g	50 mL	95.2381	SOIL
SAMPLE	243492002		SW846 3050B	29-DEC-2009 13:00	0.5 g	50 mL	100	SOIL
SAMPLE	243492003		SW846 3050B	29-DEC-2009 13:00	0.521 g	50 mL	95.96929	SOIL
SAMPLE	243492004		SW846 3050B	29-DEC-2009 13:00	0.501 g	50 mL	99.8004	SOIL
SAMPLE	243492005		SW846 3050B	29-DEC-2009 13:00	0.503 g	50 mL	99.40358	SOIL
SAMPLE	243492006		SW846 3050B	29-DEC-2009 13:00	0.516 g	50 mL	96.89922	SOIL
SAMPLE	243492007		SW846 3050B	29-DEC-2009 13:00	0.503 g	50 mL	99.40358	SOIL
SAMPLE	243547002		SW846 3050B	29-DEC-2009 13:00	0.512 g	50 mL	97.65625	SOIL
SAMPLE	243547003		SW846 3050B	29-DEC-2009 13:00	0.5 g	50 mL	100	SOIL
SAMPLE	243549002		SW846 3050B	29-DEC-2009 13:00	0.507 g	50 mL	98.61933	SOIL
DUP	1202004428	243549002	SW846 3050B	29-DEC-2009 13:00	0.501 g	50 mL	99.8004	SOIL
MS	1202004429	243549002	SW846 3050B	29-DEC-2009 13:00	0.51 g	50 mL	98.03922	SOIL
MSD	1202004431	243549002	SW846 3050B	29-DEC-2009 13:00	0.509 g	50 mL	98.23183	SOIL
SDILT	1202004430	243549002	SW846 3050B	29-DEC-2009 13:00	0.507 g	50 mL	98.61933	SOIL

Reagent/Solvent Lot ID	Amount	Description	Comments
1244970	10 mL	HYDROCHLORIC ACID	Clumpy,gray soil.
1234886	1.25 mL	Nitric Acid CONC.	



# Prep LogBook

Analyst: FGA Verified by: \_\_\_\_\_

Batch: 941049

Lab SOP: GL-MA-E-009 REV# 19

Sample Type	Sample ID	Parent Sample ID	Method	Prep Date	Initial Wt.	Final Volume	Prep Factor	Spike Amount	Spike Units
MB	1202014118		SW846 3050B	13-JAN-2010 12:45	0.5 g	50 mL	100		g
LCS	1202014119		SW846 3050B	13-JAN-2010 12:45	0.51 g	50 mL	98.03922		mL
SAMPLE	243457001		SW846 3050B	13-JAN-2010 12:45	0.505 g	50 mL	99.0099		mL
SAMPLE	243457002		SW846 3050B	13-JAN-2010 12:45	0.503 g	50 mL	99.40358		mL
SAMPLE	243457003		SW846 3050B	13-JAN-2010 12:45	0.523 g	50 mL	95.60229		mL
SAMPLE	243457004		SW846 3050B	13-JAN-2010 12:45	0.504 g	50 mL	99.20635		mL
SAMPLE	243472001		SW846 3050B	13-JAN-2010 12:45	0.502 g	50 mL	99.60159		mL
SAMPLE	243472002		SW846 3050B	13-JAN-2010 12:45	0.545 g	50 mL	91.74312		mL
SAMPLE	243472003		SW846 3050B	13-JAN-2010 12:45	0.516 g	50 mL	96.89922		mL
SAMPLE	243492001		SW846 3050B	13-JAN-2010 12:45	0.525 g	50 mL	95.2381		mL
SAMPLE	243492002		SW846 3050B	13-JAN-2010 12:45	0.516 g	50 mL	96.89922		mL
SAMPLE	243492003		SW846 3050B	13-JAN-2010 12:45	0.542 g	50 mL	92.25092		mL
SAMPLE	243492004		SW846 3050B	13-JAN-2010 12:45	0.52 g	50 mL	96.15385		mL
SAMPLE	243492005		SW846 3050B	13-JAN-2010 12:45	0.52 g	50 mL	96.15385		mL
SAMPLE	243492006		SW846 3050B	13-JAN-2010 12:45	0.546 g	50 mL	91.57509		mL
SAMPLE	243492007		SW846 3050B	13-JAN-2010 12:45	0.509 g	50 mL	98.23183		mL
SAMPLE	243547002		SW846 3050B	13-JAN-2010 12:45	0.517 g	50 mL	96.7118		mL
SAMPLE	243547003		SW846 3050B	13-JAN-2010 12:45	0.53 g	50 mL	94.33962		mL
SAMPLE	243549002		SW846 3050B	13-JAN-2010 12:45	0.534 g	50 mL	93.63296		mL
DUP	1202004428	243549002	SW846 3050B	13-JAN-2010 12:45	0.5 g	50 mL	100		mL
MS	1202004429	243549002	SW846 3050B	13-JAN-2010 12:45	0.505 g	50 mL	99.0099		mL
MSD	1202004431	243549002	SW846 3050B	13-JAN-2010 12:45	0.513 g	50 mL	97.46589		mL
SDLT	1202004430	243549002	SW846 3050B	13-JAN-2010 12:45	0.534 g	50 mL	93.63296		mL

Comments: Brown,medium soil.

Reagent/Solvent Lot ID	Amount	Description
1252838	10 mL	HYDROCHLORIC ACID
1252836	1.25 mL	Nitric Acid CONC.

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# Prep LogBook

Analyst: TXB3  
 Batch: 937637  
 Lab SOP: GL-MA-E-010 REV# 23

Verified by: \_\_\_\_\_

Sample Type	Sample ID	Parent Sample ID	Method	Prep Date	Type	Sample Id	Lot. Id	Spike Amount	Spike Units
MB	1202006448		SW846 7471A Prep	06-JAN-2010 13:05	LCS	1202006453	U1031809A	.201	g
LCS	1202006453		SW846 7471A Prep	06-JAN-2010 13:05	MS	1202006451	WHG100106-14	.3	mL
SAMPLE	243457001		SW846 7471A Prep	06-JAN-2010 13:05	MSD	1202006452	WHG100106-14	.3	mL
DUP	1202006449	243457001	SW846 7471A Prep	06-JAN-2010 13:05					
SDILT	1202006450	243457001	SW846 7471A Prep	06-JAN-2010 13:05					
MS	1202006451	243457001	SW846 7471A Prep	06-JAN-2010 13:05					
MSD	1202006452	243457001	SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243457002		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243457003		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243457004		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243472001		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243472002		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243472003		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521001		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521002		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521003		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521004		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521005		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521006		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521007		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521008		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521009		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521010		SW846 7471A Prep	06-JAN-2010 13:05					
SAMPLE	243521011		SW846 7471A Prep	06-JAN-2010 13:05					

Reagent/Solvent Lot ID	Amount	Description
1236355-A	1.125 mL	Hydrochloric Acid Conc.
1240182-1	.375 mL	NITRIC ACID
1244904-C	7.5 mL	5% KMnO4 solution
1206350-C	2 mL	Hg reducing agent
WHG100106-07	30 uL	Mercury Working Standard 1st Source CAL S 0.2/CRA
WHG100106-08	75 uL	Mercury Working Standard 1st Source CAL S 0.5

Comments: Sample 243457001 is a clumpy brown soil.  
 Digestion Start Date: 06-JAN-10 13:05  
 Digestion End Date: 06-JAN-10 13:35

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## Prep LogBook

WHG100106-11	1.5 mL	Mercury Working 1st Source CAL S 10.0
WHG100106-09	300 uL	Mercury Working 1st Source CAL S 2.0
WHG100106-10	750 uL	Mercury Working 1st Source CAL S 5.0/CCV
WHG100106-12	750 uL	Mercury Working 2nd Source S 5.0/ICV



### DATA EXCEPTION REPORT

<b>Mo. Day Yr.</b> 12-JAN-10	<b>Division:</b> Industrial	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Process
<b>Instrument Type:</b> ICP	<b>Test / Method:</b> SW846 3050B/6010B	<b>Matrix Type:</b> Solid	<b>Client Code:</b> LANL
<b>Batch ID:</b> 936808	<b>Sample Numbers:</b> See Below		
<p><b>Potentially affected work order(s)(SDG):</b> 243457(10-1038),243472(10-1057),243492(10-1037),243547(10-1084),243549(10-1085)</p> <p><b>Application Issues:</b></p> <p>Failed Recovery for MS/PS</p> <p>Failed RPD for DUP</p> <p>Failed Recovery for MSD/PSD</p>			
<b>Specification and Requirements</b>		<b>DER Disposition:</b>	
<p><b>Exception Description:</b></p> <p>1. Failed Recovery for MS/PS:</p> <p>QC 1202004429MS</p> <p>2. Failed RPD for DUP:</p> <p>QC 1202004428DUP</p> <p>3. Failed Recovery for MSD/PSD:</p> <p>QC 1202004431MSD</p>		<p>1. The matrix spike recovery failed outside of the control limits for calcium, magnesium and potassium due to possible matrix interferences and/or non-homogeneity. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.</p> <p>2. The sample and sample duplicate % RPD failed outside the control limits for cobalt, titanium and vanadium due to possible sample non-homogeneity and/or matrix interference. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.</p> <p>3. The matrix spike duplicate recovery failed outside of the control limits for magnesium and potassium due to possible matrix interferences and/or non-homogeneity. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.</p>	

**Originator's Name:**

Helen Camello 13-JAN-10

**Data Validator/Group Leader:**

Bryan Davis 14-JAN-10



### DATA EXCEPTION REPORT

<b>Mo.Day Yr.</b> 15-JAN-10	<b>Division:</b> Industrial	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Process
<b>Instrument Type:</b> ICP	<b>Test / Method:</b> SW846 3050B/6010B	<b>Matrix Type:</b> Solid	<b>Client Code:</b> LANL
<b>Batch ID:</b> 941050	<b>Sample Numbers:</b> See Below		
<b>Potentially affected work order(s)(SDG):</b> 243457(10-1038),243472(10-1057),243492(10-1037),243547(10-1084),243549(10-1085) <b>Application Issues:</b> Failed Recovery for MS/PS Failed Recovery for MSD/PSD			
<b>Specification and Requirements</b>		<b>DER Disposition:</b>	
<b>Exception Description:</b>  1. Failed Recovery for MS/PS: QC 1202004429MS  2. Failed Recovery for MSD/PSD: QC 1202004431MSD		1./2. The matrix spike and matrix spike duplicate recovery failed outside of the control limits for silicon due to possible matrix interferences and/or non-homogeneity. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.	

**Originator's Name:**

Helen Camello

15-JAN-10

**Data Validator/Group Leader:**

Eric Lawson

18-JAN-10



### DATA EXCEPTION REPORT

<b>Mo. Day Yr.</b> 16-JAN-10	<b>Division:</b> Industrial	<b>Quality Criteria:</b> Specifications	<b>Type:</b> Process
<b>Instrument Type:</b> ICP/MS	<b>Test / Method:</b> SW846 3050B/6020	<b>Matrix Type:</b> Solid	<b>Client Code:</b> LANL
<b>Batch ID:</b> 936805	<b>Sample Numbers:</b> See Below		
<p><b>Potentially affected work order(s)(SDG):</b> 243457(10-1038),243472(10-1057),243492(10-1037),243547(10-1084),243549(10-1085)</p> <p><b>Application Issues:</b> Failed RPD for DUP Failed Recovery for MSD/PSD</p>			
<b>Specification and Requirements Exception Description:</b>		<b>DER Disposition:</b>	
<p>1. Failed RPD for DUP: QC 1202004422DUP</p> <p>2. Failed Recovery for MSD/PSD: QC 1202004425MSD</p>		<p>The matrix spike duplicate failed outside of the control limits for Se due to possible matrix interferences and/or sample non-homogeneity. Per GEL's accredited methods and SOP's, a corrective action is not required and the data is qualified and reported.</p> <p>The sample and sample duplicate %RPD failed outside the control limits for Be and Ni due to possible sample homogeneity and/or matrix interference. Per GEL's accredited methods and SOP's, a corrective action is not required and the data is qualified and reported.</p>	

**Originator's Name:**

Rose Jenkins 16-JAN-10

**Data Validator/Group Leader:**

Samantha Jacobs 18-JAN-10



# Standard Logbook

**Serial ID:** UHG1167639-01      **Opened:** 13-AUG-09      **Amount :** 125 mL  
**Name:** MHGSTOCK1      **Received:** 13-AUG-09      **Catalog Number :** PLHG4-2Y  
**Type:** Source Material      **Expires:** 13-AUG-10      **Lot Number :** 15-37HG  
**Employee:** Bryan Davis      **Solvent :** 10% HNO3  
**Supplier:** Spex  
**Description:** Mercury Source Standard #1 1,000 mg/L  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Mercury	1000 mg/L		

**Serial ID:** UHG1167641-02      **Opened:** 13-AUG-09      **Amount :** 100 mL  
**Name:** MHGSTOCK2      **Received:** 13-AUG-09      **Catalog Number :** AHG1KN-100  
**Type:** Source Material      **Expires:** 13-AUG-10      **Lot Number :** 4905530  
**Employee:** Bryan Davis      **Solvent :** 3% HNO3  
**Supplier:** Ricca Chemical Company  
**Description:** Mercury Source Standard #2 1,000 mg/L  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Mercury	999.7 mg/L		

**Serial ID:** UI031809A      **Opened:** 18-MAR-09      **Catalog Number :** 540  
**Name:** METALSOILSRM      **Received:** 18-MAR-09      **Lot Number :** D061-540  
**Type:** Source Material      **Expires:** 10-OCT-10  
**Employee:** Jamie Johnson  
**Supplier:** ERA  
**Description:** Metals LCS Soil SRM  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	10600 mg/kg	Antimony	126 mg/kg
Arsenic	225 mg/kg	Barium	565 mg/kg
Beryllium	162 mg/kg	Boron	107 mg/kg
Cadmium	69.1 mg/kg	Calcium	10000 mg/kg
Chromium	124 mg/kg	Cobalt	115 mg/kg
Copper	66.7 mg/kg	Iron	17600 mg/kg
Lead	223 mg/kg	Magnesium	4260 mg/kg
Manganese	368 mg/kg	Mercury	5.15 mg/kg
Molybdenum	107 mg/kg	Nickel	172 mg/kg
Potassium	4090 mg/kg	Selenium	147 mg/kg
Silver	35.2 mg/kg	Sodium	538 mg/kg
Strontium	117 mg/kg	Thallium	173 mg/kg
Tin	164 mg/kg	Titanium	381 mg/kg
Vanadium	93.9 mg/kg	Zinc	349 mg/kg



# Standard Logbook

**Serial ID:** UI062540-I      **Opened:** 12-JUN-09      **Amount :** 80 g  
**Name:** ICP SOIL SRM      **Received:** 12-JUN-09      **Lot Number :** D062-540  
**Type:** Source Material      **Expires:** 31-JAN-12  
**Employee:** Bryan Davis  
**Supplier:** ERA  
**Description:** Metals Soil LCS SRM ICP/Hg  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	10500 mg/kg	Antimony	173 mg/kg
Arsenic	104 mg/kg	Barium	198 mg/kg
Beryllium	77.6 mg/kg	Boron	141 mg/kg
Cadmium	60.7 mg/kg	Calcium	9870 mg/kg
Chromium	236 mg/kg	Cobalt	91.2 mg/kg
Copper	174 mg/kg	Iron	18000 mg/kg
Lead	86 mg/kg	Magnesium	4000 mg/kg
Manganese	558 mg/kg	Mercury	8.46 mg/kg
Molybdenum	48.6 mg/kg	Nickel	134 mg/kg
Phosphorous	736 mg/kg	Potassium	4300 mg/kg
Selenium	286 mg/kg	Silica	2591 mg/kg
Silicon	1211 mg/kg	Silver	30.1 mg/kg
Sodium	1020 mg/kg	Strontium	227 mg/kg
Sulfur	385 mg/kg	Thallium	121 mg/kg
Tin	104 mg/kg	Titanium	462 mg/kg
Vanadium	115 mg/kg	Zinc	594 mg/kg

**Serial ID:** UI062540-MS      **Opened:** 12-JUN-09      **Lot Number :** D062-540  
**Name:** ICPMS SOIL SRM      **Received:** 12-JUN-09  
**Type:** Source Material      **Expires:** 31-JAN-12  
**Employee:** Bryan Davis  
**Supplier:** ERA  
**Description:** Metals Soil LCS SRM ICPMS  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	10500 mg/kg	Antimony	67.4 mg/kg
Arsenic	104 mg/kg	Barium	198 mg/kg
Beryllium	77.6 mg/kg	Boron	141 mg/kg
Cadmium	60.6 mg/kg	Calcium	9870 mg/kg
Chromium	236 mg/kg	Cobalt	91.2 mg/kg
Copper	174 mg/kg	Iron	18000 mg/kg
Lead	86 mg/kg	Lithium	10.6 mg/kg
Magnesium	4000 mg/kg	Manganese	558 mg/kg
Mercury	8.46 mg/kg	Molybdenum	48.6 mg/kg
Nickel	134 mg/kg	Phosphorous	755 mg/kg
Potassium	4300 mg/kg	Selenium	286 mg/kg
Silver	30.1 mg/kg	Sodium	1020 mg/kg



# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Strontium	227 mg/kg	Thallium	121 mg/kg
Thorium	9.84 mg/kg	Tin	104 mg/kg
Titanium	462 mg/kg	Uranium	2.13 mg/kg
Uranium-235	.0153 mg/kg	Uranium-238	2.11 mg/kg
Vanadium	92.4 mg/kg	Zinc	594 mg/kg
Zirconium	10.6 mg/kg		

**Serial ID:** UI090422-40      **Opened:** 04-MAY-09      **Amount :** 500 mL  
**Name:** TRACE ICP ICSA SOLN A      **Received:** 22-APR-09      **Catalog Number :** 160005-01-03  
**Type:** Source Material      **Expires:** 04-MAY-10      **Lot Number :** 1013357  
**Employee:** Helen Camello      **Solvent :** 5%HNO3  
**Supplier:** o2si  
**Description:** TRACE ICP ICSA SOLN A mg/L +/- 0.5% IN 5% HNO3  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	5000 mg/L	Calcium	5000 mg/L
Iron	2000 mg/L	Magnesium	5000 mg/L

**Serial ID:** UI090610-03      **Opened:** 10-JUN-09      **Catalog Number :** 060074-06-01  
**Name:** ICPMS Tungsten - 10mg/L      **Received:** 10-JUN-09      **Lot Number :** 1016338  
**Type:** Source Material      **Expires:** 10-JUN-10      **Solvent :** 2% HNO3  
**Employee:** Paul Boyd  
**Supplier:** O2SI  
**Description:** ICPMS Tungsten standard SPIKE - 10mg/L  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Tungsten	10 mg/L		

**Serial ID:** UI090701-09      **Opened:** 01-JUL-09      **Amount :** 250 mL  
**Name:** ICP-MS CRDL Master #1      **Received:** 01-JUL-09      **Catalog Number :** 160044-09-02  
**Type:** Source Material      **Expires:** 01-JUL-10      **Lot Number :** 1016477  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% IN 2% HNO3  
**Supplier:** O2SI  
**Description:** ICPMS CRDL Master Soln #1  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	15 mg/L	Arsenic	5 mg/L
Barium	2 mg/L	Beryllium	.5 mg/L
Boron	15 mg/L	Cadmium	1 mg/L
Calcium	100 mg/L	Chromium	3 mg/L
Cobalt	1 mg/L	Copper	1 mg/L



# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Iron	25 mg/L	Lead	2 mg/L
Lithium	10 mg/L	Magnesium	15 mg/L
Manganese	5 mg/L	Nickel	2 mg/L
Phosphorous	50 mg/L	Potassium	300 mg/L
Selenium	5 mg/L	Sodium	250 mg/L
Strontium	10 mg/L	Thallium	1 mg/L
Thorium	1 mg/L	Uranium	.2 mg/L
Vanadium	10 mg/L	Zinc	10 mg/L

**Serial ID:** UI090701-10      **Opened:** 01-JUL-09      **Amount :** 250 mL  
**Name:** ICP-MS CRDL Master #2      **Received:** 01-JUL-09      **Catalog Number :** 160044-08-02  
**Type:** Source Material      **Expires:** 01-JUL-10      **Lot Number :** 1016476  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% IN 2% HNO3  
**Supplier:** 02SI  
**Description:** ICPMS CRDL Soln #2  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	2 mg/L	Molybdenum	.5 mg/L
Silver	1 mg/L	Tin	2 mg/L
Titanium	10 mg/L	Tungsten	5 mg/L
Zirconium	2 mg/L		

**Serial ID:** UI090701-40      **Opened:** 01-JUL-09      **Amount :** 500 mL  
**Name:** TRACE ICP Stock PQL St      **Received:** 30-JUN-09      **Catalog Number :** 160543-01-03  
**Type:** Source Material      **Expires:** 01-JUL-10      **Lot Number :** 1016475  
**Employee:** Helen Camello      **Solvent :** +/-0.5%in2%HNO3+TrHF  
**Supplier:** 02si  
**Description:** TRACE ICP Stock PQL Standard  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	100 mg/L	Antimony	5 mg/L
Arsenic	15 mg/L	Barium	2.5 mg/L
Beryllium	2.5 mg/L	Boron	25 mg/L
Cadmium	2.5 mg/L	Calcium	100 mg/L
Chromium	2.5 mg/L	Cobalt	2.5 mg/L
Copper	5 mg/L	Iron	50 mg/L
Lead	5 mg/L	Magnesium	150 mg/L
Manganese	5 mg/L	Molybdenum	5 mg/L
Nickel	2.5 mg/L	Phosphorous	75 mg/L
Potassium	75 mg/L	Selenium	15 mg/L
Silicon	50 mg/L	Silver	2.5 mg/L
Sodium	150 mg/L	Strontium	2.5 mg/L
Sulfur	50 mg/L	Thallium	10 mg/L



# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Tin	5 mg/L	Titanium	2.5 mg/L
Uranium	25 mg/L	Vanadium	2.5 mg/L
Zinc	5 mg/L		

**Serial ID:** UI090828-42      **Opened:** 16-SEP-09      **Amount :** 500 mL  
**Name:** TRACE ICP Na-1000SOUR      **Received:** 27-AUG-09      **Catalog Number :** 060011-02-03  
**Type:** Source Material      **Expires:** 16-SEP-10      **Lot Number :** 1017098  
**Employee:** Helen Camello      **Solvent :** 1%HNO3  
**Supplier:** O2SI  
**Description:** Sodium 1000 +/- 3 ug/mL in 1% HNO3  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Sodium	1000 ug/mL		

**Serial ID:** UI090925-40      **Opened:** 23-OCT-09      **Amount :** 500 mL  
**Name:** SECOND SOURCE STD -1      **Received:** 25-SEP-09      **Catalog Number :** SGELMX38-500N  
**Type:** Source Material      **Expires:** 30-SEP-10      **Lot Number :** 4909129  
**Employee:** Helen Camello      **Solvent :** 5%HNO3  
**Supplier:** SPECTRO PURE  
**Description:** SECOND SOURCE STD #1A 5%HNO3  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	1000 mg/L	Arsenic	100 mg/L
Barium	100 mg/L	Boron	100 mg/L
Cadmium	100 mg/L	Calcium	1000 mg/L
Chromium	100 mg/L	Cobalt	100 mg/L
Copper	100 mg/L	Iron	1000 mg/L
Lead	100 mg/L	Phosphorous	500 mg/L
Potassium	500 mg/L	Selenium	500 mg/L
Sodium	500 mg/L	Strontium	100 mg/L

**Serial ID:** UI090925-41      **Opened:** 23-OCT-09      **Amount :** 500 mL  
**Name:** SECOND SOURCE STD -1      **Received:** 25-SEP-09      **Catalog Number :** SGELMX39-500B  
**Type:** Source Material      **Expires:** 30-SEP-10      **Lot Number :** 4909130  
**Employee:** Helen Camello      **Solvent :** 5%HNO3,TR.HF  
**Supplier:** SPECTRO PURE  
**Description:** SECOND SOURCE STD #1B  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	100 mg/L	Beryllium	50 mg/L
Magnesium	1000 mg/L	Manganese	100 mg/L



# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Molybdenum	100 mg/L	Nickel	100 mg/L
Silver	50 mg/L	Sulfur	500 mg/L
Thallium	100 mg/L	Tin	100 mg/L
Titanium	100 mg/L	Uranium	100 mg/L
Vanadium	100 mg/L	Zinc	100 mg/L

**Serial ID:** UI091015-42      **Opened:** 28-OCT-09      **Amount :** 500 mL  
**Name:** SI 1000mg/L      **Received:** 15-OCT-09      **Catalog Number :** 060014-02-03  
**Type:** Source Material      **Expires:** 28-OCT-10      **Lot Number :** 1017581  
**Employee:** Helen Camello      **Solvent :** 0.3%H<sub>2</sub>O(NH<sub>4</sub>)<sub>2</sub>SiF<sub>6</sub>  
**Supplier:** o2si  
**Description:** Silicon 1000mg/L +/- 0.3% in H<sub>2</sub>O(NH<sub>4</sub>)<sub>2</sub>SiF<sub>6</sub>  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Silica	2139 mg/L	Silicon	1000 mg/L

**Serial ID:** UI091015-A      **Opened:** 15-OCT-09      **Catalog Number :** 160067-03  
**Name:** ICP-MS DOE SOIL SPIKE      **Received:** 15-OCT-09      **Lot Number :** 1017142  
**Type:** Source Material      **Expires:** 15-OCT-10  
**Employee:** Francena Armstrong  
**Supplier:** 02si  
**Description:** ICP-MS Spike for soil products.  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	200 mg/L	Arsenic	8 mg/L
Barium	5 mg/L	Beryllium	5 mg/L
Boron	10 mg/L	Cadmium	1 mg/L
Calcium	200 mg/L	Chromium	5 mg/L
Cobalt	5 mg/L	Copper	5 mg/L
Iron	200 mg/L	Lead	20 mg/L
Lithium	5 mg/L	Magnesium	200 mg/L
Manganese	5 mg/L	Nickel	5 mg/L
Phosphorus, Total as P	200 mg/L	Potassium	200 mg/L
Selenium	2 mg/L	Sodium	200 mg/L
Strontium	5 mg/L	Thallium	10 mg/L
Thorium	5 mg/L	Uranium	5 mg/L
Uranium-235	.036 mg/L	Uranium-238	4.964 mg/L
Vanadium	5 mg/L	Zinc	5 mg/L



# Standard Logbook

**Serial ID:** UI091015-B      **Opened:** 15-OCT-09      **Catalog Number :** 160067-03  
**Name:** ICP-MS DOE SOIL SPIKE      **Received:** 15-OCT-09      **Lot Number :** 1017142  
**Type:** Source Material      **Expires:** 15-OCT-10  
**Employee:** Francena Armstrong  
**Supplier:** 02si  
**Description:** ICP-MS Spike for Soil Products  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	20 mg/L	Molybdenum	5 mg/L
Silicon	200 mg/L	Silver	5 mg/L
Tin	5 mg/L	Zirconium	5 mg/L

**Serial ID:** UI091102-40      **Opened:** 16-NOV-09      **Amount :** 500 mL  
**Name:** TRACE CALSTD#1A SOUF      **Received:** 02-NOV-09      **Catalog Number :** HP2270-1-500  
**Type:** Source Material      **Expires:** 31-OCT-10      **Lot Number :** 0930215  
**Employee:** Helen Camello      **Solvent :** HNO3  
**Supplier:** Environmental Express  
**Description:** Trace Calibration Std #1A  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	2000 mg/L	Arsenic	200 mg/L
Barium	200 mg/L	Beryllium	200 mg/L
Boron	200 mg/L	Cadmium	200 mg/L
Calcium	2000 mg/L	Chromium	200 mg/L
Cobalt	200 mg/L	Copper	200 mg/L
Iron	2000 mg/L	Lead	200 mg/L
Magnesium	2000 mg/L	Manganese	200 mg/L
Nickel	200 mg/L	Phosphorous	1000 mg/L
Potassium	2000 mg/L	Selenium	200 mg/L
Sodium	2000 mg/L	Strontium	200 mg/L
Thallium	200 mg/L	Uranium	200 mg/L
Vanadium	200 mg/L	Zinc	200 mg/L

**Serial ID:** UI091102-41      **Opened:** 16-NOV-09      **Amount :** 500 mL  
**Name:** TRACE CALSTD#1B SOUF      **Received:** 02-NOV-09      **Catalog Number :** HP2270-2-500  
**Type:** Source Material      **Expires:** 31-OCT-10      **Lot Number :** 0930216  
**Employee:** Helen Camello      **Solvent :** HNO3  
**Supplier:** Environmental Express  
**Description:** Trace Calibration Standard #1B  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	200 mg/L	Molybdenum	200 mg/L
Silver	200 mg/L	Sulfur	400 mg/L



# Standard Logbook

<b>Analyte</b>	<b>Concentration</b>	<b>Analyte</b>	<b>Concentration</b>
Tin	200 mg/L	Titanium	200 mg/L

**Serial ID:** UI091102-42      **Opened:** 17-NOV-09      **Amount :** 200 mL  
**Name:** SILICON      **Received:** 02-NOV-09      **Catalog Number :** HP100050-4F  
**Type:** Source Material      **Expires:** 17-NOV-10      **Lot Number :** 0921924  
**Employee:** Helen Camello      **Solvent :** H2O/tr HF  
**Supplier:** ENVIRNMENTAL EXPRESS  
**Description:** SILICON 1000mg/L H2O/tr HF  
**Comments:** None

<b>Analyte</b>	<b>Concentration</b>	<b>Analyte</b>	<b>Concentration</b>
Silica	2139 mg/L	Silicon	1000 mg/L

**Serial ID:** UI091124-01      **Opened:** 24-NOV-09      **Lot Number :** 1017642  
**Name:** METALSPIKE-1      **Received:** 24-NOV-09  
**Type:** Source Material      **Expires:** 24-NOV-10  
**Employee:** Francena Armstrong  
**Supplier:** OS2I  
**Description:** Metals Spike Mix I  
**Comments:** None

<b>Analyte</b>	<b>Concentration</b>	<b>Analyte</b>	<b>Concentration</b>
Aluminum	1000 ug/mL	Arsenic	100 ug/mL
Barium	100 ug/mL	Beryllium	100 ug/mL
Boron	100 ug/mL	Cadmium	100 ug/mL
Calcium	1000 ug/mL	Cobalt	100 ug/mL
Iron	1000 ug/mL	Lead	100 ug/mL
Magnesium	1000 ug/mL	Phosphorous	100 ug/mL
Potassium	1000 ug/mL	Silver	100 ug/mL
Sodium	1000 ug/mL	Strontium	100 ug/mL

**Serial ID:** UI091124-06      **Opened:** 24-NOV-09      **Lot Number :** 1017643  
**Name:** METALSPIKE-2      **Received:** 24-NOV-09  
**Type:** Source Material      **Expires:** 24-NOV-10  
**Employee:** Francena Armstrong  
**Supplier:** OS2I  
**Description:** Metals Spike Mix II  
**Comments:** None

<b>Analyte</b>	<b>Concentration</b>	<b>Analyte</b>	<b>Concentration</b>
Antimony	100 ug/mL	Chromium	100 ug/mL
Copper	100 ug/mL	Manganese	100 ug/mL
Molybdenum	100 ug/mL	Nickel	100 ug/mL
Selenium	100 ug/mL	Silica	2141 ug/mL



# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Silicon	1000 ug/mL	Sulfur	1000 ug/mL
Thallium	100 ug/mL	Tin	100 ug/mL
Titanium	100 ug/mL	Uranium	100 ug/mL
Vanadium	100 ug/mL	Zinc	100 ug/mL

**Serial ID:** UI091212-11      **Opened:** 12-DEC-09      **Amount :** 1000 mL  
**Name:** ICP-MS ICSA Master A      **Received:** 12-DEC-09      **Catalog Number :** 160013-01-01L  
**Type:** Source Material      **Expires:** 12-DEC-10      **Lot Number :** 1015303  
**Employee:** Paul Boyd      **Solvent :** 2% HNO3  
**Supplier:** 02SI  
**Description:** ICP-MS ICSA Master A  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	1000 mg/L	Calcium	1000 mg/L
Carbon	2000 mg/L	Chloride	10000 mg/L
Iron	1000 mg/L	Magnesium	1000 mg/L
Molybdenum	20 mg/L	Phosphorous	1000 mg/L
Potassium	1000 mg/L	Sodium	1000 mg/L
Sulfur	1000 mg/L	Titanium	20 mg/L

**Serial ID:** UI091215-48      **Opened:** 04-JAN-10      **Amount :** 1000 mL  
**Name:** Trace ICP ICSA      **Received:** 18-DEC-09      **Catalog Number :** 160005-02  
**Type:** Source Material      **Expires:** 04-JAN-11      **Lot Number :** 1018219  
**Employee:** Helen Camello      **Solvent :** 3% HCl + 1% HNO3  
**Supplier:** o2si  
**Description:** Trace ICP Interferent Check Standard A  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	500000 UG/L	Calcium	500000 UG/L
Iron	200000 UG/L	Magnesium	500000 UG/L

**Serial ID:** UI091216-01      **Opened:** 16-DEC-09      **Lot Number :** 1018095  
**Name:** METALSPIKE-1      **Received:** 16-DEC-09  
**Type:** Source Material      **Expires:** 16-DEC-10  
**Employee:** Francena Armstrong  
**Supplier:** OS2I  
**Description:** Metals Spike Mix I  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	1000 ug/mL	Arsenic	100 ug/mL
Barium	100 ug/mL	Beryllium	100 ug/mL



# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Boron	100 ug/mL	Cadmium	100 ug/mL
Calcium	1000 ug/mL	Cobalt	100 ug/mL
Iron	1000 ug/mL	Lead	100 ug/mL
Magnesium	1000 ug/mL	Phosphorous	100 ug/mL
Potassium	1000 ug/mL	Silver	100 ug/mL
Sodium	1000 ug/mL	Strontium	100 ug/mL

**Serial ID:** UI091216-06      **Opened:** 16-DEC-09      **Lot Number :** 1018096  
**Name:** METALSPIKE-2      **Received:** 16-DEC-09  
**Type:** Source Material      **Expires:** 16-DEC-10  
**Employee:** Francena Armstrong  
**Supplier:** OS2I  
**Description:** Metals Spike Mix II  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	100 ug/mL	Chromium	100 ug/mL
Copper	100 ug/mL	Manganese	100 ug/mL
Molybdenum	100 ug/mL	Nickel	100 ug/mL
Selenium	100 ug/mL	Silica	2141 ug/mL
Silicon	1000 ug/mL	Sulfur	1000 ug/mL
Thallium	100 ug/mL	Tin	100 ug/mL
Titanium	100 ug/mL	Uranium	100 ug/mL
Vanadium	100 ug/mL	Zinc	100 ug/mL

**Serial ID:** UI091217-06      **Opened:** 17-DEC-09      **Amount :** 250 mL  
**Name:** ICP-MS ICV/CCV Master A      **Received:** 17-DEC-09      **Catalog Number :** 160055-01  
**Type:** Source Material      **Expires:** 17-DEC-10      **Lot Number :** 1018209  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 5% HNO3 100 cm2  
**Supplier:** 02SI  
**Description:** ICPMS ICV/CCV SOLN A - 10ppm  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	2020 mg/L	Calcium	2000 mg/L
Iron	2000 mg/L	Magnesium	2000 mg/L
Phosphorous	2000 mg/L	Potassium	2000 mg/L
Sodium	2000 mg/L		

**Serial ID:** UI091217-07      **Opened:** 17-DEC-09      **Amount :** 250 mL  
**Name:** ICP-MS ICV/CCV Master B      **Received:** 17-DEC-09      **Catalog Number :** 160054-02  
**Type:** Source Material      **Expires:** 17-DEC-10      **Lot Number :** 1018210  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 5% HNO3 100 cm2  
**Supplier:** 02SI



# Standard Logbook

**Description:** ICPMS ICV/CCV Soln B - 10ppm

**Comments:** None

Analyte	Concentration	Analyte	Concentration
Arsenic	20 mg/L	Barium	20 mg/L
Beryllium	20 mg/L	Boron	40 mg/L
Cadmium	20 mg/L	Chromium	20 mg/L
Cobalt	20 mg/L	Copper	20 mg/L
Lead	20 mg/L	Lithium	20 mg/L
Manganese	20 mg/L	Nickel	20 mg/L
Selenium	20 mg/L	Strontium	20 mg/L
Thallium	20 mg/L	Thorium	20 mg/L
Uranium	20 mg/L	Vanadium	20 mg/L
Zinc	20 mg/L		

**Serial ID:** UI091217-08      **Opened:** 17-DEC-09      **Amount :** 250 mL  
**Name:** ICP-MS ICV/CCV Master C      **Received:** 17-DEC-09      **Catalog Number :** 160054-03  
**Type:** Source Material      **Expires:** 17-DEC-10      **Lot Number :** 1018211  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 5% HNO3 100 cm2  
**Supplier:** 02SI  
**Description:** ICPMS ICV/CCV Soln C - 10ppm  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	20 mg/L	Molybdenum	20 mg/L
Silver	20 mg/L	Tin	20 mg/L
Titanium	20 mg/L	Tungsten	20 mg/L
Zirconium	20 mg/L		

**Serial ID:** UI091217-12      **Opened:** 17-DEC-09      **Amount :** 250 mL  
**Name:** ICP-MS ICSAB Master B      **Received:** 17-DEC-09      **Catalog Number :** 160033-02  
**Type:** Source Material      **Expires:** 17-DEC-10      **Lot Number :** 1018212  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 2% HNO3  
**Supplier:** 02SI  
**Description:** ICPMS ICSAB Master B  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Arsenic	2 mg/L	Barium	2 mg/L
Beryllium	2 mg/L	Boron	2 mg/L
Cadmium	2 mg/L	Chromium	2 mg/L
Cobalt	2 mg/L	Copper	2 mg/L
Lead	2 mg/L	Lithium	2 mg/L
Manganese	2 mg/L	Nickel	2 mg/L
Selenium	2 mg/L	Strontium	2 mg/L
Thallium	2 mg/L	Thorium	2 mg/L



# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Uranium	2 mg/L	Vanadium	2 mg/L
Zinc	2 mg/L		

**Serial ID:** UI091217-13      **Opened:** 17-DEC-09      **Amount :** 250 mL  
**Name:** ICP-MS ICSAB Master C      **Received:** 17-DEC-09      **Catalog Number :** 160033-03  
**Type:** Source Material      **Expres:** 17-DEC-10      **Lot Number :** 1016926  
**Employee:** Paul Boyd      **Solvent :** +/- 0.5% in 2% HNO3  
**Supplier:** 02SI  
**Description:** ICPMS ICSAB Master C  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	2 mg/L	Silver	2 mg/L
Tin	2 mg/L	Tungsten	2 mg/L
Zirconium	2 mg/L		

**Serial ID:** UI091228-40      **Opened:** 28-DEC-09      **Amount :** 500 mL  
**Name:** ICP HIGH RANGE STD-A      **Received:** 21-DEC-09      **Catalog Number :** 160211-05-03  
**Type:** Source Material      **Expires:** 28-DEC-10      **Lot Number :** 1018160  
**Employee:** Helen Camello      **Solvent :** +/-0.5%in2%HNO3  
**Supplier:** 02SI  
**Description:** ICP HIGH RANGE STD SOLUTION A  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	10000 ug/L	Arsenic	10000 ug/L
Barium	15000 ug/L	Beryllium	3000 ug/L
Boron	5000 ug/L	Cadmium	10000 ug/L
Chromium	25000 ug/L	Cobalt	10000 ug/L
Copper	20000 ug/L	Lead	25000 ug/L
Manganese	10000 ug/L	Molybdenum	10000 ug/L
Nickel	10000 ug/L	Phosphorous	15000 ug/L
Potassium	300000 ug/L	Selenium	10000 ug/L
Silica	107000 ug/L	Silicon	50000 ug/L
Silver	1000 ug/L	Strontium	10000 ug/L
Sulfur	50000 ug/L	Thallium	10000 ug/L
Tin	10000 ug/L	Titanium	10000 ug/L
Vanadium	10000 ug/L	Zinc	15000 ug/L

**Serial ID:** UI091228-41      **Opened:** 28-DEC-09      **Amount :** 500 mL  
**Name:** ICP HIGH RANGE STD B      **Received:** 21-DEC-09      **Catalog Number :** 160211-05-03  
**Type:** Source Material      **Expires:** 28-DEC-10      **Lot Number :** 1018160  
**Employee:** Helen Camello      **Solvent :** +/-0.5%in2%HNO3  
**Supplier:** 02SI



# Standard Logbook

**Description:** ICP HIGH RANGE STD SOLUTION B

**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	500000 ug/L	Calcium	500000 ug/L
Iron	500000 ug/L	Magnesium	500000 ug/L
Sodium	500000 ug/L	Uranium	15000 ug/L

**Serial ID:** UI100114-40      **Opened:** 14-JAN-10      **Amount :** 500 mL  
**Name:** ICP HIGH RANGE STD-A      **Received:** 14-JAN-10      **Catalog Number :** 160211-05-03  
**Type:** Source Material      **Expires:** 14-JAN-11      **Lot Number :** 1018160  
**Employee:** Helen Camello      **Solvent :** +/-0.5%in2%HNO3  
**Supplier:** Q2SI

**Description:** ICP HIGH RANGE STD SOLUTION A

**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	10000 ug/L	Arsenic	10000 ug/L
Barium	15000 ug/L	Beryllium	3000 ug/L
Boron	5000 ug/L	Cadmium	10000 ug/L
Chromium	25000 ug/L	Cobalt	10000 ug/L
Copper	20000 ug/L	Lead	25000 ug/L
Manganese	10000 ug/L	Molybdenum	10000 ug/L
Nickel	10000 ug/L	Phosphorous	15000 ug/L
Potassium	300000 ug/L	Selenium	10000 ug/L
Silica	107000 ug/L	Silicon	50000 ug/L
Silver	1000 ug/L	Strontium	10000 ug/L
Sulfur	50000 ug/L	Thallium	10000 ug/L
Tin	10000 ug/L	Titanium	10000 ug/L
Vanadium	10000 ug/L	Zinc	15000 ug/L

**Serial ID:** UI100114-41      **Opened:** 14-JAN-10      **Amount :** 500 mL  
**Name:** ICP HIGH RANGE STD B      **Received:** 14-JAN-10      **Catalog Number :** 160211-05-03  
**Type:** Source Material      **Expires:** 14-JAN-11      **Lot Number :** 1018160  
**Employee:** Helen Camello      **Solvent :** +/-0.5%in2%HNO3  
**Supplier:** Q2SI

**Description:** ICP HIGH RANGE STD SOLUTION B

**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	500000 ug/L	Calcium	500000 ug/L
Iron	500000 ug/L	Magnesium	500000 ug/L
Sodium	500000 ug/L	Uranium	15000 ug/L



# Standard Logbook

**Serial ID:** UMS090303-01      **Opened:** 03-MAR-09      **Amount :** 250 mL  
**Name:** ICPMSCaSPIKEB      **Received:** 03-MAR-09      **Catalog Number :** ZGEL-100-250  
**Type:** Source Material      **Expires:** 28-FEB-10      **Lot Number :** 14-81JB  
**Employee:** Paul Boyd  
**Supplier:** SPEX  
**Description:** ICPMS Calibration Standard Solution B  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Arsenic	10 mg/L	Barium	10 mg/L
Beryllium	10 mg/L	Boron	20 mg/L
Cadmium	10 mg/L	Chromium	10 mg/L
Cobalt	10 mg/L	Copper	10 mg/L
Lead	10 mg/L	Lithium	10 mg/L
Manganese	10 mg/L	Nickel	10 mg/L
Selenium	10 mg/L	Silver	10 mg/L
Strontium	10 mg/L	Thallium	10 mg/L
Thorium	10 mg/L	Uranium	10 mg/L
Vanadium	10 mg/L	Zinc	10 mg/L

**Serial ID:** UMS090303-02      **Opened:** 03-MAR-09      **Catalog Number :** ZGEL-102-250  
**Name:** ICPMSCaSPIKEA      **Received:** 03-MAR-09      **Lot Number :** 14-83JB  
**Type:** Source Material      **Expires:** 28-FEB-10  
**Employee:** Paul Boyd  
**Supplier:** SPEX  
**Description:** ICPMS Calibration Standard Solution A  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	1000 mg/L	Calcium	1000 mg/L
Iron	1000 mg/L	Magnesium	1000 mg/L
Phosphorous	1000 mg/L	Potassium	1000 mg/L
Sodium	1000 mg/L		

**Serial ID:** UMS090303-03      **Opened:** 03-MAR-09      **Amount :** 250 ml  
**Name:** ICPMSCaSPIKEC      **Received:** 03-MAR-09      **Catalog Number :** ZGEL-101-250  
**Type:** Source Material      **Expires:** 28-FEB-10      **Lot Number :** 15-199JB  
**Employee:** Paul Boyd  
**Supplier:** SPEX  
**Description:** ICPMS Calibration Standard Solution C  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Antimony	10 mg/L	Molybdenum	10 mg/L
Tin	10 mg/L	Titanium	10 mg/L
Zirconium	10 mg/L		



# Standard Logbook

**Serial ID:** IHG100106-01      **Opened:** 06-JAN-10      **Instrument Id :** Mercury  
**Name:** MHGINTER1      **Received:** 06-JAN-10      **Pipet Id :** Minou1  
**Type:** Intermediate      **Expires:** 07-JAN-10      **Solvent :** 1mL HNO3 + Type1 H2O  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Intermediate 1st Source 200 ug/L  
**Comments:** Prepare fresh daily

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UHG1167639-01	Mercury	1000 mg/L	.05 mL	250 mL	200 ug/L

**Serial ID:** IHG100106-02      **Opened:** 06-JAN-10      **Pipet Id :** Minou1  
**Name:** MHGINTER2      **Received:** 06-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Intermediate      **Expires:** 07-JAN-10  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Intermediate 2nd Source 200 ug/L  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UHG1167641-02	Mercury	999.7 mg/L	.05 mL	250 mL	200 ug/L

**Serial ID:** WHG100106-07      **Opened:** 06-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALSO.2CRA      **Received:** 06-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 13-JAN-10  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working Standard 1st Source CAL S 0.2/CRA  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100106-01	Mercury	200 ug/L	30 uL	30 mL	.2 ug/L

**Serial ID:** WHG100106-08      **Opened:** 06-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALSO.5      **Received:** 06-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 13-JAN-10  
**Employee:** Tara Griffin      **Verified:** 20-JUL-07  
**Supplier:** GEL  
**Description:** Mercury Working Standard 1st Source CAL S 0.5  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100106-01	Mercury	200 ug/L	75 uL	30 mL	.5 ug/L



# Standard Logbook

**Serial ID:** WHG100106-09      **Opened:** 06-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS2.0      **Received:** 06-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 13-JAN-10  
**Employee:** Tara Griffin      **Verified:** 20-JUL-07  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL S 2.0  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100106-01	Mercury	200 ug/L	300 uL	30 mL	2 ug/L

**Serial ID:** WHG100106-10      **Opened:** 06-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS5.0CCV      **Received:** 06-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 13-JAN-10  
**Employee:** Tara Griffin      **Verified:** 20-JUL-07  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL S 5.0/CCV  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100106-01	Mercury	200 ug/L	750 uL	30 mL	5 ug/L

**Serial ID:** WHG100106-11      **Opened:** 06-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS10.0      **Received:** 06-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 13-JAN-10  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL S 10.0  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100106-01	Mercury	200 ug/L	1.5 mL	30 mL	10 ug/L

**Serial ID:** WHG100106-12      **Opened:** 06-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKS5.0ICV      **Received:** 06-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 13-JAN-10  
**Employee:** Tara Griffin      **Verified:** 20-JUL-07  
**Supplier:** GEL  
**Description:** Mercury Working 2nd Source S 5.0/ICV  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100106-02	Mercury	200 ug/L	750 uL	30 mL	5 ug/L



# Standard Logbook

**Serial ID:** WHG100106-14      **Opened:** 06-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGSOILMSSPIKE      **Received:** 06-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 07-JAN-10  
**Employee:** Tara Griffin      **Verified:** 20-JUL-07  
**Supplier:** GEL  
**Description:** Mercury soil working intermediate standard for MS  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UHG1167639-01	Mercury	1000 mg/L	.05 mL	250 mL	200 ug/L

**Serial ID:** WI100111-42      **Opened:** 11-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP 0.1 PPM STD.      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1253514  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.1 PPM CALIBRATION STD.  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WI100111-44	Aluminum	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100111-44	Antimony	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Arsenic	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Barium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Beryllium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Boron	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Cadmium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Calcium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100111-44	Chromium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Cobalt	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Copper	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Iron	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100111-44	Lead	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Magnesium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100111-44	Manganese	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Molybdenum	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Nickel	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Phosphorous	5000 ug/L	10 mL	100 mL	500 ug/L
WI100111-44	Potassium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100111-44	Selenium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Silica	10698 ug/L	10 mL	100 mL	1069 ug/L
WI100111-44	Silicon	5000 ug/L	10 mL	100 mL	500 ug/L
WI100111-44	Silver	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Sodium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100111-44	Strontium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Sulfur	2000 ug/L	10 mL	100 mL	200 ug/L
WI100111-44	Thallium	1000 ug/L	10 mL	100 mL	100 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WI100111-44	Tin	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Titanium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Uranium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Vanadium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100111-44	Zinc	1000 ug/L	10 mL	100 mL	100 ug/L

**Serial ID:** WI100111-43      **Opened:** 11-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP 0.5/CCV STD.      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1253514  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.5/CCV CALIBRATION STD.  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090828-42	Sodium	1000 ug/mL	5 mL	1000 mL	5000 UG/L
UI091015-42	Silica	2139 mg/L	2.5 mL	1000 mL	5348.25 UG/L
UI091015-42	Silicon	1000 mg/L	2.5 mL	1000 mL	2500 UG/L
UI091102-40	Aluminum	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Arsenic	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Barium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Beryllium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Boron	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Cadmium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Calcium	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Chromium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Cobalt	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Copper	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Iron	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Lead	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Magnesium	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Manganese	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Nickel	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Phosphorous	1000 mg/L	2.5 mL	1000 mL	2500 UG/L
UI091102-40	Potassium	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Selenium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Sodium	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Strontium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Thallium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Uranium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Vanadium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Zinc	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Antimony	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Molybdenum	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Silver	200 mg/L	2.5 mL	1000 mL	500 UG/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Alliquot	Final Vol.	Final Conc.
UI091102-41	Sulfur	400 mg/L	2.5 mL	1000 mL	1000 UG/L
UI091102-41	Tin	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Titanium	200 mg/L	2.5 mL	1000 mL	500 UG/L

**Serial ID:** WI100111-44      **Opened:** 11-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP SCAL 1.0      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 3%HCL and 1 %HNO3-1253514  
**Employee:** Helen Camello  
**Supplier:** o2si  
**Description:** Trace ICP Calibration Standard 1.0ppm  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Alliquot	Final Vol.	Final Conc.
UI091015-42	Silica	2139 mg/L	2.5 mL	500 mL	10698 ug/L
UI091015-42	Silicon	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI091102-40	Aluminum	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Arsenic	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Barium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Beryllium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Boron	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Cadmium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Calcium	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Chromium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Cobalt	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Copper	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Iron	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Lead	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Magnesium	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Manganese	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Nickel	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Phosphorous	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI091102-40	Potassium	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Selenium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Sodium	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Strontium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Thallium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Uranium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Vanadium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Zinc	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Antimony	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Molybdenum	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Silver	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Sulfur	400 mg/L	2.5 mL	500 mL	2000 ug/L
UI091102-41	Tin	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Titanium	200 mg/L	2.5 mL	500 mL	1000 ug/L



# Standard Logbook

**Serial ID:** W100111-45      **Opened:** 11-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP S-10 STD      **Received:** 22-APR-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1253514  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP S-10 CALIBRATION STD.  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090422-40	Aluminum	5000 mg/L	5 mL	500 mL	50000 UG/L
UI090422-40	Calcium	5000 mg/L	5 mL	500 mL	50000 UG/L
UI090422-40	Iron	2000 mg/L	5 mL	500 mL	20000 UG/L
UI090422-40	Magnesium	5000 mg/L	5 mL	500 mL	50000 UG/L
UI090828-42	Sodium	1000 ug/mL	10 mL	500 mL	20000 UG/L

**Serial ID:** W100111-46      **Opened:** 11-JAN-10      **Balance Id :** 216  
**Name:** ICP TRACE ICV      **Received:** 25-SEP-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 3%HCL AND 1%HNO3-1253514  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** Initial Calibration Verification ICP Trace Metals  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090925-40	Aluminum	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI090925-40	Arsenic	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Barium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Boron	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Cadmium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Calcium	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI090925-40	Chromium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Cobalt	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Copper	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Iron	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI090925-40	Lead	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Phosphorous	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-40	Potassium	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-40	Selenium	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-40	Sodium	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-40	Strontium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Antimony	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Beryllium	50 mg/L	2.5 mL	500 mL	250 ug/L
UI090925-41	Magnesium	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI090925-41	Manganese	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Molybdenum	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Nickel	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Silver	50 mg/L	2.5 mL	500 mL	250 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090925-41	Sulfur	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-41	Thallium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Tin	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Titanium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Uranium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Vanadium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Zinc	100 mg/L	2.5 mL	500 mL	500 ug/L
UI091102-42	Silica	2139 mg/L	2.5 mL	500 mL	10695 ug/L
UI091102-42	Silicon	1000 mg/L	2.5 mL	500 mL	5000 ug/L

**Serial ID:** WI100111-47      **Opened:** 11-JAN-10      **Balance Id :** 216  
**Name:** PQL Working Standard      **Received:** 30-JUN-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 3%HCL &1%HNO3-1253514  
**Employee:** Helen Camello  
**Supplier:** 02si  
**Description:** PQL Working Standard  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090701-40	Aluminum	100 mg/L	2 mL	1000 mL	200 ug/L
UI090701-40	Antimony	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Arsenic	15 mg/L	2 mL	1000 mL	15 ug/L
UI090701-40	Barium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Beryllium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Boron	25 mg/L	2 mL	1000 mL	50 ug/L
UI090701-40	Cadmium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Calcium	100 mg/L	2 mL	1000 mL	100 ug/L
UI090701-40	Chromium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Cobalt	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Copper	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Iron	50 mg/L	2 mL	1000 mL	100 ug/L
UI090701-40	Lead	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Magnesium	150 mg/L	2 mL	1000 mL	300 ug/L
UI090701-40	Manganese	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Molybdenum	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Nickel	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Phosphorous	75 mg/L	2 mL	1000 mL	150 ug/L
UI090701-40	Potassium	75 mg/L	2 mL	1000 mL	150 ug/L
UI090701-40	Selenium	15 mg/L	2 mL	1000 mL	15 ug/L
UI090701-40	Silicon	50 mg/L	2 mL	1000 mL	100 ug/L
UI090701-40	Silver	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Sodium	150 mg/L	2 mL	1000 mL	150 ug/L
UI090701-40	Strontium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Sulfur	50 mg/L	2 mL	1000 mL	100 ug/L
UI090701-40	Thallium	10 mg/L	2 mL	1000 mL	20 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090701-40	Tin	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Titanium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Uranium	25 mg/L	2 mL	1000 mL	50 ug/L
UI090701-40	Vanadium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Zinc	5 mg/L	2 mL	1000 mL	10 ug/L

**Serial ID:** WI100114-42      **Opened:** 14-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP 0.1 PPM STD.      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 15-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1253514  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.1 PPM CALIBRATION STD.  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WI100114-44	Aluminum	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100114-44	Antimony	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Arsenic	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Barium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Beryllium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Boron	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Cadmium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Calcium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100114-44	Chromium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Cobalt	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Copper	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Iron	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100114-44	Lead	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Magnesium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100114-44	Manganese	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Molybdenum	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Nickel	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Phosphorous	5000 ug/L	10 mL	100 mL	500 ug/L
WI100114-44	Potassium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100114-44	Selenium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Silica	10698 ug/L	10 mL	100 mL	1069 ug/L
WI100114-44	Silicon	5000 ug/L	10 mL	100 mL	500 ug/L
WI100114-44	Silver	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Sodium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100114-44	Strontium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Sulfur	2000 ug/L	10 mL	100 mL	200 ug/L
WI100114-44	Thallium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Tin	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Titanium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Uranium	1000 ug/L	10 mL	100 mL	100 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WI100114-44	Vanadium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100114-44	Zinc	1000 ug/L	10 mL	100 mL	100 ug/L

**Serial ID:** WI100114-43      **Opened:** 14-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP 0.5/CCV STD.      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 15-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1253514  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.5/CCV CALIBRATION STD.  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090828-42	Sodium	1000 ug/mL	5 mL	1000 mL	5000 UG/L
UI091015-42	Silica	2139 mg/L	2.5 mL	1000 mL	5348.25 UG/L
UI091015-42	Silicon	1000 mg/L	2.5 mL	1000 mL	2500 UG/L
UI091102-40	Aluminum	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Arsenic	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Barium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Beryllium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Boron	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Cadmium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Calcium	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Chromium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Cobalt	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Copper	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Iron	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Lead	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Magnesium	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Manganese	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Nickel	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Phosphorous	1000 mg/L	2.5 mL	1000 mL	2500 UG/L
UI091102-40	Potassium	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Selenium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Sodium	2000 mg/L	2.5 mL	1000 mL	5000 UG/L
UI091102-40	Strontium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Thallium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Uranium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Vanadium	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-40	Zinc	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Antimony	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Molybdenum	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Silver	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Sulfur	400 mg/L	2.5 mL	1000 mL	1000 UG/L
UI091102-41	Tin	200 mg/L	2.5 mL	1000 mL	500 UG/L
UI091102-41	Titanium	200 mg/L	2.5 mL	1000 mL	500 UG/L



# Standard Logbook

**Serial ID:** WI100114-44      **Opened:** 14-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP SCAL 1.0      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expres:** 15-JAN-10      **Solvent :** 3%HCL and 1 %HNO3-1253514  
**Employee:** Helen Camello  
**Supplier:** o2si  
**Description:** Trace ICP Calibration Standard 1.0ppm  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091015-42	Silica	2139 mg/L	2.5 mL	500 mL	10698 ug/L
UI091015-42	Silicon	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI091102-40	Aluminum	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Arsenic	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Barium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Beryllium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Boron	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Cadmium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Calcium	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Chromium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Cobalt	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Copper	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Iron	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Lead	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Magnesium	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Manganese	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Nickel	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Phosphorous	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI091102-40	Potassium	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Selenium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Sodium	2000 mg/L	2.5 mL	500 mL	10000 ug/L
UI091102-40	Strontium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Thallium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Uranium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Vanadium	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-40	Zinc	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Antimony	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Molybdenum	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Silver	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Sulfur	400 mg/L	2.5 mL	500 mL	2000 ug/L
UI091102-41	Tin	200 mg/L	2.5 mL	500 mL	1000 ug/L
UI091102-41	Titanium	200 mg/L	2.5 mL	500 mL	1000 ug/L



# Standard Logbook

**Serial ID:** W100114-45      **Opened:** 14-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP S-10 STD      **Received:** 22-APR-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 15-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1253514  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP S-10 CALIBRATION STD.  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090422-40	Aluminum	5000 mg/L	5 mL	500 mL	50000 UG/L
UI090422-40	Calcium	5000 mg/L	5 mL	500 mL	50000 UG/L
UI090422-40	Iron	2000 mg/L	5 mL	500 mL	20000 UG/L
UI090422-40	Magnesium	5000 mg/L	5 mL	500 mL	50000 UG/L
UI090828-42	Sodium	1000 ug/mL	10 mL	500 mL	20000 UG/L

**Serial ID:** W100114-46      **Opened:** 14-JAN-10      **Balance Id :** 216  
**Name:** ICP TRACE ICV      **Received:** 25-SEP-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 15-JAN-10      **Solvent :** 3%HCL AND 1%HNO3-1253514  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** Initial Calibration Verification ICP Trace Metals  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090925-40	Aluminum	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI090925-40	Arsenic	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Barium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Boron	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Cadmium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Calcium	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI090925-40	Chromium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Cobalt	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Copper	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Iron	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI090925-40	Lead	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-40	Phosphorous	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-40	Potassium	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-40	Selenium	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-40	Sodium	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-40	Strontium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Antimony	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Beryllium	50 mg/L	2.5 mL	500 mL	250 ug/L
UI090925-41	Magnesium	1000 mg/L	2.5 mL	500 mL	5000 ug/L
UI090925-41	Manganese	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Molybdenum	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Nickel	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Silver	50 mg/L	2.5 mL	500 mL	250 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090925-41	Sulfur	500 mg/L	2.5 mL	500 mL	2500 ug/L
UI090925-41	Thallium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Tin	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Titanium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Uranium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Vanadium	100 mg/L	2.5 mL	500 mL	500 ug/L
UI090925-41	Zinc	100 mg/L	2.5 mL	500 mL	500 ug/L
UI091102-42	Silica	2139 mg/L	2.5 mL	500 mL	10695 ug/L
UI091102-42	Silicon	1000 mg/L	2.5 mL	500 mL	5000 ug/L

**Serial ID:** WI100114-47      **Opened:** 14-JAN-10      **Balance Id :** 216  
**Name:** PQL Working Standard      **Received:** 30-JUN-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 15-JAN-10      **Solvent :** 3%HCL & 1%HNO3-1253514  
**Employee:** Helen Camello  
**Supplier:** 02si  
**Description:** PQL Working Standard  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090701-40	Aluminum	100 mg/L	2 mL	1000 mL	200 ug/L
UI090701-40	Antimony	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Arsenic	15 mg/L	2 mL	1000 mL	15 ug/L
UI090701-40	Barium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Beryllium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Boron	25 mg/L	2 mL	1000 mL	50 ug/L
UI090701-40	Cadmium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Calcium	100 mg/L	2 mL	1000 mL	100 ug/L
UI090701-40	Chromium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Cobalt	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Copper	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Iron	50 mg/L	2 mL	1000 mL	100 ug/L
UI090701-40	Lead	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Magnesium	150 mg/L	2 mL	1000 mL	300 ug/L
UI090701-40	Manganese	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Molybdenum	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Nickel	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Phosphorous	75 mg/L	2 mL	1000 mL	150 ug/L
UI090701-40	Potassium	75 mg/L	2 mL	1000 mL	150 ug/L
UI090701-40	Selenium	15 mg/L	2 mL	1000 mL	15 ug/L
UI090701-40	Silicon	50 mg/L	2 mL	1000 mL	100 ug/L
UI090701-40	Silver	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Sodium	150 mg/L	2 mL	1000 mL	150 ug/L
UI090701-40	Strontium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Sulfur	50 mg/L	2 mL	1000 mL	100 ug/L
UI090701-40	Thallium	10 mg/L	2 mL	1000 mL	20 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090701-40	Tin	5 mg/L	2 mL	1000 mL	10 ug/L
UI090701-40	Titanium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Uranium	25 mg/L	2 mL	1000 mL	50 ug/L
UI090701-40	Vanadium	2.5 mg/L	2 mL	1000 mL	5 ug/L
UI090701-40	Zinc	5 mg/L	2 mL	1000 mL	10 ug/L

**Serial ID:** WMS100111-04AB      **Opened:** 11-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS Cal Standard 10      **Received:** 11-JAN-10      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Employee:** Rose Jenkins  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (10 ppb)  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS100111-04B	Aluminum	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100111-04B	Antimony	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Arsenic	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Barium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Beryllium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Boron	200 ug/l	5 mL	50 mL	20 ug/l
WMS100111-04B	Cadmium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Calcium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100111-04B	Chromium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Cobalt	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Copper	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Iron	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100111-04B	Lead	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Lithium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Magnesium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100111-04B	Manganese	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Molybdenum	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Nickel	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Phosphorous	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100111-04B	Potassium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100111-04B	Selenium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Silver	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Sodium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100111-04B	Strontium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Thallium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Thorium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Tin	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Titanium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Tungsten	100 ug/L	5 mL	50 mL	10 ug/L
WMS100111-04B	Uranium	100 ug/l	5 mL	50 mL	10 ug/l



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS100111-04B	Vanadium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Zinc	100 ug/l	5 mL	50 mL	10 ug/l
WMS100111-04B	Zirconium	100 ug/l	5 mL	50 mL	10 ug/l

**Serial ID:** WMS100111-04B      **Opened:** 11-JAN-10      **Amount :** 50 mL  
**Name:** ICPMS Cal Standard 100      **Received:** 11-JAN-10      **Balance Id :** 40245216  
**Type:** Working      **Expires:** 12-JAN-10      **Pipet Id :** 1758088  
**Employee:** Rose Jenkins      **Solvent :** 2%HNO3/1%HCl- 1238829  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (100 ppb)  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090610-03	Tungsten	10 mg/L	.5 mL	50 mL	100 ug/L
UMS090303-01	Arsenic	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Barium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Beryllium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Boron	20 mg/L	.5	50 mL	200 ug/l
UMS090303-01	Cadmium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Chromium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Cobalt	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Copper	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Lead	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Lithium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Manganese	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Nickel	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Selenium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Silver	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Strontium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Thallium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Thorium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Uranium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Vanadium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Zinc	10 mg/L	.5	50 mL	100 ug/l
UMS090303-02	Aluminum	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Calcium	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Iron	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Magnesium	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Phosphorous	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Potassium	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Sodium	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-03	Antimony	10 mg/L	.5	50 mL	100 ug/l
UMS090303-03	Molybdenum	10 mg/L	.5	50 mL	100 ug/l
UMS090303-03	Tin	10 mg/L	.5	50 mL	100 ug/l
UMS090303-03	Titanium	10 mg/L	.5	50 mL	100 ug/l



# Standard Logbook

<b>Parent Material</b>	<b>Analyte</b>	<b>Parent Conc.</b>	<b>Aliquot</b>	<b>Final Vol.</b>	<b>Final Conc.</b>
UMS090303-03	Zirconium	10 mg/L	.5	50 mL	100 ug/l

<b>Serial ID:</b> <u>WMS100111-05B</u>	<b>Opened:</b> <u>11-JAN-10</u>	<b>Balance Id :</b> <u>40245216</u>
<b>Name:</b> <u>ICPMS ICV</u>	<b>Received:</b> <u>11-JAN-10</u>	<b>Pipet Id :</b> <u>1758088</u>
<b>Type:</b> <u>Working</u>	<b>Expres:</b> <u>12-JAN-10</u>	<b>Solvent :</b> <u>2%HNO3/1%HCl - 1238829</u>
<b>Employee:</b> <u>Rose Jenkins</u>		
<b>Supplier:</b> <u>GEL</u>		
<b>Description:</b> <u>ICPMS ICV</u>		
<b>Comments:</b> <u>None</u>		

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091217-06	Aluminum	2020 mg/L	.125 mL	50 mL	5050 ug/L
UI091217-06	Calcium	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Iron	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Magnesium	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Phosphorous	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Potassium	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Sodium	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-07	Arsenic	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Barium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Beryllium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Boron	40 mg/L	.125 mL	50 mL	100 ug/L
UI091217-07	Cadmium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Chromium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Cobalt	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Copper	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Lead	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Lithium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Manganese	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Nickel	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Selenium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Strontium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Thallium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Thorium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Uranium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Vanadium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Zinc	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Antimony	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Molybdenum	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Silver	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Tin	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Titanium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Tungsten	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Zirconium	20 mg/L	.125 mL	50 mL	50 ug/L



# Standard Logbook

**Serial ID:** WMS100111-06B      **Opened:** 11-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS CRDL      **Received:** 11-JAN-10      **Pipet Id :** 3820544  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Employee:** Rose Jenkins  
**Supplier:** GEL  
**Description:** ICPMS CRDL  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090701-09	Aluminum	15 mg/L	.05 mL	50 mL	15 ug/L
UI090701-09	Arsenic	5 mg/L	.05 mL	50 mL	5 ug/L
UI090701-09	Barium	2 mg/L	.05 mL	50 mL	2 ug/L
UI090701-09	Beryllium	.5 mg/L	.05 mL	50 mL	.5 ug/L
UI090701-09	Boron	15 mg/L	.05 mL	50 mL	15 ug/L
UI090701-09	Cadmium	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Calcium	100 mg/L	.05 mL	50 mL	100 ug/L
UI090701-09	Chromium	3 mg/L	.05 mL	50 mL	3 ug/L
UI090701-09	Cobalt	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Copper	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Iron	25 mg/L	.05 mL	50 mL	25 ug/L
UI090701-09	Lead	2 mg/L	.05 mL	50 mL	2 ug/L
UI090701-09	Lithium	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-09	Magnesium	15 mg/L	.05 mL	50 mL	15 ug/L
UI090701-09	Manganese	5 mg/L	.05 mL	50 mL	5 ug/L
UI090701-09	Nickel	2 mg/L	.05 mL	50 mL	2 ug/L
UI090701-09	Phosphorous	50 mg/L	.05 mL	50 mL	50 ug/L
UI090701-09	Potassium	300 mg/L	.05 mL	50 mL	300 ug/L
UI090701-09	Selenium	5 mg/L	.05 mL	50 mL	5 ug/L
UI090701-09	Sodium	250 mg/L	.05 mL	50 mL	250 ug/L
UI090701-09	Strontium	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-09	Thallium	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Thorium	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Uranium	.2 mg/L	.05 mL	50 mL	.2 ug/L
UI090701-09	Vanadium	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-09	Zinc	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-10	Antimony	2 mg/L	.05 mL	50 mL	2 ug/L
UI090701-10	Molybdenum	.5 mg/L	.05 mL	50 mL	.5 ug/L
UI090701-10	Silver	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-10	Tin	2 mg/L	.05 mL	50 mL	5 ug/L
UI090701-10	Titanium	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-10	Tungsten	5 mg/L	.05 mL	50 mL	5 ug/L
UI090701-10	Zirconium	2 mg/L	.05 mL	50 mL	2 ug/L



# Standard Logbook

**Serial ID:** WMS100111-07B      **Opened:** 11-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICSA      **Received:** 11-JAN-10      **Lot Number :** 1010773  
**Type:** Working      **Expires:** 12-JAN-10      **Pipet Id :** 3541598  
**Employee:** Rose Jenkins      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Supplier:** GEL  
**Description:** ICPMS ICSA  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091212-11	Aluminum	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Calcium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Chloride	10000 mg/L	5 mL	50 mL	1000000 ug/L
UI091212-11	Iron	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Magnesium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Molybdenum	20 mg/L	5 mL	50 mL	2000 ug/L
UI091212-11	Phosphorous	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Potassium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Sodium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Sulfur	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Titanium	20 mg/L	5 mL	50 mL	2000 ug/L

**Serial ID:** WMS100111-08B      **Opened:** 11-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICSAB      **Received:** 11-JAN-10      **Pipet Id :** 3541598/1758088  
**Type:** Working      **Expires:** 12-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Employee:** Rose Jenkins  
**Supplier:** GEL  
**Description:** ICPMS ICSAB  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091212-11	Aluminum	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Calcium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Chloride	10000 mg/L	5 mL	50 mL	1000000 ug/L
UI091212-11	Iron	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Magnesium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Molybdenum	20 mg/L	5 mL	50 mL	2000 ug/L
UI091212-11	Phosphorous	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Potassium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Sodium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Sulfur	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Titanium	20 mg/L	5 mL	50 mL	2000 ug/L
UI091217-12	Arsenic	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Barium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Beryllium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Boron	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Cadmium	2 mg/L	.5 mL	50 mL	20.2 ug/L
UI091217-12	Chromium	2 mg/L	.5 mL	50 mL	22.2 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091217-12	Cobalt	2 mg/L	.5 mL	50 mL	20.4 ug/L
UI091217-12	Copper	2 mg/L	.5 mL	50 mL	23.4 ug/L
UI091217-12	Lead	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Lithium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Manganese	2 mg/L	.5 mL	50 mL	22.7 ug/L
UI091217-12	Nickel	2 mg/L	.5 mL	50 mL	22.4 ug/L
UI091217-12	Selenium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Strontium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Thallium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Thorium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Uranium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Vanadium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Zinc	2 mg/L	.5 mL	50 mL	27 ug/L
UI091217-13	Antimony	2 mg/L	.5 mL	50 mL	20.5 ug/L
UI091217-13	Silver	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-13	Tin	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-13	Tungsten	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-13	Zirconium	2 mg/L	.5 mL	50 mL	20 ug/L

**Serial ID:** WMS100113-04AB      **Opened:** 13-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS Cal Standard 10      **Received:** 13-JAN-10      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 14-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Employee:** Rose Jenkins  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (10 ppb)  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS100113-04B	Aluminum	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100113-04B	Antimony	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Arsenic	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Barium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Beryllium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Boron	200 ug/l	5 mL	50 mL	20 ug/l
WMS100113-04B	Cadmium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Calcium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100113-04B	Chromium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Cobalt	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Copper	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Iron	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100113-04B	Lead	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Lithium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Magnesium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100113-04B	Manganese	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Molybdenum	100 ug/l	5 mL	50 mL	10 ug/l



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS100113-04B	Nickel	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Phosphorous	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100113-04B	Potassium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100113-04B	Selenium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Silver	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Sodium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100113-04B	Strontium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Thallium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Thorium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Tin	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Titanium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Tungsten	100 ug/L	5 mL	50 mL	10 ug/L
WMS100113-04B	Uranium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Vanadium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Zinc	100 ug/l	5 mL	50 mL	10 ug/l
WMS100113-04B	Zirconium	100 ug/l	5 mL	50 mL	10 ug/l

**Serial ID:** WMS100113-04B      **Opened:** 13-JAN-10      **Amount:** 50 mL  
**Name:** ICPMS Cal Standard 100      **Received:** 13-JAN-10      **Balance Id:** 40245216  
**Type:** Working      **Expires:** 14-JAN-10      **Pipet Id:** 1758088  
**Employee:** Rose Jenkins      **Solvent:** 2%HNO3/1%HCl- 1238829  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (100 ppb)  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090610-03	Tungsten	10 mg/L	.5 mL	50 mL	100 ug/L
UMS090303-01	Arsenic	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Barium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Beryllium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Boron	20 mg/L	.5	50 mL	200 ug/l
UMS090303-01	Cadmium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Chromium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Cobalt	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Copper	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Lead	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Lithium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Manganese	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Nickel	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Selenium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Silver	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Strontium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Thallium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Thorium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Uranium	10 mg/L	.5	50 mL	100 ug/l



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
UMS090303-01	Vanadium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-01	Zinc	10 mg/L	.5	50 mL	100 ug/l
UMS090303-02	Aluminum	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Calcium	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Iron	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Magnesium	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Phosphorous	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Potassium	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-02	Sodium	1000 mg/L	.5	50 mL	10000 ug/l
UMS090303-03	Antimony	10 mg/L	.5	50 mL	100 ug/l
UMS090303-03	Molybdenum	10 mg/L	.5	50 mL	100 ug/l
UMS090303-03	Tin	10 mg/L	.5	50 mL	100 ug/l
UMS090303-03	Titanium	10 mg/L	.5	50 mL	100 ug/l
UMS090303-03	Zirconium	10 mg/L	.5	50 mL	100 ug/l

**Serial ID:** WMS100113-05B      **Opened:** 13-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICV      **Received:** 13-JAN-10      **Pipet Id :** 1758088  
**Type:** Working      **Expires:** 14-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Employee:** Rose Jenkins  
**Supplier:** GEL  
**Description:** ICPMS ICV  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
UI091217-06	Aluminum	2020 mg/L	.125 mL	50 mL	5050 ug/L
UI091217-06	Calcium	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Iron	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Magnesium	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Phosphorous	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Potassium	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-06	Sodium	2000 mg/L	.125 mL	50 mL	5000 ug/L
UI091217-07	Arsenic	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Barium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Beryllium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Boron	40 mg/L	.125 mL	50 mL	100 ug/L
UI091217-07	Cadmium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Chromium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Cobalt	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Copper	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Lead	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Lithium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Manganese	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Nickel	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Selenium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Strontium	20 mg/L	.125 mL	50 mL	50 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091217-07	Thallium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Thorium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Uranium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Vanadium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-07	Zinc	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Antimony	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Molybdenum	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Silver	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Tin	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Titanium	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Tungsten	20 mg/L	.125 mL	50 mL	50 ug/L
UI091217-08	Zirconium	20 mg/L	.125 mL	50 mL	50 ug/L

**Serial ID:** WMS100113-06B      **Opened:** 13-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS CRDL      **Received:** 13-JAN-10      **Pipet Id :** 3820544  
**Type:** Working      **Expires:** 14-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Employee:** Rose Jenkins  
**Supplier:** GEL  
**Description:** ICPMS CRDL  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090701-09	Aluminum	15 mg/L	.05 mL	50 mL	15 ug/L
UI090701-09	Arsenic	5 mg/L	.05 mL	50 mL	5 ug/L
UI090701-09	Barium	2 mg/L	.05 mL	50 mL	2 ug/L
UI090701-09	Beryllium	.5 mg/L	.05 mL	50 mL	.5 ug/L
UI090701-09	Boron	15 mg/L	.05 mL	50 mL	15 ug/L
UI090701-09	Cadmium	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Calcium	100 mg/L	.05 mL	50 mL	100 ug/L
UI090701-09	Chromium	3 mg/L	.05 mL	50 mL	3 ug/L
UI090701-09	Cobalt	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Copper	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Iron	25 mg/L	.05 mL	50 mL	25 ug/L
UI090701-09	Lead	2 mg/L	.05 mL	50 mL	2 ug/L
UI090701-09	Lithium	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-09	Magnesium	15 mg/L	.05 mL	50 mL	15 ug/L
UI090701-09	Manganese	5 mg/L	.05 mL	50 mL	5 ug/L
UI090701-09	Nickel	2 mg/L	.05 mL	50 mL	2 ug/L
UI090701-09	Phosphorous	50 mg/L	.05 mL	50 mL	50 ug/L
UI090701-09	Potassium	300 mg/L	.05 mL	50 mL	300 ug/L
UI090701-09	Selenium	5 mg/L	.05 mL	50 mL	5 ug/L
UI090701-09	Sodium	250 mg/L	.05 mL	50 mL	250 ug/L
UI090701-09	Strontium	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-09	Thallium	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-09	Thorium	1 mg/L	.05 mL	50 mL	1 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI090701-09	Uranium	.2 mg/L	.05 mL	50 mL	.2 ug/L
UI090701-09	Vanadium	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-09	Zinc	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-10	Antimony	2 mg/L	.05 mL	50 mL	2 ug/L
UI090701-10	Molybdenum	.5 mg/L	.05 mL	50 mL	.5 ug/L
UI090701-10	Silver	1 mg/L	.05 mL	50 mL	1 ug/L
UI090701-10	Tin	2 mg/L	.05 mL	50 mL	5 ug/L
UI090701-10	Titanium	10 mg/L	.05 mL	50 mL	10 ug/L
UI090701-10	Tungsten	5 mg/L	.05 mL	50 mL	5 ug/L
UI090701-10	Zirconium	2 mg/L	.05 mL	50 mL	2 ug/L

**Serial ID:** WMS100113-07B      **Opened:** 13-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICSA      **Received:** 13-JAN-10      **Lot Number :** 1010773  
**Type:** Working      **Expires:** 14-JAN-10      **Pipet Id :** 3541598  
**Employee:** Rose Jenkins      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Supplier:** GEL  
**Description:** ICPMS ICSA  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091212-11	Aluminum	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Calcium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Chloride	10000 mg/L	5 mL	50 mL	1000000 ug/L
UI091212-11	Iron	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Magnesium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Molybdenum	20 mg/L	5 mL	50 mL	2000 ug/L
UI091212-11	Phosphorous	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Potassium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Sodium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Sulfur	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Titanium	20 mg/L	5 mL	50 mL	2000 ug/L

**Serial ID:** WMS100113-08B      **Opened:** 13-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICSAB      **Received:** 13-JAN-10      **Pipet Id :** 3541598/1758088  
**Type:** Working      **Expires:** 14-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1238829  
**Employee:** Rose Jenkins  
**Supplier:** GEL  
**Description:** ICPMS ICSAB  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091212-11	Aluminum	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Calcium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Chloride	10000 mg/L	5 mL	50 mL	1000000 ug/L
UI091212-11	Iron	1000 mg/L	5 mL	50 mL	100000 ug/L



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091212-11	Magnesium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Molybdenum	20 mg/L	5 mL	50 mL	2000 ug/L
UI091212-11	Phosphorous	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Potassium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Sodium	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Sulfur	1000 mg/L	5 mL	50 mL	100000 ug/L
UI091212-11	Titanium	20 mg/L	5 mL	50 mL	2000 ug/L
UI091217-12	Arsenic	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Barium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Beryllium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Boron	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Cadmium	2 mg/L	.5 mL	50 mL	20.2 ug/L
UI091217-12	Chromium	2 mg/L	.5 mL	50 mL	22.2 ug/L
UI091217-12	Cobalt	2 mg/L	.5 mL	50 mL	20.4 ug/L
UI091217-12	Copper	2 mg/L	.5 mL	50 mL	23.4 ug/L
UI091217-12	Lead	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Lithium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Manganese	2 mg/L	.5 mL	50 mL	22.7 ug/L
UI091217-12	Nickel	2 mg/L	.5 mL	50 mL	22.4 ug/L
UI091217-12	Selenium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Strontium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Thallium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Thorium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Uranium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Vanadium	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-12	Zinc	2 mg/L	.5 mL	50 mL	27 ug/L
UI091217-13	Antimony	2 mg/L	.5 mL	50 mL	20.5 ug/L
UI091217-13	Silver	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-13	Tin	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-13	Tungsten	2 mg/L	.5 mL	50 mL	20 ug/L
UI091217-13	Zirconium	2 mg/L	.5 mL	50 mL	20 ug/L

**Serial ID:** 1156689-A      **Opened:** 20-JUL-09      **Lot Number :** 41226920  
**Name:** B-KMnO4(VWR)-MER      **Received:** 20-JUL-09  
**Type:** Reagent/Solvent      **Expires:** 20-JUL-10  
**Employee:** Tara Griffin      **Verified:** 07-AUG-07  
**Supplier:** VWR  
**Description:** Potassium Permanganate  
**Comments:** None



# Standard Logbook

**Serial ID:** 1164796-A      **Opened:** 06-AUG-09      **Lot Number :** 49149927  
**Name:** B-NH2OH.HCl-MER      **Received:** 06-AUG-09  
**Type:** Reagent/Solvent      **Expires:** 06-AUG-10  
**Employee:** Tara Griffin  
**Supplier:** Fisher Scientific  
**Description:** Hydroxylamine Hydrochloride  
**Comments:** None

**Serial ID:** 1203655-02      **Opened:** 15-OCT-09      **Lot Number :** ZU74081198 mL  
**Name:** B-H2O2      **Received:** 15-OCT-09  
**Type:** Reagent/Solvent      **Expires:** 15-OCT-10  
**Employee:** Francena Armstrong  
**Supplier:** EM SCIENCE  
**Description:** Hydrogen Peroxide 30%  
**Comments:** None

**Serial ID:** 1206350-C      **Opened:** 22-OCT-09      **Balance Id :** BAL-002  
**Name:** B-NaCl.NH2OH.HCl-MER      **Received:** 22-OCT-09  
**Type:** Reagent/Solvent      **Expires:** 15-JAN-10  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Hq reducing agent  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
1164796-A	B-NH2OH.HCl-MER	N/A	120 g	1000 mL	N/A

**Serial ID:** 1234886      **Opened:** 27-NOV-09      **Lot Number :** H20053 L  
**Name:** I-HNO3      **Received:** 27-NOV-09  
**Type:** Reagent/Solvent      **Expires:** 27-NOV-10  
**Employee:** Bryan Davis  
**Supplier:** BAKER  
**Description:** Nitric Acid CONC.  
**Comments:** None

**Serial ID:** 1236355-A      **Opened:** 01-DEC-09      **Lot Number :** 200930201  
**Name:** B-HCl-MER      **Received:** 01-DEC-09  
**Type:** Reagent/Solvent      **Expires:** 01-DEC-10  
**Employee:** Tara Griffin  
**Supplier:** Aristar  
**Description:** Hydrochloric Acid Conc.  
**Comments:** None



# Standard Logbook

**Serial ID:** 1238345      **Opened:** 04-DEC-09      **Lot Number :** H20053 L  
**Name:** I-HNO3      **Received:** 04-DEC-09  
**Type:** Reagent/Solvent      **Expires:** 04-DEC-10  
**Employee:** Francena Armstrong  
**Supplier:** BAKER  
**Description:** Nitric Acid CONC.  
**Comments:** None

**Serial ID:** 1240182-1      **Opened:** 09-DEC-09      **Instrument Id :** MERCURY  
**Name:** B-HNO3-MER      **Received:** 09-DEC-09      **Lot Number :** H34040  
**Type:** Reagent/Solvent      **Expires:** 09-DEC-10  
**Employee:** Tara Griffin  
**Supplier:** Mallinckrodt Chemicals  
**Description:** NITRIC ACID  
**Comments:** None

**Serial ID:** 1244904-C      **Opened:** 18-DEC-09      **Balance Id :** BAL-002  
**Name:** B-KMnO4-MER      **Received:** 18-DEC-09  
**Type:** Reagent/Solvent      **Expires:** 18-JUN-10  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** 5% KMnO4 solution  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
1156689-A	B-KMnO4(VWR)-MER	Crystals	50 g	1000 mL	3%

**Serial ID:** 1244970      **Opened:** 18-DEC-09      **Lot Number :** H41032  
**Name:** I-HCL      **Received:** 18-DEC-09      **Preservative Id :** 5 none  
**Type:** Reagent/Solvent      **Expires:** 18-DEC-10  
**Employee:** Francena Armstrong  
**Supplier:** J.T. BAKER  
**Description:** HYDROCHLORIC ACID  
**Comments:** None

**Serial ID:** 1252836      **Opened:** 08-JAN-10      **Lot Number :** H20053 L  
**Name:** I-HNO3      **Received:** 08-JAN-10  
**Type:** Reagent/Solvent      **Expires:** 08-JAN-11  
**Employee:** Francena Armstrong  
**Supplier:** BAKER  
**Description:** Nitric Acid CONC.  
**Comments:** None



# Standard Logbook

**Serial ID:** 1252838      **Opened:** 08-JAN-10      **Lot Number :** H41032  
**Name:** I-HCL      **Received:** 08-JAN-10      **Preservative\_Id :** 5 none  
**Type:** Reagent/Solvent      **Expires:** 08-JAN-11  
**Employee:** Francena Armstrong  
**Supplier:** J.T. BAKER  
**Description:** HYDROCHLORIC ACID  
**Comments:** None

**Serial ID:** 1253206      **Opened:** 11-JAN-10      **Solvent :** Type I Water  
**Name:** B-2%HNO3/1%HCL-ICPMS      **Received:** 11-JAN-10  
**Type:** Reagent/Solvent      **Expires:** 18-JAN-10  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** 2%HNO3/1%HCL Solution (Type I Water)  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
1238345	I-HNO3	69.0-70.0	180 mL	9 l	N/A
1244970	I-HCL	36.5-38.0	90 mL	9 l	N/A

**Serial ID:** 1253514      **Opened:** 11-JAN-10      **Amount :** 20 L  
**Name:** B-ICP-RINSE SOLN      **Received:** 11-JAN-10      **Lot Number :** H04040+G34050  
**Type:** Reagent/Solvent      **Expres:** 17-JAN-10      **Solvent :** 3%HCL+1%HNO3  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** 3%HCL+1%HNO3 RINSE SOLN.  
**Comments:** None



# **General Chemistry**

## **Analysis**



# **Case Narrative**



**General Chemistry Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-1038**

**Method/Analysis Information**

<b>Product:</b>	<b>Cyanide, Total</b>		
<b>Analytical Batch:</b>	936400	<b>Method:</b>	SW846 9012A
<b>Prep Batch :</b>	936399	<b>Method:</b>	SW846 9010B Prep

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in SW846 9012A:

<b>Sample ID</b>	<b>Client ID</b>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552
1202003577	Method Blank (MB)
1202003578	243385008(RE12-10-7585) Sample Duplicate (DUP)
1202003579	243385008(RE12-10-7585) Matrix Spike (MS)
1202003580	243385008(RE12-10-7585) Matrix Spike Duplicate (MSD)
1202003581	Laboratory Control Sample (LCS)
1202004486	243505001(RE16-10-2853) Sample Duplicate (DUP)
1202004487	243505001(RE16-10-2853) Matrix Spike (MS)
1202004488	243505001(RE16-10-2853) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-095 REV# 12.

**Preparation/Analytical Method Verification**

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

**Calibration Information**

The Flow Injection analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

**Initial Calibration**

All initial calibration requirements have been met for this SDG.



**Continuing Calibration Blanks**

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

**Calibration Verification Information (CCV)**

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

**Y Intercept Rule**

The absolute value of the intercept is less than 3 times the MDL.

**Quality Control (QC) Information****Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

**Laboratory Control Sample (LCS) Recovery**

The LCS spike recovery met the acceptance limits.

**Quality Control (QC) Designation**

The following samples were selected for QC analysis: 243385008 (RE12-10-7585) and 243505001 (RE16-10-2853).

**Matrix Spike (MS)/Post Spike (PS) Recovery Statement**

The MS/PS recoveries for this sample set were within the required acceptance limits.

**Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recoveries for this sample set were within the required acceptance limits.

**MS/MSD Relative Percent Difference (RPD) Statement**

The RPDs between the spike and spike duplicate met the acceptance limits.

**Duplicate Relative Percent Difference (RPD) Statement**

The values for the sample and duplicate are less than the Practical Quantitation Limit (PQL); therefore, the RPD is not applicable. 1202003578 (RE12-10-7585) and 1202004486 (RE16-10-2853).

**Technical Information**

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

**Holding Times**

All samples in this SDG met the specified holding time.

**Sample Preservation/Integrity**

All the samples from this sample group met the preservation and integrity requirements of the method.

**Sample Dilutions**



The following sample in this sample group was diluted due to high concentration: 1202003581 (LCS).

**Sample Re-analysis**

The samples in this SDG did not require re-analysis.

**Miscellaneous Information**

**Nonconformance (NCR) Documentation**

An NCR was not required for this SDG.

**Additional Comments**

Additional comments were not required for this SDG.

**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.



**Certification Statement**


Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

Reviewer: \_\_\_\_\_



Date: \_\_\_\_\_

19Jan10



# **Sample Data Summary**



## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

LANL010 Los Alamos National Laboratory (72733-001-09)

Client SDG: 10-1038 GEL Work Order: 243457

**The Qualifiers in this report are defined as follows:**

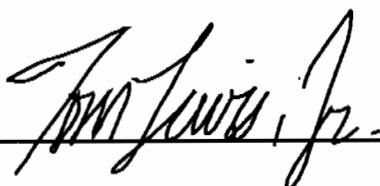
- \* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
- \*\* Indicates the analyte is a surrogate compound.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by

A handwritten signature in black ink, appearing to read "Tom Lewis, Jr.", is written over a horizontal line.



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 5, 2010

Client SDG: 10-1038

Client Sample ID: RE12-10-7553  
Sample ID: 243457001  
Matrix: R  
Collect Date: 18-DEC-09 12:00  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 20.7%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Flow Injection Analysis</b>											
<i>SW9012A Cyanide, Total Federal "Dry Weight Corrected"</i>											
Cyanide, Total	U	ND	75.3	277	ug/kg	1	AXC2	12/31/09	1014	936400	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/30/09	1520	936399

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	



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## Certificate of Analysis

Company : Los Alamos National Laboratory,  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 5, 2010

Client SDG: 10-1038

Client Sample ID: RE12-10-7554  
Sample ID: 243457002  
Matrix: R  
Collect Date: 18-DEC-09 12:00  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 8.06%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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### Flow Injection Analysis

SW9012A Cyanide, Total Federal "Dry Weight Corrected"

Cyanide, Total	U	ND	68.5	252	ug/kg	1	AXC2	12/31/09	1019	936400	1
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### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/30/09	1520	936399

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	



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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 5, 2010

Client SDG: 10-1038

Client Sample ID: RE12-10-7551  
Sample ID: 243457003  
Matrix: R  
Collect Date: 18-DEC-09 12:00  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 11.1%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Flow Injection Analysis</b>											
<i>SW9012A Cyanide, Total Federal "Dry Weight Corrected"</i>											
Cyanide, Total	U	ND	73.6	270	ug/kg	1	AXC2	12/31/09	1020	936400	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/30/09	1520	936399

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	



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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 5, 2010

Client SDG: 10-1038

Client Sample ID: RE12-10-7552  
Sample ID: 243457004  
Matrix: R  
Collect Date: 18-DEC-09 12:00  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 7.58%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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### Flow Injection Analysis

SW9012A Cyanide, Total Federal "Dry Weight Corrected"

Cyanide, Total	U	ND	73.6	271	ug/kg	1	AXC2	12/31/09	1020	936400	1
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### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/30/09	1520	936399

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	



# **Quality Control Summary**



# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: January 5, 2010

Page 1 of 2

Los Alamos National Laboratory  
PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm111  
Los Alamos, New Mexico

Contact: Ms. Joylene Valdez

Workorder: 243457

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Flow Injection Analysis</b>											
Batch	936400										
QC1202003578	243385008	DUP									
Cyanide, Total		U	ND	U	ND	ug/kg	N/A		AXC2	12/31/09	10:09
QC1202004486	243505001	DUP									
Cyanide, Total		U	ND	U	ND	ug/kg	N/A			12/31/09	10:35
QC1202003581	LCS										
Cyanide, Total	67900				63300	ug/kg	93.2	(46%-145%)		12/31/09	10:07
QC1202003577	MB										
Cyanide, Total			U		250	ug/kg				12/31/09	10:06
QC1202003579	243385008	MS									
Cyanide, Total	4960	U	ND		4960	ug/kg	100	(50%-130%)		12/31/09	10:10
QC1202004487	243505001	MS									
Cyanide, Total	4890	U	ND		5380	ug/kg	109	(50%-130%)		12/31/09	10:36
QC1202003580	243385008	MSD									
Cyanide, Total	5250	U	ND		4890	ug/kg	1.43	93.2	(0%-30%)	12/31/09	10:11
QC1202004488	243505001	MSD									
Cyanide, Total	5560	U	ND		5950	ug/kg	10.1	106	(0%-30%)	12/31/09	10:36

### Notes:

RER is calculated at the 95% confidence level (2-sigma).

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor



## GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

### QC Summary

Workorder: 243457

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
N/A	RPD or %Recovery limits do not apply.										
ND	Analyte concentration is not detected above the detection limit										
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
P	Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%										
R	Sample results are rejected										
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.										
UI	Gamma Spectroscopy--Uncertain identification										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Y	QC Samples were not spiked with this compound										
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.										
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.										
d	5-day BOD--The 2:1 depletion requirement was not met for this sample										
h	Preparation or preservation holding time was exceeded										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

\* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



# **Instrument QC Data Summary**



# INITIAL AND CONTINUING CALIBRATION VERIFICATION

Report Run On: 05-JAN-2010 17:36

GEL Laboratories LLC

Contract: LANL01004

SDG #: 10-1038

Flow Injection Analysis

Method: SW846 9012A

Concentration Units:ug/L

Instrument: Lachat QuickChem FIA+ 8000 Series

Parmname: Cyanide, Total

Sample Type	Run Date	Data File	Result	Nominal	Recovery	Limits	Within Limits
ICV	31-DEC-2009 10:01:18	OM_12-31-2009_09-50-50	150	150	100	(90%-110%)	Yes
CCV	31-DEC-2009 10:15:36	OM_12-31-2009_09-50-50	105	100	105	(90%-110%)	Yes
CCV	31-DEC-2009 10:28:01	OM_12-31-2009_09-50-50	106	100	106	(90%-110%)	Yes
CCV	31-DEC-2009 10:40:23	OM_12-31-2009_09-50-50	106	100	106	(90%-110%)	Yes

Sample Type	Run Date	Data File	Result	Limits	Within Limits
ICB	31-DEC-2009 10:03:08	OM_12-31-2009_09-50-50	-1.31	5	Yes
CCB	31-DEC-2009 10:17:26	OM_12-31-2009_09-50-50	-1.68	5	Yes
CCB	31-DEC-2009 10:29:51	OM_12-31-2009_09-50-50	-1.39	5	Yes
CCB	31-DEC-2009 10:42:13	OM_12-31-2009_09-50-50	-1.45	5	Yes



# **Cyanide, Total**



# Prep LogBook

Analyst: AXS5  
Batch: 936399  
Lab SOP: GL-GC-E-067 REV# 13

Verified by: \_\_\_\_\_

Sample Type	Sample ID	Parent Sample ID	Method	Prep Date	Ph	Initial Wt.	Final Volume	Prep Factor	Spike Amount	Spike Units
MB	1202003577		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.5 g	25 mL	50		SOIL
LCS	1202003581		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.25 g	25 mL	100		SOIL
SAMPLE	243385008		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.52 g	25 mL	48.07692		SOIL
DUP	1202003578	243385008	SW846 9010B Prep	30-DEC-2009 15:20	>12	0.57 g	25 mL	43.85965		SOIL
MS	1202003579	243385008	SW846 9010B Prep	30-DEC-2009 15:20	>12	0.55 g	25 mL	45.45455		SOIL
MSD	1202003580	243385008	SW846 9010B Prep	30-DEC-2009 15:20	>12	0.52 g	25 mL	48.07692		SOIL
SAMPLE	243385009		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.55 g	25 mL	45.45455		SOIL
SAMPLE	243385010		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.58 g	25 mL	43.10345		SOIL
SAMPLE	243385011		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.57 g	25 mL	43.85965		SOIL
SAMPLE	243457001		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.57 g	25 mL	43.85965		SOIL
SAMPLE	243457002		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.54 g	25 mL	46.2963		SOIL
SAMPLE	243457003		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.52 g	25 mL	48.07692		SOIL
SAMPLE	243457004		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.5 g	25 mL	50		SOIL
SAMPLE	243472001		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.5 g	25 mL	50		SOIL
SAMPLE	243472002		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.53 g	25 mL	47.16981		SOIL
SAMPLE	243472003		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.5 g	25 mL	50		SOIL
SAMPLE	243492001		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.54 g	25 mL	46.2963		SOIL
SAMPLE	243492002		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.54 g	25 mL	46.2963		SOIL
SAMPLE	243492003		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.53 g	25 mL	47.16981		SOIL
SAMPLE	243492004		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.52 g	25 mL	48.07692		SOIL
SAMPLE	243492005		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.52 g	25 mL	48.07692		SOIL
SAMPLE	243492006		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.52 g	25 mL	48.07692		SOIL
SAMPLE	243492007		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.5 g	25 mL	50		SOIL
SAMPLE	243505001		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.51 g	25 mL	49.01961		SOIL
DUP	1202004486	243505001	SW846 9010B Prep	30-DEC-2009 15:20	>12	0.55 g	25 mL	45.45455		SOIL
MS	1202004487	243505001	SW846 9010B Prep	30-DEC-2009 15:20	>12	0.58 g	25 mL	43.10345		SOIL
MSD	1202004488	243505001	SW846 9010B Prep	30-DEC-2009 15:20	>12	0.51 g	25 mL	49.01961		SOIL
SAMPLE	243505002		SW846 9010B Prep	30-DEC-2009 15:20	>12	0.54 g	25 mL	46.2963		SOIL



## Prep LogBook

Reagent/Solvent Lot ID	Amount	Description	Comments
0912111-C	25 mL	0.25N Sodium Hydroxide Solution	
WCN091230-07	.0375 mL	150 ppb CN Distilled ICV Standard	
1176724-C	1.25 mL	0.8N H3NO3S	
1238146-C	2.5 mL	50% H2SO4 CN Prep	
1176778-C	1 mL	51% MgCl2 Soln	
1238142-C	1.25 mL	Bismuth Nitrate Solution	



This is runlog Lachat1

Sample ID	Batch	Dilution	Analyst	Runtime	Dataset
200 ppb		1	axc2	12/31/2009 9:54:09	OM_12-31-2009_09-50-50
150 ppb		1	axc2	12/31/2009 9:55:01	OM_12-31-2009_09-50-50
100 ppb		1	axc2	12/31/2009 9:55:53	OM_12-31-2009_09-50-50
50 ppb		1	axc2	12/31/2009 9:56:46	OM_12-31-2009_09-50-50
10 ppb		1	axc2	12/31/2009 9:57:39	OM_12-31-2009_09-50-50
CRDL 5.0 ppb		1	axc2	12/31/2009 9:58:33	OM_12-31-2009_09-50-50
ICAL-00		1	axc2	12/31/2009 9:59:28	OM_12-31-2009_09-50-50
ICV		1	axc2	12/31/2009 10:01:18	OM_12-31-2009_09-50-50
ICB		1	axc2	12/31/2009 10:03:08	OM_12-31-2009_09-50-50
CRDL		1	axc2	12/31/2009 10:04:58	OM_12-31-2009_09-50-50
1202003577	936400	1	axc2	12/31/2009 10:06:47	OM_12-31-2009_09-50-50
1202003581	936400	25	axc2	12/31/2009 10:07:41	OM_12-31-2009_09-50-50
243385008	936400	1	axc2	12/31/2009 10:08:34	OM_12-31-2009_09-50-50
1202003578	936400	1	axc2	12/31/2009 10:09:27	OM_12-31-2009_09-50-50
1202003579	936400	1	axc2	12/31/2009 10:10:20	OM_12-31-2009_09-50-50
1202003580	936400	1	axc2	12/31/2009 10:11:13	OM_12-31-2009_09-50-50
243385009	936400	1	axc2	12/31/2009 10:12:05	OM_12-31-2009_09-50-50
243385010	936400	1	axc2	12/31/2009 10:12:58	OM_12-31-2009_09-50-50
243385011	936400	1	axc2	12/31/2009 10:13:51	OM_12-31-2009_09-50-50
243457001	936400	1	axc2	12/31/2009 10:14:43	OM_12-31-2009_09-50-50
CCV		1	axc2	12/31/2009 10:15:36	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009 10:17:26	OM_12-31-2009_09-50-50
243457002	936400	1	axc2	12/31/2009 10:19:14	OM_12-31-2009_09-50-50
243457003	936400	1	axc2	12/31/2009 10:20:06	OM_12-31-2009_09-50-50
243457004	936400	1	axc2	12/31/2009 10:20:58	OM_12-31-2009_09-50-50
243472001	936400	1	axc2	12/31/2009 10:21:50	OM_12-31-2009_09-50-50
243472002	936400	1	axc2	12/31/2009 10:22:41	OM_12-31-2009_09-50-50
243472003	936400	1	axc2	12/31/2009 10:23:35	OM_12-31-2009_09-50-50
243492001	936400	1	axc2	12/31/2009 10:24:29	OM_12-31-2009_09-50-50
243492002	936400	1	axc2	12/31/2009 10:25:22	OM_12-31-2009_09-50-50
243492003	936400	1	axc2	12/31/2009 10:26:15	OM_12-31-2009_09-50-50
243492004	936400	1	axc2	12/31/2009 10:27:09	OM_12-31-2009_09-50-50
CCV		1	axc2	12/31/2009 10:28:01	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009 10:29:51	OM_12-31-2009_09-50-50
243492005	936400	1	axc2	12/31/2009 10:31:40	OM_12-31-2009_09-50-50
243492006	936400	1	axc2	12/31/2009 10:32:33	OM_12-31-2009_09-50-50
243492007	936400	1	axc2	12/31/2009 10:33:26	OM_12-31-2009_09-50-50
243505001	936400	1	axc2	12/31/2009 10:34:18	OM_12-31-2009_09-50-50
1202004486	936400	1	axc2	12/31/2009 10:35:11	OM_12-31-2009_09-50-50
1202004487	936400	1	axc2	12/31/2009 10:36:03	OM_12-31-2009_09-50-50
1202004488	936400	1	axc2	12/31/2009 10:36:55	OM_12-31-2009_09-50-50
243505002	936400	1	axc2	12/31/2009 10:37:48	OM_12-31-2009_09-50-50
1202004505	936845	1	axc2	12/31/2009 10:38:39	OM_12-31-2009_09-50-50
1202004509	936845	25	axc2	12/31/2009 10:39:31	OM_12-31-2009_09-50-50
CCV		1	axc2	12/31/2009 10:40:23	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009 10:42:13	OM_12-31-2009_09-50-50
243358001	936845	1	axc2	12/31/2009 10:44:04	OM_12-31-2009_09-50-50
243550005	936845	1	axc2	12/31/2009 10:44:58	OM_12-31-2009_09-50-50
1202004506	936845	1	axc2	12/31/2009 10:45:52	OM_12-31-2009_09-50-50
1202004507	936845	1	axc2	12/31/2009 10:46:44	OM_12-31-2009_09-50-50
1202004508	936845	1	axc2	12/31/2009 10:47:38	OM_12-31-2009_09-50-50
243550006	936845	1	axc2	12/31/2009 10:48:31	OM_12-31-2009_09-50-50
243550007	936845	1	axc2	12/31/2009 10:49:24	OM_12-31-2009_09-50-50
243550008	936845	1	axc2	12/31/2009 10:50:17	OM_12-31-2009_09-50-50
243550009	936845	1	axc2	12/31/2009 10:51:10	OM_12-31-2009_09-50-50
243550010	936845	1	axc2	12/31/2009 10:52:02	OM_12-31-2009_09-50-50
CCV		1	axc2	12/31/2009 10:52:55	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009 10:54:45	OM_12-31-2009_09-50-50



243550011	936845	1	axc2	12/31/2009	10:56:33	OM_12-31-2009_09-50-50
243550012	936845	1	axc2	12/31/2009	10:57:27	OM_12-31-2009_09-50-50
243550013	936845	1	axc2	12/31/2009	10:58:18	OM_12-31-2009_09-50-50
243602001	936845	1	axc2	12/31/2009	10:59:11	OM_12-31-2009_09-50-50
1202006206	936845	1	axc2	12/31/2009	11:00:03	OM_12-31-2009_09-50-50
1202006207	936845	1	axc2	12/31/2009	11:00:56	OM_12-31-2009_09-50-50
1202006208	936845	1	axc2	12/31/2009	11:01:51	OM_12-31-2009_09-50-50
243602002	936845	1	axc2	12/31/2009	11:02:44	OM_12-31-2009_09-50-50
243602003	936845	1	axc2	12/31/2009	11:03:37	OM_12-31-2009_09-50-50
243602004	936845	1	axc2	12/31/2009	11:04:31	OM_12-31-2009_09-50-50
CCV		1	axc2	12/31/2009	11:05:24	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:07:15	OM_12-31-2009_09-50-50
243602005	936845	1	axc2	12/31/2009	11:09:04	OM_12-31-2009_09-50-50
243611001	936845	1	axc2	12/31/2009	11:09:58	OM_12-31-2009_09-50-50
243611002	936845	1	axc2	12/31/2009	11:10:50	OM_12-31-2009_09-50-50
243611003	936845	1	axc2	12/31/2009	11:11:43	OM_12-31-2009_09-50-50
CCV		1	axc2	12/31/2009	11:12:35	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50
CCB		1	axc2	12/31/2009	11:14:26	OM_12-31-2009_09-50-50



Author: axc2

Date : 12/31/2009

Original Run Filename: OM\_12-31-2009\_09-50-50.OMN created 12/31/2009 09:50:50  
 Original Run Author's Signature: [axc2]  
 Current Run Filename: OM\_12-31-2009\_09-50-50.OMN last modified 12/31/2009 11:15:32  
 Current Run Author's Signature: [axc2]  
 Description: GL-GC-E-095 EPA 335.1, 335.3, 335.4, 9012A, CLP335.2-M  
 Liquid LCS nominal 50 ug/L

Sample	Rep.	Cup No.	Channel 1		Detection Time	ADF	MDF	Description
			TCYANIDE Conc. (ug/L)	Area (Vs)				
WCN091231-01	1	S1	200	7.27	12/31/2009@09:54:09			200 ppb
WCN091231-02	1	S2	150	5.46	12/31/2009@09:55:01			150 ppb
WCN091231-03	1	S3	100	3.56	12/31/2009@09:55:53			100 ppb
WCN091231-04	1	S4	50.0	1.96	12/31/2009@09:56:46			50 ppb
WCN091231-05	1	S5	10.0	0.454	12/31/2009@09:57:39			10 ppb
WCN091231-06	1	S6	5.00	0.263	12/31/2009@09:58:33			CRDL 5.0 ppb
WCN091231-08	1	S7	0.00	0.0241	12/31/2009@09:59:28			0.0 ppb
DQM Test: Minimum Correlation Coefficient								
Result:			0.99975 > 0.99500					
Message			Pass					
Action			Continue					
WCN091231-07	1	S8	150	5.44	12/31/2009@10:01:18			ICV
Known Conc:			150					
DQM Test: > + Percent Relative Difference								
Result:			-0.2 < 10.0					
Message			ICV Passed					
Action			Continue					
DQM Test: < - Percent Relative Difference								
Result:			-0.2 < 10.0					
Message			ICV Passed					
Action			Continue					
Calibration:			Table/Fig. 1					
WCN091231-08	1	S7	-1.31	0.0268	12/31/2009@10:03:08			ICB/CCB
Known Conc:			0.00					
DQM Test: > + Concentration Limit								
Result:			-1.31 < 5.01					
Message			ICB/CCB Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			-1.31 > -5.01					
Message			ICB/CCB Passed					
Action			Continue					
WCN091231-06	1	S6	5.65	0.276	12/31/2009@10:04:58			CRDL
Known Conc:			5.00					
DQM Test: > + Concentration Limit								
Result:			5.65 < 7.50					
Message			CRDL Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			5.65 > 2.50					
Message			Pass					
Action			None					
1202003577 936400 MB	1	1	-2.06	-1.84e-4	12/31/2009@10:06:47			
1202003581 LCS	1	2	25.3	0.980	12/31/2009@10:07:41		25.00	
243385008	1	3	-0.828	0.0442	12/31/2009@10:08:34			
1202003578 DUP	1	4	-0.559	0.0538	12/31/2009@10:09:27			
1202003579 MS	1	5	100	3.68	12/31/2009@10:10:20			
1202003580 MSD	1	6	93.2	3.42	12/31/2009@10:11:13			
243385009	1	7	1.70	0.135	12/31/2009@10:12:05			
243385010	1	8	-0.0222	0.0731	12/31/2009@10:12:58			
243385011	1	9	1.56	0.130	12/31/2009@10:13:51			
243457001	1	10	0.0568	0.0759	12/31/2009@10:14:43			
WCN091231-03	1	S3	105	3.84	12/31/2009@10:15:36			CCV
Known Conc:			100					
DQM Test: > + Percent Relative Difference								
Result:			5.0 < 10.0					



Message			CCV Passed					
Action			Continue					
DQM Test: < - Percent Relative Difference								
Result:			5.0 < 10.0					
Message			CCV Passed					
Action			Continue					
WCN091231-08	1	S7	-1.68	0.0135	12/31/2009@10:17:26			CCB
Known Conc:			0.00					
DQM Test: > + Concentration Limit								
Result:			-1.68 < 5.00					
Message			CCB Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			-1.68 > -5.00					
Message			CCB Passed					
Action			Continue					
243457002	1	11	-2.06	-1.40e-4	12/31/2009@10:19:14			
243457003	1	12	-0.480	0.0566	12/31/2009@10:20:06			
243457004	1	13	-0.817	0.0445	12/31/2009@10:20:58			
243472001	1	14	-1.24	0.0295	12/31/2009@10:21:50			
243472002	1	15	-1.53	0.0189	12/31/2009@10:22:41			
243472003	1	16	-0.958	0.0395	12/31/2009@10:23:35			
243492001	1	17	-0.475	0.0568	12/31/2009@10:24:29			
243492002	1	18	-2.06	-1.97e-4	12/31/2009@10:25:22			
243492003	1	19	-0.650	0.0505	12/31/2009@10:26:15			
243492004	1	20	0.203	0.0811	12/31/2009@10:27:09			
WCN091231-03	1	S3	106	3.86	12/31/2009@10:28:01			CCV
Known Conc:			100					
DQM Test: > + Percent Relative Difference								
Result:			5.6 < 10.0					
Message			CCV Passed					
Action			Continue					
DQM Test: < - Percent Relative Difference								
Result:			5.6 < 10.0					
Message			CCV Passed					
Action			Continue					
WCN091231-08	1	S7	-1.39	0.0240	12/31/2009@10:29:51			CCB
Known Conc:			0.00					
DQM Test: > + Concentration Limit								
Result:			-1.39 < 5.00					
Message			CCB Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			-1.39 > -5.00					
Message			CCB Passed					
Action			Continue					
243492005	1	21	-0.535	0.0547	12/31/2009@10:31:40			
243492006	1	22	-0.999	0.0380	12/31/2009@10:32:33			
243492007	1	23	0.130	0.0785	12/31/2009@10:33:26			
243505001	1	24	0.927	0.107	12/31/2009@10:34:18			
1202004486 DUP	1	25	0.725	0.0998	12/31/2009@10:35:11			
1202004487 MS	1	26	110	4.01	12/31/2009@10:36:03			
1202004488 MSD	1	27	107	3.91	12/31/2009@10:36:55			
243505002	1	28	-0.444	0.0579	12/31/2009@10:37:48			
1202004505 936845 MB	1	29	-1.09	0.0347	12/31/2009@10:38:39			
1202004509 LCS	1	30	33.1	1.26	12/31/2009@10:39:31		25.00	
WCN091231-03	1	S3	106	3.88	12/31/2009@10:40:23			CCV
Known Conc:			100					
DQM Test: > + Percent Relative Difference								
Result:			6.1 < 10.0					
Message			CCV Passed					
Action			Continue					
DQM Test: < - Percent Relative Difference								
Result:			6.1 < 10.0					
Message			CCV Passed					
Action			Continue					
WCN091231-08	1	S7	-1.45	0.0217	12/31/2009@10:42:13			CCB
Known Conc:			0.00					



DQM Test: > + Concentration Limit						
Result:	-1.45 < 5.00					
Message	CCB Passed					
Action	Continue					
DQM Test: < - Concentration Limit						
Result:	-1.45 > -5.00					
Message	CCB Passed					
Action	Continue					
243358001	1	31	14.1	0.579	12/31/2009@10:44:04	
243550005	1	32	-1.04	0.0364	12/31/2009@10:44:58	
1202004506  DUP	1	33	-2.16	-0.00355	12/31/2009@10:45:52	
1202004507  MS	1	34	107	3.91	12/31/2009@10:46:44	
1202004508  MSD	1	35	111	4.04	12/31/2009@10:47:38	
243550006	1	36	-1.12	0.0337	12/31/2009@10:48:31	
243550007	1	37	-2.06	-1.33e-4	12/31/2009@10:49:24	
243550008	1	38	-2.06	-1.26e-4	12/31/2009@10:50:17	
243550009	1	39	-0.957	0.0395	12/31/2009@10:51:10	
243550010	1	40	-0.882	0.0422	12/31/2009@10:52:02	
WCN091231-03	1	S3	106	3.86	12/31/2009@10:52:55	CCV
Known Conc:			100			
DQM Test: > + Percent Relative Difference						
Result:	5.7 < 10.0					
Message	CCV Passed					
Action	Continue					
DQM Test: < - Percent Relative Difference						
Result:	5.7 < 10.0					
Message	CCV Passed					
Action	Continue					
WCN091231-08	1	S7	-2.16	-0.00350	12/31/2009@10:54:45	CCB
Known Conc:			0.00			
DQM Test: > + Concentration Limit						
Result:	-2.16 < 5.00					
Message	CCB Passed					
Action	Continue					
DQM Test: < - Concentration Limit						
Result:	-2.16 > -5.00					
Message	CCB Passed					
Action	Continue					
243550011	1	41	0.158	0.0795	12/31/2009@10:56:33	
243550012	1	42	-1.24	0.0294	12/31/2009@10:57:27	
243550013	1	43	6.74	0.316	12/31/2009@10:58:18	
243602001	1	44	-0.152	0.0684	12/31/2009@10:59:11	
1202006206  DUP	1	45	1.40	0.124	12/31/2009@11:00:03	
1202006207  MS	1	46	104	3.80	12/31/2009@11:00:56	
1202006208  MSD	1	47	105	3.84	12/31/2009@11:01:51	
243602002	1	48	0.279	0.0839	12/31/2009@11:02:44	
243602003	1	49	-1.02	0.0371	12/31/2009@11:03:37	
243602004	1	50	-0.548	0.0542	12/31/2009@11:04:31	
WCN091231-03	1	S3	106	3.88	12/31/2009@11:05:24	CCV
Known Conc:			100			
DQM Test: > + Percent Relative Difference						
Result:	6.0 < 10.0					
Message	CCV Passed					
Action	Continue					
DQM Test: < - Percent Relative Difference						
Result:	6.0 < 10.0					
Message	CCV Passed					
Action	Continue					
WCN091231-08	1	S7	-1.35	0.0255	12/31/2009@11:07:15	CCB
Known Conc:			0.00			
DQM Test: > + Concentration Limit						
Result:	-1.35 < 5.00					
Message	CCB Passed					
Action	Continue					
DQM Test: < - Concentration Limit						
Result:	-1.35 > -5.00					
Message	CCB Passed					
Action	Continue					



243602005	1	51	-1.28	0.0280	12/31/2009@11:09:04			
243611001	1	52	4.33	0.229	12/31/2009@11:09:58			
243611002	1	53	2.36	0.158	12/31/2009@11:10:50			
243611003	1	54	1.05	0.112	12/31/2009@11:11:43			
WCN091231-03	1	S3	106	3.87	12/31/2009@11:12:35			CCV
Known Conc:			100					
DQM Test: > + Percent Relative Difference								
Result:			6.0 < 10.0					
Message			CCV Passed					
Action			Continue					
DQM Test: < - Percent Relative Difference								
Result:			6.0 < 10.0					
Message			CCV Passed					
Action			Continue					
WCN091231-08	1	S7	-1.37	0.0246	12/31/2009@11:14:26			CCB
Known Conc:			0.00					
DQM Test: > + Concentration Limit								
Result:			-1.37 < 5.00					
Message			CCB Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			-1.37 > -5.00					
Message			CCB Passed					
Action			Continue					

Analyte Properties Table for OM\_12-31-2009\_09-50-50.OMN

Property	Channel 1
	TCYANIDE
Concentration Units	ug/L
Calibration Fit Type	First Order
Clear Calibration	True
Force Through Zero	False
Calibration Weighting	None
Auto Dilution Trigger	True
% of High Standard	100
Quik Chem Method	10-204-00-1-A
Chemistry	Direct/Bipolar
Calibration by Height	False
Inject to Peak Start	22
Peak Base Width	39



Channel 1: Current View

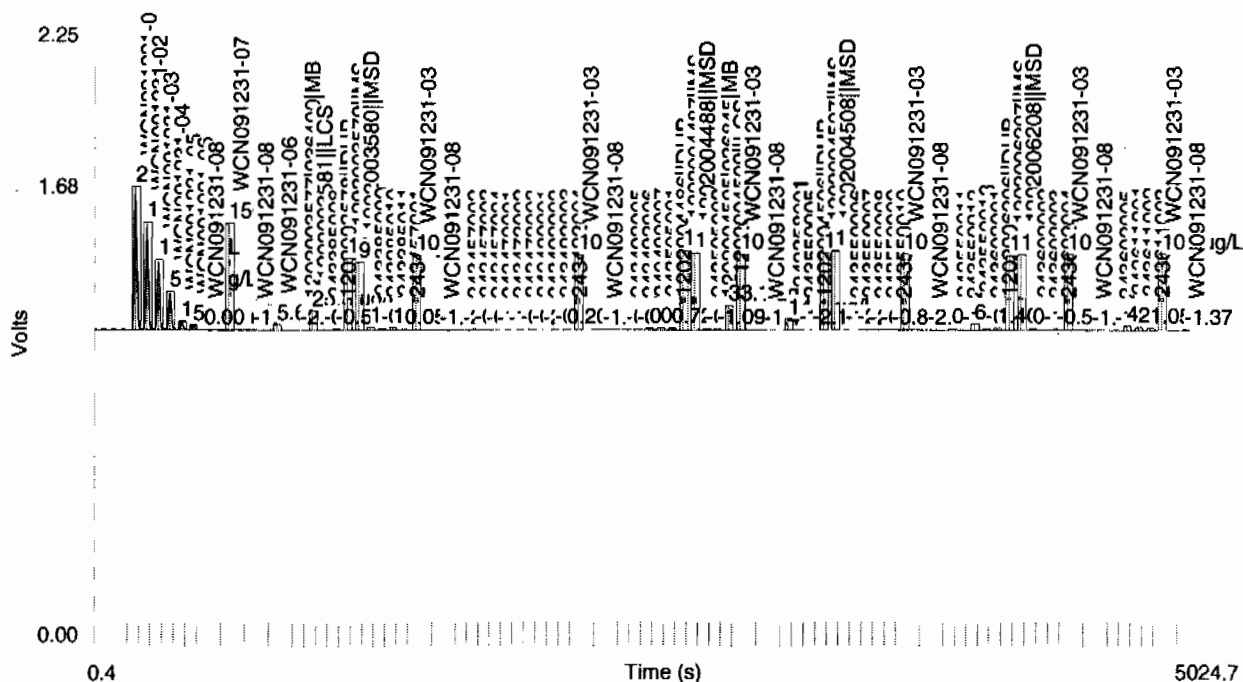
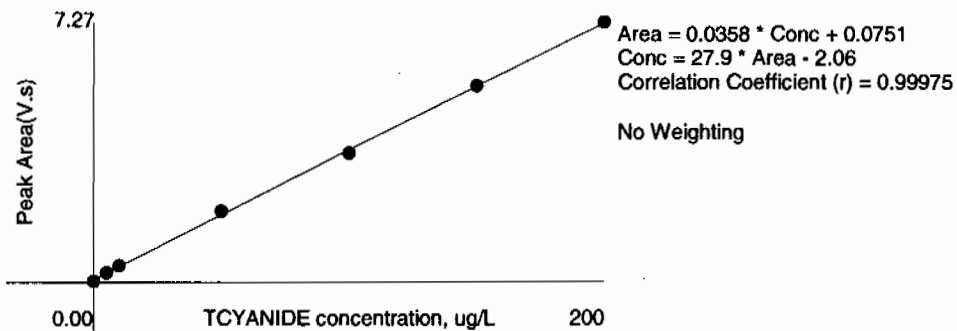


Table 1: TCYANIDE

	Conc. (ug/L)	Rep	Peak Area (Volt-s)	Peak Height (Volts)	% Residual	Detection Date	Detection Time
1	200	1	7.27	0.534	-0.3	12/31/2009	09:55:12
2	150	1	5.46	0.402	-0.1	12/31/2009	09:56:04
3	100	1	3.56	0.263	2.8	12/31/2009	09:56:56
4	50.0	1	1.96	0.143	-5.2	12/31/2009	09:57:49
5	10.0	1	0.454	0.0322	-4.7	12/31/2009	09:58:42
6	5.00	1	0.263	0.0177	-3.4	12/31/2009	09:59:36
7	0.00	1	0.0241	0.00158		12/31/2009	10:00:30

Figure 1: TCYANIDE





# RADIOLOGICAL ANALYSIS



**Radiochemistry Case Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-1038**

**Method/Analysis Information**

**Procedure:** Dry Weight-Percent Moisture

**Analytical Method:**

**Analytical Batch Number:** 936633

<b>Sample ID</b>	<b>Client ID</b>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552
1202004098	243457001(RE12-10-7553) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-020 REV# 9.

**Calibration Information:**

**Quality Control (QC) Information:**

**Designated QC**

The following sample was used for QC: 243457001 (RE12-10-7553). The QC was from LANL work order 243457.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

Not Applicable. The blank result is less than 1.65 times the CSU.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.



**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Blank Decision Level**

Not Applicable. The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>AM241</b>
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	936962
Prep Batch Number:	936640

<b>Sample ID</b>	<b>Client ID</b>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552
1202004879	Method Blank (MB)
1202004880	243397005(RE16-10-2844) Sample Duplicate (DUP)
1202004881	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in



accordance with GL-RAD-A-011 REV# 18.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:**

**Blank Information**

Aliquot for sample 1202004879 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 243397005 (RE16-10-2844). The QC was from LANL work order 243397.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The blank result is less than 1.65 times the CSU.

**Technical Information:**

**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:**

**Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**



The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

**Product:** ISOPU  
**Analytical Method:** DOE EML HASL-300, Pu-11-RC Modified  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 939255  
**Prep Batch Number:** 936640

<b>Sample ID</b>	<b>Client ID</b>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457004	RE12-10-7552
1202009994	Method Blank (MB)
1202009995	243397005(RE16-10-2844) Sample Duplicate (DUP)
1202009996	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

**Calibration Information:**

**Calibration Information**

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.



**Quality Control (QC) Information:****Blank Information**

Aliquot for sample 1202009994 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 243397005 (RE16-10-2844). The QC was from LANL work order 243397.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The blank result is less than 1.65 times the CSU.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

Samples were reprepared due to high blank activity.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**



**Product:** ISOPU  
**Analytical Method:** DOE EML HASL-300, Pu-11-RC Modified  
**Prep Method:** Dry Soil Prep  
**Analytical Batch Number:** 940420  
**Prep Batch Number:** 936640

Sample ID	Client ID
243457003	RE12-10-7551
1202012590	Method Blank (MB)
1202012591	243457003(RE12-10-7551) Sample Duplicate (DUP)
1202012592	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

Aliquot for sample 1202012590 (MB) was changed to 1.0 per client request.

##### **Designated QC**

The following sample was used for QC: 243457003 (RE12-10-7551). The QC was from LANL work order 243457.

##### **QC Information**

All of the QC samples met the required acceptance limits.

##### **CSU**

The blank result is less than 1.65 times the CSU.



**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

Sample 1202012590 (MB) was recounted due to a peak shift. Sample 243457003 (RE12-10-7551) was reprepared due to suspected interference.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	ISOU
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	936975
Prep Batch Number:	936640



Sample ID	Client ID
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552
1202004921	Method Blank (MB)
1202004922	243397005(RE16-10-2844) Sample Duplicate (DUP)
1202004923	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

#### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 18.

#### **Calibration Information:**

##### **Calibration Information**

All initial and continuing calibration requirements have been met. Calibrations are performed monthly using mixed alpha standards comprised of the following: Gd-148, Np-237, and Cm-244.

##### **Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

##### **Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

#### **Quality Control (QC) Information:**

##### **Blank Information**

Aliquot for sample 1202004921 (MB) was changed to 1.0 per client request.

##### **Designated QC**

The following sample was used for QC: 243397005 (RE16-10-2844). The QC was from LANL work order 243397.

##### **QC Information**

All of the QC samples met the required acceptance limits.

##### **CSU**

The blank result is less than 1.65 times the CSU.

#### **Technical Information:**

##### **Holding Time**

All sample procedures for this sample set were performed within the required holding time.

##### **Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.



**Miscellaneous Information:**

**Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Manual Integration**

No manual integrations were performed on data in this batch.

**Additional Comments**

The MDCs are calculated using a blank population.

**Blank Decision Level**

The blank result is less than the decision level.

**Qualifier information**

Manual qualifiers were not required.

**Method/Analysis Information**

<b>Product:</b>	<b>GAMMA SPEC</b>
Analytical Method:	DOE HASL 300, 4.5.2.3/Ga-01-R
Prep Method:	Dry Soil Prep
Analytical Batch Number:	936923
Prep Batch Number:	936640

<b>Sample ID</b>	<b>Client ID</b>
243457001	RE12-10-7553
243457002	RE12-10-7554
243457003	RE12-10-7551
243457004	RE12-10-7552
1202004732	Method Blank (MB)
1202004733	243457001(RE12-10-7553) Sample Duplicate (DUP)
1202004734	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 18.



**Calibration Information:****Calibration Information**

All initial and continuing calibration requirements have been met. The initial Calibrations were performed in February 2009, March 2009, June 2009, July 2009, November 2009 and December 2009.

**Standards Information**

Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

**Sample Geometry**

All counting sources were prepared in the same geometry as the calibration standards.

**Quality Control (QC) Information:****Blank Information**

The blank volume is representative of the sample volume in this batch.

**Designated QC**

The following sample was used for QC: 243457001 (RE12-10-7553). The QC was from LANL work order 243457.

**QC Information**

All of the QC samples met the required acceptance limits.

**CSU**

The blank 1202004732 (MB) result is greater than 1.65 times the CSU but less than the MDC for Th-234 and Y-88.

**Technical Information:****Holding Time**

All sample procedures for this sample set were performed within the required holding time.

**Sample Re-prep/Re-analysis**

None of the samples in this sample set required reprep or reanalysis.

**Miscellaneous Information:****Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

**Additional Comments**

Additional comments were not required for this sample set.

**Blank Decision Level**

The blank 1202004732 (MB) result is greater than the decision level but less than the MDC for TI-208 and Th-234.



**Qualifier information**

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to interference.	Bismuth-211	243457001	RE12-10-7553
			243457002	RE12-10-7554
			243457003	RE12-10-7551
			243457004	RE12-10-7552
			1202004733	RE12-10-7553(243457001DUP)
		Cadmium-109	243457001	RE12-10-7553
			243457002	RE12-10-7554
			243457003	RE12-10-7551
			243457004	RE12-10-7552
			1202004733	RE12-10-7553(243457001DUP)
		Radium-224	243457001	RE12-10-7553
			243457002	RE12-10-7554
			243457003	RE12-10-7551
			243457004	RE12-10-7552
			1202004733	RE12-10-7553(243457001DUP)
UI	Data rejected due to low abundance.	Cesium-134	243457001	RE12-10-7553
			243457001	RE12-10-7553
			243457004	RE12-10-7552
			243457004	RE12-10-7552
			1202004733	RE12-10-7553(243457001DUP)
			1202004733	RE12-10-7553(243457001DUP)
		Radium-228	243457004	RE12-10-7552
			243457004	RE12-10-7552
		Strontium-85	243457001	RE12-10-7553
			243457001	RE12-10-7553



243457003	RE12-10-7551
243457003	RE12-10-7551
1202004732	MB for batch 936923
1202004732	MB for batch 936923
1202004733	RE12-10-7553(243457001DUP)
1202004733	RE12-10-7553(243457001DUP)

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

**Review Validation:**

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

**The following data validator verified the information presented in this case narrative:**

**Reviewer/Date:** \_\_\_\_\_  7/14/10



# SAMPLE DATA SUMMARY



## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

LANL010 Los Alamos National Laboratory (72733-001-09)

Client SDG: 10-1038 GEL Work Order: 243457

**The Qualifiers in this report are defined as follows:**

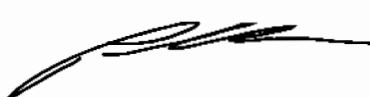
- \* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
- \*\* Indicates the analyte is a surrogate compound.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Reviewed by



1/14/10



# GEL LABORATORIES LLC

2040 Savage Road, Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7553  
Sample ID: 243457001  
Matrix: R  
Collect Date: 18-DEC-09  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 20.7%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>												
<i>"As Received"</i>												
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00492	0.0191	+/-0.00237	0.050	pCi/g		MXE1	01/06/10	1820	936962	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00451	0.0248	+/-0.00261	0.050	pCi/g		MXE1	01/09/10	1201	939255	3
Plutonium-239/240	U	0.015	0.0284	+/-0.00567	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.52	0.113	+/-0.131	0.100	pCi/g		MXE1	01/06/10	1351	936975	5
Uranium-235/236		0.0994	0.0703	+/-0.0223	0.100	pCi/g						
Uranium-238		1.98	0.0657	+/-0.164	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0848	0.128	+/-0.0416	0.200	pCi/g		MXR1	01/04/10	1358	936923	6
Bismuth-211	UI	4.87	0.428	+/-0.338		pCi/g						
Bismuth-214		1.51	0.145	+/-0.113	0.200	pCi/g						
Cadmium-109	UI	4.67	1.18	+/-0.519		pCi/g						
Cerium-139	U	0.0176	0.0611	+/-0.0184	0.050	pCi/g						
Cesium-134	UI	0.124	0.121	+/-0.0429	0.100	pCi/g						
Cesium-137		0.347	0.0865	+/-0.0412	0.100	pCi/g						
Cobalt-60	U	0.000846	0.0726	+/-0.0225	0.100	pCi/g						
Europium-152	U	-0.00947	0.216	+/-0.0797	0.200	pCi/g						
Lanthanum-140	U	0.0692	0.240	+/-0.0722		pCi/g						
Lead-212		1.94	0.111	+/-0.124	0.100	pCi/g						
Lead-214		1.70	0.146	+/-0.126	0.100	pCi/g						
Mercury-203	U	0.0649	0.0938	+/-0.030	0.100	pCi/g						
Potassium-40		22.3	0.790	+/-1.15	1.00	pCi/g						
Radium-223	U	-0.35	1.37	+/-0.485		pCi/g						
Radium-224	UI	6.28	1.26	+/-0.944		pCi/g						
Radium-226		1.51	0.145	+/-0.113		pCi/g						
Radium-228		1.88	0.275	+/-0.195	0.500	pCi/g						
Ruthenium-106	U	0.599	0.822	+/-0.233	0.800	pCi/g						



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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID:			RE12-10-7553		Project:		LANL01004				
Sample ID:			243457001		Client ID:		LANL010				
Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
GAMMA SPEC "Dry Weight Corrected"											
Sodium-22	U	0.0404	0.098	+/-0.0282	0.080	pCi/g					
Strontium-85	UI	0.148	0.0982	+/-0.0286		pCi/g					
Thallium-208		0.587	0.0721	+/-0.0585	0.080	pCi/g					
Thorium-227	U	0.185	0.844	+/-0.246		pCi/g					
Thorium-231	U	-0.35	1.37	+/-0.485		pCi/g					
Thorium-234		1.79	1.24	+/-0.538	2.00	pCi/g					
Tin-113	U	-0.0293	0.103	+/-0.0318	0.100	pCi/g					
Uranium-235	U	0.0353	0.436	+/-0.136	0.500	pCi/g					
Yttrium-88	U	0.0227	0.0758	+/-0.0209	0.100	pCi/g					

### The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	83.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	77.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	97.0	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7553  
Sample ID: 243457001  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

E Organics--Concentration of the target analyte exceeds the instrument calibration range  
F Estimated Value  
H Analytical holding time was exceeded  
J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).  
Quantitation is based on nearest internal standard response factor  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
d 5-day BOD--The 2:1 depletion requirement was not met for this sample  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7554  
Sample ID: 243457002  
Matrix: R  
Collect Date: 18-DEC-09  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 8.06%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>												
<i>"As Received"</i>												
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00385	0.0193	+/-0.0021	0.050	pCi/g		MXE1	01/06/10	1820	936962	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00149	0.0245	+/-0.00904	0.050	pCi/g		MXE1	01/09/10	1201	939255	3
Plutonium-239/240	U	-0.00149	0.0281	+/-0.00647	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.332	0.115	+/-0.0428	0.100	pCi/g		MXE1	01/06/10	1351	936975	5
Uranium-235/236	U	0.0137	0.0711	+/-0.00797	0.100	pCi/g						
Uranium-238		0.355	0.0664	+/-0.044	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.015	0.186	+/-0.0618	0.200	pCi/g		MXR1	01/04/10	1358	936923	6
Bismuth-211	UI	3.44	0.361	+/-0.288		pCi/g						
Bismuth-214		1.05	0.138	+/-0.096	0.200	pCi/g						
Cadmium-109	UI	2.75	1.29	+/-0.519		pCi/g						
Cerium-139	U	-0.0111	0.0483	+/-0.0154	0.050	pCi/g						
Cesium-134	U	0.0555	0.0926	+/-0.0243	0.100	pCi/g						
Cesium-137	U	-0.0226	0.0631	+/-0.0203	0.100	pCi/g						
Cobalt-60	U	-0.00637	0.065	+/-0.0203	0.100	pCi/g						
Europium-152	U	-0.0312	0.160	+/-0.057	0.200	pCi/g						
Lanthanum-140	U	-0.00115	0.167	+/-0.0531		pCi/g						
Lead-212		1.60	0.0998	+/-0.099	0.100	pCi/g						
Lead-214		1.20	0.126	+/-0.105	0.100	pCi/g						
Mercury-203	U	0.00138	0.0754	+/-0.0256	0.100	pCi/g						
Potassium-40		35.3	0.613	+/-1.85	1.00	pCi/g						
Radium-223	U	0.466	1.21	+/-0.399		pCi/g						
Radium-224	UI	3.36	1.14	+/-0.627		pCi/g						
Radium-226		1.05	0.138	+/-0.096		pCi/g						
Radium-228		1.63	0.230	+/-0.195	0.500	pCi/g						
Ruthenium-106	U	-0.0628	0.558	+/-0.170	0.800	pCi/g						
Sodium-22	U	-0.00185	0.0831	+/-0.0254	0.080	pCi/g						



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7554  
Sample ID: 243457002

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0716	0.0773	+/-0.0232		pCi/g						
Thallium-208		0.500	0.0637	+/-0.0513	0.080	pCi/g						
Thorium-227	U	-0.145	0.653	+/-0.199		pCi/g						
Thorium-231	U	0.466	1.21	+/-0.399		pCi/g						
Thorium-234	U	0.299	1.62	+/-0.648	2.00	pCi/g						
Tin-113	U	-0.0215	0.0815	+/-0.0257	0.100	pCi/g						
Uranium-235	U	-0.207	0.331	+/-0.111	0.500	pCi/g						
Yttrium-88	U	-0.0121	0.0461	+/-0.0155	0.100	pCi/g						

### The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	81.8	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	93.6	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

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- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E Organics--Concentration of the target analyte exceeds the instrument calibration range



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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7554 Project: LANL01004  
Sample ID: 243457002 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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F Estimated Value  
H Analytical holding time was exceeded  
J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).  
Quantitation is based on nearest internal standard response factor  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
d 5-day BOD--The 2:1 depletion requirement was not met for this sample  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.



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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7551  
Sample ID: 243457003  
Matrix: R  
Collect Date: 18-DEC-09  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 11.1%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Gravimetric Solids</b>											
<i>"As Received"</i>											
<b>Rad Alpha Spec Analysis</b>											
<i>AM241 "Dry Weight Corrected"</i>											
Americium-241	U	0.000378	0.0187	+/-0.0011	0.050	pCi/g		MXE1	01/06/10	1820 936962	2
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	-0.0061	0.0202	+/-0.00801	0.050	pCi/g		MXE1	01/12/10	1128 940420	3
Plutonium-239/240	U	-0.00122	0.0231	+/-0.00366	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		1.43	0.115	+/-0.125	0.100	pCi/g		MXE1	01/06/10	1351 936975	7
Uranium-235/236	U	0.0414	0.0716	+/-0.0141	0.100	pCi/g					
Uranium-238		1.47	0.0669	+/-0.128	0.100	pCi/g					
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	-0.0045	0.413	+/-0.120	0.200	pCi/g		MXR1	01/04/10	1358 936923	8
Bismuth-211	UI	4.22	0.334	+/-0.279		pCi/g					
Bismuth-214		1.24	0.111	+/-0.0919	0.200	pCi/g					
Cadmium-109	UI	4.17	1.29	+/-0.639		pCi/g					
Cerium-139	U	-0.0079	0.0497	+/-0.0154	0.050	pCi/g					
Cesium-134	U	0.0464	0.0816	+/-0.0227	0.100	pCi/g					
Cesium-137		0.114	0.0596	+/-0.0258	0.100	pCi/g					
Cobalt-60	U	0.00675	0.073	+/-0.0217	0.100	pCi/g					
Europium-152	U	-0.0946	0.150	+/-0.0553	0.200	pCi/g					
Lanthanum-140	U	-0.0333	0.151	+/-0.0493		pCi/g					
Lead-212		1.76	0.0944	+/-0.0885	0.100	pCi/g					
Lead-214		1.47	0.116	+/-0.104	0.100	pCi/g					
Mercury-203	U	0.0591	0.0783	+/-0.0243	0.100	pCi/g					
Potassium-40		19.9	0.461	+/-1.15	1.00	pCi/g					
Radium-223	U	0.0569	1.08	+/-0.363		pCi/g					
Radium-224	UI	5.42	1.07	+/-0.783		pCi/g					
Radium-226		1.24	0.111	+/-0.0919		pCi/g					
Radium-228		1.91	0.205	+/-0.210	0.500	pCi/g					
Ruthenium-106	U	0.435	0.601	+/-0.163	0.800	pCi/g					
Sodium-22	U	0.0179	0.0805	+/-0.0233	0.080	pCi/g					



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Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: Sample ID:			RE12-10-7551 243457003		Project: Client ID:		LANL01004 LANL010				
Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
GAMMA SPEC "Dry Weight Corrected"											
Strontium-85	UI	0.0905	0.075	+/-0.0224		pCi/g					
Thallium-208		0.547	0.0574	+/-0.0429	0.080	pCi/g					
Thorium-227	U	-0.12	0.625	+/-0.187		pCi/g					
Thorium-231	U	0.0569	1.08	+/-0.363		pCi/g					
Thorium-234	U	1.08	3.25	+/-0.936	2.00	pCi/g					
Tin-113	U	0.0147	0.080	+/-0.0237	0.100	pCi/g					
Uranium-235	U	-0.00423	0.354	+/-0.108	0.500	pCi/g					
Yttrium-88	U	-0.0195	0.0436	+/-0.0162	0.100	pCi/g					

### The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, Pu-11-RC Modified
6	DOE EML HASL-300, Pu-11-RC Modified
7	DOE EML HASL-300, U-02-RC Modified
8	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	87.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	95.1	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	91.9	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample



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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID:	RE12-10-7551	Project:	LANL01004									
Sample ID:	243457003	Client ID:	LANL010									
Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.

E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria  
E Organics--Concentration of the target analyte exceeds the instrument calibration range  
F Estimated Value  
H Analytical holding time was exceeded  
J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).  
Quantitation is based on nearest internal standard response factor  
N/A RPD or %Recovery limits do not apply.  
ND Analyte concentration is not detected above the detection limit  
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%  
R Sample results are rejected  
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.  
UI Gamma Spectroscopy--Uncertain identification  
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
d 5-day BOD--The 2:1 depletion requirement was not met for this sample  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : Los Alamos National Laboratory  
Address : PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7552  
Sample ID: 243457004  
Matrix: R  
Collect Date: 18-DEC-09  
Receive Date: 23-DEC-09  
Collector: Client  
Moisture: 7.58%

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>												
<i>"As Received"</i>												
<b>Rad Alpha Spec Analysis</b>												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000268	0.0177	+/-0.00104	0.050	pCi/g		MXE1	01/06/10	1820	936962	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0104	0.0214	+/-0.00689	0.050	pCi/g		MXE1	01/09/10	1201	939255	3
Plutonium-239/240	U	0.0013	0.0245	+/-0.0013	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.452	0.117	+/-0.0525	0.100	pCi/g		MXE1	01/06/10	1351	936975	5
Uranium-235/236	U	0.0186	0.0725	+/-0.00941	0.100	pCi/g						
Uranium-238		0.550	0.0677	+/-0.0601	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.049	0.178	+/-0.0574	0.200	pCi/g		MXR1	01/04/10	1359	936923	6
Bismuth-211	UI	3.49	0.269	+/-0.304		pCi/g						
Bismuth-214		0.959	0.0974	+/-0.0917	0.200	pCi/g						
Cadmium-109	UI	2.41	0.960	+/-0.383		pCi/g						
Cerium-139	U	-0.0154	0.0383	+/-0.0117	0.050	pCi/g						
Cesium-134	UI	0.133	0.0889	+/-0.0317	0.100	pCi/g						
Cesium-137	U	-0.0159	0.0585	+/-0.0186	0.100	pCi/g						
Cobalt-60	U	-0.0145	0.0639	+/-0.0205	0.100	pCi/g						
Europium-152	U	-0.0948	0.136	+/-0.0462	0.200	pCi/g						
Lanthanum-140	U	0.0139	0.151	+/-0.0445		pCi/g						
Lead-212		1.53	0.0849	+/-0.120	0.100	pCi/g						
Lead-214		1.22	0.0937	+/-0.110	0.100	pCi/g						
Mercury-203	U	-0.0139	0.0609	+/-0.019	0.100	pCi/g						
Potassium-40		32.6	0.430	+/-1.69	1.00	pCi/g						
Radium-223	U	-0.0316	0.935	+/-0.326		pCi/g						
Radium-224	UI	1.53	0.966	+/-0.489		pCi/g						
Radium-226		0.959	0.0974	+/-0.0917		pCi/g						
Radium-228	UI	1.25	0.470	+/-0.161	0.500	pCi/g						
Ruthenium-106	U	0.115	0.522	+/-0.154	0.800	pCi/g						
Sodium-22	U	-0.0224	0.0657	+/-0.0216	0.080	pCi/g						



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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7552  
Sample ID: 243457004

Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
<b>Rad Gamma Spec Analysis</b>											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	U	0.0189	0.058	+/-0.0188		pCi/g					
Thallium-208		0.486	0.0555	+/-0.0464	0.080	pCi/g					
Thorium-227	U	0.0305	0.559	+/-0.168		pCi/g					
Thorium-231	U	-0.0316	0.935	+/-0.326		pCi/g					
Thorium-234	U	0.733	1.41	+/-0.653	2.00	pCi/g					
Tin-113	U	-0.00287	0.0618	+/-0.0181	0.100	pCi/g					
Uranium-235	U	0.0513	0.299	+/-0.0874	0.500	pCi/g					
Yttrium-88	U	-0.0134	0.0523	+/-0.0174	0.100	pCi/g					

### The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Am-05-RC Modified
3	DOE EML HASL-300, Pu-11-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	81.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	90.6	(50%-105%)

### Notes:

TPU is calculated at the 67% confidence level (1-sigma).

The Qualifiers in this report are defined as follows :

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E Organics--Concentration of the target analyte exceeds the instrument calibration range



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### Certificate of Analysis

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Los Alamos, New Mexico 87545  
Contact: Ms. Joylene Valdez  
Project: LANL ER Project

Report Date: January 14, 2010

Client Sample ID: RE12-10-7552  
Sample ID: 243457004  
Project: LANL01004  
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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F Estimated Value  
H Analytical holding time was exceeded  
J Value is estimated  
M M if above MDC and less than LLD  
M Matrix Related Failure  
N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC).  
Quantitation is based on nearest internal standard response factor  
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P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%  
R Sample results are rejected  
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X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier  
Y QC Samples were not spiked with this compound  
Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.  
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.  
d 5-day BOD--The 2:1 depletion requirement was not met for this sample  
h Preparation or preservation holding time was exceeded  
The above sample is reported on a dry weight basis.



# QUALITY CONTROL DATA



# GEL LABORATORIES LLC

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## QC Summary

Report Date: January 14, 2010

Page 1 of 7

Client : Los Alamos National Laboratory  
PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico  
Contact: Ms. Joylene Valdez  
Workorder: 243457

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	936962										
QC1202004880	243397005	DUP									
Americium-241		U	0.0012	U	-0.000796	pCi/g	0.393	(0-1)	MXE1	01/06/10	18:21
		TPU:	+/-0.0011		+/-0.00144						
		Yield:	95.5		94.6						
QC1202004881	LCS										
Americium-241	33.2				29.2	pCi/g	88.1	(75%-125%)		01/06/10	18:21
		TPU:			+/-1.95						
		Yield:			104						
QC1202004879	MB										
Americium-241		U	0.00155		0.00155	pCi/g				01/06/10	18:21
		TPU:			+/-0.00141						
		Yield:			92.5						
Batch	936975										
QC1202004922	243397005	DUP									
Uranium-233/234			0.406		0.332	pCi/g	0.438	(0-1)	MXE1	01/06/10	10:36
		TPU:	+/-0.0483		+/-0.0361						
		Yield:	97.5		97.7						
Uranium-235/236		U	0.0271	U	0.0233	pCi/g	0.0834	(0-1)			
		TPU:	+/-0.0144		+/-0.00838						
		Yield:	97.5		97.7						
Uranium-238			0.406		0.339	pCi/g	0.394	(0-1)			
		TPU:	+/-0.0483		+/-0.0368						
		Yield:	97.5		97.7						
QC1202004923	LCS										
Uranium-233/234					6.27	pCi/g		(75%-125%)		01/06/10	10:35
		TPU:			+/-0.540						
		Yield:			98.7						
Uranium-235/236					0.372	pCi/g		(75%-125%)			
		TPU:			+/-0.0781						
		Yield:			98.7						
Uranium-238	5.75				5.51	pCi/g	95.8	(75%-125%)			
		TPU:			+/-0.484						
		Yield:			98.7						
QC1202004921	MB										
Uranium-233/234		U	0.00598		0.00598	pCi/g				01/06/10	10:36
		TPU:			+/-0.00419						
		Yield:			102						
Uranium-235/236		U	0.00284		0.00284	pCi/g					
		TPU:			+/-0.00284						
		Yield:			102						
Uranium-238		U	0.00574		0.00574	pCi/g					
		TPU:			+/-0.00383						
		Yield:			102						
Batch	939255										



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## QC Summary

Workorder: 243457

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
<b>Rad Alpha Spec</b>											
Batch	939255										
QC1202009995	243397005	DUP									
Plutonium-238	U	0.00	U	-0.00276	pCi/g	0.198		(0-1)	MXE1	01/09/10	12:01
	TPU:	+/-0.0011		+/-0.00584							
	Yield:	102		90.8							
Plutonium-239/240	U	0.0011	U	0.00275	pCi/g	0.215		(0-1)			
	TPU:	+/-0.0019		+/-0.00195							
	Yield:	102		90.8							
QC1202009996	LCS										
Plutonium-238				6.86	pCi/g			(75%-125%)			
	TPU:			+/-0.510							
	Yield:			89.0							
Plutonium-239/240	41.8			39.5	pCi/g		94.5	(75%-125%)			
	TPU:			+/-2.43							
	Yield:			89.0							
QC1202009994	MB										
Plutonium-238			U	-0.0103	pCi/g					01/09/10	12:01
	TPU:			+/-0.00685							
	Yield:			83.1							
Plutonium-239/240			U	-0.00685	pCi/g						
	TPU:			+/-0.00419							
	Yield:			83.1							
Batch	940420										
QC1202012591	243457003	DUP									
Plutonium-238	U	-0.0061	U	-0.00337	pCi/g	0.111		(0-1)	MXE1	01/12/10	11:28
	TPU:	+/-0.00801		+/-0.00435							
	Yield:	95.1		92.2							
Plutonium-239/240	U	-0.00122	U	0.00786	pCi/g	0.587		(0-1)			
	TPU:	+/-0.00366		+/-0.00407							
	Yield:	95.1		92.2							
QC1202012592	LCS										
Plutonium-238				6.46	pCi/g			(75%-125%)			
	TPU:			+/-0.453							
	Yield:			103							
Plutonium-239/240	41.8			35.5	pCi/g		84.9	(75%-125%)			
	TPU:			+/-2.10							
	Yield:			103							
QC1202012590	MB										
Plutonium-238			U	-0.00127	pCi/g					01/13/10	15:58
	TPU:			+/-0.00179							
	Yield:			93.9							
Plutonium-239/240			U	0.00	pCi/g						
	TPU:			+/-0.00127							
	Yield:			93.9							
<b>Rad Gamma Spec</b>											
Batch	936923										
QC1202004733	243457001	DUP									
Americium-241	U	0.0848	U	0.146	pCi/g	0.157		(0-1)	MXR1	01/04/10	16:16
	TPU:	+/-0.0416		+/-0.155							
Bismuth-211	UI	4.87	UI	4.61	pCi/g	0.207		(0-1)			



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## QC Summary

Workorder: 243457

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 936923											
Bismuth-214	TPU:	+/-0.338		+/-0.291							
		1.51		1.48	pCi/g	0.0672		(0-1)			
Cadmium-109	TPU:	+/-0.113		+/-0.103							
	UI	4.67	UI	2.88	pCi/g	0.800		(0-1)			
Cerium-139	TPU:	+/-0.519		+/-0.603							
	U	0.0176	U	-0.0119	pCi/g	0.411		(0-1)			
Cesium-134	TPU:	+/-0.0184		+/-0.0174							
	UI	0.124	UI	0.123	pCi/g	0.00732		(0-1)			
Cesium-137	TPU:	+/-0.0429		+/-0.0323							
		0.347		0.251	pCi/g	0.562		(0-1)			
Cobalt-60	TPU:	+/-0.0412		+/-0.0441							
	U	0.000846	U	-0.00901	pCi/g	0.112		(0-1)			
Europium-152	TPU:	+/-0.0225		+/-0.0215							
	U	-0.00947	U	-0.113	pCi/g	0.315		(0-1)			
Lanthanum-140	TPU:	+/-0.0797		+/-0.0846							
	U	0.0692	U	0.100	pCi/g	0.126		(0-1)			
Lead-212	TPU:	+/-0.0722		+/-0.0521							
		1.94		1.91	pCi/g	0.0578		(0-1)			
Lead-214	TPU:	+/-0.124		+/-0.101							
		1.70		1.61	pCi/g	0.191		(0-1)			
Mercury-203	TPU:	+/-0.126		+/-0.110							
	U	0.0649	U	-0.00456	pCi/g	0.634		(0-1)			
Potassium-40	TPU:	+/-0.030		+/-0.0248							
		22.3		22.0	pCi/g	0.0552		(0-1)			
Radium-223	TPU:	+/-1.15		+/-1.11							
	U	-0.35	U	-0.746	pCi/g	0.224		(0-1)			
Radium-224	TPU:	+/-0.485		+/-0.401							
	UI	6.28	UI	4.90	pCi/g	0.394		(0-1)			
Radium-226	TPU:	+/-0.944		+/-0.813							
		1.51		1.48	pCi/g	0.0672		(0-1)			
Radium-228	TPU:	+/-0.113		+/-0.103							
		1.88		1.84	pCi/g	0.0542		(0-1)			
Ruthenium-106	TPU:	+/-0.195		+/-0.193							
	U	0.599	U	-0.122	pCi/g	0.877		(0-1)			
Sodium-22	TPU:	+/-0.233		+/-0.178							
	U	0.0404	U	0.0164	pCi/g	0.229		(0-1)			
Strontium-85	TPU:	+/-0.0282		+/-0.0242							
	UI	0.148	UI	0.0997	pCi/g	0.457		(0-1)			
Thallium-208	TPU:	+/-0.0286		+/-0.0241							
		0.587		0.606	pCi/g	0.0835		(0-1)			
Thorium-227	TPU:	+/-0.0585		+/-0.0512							
	U	0.185	U	-0.139	pCi/g	0.352		(0-1)			
Thorium-231	TPU:	+/-0.246		+/-0.214							
	U	-0.35	U	-0.746	pCi/g	0.224		(0-1)			
Thorium-234	TPU:	+/-0.485		+/-0.401							
		1.79	U	1.78	pCi/g	0.0028		(0-1)			
Tin-113	TPU:	+/-0.538		+/-1.43							
	U	-0.0293	U	-0.0246	pCi/g	0.0404		(0-1)			
Uranium-235	TPU:	+/-0.0318		+/-0.0258							
	U	0.0353	U	0.0805	pCi/g	0.086		(0-1)			
	TPU:	+/-0.136		+/-0.127							



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## QC Summary

Workorder: 243457

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 936923											
Yttrium-88	U	0.0227	U	0.0111	pCi/g	0.150		(0-1)			
	TPU:	+/-0.0209		+/-0.0176							
QC1202004734 LCS											
Americium-241	15.9			14.0	pCi/g		87.7	(75%-125%)		01/05/1007:39	
	TPU:			+/-0.644							
Bismuth-211				2.12	pCi/g						
	TPU:			+/-0.296							
Bismuth-214				0.916	pCi/g						
	TPU:			+/-0.127							
Cadmium-109				55.3	pCi/g						
	TPU:			+/-2.75							
Cerium-139			U	-0.0453	pCi/g						
	TPU:			+/-0.132							
Cesium-134			U	0.110	pCi/g						
	TPU:			+/-0.0703							
Cesium-137	5.57			5.82	pCi/g		104	(75%-125%)			
	TPU:			+/-0.246							
Cobalt-60	6.49			7.04	pCi/g		108	(75%-125%)			
	TPU:			+/-0.287							
Europium-152			U	0.0329	pCi/g						
	TPU:			+/-0.115							
Lanthanum-140				2.12E+06	pCi/g						
	TPU:			+/-2.93E+06							
Lead-212				0.927	pCi/g						
	TPU:			+/-0.104							
Lead-214				0.739	pCi/g						
	TPU:			+/-0.105							
Mercury-203			U	13.6	pCi/g						
	TPU:			+/-4.90							
Potassium-40			U	0.607	pCi/g						
	TPU:			+/-0.338							
Radium-223			U	-0.601	pCi/g						
	TPU:			+/-0.634							
Radium-224				6.23	pCi/g						
	TPU:			+/-0.818							
Radium-226				0.916	pCi/g						
	TPU:			+/-0.127							
Radium-228				0.874	pCi/g						
	TPU:			+/-0.277							
Ruthenium-106			U	0.737	pCi/g						
	TPU:			+/-0.657							
Sodium-22			U	-0.0416	pCi/g						
	TPU:			+/-0.0371							
Strontium-85			U	0.829	pCi/g						
	TPU:			+/-1.52							
Thallium-208				0.378	pCi/g						
	TPU:			+/-0.0614							
Thorium-227			U	-0.0769	pCi/g						
	TPU:			+/-0.345							
Thorium-231			U	-0.601	pCi/g						
	TPU:			+/-0.634							



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## QC Summary

Workorder: 243457

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch 936923									
Thorium-234		U	-0.982	pCi/g					
	TPU:		+/-0.564						
Tin-113		U	0.491	pCi/g					
	TPU:		+/-0.349						
Uranium-235		U	-0.0116	pCi/g					
	TPU:		+/-0.167						
Yttrium-88		U	0.167	pCi/g					
	TPU:		+/-0.248						
QC1202004732 MB									
Americium-241		U	0.0401	pCi/g					01/04/1014:05
	TPU:		+/-0.0345						
Bismuth-211		U	-0.0418	pCi/g					
	TPU:		+/-0.0678						
Bismuth-214		U	7.60E-05	pCi/g					
	TPU:		+/-0.0238						
Cadmium-109		U	-0.155	pCi/g					
	TPU:		+/-0.180						
Cerium-139		U	-0.0115	pCi/g					
	TPU:		+/-0.00803						
Cesium-134		U	0.00855	pCi/g					
	TPU:		+/-0.0127						
Cesium-137		U	-0.00525	pCi/g					
	TPU:		+/-0.00923						
Cobalt-60		U	-0.0105	pCi/g					
	TPU:		+/-0.0107						
Europium-152		U	-0.000323	pCi/g					
	TPU:		+/-0.0274						
Lanthanum-140		U	-0.000214	pCi/g					
	TPU:		+/-0.0181						
Lead-212		U	-0.0117	pCi/g					
	TPU:		+/-0.0187						
Lead-214		U	-0.00432	pCi/g					
	TPU:		+/-0.0235						
Mercury-203		U	0.0135	pCi/g					
	TPU:		+/-0.0109						
Potassium-40		U	-0.143	pCi/g					
	TPU:		+/-0.134						
Radium-223		U	-0.338	pCi/g					
	TPU:		+/-0.195						
Radium-224		U	0.0767	pCi/g					
	TPU:		+/-0.192						
Radium-226		U	7.60E-05	pCi/g					
	TPU:		+/-0.0238						
Radium-228		U	-0.0253	pCi/g					
	TPU:		+/-0.0421						
Ruthenium-106		U	0.0807	pCi/g					
	TPU:		+/-0.0836						
Sodium-22		U	-0.0043	pCi/g					
	TPU:		+/-0.00922						
Strontium-85		UI	0.102	pCi/g					
	TPU:		+/-0.0134						



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 243457

Page 6 of 7

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	936923										
Thallium-208			U	0.0169	pCi/g						
	TPU:			+/-0.0183							
Thorium-227			U	-0.0485	pCi/g						
	TPU:			+/-0.115							
Thorium-231			U	-0.338	pCi/g						
	TPU:			+/-0.195							
Thorium-234			U	0.885	pCi/g						
	TPU:			+/-0.530							
Tin-113			U	0.012	pCi/g						
	TPU:			+/-0.0118							
Uranium-235			U	-0.064	pCi/g						
	TPU:			+/-0.0619							
Yttrium-88			U	0.0169	pCi/g						
	TPU:			+/-0.00997							

### Notes:

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
- N/A RPD-or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- P Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound



## GEL LABORATORIES LLC

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### QC Summary

Workorder: 243457

Page 7 of 7

Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
d	5-day BOD--The 2:1 depletion requirement was not met for this sample									
h	Preparation or preservation holding time was exceeded									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

\*\* Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



**RAW DATA**



## Radiochemistry Batch Checklist, Rev 9

 Batch# 936962 Product: Am Date: 1/7/10

Critera:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10" MDA/ MDC, error is 150% or less of sample activity. If greater 10" MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5" MDA/ MDC, then RPD is 100% or less. If greater 5" MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hil notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch non-conformances completed, if applicable.			N/A
Batch non-conformances second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

revised 8/1/08

Primary Review Performed By:

J. Denise Green 1/7/10

Secondary Review Performed By:

Paula 1/7/101/14  
LANC



## Am/Cm Que Sheet

04-JAN-10

Batch #: 936962 Analyst: MXE1 First Client Due Date: 14-JAN-10 Internal Due Date: 04-JAN-10 Comments:  
 Tracer Code: 446-910-1-SS Expiration Date: 01/11/10 Vol: 0.1  
 LCS Isotope(s): Am241/Cm244 LCS Code(s): 0144-B / NA Expiration Date: 4/30/10 / NA Vol(s): ESUM / NA  
 Spike Isotope(s): Am241/Cm244 Spike Code(s): NA / NA Expiration Date: NA / NA Vol(s): NA / NA  
 Prep Date: 1/4/10 Initials: VWN Pipet ID: 2411058 Balance ID: 50410714 Witness: MW, 1/4/10

Sample ID	Client Description	Type	Hazard	Min	Code	CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry	Am/Cm	Det #
												Aliquot (g/l/l)		
243397001-1	RE16-16-2842	SAMPLE	.05	pC/g	SOIL	LANL010	17-DEC-09	1	1	1.951	18			
243397002-1	RE16-16-2843	SAMPLE	.05	pC/g	SOIL	LANL010	17-DEC-09	2	2	1.953	223			
243397003-1	RE16-16-2841	SAMPLE	.05	pC/g	SOIL	LANL010	17-DEC-09	3	3	1.951	224			
243397004-1	RE16-16-2845	SAMPLE	.05	pC/g	SOIL	LANL010	17-DEC-09	4	4	1.950	225			
243397005-1	RE16-16-2844	SAMPLE	.05	pC/g	SOIL	LANL010	17-DEC-09	5	5	1.955	226			
243457001-1	RE12-16-7553	SAMPLE	.05	pC/g	SOIL	LANL010	18-DEC-09	6	6	1.951	227			
243457002-1	RE12-16-7554	SAMPLE	.05	pC/g	SOIL	LANL010	18-DEC-09	7	7	1.951	228			
243457003-1	RE12-16-7551	SAMPLE	.05	pC/g	SOIL	LANL010	18-DEC-09	8	8	1.951	229			
243457004-1	RE12-16-7552	SAMPLE	.05	pC/g	SOIL	LANL010	18-DEC-09	9	9	1.959	230			
243472001-1	RE03-08-14228	SAMPLE	.05	pC/g	SOIL	LANL010	21-DEC-09	10	10	1.950	231			
243472002-1	RE03-08-14230	SAMPLE	.05	pC/g	SOIL	LANL010	21-DEC-09	11	11	1.950	232			
243472003-1	RE03-08-14229	SAMPLE	.05	pC/g	SOIL	LANL010	21-DEC-09	12	12	1.958	233			
243509001-1	RE16-16-2837	SAMPLE	.05	pC/g	SOIL	LANL010	18-DEC-09	13	13	1.954	234			
243509002-1	RE16-16-2835	SAMPLE	.05	pC/g	SOIL	LANL010	18-DEC-09	14	14	1.954	235			
243509003-1	RE16-16-2838	SAMPLE	.05	pC/g	SOIL	LANL010	18-DEC-09	15	15	1.950	236			
243555001-1	WST21-10-9933	SAMPLE	.05	pC/g	SOIL	LANL010	23-DEC-09	16	16	1.951	237			
243555002-1	WST21-10-9931	SAMPLE	.05	pC/g	SOIL	LANL010	23-DEC-09	17	17	1.950	238			
243611001-1	RE16-16-2858	SAMPLE	.05	pC/g	SOIL	LANL010	22-DEC-09	18	18	1.959	239			
243611002-1	RE16-16-2852	SAMPLE	.05	pC/g	SOIL	LANL010	22-DEC-09	19	19	1.958	240			
243611003-1	RE16-16-2857	SAMPLE	.05	pC/g	SOIL	LANL010	22-DEC-09	20	20	1.951	241			
1202004879-1	MB for batch 936962	MB	.05	pC/g	SOIL	QC ACCOUNT	17-DEC-09	21	21	1.951	242			
1202004880-1	RE16-16-2844(243397005DUP)	DUP	.05	pC/g	SOIL	QC ACCOUNT	17-DEC-09	22	22	1.950	243			
1202004881-1	LCS for batch 936962	LCS	.05	pC/g	SOIL	QC ACCOUNT	17-DEC-09	23	23	0.115	244			

Choose SOP Used: GL-RAD-A-011  
 GL-RAD-A-036

Solid Sample Dissolution by: **LEACH or DIGESTION**  
 Circle One

Data Reviewed By: 

1/7/10



# Blank Correction Report

**Batch ID 936962**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202004880	DUP	Americium-241	1.26 g	-0.000796	0.00144	0.0173	.001230159	pCi/g	YES
1202004881	LCS	Americium-241	0.113 g	29.2	1.95	0.174	.013716814	pCi/g	NO
1202004879	MB	Americium-241	1.00 g	0.00155	0.00141	0.0217	.00155	pCi/g	YES
243397001	RE16-10-2842	Americium-241	1.25 g	-0.000566	0.00557	0.0214	.00124	pCi/g	YES
243397002	RE16-10-2843	Americium-241	1.25 g	-0.000793	0.00103	0.0175	.00124	pCi/g	YES
243397003	RE16-10-2841	Americium-241	1.25 g	0.0132	0.00384	0.0182	.00124	pCi/g	NO
243397004	RE16-10-2845	Americium-241	1.25 g	0.0123	0.00372	0.0184	.00124	pCi/g	NO
243397005	RE16-10-2844	Americium-241	1.26 g	0.0012	0.0011	0.0171	.001230159	pCi/g	YES
243457001	RE12-10-7553	Americium-241	1.25 g	0.00492	0.00237	0.0191	.00124	pCi/g	YES
243457002	RE12-10-7554	Americium-241	1.25 g	0.00385	0.0021	0.0193	.00124	pCi/g	YES
243457003	RE12-10-7551	Americium-241	1.25 g	0.000378	0.0011	0.0187	.00124	pCi/g	YES
243457004	RE12-10-7552	Americium-241	1.26 g	0.000268	0.00104	0.0177	.001230159	pCi/g	YES
243472001	RE03-09-14228	Americium-241	1.26 g	-0.000286	0.00153	0.026	.001230159	pCi/g	YES
243472002	RE03-09-14230	Americium-241	1.26 g	-0.000669	0.00114	0.0194	.001230159	pCi/g	YES
243472003	RE03-09-14229	Americium-241	1.26 g	-0.00078	0.00104	0.0178	.001230159	pCi/g	YES
243509001	RE16-10-2837	Americium-241	1.25 g	0.00835	0.00311	0.0192	.00124	pCi/g	NO
243509002	RE16-10-2835	Americium-241	1.26 g	0.00867	0.00306	0.0178	.001230159	pCi/g	NO
243509003	RE16-10-2838	Americium-241	1.25 g	0.000209	0.00102	0.0173	.00124	pCi/g	YES
243555001	WST21-10-9933	Americium-241	1.25 g	-0.000648	0.00321	0.020	.00124	pCi/g	YES
243555002	WST21-10-9931	Americium-241	1.26 g	0.0572	0.00874	0.0186	.001230159	pCi/g	NO
243611001	RE16-10-2858	Americium-241	1.26 g	0.000287	0.00105	0.0179	.001230159	pCi/g	YES
243611002	RE16-10-2852	Americium-241	1.26 g	0.00972	0.00324	0.0178	.001230159	pCi/g	NO
243611003	RE16-10-2857	Americium-241	1.26 g	0.00357	0.00197	0.0183	.001230159	pCi/g	YES



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936962  
SAMPLE DATE : 17-DEC-2009 00:00:00

SAMPLE ID : S0243397005\_AM  
SAMPLE QTY: 1.255 G

DETECTOR NUMBER :79419  
AVERAGE %EFFICIENCY :37.3342  
% YIELD : 95.537

COUNT DATE: 6-JAN-2010 18:20:28  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91660 dpm  
RESULTS : 2.78644 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B226.CNF;66  
BKG DATE : 3-JAN-2010  
EFF FILE : W226.CNF;24  
CAL DATE : 28-DEC-2009

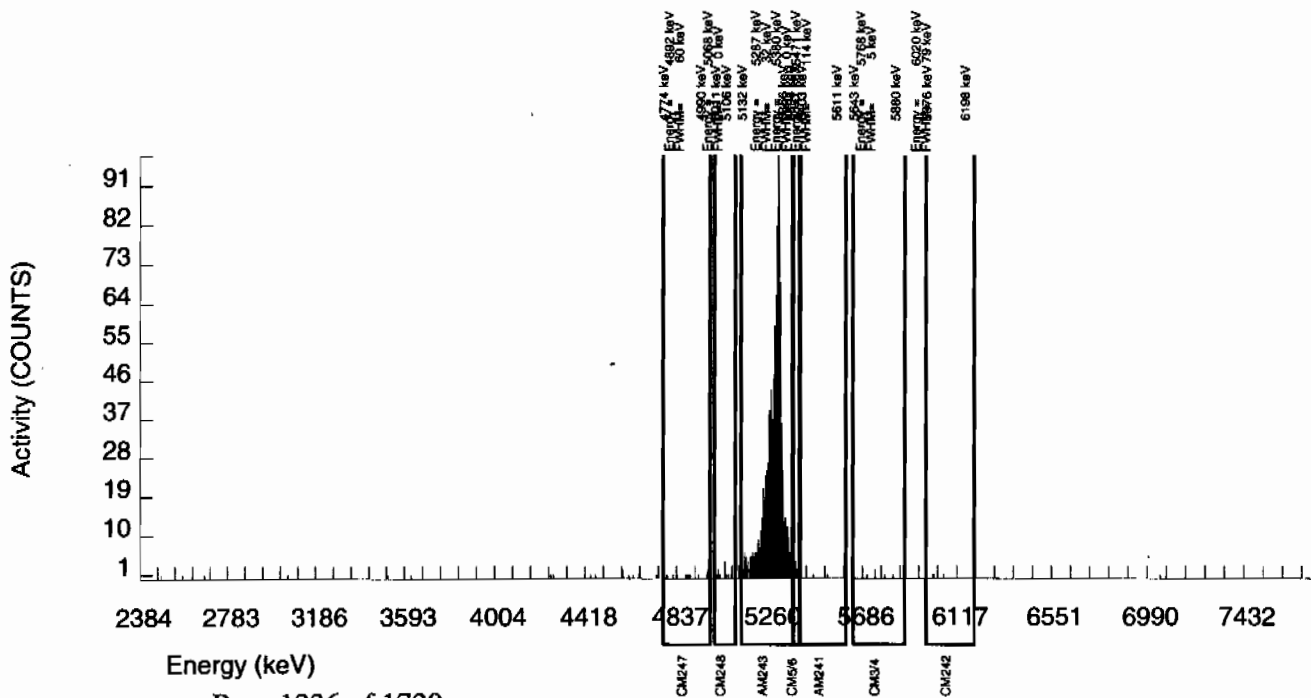
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	5.000	5.000	0.000	5.2338	100.0000	5.04E-03	2.27E-03	1.23E-02	2.72E-02	2.26E-03
CM-5/6	5386.000	23.000	23.000	0.000	19.8463	86.09000	2.69E-02	5.82E-03	5.40E-02	1.11E-01	5.61E-03
AM-241	5479.150	3.000	1.193	0.000	3.0704	99.94000	1.20E-03	1.10E-03	7.19E-03	1.71E-02	1.10E-03
CM-242	6102.000	4.000	4.000	0.000	4.3186	100.0000	4.40E-03	2.22E-03	1.01E-02	2.29E-02	2.20E-03
AM243	5270.000	1038.000	1038.000	0.000	0.0000	99.78000	1.05E+00	6.90E-02	0.00E+00	2.73E-03	3.25E-02
CM-247	4946.000	15.000	13.000	2.000	15.3366	79.30000	1.65E-02	5.32E-03	4.53E-02	9.40E-02	5.23E-03
CM-248	5078.600	16.000	16.000	0.000	22.1555	91.00000	1.77E-02	4.54E-03	5.70E-02	1.17E-01	4.42E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936962 SAMPLE DATE : 18-DEC-2009 00:00:00		SAMPLE ID : S0243457001_AM SAMPLE QTY: 1.252 G	
DETECTOR NUMBER :79420 AVERAGE %EFFICIENCY :38.4824 % YIELD : 83.221		COUNT DATE: 6-JAN-2010 18:20:30 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91660 dpm RESULTS : 2.42724 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B227.CNF;66 BKG DATE : 3-JAN-2010 EFF FILE : W227.CNF;24 CAL DATE : 28-DEC-2009

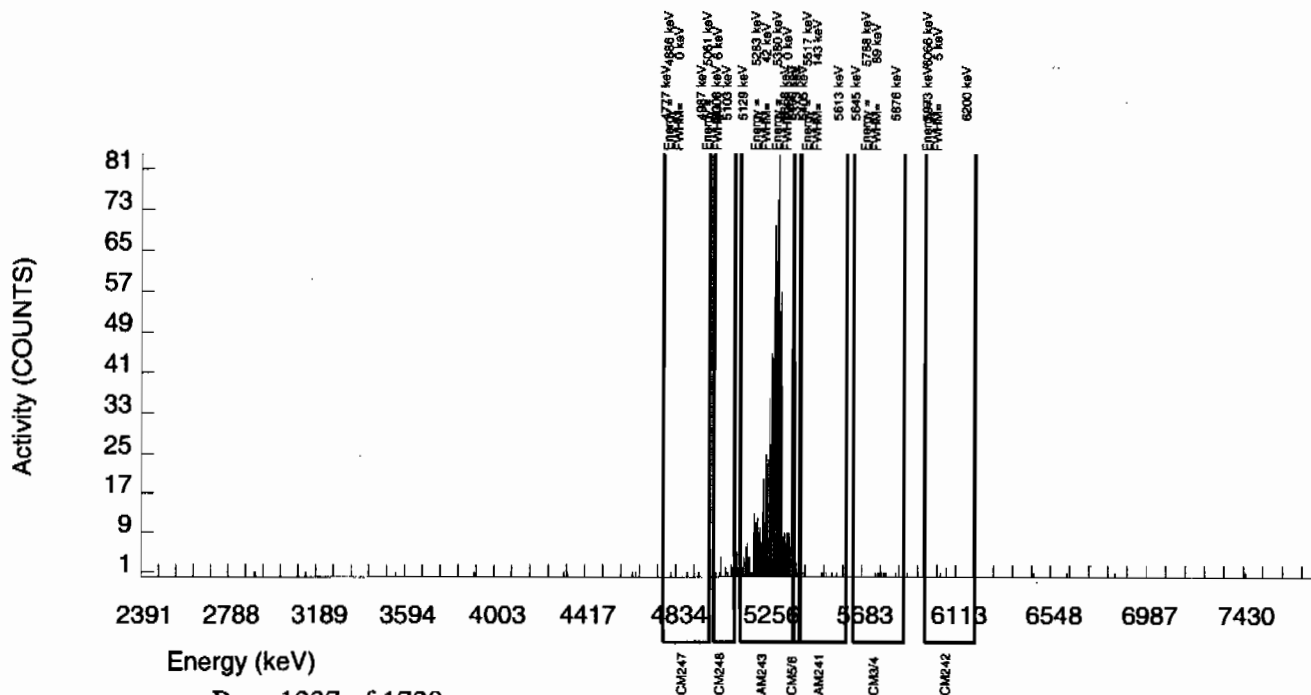
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	6.000	6.000	0.000	5.2338	100.0000	6.75E-03	2.79E-03	1.37E-02	3.04E-02	2.76E-03
CM-5/6	5386.000	20.000	20.000	0.000	19.8463	86.09000	2.61E-02	6.04E-03	6.02E-02	1.24E-01	5.84E-03
AM-241	5479.150	6.000	4.378	0.000	3.0704	99.94000	4.92E-03	2.37E-03	8.03E-03	1.91E-02	2.35E-03
CM-242	6102.000	3.000	3.000	0.000	4.3186	100.0000	3.67E-03	2.13E-03	1.13E-02	2.56E-02	2.12E-03
AM243	5270.000	932.000	932.000	0.000	0.0000	99.78000	1.05E+00	7.09E-02	0.00E+00	3.05E-03	3.44E-02
CM-247	4946.000	5.000	5.000	0.000	15.3366	79.30000	7.08E-03	3.20E-03	5.05E-02	1.05E-01	3.17E-03
CM-248	5078.600	14.000	13.000	1.000	22.1555	91.00000	1.60E-02	4.87E-03	6.36E-02	1.31E-01	4.78E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936962  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S0243457002\_AM  
SAMPLE QTY: 1.252 G

DETECTOR NUMBER :79421  
AVERAGE %EFFICIENCY :36.8770  
% YIELD : 86.099

COUNT DATE: 6-JAN-2010 18:20:33  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91660 dpm  
RESULTS : 2.51116 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B228.CNF;66  
BKG DATE : 3-JAN-2010  
EFF FILE : W228.CNF;24  
CAL DATE : 28-DEC-2009

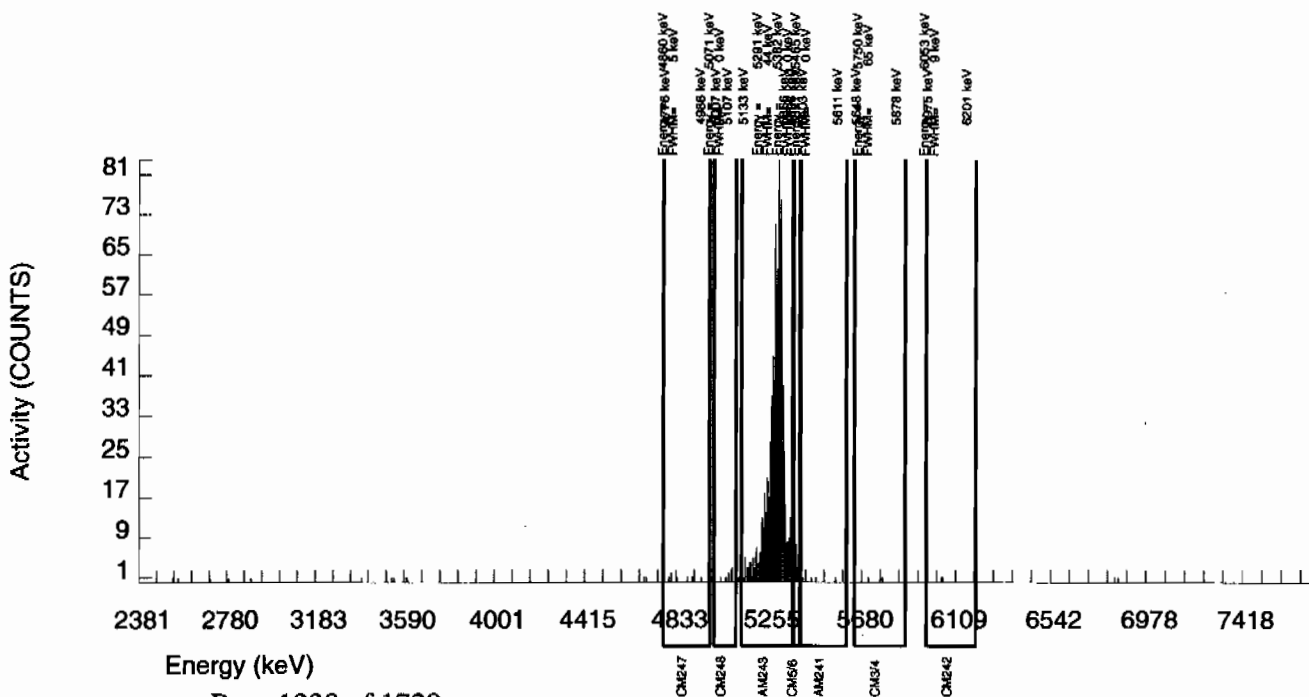
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	2.000	2.000	0.000	5.2338	100.0000	2.27E-03	1.61E-03	1.38E-02	3.07E-02	1.61E-03
CM-5/6	5386.000	33.000	33.000	0.000	19.8463	86.09000	4.34E-02	7.99E-03	6.08E-02	1.25E-01	7.56E-03
AM-241	5479.150	5.000	3.392	0.000	3.0704	99.94000	3.85E-03	2.10E-03	8.10E-03	1.93E-02	2.09E-03
CM-242	6102.000	2.000	2.000	0.000	4.3186	100.0000	2.47E-03	1.75E-03	1.14E-02	2.58E-02	1.75E-03
AM243	5270.000	925.000	924.000	1.000	1.0000	99.78000	1.05E+00	7.10E-02	2.64E-03	8.36E-03	3.46E-02
CM-247	4946.000	9.000	8.000	1.000	15.3366	79.30000	1.14E-02	4.57E-03	5.10E-02	1.06E-01	4.52E-03
CM-248	5078.600	15.000	15.000	0.000	22.1555	91.00000	1.87E-02	4.95E-03	6.42E-02	1.32E-01	4.82E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936962  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S0243457003\_AM  
SAMPLE QTY: 1.251 G

DETECTOR NUMBER :79422  
AVERAGE %EFFICIENCY :37.2913  
% YIELD : 87.723

COUNT DATE: 6-JAN-2010 18:20:36  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_AM.N
ID : 0244-B	ID : 0244-B	ID : 445-96-2-SS	BKG FILE : B229.CNF;66
ISOTOPE : AM-241	ISOTOPE : AM-241	ISOTOPE : AM243	BKG DATE : 3-JAN-2010
PCI/G : 3.316E+01	PCI/G : 3.316E+01	NOMINAL : 2.91660 dpm	EFF FILE : W229.CNF;24
		RESULTS : 2.55852 dpm	CAL DATE : 28-DEC-2009

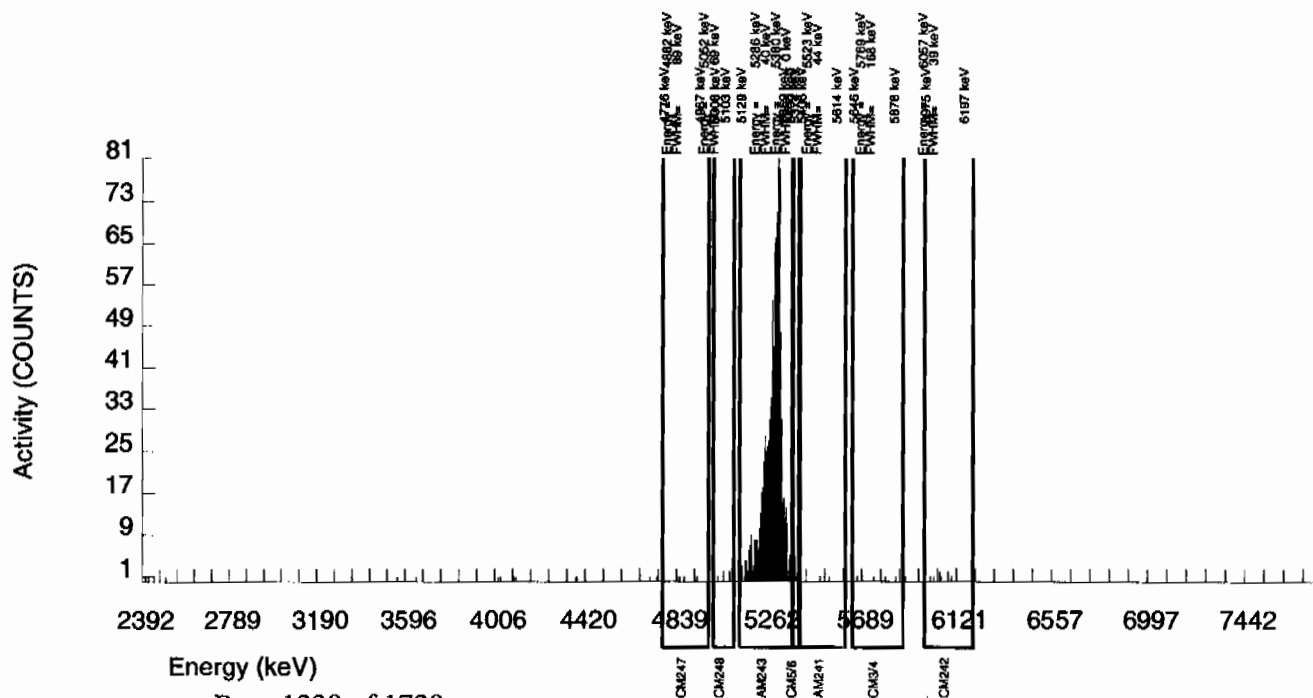
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	4.000	4.000	0.000	5.2338	100.0000	4.41E-03	2.22E-03	1.34E-02	2.98E-02	2.21E-03
CM-5/6	5386.000	25.000	25.000	0.000	19.8463	86.09000	3.20E-02	6.66E-03	5.90E-02	1.22E-01	6.39E-03
AM-241	5479.150	2.000	0.343	0.000	3.0704	99.94000	3.78E-04	1.10E-03	7.87E-03	1.87E-02	1.10E-03
CM-242	6102.000	9.000	9.000	0.000	4.3186	100.0000	1.08E-02	3.65E-03	1.11E-02	2.51E-02	3.60E-03
AM243	5270.000	952.000	952.000	0.000	0.0000	99.78000	1.05E+00	7.05E-02	0.00E+00	2.99E-03	3.40E-02
CM-247	4946.000	4.000	3.000	1.000	15.3366	79.30000	4.16E-03	3.11E-03	4.95E-02	1.03E-01	3.10E-03
CM-248	5078.600	7.000	6.000	1.000	22.1555	91.00000	7.26E-03	3.45E-03	6.23E-02	1.28E-01	3.42E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936962  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S0243457004\_AM  
SAMPLE QTY: 1.259 G

DETECTOR NUMBER :79423  
AVERAGE %EFFICIENCY :37.6072  
% YIELD : 91.463

COUNT DATE: 6-JAN-2010 18:20:39  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91660 dpm  
RESULTS : 2.66761 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B230.CNF;66  
BKG DATE : 3-JAN-2010  
EFF FILE : W230.CNF;24  
CAL DATE : 28-DEC-2009

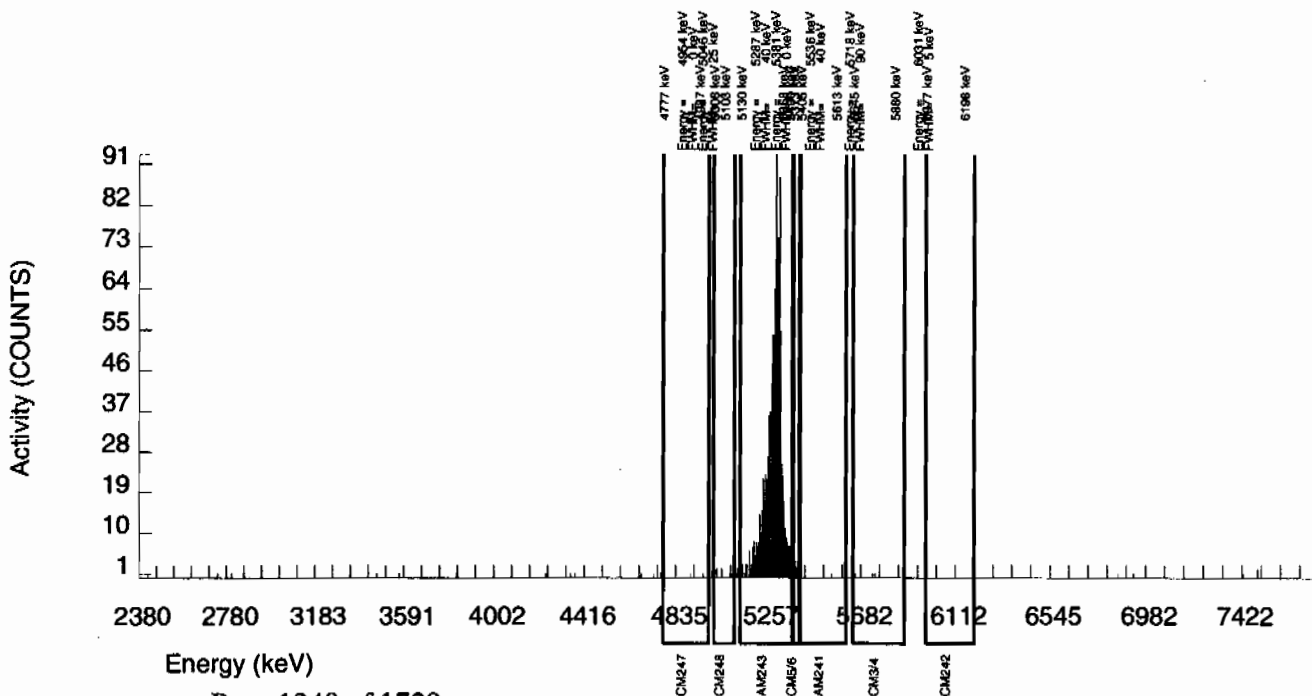
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	3.000	2.000	1.000	5.2338	100.0000	2.08E-03	2.09E-03	1.27E-02	2.81E-02	2.08E-03
CM-5/6	5386.000	22.000	22.000	0.000	19.8463	86.09000	2.66E-02	5.88E-03	5.58E-02	1.15E-01	5.67E-03
AM-241	5479.150	2.000	0.258	0.000	3.0704	99.94000	2.68E-04	1.04E-03	7.43E-03	1.77E-02	1.04E-03
CM-242	6102.000	1.000	1.000	0.000	4.3186	100.0000	1.13E-03	1.14E-03	1.05E-02	2.37E-02	1.13E-03
AM243	5270.000	1001.000	1001.000	0.000	0.0000	99.78000	1.04E+00	6.93E-02	0.00E+00	2.83E-03	3.30E-02
CM-247	4946.000	3.000	3.000	0.000	15.3366	79.30000	3.94E-03	2.28E-03	4.68E-02	9.72E-02	2.27E-03
CM-248	5078.600	8.000	7.000	1.000	22.1555	91.00000	8.00E-03	3.46E-03	5.89E-02	1.21E-01	3.43E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936962 SAMPLE DATE : 4-JAN-2010 00:00:00.			SAMPLE ID : S1202004879_AM SAMPLE QTY: 1.000 G		
DETECTOR NUMBER :79435 AVERAGE %EFFICIENCY :38.1437 % YIELD : 92.519			COUNT DATE: 6-JAN-2010 18:21:13 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1		
MS/MSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	LCS/LCSD ID : 0244-B ISOTOPE : AM-241 PCI/G : 3.316E+01	TRACER ID : 445-96-2-SS ISOTOPE : AM243 NOMINAL : 2.91659 dpm RESULTS : 2.69839 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B242.CNF;66 BKG DATE : 3-JAN-2010 EFF FILE : W242.CNF;24 CAL DATE : 28-DEC-2009		

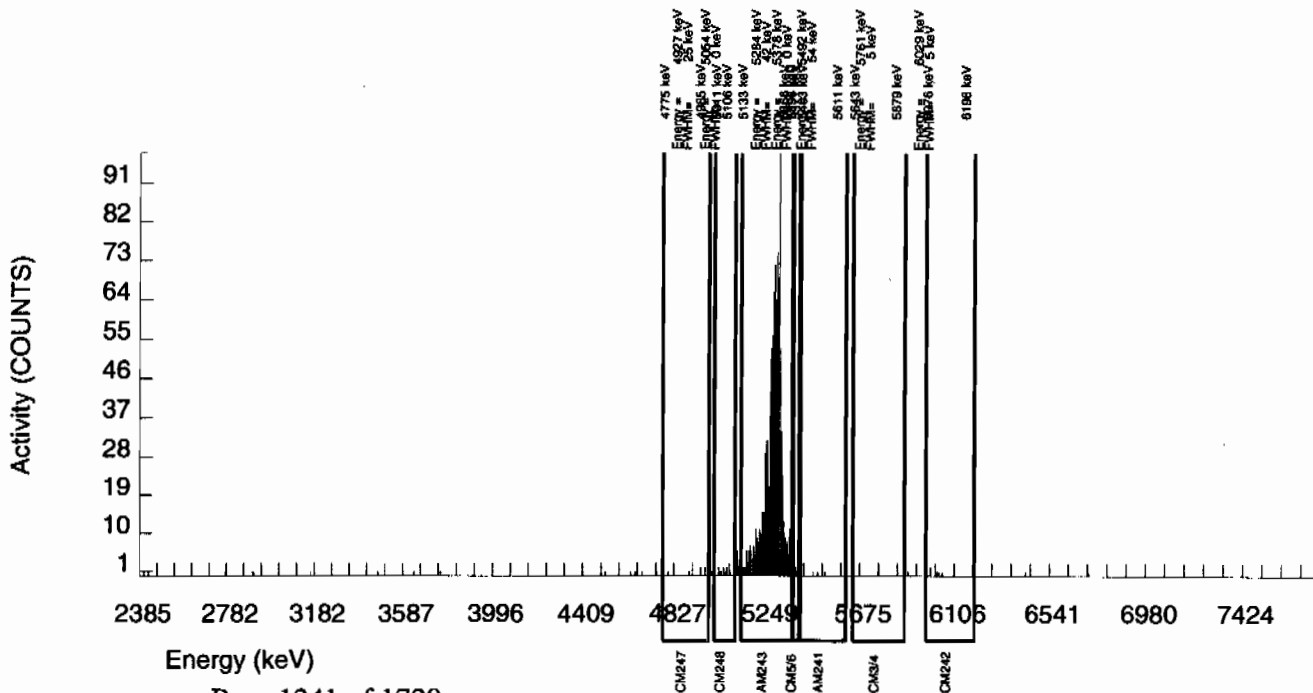
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	1.000	0.000	1.000	5.2338	100.0000	0.00E+00	1.81E-03	1.55E-02	3.45E-02	1.81E-03
CM-5/6	5386.000	16.000	16.000	0.000	19.8463	86.09000	2.37E-02	6.09E-03	6.85E-02	1.41E-01	5.93E-03
AM-241	5479.150	3.000	1.213	0.000	3.0704	99.94000	1.55E-03	1.41E-03	9.12E-03	2.17E-02	1.41E-03
CM-242	6102.000	6.000	6.000	0.000	4.3186	100.0000	7.76E-03	3.20E-03	1.28E-02	2.91E-02	3.17E-03
AM243	5270.000	1028.000	1027.000	1.000	1.0000	99.78000	1.31E+00	8.69E-02	2.98E-03	9.42E-03	4.10E-02
CM-247	4946.000	6.000	6.000	0.000	15.3366	79.30000	9.66E-03	3.98E-03	5.74E-02	1.19E-01	3.94E-03
CM-248	5078.600	15.000	15.000	0.000	22.1555	91.00000	2.10E-02	5.57E-03	7.23E-02	1.48E-01	5.43E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity





**GEL Laboratories LLC**  
**ALPHA SPECTROSCOPY REPORT**

BATCH NUMBER: 936962  
SAMPLE DATE : 17-DEC-2009 00:00:00

SAMPLE ID : S1202004880\_AM  
SAMPLE QTY: 1.260 G

DETECTOR NUMBER :79436  
AVERAGE %EFFICIENCY :37.2411  
% YIELD : 94.576

COUNT DATE: 6-JAN-2010 18:21:15  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91660 dpm  
RESULTS : 2.75841 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B243.CNF;66  
BKG DATE : 3-JAN-2010  
EFF FILE : W243.CNF;24  
CAL DATE : 28-DEC-2009

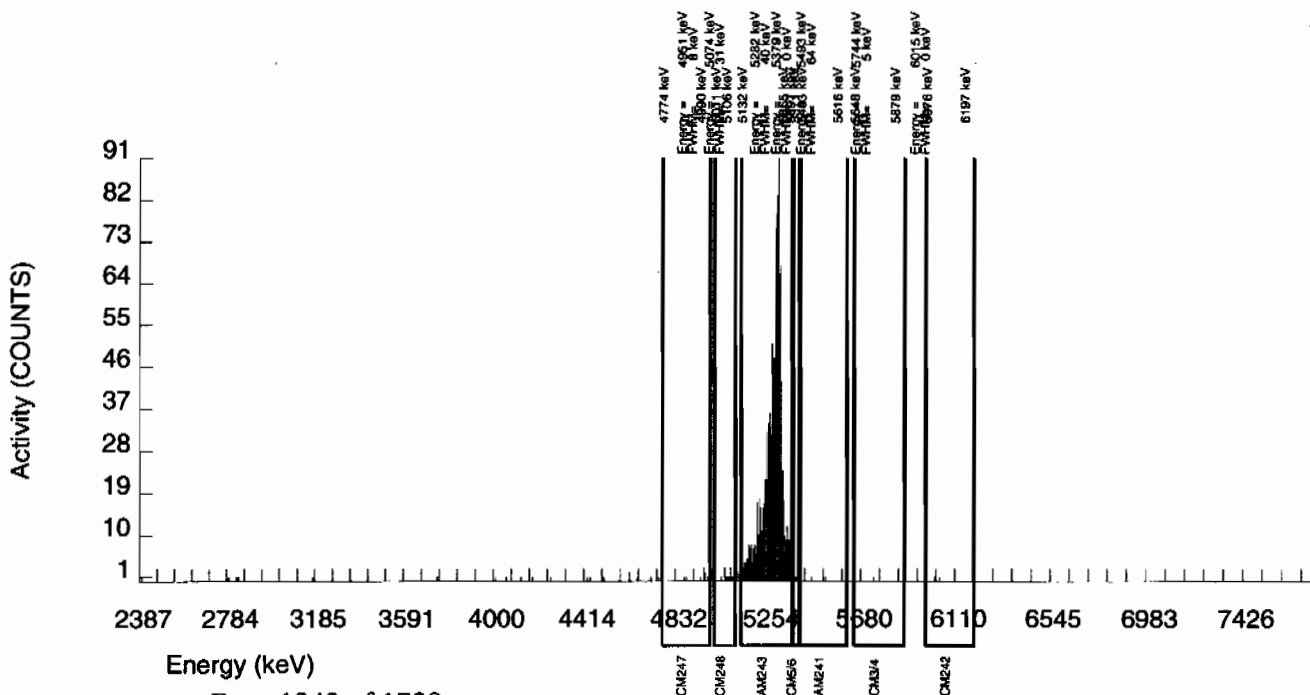
## NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	1.000	0.000	1.000	5.2338	100.0000	0.00E+00	1.44E-03	1.24E-02	2.75E-02	1.44E-03
CM-5/6	5386.000	20.000	20.000	0.000	19.8463	86.09000	2.36E-02	5.46E-03	5.44E-02	1.12E-01	5.27E-03
AM-241	5479.150	2.000	-0.784	1.000	3.0704	99.94000	-7.96E-04	1.44E-03	7.25E-03	1.73E-02	1.44E-03
CM-242	6102.000	3.000	3.000	0.000	4.3186	100.0000	3.33E-03	1.93E-03	1.02E-02	2.31E-02	1.92E-03
AM243	5270.000	1027.000	1025.000	2.000	1.4142	99.78000	1.04E+00	7.05E-02	3.35E-03	9.45E-03	3.26E-02
CM-247	4946.000	9.000	7.000	2.000	15.3366	79.30000	8.96E-03	4.28E-03	4.57E-02	9.48E-02	4.25E-03
CM-248	5078.600	14.000	14.000	0.000	22.1555	91.00000	1.56E-02	4.28E-03	5.75E-02	1.18E-01	4.17E-03

**NOTE: Sg calculated via blank population (updated 5-JAN-2010)**

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936962  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S1202004881\_AM  
SAMPLE QTY: 0.113 G

DETECTOR NUMBER :79437  
AVERAGE %EFFICIENCY :37.3769  
% YIELD : 103.978

COUNT DATE: 6-JAN-2010 18:21:18  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : AM-241  
PCI/G : 3.316E+01

TRACER  
ID : 445-96-2-SS  
ISOTOPE : AM243  
NOMINAL : 2.91659 dpm  
RESULTS : 3.03260 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B244.CNF;66  
BKG DATE : 3-JAN-2010  
EFF FILE : W244.CNF;24  
CAL DATE : 28-DEC-2009

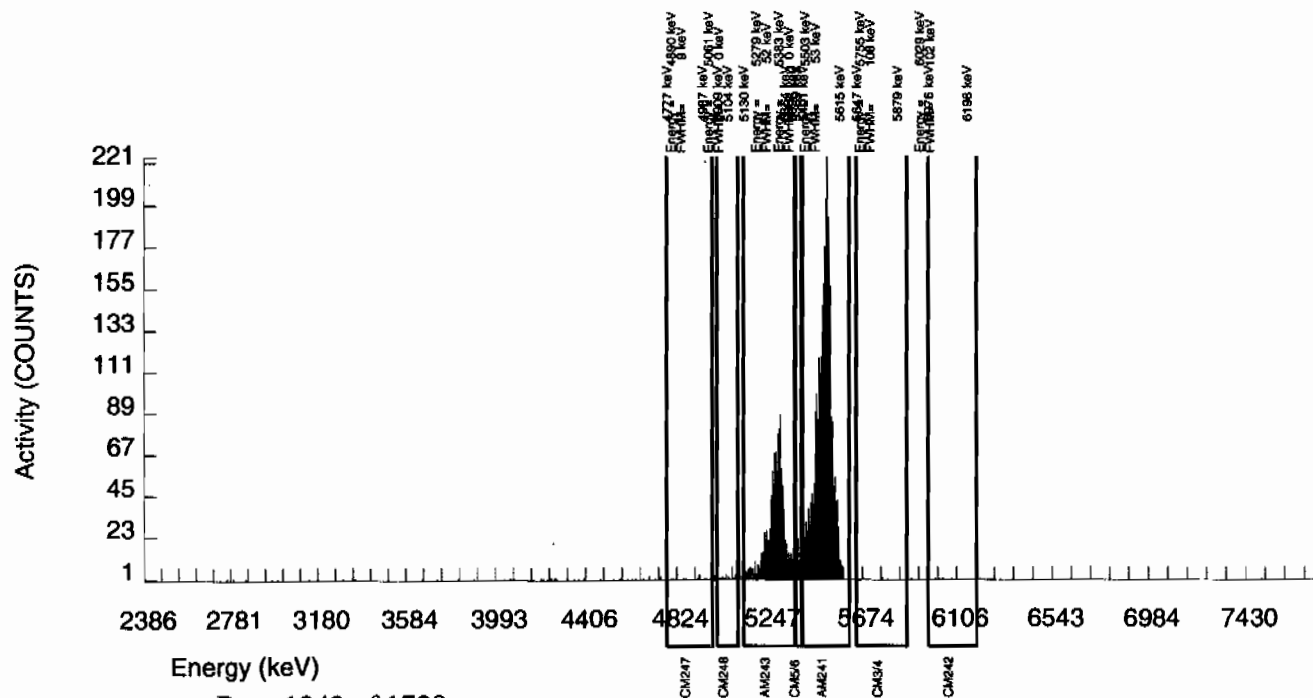
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	4.000	4.000	0.000	5.2338	100.0000	4.10E-02	2.07E-02	1.25E-01	2.78E-01	2.05E-02
CM-5/6	5386.000	87.000	87.000	0.000	19.8463	86.09000	1.04E+00	1.29E-01	5.50E-01	1.13E+00	1.11E-01
AM-241	5479.150	2850.000	2847.031	1.000	3.0704	99.94000	2.92E+01	1.95E+00	7.33E-02	1.74E-01	5.48E-01
CM-242	6102.000	7.000	7.000	0.000	4.3186	100.0000	7.28E-02	2.79E-02	1.03E-01	2.34E-01	2.75E-02
AM243	5270.000	1131.000	1131.000	0.000	0.0000	99.78000	1.16E+01	8.22E-01	0.00E+00	2.79E-02	3.46E-01
CM-247	4946.000	16.000	16.000	0.000	15.3366	79.30000	2.07E-01	5.34E-02	4.61E-01	9.58E-01	5.17E-02
CM-248	5078.600	24.000	24.000	0.000	22.1555	91.00000	2.71E-01	5.79E-02	5.81E-01	1.19E+00	5.52E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity





# Radiochemistry Batch Checklist, Rev 9

Batch# 936975 Product: V Date: 1/7/10

Critera:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10" MDA/ MDC, error is 150% or less of sample activity. If greater 10" MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLO has been met.	✓		
If duplicate activities are less 5" MDA/ MDC, then RPD is 100% or less. If greater 5" MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance critera.			
Tracer yield is 10-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance critera.	✓		
Method blank is less than the RDL/ LLO.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance critera.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly stored.	✓		
QC data entered into QC databases and batch is in REVW	✓		
Ht notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch non-conformances completed, if applicable.			N/A
Batch non-conformances ascend reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (if REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

revised 8/1/08

Primary Review Performed By:

J. L. L. - 1/7/10

Secondary Review Performed By:

E. [Signature] 1/7/10

1/4 1/14

LANL



# Uranium Que Sheet

04-JAN-10

Batch #: 936975 Analyst: MXE1 First Client Due Date: 14-JAN-10 Internal Due Date: 04-JAN-10  
 Tracer Isotope: U-232 U-236 Tracer Code: 1/8/6-H Expiration Date: 12/4/10 Vol: 0.1  
 LCS Isotope: U-238 LCS Code: 0/244-H Expiration Date: 10/31/10 Vol: 49714  
 Spike Isotope: U-238 Spike Code: N/A Expiration Date: N/A Vol: N/A  
 Prep Date: 1/4/10 Initials: KAN Pipet ID: 281188 Balance ID: 20410714  
 Witness: 1/4/10 me

Sample ID	Client Description	Type	Hazard Code	Mis CRDL	Matrix	Client	Collection Date	Pos.	Label #	Weight (g) (1/1)	U Det #
243397001-1	RE16-10-2842	SAMPLE		.1 pChg	SOIL	LANL010	17-DEC-09	1	1	0.515	114
243397002-1	RE16-10-2843	SAMPLE		.1 pChg	SOIL	LANL010	17-DEC-09	2	2	0.501	115
243397003-1	RE16-10-2841	SAMPLE		.1 pChg	SOIL	LANL010	17-DEC-09	3	3	0.511	117
243397004-1	RE16-10-2845	SAMPLE		.1 pChg	SOIL	LANL010	17-DEC-09	4	4	0.514	118
243397005-1	RE16-10-2844	SAMPLE		.1 pChg	SOIL	LANL010	17-DEC-09	5	5	0.511	121
243457001-1	RE12-10-7553	SAMPLE		.1 pChg	SOIL	LANL010	18-DEC-09	6	6	0.505	122
243457002-1	RE12-10-7554	SAMPLE		.1 pChg	SOIL	LANL010	18-DEC-09	7	7	0.511	123
243457003-1	RE12-10-7551	SAMPLE		.1 pChg	SOIL	LANL010	18-DEC-09	8	8	0.510	124
243457004-1	RE12-10-7552	SAMPLE		.1 pChg	SOIL	LANL010	18-DEC-09	9	9	0.514	128
243472001-1	RE03-09-14228	SAMPLE		.1 pChg	SOIL	LANL010	21-DEC-09	10	10	0.501	129
243472002-1	RE03-09-14236	SAMPLE		.1 pChg	SOIL	LANL010	21-DEC-09	11	11	0.500	130
243472003-1	RE03-09-14229	SAMPLE		.1 pChg	SOIL	LANL010	21-DEC-09	12	12	0.507	132
243509001-1	RE16-10-2837	SAMPLE		.1 pChg	SOIL	LANL010	18-DEC-09	13	13	0.506	133
243509002-1	RE16-10-2835	SAMPLE		.1 pChg	SOIL	LANL010	18-DEC-09	14	14	0.511	134
243509003-1	RE16-10-2838	SAMPLE		.1 pChg	SOIL	LANL010	18-DEC-09	15	15	0.500	152
243555001-1	WFF01-10-0903	SAMPLE		.1 pChg	SOIL	LANL010	22-DEC-09	16	16	0.500	153
243555002-1	WFF01-10-0901	SAMPLE		.1 pChg	SOIL	LANL010	22-DEC-09	17	17	0.505	154
243511001-1	RE16-10-2838	SAMPLE		.1 pChg	SOIL	LANL010	22-DEC-09	18	18	0.514	165
243511002-1	RE16-10-2852	SAMPLE		.1 pChg	SOIL	LANL010	22-DEC-09	19	19	0.514	166
243511003-1	RE16-10-2857	SAMPLE		.1 pChg	SOIL	LANL010	22-DEC-09	20	20	0.505	170
1202004921-1	MB for batch 936975	MB		.1 pChg	SOIL	QC ACCOUNT		21	21	0.505	171
1202004922-1	RE16-10-2844(24337005DIU)	DUP		.1 pChg	SOIL	QC ACCOUNT		22	22	0.510	172
1202004923-1	LCS for batch 936975	LCS		.1 pChg	SOIL	QC ACCOUNT		23	23	0.101	167

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION

Data Reviewed By: JPL M.F. - 1/7/10



# Blank Correction Report

Batch ID 936975

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202004822	DUP	Uranium-233/234	0.510 g	0.332	0.0361	0.0729	.011725480	pCi/g	NO
		Uranium-235/236	0.510 g	0.0233	0.00838	0.0463	.005568827	pCi/g	YES
		Uranium-238	0.510 g	0.339	0.0368	0.0423	.011254902	pCi/g	NO
1202004823	LCS	Uranium-233/234	0.102 g	6.27	0.540	0.369	.058627451	pCi/g	NO
		Uranium-235/236	0.102 g	0.372	0.0781	0.223	.027843137	pCi/g	NO
		Uranium-238	0.102 g	5.51	0.484	0.208	.058274610	pCi/g	NO
1202004821	MB	Uranium-233/234	1.00 g	0.00598	0.00419	0.0356	.00598	pCi/g	YES
		Uranium-235/236	1.00 g	0.00284	0.00284	0.0221	.00284	pCi/g	YES
		Uranium-238	1.00 g	0.00574	0.00383	0.0208	.00574	pCi/g	YES
243397001	RE16-10-2842	Uranium-233/234	0.515 g	0.242	0.0344	0.111	.011611650	pCi/g	NO
		Uranium-235/236	0.515 g	0.0221	0.0118	0.0887	.005514563	pCi/g	YES
		Uranium-238	0.515 g	0.286	0.0381	0.0642	.011145631	pCi/g	NO
243397002	RE16-10-2843	Uranium-233/234	0.502 g	0.307	0.0399	0.111	.011912351	pCi/g	NO
		Uranium-235/236	0.502 g	0.0177	0.0109	0.0889	.005657371	pCi/g	YES
		Uranium-238	0.502 g	0.286	0.0382	0.0644	.011434263	pCi/g	NO
243397003	RE16-10-2841	Uranium-233/234	0.511 g	0.681	0.0698	0.115	.011702544	pCi/g	NO
		Uranium-235/236	0.511 g	0.0366	0.0147	0.0712	.005557730	pCi/g	NO
		Uranium-238	0.511 g	0.740	0.0744	0.0865	.011232877	pCi/g	NO
243397004	RE16-10-2845	Uranium-233/234	0.514 g	0.814	0.0849	0.141	.011634241	pCi/g	NO
		Uranium-235/236	0.514 g	0.0608	0.0173	0.0875	.005525292	pCi/g	NO
		Uranium-238	0.514 g	0.784	0.081	0.0817	.011167315	pCi/g	NO
243397005	RE16-10-2844	Uranium-233/234	0.511 g	0.406	0.0483	0.113	.011702544	pCi/g	NO
		Uranium-235/236	0.511 g	0.0271	0.0144	0.0703	.005557730	pCi/g	YES
		Uranium-238	0.511 g	0.406	0.0483	0.0657	.011232877	pCi/g	NO
243457001	RE12-10-7553	Uranium-233/234	0.505 g	1.52	0.131	0.113	.011841584	pCi/g	NO
		Uranium-235/236	0.505 g	0.0994	0.0223	0.0703	.005823762	pCi/g	NO
		Uranium-238	0.505 g	1.98	0.184	0.0657	.011388337	pCi/g	NO
243457002	RE12-10-7554	Uranium-233/234	0.501 g	0.332	0.0428	0.115	.011936128	pCi/g	NO
		Uranium-235/236	0.501 g	0.0137	0.00797	0.0711	.005688663	pCi/g	YES
		Uranium-238	0.501 g	0.365	0.044	0.0864	.011457086	pCi/g	NO
243457003	RE12-10-7551	Uranium-233/234	0.510 g	1.43	0.125	0.115	.011725490	pCi/g	NO
		Uranium-235/236	0.510 g	0.0414	0.0141	0.0718	.005568827	pCi/g	NO
		Uranium-238	0.510 g	1.47	0.128	0.0699	.011254902	pCi/g	NO
243457004	RE12-10-7552	Uranium-233/234	0.512 g	0.452	0.0525	0.117	.011679888	pCi/g	NO
		Uranium-235/236	0.512 g	0.0186	0.00941	0.0725	.005548675	pCi/g	YES
		Uranium-238	0.512 g	0.550	0.0601	0.0677	.011210838	pCi/g	NO
243472001	RE03-09-14228	Uranium-233/234	0.501 g	0.860	0.0825	0.112	.011836128	pCi/g	NO
		Uranium-235/236	0.501 g	0.0314	0.0121	0.0698	.005688663	pCi/g	NO
		Uranium-238	0.501 g	0.835	0.0807	0.0652	.011457086	pCi/g	NO
243472002	RE03-09-14230	Uranium-233/234	0.500 g	0.829	0.0809	0.116	.01196	pCi/g	NO
		Uranium-235/236	0.500 g	0.0484	0.015	0.0722	.00568	pCi/g	NO



# Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
243472002	RE03-09-14230	Uranium-238	0.500 g	0.893	0.0858	0.0675	.01148	pCi/g	NO
243472003	RE03-09-14229	Uranium-233/234	0.507 g	0.882	0.0838	0.111	.011794872	pCi/g	NO
		Uranium-235/236	0.507 g	0.0266	0.0127	0.069	.005601576	pCi/g	YES
		Uranium-238	0.507 g	0.911	0.0861	0.0645	.011321499	pCi/g	NO
243509001	RE16-10-2837	Uranium-233/234	0.506 g	0.763	0.0761	0.127	.011818182	pCi/g	NO
		Uranium-235/236	0.506 g	0.0457	0.0156	0.079	.006612648	pCi/g	NO
		Uranium-238	0.506 g	0.932	0.091	0.0738	.011343674	pCi/g	NO
243509002	RE16-10-2835	Uranium-233/234	0.511 g	0.763	0.0794	0.134	.011702644	pCi/g	NO
		Uranium-235/236	0.511 g	0.0639	0.0205	0.0829	.005667730	pCi/g	NO
		Uranium-238	0.511 g	0.879	0.0886	0.0775	.011232877	pCi/g	NO
243509003	RE16-10-2838	Uranium-233/234	0.502 g	0.463	0.0541	0.127	.011912351	pCi/g	NO
		Uranium-235/236	0.502 g	0.0151	0.00881	0.0785	.006657371	pCi/g	YES
		Uranium-238	0.502 g	0.486	0.0564	0.0734	.011434283	pCi/g	NO
243611001	RE16-10-2856	Uranium-233/234	0.512 g	0.619	0.0587	0.0615	.011679668	pCi/g	NO
		Uranium-235/236	0.512 g	0.026	0.00937	0.0606	.006546675	pCi/g	YES
		Uranium-238	0.512 g	0.579	0.0559	0.0473	.011210938	pCi/g	NO
243611002	RE16-10-2852	Uranium-233/234	0.514 g	0.913	0.0791	0.0794	.011634241	pCi/g	NO
		Uranium-235/236	0.514 g	0.0696	0.0156	0.0493	.006525292	pCi/g	NO
		Uranium-238	0.514 g	0.940	0.081	0.046	.011167315	pCi/g	NO
243611003	RE16-10-2857	Uranium-233/234	0.508 g	0.878	0.0776	0.0834	.011771654	pCi/g	NO
		Uranium-235/236	0.508 g	0.0432	0.0124	0.0518	.006690551	pCi/g	NO
		Uranium-238	0.508 g	1.04	0.089	0.0484	.011299213	pCi/g	NO



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936975 SAMPLE DATE : 17-DEC-2009 00:00:00		SAMPLE ID : S0243397005_UU SAMPLE QTY: 0.511 G	
DETECTOR NUMBER :75545 AVERAGE %EFFICIENCY :24.7171 % YIELD : 97.537		COUNT DATE: 6-JAN-2010 13:51:42 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.51139 dpm RESULTS : 4.40029 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B121.CNF;427 BKG DATE : 3-JAN-2010 EFF FILE : W121.CNF;115 CAL DATE : 15-DEC-2009

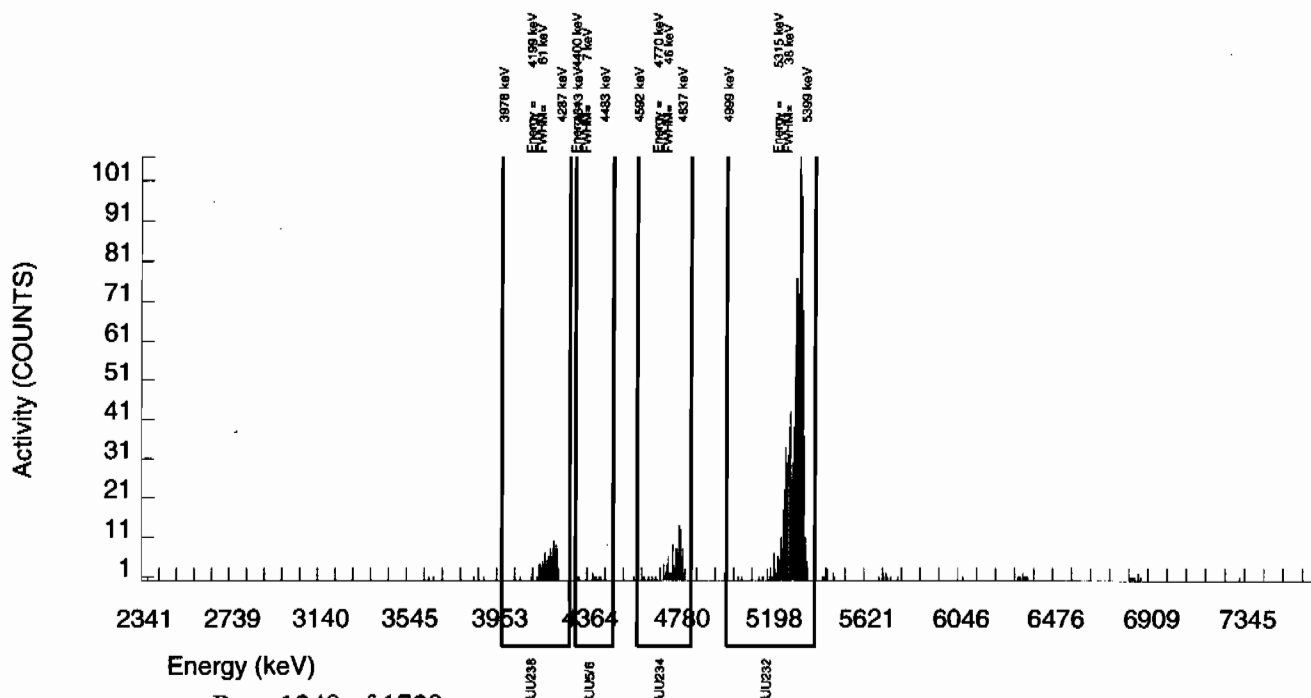
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	113.000	110.901	1.000	6.0782	100.0000	4.06E-01	4.83E-02	5.17E-02	1.13E-01	3.89E-02
U232	5302.100	1088.000	1087.000	1.000	1.0000	100.0000	3.98E+00	3.06E-01	8.51E-03	2.69E-02	1.21E-01
U-235	4391.000	8.000	6.000	2.000	2.7628	80.90000	2.71E-02	1.44E-02	2.90E-02	7.03E-02	1.43E-02
U-238	4184.730	112.000	111.000	1.000	3.2810	100.0000	4.06E-01	4.83E-02	2.79E-02	6.57E-02	3.89E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936975 SAMPLE DATE : 18-DEC-2009 00:00:00		SAMPLE ID : S0243457001_UU SAMPLE QTY: 0.505 G	
DETECTOR NUMBER :75546 AVERAGE %EFFICIENCY :25.1424 % YIELD : 97.034		COUNT DATE: 6-JAN-2010 13:51:44 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.51126 dpm RESULTS : 4.37747 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B122.CNF;429 BKG DATE : 3-JAN-2010 EFF FILE : W122.CNF;118 CAL DATE : 15-DEC-2009

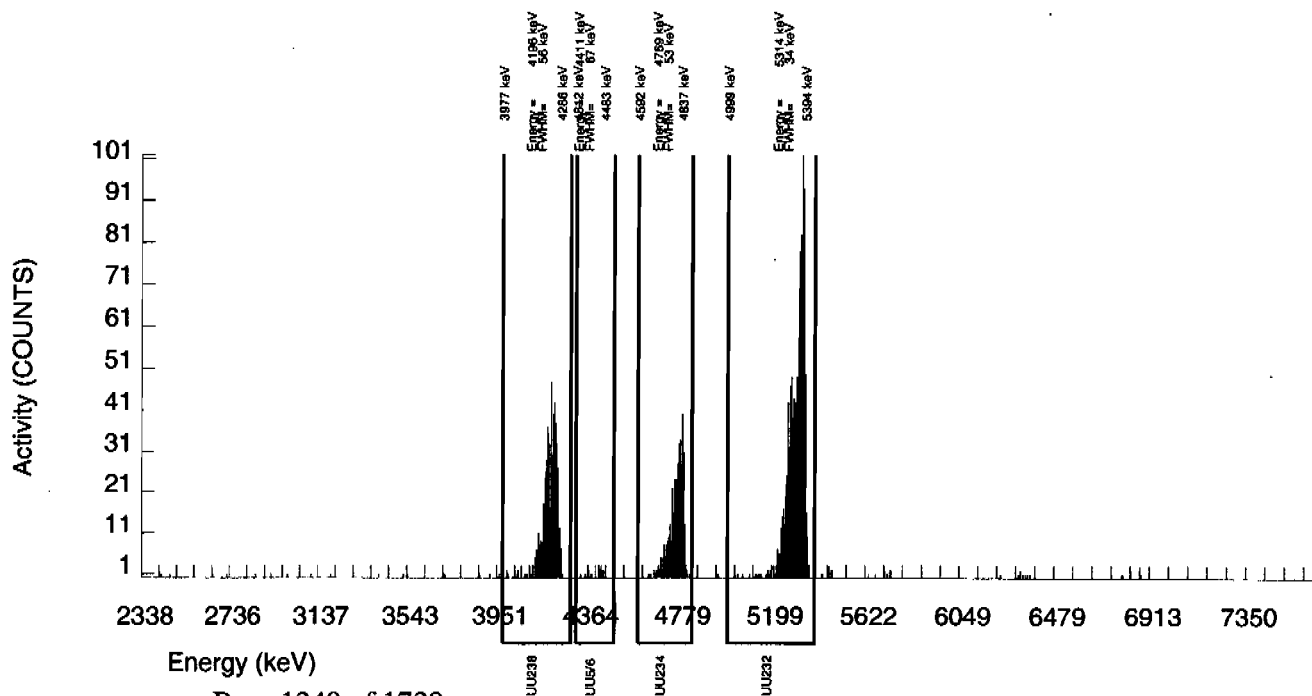
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	418.000	416.888	0.000	6.0782	100.0000	1.52E+00	1.31E-01	5.17E-02	1.13E-01	7.47E-02
U232	5302.100	1108.000	1100.000	8.000	2.8284	100.0000	4.02E+00	3.09E-01	2.41E-02	5.80E-02	1.22E-01
U-235	4391.000	22.000	22.000	0.000	2.7628	80.90000	9.94E-02	2.23E-02	2.90E-02	7.03E-02	2.12E-02
U-238	4184.730	542.000	541.000	1.000	3.2810	100.0000	1.98E+00	1.64E-01	2.79E-02	6.57E-02	8.52E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936975  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S0243457002\_UU  
SAMPLE QTY: 0.501 G

DETECTOR NUMBER :45-142V3  
AVERAGE %EFFICIENCY :25.9872  
% YIELD : 93.624

COUNT DATE: 6-JAN-2010 13:51:46  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.51126 dpm  
RESULTS : 4.22363 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B123.CNF;427  
BKG DATE : 3-JAN-2010  
EFF FILE : W123.CNF;114  
CAL DATE : 15-DEC-2009

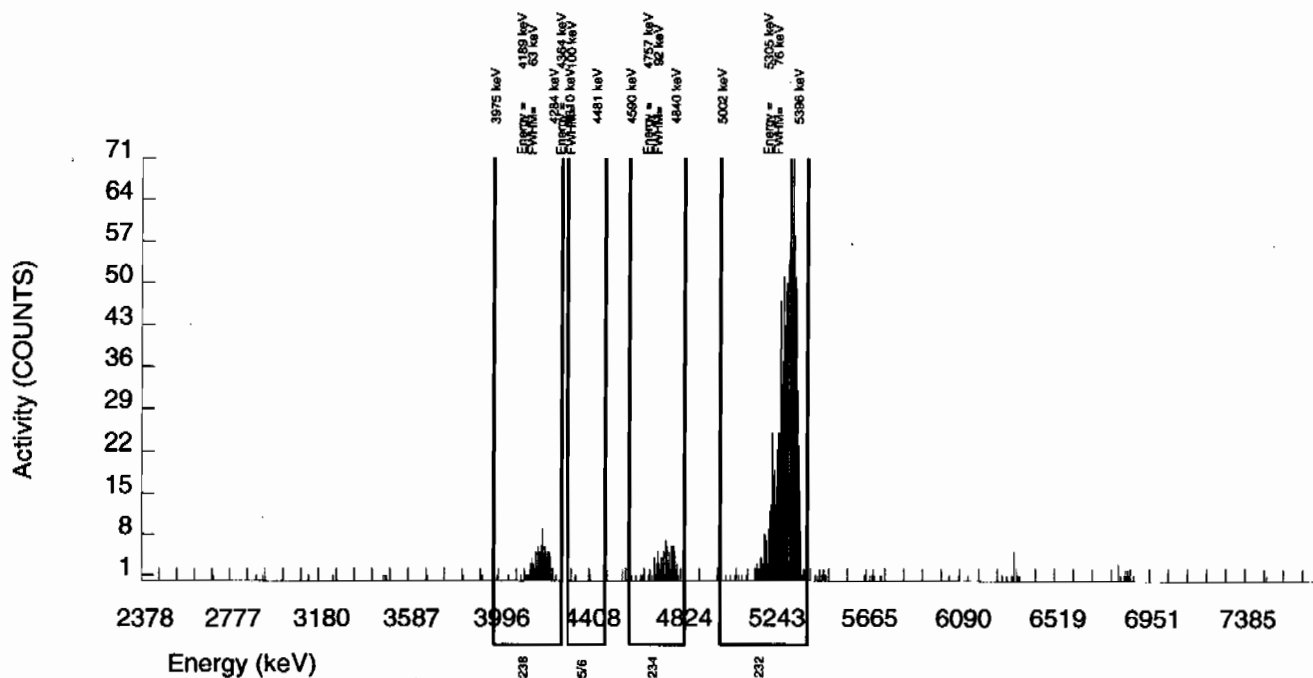
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	93.000	89.891	2.000	6.0782	100.0000	3.32E-01	4.28E-02	5.23E-02	1.15E-01	3.58E-02
U232	5302.100	1104.000	1097.000	7.000	2.6458	100.0000	4.06E+00	3.12E-01	2.27E-02	5.55E-02	1.23E-01
U-235	4391.000	3.000	3.000	0.000	2.7628	80.90000	1.37E-02	7.97E-03	2.94E-02	7.11E-02	7.91E-03
U-238	4184.730	96.000	96.000	0.000	3.2810	100.0000	3.55E-01	4.40E-02	2.82E-02	6.64E-02	3.62E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936975 SAMPLE DATE : 18-DEC-2009 00:00:00		SAMPLE ID : S0243457003_UU SAMPLE QTY: 0.510 G	
DETECTOR NUMBER :45-142V2 AVERAGE %EFFICIENCY :25.8094 % YIELD : 91.949		COUNT DATE: 6-JAN-2010 13:51:49 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.51126 dpm RESULTS : 4.14806 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B124.CNF;423 BKG DATE : 3-JAN-2010 EFF FILE : W124.CNF;110 CAL DATE : 15-DEC-2009

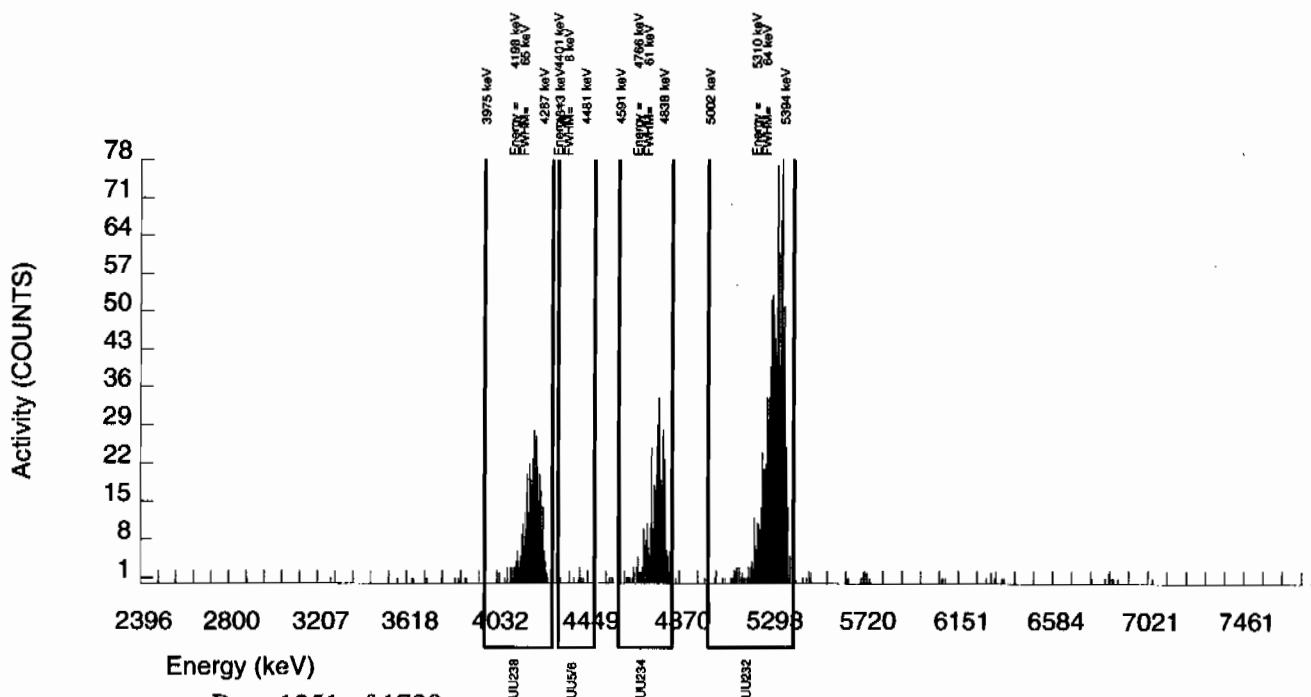
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	386.000	382.918	2.000	6.0782	100.0000	1.43E+00	1.25E-01	5.26E-02	1.15E-01	7.32E-02
U232	5302.100	1072.000	1070.000	2.000	1.4142	100.0000	3.98E+00	3.07E-01	1.22E-02	3.46E-02	1.22E-01
U-235	4391.000	9.000	9.000	0.000	2.7628	80.90000	4.14E-02	1.41E-02	2.96E-02	7.16E-02	1.38E-02
U-238	4184.730	397.000	396.000	1.000	3.2810	100.0000	1.47E+00	1.28E-01	2.84E-02	6.69E-02	7.42E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936975 SAMPLE DATE : 18-DEC-2009 00:00:00		SAMPLE ID : S0243457004_UU SAMPLE QTY: 0.512 G	
DETECTOR NUMBER :75549 AVERAGE %EFFICIENCY :25.7685 % YIELD : 90.631		COUNT DATE: 6-JAN-2010 13:51:57 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.51126 dpm RESULTS : 4.08862 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B128.CNF;442 BKG DATE : 3-JAN-2010 EFF FILE : W128.CNF;131 CAL DATE : 15-DEC-2009

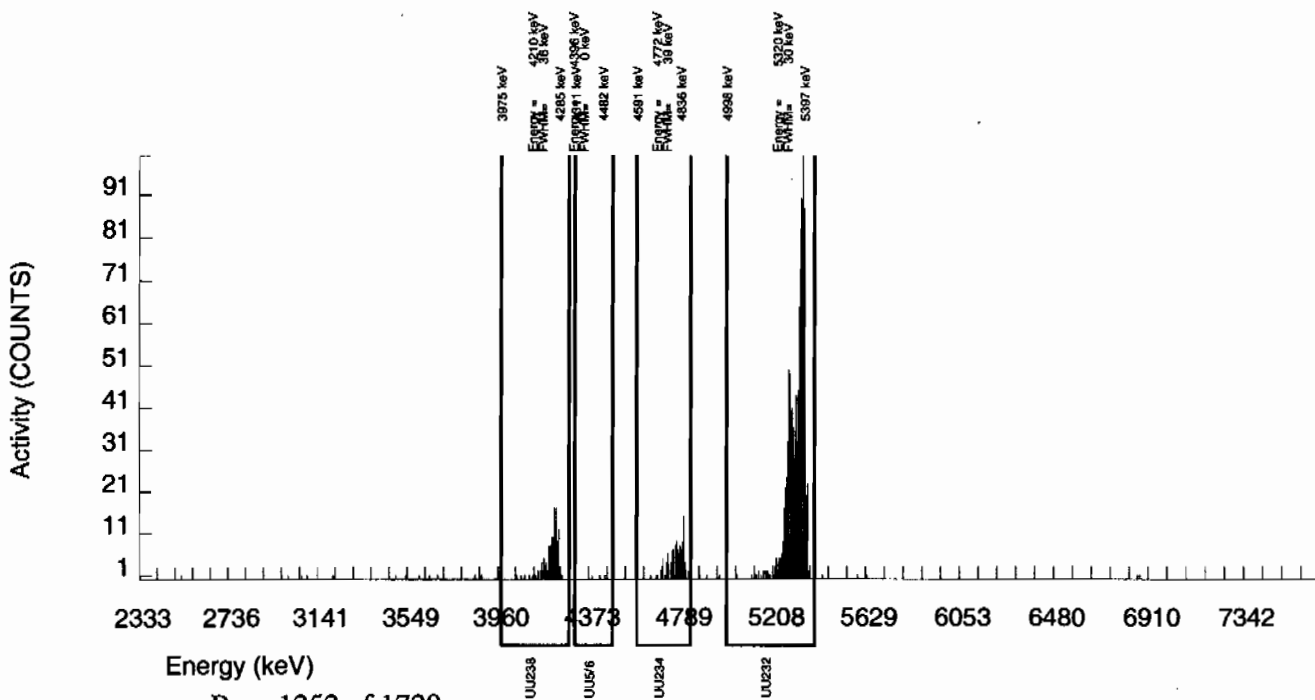
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	122.000	119.936	1.000	6.0782	100.0000	4.52E-01	5.25E-02	5.33E-02	1.17E-01	4.16E-02
U232	5302.100	1056.000	1053.000	3.000	1.7321	100.0000	3.97E+00	3.07E-01	1.52E-02	4.06E-02	1.23E-01
U-235	4391.000	4.000	4.000	0.000	2.7628	80.90000	1.86E-02	9.41E-03	2.99E-02	7.25E-02	9.31E-03
U-238	4184.730	147.000	146.000	1.000	3.2810	100.0000	5.50E-01	6.01E-02	2.88E-02	6.77E-02	4.58E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936975  
SAMPLE DATE : 4-JAN-2010 00:00:00.

SAMPLE ID : S1202004921\_UU  
SAMPLE QTY: 1.000 G

DETECTOR NUMBER :78260  
AVERAGE %EFFICIENCY :38.3524  
% YIELD : 102.299

COUNT DATE: 6-JAN-2010 10:36:02  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.50915 dpm  
RESULTS : 4.61284 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B171.CNF;163  
BKG DATE : 3-JAN-2010  
EFF FILE : W171.CNF;69  
CAL DATE : 21-DEC-2009

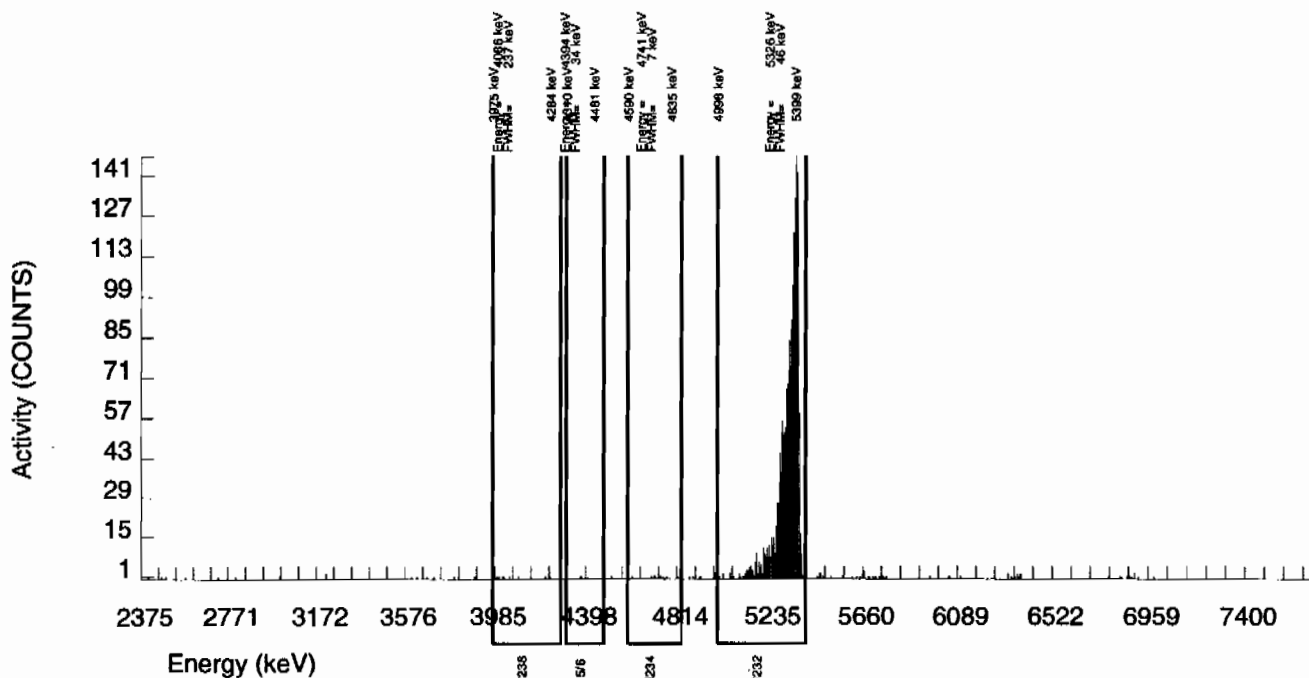
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	11.000	5.212	4.000	6.0782	100.0000	5.98E-03	4.19E-03	1.62E-02	3.56E-02	4.17E-03
U232	5302.100	1777.000	1769.000	8.000	2.8284	100.0000	2.03E+00	1.46E-01	7.55E-03	1.82E-02	4.85E-02
U-235	4391.000	3.000	2.000	1.000	2.7628	80.90000	2.84E-03	2.84E-03	9.12E-03	2.21E-02	2.84E-03
U-238	4184.730	8.000	5.000	3.000	3.2810	100.0000	5.74E-03	3.83E-03	8.76E-03	2.06E-02	3.81E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936975  
SAMPLE DATE : 17-DEC-2009 00:00:00

SAMPLE ID : S1202004922\_UU  
SAMPLE QTY: 0.510 G

DETECTOR NUMBER :78772  
AVERAGE %EFFICIENCY :38.4140  
% YIELD : 97.747

COUNT DATE: 6-JAN-2010 10:36:03  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

LCS/LCSD  
ID : 0244-A  
ISOTOPE : U-238  
PCI/G : 5.750E+00

TRACER  
ID : 1283-H  
ISOTOPE : U232  
NOMINAL : 4.51139 dpm  
RESULTS : 4.40976 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B172.CNF;161  
BKG DATE : 3-JAN-2010  
EFF FILE : W172.CNF;62  
CAL DATE : 21-DEC-2009

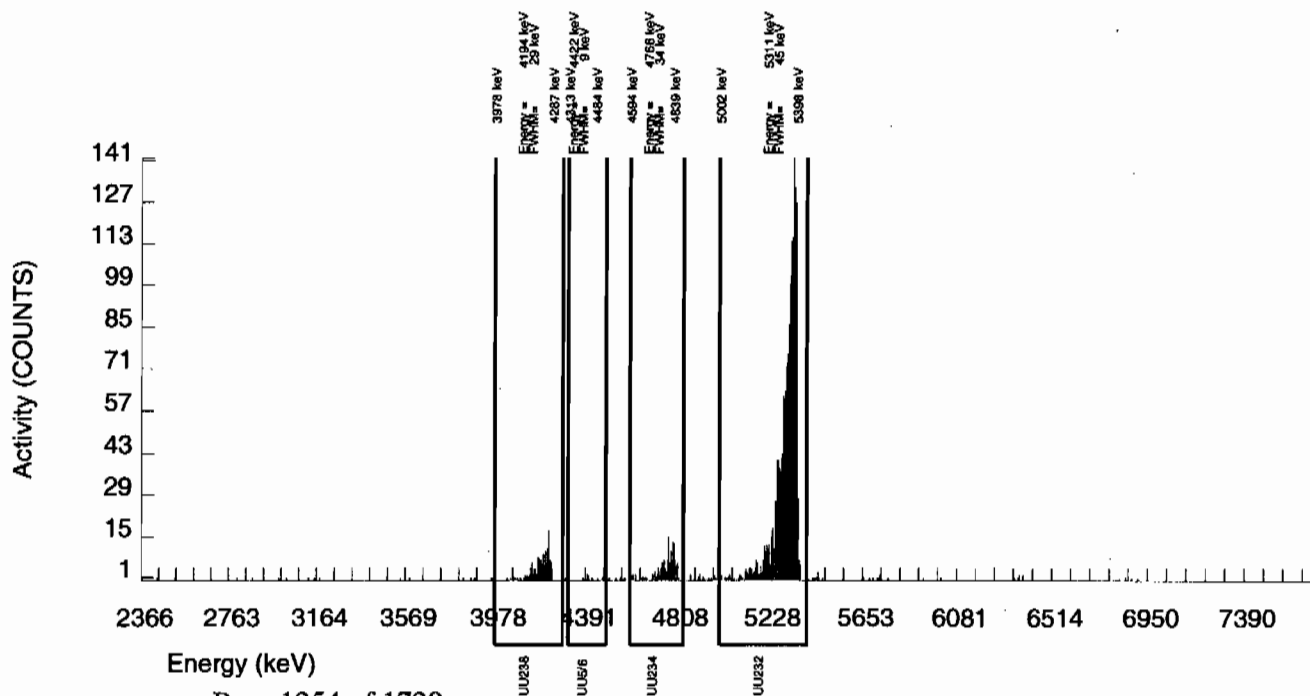
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	144.000	141.289	1.000	6.0782	100.0000	3.32E-01	3.61E-02	3.33E-02	7.29E-02	2.82E-02
U232	5302.100	1698.000	1693.000	5.000	2.2361	100.0000	3.98E+00	2.88E-01	1.22E-02	3.08E-02	9.71E-02
U-235	4391.000	8.000	8.000	0.000	2.7628	80.90000	2.33E-02	8.38E-03	1.87E-02	4.53E-02	8.22E-03
U-238	4184.730	146.000	144.000	2.000	3.2810	100.0000	3.39E-01	3.68E-02	1.80E-02	4.23E-02	2.86E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 936975 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S1202004923_UU SAMPLE QTY: 0.102 G	
DETECTOR NUMBER :72546 AVERAGE %EFFICIENCY :38.6386 % YIELD : 98.729		COUNT DATE: 6-JAN-2010 10:35:52 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :MXE1	
MS/MSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	LCS/LCSD ID : 0244-A ISOTOPE : U-238 PCI/G : 5.750E+00	TRACER ID : 1283-H ISOTOPE : U232 NOMINAL : 4.50915 dpm RESULTS : 4.45185 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B167.CNF;157 BKG DATE : 3-JAN-2010 EFF FILE : W167.CNF;52 CAL DATE : 21-DEC-2009

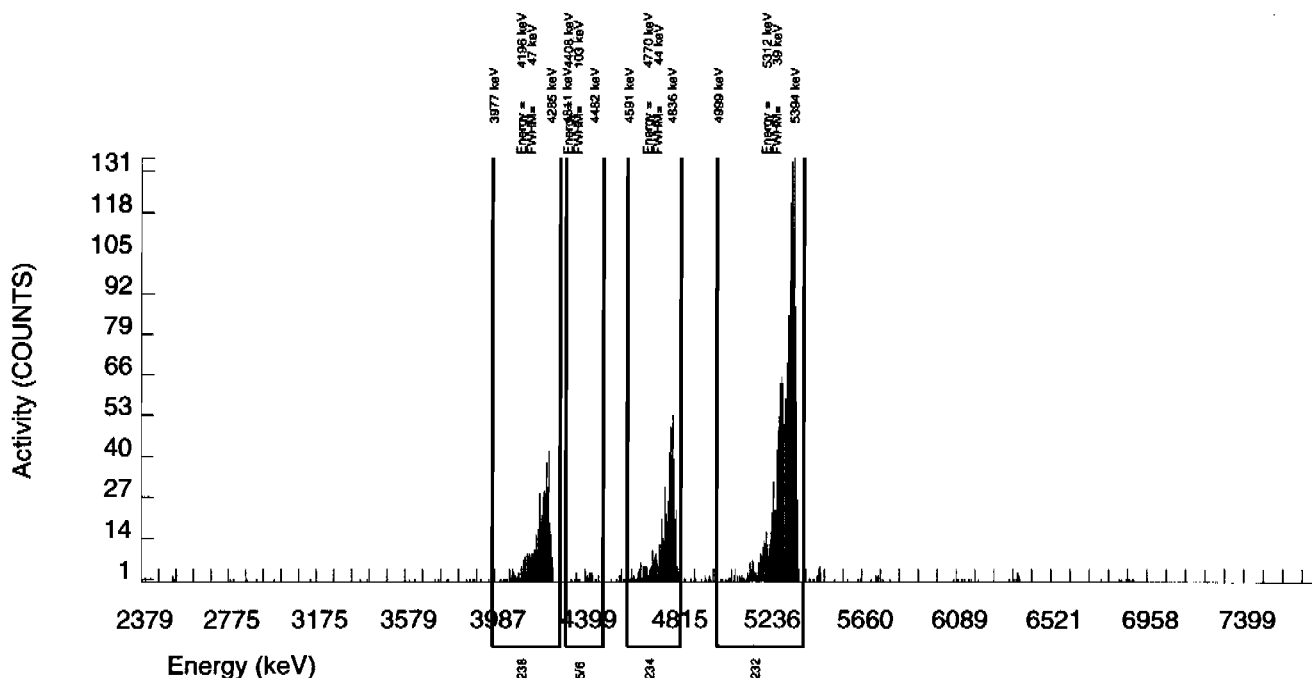
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
U-3/4	4763.020	543.000	541.261	0.000	6.0782	100.0000	6.27E+00	5.40E-01	1.64E-01	3.59E-01	2.69E-01
U232	5302.100	1724.000	1720.000	4.000	2.0000	100.0000	1.99E+01	1.56E+00	5.39E-02	1.39E-01	4.81E-01
U-235	4391.000	26.000	26.000	0.000	2.7628	80.90000	3.72E-01	7.81E-02	9.20E-02	2.23E-01	7.30E-02
U-238	4184.730	479.000	476.000	3.000	3.2810	100.0000	5.51E+00	4.84E-01	8.84E-02	2.08E-01	2.54E-01

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of U232 calculated as sqrt(BKG AREA)

NOTE: Corrections made to U-3/4 net area due to tracer impurity





# Radiochemistry Batch Checklist, Rev 9

Batch# 939255 Product: PV Date: 1/12/10

Critera:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10" MDA/ MDC, error is 150% or less of sample activity. If greater 10" MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5" MDA/ MDC, then RPD is 100% or less. If greater 5" MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance critera.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance critera.	✓		
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance critera.	✓		
No blank spaces on data forms.			
All line outs initialed and dated.	✓		
No transcription errors are apparent.	✓		
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Htl notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch non-conformances completed, if applicable.			N/A
Batch non-conformances second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

revised 8/1/08

Primary Review Performed By: Joe Miller 1/12/10

Secondary Review Performed By: Chris Miller 1/12/10



# Plutonium Que Sheet

07-JAN-10

Batch #: 939255 Analyst: MXE1 First Client Due Date: 14-JAN-10 Internal Due Date: 09-JAN-10  
 Tracer Isotope(s): Pu-239/Pu-238 Tracer Code: 1314-A Expiration Date: 12/3/10 Vol: 0.1  
 LCS Isotope(s): Pu-239/Pu-238 LCS Code: 001010 Expiration Date: 02/11/10 Vol: 0.1  
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: 001010 Expiration Date: 02/11/10 Vol: 0.1  
 Prep Date: 1/1/10 Initials: ME Pipet ID: 2411028 Balance ID: 50410272 Witness: 92 1/7/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Alquot	Pu Det #
243397001-2	RE16-10-2842	SAMPLE	.05 pCi/g		SOIL	LANL010	17-DEC-09	1	1	1.271	1
243397002-2	RE16-10-2843	SAMPLE	.05 pCi/g		SOIL	LANL010	17-DEC-09	2	2	1.253	2
243397003-2	RE16-10-2841	SAMPLE	.05 pCi/g		SOIL	LANL010	17-DEC-09	3	3	1.257	3
243397004-2	RE16-10-2845	SAMPLE	.05 pCi/g		SOIL	LANL010	17-DEC-09	4	4	1.262	209
243397005-2	RE16-10-2844	SAMPLE	.05 pCi/g		SOIL	LANL010	17-DEC-09	5	5	1.260	5
243457001-2	RE12-10-7553	SAMPLE	.05 pCi/g		SOIL	LANL010	18-DEC-09	6	6	1.263	6
243457002-2	RE12-10-7554	SAMPLE	.05 pCi/g		SOIL	LANL010	18-DEC-09	7	7	1.252	7
243457003-2	RE12-10-7552	SAMPLE	.05 pCi/g		SOIL	LANL010	18-DEC-09	8	8	1.255	8
243457004-2	RE12-10-7552	SAMPLE	.05 pCi/g		SOIL	LANL010	18-DEC-09	9	9	1.255	9
243472001-2	RE03-09-14228	SAMPLE	.05 pCi/g		SOIL	LANL010	21-DEC-09	10	10	1.251	10
243472002-2	RE03-09-14230	SAMPLE	.05 pCi/g		SOIL	LANL010	21-DEC-09	11	11	1.255	11
243472003-2	RE03-09-14229	SAMPLE	.05 pCi/g		SOIL	LANL010	21-DEC-09	12	12	1.255	12
243509001-2	RE16-10-2837	SAMPLE	.05 pCi/g		SOIL	LANL010	18-DEC-09	13	13	1.263	13
243509002-2	RE16-10-2835	SAMPLE	.05 pCi/g		SOIL	LANL010	18-DEC-09	14	14	1.253	14
243509003-2	RE16-10-2838	SAMPLE	.05 pCi/g		SOIL	LANL010	18-DEC-09	15	15	1.259	15
243555001-2	RE16-10-2835	SAMPLE	.05 pCi/g		SOIL	LANL010	18-DEC-09	16	16	1.276	16
243555002-2	RE16-10-2831	SAMPLE	.05 pCi/g		SOIL	LANL010	23-DEC-09	17	17	1.252	247
243611001-2	RE16-10-2858	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	18	18	1.252	247
243611002-2	RE16-10-2852	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	19	19	1.260	247
243611003-2	RE16-10-2857	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	20	20	1.268	244
1202009994-1	MB for batch 939255	MB	UCF pCi/g to pCi/g		SOIL	QC ACCOUNT		21	21	1.00	18
1202009995-2	RE16-10-2844(243397005DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	17-DEC-09	22	22	1.250	19
1202009996-1	LCS for batch 939255	LCS	UCF pCi/g to pCi/g		SOIL	QC ACCOUNT		23	23	0.109	20

Choose SOP Used: GL-RAD-A-011, GL-RAD-A-036, RAD-A-043

Solid Sample Dissolution by: LEACH or DIGESTION Circle One

Data Reviewed By: JolALC-1/12/10



# Blank Correction Report

**Batch ID 939255**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202009995	DUP	Plutonium-238	1.25 g	-0.00276	0.00584	0.0227	-.00824	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00275	0.00195	0.026	-.00548	pCi/g	NO
1202009996	LCS	Plutonium-238	0.109 g	6.86	0.510	0.229	-.09449541	pCi/g	NO
		Plutonium-239/240	0.109 g	39.5	2.43	0.262	-.06284404	pCi/g	NO
1202009994	MB	Plutonium-238	1.00 g	-0.0103	0.00685	0.0283	-.0103	pCi/g	NO
		Plutonium-239/240	1.00 g	-0.00685	0.00419	0.0323	-.00685	pCi/g	NO
243397001	RE16-10-2842	Plutonium-238	1.27 g	-1.47E-10	0.00175	0.0204	-.00811024	pCi/g	NO
		Plutonium-239/240	1.27 g	-0.00247	0.0039	0.0233	-.00539370	pCi/g	NO
243397002	RE16-10-2843	Plutonium-238	1.25 g	-1.64E-10	0.00195	0.0227	-.00824	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00275	0.00275	0.026	-.00548	pCi/g	NO
243397003	RE16-10-2841	Plutonium-238	1.26 g	0.00131	0.00394	0.0217	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.021	0.00567	0.0248	-.00543651	pCi/g	NO
243397004	RE16-10-2845	Plutonium-238	1.26 g	0.00206	0.00146	0.017	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0206	0.00494	0.0195	-.00543651	pCi/g	NO
243397005	RE16-10-2844	Plutonium-238	1.26 g	0.00	0.0011	0.0181	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0011	0.0019	0.0207	-.00543651	pCi/g	NO
243457001	RE12-10-7553	Plutonium-238	1.26 g	0.00451	0.00261	0.0248	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.015	0.00567	0.0284	-.00543651	pCi/g	NO
243457002	RE12-10-7554	Plutonium-238	1.25 g	-0.00149	0.00904	0.0245	-.00824	pCi/g	NO
		Plutonium-239/240	1.25 g	-0.00149	0.00647	0.0281	-.00548	pCi/g	NO
243457004	RE12-10-7552	Plutonium-238	1.26 g	0.0104	0.00689	0.0214	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0013	0.0013	0.0245	-.00543651	pCi/g	NO
243472001	RE03-09-14228	Plutonium-238	1.26 g	-0.00826	0.00826	0.0227	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	-0.00275	0.00389	0.026	-.00543651	pCi/g	NO
243472002	RE03-09-14230	Plutonium-238	1.26 g	-0.00968	0.0077	0.0228	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00415	0.00415	0.0261	-.00543651	pCi/g	NO
243472003	RE03-09-14229	Plutonium-238	1.26 g	-0.00127	0.00727	0.0209	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00127	0.00127	0.0239	-.00543651	pCi/g	NO
243509001	RE16-10-2837	Plutonium-238	1.27 g	0.00115	0.00447	0.0191	-.00811024	pCi/g	NO
		Plutonium-239/240	1.27 g	0.0173	0.0051	0.0218	-.00539370	pCi/g	NO
243509002	RE16-10-2835	Plutonium-238	1.25 g	-0.00964	0.0114	0.0265	-.00824	pCi/g	NO
		Plutonium-239/240	1.25 g	0.0273	0.00847	0.0303	-.00548	pCi/g	NO
243509003	RE16-10-2838	Plutonium-238	1.26 g	-0.00921	0.00543	0.0217	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00658	0.00296	0.0249	-.00543651	pCi/g	NO
243611001	RE16-10-2858	Plutonium-238	1.25 g	0.00	0.00114	0.0188	-.00824	pCi/g	NO
		Plutonium-239/240	1.25 g	0.00227	0.00228	0.0215	-.00548	pCi/g	NO
243611002	RE16-10-2852	Plutonium-238	1.26 g	0.00	0.00166	0.0193	-.00817460	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0176	0.00491	0.0221	-.00543651	pCi/g	NO
243611003	RE16-10-2857	Plutonium-238	1.27 g	0.00135	0.00233	0.0222	-.00811024	pCi/g	NO



## Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
243611003	RE16-10-2857	Plutonium-239/240	1.27 g	0.0108	0.00385	0.0255	-.00539370	pCi/g	NO



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 939255  
SAMPLE DATE : 17-DEC-2009 00:00:00

SAMPLE ID : S0243397005\_PU  
SAMPLE QTY: 1.260 G

DETECTOR NUMBER : 79454  
AVERAGE %EFFICIENCY : 32.0695  
% YIELD : 101.778

COUNT DATE: 9-JAN-2010 12:01:38  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST : MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

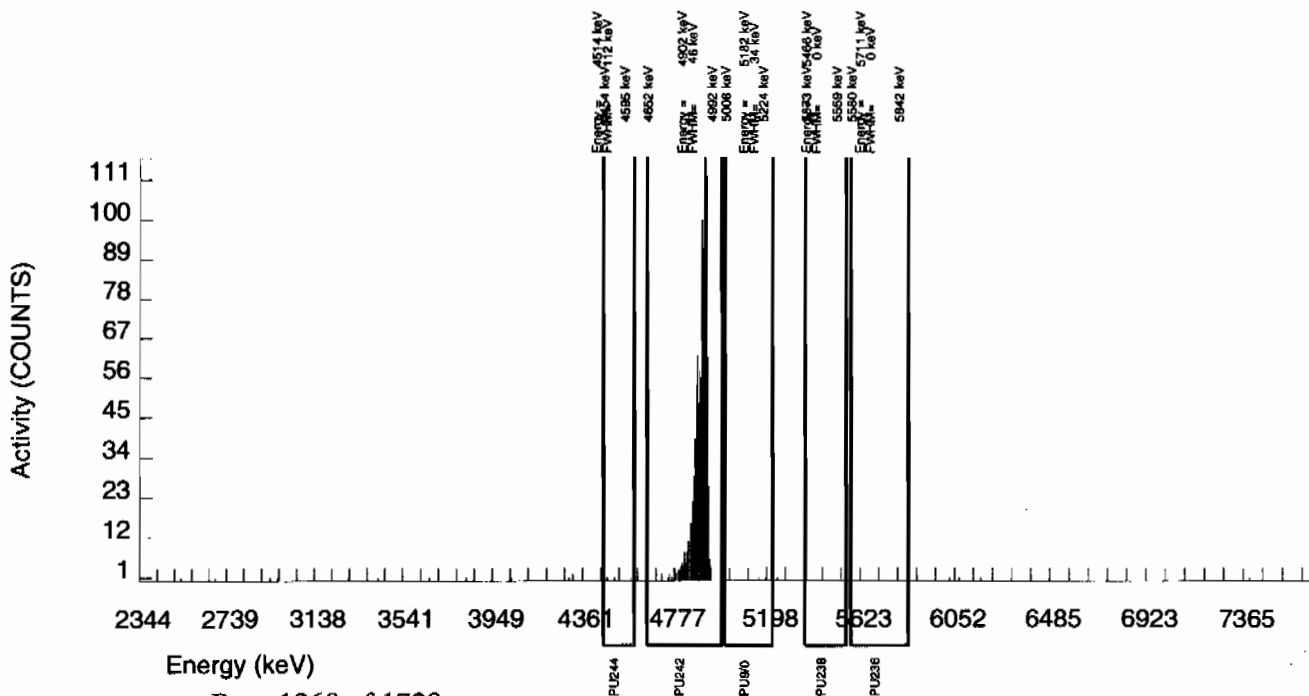
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.44564 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B005.CNF;1091  
BKG DATE : 3-JAN-2010  
EFF FILE : W005.CNF;335  
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2.000	1.000	1.000	3.4797	99.90000	1.10E-03	1.90E-03	8.88E-03	2.07E-02	1.90E-03
PU-236	5749.000	0.000	0.000	0.000	2.1286	100.0000	0.00E+00	1.11E-03	5.42E-03	1.38E-02	1.11E-03
PU-238	5499.000	0.000	0.000	0.000	2.9680	99.90000	0.00E+00	1.10E-03	7.57E-03	1.81E-02	1.10E-03
PU242	4890.000	1107.000	1105.000	2.000	1.4142	100.0000	1.21E+00	7.05E-02	3.60E-03	1.02E-02	3.65E-02
PU-244	4589.000	4.000	4.000	0.000	5.2050	99.90000	4.39E-03	2.20E-03	1.33E-02	2.95E-02	2.19E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 939255  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S0243457001\_PU  
SAMPLE QTY: 1.263 G

DETECTOR NUMBER :79455  
AVERAGE %EFFICIENCY :30.5320  
% YIELD : 77.880

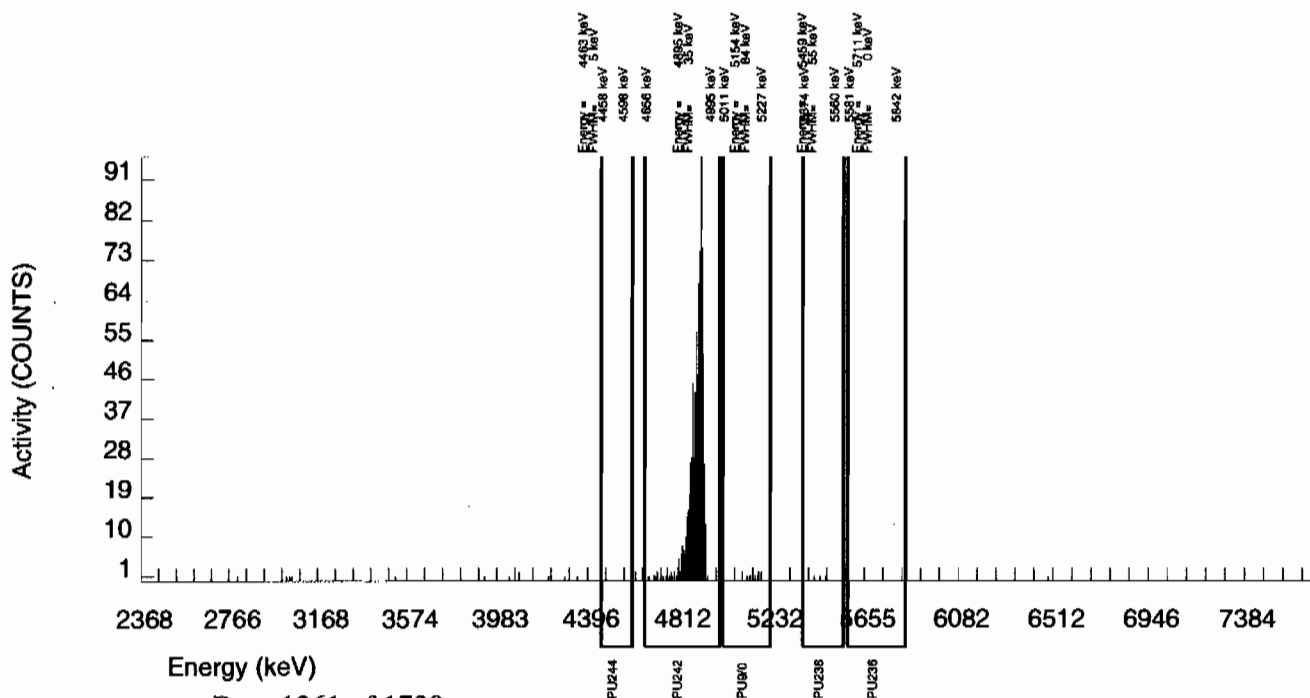
COUNT DATE: 9-JAN-2010 12:01:38  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_PU.N
ID : 0244-B	ID : 0244-B	ID : 1374-A	BKG FILE : B006.CNF;1104
ISOTOPE : PU-9/0	ISOTOPE : PU-9/0	ISOTOPE : PU242	BKG DATE : 3-JAN-2010
PCI/G : 4.178E+01	PCI/G : 4.178E+01	NOMINAL : 3.38543 dpm	EFF FILE : W006.CNF;359
		RESULTS : 2.63658 dpm	CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	12.000	10.000	2.000	3.4797	99.90000	1.50E-02	5.67E-03	1.22E-02	2.84E-02	5.62E-03
PU-236	5749.000	0.000	0.000	0.000	2.1286	100.0000	0.00E+00	1.52E-03	7.43E-03	1.89E-02	1.52E-03
PU-238	5499.000	3.000	3.000	0.000	2.9680	99.90000	4.51E-03	2.61E-03	1.04E-02	2.48E-02	2.60E-03
PU242	4890.000	805.000	805.000	0.000	0.0000	100.0000	1.21E+00	7.70E-02	0.00E+00	4.06E-03	4.26E-02
PU-244	4589.000	1.000	1.000	0.000	5.2050	99.90000	1.50E-03	1.50E-03	1.82E-02	4.04E-02	1.50E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 939255  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S0243457002\_PU  
SAMPLE QTY: 1.252 G

DETECTOR NUMBER :67607  
AVERAGE %EFFICIENCY :29.6523  
% YIELD : 81.784

COUNT DATE: 9-JAN-2010 12:01:40  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

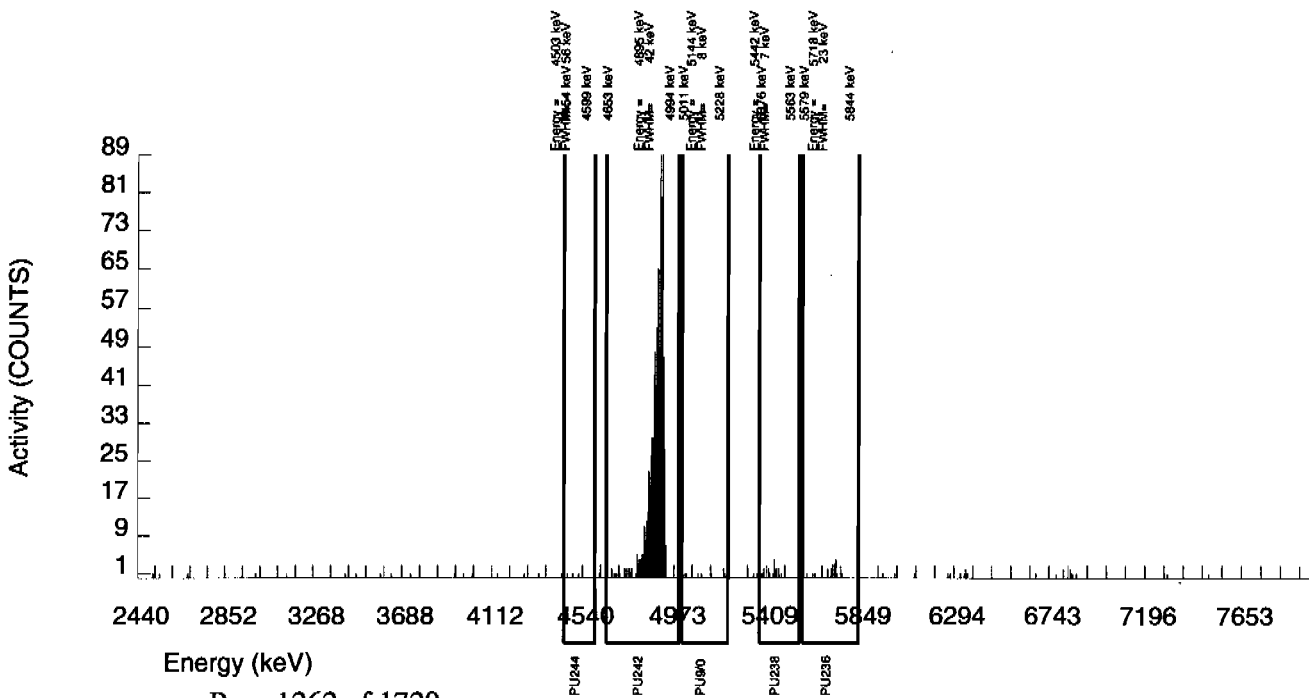
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 2.76876 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B007.CNF;1099  
BKG DATE : 3-JAN-2010  
EFF FILE : W007.CNF;310  
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	9.000	-1.000	10.000	3.4797	99.90000	-1.49E-03	6.47E-03	1.20E-02	2.81E-02	6.47E-03
PU-236	5749.000	19.000	5.000	14.000	2.1286	100.0000	7.53E-03	8.66E-03	7.35E-03	1.87E-02	8.65E-03
PU-238	5499.000	18.000	-1.000	19.000	2.9680	99.90000	-1.49E-03	9.04E-03	1.03E-02	2.45E-02	9.04E-03
PU242	4890.000	823.000	821.000	2.000	1.4142	100.0000	1.22E+00	7.73E-02	4.88E-03	1.38E-02	4.26E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	2.97E-03	2.97E-03	1.80E-02	4.00E-02	2.97E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 939255  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S0243457004\_PU  
SAMPLE QTY: 1.255 G

DETECTOR NUMBER :72528  
AVERAGE %EFFICIENCY :34.0896  
% YIELD : 81.277

COUNT DATE: 9-JAN-2010 12:01:40  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 2.75157 dpm

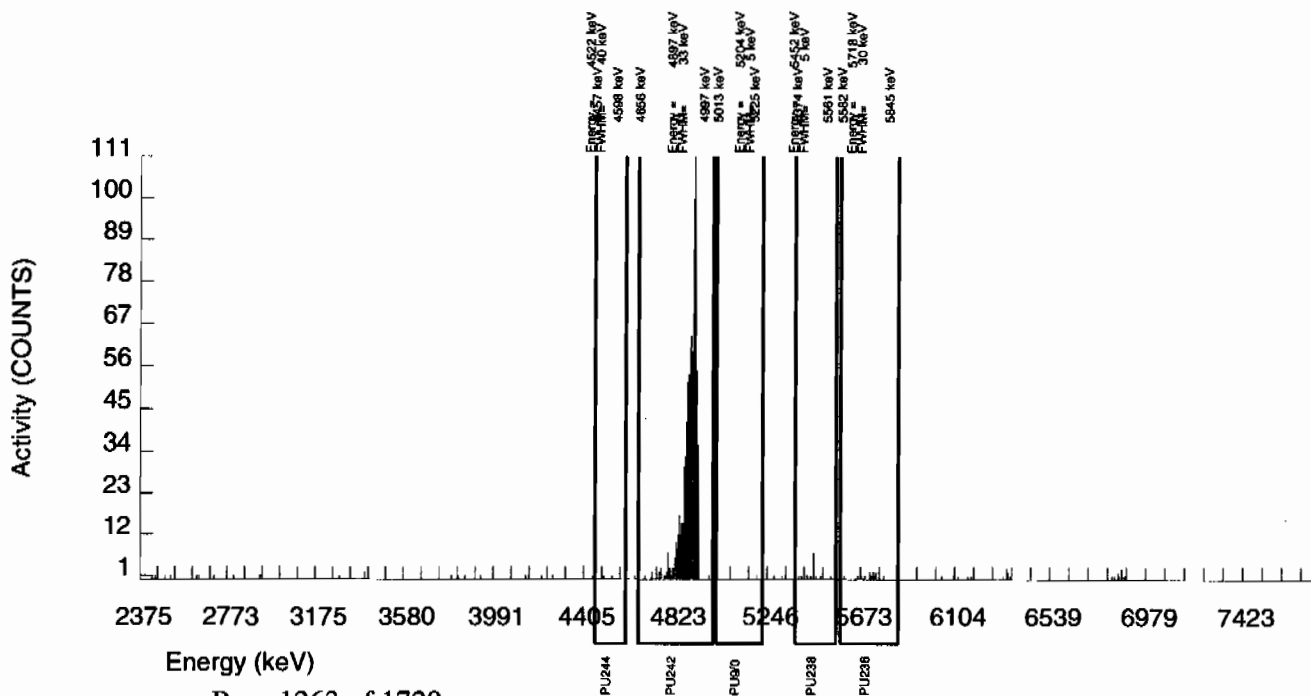
LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B009.CNF;1092  
BKG DATE : 3-JAN-2010  
EFF FILE : W009.CNF;305  
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	1.000	1.000	0.000	3.4797	99.90000	1.30E-03	1.30E-03	1.05E-02	2.45E-02	1.30E-03
PU-236	5749.000	14.000	-2.000	16.000	2.1286	100.0000	-2.63E-03	7.20E-03	6.41E-03	1.63E-02	7.20E-03
PU-238	5499.000	18.000	8.000	10.000	2.9680	99.90000	1.04E-02	6.89E-03	8.95E-03	2.14E-02	6.87E-03
PU242	4890.000	940.000	938.000	2.000	1.4142	100.0000	1.22E+00	7.41E-02	4.26E-03	1.20E-02	3.98E-02
PU-244	4589.000	2.000	1.000	1.000	5.2050	99.90000	1.30E-03	2.25E-03	1.57E-02	3.49E-02	2.25E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 939255  
SAMPLE DATE : 7-JAN-2010 00:00:00.

SAMPLE ID : S1202009994\_PU  
SAMPLE QTY: 1.000 G

DETECTOR NUMBER :78782  
AVERAGE %EFFICIENCY :31.6882  
% YIELD : 83.148

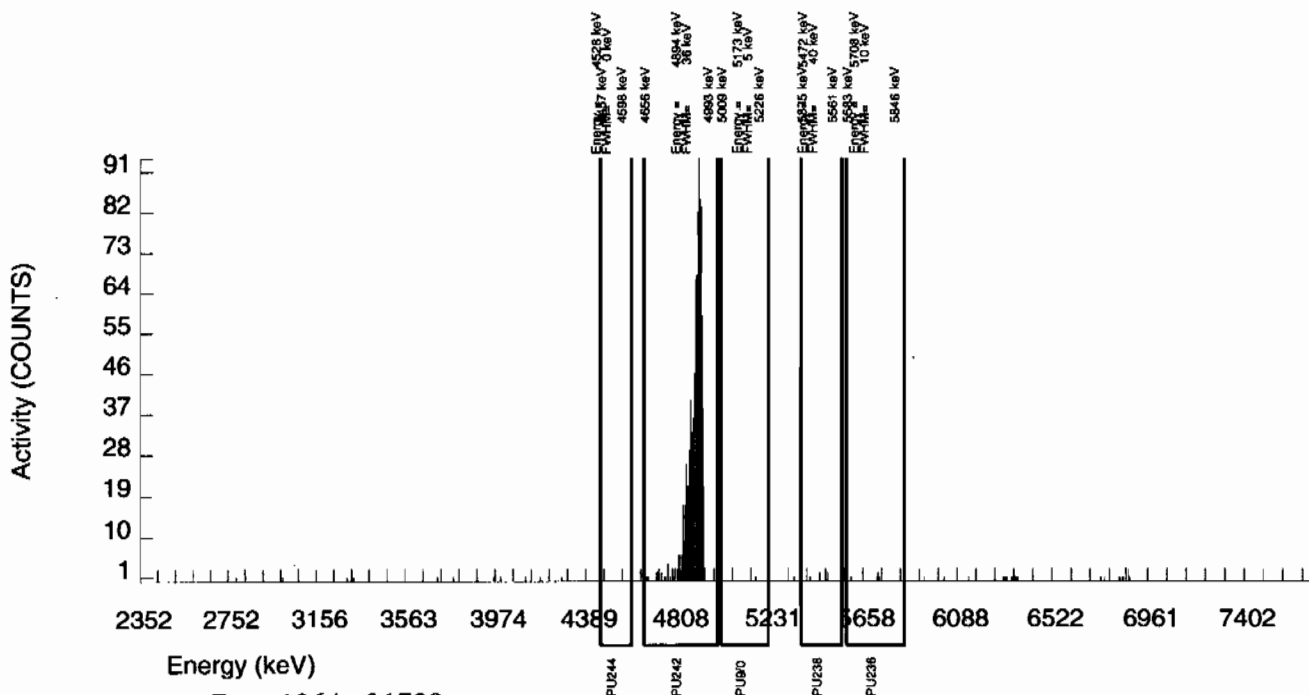
COUNT DATE: 9-JAN-2010 12:01:41  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_PU.N
ID : 0244-B	ID : 0244-B	ID : 1374-A	BKG FILE : B018.CNF;1076
ISOTOPE : PU-9/0	ISOTOPE : PU-9/0	ISOTOPE : PU242	BKG DATE : 3-JAN-2010
PCI/G : 4.178E+01	PCI/G : 4.178E+01	NOMINAL : 3.38543 dpm	EFF FILE : W018.CNF;304
		RESULTS : 2.81493 dpm	CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	1.000	-4.000	5.000	3.4797	99.90000	-6.85E-03	4.19E-03	1.39E-02	3.23E-02	4.19E-03
PU-236	5749.000	5.000	-4.000	9.000	2.1286	100.0000	-6.85E-03	6.41E-03	8.47E-03	2.16E-02	6.41E-03
PU-238	5499.000	5.000	-6.000	11.000	2.9680	99.90000	-1.03E-02	6.85E-03	1.18E-02	2.83E-02	6.85E-03
PU242	4890.000	895.000	892.000	3.000	1.7321	100.0000	1.52E+00	9.45E-02	6.89E-03	1.84E-02	5.12E-02
PU-244	4589.000	0.000	-1.000	1.000	5.2050	99.90000	-1.71E-03	2.42E-03	2.07E-02	4.61E-02	2.42E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 939255  
SAMPLE DATE : 17-DEC-2009 00:00:00

SAMPLE ID : S1202009995\_PU  
SAMPLE QTY: 1.250 G

DETECTOR NUMBER :78786  
AVERAGE %EFFICIENCY :28.8706  
% YIELD : 90.751

COUNT DATE: 9-JAN-2010 12:01:42  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

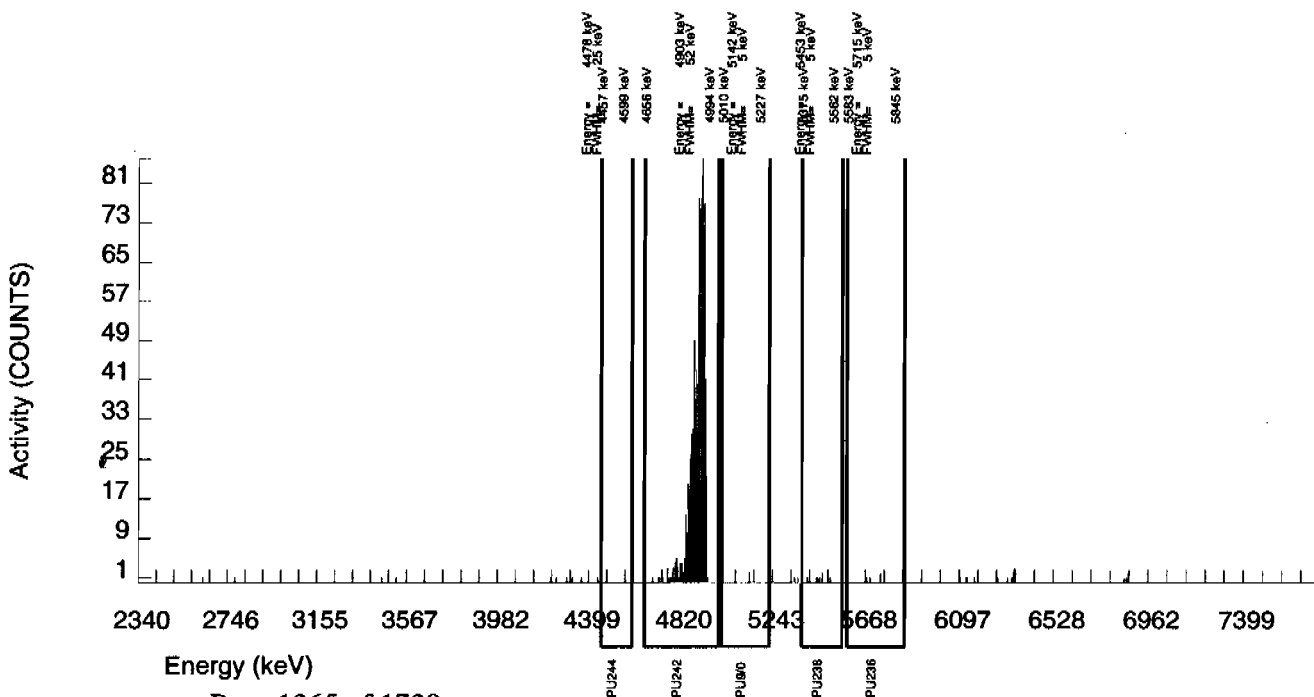
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.07233 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B019.CNF;1090  
BKG DATE : 3-JAN-2010  
EFF FILE : W019.CNF;305  
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2.000	2.000	0.000	3.4797	99.90000	2.75E-03	1.95E-03	1.11E-02	2.60E-02	1.95E-03
PU-236	5749.000	4.000	0.000	4.000	2.1286	100.0000	3.33E-10	3.95E-03	6.81E-03	1.73E-02	3.95E-03
PU-238	5499.000	8.000	-2.000	10.000	2.9680	99.90000	-2.75E-03	5.84E-03	9.51E-03	2.27E-02	5.84E-03
PU242	4890.000	888.000	887.000	1.000	1.0000	100.0000	1.22E+00	7.56E-02	3.20E-03	1.01E-02	4.10E-02
PU-244	4589.000	2.000	2.000	0.000	5.2050	99.90000	2.75E-03	1.95E-03	1.67E-02	3.71E-02	1.95E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 939255  
SAMPLE DATE : 7-JAN-2010 00:00:00.

SAMPLE ID : S1202009996\_PU  
SAMPLE QTY: 0.109 G

DETECTOR NUMBER :78787  
AVERAGE %EFFICIENCY :33.6054  
% YIELD : 88.952

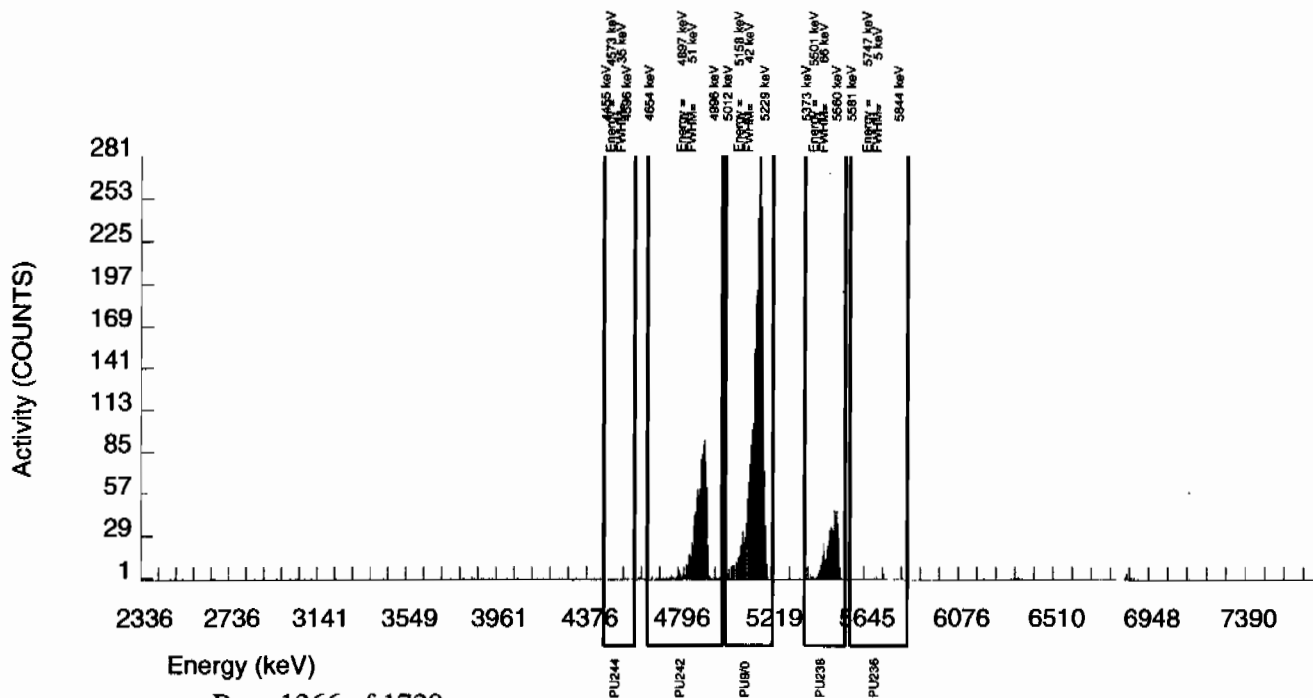
COUNT DATE: 9-JAN-2010 12:01:42  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_PU.N
ID : 0244-B	ID : 0244-B	ID : 1374-A	BKG FILE : B020.CNF;1085
ISOTOPE : PU-9/0	ISOTOPE : PU-9/0	ISOTOPE : PU242	BKG DATE : 3-JAN-2010
PCI/G : 4.178E+01	PCI/G : 4.178E+01	NOMINAL : 3.38543 dpm	EFF FILE : W020.CNF;318
		RESULTS : 3.01142 dpm	CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	2857.000	2856.000	1.000	3.4797	99.90000	3.95E+01	2.43E+00	1.12E-01	2.62E-01	7.40E-01
PU-236	5749.000	10.000	7.000	3.000	2.1286	100.0000	9.70E-02	5.03E-02	6.85E-02	1.74E-01	4.99E-02
PU-238	5499.000	504.000	496.000	8.000	2.9680	99.90000	6.86E+00	5.10E-01	9.56E-02	2.29E-01	3.13E-01
PU242	4890.000	1014.000	1012.000	2.000	1.4142	100.0000	1.40E+01	9.31E-01	4.55E-02	1.28E-01	4.41E-01
PU-244	4589.000	3.000	3.000	0.000	5.2050	99.90000	4.15E-02	2.41E-02	1.68E-01	3.73E-01	2.40E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





## Radiochemistry Batch Checklist, Rev 9

 Batch# 946420 Product: PJ Date: 1/13/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDU/ LLD has been met.	✓		
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDU/ LLD.	✓		
(If rad samples. < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.			
All line outs initialed and dated.	✓		
No transcription errors are apparent.			
Aux data is correct.			N/A
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Ht notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch non-conformances completed. if applicable.			N/A
Batch non-conformances second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

revised 8/1/08

Primary Review Performed By: J. L. M. 1/13/10Secondary Review Performed By: [Signature] 1/14/10

1/20



# Plutonium Que Sheet

11-JAN-10

Batch #: 940420 Analyst: MXE1 First Client Due Date: 20-JAN-10 Internal Due Date: 14-JAN-10

Tracer Isotope(s): Pu-242/Pu-238 Tracer Code: 1334-A Expiration Date: 12/03/10 Vol: 0.1  
 LCS Isotope(s): Pu-239/Pu-238 LCS Code: Expiration Date: Vol:   
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: Expiration Date: Vol:

Prep Date: 01/11/10 Initials: JAD Pipet ID: 2241053 Balance ID: 50410272

Witness: JAM 1/11/10

Sample ID	Client Description	Type	Hazard Code	Mln CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Allyquot	Pu Det #
243457003-4	RE12-10-7351	SAMPLE	.05 pCi/g	SOIL	LANL010	18-DEC-09	1	1	1.251	95	95
1202012590-1	MB for batch 940420	MB	UCF pCi/g to pCi/g	SOIL	QC ACCOUNT	18-DEC-09	2	2	1.00	97	97
1202012591-4	RE12-10-7351(243457003DUP)	DUP	.05 pCi/g	SOIL	QC ACCOUNT	18-DEC-09	3	3	1.256	97	97
1202012592-1	LCS for batch 940420	LCS	UCF pCi/g to pCi/g	SOIL	QC ACCOUNT	18-DEC-09	4	4	0.117	99	99

\* SAM: 0244-B exp 04/30/20 0.117g

Choose SOP Used: GL-RAD-A-011, GL-RAD-A-036, RAD-A-043  
 Solid Sample Dissolution by LEACH or DIGESTION  
 Circle One

Data Reviewed By: JAL 1-13/10



# Blank Correction Report

**Batch ID 940420**

GEL Sample ID	Client sample ID	Parameter	Alliquot	Result	TPU	MDA	Alliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202012591	DUP	Plutonium-238	1.28 g	-0.00337	0.00435	0.0186	-0.00100794	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00786	0.00407	0.0212	0	pCi/g	NO
1202012592	LCS	Plutonium-238	0.117 g	6.46	0.453	0.182	-0.01085470	pCi/g	NO
		Plutonium-239/240	0.117 g	35.5	2.10	0.208	0	pCi/g	NO
1202012590	MB	Plutonium-238	1.00 g	-0.00127	0.00179	0.0209	-0.00127	pCi/g	NO
		Plutonium-239/240	1.00 g	0.00	0.00127	0.024	0	pCi/g	NO
243457003	RE12-10-7551	Plutonium-238	1.25 g	-0.0061	0.00801	0.0202	-0.001016	pCi/g	YES
		Plutonium-239/240	1.25 g	-0.00122	0.00366	0.0231	0	pCi/g	YES



GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940420  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S0243457003\_PU  
SAMPLE QTY: 1.251 G

DETECTOR NUMBER :64279  
AVERAGE %EFFICIENCY :31.0608  
% YIELD : 95.098

COUNT DATE:12-JAN-2010 11:28:38  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

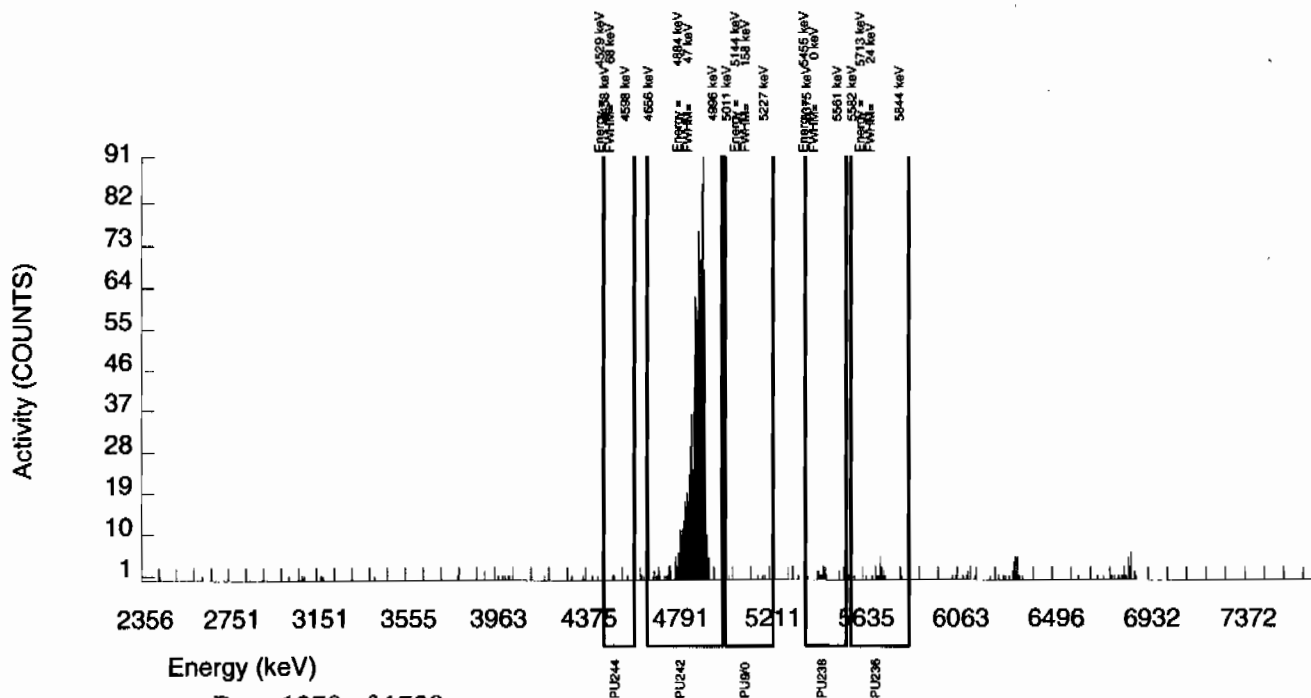
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.21949 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B095.CNF;671  
BKG DATE : 10-JAN-2010  
EFF FILE : W095.CNF;207  
CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	4.000	-1.000	5.000	3.4797	99.90000	-1.22E-03	3.66E-03	9.88E-03	2.31E-02	3.66E-03
PU-236	5749.000	20.000	2.000	18.000	2.1286	100.0000	2.48E-03	7.65E-03	6.04E-03	1.54E-02	7.64E-03
PU-238	5499.000	19.000	-5.000	24.000	2.9680	99.90000	-6.10E-03	8.01E-03	8.43E-03	2.02E-02	8.01E-03
PU242	4890.000	1008.000	1000.000	8.000	2.8284	100.0000	1.22E+00	7.33E-02	8.02E-03	1.93E-02	3.89E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	2.44E-03	2.44E-03	1.48E-02	3.29E-02	2.44E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940420  
SAMPLE DATE : 11-JAN-2010 00:00:00

SAMPLE ID : S1202012590\_PU  
SAMPLE QTY: 1.000 G

DETECTOR NUMBER :79449  
AVERAGE %EFFICIENCY :37.8660  
% YIELD : 93.921

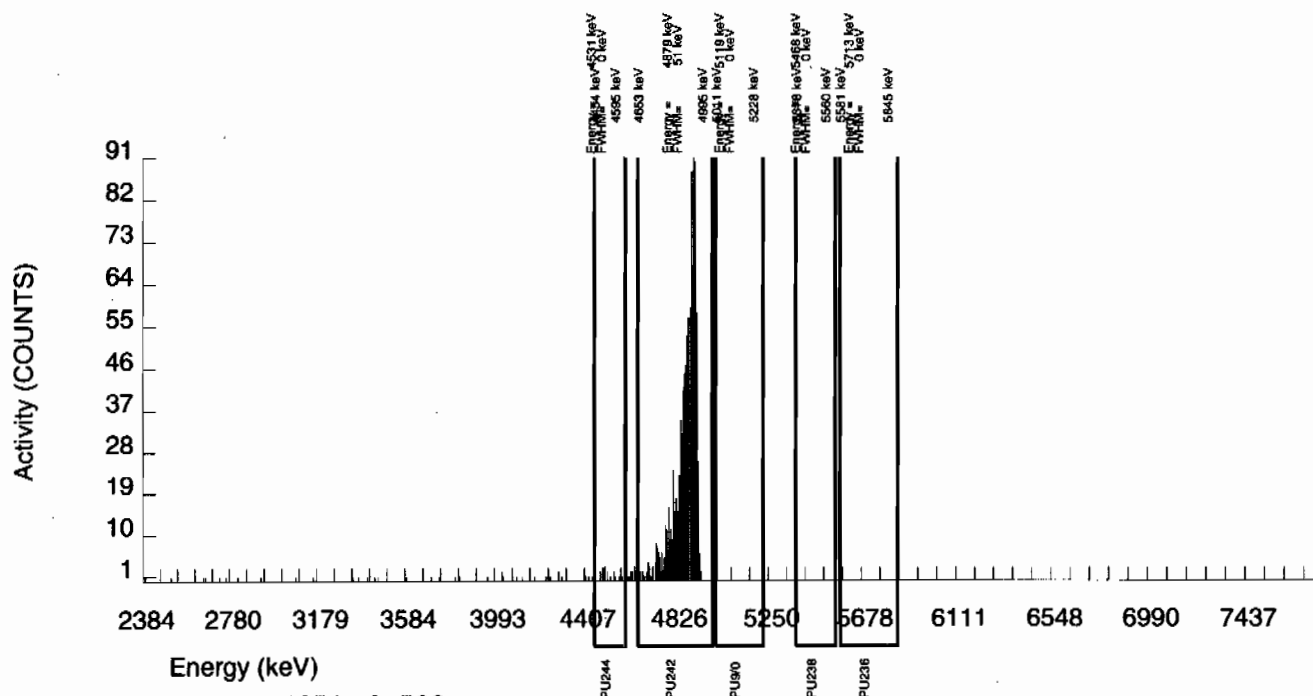
COUNT DATE:13-JAN-2010 15:58:54  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :MXE1

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_PU.N
ID : 0244-B	ID : 0244-B	ID : 1374-A	BKG FILE : B256.CNF;70
ISOTOPE : PU-9/0	ISOTOPE : PU-9/0	ISOTOPE : PU242	BKG DATE : 10-JAN-2010
PCI/G : 4.178E+01	PCI/G : 4.178E+01	NOMINAL : 3.38543 dpm	EFF FILE : W256.CNF;24
		RESULTS : 3.17963 dpm	CAL DATE : 28-DEC-2009

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	0.000	0.000	0.000	3.4797	99.90000	0.00E+00	1.27E-03	1.03E-02	2.40E-02	1.27E-03
PU-236	5749.000	0.000	0.000	0.000	2.1286	100.0000	0.00E+00	1.27E-03	6.27E-03	1.60E-02	1.27E-03
PU-238	5499.000	0.000	-1.000	1.000	2.9680	99.90000	-1.27E-03	1.79E-03	8.75E-03	2.09E-02	1.79E-03
PU242	4890.000	1205.000	1204.000	1.000	1.0000	100.0000	1.52E+00	8.68E-02	2.95E-03	9.33E-03	4.40E-02
PU-244	4589.000	19.000	19.000	0.000	5.2050	99.90000	2.41E-02	5.65E-03	1.54E-02	3.41E-02	5.53E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940420  
SAMPLE DATE : 18-DEC-2009 00:00:00

SAMPLE ID : S1202012591\_PU  
SAMPLE QTY: 1.256 G

DETECTOR NUMBER :67599  
AVERAGE %EFFICIENCY :34.6778  
% YIELD : 92.164

COUNT DATE:12-JAN-2010 11:28:38  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

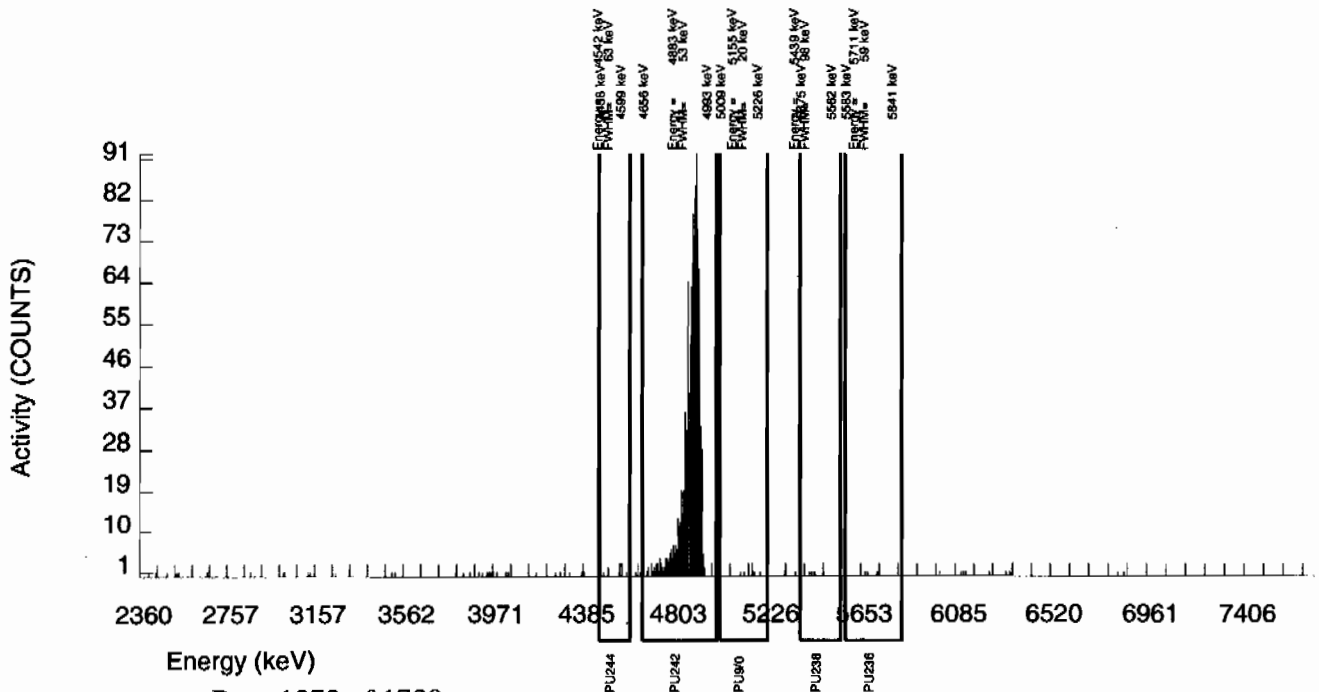
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.12015 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B097.CNF;665  
BKG DATE : 10-JAN-2010  
EFF FILE : W097.CNF;191  
CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	10.000	7.000	3.000	3.4797	99.90000	7.86E-03	4.07E-03	9.09E-03	2.12E-02	4.05E-03
PU-236	5749.000	4.000	-2.000	6.000	2.1286	100.0000	-2.28E-03	3.61E-03	5.56E-03	1.42E-02	3.61E-03
PU-238	5499.000	6.000	-3.000	9.000	2.9680	99.90000	-3.37E-03	4.35E-03	7.76E-03	1.86E-02	4.35E-03
PU242	4890.000	1086.000	1082.000	4.000	2.0000	100.0000	1.21E+00	7.13E-02	5.22E-03	1.35E-02	3.70E-02
PU-244	4589.000	8.000	8.000	0.000	5.2050	99.90000	8.99E-03	3.21E-03	1.36E-02	3.02E-02	3.18E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 940420  
SAMPLE DATE : 11-JAN-2010 00:00:00

SAMPLE ID : S1202012592\_PU  
SAMPLE QTY: 0.117 G

DETECTOR NUMBER :70317  
AVERAGE %EFFICIENCY :33.9756  
% YIELD : 103.198

COUNT DATE:12-JAN-2010 11:28:38  
ELAPSED LIVE TIME(SEC): 59999.99  
ANALYST :MXE1

MS/MSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

LCS/LCSD  
ID : 0244-B  
ISOTOPE : PU-9/0  
PCI/G : 4.178E+01

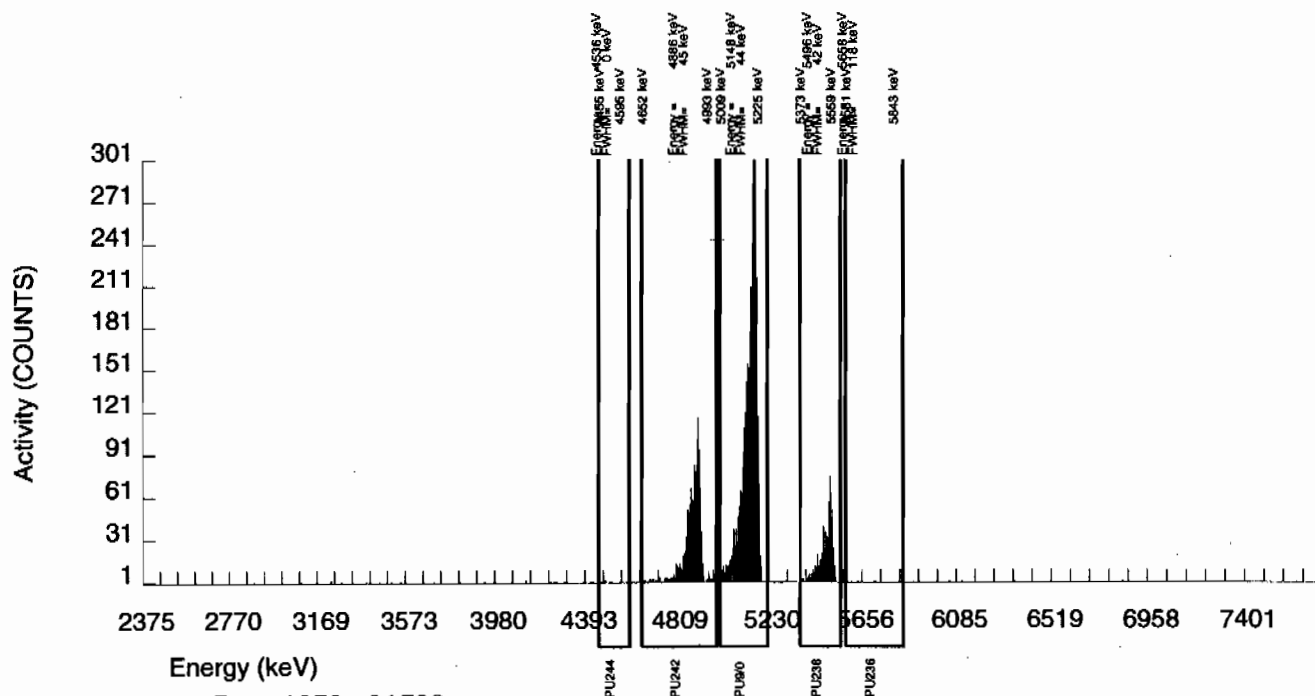
TRACER  
ID : 1374-A  
ISOTOPE : PU242  
NOMINAL : 3.38543 dpm  
RESULTS : 3.49368 dpm

LIB FILE : ENV\_ALPHA\_PU.N  
BKG FILE : B099.CNF;668  
BKG DATE : 10-JAN-2010  
EFF FILE : W099.CNF;191  
CAL DATE : 11-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	3229.000	3228.000	1.000	3.4797	99.90000	3.55E+01	2.10E+00	8.90E-02	2.08E-01	6.25E-01
PU-236	5749.000	2.000	1.000	1.000	2.1286	100.0000	1.10E-02	1.91E-02	5.44E-02	1.39E-01	1.90E-02
PU-238	5499.000	591.000	588.000	3.000	2.9680	99.90000	6.46E+00	4.53E-01	7.59E-02	1.82E-01	2.68E-01
PU242	4890.000	1191.000	1187.000	4.000	2.0000	100.0000	1.30E+01	8.28E-01	5.11E-02	1.32E-01	3.80E-01
PU-244	4589.000	10.000	10.000	0.000	5.2050	99.90000	1.10E-01	3.53E-02	1.33E-01	2.96E-01	3.48E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





## Radiochemistry Batch Checklist, Rev 9

Batch# 936923 Product: XS Date: 1/16/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)			NA
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.			
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.			
If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.			NA
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.			
Sample was correctly preserved if required.			NA
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms.	✓		
All line outs initialed and dated.			
No transcription errors are apparent.			
Aux data is correct.			NA
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly statused.	✓		
QC data entered into QC database and batch is in REVW	✓		
Hit notification complete (if necessary)			NA
Batch entered into Case Narrative.	✓		
Batch non-conformances completed, if applicable.			NA
Batch non-conformances second reviewed and disposition verified to be completed.			NA
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

GEL Laboratories, LLC

revised 8/1/08

Primary Review Performed By: [Signature] 1/16/10Secondary Review Performed By: [Signature] 1/16/10



# Gamma Spec Que Sheet

10g - 1/4/10

12/28/2009

Batch #: 936923

Analyst: MXR1

First Client Due Date: 01/20/2010

Internal Due Date: 01/09/2010

Gamma Spike Isotope: Mixed Gamma

Spike Code: N/A

Expiration Date: N/A

Vol: N/A Nominal Concentration: N/A

Gamma LCS Isotope: Mixed Gamma

LCS Code: 1032-A

Expiration Date: 12/2/10

Vol: 1.0mL Nominal Concentration: 15.71 Cs-137 5.54; Co-60 6.495

Initials: MS

Prep Date: 12/28/09

Library: SOLID

Witness: N/A

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Wet/Dry

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Aliquot (1/g/F)	Detector	Sealing Date/Time (if Applicable)
243457001-1	RE12-10-7553	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	111.113	5	12/28/09
243457002-1	RE12-10-7554	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	111.61	7	
243457003-1	RE12-10-7551	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	119.34	10	
243457004-1	RE12-10-7552	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	118.32	11	
243492001-1	RE12-10-7288	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	128.66	12	
243492002-1	RE12-10-7290	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	137.86	13	
243492003-1	RE12-10-7289	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	131.78	13	11/16
243492004-1	RE12-10-7291	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	129.11	15	
243492005-1	RE12-10-7292	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	132.80	16	
243492006-1	RE12-10-7293	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	136.11	17	
243492007-1	RE12-10-7296	SAMPLE		LANL010	SOIL	18-DEC-09 12:00:00	CAF	124.45	18	
1202004732-1	MB	MB		QC ACCOUNT	SOIL	12/28/09	CAF	137.86	22	
1202004733-1	DUP RE12-10-7553(243457001)	DUP		QC ACCOUNT	SOIL	18-DEC-09 12:00:00	CAF	111.113	15	
1202004734-1	LCS	LCS		QC ACCOUNT	SOIL	12/28/09	CAF	155.44	5	

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: [Signature]

1/6/10

Page 1 of 1

no history

no files

no 1/6/10



## Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
936923	243457001	SAMPLE	04-JAN-10		Cerium-139	0.01757	0.06112	0.050
					Europium-152	-0.00947	0.2164	0.200
					Ruthenium-106	0.599	0.822	0.800
					Sodium-22	0.04037	0.09795	0.080
					Tin-113	-0.02927	0.1026	0.100
936923	243457002	SAMPLE	04-JAN-10		Sodium-22	-0.00185	0.08347	0.080
936923	243457003	SAMPLE	04-JAN-10		Americium-241	-0.0045	0.3995	0.200
					Sodium-22	0.01792	0.08057	0.080
					Thorium-234	2.02	3.14	2.00
936923	243457004	SAMPLE	04-JAN-10					
936923	243492001	SAMPLE	04-JAN-10		Americium-241	0.02651	0.2397	0.200
936923	243492002	SAMPLE	04-JAN-10		Cerium-139	-0.00196	0.0525	0.050
					Sodium-22	0	0.09911	0.080
936923	243492003	SAMPLE	05-JAN-10		Cerium-139	-0.00524	0.05456	0.050
					Cesium-134	0.08957	0.1136	0.100
					Sodium-22	0.00083	0.08453	0.080
936923	243492004	SAMPLE	04-JAN-10		Americium-241	0.1668	0.4863	0.200
					Cerium-139	-0.01548	0.05894	0.050
					Sodium-22	0.0006	0.09006	0.080
					Thorium-234	2.342	3.661	2.00
936923	243492005	SAMPLE	04-JAN-10		Americium-241	0.09361	0.2184	0.200
936923	243492006	SAMPLE	04-JAN-10		Cesium-134	0.0853	0.1181	0.100
					Sodium-22	0.02544	0.09891	0.080
936923	243492007	SAMPLE	04-JAN-10		Americium-241	0.08976	0.282	0.200
					Thorium-234	1.171	2.208	2.00
936923	1202004732	MB	04-JAN-10					
936923	1202004733	DUP	04-JAN-10		Americium-241	0.1464	0.4711	0.200
					Cerium-139	-0.01189	0.05614	0.050
					Sodium-22	0.01637	0.0804	0.080
					Thorium-234	1.775	3.675	2.00
936923	1202004734	LCS	05-JAN-10		Cerium-139	-0.04529	0.4515	0.050
					Cesium-134	0.1102	0.252	0.100
					Europium-152	0.0329	0.35	0.200
					Mercury-203	13.63	18.2	0.100
					Potassium-40	0.6073	1.271	1.00
					Ruthenium-106	0.7365	2.271	0.800
					Sodium-22	-0.04157	0.11	0.080
					Tin-113	0.4912	1.244	0.100
					Uranium-235	-0.01163	0.5763	0.500
					Yttrium-88	0.1666	0.8744	0.100



# GEL QUALS

Batch ID: 936923

Report run on: January 6, 2010 1:44 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
243457001-1 04-JAN-2010 13:58	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.873			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.673			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1236		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		6.278			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1479			
243457002-1 04-JAN-2010 13:58	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.444			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.749			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.381			
243457003-1 04-JAN-2010 13:58	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.22			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.165			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.419			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09047			
243457004-1 04-JAN-2010 13:59	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.492			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.408			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1328		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		1.527			
	Radium-228	UI	UI	UI	Data rejected due to low abundance.		1.245		.5	.5
243492001-1 04-JAN-2010 13:59	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.207			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.375			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.285			
	Thallium-234	UI	UI	UI	Data rejected due to high counting uncertainty.		2.258			



# GEL QUALS

Batch ID: 936923

Report run on: January 6, 2010 1:44 PM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
243492002-1 04-JAN-2010 14:00	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.375			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.651			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1298		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		2.071			
243492004-1 04-JAN-2010 14:01	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.246			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.097			
243492005-1 04-JAN-2010 14:01	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.284			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.793			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.09186		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.958			
243492006-1 04-JAN-2010 14:02	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.877			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.231			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.286			
243492007-1 04-JAN-2010 14:02	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.292			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.846			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1023		.1	.1
	Cesium-137	UI	UI	UI	Data rejected due to low abundance.		.06304		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.786			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1276			



# GEL QUALS

Batch ID: 936923

Report run on: January 6, 2010 1:44 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
1202004732-1 MB 04-JAN-2010 14:05	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1024			
1202004733-1 DUP 04-JAN-2010 15:16	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.613			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.877			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1225		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.895			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09968			
243492003-1 05-JAN-2010 14:15	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.755			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.274			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.868			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09707			
	Thorium-234	UI	UI	UI	Data rejected due to high counting uncertainty.		1.18			



## Gamma Review Report based on Result &gt; MDA for Batch:936923

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
243457001	18-DEC-09 12:00	04-JAN-10 13:58	17.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.879	0.1949	pCi/g	0.2754	N	911.5 3	1.388	IDENTIFIED 8.331	<input type="checkbox"/>	
Americium-243	0.4517	0.03935	pCi/g	0.07177	N	74.64 1	1.452	IDENTIFIED 7.782	<input type="checkbox"/>	
Annihilation Rad.	0.1096	0.04488	pCi/g	0.06163	N	511.4 1	1.631	IDENTIFIED 40.84	<input type="checkbox"/>	
Barium-137m	0.3282	0.03896	pCi/g	0.08185	N	661.7 2	2.012	IDENTIFIED 11.41	<input type="checkbox"/>	
Bismuth-210	1.631	0.5546	pCi/g	1.031	N	46.46 3	1.164	IDENTIFIED 33.78	<input type="checkbox"/>	
Bismuth-211	4.873	0.3377	pCi/g	0.4279	Y	352.1 4	1.372	IDENTIFIED 5.697	<input checked="" type="checkbox"/>	
Bismuth-212	1.217	0.3156	pCi/g	0.8938	N	0 12 0		FAIL_ABUND 0	<input type="checkbox"/>	
Bismuth-214	1.507	0.1127	pCi/g	0.1454	0.200	609.4 4	1.437	IDENTIFIED 6.194	<input type="checkbox"/>	
Cadmium-109	4.673	0.5192	pCi/g	1.177	Y	87.21 3	1.288	IDENTIFIED 10.44	<input checked="" type="checkbox"/>	UF
Cerium-143	2532	420.3	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Cesium-134	0.1236	0.04285	pCi/g	0.1206	0.100	0 12 0		FAIL_ABUND 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-137	0.347	0.0412	pCi/g	0.08652	0.100	661.7 2	2.012	IDENTIFIED 11.41	<input type="checkbox"/>	
Gross Gamma	10.62	1.742	pCi/g	6.349	N	0			<input type="checkbox"/>	
Iodine-126	0.5898	0.1874	pCi/g	0.504	N	0 12 0		FAIL_ABUND 0	<input type="checkbox"/>	
Krypton-85	28.25	5.471	pCi/g	18.75	N	0 12 0		NOT_IDENTI 0	<input type="checkbox"/>	
Lead-210	1.631	0.5546	pCi/g	1.031	N	46.46 3	1.164	IDENTIFIED 33.78	<input type="checkbox"/>	
Lead-212	1.937	0.1239	pCi/g	0.1105	0.100	238.8 4	1.237	IDENTIFIED 3.443	<input type="checkbox"/>	
Lead-214	1.695	0.1255	pCi/g	0.146	0.100	352.1 4	1.372	IDENTIFIED 5.697	<input type="checkbox"/>	
Neptunium-237	1.345	0.2039	pCi/g	0.3373	N	87.21 3	1.288	IDENTIFIED 10.44	<input type="checkbox"/>	
Niobium-95m	0.3244	0.09426	pCi/g	0.299	N	0 12 0		NOT_IDENTI 0	<input type="checkbox"/>	
Niobium-97	1.10E+06	5.12E+05	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Polonium-210	1.631	0.5536	pCi/g	1.031	N	46.46 3	1.164	IDENTIFIED 33.78	<input type="checkbox"/>	
Polonium-212	1.937	0.1239	pCi/g	0.1105	N	238.8 4	1.237	IDENTIFIED 3.443	<input type="checkbox"/>	
Polonium-214	1.695	0.1255	pCi/g	0.146	N	352.1 4	1.372	IDENTIFIED 5.697	<input type="checkbox"/>	
Polonium-216	1.937	0.1239	pCi/g	0.1105	N	238.8 4	1.237	IDENTIFIED 3.443	<input type="checkbox"/>	
Polonium-218	1.695	0.1255	pCi/g	0.146	N	352.1 4	1.372	IDENTIFIED 5.697	<input type="checkbox"/>	
Potassium-40	22.25	1.154	pCi/g	0.7895	1.00	1461 1	2.061	IDENTIFIED 4.148	<input type="checkbox"/>	
Radium-224	6.278	0.9443	pCi/g	1.257	Y	241.8 1	2.032	IDENTIFIED 14.23	<input checked="" type="checkbox"/>	UF
Radium-226	1.507	0.1127	pCi/g	0.1454	Y	609.4 4	1.437	IDENTIFIED 6.194	<input type="checkbox"/>	
Radium-228	1.879	0.1949	pCi/g	0.2754	0.500	911.5 3	1.388	IDENTIFIED 8.331	<input type="checkbox"/>	
Sodium-24	3.78E+05	3.42E+06	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Strontium-85	0.1479	0.02864	pCi/g	0.09816	Y	0 12 0		NOT_IDENTI 0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Technetium-99m	3.34E+17	0	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	
Thallium-208	0.5872	0.05848	pCi/g	0.0721	0.080	583.4 1	1.511	IDENTIFIED 9.254	<input type="checkbox"/>	
Thorium-228	1.97	0.126	pCi/g	0.1124	N	238.8 4	1.237	IDENTIFIED 3.443	<input type="checkbox"/>	
Thorium-230	1.507	0.1127	pCi/g	0.1454	N	609.4 4	1.437	IDENTIFIED 6.194	<input type="checkbox"/>	
Thorium-232	1.879	0.1949	pCi/g	0.2754	N	911.5 3	1.388	IDENTIFIED 8.331	<input type="checkbox"/>	
Thorium-234	1.786	0.5381	pCi/g	1.242	2.00	63.19 2	1.111	IDENTIFIED 28.8	<input type="checkbox"/>	
Tin-126	0.458	0.05089	pCi/g	0.1152	N	87.21 3	1.288	IDENTIFIED 10.44	<input type="checkbox"/>	
Titanium-44	0.474	0.02879	pCi/g	0.08041	N	0 12 0		FAIL_ABUND 0	<input type="checkbox"/>	
Total Uranium	5.3285	1.60E-06	ug/g	1.8516	N	0			<input type="checkbox"/>	
Uranium-234	1.507	0.1127	pCi/g	0.1454	N	609.4 4	1.437	IDENTIFIED 6.194	<input type="checkbox"/>	
Uranium-238	1.786	0.5381	pCi/g	1.242	N	63.19 2	1.111	IDENTIFIED 28.8	<input type="checkbox"/>	
Zirconium-97	1.67E+07	9.49E+06	pCi/g	0	N	0 12 0		SHORT_HLIF 0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
243457002	18-DEC-09 12:00	04-JAN-10 13:58	17.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.628	0.1948	pCi/g	0.2295	N	911.8 3	1.689	IDENTIFIED 10.45	<input type="checkbox"/>	
Americium-243	0.3241	0.03513	pCi/g	0.07212	N	74.69 1	1.106	IDENTIFIED 10.07	<input type="checkbox"/>	



Annihilation Rad.	—	0.1348	0.04087	pCi/g	0.05193	N	511	1	1.895	IDENTIFIED	30	<input type="checkbox"/>
Bismuth-211	INT	3.444	0.2878	pCi/g	0.3605	Y	352	4	1.242	IDENTIFIED	7.05	<input checked="" type="checkbox"/> ✓
Bismuth-212	HE	1.192	0.3456	pCi/g	0.7389	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>
Bismuth-214	✓	1.054	0.09596	pCi/g	0.1375	0.200	609.5	4	1.3	IDENTIFIED	7.497	<input type="checkbox"/>
Cadmium-109	INT	2.749	0.5187	pCi/g	1.292	Y	87.16	3	1.489	IDENTIFIED	18.28	<input checked="" type="checkbox"/> ✓
Cerium-143	—	1515	289.4	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Gross Gamma	—	9.544	1.838	pCi/g	3.724	N	0	0				<input type="checkbox"/>
Iodine-123	HE	5.02E+07	3.63E+07	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Iodine-133	HE	6772	15490	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Iodine-135	—	1.58E+18	0	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Lead-212	✓	1.604	0.099	pCi/g	0.09976	0.100	238.7	4	1.086	IDENTIFIED	3.901	<input type="checkbox"/>
Lead-214	✓	1.198	0.1049	pCi/g	0.1257	0.100	352	4	1.242	IDENTIFIED	7.05	<input type="checkbox"/>
Lutetium-177	HE	4.362	0.9572	pCi/g	2.657	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>
Neptunium-237	INT	0.7911	0.1701	pCi/g	0.383	N	87.16	3	1.489	IDENTIFIED	18.28	<input type="checkbox"/>
Polonium-212	NR	1.604	0.099	pCi/g	0.09976	N	238.7	4	1.086	IDENTIFIED	3.901	<input type="checkbox"/>
Polonium-214	NR	1.198	0.1049	pCi/g	0.1257	N	352	4	1.242	IDENTIFIED	7.05	<input type="checkbox"/>
Polonium-216	NR	1.604	0.099	pCi/g	0.09976	N	238.7	4	1.086	IDENTIFIED	3.901	<input type="checkbox"/>
Polonium-218	NR	1.198	0.1049	pCi/g	0.1257	N	352	4	1.242	IDENTIFIED	7.05	<input type="checkbox"/>
Potassium-40	✓	35.29	1.852	pCi/g	0.6128	1.00	1461	1	2.033	IDENTIFIED	3.015	<input type="checkbox"/>
Radium-224	INT	3.361	0.6274	pCi/g	1.135	Y	241.7	1	1.582	IDENTIFIED	18.18	<input checked="" type="checkbox"/> ✓
Radium-226	✓	1.054	0.09596	pCi/g	0.1375	Y	609.5	4	1.3	IDENTIFIED	7.497	<input type="checkbox"/>
Radium-228	✓	1.628	0.1948	pCi/g	0.2295	0.500	911.8	3	1.689	IDENTIFIED	10.45	<input type="checkbox"/>
Sodium-24	HE	7.13E+06	3.65E+06	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Technetium-99m	—	4.03E+18	0	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-200	HE	461.5	869.6	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>
Thallium-208	✓	0.4995	0.05134	pCi/g	0.06365	0.080	583.2	1	1.433	IDENTIFIED	9.097	<input type="checkbox"/>
Thorium-228	NR	1.632	0.1007	pCi/g	0.1015	N	238.7	4	1.086	IDENTIFIED	3.901	<input type="checkbox"/>
Thorium-230	NR	1.054	0.09596	pCi/g	0.1375	N	609.5	4	1.3	IDENTIFIED	7.497	<input type="checkbox"/>
Thorium-232	NR	1.628	0.1948	pCi/g	0.2295	N	911.8	3	1.689	IDENTIFIED	10.45	<input type="checkbox"/>
Tin-126	INT	0.2694	0.05083	pCi/g	0.1269	N	87.16	3	1.489	IDENTIFIED	18.28	<input type="checkbox"/>
Titanium-44	LA	0.3689	0.02825	pCi/g	0.0717	N	0	11	0	FAIL_ABUND	0	<input type="checkbox"/>
Uranium-234	NR	1.054	0.09596	pCi/g	0.1375	N	609.5	4	1.3	IDENTIFIED	7.497	<input type="checkbox"/>
Zirconium-97	—	2.99E+07	7.74E+06	pCi/g	0	N	0	11	0	SHORT_HLIF	0	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
243457003	18-DEC-09 12:00	04-JAN-10 13:58	17.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	NR	1.905	0.2101	pCi/g	0.2049	N	911.7	3	1.435	IDENTIFIED 9.143 <input type="checkbox"/>
Americium-243	INT	0.382	0.0484	pCi/g	0.1087	N	74.7	1	1.034	IDENTIFIED 11.42 <input type="checkbox"/>
Annihilation Rad.	—	0.1377	0.03684	pCi/g	0.04772	N	511.1	1	1.603	IDENTIFIED 26.57 <input type="checkbox"/>
Barium-137m	NR	0.1082	0.02437	pCi/g	0.05636	N	662.4	2	1.881	IDENTIFIED 22.4 <input type="checkbox"/>
Bismuth-211	INT	4.22	0.279	pCi/g	0.3338	Y	351.9	4	1.341	IDENTIFIED 5.516 <input checked="" type="checkbox"/> ✓
Bismuth-212	HE	0.8214	0.2274	pCi/g	0.657	N	0	10	0	FAIL_ABUND 0 <input type="checkbox"/>
Bismuth-214	✓	1.244	0.09186	pCi/g	0.111	0.200	609.7	4	1.399	IDENTIFIED 6.33 <input type="checkbox"/>
Cadmium-109	INT	4.165	0.6387	pCi/g	1.29	Y	87.12	3	1.332	IDENTIFIED 14.26 <input checked="" type="checkbox"/> ✓
Cerium-143	—	1629	287.5	pCi/g	0	N	0	10	0	SHORT_HLIF 0 <input type="checkbox"/>
Cesium-137	✓	0.1143	0.02576	pCi/g	0.05958	0.100	662.4	2	1.881	IDENTIFIED 22.4 <input type="checkbox"/>
Curium-243	HE	0.196	0.06669	pCi/g	0.1721	N	0	10	0	FAIL_ABUND 0 <input type="checkbox"/>
Europium-155	HE	0.2189	0.07452	pCi/g	0.185	N	105.2	1	1.428	IDENTIFIED 33.78 <input type="checkbox"/>
Gross Gamma	—	8.877	1.257	pCi/g	3.338	N	0			<input type="checkbox"/>
Iodine-133	HE	10920	14720	pCi/g	0	N	0	10	0	SHORT_HLIF 0 <input type="checkbox"/>
Krypton-85	HE	17.28	4.288	pCi/g	14.33	N	0	10	0	NOT_IDENTI 0 <input type="checkbox"/>
Lead-212	✓	1.757	0.08853	pCi/g	0.09436	0.100	238.6	4	1.155	IDENTIFIED 3.319 <input type="checkbox"/>
Lead-214	✓	1.468	0.1043	pCi/g	0.1156	0.100	351.9	4	1.341	IDENTIFIED 5.516 <input type="checkbox"/>
Lutetium-177	LA	4.516	0.8525	pCi/g	2.632	N	0	10	0	FAIL_ABUND 0 <input type="checkbox"/>
Neptunium-237	INT	1.199	0.2215	pCi/g	0.3805	N	87.12	3	1.332	IDENTIFIED 14.26 <input type="checkbox"/>
Polonium-212	NR	1.757	0.08853	pCi/g	0.09436	N	238.6	4	1.155	IDENTIFIED 3.319 <input type="checkbox"/>



Polonium-214	NR	1.468	0.1043	pCi/g	0.1156	N	351.9	4	1.341	IDENTIFIED	5.516	<input type="checkbox"/>
Polonium-216	NR	1.757	0.08853	pCi/g	0.09436	N	238.6	4	1.155	IDENTIFIED	3.319	<input type="checkbox"/>
Polonium-218	NR	1.468	0.1043	pCi/g	0.1156	N	351.9	4	1.341	IDENTIFIED	5.516	<input type="checkbox"/>
Potassium-40	✓	19.89	1.154	pCi/g	0.4612	1.00	1462	1	1.726	IDENTIFIED	3.886	<input type="checkbox"/>
Radium-224	INT	5.419	0.7827	pCi/g	1.074	Y	241.6	1	1.963	IDENTIFIED	14.12	<input checked="" type="checkbox"/> UI
Radium-226	✓	1.244	0.09186	pCi/g	0.111	Y	609.7	4	1.399	IDENTIFIED	6.33	<input type="checkbox"/>
Radium-228	✓	1.905	0.2101	pCi/g	0.2049	0.500	911.7	3	1.435	IDENTIFIED	9.143	<input type="checkbox"/>
Sodium-24	HE	1.85E+06	3.17E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>
Strontium-85	LA	0.09047	0.02244	pCi/g	0.075	Y	0	10	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.5466	0.04293	pCi/g	0.05743	0.080	583.5	1	1.453	IDENTIFIED	7.099	<input type="checkbox"/>
Thorium-228	NR	1.787	0.09005	pCi/g	0.09598	N	238.6	4	1.155	IDENTIFIED	3.319	<input type="checkbox"/>
Thorium-230	NR	1.244	0.09186	pCi/g	0.111	N	609.7	4	1.399	IDENTIFIED	6.33	<input type="checkbox"/>
Thorium-232	NR	1.905	0.2101	pCi/g	0.2049	N	911.7	3	1.435	IDENTIFIED	9.143	<input type="checkbox"/>
Tin-126	INT	0.4081	0.06259	pCi/g	0.1273	N	87.12	3	1.332	IDENTIFIED	14.26	<input type="checkbox"/>
Titanium-44	LA	0.3852	0.03564	pCi/g	0.08452	N	0	10	0	FAIL_ABUND	0	<input type="checkbox"/>
Uranium-234	NR	1.244	0.09186	pCi/g	0.111	N	609.7	4	1.399	IDENTIFIED	6.33	<input type="checkbox"/>
Zirconium-97	HE	9.19E+06	6.76E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue
243457004	18-DEC-09 12:00	04-JAN-10 13:59	17.1	SAMPLE	LOAD	1	LANL	LANL01004	GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	LA	1.245	0.1614	pCi/g	0.4703	N	0	14	0	FAIL_ABUND	0
Americium-243	INT	0.3542	0.03304	pCi/g	0.06592	N	74.7	1	0.9537	IDENTIFIED	8.403
Annihilation Rad.	-	0.1521	0.03447	pCi/g	0.04247	N	510.4	1	1.714	IDENTIFIED	22.02
Bismuth-211	INT	3.492	0.304	pCi/g	0.2686	Y	351.6	4	1.202	IDENTIFIED	5.695
Bismuth-212	LA	1.149	0.2337	pCi/g	0.6644	N	0	14	0	FAIL_ABUND	0
Bismuth-214	✓	0.9594	0.09172	pCi/g	0.09742	0.200	608.9	4	1.314	IDENTIFIED	7.709
Cadmium-109	INT	2.408	0.3833	pCi/g	0.9601	Y	87.04	3	0.844	IDENTIFIED	15.21
Cerium-143	-	1568	285.7	pCi/g	0	N	0	14	0	SHORT_HLIF	0
Cesium-134	LA	0.1328	0.03171	pCi/g	0.08885	0.100	0	14	0	FAIL_ABUND	0
Gross Gamma	-	9.134	1.457	pCi/g	2.867	N	0				
Iodine-123	HE	2.27E+07	2.93E+07	pCi/g	0	N	0	14	0	SHORT_HLIF	0
Iodine-133	HE	5975	12660	pCi/g	0	N	0	14	0	SHORT_HLIF	0
Iodine-135	-	1.60E+17	0	pCi/g	0	N	0	14	0	SHORT_HLIF	0
Lead-212	✓	1.532	0.1203	pCi/g	0.08488	0.100	238.4	4	0.9526	IDENTIFIED	3.561
Lead-214	✓	1.215	0.1104	pCi/g	0.09365	0.100	351.6	4	1.202	IDENTIFIED	5.695
Lutetium-177	HE	3.135	0.942	pCi/g	2.36	N	0	14	0	FAIL_ABUND	0
Neptunium-237	INT	0.693	0.1315	pCi/g	0.3051	N	87.04	3	0.844	IDENTIFIED	15.21
Niobium-97	HE	25330	3.20E+05	pCi/g	0	N	0	14	0	SHORT_HLIF	0
Polonium-212	NR	1.532	0.1203	pCi/g	0.08488	N	238.4	4	0.9526	IDENTIFIED	3.561
Polonium-214	NR	1.215	0.1104	pCi/g	0.09365	N	351.6	4	1.202	IDENTIFIED	5.695
Polonium-216	NR	1.532	0.1203	pCi/g	0.08488	N	238.4	4	0.9526	IDENTIFIED	3.561
Polonium-218	NR	1.215	0.1104	pCi/g	0.09365	N	351.6	4	1.202	IDENTIFIED	5.695
Potassium-40	✓	32.6	1.685	pCi/g	0.4303	1.00	1460	1	1.712	IDENTIFIED	2.831
Radium-224	INT	1.527	0.4885	pCi/g	0.9663	Y	240.6	1	1.246	IDENTIFIED	31.28
Radium-226	✓	0.9594	0.09172	pCi/g	0.09742	Y	608.9	4	1.314	IDENTIFIED	7.709
Radium-228	LA	1.245	0.1614	pCi/g	0.4703	0.500	0	14	0	FAIL_ABUND	0
Thallium-200	HE	84.94	695.6	pCi/g	0	N	0	14	0	SHORT_HLIF	0
Thallium-208	✓	0.486	0.04643	pCi/g	0.0555	0.080	582.7	1	1.396	IDENTIFIED	7.881
Thorium-228	NR	1.559	0.1223	pCi/g	0.08634	N	238.4	4	0.9526	IDENTIFIED	3.561
Thorium-230	NR	0.9594	0.09171	pCi/g	0.09742	N	608.9	4	1.314	IDENTIFIED	7.709
Thorium-232	LA	1.245	0.1614	pCi/g	0.4703	N	0	14	0	FAIL_ABUND	0
Tin-126	INT	0.236	0.03757	pCi/g	0.0944	N	87.04	3	0.844	IDENTIFIED	15.21
Titanium-44	LA	0.3317	0.02346	pCi/g	0.05096	N	0	14	0	FAIL_ABUND	0
Total Uranium	-	2.2034	1.94E-06	ug/g	2.1046	N	0				
Uranium-234	NR	0.9594	0.09171	pCi/g	0.09742	N	608.9	4	1.314	IDENTIFIED	7.709
Zirconium-97	-	2.96E+07	6.15E+06	pCi/g	0	N	0	14	0	SHORT_HLIF	0











Potassium-40	✓	21.78	1.052	pCi/g	0.6343	1.00	1460	1	1.972	IDENTIFIED	3.738	<input type="checkbox"/>
Promethium-149	HE	90.89	121.9	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>
Radium-224	WT	3.868	0.618	pCi/g	1.074	Y	241.5	1	1.664	IDENTIFIED	15.48	<input checked="" type="checkbox"/>
Radium-226	✓	1.362	0.1191	pCi/g	0.1505	Y	608.9	4	1.695	IDENTIFIED	7.392	<input type="checkbox"/>
Radium-228	✓	1.421	0.206	pCi/g	0.3095	0.500	911.1	3	1.667	IDENTIFIED	13.54	<input type="checkbox"/>
Sodium-24	HE	2.22E+06	1.24E+07	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>
Strontium-85	LA	0.09707	0.02458	pCi/g	0.08354	Y	0	13	0	NOT_IDENTI	0	<input checked="" type="checkbox"/> UI Data rejected due to low abundance.
Thallium-208	✓	0.5619	0.05638	pCi/g	0.07741	0.080	582.9	1	1.583	IDENTIFIED	9.142	<input type="checkbox"/>
Thorium-228	NR	1.568	0.09179	pCi/g	0.09607	N	238.5	4	1.242	IDENTIFIED	3.691	<input type="checkbox"/>
Thorium-230	NR	1.362	0.1191	pCi/g	0.1505	N	608.9	4	1.695	IDENTIFIED	7.392	<input type="checkbox"/>
Thorium-232	NR	1.421	0.206	pCi/g	0.3095	N	911.1	3	1.667	IDENTIFIED	13.54	<input type="checkbox"/>
Thorium-234	N/C	1.18	0.5112	pCi/g	1.036	2.00	63.14	2	1.308	IDENTIFIED	42.33	<input checked="" type="checkbox"/>
Tin-126	INT	0.3204	0.03594	pCi/g	0.09251	N	87.11	3	1.506	IDENTIFIED	10.49	<input type="checkbox"/>
Titanium-44	WT	0.3501	0.02555	pCi/g	0.05805	N	0	13	0	FAIL_ABUND	0	<input type="checkbox"/>
Total Uranium		3.6261	1.52E-06	ug/g	1.5437	N						<input type="checkbox"/>
Uranium-234	NR	1.362	0.1191	pCi/g	0.1505	N	608.9	4	1.695	IDENTIFIED	7.392	<input type="checkbox"/>
Uranium-238	HE	1.18	0.5112	pCi/g	1.036	N	63.14	2	1.308	IDENTIFIED	42.33	<input type="checkbox"/>
Zirconium-97		1.32E+08	2.34E+07	pCi/g	0	N	0	13	0	SHORT_HLIF	0	<input type="checkbox"/>

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
243492004	18-DEC-09 12:00	04-JAN-10 14:01	17.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	NR	1.542	0.1641	pCi/g	0.2241	N	911	3	2.031	IDENTIFIED	9.073
Americium-243	WT	0.3608	0.05363	pCi/g	0.1298	N	74.29	1	1.245	IDENTIFIED	13.79
Bismuth-211	INT	4.246	0.3066	pCi/g	0.3948	Y	351.5	4	1.542	IDENTIFIED	6.352
Bismuth-214	✓	1.283	0.09564	pCi/g	0.1235	0.200	609	4	1.618	IDENTIFIED	6.466
Cerium-143	✓	3535	509.6	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Gross Gamma	✓	8.652	1.722	pCi/g	4.099	N	0				
Iodine-133	HE	3899	17370	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Iodine-135	✓	1.85E+17	0	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Lead-212	✓	1.719	0.09884	pCi/g	0.108	0.100	238.2	4	1.428	IDENTIFIED	3.993
Lead-214	✓	1.477	0.1134	pCi/g	0.1376	0.100	351.5	4	1.542	IDENTIFIED	6.352
Niobium-95m	LA	1.594	0.1273	pCi/g	0.4231	N	0	7	0	NOT_IDENTI	0
Polonium-212	NR	1.719	0.09884	pCi/g	0.108	N	238.2	4	1.428	IDENTIFIED	3.993
Polonium-214	NR	1.477	0.1134	pCi/g	0.1376	N	351.5	4	1.542	IDENTIFIED	6.352
Polonium-216	NR	1.719	0.09884	pCi/g	0.108	N	238.2	4	1.428	IDENTIFIED	3.993
Polonium-218	NR	1.477	0.1134	pCi/g	0.1376	N	351.5	4	1.542	IDENTIFIED	6.352
Potassium-40	✓	20.5	1.205	pCi/g	0.6862	1.00	1461	1	1.977	IDENTIFIED	4.468
Radium-224	INT	5.097	0.8264	pCi/g	1.228	Y	241.2	1	2.019	IDENTIFIED	15.84
Radium-226	✓	1.283	0.09564	pCi/g	0.1235	Y	609	4	1.618	IDENTIFIED	6.466
Radium-228	✓	1.542	0.1641	pCi/g	0.2241	0.500	911	3	2.031	IDENTIFIED	9.073
Thallium-208	✓	0.6367	0.04655	pCi/g	0.06837	0.080	582.8	1	1.608	IDENTIFIED	6.582
Thorium-228	NR	1.748	0.1005	pCi/g	0.1098	N	238.2	4	1.428	IDENTIFIED	3.993
Thorium-230	NR	1.283	0.09564	pCi/g	0.1235	N	609	4	1.618	IDENTIFIED	6.466
Thorium-232	NR	1.542	0.1641	pCi/g	0.2241	N	911	3	2.031	IDENTIFIED	9.073
Tin-126	HE	0.2539	0.06752	pCi/g	0.2141	N	0	7	0	FAIL_ABUND	0
Titanium-44	LA	0.273	0.03228	pCi/g	0.1036	N	0	7	0	NOT_IDENTI	0
Total Uranium	✓	7.1339	4.76E-06	ug/g	5.7247	N	0				
Uranium-234	NR	1.283	0.09564	pCi/g	0.1235	N	609	4	1.618	IDENTIFIED	6.466
Zirconium-97	✓	4.60E+07	9.06E+06	pCi/g	0	N	0	7	0	SHORT_HLIF	0

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Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
243492005	18-DEC-09 12:00	04-JAN-10 14:01	17.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment
Actinium-228	NR	1.817	0.1852	pCi/g	0.191	N	910.8	3	1.527	IDENTIFIED	8.278
Americium-243	INT	0.3851	0.03697	pCi/g	0.08853	N	74.72	1	1.078	IDENTIFIED	8.659







Radium-224	INT	5.286	0.8353	pCi/g	1.085	Y	240.9	1	1.923	IDENTIFIED	15.35	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.306	0.1211	pCi/g	0.1335	Y	609	4	1.364	IDENTIFIED	8.12	<input type="checkbox"/>	
Radium-228	✓	1.793	0.2171	pCi/g	0.2436	0.500	911.1	3	1.8	IDENTIFIED	10.97	<input type="checkbox"/>	
Sodium-24	HE	1.18E+06	4.01E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-200	HE	1473	808.3	pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.6008	0.05696	pCi/g	0.0705	0.080	582.7	1	1.291	IDENTIFIED	8.613	<input type="checkbox"/>	
Thorium-228	NR	1.828	0.101	pCi/g	0.09694	N	238	4	1.044	IDENTIFIED	3.357	<input type="checkbox"/>	
Thorium-230	NR	1.305	0.1211	pCi/g	0.1335	N	609	4	1.364	IDENTIFIED	8.12	<input type="checkbox"/>	
Thorium-232	NR	1.793	0.2171	pCi/g	0.2436	N	911.1	3	1.8	IDENTIFIED	10.97	<input type="checkbox"/>	
Thorium-234	✓	1.925	0.562	pCi/g	1.071	2.00	62.28	2	0.8346	IDENTIFIED	27.75	<input type="checkbox"/>	
Tin-126	INT	0.4777	0.04637	pCi/g	0.09524	N	86.43	2	1.231	IDENTIFIED	8.822	<input type="checkbox"/>	
Total Uranium	LA	5.7213	1.67E-06	ug/g	1.5954	N	0	0	0			<input type="checkbox"/>	
Uranium-234	NR	1.305	0.1211	pCi/g	0.1335	N	609	4	1.364	IDENTIFIED	8.12	<input type="checkbox"/>	
Uranium-238	HE	1.925	0.562	pCi/g	1.071	N	62.28	2	0.8346	IDENTIFIED	27.75	<input type="checkbox"/>	
Zirconium-97	HE	1.22E+07	8.36E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	<input type="checkbox"/>	

\*\*\* = Number of isotopes identified with a keyline at this energy.

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
243492007	18-DEC-09 12:00	04-JAN-10 14:02	17.1	SAMPLE	LOAD	1	LANL	LANL01004GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment		
Actinium-228	NR	1.539	0.1578	pCi/g	0.1707	N	911.3	3	2.171	IDENTIFIED	7.822	<input type="checkbox"/>	
Americium-243	INT	0.3528	0.03811	pCi/g	0.09032	N	75.14	1	1.043	IDENTIFIED	9.958	<input type="checkbox"/>	
Annihilation Rad.	-	0.1216	0.02871	pCi/g	0.03781	N	511.1	1	1.897	IDENTIFIED	23.38	<input type="checkbox"/>	
Barium-137m	HE	0.05963	0.01545	pCi/g	0.05722	N	0	16	0	NOT_IDENTI	0	<input type="checkbox"/>	
Bismuth-211	WT	4.292	0.2355	pCi/g	0.2418	Y	352.1	4	1.314	IDENTIFIED	4.45	<input checked="" type="checkbox"/>	UF
Bismuth-212	LA	0.924	0.1894	pCi/g	0.5456	N	0	16	0	FAIL_ABUND	0	<input type="checkbox"/>	
Bismuth-214	✓	1.175	0.08175	pCi/g	0.09157	0.200	609.6	4	1.542	IDENTIFIED	5.335	<input type="checkbox"/>	
Cadmium-109	INT	3.846	0.4617	pCi/g	1.247	Y	87.66	3	1.331	IDENTIFIED	11.08	<input checked="" type="checkbox"/>	UF
Cerium-143	-	1743	269.2	pCi/g	0	N	0	16	0	SHORT_HLIF	0	<input type="checkbox"/>	
Cesium-134	LA	0.1023	0.0226	pCi/g	0.07153	0.100	0	16	0	FAIL_ABUND	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Cesium-135	HE	0.2696	0.07255	pCi/g	0.2353	N	0	16	0	NOT_IDENTI	0	<input type="checkbox"/>	
Cesium-137	LA	0.06304	0.01634	pCi/g	0.06048	0.100	0	16	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Gold-195	HE	0.4737	0.1166	pCi/g	0.3834	N	0	16	0	FAIL_ABUND	0	<input type="checkbox"/>	
Gross Gamma	-	8.397	1.202	pCi/g	2.17	N	0					<input type="checkbox"/>	
Iodine-133	HE	895.1	11520	pCi/g	0	N	0	16	0	SHORT_HLIF	0	<input type="checkbox"/>	
Krypton-85	LA	24.38	3.668	pCi/g	12.69	N	0	16	0	NOT_IDENTI	0	<input type="checkbox"/>	
Lead-212	✓	1.595	0.07512	pCi/g	0.07828	0.100	239	4	1.161	IDENTIFIED	3.068	<input type="checkbox"/>	
Lead-214	✓	1.493	0.09071	pCi/g	0.08426	0.100	352.1	4	1.314	IDENTIFIED	4.45	<input type="checkbox"/>	
Lutetium-177	HE	3.704	0.8706	pCi/g	2.04	N	0	16	0	FAIL_ABUND	0	<input type="checkbox"/>	
Neptunium-237	INT	1.107	0.1752	pCi/g	0.3873	N	87.66	3	1.331	IDENTIFIED	11.08	<input type="checkbox"/>	
Niobium-97	HE	64460	2.88E+05	pCi/g	0	N	0	16	0	SHORT_HLIF	0	<input type="checkbox"/>	
Polonium-212	NR	1.595	0.07512	pCi/g	0.07828	N	239	4	1.161	IDENTIFIED	3.068	<input type="checkbox"/>	
Polonium-214	NR	1.493	0.09071	pCi/g	0.08426	N	352.1	4	1.314	IDENTIFIED	4.45	<input type="checkbox"/>	
Polonium-216	NR	1.595	0.07512	pCi/g	0.07828	N	239	4	1.161	IDENTIFIED	3.068	<input type="checkbox"/>	
Polonium-218	NR	1.493	0.09071	pCi/g	0.08426	N	352.1	4	1.314	IDENTIFIED	4.45	<input type="checkbox"/>	
Potassium-40	✓	24.68	1.144	pCi/g	0.4572	1.00	1461	1	2.493	IDENTIFIED	2.664	<input type="checkbox"/>	
Radium-224	WT	3.786	0.494	pCi/g	0.8897	Y	241.9	1	1.541	IDENTIFIED	12.75	<input checked="" type="checkbox"/>	UI
Radium-226	✓	1.175	0.08175	pCi/g	0.09157	Y	609.6	4	1.542	IDENTIFIED	5.335	<input type="checkbox"/>	
Radium-228	✓	1.539	0.1578	pCi/g	0.1707	0.500	911.3	3	2.171	IDENTIFIED	7.822	<input type="checkbox"/>	
Sodium-24	HE	1.00E+06	2.46E+06	pCi/g	0	N	0	16	0	SHORT_HLIF	0	<input type="checkbox"/>	
Strontium-85	LA	0.1276	0.0192	pCi/g	0.06644	Y	0	16	0	NOT_IDENTI	0	<input checked="" type="checkbox"/>	UI Data rejected due to low abundance.
Thallium-200	HE	115.3	630	pCi/g	0	N	0	16	0	SHORT_HLIF	0	<input type="checkbox"/>	
Thallium-208	✓	0.5096	0.03834	pCi/g	0.0436	0.080	583.4	1	1.667	IDENTIFIED	6.42	<input type="checkbox"/>	
Thorium-228	NR	1.623	0.07641	pCi/g	0.07963	N	239	4	1.161	IDENTIFIED	3.068	<input type="checkbox"/>	
Thorium-230	NR	1.175	0.08175	pCi/g	0.09157	N	609.6	4	1.542	IDENTIFIED	5.335	<input type="checkbox"/>	
Thorium-232	NR	1.539	0.1578	pCi/g	0.1707	N	911.3	3	2.171	IDENTIFIED	7.822	<input type="checkbox"/>	
Tin-126	INT	0.3769	0.04525	pCi/g	0.123	N	87.66	3	1.331	IDENTIFIED	11.08	<input type="checkbox"/>	
Titanium-44	LA	0.3294	0.02587	pCi/g	0.08308	N	0	16	0	FAIL_ABUND	0	<input type="checkbox"/>	











Tin-126	3.331	0.1658	pCi/g 0.1881	N	87.91	3	1.249	IDENTIFIED	3.207	<input type="checkbox"/>
Titanium-44	0.2533	0.02739	pCi/g 0.08983	N	0	29	0	FAIL_ABUND	0	<input type="checkbox"/>
Uranium-234	0.9157	0.1272	pCi/g 0.2409	N	610.1	4	1.666	IDENTIFIED	13.25	<input type="checkbox"/>
Zirconium-97	1.00E+41	0	pCi/g 0	N	0	29	0	SHORT_HLIF	0	<input type="checkbox"/>

\*\*\* = Number of isotopes identified with a keyline at this energy.



# Result Greater Than DL

Batch Id	Sample Id	Sample Type	Run Date	Paramname	Result	Uncertainty	Units	DL	RDL
936923	243492007	SAMPLE	04-JAN-10	Cadmium-109	3.846	0.4617	pCi/g	0.624	Y
				Cadmium-115	15.32	7.989	pCi/g	14.02	N
				Cerium-143	1743	269.2	pCi/g	0	N
				Cesium-134	0.1023	0.0226	pCi/g	0.03578	0.100
				Cesium-137	0.06304	0.01634	pCi/g	0.03026	0.100
				Gross Gamma	8.397	1.202	pCi/g	1.05	N
				Iodine-133	895.1	11520	pCi/g	0	N
				Krypton-85	24.38	3.668	pCi/g	6.35	N
				Lead-212	1.595	0.07512	pCi/g	0.03916	0.100
				Lead-214	1.493	0.09071	pCi/g	0.04215	0.100
				Niobium-87	64460	2.88E+05	pCi/g	0	N
				Potassium-40	24.68	1.144	pCi/g	0.2287	1.00
				Radium-224	3.786	0.494	pCi/g	0.4451	Y
				Radium-226	1.175	0.08175	pCi/g	0.04581	Y
				Radium-228	1.539	0.1678	pCi/g	0.08538	0.500
				Sodium-24	1.00E+06	2.46E+06	pCi/g	0	N
				Strontium-85	0.1276	0.0192	pCi/g	0.03324	Y
				Thallium-200	115.3	630	pCi/g	0	N
				Thallium-208	0.5096	0.03834	pCi/g	0.02181	0.080
				Thorium-234	1.171	1.078	pCi/g	1.152	2.00
				Zirconium-97	1.55E+07	5.86E+06	pCi/g	0	N
936923	1202004732	MB	04-JAN-10	Iodine-135	1.30E+06	7.07E+06	pCi/g	0	N
				Krypton-85	21.62	2.835	pCi/g	5.04	N
				Strontium-85	0.1024	0.01343	pCi/g	0.02368	Y ✓
				Thallium-208	0.01691	0.01834	pCi/g	0.0152	0.080
				Thorium-234	0.8851	0.5297	pCi/g	0.543	2.00
				Zirconium-97	2255	379.9	pCi/g	0	N
936923	1202004733	DUP	04-JAN-10	Bismuth-211	4.613	0.2812	pCi/g	0.1644	Y
				Bismuth-214	1.478	0.1032	pCi/g	0.06099	0.200
				Cadmium-109	2.877	0.6029	pCi/g	0.7678	Y
				Cerium-143	4486	608.4	pCi/g	0	N
				Cesium-134	0.1225	0.0323	pCi/g	0.04643	0.100
				Cesium-137	0.2511	0.04413	pCi/g	0.02996	0.100
				Gross Gamma	9.786	1.549	pCi/g	2.03	N
				Iodine-133	5507	17090	pCi/g	0	N
				Krypton-85	19.02	4.605	pCi/g	7.459	N
				Lanthanum-140	0.1004	0.05212	pCi/g	0.06686	Y



## VAX/VMS Nuclide Identification Report Generated 5-JAN-2010 14:04:38.42

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457001.CNF;1
Sample date        : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:02.
Sample ID          : G243457001 Sample quantity : 1.11113E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.74 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 936923 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.46*	149	542	1.16	93.91	88	11	2.07E-02	33.8	
2	0	63.19*	162	582	1.11	127.35	123	9	2.25E-02	28.8	
3	1	74.64*	709	647	1.45	150.26	144	17	9.85E-02	7.8	4.84E+00
4	1	77.11*	1096	468	1.20	155.20	144	17	1.52E-01	4.7	
5	2	84.21*	205	518	1.49	169.39	164	30	2.85E-02	20.7	2.38E+00
6	2	87.21*	394	426	1.29	175.39	164	30	5.47E-02	10.4	
7	2	89.97	257	350	1.14	180.92	164	30	3.57E-02	14.0	
8	2	92.78*	335	412	1.45	186.53	164	30	4.65E-02	13.6	
9	0	186.22*	281	446	1.35	373.39	366	15	3.90E-02	17.8	
10	0	210.46	74	377	1.61	421.87	413	12	1.02E-02	54.0	
11	3	238.76*	1220	171	1.24	478.45	473	22	1.69E-01	3.4	1.48E+00
12	3	241.80	347	217	2.03	484.53	473	22	4.82E-02	14.2	
13	0	270.22*	132	181	1.86	541.35	536	11	1.84E-02	21.8	
14	0	277.29	41	142	0.67	555.48	553	7	5.69E-03	50.7	
15	2	295.35*	370	137	1.32	591.60	586	21	5.14E-02	7.6	1.77E+00
16	2	300.26	106	171	1.91	601.41	586	21	1.47E-02	26.3	
17	0	328.88	34	198	1.41	658.65	651	11	4.78E-03	81.0	
18	0	338.31	234	179	1.15	677.50	673	11	3.25E-02	12.8	
19	0	352.10*	656	176	1.37	705.06	699	12	9.11E-02	5.7	
20	0	463.10	81	84	1.33	926.98	921	11	1.13E-02	24.6	
21	0	511.37*	82	151	1.63	1023.49	1015	17	1.14E-02	40.8	
22	0	583.39*	330	122	1.51	1167.45	1161	15	4.59E-02	9.3	
23	0	609.43*	448	72	1.44	1219.51	1213	12	6.23E-02	6.2	
24	1	661.67	176	63	2.01	1323.94	1317	25	2.44E-02	11.4	2.79E+00
25	1	665.89	56	54	2.01	1332.37	1317	25	7.80E-03	31.6	
26	0	727.43	79	81	1.19	1455.37	1450	12	1.09E-02	25.5	
27	0	768.43	52	67	1.34	1537.32	1532	11	7.27E-03	33.1	
28	0	795.21	47	55	1.67	1590.84	1586	12	6.56E-03	34.4	
29	0	863.50	12	74	2.23	1727.32	1721	11	1.73E-03	150.3	
30	0	911.48*	233	30	1.39	1823.22	1817	12	3.23E-02	8.3	
31	1	962.04	33	18	2.19	1924.26	1920	37	4.60E-03	28.7	2.46E+00
32	1	964.72	66	27	2.19	1929.60	1920	37	9.20E-03	21.8	
33	1	969.12*	158	30	2.19	1938.40	1920	37	2.20E-02	11.1	
34	0	1120.93*	75	76	2.03	2241.75	2236	15	1.05E-02	28.4	
35	0	1238.94	60	38	1.65	2477.55	2470	15	8.26E-03	25.9	
36	0	1461.13*	705	27	2.06	2921.41	2912	16	9.79E-02	4.1	
37	0	1588.81	25	12	1.67	3176.44	3169	12	3.47E-03	34.2	
38	0	1731.41	28	6	1.34	3461.24	3455	14	3.94E-03	26.9	



Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1765.49	60	19	1.96	3529.31	3524	11	8.34E-03	19.1	

Flag: "\*" = Peak area was modified by background subtraction



## VMS Nuclide Identification Report V3.1 Generated 5-JAN-2010 14:04:41

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:02
Sample ID        : G243457001 Sample quantity : 111.11 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA5 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.74 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.225E+01	2.307E+00	7.937E-01	4.936E-02	28.039
CD-109	+	88.03	*	4.673E+00	1.038E+00	1.158E+00	8.816E-02	4.036
SN-126	+	64.28		7.068E-01	4.205E-01	4.868E-01	7.255E-02	1.452
	+	86.94		1.904E+00	8.787E-01	4.702E-01	1.935E-01	4.049
	+	87.57	*	4.580E-01	1.018E-01	1.133E-01	8.629E-03	4.042
BA-137M	+	661.65	*	3.282E-01	7.793E-02	8.176E-02	5.377E-03	4.014
CS-137	+	661.65	*	3.470E-01	8.240E-02	8.643E-02	5.702E-03	4.014
TL-208	+	277.35		4.773E-01	4.879E-01	7.718E-01	9.900E-02	0.618
	+	510.84		5.073E-01	4.177E-01	2.844E-01	2.988E-02	1.784
	+	583.14	*	5.872E-01	1.170E-01	7.196E-02	5.295E-03	8.160
		860.37		3.878E-01	5.480E-01	8.345E-01	8.468E-02	0.465
BI-210	+	46.50	*	1.631E+00	1.109E+00	1.009E+00	7.873E-02	1.616
PB-210	+	46.50	*	1.631E+00	1.109E+00	1.009E+00	7.873E-02	1.616
PO-210	+	46.50	*	1.631E+00	1.107E+00	1.009E+00	6.788E-02	1.616
BI-211		72.87		1.164E+01	3.096E+00	4.839E+00	3.809E-01	2.405
	+	351.07	*	4.873E+00	6.754E-01	4.254E-01	3.371E-02	11.455
PB-212	+	74.81		2.786E+00	5.509E-01	4.350E-01	5.304E-02	6.404
	+	77.11		2.568E+00	3.120E-01	2.598E-01	2.022E-02	9.886
	+	87.30		2.118E+00	5.162E-01	5.237E-01	6.583E-02	4.045
	+	238.63	*	1.937E+00	2.478E-01	1.095E-01	1.181E-02	17.688
	+	300.09		2.626E+00	1.411E+00	1.591E+00	1.691E-01	1.650
PO-212	+	74.81		2.786E+00	5.509E-01	4.350E-01	5.304E-02	6.404
	+	77.11		2.568E+00	3.120E-01	2.598E-01	2.022E-02	9.886
	+	87.30		2.118E+00	5.162E-01	5.237E-01	6.583E-02	4.045
		115.19		1.962E+00	4.167E+00	6.899E+00	8.778E-01	0.284
	+	238.63	*	1.937E+00	2.478E-01	1.095E-01	1.181E-02	17.688
	+	300.09		2.626E+00	1.411E+00	1.591E+00	1.691E-01	1.650
BI-214	+	609.31	*	1.507E+00	2.254E-01	1.452E-01	1.217E-02	10.380
	+	1120.29		1.341E+00	7.719E-01	5.711E-01	5.455E-02	2.348
	+	1764.49		1.491E+00	5.771E-01	5.393E-01	3.118E-02	2.765
PB-214	+	74.81		4.801E+00	9.089E-01	7.496E-01	8.079E-02	6.404
	+	77.11		4.403E+00	6.314E-01	4.453E-01	4.850E-02	9.886
	+	87.30		3.628E+00	8.535E-01	8.971E-01	9.723E-02	4.045
	+	241.98		3.311E+00	1.013E+00	6.595E-01	7.433E-02	5.020



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		1.607E+00	3.011E-01	2.786E-01	3.046E-02	5.768
	+	351.92	*	1.695E+00	2.510E-01	1.451E-01	1.374E-02	11.680
	+	74.81		4.801E+00	9.089E-01	7.496E-01	8.079E-02	6.404
	+	77.11		4.403E+00	6.314E-01	4.453E-01	4.850E-02	9.886
	+	87.30		3.628E+00	8.535E-01	8.971E-01	9.723E-02	4.045
	+	241.98		3.311E+00	1.013E+00	6.595E-01	7.433E-02	5.020
PO-216	+	295.21		1.607E+00	3.011E-01	2.786E-01	3.046E-02	5.768
	+	351.92	*	1.695E+00	2.510E-01	1.451E-01	1.374E-02	11.680
	+	74.81		2.786E+00	5.509E-01	4.350E-01	5.304E-02	6.404
	+	77.11		2.568E+00	3.120E-01	2.598E-01	2.022E-02	9.886
	+	87.30		2.118E+00	5.162E-01	5.237E-01	6.583E-02	4.045
	+	238.63	*	1.937E+00	2.478E-01	1.095E-01	1.181E-02	17.688
PO-218	+	300.09		2.626E+00	1.411E+00	1.591E+00	1.691E-01	1.650
	+	74.81		4.801E+00	9.089E-01	7.496E-01	8.079E-02	6.404
	+	77.11		4.403E+00	6.314E-01	4.453E-01	4.850E-02	9.886
	+	87.30		3.628E+00	8.535E-01	8.971E-01	9.723E-02	4.045
	+	241.98		3.311E+00	1.013E+00	6.595E-01	7.433E-02	5.020
	+	295.21		1.607E+00	3.011E-01	2.786E-01	3.046E-02	5.768
RA-224	+	351.92	*	1.695E+00	2.510E-01	1.451E-01	1.374E-02	11.680
RA-226	+	240.98	*	6.278E+00	1.889E+00	1.246E+00	1.220E-01	5.036
AC-228	+	609.31	*	1.507E+00	2.254E-01	1.452E-01	1.217E-02	10.380
	+	1120.29		1.341E+00	7.719E-01	5.711E-01	5.455E-02	2.348
	+	1764.49		1.491E+00	5.771E-01	5.393E-01	3.118E-02	2.765
	+	338.32		1.912E+00	9.253E-01	5.113E-01	2.102E-01	3.739
	+	911.07	*	1.879E+00	3.899E-01	2.759E-01	3.414E-02	6.810
	+	969.11		2.255E+00	7.298E-01	4.229E-01	9.989E-02	5.332
RA-228	+	338.32		1.912E+00	9.253E-01	5.113E-01	2.102E-01	3.739
	+	911.07	*	1.879E+00	3.899E-01	2.759E-01	3.414E-02	6.810
	+	969.11		2.255E+00	7.298E-01	4.229E-01	9.989E-02	5.332
	+	74.81		2.834E+00	4.948E-01	4.425E-01	3.500E-02	6.404
	+	77.11		2.612E+00	3.174E-01	2.642E-01	2.057E-02	9.886
	+	87.30		2.154E+00	4.788E-01	5.326E-01	4.058E-02	4.045
TH-228	+	238.63	*	1.970E+00	2.521E-01	1.114E-01	1.201E-02	17.688
	+	300.09		2.671E+00	2.119E+00	1.619E+00	9.601E-01	1.650
	+	609.31	*	1.507E+00	2.254E-01	1.452E-01	1.217E-02	10.380
	+	1120.29		1.341E+00	7.719E-01	5.711E-01	5.455E-02	2.348
	+	1764.49		1.491E+00	5.771E-01	5.393E-01	3.118E-02	2.765
	+	338.32		1.912E+00	5.111E-01	5.113E-01	4.009E-02	3.739
TH-232	+	911.07	*	1.879E+00	3.899E-01	2.759E-01	3.414E-02	6.810
	+	969.11		2.255E+00	7.298E-01	4.229E-01	9.989E-02	5.332
	+	63.29	*	1.786E+00	1.076E+00	1.219E+00	2.166E-01	1.465
	+	92.38		2.697E+00	8.809E-01	7.864E-01	1.413E-01	3.429
	+	609.31	*	1.507E+00	2.254E-01	1.452E-01	1.217E-02	10.380
	+	1120.29		1.341E+00	7.719E-01	5.711E-01	5.455E-02	2.348
U-234	+	1764.49		1.491E+00	5.771E-01	5.393E-01	3.118E-02	2.765
	+	86.50	*	1.345E+00	4.078E-01	3.317E-01	7.298E-02	4.054
	+	95.87		-3.469E-02	1.134E+00	1.624E+00	4.022E-01	-0.021
	+	63.29	*	1.786E+00	1.076E+00	1.219E+00	2.166E-01	1.465
	+	92.38		2.697E+00	7.695E-01	7.864E-01	6.580E-02	3.429



## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	+	74.67	*	4.517E-01	7.870E-02	7.051E-02	5.523E-03	6.406
	+	86.72		5.043E+01	1.121E+01	1.245E+01	9.494E-01	4.051
		117.66		-6.176E-01	4.476E+00	7.246E+00	9.595E-01	-0.085
		142.18		8.431E+00	2.210E+01	3.626E+01	4.506E+00	0.232
ANH-511	+	511.00	*	1.096E-01	8.976E-02	6.145E-02	3.933E-03	1.783

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	4.158E-02	4.294E-01	7.058E-01	5.056E-02	0.059
NA-22		1274.54	*	4.037E-02	5.636E-02	9.836E-02	5.729E-03	0.410
NA-24		1368.53	*	3.775E-01	5.636E-02	Half-Life too short		
AL-26		1129.67		-1.406E+00	2.534E+00	3.407E+00	2.282E-01	-0.413
		1808.65	*	1.612E-02	4.534E-02	7.910E-02	4.539E-03	0.204
TI-44		67.85		2.762E-03	4.283E-02	5.255E-02	4.205E-03	0.053
	+	78.38	*	4.740E-01	5.758E-02	7.903E-02	6.132E-03	5.998
SC-46		889.25	*	1.964E-03	5.260E-02	8.732E-02	8.770E-03	0.022
	+	1120.51		2.334E-01	1.334E-01	1.730E-01	1.190E-02	1.349
V-48		944.10		4.059E-01	1.156E+00	1.975E+00	1.910E-01	0.206
		983.50	*	4.461E-02	9.591E-02	1.588E-01	1.455E-02	0.281
		1312.09		2.961E-02	1.136E-01	1.894E-01	1.098E-02	0.156
CR-51		320.08	*	-1.835E-01	5.105E-01	8.084E-01	7.149E-02	-0.227
MN-52		744.21		-3.141E-01	4.129E-01	6.458E-01	5.014E-02	-0.486
		848.13		3.503E+00	1.044E+01	1.787E+01	1.675E+00	0.196
		935.52		5.107E-01	4.193E-01	7.633E-01	7.462E-02	0.669
		1246.25		7.360E+00	1.306E+01	1.969E+01	1.145E+00	0.374
		1333.61		1.236E-01	6.889E+00	1.115E+01	6.453E-01	0.011
		1434.06	*	1.030E-01	3.667E-01	6.361E-01	3.725E-02	0.162
MN-54		834.83	*	1.356E-03	5.192E-02	8.636E-02	7.912E-03	0.016
CO-56		846.75	*	2.116E-02	5.051E-02	8.692E-02	8.129E-03	0.243
		977.42		5.968E-01	4.252E+00	6.137E+00	5.673E-01	0.097
		1037.82		-1.758E-01	4.152E-01	6.503E-01	5.737E-02	-0.270
		1175.09		-1.197E+00	2.977E+00	4.644E+00	2.694E-01	-0.258
	+	1238.25		3.026E-01	1.579E-01	2.250E-01	1.390E-02	1.345
		1360.21		-2.206E-01	1.090E+00	1.695E+00	9.847E-02	-0.130
		1771.40		-1.885E-02	3.831E-01	5.312E-01	3.068E-02	-0.035
CO-57		122.06	*	-2.574E-02	3.030E-02	4.719E-02	6.695E-03	-0.545
		136.48		-1.564E-01	2.664E-01	4.203E-01	5.630E-02	-0.372
CO-58		810.76	*	-4.644E-02	5.243E-02	7.985E-02	7.028E-03	-0.582
FE-59		142.65		2.006E+00	3.498E+00	5.775E+00	7.151E-01	0.347
		192.34		4.399E-01	1.383E+00	1.970E+00	2.825E-01	0.223
		1099.22	*	6.001E-02	1.123E-01	1.939E-01	1.571E-02	0.309
		1291.56		-8.283E-02	1.700E-01	2.588E-01	1.922E-02	-0.320
CO-60		1173.22		5.439E-02	5.757E-02	1.022E-01	5.926E-03	0.532
		1332.49	*	8.457E-04	4.506E-02	7.294E-02	4.221E-03	0.012
ZN-65		1115.52	*	-1.142E-01	1.423E-01	1.753E-01	1.225E-02	-0.652
GE-68		1077.35	*	6.442E-01	1.581E+00	2.694E+00	2.069E-01	0.239
AS-73		53.44	*	-5.442E-02	2.889E-01	4.728E-01	3.559E-02	-0.115



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-74		595.88	*	1.217E-01	1.295E-01	2.242E-01	1.475E-02	0.543
		634.78		1.883E-01	5.270E-01	8.729E-01	5.754E-02	0.216
SE-75		66.05		-1.699E+00	3.485E+00	4.951E+00	4.939E-01	-0.343
		96.73		-4.326E-01	9.435E-01	1.320E+00	1.843E-01	-0.328
		121.11		-1.051E-01	1.617E-01	2.545E-01	4.000E-02	-0.413
		136.00		-2.024E-02	4.996E-02	7.955E-02	1.037E-02	-0.254
		198.60		-7.979E-01	2.465E+00	3.856E+00	4.168E-01	-0.207
		264.65	*	-3.052E-03	6.179E-02	8.969E-02	8.563E-03	-0.034
		279.53		1.157E-01	1.580E-01	2.404E-01	2.302E-02	0.481
		303.91		3.316E+00	2.884E+00	4.498E+00	5.216E-01	0.737
		400.65		1.631E-01	3.553E-01	5.998E-01	5.488E-02	0.272
BR-77	+	87.88		1.786E+03	3.968E+02	6.387E+02	4.861E+01	2.796
		200.40		3.815E+02	3.786E+02	6.294E+02	6.285E+01	0.606
	+	239.00		5.518E+02	6.611E+01	8.317E+01	8.152E+00	6.634
		249.79		9.469E+01	1.643E+02	2.487E+02	2.412E+01	0.381
		281.68		-2.255E+01	2.256E+02	3.253E+02	3.005E+01	-0.069
		297.23		8.334E+02	1.689E+02	2.998E+02	2.677E+01	2.779
		303.76		5.241E+02	4.309E+02	6.769E+02	5.944E+01	0.774
		439.47		1.723E+01	3.288E+02	5.408E+02	3.297E+01	0.032
		484.57		3.943E+02	5.281E+02	9.064E+02	5.714E+01	0.435
		520.65	*	-3.084E+00	2.404E+01	3.869E+01	2.488E+00	-0.080
		574.64		-3.878E+02	4.936E+02	7.460E+02	4.888E+01	-0.520
		578.91		1.650E+02	2.125E+02	3.232E+02	2.120E+01	0.511
		585.48		4.113E+03	6.716E+02	1.240E+03	8.144E+01	3.316
		755.35		6.446E+02	4.243E+02	7.790E+02	6.178E+01	0.827
		817.79		1.302E+02	3.201E+02	5.499E+02	4.889E+01	0.237
SR-82		698.33		2.259E+01	4.825E+01	8.350E+01	5.923E+00	0.271
		776.49	*	-5.843E-01	5.450E-01	7.972E-01	6.578E-02	-0.733
		1395.20		5.654E+00	1.454E+01	2.551E+01	1.489E+00	0.222
RB-83		520.41	*	-5.887E-03	9.325E-02	1.467E-01	9.431E-03	-0.040
		529.64		-6.860E-02	1.465E-01	2.231E-01	1.441E-02	-0.307
		552.65		3.280E-02	2.737E-01	4.476E-01	2.915E-02	0.073
RB-84		881.50	*	-1.208E-02	8.620E-02	1.405E-01	1.394E-02	-0.086
KR-85		513.99	*	2.825E+01	1.094E+01	1.870E+01	1.198E+00	1.511
SR-85		513.99	*	1.479E-01	5.728E-02	9.787E-02	6.273E-03	1.511
RB-86		1076.63	*	-2.882E-01	1.093E+00	1.738E+00	1.337E-01	-0.166
Y-88		898.02		-1.580E-02	5.596E-02	9.003E-02	9.206E-03	-0.175
		1836.01	*	2.266E-02	4.178E-02	7.631E-02	4.366E-03	0.297
ZR-88		392.90	*	-1.395E-02	4.409E-02	7.131E-02	4.152E-03	-0.196
Y-91		1204.90	*	-1.817E+01	2.671E+01	4.056E+01	2.357E+00	-0.448
NB-94		702.63	*	-1.144E-02	4.570E-02	7.516E-02	5.378E-03	-0.152
		871.10		3.236E-02	4.496E-02	7.780E-02	7.582E-03	0.416
NB-95		765.79	*	1.024E-01	6.245E-02	1.052E-01	8.509E-03	0.973
NB-95M		235.69	*	3.244E-01	1.885E-01	2.963E-01	3.241E-02	1.095
ZR-95		724.18		6.976E-03	1.647E-01	2.270E-01	1.888E-02	0.031
		756.15	*	1.534E-01	1.043E-01	1.908E-01	1.695E-02	0.804
NB-97		657.90	*	1.097E+00	1.043E-01	Half-Life	too short	
		1024.50		4.539E+01	1.043E-01	Half-Life	too short	
ZR-97		254.15		-3.615E+01	1.043E-01	Half-Life	too short	



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	355.39			1.857E+01	1.043E-01	Half-Life	too short	
	507.63	*		1.670E+01	1.043E-01	Half-Life	too short	
	602.52			1.394E+01	1.043E-01	Half-Life	too short	
	1021.30			9.086E+01	1.043E-01	Half-Life	too short	
	1147.95			-1.600E+01	1.043E-01	Half-Life	too short	
	1362.66			-4.609E+01	1.043E-01	Half-Life	too short	
	1750.46			2.464E+01	1.043E-01	Half-Life	too short	
MO-99	140.51			1.651E+00	5.437E+01	8.813E+01	2.571E+01	0.019
	181.06			-1.124E+01	4.078E+01	5.607E+01	1.063E+01	-0.200
	366.43			-1.098E+02	1.723E+02	2.729E+02	1.873E+01	-0.402
	739.58	*		1.684E+01	2.532E+01	4.431E+01	6.504E+00	0.380
	778.00			-3.723E+01	7.056E+01	1.119E+02	9.264E+00	-0.333
TC-99M	140.51	*		3.338E+11	7.056E+01	Half-Life	too short	
RH-101	127.23			5.057E-02	3.991E-02	6.692E-02	9.213E-03	0.756
	198.01	*		-5.062E-02	4.525E-02	6.787E-02	6.777E-03	-0.746
	325.23			1.054E-01	3.180E-01	4.700E-01	3.868E-02	0.224
RH-102	418.52			9.878E-02	3.936E-01	6.563E-01	3.925E-02	0.151
	475.06	*		-8.922E-03	3.859E-02	6.197E-02	3.882E-03	-0.144
	631.29			-2.128E-02	7.557E-02	1.187E-01	7.826E-03	-0.179
	697.49			7.678E-02	1.045E-01	1.839E-01	1.302E-02	0.418
	766.84			3.571E-01	1.613E-01	2.814E-01	2.281E-02	1.269
	1046.59			4.510E-02	1.409E-01	2.387E-01	1.959E-02	0.189
	1112.84			5.889E-02	3.044E-01	4.709E-01	3.309E-02	0.125
RU-103	497.08	*		-1.381E-02	5.627E-02	8.999E-02	1.162E-02	-0.153
	610.33	+		1.685E+01	3.373E+00	3.975E+00	6.253E-01	4.238
RH-106	511.85	+		5.493E-01	4.500E-01	5.591E-01	3.580E-02	0.982
	621.84	*		5.990E-01	4.707E-01	8.208E-01	9.971E-02	0.730
	1050.47			-1.093E+00	2.757E+00	4.311E+00	3.509E-01	-0.253
RU-106	511.85	+		5.493E-01	4.500E-01	5.591E-01	3.580E-02	0.982
	621.84	*		5.990E-01	4.668E-01	8.208E-01	5.410E-02	0.730
	1050.47			-1.093E+00	2.757E+00	4.311E+00	3.509E-01	-0.253
AG-108M	433.93	*		-1.353E-02	4.144E-02	6.640E-02	4.345E-03	-0.204
	614.37			9.852E-03	5.570E-02	7.904E-02	5.554E-03	0.125
	722.95			1.337E-02	5.946E-02	8.802E-02	6.900E-03	0.152
AG-110M	657.75	*		5.385E-02	5.313E-02	8.224E-02	5.685E-03	0.655
	677.61			-1.664E-02	4.295E-01	7.189E-01	5.107E-02	-0.023
	706.67			1.765E-01	2.804E-01	4.831E-01	3.621E-02	0.365
	763.93			7.043E-02	2.183E-01	3.269E-01	2.720E-02	0.215
	884.67			-2.545E-02	6.042E-02	9.551E-02	9.751E-03	-0.266
	937.48			-7.675E-02	1.496E-01	2.344E-01	2.351E-02	-0.327
	1384.27			-1.904E-01	2.159E-01	3.201E-01	1.979E-02	-0.595
IN-111	171.28			-1.222E+00	2.054E+00	3.209E+00	3.190E-01	-0.381
	245.39	*		-8.719E-02	2.325E+00	3.390E+00	3.303E-01	-0.026
IN-113M	391.69	*		-2.927E-02	6.367E-02	1.021E-01	6.335E-03	-0.287
SN-113	391.69	*		-2.927E-02	6.367E-02	1.021E-01	6.335E-03	-0.287
IN-114M	190.27	*		-6.714E-03	2.725E-01	3.802E-01	3.797E-02	-0.018
CD-115	260.90			-6.619E+01	3.075E+02	5.099E+02	4.875E+01	-0.130
	492.35			1.118E+01	8.611E+01	1.417E+02	8.976E+00	0.079
	527.90	*		-1.168E+01	2.767E+01	4.237E+01	2.734E+00	-0.276



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M	156.02			8.524E-01	3.137E+00	5.117E+00	5.642E-01	0.167
	158.56	*		-6.943E-02	7.605E-02	1.172E-01	1.260E-02	-0.593
SB-122	563.90	*		3.585E+00	4.836E+00	8.236E+00	5.382E-01	0.435
	692.80			-1.090E+01	9.924E+01	1.650E+02	1.158E+01	-0.066
I-123	159.00	*		-5.263E+01	9.924E+01	Half-Life	too short	
	528.96			-3.435E+03	9.924E+01	Half-Life	too short	
TE-123M	159.00	*		-2.181E-02	3.576E-02	5.600E-02	6.017E-03	-0.390
I-124	602.71	*		3.574E-01	1.409E+00	2.015E+00	1.327E-01	0.177
	722.78			1.514E+00	8.670E+00	1.276E+01	9.504E-01	0.119
	1325.50			1.512E+01	5.860E+01	9.793E+01	5.671E+00	0.154
	1376.25			6.530E+01	6.008E+01	1.109E+02	6.460E+00	0.589
	1509.49			1.157E+01	2.776E+01	4.880E+01	2.869E+00	0.237
	1691.02			5.732E+00	6.849E+00	1.293E+01	7.545E-01	0.443
SB-124	602.71			1.534E-02	6.047E-02	8.649E-02	5.696E-03	0.177
	645.85			-2.398E-01	6.920E-01	1.078E+00	7.817E-02	-0.222
	709.31			-2.041E+00	3.703E+00	5.926E+00	4.297E-01	-0.344
	713.82			9.463E-01	2.087E+00	3.616E+00	4.029E-01	0.262
	722.78			9.420E-02	5.394E-01	7.939E-01	6.083E-02	0.119
+	968.20			2.375E+01	5.704E+00	1.005E+01	9.412E-01	2.363
	1045.16			-9.333E-02	3.125E+00	5.105E+00	4.201E-01	-0.018
	1325.50			1.005E+00	3.894E+00	6.507E+00	3.768E-01	0.154
	1368.21			1.708E-01	1.828E+00	2.996E+00	3.559E-01	0.057
	1436.60			-1.140E+00	4.812E+00	7.765E+00	4.548E-01	-0.147
	1691.02	*		8.412E-02	1.005E-01	1.897E-01	1.201E-02	0.443
SB-125	427.89	*		-4.180E-03	1.297E-01	2.124E-01	1.332E-02	-0.020
+	463.38			9.676E-01	4.806E-01	6.908E-01	4.919E-02	1.401
	600.56			7.293E-02	2.359E-01	3.899E-01	2.883E-02	0.187
	635.90			-1.255E-02	3.840E-01	6.161E-01	4.608E-02	-0.020
TE-125M	109.28	*		-7.896E-01	1.113E+01	1.812E+01	2.329E+00	-0.044
I-126	388.63			1.420E-01	3.225E-01	5.441E-01	3.238E-02	0.261
+	666.33	*		5.898E-01	3.748E-01	5.035E-01	3.343E-02	1.171
	753.82			1.010E+00	2.335E+00	4.019E+00	3.178E-01	0.251
SB-126	223.80			-2.819E+00	5.443E+00	8.955E+00	8.873E-01	-0.315
+	278.60			3.522E+00	3.587E+00	6.133E+00	5.698E-01	0.574
+	296.50			1.785E+01	3.154E+00	5.174E+00	4.628E-01	3.450
	414.70			-1.011E-01	1.149E-01	1.782E-01	1.062E-02	-0.567
	415.30			-7.092E+00	9.308E+00	1.454E+01	8.667E-01	-0.488
	555.20			3.000E+00	5.980E+00	1.006E+01	6.555E-01	0.298
	573.80			-1.280E+00	1.578E+00	2.382E+00	1.561E-01	-0.537
	593.00			6.507E-01	1.358E+00	2.278E+00	1.498E-01	0.286
	656.30			-1.455E-01	5.676E+00	7.824E+00	5.149E-01	-0.019
+	666.33			2.476E-01	1.573E-01	2.113E-01	1.403E-02	1.171
	675.00			-2.547E-01	3.324E+00	5.145E+00	3.479E-01	-0.049
	695.00			-1.102E-01	1.209E-01	1.888E-01	1.330E-02	-0.584
	697.00			1.758E-01	4.046E-01	6.987E-01	4.943E-02	0.252
	720.50	*		6.357E-02	2.295E-01	3.546E-01	2.629E-02	0.179
	856.80			6.820E-01	7.579E-01	1.203E+00	1.145E-01	0.567
	989.30			-5.322E-01	1.733E+00	2.753E+00	2.500E-01	-0.193
	1034.80			1.081E+01	1.253E+01	2.228E+01	1.871E+00	0.485



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	1213.00		-1.373E+00	6.761E+00	1.076E+01	6.253E-01	-0.128
	61.10		1.053E+02	4.894E+01	7.518E+01	8.635E+00	1.401
	252.40		-2.385E+00	7.895E+00	1.295E+01	5.494E+00	-0.184
	290.80		2.239E+01	4.197E+01	6.309E+01	7.630E+00	0.355
	411.60		7.942E+00	2.271E+01	3.808E+01	5.676E+00	0.209
	444.90		6.850E+00	1.929E+01	3.229E+01	3.739E+00	0.212
	473.00		8.368E-01	3.120E+00	5.189E+00	6.232E-01	0.161
	543.00		-2.705E+00	3.254E+01	5.245E+01	7.208E+00	-0.052
	603.60		8.547E+00	2.464E+01	3.559E+01	4.201E+00	0.240
	685.20	*	-1.244E+00	2.634E+00	4.255E+00	4.599E-01	-0.292
XE-127	698.50		1.357E+01	2.905E+01	5.016E+01	7.773E+00	0.271
	722.20		1.394E+01	6.080E+01	9.005E+01	9.842E+00	0.155
	783.80		1.196E+01	7.057E+00	1.297E+01	1.659E+00	0.922
	57.60		7.337E-01	2.934E+00	4.552E+00	3.665E-01	0.161
	145.22		3.199E-01	9.154E-01	1.463E+00	1.776E-01	0.219
I-131	172.10		-1.986E-02	1.552E-01	2.482E-01	2.469E-02	-0.080
	202.84	*	-3.870E-02	7.524E-02	1.013E-01	1.012E-02	-0.382
	374.96		1.139E-01	2.565E-01	4.347E-01	2.837E-02	0.262
	80.18		-1.759E-01	7.279E+00	7.563E+00	5.903E-01	-0.023
	284.30		-6.066E-02	2.195E+00	3.659E+00	3.522E-01	-0.017
TE-132	364.48	*	-6.770E-02	1.710E-01	2.755E-01	2.074E-02	-0.246
	636.97		1.135E+00	2.485E+00	4.148E+00	2.999E-01	0.274
	722.89		2.720E+00	1.187E+01	1.758E+01	1.323E+00	0.155
	49.72		-8.694E+00	8.435E+00	1.167E+01	1.200E+00	-0.745
	111.76		5.399E+00	5.252E+01	8.595E+01	1.216E+01	0.063
BA-133	116.30		1.065E+01	4.856E+01	7.973E+01	1.192E+01	0.134
	228.16	*	-2.219E-01	1.305E+00	2.180E+00	3.664E-01	-0.102
	53.15		4.274E-01	1.195E+00	1.990E+00	1.491E-01	0.215
	79.62		2.760E+00	1.811E+00	2.043E+00	3.011E-01	1.351
	81.00		-3.623E-02	1.322E-01	1.345E-01	2.072E-02	-0.269
I-133	276.40	+	4.718E-01	4.836E-01	8.272E-01	1.231E-01	0.570
	302.84		1.947E-01	2.064E-01	3.164E-01	4.242E-02	0.615
	356.01	*	-8.329E-03	6.207E-02	8.805E-02	1.087E-02	-0.095
	383.85		-2.110E-01	4.031E-01	6.429E-01	7.115E-02	-0.328
	510.53	+	5.366E+00	4.031E-01	Half-Life too short		
CS-134	529.87	*	-2.427E-02	4.031E-01	Half-Life too short		
	706.58		1.708E+00	4.031E-01	Half-Life too short		
	856.28		8.003E-01	4.031E-01	Half-Life too short		
	875.33		-6.877E-02	4.031E-01	Half-Life too short		
	1236.41		3.754E+00	4.031E-01	Half-Life too short		
	1298.22		3.075E+00	4.031E-01	Half-Life too short		
	475.35		2.533E-01	2.457E+00	4.041E+00	2.532E-01	0.063
	563.23		2.031E-01	5.104E-01	8.499E-01	5.644E-02	0.239
	569.32		1.366E-01	2.718E-01	4.560E-01	3.054E-02	0.300
	604.70		2.397E-02	4.889E-02	7.178E-02	4.747E-03	0.334
	795.84	+	1.236E-01	8.569E-02	1.207E-01	1.039E-02	1.024
	801.93	*	1.235E-01	6.884E-01	1.017E+00	8.838E-02	0.121
	1038.57		-2.065E+00	5.154E+00	8.098E+00	6.751E-01	-0.255
	1167.94		1.556E-01	3.411E+00	5.577E+00	3.297E-01	0.028



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135	1365.15			-4.602E-01	1.198E+00	1.782E+00	1.137E-01	-0.258
	268.24	*		3.366E-01	2.284E-01	3.553E-01	3.801E-02	0.948
	288.45			1.098E+12	2.284E-01	Half-Life	too short	
	417.63			1.970E+12	2.284E-01	Half-Life	too short	
	546.56			9.779E+11	2.284E-01	Half-Life	too short	
	836.80			3.151E+12	2.284E-01	Half-Life	too short	
	1038.76			-4.579E+11	2.284E-01	Half-Life	too short	
	1124.00			2.033E+13	2.284E-01	Half-Life	too short	
	1131.51			8.889E+11	2.284E-01	Half-Life	too short	
	1260.41	*		-4.440E+11	2.284E-01	Half-Life	too short	
	1457.56			5.397E+13	2.284E-01	Half-Life	too short	
	1678.03			-9.549E+11	2.284E-01	Half-Life	too short	
	1706.46			2.956E+12	2.284E-01	Half-Life	too short	
	1791.20			2.763E+11	2.284E-01	Half-Life	too short	
	66.91			-8.204E-03	6.389E-01	9.266E-01	1.401E-01	-0.009
CS-136 + CE-139 BA-140	86.29			6.628E+00	1.603E+00	2.367E+00	2.891E-01	2.800
	153.22			7.740E-01	9.142E-01	1.519E+00	1.841E-01	0.509
	163.89			-1.645E-01	1.477E+00	2.368E+00	2.617E-01	-0.069
	176.55			1.582E-01	5.234E-01	8.517E-01	8.854E-02	0.186
	273.65			3.618E-01	1.006E+00	1.027E+00	1.017E-01	0.352
	340.57			6.629E-01	2.425E-01	3.973E-01	3.197E-02	1.669
	818.51			-2.028E-02	1.141E-01	1.868E-01	1.664E-02	-0.109
	1048.07	*		3.387E-02	1.402E-01	2.359E-01	2.021E-02	0.144
	1235.34			3.661E-01	9.754E-01	1.419E+00	1.419E-01	0.258
	165.85	*		1.757E-02	3.678E-02	6.041E-02	5.998E-03	0.291
	162.64			-1.363E-01	1.035E+00	1.659E+00	1.778E-01	-0.082
	304.84			1.553E+00	1.989E+00	2.979E+00	8.360E-01	0.521
	423.70			-5.809E-01	3.005E+00	4.867E+00	1.549E+00	-0.119
	537.32	*		1.106E-02	3.949E-01	6.422E-01	2.097E-01	0.017
	328.77			3.857E-01	6.257E-01	7.619E-01	6.582E-02	0.506
LA-140 + CE-141 CE-143	432.53			-1.696E+00	2.996E+00	4.721E+00	3.136E-01	-0.359
	487.03			1.424E-02	2.080E-01	3.408E-01	2.394E-02	0.042
	751.79			-1.086E+00	2.811E+00	4.557E+00	4.045E-01	-0.238
	815.85			-1.249E-01	4.885E-01	7.936E-01	7.801E-02	-0.157
	867.82			-1.114E-01	2.318E+00	3.280E+00	3.313E-01	-0.034
	919.63			-1.587E-01	3.903E+00	6.275E+00	7.378E-01	-0.025
	925.24			1.097E-01	1.562E+00	2.597E+00	2.693E-01	0.042
	1596.49	*		6.920E-02	1.443E-01	2.416E-01	1.420E-02	0.286
	145.44	*		3.024E-02	8.315E-02	1.330E-01	1.625E-02	0.227
	57.37			8.969E-05	8.315E-02	Half-Life	too short	
	231.56			6.247E-03	8.315E-02	Half-Life	too short	
	293.26	*		2.532E-03	8.315E-02	Half-Life	too short	
	350.59			9.713E-02	8.315E-02	Half-Life	too short	
	490.36			9.625E-04	8.315E-02	Half-Life	too short	
	664.57			1.021E-02	8.315E-02	Half-Life	too short	
CE-144 PM-144	721.93			1.233E-03	8.315E-02	Half-Life	too short	
	80.11			3.015E-01	2.846E+00	2.987E+00	2.308E-01	0.101
	133.54	*		1.006E-01	2.553E-01	4.194E-01	7.765E-02	0.240
	476.78			8.136E-02	8.655E-02	1.504E-01	1.104E-02	0.541



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		-3.720E-02	4.658E-02	7.018E-02	4.843E-03	-0.530
		696.49	*	3.466E-03	4.617E-02	7.781E-02	5.502E-03	0.045
		778.57		-1.068E+00	2.948E+00	4.755E+00	3.940E-01	-0.225
PR-144		696.49	*	2.351E-01	3.132E+00	5.278E+00	3.730E-01	0.045
		1489.15		-8.897E+00	1.445E+01	2.161E+01	1.270E+00	-0.412
PM-146		453.90	*	-6.147E-03	5.756E-02	9.351E-02	8.298E-03	-0.066
		633.02		-4.877E-01	1.956E+00	3.070E+00	1.134E+00	-0.159
		735.90		5.784E-03	2.104E-01	3.448E-01	9.767E-02	0.017
		747.13		6.055E-02	1.232E-01	2.132E-01	2.890E-02	0.284
ND-147	+	91.11		1.169E+00	3.428E-01	6.552E-01	5.828E-02	1.785
		319.41		-3.133E-01	4.814E+00	7.972E+00	6.691E-01	-0.039
		439.89		5.190E-01	8.593E+00	1.414E+01	8.626E-01	0.037
		531.02	*	-7.875E-03	8.409E-01	1.365E+00	1.886E-01	-0.006
PM-149		285.90	*	-9.795E+01	2.123E+02	3.452E+02	5.472E+01	-0.284
EU-152		121.78		-6.260E-02	8.676E-02	1.361E-01	2.035E-02	-0.460
		244.69		6.604E-01	4.547E-01	7.186E-01	7.006E-02	0.919
		344.27	*	-9.471E-03	1.594E-01	2.151E-01	1.769E-02	-0.044
		443.98		6.841E-01	1.311E+00	2.218E+00	1.357E-01	0.308
		778.89		-6.207E-02	3.394E-01	5.565E-01	4.612E-02	-0.112
		867.32		2.157E-02	1.211E+00	1.729E+00	1.674E-01	0.012
	+	964.01		1.086E+00	4.837E-01	7.663E-01	7.220E-02	1.417
		1085.78		-1.546E-01	5.389E-01	8.553E-01	6.440E-02	-0.181
		1112.02		2.456E-01	3.983E-01	6.782E-01	4.776E-02	0.362
		1407.95		-3.805E-02	2.468E-01	4.048E-01	2.365E-02	-0.094
GD-153		69.67		1.199E+00	1.341E+00	2.007E+00	1.596E-01	0.597
	+	83.37		4.188E+01	1.763E+01	2.446E+01	1.877E+00	1.712
		97.43	*	-3.412E-03	9.562E-02	1.369E-01	1.269E-02	-0.025
		103.18		-1.462E-01	1.187E-01	1.834E-01	1.897E-02	-0.797
EU-154		123.07		-2.176E-02	6.097E-02	9.752E-02	1.554E-02	-0.223
		247.94		-1.253E-01	5.014E-01	7.198E-01	8.869E-02	-0.174
		591.81		3.750E-02	8.525E-01	1.301E+00	1.334E-01	0.029
		723.30		-1.307E-02	2.577E-01	3.695E-01	3.137E-02	-0.035
		756.87		1.319E+00	1.088E+00	1.959E+00	2.254E-01	0.673
		873.19		3.222E-02	3.820E-01	6.376E-01	8.343E-02	0.051
		996.32		-4.756E-02	5.003E-01	8.147E-01	1.462E-01	-0.058
		1004.76		1.418E-01	2.781E-01	4.785E-01	5.654E-02	0.296
		1274.45	*	1.096E-01	1.571E-01	2.734E-01	2.556E-02	0.401
EU-155		48.70		1.436E-01	6.407E-01	9.469E-01	6.599E-02	0.152
		60.01		2.385E+00	2.746E+00	4.134E+00	3.422E-01	0.577
	+	86.54		5.520E-01	1.229E-01	1.934E-01	1.494E-02	2.854
		105.31	*	-1.605E-02	1.210E-01	1.967E-01	2.130E-02	-0.082
TB-160	+	86.79		1.501E+00	3.336E-01	5.163E-01	3.937E-02	2.908
		197.04		-9.908E-01	7.793E-01	1.158E+00	1.156E-01	-0.856
		215.65		-5.033E-01	9.910E-01	1.540E+00	1.532E-01	-0.327
		298.57		2.720E-01	1.563E-01	2.769E-01	2.464E-02	0.982
		879.36	*	6.145E-02	1.732E-01	2.966E-01	2.930E-02	0.207
	+	962.29		1.018E+00	5.931E-01	1.280E+00	1.209E-01	0.795
	+	966.15		7.595E-01	3.384E-01	6.888E-01	6.471E-02	1.103
		1177.93		-5.594E-01	4.961E-01	7.118E-01	4.130E-02	-0.786



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1271.85			-1.068E+00	9.855E-01	1.391E+00	8.084E-02	-0.767
	80.57			-8.904E-02	3.629E-01	3.704E-01	2.860E-02	-0.240
	184.41			1.498E-01	5.585E-02	8.676E-02	8.657E-03	1.726
	280.46			1.088E-02	1.174E-01	1.716E-01	1.589E-02	0.063
	410.95			1.241E-01	3.175E-01	5.342E-01	3.171E-02	0.232
	711.68	*		-5.356E-02	7.631E-02	1.201E-01	8.752E-03	-0.446
	752.31			-1.397E-01	4.078E-01	6.635E-01	5.232E-02	-0.211
TM-171	810.29			-1.044E-01	7.984E-02	1.161E-01	1.019E-02	-0.899
	51.35			1.233E+01	9.838E+00	1.514E+01	1.102E+00	0.814
	52.39			1.881E+00	5.161E+00	8.334E+00	6.167E-01	0.226
	59.40			1.403E+01	1.423E+01	2.152E+01	1.783E+00	0.652
	66.72	*		-9.355E+00	2.106E+01	2.998E+01	2.410E+00	-0.312
LU-176	88.36			1.086E+00	2.414E-01	4.041E-01	3.100E-02	2.688
	201.83			4.459E-03	3.903E-02	6.051E-02	6.040E-03	0.074
	306.84	*		6.487E-03	3.241E-02	5.157E-02	4.491E-03	0.126
LU-177	401.10			7.328E-01	9.251E+00	1.529E+01	8.986E-01	0.048
	112.95			-7.544E-01	2.359E+00	3.796E+00	4.656E-01	-0.199
	208.36	*		2.691E+00	1.779E+00	2.991E+00	2.982E-01	0.900
LU-177M	52.97			2.415E-01	5.403E-01	9.022E-01	6.739E-02	0.268
	54.07			-1.149E-01	3.059E-01	4.972E-01	3.781E-02	-0.231
	61.30			1.923E+00	9.119E-01	1.417E+00	1.165E-01	1.357
	121.62			-1.467E-01	4.393E-01	7.038E-01	9.915E-02	-0.208
	147.16			-8.030E-01	8.085E-01	1.243E+00	1.484E-01	-0.646
	171.86			-3.478E-01	6.174E-01	9.663E-01	9.610E-02	-0.360
	218.09			4.516E-01	1.028E+00	1.764E+00	1.753E-01	0.256
	268.79			3.261E+00	1.457E+00	1.862E+00	1.760E-01	1.751
	319.02			-9.542E-02	3.380E-01	5.532E-01	4.647E-02	-0.172
	367.43			-4.201E-01	1.128E+00	1.819E+00	1.241E-01	-0.231
	413.65	*		-1.705E-01	2.378E-01	3.729E-01	2.220E-02	-0.457
	56.28			-4.652E-01	3.994E-01	6.349E-01	5.004E-02	-0.733
	57.53			4.803E-02	2.443E-01	3.783E-01	3.042E-02	0.127
HF-181	65.20			9.552E-02	7.037E-01	1.027E+00	8.304E-02	0.093
	133.02			-6.064E-02	8.611E-02	1.352E-01	1.794E-02	-0.449
	136.25			-3.613E-01	6.026E-01	9.505E-01	1.234E-01	-0.380
	345.85			-1.361E-01	3.298E-01	4.309E-01	3.273E-02	-0.316
	482.03	*		-2.496E-02	5.833E-02	9.221E-02	5.803E-03	-0.271
	56.28			-1.783E-01	1.531E-01	2.434E-01	1.919E-02	-0.733
	57.53			1.827E-02	9.370E-02	1.451E-01	1.167E-02	0.126
W-181	65.20	*		3.635E-02	2.678E-01	3.909E-01	3.160E-02	0.093
	67.75			2.382E-02	9.263E-02	1.266E-01	1.013E-02	0.188
	100.10			3.321E-01	2.018E-01	3.354E-01	3.274E-02	0.990
TA-182	152.43			1.934E-01	4.248E-01	6.980E-01	7.961E-02	0.277
	222.10			-2.183E-01	4.229E-01	6.960E-01	6.902E-02	-0.314
	1001.68			-8.649E-01	2.949E+00	4.620E+00	4.113E-01	-0.187
	1121.28			6.417E-01	3.668E-01	4.731E-01	3.248E-02	1.356
	1189.05			-1.244E-01	4.018E-01	6.326E-01	3.673E-02	-0.197
	1221.42	*		-1.337E-01	2.670E-01	4.123E-01	2.397E-02	-0.324
	1230.97			1.410E-01	7.488E-01	1.065E+00	6.194E-02	0.132
RE-183	57.98			1.131E-01	9.920E-02	1.513E-01	1.225E-02	0.748



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		5.730E-02	5.928E-02	8.962E-02	7.418E-03	0.639
		67.20		3.329E-02	1.528E-01	2.235E-01	1.793E-02	0.149
		162.32	*	-1.262E-02	1.389E-01	2.229E-01	2.303E-02	-0.057
		208.81		2.219E+00	1.345E+00	2.266E+00	2.259E-01	0.979
		291.72		2.251E-01	1.311E+00	1.924E+00	1.740E-01	0.117
		57.98		4.121E-01	3.614E-01	5.510E-01	4.464E-02	0.748
		59.32		2.086E-01	2.158E-01	3.262E-01	2.700E-02	0.639
		67.20		1.212E-01	5.563E-01	8.140E-01	6.529E-02	0.149
		161.27		2.783E-01	4.326E-01	7.154E-01	7.477E-02	0.389
		216.55		-4.014E-02	3.232E-01	5.422E-01	5.391E-02	-0.074
		252.85	*	-2.126E-01	2.996E-01	4.851E-01	4.687E-02	-0.438
		318.01		-3.041E-01	5.886E-01	9.507E-01	8.012E-02	-0.320
		792.07		6.869E-01	1.487E+00	2.248E+00	1.908E-01	0.306
		903.28		-1.810E-01	1.436E+00	2.166E+00	2.195E-01	-0.084
OS-185		920.93		-1.290E-01	5.810E-01	9.376E-01	9.323E-02	-0.138
		59.72		1.260E-01	1.632E-01	2.449E-01	2.030E-02	0.515
		61.14		2.211E-01	9.813E-02	1.532E-01	1.262E-02	1.443
		69.30		2.194E-01	2.403E-01	3.600E-01	2.866E-02	0.609
		592.07		4.264E-01	3.550E+00	5.458E+00	3.588E-01	0.078
		646.12	*	-2.901E-02	5.772E-02	8.854E-02	5.833E-03	-0.328
		717.42		1.322E-01	1.169E+00	1.973E+00	1.454E-01	0.067
		874.81		-1.124E-01	7.790E-01	1.272E+00	1.247E-01	-0.088
		880.27		5.748E-02	9.514E-01	1.584E+00	1.568E-01	0.036
		155.03	*	1.118E-01	2.198E-01	3.616E-01	4.025E-02	0.309
RE-188		477.96		-2.151E-02	4.082E+00	6.662E+00	4.181E-01	-0.003
		633.10		-8.834E-01	4.022E+00	6.354E+00	4.189E-01	-0.139
		63.58		7.319E+01	4.257E+01	5.649E+01	4.598E+00	1.296
W-188	+	227.08		-4.418E+00	1.599E+01	2.660E+01	2.630E+00	-0.166
		290.67	*	5.999E+00	1.042E+01	1.572E+01	1.425E+00	0.382
IR-192	+	295.96		1.248E+00	2.208E-01	3.611E-01	3.255E-02	3.456
		308.46		-1.238E-01	1.229E-01	1.925E-01	1.678E-02	-0.643
		316.51	*	2.251E-03	4.499E-02	7.500E-02	6.366E-03	0.030
		468.07		1.050E-01	9.468E-02	1.486E-01	1.050E-02	0.706
		604.41		3.454E-01	6.667E-01	9.810E-01	1.155E-01	0.352
AU-195		612.46		4.452E+00	1.374E+00	2.348E+00	1.924E-01	1.896
		65.12		3.369E-02	1.237E-01	1.815E-01	1.468E-02	0.186
		66.83		-5.350E-03	6.946E-02	1.005E-01	8.070E-03	-0.053
	+	75.70		1.473E+00	2.566E-01	4.496E-01	3.512E-02	3.275
		98.88	*	3.905E-01	2.739E-01	4.172E-01	3.978E-02	0.936
TL-200		129.76		2.972E+00	3.615E+00	6.011E+00	8.146E-01	0.494
		367.94	*	-6.314E-04	3.615E+00	Half-Life	too short	
		579.30		1.405E-02	3.615E+00	Half-Life	too short	
		828.27		-6.217E-03	3.615E+00	Half-Life	too short	
TL-201		1205.75		2.309E-03	3.615E+00	Half-Life	too short	
		68.90		6.204E+00	6.271E+00	8.829E+00	7.039E-01	0.703
		70.82		5.715E-01	3.575E+00	5.211E+00	4.128E-01	0.110
		80.30		-1.850E+00	1.046E+01	1.074E+01	8.297E-01	-0.172
		135.34		-8.496E+00	4.952E+01	7.970E+01	1.041E+01	-0.107
		167.43	*	4.031E+00	1.364E+01	2.223E+01	2.207E+00	0.181



---- Non-Identified Nuclides ----

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TL-202		68.90		3.987E-01	4.030E-01	5.674E-01	4.524E-02	0.703
		70.82		3.663E-02	2.291E-01	3.340E-01	2.646E-02	0.110
		80.30		-1.186E-01	6.708E-01	6.885E-01	5.319E-02	-0.172
HG-203		439.56	*	5.863E-03	1.004E-01	1.651E-01	1.007E-02	0.036
		70.83		1.483E-01	9.151E-01	1.334E+00	1.757E-01	0.111
		72.87		2.383E+00	6.774E-01	9.910E-01	1.261E-01	2.405
		82.60		1.117E+00	1.641E+00	1.802E+00	2.375E-01	0.620
		279.20	*	6.486E-02	6.005E-02	9.311E-02	8.853E-03	0.697
BI-207		72.80		6.147E-01	1.777E-01	2.774E-01	2.184E-02	2.216
	+	74.97		8.109E-01	1.413E-01	2.174E-01	1.702E-02	3.729
	+	84.90		5.387E-01	2.268E-01	3.361E-01	2.572E-02	1.603
		569.67		1.784E-02	4.276E-02	7.130E-02	4.666E-03	0.250
		1063.62	*	-1.898E-02	7.108E-02	1.132E-01	8.968E-03	-0.168
TL-207		1770.23		3.505E-01	7.227E-01	1.143E+00	6.604E-02	0.307
		81.07		-7.840E-02	2.919E-01	2.972E-01	2.292E-02	-0.264
	+	83.78		3.551E-01	1.495E-01	2.091E-01	1.603E-02	1.699
		94.90		7.127E-01	2.884E-01	4.479E-01	3.947E-02	1.591
		122.32		-1.693E+00	2.092E+00	3.265E+00	4.755E-01	-0.519
		144.24		2.394E-01	8.767E-01	1.399E+00	1.814E-01	0.171
		154.21		5.775E-01	4.987E-01	8.353E-01	9.934E-02	0.691
	+	269.46		7.570E-01	3.385E-01	4.427E-01	4.251E-02	1.710
		323.87	*	-3.501E-01	9.696E-01	1.356E+00	2.379E-01	-0.258
	+	338.28		7.983E+00	2.247E+00	3.143E+00	3.703E-01	2.540
		445.03		9.115E-01	3.141E+00	5.238E+00	5.477E-01	0.174
PO-209		260.50		-1.479E+00	1.231E+01	2.050E+01	1.962E+00	-0.072
		262.80		-4.058E+01	3.464E+01	5.270E+01	5.026E+00	-0.770
		896.60	*	2.177E+00	9.716E+00	1.640E+01	1.667E+00	0.133
PB-211		404.84	*	-4.121E-01	1.292E+00	2.043E+00	1.274E+00	-0.202
		427.08		1.310E+00	2.987E+00	4.849E+00	2.998E+00	0.270
		831.96		-1.177E+00	1.826E+00	2.609E+00	1.636E+00	-0.451
BI-212	+	727.18	*	1.217E+00	6.312E-01	8.935E-01	8.105E-02	1.362
		785.46		1.209E+00	2.428E+00	4.194E+00	3.518E-01	0.288
		1620.62		1.429E+00	1.675E+00	3.116E+00	1.828E-01	0.459
PO-215		81.07		-7.840E-02	2.919E-01	2.972E-01	2.292E-02	-0.264
	+	83.78		3.551E-01	1.495E-01	2.091E-01	1.603E-02	1.699
		94.90		7.127E-01	2.884E-01	4.479E-01	3.947E-02	1.591
		122.32		-1.693E+00	2.092E+00	3.265E+00	4.755E-01	-0.519
		144.24		2.394E-01	8.767E-01	1.399E+00	1.814E-01	0.171
		154.21		5.775E-01	4.987E-01	8.353E-01	9.934E-02	0.691
	+	269.46		7.570E-01	3.385E-01	4.427E-01	4.251E-02	1.710
		323.87	*	-3.501E-01	9.696E-01	1.356E+00	2.379E-01	-0.258
	+	338.28		7.983E+00	2.247E+00	3.143E+00	3.703E-01	2.540
		445.03		9.115E-01	3.141E+00	5.238E+00	5.477E-01	0.174
	+	271.23		9.712E-01	4.374E-01	5.724E-01	6.287E-02	1.697
RN-219		401.81	*	-1.279E-01	5.623E-01	9.126E-01	1.245E-01	-0.140
RN-220		549.76	*	-1.442E+01	3.565E+01	5.595E+01	3.640E+00	-0.258
RA-223		81.07		-7.840E-02	2.919E-01	2.972E-01	2.292E-02	-0.264
	+	83.78		3.551E-01	1.495E-01	2.091E-01	1.603E-02	1.699
		94.90		7.127E-01	2.884E-01	4.479E-01	3.947E-02	1.591



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		-1.693E+00	2.092E+00	3.265E+00	4.755E-01	-0.519
		144.24		2.394E-01	8.767E-01	1.399E+00	1.814E-01	0.171
		154.21		5.775E-01	4.987E-01	8.353E-01	9.934E-02	0.691
	+	269.46		7.570E-01	3.385E-01	4.427E-01	4.251E-02	1.710
		323.87	*	-3.501E-01	9.696E-01	1.356E+00	2.379E-01	-0.258
	+	338.28		7.983E+00	2.247E+00	3.143E+00	3.703E-01	2.540
		445.03		9.115E-01	3.141E+00	5.238E+00	5.477E-01	0.174
		79.80		1.488E+00	2.228E+00	2.413E+00	5.106E-01	0.617
		236.00		1.242E+00	3.932E-01	6.112E-01	8.020E-02	2.032
		256.20	*	1.845E-01	4.918E-01	8.367E-01	1.333E-01	0.221
		286.10		-5.181E-01	1.918E+00	3.156E+00	4.279E-01	-0.164
	+	299.80		4.866E+00	2.702E+00	3.373E+00	5.942E-01	1.443
TH-227		304.40		2.138E+00	2.589E+00	3.937E+00	7.285E-01	0.543
		334.20		1.412E+00	4.062E+00	4.789E+00	9.161E-01	0.295
		79.80		1.488E+00	2.229E+00	2.413E+00	5.173E-01	0.617
	+	94.00		1.042E+01	3.631E+00	4.162E+00	9.070E-01	2.504
		236.00		1.242E+00	3.879E-01	6.112E-01	7.359E-02	2.032
		256.20	*	1.845E-01	4.922E-01	8.367E-01	1.553E-01	0.221
		286.10		-5.181E-01	1.986E+00	3.156E+00	3.169E+00	-0.164
	+	299.80		4.866E+00	2.702E+00	3.373E+00	5.942E-01	1.443
		304.40		2.138E+00	2.589E+00	3.937E+00	7.285E-01	0.543
		334.20		1.412E+00	4.062E+00	4.789E+00	9.161E-01	0.295
	+	85.43		5.316E-01	2.238E-01	3.573E-01	2.732E-02	1.488
	+	88.47		6.253E-01	1.390E-01	2.323E-01	1.786E-02	2.692
TH-229		100.00		3.523E-01	2.074E-01	3.451E-01	3.362E-02	1.021
		193.63	*	2.514E-01	6.707E-01	1.054E+00	1.053E-01	0.238
	+	210.97		1.463E+00	1.587E+00	1.739E+00	1.733E-01	0.841
	PA-231	283.67	*	-5.853E-01	1.964E+00	3.140E+00	4.873E-01	-0.186
	+	301.29		1.947E+00	1.053E+00	1.343E+00	1.665E-01	1.449
	TH-231	81.07		-7.840E-02	2.919E-01	2.972E-01	2.292E-02	-0.264
	+	83.78		3.551E-01	1.495E-01	2.091E-01	1.603E-02	1.699
		94.90		7.127E-01	2.884E-01	4.479E-01	3.947E-02	1.591
		122.32		-1.693E+00	2.092E+00	3.265E+00	4.755E-01	-0.519
		144.24		2.394E-01	8.767E-01	1.399E+00	1.814E-01	0.171
		154.21		5.775E-01	4.987E-01	8.353E-01	9.934E-02	0.691
	+	269.46		7.570E-01	3.385E-01	4.427E-01	4.251E-02	1.710
U-231		323.87	*	-3.501E-01	9.696E-01	1.356E+00	2.379E-01	-0.258
	+	338.28		7.983E+00	2.247E+00	3.143E+00	3.703E-01	2.540
		445.03		9.115E-01	3.141E+00	5.238E+00	5.477E-01	0.174
	+	84.21		2.115E+01	8.904E+00	1.238E+01	9.490E-01	1.708
	+	92.29		1.423E+01	4.062E+00	6.002E+00	5.012E-01	2.371
		95.87	*	-5.436E-02	1.777E+00	2.545E+00	2.288E-01	-0.021
		108.00		9.199E-01	3.233E+00	5.330E+00	6.008E-01	0.173
	PA-233	75.28		2.366E+01	5.101E+00	6.816E+00	1.016E+00	3.471
	+	86.59		8.965E+00	3.026E+00	3.129E+00	8.297E-01	2.866
	+	300.12		1.357E+00	7.430E-01	9.379E-01	1.408E-01	1.446
		311.98	*	8.136E-03	7.880E-02	1.318E-01	1.164E-02	0.062
		340.50		3.073E+00	1.268E+00	1.760E+00	4.143E-01	1.746
		398.62		4.244E-01	2.841E+00	4.714E+00	1.219E+00	0.090



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		-7.199E-01	2.220E+00	3.566E+00	7.357E-01	-0.202
		63.00		2.081E+00	1.240E+00	1.617E+00	2.466E-01	1.287
		94.67		7.354E-01	2.226E-01	3.348E-01	4.188E-02	2.196
		98.44		1.327E-01	1.320E-01	1.661E-01	9.288E-02	0.799
		99.86		9.316E-01	5.266E-01	8.775E-01	8.526E-02	1.062
		111.00		1.066E-01	2.158E-01	3.575E-01	5.214E-02	0.298
		131.20		-1.537E-02	1.326E-01	2.141E-01	2.875E-02	-0.072
		152.70		3.513E-01	4.068E-01	6.717E-01	1.249E-01	0.523
	+	186.00		8.388E+00	3.989E+00	3.266E+00	1.032E+00	2.569
		226.40		1.137E-01	4.836E-01	8.219E-01	1.156E-01	0.138
		227.20		-1.175E-01	5.309E-01	8.852E-01	8.754E-02	-0.133
		248.90		2.519E-01	1.131E+00	1.675E+00	3.828E-01	0.150
		293.70		6.269E+00	1.593E+00	2.126E+00	3.720E-01	2.948
		369.80		-6.580E-01	1.075E+00	1.692E+00	3.570E-01	-0.389
		568.70		1.324E-01	1.424E+00	2.321E+00	1.518E-01	0.057
		569.50		1.935E-01	3.758E-01	6.309E-01	4.129E-02	0.307
		574.00		-1.559E+00	2.036E+00	3.088E+00	2.023E-01	-0.505
		699.00		1.709E-01	9.631E-01	1.633E+00	3.013E-01	0.105
		706.10		1.065E+00	1.476E+00	2.434E+00	1.079E+00	0.438
		733.00		2.418E-01	5.923E-01	8.890E-01	1.940E-01	0.272
		742.81		-1.530E+00	2.104E+00	2.857E+00	1.918E+00	-0.535
	+	796.30		2.397E+00	1.772E+00	2.357E+00	6.372E-01	1.017
		805.60		1.467E+00	1.511E+00	2.582E+00	7.919E-01	0.568
		819.60		1.251E-03	1.751E+00	2.910E+00	1.109E+00	0.000
		826.30		-2.356E-01	1.156E+00	1.879E+00	8.421E-01	-0.125
		831.60		-1.338E-01	8.408E-01	1.376E+00	4.125E-01	-0.097
		876.40		-5.393E-01	1.251E+00	1.733E+00	1.783E+00	-0.311
		880.51		2.899E-02	3.399E-01	5.674E-01	5.618E-02	0.051
		883.24		-2.119E-01	3.895E-01	5.644E-01	3.804E-01	-0.376
		899.00		-5.217E-01	1.147E+00	1.776E+00	7.825E-01	-0.294
		925.00		2.845E-01	1.432E+00	2.412E+00	2.387E-01	0.118
		926.50		6.709E-03	2.116E-01	3.504E-01	9.016E-02	0.019
		946.00	*	9.300E-02	3.612E-01	6.106E-01	1.176E-01	0.152
		949.00		-2.096E-01	5.255E-01	8.275E-01	7.954E-02	-0.253
		980.50		-2.135E-01	1.030E+00	1.405E+00	1.293E-01	-0.152
		1394.10		4.982E-01	1.510E+00	2.574E+00	1.667E+00	0.194
PA-234M		766.42		3.435E+01	2.394E+01	2.886E+01	1.462E+01	1.190
		1001.03	*	-4.036E-01	6.642E+00	1.064E+01	1.088E+00	-0.038
U-235	+	89.95		4.114E+00	1.708E+00	2.033E+00	6.235E-01	2.024
	+	93.35		3.242E+00	1.266E+00	1.335E+00	3.738E-01	2.428
		105.00		7.191E-02	1.171E+00	1.917E+00	5.847E-01	0.038
		143.76	*	3.529E-02	2.713E-01	4.306E-01	8.425E-02	0.082
		163.35		-1.992E-01	5.880E-01	9.311E-01	1.848E-01	-0.214
NP-236	+	185.71		3.107E-01	1.146E-01	1.204E-01	1.202E-02	2.581
		205.31		-7.063E-01	7.955E-01	1.028E+00	2.028E-01	-0.687
		94.67		5.609E-01	1.615E-01	2.542E-01	2.230E-02	2.206
		98.44		1.003E-01	8.306E-02	1.256E-01	1.187E-02	0.799
		111.00		8.065E-02	1.631E-01	2.704E-01	3.210E-02	0.298
		160.31	*	-2.215E-02	9.788E-02	1.562E-01	1.649E-02	-0.142



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		2.735E-01	1.831E-01	2.924E-01	2.824E-02	0.935
		117.00	*	-1.010E-02	2.242E-01	3.645E-01	4.775E-02	-0.028
	+	209.75		1.474E+00	1.599E+00	1.781E+00	1.775E-01	0.828
		228.18		-4.625E-02	2.810E-01	4.698E-01	4.643E-02	-0.098
	+	277.60		2.302E-01	2.344E-01	3.973E-01	3.698E-02	0.579
		334.30		7.277E-01	2.082E+00	2.714E+00	2.161E-01	0.268
AM-241		59.54	*	8.480E-02	8.314E-02	1.258E-01	1.126E-02	0.674
CM-243		99.55		2.814E-01	1.884E-01	3.009E-01	2.907E-02	0.935
		103.76	*	-7.328E-02	1.077E-01	1.710E-01	1.787E-02	-0.428
		117.00		-1.039E-02	2.307E-01	3.750E-01	4.913E-02	-0.028
	+	209.75		1.453E+00	1.576E+00	1.756E+00	1.750E-01	0.828
		228.18		-4.674E-02	2.840E-01	4.747E-01	4.692E-02	-0.098
	+	277.60		2.321E-01	2.364E-01	4.006E-01	3.728E-02	0.579
AM-246		798.80		-2.400E-01	2.429E-01	3.074E-01	2.642E-02	-0.781
		1036.00		1.127E-01	3.894E-01	6.570E-01	5.504E-02	0.171
		1062.04		-3.182E-01	3.096E-01	4.507E-01	3.582E-02	-0.706
		1078.86	*	-3.657E-02	1.901E-01	3.048E-01	2.333E-02	-0.120
CM-247	+	278.00		9.546E-01	9.721E-01	1.643E+00	1.528E-01	0.581
		287.40		-6.348E-01	1.541E+00	2.517E+00	2.297E-01	-0.252
		402.60	*	-1.837E-02	4.967E-02	7.990E-02	4.702E-03	-0.230
CF-249		252.85		-7.913E-01	1.115E+00	1.806E+00	1.745E-01	-0.438
		333.44		1.749E-02	3.668E-01	3.561E-01	2.845E-02	0.049
		387.95	*	1.837E-02	5.561E-02	9.332E-02	5.582E-03	0.197
CF-251		176.60	*	5.858E-02	1.626E-01	2.651E-01	2.641E-02	0.221
		227.00		6.698E-03	4.635E-01	7.809E-01	7.724E-02	0.009
		285.00		-8.338E-01	2.166E+00	3.543E+00	3.250E-01	-0.235



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457001      *
* Acquisition date   : 4-JAN-2010 13:58:02 Detector SN# :                   *
* Detector ID        : GAM05 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                       *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000            *
* Elapsed real time  : 0 02:00:01.74 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G243457001 Analyst initials: MXR1                 *
* Batch Number       : 936923 Sample Quantity : 1.1111E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                           *
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                              *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.225E+01	2.261E+00	7.895E-01	0.000E+00
CD-109	4.673E+00	1.018E+00	1.177E+00	0.000E+00
SN-126	4.580E-01	9.974E-02	1.152E-01	0.000E+00
BA-137M	3.282E-01	7.637E-02	8.185E-02	0.000E+00
CS-137	3.470E-01	8.075E-02	8.652E-02	0.000E+00
TL-208	5.872E-01	1.146E-01	7.210E-02	0.000E+00
BI-210	1.631E+00	1.087E+00	1.031E+00	0.000E+00
PB-210	1.631E+00	1.087E+00	1.031E+00	0.000E+00
PO-210	1.631E+00	1.085E+00	1.031E+00	0.000E+00
BI-211	4.873E+00	6.619E-01	4.279E-01	0.000E+00
PB-212	1.937E+00	2.429E-01	1.105E-01	0.000E+00
PO-212	1.937E+00	2.429E-01	1.105E-01	0.000E+00
BI-214	1.507E+00	2.209E-01	1.454E-01	0.000E+00
PB-214	1.695E+00	2.460E-01	1.460E-01	0.000E+00
PO-214	1.695E+00	2.460E-01	1.460E-01	0.000E+00
PO-216	1.937E+00	2.429E-01	1.105E-01	0.000E+00
PO-218	1.695E+00	2.460E-01	1.460E-01	0.000E+00
RA-224	6.278E+00	1.851E+00	1.257E+00	0.000E+00
RA-226	1.507E+00	2.209E-01	1.454E-01	0.000E+00
AC-228	1.879E+00	3.821E-01	2.754E-01	0.000E+00
RA-228	1.879E+00	3.821E-01	2.754E-01	0.000E+00
TH-228	1.970E+00	2.470E-01	1.124E-01	0.000E+00
TH-230	1.507E+00	2.209E-01	1.454E-01	0.000E+00
TH-232	1.879E+00	3.821E-01	2.754E-01	0.000E+00
TH-234	1.786E+00	1.055E+00	1.242E+00	0.000E+00
U-234	1.507E+00	2.209E-01	1.454E-01	0.000E+00
NP-237	1.345E+00	3.997E-01	3.373E-01	0.000E+00
U-238	1.786E+00	1.055E+00	1.242E+00	0.000E+00
AM-243	4.517E-01	7.713E-02	7.177E-02	0.000E+00
ANH-511	1.096E-01	8.796E-02	6.163E-02	0.000E+00

---- Non-Identified Nuclides ----

Key-Line



Nuclide	Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	4.158E-02	4.208E-01	7.083E-01	0.000E+00	NOT IDENT.
NA-22	4.037E-02	5.523E-02	9.795E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	6.697E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.612E-02	4.444E-02	7.855E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.643E-02	8.041E-02	0.000E+00	FAIL ABUN
SC-46	1.964E-03	5.155E-02	8.720E-02	0.000E+00	FAIL ABUN
V-48	4.461E-02	9.399E-02	1.585E-01	0.000E+00	NOT IDENT.
CR-51	-1.835E-01	5.003E-01	8.138E-01	0.000E+00	NOT IDENT.
MN-52	1.030E-01	3.594E-01	6.329E-01	0.000E+00	NOT IDENT.
MN-54	1.356E-03	5.088E-02	8.629E-02	0.000E+00	NOT IDENT.
CO-56	2.116E-02	4.950E-02	8.684E-02	0.000E+00	FAIL ABUN
CO-57	-2.574E-02	2.969E-02	4.785E-02	0.000E+00	NOT IDENT.
CO-58	-4.644E-02	5.138E-02	7.980E-02	0.000E+00	NOT IDENT.
FE-59	6.001E-02	1.101E-01	1.934E-01	0.000E+00	NOT IDENT.
CO-60	8.457E-04	4.416E-02	7.261E-02	0.000E+00	NOT IDENT.
ZN-65	-1.142E-01	1.394E-01	1.748E-01	0.000E+00	NOT IDENT.
GE-68	6.442E-01	1.549E+00	2.687E+00	0.000E+00	NOT IDENT.
AS-73	-5.442E-02	2.832E-01	4.825E-01	0.000E+00	NOT IDENT.
AS-74	1.217E-01	1.269E-01	2.246E-01	0.000E+00	NOT IDENT.
SE-75	-3.052E-03	6.055E-02	9.042E-02	0.000E+00	NOT IDENT.
BR-77	-3.084E+00	2.356E+01	3.881E+01	0.000E+00	FAIL ABUN
SR-82	-5.843E-01	5.341E-01	7.970E-01	0.000E+00	NOT IDENT.
RB-83	-5.887E-03	9.139E-02	1.471E-01	0.000E+00	NOT IDENT.
RB-84	-1.208E-02	8.448E-02	1.404E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	1.072E+01	1.875E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.613E-02	9.816E-02	0.000E+00	NOT IDENT.
RB-86	-2.882E-01	1.071E+00	1.733E+00	0.000E+00	NOT IDENT.
Y-88	2.266E-02	4.094E-02	7.578E-02	0.000E+00	NOT IDENT.
ZR-88	-1.395E-02	4.320E-02	7.167E-02	0.000E+00	NOT IDENT.
Y-91	-1.817E+01	2.618E+01	4.041E+01	0.000E+00	NOT IDENT.
NB-94	-1.144E-02	4.479E-02	7.520E-02	0.000E+00	NOT IDENT.
NB-95	1.024E-01	6.120E-02	1.052E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.847E-01	2.990E-01	0.000E+00	NOT IDENT.
ZR-95	1.534E-01	1.023E-01	1.908E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.003E+06	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.859E+07	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.684E+01	2.481E+01	4.431E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.077E+19	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-5.062E-02	4.434E-02	6.857E-02	0.000E+00	NOT IDENT.
RH-102	-8.922E-03	3.782E-02	6.220E-02	0.000E+00	NOT IDENT.
RU-103	-1.381E-02	5.515E-02	9.028E-02	0.000E+00	FAIL ABUN
RH-106	5.990E-01	4.613E-01	8.220E-01	0.000E+00	FAIL ABUN
RU-106	5.990E-01	4.574E-01	8.220E-01	0.000E+00	FAIL ABUN
AG-108M	-1.353E-02	4.061E-02	6.669E-02	0.000E+00	NOT IDENT.
AG-110M	5.385E-02	5.206E-02	8.233E-02	0.000E+00	NOT IDENT.
IN-111	-8.719E-02	2.279E+00	3.420E+00	0.000E+00	NOT IDENT.
IN-113M	-2.927E-02	6.240E-02	1.026E-01	0.000E+00	NOT IDENT.
SN-113	-2.927E-02	6.240E-02	1.026E-01	0.000E+00	NOT IDENT.
IN-114M	-6.714E-03	2.671E-01	3.843E-01	0.000E+00	NOT IDENT.
CD-115	-1.168E+01	2.712E+01	4.249E+01	0.000E+00	NOT IDENT.
SN-117M	-6.943E-02	7.453E-02	1.186E-01	0.000E+00	NOT IDENT.
SB-122	3.585E+00	4.740E+00	8.254E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	8.456E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.181E-02	3.504E-02	5.667E-02	0.000E+00	NOT IDENT.
I-124	3.574E-01	1.381E+00	2.019E+00	0.000E+00	NOT IDENT.
SB-124	8.412E-02	9.852E-02	1.885E-01	0.000E+00	FAIL ABUN
SB-125	-4.180E-03	1.271E-01	2.134E-01	0.000E+00	FAIL ABUN
TE-125M	-7.896E-01	1.091E+01	1.839E+01	0.000E+00	NOT IDENT.
I-126	0.000E+00	3.674E-01	5.040E-01	0.000E+00	FAIL ABUN
SB-126	6.357E-02	2.249E-01	3.547E-01	0.000E+00	FAIL ABUN
SB-127	-1.244E+00	2.581E+00	4.258E+00	0.000E+00	NOT IDENT.
XE-127	-3.870E-02	7.374E-02	1.024E-01	0.000E+00	NOT IDENT.
I-131	-6.770E-02	1.676E-01	2.771E-01	0.000E+00	NOT IDENT.
TE-132	-2.219E-01	1.279E+00	2.201E+00	0.000E+00	NOT IDENT.
BA-133	-8.329E-03	6.083E-02	8.856E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.891E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	8.398E-02	1.206E-01	0.000E+00	FAIL ABUN
CS-135	3.366E-01	2.239E-01	3.581E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.691E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	3.387E-02	1.374E-01	2.353E-01	0.000E+00	FAIL ABUN
CE-139	1.757E-02	3.605E-02	6.112E-02	0.000E+00	NOT IDENT.
BA-140	1.106E-02	3.870E-01	6.439E-01	0.000E+00	NOT IDENT.
LA-140	6.920E-02	1.414E-01	2.402E-01	0.000E+00	FAIL ABUN
CE-141	3.024E-02	8.148E-02	1.346E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.237E+02	0.000E+00	0.000E+00	SHORT HLIF



CE-144	1.006E-01	2.502E-01	4.250E-01	0.000E+00	NOT IDENT.
PM-144	3.466E-03	4.525E-02	7.785E-02	0.000E+00	NOT IDENT.
PR-144	2.351E-01	3.070E+00	5.281E+00	0.000E+00	NOT IDENT.
PM-146	-6.147E-03	5.641E-02	9.388E-02	0.000E+00	NOT IDENT.
ND-147	-7.875E-03	8.241E-01	1.368E+00	0.000E+00	FAIL ABUN
PM-149	-9.795E+01	2.080E+02	3.478E+02	0.000E+00	NOT IDENT.
EU-152	-9.471E-03	1.562E-01	2.164E-01	0.000E+00	FAIL ABUN
GD-153	-3.412E-03	9.370E-02	1.391E-01	0.000E+00	FAIL ABUN
EU-154	1.096E-01	1.540E-01	2.723E-01	0.000E+00	NOT IDENT.
EU-155	-1.605E-02	1.186E-01	1.997E-01	0.000E+00	FAIL ABUN
TB-160	6.145E-02	1.697E-01	2.962E-01	0.000E+00	FAIL ABUN
HO-166M	-5.356E-02	7.478E-02	1.202E-01	0.000E+00	NOT IDENT.
TM-171	-9.355E+00	2.063E+01	3.055E+01	0.000E+00	NOT IDENT.
LU-176	6.487E-03	3.177E-02	5.193E-02	0.000E+00	FAIL ABUN
LU-177	2.691E+00	1.744E+00	3.021E+00	0.000E+00	NOT IDENT.
LU-177M	-1.705E-01	2.330E-01	3.747E-01	0.000E+00	FAIL ABUN
HF-181	-2.496E-02	5.717E-02	9.253E-02	0.000E+00	NOT IDENT.
W-181	3.635E-02	2.625E-01	3.984E-01	0.000E+00	NOT IDENT.
TA-182	-1.337E-01	2.616E-01	4.108E-01	0.000E+00	FAIL ABUN
RE-183	-1.262E-02	1.361E-01	2.256E-01	0.000E+00	NOT IDENT.
RE-184	-2.126E-01	2.936E-01	4.892E-01	0.000E+00	NOT IDENT.
OS-185	-2.901E-02	5.657E-02	8.865E-02	0.000E+00	NOT IDENT.
RE-188	1.118E-01	2.154E-01	3.660E-01	0.000E+00	NOT IDENT.
W-188	5.999E+00	1.021E+01	1.583E+01	0.000E+00	FAIL ABUN
IR-192	2.251E-03	4.409E-02	7.551E-02	0.000E+00	FAIL ABUN
AU-195	3.905E-01	2.684E-01	4.238E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.947E+03	0.000E+00	0.000E+00	SHORT HLIF
TL-201	4.031E+00	1.337E+01	2.249E+01	0.000E+00	NOT IDENT.
TL-202	5.863E-03	9.835E-02	1.658E-01	0.000E+00	NOT IDENT.
HG-203	6.486E-02	5.885E-02	9.383E-02	0.000E+00	NOT IDENT.
BI-207	-1.898E-02	6.966E-02	1.129E-01	0.000E+00	FAIL ABUN
TL-207	-3.501E-01	9.502E-01	1.365E+00	0.000E+00	FAIL ABUN
PO-209	2.177E+00	9.522E+00	1.637E+01	0.000E+00	NOT IDENT.
PB-211	-4.121E-01	1.266E+00	2.053E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.186E-01	8.938E-01	0.000E+00	FAIL ABUN
PO-215	-3.501E-01	9.502E-01	1.365E+00	0.000E+00	FAIL ABUN
RN-219	-1.279E-01	5.511E-01	9.170E-01	0.000E+00	FAIL ABUN
RN-220	-1.442E+01	3.493E+01	5.609E+01	0.000E+00	NOT IDENT.
RA-223	-3.501E-01	9.502E-01	1.365E+00	0.000E+00	FAIL ABUN
AC-227	1.845E-01	4.820E-01	8.437E-01	0.000E+00	FAIL ABUN
TH-227	1.845E-01	4.823E-01	8.437E-01	0.000E+00	FAIL ABUN
TH-229	2.514E-01	6.573E-01	1.066E+00	0.000E+00	FAIL ABUN
PA-231	-5.853E-01	1.925E+00	3.163E+00	0.000E+00	FAIL ABUN
TH-231	-3.501E-01	9.502E-01	1.365E+00	0.000E+00	FAIL ABUN
U-231	-5.436E-02	1.741E+00	2.586E+00	0.000E+00	FAIL ABUN
PA-233	8.136E-03	7.722E-02	1.327E-01	0.000E+00	FAIL ABUN
PA-234	9.300E-02	3.539E-01	6.095E-01	0.000E+00	FAIL ABUN
PA-234M	-4.036E-01	6.510E+00	1.062E+01	0.000E+00	NOT IDENT.
U-235	3.529E-02	2.658E-01	4.361E-01	0.000E+00	FAIL ABUN
NP-236	-2.215E-02	9.593E-02	1.581E-01	0.000E+00	NOT IDENT.
NP-239	-1.010E-02	2.197E-01	3.697E-01	0.000E+00	FAIL ABUN
AM-241	8.480E-02	8.148E-02	1.283E-01	0.000E+00	NOT IDENT.
CM-243	-7.328E-02	1.056E-01	1.737E-01	0.000E+00	FAIL ABUN
AM-246	-3.657E-02	1.863E-01	3.039E-01	0.000E+00	NOT IDENT.
CM-247	-1.837E-02	4.868E-02	8.029E-02	0.000E+00	FAIL ABUN
CF-249	1.837E-02	5.449E-02	9.381E-02	0.000E+00	NOT IDENT.
CF-251	5.858E-02	1.593E-01	2.681E-01	0.000E+00	NOT IDENT.



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457001.CNF;1
Sample date    : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:02.
Sample ID      : G243457001          Sample quantity  : 1.11113E+02 GRAM
Detector name  : GAM05              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00    Elapsed real time: 0 02:00:01.74  0.0%
Energy tolerance: 1.50000 keV       Analyst Initials : MXR1
Abundance limit : 75.00000          Sensitivity     : 5.00000
Batch ID       : 936923             Detector SN#    :
Matrix Spike ID :                    LCS ID           : 1032-A
*****

```

## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	705	10.67*	1.003E+00	2.225E+01	2.225E+01	10.37
CD-109	88.03	394	3.72*	7.859E+00	4.555E+00	4.673E+00	22.22
SN-126	64.28	162	9.60	8.064E+00	7.068E-01	7.068E-01	59.50
	86.94	394	8.90	7.859E+00	1.904E+00	1.904E+00	46.15
	87.57	394	37.00*	7.859E+00	4.580E-01	4.580E-01	22.22
BA-137M	661.65	176	89.98*	2.015E+00	3.279E-01	3.282E-01	23.74
CS-137	661.65	176	85.12*	2.015E+00	3.466E-01	3.470E-01	23.75
TL-208	277.35	41	6.80	4.262E+00	4.773E-01	4.773E-01	102.21
	510.84	82	21.60	2.542E+00	5.073E-01	5.073E-01	82.34
	583.14	330	84.20*	2.258E+00	5.872E-01	5.872E-01	19.92
	860.37	-----	12.46	1.590E+00	-----	Line Not Found	-----
BI-210	46.50	149	4.05*	7.629E+00	1.629E+00	1.631E+00	68.01
PB-210	46.50	149	4.05*	7.629E+00	1.629E+00	1.631E+00	68.01
PO-210	46.50	149	4.05*	7.629E+00	1.629E+00	1.631E+00	67.89
BI-211	72.87	-----	1.27	8.052E+00	-----	Line Not Found	-----
	351.07	656	12.94*	3.514E+00	4.873E+00	4.873E+00	13.86
PB-212	74.81	709	10.70	8.037E+00	2.786E+00	2.786E+00	19.77
	77.11	1096	18.00	8.012E+00	2.568E+00	2.568E+00	12.15
	87.30	394	8.00	7.859E+00	2.118E+00	2.118E+00	24.37
	238.63	1220	44.60*	4.771E+00	1.937E+00	1.937E+00	12.79
	300.09	106	3.41	4.003E+00	2.626E+00	2.626E+00	53.73
PO-212	74.81	709	10.70	8.037E+00	2.786E+00	2.786E+00	19.77
	77.11	1096	18.00	8.012E+00	2.568E+00	2.568E+00	12.15
	87.30	394	8.00	7.859E+00	2.118E+00	2.118E+00	24.37
	115.19	-----	0.60	7.241E+00	-----	Line Not Found	-----
	238.63	1220	44.60*	4.771E+00	1.937E+00	1.937E+00	12.79
	300.09	106	3.41	4.003E+00	2.626E+00	2.626E+00	53.73
BI-214	609.31	448	46.30*	2.171E+00	1.507E+00	1.507E+00	14.96
	1120.29	75	15.10	1.257E+00	1.341E+00	1.341E+00	57.55
	1764.49	60	15.80	8.608E-01	1.491E+00	1.491E+00	38.71
PB-214	74.81	709	6.21	8.037E+00	4.800E+00	4.801E+00	18.93
	77.11	1096	10.50	8.012E+00	4.403E+00	4.403E+00	14.34



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	87.30	394	4.67	7.859E+00	3.628E+00	3.628E+00	23.52
	241.98	347	7.49	4.727E+00	3.311E+00	3.311E+00	30.60
	295.21	370	19.20	4.056E+00	1.607E+00	1.607E+00	18.74
	351.92	656	37.20*	3.514E+00	1.695E+00	1.695E+00	14.81
	74.81	709	6.21	8.037E+00	4.800E+00	4.801E+00	18.93
	77.11	1096	10.50	8.012E+00	4.403E+00	4.403E+00	14.34
	87.30	394	4.67	7.859E+00	3.628E+00	3.628E+00	23.52
	241.98	347	7.49	4.727E+00	3.311E+00	3.311E+00	30.60
PO-216	295.21	370	19.20	4.056E+00	1.607E+00	1.607E+00	18.74
	351.92	656	37.20*	3.514E+00	1.695E+00	1.695E+00	14.81
	74.81	709	10.70	8.037E+00	2.786E+00	2.786E+00	19.77
	77.11	1096	18.00	8.012E+00	2.568E+00	2.568E+00	12.15
	87.30	394	8.00	7.859E+00	2.118E+00	2.118E+00	24.37
	238.63	1220	44.60*	4.771E+00	1.937E+00	1.937E+00	12.79
	300.09	106	3.41	4.003E+00	2.626E+00	2.626E+00	53.73
	74.81	709	6.21	8.037E+00	4.800E+00	4.801E+00	18.93
PO-218	77.11	1096	10.50	8.012E+00	4.403E+00	4.403E+00	14.34
	87.30	394	4.67	7.859E+00	3.628E+00	3.628E+00	23.52
	241.98	347	7.49	4.727E+00	3.311E+00	3.311E+00	30.60
	295.21	370	19.20	4.056E+00	1.607E+00	1.607E+00	18.74
	351.92	656	37.20*	3.514E+00	1.695E+00	1.695E+00	14.81
	240.98	347	3.95*	4.727E+00	6.278E+00	6.278E+00	30.09
	609.31	448	46.30*	2.171E+00	1.507E+00	1.507E+00	14.96
	1120.29	75	15.10	1.257E+00	1.341E+00	1.341E+00	57.55
AC-228	1764.49	60	15.80	8.608E-01	1.491E+00	1.491E+00	38.71
	338.32	234	11.40	3.633E+00	1.912E+00	1.912E+00	48.40
	911.07	233	27.70*	1.510E+00	1.879E+00	1.879E+00	20.75
	969.11	158	16.60	1.429E+00	2.255E+00	2.255E+00	32.36
	338.32	234	11.40	3.633E+00	1.912E+00	1.912E+00	48.40
	911.07	233	27.70*	1.510E+00	1.879E+00	1.879E+00	20.75
	969.11	158	16.60	1.429E+00	2.255E+00	2.255E+00	32.36
	74.81	709	10.70	8.037E+00	2.786E+00	2.834E+00	17.46
TH-228	77.11	1096	18.00	8.012E+00	2.568E+00	2.612E+00	12.15
	87.30	394	8.00	7.859E+00	2.118E+00	2.154E+00	22.22
	238.63	1220	44.60*	4.771E+00	1.937E+00	1.970E+00	12.79
	300.09	106	3.41	4.003E+00	2.626E+00	2.671E+00	79.32
	609.31	448	46.30*	2.171E+00	1.507E+00	1.507E+00	14.96
	1120.29	75	15.10	1.257E+00	1.341E+00	1.341E+00	57.55
	1764.49	60	15.80	8.608E-01	1.491E+00	1.491E+00	38.71
	338.32	234	11.40	3.633E+00	1.912E+00	1.912E+00	26.74
TH-232	911.07	233	27.70*	1.510E+00	1.879E+00	1.879E+00	20.75
	969.11	158	16.60	1.429E+00	2.255E+00	2.255E+00	32.36
	63.29	162	3.80*	8.064E+00	1.786E+00	1.786E+00	60.28
	92.38	335	5.41	7.752E+00	2.697E+00	2.697E+00	32.66
	609.31	448	46.30*	2.171E+00	1.507E+00	1.507E+00	14.96
	1120.29	75	15.10	1.257E+00	1.341E+00	1.341E+00	57.55
	1764.49	60	15.80	8.608E-01	1.491E+00	1.491E+00	38.71
	86.50	394	12.60*	7.859E+00	1.345E+00	1.345E+00	30.33
NP-237	95.87	-----	2.60	7.687E+00	-----	Line Not Found	-----



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-238	63.29	162	3.80*	8.064E+00	1.786E+00	1.786E+00	60.28
	92.38	335	5.41	7.752E+00	2.697E+00	2.697E+00	28.53
AM-243	74.67	709	66.00*	8.037E+00	4.517E-01	4.517E-01	17.42
	86.72	394	0.34	7.859E+00	5.043E+01	5.043E+01	22.22
	117.66	-----	0.55	7.181E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.593E+00	-----	Line Not Found	-----
ANH-511	511.00	82	100.00*	2.542E+00	1.096E-01	1.096E-01	81.92

Flag: "\*" = Keyline



Total number of lines in spectrum 39  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 35 89.74%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.225E+01	2.225E+01	0.231E+01	10.37	
CD-109	464.00D	1.03	4.555E+00	4.673E+00	1.038E+00	22.22	
SN-126	1.00E+05Y	1.00	4.580E-01	4.580E-01	1.018E-01	22.22	
BA-137M	30.17Y	1.00	3.279E-01	3.282E-01	0.779E-01	23.74	
CS-137	30.17Y	1.00	3.466E-01	3.470E-01	0.824E-01	23.75	
TL-208	1.41E+10Y	1.00	5.872E-01	5.872E-01	1.170E-01	19.92	
BI-210	22.26Y	1.00	1.629E+00	1.631E+00	1.109E+00	68.01	
PB-210	22.26Y	1.00	1.629E+00	1.631E+00	1.109E+00	68.01	
PO-210	22.26Y	1.00	1.629E+00	1.631E+00	1.107E+00	67.89	
BI-211	7.04E+08Y	1.00	4.873E+00	4.873E+00	0.675E+00	13.86	
PB-212	1.41E+10Y	1.00	1.937E+00	1.937E+00	0.248E+00	12.79	
PO-212	1.41E+10Y	1.00	1.937E+00	1.937E+00	0.248E+00	12.79	
BI-214	1600.00Y	1.00	1.507E+00	1.507E+00	0.225E+00	14.96	
PB-214	1600.00Y	1.00	1.695E+00	1.695E+00	0.251E+00	14.81	
PO-214	1600.00Y	1.00	1.695E+00	1.695E+00	0.251E+00	14.81	
PO-216	1.41E+10Y	1.00	1.937E+00	1.937E+00	0.248E+00	12.79	
PO-218	1600.00Y	1.00	1.695E+00	1.695E+00	0.251E+00	14.81	
RA-224	1.41E+10Y	1.00	6.278E+00	6.278E+00	1.889E+00	30.09	
RA-226	1600.00Y	1.00	1.507E+00	1.507E+00	0.225E+00	14.96	
AC-228	1.41E+10Y	1.00	1.879E+00	1.879E+00	0.390E+00	20.75	
RA-228	1.41E+10Y	1.00	1.879E+00	1.879E+00	0.390E+00	20.75	
TH-228	1.91Y	1.02	1.937E+00	1.970E+00	0.252E+00	12.79	
TH-230	4.47E+09Y	1.00	1.507E+00	1.507E+00	0.225E+00	14.96	
TH-232	1.41E+10Y	1.00	1.879E+00	1.879E+00	0.390E+00	20.75	
TH-234	4.47E+09Y	1.00	1.786E+00	1.786E+00	1.076E+00	60.28	
U-234	4.47E+09Y	1.00	1.507E+00	1.507E+00	0.225E+00	14.96	
NP-237	2.14E+06Y	1.00	1.345E+00	1.345E+00	0.408E+00	30.33	
U-238	4.47E+09Y	1.00	1.786E+00	1.786E+00	1.076E+00	60.28	
AM-243	7380.00Y	1.00	4.517E-01	4.517E-01	0.787E-01	17.42	
ANH-511	1.00E+09Y	1.00	1.096E-01	1.096E-01	0.898E-01	81.92	
Total Activity :			7.454E+01	7.470E+01			

Grand Total Activity : 7.454E+01 7.470E+01

Flags: "K" = Keyline not found "M" = Manually accepted  
"E" = Manually edited "A" = Nuclide specific abn. limit



It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	84.21	205	518	1.49	169.39	164	30	2.85E-02	41.4	7.91E+00	T
2	89.97	257	350	1.14	180.92	164	30	3.57E-02	28.0	7.81E+00	T
0	186.22	281	446	1.35	373.39	366	15	3.90E-02	35.5	5.65E+00	T
0	210.46	74	377	1.61	421.87	413	12	1.02E-02	****	5.22E+00	T
0	270.22	132	181	1.86	541.35	536	11	1.84E-02	43.7	4.35E+00	T
0	328.88	34	198	1.41	658.65	651	11	4.78E-03	****	3.72E+00	T
0	463.10	81	84	1.33	926.98	921	11	1.13E-02	49.2	2.78E+00	T
1	665.89	56	54	2.01	1332.37	1317	25	7.80E-03	63.2	2.00E+00	T
0	727.43	79	81	1.19	1455.37	1450	12	1.09E-02	51.1	1.85E+00	T
0	768.43	52	67	1.34	1537.32	1532	11	7.27E-03	66.2	1.76E+00	
0	795.21	47	55	1.67	1590.84	1586	12	6.56E-03	68.8	1.71E+00	T
0	863.50	12	74	2.23	1727.32	1721	11	1.73E-03	****	1.58E+00	
1	962.04	33	18	2.19	1924.26	1920	37	4.60E-03	57.5	1.44E+00	T
1	964.72	66	27	2.19	1929.60	1920	37	9.20E-03	43.5	1.44E+00	T
0	1238.94	60	38	1.65	2477.55	2470	15	8.26E-03	51.8	1.15E+00	T
0	1588.81	25	12	1.67	3176.44	3169	12	3.47E-03	68.4	9.37E-01	
0	1731.41	28	6	1.34	3461.24	3455	14	3.94E-03	53.9	8.74E-01	

Flags: "T" = Tentatively associated



```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457001.CNF;1
* Acquisition date   : 4-JAN-2010 13:58:02. Detector SN#      :
* Detector ID        : GAM05 Sensitivity      : 5.00000
* Geometry           : CAN Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.74 Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID
* Sample ID          : G243457001 Analyst initials: MXR1
* Batch Number       : 936923 Sample Quantity : 1.11113E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00.5MS Isotope      :
* MSD ID             : MSD Isotope      :
* LCS ID             : 1032-A LCS Isotope :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.225E+01	2.307E+00	7.937E-01	4.936E-02	28.039
CD-109	4.673E+00	1.038E+00	1.158E+00	8.816E-02	4.036
SN-126	4.580E-01	1.018E-01	1.133E-01	8.629E-03	4.042
BA-137M	3.282E-01	7.793E-02	8.176E-02	5.377E-03	4.014
CS-137	3.470E-01	8.240E-02	8.643E-02	5.702E-03	4.014
TL-208	5.872E-01	1.170E-01	7.196E-02	5.295E-03	8.160
BI-210	1.631E+00	1.109E+00	1.009E+00	7.873E-02	1.616
PB-210	1.631E+00	1.109E+00	1.009E+00	7.873E-02	1.616
PO-210	1.631E+00	1.107E+00	1.009E+00	6.788E-02	1.616
BI-211	4.873E+00	6.754E-01	4.254E-01	3.371E-02	11.455
PB-212	1.937E+00	2.478E-01	1.095E-01	1.181E-02	17.688
PO-212	1.937E+00	2.478E-01	1.095E-01	1.181E-02	17.688
BI-214	1.507E+00	2.254E-01	1.452E-01	1.217E-02	10.380
PB-214	1.695E+00	2.510E-01	1.451E-01	1.374E-02	11.680
PO-214	1.695E+00	2.510E-01	1.451E-01	1.374E-02	11.680
PO-216	1.937E+00	2.478E-01	1.095E-01	1.181E-02	17.688
PO-218	1.695E+00	2.510E-01	1.451E-01	1.374E-02	11.680
RA-224	6.278E+00	1.889E+00	1.246E+00	1.220E-01	5.036



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	1.507E+00	2.254E-01	1.452E-01	1.217E-02	10.380
AC-228	1.879E+00	3.899E-01	2.759E-01	3.414E-02	6.810
RA-228	1.879E+00	3.899E-01	2.759E-01	3.414E-02	6.810
TH-228	1.970E+00	2.521E-01	1.114E-01	1.201E-02	17.688
TH-230	1.507E+00	2.254E-01	1.452E-01	1.217E-02	10.380
TH-232	1.879E+00	3.899E-01	2.759E-01	3.414E-02	6.810
TH-234	1.786E+00	1.076E+00	1.219E+00	2.166E-01	1.465
U-234	1.507E+00	2.254E-01	1.452E-01	1.217E-02	10.380
NP-237	1.345E+00	4.078E-01	3.317E-01	7.298E-02	4.054
U-238	1.786E+00	1.076E+00	1.219E+00	2.166E-01	1.465
AM-243	4.517E-01	7.870E-02	7.051E-02	5.523E-03	6.406
ANH-511	1.096E-01	8.976E-02	6.145E-02	3.933E-03	1.783

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	4.158E-02		4.294E-01	7.058E-01	5.056E-02	0.059
NA-22	4.037E-02		5.636E-02	9.836E-02	5.729E-03	0.410
NA-24	3.775E-01		3.417E+00	Half-Life too short		
AL-26	1.612E-02		4.534E-02	7.910E-02	4.539E-03	0.204
TI-44	4.740E-01	+	5.758E-02	7.903E-02	6.132E-03	5.998
SC-46	1.964E-03		5.260E-02	8.732E-02	8.770E-03	0.022
V-48	4.461E-02		9.591E-02	1.588E-01	1.455E-02	0.281
CR-51	-1.835E-01		5.105E-01	8.084E-01	7.149E-02	-0.227
MN-52	1.030E-01		3.667E-01	6.361E-01	3.725E-02	0.162
MN-54	1.356E-03		5.192E-02	8.636E-02	7.912E-03	0.016
CO-56	2.116E-02		5.051E-02	8.692E-02	8.129E-03	0.243
CO-57	-2.574E-02		3.030E-02	4.719E-02	6.695E-03	-0.545
CO-58	-4.644E-02		5.243E-02	7.985E-02	7.028E-03	-0.582
FE-59	6.001E-02		1.123E-01	1.939E-01	1.571E-02	0.309
CO-60	8.457E-04		4.506E-02	7.294E-02	4.221E-03	0.012
ZN-65	-1.142E-01		1.423E-01	1.753E-01	1.225E-02	-0.652
GE-68	6.442E-01		1.581E+00	2.694E+00	2.069E-01	0.239
AS-73	-5.442E-02		2.889E-01	4.728E-01	3.559E-02	-0.115
AS-74	1.217E-01		1.295E-01	2.242E-01	1.475E-02	0.543
SE-75	-3.052E-03		6.179E-02	8.969E-02	8.563E-03	-0.034
BR-77	-3.084E+00		2.404E+01	3.869E+01	2.488E+00	-0.080
SR-82	-5.843E-01		5.450E-01	7.972E-01	6.578E-02	-0.733
RB-83	-5.887E-03		9.325E-02	1.467E-01	9.431E-03	-0.040
RB-84	-1.208E-02		8.620E-02	1.405E-01	1.394E-02	-0.086
KR-85	2.825E+01		1.094E+01	1.870E+01	1.198E+00	1.511
SR-85	1.479E-01		5.728E-02	9.787E-02	6.273E-03	1.511
RB-86	-2.882E-01		1.093E+00	1.738E+00	1.337E-01	-0.166
Y-88	2.266E-02		4.178E-02	7.631E-02	4.366E-03	0.297
ZR-88	-1.395E-02		4.409E-02	7.131E-02	4.152E-03	-0.196
Y-91	-1.817E+01		2.671E+01	4.056E+01	2.357E+00	-0.448
NB-94	-1.144E-02		4.570E-02	7.516E-02	5.378E-03	-0.152



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	1.024E-01		6.245E-02	1.052E-01	8.509E-03	0.973
NB-95M	3.244E-01		1.885E-01	2.963E-01	3.241E-02	1.095
ZR-95	1.534E-01		1.043E-01	1.908E-01	1.695E-02	0.804
NB-97	1.097E+00		5.119E-01	Half-Life	too short	
ZR-97	1.670E+01		9.487E+00	Half-Life	too short	
MO-99	1.684E+01		2.532E+01	4.431E+01	6.504E+00	0.380
TC-99M	3.338E+11		5.495E+12	Half-Life	too short	
RH-101	-5.062E-02		4.525E-02	6.787E-02	6.777E-03	-0.746
RH-102	-8.922E-03		3.859E-02	6.197E-02	3.882E-03	-0.144
RU-103	-1.381E-02		5.627E-02	8.999E-02	1.162E-02	-0.153
RH-106	5.990E-01		4.707E-01	8.208E-01	9.971E-02	0.730
RU-106	5.990E-01		4.668E-01	8.208E-01	5.410E-02	0.730
AG-108M	-1.353E-02		4.144E-02	6.640E-02	4.345E-03	-0.204
AG-110M	5.385E-02		5.313E-02	8.224E-02	5.685E-03	0.655
IN-111	-8.719E-02		2.325E+00	3.390E+00	3.303E-01	-0.026
IN-113M	-2.927E-02		6.367E-02	1.021E-01	6.335E-03	-0.287
SN-113	-2.927E-02		6.367E-02	1.021E-01	6.335E-03	-0.287
IN-114M	-6.714E-03		2.725E-01	3.802E-01	3.797E-02	-0.018
CD-115	-1.168E+01		2.767E+01	4.237E+01	2.734E+00	-0.276
SN-117M	-6.943E-02		7.605E-02	1.172E-01	1.260E-02	-0.593
SB-122	3.585E+00		4.836E+00	8.236E+00	5.382E-01	0.435
I-123	-5.263E+01		4.314E+01	Half-Life	too short	
TE-123M	-2.181E-02		3.576E-02	5.600E-02	6.017E-03	-0.390
I-124	3.574E-01		1.409E+00	2.015E+00	1.327E-01	0.177
SB-124	8.412E-02		1.005E-01	1.897E-01	1.201E-02	0.443
SB-125	-4.180E-03		1.297E-01	2.124E-01	1.332E-02	-0.020
TE-125M	-7.896E-01		1.113E+01	1.812E+01	2.329E+00	-0.044
I-126	5.898E-01	+	3.748E-01	5.035E-01	3.343E-02	1.171
SB-126	6.357E-02		2.295E-01	3.546E-01	2.629E-02	0.179
SB-127	-1.244E+00		2.634E+00	4.255E+00	4.599E-01	-0.292
XE-127	-3.870E-02		7.524E-02	1.013E-01	1.012E-02	-0.382
I-131	-6.770E-02		1.710E-01	2.755E-01	2.074E-02	-0.246
TE-132	-2.219E-01		1.305E+00	2.180E+00	3.664E-01	-0.102
BA-133	-8.329E-03		6.207E-02	8.805E-02	1.087E-02	-0.095
I-133	-2.427E-02		1.985E-02	Half-Life	too short	
CS-134	1.236E-01	+	8.569E-02	1.207E-01	1.039E-02	1.024
CS-135	3.366E-01		2.284E-01	3.553E-01	3.801E-02	0.948
I-135	-4.440E+11		4.944E+11	Half-Life	too short	
CS-136	3.387E-02		1.402E-01	2.359E-01	2.021E-02	0.144
CE-139	1.757E-02		3.678E-02	6.041E-02	5.998E-03	0.291
BA-140	1.106E-02		3.949E-01	6.422E-01	2.097E-01	0.017
LA-140	6.920E-02		1.443E-01	2.416E-01	1.420E-02	0.286
CE-141	3.024E-02		8.315E-02	1.330E-01	1.625E-02	0.227
CE-143	2.532E-03		4.203E-04	Half-Life	too short	
CE-144	1.006E-01		2.553E-01	4.194E-01	7.765E-02	0.240
PM-144	3.466E-03		4.617E-02	7.781E-02	5.502E-03	0.045
PR-144	2.351E-01		3.132E+00	5.278E+00	3.730E-01	0.045
PM-146	-6.147E-03		5.756E-02	9.351E-02	8.298E-03	-0.066



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	-7.875E-03		8.409E-01	1.365E+00	1.886E-01	-0.006
PM-149	-9.795E+01		2.123E+02	3.452E+02	5.472E+01	-0.284
EU-152	-9.471E-03		1.594E-01	2.151E-01	1.769E-02	-0.044
GD-153	-3.412E-03		9.562E-02	1.369E-01	1.269E-02	-0.025
EU-154	1.096E-01		1.571E-01	2.734E-01	2.556E-02	0.401
EU-155	-1.605E-02		1.210E-01	1.967E-01	2.130E-02	-0.082
TB-160	6.145E-02		1.732E-01	2.966E-01	2.930E-02	0.207
HO-166M	-5.356E-02		7.631E-02	1.201E-01	8.752E-03	-0.446
TM-171	-9.355E+00		2.106E+01	2.998E+01	2.410E+00	-0.312
LU-176	6.487E-03		3.241E-02	5.157E-02	4.491E-03	0.126
LU-177	2.691E+00		1.779E+00	2.991E+00	2.982E-01	0.900
LU-177M	-1.705E-01		2.378E-01	3.729E-01	2.220E-02	-0.457
HF-181	-2.496E-02		5.833E-02	9.221E-02	5.803E-03	-0.271
W-181	3.635E-02		2.678E-01	3.909E-01	3.160E-02	0.093
TA-182	-1.337E-01		2.670E-01	4.123E-01	2.397E-02	-0.324
RE-183	-1.262E-02		1.389E-01	2.229E-01	2.303E-02	-0.057
RE-184	-2.126E-01		2.996E-01	4.851E-01	4.687E-02	-0.438
OS-185	-2.901E-02		5.772E-02	8.854E-02	5.833E-03	-0.328
RE-188	1.118E-01		2.198E-01	3.616E-01	4.025E-02	0.309
W-188	5.999E+00		1.042E+01	1.572E+01	1.425E+00	0.382
IR-192	2.251E-03		4.499E-02	7.500E-02	6.366E-03	0.030
AU-195	3.905E-01		2.739E-01	4.172E-01	3.978E-02	0.936
TL-200	-6.314E-04		9.934E-04	Half-Life too short		
TL-201	4.031E+00		1.364E+01	2.223E+01	2.207E+00	0.181
TL-202	5.863E-03		1.004E-01	1.651E-01	1.007E-02	0.036
HG-203	6.486E-02		6.005E-02	9.311E-02	8.853E-03	0.697
BI-207	-1.898E-02		7.108E-02	1.132E-01	8.968E-03	-0.168
TL-207	-3.501E-01		9.696E-01	1.356E+00	2.379E-01	-0.258
PO-209	2.177E+00		9.716E+00	1.640E+01	1.667E+00	0.133
PB-211	-4.121E-01		1.292E+00	2.043E+00	1.274E+00	-0.202
BI-212	1.217E+00	+	6.312E-01	8.935E-01	8.105E-02	1.362
PO-215	-3.501E-01		9.696E-01	1.356E+00	2.379E-01	-0.258
RN-219	-1.279E-01		5.623E-01	9.126E-01	1.245E-01	-0.140
RN-220	-1.442E+01		3.565E+01	5.595E+01	3.640E+00	-0.258
RA-223	-3.501E-01		9.696E-01	1.356E+00	2.379E-01	-0.258
AC-227	1.845E-01		4.918E-01	8.367E-01	1.333E-01	0.221
TH-227	1.845E-01		4.922E-01	8.367E-01	1.553E-01	0.221
TH-229	2.514E-01		6.707E-01	1.054E+00	1.053E-01	0.238
PA-231	-5.853E-01		1.964E+00	3.140E+00	4.873E-01	-0.186
TH-231	-3.501E-01		9.696E-01	1.356E+00	2.379E-01	-0.258
U-231	-5.436E-02		1.777E+00	2.545E+00	2.288E-01	-0.021
PA-233	8.136E-03		7.880E-02	1.318E-01	1.164E-02	0.062
PA-234	9.300E-02		3.612E-01	6.106E-01	1.176E-01	0.152
PA-234M	-4.036E-01		6.642E+00	1.064E+01	1.088E+00	-0.038
U-235	3.529E-02		2.713E-01	4.306E-01	8.425E-02	0.082
NP-236	-2.215E-02		9.788E-02	1.562E-01	1.649E-02	-0.142
NP-239	-1.010E-02		2.242E-01	3.645E-01	4.775E-02	-0.028
AM-241	8.480E-02		8.314E-02	1.258E-01	1.126E-02	0.674



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-7.328E-02		1.077E-01	1.710E-01	1.787E-02	-0.428
AM-246	-3.657E-02		1.901E-01	3.048E-01	2.333E-02	-0.120
CM-247	-1.837E-02		4.967E-02	7.990E-02	4.702E-03	-0.230
CF-249	1.837E-02		5.561E-02	9.332E-02	5.582E-03	0.197
CF-251	5.858E-02		1.626E-01	2.651E-01	2.641E-02	0.221



## VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G243457001
* Acquisition date   : 4-JAN-2010 13:58:02 Detector SN#      :
* Detector ID        : GAM05                               Sensitivity      : 5.000
* Geometry           : CAN                                 Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.74                      Half life ratio  : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID
* Sample ID          : G243457001                      Analyst initials: MXR1
* Batch Number       : 936923                          Sample Quantity : 1.111E+02 GRAM
* Recovery           : 1.00000                          Carrier Weight  : 0.00000
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope      :
* MSD DPM             : 0.000                          MSD Isotope      :
* LCS DPM             : 0.000                          LCS Isotope      :
* LCSD DPM            : 0.000                          LCSD Isotope     :
*****
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.225E+01	2.261E+00	3.950E-01	1.154E+00
CD-109	4.673E+00	1.018E+00	5.889E-01	5.192E-01
SN-126	4.580E-01	9.974E-02	5.764E-02	5.089E-02
BA-137M	3.282E-01	7.637E-02	4.095E-02	3.896E-02
CS-137	3.470E-01	8.075E-02	4.329E-02	4.120E-02
TL-208	5.872E-01	1.146E-01	3.607E-02	5.848E-02
BI-210	1.631E+00	1.087E+00	5.158E-01	5.546E-01
PB-210	1.631E+00	1.087E+00	5.158E-01	5.546E-01
PO-210	1.631E+00	1.085E+00	5.158E-01	5.536E-01
BI-211	4.873E+00	6.619E-01	2.141E-01	3.377E-01
PB-212	1.937E+00	2.429E-01	5.528E-02	1.239E-01
PO-212	1.937E+00	2.429E-01	5.528E-02	1.239E-01
BI-214	1.507E+00	2.209E-01	7.275E-02	1.127E-01
PB-214	1.695E+00	2.460E-01	7.304E-02	1.255E-01
PO-214	1.695E+00	2.460E-01	7.304E-02	1.255E-01
PO-216	1.937E+00	2.429E-01	5.528E-02	1.239E-01
PO-218	1.695E+00	2.460E-01	7.304E-02	1.255E-01
RA-224	6.278E+00	1.851E+00	6.291E-01	9.443E-01
RA-226	1.507E+00	2.209E-01	7.275E-02	1.127E-01
AC-228	1.879E+00	3.821E-01	1.378E-01	1.949E-01
RA-228	1.879E+00	3.821E-01	1.378E-01	1.949E-01
TH-228	1.970E+00	2.470E-01	5.623E-02	1.260E-01
TH-230	1.507E+00	2.209E-01	7.275E-02	1.127E-01
TH-232	1.879E+00	3.821E-01	1.378E-01	1.949E-01
TH-234	1.786E+00	1.055E+00	6.215E-01	5.381E-01
U-234	1.507E+00	2.209E-01	7.275E-02	1.127E-01
NP-237	1.345E+00	3.997E-01	1.687E-01	2.039E-01
U-238	1.786E+00	1.055E+00	6.215E-01	5.381E-01
AM-243	4.517E-01	7.713E-02	3.591E-02	3.935E-02
ANH-511	1.096E-01	8.796E-02	3.084E-02	4.488E-02

---- Non-Identified Nuclides ----

Key-Line



Nuclide	Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	4.158E-02	4.208E-01	3.543E-01	2.147E-01 NOT IDENT.
NA-22	4.037E-02	5.523E-02	4.901E-02	2.818E-02 NOT IDENT.
NA-24	3.775E+05	6.697E+06	0.000E+00	3.417E+06 SHORT HLIF
AL-26	1.612E-02	4.444E-02	3.930E-02	2.267E-02 NOT IDENT.
TI-44	4.740E-01	5.643E-02	4.023E-02	2.879E-02 FAIL ABUN
SC-46	1.964E-03	5.155E-02	4.363E-02	2.630E-02 FAIL ABUN
V-48	4.461E-02	9.399E-02	7.929E-02	4.795E-02 NOT IDENT.
CR-51	-1.835E-01	5.003E-01	4.071E-01	2.553E-01 NOT IDENT.
MN-52	1.030E-01	3.594E-01	3.166E-01	1.833E-01 NOT IDENT.
MN-54	1.356E-03	5.088E-02	4.317E-02	2.596E-02 NOT IDENT.
CO-56	2.116E-02	4.950E-02	4.345E-02	2.526E-02 FAIL ABUN
CO-57	-2.574E-02	2.969E-02	2.394E-02	1.515E-02 NOT IDENT.
CO-58	-4.644E-02	5.138E-02	3.992E-02	2.621E-02 NOT IDENT.
FE-59	6.001E-02	1.101E-01	9.674E-02	5.616E-02 NOT IDENT.
CO-60	8.457E-04	4.416E-02	3.633E-02	2.253E-02 NOT IDENT.
ZN-65	-1.142E-01	1.394E-01	8.743E-02	7.113E-02 NOT IDENT.
GE-68	6.442E-01	1.549E+00	1.344E+00	7.905E-01 NOT IDENT.
AS-73	-5.442E-02	2.832E-01	2.414E-01	1.445E-01 NOT IDENT.
AS-74	1.217E-01	1.269E-01	1.124E-01	6.473E-02 NOT IDENT.
SE-75	-3.052E-03	6.055E-02	4.524E-02	3.089E-02 NOT IDENT.
BR-77	-3.084E+00	2.356E+01	1.941E+01	1.202E+01 FAIL ABUN
SR-82	-5.843E-01	5.341E-01	3.988E-01	2.725E-01 NOT IDENT.
RB-83	-5.887E-03	9.139E-02	7.360E-02	4.663E-02 NOT IDENT.
RB-84	-1.208E-02	8.448E-02	7.023E-02	4.310E-02 NOT IDENT.
KR-85	2.825E+01	1.072E+01	9.382E+00	5.471E+00 NOT IDENT.
SR-85	1.479E-01	5.613E-02	4.911E-02	2.864E-02 NOT IDENT.
RB-86	-2.882E-01	1.071E+00	8.669E-01	5.465E-01 NOT IDENT.
Y-88	2.266E-02	4.094E-02	3.791E-02	2.089E-02 NOT IDENT.
ZR-88	-1.395E-02	4.320E-02	3.585E-02	2.204E-02 NOT IDENT.
Y-91	-1.817E+01	2.618E+01	2.021E+01	1.335E+01 NOT IDENT.
NB-94	-1.144E-02	4.479E-02	3.762E-02	2.285E-02 NOT IDENT.
NB-95	1.024E-01	6.120E-02	5.262E-02	3.122E-02 NOT IDENT.
NB-95M	3.244E-01	1.847E-01	1.496E-01	9.426E-02 NOT IDENT.
ZR-95	1.534E-01	1.023E-01	9.547E-02	5.217E-02 NOT IDENT.
NB-97	1.097E+06	1.003E+06	0.000E+00	5.119E+05 SHORT HLIF
ZR-97	1.670E+07	1.859E+07	0.000E+00	9.487E+06 SHORT HLIF
MO-99	1.684E+01	2.481E+01	2.217E+01	1.266E+01 NOT IDENT.
TC-99M	3.338E+17	1.077E+19	0.000E+00	0.000E+00 SHORT HLIF
RH-101	-5.062E-02	4.434E-02	3.431E-02	2.262E-02 NOT IDENT.
RH-102	-8.922E-03	3.782E-02	3.112E-02	1.930E-02 NOT IDENT.
RU-103	-1.381E-02	5.515E-02	4.517E-02	2.814E-02 FAIL ABUN
RH-106	5.990E-01	4.613E-01	4.112E-01	2.354E-01 FAIL ABUN
RU-106	5.990E-01	4.574E-01	4.112E-01	2.334E-01 FAIL ABUN
AG-108M	-1.353E-02	4.061E-02	3.336E-02	2.072E-02 NOT IDENT.
AG-110M	5.385E-02	5.206E-02	4.119E-02	2.656E-02 NOT IDENT.
IN-111	-8.719E-02	2.279E+00	1.711E+00	1.163E+00 NOT IDENT.
IN-113M	-2.927E-02	6.240E-02	5.135E-02	3.183E-02 NOT IDENT.
SN-113	-2.927E-02	6.240E-02	5.135E-02	3.183E-02 NOT IDENT.
IN-114M	-6.714E-03	2.671E-01	1.923E-01	1.363E-01 NOT IDENT.
CD-115	-1.168E+01	2.712E+01	2.126E+01	1.384E+01 NOT IDENT.
SN-117M	-6.943E-02	7.453E-02	5.932E-02	3.802E-02 NOT IDENT.
SB-122	3.585E+00	4.740E+00	4.130E+00	2.418E+00 NOT IDENT.
I-123	-5.263E+07	8.456E+07	0.000E+00	4.314E+07 SHORT HLIF
TE-123M	-2.181E-02	3.504E-02	2.835E-02	1.788E-02 NOT IDENT.
I-124	3.574E-01	1.381E+00	1.010E+00	7.045E-01 NOT IDENT.
SB-124	8.412E-02	9.852E-02	9.431E-02	5.026E-02 FAIL ABUN
SB-125	-4.180E-03	1.271E-01	1.067E-01	6.485E-02 FAIL ABUN
TE-125M	-7.896E-01	1.091E+01	9.200E+00	5.567E+00 NOT IDENT.
I-126	5.898E-01	3.674E-01	2.521E-01	1.874E-01 FAIL ABUN
SB-126	6.357E-02	2.249E-01	1.775E-01	1.148E-01 FAIL ABUN
SB-127	-1.244E+00	2.581E+00	2.130E+00	1.317E+00 NOT IDENT.
XE-127	-3.870E-02	7.374E-02	5.122E-02	3.762E-02 NOT IDENT.
I-131	-6.770E-02	1.676E-01	1.386E-01	8.549E-02 NOT IDENT.
TE-132	-2.219E-01	1.279E+00	1.101E+00	6.525E-01 NOT IDENT.
BA-133	-8.329E-03	6.083E-02	4.431E-02	3.104E-02 FAIL ABUN
I-133	-2.427E+04	3.891E+04	0.000E+00	1.985E+04 SHORT HLIF
CS-134	1.236E-01	8.398E-02	6.034E-02	4.285E-02 FAIL ABUN
CS-135	3.366E-01	2.239E-01	1.792E-01	1.142E-01 NOT IDENT.
I-135	-4.440E+17	9.691E+17	0.000E+00	0.000E+00 SHORT HLIF
CS-136	3.387E-02	1.374E-01	1.177E-01	7.010E-02 FAIL ABUN
CE-139	1.757E-02	3.605E-02	3.058E-02	1.839E-02 NOT IDENT.
BA-140	1.106E-02	3.870E-01	3.221E-01	1.974E-01 NOT IDENT.
LA-140	6.920E-02	1.414E-01	1.202E-01	7.216E-02 FAIL ABUN
CE-141	3.024E-02	8.148E-02	6.736E-02	4.157E-02 NOT IDENT.
CE-143	2.532E+03	8.237E+02	0.000E+00	4.203E+02 SHORT HLIF



CE-144	1.006E-01	2.502E-01	2.126E-01	1.277E-01	NOT IDENT.
PM-144	3.466E-03	4.525E-02	3.895E-02	2.309E-02	NOT IDENT.
PR-144	2.351E-01	3.070E+00	2.642E+00	1.566E+00	NOT IDENT.
PM-146	-6.147E-03	5.641E-02	4.697E-02	2.878E-02	NOT IDENT.
ND-147	-7.875E-03	8.241E-01	6.846E-01	4.205E-01	FAIL ABUN
PM-149	-9.795E+01	2.080E+02	1.740E+02	1.061E+02	NOT IDENT.
EU-152	-9.471E-03	1.562E-01	1.083E-01	7.970E-02	FAIL ABUN
GD-153	-3.412E-03	9.370E-02	6.957E-02	4.781E-02	FAIL ABUN
EU-154	1.096E-01	1.540E-01	1.362E-01	7.856E-02	NOT IDENT.
EU-155	-1.605E-02	1.186E-01	9.989E-02	6.051E-02	FAIL ABUN
TB-160	6.145E-02	1.697E-01	1.482E-01	8.659E-02	FAIL ABUN
HO-166M	-5.356E-02	7.478E-02	6.012E-02	3.815E-02	NOT IDENT.
TM-171	-9.355E+00	2.063E+01	1.528E+01	1.053E+01	NOT IDENT.
LU-176	6.487E-03	3.177E-02	2.598E-02	1.621E-02	FAIL ABUN
LU-177	2.691E+00	1.744E+00	1.511E+00	8.896E-01	NOT IDENT.
LU-177M	-1.705E-01	2.330E-01	1.875E-01	1.189E-01	FAIL ABUN
HF-181	-2.496E-02	5.717E-02	4.629E-02	2.917E-02	NOT IDENT.
W-181	3.635E-02	2.625E-01	1.993E-01	1.339E-01	NOT IDENT.
TA-182	-1.337E-01	2.616E-01	2.055E-01	1.335E-01	FAIL ABUN
RE-183	-1.262E-02	1.361E-01	1.129E-01	6.945E-02	NOT IDENT.
RE-184	-2.126E-01	2.936E-01	2.447E-01	1.498E-01	NOT IDENT.
OS-185	-2.901E-02	5.657E-02	4.435E-02	2.886E-02	NOT IDENT.
RE-188	1.118E-01	2.154E-01	1.831E-01	1.099E-01	NOT IDENT.
W-188	5.999E+00	1.021E+01	7.922E+00	5.210E+00	FAIL ABUN
IR-192	2.251E-03	4.409E-02	3.778E-02	2.250E-02	FAIL ABUN
AU-195	3.905E-01	2.684E-01	2.120E-01	1.370E-01	FAIL ABUN
TL-200	-6.314E+02	1.947E+03	0.000E+00	9.934E+02	SHORT HLIF
TL-201	4.031E+00	1.337E+01	1.125E+01	6.821E+00	NOT IDENT.
TL-202	5.863E-03	9.835E-02	8.296E-02	5.018E-02	NOT IDENT.
HG-203	6.486E-02	5.885E-02	4.694E-02	3.002E-02	NOT IDENT.
BI-207	-1.898E-02	6.966E-02	5.650E-02	3.554E-02	FAIL ABUN
TL-207	-3.501E-01	9.502E-01	6.831E-01	4.848E-01	FAIL ABUN
PO-209	2.177E+00	9.522E+00	8.192E+00	4.858E+00	NOT IDENT.
PB-211	-4.121E-01	1.266E+00	1.027E+00	6.461E-01	NOT IDENT.
BI-212	1.217E+00	6.186E-01	4.471E-01	3.156E-01	FAIL ABUN
PO-215	-3.501E-01	9.502E-01	6.831E-01	4.848E-01	FAIL ABUN
RN-219	-1.279E-01	5.511E-01	4.588E-01	2.812E-01	FAIL ABUN
RN-220	-1.442E+01	3.493E+01	2.806E+01	1.782E+01	NOT IDENT.
RA-223	-3.501E-01	9.502E-01	6.831E-01	4.848E-01	FAIL ABUN
AC-227	1.845E-01	4.820E-01	4.221E-01	2.459E-01	FAIL ABUN
TH-227	1.845E-01	4.823E-01	4.221E-01	2.461E-01	FAIL ABUN
TH-229	2.514E-01	6.573E-01	5.331E-01	3.353E-01	FAIL ABUN
PA-231	-5.853E-01	1.925E+00	1.583E+00	9.819E-01	FAIL ABUN
TH-231	-3.501E-01	9.502E-01	6.831E-01	4.848E-01	FAIL ABUN
U-231	-5.436E-02	1.741E+00	1.294E+00	8.883E-01	FAIL ABUN
PA-233	8.136E-03	7.722E-02	6.640E-02	3.940E-02	FAIL ABUN
PA-234	9.300E-02	3.539E-01	3.049E-01	1.806E-01	FAIL ABUN
PA-234M	-4.036E-01	6.510E+00	5.313E+00	3.321E+00	NOT IDENT.
U-235	3.529E-02	2.658E-01	2.182E-01	1.356E-01	FAIL ABUN
NP-236	-2.215E-02	9.593E-02	7.908E-02	4.894E-02	NOT IDENT.
NP-239	-1.010E-02	2.197E-01	1.850E-01	1.121E-01	FAIL ABUN
AM-241	8.480E-02	8.148E-02	6.418E-02	4.157E-02	NOT IDENT.
CM-243	-7.328E-02	1.056E-01	8.688E-02	5.385E-02	FAIL ABUN
AM-246	-3.657E-02	1.863E-01	1.521E-01	9.504E-02	NOT IDENT.
CM-247	-1.837E-02	4.868E-02	4.017E-02	2.484E-02	FAIL ABUN
CF-249	1.837E-02	5.449E-02	4.693E-02	2.780E-02	NOT IDENT.
CF-251	5.858E-02	1.593E-01	1.341E-01	8.128E-02	NOT IDENT.



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*                                     *
*               GEL Laboratories LLC   *
*               2040 SAVAGE ROAD       *
*               CHARLESTON , SC 29417  *
*               GAMMA SPECTROSCOPY BACKGROUN *
*               REPORT                  *
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ENERGY	MDA COUNTS
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46.50	393.0421
46.50	393.0421
46.50	393.0421
48.70	439.1156
49.72	461.2468
51.35	382.8514
52.39	422.9422
52.97	423.1994
53.15	423.3209
53.44	447.5258
54.07	450.8577
56.28	510.2934
56.28	510.2954
57.37	0.0000
57.53	463.9169
57.53	463.9178
57.60	463.9664
57.98	417.8112
57.98	417.8112
59.32	460.5213
59.32	460.5213
59.40	460.5766
59.54	460.6727
59.72	480.9664
60.01	481.1736
61.10	464.8488
61.14	464.8762
61.30	494.5333
63.00	565.1346
63.29	565.3708
63.29	565.3708
63.58	557.0259
64.28	576.3266
65.12	620.8002
65.20	620.8704
65.20	620.8704
66.05	590.3005
66.72	608.0924
66.83	584.6747
66.91	584.7408
67.20	584.9764
67.20	584.9764
67.75	594.4461
67.85	609.5724
68.90	552.1597
68.90	552.1597
69.30	566.2244
69.67	566.5122
70.82	622.5566
70.82	622.5566
70.83	622.5662
72.80	640.0107
72.87	640.0701
72.87	640.0701
74.67	566.9056
74.81	567.0083
74.81	567.0083
74.81	567.0083
74.81	567.0083
74.81	567.0083
74.81	567.0083
74.81	567.0083
74.97	567.1262
75.28	567.3556
75.70	567.6657
77.11	568.6967
77.11	568.6967



77.11	568.6967
77.11	568.6967
77.11	568.6967
77.11	568.6967
77.11	568.6967
78.38	529.2562
79.62	530.0862
79.80	530.2060
79.80	530.2060
80.11	530.4130
80.18	530.4597
80.30	530.5388
80.30	530.5388
80.57	530.7174
81.00	531.0015
81.07	531.0482
81.07	531.0482
81.07	531.0482
81.07	531.0482
82.60	532.0548
83.37	437.0261
83.78	437.2476
83.78	437.2476
83.78	437.2476
83.78	437.2476
84.21	437.4757
84.90	437.8421
85.43	438.1219
86.29	438.5749
86.50	438.6848
86.54	438.7065
86.59	438.7331
86.72	438.8014
86.79	438.8364
86.94	438.9163
87.30	439.1045
87.30	439.1045
87.30	439.1045
87.30	439.1045
87.30	439.1045
87.30	439.1045
87.57	439.2444
87.88	439.4059
88.03	439.4842
88.36	439.6557
88.47	439.7124
89.95	440.4768
91.11	441.0730
92.29	441.6742
92.38	441.7191
92.38	441.7191
93.35	442.2104
94.00	442.5385
94.67	402.5262
94.67	402.5292
94.90	423.7395
94.90	423.7395
94.90	423.7395
94.90	423.7395
95.87	429.0789
95.87	429.0789
96.73	426.2409
97.43	397.2655
98.44	343.9220
98.44	343.9220
98.88	337.5664
99.55	342.7112
99.55	342.7112
99.86	330.0009
100.00	330.0515
100.10	330.0885
103.18	413.6968
103.76	390.3875
105.00	364.2290
105.31	377.6905
108.00	365.3814
109.28	389.5732



111.00	361.3568
111.00	361.3568
111.76	370.9377
112.95	387.9404
115.19	341.1249
116.30	334.2379
117.00	345.8973
117.00	345.8973
117.66	344.0446
121.11	335.8261
121.62	319.2979
121.78	339.1756
122.06	346.5759
122.32	347.7062
122.32	347.7062
122.32	347.7062
122.32	347.7062
123.07	330.1953
127.23	327.3123
129.76	354.3807
131.20	369.5955
133.02	379.7095
133.54	332.4044
135.34	347.7502
136.00	356.4196
136.25	369.1936
136.48	365.0385
140.51	355.7407
140.51	0.0000
142.18	341.3760
142.65	334.0706
143.76	335.4614
144.24	328.1429
144.24	328.1429
144.24	328.1429
144.24	328.1429
145.22	313.4965
145.44	310.3575
147.16	344.9987
152.43	310.0744
152.70	296.1938
153.22	300.6168
154.21	291.1960
154.21	291.1960
154.21	291.1960
154.21	291.1960
155.03	309.6760
156.02	311.0070
158.56	326.7597
159.00	0.0000
159.00	315.0108
160.31	299.1499
161.27	266.9602
162.32	300.7220
162.64	300.7983
163.35	307.4680
163.89	302.1869
165.85	272.2869
167.43	284.5796
171.28	302.8769
171.86	304.1047
172.10	285.6290
176.55	288.8024
176.60	286.6265
181.06	305.6045
184.41	288.7677
185.71	264.3732
186.00	264.4318
190.27	286.4881
192.34	256.8121
193.63	269.7156
197.04	316.5524
198.01	317.8835
198.60	293.5538
200.40	263.8694
201.83	290.4074
202.84	317.6361
205.31	318.1859



208.36	273.1820
208.81	273.2676
209.75	254.6172
209.75	254.6172
210.97	267.3924
215.65	274.5465
216.55	254.8986
218.09	234.4253
222.10	254.9429
223.80	253.4202
226.40	232.0953
227.00	239.4417
227.08	253.0600
227.20	253.0804
228.16	255.9618
228.18	255.9653
228.18	255.9653
231.56	0.0000
235.69	259.9442
236.00	259.9964
236.00	259.9964
238.63	220.2243
238.63	220.2243
238.63	220.2243
238.63	220.2243
239.00	220.2758
240.98	220.5509
241.98	220.6892
241.98	220.6892
241.98	220.6892
244.69	188.0422
245.39	206.4771
247.94	206.8039
248.90	194.6638
249.79	191.7038
252.40	223.0391
252.85	235.0859
252.85	235.0859
254.15	0.0000
256.20	215.2406
256.20	215.2406
260.50	217.6504
260.90	218.6284
262.80	227.7384
264.65	188.7883
268.24	176.7821
268.79	198.5547
269.46	189.3219
269.46	189.3219
269.46	189.3219
269.46	189.3219
271.23	205.0522
273.65	182.0056
276.40	215.0157
277.35	202.6621
277.60	206.8490
277.60	206.8490
278.00	204.9195
278.60	202.1836
279.20	177.9070
279.53	185.7438
280.46	179.5963
281.68	187.5342
283.67	190.8757
284.30	182.1781
285.00	187.8882
285.90	192.6830
286.10	188.9454
286.10	188.9454
287.40	191.9049
288.45	0.0000
290.67	166.4962
290.80	166.5070
291.72	172.8799
293.26	0.0000
293.70	184.0812
295.21	190.8496
295.21	190.8496



295.21	190.8496
295.96	190.9285
296.50	190.9852
297.23	191.0616
298.57	191.2022
299.80	191.3304
299.80	191.3304
300.09	191.3600
300.09	191.3600
300.09	191.3600
300.09	191.3600
300.12	191.3625
301.29	189.5898
302.84	161.2863
303.76	137.6367
303.91	137.6473
304.40	145.5974
304.40	145.5974
304.84	145.6311
306.84	159.2579
308.46	183.6633
311.98	154.4517
316.51	165.3341
318.01	180.7682
319.02	175.1211
319.41	167.4997
320.08	170.2170
323.87	174.2842
323.87	174.2842
323.87	174.2842
323.87	174.2842
325.23	158.4077
328.77	152.2837
333.44	163.8948
334.20	147.8828
334.20	147.8828
334.30	149.4978
338.28	181.6913
338.28	181.6913
338.28	181.6913
338.28	181.6913
338.32	181.6958
338.32	181.6958
338.32	181.6958
340.50	183.8306
340.57	183.8352
344.27	170.6053
345.85	180.4395
350.59	0.0000
351.07	152.3752
351.92	145.9515
351.92	145.9515
351.92	145.9515
355.39	0.0000
356.01	141.3679
364.48	136.0731
366.43	137.1802
367.43	131.3632
367.94	0.0000
369.80	138.3821
374.96	120.0267
383.85	152.1370
387.95	149.4554
388.63	153.4617
391.69	165.5730
391.69	165.5730
392.90	161.6967
398.62	140.2358
400.65	138.3722
401.10	147.3623
401.81	148.4052
402.60	146.4635
404.84	149.6027
410.95	125.0076
411.60	126.0431
413.65	146.1818
414.70	152.2598
415.30	142.2791



415.76	136.2955
417.63	0.0000
418.52	130.4396
423.70	144.8121
427.08	127.9023
427.89	137.0127
432.53	123.1527
433.93	112.1158
439.47	110.3545
439.56	110.3585
439.89	111.3857
443.98	113.6064
444.90	118.7239
445.03	118.7296
445.03	118.7296
445.03	118.7296
445.03	118.7296
453.90	113.0569
463.38	114.1775
468.07	78.5393
473.00	98.5406
475.06	107.8672
475.35	97.6058
476.78	84.2972
477.59	99.7494
477.96	100.7921
482.03	109.1961
484.57	87.6511
487.03	105.2834
490.36	0.0000
492.35	92.0561
497.08	103.6243
507.63	0.0000
510.53	0.0000
510.84	98.9637
511.00	98.9695
511.85	99.0009
511.85	99.0009
513.99	78.2222
513.99	78.2222
520.41	89.4469
520.65	90.9656
527.90	98.5508
528.96	0.0000
529.64	96.5169
529.87	0.0000
531.02	90.2685
537.32	95.7366
543.00	96.9908
546.56	0.0000
549.76	98.2857
552.65	89.9244
555.20	82.5951
563.23	96.6364
563.90	91.3477
568.70	102.1430
569.32	89.3956
569.50	89.3997
569.67	92.5989
573.80	102.3258
574.00	102.3328
574.64	98.0914
578.91	65.8475
579.30	0.0000
583.14	75.9246
585.48	65.9981
591.81	77.7605
592.07	77.7676
593.00	74.0369
595.88	69.8147
600.56	83.9109
602.52	0.0000
602.71	86.1250
602.71	86.1250
603.60	82.5608
604.41	75.4021
604.70	77.2044
609.31	86.3164



609.31	86.3164
609.31	86.3164
609.31	86.3164
610.33	82.7480
612.46	86.4082
614.37	73.8537
618.01	106.0462
621.84	75.8430
621.84	75.8430
631.29	84.7736
633.02	86.9961
633.10	87.0000
634.78	75.0779
635.90	84.9012
636.97	71.8652
645.85	79.7154
646.12	79.7226
656.30	73.0436
657.75	62.1161
657.90	0.0000
661.65	88.8983
661.65	88.8983
664.57	0.0000
666.33	89.0308
666.33	89.0308
675.00	86.9473
677.61	85.4846
685.20	86.6084
692.80	88.6582
695.00	102.5788
696.49	82.2859
696.49	82.2859
697.00	79.5245
697.49	76.7622
698.33	78.6326
698.50	78.6361
699.00	83.2745
702.63	89.8501
706.10	63.0541
706.58	0.0000
706.67	63.9926
709.31	82.6064
711.68	77.0931
713.82	61.3419
717.42	68.8511
720.50	68.4487
721.93	0.0000
722.20	67.0869
722.78	68.6962
722.78	68.6962
722.89	67.1001
722.95	67.1016
723.30	75.0980
724.18	83.1090
727.18	65.5854
733.00	72.1080
735.90	76.5431
739.58	61.8119
742.81	82.4946
744.21	82.5269
747.13	65.7033
751.79	92.1083
752.31	93.0623
753.82	76.1748
755.35	62.0952
756.15	62.1100
756.87	62.1234
763.93	53.3557
765.79	51.7667
766.42	50.1577
766.84	50.1642
776.49	80.5414
778.00	67.2327
778.57	67.2429
778.89	65.3557
783.80	51.2183
785.46	70.2211
792.07	61.9302



795.84	63.7626
796.30	68.5298
798.80	97.9667
801.93	73.5393
805.60	63.9343
810.29	79.3053
810.76	70.7149
815.85	66.9851
817.79	58.4037
818.51	67.9911
819.60	68.9692
826.30	70.0549
828.27	0.0000
831.60	68.2323
831.96	78.8102
834.83	74.0627
836.80	0.0000
846.75	50.1750
848.13	46.3330
856.28	0.0000
856.80	46.4395
860.37	87.9846
867.32	51.5567
867.82	54.8899
871.10	45.5539
873.19	51.4969
874.81	56.3787
875.33	0.0000
876.40	56.4011
879.36	43.7933
880.27	45.7502
880.51	45.7531
881.50	45.7646
883.24	56.5014
884.67	50.6744
889.25	54.6374
896.60	51.8074
898.02	59.6485
899.00	62.5977
903.28	58.7488
911.07	53.9594
911.07	53.9594
911.07	53.9594
919.63	47.1934
920.93	52.1255
925.00	43.3179
925.24	46.2742
926.50	44.3198
935.52	40.4703
937.48	62.2156
944.10	39.5662
946.00	41.5642
949.00	46.5468
962.29	40.8775
964.01	40.7523
966.15	40.7739
968.20	40.7940
969.11	40.8023
969.11	40.8023
969.11	40.8023
977.42	42.7359
980.50	44.4780
983.50	37.1485
989.30	47.0000
996.32	57.0939
1001.03	56.1549
1001.68	58.1687
1004.76	46.1675
1021.30	0.0000
1024.50	0.0000
1034.80	37.3944
1036.00	45.4926
1037.82	53.6017
1038.57	54.6218
1038.76	0.0000
1045.16	44.5747
1046.59	40.5355
1048.07	37.5074



1050.47	44.6284
1050.47	44.6284
1062.04	63.0495
1063.62	55.9511
1076.63	49.9909
1077.35	41.8375
1078.86	53.0791
1085.78	55.2041
1099.22	36.9126
1112.02	40.3801
1112.84	46.6209
1115.52	67.0328
1120.29	47.6775
1120.29	47.6775
1120.29	47.6775
1120.29	47.6775
1120.51	47.6794
1121.28	50.4834
1124.00	0.0000
1129.67	58.8323
1131.51	0.0000
1147.95	0.0000
1167.94	57.2312
1173.22	41.6683
1175.09	57.3163
1177.93	68.8198
1189.05	56.4368
1204.90	71.3009
1205.75	0.0000
1213.00	58.8164
1221.42	67.3333
1230.97	61.4400
1235.34	59.6859
1236.41	0.0000
1238.25	54.8945
1246.25	39.8765
1260.41	0.0000
1271.85	56.3254
1274.45	35.0880
1274.54	35.0880
1291.56	45.8730
1298.22	0.0000
1312.09	33.2037
1325.50	26.8453
1325.50	26.8453
1332.49	24.7304
1333.61	21.5096
1360.21	20.5369
1362.66	0.0000
1365.15	17.3099
1368.21	16.2372
1368.53	0.0000
1376.25	26.0186
1384.27	38.1558
1394.10	23.3076
1395.20	23.3119
1407.95	32.7136
1434.06	20.6595
1436.60	25.3671
1457.56	0.0000
1460.81	29.2506
1489.15	22.7586
1509.49	20.9358
1596.49	22.1245
1620.62	14.5438
1678.03	0.0000
1691.02	9.8064
1691.02	9.8064
1706.46	0.0000
1750.46	0.0000
1764.49	21.8220
1764.49	21.8220
1764.49	21.8220
1764.49	21.8220
1770.23	12.1616
1771.40	15.6390
1791.20	0.0000
1808.65	13.9805



1836.01

8.0215



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G243457001

Total Uranium Activity	5.3285E+00	ug/g
Total Uranium Counting Unc.	3.1403E+00	ug/g
Total Uranium Tpu	1.6022E-06	ug/g
Total Uranium Mda	1.8516E+00	ug/g



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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 936923          SAMPLE ID   : G243457001
*  ANALYST       : MXR1            DETECTOR    : GAM05
*  SAMPLE DATE   : 18-DEC-2009 12:00:00.00 COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 4-JAN-2010 13:58:02.37 SAMPLE ALQT: 111.113 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.062E+01
GROSS GAMMA ERROR  (pCi/GRAM ) : 1.742E+00
GROSS GAMMA MDA    (pCi/GRAM ) : 6.349E+00
GROSS GAMMA DLC    (pCi/GRAM ) : 3.097E+00

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VAX/VMS Nuclide Identification Report Generated 6-JAN-2010 11:55:03.18

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457002.CNF;1
Sample date        : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:30.
Sample ID          : G243457002      Sample quantity   : 1.11610E+02 GRAM
Detector name      : GAM07            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:01.21  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 936923           Detector SN#      :
Matrix Spike ID    :                  LCS ID           : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.37*	46	274	0.89	92.40	89	7	6.41E-03	64.8	
2	0	63.53*	16	415	0.74	126.72	123	7	2.27E-03	216.7	
3	1	74.69	386	367	1.11	149.03	142	18	5.35E-02	10.1	2.55E+00
4	1	77.07*	669	353	1.11	153.80	142	18	9.29E-02	6.4	
5	0	87.16	203	427	1.49	173.98	171	7	2.81E-02	18.3	
6	3	90.00	104	364	1.01	179.65	177	13	1.45E-02	29.2	1.32E+00
7	3	92.93*	186	388	1.39	185.51	177	13	2.59E-02	21.2	
8	0	186.19*	154	240	1.12	371.98	368	9	2.14E-02	20.8	
9	0	208.90	131	206	1.80	417.41	413	9	1.82E-02	21.6	
10	5	238.66*	1044	182	1.09	476.90	472	17	1.45E-01	3.9	1.13E+00
11	5	241.69	192	234	1.58	482.97	472	17	2.67E-02	18.2	
12	0	269.79*	115	162	1.71	539.15	533	11	1.59E-02	23.9	
13	0	277.19	47	143	1.21	553.96	551	8	6.51E-03	47.0	
14	0	295.07*	306	165	1.42	589.72	584	12	4.25E-02	10.3	
15	0	300.09	58	117	1.55	599.75	596	8	8.10E-03	34.6	
16	0	328.61	45	170	0.83	656.77	652	10	6.30E-03	56.1	
17	0	338.63*	209	168	1.21	676.82	671	13	2.91E-02	14.8	
18	0	351.98*	488	165	1.24	703.52	698	12	6.77E-02	7.1	
19	0	463.59	78	91	1.23	926.69	921	13	1.08E-02	27.6	
20	0	510.96*	110	151	1.90	1021.42	1013	16	1.53E-02	30.0	
21	0	583.23*	310	99	1.43	1165.95	1160	14	4.30E-02	9.1	
22	0	609.48*	346	78	1.30	1218.44	1213	11	4.81E-02	7.5	
23	0	728.24	86	92	2.23	1455.92	1447	18	1.20E-02	28.5	
24	0	795.30	24	32	0.99	1590.03	1586	7	3.31E-03	43.6	
25	0	861.83*	25	79	1.70	1723.06	1717	13	3.41E-03	78.5	
26	0	911.75*	227	60	1.69	1822.91	1816	16	3.16E-02	10.4	
27	1	964.49*	48	55	1.98	1928.36	1920	35	6.72E-03	33.2	9.41E-01
28	1	969.13	150	42	1.98	1937.64	1920	35	2.08E-02	12.2	
29	0	1121.72*	69	91	1.55	2242.79	2236	16	9.57E-03	34.6	
30	0	1461.05*	1264	31	2.03	2921.39	2911	18	1.76E-01	3.0	
31	0	1497.54	16	8	1.03	2994.37	2984	14	2.25E-03	43.0	
32	0	1587.83	27	9	0.95	3174.94	3165	16	3.81E-03	30.1	
33	0	1765.00*	73	0	1.74	3529.25	3521	16	1.01E-02	12.6	

Flag: "\*" = Peak area was modified by background subtraction



## VMS Nuclide Identification Report V3.1 Generated 6-JAN-2010 11:55:06

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457002.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:30  
 Sample ID : G243457002 Sample quantity : 111.61 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA7 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.21 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.529E+01	3.703E+00	6.160E-01	5.289E-02	57.296
CD-109	+	88.03	*	2.749E+00	1.037E+00	1.270E+00	1.196E-01	2.165
SN-126	+	64.28		1.184E-01	5.132E-01	6.257E-01	9.074E-02	0.189
	+	86.94		1.120E+00	6.196E-01	5.326E-01	2.211E-01	2.103
	+	87.57	*	2.694E-01	1.017E-01	1.247E-01	1.168E-02	2.161
TL-208	+	277.35		5.267E-01	4.994E-01	6.516E-01	7.979E-02	0.808
	+	510.84		6.240E-01	3.820E-01	2.395E-01	2.918E-02	2.605
	+	583.14	*	4.995E-01	1.027E-01	6.350E-02	6.074E-03	7.866
	+	860.37		3.719E-01	5.853E-01	4.993E-01	4.882E-02	0.745
BI-210	+	46.50	*	1.876E+00	2.440E+00	2.884E+00	2.706E-01	0.651
PB-210	+	46.50	*	1.876E+00	2.440E+00	2.884E+00	2.706E-01	0.651
PO-210	+	46.50	*	1.876E+00	2.438E+00	2.884E+00	2.454E-01	0.651
BI-211		72.87		6.734E+00	2.601E+00	4.557E+00	3.597E-01	1.478
	+	351.07	*	3.444E+00	5.755E-01	3.582E-01	3.213E-02	9.615
PB-212	+	74.81		1.999E+00	4.719E-01	4.359E-01	5.376E-02	4.586
	+	77.11		1.999E+00	3.061E-01	2.520E-01	2.080E-02	7.932
	+	87.30		1.246E+00	4.864E-01	5.872E-01	8.034E-02	2.122
	+	238.63	*	1.604E+00	1.980E-01	9.882E-02	9.452E-03	16.231
	+	300.09		1.385E+00	9.694E-01	1.224E+00	1.270E-01	1.132
PO-212	+	74.81		1.999E+00	4.719E-01	4.359E-01	5.376E-02	4.586
	+	77.11		1.999E+00	3.061E-01	2.520E-01	2.080E-02	7.932
	+	87.30		1.246E+00	4.864E-01	5.872E-01	8.034E-02	2.122
	+	115.19		1.674E+00	3.480E+00	5.736E+00	4.940E-01	0.292
	+	238.63	*	1.604E+00	1.980E-01	9.882E-02	9.452E-03	16.231
	+	300.09		1.385E+00	9.694E-01	1.224E+00	1.270E-01	1.132
BI-214	+	609.31	*	1.054E+00	1.919E-01	1.373E-01	1.420E-02	7.676
	+	1120.29		1.087E+00	7.602E-01	5.008E-01	5.377E-02	2.170
	+	1764.49		1.570E+00	4.176E-01	3.371E-01	2.772E-02	4.657
PB-214	+	74.81		3.444E+00	7.890E-01	7.510E-01	8.216E-02	4.586
	+	77.11		3.427E+00	5.861E-01	4.321E-01	4.853E-02	7.932
	+	87.30		2.134E+00	8.221E-01	1.006E+00	1.218E-01	2.122
	+	241.98		1.772E+00	6.692E-01	5.953E-01	6.042E-02	2.978
	+	295.21		1.275E+00	2.942E-01	2.264E-01	2.396E-02	5.632
	+	351.92	*	1.198E+00	2.097E-01	1.249E-01	1.296E-02	9.595



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		3.444E+00	7.890E-01	7.510E-01	8.216E-02	4.586
	+	77.11		3.427E+00	5.861E-01	4.321E-01	4.853E-02	7.932
	+	87.30		2.134E+00	8.221E-01	1.006E+00	1.218E-01	2.122
	+	241.98		1.772E+00	6.692E-01	5.953E-01	6.042E-02	2.978
	+	295.21		1.275E+00	2.942E-01	2.264E-01	2.396E-02	5.632
PO-216	+	351.92	*	1.198E+00	2.097E-01	1.249E-01	1.296E-02	9.595
	+	74.81		1.999E+00	4.719E-01	4.359E-01	5.376E-02	4.586
	+	77.11		1.999E+00	3.061E-01	2.520E-01	2.080E-02	7.932
	+	87.30		1.246E+00	4.864E-01	5.872E-01	8.034E-02	2.122
	+	238.63	*	1.604E+00	1.980E-01	9.882E-02	9.452E-03	16.231
PO-218	+	300.09		1.385E+00	9.694E-01	1.224E+00	1.270E-01	1.132
	+	74.81		3.444E+00	7.890E-01	7.510E-01	8.216E-02	4.586
	+	77.11		3.427E+00	5.861E-01	4.321E-01	4.853E-02	7.932
	+	87.30		2.134E+00	8.221E-01	1.006E+00	1.218E-01	2.122
	+	241.98		1.772E+00	6.692E-01	5.953E-01	6.042E-02	2.978
RA-224	+	295.21		1.275E+00	2.942E-01	2.264E-01	2.396E-02	5.632
	+	351.92	*	1.198E+00	2.097E-01	1.249E-01	1.296E-02	9.595
	+	240.98	*	3.361E+00	1.255E+00	1.125E+00	9.513E-02	2.988
	+	609.31	*	1.054E+00	1.919E-01	1.373E-01	1.420E-02	7.676
	+	1120.29		1.087E+00	7.602E-01	5.008E-01	5.377E-02	2.170
AC-228	+	1764.49		1.570E+00	4.176E-01	3.371E-01	2.772E-02	4.657
	+	338.32		1.630E+00	8.270E-01	3.919E-01	1.616E-01	4.159
	+	911.07	*	1.628E+00	3.895E-01	2.298E-01	2.677E-02	7.086
	+	969.11		1.889E+00	6.408E-01	4.086E-01	9.601E-02	4.622
	+	338.32		1.630E+00	8.270E-01	3.919E-01	1.616E-01	4.159
RA-228	+	911.07	*	1.628E+00	3.895E-01	2.298E-01	2.677E-02	7.086
	+	969.11		1.889E+00	6.408E-01	4.086E-01	9.601E-02	4.622
	+	74.81		2.033E+00	4.413E-01	4.433E-01	3.604E-02	4.586
	+	77.11		2.033E+00	3.113E-01	2.564E-01	2.116E-02	7.932
	+	87.30		1.267E+00	4.783E-01	5.973E-01	5.577E-02	2.122
TH-228	+	238.63	*	1.632E+00	2.014E-01	1.005E-01	9.615E-03	16.231
	+	300.09		1.409E+00	1.284E+00	1.245E+00	7.380E-01	1.132
	+	609.31	*	1.054E+00	1.919E-01	1.372E-01	1.420E-02	7.676
	+	1120.29		1.087E+00	7.602E-01	5.008E-01	5.377E-02	2.170
	+	1764.49		1.570E+00	4.176E-01	3.371E-01	2.772E-02	4.657
TH-232	+	338.32		1.630E+00	5.015E-01	3.919E-01	3.354E-02	4.159
	+	911.07	*	1.628E+00	3.895E-01	2.298E-01	2.677E-02	7.086
	+	969.11		1.889E+00	6.408E-01	4.086E-01	9.601E-02	4.622
	+	63.29	*	2.990E-01	1.297E+00	1.590E+00	2.767E-01	0.188
	+	92.38		1.651E+00	7.638E-01	7.026E-01	1.289E-01	2.349
U-234	+	609.31	*	1.054E+00	1.919E-01	1.372E-01	1.420E-02	7.676
	+	1120.29		1.087E+00	7.602E-01	5.008E-01	5.377E-02	2.170
	+	1764.49		1.570E+00	4.176E-01	3.371E-01	2.772E-02	4.657
	+	86.50	*	7.911E-01	3.403E-01	3.764E-01	8.511E-02	2.102
	+	95.87		-1.429E-01	9.453E-01	1.358E+00	3.363E-01	-0.105
U-238	+	63.29	*	2.990E-01	1.297E+00	1.590E+00	2.767E-01	0.188
	+	92.38		1.651E+00	7.173E-01	7.026E-01	6.436E-02	2.349
	+	74.67	*	3.241E-01	7.025E-02	7.079E-02	5.691E-03	4.578
	+	86.72		2.967E+01	1.120E+01	1.410E+01	1.307E+00	2.104
	+							



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.66		-3.084E+00	3.683E+00	5.662E+00	4.870E-01	-0.545
		142.18		-1.345E+00	1.770E+01	2.815E+01	2.323E+00	-0.048
ANH-511	+	511.00	*	1.348E-01	8.173E-02	5.176E-02	4.599E-03	2.604

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-3.245E-02	3.560E-01	5.662E-01	5.343E-02	-0.057
NA-22		1274.54	*	-1.853E-03	5.071E-02	8.347E-02	6.852E-03	-0.022
NA-24		1368.53	*	7.127E+00	5.071E-02	Half-Life too short		
AL-26		1129.67		3.464E-01	2.519E+00	3.682E+00	3.093E-01	0.094
		1808.65	*	1.205E-02	2.476E-02	4.631E-02	3.776E-03	0.260
TI-44		67.85		2.272E-02	3.716E-02	5.986E-02	4.516E-03	0.380
	+	78.38	*	3.689E-01	5.649E-02	7.041E-02	5.894E-03	5.240
SC-46		889.25	*	-7.755E-03	4.664E-02	7.443E-02	6.820E-03	-0.104
	+	1120.51		1.891E-01	1.317E-01	1.507E-01	1.273E-02	1.255
V-48		944.10		-6.404E-01	1.130E+00	1.712E+00	1.556E-01	-0.374
		983.50	*	-2.930E-02	8.596E-02	1.330E-01	1.197E-02	-0.220
		1312.09		1.845E-02	9.976E-02	1.680E-01	1.377E-02	0.110
CR-51		320.08	*	-4.312E-02	4.151E-01	6.780E-01	6.127E-02	-0.064
MN-52		744.21		-5.289E-02	3.657E-01	5.942E-01	5.394E-02	-0.089
		848.13		-1.090E+00	9.526E+00	1.534E+01	1.408E+00	-0.071
		935.52		1.679E-01	3.820E-01	6.438E-01	5.863E-02	0.261
		1246.25		-9.407E+00	1.190E+01	1.829E+01	1.498E+00	-0.514
		1333.61		-2.678E+00	6.914E+00	1.078E+01	8.836E-01	-0.248
		1434.06	*	3.207E-01	3.479E-01	6.388E-01	5.312E-02	0.502
MN-54		834.83	*	6.858E-03	4.199E-02	6.953E-02	6.383E-03	0.099
CO-56		846.75	*	9.101E-03	4.703E-02	7.802E-02	7.163E-03	0.117
		977.42		3.021E+00	3.523E+00	5.572E+00	5.025E-01	0.542
		1037.82		7.489E-02	3.504E-01	6.002E-01	5.568E-02	0.125
		1175.09		2.121E-01	2.718E+00	4.551E+00	3.705E-01	0.047
		1238.25		1.072E-01	1.171E-01	2.061E-01	1.742E-02	0.520
		1360.21		-1.219E+00	1.184E+00	1.661E+00	1.367E-01	-0.734
		1771.40		1.232E-01	2.418E-01	4.026E-01	3.307E-02	0.306
CO-57		122.06	*	1.124E-02	2.516E-02	4.134E-02	3.556E-03	0.272
		136.48		-6.451E-02	2.236E-01	3.482E-01	3.135E-02	-0.185
CO-58		810.76	*	-4.510E-02	4.836E-02	7.178E-02	6.595E-03	-0.628
FE-59		142.65		-1.779E+00	2.885E+00	4.387E+00	3.618E-01	-0.406
		192.34		-2.962E-01	9.821E-01	1.636E+00	2.148E-01	-0.181
		1099.22	*	1.013E-02	1.135E-01	1.912E-01	1.772E-02	0.053
		1291.56		-5.734E-02	1.612E-01	2.564E-01	2.415E-02	-0.224
CO-60		1173.22		-1.023E-02	5.174E-02	8.446E-02	6.873E-03	-0.121
		1332.49	*	-6.372E-03	4.053E-02	6.529E-02	5.348E-03	-0.098
ZN-65		1115.52	*	-2.524E-02	1.133E-01	1.579E-01	1.340E-02	-0.160
GE-68		1077.35	*	8.520E-01	1.543E+00	2.702E+00	2.341E-01	0.315
AS-73		53.44	*	-2.460E-02	5.487E-01	8.846E-01	6.643E-02	-0.028
AS-74		595.88	*	8.389E-02	1.095E-01	1.931E-01	1.731E-02	0.434
		634.78		-1.110E-01	4.020E-01	6.522E-01	5.814E-02	-0.170



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75		66.05		8.750E-01	4.037E+00	6.024E+00	5.715E-01	0.145
		96.73		-3.743E-01	8.171E-01	1.150E+00	1.593E-01	-0.326
		121.11		2.876E-02	1.339E-01	2.177E-01	2.439E-02	0.132
		136.00		-7.633E-03	4.187E-02	6.554E-02	5.510E-03	-0.116
		198.60		-9.900E-01	1.802E+00	2.940E+00	2.702E-01	-0.337
		264.65	*	-2.930E-02	5.217E-02	7.267E-02	6.205E-03	-0.403
		279.53		4.101E-03	1.320E-01	1.927E-01	1.699E-02	0.021
		303.91		-5.233E-01	2.533E+00	3.601E+00	4.116E-01	-0.145
		400.65		2.355E-01	2.905E-01	4.958E-01	5.420E-02	0.475
BR-77	+	87.88		1.050E+03	3.964E+02	5.810E+02	5.466E+01	1.808
		200.40		-1.000E+02	2.854E+02	4.732E+02	3.891E+01	-0.211
	+	239.00		4.569E+02	5.255E+01	7.365E+01	6.223E+00	6.204
		249.79		-4.579E+01	1.201E+02	1.959E+02	1.661E+01	-0.234
		281.68		1.076E+02	1.876E+02	2.854E+02	2.425E+01	0.377
		297.23		4.181E+02	1.518E+02	2.108E+02	1.802E+01	1.983
		303.76		-9.349E+01	3.776E+02	5.349E+02	4.579E+01	-0.175
		439.47		1.805E+02	2.818E+02	4.760E+02	4.100E+01	0.379
		484.57		-1.088E+02	4.488E+02	7.036E+02	6.197E+01	-0.155
		520.65	*	3.099E+00	1.893E+01	3.230E+01	2.877E+00	0.096
		574.64		1.388E+02	4.047E+02	6.949E+02	6.232E+01	0.200
		578.91		1.819E+01	1.922E+02	2.828E+02	2.537E+01	0.064
		585.48		2.032E+03	5.295E+02	9.303E+02	8.343E+01	2.184
		755.35		1.739E+00	3.043E+02	5.003E+02	4.552E+01	0.003
		817.79		-8.826E+01	2.976E+02	4.554E+02	4.177E+01	-0.194
SR-82		698.33		-1.405E+01	4.097E+01	6.577E+01	5.897E+00	-0.214
		776.49	*	8.818E-03	4.656E-01	7.649E-01	6.984E-02	0.012
		1395.20		-7.645E+00	1.119E+01	1.615E+01	1.337E+00	-0.473
RB-83		520.41	*	1.322E-02	7.179E-02	1.227E-01	1.093E-02	0.108
		529.64		2.442E-02	1.147E-01	1.962E-01	1.751E-02	0.124
		552.65		-1.357E-01	2.209E-01	3.527E-01	3.159E-02	-0.385
RB-84		881.50	*	-3.048E-02	7.714E-02	1.196E-01	1.097E-02	-0.255
KR-85		513.99	*	1.367E+01	8.857E+00	1.472E+01	1.309E+00	0.929
SR-85		513.99	*	7.157E-02	4.636E-02	7.706E-02	6.852E-03	0.929
RB-86		1076.63	*	2.209E-01	1.046E+00	1.783E+00	1.545E-01	0.124
Y-88		898.02		-1.960E-02	5.031E-02	7.837E-02	7.207E-03	-0.250
		1836.01	*	-1.209E-02	3.097E-02	4.644E-02	3.769E-03	-0.260
ZR-88		392.90	*	2.051E-02	3.478E-02	5.873E-02	4.892E-03	0.349
Y-91		1204.90	*	-1.238E+01	2.341E+01	3.703E+01	3.024E+00	-0.334
NB-94		702.63	*	2.310E-03	3.611E-02	5.997E-02	5.385E-03	0.039
		871.10		1.917E-02	3.772E-02	6.448E-02	5.916E-03	0.297
NB-95		765.79	*	3.979E-02	5.126E-02	8.907E-02	8.120E-03	0.447
NB-95M		235.69	*	6.776E-02	1.452E-01	2.203E-01	2.138E-02	0.308
ZR-95		724.18		1.307E-02	1.209E-01	1.749E-01	1.705E-02	0.075
		756.15	*	1.908E-03	7.733E-02	1.274E-01	1.265E-02	0.015
NB-97		657.90	*	-4.574E-01	7.733E-02	Half-Life	too short	
		1024.50		-3.797E+01	7.733E-02	Half-Life	too short	
ZR-97		254.15		3.070E+00	7.733E-02	Half-Life	too short	
		355.39		-1.022E+01	7.733E-02	Half-Life	too short	
		507.63	*	2.994E+01	7.733E-02	Half-Life	too short	



---- Non-Identified Nuclides ----

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	602.52			-2.994E+01	7.733E-02	Half-Life	too short	
	1021.30			-2.197E+01	7.733E-02	Half-Life	too short	
	1147.95			2.660E+01	7.733E-02	Half-Life	too short	
	1362.66			-8.232E+01	7.733E-02	Half-Life	too short	
	1750.46			1.188E+00	7.733E-02	Half-Life	too short	
MO-99	140.51			1.992E+01	4.424E+01	7.168E+01	1.977E+01	0.278
	181.06			2.133E+01	3.011E+01	4.886E+01	8.809E+00	0.437
	366.43			2.537E+01	1.432E+02	2.366E+02	2.004E+01	0.107
	739.58	*		7.649E+00	2.007E+01	3.417E+01	5.277E+00	0.224
	778.00			1.690E+01	6.288E+01	1.056E+02	9.647E+00	0.160
TC-99M	140.51	*		4.030E+12	6.288E+01	Half-Life	too short	
RH-101	127.23			-3.757E-03	3.384E-02	5.403E-02	4.588E-03	-0.070
	198.01	*		-2.772E-02	3.293E-02	5.290E-02	4.340E-03	-0.524
	325.23			9.097E-02	2.743E-01	4.062E-01	3.483E-02	0.224
RH-102	418.52			-2.201E-01	3.274E-01	5.018E-01	4.264E-02	-0.439
	475.06	*		-8.513E-03	3.169E-02	4.963E-02	4.353E-03	-0.172
	631.29			-1.140E-02	5.738E-02	9.382E-02	8.370E-03	-0.122
	697.49			1.947E-02	8.717E-02	1.466E-01	1.314E-02	0.133
	766.84			1.285E-01	1.284E-01	2.262E-01	2.062E-02	0.568
	1046.59			-4.219E-02	1.296E-01	2.105E-01	1.851E-02	-0.200
	1112.84			-1.811E-01	2.558E-01	3.737E-01	3.173E-02	-0.485
RU-103	497.08	*		-6.886E-03	4.542E-02	7.160E-02	1.024E-02	-0.096
	610.33	+		1.178E+01	2.657E+00	3.220E+00	5.429E-01	3.657
RH-106	511.85	+		6.757E-01	4.098E-01	5.179E-01	4.603E-02	1.305
	621.84	*		-6.278E-02	3.400E-01	5.574E-01	7.560E-02	-0.113
	1050.47			3.412E-01	2.562E+00	4.351E+00	3.820E-01	0.078
RU-106	511.85	+		6.757E-01	4.098E-01	5.179E-01	4.603E-02	1.305
	621.84	*		-6.278E-02	3.399E-01	5.574E-01	4.981E-02	-0.113
	1050.47			3.412E-01	2.562E+00	4.351E+00	3.820E-01	0.078
AG-108M	433.93	*		-9.463E-03	3.626E-02	5.728E-02	5.114E-03	-0.165
	614.37			3.011E-02	4.796E-02	7.418E-02	6.879E-03	0.406
	722.95			2.358E-03	5.313E-02	7.631E-02	7.138E-03	0.031
AG-110M	657.75	*		-2.183E-02	3.643E-02	5.708E-02	5.200E-03	-0.382
	677.61			-4.388E-01	3.386E-01	4.894E-01	4.473E-02	-0.897
	706.67			9.010E-02	2.334E-01	3.975E-01	3.664E-02	0.227
	763.93			-1.125E-01	1.946E-01	3.034E-01	2.835E-02	-0.371
	884.67			-2.070E-02	5.469E-02	8.508E-02	8.022E-03	-0.243
	937.48			4.967E-03	1.341E-01	2.176E-01	2.045E-02	0.023
	1384.27			-6.370E-02	1.767E-01	2.748E-01	2.340E-02	-0.232
IN-111	171.28			-5.389E-01	1.724E+00	2.679E+00	2.132E-01	-0.201
	245.39	*		6.652E-01	1.991E+00	2.974E+00	2.519E-01	0.224
IN-113M	391.69	*		-2.149E-02	5.143E-02	8.103E-02	6.966E-03	-0.265
SN-113	391.69	*		-2.149E-02	5.143E-02	8.103E-02	6.966E-03	-0.265
IN-114M	190.27	*		-5.107E-02	2.163E-01	3.182E-01	2.589E-02	-0.160
CD-115	260.90			6.695E+01	2.523E+02	4.257E+02	3.617E+01	0.157
	492.35			-2.065E+01	7.158E+01	1.115E+02	9.847E+00	-0.185
	527.90	*		-5.298E-01	2.083E+01	3.500E+01	3.123E+00	-0.015
SN-117M	156.02			-2.113E+00	2.650E+00	4.026E+00	3.243E-01	-0.525
	158.56	*		4.523E-02	6.279E-02	1.033E-01	8.281E-03	0.438



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-122	563.90	*		2.998E+00	3.563E+00	6.341E+00	5.685E-01	0.473
	692.80			-4.819E+00	8.393E+01	1.381E+02	1.236E+01	-0.035
I-123	159.00	*		5.018E+01	8.393E+01	Half-Life too short		
	528.96			-4.442E+02	8.393E+01	Half-Life too short		
TE-123M	159.00	*		2.079E-02	3.010E-02	4.941E-02	3.986E-03	0.421
I-124	602.71	*		-5.198E-01	1.112E+00	1.608E+00	1.441E-01	-0.323
	722.78			3.423E-01	7.687E+00	1.104E+01	9.972E-01	0.031
	1325.50			-1.726E+01	5.779E+01	9.183E+01	7.525E+00	-0.188
	1376.25			5.097E+01	4.633E+01	8.600E+01	7.098E+00	0.593
	1509.49			1.232E+01	2.291E+01	4.043E+01	3.380E+00	0.305
	1691.02			-2.297E+00	4.182E+00	5.565E+00	4.624E-01	-0.413
SB-124	602.71			-2.231E-02	4.770E-02	6.901E-02	6.184E-03	-0.323
	645.85			-5.853E-01	5.558E-01	8.313E-01	7.809E-02	-0.704
	709.31			1.496E+00	3.414E+00	5.770E+00	5.192E-01	0.259
	713.82			-7.538E-01	1.917E+00	3.052E+00	3.760E-01	-0.247
	722.78			2.129E-02	4.782E-01	6.870E-01	6.326E-02	0.031
	+ 968.20			1.989E+01	5.190E+00	8.763E+00	7.922E-01	2.269
	1045.16			1.937E+00	2.854E+00	5.078E+00	4.469E-01	0.381
	1325.50			-1.147E+00	3.840E+00	6.101E+00	5.000E-01	-0.188
	1368.21			2.131E+00	2.027E+00	3.747E+00	4.960E-01	0.569
	1436.60			-2.140E+00	4.290E+00	6.472E+00	5.383E-01	-0.331
	1691.02			-3.371E-02	6.137E-02	8.167E-02	7.074E-03	-0.413
SB-125	427.89	*		-2.693E-02	9.814E-02	1.549E-01	1.351E-02	-0.174
	+ 463.38			8.619E-01	4.833E-01	5.836E-01	5.482E-02	1.477
	600.56			-7.108E-02	1.934E-01	3.135E-01	3.001E-02	-0.227
	635.90			-1.430E-01	2.940E-01	4.679E-01	4.486E-02	-0.306
TE-125M	109.28	*		5.245E+00	9.132E+00	1.513E+01	1.570E+00	0.347
I-126	388.63			1.793E-01	2.461E-01	4.197E-01	3.502E-02	0.427
	666.33	*		1.033E-01	2.283E-01	3.917E-01	3.473E-02	0.264
	753.82			-6.023E-01	1.818E+00	2.895E+00	2.633E-01	-0.208
SB-126	223.80			-5.150E+00	4.807E+00	7.464E+00	6.256E-01	-0.690
	+ 278.60			3.887E+00	3.669E+00	5.094E+00	4.324E-01	0.763
	+ 296.50			1.417E+01	3.146E+00	4.190E+00	3.581E-01	3.381
	414.70			5.607E-03	9.448E-02	1.536E-01	1.301E-02	0.037
	415.30			-2.655E-01	7.789E+00	1.257E+01	1.066E+00	-0.021
	555.20			3.428E+00	4.747E+00	8.387E+00	7.513E-01	0.409
	573.80			5.060E-01	1.288E+00	2.219E+00	1.990E-01	0.228
	593.00			-9.364E-01	1.169E+00	1.825E+00	1.636E-01	-0.513
	656.30			1.648E+00	3.852E+00	6.628E+00	5.875E-01	0.249
	666.33			4.337E-02	9.583E-02	1.644E-01	1.458E-02	0.264
	675.00			1.082E+00	2.374E+00	4.084E+00	3.632E-01	0.265
	695.00			6.438E-02	9.917E-02	1.721E-01	1.541E-02	0.374
	697.00			4.102E-02	3.465E-01	5.780E-01	5.180E-02	0.071
	720.50	*		4.113E-02	2.050E-01	3.002E-01	2.709E-02	0.137
	856.80			-1.937E-01	5.996E-01	7.980E-01	7.326E-02	-0.243
	989.30			1.096E+00	1.704E+00	2.917E+00	2.621E-01	0.376
	1034.80			-3.247E+00	1.082E+01	1.762E+01	1.557E+00	-0.184
	1213.00			-7.077E+00	6.626E+00	9.953E+00	8.134E-01	-0.711
SB-127	61.10			6.183E+01	6.584E+01	1.016E+02	1.096E+01	0.609



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	252.40			-1.913E+00	6.483E+00	1.055E+01	4.448E+00	-0.181
	290.80			1.631E+00	3.490E+01	5.088E+01	5.953E+00	0.032
	411.60			1.113E+01	1.936E+01	3.249E+01	5.222E+00	0.343
	444.90			7.251E-01	1.442E+01	2.333E+01	3.053E+00	0.031
	473.00			1.613E+00	2.429E+00	4.109E+00	5.542E-01	0.392
	543.00			-2.614E+01	2.519E+01	3.824E+01	5.759E+00	-0.684
	603.60			-5.213E+00	2.079E+01	2.933E+01	3.894E+00	-0.178
	685.20	*		-3.040E-01	2.269E+00	3.712E+00	4.529E-01	-0.082
	698.50			-7.437E+00	2.439E+01	3.924E+01	6.449E+00	-0.190
	722.20			1.753E+01	5.214E+01	7.757E+01	9.362E+00	0.226
	783.80			6.782E-02	5.475E+00	8.984E+00	1.196E+00	0.008
XE-127	57.60			-1.282E+00	4.310E+00	7.054E+00	5.113E-01	-0.182
	145.22			-4.109E-01	7.505E-01	1.145E+00	9.399E-02	-0.359
	172.10			-1.645E-02	1.299E-01	2.038E-01	1.624E-02	-0.081
	202.84	*		4.294E-02	4.868E-02	8.282E-02	6.825E-03	0.518
	374.96			-2.320E-02	2.335E-01	3.777E-01	3.183E-02	-0.061
I-131	80.18			2.118E-01	4.945E+00	7.252E+00	6.251E-01	0.029
	284.30			1.325E-01	1.891E+00	3.144E+00	2.822E-01	0.042
	364.48	*		-5.393E-02	1.396E-01	2.210E-01	1.982E-02	-0.244
	636.97			-7.634E-02	1.916E+00	3.176E+00	2.983E-01	-0.024
	722.89			4.710E-01	1.060E+01	1.522E+01	1.385E+00	0.031
TE-132	49.72			-1.768E+00	1.800E+01	2.672E+01	2.909E+00	-0.066
	111.76			-1.248E+01	4.424E+01	7.044E+01	8.037E+00	-0.177
	116.30			2.613E+01	4.039E+01	6.698E+01	7.626E+00	0.390
	228.16	*		3.917E-01	1.085E+00	1.847E+00	2.952E-01	0.212
BA-133	53.15			3.667E-01	2.312E+00	3.760E+00	2.833E-01	0.098
	79.62			8.527E-01	1.167E+00	1.763E+00	2.671E-01	0.484
	81.00			-1.095E-01	9.599E-02	1.297E-01	2.060E-02	-0.844
+	276.40			5.207E-01	4.953E-01	7.307E-01	1.050E-01	0.713
	302.84			5.029E-02	1.697E-01	2.517E-01	3.335E-02	0.200
	356.01	*		-2.314E-02	5.392E-02	7.389E-02	9.703E-03	-0.313
	383.85			-5.786E-02	3.165E-01	5.075E-01	6.312E-02	-0.114
I-133	510.53	+		6.603E+00	3.165E-01	Half-Life	too short	
	529.87	*		6.772E-03	3.165E-01	Half-Life	too short	
	706.58			8.016E-01	3.165E-01	Half-Life	too short	
	856.28			-9.746E-01	3.165E-01	Half-Life	too short	
	875.33			-3.702E-01	3.165E-01	Half-Life	too short	
	1236.41			1.711E+00	3.165E-01	Half-Life	too short	
	1298.22			-3.415E-01	3.165E-01	Half-Life	too short	
CS-134	475.35			-6.728E-01	2.078E+00	3.238E+00	2.841E-01	-0.208
	563.23			2.871E-01	3.679E-01	6.529E-01	5.905E-02	0.440
	569.32			-9.704E-02	2.229E-01	3.502E-01	3.180E-02	-0.277
	604.70			1.493E-04	4.254E-02	6.175E-02	5.545E-03	0.002
+	795.84	*		5.551E-02	4.868E-02	9.257E-02	8.529E-03	0.600
	801.93			6.540E-02	4.689E-01	7.649E-01	7.042E-02	0.085
	1038.57			-4.355E-02	4.323E+00	7.250E+00	6.398E-01	-0.006
	1167.94			-1.843E+00	2.868E+00	4.473E+00	3.655E-01	-0.412
	1365.15			7.131E-03	1.437E+00	2.363E+00	2.044E-01	0.003
CS-135	268.24	*		2.044E-01	1.878E-01	2.947E-01	2.906E-02	0.694



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135	288.45			-2.808E+12	1.878E-01	Half-Life	too short	
	417.63			-2.870E+12	1.878E-01	Half-Life	too short	
	546.56			2.584E+11	1.878E-01	Half-Life	too short	
	836.80			1.194E+12	1.878E-01	Half-Life	too short	
	1038.76			-8.391E+10	1.878E-01	Half-Life	too short	
	1124.00			2.207E+12	1.878E-01	Half-Life	too short	
	1131.51			3.382E+11	1.878E-01	Half-Life	too short	
	1260.41	*		1.575E+12	1.878E-01	Half-Life	too short	
	1457.56			6.846E+13	1.878E-01	Half-Life	too short	
	1678.03			-2.265E+11	1.878E-01	Half-Life	too short	
	1706.46			8.903E+11	1.878E-01	Half-Life	too short	
	1791.20			2.316E+11	1.878E-01	Half-Life	too short	
CS-136	66.91			3.792E-01	7.282E-01	1.099E+00	1.631E-01	0.345
	86.29	+		3.899E+00	1.518E+00	2.127E+00	2.820E-01	1.833
	153.22			3.185E-01	7.786E-01	1.262E+00	1.158E-01	0.252
	163.89			6.482E-01	1.194E+00	1.946E+00	1.762E-01	0.333
	176.55			-1.250E-01	4.053E-01	6.782E-01	5.796E-02	-0.184
	273.65			-7.137E-02	8.028E-01	8.366E-01	7.590E-02	-0.085
	340.57			3.939E-01	1.771E-01	2.933E-01	2.584E-02	1.343
	818.51			-5.680E-02	1.056E-01	1.579E-01	1.449E-02	-0.360
	1048.07	*		-8.957E-02	1.344E-01	2.102E-01	1.923E-02	-0.426
	1235.34			-1.593E-01	8.181E-01	1.335E+00	1.540E-01	-0.119
BA-137M	661.65	*		-2.137E-02	3.831E-02	5.964E-02	5.278E-03	-0.358
CS-137	661.65	*		-2.259E-02	4.049E-02	6.304E-02	5.589E-03	-0.358
CE-139	165.85	*		-1.112E-02	3.077E-02	4.773E-02	3.775E-03	-0.233
BA-140	162.64			-3.662E-01	8.654E-01	1.340E+00	1.139E-01	-0.273
LA-140	404.84			-2.862E-01	1.650E+00	2.349E+00	6.579E-01	-0.122
	323.70			3.439E-01	2.339E+00	3.818E+00	1.237E+00	0.090
	537.32	*		-2.055E-01	3.107E-01	4.824E-01	1.603E-01	-0.426
	328.77	+		4.851E-01	5.459E-01	6.703E-01	6.072E-02	0.724
	432.53			1.298E+00	2.454E+00	4.122E+00	3.709E-01	0.315
	487.03			1.284E-01	1.669E-01	2.838E-01	2.650E-02	0.452
	751.79			-3.948E-01	2.167E+00	3.503E+00	3.492E-01	-0.113
	815.85			1.274E-01	4.369E-01	7.323E-01	7.404E-02	0.174
	867.82			4.389E-02	2.011E+00	2.834E+00	2.722E-01	0.015
	919.63			2.687E+00	3.985E+00	6.111E+00	6.762E-01	0.440
	925.24			9.001E-02	1.450E+00	2.362E+00	2.276E-01	0.038
	1596.49	*		-1.149E-03	1.061E-01	1.679E-01	1.405E-02	-0.007
CE-141	145.44	*		-3.880E-02	6.838E-02	1.042E-01	8.722E-03	-0.372
CE-143	57.37			-2.226E-04	6.838E-02	Half-Life	too short	
	231.56			2.849E-03	6.838E-02	Half-Life	too short	
	293.26	*		1.515E-03	6.838E-02	Half-Life	too short	
	350.59	+		7.353E-02	6.838E-02	Half-Life	too short	
	490.36			-1.819E-03	6.838E-02	Half-Life	too short	
	664.57			2.316E-03	6.838E-02	Half-Life	too short	
	721.93			1.994E-03	6.838E-02	Half-Life	too short	
CE-144	80.11			1.159E-01	1.931E+00	2.835E+00	2.422E-01	0.041
	133.54	*		-2.154E-02	2.103E-01	3.350E-01	5.172E-02	-0.064
PM-144	476.78			-2.514E-04	7.294E-02	1.169E-01	1.119E-02	-0.002



----- Non-Identified Nuclides -----

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		618.01		1.177E-02	3.608E-02	6.162E-02	5.653E-03	0.191
		696.49	*	1.410E-02	3.952E-02	6.715E-02	6.020E-03	0.210
		778.57		3.333E-02	2.551E+00	4.188E+00	3.827E-01	0.008
PR-144		696.49	*	9.567E-01	2.681E+00	4.555E+00	4.082E-01	0.210
		1489.15		-1.387E+01	1.422E+01	1.382E+01	1.154E+00	-1.003
PM-146		453.90	*	-1.172E-02	5.023E-02	7.931E-02	8.545E-03	-0.148
		633.02		6.211E-01	1.446E+00	2.464E+00	9.226E-01	0.252
		735.90		-4.407E-02	1.867E-01	2.571E-01	7.388E-02	-0.171
		747.13		6.969E-02	1.116E-01	1.922E-01	2.753E-02	0.363
ND-147	+	91.11		5.331E-01	3.160E-01	5.364E-01	5.309E-02	0.994
		319.41		-2.034E+00	4.084E+00	6.499E+00	5.575E-01	-0.313
		439.89		3.333E+00	7.395E+00	1.232E+01	1.062E+00	0.270
		531.02	*	2.749E-01	6.624E-01	1.148E+00	1.737E-01	0.239
PM-149		285.90	*	-5.175E+00	1.804E+02	2.982E+02	4.619E+01	-0.017
EU-152		121.78		1.540E-02	7.269E-02	1.181E-01	1.170E-02	0.130
		244.69		2.968E-01	3.744E-01	5.808E-01	4.918E-02	0.511
		344.27	*	-3.120E-02	1.140E-01	1.591E-01	1.443E-02	-0.196
		443.98		-6.401E-01	1.007E+00	1.530E+00	1.322E-01	-0.418
		778.89		-5.720E-02	2.878E-01	4.627E-01	4.227E-02	-0.124
		867.32		-5.557E-01	1.157E+00	1.512E+00	1.387E-01	-0.368
	+	964.01		7.020E-01	4.702E-01	7.081E-01	6.409E-02	0.991
		1085.78		-6.853E-02	4.587E-01	7.565E-01	6.526E-02	-0.091
		1112.02		-1.659E-01	3.361E-01	5.325E-01	4.524E-02	-0.312
		1407.95		1.055E-01	2.141E-01	3.729E-01	3.092E-02	0.283
GD-153		69.67		-1.644E+00	1.482E+00	2.050E+00	1.570E-01	-0.802
		83.37		7.231E+00	1.474E+01	2.200E+01	1.955E+00	0.329
		97.43	*	2.167E-04	8.302E-02	1.203E-01	1.076E-02	0.002
		103.18		-3.211E-02	1.039E-01	1.659E-01	1.456E-02	-0.194
EU-154		123.07		2.063E-02	5.173E-02	8.470E-02	9.597E-03	0.244
		247.94		-3.111E-01	3.885E-01	5.935E-01	6.748E-02	-0.524
		591.81		-3.915E-01	7.047E-01	1.090E+00	1.300E-01	-0.359
		723.30		7.014E-02	2.104E-01	3.131E-01	3.100E-02	0.224
		756.87		1.415E-02	8.237E-01	1.356E+00	1.671E-01	0.010
		873.19		-1.178E-01	3.300E-01	5.153E-01	6.514E-02	-0.229
		996.32		-1.595E-01	4.267E-01	6.570E-01	1.178E-01	-0.243
		1004.76		1.260E-01	2.555E-01	4.306E-01	5.116E-02	0.293
		1274.45	*	-1.150E-02	1.424E-01	2.333E-01	2.565E-02	-0.049
EU-155		48.70		-1.437E+00	1.460E+00	2.045E+00	1.655E-01	-0.703
		60.01		2.519E+00	3.952E+00	6.042E+00	4.351E-01	0.417
	+	86.54		3.247E-01	1.226E-01	1.786E-01	1.666E-02	1.818
		105.31	*	9.858E-02	1.067E-01	1.793E-01	1.584E-02	0.550
TB-160	+	86.79		8.832E-01	3.333E-01	4.868E-01	4.515E-02	1.814
		197.04		-9.541E-02	5.721E-01	9.524E-01	7.805E-02	-0.100
		215.65		-5.163E-01	7.769E-01	1.262E+00	1.051E-01	-0.409
		298.57		1.369E-01	1.668E-01	1.966E-01	1.681E-02	0.696
		879.36	*	3.736E-02	1.477E-01	2.466E-01	2.262E-02	0.152
		962.29		1.014E+00	7.540E-01	1.213E+00	1.098E-01	0.836
		966.15		1.124E+00	3.126E-01	5.963E-01	5.393E-02	1.885
		1177.93		-1.066E-02	4.540E-01	7.534E-01	6.135E-02	-0.014



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1271.85			5.340E-01	8.556E-01	1.500E+00	1.230E-01	0.356
	80.57			-1.137E-01	2.517E-01	3.590E-01	3.084E-02	-0.317
	184.41			3.072E-02	4.157E-02	6.563E-02	5.305E-03	0.468
	280.46			-5.324E-03	9.868E-02	1.431E-01	1.215E-02	-0.037
	410.95			2.302E-01	2.785E-01	4.753E-01	4.016E-02	0.484
	711.68	*		-6.411E-03	7.205E-02	1.168E-01	1.052E-02	-0.055
	752.31			-1.759E-01	3.114E-01	4.847E-01	4.407E-02	-0.363
TM-171	810.29			-5.360E-02	7.187E-02	1.091E-01	9.998E-03	-0.491
	51.35			4.612E+00	1.829E+01	3.074E+01	2.374E+00	0.150
	52.39			4.126E+00	9.915E+00	1.629E+01	1.239E+00	0.253
	59.40			-7.621E+00	2.134E+01	3.104E+01	2.232E+00	-0.245
	66.72	*		1.805E+01	2.351E+01	3.599E+01	2.691E+00	0.502
LU-176	88.36		+	6.389E-01	2.411E-01	3.488E-01	3.278E-02	1.832
	201.83			1.683E-02	2.817E-02	4.876E-02	4.014E-03	0.345
	306.84	*		-5.149E-03	2.561E-02	4.167E-02	3.570E-03	-0.124
LU-177	401.10			1.361E+00	7.638E+00	1.254E+01	1.051E+00	0.109
	112.95			-3.453E-01	1.955E+00	3.129E+00	2.700E-01	-0.110
LU-177M	208.36	*	+	4.362E+00	1.914E+00	2.629E+00	2.177E-01	1.659
	52.97			2.910E-01	1.050E+00	1.715E+00	1.295E-01	0.170
	54.07			-3.597E-01	5.672E-01	8.897E-01	6.635E-02	-0.404
	61.30			1.226E+00	1.207E+00	1.873E+00	1.356E-01	0.654
	121.62			7.960E-02	3.757E-01	6.106E-01	5.247E-02	0.130
	147.16			2.681E-01	6.820E-01	1.108E+00	9.061E-02	0.242
	171.86			-5.859E-02	5.087E-01	7.989E-01	6.363E-02	-0.073
	218.09			2.241E-01	8.511E-01	1.448E+00	1.208E-01	0.155
	268.79		+	2.718E+00	1.322E+00	1.629E+00	1.384E-01	1.669
	319.02			-1.412E-01	2.836E-01	4.514E-01	3.871E-02	-0.313
HF-181	367.43			4.936E-01	9.627E-01	1.626E+00	1.376E-01	0.304
	413.65	*		1.229E-02	2.010E-01	3.268E-01	2.767E-02	0.038
	56.28			2.717E-02	6.427E-01	1.068E+00	7.806E-02	0.025
	57.53			-1.124E-01	3.602E-01	5.892E-01	4.273E-02	-0.191
	65.20			-5.761E-01	8.320E-01	1.184E+00	8.761E-02	-0.487
	133.02			-4.625E-02	7.072E-02	1.094E-01	9.185E-03	-0.423
	136.25			-6.723E-02	4.976E-01	7.807E-01	6.513E-02	-0.086
	345.85			-7.564E-02	2.392E-01	3.325E-01	2.841E-02	-0.227
	482.03	*		-4.202E-02	4.849E-02	7.150E-02	6.290E-03	-0.588
	56.28			1.086E-02	2.464E-01	4.094E-01	2.993E-02	0.027
W-181	57.53			-4.316E-02	1.382E-01	2.260E-01	1.639E-02	-0.191
	65.20	*		-2.193E-01	3.167E-01	4.506E-01	3.334E-02	-0.487
TA-182	67.75			5.584E-02	8.970E-02	1.446E-01	1.090E-02	0.386
	100.10			-6.297E-02	1.719E-01	2.741E-01	2.427E-02	-0.230
	152.43			1.412E-01	3.612E-01	5.855E-01	4.747E-02	0.241
	222.10			2.981E-02	3.560E-01	5.886E-01	4.927E-02	0.051
	1001.68			-2.025E+00	2.511E+00	3.731E+00	3.340E-01	-0.543
RE-183	1121.28		+	5.199E-01	3.621E-01	4.128E-01	3.486E-02	1.260
	1189.05			6.155E-02	3.877E-01	6.527E-01	5.322E-02	0.094
	1221.42	*		-1.712E-01	2.380E-01	3.688E-01	3.016E-02	-0.464
	1230.97			4.515E-02	5.953E-01	9.925E-01	8.123E-02	0.045
	57.98			-9.747E-02	1.418E-01	2.281E-01	1.650E-02	-0.427



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		-1.015E-02	8.797E-02	1.296E-01	9.323E-03	-0.078
		67.20		1.149E-01	1.714E-01	2.610E-01	1.959E-02	0.440
		162.32	*	-4.906E-02	1.159E-01	1.794E-01	1.429E-02	-0.273
	+	208.81		3.264E+00	1.432E+00	1.993E+00	1.651E-01	1.638
		291.72		5.668E-01	1.094E+00	1.656E+00	1.413E-01	0.342
		57.98		-3.551E-01	5.166E-01	8.311E-01	6.012E-02	-0.427
		59.32		-3.693E-02	3.202E-01	4.719E-01	3.394E-02	-0.078
		67.20		4.185E-01	6.241E-01	9.506E-01	7.136E-02	0.440
		161.27		-4.128E-01	3.814E-01	5.675E-01	4.527E-02	-0.727
		216.55		-8.370E-02	2.726E-01	4.510E-01	3.761E-02	-0.186
		252.85	*	-4.427E-02	2.425E-01	4.000E-01	3.395E-02	-0.111
		318.01		-1.725E-01	4.865E-01	7.818E-01	6.705E-02	-0.221
OS-185		792.07		-5.342E-02	1.221E+00	1.720E+00	1.573E-01	-0.031
		903.28		1.593E-01	1.173E+00	1.877E+00	1.718E-01	0.085
		920.93		1.462E-01	5.582E-01	9.036E-01	8.249E-02	0.162
		59.72		9.378E-03	2.396E-01	3.559E-01	2.560E-02	0.026
		61.14		1.274E-01	1.331E-01	2.062E-01	1.491E-02	0.618
		69.30		-9.076E-02	2.588E-01	3.741E-01	2.857E-02	-0.243
		592.07		-1.947E+00	2.813E+00	4.429E+00	3.971E-01	-0.440
		646.12	*	-4.881E-02	4.729E-02	7.100E-02	6.313E-03	-0.687
		717.42		-7.295E-02	1.007E+00	1.650E+00	1.488E-01	-0.044
		874.81		-2.531E-01	6.410E-01	9.956E-01	9.133E-02	-0.254
		880.27		1.204E-01	8.103E-01	1.339E+00	1.227E-01	0.090
		155.03	*	5.843E-02	1.816E-01	2.933E-01	2.366E-02	0.199
RE-188		477.96		7.082E-01	3.328E+00	5.432E+00	4.771E-01	0.130
		633.10		1.192E+00	2.933E+00	5.050E+00	4.504E-01	0.236
W-188	+	63.58		1.226E+01	5.312E+01	7.056E+01	5.168E+00	0.174
IR-192		227.08		3.695E+00	1.358E+01	2.306E+01	1.937E+00	0.160
	*	290.67		-1.502E-01	8.620E+00	1.250E+01	1.066E+00	-0.012
	+	295.96		9.902E-01	2.202E-01	2.985E-01	2.569E-02	3.318
		308.46		6.734E-02	9.798E-02	1.684E-01	1.450E-02	0.400
	*	316.51		2.335E-02	3.770E-02	6.433E-02	5.529E-03	0.363
		468.07		4.373E-03	8.051E-02	1.135E-01	1.062E-02	0.039
		604.41		-1.106E-02	5.840E-01	8.456E-01	1.120E-01	-0.013
		612.46		1.705E+00	9.398E-01	1.579E+00	1.609E-01	1.080
AU-195		65.12		-9.606E-02	1.462E-01	2.085E-01	1.542E-02	-0.461
		66.83		6.100E-02	7.824E-02	1.198E-01	8.970E-03	0.509
	+	75.70		1.057E+00	2.290E-01	4.211E-01	3.422E-02	2.509
	*	98.88		1.735E-01	2.134E-01	3.580E-01	3.184E-02	0.485
TL-200		129.76		3.168E+00	3.019E+00	5.054E+00	4.269E-01	0.627
	*	367.94		4.615E-04	3.019E+00	Half-Life	too short	
		579.30		2.591E-03	3.019E+00	Half-Life	too short	
		828.27		1.643E-02	3.019E+00	Half-Life	too short	
TL-201		1205.75		4.633E-03	3.019E+00	Half-Life	too short	
		68.90		-7.707E-02	6.344E+00	9.340E+00	7.107E-01	-0.008
		70.82		-9.832E-01	3.704E+00	5.375E+00	4.160E-01	-0.183
		80.30		9.499E-02	7.113E+00	1.041E+01	8.915E-01	0.009
		135.34		-1.950E+00	4.119E+01	6.493E+01	5.425E+00	-0.030
	*	167.43		-5.056E+00	1.135E+01	1.752E+01	1.388E+00	-0.289



---- Non-Identified Nuclides ----

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TL-202		68.90		-4.953E-03	4.077E-01	6.002E-01	4.567E-02	-0.008
		70.82		-6.301E-02	2.374E-01	3.445E-01	2.666E-02	-0.183
		80.30		6.090E-03	4.560E-01	6.676E-01	5.715E-02	0.009
		439.56	*	5.562E-02	8.601E-02	1.453E-01	1.252E-02	0.383
HG-203		70.83		-2.458E-01	9.481E-01	1.376E+00	1.798E-01	-0.179
		72.87		1.379E+00	5.502E-01	9.333E-01	1.189E-01	1.478
		82.60		-1.444E-02	1.108E+00	1.618E+00	2.242E-01	-0.009
		279.20	*	1.378E-03	5.123E-02	7.477E-02	6.531E-03	0.018
BI-207		72.80		3.611E-01	1.502E-01	2.626E-01	2.071E-02	1.375
	+	74.97		5.818E-01	1.261E-01	2.000E-01	1.613E-02	2.909
		84.90		1.953E-01	1.895E-01	2.889E-01	2.616E-02	0.676
		569.67		-8.422E-03	3.520E-02	5.629E-02	5.048E-03	-0.150
		1063.62	*	-5.723E-02	6.132E-02	9.245E-02	8.066E-03	-0.619
		1770.23		-4.506E-02	5.820E-01	8.148E-01	6.693E-02	-0.055
TL-207		81.07		-2.420E-01	2.094E-01	2.861E-01	2.472E-02	-0.846
		83.78		1.107E-01	1.242E-01	1.886E-01	1.684E-02	0.587
		94.90		1.965E-01	2.309E-01	3.502E-01	3.166E-02	0.561
		122.32		7.016E-01	1.750E+00	2.867E+00	2.644E-01	0.245
		144.24		-5.639E-01	7.011E-01	1.052E+00	9.776E-02	-0.536
		154.21		8.210E-02	4.138E-01	6.644E-01	5.974E-02	0.124
	+	269.46		6.311E-01	3.071E-01	3.952E-01	3.430E-02	1.597
		323.87	*	4.660E-01	7.970E-01	1.201E+00	2.124E-01	0.388
	+	338.28		6.805E+00	2.178E+00	2.660E+00	3.264E-01	2.559
		445.03		4.584E-02	2.353E+00	3.796E+00	4.594E-01	0.012
PO-209		260.50		9.284E+00	9.981E+00	1.740E+01	1.478E+00	0.534
		262.80		-1.088E+01	2.868E+01	4.499E+01	3.823E+00	-0.242
		896.60	*	5.508E+00	8.769E+00	1.507E+01	1.380E+00	0.365
PB-211		404.84	*	3.170E-01	1.044E+00	1.699E+00	1.064E+00	0.187
		427.08		-4.524E-01	2.212E+00	3.486E+00	2.166E+00	-0.130
		831.96		-4.304E-01	1.461E+00	2.278E+00	1.430E+00	-0.189
BI-212	+	727.18	*	1.192E+00	6.913E-01	7.385E-01	7.660E-02	1.613
		785.46		8.362E-01	1.903E+00	3.243E+00	2.965E-01	0.258
		1620.62		7.666E-01	1.471E+00	2.583E+00	2.158E-01	0.297
PO-215		81.07		-2.420E-01	2.094E-01	2.861E-01	2.472E-02	-0.846
		83.78		1.107E-01	1.242E-01	1.886E-01	1.684E-02	0.587
		94.90		1.965E-01	2.309E-01	3.502E-01	3.166E-02	0.561
		122.32		7.016E-01	1.750E+00	2.867E+00	2.644E-01	0.245
		144.24		-5.639E-01	7.011E-01	1.052E+00	9.776E-02	-0.536
		154.21		8.210E-02	4.138E-01	6.644E-01	5.974E-02	0.124
	+	269.46		6.311E-01	3.071E-01	3.952E-01	3.430E-02	1.597
		323.87	*	4.660E-01	7.970E-01	1.201E+00	2.124E-01	0.388
	+	338.28		6.805E+00	2.178E+00	2.660E+00	3.264E-01	2.559
		445.03		4.584E-02	2.353E+00	3.796E+00	4.594E-01	0.012
RN-219	+	271.23		8.097E-01	3.964E-01	4.879E-01	4.982E-02	1.659
		401.81	*	-2.111E-01	4.702E-01	7.364E-01	1.097E-01	-0.287
RN-220		549.76	*	-1.005E+00	2.851E+01	4.775E+01	4.275E+00	-0.021
RA-223		81.07		-2.420E-01	2.094E-01	2.861E-01	2.472E-02	-0.846
		83.78		1.107E-01	1.242E-01	1.886E-01	1.684E-02	0.587
		94.90		1.965E-01	2.309E-01	3.502E-01	3.166E-02	0.561



## ---- Non-Identified Nuclides ----

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AC-227		122.32		7.016E-01	1.750E+00	2.867E+00	2.644E-01	0.245
		144.24		-5.639E-01	7.011E-01	1.052E+00	9.776E-02	-0.536
		154.21		8.210E-02	4.138E-01	6.644E-01	5.974E-02	0.124
	+	269.46		6.311E-01	3.071E-01	3.952E-01	3.430E-02	1.597
		323.87	*	4.660E-01	7.970E-01	1.201E+00	2.124E-01	0.388
	+	338.28		6.805E+00	2.178E+00	2.660E+00	3.264E-01	2.559
		445.03		4.584E-02	2.353E+00	3.796E+00	4.594E-01	0.012
		79.80		8.856E-01	1.477E+00	2.212E+00	4.747E-01	0.400
		236.00		4.671E-01	2.680E-01	4.297E-01	5.207E-02	1.087
		256.20	*	-1.445E-01	3.970E-01	6.468E-01	9.880E-02	-0.223
		286.10		4.843E-01	1.616E+00	2.719E+00	3.571E-01	0.178
	+	299.80		2.567E+00	1.832E+00	2.696E+00	4.707E-01	0.952
		304.40		-3.100E-01	2.159E+00	3.085E+00	5.679E-01	-0.100
		334.20		-1.144E-01	3.399E+00	4.097E+00	7.943E-01	-0.028
TH-227		79.80		8.856E-01	1.477E+00	2.212E+00	4.808E-01	0.400
	+	94.00		6.379E+00	3.051E+00	3.421E+00	7.515E-01	1.864
		236.00		4.671E-01	2.669E-01	4.297E-01	4.699E-02	1.087
		256.20	*	-1.445E-01	3.972E-01	6.468E-01	1.164E-01	-0.223
		286.10		4.843E-01	1.686E+00	2.719E+00	2.729E+00	0.178
	+	299.80		2.567E+00	1.832E+00	2.696E+00	4.707E-01	0.952
		304.40		-3.100E-01	2.159E+00	3.085E+00	5.679E-01	-0.100
		334.20		-1.144E-01	3.399E+00	4.097E+00	7.943E-01	-0.028
	+	85.43		3.134E-01	1.969E-01	3.048E-01	2.779E-02	1.028
		88.47		3.678E-01	1.388E-01	2.000E-01	1.878E-02	1.839
TH-229		100.00		-3.869E-03	1.742E-01	2.823E-01	2.501E-02	-0.014
		193.63	*	-2.758E-01	5.156E-01	8.491E-01	6.934E-02	-0.325
		210.97		1.060E+00	9.001E-01	1.424E+00	1.182E-01	0.744
	+	283.67	*	-2.654E-01	1.636E+00	2.683E+00	4.056E-01	-0.099
		301.29		1.027E+00	7.216E-01	1.110E+00	1.354E-01	0.925
PA-231		81.07		-2.420E-01	2.094E-01	2.861E-01	2.472E-02	-0.846
		83.78		1.107E-01	1.242E-01	1.886E-01	1.684E-02	0.587
TH-231		94.90		1.965E-01	2.309E-01	3.502E-01	3.166E-02	0.561
		122.32		7.016E-01	1.750E+00	2.867E+00	2.644E-01	0.245
		144.24		-5.639E-01	7.011E-01	1.052E+00	9.776E-02	-0.536
		154.21		8.210E-02	4.138E-01	6.644E-01	5.974E-02	0.124
	+	269.46		6.311E-01	3.071E-01	3.952E-01	3.430E-02	1.597
		323.87	*	4.660E-01	7.970E-01	1.201E+00	2.124E-01	0.388
	+	338.28		6.805E+00	2.178E+00	2.660E+00	3.264E-01	2.559
		445.03		4.584E-02	2.353E+00	3.796E+00	4.594E-01	0.012
	+	84.21		5.377E+00	7.441E+00	1.121E+01	1.007E+00	0.480
		92.29		8.712E+00	3.786E+00	5.111E+00	4.685E-01	1.704
U-231		95.87	*	-2.239E-01	1.481E+00	2.128E+00	1.915E-01	-0.105
		108.00		-1.451E+00	2.814E+00	4.437E+00	3.854E-01	-0.327
	+	75.28		1.698E+01	4.265E+00	6.257E+00	9.421E-01	2.713
	+	86.59		5.274E+00	2.399E+00	2.902E+00	7.844E-01	1.817
	+	300.12		7.157E-01	5.066E-01	7.525E-01	1.116E-01	0.951
		311.98	*	-8.761E-03	6.630E-02	1.083E-01	9.547E-03	-0.081
		340.50		1.922E+00	8.954E-01	1.315E+00	3.132E-01	1.461
		398.62		-1.909E+00	2.481E+00	3.722E+00	9.882E-01	-0.513



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		-2.937E-01	1.853E+00	2.961E+00	6.365E-01	-0.099
		63.00		3.485E-01	1.511E+00	2.065E+00	3.057E-01	0.169
		94.67		3.097E-01	1.693E-01	2.637E-01	3.350E-02	1.174
		98.44		1.124E-01	1.057E-01	1.462E-01	8.161E-02	0.769
		99.86		4.668E-02	4.433E-01	7.227E-01	6.405E-02	0.065
		111.00		-3.100E-02	1.786E-01	2.861E-01	3.464E-02	-0.108
		131.20		-1.099E-01	1.130E-01	1.721E-01	1.450E-02	-0.639
		152.70		5.835E-02	3.486E-01	5.588E-01	9.383E-02	0.104
		186.00		4.468E+00	2.316E+00	2.657E+00	8.257E-01	1.681
		226.40		1.531E-01	4.139E-01	7.055E-01	9.212E-02	0.217
		227.20		2.334E-02	4.545E-01	7.637E-01	6.414E-02	0.031
		248.90		-1.051E-01	8.277E-01	1.370E+00	3.064E-01	-0.077
		293.70		6.120E+00	1.640E+00	1.735E+00	2.994E-01	3.528
		369.80		3.431E-01	9.211E-01	1.536E+00	3.335E-01	0.223
		568.70		-4.574E-01	1.080E+00	1.750E+00	1.569E-01	-0.261
		569.50		-1.035E-01	3.101E-01	4.918E-01	4.410E-02	-0.210
		574.00		8.444E-01	1.645E+00	2.856E+00	2.562E-01	0.296
		699.00		-1.952E-02	8.029E-01	1.324E+00	2.547E-01	-0.015
		706.10		-4.570E-01	1.214E+00	1.913E+00	8.545E-01	-0.239
		733.00		3.383E-01	4.219E-01	6.602E-01	1.477E-01	0.512
		742.81		-1.157E+00	1.806E+00	2.515E+00	1.692E+00	-0.460
		796.30		1.077E+00	9.839E-01	1.806E+00	4.917E-01	0.596
		805.60		7.426E-01	1.148E+00	1.952E+00	6.013E-01	0.380
		819.60		-6.115E-01	1.549E+00	2.316E+00	8.836E-01	-0.264
		826.30		-2.714E-02	9.915E-01	1.614E+00	7.240E-01	-0.017
		831.60		-4.754E-02	7.408E-01	1.201E+00	3.605E-01	-0.040
		876.40		-7.827E-02	8.928E-01	1.431E+00	1.472E+00	-0.055
		880.51		1.648E-02	2.895E-01	4.734E-01	4.341E-02	0.035
		883.24		-1.203E-01	3.145E-01	4.714E-01	3.172E-01	-0.255
		899.00		-1.671E-01	1.006E+00	1.601E+00	7.015E-01	-0.104
		925.00		-2.862E-01	1.376E+00	2.178E+00	1.987E-01	-0.131
		926.50		4.658E-02	2.009E-01	3.325E-01	8.462E-02	0.140
		946.00	*	8.309E-02	3.535E-01	5.843E-01	1.109E-01	0.142
		949.00		2.828E-01	5.102E-01	8.700E-01	7.901E-02	0.325
		980.50		-5.459E-01	9.231E-01	1.147E+00	1.034E-01	-0.476
		1394.10		2.334E-04	1.085E+00	1.781E+00	1.158E+00	0.000
PA-234M		766.42		1.398E+01	1.508E+01	2.361E+01	1.200E+01	0.592
		1001.03	*	-3.954E+00	5.358E+00	7.997E+00	8.200E-01	-0.494
U-235	+	89.95		1.876E+00	1.241E+00	1.796E+00	5.578E-01	1.044
		93.35		1.984E+00	1.012E+00	1.149E+00	3.239E-01	1.727
		105.00		1.141E+00	1.105E+00	1.782E+00	5.325E-01	0.640
		143.76	*	-2.071E-01	2.213E-01	3.265E-01	5.655E-02	-0.634
		163.35		3.153E-01	4.812E-01	7.840E-01	1.473E-01	0.402
NP-236	+	185.71		1.655E-01	6.997E-02	9.715E-02	7.865E-03	1.703
		205.31		-2.042E-01	5.639E-01	8.153E-01	1.542E-01	-0.250
		94.67		2.366E-01	1.268E-01	2.002E-01	1.812E-02	1.182
		98.44		8.493E-02	6.472E-02	1.105E-01	9.843E-03	0.769
		111.00		-2.345E-02	1.351E-01	2.164E-01	1.871E-02	-0.108
		160.31	*	4.054E-02	8.266E-02	1.344E-01	1.074E-02	0.302



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		5.389E-02	1.498E-01	2.469E-01	2.190E-02	0.218
		117.00	*	1.474E-02	1.815E-01	2.936E-01	2.526E-02	0.050
	+	209.75		2.525E+00	1.108E+00	1.542E+00	1.279E-01	1.638
		228.18		8.064E-02	2.332E-01	3.972E-01	3.338E-02	0.203
	+	277.60		2.540E-01	2.398E-01	3.418E-01	2.902E-02	0.743
AM-241		334.30		-1.080E-01	1.924E+00	2.313E+00	1.981E-01	-0.047
		59.54	*	-1.496E-02	1.235E-01	1.820E-01	1.443E-02	-0.082
CM-243		99.55		5.546E-02	1.542E-01	2.541E-01	2.254E-02	0.218
		103.76	*	5.921E-02	9.437E-02	1.570E-01	1.376E-02	0.377
		117.00		1.517E-02	1.868E-01	3.021E-01	2.600E-02	0.050
	+	209.75		2.489E+00	1.093E+00	1.520E+00	1.261E-01	1.638
		228.18		8.149E-02	2.356E-01	4.014E-01	3.373E-02	0.203
AM-246	+	277.60		2.561E-01	2.418E-01	3.447E-01	2.926E-02	0.743
		798.80		3.990E-03	1.782E-01	2.531E-01	2.318E-02	0.016
		1036.00		-7.181E-02	3.203E-01	5.255E-01	4.643E-02	-0.137
		1062.04		-4.587E-02	2.481E-01	4.080E-01	3.563E-02	-0.112
		1078.86	*	9.824E-02	1.756E-01	3.077E-01	2.664E-02	0.319
CM-247	+	278.00		1.053E+00	9.945E-01	1.416E+00	1.202E-01	0.744
		287.40		-1.911E-01	1.312E+00	2.153E+00	1.834E-01	-0.089
		402.60	*	-1.109E-02	4.261E-02	6.782E-02	5.694E-03	-0.163
CF-249		252.85		-1.648E-01	9.025E-01	1.489E+00	1.264E-01	-0.111
		333.44		1.412E-01	2.760E-01	3.090E-01	2.647E-02	0.457
CF-251		387.95	*	1.200E-02	4.405E-02	7.294E-02	6.088E-03	0.165
		176.60	*	-3.633E-02	1.262E-01	2.113E-01	1.693E-02	-0.172
		227.00		1.036E-01	3.994E-01	6.777E-01	5.691E-02	0.153
		285.00		-7.827E-01	1.888E+00	3.048E+00	2.594E-01	-0.257



## VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457002      *
* Acquisition date   : 4-JAN-2010 13:58:30 Detector SN# :                    *
* Detector ID        : GAM07 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.21 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243457002 Analyst initials: MXR1                 *
* Batch Number       : 936923 Sample Quantity : 1.1161E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 MS Isotope :                  *
* MSD DPM            : 0.000 MSD Isotope :                               *
* LCS DPM            : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.529E+01	3.629E+00	6.128E-01	0.000E+00
CD-109	2.749E+00	1.017E+00	1.292E+00	0.000E+00
SN-126	2.694E-01	9.963E-02	1.269E-01	0.000E+00
TL-208	4.995E-01	1.006E-01	6.365E-02	0.000E+00
BI-210	1.876E+00	2.391E+00	2.949E+00	0.000E+00
PB-210	1.876E+00	2.391E+00	2.949E+00	0.000E+00
PO-210	1.876E+00	2.390E+00	2.949E+00	0.000E+00
BI-211	3.444E+00	5.640E-01	3.605E-01	0.000E+00
PB-212	1.604E+00	1.940E-01	9.976E-02	0.000E+00
PO-212	1.604E+00	1.940E-01	9.976E-02	0.000E+00
BI-214	1.054E+00	1.881E-01	1.375E-01	0.000E+00
PB-214	1.198E+00	2.055E-01	1.257E-01	0.000E+00
PO-214	1.198E+00	2.055E-01	1.257E-01	0.000E+00
PO-216	1.604E+00	1.940E-01	9.976E-02	0.000E+00
PO-218	1.198E+00	2.055E-01	1.257E-01	0.000E+00
RA-224	3.361E+00	1.230E+00	1.135E+00	0.000E+00
RA-226	1.054E+00	1.881E-01	1.375E-01	0.000E+00
AC-228	1.628E+00	3.817E-01	2.295E-01	0.000E+00
RA-228	1.628E+00	3.817E-01	2.295E-01	0.000E+00
TH-228	1.632E+00	1.974E-01	1.015E-01	0.000E+00
TH-230	1.054E+00	1.881E-01	1.375E-01	0.000E+00
TH-232	1.628E+00	3.817E-01	2.295E-01	0.000E+00
TH-234	2.990E-01	1.271E+00	1.622E+00	0.000E+00
U-234	1.054E+00	1.881E-01	1.375E-01	0.000E+00
NP-237	7.911E-01	3.334E-01	3.830E-01	0.000E+00
U-238	2.990E-01	1.271E+00	1.622E+00	0.000E+00
AM-243	3.241E-01	6.885E-02	7.212E-02	0.000E+00
ANH-511	1.348E-01	8.010E-02	5.193E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )
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BE-7	-3.245E-02	3.489E-01	5.684E-01	0.000E+00	NOT IDENT.
NA-22	-1.853E-03	4.969E-02	8.314E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	7.144E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.205E-02	2.427E-02	4.599E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.536E-02	7.170E-02	0.000E+00	FAIL ABUN
SC-46	-7.755E-03	4.571E-02	7.435E-02	0.000E+00	FAIL ABUN
V-48	-2.930E-02	8.424E-02	1.327E-01	0.000E+00	NOT IDENT.
CR-51	-4.312E-02	4.068E-01	6.829E-01	0.000E+00	NOT IDENT.
MN-52	3.207E-01	3.409E-01	6.357E-01	0.000E+00	NOT IDENT.
MN-54	6.858E-03	4.115E-02	6.950E-02	0.000E+00	NOT IDENT.
CO-56	9.101E-03	4.609E-02	7.797E-02	0.000E+00	NOT IDENT.
CO-57	1.124E-02	2.466E-02	4.195E-02	0.000E+00	NOT IDENT.
CO-58	-4.510E-02	4.739E-02	7.176E-02	0.000E+00	NOT IDENT.
FE-59	1.013E-02	1.112E-01	1.907E-01	0.000E+00	NOT IDENT.
CO-60	-6.372E-03	3.972E-02	6.501E-02	0.000E+00	NOT IDENT.
ZN-65	-2.524E-02	1.110E-01	1.574E-01	0.000E+00	NOT IDENT.
GE-68	8.520E-01	1.512E+00	2.695E+00	0.000E+00	NOT IDENT.
AS-73	-2.460E-02	5.377E-01	9.036E-01	0.000E+00	NOT IDENT.
AS-74	8.389E-02	1.074E-01	1.935E-01	0.000E+00	NOT IDENT.
SE-75	-2.930E-02	5.112E-02	7.330E-02	0.000E+00	NOT IDENT.
BR-77	3.099E+00	1.855E+01	3.241E+01	0.000E+00	FAIL ABUN
SR-82	8.818E-03	4.563E-01	7.649E-01	0.000E+00	NOT IDENT.
RB-83	1.322E-02	7.036E-02	1.231E-01	0.000E+00	NOT IDENT.
RB-84	-3.048E-02	7.560E-02	1.195E-01	0.000E+00	NOT IDENT.
KR-85	1.367E+01	8.680E+00	1.477E+01	0.000E+00	NOT IDENT.
SR-85	7.157E-02	4.543E-02	7.732E-02	0.000E+00	NOT IDENT.
RB-86	2.209E-01	1.025E+00	1.778E+00	0.000E+00	NOT IDENT.
Y-88	-1.209E-02	3.035E-02	4.612E-02	0.000E+00	NOT IDENT.
ZR-88	2.051E-02	3.408E-02	5.905E-02	0.000E+00	NOT IDENT.
Y-91	-1.238E+01	2.294E+01	3.690E+01	0.000E+00	NOT IDENT.
NB-94	2.310E-03	3.539E-02	6.002E-02	0.000E+00	NOT IDENT.
NB-95	3.979E-02	5.023E-02	8.908E-02	0.000E+00	NOT IDENT.
NB-95M	6.776E-02	1.423E-01	2.224E-01	0.000E+00	NOT IDENT.
ZR-95	1.908E-03	7.578E-02	1.274E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	6.819E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.516E+07	0.000E+00	0.000E+00	SHORT HLIF
MO-99	7.649E+00	1.967E+01	3.418E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.796E+18	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.772E-02	3.227E-02	5.349E-02	0.000E+00	NOT IDENT.
RH-102	-8.513E-03	3.105E-02	4.982E-02	0.000E+00	NOT IDENT.
RU-103	-6.886E-03	4.451E-02	7.186E-02	0.000E+00	FAIL ABUN
RH-106	-6.278E-02	3.332E-01	5.584E-01	0.000E+00	FAIL ABUN
RU-106	-6.278E-02	3.331E-01	5.584E-01	0.000E+00	FAIL ABUN
AG-108M	-9.463E-03	3.554E-02	5.756E-02	0.000E+00	NOT IDENT.
AG-110M	-2.183E-02	3.570E-02	5.716E-02	0.000E+00	NOT IDENT.
IN-111	6.652E-01	1.951E+00	3.001E+00	0.000E+00	NOT IDENT.
IN-113M	-2.149E-02	5.040E-02	8.148E-02	0.000E+00	NOT IDENT.
SN-113	-2.149E-02	5.040E-02	8.148E-02	0.000E+00	NOT IDENT.
IN-114M	-5.107E-02	2.120E-01	3.218E-01	0.000E+00	NOT IDENT.
CD-115	-5.298E-01	2.041E+01	3.511E+01	0.000E+00	NOT IDENT.
SN-117M	4.523E-02	6.154E-02	1.046E-01	0.000E+00	NOT IDENT.
SB-122	2.998E+00	3.492E+00	6.358E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	7.120E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	2.079E-02	2.950E-02	5.004E-02	0.000E+00	NOT IDENT.
I-124	-5.198E-01	1.089E+00	1.611E+00	0.000E+00	NOT IDENT.
SB-124	-3.371E-02	6.014E-02	8.116E-02	0.000E+00	FAIL ABUN
SB-125	-2.693E-02	9.617E-02	1.557E-01	0.000E+00	FAIL ABUN
TE-125M	5.245E+00	8.949E+00	1.537E+01	0.000E+00	NOT IDENT.
I-126	1.033E-01	2.237E-01	3.922E-01	0.000E+00	NOT IDENT.
SB-126	4.113E-02	2.009E-01	3.004E-01	0.000E+00	FAIL ABUN
SB-127	-3.040E-01	2.223E+00	3.716E+00	0.000E+00	NOT IDENT.
XE-127	4.294E-02	4.770E-02	8.372E-02	0.000E+00	NOT IDENT.
I-131	-5.393E-02	1.368E-01	2.223E-01	0.000E+00	NOT IDENT.
TE-132	3.917E-01	1.063E+00	1.866E+00	0.000E+00	NOT IDENT.
BA-133	-2.314E-02	5.284E-02	7.435E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.036E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.551E-02	4.771E-02	9.256E-02	0.000E+00	FAIL ABUN
CS-135	2.044E-01	1.841E-01	2.972E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.706E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.957E-02	1.317E-01	2.097E-01	0.000E+00	FAIL ABUN
BA-137M	-2.137E-02	3.754E-02	5.972E-02	0.000E+00	NOT IDENT.
CS-137	-2.259E-02	3.968E-02	6.313E-02	0.000E+00	NOT IDENT.
CE-139	-1.112E-02	3.015E-02	4.832E-02	0.000E+00	NOT IDENT.
BA-140	-2.055E-01	3.045E-01	4.838E-01	0.000E+00	NOT IDENT.
LA-140	-1.149E-03	1.040E-01	1.669E-01	0.000E+00	FAIL ABUN
CE-141	-3.880E-02	6.701E-02	1.056E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.672E+02	0.000E+00	0.000E+00	SHORT HLIF



CE-144	-2.154E-02	2.061E-01	3.398E-01	0.000E+00	NOT IDENT.
PM-144	1.410E-02	3.873E-02	6.722E-02	0.000E+00	NOT IDENT.
PR-144	9.567E-01	2.627E+00	4.560E+00	0.000E+00	NOT IDENT.
PM-146	-1.172E-02	4.922E-02	7.965E-02	0.000E+00	NOT IDENT.
ND-147	2.749E-01	6.491E-01	1.152E+00	0.000E+00	FAIL ABUN
PM-149	-5.175E+00	1.768E+02	3.006E+02	0.000E+00	NOT IDENT.
EU-152	-3.120E-02	1.117E-01	1.602E-01	0.000E+00	FAIL ABUN
GD-153	2.167E-04	8.136E-02	1.223E-01	0.000E+00	NOT IDENT.
EU-154	-1.150E-02	1.395E-01	2.324E-01	0.000E+00	NOT IDENT.
EU-155	9.858E-02	1.046E-01	1.821E-01	0.000E+00	FAIL ABUN
TB-160	3.736E-02	1.447E-01	2.464E-01	0.000E+00	FAIL ABUN
HO-166M	-6.411E-03	7.061E-02	1.169E-01	0.000E+00	NOT IDENT.
TM-171	1.805E+01	2.304E+01	3.669E+01	0.000E+00	NOT IDENT.
LU-176	-5.149E-03	2.510E-02	4.198E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.876E+00	2.657E+00	0.000E+00	FAIL ABUN
LU-177M	1.229E-02	1.970E-01	3.285E-01	0.000E+00	FAIL ABUN
HF-181	-4.202E-02	4.752E-02	7.177E-02	0.000E+00	NOT IDENT.
W-181	-2.193E-01	3.103E-01	4.596E-01	0.000E+00	NOT IDENT.
TA-182	-1.712E-01	2.332E-01	3.675E-01	0.000E+00	FAIL ABUN
RE-183	-4.906E-02	1.136E-01	1.817E-01	0.000E+00	FAIL ABUN
RE-184	-4.427E-02	2.376E-01	4.036E-01	0.000E+00	NOT IDENT.
OS-185	-4.881E-02	4.634E-02	7.111E-02	0.000E+00	NOT IDENT.
RE-188	5.843E-02	1.780E-01	2.971E-01	0.000E+00	NOT IDENT.
W-188	-1.502E-01	8.448E+00	1.260E+01	0.000E+00	FAIL ABUN
IR-192	2.335E-02	3.694E-02	6.480E-02	0.000E+00	FAIL ABUN
AU-195	1.735E-01	2.091E-01	3.640E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.704E+03	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-5.056E+00	1.113E+01	1.773E+01	0.000E+00	NOT IDENT.
TL-202	5.562E-02	8.429E-02	1.460E-01	0.000E+00	NOT IDENT.
HG-203	1.378E-03	5.020E-02	7.539E-02	0.000E+00	NOT IDENT.
BI-207	-5.723E-02	6.010E-02	9.222E-02	0.000E+00	FAIL ABUN
TL-207	4.660E-01	7.810E-01	1.210E+00	0.000E+00	FAIL ABUN
PO-209	5.508E+00	8.593E+00	1.505E+01	0.000E+00	NOT IDENT.
PB-211	3.170E-01	1.023E+00	1.707E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.775E-01	7.389E-01	0.000E+00	FAIL ABUN
PO-215	4.660E-01	7.810E-01	1.210E+00	0.000E+00	FAIL ABUN
RN-219	-2.111E-01	4.608E-01	7.403E-01	0.000E+00	FAIL ABUN
RN-220	-1.005E+00	2.793E+01	4.788E+01	0.000E+00	NOT IDENT.
RA-223	4.660E-01	7.810E-01	1.210E+00	0.000E+00	FAIL ABUN
AC-227	-1.445E-01	3.890E-01	6.526E-01	0.000E+00	FAIL ABUN
TH-227	-1.445E-01	3.893E-01	6.526E-01	0.000E+00	FAIL ABUN
TH-229	-2.758E-01	5.053E-01	8.586E-01	0.000E+00	FAIL ABUN
PA-231	-2.654E-01	1.603E+00	2.705E+00	0.000E+00	FAIL ABUN
TH-231	4.660E-01	7.810E-01	1.210E+00	0.000E+00	FAIL ABUN
U-231	-2.239E-01	1.451E+00	2.163E+00	0.000E+00	FAIL ABUN
PA-233	-8.761E-03	6.497E-02	1.090E-01	0.000E+00	FAIL ABUN
PA-234	8.309E-02	3.465E-01	5.834E-01	0.000E+00	FAIL ABUN
PA-234M	-3.954E+00	5.251E+00	7.981E+00	0.000E+00	NOT IDENT.
U-235	-2.071E-01	2.169E-01	3.310E-01	0.000E+00	FAIL ABUN
NP-236	4.054E-02	8.100E-02	1.361E-01	0.000E+00	NOT IDENT.
NP-239	1.474E-02	1.779E-01	2.981E-01	0.000E+00	FAIL ABUN
AM-241	-1.496E-02	1.211E-01	1.857E-01	0.000E+00	NOT IDENT.
CM-243	5.921E-02	9.249E-02	1.595E-01	0.000E+00	FAIL ABUN
AM-246	9.824E-02	1.721E-01	3.069E-01	0.000E+00	NOT IDENT.
CM-247	-1.109E-02	4.176E-02	6.818E-02	0.000E+00	FAIL ABUN
CF-249	1.200E-02	4.316E-02	7.335E-02	0.000E+00	NOT IDENT.
CF-251	-3.633E-02	1.236E-01	2.138E-01	0.000E+00	NOT IDENT.



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457002.CNF;1
Sample date        : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:30.
Sample ID          : G243457002          Sample quantity  : 1.11610E+02 GRAM
Detector name      : GAM07              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.21  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 936923             Detector SN#      :
Matrix Spike ID    :                    LCS ID           : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1264	10.67*	1.129E+00	3.529E+01	3.529E+01	10.49
CD-109	88.03	203	3.72*	6.833E+00	2.679E+00	2.749E+00	37.74
SN-126	64.28	16	9.60	4.831E+00	1.184E-01	1.184E-01	433.56
	86.94	203	8.90	6.833E+00	1.120E+00	1.120E+00	55.32
	87.57	203	37.00*	6.833E+00	2.694E-01	2.694E-01	37.74
TL-208	277.35	47	6.80	4.403E+00	5.267E-01	5.267E-01	94.81
	510.84	110	21.60	2.755E+00	6.240E-01	6.240E-01	61.21
	583.14	310	84.20*	2.476E+00	4.995E-01	4.995E-01	20.56
	860.37	25	12.46	1.780E+00	3.719E-01	3.719E-01	157.37
BI-210	46.50	46	4.05*	2.047E+00	1.874E+00	1.876E+00	130.01
PB-210	46.50	46	4.05*	2.047E+00	1.874E+00	1.876E+00	130.01
PO-210	46.50	46	4.05*	2.047E+00	1.874E+00	1.876E+00	129.95
BI-211	72.87	-----	1.27	5.899E+00	-----	Line Not Found	-----
	351.07	488	12.94*	3.681E+00	3.444E+00	3.444E+00	16.71
PB-212	74.81	386	10.70	6.062E+00	1.999E+00	1.999E+00	23.61
	77.11	669	18.00	6.255E+00	1.999E+00	1.999E+00	15.31
	87.30	203	8.00	6.833E+00	1.246E+00	1.246E+00	39.04
	238.63	1044	44.60*	4.910E+00	1.604E+00	1.604E+00	12.34
	300.09	58	3.41	4.151E+00	1.385E+00	1.385E+00	69.98
PO-212	74.81	386	10.70	6.062E+00	1.999E+00	1.999E+00	23.61
	77.11	669	18.00	6.255E+00	1.999E+00	1.999E+00	15.31
	87.30	203	8.00	6.833E+00	1.246E+00	1.246E+00	39.04
	115.19	-----	0.60	7.150E+00	-----	Line Not Found	-----
	238.63	1044	44.60*	4.910E+00	1.604E+00	1.604E+00	12.34
	300.09	58	3.41	4.151E+00	1.385E+00	1.385E+00	69.98
BI-214	609.31	346	46.30*	2.389E+00	1.054E+00	1.054E+00	18.22
	1120.29	69	15.10	1.412E+00	1.087E+00	1.087E+00	69.96
	1764.49	73	15.80	9.831E-01	1.570E+00	1.570E+00	26.59
PB-214	74.81	386	6.21	6.062E+00	3.444E+00	3.444E+00	22.91
	77.11	669	10.50	6.255E+00	3.427E+00	3.427E+00	17.10
	87.30	203	4.67	6.833E+00	2.134E+00	2.134E+00	38.52
	241.98	192	7.49	4.866E+00	1.772E+00	1.772E+00	37.76



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	306	19.20	4.204E+00	1.275E+00	1.275E+00	23.07
	351.92	488	37.20*	3.681E+00	1.198E+00	1.198E+00	17.51
	74.81	386	6.21	6.062E+00	3.444E+00	3.444E+00	22.91
	77.11	669	10.50	6.255E+00	3.427E+00	3.427E+00	17.10
	87.30	203	4.67	6.833E+00	2.134E+00	2.134E+00	38.52
	241.98	192	7.49	4.866E+00	1.772E+00	1.772E+00	37.76
	295.21	306	19.20	4.204E+00	1.275E+00	1.275E+00	23.07
PO-216	351.92	488	37.20*	3.681E+00	1.198E+00	1.198E+00	17.51
	74.81	386	10.70	6.062E+00	1.999E+00	1.999E+00	23.61
	77.11	669	18.00	6.255E+00	1.999E+00	1.999E+00	15.31
	87.30	203	8.00	6.833E+00	1.246E+00	1.246E+00	39.04
	238.63	1044	44.60*	4.910E+00	1.604E+00	1.604E+00	12.34
	300.09	58	3.41	4.151E+00	1.385E+00	1.385E+00	69.98
	74.81	386	6.21	6.062E+00	3.444E+00	3.444E+00	22.91
PO-218	77.11	669	10.50	6.255E+00	3.427E+00	3.427E+00	17.10
	87.30	203	4.67	6.833E+00	2.134E+00	2.134E+00	38.52
	241.98	192	7.49	4.866E+00	1.772E+00	1.772E+00	37.76
	295.21	306	19.20	4.204E+00	1.275E+00	1.275E+00	23.07
	351.92	488	37.20*	3.681E+00	1.198E+00	1.198E+00	17.51
	240.98	192	3.95*	4.866E+00	3.361E+00	3.361E+00	37.34
	609.31	346	46.30*	2.389E+00	1.054E+00	1.054E+00	18.22
RA-224	1120.29	69	15.10	1.412E+00	1.087E+00	1.087E+00	69.96
RA-226	1764.49	73	15.80	9.831E-01	1.570E+00	1.570E+00	26.59
AC-228	338.32	209	11.40	3.790E+00	1.630E+00	1.630E+00	50.75
	911.07	227	27.70*	1.695E+00	1.628E+00	1.628E+00	23.92
	969.11	150	16.60	1.606E+00	1.889E+00	1.889E+00	33.93
RA-228	338.32	209	11.40	3.790E+00	1.630E+00	1.630E+00	50.75
	911.07	227	27.70*	1.695E+00	1.628E+00	1.628E+00	23.92
	969.11	150	16.60	1.606E+00	1.889E+00	1.889E+00	33.93
TH-228	74.81	386	10.70	6.062E+00	1.999E+00	2.033E+00	21.71
	77.11	669	18.00	6.255E+00	1.999E+00	2.033E+00	15.31
	87.30	203	8.00	6.833E+00	1.246E+00	1.267E+00	37.74
	238.63	1044	44.60*	4.910E+00	1.604E+00	1.632E+00	12.34
	300.09	58	3.41	4.151E+00	1.385E+00	1.409E+00	91.12
TH-230	609.31	346	46.30*	2.389E+00	1.054E+00	1.054E+00	18.22
	1120.29	69	15.10	1.412E+00	1.087E+00	1.087E+00	69.96
	1764.49	73	15.80	9.831E-01	1.570E+00	1.570E+00	26.59
TH-232	338.32	209	11.40	3.790E+00	1.630E+00	1.630E+00	30.77
	911.07	227	27.70*	1.695E+00	1.628E+00	1.628E+00	23.92
	969.11	150	16.60	1.606E+00	1.889E+00	1.889E+00	33.93
TH-234	63.29	16	3.80*	4.831E+00	2.990E-01	2.990E-01	433.66
	92.38	186	5.41	7.022E+00	1.651E+00	1.651E+00	46.27
U-234	609.31	346	46.30*	2.389E+00	1.054E+00	1.054E+00	18.22
	1120.29	69	15.10	1.412E+00	1.087E+00	1.087E+00	69.96
	1764.49	73	15.80	9.831E-01	1.570E+00	1.570E+00	26.59
NP-237	86.50	203	12.60*	6.833E+00	7.911E-01	7.911E-01	43.01
	95.87	-----	2.60	7.087E+00	-----	Line Not Found	-----
U-238	63.29	16	3.80*	4.831E+00	2.990E-01	2.990E-01	433.66
	92.38	186	5.41	7.022E+00	1.651E+00	1.651E+00	43.46



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	74.67	386	66.00*	6.062E+00	3.241E-01	3.241E-01	21.68
	86.72	203	0.34	6.833E+00	2.967E+01	2.967E+01	37.74
	117.66	-----	0.55	7.126E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.723E+00	-----	Line Not Found	-----
ANH-511	511.00	110	100.00*	2.755E+00	1.348E-01	1.348E-01	60.64

Flag: "\*" = Keyline



Total number of lines in spectrum 33  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 31 93.94%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.529E+01	3.529E+01	0.370E+01	10.49	
CD-109	464.00D	1.03	2.679E+00	2.749E+00	1.037E+00	37.74	
SN-126	1.00E+05Y	1.00	2.694E-01	2.694E-01	1.017E-01	37.74	
TL-208	1.41E+10Y	1.00	4.995E-01	4.995E-01	1.027E-01	20.56	
BI-210	22.26Y	1.00	1.874E+00	1.876E+00	2.440E+00	130.01	
PB-210	22.26Y	1.00	1.874E+00	1.876E+00	2.440E+00	130.01	
PO-210	22.26Y	1.00	1.874E+00	1.876E+00	2.438E+00	129.95	
BI-211	7.04E+08Y	1.00	3.444E+00	3.444E+00	0.576E+00	16.71	
PB-212	1.41E+10Y	1.00	1.604E+00	1.604E+00	0.198E+00	12.34	
PO-212	1.41E+10Y	1.00	1.604E+00	1.604E+00	0.198E+00	12.34	
BI-214	1600.00Y	1.00	1.054E+00	1.054E+00	0.192E+00	18.22	
PB-214	1600.00Y	1.00	1.198E+00	1.198E+00	0.210E+00	17.51	
PO-214	1600.00Y	1.00	1.198E+00	1.198E+00	0.210E+00	17.51	
PO-216	1.41E+10Y	1.00	1.604E+00	1.604E+00	0.198E+00	12.34	
PO-218	1600.00Y	1.00	1.198E+00	1.198E+00	0.210E+00	17.51	
RA-224	1.41E+10Y	1.00	3.361E+00	3.361E+00	1.255E+00	37.34	
RA-226	1600.00Y	1.00	1.054E+00	1.054E+00	0.192E+00	18.22	
AC-228	1.41E+10Y	1.00	1.628E+00	1.628E+00	0.390E+00	23.92	
RA-228	1.41E+10Y	1.00	1.628E+00	1.628E+00	0.390E+00	23.92	
TH-228	1.91Y	1.02	1.604E+00	1.632E+00	0.201E+00	12.34	
TH-230	4.47E+09Y	1.00	1.054E+00	1.054E+00	0.192E+00	18.22	
TH-232	1.41E+10Y	1.00	1.628E+00	1.628E+00	0.390E+00	23.92	
TH-234	4.47E+09Y	1.00	2.990E-01	2.990E-01	12.97E-01	433.66	
U-234	4.47E+09Y	1.00	1.054E+00	1.054E+00	0.192E+00	18.22	
NP-237	2.14E+06Y	1.00	7.911E-01	7.911E-01	3.403E-01	43.01	
U-238	4.47E+09Y	1.00	2.990E-01	2.990E-01	12.97E-01	433.66	
AM-243	7380.00Y	1.00	3.241E-01	3.241E-01	0.703E-01	21.68	
ANH-511	1.00E+09Y	1.00	1.348E-01	1.348E-01	0.817E-01	60.64	

Total Activity : 7.212E+01 7.223E+01

Grand Total Activity : 7.212E+01 7.223E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Unidentified Energy Lines  
Sample ID : G243457002

Page : 5  
Acquisition date : 4-JAN-2010 13:58:30

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	90.00	104	364	1.01	179.65	177	13	1.45E-02	58.4	6.94E+00	T
0	186.19	154	240	1.12	371.98	368	9	2.14E-02	41.5	5.81E+00	T
0	208.90	131	206	1.80	417.41	413	9	1.82E-02	43.1	5.39E+00	T
0	269.79	115	162	1.71	539.15	533	11	1.59E-02	47.9	4.49E+00	T
0	328.61	45	170	0.83	656.77	652	10	6.30E-03	****	3.88E+00	T
0	463.59	78	91	1.23	926.69	921	13	1.08E-02	55.3	2.98E+00	T
0	728.24	86	92	2.23	1455.92	1447	18	1.20E-02	57.1	2.06E+00	T
0	795.30	24	32	0.99	1590.03	1586	7	3.31E-03	87.2	1.91E+00	T
1	964.49	48	55	1.98	1928.36	1920	35	6.72E-03	66.4	1.61E+00	T
0	1497.54	16	8	1.03	2994.37	2984	14	2.25E-03	85.9	1.11E+00	
0	1587.83	27	9	0.95	3174.94	3165	16	3.81E-03	60.2	1.06E+00	

Flags: "T" = Tentatively associated



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457002.CNF;1  *
* Acquisition date   : 4-JAN-2010 13:58:30.  Detector SN#      :             *
* Detector ID        : GAM07              Sensitivity          : 5.00000      *
* Geometry           : CAN                  Energy tolerance    : 1.50000      *
* Elapsed live time  : 0 02:00:00.00       Abundance limit     : 75.00000      *
* Elapsed real time  : 0 02:00:01.21       Half life ratio    : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00  Nuclide Library   : SOLID        *
* Sample ID          : G243457002          Analyst initials  : MXRl          *
* Batch Number       : 936923              Sample Quantity   : 1.11610E+02 GRAM  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58.0MS Isotope       :             *
* MSD ID             :                      MSD Isotope        :             *
* LCS ID             : 1032-A              LCS Isotope         :             *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.529E+01	3.703E+00	6.160E-01	5.289E-02	57.296
CD-109	2.749E+00	1.037E+00	1.270E+00	1.196E-01	2.165
SN-126	2.694E-01	1.017E-01	1.247E-01	1.168E-02	2.161
TL-208	4.995E-01	1.027E-01	6.350E-02	6.074E-03	7.866
BI-210	1.876E+00	2.440E+00	2.884E+00	2.706E-01	0.651
PB-210	1.876E+00	2.440E+00	2.884E+00	2.706E-01	0.651
PO-210	1.876E+00	2.438E+00	2.884E+00	2.454E-01	0.651
BI-211	3.444E+00	5.755E-01	3.582E-01	3.213E-02	9.615
PB-212	1.604E+00	1.980E-01	9.882E-02	9.452E-03	16.231
PO-212	1.604E+00	1.980E-01	9.882E-02	9.452E-03	16.231
BI-214	1.054E+00	1.919E-01	1.373E-01	1.420E-02	7.676
PB-214	1.198E+00	2.097E-01	1.249E-01	1.296E-02	9.595
PO-214	1.198E+00	2.097E-01	1.249E-01	1.296E-02	9.595
PO-216	1.604E+00	1.980E-01	9.882E-02	9.452E-03	16.231
PO-218	1.198E+00	2.097E-01	1.249E-01	1.296E-02	9.595
RA-224	3.361E+00	1.255E+00	1.125E+00	9.513E-02	2.988
RA-226	1.054E+00	1.919E-01	1.373E-01	1.420E-02	7.676
AC-228	1.628E+00	3.895E-01	2.298E-01	2.677E-02	7.086



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.628E+00	3.895E-01	2.298E-01	2.677E-02	7.086
TH-228	1.632E+00	2.014E-01	1.005E-01	9.615E-03	16.231
TH-230	1.054E+00	1.919E-01	1.372E-01	1.420E-02	7.676
TH-232	1.628E+00	3.895E-01	2.298E-01	2.677E-02	7.086
TH-234	2.990E-01	1.297E+00	1.590E+00	2.767E-01	0.188
U-234	1.054E+00	1.919E-01	1.372E-01	1.420E-02	7.676
NP-237	7.911E-01	3.403E-01	3.764E-01	8.511E-02	2.102
U-238	2.990E-01	1.297E+00	1.590E+00	2.767E-01	0.188
AM-243	3.241E-01	7.025E-02	7.079E-02	5.691E-03	4.578
ANH-511	1.348E-01	8.173E-02	5.176E-02	4.599E-03	2.604

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.245E-02		3.560E-01	5.662E-01	5.343E-02	-0.057
NA-22	-1.853E-03		5.071E-02	8.347E-02	6.852E-03	-0.022
NA-24	7.127E+00		3.645E+00	Half-Life too short		
AL-26	1.205E-02		2.476E-02	4.631E-02	3.776E-03	0.260
TI-44	3.689E-01	+	5.649E-02	7.041E-02	5.894E-03	5.240
SC-46	-7.755E-03		4.664E-02	7.443E-02	6.820E-03	-0.104
V-48	-2.930E-02		8.596E-02	1.330E-01	1.197E-02	-0.220
CR-51	-4.312E-02		4.151E-01	6.780E-01	6.127E-02	-0.064
MN-52	3.207E-01		3.479E-01	6.388E-01	5.312E-02	0.502
MN-54	6.858E-03		4.199E-02	6.953E-02	6.383E-03	0.099
CO-56	9.101E-03		4.703E-02	7.802E-02	7.163E-03	0.117
CO-57	1.124E-02		2.516E-02	4.134E-02	3.556E-03	0.272
CO-58	-4.510E-02		4.836E-02	7.178E-02	6.595E-03	-0.628
FE-59	1.013E-02		1.135E-01	1.912E-01	1.772E-02	0.053
CO-60	-6.372E-03		4.053E-02	6.529E-02	5.348E-03	-0.098
ZN-65	-2.524E-02		1.133E-01	1.579E-01	1.340E-02	-0.160
GE-68	8.520E-01		1.543E+00	2.702E+00	2.341E-01	0.315
AS-73	-2.460E-02		5.487E-01	8.846E-01	6.643E-02	-0.028
AS-74	8.389E-02		1.095E-01	1.931E-01	1.731E-02	0.434
SE-75	-2.930E-02		5.217E-02	7.267E-02	6.205E-03	-0.403
BR-77	3.099E+00		1.893E+01	3.230E+01	2.877E+00	0.096
SR-82	8.818E-03		4.656E-01	7.649E-01	6.984E-02	0.012
RB-83	1.322E-02		7.179E-02	1.227E-01	1.093E-02	0.108
RB-84	-3.048E-02		7.714E-02	1.196E-01	1.097E-02	-0.255
KR-85	1.367E+01		8.857E+00	1.472E+01	1.309E+00	0.929
SR-85	7.157E-02		4.636E-02	7.706E-02	6.852E-03	0.929
RB-86	2.209E-01		1.046E+00	1.783E+00	1.545E-01	0.124
Y-88	-1.209E-02		3.097E-02	4.644E-02	3.769E-03	-0.260
ZR-88	2.051E-02		3.478E-02	5.873E-02	4.892E-03	0.349
Y-91	-1.238E+01		2.341E+01	3.703E+01	3.024E+00	-0.334
NB-94	2.310E-03		3.611E-02	5.997E-02	5.385E-03	0.039
NB-95	3.979E-02		5.126E-02	8.907E-02	8.120E-03	0.447
NB-95M	6.776E-02		1.452E-01	2.203E-01	2.138E-02	0.308



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	1.908E-03		7.733E-02	1.274E-01	1.265E-02	0.015
NB-97	-4.574E-01		3.479E-01	Half-Life too short		
ZR-97	2.994E+01		7.735E+00	Half-Life too short		
MO-99	7.649E+00		2.007E+01	3.417E+01	5.277E+00	0.224
TC-99M	4.030E+12		4.488E+12	Half-Life too short		
RH-101	-2.772E-02		3.293E-02	5.290E-02	4.340E-03	-0.524
RH-102	-8.513E-03		3.169E-02	4.963E-02	4.353E-03	-0.172
RU-103	-6.886E-03		4.542E-02	7.160E-02	1.024E-02	-0.096
RH-106	-6.278E-02		3.400E-01	5.574E-01	7.560E-02	-0.113
RU-106	-6.278E-02		3.399E-01	5.574E-01	4.981E-02	-0.113
AG-108M	-9.463E-03		3.626E-02	5.728E-02	5.114E-03	-0.165
AG-110M	-2.183E-02		3.643E-02	5.708E-02	5.200E-03	-0.382
IN-111	6.652E-01		1.991E+00	2.974E+00	2.519E-01	0.224
IN-113M	-2.149E-02		5.143E-02	8.103E-02	6.966E-03	-0.265
SN-113	-2.149E-02		5.143E-02	8.103E-02	6.966E-03	-0.265
IN-114M	-5.107E-02		2.163E-01	3.182E-01	2.589E-02	-0.160
CD-115	-5.298E-01		2.083E+01	3.500E+01	3.123E+00	-0.015
SN-117M	4.523E-02		6.279E-02	1.033E-01	8.281E-03	0.438
SB-122	2.998E+00		3.563E+00	6.341E+00	5.685E-01	0.473
I-123	5.018E+01		3.633E+01	Half-Life too short		
TE-123M	2.079E-02		3.010E-02	4.941E-02	3.986E-03	0.421
I-124	-5.198E-01		1.112E+00	1.608E+00	1.441E-01	-0.323
SB-124	-3.371E-02		6.137E-02	8.167E-02	7.074E-03	-0.413
SB-125	-2.693E-02		9.814E-02	1.549E-01	1.351E-02	-0.174
TE-125M	5.245E+00		9.132E+00	1.513E+01	1.570E+00	0.347
I-126	1.033E-01		2.283E-01	3.917E-01	3.473E-02	0.264
SB-126	4.113E-02		2.050E-01	3.002E-01	2.709E-02	0.137
SB-127	-3.040E-01		2.269E+00	3.712E+00	4.529E-01	-0.082
XE-127	4.294E-02		4.868E-02	8.282E-02	6.825E-03	0.518
I-131	-5.393E-02		1.396E-01	2.210E-01	1.982E-02	-0.244
TE-132	3.917E-01		1.085E+00	1.847E+00	2.952E-01	0.212
BA-133	-2.314E-02		5.392E-02	7.389E-02	9.703E-03	-0.313
I-133	6.772E-03		1.549E-02	Half-Life too short		
CS-134	5.551E-02	+	4.868E-02	9.257E-02	8.529E-03	0.600
CS-135	2.044E-01		1.878E-01	2.947E-01	2.906E-02	0.694
I-135	1.575E+12		4.952E+11	Half-Life too short		
CS-136	-8.957E-02		1.344E-01	2.102E-01	1.923E-02	-0.426
BA-137M	-2.137E-02		3.831E-02	5.964E-02	5.278E-03	-0.358
CS-137	-2.259E-02		4.049E-02	6.304E-02	5.589E-03	-0.358
CE-139	-1.112E-02		3.077E-02	4.773E-02	3.775E-03	-0.233
BA-140	-2.055E-01		3.107E-01	4.824E-01	1.603E-01	-0.426
LA-140	-1.149E-03		1.061E-01	1.679E-01	1.405E-02	-0.007
CE-141	-3.880E-02		6.838E-02	1.042E-01	8.722E-03	-0.372
CE-143	1.515E-03		2.894E-04	Half-Life too short		
CE-144	-2.154E-02		2.103E-01	3.350E-01	5.172E-02	-0.064
PM-144	1.410E-02		3.952E-02	6.715E-02	6.020E-03	0.210
PR-144	9.567E-01		2.681E+00	4.555E+00	4.082E-01	0.210
PM-146	-1.172E-02		5.023E-02	7.931E-02	8.545E-03	-0.148



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	2.749E-01		6.624E-01	1.148E+00	1.737E-01	0.239
PM-149	-5.175E+00		1.804E+02	2.982E+02	4.619E+01	-0.017
EU-152	-3.120E-02		1.140E-01	1.591E-01	1.443E-02	-0.196
GD-153	2.167E-04		8.302E-02	1.203E-01	1.076E-02	0.002
EU-154	-1.150E-02		1.424E-01	2.333E-01	2.565E-02	-0.049
EU-155	9.858E-02		1.067E-01	1.793E-01	1.584E-02	0.550
TB-160	3.736E-02		1.477E-01	2.466E-01	2.262E-02	0.152
HO-166M	-6.411E-03		7.205E-02	1.168E-01	1.052E-02	-0.055
TM-171	1.805E+01		2.351E+01	3.599E+01	2.691E+00	0.502
LU-176	-5.149E-03		2.561E-02	4.167E-02	3.570E-03	-0.124
LU-177	4.362E+00	+	1.914E+00	2.629E+00	2.177E-01	1.659
LU-177M	1.229E-02		2.010E-01	3.268E-01	2.767E-02	0.038
HF-181	-4.202E-02		4.849E-02	7.150E-02	6.290E-03	-0.588
W-181	-2.193E-01		3.167E-01	4.506E-01	3.334E-02	-0.487
TA-182	-1.712E-01		2.380E-01	3.688E-01	3.016E-02	-0.464
RE-183	-4.906E-02		1.159E-01	1.794E-01	1.429E-02	-0.273
RE-184	-4.427E-02		2.425E-01	4.000E-01	3.395E-02	-0.111
OS-185	-4.881E-02		4.729E-02	7.100E-02	6.313E-03	-0.687
RE-188	5.843E-02		1.816E-01	2.933E-01	2.366E-02	0.199
W-188	-1.502E-01		8.620E+00	1.250E+01	1.066E+00	-0.012
IR-192	2.335E-02		3.770E-02	6.433E-02	5.529E-03	0.363
AU-195	1.735E-01		2.134E-01	3.580E-01	3.184E-02	0.485
TL-200	4.615E-04		8.696E-04	Half-Life	too short	
TL-201	-5.056E+00		1.135E+01	1.752E+01	1.388E+00	-0.289
TL-202	5.562E-02		8.601E-02	1.453E-01	1.252E-02	0.383
HG-203	1.378E-03		5.123E-02	7.477E-02	6.531E-03	0.018
BI-207	-5.723E-02		6.132E-02	9.245E-02	8.066E-03	-0.619
TL-207	4.660E-01		7.970E-01	1.201E+00	2.124E-01	0.388
PO-209	5.508E+00		8.769E+00	1.507E+01	1.380E+00	0.365
PB-211	3.170E-01		1.044E+00	1.699E+00	1.064E+00	0.187
BI-212	1.192E+00	+	6.913E-01	7.385E-01	7.660E-02	1.613
PO-215	4.660E-01		7.970E-01	1.201E+00	2.124E-01	0.388
RN-219	-2.111E-01		4.702E-01	7.364E-01	1.097E-01	-0.287
RN-220	-1.005E+00		2.851E+01	4.775E+01	4.275E+00	-0.021
RA-223	4.660E-01		7.970E-01	1.201E+00	2.124E-01	0.388
AC-227	-1.445E-01		3.970E-01	6.468E-01	9.880E-02	-0.223
TH-227	-1.445E-01		3.972E-01	6.468E-01	1.164E-01	-0.223
TH-229	-2.758E-01		5.156E-01	8.491E-01	6.934E-02	-0.325
PA-231	-2.654E-01		1.636E+00	2.683E+00	4.056E-01	-0.099
TH-231	4.660E-01		7.970E-01	1.201E+00	2.124E-01	0.388
U-231	-2.239E-01		1.481E+00	2.128E+00	1.915E-01	-0.105
PA-233	-8.761E-03		6.630E-02	1.083E-01	9.547E-03	-0.081
PA-234	8.309E-02		3.535E-01	5.843E-01	1.109E-01	0.142
PA-234M	-3.954E+00		5.358E+00	7.997E+00	8.200E-01	-0.494
U-235	-2.071E-01		2.213E-01	3.265E-01	5.655E-02	-0.634
NP-236	4.054E-02		8.266E-02	1.344E-01	1.074E-02	0.302
NP-239	1.474E-02		1.815E-01	2.936E-01	2.526E-02	0.050
AM-241	-1.496E-02		1.235E-01	1.820E-01	1.443E-02	-0.082



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	5.921E-02		9.437E-02	1.570E-01	1.376E-02	0.377
AM-246	9.824E-02		1.756E-01	3.077E-01	2.664E-02	0.319
CM-247	-1.109E-02		4.261E-02	6.782E-02	5.694E-03	-0.163
CF-249	1.200E-02		4.405E-02	7.294E-02	6.088E-03	0.165
CF-251	-3.633E-02		1.262E-01	2.113E-01	1.693E-02	-0.172



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G243457002          *
* Acquisition date   : 4-JAN-2010 13:58:30 Detector SN# :                  *
* Detector ID        : GAM07 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.21 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243457002 Analyst initials: MXR1                 *
* Batch Number       : 936923 Sample Quantity : 1.1161E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                             *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.529E+01	3.629E+00	3.066E-01	1.852E+00
CD-109	2.749E+00	1.017E+00	6.462E-01	5.187E-01
SN-126	2.694E-01	9.963E-02	6.347E-02	5.083E-02
TL-208	4.995E-01	1.006E-01	3.184E-02	5.134E-02
BI-210	1.876E+00	2.391E+00	1.475E+00	1.220E+00
PB-210	1.876E+00	2.391E+00	1.475E+00	1.220E+00
PO-210	1.876E+00	2.390E+00	1.475E+00	1.219E+00
BI-211	3.444E+00	5.640E-01	1.804E-01	2.878E-01
PB-212	1.604E+00	1.940E-01	4.991E-02	9.900E-02
PO-212	1.604E+00	1.940E-01	4.991E-02	9.900E-02
BI-214	1.054E+00	1.881E-01	6.880E-02	9.596E-02
PB-214	1.198E+00	2.055E-01	6.287E-02	1.049E-01
PO-214	1.198E+00	2.055E-01	6.287E-02	1.049E-01
PO-216	1.604E+00	1.940E-01	4.991E-02	9.900E-02
PO-218	1.198E+00	2.055E-01	6.287E-02	1.049E-01
RA-224	3.361E+00	1.230E+00	5.681E-01	6.274E-01
RA-226	1.054E+00	1.881E-01	6.880E-02	9.596E-02
AC-228	1.628E+00	3.817E-01	1.148E-01	1.948E-01
RA-228	1.628E+00	3.817E-01	1.148E-01	1.948E-01
TH-228	1.632E+00	1.974E-01	5.077E-02	1.007E-01
TH-230	1.054E+00	1.881E-01	6.880E-02	9.596E-02
TH-232	1.628E+00	3.817E-01	1.148E-01	1.948E-01
TH-234	2.990E-01	1.271E+00	8.115E-01	6.484E-01
U-234	1.054E+00	1.881E-01	6.880E-02	9.596E-02
NP-237	7.911E-01	3.334E-01	1.916E-01	1.701E-01
U-238	2.990E-01	1.271E+00	8.115E-01	6.484E-01
AM-243	3.241E-01	6.885E-02	3.608E-02	3.513E-02
ANH-511	1.348E-01	8.010E-02	2.598E-02	4.087E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-3.245E-02	3.489E-01	2.844E-01	1.780E-01	NOT IDENT.
NA-22	-1.853E-03	4.969E-02	4.160E-02	2.535E-02	NOT IDENT.
NA-24	7.127E+06	7.144E+06	0.000E+00	3.645E+06	SHORT HLIF
AL-26	1.205E-02	2.427E-02	2.301E-02	1.238E-02	NOT IDENT.
TI-44	3.689E-01	5.536E-02	3.587E-02	2.825E-02	FAIL ABUN
SC-46	-7.755E-03	4.571E-02	3.720E-02	2.332E-02	FAIL ABUN
V-48	-2.930E-02	8.424E-02	6.640E-02	4.298E-02	NOT IDENT.
CR-51	-4.312E-02	4.068E-01	3.416E-01	2.075E-01	NOT IDENT.
MN-52	3.207E-01	3.409E-01	3.180E-01	1.739E-01	NOT IDENT.
MN-54	6.858E-03	4.115E-02	3.477E-02	2.100E-02	NOT IDENT.
CO-56	9.101E-03	4.609E-02	3.901E-02	2.352E-02	NOT IDENT.
CO-57	1.124E-02	2.466E-02	2.099E-02	1.258E-02	NOT IDENT.
CO-58	-4.510E-02	4.739E-02	3.590E-02	2.418E-02	NOT IDENT.
FE-59	1.013E-02	1.112E-01	9.541E-02	5.675E-02	NOT IDENT.
CO-60	-6.372E-03	3.972E-02	3.252E-02	2.027E-02	NOT IDENT.
ZN-65	-2.524E-02	1.110E-01	7.875E-02	5.664E-02	NOT IDENT.
GE-68	8.520E-01	1.512E+00	1.348E+00	7.714E-01	NOT IDENT.
AS-73	-2.460E-02	5.377E-01	4.521E-01	2.744E-01	NOT IDENT.
AS-74	8.389E-02	1.074E-01	9.681E-02	5.477E-02	NOT IDENT.
SE-75	-2.930E-02	5.112E-02	3.667E-02	2.608E-02	NOT IDENT.
BR-77	3.099E+00	1.855E+01	1.621E+01	9.464E+00	FAIL ABUN
SR-82	8.818E-03	4.563E-01	3.827E-01	2.328E-01	NOT IDENT.
RB-83	1.322E-02	7.036E-02	6.159E-02	3.590E-02	NOT IDENT.
RB-84	-3.048E-02	7.560E-02	5.979E-02	3.857E-02	NOT IDENT.
KR-85	1.367E+01	8.680E+00	7.390E+00	4.429E+00	NOT IDENT.
SR-85	7.157E-02	4.543E-02	3.868E-02	2.318E-02	NOT IDENT.
RB-86	2.209E-01	1.025E+00	8.897E-01	5.229E-01	NOT IDENT.
Y-88	-1.209E-02	3.035E-02	2.307E-02	1.548E-02	NOT IDENT.
ZR-88	2.051E-02	3.408E-02	2.954E-02	1.739E-02	NOT IDENT.
Y-91	-1.238E+01	2.294E+01	1.846E+01	1.171E+01	NOT IDENT.
NB-94	2.310E-03	3.539E-02	3.003E-02	1.805E-02	NOT IDENT.
NB-95	3.979E-02	5.023E-02	4.457E-02	2.563E-02	NOT IDENT.
NB-95M	6.776E-02	1.423E-01	1.113E-01	7.260E-02	NOT IDENT.
ZR-95	1.908E-03	7.578E-02	6.374E-02	3.866E-02	NOT IDENT.
NB-97	-4.574E+05	6.819E+05	0.000E+00	3.479E+05	SHORT HLIF
ZR-97	2.994E+07	1.516E+07	0.000E+00	7.735E+06	SHORT HLIF
MO-99	7.649E+00	1.967E+01	1.710E+01	1.004E+01	NOT IDENT.
TC-99M	4.030E+18	8.796E+18	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.772E-02	3.227E-02	2.676E-02	1.646E-02	NOT IDENT.
RH-102	-8.513E-03	3.105E-02	2.493E-02	1.584E-02	NOT IDENT.
RU-103	-6.886E-03	4.451E-02	3.595E-02	2.271E-02	FAIL ABUN
RH-106	-6.278E-02	3.332E-01	2.794E-01	1.700E-01	FAIL ABUN
RU-106	-6.278E-02	3.331E-01	2.794E-01	1.700E-01	FAIL ABUN
AG-108M	-9.463E-03	3.554E-02	2.879E-02	1.813E-02	NOT IDENT.
AG-110M	-2.183E-02	3.570E-02	2.860E-02	1.822E-02	NOT IDENT.
IN-111	6.652E-01	1.951E+00	1.502E+00	9.956E-01	NOT IDENT.
IN-113M	-2.149E-02	5.040E-02	4.077E-02	2.571E-02	NOT IDENT.
SN-113	-2.149E-02	5.040E-02	4.077E-02	2.571E-02	NOT IDENT.
IN-114M	-5.107E-02	2.120E-01	1.610E-01	1.082E-01	NOT IDENT.
CD-115	-5.298E-01	2.041E+01	1.757E+01	1.041E+01	NOT IDENT.
SN-117M	4.523E-02	6.154E-02	5.233E-02	3.140E-02	NOT IDENT.
SB-122	2.998E+00	3.492E+00	3.181E+00	1.781E+00	NOT IDENT.
I-123	5.018E+07	7.120E+07	0.000E+00	3.633E+07	SHORT HLIF
TE-123M	2.079E-02	2.950E-02	2.504E-02	1.505E-02	NOT IDENT.
I-124	-5.198E-01	1.089E+00	8.061E-01	5.558E-01	NOT IDENT.
SB-124	-3.371E-02	6.014E-02	4.060E-02	3.068E-02	FAIL ABUN
SB-125	-2.693E-02	9.617E-02	7.788E-02	4.907E-02	FAIL ABUN
TE-125M	5.245E+00	8.949E+00	7.689E+00	4.566E+00	NOT IDENT.
I-126	1.033E-01	2.237E-01	1.962E-01	1.141E-01	NOT IDENT.
SB-126	4.113E-02	2.009E-01	1.503E-01	1.025E-01	FAIL ABUN
SB-127	-3.040E-01	2.223E+00	1.859E+00	1.134E+00	NOT IDENT.
XE-127	4.294E-02	4.770E-02	4.188E-02	2.434E-02	NOT IDENT.
I-131	-5.393E-02	1.368E-01	1.112E-01	6.979E-02	NOT IDENT.
TE-132	3.917E-01	1.063E+00	9.334E-01	5.426E-01	NOT IDENT.
BA-133	-2.314E-02	5.284E-02	3.720E-02	2.696E-02	FAIL ABUN
I-133	6.772E+03	3.036E+04	0.000E+00	1.549E+04	SHORT HLIF
CS-134	5.551E-02	4.771E-02	4.631E-02	2.434E-02	FAIL ABUN
CS-135	2.044E-01	1.841E-01	1.487E-01	9.391E-02	NOT IDENT.
I-135	1.575E+18	9.706E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.957E-02	1.317E-01	1.049E-01	6.719E-02	FAIL ABUN
BA-137M	-2.137E-02	3.754E-02	2.988E-02	1.915E-02	NOT IDENT.
CS-137	-2.259E-02	3.968E-02	3.158E-02	2.025E-02	NOT IDENT.
CE-139	-1.112E-02	3.015E-02	2.418E-02	1.538E-02	NOT IDENT.
BA-140	-2.055E-01	3.045E-01	2.421E-01	1.553E-01	NOT IDENT.
LA-140	-1.149E-03	1.040E-01	8.352E-02	5.305E-02	FAIL ABUN
CE-141	-3.880E-02	6.701E-02	5.283E-02	3.419E-02	NOT IDENT.
CE-143	1.515E+03	5.672E+02	0.000E+00	2.894E+02	SHORT HLIF



CE-144	-2.154E-02	2.061E-01	1.700E-01	1.052E-01	NOT IDENT.
PM-144	1.410E-02	3.873E-02	3.363E-02	1.976E-02	NOT IDENT.
PR-144	9.567E-01	2.627E+00	2.281E+00	1.340E+00	NOT IDENT.
PM-146	-1.172E-02	4.922E-02	3.985E-02	2.511E-02	NOT IDENT.
ND-147	2.749E-01	6.491E-01	5.762E-01	3.312E-01	FAIL ABUN
PM-149	-5.175E+00	1.768E+02	1.504E+02	9.021E+01	NOT IDENT.
EU-152	-3.120E-02	1.117E-01	8.014E-02	5.701E-02	FAIL ABUN
GD-153	2.167E-04	8.136E-02	6.120E-02	4.151E-02	NOT IDENT.
EU-154	-1.150E-02	1.395E-01	1.162E-01	7.119E-02	NOT IDENT.
EU-155	9.858E-02	1.046E-01	9.112E-02	5.335E-02	FAIL ABUN
TB-160	3.736E-02	1.447E-01	1.233E-01	7.383E-02	FAIL ABUN
HO-166M	-6.411E-03	7.061E-02	5.848E-02	3.602E-02	NOT IDENT.
TM-171	1.805E+01	2.304E+01	1.836E+01	1.175E+01	NOT IDENT.
LU-176	-5.149E-03	2.510E-02	2.100E-02	1.280E-02	FAIL ABUN
LU-177	4.362E+00	1.876E+00	1.329E+00	9.572E-01	FAIL ABUN
LU-177M	1.229E-02	1.970E-01	1.643E-01	1.005E-01	FAIL ABUN
HF-181	-4.202E-02	4.752E-02	3.591E-02	2.425E-02	NOT IDENT.
W-181	-2.193E-01	3.103E-01	2.299E-01	1.583E-01	NOT IDENT.
TA-182	-1.712E-01	2.332E-01	1.839E-01	1.190E-01	FAIL ABUN
RE-183	-4.906E-02	1.136E-01	9.090E-02	5.795E-02	FAIL ABUN
RE-184	-4.427E-02	2.376E-01	2.019E-01	1.212E-01	NOT IDENT.
OS-185	-4.881E-02	4.634E-02	3.558E-02	2.364E-02	NOT IDENT.
RE-188	5.843E-02	1.780E-01	1.486E-01	9.079E-02	NOT IDENT.
W-188	-1.502E-01	8.448E+00	6.304E+00	4.310E+00	FAIL ABUN
IR-192	2.335E-02	3.694E-02	3.242E-02	1.885E-02	FAIL ABUN
AU-195	1.735E-01	2.091E-01	1.821E-01	1.067E-01	FAIL ABUN
TL-200	4.615E+02	1.704E+03	0.000E+00	8.696E+02	SHORT HLIF
TL-201	-5.056E+00	1.113E+01	8.872E+00	5.677E+00	NOT IDENT.
TL-202	5.562E-02	8.429E-02	7.304E-02	4.300E-02	NOT IDENT.
HG-203	1.378E-03	5.020E-02	3.772E-02	2.561E-02	NOT IDENT.
BI-207	-5.723E-02	6.010E-02	4.614E-02	3.066E-02	FAIL ABUN
TL-207	4.660E-01	7.810E-01	6.051E-01	3.985E-01	FAIL ABUN
PO-209	5.508E+00	8.593E+00	7.532E+00	4.384E+00	NOT IDENT.
PB-211	3.170E-01	1.023E+00	8.543E-01	5.221E-01	NOT IDENT.
BI-212	1.192E+00	6.775E-01	3.697E-01	3.456E-01	FAIL ABUN
PO-215	4.660E-01	7.810E-01	6.051E-01	3.985E-01	FAIL ABUN
RN-219	-2.111E-01	4.608E-01	3.704E-01	2.351E-01	FAIL ABUN
RN-220	-1.005E+00	2.793E+01	2.395E+01	1.425E+01	NOT IDENT.
RA-223	4.660E-01	7.810E-01	6.051E-01	3.985E-01	FAIL ABUN
AC-227	-1.445E-01	3.890E-01	3.265E-01	1.985E-01	FAIL ABUN
TH-227	-1.445E-01	3.893E-01	3.265E-01	1.986E-01	FAIL ABUN
TH-229	-2.758E-01	5.053E-01	4.296E-01	2.578E-01	FAIL ABUN
PA-231	-2.654E-01	1.603E+00	1.353E+00	8.179E-01	FAIL ABUN
TH-231	4.660E-01	7.810E-01	6.051E-01	3.985E-01	FAIL ABUN
U-231	-2.239E-01	1.451E+00	1.082E+00	7.403E-01	FAIL ABUN
PA-233	-8.761E-03	6.497E-02	5.456E-02	3.315E-02	FAIL ABUN
PA-234	8.309E-02	3.465E-01	2.919E-01	1.768E-01	FAIL ABUN
PA-234M	-3.954E+00	5.251E+00	3.993E+00	2.679E+00	NOT IDENT.
U-235	-2.071E-01	2.169E-01	1.656E-01	1.107E-01	FAIL ABUN
NP-236	4.054E-02	8.100E-02	6.811E-02	4.133E-02	NOT IDENT.
NP-239	1.474E-02	1.779E-01	1.491E-01	9.076E-02	FAIL ABUN
AM-241	-1.496E-02	1.211E-01	9.291E-02	6.177E-02	NOT IDENT.
CM-243	5.921E-02	9.249E-02	7.981E-02	4.719E-02	FAIL ABUN
AM-246	9.824E-02	1.721E-01	1.535E-01	8.781E-02	NOT IDENT.
CM-247	-1.109E-02	4.176E-02	3.411E-02	2.130E-02	FAIL ABUN
CF-249	1.200E-02	4.316E-02	3.670E-02	2.202E-02	NOT IDENT.
CF-251	-3.633E-02	1.236E-01	1.070E-01	6.308E-02	NOT IDENT.



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 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON, SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
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46.50	238.1919
46.50	238.1919
46.50	238.1919
48.70	261.3962
49.72	240.7359
51.35	253.6814
52.39	241.9269
52.97	251.8597
53.15	255.8064
53.44	262.7046
54.07	278.4838
56.28	273.2437
56.28	273.2451
57.37	0.0000
57.53	298.2826
57.53	298.2841
57.60	298.3327
57.98	318.9630
57.98	318.9630
59.32	315.1151
59.32	315.1151
59.40	329.7650
59.54	322.5755
59.72	322.7121
60.01	303.9345
61.10	306.1699
61.14	306.1978
61.30	306.3110
63.00	343.3033
63.29	343.5286
63.29	343.5286
63.58	327.0567
64.28	358.5563
65.12	372.5316
65.20	372.5975
65.20	372.5975
66.05	324.4115
66.72	307.0840
66.83	307.1598
66.91	322.0547
67.20	317.8016
67.20	317.8016
67.75	323.5329
67.85	323.6026
68.90	332.3818
68.90	332.3818
69.30	347.5837
69.67	386.6761
70.82	356.1847
70.82	356.1847
70.83	356.1920
72.80	326.5969
72.87	326.6450
72.87	326.6450
74.67	327.8488
74.81	327.9417
74.81	327.9417
74.81	327.9417
74.81	327.9417
74.81	327.9417
74.81	327.9417
74.81	327.9417
74.97	328.0478
75.28	328.2534
75.70	328.5303
77.11	329.4572
77.11	329.4572



77.11	329.4572
77.11	329.4572
77.11	329.4572
77.11	329.4572
77.11	329.4572
78.38	330.2846
79.62	298.5863
79.80	298.6909
79.80	298.6909
80.11	320.2183
80.18	320.2615
80.30	320.3352
80.30	320.3352
80.57	344.9211
81.00	386.4489
81.07	386.5010
81.07	386.5010
81.07	386.5010
81.07	386.5010
82.60	355.4571
83.37	339.0942
83.78	325.5388
83.78	325.5388
83.78	325.5388
83.78	325.5388
84.21	336.5601
84.90	330.8377
85.43	352.7284
86.29	419.6294
86.50	425.9647
86.54	425.9962
86.59	426.0363
86.72	426.1373
86.79	426.1900
86.94	427.8546
87.30	421.9532
87.30	421.9532
87.30	421.9532
87.30	421.9532
87.30	421.9532
87.30	421.9532
87.57	408.2441
87.88	408.4757
88.03	408.5865
88.36	408.8322
88.47	408.9148
89.95	410.0065
91.11	289.4685
92.29	290.0730
92.38	290.1198
92.38	290.1198
93.35	290.6136
94.00	251.8389
94.67	247.4319
94.67	247.4343
94.90	267.8998
94.90	267.8998
94.90	267.8998
94.90	267.8998
95.87	263.6407
95.87	263.6407
96.73	284.4613
97.43	265.9179
98.44	225.9191
98.44	225.9191
98.88	240.8083
99.55	257.9236
99.55	257.9236
99.86	257.0049
100.00	257.0645
100.10	270.8076
103.18	273.2484
103.76	244.8853
105.00	244.3165
105.31	243.3766
108.00	274.3134
109.28	231.0183



111.00	247.7286
111.00	247.7286
111.76	257.6843
112.95	252.7809
115.19	227.7452
116.30	212.9918
117.00	217.5466
117.00	217.5466
117.66	240.5135
121.11	213.4349
121.62	220.1341
121.78	220.1854
122.06	214.8235
122.32	220.3591
122.32	220.3591
122.32	220.3591
122.32	220.3591
123.07	220.6005
127.23	270.2631
129.76	241.4611
131.20	288.3495
133.02	261.3876
133.54	238.2991
135.34	231.1097
136.00	240.2139
136.25	238.0702
136.48	247.0468
140.51	227.1277
140.51	0.0000
142.18	232.1148
142.65	234.5042
143.76	243.8336
144.24	233.8688
144.24	233.8688
144.24	233.8688
144.24	233.8688
145.22	233.0414
145.44	233.1066
147.16	227.9815
152.43	230.6507
152.70	242.0951
153.22	233.1546
154.21	226.6099
154.21	226.6099
154.21	226.6099
154.21	226.6099
155.03	220.0012
156.02	248.8048
158.56	200.3535
159.00	0.0000
159.00	205.0423
160.31	205.3700
161.27	246.9600
162.32	221.9704
162.64	222.0549
163.35	191.1523
163.89	190.1250
165.85	211.3573
167.43	216.3804
171.28	216.1921
171.86	205.8698
172.10	205.9274
176.55	217.5014
176.60	217.5146
181.06	203.3275
184.41	223.6668
185.71	211.2264
186.00	231.3241
190.27	223.6713
192.34	213.2806
193.63	220.7231
197.04	191.0276
198.01	202.8917
198.60	194.0328
200.40	202.4969
201.83	182.0669
202.84	170.1404
205.31	193.9336



208.36	187.8212
208.81	187.9064
209.75	216.6138
209.75	216.6138
210.97	197.9570
215.65	204.7278
216.55	195.7612
218.09	172.2368
222.10	163.7108
223.80	202.6698
226.40	176.3914
227.00	182.9603
227.08	182.9754
227.20	191.3130
228.16	176.6858
228.18	176.6902
228.18	176.6902
231.56	0.0000
235.69	189.3001
236.00	165.4987
236.00	165.4987
238.63	191.4931
238.63	191.4931
238.63	191.4931
238.63	191.4931
239.00	191.5588
240.98	191.9044
241.98	192.0788
241.98	192.0788
241.98	192.0788
244.69	147.2764
245.39	150.3772
247.94	171.1751
248.90	150.8484
249.79	157.5729
252.40	159.8274
252.85	156.1062
252.85	156.1062
254.15	0.0000
256.20	160.3600
256.20	160.3600
260.50	132.3847
260.90	147.6752
262.80	153.7762
264.65	152.9272
268.24	141.1198
268.79	138.1157
269.46	138.1948
269.46	138.1948
269.46	138.1948
269.46	138.1948
271.23	155.3146
273.65	154.0869
276.40	151.3497
277.35	155.5241
277.60	151.6913
277.60	151.6913
278.00	146.9091
278.60	167.0941
279.20	156.3404
279.53	150.1890
280.46	139.4561
281.68	130.2882
283.67	146.6176
284.30	141.8340
285.00	152.6064
285.90	142.0167
286.10	133.2832
286.10	133.2832
287.40	144.1360
288.45	0.0000
290.67	131.2315
290.80	131.2459
291.72	125.0879
293.26	0.0000
293.70	140.9436
295.21	136.4069
295.21	136.4069



295.21	136.4069
295.96	136.4876
296.50	105.9401
297.23	106.0010
298.57	106.1115
299.80	143.1917
299.80	143.1917
300.09	122.7624
300.09	122.7624
300.09	122.7624
300.09	122.7624
300.12	122.7662
301.29	126.0273
302.84	127.7550
303.76	135.7377
303.91	135.7523
304.40	124.7510
304.40	124.7510
304.84	126.3730
306.84	124.5888
308.46	101.9721
311.98	120.1119
316.51	114.5438
318.01	130.6262
319.02	135.7136
319.41	135.7531
320.08	123.8354
323.87	115.3687
323.87	115.3687
323.87	115.3687
323.87	115.3687
325.23	128.3145
328.77	140.7071
333.44	112.9451
334.20	134.5316
334.20	134.5316
334.30	134.5418
338.28	117.3842
338.28	117.3842
338.28	117.3842
338.28	117.3842
338.32	117.3877
338.32	117.3877
338.32	117.3877
340.50	107.0276
340.57	107.0325
344.27	110.5648
345.85	117.1969
350.59	0.0000
351.07	119.4601
351.92	119.5315
351.92	119.5315
351.92	119.5315
355.39	0.0000
356.01	109.8270
364.48	98.9180
366.43	92.8578
367.43	91.8872
367.94	0.0000
369.80	98.2369
374.96	116.2109
383.85	99.1444
387.95	102.5459
388.63	92.1223
391.69	118.5245
391.69	118.5245
392.90	97.6219
398.62	126.4197
400.65	94.9356
401.10	108.6784
401.81	117.1719
402.60	117.2295
404.84	99.4146
410.95	98.7288
411.60	96.6445
413.65	105.2721
414.70	102.1479
415.30	101.1201



415.76	103.2786
417.63	0.0000
418.52	111.9839
423.70	93.0760
427.08	90.0485
427.89	90.0921
432.53	78.5104
433.93	94.7206
439.47	82.0709
439.56	82.0743
439.89	86.4111
443.98	87.6989
444.90	76.9131
445.03	76.9196
445.03	76.9196
445.03	76.9196
445.03	76.9196
453.90	98.0008
463.38	87.5793
468.07	75.5156
473.00	61.6345
475.06	82.6401
475.35	83.7559
476.78	78.3063
477.59	79.4443
477.96	72.8391
482.03	90.6985
484.57	83.0704
487.03	67.6542
490.36	0.0000
492.35	76.7459
497.08	75.8245
507.63	0.0000
510.53	0.0000
510.84	83.1145
511.00	83.1213
511.85	83.1580
511.85	83.1580
513.99	76.5000
513.99	76.5000
520.41	68.6264
520.65	68.6356
527.90	72.5156
528.96	0.0000
529.64	73.4873
529.87	0.0000
531.02	66.2757
537.32	81.0582
543.00	84.9397
546.56	0.0000
549.76	76.9781
552.65	84.4284
555.20	63.4005
563.23	59.0359
563.90	60.9001
568.70	82.3120
569.32	81.4129
569.50	81.4193
569.67	81.4258
573.80	74.1699
574.00	71.3942
574.64	72.3442
578.91	78.9965
579.30	0.0000
583.14	71.7044
585.48	85.4563
591.81	81.0342
592.07	81.3543
593.00	87.0036
595.88	66.5105
600.56	81.6751
602.52	0.0000
602.71	85.9174
602.71	85.9174
603.60	84.6101
604.41	83.0734
604.70	83.0842
609.31	94.2554



609.31	94.2554
609.31	94.2554
609.31	94.2554
610.33	75.4395
612.46	64.4996
614.37	67.7054
618.01	70.9698
621.84	67.3009
621.84	67.3009
631.29	63.7760
633.02	54.2989
633.10	54.3003
634.78	63.8741
635.90	70.5818
636.97	61.0734
645.85	75.6807
646.12	76.6465
656.30	54.8514
657.75	67.4023
657.90	0.0000
661.65	68.4796
661.65	68.4796
664.57	0.0000
666.33	68.6166
666.33	68.6166
675.00	56.2583
677.61	77.6816
685.20	74.0313
692.80	76.2176
695.00	65.5295
696.49	69.4833
696.49	69.4833
697.00	74.3913
697.49	70.4900
698.33	78.3496
698.50	76.3966
699.00	72.4933
702.63	64.7528
706.10	77.6152
706.58	0.0000
706.67	63.8749
709.31	66.8943
711.68	69.9132
713.82	72.9305
717.42	64.1526
720.50	62.5850
721.93	0.0000
722.20	59.3306
722.78	67.5859
722.78	67.5859
722.89	67.5893
722.95	67.5909
723.30	57.7081
724.18	67.6243
727.18	69.3557
733.00	39.7227
735.90	59.6528
739.58	49.7815
742.81	77.7582
744.21	71.8154
747.13	63.9078
751.79	65.0238
752.31	69.0387
753.82	64.0734
755.35	52.0901
756.15	55.1128
756.87	55.1276
763.93	80.4023
765.79	67.3844
766.42	64.3828
766.84	66.4044
776.49	63.6183
778.00	56.5811
778.57	57.6040
778.89	57.6109
783.80	55.6915
785.46	52.6868
792.07	55.8634



795.84	57.9755
796.30	71.2100
798.80	57.6987
801.93	57.0855
805.60	50.0168
810.29	72.5965
810.76	73.6312
815.85	59.4245
817.79	60.4908
818.51	65.6344
819.60	59.5052
826.30	61.7051
828.27	0.0000
831.60	63.8815
831.96	66.9821
834.83	57.7664
836.80	0.0000
846.75	55.9380
848.13	51.8188
856.28	0.0000
856.80	45.0461
860.37	50.3063
867.32	62.5986
867.82	50.4349
871.10	42.8313
873.19	51.2251
874.81	49.1618
875.33	0.0000
876.40	45.0020
879.36	39.8091
880.27	39.8221
880.51	40.8729
881.50	47.1775
883.24	47.2050
884.67	50.3766
889.25	54.6584
896.60	47.4181
898.02	60.0907
899.00	58.0024
903.28	50.4571
911.07	47.6466
911.07	47.6466
911.07	47.6466
919.63	40.7030
920.93	50.7522
925.00	53.1836
925.24	48.9334
926.50	46.8252
935.52	50.1647
937.48	55.5356
944.10	55.6550
946.00	49.2636
949.00	43.9509
962.29	52.0315
964.01	48.4695
966.15	48.5024
968.20	48.5332
969.11	48.5475
969.11	48.5475
969.11	48.5475
977.42	30.6465
980.50	46.9166
983.50	47.6824
989.30	45.5971
996.32	53.3126
1001.03	53.3892
1001.68	59.9387
1004.76	47.9961
1021.30	0.0000
1024.50	0.0000
1034.80	48.6178
1036.00	45.8822
1037.82	44.9884
1038.57	47.7534
1038.76	0.0000
1045.16	42.3258
1046.59	52.4703
1048.07	55.2563



1050.47	46.0795
1050.47	46.0795
1062.04	47.1609
1063.62	54.5827
1076.63	55.7178
1077.35	52.0146
1078.86	52.0374
1085.78	52.1423
1099.22	56.0815
1112.02	50.6558
1112.84	55.1705
1115.52	53.1209
1120.29	46.7447
1120.29	46.7447
1120.29	46.7447
1120.29	46.7447
1120.51	53.1945
1121.28	59.2522
1124.00	0.0000
1129.67	64.6429
1131.51	0.0000
1147.95	0.0000
1167.94	60.9714
1173.22	57.2412
1175.09	58.2250
1177.93	64.0011
1189.05	64.1920
1204.90	71.1967
1205.75	0.0000
1213.00	84.8454
1221.42	73.4395
1230.97	71.6845
1235.34	83.4035
1236.41	0.0000
1238.25	69.8760
1246.25	75.8577
1260.41	0.0000
1271.85	40.1342
1274.45	46.0380
1274.54	45.0585
1291.56	53.1211
1298.22	0.0000
1312.09	34.6055
1325.50	39.6794
1325.50	39.6794
1332.49	27.8234
1333.61	31.8060
1360.21	38.0124
1362.66	0.0000
1365.15	29.0437
1368.21	19.0425
1368.53	0.0000
1376.25	21.0872
1384.27	28.1698
1394.10	17.1425
1395.20	23.1984
1407.95	25.2909
1434.06	18.3193
1436.60	26.4761
1457.56	0.0000
1460.81	22.5264
1489.15	21.1975
1509.49	16.5612
1596.49	18.4055
1620.62	15.8972
1678.03	0.0000
1691.02	8.6003
1691.02	8.6003
1706.46	0.0000
1750.46	0.0000
1764.49	11.2178
1764.49	11.2178
1764.49	11.2178
1764.49	11.2178
1770.23	13.1016
1771.40	6.5525
1791.20	0.0000
1808.65	4.7135



1836.01

9.4754



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G243457002

Total Uranium Activity	7.9376E-01	ug/g
Total Uranium Counting Unc.	3.7819E+00	ug/g
Total Uranium Tpu	1.9295E-06	ug/g
Total Uranium Mda	2.4154E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 936923                          SAMPLE ID   : G243457002
*  ANALYST       : MXR1                             DETECTOR    : GAM07
*  SAMPLE DATE   : 18-DEC-2009 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 4-JAN-2010 13:58:30.61          SAMPLE ALQT  : 111.610 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.544E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.838E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.724E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.802E+00

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VAX/VMS Nuclide Identification Report Generated 6-JAN-2010 11:55:54.71

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457003.CNF;1
Sample date        : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:57.
Sample ID          : G243457003      Sample quantity   : 1.19340E+02 GRAM
Detector name      : GAM10           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:00.99  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 936923          Detector SN#      :
Matrix Spike ID    :                 LCS ID            : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	74.70*	311	369	1.03	149.53	144	14	4.32E-02	11.4	1.03E+00
2	3	76.94	497	325	0.94	154.01	144	14	6.91E-02	7.5	
3	3	83.92*	91	382	1.32	167.97	163	30	1.26E-02	38.7	1.29E+00
4	3	87.12	253	357	1.33	174.37	163	30	3.51E-02	14.3	
5	3	89.76	207	291	1.24	179.63	163	30	2.87E-02	15.6	
6	3	92.68*	238	306	1.35	185.46	163	30	3.31E-02	15.7	
7	0	105.23	92	288	1.43	210.55	207	8	1.27E-02	33.8	
8	0	186.03*	180	331	1.29	372.01	368	10	2.49E-02	21.2	
9	0	209.26	150	209	1.22	418.44	415	8	2.08E-02	18.6	
10	6	238.61*	1274	154	1.16	477.09	470	19	1.77E-01	3.3	1.80E+00
11	6	241.55	345	264	1.96	482.97	470	19	4.79E-02	14.1	
12	0	270.28	128	186	1.48	540.37	536	10	1.78E-02	21.7	
13	0	277.14	72	120	1.00	554.09	551	6	1.00E-02	26.7	
14	0	295.21*	428	141	1.14	590.21	586	10	5.94E-02	7.2	
15	0	299.74	83	142	1.42	599.25	596	9	1.15E-02	28.0	
16	0	327.97	62	122	1.38	655.68	653	8	8.66E-03	32.9	
17	0	338.52*	249	178	1.19	676.76	672	11	3.45E-02	12.5	
18	0	351.93*	675	161	1.34	703.56	699	13	9.37E-02	5.5	
19	0	463.48	87	122	1.58	926.52	922	14	1.20E-02	28.9	
20	0	511.08*	128	169	1.60	1021.68	1014	16	1.78E-02	26.6	
21	0	583.48*	384	87	1.45	1166.41	1161	11	5.34E-02	7.1	
22	0	609.69*	463	88	1.40	1218.80	1213	12	6.43E-02	6.3	
23	3	662.39	73	52	1.88	1324.16	1319	17	1.01E-02	22.4	1.01E+00
24	3	666.30	30	35	1.92	1331.98	1319	17	4.22E-03	41.5	
25	0	727.90*	67	69	1.20	1455.14	1449	11	9.24E-03	27.4	
26	0	768.21	55	38	2.12	1535.73	1531	9	7.62E-03	24.4	
27	0	911.73*	292	81	1.43	1822.71	1815	16	4.05E-02	9.1	
28	2	965.07	61	31	2.12	1929.35	1922	34	8.44E-03	23.5	1.30E+00
29	2	969.65*	162	24	1.80	1938.52	1922	34	2.25E-02	10.2	
30	0	1122.80	65	70	1.54	2244.81	2233	14	9.04E-03	29.5	
31	0	1156.08	30	24	1.53	2311.36	2306	12	4.10E-03	38.0	
32	0	1238.86*	31	30	1.39	2476.93	2473	8	4.36E-03	36.8	
33	0	1461.62*	747	16	1.73	2922.56	2915	18	1.04E-01	3.9	
34	0	1765.92*	104	10	2.27	3531.42	3524	19	1.44E-02	12.6	

Flag: "\*" = Peak area was modified by background subtraction



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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:57
Sample ID         : G243457003 Sample quantity : 119.34 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA10 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:00.99 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.989E+01	2.307E+00	4.624E-01	3.983E-02	43.015
CD-109	+	88.03	*	4.165E+00	1.277E+00	1.252E+00	1.420E-01	3.326
SN-126		64.28		-1.519E-01	6.968E-01	1.140E+00	1.950E-01	-0.133
	+	86.94		1.697E+00	8.613E-01	5.192E-01	2.180E-01	3.268
	+	87.57	*	4.081E-01	1.252E-01	1.236E-01	1.399E-02	3.302
BA-137M	+	661.65	*	1.082E-01	4.874E-02	5.599E-02	2.763E-03	1.932
CS-137	+	661.65	*	1.143E-01	5.152E-02	5.919E-02	2.937E-03	1.932
EU-155		48.70		-3.387E+00	6.027E+00	9.871E+00	1.186E+00	-0.343
		60.01		-2.791E+00	7.755E+00	1.273E+01	1.568E+00	-0.219
	+	86.54		4.919E-01	1.510E-01	1.515E-01	1.715E-02	3.246
	+	105.31	*	2.189E-01	1.490E-01	1.800E-01	1.493E-02	1.216
TL-208	+	277.35		7.251E-01	3.949E-01	6.441E-01	7.025E-02	1.126
	+	510.84		6.373E-01	3.452E-01	2.187E-01	2.299E-02	2.913
	+	583.14	*	5.466E-01	8.585E-02	5.697E-02	3.828E-03	9.594
		860.37		6.016E-01	3.151E-01	5.892E-01	5.754E-02	1.021
BI-211		72.87		5.846E+00	4.428E+00	6.879E+00	7.565E-01	0.850
	+	351.07	*	4.220E+00	5.581E-01	3.292E-01	2.400E-02	12.819
PB-212	+	74.81		2.356E+00	6.364E-01	6.466E-01	9.309E-02	3.644
	+	77.11		2.087E+00	3.862E-01	3.583E-01	3.918E-02	5.825
	+	87.30		1.888E+00	6.090E-01	5.742E-01	8.664E-02	3.287
	+	238.63	*	1.757E+00	1.771E-01	9.265E-02	7.028E-03	18.959
	+	300.09		1.753E+00	9.935E-01	1.088E+00	9.564E-02	1.611
PO-212	+	74.81		2.356E+00	6.364E-01	6.466E-01	9.309E-02	3.644
	+	77.11		2.087E+00	3.862E-01	3.583E-01	3.918E-02	5.825
	+	87.30		1.888E+00	6.090E-01	5.742E-01	8.664E-02	3.287
		115.19		8.920E-01	3.675E+00	6.034E+00	4.317E-01	0.148
	+	238.63	*	1.757E+00	1.771E-01	9.265E-02	7.028E-03	18.959
	+	300.09		1.753E+00	9.935E-01	1.088E+00	9.564E-02	1.611
BI-214	+	609.31	*	1.244E+00	1.837E-01	1.102E-01	8.384E-03	11.292
		1120.29		1.139E+00	4.146E-01	7.694E-01	7.519E-02	1.480
	+	1764.49		2.112E+00	5.509E-01	3.384E-01	2.259E-02	6.242
PB-214	+	74.81		4.060E+00	1.072E+00	1.114E+00	1.473E-01	3.644
	+	77.11		3.578E+00	7.160E-01	6.143E-01	8.186E-02	5.825
	+	87.30		3.234E+00	1.023E+00	9.837E-01	1.346E-01	3.287



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	241.98		2.858E+00	8.410E-01	5.578E-01	4.641E-02	5.123
	+	295.21		1.588E+00	2.709E-01	2.056E-01	1.857E-02	7.724
	+	351.92	*	1.468E+00	2.087E-01	1.140E-01	1.023E-02	12.872
	+	74.81		4.060E+00	1.072E+00	1.114E+00	1.473E-01	3.644
	+	77.11		3.578E+00	7.160E-01	6.143E-01	8.186E-02	5.825
	+	87.30		3.234E+00	1.023E+00	9.837E-01	1.346E-01	3.287
PO-216	+	241.98		2.858E+00	8.410E-01	5.578E-01	4.641E-02	5.123
	+	295.21		1.588E+00	2.709E-01	2.056E-01	1.857E-02	7.724
	+	351.92	*	1.468E+00	2.087E-01	1.140E-01	1.023E-02	12.872
	+	74.81		2.356E+00	6.364E-01	6.466E-01	9.309E-02	3.644
	+	77.11		2.087E+00	3.862E-01	3.583E-01	3.918E-02	5.825
	+	87.30		1.888E+00	6.090E-01	5.742E-01	8.664E-02	3.287
PO-218	+	238.63	*	1.757E+00	1.771E-01	9.265E-02	7.028E-03	18.959
	+	300.09		1.753E+00	9.935E-01	1.088E+00	9.564E-02	1.611
	+	74.81		4.060E+00	1.072E+00	1.114E+00	1.473E-01	3.644
	+	77.11		3.578E+00	7.160E-01	6.143E-01	8.186E-02	5.825
	+	87.30		3.234E+00	1.023E+00	9.837E-01	1.346E-01	3.287
	+	241.98		2.858E+00	8.410E-01	5.578E-01	4.641E-02	5.123
RA-224	+	295.21		1.588E+00	2.709E-01	2.056E-01	1.857E-02	7.724
	+	351.92	*	1.468E+00	2.087E-01	1.140E-01	1.023E-02	12.872
RA-226	+	240.98	*	5.419E+00	1.565E+00	1.054E+00	6.471E-02	5.140
	+	609.31	*	1.244E+00	1.837E-01	1.102E-01	8.384E-03	11.292
AC-228	+	1120.29		1.139E+00	4.146E-01	7.694E-01	7.519E-02	1.480
	+	1764.49		2.112E+00	5.509E-01	3.384E-01	2.259E-02	6.242
	+	338.32		1.717E+00	8.221E-01	3.599E-01	1.472E-01	4.770
	+	911.07	*	1.905E+00	4.202E-01	2.043E-01	2.521E-02	9.323
RA-228	+	969.11		1.874E+00	5.849E-01	3.489E-01	8.250E-02	5.370
	+	338.32		1.717E+00	8.221E-01	3.599E-01	1.472E-01	4.770
	+	911.07	*	1.905E+00	4.202E-01	2.043E-01	2.521E-02	9.323
TH-228	+	969.11		1.874E+00	5.849E-01	3.489E-01	8.250E-02	5.370
	+	74.81		2.397E+00	6.079E-01	6.577E-01	7.240E-02	3.644
	+	77.11		2.123E+00	3.929E-01	3.645E-01	3.985E-02	5.825
	+	87.30		1.920E+00	5.889E-01	5.841E-01	6.600E-02	3.287
TH-230	+	238.63	*	1.787E+00	1.801E-01	9.424E-02	7.149E-03	18.959
	+	300.09		1.783E+00	1.451E+00	1.107E+00	6.533E-01	1.611
	+	609.31	*	1.244E+00	1.837E-01	1.102E-01	8.384E-03	11.292
	+	1120.29		1.139E+00	4.146E-01	7.694E-01	7.519E-02	1.480
TH-232	+	1764.49		2.112E+00	5.509E-01	3.384E-01	2.259E-02	6.242
	+	338.32		1.717E+00	4.428E-01	3.599E-01	2.413E-02	4.770
	+	911.07	*	1.905E+00	4.202E-01	2.043E-01	2.521E-02	9.323
U-234	+	969.11		1.874E+00	5.849E-01	3.489E-01	8.250E-02	5.370
	+	609.31	*	1.244E+00	1.837E-01	1.102E-01	8.384E-03	11.292
	+	1120.29		1.139E+00	4.146E-01	7.694E-01	7.519E-02	1.480
U-235	+	1764.49		2.112E+00	5.509E-01	3.384E-01	2.259E-02	6.242
	+	89.95		4.381E+00	1.945E+00	1.635E+00	5.158E-01	2.679
	+	93.35		2.914E+00	1.237E+00	9.400E-01	2.680E-01	3.100
	+	105.00		2.144E+00	1.583E+00	1.765E+00	5.249E-01	1.215
	+	143.76	*	-4.226E-03	2.164E-01	3.455E-01	5.649E-02	-0.012
		163.35		3.334E-01	4.803E-01	7.871E-01	1.408E-01	0.424



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	185.71		1.750E-01	7.470E-02	7.309E-02	4.114E-03	2.395
		205.31		5.734E-01	5.640E-01	8.813E-01	1.585E-01	0.651
NP-237	+	86.50	*	1.199E+00	4.431E-01	3.695E-01	8.683E-02	3.244
		95.87		-5.950E-01	1.060E+00	1.484E+00	3.709E-01	-0.401
AM-243	+	74.67	*	3.820E-01	9.680E-02	1.053E-01	1.153E-02	3.627
	+	86.72		4.494E+01	1.379E+01	1.380E+01	1.555E+00	3.256
		117.66		-9.516E-01	3.852E+00	6.179E+00	4.287E-01	-0.154
		142.18		-4.931E+00	1.788E+01	2.820E+01	1.683E+00	-0.175
ANH-511	+	511.00	*	1.377E-01	7.368E-02	4.726E-02	3.028E-03	2.913

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-1.024E-01	3.340E-01	5.261E-01	3.912E-02	-0.195
NA-22		1274.54	*	1.792E-02	4.662E-02	8.057E-02	6.241E-03	0.222
NA-24		1368.53	*	1.847E+00	4.662E-02	Half-Life too short		
AL-26		1129.67		7.178E-01	1.741E+00	3.033E+00	2.128E-01	0.237
		1808.65	*	8.876E-03	2.223E-02	4.017E-02	2.547E-03	0.221
TI-44		67.85		2.596E-04	5.954E-02	9.884E-02	1.116E-02	0.003
	+	78.38	*	3.852E-01	7.128E-02	8.197E-02	8.970E-03	4.699
SC-46		889.25	*	-2.799E-02	4.118E-02	6.237E-02	6.172E-03	-0.449
		1120.51		2.018E-01	7.126E-02	1.346E-01	9.671E-03	1.499
V-48		944.10		-6.705E-01	1.046E+00	1.585E+00	1.536E-01	-0.423
		983.50	*	-4.730E-02	7.901E-02	1.193E-01	1.103E-02	-0.397
		1312.09		7.211E-03	8.214E-02	1.379E-01	1.151E-02	0.052
CR-51		320.08	*	1.396E-01	3.739E-01	6.330E-01	4.572E-02	0.220
MN-52		744.21		-1.473E-01	3.017E-01	4.774E-01	3.114E-02	-0.309
		848.13		1.298E+00	8.991E+00	1.495E+01	1.325E+00	0.087
		935.52		3.756E-01	3.586E-01	6.367E-01	6.225E-02	0.590
		1246.25		2.201E+00	1.091E+01	1.811E+01	1.319E+00	0.122
		1333.61		-6.053E+00	7.346E+00	1.094E+01	9.505E-01	-0.553
		1434.06	*	-1.189E-01	3.439E-01	5.395E-01	4.559E-02	-0.220
MN-54		834.83	*	4.119E-02	3.861E-02	6.898E-02	5.893E-03	0.597
CO-56		846.75	*	-1.277E-02	4.195E-02	6.681E-02	5.900E-03	-0.191
		977.42		-3.147E-01	3.598E+00	4.973E+00	4.635E-01	-0.063
		1037.82		-1.534E-01	3.053E-01	4.619E-01	4.154E-02	-0.332
		1175.09		3.697E-01	2.151E+00	3.664E+00	2.269E-01	0.101
	+	1238.25		1.334E-01	9.882E-02	1.786E-01	1.332E-02	0.747
		1360.21		2.579E-01	9.174E-01	1.582E+00	1.367E-01	0.163
		1771.40		1.001E-01	2.536E-01	4.054E-01	2.686E-02	0.247
CO-57		122.06	*	1.389E-02	2.524E-02	4.193E-02	2.765E-03	0.331
		136.48		6.376E-02	2.200E-01	3.591E-01	2.512E-02	0.178
CO-58		810.76	*	-2.485E-02	3.921E-02	6.034E-02	4.828E-03	-0.412
FE-59		142.65		3.121E-01	2.822E+00	4.534E+00	2.702E-01	0.069
		192.34		-4.649E-01	1.006E+00	1.551E+00	1.824E-01	-0.300
		1099.22	*	1.839E-02	9.332E-02	1.535E-01	1.281E-02	0.120
		1291.56		6.330E-02	1.374E-01	2.392E-01	2.213E-02	0.265
CO-60		1173.22		2.341E-03	4.364E-02	7.346E-02	4.530E-03	0.032



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		6.750E-03	4.330E-02	7.309E-02	6.352E-03	0.092
ZN-65	1115.52	*		-2.160E-01	1.323E-01	1.385E-01	1.009E-02	-1.559
GE-68	1077.35	*		1.505E+00	1.338E+00	2.398E+00	1.900E-01	0.628
AS-73	53.44	*		2.340E-01	1.701E+00	2.795E+00	3.699E-01	0.084
AS-74	595.88	*		8.492E-02	9.281E-02	1.667E-01	9.521E-03	0.510
	634.78			-3.437E-02	3.669E-01	6.097E-01	3.218E-02	-0.056
SE-75	66.05			-5.778E+00	6.448E+00	1.027E+01	1.323E+00	-0.563
	96.73			-4.953E-01	9.070E-01	1.270E+00	1.798E-01	-0.390
	121.11			-1.535E-02	1.402E-01	2.262E-01	2.215E-02	-0.068
	136.00			3.482E-02	4.111E-02	6.871E-02	4.267E-03	0.507
	198.60			-1.591E+00	1.901E+00	2.783E+00	1.972E-01	-0.572
	264.65	*		1.587E-02	4.498E-02	7.152E-02	4.562E-03	0.222
	279.53			1.010E-01	1.253E-01	1.943E-01	1.331E-02	0.520
	303.91			-5.717E-01	2.286E+00	3.269E+00	3.277E-01	-0.175
	400.65			1.892E-01	2.701E-01	4.601E-01	4.493E-02	0.411
BR-77	87.88	+		1.592E+03	4.882E+02	6.654E+02	7.544E+01	2.392
	200.40			1.186E+02	2.859E+02	4.616E+02	2.662E+01	0.257
	239.00	+		5.004E+02	4.518E+01	7.165E+01	4.386E+00	6.985
	249.79			-1.171E+02	1.113E+02	1.760E+02	1.093E+01	-0.665
	281.68			5.089E+01	1.713E+02	2.703E+02	1.740E+01	0.188
	297.23			5.162E+02	1.386E+02	2.068E+02	1.350E+01	2.496
	303.76			-1.018E+02	3.407E+02	4.852E+02	3.184E+01	-0.210
	439.47			1.082E+02	2.437E+02	4.091E+02	2.750E+01	0.264
	484.57			-9.128E+01	4.148E+02	6.575E+02	4.308E+01	-0.139
	520.65	*		-4.299E+00	1.893E+01	2.980E+01	1.891E+00	-0.144
	574.64			-4.234E+02	3.426E+02	5.179E+02	3.065E+01	-0.818
	578.91			8.401E+01	1.626E+02	2.520E+02	1.481E+01	0.333
	585.48			3.052E+03	4.889E+02	9.460E+02	5.502E+01	3.226
	755.35			2.702E+02	3.174E+02	5.598E+02	3.782E+01	0.483
	817.79			1.251E+01	2.292E+02	3.792E+02	3.087E+01	0.033
SR-82	698.33			8.959E+00	3.850E+01	6.515E+01	3.655E+00	0.137
	776.49	*		-4.930E-01	4.326E-01	6.399E-01	4.613E-02	-0.770
	1395.20			-1.253E+01	1.146E+01	1.547E+01	1.324E+00	-0.810
RB-83	520.41	*		-8.440E-03	7.224E-02	1.148E-01	7.288E-03	-0.073
	529.64			7.685E-02	1.060E-01	1.802E-01	1.132E-02	0.427
	552.65			4.752E-02	2.037E-01	3.322E-01	2.029E-02	0.143
RB-84	881.50	*		-8.351E-03	7.668E-02	1.241E-01	1.203E-02	-0.067
KR-85	513.99	*		1.728E+01	8.575E+00	1.419E+01	9.066E-01	1.218
SR-85	513.99	*		9.047E-02	4.489E-02	7.429E-02	4.746E-03	1.218
RB-86	1076.63	*		5.460E-01	8.994E-01	1.541E+00	1.223E-01	0.354
Y-88	898.02			-2.068E-02	4.367E-02	6.778E-02	6.886E-03	-0.305
	1836.01	*		-1.950E-02	3.239E-02	4.385E-02	2.690E-03	-0.445
ZR-88	392.90	*		6.033E-03	3.268E-02	5.409E-02	3.676E-03	0.112
Y-91	1204.90	*		4.625E+00	1.830E+01	3.134E+01	2.082E+00	0.148
NB-94	702.63	*		1.471E-02	3.501E-02	6.006E-02	3.419E-03	0.245
	871.10			-2.098E-02	3.646E-02	5.620E-02	5.302E-03	-0.373
NB-95	765.79	*		3.116E-02	4.766E-02	7.367E-02	5.141E-03	0.423
NB-95M	235.69	*		-3.933E-02	1.409E-01	2.058E-01	1.596E-02	-0.191
ZR-95	724.18			-7.189E-02	1.043E-01	1.367E-01	9.743E-03	-0.526



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	756.15	*		1.496E-02	7.701E-02	1.294E-01	1.017E-02	0.116
	657.90	*		-2.211E-01	7.701E-02	Half-Life	too short	
	1024.50			3.106E+01	7.701E-02	Half-Life	too short	
ZR-97	254.15			4.703E+01	7.701E-02	Half-Life	too short	
	355.39			3.666E+00	7.701E-02	Half-Life	too short	
	507.63	*		9.191E+00	7.701E-02	Half-Life	too short	
	602.52			-1.910E+01	7.701E-02	Half-Life	too short	
	1021.30			3.104E+01	7.701E-02	Half-Life	too short	
	1147.95			1.356E+01	7.701E-02	Half-Life	too short	
	1362.66			1.374E+01	7.701E-02	Half-Life	too short	
MO-99	1750.46			3.607E+00	7.701E-02	Half-Life	too short	
	140.51			-6.332E+00	4.353E+01	6.852E+01	1.850E+01	-0.092
	181.06			7.853E+00	3.180E+01	4.559E+01	7.782E+00	0.172
	366.43			1.396E+01	1.428E+02	2.360E+02	1.599E+01	0.059
	739.58	*		1.854E+00	1.999E+01	3.266E+01	4.591E+00	0.057
TC-99M	778.00			-5.480E+01	5.907E+01	8.920E+01	6.461E+00	-0.614
	140.51	*		-1.282E+12	5.907E+01	Half-Life	too short	
RH-101	127.23			4.183E-02	3.343E-02	5.681E-02	3.631E-03	0.736
	198.01	*		-3.396E-02	3.456E-02	5.020E-02	2.884E-03	-0.677
RH-102	325.23			5.194E-03	2.340E-01	3.407E-01	2.269E-02	0.015
	418.52			5.012E-02	2.658E-01	4.393E-01	2.974E-02	0.114
	475.06	*		-3.265E-03	2.975E-02	4.765E-02	3.143E-03	-0.069
	631.29			2.539E-02	5.251E-02	9.135E-02	4.860E-03	0.278
	697.49			5.113E-02	7.883E-02	1.376E-01	7.695E-03	0.372
+ RU-103	766.84			2.499E-01	1.232E-01	2.022E-01	1.415E-02	1.236
	1046.59			5.477E-03	1.098E-01	1.782E-01	1.497E-02	0.031
	1112.84			1.839E-01	2.785E-01	4.377E-01	3.204E-02	0.420
+ RH-106	497.08	*		-3.021E-02	4.378E-02	6.535E-02	8.479E-03	-0.462
	610.33			1.391E+01	2.765E+00	3.266E+00	5.006E-01	4.258
+ RU-106	511.85			6.901E-01	3.694E-01	4.540E-01	2.906E-02	1.520
	621.84	*		4.347E-01	3.279E-01	5.962E-01	6.892E-02	0.729
	1050.47			-4.250E-01	2.307E+00	3.642E+00	3.038E-01	-0.117
AG-108M	511.85			6.901E-01	3.694E-01	4.540E-01	2.906E-02	1.520
	621.84	*		4.347E-01	3.249E-01	5.962E-01	3.238E-02	0.729
	1050.47			-4.250E-01	2.307E+00	3.642E+00	3.038E-01	-0.117
AG-110M	433.93	*		-1.072E-02	3.321E-02	5.268E-02	3.777E-03	-0.203
	614.37			1.613E-02	3.838E-02	5.887E-02	3.551E-03	0.274
	722.95			-1.771E-03	4.602E-02	6.599E-02	4.330E-03	-0.027
IN-111	657.75	*		-1.108E-02	3.692E-02	5.158E-02	2.795E-03	-0.215
	677.61			-1.019E-01	3.078E-01	4.990E-01	2.801E-02	-0.204
	706.67			-2.479E-01	2.253E-01	3.411E-01	2.088E-02	-0.727
	763.93			4.996E-02	1.797E-01	2.668E-01	1.931E-02	0.187
	884.67			1.341E-02	5.131E-02	8.608E-02	8.628E-03	0.156
	937.48			-4.817E-02	1.187E-01	1.851E-01	1.857E-02	-0.260
	1384.27			-1.205E-01	1.871E-01	2.832E-01	2.501E-02	-0.426
IN-113M	171.28			3.589E-01	1.705E+00	2.744E+00	1.509E-01	0.131
	245.39	*		5.716E-01	1.834E+00	2.777E+00	1.715E-01	0.206
SN-113	391.69	*		1.465E-02	4.737E-02	7.901E-02	5.634E-03	0.185
	391.69	*		1.465E-02	4.737E-02	7.901E-02	5.634E-03	0.185



---- Non-Identified Nuclides ----

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IN-114M	190.27	*		6.815E-02	2.099E-01	3.020E-01	1.712E-02	0.226
CD-115	260.90			1.977E+02	2.268E+02	3.967E+02	2.498E+01	0.498
	492.35			-2.979E-01	6.785E+01	1.093E+02	7.118E+00	-0.003
	527.90	*		1.045E+01	1.987E+01	3.327E+01	2.094E+00	0.314
SN-117M	156.02			-2.545E+00	2.592E+00	3.947E+00	2.234E-01	-0.645
	158.56	*		-1.024E-02	6.122E-02	9.713E-02	5.447E-03	-0.105
SB-122	563.90	*		1.641E+00	3.458E+00	5.741E+00	3.453E-01	0.286
	692.80			-6.384E+01	7.741E+01	1.181E+02	6.502E+00	-0.541
I-123	159.00	*		-2.900E+01	7.741E+01	Half-Life	too short	
	528.96			5.682E+03	7.741E+01	Half-Life	too short	
TE-123M	159.00	*		-1.201E-02	2.935E-02	4.599E-02	2.612E-03	-0.261
I-124	602.71	*		-4.223E-01	8.951E-01	1.359E+00	7.666E-02	-0.311
	722.78			-5.165E-01	6.639E+00	9.474E+00	5.768E-01	-0.055
	1325.50			-4.737E+01	5.156E+01	7.525E+01	6.451E+00	-0.629
	1376.25			2.851E+01	4.906E+01	8.621E+01	7.419E+00	0.331
	1509.49			2.562E+01	2.560E+01	4.722E+01	3.861E+00	0.542
	1691.02			2.540E+00	5.891E+00	1.032E+01	7.425E-01	0.246
SB-124	602.71			-1.812E-02	3.841E-02	5.831E-02	3.291E-03	-0.311
	645.85			3.470E-01	4.630E-01	8.235E-01	4.914E-02	0.421
	709.31			2.209E+00	2.888E+00	5.083E+00	2.960E-01	0.434
	713.82			-8.870E-01	1.723E+00	2.735E+00	2.810E-01	-0.324
	722.78			-3.213E-02	4.130E-01	5.894E-01	3.742E-02	-0.055
	968.20	+		1.973E+01	4.430E+00	8.084E+00	7.620E-01	2.441
	1045.16			-5.420E-01	2.440E+00	3.832E+00	3.227E-01	-0.141
	1325.50			-3.147E+00	3.426E+00	5.000E+00	4.286E-01	-0.629
	1368.21			8.908E-02	1.673E+00	2.790E+00	3.760E-01	0.032
	1436.60			5.285E-01	4.111E+00	6.899E+00	5.825E-01	0.077
	1691.02	*		3.727E-02	8.645E-02	1.515E-01	1.151E-02	0.246
SB-125	427.89	*		-4.158E-03	8.955E-02	1.452E-01	1.011E-02	-0.029
	463.38	+		8.414E-01	4.904E-01	5.828E-01	4.371E-02	1.444
	600.56			-1.186E-01	1.684E-01	2.674E-01	1.762E-02	-0.444
	635.90			9.265E-02	2.496E-01	4.309E-01	2.732E-02	0.215
TE-125M	109.28	*		-1.175E-01	1.097E+01	1.594E+01	1.531E+00	-0.007
I-126	388.63			1.204E-01	2.361E-01	3.988E-01	2.710E-02	0.302
	666.33	+	*	2.547E-01	2.116E-01	3.144E-01	1.577E-02	0.810
	753.82			2.096E+00	1.692E+00	3.073E+00	2.066E-01	0.682
SB-126	223.80			1.049E+00	4.434E+00	7.567E+00	4.531E-01	0.139
	278.60	+		5.351E+00	2.875E+00	5.254E+00	3.373E-01	1.018
	296.50	+		1.765E+01	2.802E+00	4.273E+00	2.788E-01	4.130
	414.70			-3.232E-02	7.716E-02	1.216E-01	8.241E-03	-0.266
	415.30			-9.198E-01	6.266E+00	1.009E+01	6.839E-01	-0.091
	555.20			-1.317E+00	4.712E+00	7.350E+00	4.475E-01	-0.179
	573.80			-6.135E-01	1.104E+00	1.781E+00	1.055E-01	-0.345
	593.00			-6.646E-01	9.759E-01	1.524E+00	8.751E-02	-0.436
	656.30			-6.631E-01	3.933E+00	5.594E+00	2.800E-01	-0.119
	666.33	+		1.069E-01	8.884E-02	1.320E-01	6.619E-03	0.810
	675.00			1.891E-01	2.139E+00	3.593E+00	1.859E-01	0.053
	695.00			-6.487E-02	9.298E-02	1.435E-01	7.962E-03	-0.452
	697.00			2.164E-01	3.111E-01	5.443E-01	3.040E-02	0.398



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		720.50	*	-1.146E-03	1.637E-01	2.564E-01	1.549E-02	-0.004
		856.80		-9.673E-01	5.637E-01	7.540E-01	6.844E-02	-1.283
		989.30		7.744E-01	1.381E+00	2.376E+00	2.181E-01	0.326
		1034.80		2.012E+00	9.518E+00	1.576E+01	1.351E+00	0.128
		1213.00		-5.050E-01	5.140E+00	8.426E+00	5.701E-01	-0.060
		61.10		-2.751E+01	1.213E+02	2.002E+02	2.910E+01	-0.137
		252.40		-4.196E+00	6.140E+00	9.504E+00	3.970E+00	-0.441
		290.80		1.897E+00	3.285E+01	4.835E+01	4.985E+00	0.039
		411.60		4.698E+00	1.827E+01	3.027E+01	4.619E+00	0.155
		444.90		4.262E+00	1.331E+01	2.212E+01	2.632E+00	0.193
		473.00		7.142E-02	2.411E+00	3.906E+00	4.763E-01	0.018
		543.00		2.250E+00	2.337E+01	3.773E+01	5.132E+00	0.060
		603.60		-7.132E-01	1.697E+01	2.471E+01	2.793E+00	-0.029
		685.20	*	-1.246E+00	1.972E+00	3.107E+00	3.074E-01	-0.401
		698.50		5.981E+00	2.319E+01	3.929E+01	5.845E+00	0.152
XE-127		722.20		-2.196E+01	4.841E+01	6.579E+01	6.614E+00	-0.334
		783.80		2.601E+00	5.538E+00	9.472E+00	1.153E+00	0.275
		57.60		-6.663E+00	1.044E+01	1.692E+01	2.151E+00	-0.394
		145.22		-3.870E-01	7.539E-01	1.183E+00	6.975E-02	-0.327
		172.10		3.736E-02	1.315E-01	2.124E-01	1.169E-02	0.176
I-131		202.84	*	1.396E-03	4.684E-02	7.959E-02	4.609E-03	0.018
		374.96		1.444E-01	2.050E-01	3.513E-01	2.383E-02	0.411
		80.18		3.748E+00	7.750E+00	9.420E+00	1.039E+00	0.398
TE-132		284.30		-1.205E+00	1.766E+00	2.831E+00	1.999E-01	-0.426
		364.48	*	6.603E-02	1.362E-01	2.307E-01	1.701E-02	0.286
		636.97		-7.228E-01	1.690E+00	2.724E+00	1.643E-01	-0.265
		722.89		-4.799E-01	9.171E+00	1.313E+01	8.126E-01	-0.037
		49.72		-5.608E+01	6.921E+01	1.115E+02	1.638E+01	-0.503
BA-133		111.76		-1.211E+01	4.571E+01	7.344E+01	7.753E+00	-0.165
		116.30		8.922E-01	4.265E+01	6.932E+01	7.115E+00	0.013
		228.16	*	-1.937E-01	1.044E+00	1.746E+00	2.596E-01	-0.111
		53.15		-3.608E+00	7.408E+00	1.185E+01	1.570E+00	-0.304
		79.62		-4.116E-01	1.942E+00	2.227E+00	3.711E-01	-0.185
I-133		81.00		2.014E-03	1.420E-01	1.660E-01	2.869E-02	0.012
	+	276.40		7.168E-01	3.941E-01	6.903E-01	9.144E-02	1.038
		302.84		-1.136E-01	1.568E-01	2.145E-01	2.585E-02	-0.530
		356.01	*	-6.195E-03	4.896E-02	6.988E-02	8.431E-03	-0.089
		383.85		-5.205E-02	2.988E-01	4.836E-01	5.529E-02	-0.108
CS-134	+	510.53		6.746E+00	2.988E-01	Half-Life	too short	
		529.87	*	1.092E-02	2.988E-01	Half-Life	too short	
		706.58		-2.408E+00	2.988E-01	Half-Life	too short	
		856.28		-3.278E+00	2.988E-01	Half-Life	too short	
		875.33		-5.081E-03	2.988E-01	Half-Life	too short	
		1236.41		3.396E+00	2.988E-01	Half-Life	too short	
		1298.22		4.821E-01	2.988E-01	Half-Life	too short	
		475.35		1.412E-01	1.891E+00	3.074E+00	2.027E-01	0.046
		563.23		5.030E-02	3.834E-01	6.141E-01	3.769E-02	0.082
		569.32		1.110E-01	1.951E-01	3.212E-01	1.970E-02	0.346
		604.70		4.507E-03	3.526E-02	5.233E-02	2.959E-03	0.086



---- Non-Identified Nuclides ----

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CS-135 I-135	795.84	*		4.638E-02	4.537E-02	8.126E-02	6.264E-03	0.571
	801.93			-2.410E-01	3.994E-01	6.196E-01	4.851E-02	-0.389
	1038.57			1.626E+00	3.560E+00	6.068E+00	5.169E-01	0.268
	1167.94			2.805E+00	2.574E+00	4.724E+00	2.963E-01	0.594
	1365.15			-1.384E-01	1.172E+00	1.904E+00	1.718E-01	-0.073
	268.24	*		7.182E-02	1.772E-01	2.682E-01	2.167E-02	0.268
	288.45			-1.608E+11	1.772E-01	Half-Life	too short	
	417.63			-6.726E+10	1.772E-01	Half-Life	too short	
	546.56			-6.930E+11	1.772E-01	Half-Life	too short	
	836.80			8.840E+11	1.772E-01	Half-Life	too short	
	1038.76			1.157E+12	1.772E-01	Half-Life	too short	
	1124.00	+		2.094E+13	1.772E-01	Half-Life	too short	
	1131.51			-8.664E+11	1.772E-01	Half-Life	too short	
	1260.41	*		-6.729E+11	1.772E-01	Half-Life	too short	
	1457.56			1.397E+13	1.772E-01	Half-Life	too short	
CS-136	1678.03			-9.714E+10	1.772E-01	Half-Life	too short	
	1706.46			3.353E+12	1.772E-01	Half-Life	too short	
	1791.20			-2.027E+12	1.772E-01	Half-Life	too short	
	66.91			-8.279E-01	1.124E+00	1.799E+00	3.081E-01	-0.460
	86.29	+		5.907E+00	1.897E+00	2.476E+00	3.648E-01	2.386
	153.22			4.060E-01	7.485E-01	1.229E+00	8.802E-02	0.330
	163.89			-3.455E-01	1.227E+00	1.933E+00	1.356E-01	-0.179
	176.55			-1.380E-02	4.133E-01	6.564E-01	4.132E-02	-0.021
	273.65			4.848E-01	7.028E-01	8.188E-01	5.844E-02	0.592
	340.57			4.315E-01	1.728E-01	2.892E-01	2.033E-02	1.492
	818.51			2.736E-02	7.988E-02	1.358E-01	1.109E-02	0.201
	1048.07	*		1.386E-03	1.156E-01	1.868E-01	1.635E-02	0.007
	1235.34			4.753E-02	7.273E-01	1.054E+00	1.139E-01	0.045
	165.85	*		-7.898E-03	3.085E-02	4.861E-02	2.655E-03	-0.162
	162.64			9.797E-01	8.298E-01	1.399E+00	8.783E-02	0.700
CE-139 BA-140	304.84			5.500E-01	1.512E+00	2.263E+00	6.216E-01	0.243
	423.70			-3.337E-02	2.060E+00	3.349E+00	1.071E+00	-0.010
	537.32	*		1.432E-01	2.877E-01	4.745E-01	1.547E-01	0.302
	328.77	+		5.914E-01	3.913E-01	6.051E-01	4.408E-02	0.977
	432.53			-2.553E-01	2.258E+00	3.640E+00	2.646E-01	-0.070
	487.03			6.668E-02	1.522E-01	2.540E-01	1.836E-02	0.263
	751.79			-9.997E-01	2.044E+00	3.242E+00	2.540E-01	-0.308
	815.85			1.882E-02	3.503E-01	5.795E-01	5.300E-02	0.032
	867.82			1.118E+00	1.555E+00	2.720E+00	2.658E-01	0.411
	919.63			-3.764E+00	3.304E+00	3.954E+00	4.640E-01	-0.952
	925.24			-9.970E-02	1.221E+00	1.972E+00	2.042E-01	-0.051
	1596.49	*		-3.331E-02	9.851E-02	1.514E-01	1.175E-02	-0.220
	145.44	*		-1.011E-02	6.801E-02	1.085E-01	6.643E-03	-0.093
	57.37			-3.538E-03	6.801E-02	Half-Life	too short	
	231.56			1.469E-03	6.801E-02	Half-Life	too short	
CE-143	293.26	*		1.629E-03	6.801E-02	Half-Life	too short	
	350.59	+		9.011E-02	6.801E-02	Half-Life	too short	
	490.36			-1.247E-03	6.801E-02	Half-Life	too short	
	664.57			5.218E-03	6.801E-02	Half-Life	too short	



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	721.93			-7.254E-04	6.801E-02	Half-Life	too short	
CE-144	80.11			3.621E-01	3.116E+00	3.677E+00	4.034E-01	0.098
	133.54	*		-8.349E-02	2.122E-01	3.357E-01	4.823E-02	-0.249
PM-144	476.78			-2.868E-02	6.666E-02	1.038E-01	7.905E-03	-0.276
	618.01			-5.395E-02	3.205E-02	4.613E-02	2.696E-03	-1.170
	696.49	*		2.180E-02	3.590E-02	6.244E-02	3.485E-03	0.349
	778.57			2.909E-01	2.304E+00	3.847E+00	2.793E-01	0.076
PR-144	696.49	*		1.479E+00	2.435E+00	4.236E+00	2.362E-01	0.349
	1489.15			7.143E+00	9.675E+00	1.815E+01	1.498E+00	0.394
PM-146	453.90	*		2.014E-03	4.187E-02	6.811E-02	6.291E-03	0.030
	633.02			2.306E-01	1.345E+00	2.280E+00	8.379E-01	0.101
	735.90			1.994E-02	1.397E-01	2.344E-01	6.565E-02	0.085
	747.13			2.846E-02	8.964E-02	1.525E-01	1.966E-02	0.187
ND-147	91.11	+		1.245E+00	4.141E-01	6.333E-01	7.061E-02	1.966
	319.41			9.001E-01	3.593E+00	6.042E+00	4.010E-01	0.149
	439.89			-1.009E-01	6.416E+00	1.041E+01	6.998E-01	-0.010
	531.02	*		-2.797E-01	6.419E-01	9.879E-01	1.357E-01	-0.283
PM-149	285.90	*		-7.059E+01	1.681E+02	2.733E+02	3.953E+01	-0.258
EU-152	121.78			3.961E-02	7.290E-02	1.211E-01	9.976E-03	0.327
	244.69			2.033E-01	3.475E-01	5.356E-01	3.304E-02	0.380
	344.27	*		-9.462E-02	1.106E-01	1.475E-01	1.087E-02	-0.642
	443.98			-2.007E-01	9.098E-01	1.450E+00	9.732E-02	-0.138
	778.89			1.060E-02	2.695E-01	4.465E-01	3.242E-02	0.024
	867.32			1.366E-01	8.690E-01	1.445E+00	1.349E-01	0.095
	964.01	+		8.099E-01	3.884E-01	6.060E-01	5.741E-02	1.336
	1085.78			1.241E-01	4.194E-01	6.968E-01	5.424E-02	0.178
	1112.02			9.330E-02	3.870E-01	6.008E-01	4.407E-02	0.155
	1407.95			1.029E-01	2.238E-01	3.885E-01	3.312E-02	0.265
GD-153	69.67			9.389E-01	2.371E+00	3.588E+00	4.001E-01	0.262
	83.37	+		2.745E+01	2.147E+01	2.863E+01	3.173E+00	0.959
	97.43	*		-1.633E-02	9.321E-02	1.338E-01	1.246E-02	-0.122
	103.18			1.016E-02	1.192E-01	1.748E-01	1.478E-02	0.058
EU-154	123.07			-1.904E-02	5.269E-02	8.384E-02	8.285E-03	-0.227
	247.94			1.723E-01	3.561E-01	5.938E-01	5.811E-02	0.290
	591.81			-4.731E-01	5.699E-01	8.730E-01	8.509E-02	-0.542
	723.30			2.323E-02	1.828E-01	2.677E-01	1.961E-02	0.087
	756.87			-2.391E-01	8.161E-01	1.316E+00	1.412E-01	-0.182
	873.19			1.309E-01	3.045E-01	5.190E-01	6.678E-02	0.252
	996.32			-2.526E-01	3.712E-01	5.499E-01	9.897E-02	-0.459
	1004.76			-5.398E-02	2.238E-01	3.529E-01	4.203E-02	-0.153
	1274.45	*		8.521E-02	1.269E-01	2.253E-01	2.399E-02	0.378
TB-160	86.79	+		1.338E+00	4.104E-01	5.555E-01	6.258E-02	2.409
	197.04			-1.451E-01	5.882E-01	8.920E-01	5.116E-02	-0.163
	215.65			-1.600E-01	7.190E-01	1.204E+00	7.119E-02	-0.133
	298.57	+		2.600E-01	1.465E-01	1.976E-01	1.291E-02	1.316
	879.36	*		4.847E-02	1.483E-01	2.503E-01	2.414E-02	0.194
	962.29			4.394E-01	5.772E-01	8.964E-01	8.509E-02	0.490
	966.15	+		5.665E-01	2.717E-01	4.637E-01	4.382E-02	1.222
	1177.93			-9.978E-02	3.399E-01	5.512E-01	3.437E-02	-0.181



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1271.85			7.473E-01	7.975E-01	1.444E+00	1.111E-01	0.517
	80.57			1.604E-01	3.832E-01	4.634E-01	5.090E-02	0.346
	184.41			6.932E-02	4.314E-02	6.738E-02	3.784E-03	1.029
	280.46			1.181E-01	9.503E-02	1.515E-01	9.742E-03	0.779
	410.95			3.613E-01	2.564E-01	4.532E-01	3.073E-02	0.797
	711.68	*		4.321E-02	6.207E-02	1.087E-01	6.382E-03	0.397
	752.31			-2.718E-02	2.957E-01	4.857E-01	3.251E-02	-0.056
TM-171	810.29			-3.920E-02	5.819E-02	8.919E-02	7.106E-03	-0.439
	51.35			1.102E+01	6.589E+01	1.111E+02	1.461E+01	0.099
	52.39			-1.880E+00	3.339E+01	5.449E+01	7.217E+00	-0.035
	59.40			-1.742E+00	4.149E+01	6.908E+01	8.581E+00	-0.025
	66.72	*		-3.278E+01	3.674E+01	5.857E+01	6.673E+00	-0.560
LU-176	88.36	+		9.680E-01	2.969E-01	4.038E-01	4.541E-02	2.398
	201.83			-1.022E-02	2.753E-02	4.599E-02	2.659E-03	-0.222
	306.84	*		1.609E-02	2.346E-02	4.049E-02	2.664E-03	0.397
LU-177	401.10			2.646E+00	7.058E+00	1.180E+01	8.016E-01	0.224
	112.95			1.026E+00	2.035E+00	3.381E+00	2.489E-01	0.304
LU-177M	208.36	+	*	4.516E+00	1.705E+00	2.580E+00	1.508E-01	1.750
	52.97			-7.672E-01	3.363E+00	5.444E+00	7.213E-01	-0.141
	54.07			-3.498E-01	1.699E+00	2.752E+00	3.630E-01	-0.127
	61.30			1.256E-01	2.204E+00	3.679E+00	4.451E-01	0.034
	121.62			1.478E-01	3.784E-01	6.243E-01	4.131E-02	0.237
	147.16			1.693E-01	6.832E-01	1.109E+00	6.493E-02	0.153
	171.86			2.092E-01	5.119E-01	8.315E-01	4.577E-02	0.252
	218.09			7.251E-03	8.188E-01	1.385E+00	8.222E-02	0.005
	268.79	+		2.727E+00	1.196E+00	1.459E+00	9.268E-02	1.869
	319.02			5.190E-02	2.526E-01	4.236E-01	2.810E-02	0.123
	367.43			-1.232E-01	9.428E-01	1.536E+00	1.040E-01	-0.080
	413.65	*		-2.854E-01	1.793E-01	2.562E-01	1.736E-02	-1.114
HF-181	56.28			-4.171E-01	1.685E+00	2.785E+00	3.598E-01	-0.150
	57.53			-6.170E-01	8.770E-01	1.416E+00	1.802E-01	-0.436
	65.20			-1.144E+00	1.304E+00	2.083E+00	2.407E-01	-0.549
	133.02			-2.958E-02	7.049E-02	1.115E-01	6.927E-03	-0.265
	136.25			4.369E-01	4.826E-01	8.089E-01	4.950E-02	0.540
	345.85			6.387E-02	1.967E-01	3.204E-01	2.155E-02	0.199
	482.03	*		8.423E-03	4.469E-02	7.318E-02	4.804E-03	0.115
W-181	56.28			-1.612E-01	6.458E-01	1.067E+00	1.379E-01	-0.151
	57.53			-2.369E-01	3.365E-01	5.433E-01	6.913E-02	-0.436
	65.20	*		-4.354E-01	4.964E-01	7.928E-01	9.160E-02	-0.549
TA-182	67.75			-7.353E-03	1.438E-01	2.382E-01	2.691E-02	-0.031
	100.10			4.591E-02	1.887E-01	3.116E-01	2.769E-02	0.147
	152.43			1.266E-01	3.445E-01	5.617E-01	3.223E-02	0.225
	222.10			9.135E-02	3.430E-01	5.863E-01	3.501E-02	0.156
	1001.68			2.600E+00	2.258E+00	3.967E+00	3.578E-01	0.656
	1121.28			4.905E-01	2.200E-01	3.715E-01	2.663E-02	1.320
RE-183	1189.05			-1.980E-01	3.256E-01	5.129E-01	3.284E-02	-0.386
	1221.42	*		4.978E-02	1.943E-01	3.321E-01	2.290E-02	0.150
	1230.97			-1.596E-01	4.642E-01	7.300E-01	5.142E-02	-0.219
	57.98			-5.026E-02	3.322E-01	5.510E-01	6.971E-02	-0.091



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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184		59.32		-9.621E-03	1.740E-01	2.895E-01	3.601E-02	-0.033
		67.20		-1.329E-01	2.644E-01	4.299E-01	4.877E-02	-0.309
		162.32	*	1.020E-01	1.121E-01	1.868E-01	1.033E-02	0.546
	+	208.81		3.379E+00	1.276E+00	1.921E+00	1.123E-01	1.759
		291.72		-1.454E-01	1.016E+00	1.472E+00	9.564E-02	-0.099
		57.98		-1.831E-01	1.210E+00	2.007E+00	2.540E-01	-0.091
		59.32		-3.502E-02	6.334E-01	1.054E+00	1.311E-01	-0.033
		67.20		-4.842E-01	9.629E-01	1.566E+00	1.776E-01	-0.309
		161.27		-1.901E-01	3.742E-01	5.833E-01	3.239E-02	-0.326
		216.55		1.760E-02	2.559E-01	4.342E-01	2.571E-02	0.041
		252.85	*	-8.485E-02	2.241E-01	3.686E-01	2.298E-02	-0.230
		318.01		-1.634E-01	4.321E-01	6.989E-01	4.633E-02	-0.234
		792.07		-1.667E+00	9.990E-01	1.366E+00	1.032E-01	-1.220
		903.28		5.163E-01	1.071E+00	1.739E+00	1.753E-01	0.297
OS-185		920.93		-4.677E-01	4.222E-01	5.890E-01	5.842E-02	-0.794
		59.72		-4.897E-02	4.632E-01	7.690E-01	9.510E-02	-0.064
		61.14		-4.971E-02	2.456E-01	4.059E-01	4.921E-02	-0.122
		69.30		1.880E-01	4.289E-01	6.503E-01	7.269E-02	0.289
		592.07		-2.013E+00	2.350E+00	3.597E+00	2.069E-01	-0.560
		646.12	*	3.508E-02	3.869E-02	6.969E-02	3.580E-03	0.503
RE-188		717.42		1.298E-01	8.961E-01	1.507E+00	9.012E-02	0.086
		874.81		-1.025E-01	6.190E-01	9.964E-01	9.493E-02	-0.103
		880.27		6.975E-01	7.950E-01	1.409E+00	1.362E-01	0.495
		155.03	*	7.765E-02	1.782E-01	2.912E-01	1.655E-02	0.267
		477.96		-9.056E-01	3.187E+00	5.030E+00	3.311E-01	-0.180
		633.10		4.363E-01	2.762E+00	4.686E+00	2.483E-01	0.093
W-188		63.58		4.435E+01	7.514E+01	1.265E+02	1.488E+01	0.350
		227.08		6.073E-01	1.271E+01	2.150E+01	1.293E+00	0.028
IR-192		290.67	*	8.199E-01	8.162E+00	1.205E+01	7.824E-01	0.068
	+	295.96		1.233E+00	1.962E-01	3.091E-01	2.041E-02	3.990
		308.46		-3.862E-02	9.294E-02	1.503E-01	9.986E-03	-0.257
		316.51	*	-1.107E-02	3.363E-02	5.459E-02	3.629E-03	-0.203
		468.07		-4.918E-02	7.712E-02	1.010E-01	7.492E-03	-0.487
		604.41		4.149E-02	4.833E-01	7.140E-01	8.040E-02	0.058
AU-195		612.46		2.762E+00	8.941E-01	1.616E+00	1.191E-01	1.710
		65.12		-2.013E-01	2.295E-01	3.665E-01	4.238E-02	-0.549
		66.83		-9.867E-02	1.221E-01	1.956E-01	2.226E-02	-0.504
	+	75.70		1.246E+00	3.156E-01	5.643E-01	6.172E-02	2.207
		98.88	*	2.768E-01	2.538E-01	4.102E-01	3.723E-02	0.675
		129.76		4.697E+00	3.013E+00	5.167E+00	3.259E-01	0.909
TL-200		367.94	*	-4.207E-04	3.013E+00	Half-Life	too short	
		579.30		6.034E-03	3.013E+00	Half-Life	too short	
		828.27		-1.294E-03	3.013E+00	Half-Life	too short	
		1205.75		3.425E-03	3.013E+00	Half-Life	too short	
TL-201		68.90		4.707E+00	1.003E+01	1.617E+01	1.812E+00	0.291
		70.82		8.311E-01	6.021E+00	8.998E+00	9.974E-01	0.092
		80.30		5.190E+00	1.113E+01	1.351E+01	1.483E+00	0.384
		135.34		4.404E+01	4.093E+01	6.905E+01	4.243E+00	0.638
		167.43	*	2.163E+00	1.130E+01	1.820E+01	9.954E-01	0.119



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TL-202		68.90		3.025E-01	6.447E-01	1.039E+00	1.165E-01	0.291
		70.82		5.326E-02	3.859E-01	5.766E-01	6.392E-02	0.092
		80.30		3.327E-01	7.136E-01	8.662E-01	9.509E-02	0.384
		439.56	*	2.319E-02	7.491E-02	1.245E-01	8.371E-03	0.186
HG-203		70.83		2.212E-01	1.541E+00	2.302E+00	3.519E-01	0.096
		72.87		1.197E+00	9.148E-01	1.409E+00	2.094E-01	0.850
	+	82.60		2.089E+00	1.649E+00	2.139E+00	3.290E-01	0.977
		279.20	*	5.908E-02	4.855E-02	7.702E-02	5.197E-03	0.767
BI-207		72.80		2.764E-01	2.559E-01	3.951E-01	4.346E-02	0.700
	+	74.97		6.858E-01	1.738E-01	2.778E-01	3.041E-02	2.468
	+	84.90		3.531E-01	2.762E-01	3.567E-01	3.979E-02	0.990
		569.67		2.570E-02	3.106E-02	5.214E-02	3.109E-03	0.493
		1063.62	*	1.595E-02	5.830E-02	9.661E-02	7.865E-03	0.165
		1770.23		8.578E-01	4.594E-01	9.816E-01	6.513E-02	0.874
TL-207		81.07		2.542E-03	3.129E-01	3.656E-01	4.021E-02	0.007
	+	83.78		2.328E-01	1.821E-01	2.427E-01	2.694E-02	0.959
		94.90		1.194E-01	2.513E-01	3.775E-01	3.686E-02	0.316
		122.32		5.425E-01	1.747E+00	2.872E+00	2.119E-01	0.189
		144.24		-2.624E-01	7.017E-01	1.101E+00	8.072E-02	-0.238
		154.21		3.185E-01	3.989E-01	6.622E-01	4.589E-02	0.481
	+	269.46		6.331E-01	2.778E-01	3.593E-01	2.370E-02	1.762
		323.87	*	5.691E-02	7.258E-01	1.062E+00	1.788E-01	0.054
	+	338.28		7.168E+00	1.953E+00	2.653E+00	2.933E-01	2.702
		445.03		6.969E-01	2.176E+00	3.617E+00	3.909E-01	0.193
PO-209		260.50		1.062E+01	9.089E+00	1.611E+01	1.014E+00	0.659
		262.80		-3.204E+01	2.602E+01	4.054E+01	2.558E+00	-0.790
		896.60	*	5.458E+00	7.417E+00	1.299E+01	1.310E+00	0.420
BI-210		46.50	*	3.874E+00	9.904E+00	1.661E+01	1.629E+00	0.233
PB-210		46.50	*	3.874E+00	9.904E+00	1.661E+01	1.629E+00	0.233
PO-210		46.50	*	3.874E+00	9.903E+00	1.661E+01	1.491E+00	0.233
PB-211		404.84	*	-4.531E-01	1.027E+00	1.563E+00	9.758E-01	-0.290
		427.08		3.075E-01	1.998E+00	3.274E+00	2.027E+00	0.094
		831.96		-5.710E-01	1.312E+00	1.987E+00	1.245E+00	-0.287
BI-212	+	727.18	*	8.214E-01	4.548E-01	6.534E-01	5.227E-02	1.257
		785.46		2.971E+00	1.847E+00	3.419E+00	2.532E-01	0.869
		1620.62		1.883E+00	1.261E+00	2.546E+00	1.942E-01	0.739
PO-215		81.07		2.542E-03	3.129E-01	3.656E-01	4.021E-02	0.007
	+	83.78		2.328E-01	1.821E-01	2.427E-01	2.694E-02	0.959
		94.90		1.194E-01	2.513E-01	3.775E-01	3.686E-02	0.316
		122.32		5.425E-01	1.747E+00	2.872E+00	2.119E-01	0.189
		144.24		-2.624E-01	7.017E-01	1.101E+00	8.072E-02	-0.238
		154.21		3.185E-01	3.989E-01	6.622E-01	4.589E-02	0.481
	+	269.46		6.331E-01	2.778E-01	3.593E-01	2.370E-02	1.762
		323.87	*	5.691E-02	7.258E-01	1.062E+00	1.788E-01	0.054
	+	338.28		7.168E+00	1.953E+00	2.653E+00	2.933E-01	2.702
		445.03		6.969E-01	2.176E+00	3.617E+00	3.909E-01	0.193
RN-219	+	271.23		8.122E-01	3.591E-01	4.705E-01	4.010E-02	1.726
		401.81	*	-2.452E-02	4.339E-01	7.061E-01	9.926E-02	-0.035
RN-220		549.76	*	-1.376E+00	2.611E+01	4.156E+01	2.549E+00	-0.033



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RA-223		81.07		2.542E-03	3.129E-01	3.656E-01	4.021E-02	0.007
	+	83.78		2.328E-01	1.821E-01	2.427E-01	2.694E-02	0.959
		94.90		1.194E-01	2.513E-01	3.775E-01	3.686E-02	0.316
		122.32		5.425E-01	1.747E+00	2.872E+00	2.119E-01	0.189
		144.24		-2.624E-01	7.017E-01	1.101E+00	8.072E-02	-0.238
		154.21		3.185E-01	3.989E-01	6.622E-01	4.589E-02	0.481
	+	269.46		6.331E-01	2.778E-01	3.593E-01	2.370E-02	1.762
		323.87	*	5.691E-02	7.258E-01	1.062E+00	1.788E-01	0.054
	+	338.28		7.168E+00	1.953E+00	2.653E+00	2.933E-01	2.702
		445.03		6.969E-01	2.176E+00	3.617E+00	3.909E-01	0.193
AC-227		79.80		1.288E-01	2.404E+00	2.822E+00	6.363E-01	0.046
		236.00		1.134E-01	2.625E-01	3.994E-01	4.242E-02	0.284
		256.20	*	-1.198E-01	3.729E-01	6.145E-01	8.700E-02	-0.195
		286.10		-2.982E-01	1.507E+00	2.483E+00	2.957E-01	-0.120
	+	299.80		3.249E+00	1.897E+00	2.598E+00	4.303E-01	1.251
		304.40		7.479E-01	1.986E+00	2.983E+00	5.242E-01	0.251
		334.20		-1.447E+00	2.848E+00	3.643E+00	6.788E-01	-0.397
TH-227		79.80		1.288E-01	2.404E+00	2.822E+00	6.437E-01	0.046
	+	94.00		9.367E+00	3.615E+00	3.805E+00	8.499E-01	2.461
		236.00		1.134E-01	2.625E-01	3.994E-01	3.695E-02	0.284
		256.20	*	-1.198E-01	3.731E-01	6.145E-01	1.048E-01	-0.195
		286.10		-2.982E-01	1.536E+00	2.483E+00	2.489E+00	-0.120
	+	299.80		3.249E+00	1.897E+00	2.598E+00	4.303E-01	1.251
		304.40		7.479E-01	1.986E+00	2.983E+00	5.242E-01	0.251
TH-229		334.20		-1.447E+00	2.848E+00	3.643E+00	6.788E-01	-0.397
		85.43		4.934E-01	2.106E-01	3.596E-01	4.022E-02	1.372
	+	88.47		4.365E-01	1.443E-01	2.313E-01	2.595E-02	1.887
		100.00		5.479E-02	1.940E-01	3.209E-01	2.856E-02	0.171
		193.63	*	1.203E-01	5.073E-01	8.130E-01	4.636E-02	0.148
PA-231		210.97		1.231E+00	8.023E-01	1.304E+00	7.653E-02	0.944
		283.67	*	-7.399E-01	1.546E+00	2.506E+00	3.524E-01	-0.295
		301.29		1.147E+00	6.281E-01	1.022E+00	1.113E-01	1.121
TH-231		81.07		2.542E-03	3.129E-01	3.656E-01	4.021E-02	0.007
	+	83.78		2.328E-01	1.821E-01	2.427E-01	2.694E-02	0.959
		94.90		1.194E-01	2.513E-01	3.775E-01	3.686E-02	0.316
		122.32		5.425E-01	1.747E+00	2.872E+00	2.119E-01	0.189
		144.24		-2.624E-01	7.017E-01	1.101E+00	8.072E-02	-0.238
		154.21		3.185E-01	3.989E-01	6.622E-01	4.589E-02	0.481
	+	269.46		6.331E-01	2.778E-01	3.593E-01	2.370E-02	1.762
		323.87	*	5.691E-02	7.258E-01	1.062E+00	1.788E-01	0.054
	+	338.28		7.168E+00	1.953E+00	2.653E+00	2.933E-01	2.702
		445.03		6.969E-01	2.176E+00	3.617E+00	3.909E-01	0.193
U-231	+	84.21		1.386E+01	1.084E+01	1.432E+01	1.593E+00	0.968
	+	92.29		1.279E+01	4.224E+00	5.995E+00	6.171E-01	2.134
		95.87	*	-9.326E-01	1.648E+00	2.326E+00	2.230E-01	-0.401
PA-233		108.00		9.669E-01	3.129E+00	4.638E+00	1.650E-01	0.209
	+	75.28		2.001E+01	5.671E+00	8.401E+00	1.408E+00	2.382
	+	86.59		7.990E+00	3.182E+00	3.325E+00	9.237E-01	2.403
	+	300.12		9.058E-01	5.222E-01	7.237E-01	9.969E-02	1.252



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234		311.98	*	-4.155E-03	5.936E-02	9.803E-02	-0.042
		340.50		2.142E+00	9.046E-01	1.302E+00	1.645
		398.62		-1.022E+00	2.209E+00	3.473E+00	-0.294
		415.76		3.100E-01	1.474E+00	2.440E+00	0.127
		63.00		8.057E-01	2.219E+00	3.708E+00	0.217
		94.67		1.291E-01	1.683E-01	2.830E-01	0.456
		98.44		1.200E-01	1.264E-01	1.653E-01	0.725
		99.86		1.650E-01	4.925E-01	8.164E-01	0.202
		111.00		-1.132E-01	1.915E-01	3.026E-01	-0.374
		131.20		-1.520E-01	1.158E-01	1.756E-01	-0.865
		152.70		2.330E-01	3.304E-01	5.438E-01	0.429
	+	186.00		4.726E+00	2.465E+00	2.625E+00	1.800
		226.40		-1.085E-01	3.983E-01	6.637E-01	-0.163
		227.20		4.337E-02	4.222E-01	7.158E-01	0.061
		248.90		-1.051E-01	7.768E-01	1.295E+00	-0.081
		293.70		5.149E+00	1.257E+00	1.746E+00	2.948
		369.80		7.060E-02	8.782E-01	1.449E+00	0.049
		568.70		6.439E-05	1.018E+00	1.623E+00	0.000
		569.50		1.918E-01	2.726E-01	4.535E-01	0.423
		574.00		-1.049E+00	1.399E+00	2.218E+00	-0.473
		699.00		3.271E-02	7.667E-01	1.280E+00	0.026
		706.10		-9.102E-01	1.161E+00	1.689E+00	-0.539
		733.00		-1.306E-01	3.881E-01	5.305E-01	-0.246
		742.81		4.832E-02	1.329E+00	2.208E+00	0.022
		796.30		9.246E-01	9.143E-01	1.584E+00	0.584
		805.60		9.000E-01	1.044E+00	1.791E+00	0.502
		819.60		5.386E-01	1.216E+00	2.059E+00	0.262
		826.30		3.204E-01	8.602E-01	1.443E+00	0.222
		831.60		-4.759E-01	6.837E-01	1.027E+00	-0.463
		876.40		-2.076E-01	8.997E-01	1.396E+00	-0.149
		880.51		2.486E-01	2.833E-01	5.021E-01	0.495
		883.24		-1.200E-01	3.188E-01	4.850E-01	-0.247
		899.00		-4.075E-01	9.127E-01	1.395E+00	-0.292
		925.00		-3.932E-01	1.150E+00	1.802E+00	-0.218
		926.50		3.318E-02	1.729E-01	2.873E-01	0.116
		946.00	*	-8.347E-03	3.185E-01	5.169E-01	-0.016
		949.00		5.833E-02	4.958E-01	8.157E-01	0.072
		980.50		3.654E-01	8.023E-01	1.207E+00	0.303
		1394.10		-4.469E-01	1.147E+00	1.714E+00	-0.261
PA-234M		766.42		1.115E+01	1.420E+01	2.052E+01	0.543
		1001.03	*	5.607E+00	4.997E+00	8.756E+00	0.640
TH-234		63.29	*	1.080E+00	1.873E+00	3.140E+00	0.344
	+	92.38		2.424E+00	8.882E-01	1.134E+00	2.138
NP-236		94.67		1.005E-01	1.275E-01	2.150E-01	0.467
		98.44		9.065E-02	8.143E-02	1.250E-01	0.725
		111.00		-8.566E-02	1.447E-01	2.289E-01	-0.374
		160.31	*	-2.349E-02	8.121E-02	1.280E-01	-0.184
U-238		63.29	*	1.080E+00	1.873E+00	3.140E+00	0.344
	+	92.38		2.424E+00	8.002E-01	1.134E+00	2.138



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		1.055E-01	1.641E-01	2.753E-01	2.470E-02	0.383
		117.00	*	-1.525E-02	1.945E-01	3.147E-01	2.201E-02	-0.048
	+	209.75		2.614E+00	9.870E-01	1.473E+00	8.628E-02	1.775
		228.18		-4.192E-02	2.247E-01	3.759E-01	2.266E-02	-0.112
	+	277.60		3.497E-01	1.879E-01	3.430E-01	2.200E-02	1.019
AM-241		334.30		-8.659E-01	1.605E+00	2.055E+00	1.375E-01	-0.421
		59.54	*	-4.495E-03	2.397E-01	3.995E-01	5.130E-02	-0.011
CM-243		99.55		1.086E-01	1.689E-01	2.833E-01	2.542E-02	0.383
	+	103.76	*	1.960E-01	1.334E-01	1.674E-01	1.403E-02	1.171
		117.00		-1.569E-02	2.002E-01	3.238E-01	2.265E-02	-0.048
	+	209.75		2.578E+00	9.731E-01	1.452E+00	8.506E-02	1.775
		228.18		-4.237E-02	2.271E-01	3.799E-01	2.290E-02	-0.112
AM-246	+	277.60		3.526E-01	1.895E-01	3.459E-01	2.218E-02	1.019
		798.80		-1.305E-01	1.394E-01	2.086E-01	1.607E-02	-0.626
		1036.00		-8.666E-02	2.918E-01	4.543E-01	3.886E-02	-0.191
		1062.04		1.506E-01	2.465E-01	4.224E-01	3.449E-02	0.357
		1078.86	*	1.801E-01	1.460E-01	2.652E-01	2.095E-02	0.679
CM-247	+	278.00		1.450E+00	7.793E-01	1.436E+00	9.208E-02	1.010
		287.40		-5.172E-03	1.212E+00	2.020E+00	1.307E-01	-0.003
		402.60	*	9.164E-03	3.883E-02	6.438E-02	4.371E-03	0.142
CF-249		252.85		-3.158E-01	8.341E-01	1.372E+00	8.553E-02	-0.230
		333.44		-9.452E-02	2.310E-01	2.690E-01	1.799E-02	-0.351
		387.95	*	4.567E-03	4.146E-02	6.834E-02	4.644E-03	0.067
CF-251		176.60	*	-1.921E-02	1.291E-01	2.038E-01	1.130E-02	-0.094
		227.00		-4.913E-02	3.763E-01	6.313E-01	3.798E-02	-0.078
		285.00		-8.790E-01	1.754E+00	2.843E+00	1.836E-01	-0.309



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457003      *
* Acquisition date   : 4-JAN-2010 13:58:57 Detector SN#                   *
* Detector ID        : GAM10 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:00.99 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G243457003 Analyst initials: MXR1                 *
* Batch Number       : 936923 Sample Quantity : 1.1934E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                           *
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08 MS Isotope                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                             *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	1.989E+01	2.261E+00	4.612E-01	0.000E+00
CD-109	4.165E+00	1.252E+00	1.290E+00	0.000E+00
SN-126	4.081E-01	1.227E-01	1.273E-01	0.000E+00
BA-137M	1.082E-01	4.776E-02	5.636E-02	0.000E+00
CS-137	1.143E-01	5.049E-02	5.958E-02	0.000E+00
EU-155	2.189E-01	1.461E-01	1.850E-01	0.000E+00
TL-208	5.466E-01	8.414E-02	5.743E-02	0.000E+00
BI-211	4.220E+00	5.469E-01	3.338E-01	0.000E+00
PB-212	1.757E+00	1.735E-01	9.436E-02	0.000E+00
PO-212	1.757E+00	1.735E-01	9.436E-02	0.000E+00
BI-214	1.244E+00	1.801E-01	1.110E-01	0.000E+00
PB-214	1.468E+00	2.045E-01	1.156E-01	0.000E+00
PO-214	1.468E+00	2.045E-01	1.156E-01	0.000E+00
PO-216	1.757E+00	1.735E-01	9.436E-02	0.000E+00
PO-218	1.468E+00	2.045E-01	1.156E-01	0.000E+00
RA-224	5.419E+00	1.534E+00	1.074E+00	0.000E+00
RA-226	1.244E+00	1.801E-01	1.110E-01	0.000E+00
AC-228	1.905E+00	4.118E-01	2.049E-01	0.000E+00
RA-228	1.905E+00	4.118E-01	2.049E-01	0.000E+00
TH-228	1.787E+00	1.765E-01	9.598E-02	0.000E+00
TH-230	1.244E+00	1.800E-01	1.110E-01	0.000E+00
TH-232	1.905E+00	4.118E-01	2.049E-01	0.000E+00
U-234	1.244E+00	1.800E-01	1.110E-01	0.000E+00
U-235	-4.226E-03	2.120E-01	3.538E-01	0.000E+00
NP-237	1.199E+00	4.342E-01	3.805E-01	0.000E+00
AM-243	3.820E-01	9.486E-02	1.087E-01	0.000E+00
ANH-511	1.377E-01	7.221E-02	4.772E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )
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BE-7	-1.024E-01	3.273E-01	5.316E-01	0.000E+00	NOT IDENT.
NA-22	1.792E-02	4.569E-02	8.049E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	6.210E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	8.876E-03	2.179E-02	3.997E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.985E-02	8.452E-02	0.000E+00	FAIL ABUN
SC-46	-2.799E-02	4.036E-02	6.257E-02	0.000E+00	NOT IDENT.
V-48	-4.730E-02	7.743E-02	1.195E-01	0.000E+00	NOT IDENT.
CR-51	1.396E-01	3.664E-01	6.426E-01	0.000E+00	NOT IDENT.
MN-52	-1.189E-01	3.371E-01	5.382E-01	0.000E+00	NOT IDENT.
MN-54	4.119E-02	3.784E-02	6.925E-02	0.000E+00	NOT IDENT.
CO-56	-1.277E-02	4.111E-02	6.706E-02	0.000E+00	FAIL ABUN
CO-57	1.389E-02	2.473E-02	4.302E-02	0.000E+00	NOT IDENT.
CO-58	-2.485E-02	3.842E-02	6.059E-02	0.000E+00	NOT IDENT.
FE-59	1.839E-02	9.145E-02	1.536E-01	0.000E+00	NOT IDENT.
CO-60	6.750E-03	4.244E-02	7.298E-02	0.000E+00	NOT IDENT.
ZN-65	-2.160E-01	1.297E-01	1.386E-01	0.000E+00	NOT IDENT.
GE-68	1.505E+00	1.311E+00	2.400E+00	0.000E+00	NOT IDENT.
AS-73	2.340E-01	1.667E+00	2.894E+00	0.000E+00	NOT IDENT.
AS-74	8.492E-02	9.096E-02	1.680E-01	0.000E+00	NOT IDENT.
SE-75	1.587E-02	4.408E-02	7.275E-02	0.000E+00	NOT IDENT.
BR-77	-4.299E+00	1.855E+01	3.008E+01	0.000E+00	FAIL ABUN
SR-82	-4.930E-01	4.239E-01	6.429E-01	0.000E+00	NOT IDENT.
RB-83	-8.440E-03	7.079E-02	1.159E-01	0.000E+00	NOT IDENT.
RB-84	-8.351E-03	7.514E-02	1.245E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	8.404E+00	1.433E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.399E-02	7.500E-02	0.000E+00	NOT IDENT.
RB-86	5.460E-01	8.814E-01	1.543E+00	0.000E+00	NOT IDENT.
Y-88	-1.950E-02	3.174E-02	4.361E-02	0.000E+00	NOT IDENT.
ZR-88	6.033E-03	3.202E-02	5.477E-02	0.000E+00	NOT IDENT.
Y-91	4.625E+00	1.794E+01	3.133E+01	0.000E+00	NOT IDENT.
NB-94	1.471E-02	3.431E-02	6.042E-02	0.000E+00	NOT IDENT.
NB-95	3.116E-02	4.671E-02	7.404E-02	0.000E+00	NOT IDENT.
NB-95M	-3.933E-02	1.381E-01	2.096E-01	0.000E+00	NOT IDENT.
ZR-95	1.496E-02	7.547E-02	1.301E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	6.940E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.324E+07	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.854E+00	1.960E+01	3.284E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	8.639E+18	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-3.396E-02	3.387E-02	5.123E-02	0.000E+00	NOT IDENT.
RH-102	-3.265E-03	2.916E-02	4.815E-02	0.000E+00	FAIL ABUN
RU-103	-3.021E-02	4.290E-02	6.600E-02	0.000E+00	FAIL ABUN
RH-106	4.347E-01	3.214E-01	6.006E-01	0.000E+00	FAIL ABUN
RU-106	4.347E-01	3.184E-01	6.006E-01	0.000E+00	FAIL ABUN
AG-108M	-1.072E-02	3.255E-02	5.328E-02	0.000E+00	NOT IDENT.
AG-110M	-1.108E-02	3.618E-02	5.193E-02	0.000E+00	NOT IDENT.
IN-111	5.716E-01	1.797E+00	2.827E+00	0.000E+00	NOT IDENT.
IN-113M	1.465E-02	4.642E-02	8.001E-02	0.000E+00	NOT IDENT.
SN-113	1.465E-02	4.642E-02	8.001E-02	0.000E+00	NOT IDENT.
IN-114M	6.815E-02	2.057E-01	3.083E-01	0.000E+00	NOT IDENT.
CD-115	1.045E+01	1.947E+01	3.357E+01	0.000E+00	NOT IDENT.
SN-117M	-1.024E-02	5.999E-02	9.937E-02	0.000E+00	NOT IDENT.
SB-122	1.641E+00	3.389E+00	5.789E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.945E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.201E-02	2.876E-02	4.705E-02	0.000E+00	NOT IDENT.
I-124	-4.223E-01	8.772E-01	1.369E+00	0.000E+00	NOT IDENT.
SB-124	3.727E-02	8.472E-02	1.508E-01	0.000E+00	FAIL ABUN
SB-125	-4.158E-03	8.776E-02	1.469E-01	0.000E+00	FAIL ABUN
TE-125M	-1.175E-01	1.075E+01	1.637E+01	0.000E+00	NOT IDENT.
I-126	2.547E-01	2.074E-01	3.164E-01	0.000E+00	FAIL ABUN
SB-126	-1.146E-03	1.605E-01	2.578E-01	0.000E+00	FAIL ABUN
SB-127	-1.246E+00	1.933E+00	3.126E+00	0.000E+00	NOT IDENT.
XE-127	1.396E-03	4.590E-02	8.121E-02	0.000E+00	NOT IDENT.
I-131	6.603E-02	1.335E-01	2.338E-01	0.000E+00	NOT IDENT.
TE-132	-1.937E-01	1.023E+00	1.779E+00	0.000E+00	NOT IDENT.
BA-133	-6.195E-03	4.798E-02	7.084E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.886E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.638E-02	4.446E-02	8.162E-02	0.000E+00	NOT IDENT.
CS-135	7.182E-02	1.736E-01	2.727E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.938E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.386E-03	1.132E-01	1.870E-01	0.000E+00	FAIL ABUN
CE-139	-7.898E-03	3.023E-02	4.971E-02	0.000E+00	NOT IDENT.
BA-140	1.432E-01	2.819E-01	4.787E-01	0.000E+00	NOT IDENT.
LA-140	-3.331E-02	9.654E-02	1.509E-01	0.000E+00	FAIL ABUN
CE-141	-1.011E-02	6.665E-02	1.111E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.636E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-8.349E-02	2.080E-01	3.441E-01	0.000E+00	NOT IDENT.
PM-144	2.180E-02	3.518E-02	6.282E-02	0.000E+00	NOT IDENT.
PR-144	1.479E+00	2.386E+00	4.261E+00	0.000E+00	NOT IDENT.



PM-146	2.014E-03	4.103E-02	6.885E-02	0.000E+00	NOT IDENT.
ND-147	-2.797E-01	6.291E-01	9.970E-01	0.000E+00	FAIL ABUN
PM-149	-7.059E+01	1.647E+02	2.777E+02	0.000E+00	NOT IDENT.
EU-152	-9.462E-02	1.084E-01	1.496E-01	0.000E+00	FAIL ABUN
GD-153	-1.633E-02	9.134E-02	1.377E-01	0.000E+00	FAIL ABUN
EU-154	8.521E-02	1.244E-01	2.250E-01	0.000E+00	NOT IDENT.
TB-160	4.847E-02	1.454E-01	2.512E-01	0.000E+00	FAIL ABUN
HO-166M	4.321E-02	6.083E-02	1.094E-01	0.000E+00	NOT IDENT.
TM-171	-3.278E+01	3.601E+01	6.050E+01	0.000E+00	NOT IDENT.
LU-176	1.609E-02	2.299E-02	4.112E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.671E+00	2.632E+00	0.000E+00	FAIL ABUN
LU-177M	-2.854E-01	1.757E-01	2.593E-01	0.000E+00	FAIL ABUN
HF-181	8.423E-03	4.380E-02	7.394E-02	0.000E+00	NOT IDENT.
W-181	-4.354E-01	4.865E-01	8.191E-01	0.000E+00	NOT IDENT.
TA-182	4.978E-02	1.904E-01	3.319E-01	0.000E+00	NOT IDENT.
RE-183	1.020E-01	1.098E-01	1.910E-01	0.000E+00	FAIL ABUN
RE-184	-8.485E-02	2.196E-01	3.751E-01	0.000E+00	NOT IDENT.
OS-185	3.508E-02	3.791E-02	7.017E-02	0.000E+00	NOT IDENT.
RE-188	7.765E-02	1.746E-01	2.980E-01	0.000E+00	NOT IDENT.
W-188	8.199E-01	7.999E+00	1.225E+01	0.000E+00	NOT IDENT.
IR-192	-1.107E-02	3.296E-02	5.542E-02	0.000E+00	FAIL ABUN
AU-195	2.768E-01	2.487E-01	4.219E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.617E+03	0.000E+00	0.000E+00	SHORT HLIF
TL-201	2.163E+00	1.108E+01	1.861E+01	0.000E+00	NOT IDENT.
TL-202	2.319E-02	7.342E-02	1.259E-01	0.000E+00	NOT IDENT.
HG-203	5.908E-02	4.758E-02	7.830E-02	0.000E+00	FAIL ABUN
BI-207	1.595E-02	5.713E-02	9.671E-02	0.000E+00	FAIL ABUN
TL-207	5.691E-02	7.113E-01	1.078E+00	0.000E+00	FAIL ABUN
PO-209	5.458E+00	7.269E+00	1.303E+01	0.000E+00	NOT IDENT.
BI-210	3.874E+00	9.706E+00	1.723E+01	0.000E+00	NOT IDENT.
PB-210	3.874E+00	9.706E+00	1.723E+01	0.000E+00	NOT IDENT.
PO-210	3.874E+00	9.705E+00	1.723E+01	0.000E+00	NOT IDENT.
PB-211	-4.531E-01	1.006E+00	1.582E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.457E-01	6.570E-01	0.000E+00	FAIL ABUN
PO-215	5.691E-02	7.113E-01	1.078E+00	0.000E+00	FAIL ABUN
RN-219	-2.452E-02	4.252E-01	7.149E-01	0.000E+00	FAIL ABUN
RN-220	-1.376E+00	2.559E+01	4.193E+01	0.000E+00	NOT IDENT.
RA-223	5.691E-02	7.113E-01	1.078E+00	0.000E+00	FAIL ABUN
AC-227	-1.198E-01	3.654E-01	6.253E-01	0.000E+00	FAIL ABUN
TH-227	-1.198E-01	3.656E-01	6.253E-01	0.000E+00	FAIL ABUN
TH-229	1.203E-01	4.971E-01	8.299E-01	0.000E+00	FAIL ABUN
PA-231	-7.399E-01	1.515E+00	2.547E+00	0.000E+00	NOT IDENT.
TH-231	5.691E-02	7.113E-01	1.078E+00	0.000E+00	FAIL ABUN
U-231	-9.326E-01	1.615E+00	2.394E+00	0.000E+00	FAIL ABUN
PA-233	-4.155E-03	5.818E-02	9.954E-02	0.000E+00	FAIL ABUN
PA-234	-8.347E-03	3.122E-01	5.182E-01	0.000E+00	FAIL ABUN
PA-234M	5.607E+00	4.898E+00	8.771E+00	0.000E+00	NOT IDENT.
TH-234	1.080E+00	1.835E+00	3.245E+00	0.000E+00	FAIL ABUN
NP-236	-2.349E-02	7.959E-02	1.309E-01	0.000E+00	NOT IDENT.
U-238	1.080E+00	1.835E+00	3.245E+00	0.000E+00	FAIL ABUN
NP-239	-1.525E-02	1.906E-01	3.231E-01	0.000E+00	FAIL ABUN
AM-241	-4.495E-03	2.350E-01	4.131E-01	0.000E+00	NOT IDENT.
CM-243	0.000E+00	1.307E-01	1.721E-01	0.000E+00	FAIL ABUN
AM-246	1.801E-01	1.431E-01	2.654E-01	0.000E+00	NOT IDENT.
CM-247	9.164E-03	3.806E-02	6.518E-02	0.000E+00	FAIL ABUN
CF-249	4.567E-03	4.063E-02	6.922E-02	0.000E+00	NOT IDENT.
CF-251	-1.921E-02	1.265E-01	2.083E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457003.CNF;1
Sample date   : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:58:57.
Sample ID     : G243457003 Sample quantity : 1.19340E+02 GRAM
Detector name : GAM10 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.99 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 936923 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

```

## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	747	10.67*	1.107E+00	1.989E+01	1.989E+01	11.60
CD-109	88.03	253	3.72*	5.265E+00	4.059E+00	4.165E+00	30.67
SN-126	64.28	-----	9.60	2.419E+00	-----	Line Not Found	-----
	86.94	253	8.90	5.265E+00	1.697E+00	1.697E+00	50.76
	87.57	253	37.00*	5.265E+00	4.081E-01	4.081E-01	30.67
BA-137M	661.65	73	89.98*	2.352E+00	1.080E-01	1.082E-01	45.06
CS-137	661.65	73	85.12*	2.352E+00	1.142E-01	1.143E-01	45.07
EU-155	48.70	-----	4.60	5.445E-01	-----	Line Not Found	-----
	60.01	-----	1.11	1.818E+00	-----	Line Not Found	-----
	86.54	253	30.90	5.265E+00	4.887E-01	4.919E-01	30.70
	105.31	92	20.70*	6.394E+00	2.175E-01	2.189E-01	68.07
TL-208	277.35	72	6.80	4.612E+00	7.251E-01	7.251E-01	54.46
	510.84	128	21.60	2.928E+00	6.373E-01	6.373E-01	54.17
	583.14	384	84.20*	2.626E+00	5.466E-01	5.466E-01	15.71
	860.37	-----	12.46	1.841E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	3.633E+00	-----	Line Not Found	-----
	351.07	675	12.94*	3.887E+00	4.220E+00	4.220E+00	13.22
PB-212	74.81	311	10.70	3.876E+00	2.356E+00	2.356E+00	27.01
	77.11	497	18.00	4.162E+00	2.087E+00	2.087E+00	18.50
	87.30	253	8.00	5.265E+00	1.888E+00	1.888E+00	32.26
	238.63	1274	44.60*	5.114E+00	1.757E+00	1.757E+00	10.08
	300.09	83	3.41	4.363E+00	1.753E+00	1.753E+00	56.67
PO-212	74.81	311	10.70	3.876E+00	2.356E+00	2.356E+00	27.01
	77.11	497	18.00	4.162E+00	2.087E+00	2.087E+00	18.50
	87.30	253	8.00	5.265E+00	1.888E+00	1.888E+00	32.26
	115.19	-----	0.60	6.657E+00	-----	Line Not Found	-----
	238.63	1274	44.60*	5.114E+00	1.757E+00	1.757E+00	10.08
	300.09	83	3.41	4.363E+00	1.753E+00	1.753E+00	56.67
BI-214	609.31	463	46.30*	2.530E+00	1.244E+00	1.244E+00	14.77
	1120.29	-----	15.10	1.415E+00	-----	Line Not Found	-----
	1764.49	104	15.80	9.761E-01	2.112E+00	2.112E+00	26.08
PB-214	74.81	311	6.21	3.876E+00	4.060E+00	4.060E+00	26.40



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	77.11	497	10.50	4.162E+00	3.578E+00	3.578E+00	20.01
	87.30	253	4.67	5.265E+00	3.234E+00	3.234E+00	31.63
	241.98	345	7.49	5.072E+00	2.858E+00	2.858E+00	29.43
	295.21	428	19.20	4.411E+00	1.588E+00	1.588E+00	17.06
	351.92	675	37.20*	3.887E+00	1.468E+00	1.468E+00	14.22
	74.81	311	6.21	3.876E+00	4.060E+00	4.060E+00	26.40
	77.11	497	10.50	4.162E+00	3.578E+00	3.578E+00	20.01
	87.30	253	4.67	5.265E+00	3.234E+00	3.234E+00	31.63
	241.98	345	7.49	5.072E+00	2.858E+00	2.858E+00	29.43
	295.21	428	19.20	4.411E+00	1.588E+00	1.588E+00	17.06
PO-216	351.92	675	37.20*	3.887E+00	1.468E+00	1.468E+00	14.22
	74.81	311	10.70	3.876E+00	2.356E+00	2.356E+00	27.01
	77.11	497	18.00	4.162E+00	2.087E+00	2.087E+00	18.50
	87.30	253	8.00	5.265E+00	1.888E+00	1.888E+00	32.26
	238.63	1274	44.60*	5.114E+00	1.757E+00	1.757E+00	10.08
PO-218	300.09	83	3.41	4.363E+00	1.753E+00	1.753E+00	56.67
	74.81	311	6.21	3.876E+00	4.060E+00	4.060E+00	26.40
	77.11	497	10.50	4.162E+00	3.578E+00	3.578E+00	20.01
	87.30	253	4.67	5.265E+00	3.234E+00	3.234E+00	31.63
	241.98	345	7.49	5.072E+00	2.858E+00	2.858E+00	29.43
	295.21	428	19.20	4.411E+00	1.588E+00	1.588E+00	17.06
	351.92	675	37.20*	3.887E+00	1.468E+00	1.468E+00	14.22
RA-224	240.98	345	3.95*	5.072E+00	5.419E+00	5.419E+00	28.89
RA-226	609.31	463	46.30*	2.530E+00	1.244E+00	1.244E+00	14.77
AC-228	1120.29	-----	15.10	1.415E+00	-----	Line Not Found	-----
	1764.49	104	15.80	9.761E-01	2.112E+00	2.112E+00	26.08
	338.32	249	11.40	3.998E+00	1.717E+00	1.717E+00	47.89
	911.07	292	27.70*	1.739E+00	1.905E+00	1.905E+00	22.06
	969.11	162	16.60	1.635E+00	1.874E+00	1.874E+00	31.21
RA-228	338.32	249	11.40	3.998E+00	1.717E+00	1.717E+00	47.89
	911.07	292	27.70*	1.739E+00	1.905E+00	1.905E+00	22.06
	969.11	162	16.60	1.635E+00	1.874E+00	1.874E+00	31.21
TH-228	74.81	311	10.70	3.876E+00	2.356E+00	2.397E+00	25.36
	77.11	497	18.00	4.162E+00	2.087E+00	2.123E+00	18.50
	87.30	253	8.00	5.265E+00	1.888E+00	1.920E+00	30.67
	238.63	1274	44.60*	5.114E+00	1.757E+00	1.787E+00	10.08
	300.09	83	3.41	4.363E+00	1.753E+00	1.783E+00	81.34
TH-230	609.31	463	46.30*	2.530E+00	1.244E+00	1.244E+00	14.77
	1120.29	-----	15.10	1.415E+00	-----	Line Not Found	-----
	1764.49	104	15.80	9.761E-01	2.112E+00	2.112E+00	26.08
TH-232	338.32	249	11.40	3.998E+00	1.717E+00	1.717E+00	25.79
	911.07	292	27.70*	1.739E+00	1.905E+00	1.905E+00	22.06
	969.11	162	16.60	1.635E+00	1.874E+00	1.874E+00	31.21
U-234	609.31	463	46.30*	2.530E+00	1.244E+00	1.244E+00	14.77
	1120.29	-----	15.10	1.415E+00	-----	Line Not Found	-----
	1764.49	104	15.80	9.761E-01	2.112E+00	2.112E+00	26.08
U-235	89.95	207	2.70	5.492E+00	4.381E+00	4.381E+00	44.40
	93.35	238	4.50	5.718E+00	2.914E+00	2.914E+00	42.44
	105.00	92	2.10	6.394E+00	2.144E+00	2.144E+00	73.81



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	143.76	-----	10.50*	6.659E+00	-----	Line Not Found	-----
	163.35	-----	4.70	6.374E+00	-----	Line Not Found	-----
	185.71	180	54.00	5.975E+00	1.750E-01	1.750E-01	42.68
	205.31	-----	4.70	5.638E+00	-----	Line Not Found	-----
NP-237	86.50	253	12.60*	5.265E+00	1.199E+00	1.199E+00	36.97
	95.87	-----	2.60	5.933E+00	-----	Line Not Found	-----
AM-243	74.67	311	66.00*	3.876E+00	3.820E-01	3.820E-01	25.34
	86.72	253	0.34	5.265E+00	4.494E+01	4.494E+01	30.67
	117.66	-----	0.55	6.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.676E+00	-----	Line Not Found	-----
ANH-511	511.00	128	100.00*	2.928E+00	1.377E-01	1.377E-01	53.53

Flag: "\*" = Keyline



Total number of lines in spectrum 34  
Number of unidentified lines 1  
Number of lines tentatively identified by NID 33 97.06%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.989E+01	1.989E+01	0.231E+01	11.60	
CD-109	464.00D	1.03	4.059E+00	4.165E+00	1.277E+00	30.67	
SN-126	1.00E+05Y	1.00	4.081E-01	4.081E-01	1.252E-01	30.67	
BA-137M	30.17Y	1.00	1.080E-01	1.082E-01	0.487E-01	45.06	
CS-137	30.17Y	1.00	1.142E-01	1.143E-01	0.515E-01	45.07	
EU-155	4.96Y	1.01	2.175E-01	2.189E-01	1.490E-01	68.07	
TL-208	1.41E+10Y	1.00	5.466E-01	5.466E-01	0.859E-01	15.71	
BI-211	7.04E+08Y	1.00	4.220E+00	4.220E+00	0.558E+00	13.22	
PB-212	1.41E+10Y	1.00	1.757E+00	1.757E+00	0.177E+00	10.08	
PO-212	1.41E+10Y	1.00	1.757E+00	1.757E+00	0.177E+00	10.08	
BI-214	1600.00Y	1.00	1.244E+00	1.244E+00	0.184E+00	14.77	
PB-214	1600.00Y	1.00	1.468E+00	1.468E+00	0.209E+00	14.22	
PO-214	1600.00Y	1.00	1.468E+00	1.468E+00	0.209E+00	14.22	
PO-216	1.41E+10Y	1.00	1.757E+00	1.757E+00	0.177E+00	10.08	
PO-218	1600.00Y	1.00	1.468E+00	1.468E+00	0.209E+00	14.22	
RA-224	1.41E+10Y	1.00	5.419E+00	5.419E+00	1.565E+00	28.89	
RA-226	1600.00Y	1.00	1.244E+00	1.244E+00	0.184E+00	14.77	
AC-228	1.41E+10Y	1.00	1.905E+00	1.905E+00	0.420E+00	22.06	
RA-228	1.41E+10Y	1.00	1.905E+00	1.905E+00	0.420E+00	22.06	
TH-228	1.91Y	1.02	1.757E+00	1.787E+00	0.180E+00	10.08	
TH-230	4.47E+09Y	1.00	1.244E+00	1.244E+00	0.184E+00	14.77	
TH-232	1.41E+10Y	1.00	1.905E+00	1.905E+00	0.420E+00	22.06	
U-234	4.47E+09Y	1.00	1.244E+00	1.244E+00	0.184E+00	14.77	
U-235	7.04E+08Y	1.00	1.750E-01	1.750E-01	0.747E-01	42.68	K
NP-237	2.14E+06Y	1.00	1.199E+00	1.199E+00	0.443E+00	36.97	
AM-243	7380.00Y	1.00	3.820E-01	3.820E-01	0.968E-01	25.34	
ANH-511	1.00E+09Y	1.00	1.377E-01	1.377E-01	0.737E-01	53.53	
Total Activity :			5.900E+01	5.914E+01			

Grand Total Activity : 5.900E+01 5.914E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	83.92	91	382	1.32	167.97	163	30	1.26E-02	77.4	4.96E+00	T
0	209.26	150	209	1.22	418.44	415	8	2.08E-02	37.3	5.57E+00	T
0	270.28	128	186	1.48	540.37	536	10	1.78E-02	43.4	4.69E+00	T
0	327.97	62	122	1.38	655.68	653	8	8.66E-03	65.8	4.09E+00	T
0	463.48	87	122	1.58	926.52	922	14	1.20E-02	57.8	3.16E+00	T
3	666.30	30	35	1.92	1331.98	1319	17	4.22E-03	82.9	2.34E+00	T
0	727.90	67	69	1.20	1455.14	1449	11	9.24E-03	54.8	2.16E+00	T
0	768.21	55	38	2.12	1535.73	1531	9	7.62E-03	48.8	2.05E+00	T
2	965.07	61	31	2.12	1929.35	1922	34	8.44E-03	47.0	1.64E+00	T
0	1122.80	65	70	1.54	2244.81	2233	14	9.04E-03	58.9	1.41E+00	T
0	1156.08	30	24	1.53	2311.36	2306	12	4.10E-03	76.0	1.37E+00	T
0	1238.86	31	30	1.39	2476.93	2473	8	4.36E-03	73.7	1.28E+00	T

Flags: "T" = Tentatively associated



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457003.CNF;1
* Acquisition date   : 4-JAN-2010 13:58:57. Detector SN#      :
* Detector ID        : GAM10          Sensitivity             : 5.00000
* Geometry           : CAN            Energy tolerance:       : 1.50000
* Elapsed live time  : 0 02:00:00.00  Abundance limit :       : 75.00000
* Elapsed real time  : 0 02:00:00.99  Half life ratio :       : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID
* Sample ID          : G243457003       Analyst initials: MXR1
* Batch Number       : 936923           Sample Quantity : 1.19340E+02 GRAM
*****
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08.8MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A             LCS Isotope        :
*****

```

## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.989E+01	2.307E+00	4.624E-01	3.983E-02	43.015
CD-109	4.165E+00	1.277E+00	1.252E+00	1.420E-01	3.326
SN-126	4.081E-01	1.252E-01	1.236E-01	1.399E-02	3.302
BA-137M	1.082E-01	4.874E-02	5.599E-02	2.763E-03	1.932
CS-137	1.143E-01	5.152E-02	5.919E-02	2.937E-03	1.932
EU-155	2.189E-01	1.490E-01	1.800E-01	1.493E-02	1.216
TL-208	5.466E-01	8.585E-02	5.697E-02	3.828E-03	9.594
BI-211	4.220E+00	5.581E-01	3.292E-01	2.400E-02	12.819
PB-212	1.757E+00	1.771E-01	9.265E-02	7.028E-03	18.959
PO-212	1.757E+00	1.771E-01	9.265E-02	7.028E-03	18.959
BI-214	1.244E+00	1.837E-01	1.102E-01	8.384E-03	11.292
PB-214	1.468E+00	2.087E-01	1.140E-01	1.023E-02	12.872
PO-214	1.468E+00	2.087E-01	1.140E-01	1.023E-02	12.872
PO-216	1.757E+00	1.771E-01	9.265E-02	7.028E-03	18.959
PO-218	1.468E+00	2.087E-01	1.140E-01	1.023E-02	12.872
RA-224	5.419E+00	1.565E+00	1.054E+00	6.471E-02	5.140
RA-226	1.244E+00	1.837E-01	1.102E-01	8.384E-03	11.292
AC-228	1.905E+00	4.202E-01	2.043E-01	2.521E-02	9.323



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.905E+00	4.202E-01	2.043E-01	2.521E-02	9.323
TH-228	1.787E+00	1.801E-01	9.424E-02	7.149E-03	18.959
TH-230	1.244E+00	1.837E-01	1.102E-01	8.384E-03	11.292
TH-232	1.905E+00	4.202E-01	2.043E-01	2.521E-02	9.323
U-234	1.244E+00	1.837E-01	1.102E-01	8.384E-03	11.292
U-235	1.750E-01	7.470E-02	3.455E-01	5.649E-02	0.507
NP-237	1.199E+00	4.431E-01	3.695E-01	8.683E-02	3.244
AM-243	3.820E-01	9.680E-02	1.053E-01	1.153E-02	3.627
ANH-511	1.377E-01	7.368E-02	4.726E-02	3.028E-03	2.913

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.024E-01		3.340E-01	5.261E-01	3.912E-02	-0.195
NA-22	1.792E-02		4.662E-02	8.057E-02	6.241E-03	0.222
NA-24	1.847E+00		3.169E+00	Half-Life too short		
AL-26	8.876E-03		2.223E-02	4.017E-02	2.547E-03	0.221
TI-44	3.852E-01	+	7.128E-02	8.197E-02	8.970E-03	4.699
SC-46	-2.799E-02		4.118E-02	6.237E-02	6.172E-03	-0.449
V-48	-4.730E-02		7.901E-02	1.193E-01	1.103E-02	-0.397
CR-51	1.396E-01		3.739E-01	6.330E-01	4.572E-02	0.220
MN-52	-1.189E-01		3.439E-01	5.395E-01	4.559E-02	-0.220
MN-54	4.119E-02		3.861E-02	6.898E-02	5.893E-03	0.597
CO-56	-1.277E-02		4.195E-02	6.681E-02	5.900E-03	-0.191
CO-57	1.389E-02		2.524E-02	4.193E-02	2.765E-03	0.331
CO-58	-2.485E-02		3.921E-02	6.034E-02	4.828E-03	-0.412
FE-59	1.839E-02		9.332E-02	1.535E-01	1.281E-02	0.120
CO-60	6.750E-03		4.330E-02	7.309E-02	6.352E-03	0.092
ZN-65	-2.160E-01		1.323E-01	1.385E-01	1.009E-02	-1.559
GE-68	1.505E+00		1.338E+00	2.398E+00	1.900E-01	0.628
AS-73	2.340E-01		1.701E+00	2.795E+00	3.699E-01	0.084
AS-74	8.492E-02		9.281E-02	1.667E-01	9.521E-03	0.510
SE-75	1.587E-02		4.498E-02	7.152E-02	4.562E-03	0.222
BR-77	-4.299E+00		1.893E+01	2.980E+01	1.891E+00	-0.144
SR-82	-4.930E-01		4.326E-01	6.399E-01	4.613E-02	-0.770
RB-83	-8.440E-03		7.224E-02	1.148E-01	7.288E-03	-0.073
RB-84	-8.351E-03		7.668E-02	1.241E-01	1.203E-02	-0.067
KR-85	1.728E+01		8.575E+00	1.419E+01	9.066E-01	1.218
SR-85	9.047E-02		4.489E-02	7.429E-02	4.746E-03	1.218
RB-86	5.460E-01		8.994E-01	1.541E+00	1.223E-01	0.354
Y-88	-1.950E-02		3.239E-02	4.385E-02	2.690E-03	-0.445
ZR-88	6.033E-03		3.268E-02	5.409E-02	3.676E-03	0.112
Y-91	4.625E+00		1.830E+01	3.134E+01	2.082E+00	0.148
NB-94	1.471E-02		3.501E-02	6.006E-02	3.419E-03	0.245
NB-95	3.116E-02		4.766E-02	7.367E-02	5.141E-03	0.423
NB-95M	-3.933E-02		1.409E-01	2.058E-01	1.596E-02	-0.191
ZR-95	1.496E-02		7.701E-02	1.294E-01	1.017E-02	0.116



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	-2.211E-01		3.541E-01	Half-Life too short		
ZR-97	9.191E+00		6.757E+00	Half-Life too short		
MO-99	1.854E+00		1.999E+01	3.266E+01	4.591E+00	0.057
TC-99M	-1.282E+12		4.408E+12	Half-Life too short		
RH-101	-3.396E-02		3.456E-02	5.020E-02	2.884E-03	-0.677
RH-102	-3.265E-03		2.975E-02	4.765E-02	3.143E-03	-0.069
RU-103	-3.021E-02		4.378E-02	6.535E-02	8.479E-03	-0.462
RH-106	4.347E-01		3.279E-01	5.962E-01	6.892E-02	0.729
RU-106	4.347E-01		3.249E-01	5.962E-01	3.238E-02	0.729
AG-108M	-1.072E-02		3.321E-02	5.268E-02	3.777E-03	-0.203
AG-110M	-1.108E-02		3.692E-02	5.158E-02	2.795E-03	-0.215
IN-111	5.716E-01		1.834E+00	2.777E+00	1.715E-01	0.206
IN-113M	1.465E-02		4.737E-02	7.901E-02	5.634E-03	0.185
SN-113	1.465E-02		4.737E-02	7.901E-02	5.634E-03	0.185
IN-114M	6.815E-02		2.099E-01	3.020E-01	1.712E-02	0.226
CD-115	1.045E+01		1.987E+01	3.327E+01	2.094E+00	0.314
SN-117M	-1.024E-02		6.122E-02	9.713E-02	5.447E-03	-0.105
SB-122	1.641E+00		3.458E+00	5.741E+00	3.453E-01	0.286
I-123	-2.900E+01		3.543E+01	Half-Life too short		
TE-123M	-1.201E-02		2.935E-02	4.599E-02	2.612E-03	-0.261
I-124	-4.223E-01		8.951E-01	1.359E+00	7.666E-02	-0.311
SB-124	3.727E-02		8.645E-02	1.515E-01	1.151E-02	0.246
SB-125	-4.158E-03		8.955E-02	1.452E-01	1.011E-02	-0.029
TE-125M	-1.175E-01		1.097E+01	1.594E+01	1.531E+00	-0.007
I-126	2.547E-01	+	2.116E-01	3.144E-01	1.577E-02	0.810
SB-126	-1.146E-03		1.637E-01	2.564E-01	1.549E-02	-0.004
SB-127	-1.246E+00		1.972E+00	3.107E+00	3.074E-01	-0.401
XE-127	1.396E-03		4.684E-02	7.959E-02	4.609E-03	0.018
I-131	6.603E-02		1.362E-01	2.307E-01	1.701E-02	0.286
TE-132	-1.937E-01		1.044E+00	1.746E+00	2.596E-01	-0.111
BA-133	-6.195E-03		4.896E-02	6.988E-02	8.431E-03	-0.089
I-133	1.092E-02		1.472E-02	Half-Life too short		
CS-134	4.638E-02		4.537E-02	8.126E-02	6.264E-03	0.571
CS-135	7.182E-02		1.772E-01	2.682E-01	2.167E-02	0.268
I-135	-6.729E+11		4.560E+11	Half-Life too short		
CS-136	1.386E-03		1.156E-01	1.868E-01	1.635E-02	0.007
CE-139	-7.898E-03		3.085E-02	4.861E-02	2.655E-03	-0.162
BA-140	1.432E-01		2.877E-01	4.745E-01	1.547E-01	0.302
LA-140	-3.331E-02		9.851E-02	1.514E-01	1.175E-02	-0.220
CE-141	-1.011E-02		6.801E-02	1.085E-01	6.643E-03	-0.093
CE-143	1.629E-03		2.875E-04	Half-Life too short		
CE-144	-8.349E-02		2.122E-01	3.357E-01	4.823E-02	-0.249
PM-144	2.180E-02		3.590E-02	6.244E-02	3.485E-03	0.349
PR-144	1.479E+00		2.435E+00	4.236E+00	2.362E-01	0.349
PM-146	2.014E-03		4.187E-02	6.811E-02	6.291E-03	0.030
ND-147	-2.797E-01		6.419E-01	9.879E-01	1.357E-01	-0.283
PM-149	-7.059E+01		1.681E+02	2.733E+02	3.953E+01	-0.258
EU-152	-9.462E-02		1.106E-01	1.475E-01	1.087E-02	-0.642



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-1.633E-02		9.321E-02	1.338E-01	1.246E-02	-0.122
EU-154	8.521E-02		1.269E-01	2.253E-01	2.399E-02	0.378
TB-160	4.847E-02		1.483E-01	2.503E-01	2.414E-02	0.194
HO-166M	4.321E-02		6.207E-02	1.087E-01	6.382E-03	0.397
TM-171	-3.278E+01		3.674E+01	5.857E+01	6.673E+00	-0.560
LU-176	1.609E-02		2.346E-02	4.049E-02	2.664E-03	0.397
LU-177	4.516E+00	+	1.705E+00	2.580E+00	1.508E-01	1.750
LU-177M	-2.854E-01		1.793E-01	2.562E-01	1.736E-02	-1.114
HF-181	8.423E-03		4.469E-02	7.318E-02	4.804E-03	0.115
W-181	-4.354E-01		4.964E-01	7.928E-01	9.160E-02	-0.549
TA-182	4.978E-02		1.943E-01	3.321E-01	2.290E-02	0.150
RE-183	1.020E-01		1.121E-01	1.868E-01	1.033E-02	0.546
RE-184	-8.485E-02		2.241E-01	3.686E-01	2.298E-02	-0.230
OS-185	3.508E-02		3.869E-02	6.969E-02	3.580E-03	0.503
RE-188	7.765E-02		1.782E-01	2.912E-01	1.655E-02	0.267
W-188	8.199E-01		8.162E+00	1.205E+01	7.824E-01	0.068
IR-192	-1.107E-02		3.363E-02	5.459E-02	3.629E-03	-0.203
AU-195	2.768E-01		2.538E-01	4.102E-01	3.723E-02	0.675
TL-200	-4.207E-04		8.248E-04	Half-Life too short		
TL-201	2.163E+00		1.130E+01	1.820E+01	9.954E-01	0.119
TL-202	2.319E-02		7.491E-02	1.245E-01	8.371E-03	0.186
HG-203	5.908E-02		4.855E-02	7.702E-02	5.197E-03	0.767
BI-207	1.595E-02		5.830E-02	9.661E-02	7.865E-03	0.165
TL-207	5.691E-02		7.258E-01	1.062E+00	1.788E-01	0.054
PO-209	5.458E+00		7.417E+00	1.299E+01	1.310E+00	0.420
BI-210	3.874E+00		9.904E+00	1.661E+01	1.629E+00	0.233
PB-210	3.874E+00		9.904E+00	1.661E+01	1.629E+00	0.233
PO-210	3.874E+00		9.903E+00	1.661E+01	1.491E+00	0.233
PB-211	-4.531E-01		1.027E+00	1.563E+00	9.758E-01	-0.290
BI-212	8.214E-01	+	4.548E-01	6.534E-01	5.227E-02	1.257
PO-215	5.691E-02		7.258E-01	1.062E+00	1.788E-01	0.054
RN-219	-2.452E-02		4.339E-01	7.061E-01	9.926E-02	-0.035
RN-220	-1.376E+00		2.611E+01	4.156E+01	2.549E+00	-0.033
RA-223	5.691E-02		7.258E-01	1.062E+00	1.788E-01	0.054
AC-227	-1.198E-01		3.729E-01	6.145E-01	8.700E-02	-0.195
TH-227	-1.198E-01		3.731E-01	6.145E-01	1.048E-01	-0.195
TH-229	1.203E-01		5.073E-01	8.130E-01	4.636E-02	0.148
PA-231	-7.399E-01		1.546E+00	2.506E+00	3.524E-01	-0.295
TH-231	5.691E-02		7.258E-01	1.062E+00	1.788E-01	0.054
U-231	-9.326E-01		1.648E+00	2.326E+00	2.230E-01	-0.401
PA-233	-4.155E-03		5.936E-02	9.803E-02	6.784E-03	-0.042
PA-234	-8.347E-03		3.185E-01	5.169E-01	9.960E-02	-0.016
PA-234M	5.607E+00		4.997E+00	8.756E+00	9.037E-01	0.640
TH-234	1.080E+00		1.873E+00	3.140E+00	6.189E-01	0.344
NP-236	-2.349E-02		8.121E-02	1.280E-01	7.132E-03	-0.184
U-238	1.080E+00		1.873E+00	3.140E+00	6.189E-01	0.344
NP-239	-1.525E-02		1.945E-01	3.147E-01	2.201E-02	-0.048
AM-241	-4.495E-03		2.397E-01	3.995E-01	5.130E-02	-0.011



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.960E-01	+	1.334E-01	1.674E-01	1.403E-02	1.171
AM-246	1.801E-01		1.460E-01	2.652E-01	2.095E-02	0.679
CM-247	9.164E-03		3.883E-02	6.438E-02	4.371E-03	0.142
CF-249	4.567E-03		4.146E-02	6.834E-02	4.644E-03	0.067
CF-251	-1.921E-02		1.291E-01	2.038E-01	1.130E-02	-0.094



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G243457003          *
* Acquisition date   : 4-JAN-2010 13:58:57 Detector SN# :                  *
* Detector ID        : GAM10 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:00.99 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243457003 Analyst initials: MXR1                  *
* Batch Number       : 936923 Sample Quantity : 1.1934E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                              *
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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	1.989E+01	2.261E+00	2.307E-01	1.154E+00
CD-109	4.165E+00	1.252E+00	6.452E-01	6.387E-01
SN-126	4.081E-01	1.227E-01	6.369E-02	6.259E-02
BA-137M	1.082E-01	4.776E-02	2.820E-02	2.437E-02
CS-137	1.143E-01	5.049E-02	2.981E-02	2.576E-02
EU-155	2.189E-01	1.461E-01	9.255E-02	7.452E-02
TL-208	5.466E-01	8.414E-02	2.873E-02	4.293E-02
BI-211	4.220E+00	5.469E-01	1.670E-01	2.790E-01
PB-212	1.757E+00	1.735E-01	4.721E-02	8.853E-02
PO-212	1.757E+00	1.735E-01	4.721E-02	8.853E-02
BI-214	1.244E+00	1.801E-01	5.554E-02	9.186E-02
PB-214	1.468E+00	2.045E-01	5.785E-02	1.043E-01
PO-214	1.468E+00	2.045E-01	5.785E-02	1.043E-01
PO-216	1.757E+00	1.735E-01	4.721E-02	8.853E-02
PO-218	1.468E+00	2.045E-01	5.785E-02	1.043E-01
RA-224	5.419E+00	1.534E+00	5.371E-01	7.827E-01
RA-226	1.244E+00	1.801E-01	5.554E-02	9.186E-02
AC-228	1.905E+00	4.118E-01	1.025E-01	2.101E-01
RA-228	1.905E+00	4.118E-01	1.025E-01	2.101E-01
TH-228	1.787E+00	1.765E-01	4.802E-02	9.005E-02
TH-230	1.244E+00	1.800E-01	5.554E-02	9.186E-02
TH-232	1.905E+00	4.118E-01	1.025E-01	2.101E-01
U-234	1.244E+00	1.800E-01	5.554E-02	9.186E-02
U-235	-4.226E-03	2.120E-01	1.770E-01	1.082E-01
NP-237	1.199E+00	4.342E-01	1.904E-01	2.215E-01
AM-243	3.820E-01	9.486E-02	5.436E-02	4.840E-02
ANH-511	1.377E-01	7.221E-02	2.387E-02	3.684E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-1.024E-01	3.273E-01	2.659E-01	1.670E-01	NOT IDENT.
NA-22	1.792E-02	4.569E-02	4.027E-02	2.331E-02	NOT IDENT.
NA-24	1.847E+06	6.210E+06	0.000E+00	3.169E+06	SHORT HLIF
AL-26	8.876E-03	2.179E-02	1.999E-02	1.112E-02	NOT IDENT.
TI-44	3.852E-01	6.985E-02	4.229E-02	3.564E-02	FAIL ABUN
SC-46	-2.799E-02	4.036E-02	3.130E-02	2.059E-02	NOT IDENT.
V-48	-4.730E-02	7.743E-02	5.979E-02	3.951E-02	NOT IDENT.
CR-51	1.396E-01	3.664E-01	3.215E-01	1.869E-01	NOT IDENT.
MN-52	-1.189E-01	3.371E-01	2.693E-01	1.720E-01	NOT IDENT.
MN-54	4.119E-02	3.784E-02	3.465E-02	1.931E-02	NOT IDENT.
CO-56	-1.277E-02	4.111E-02	3.355E-02	2.098E-02	FAIL ABUN
CO-57	1.389E-02	2.473E-02	2.152E-02	1.262E-02	NOT IDENT.
CO-58	-2.485E-02	3.842E-02	3.032E-02	1.960E-02	NOT IDENT.
FE-59	1.839E-02	9.145E-02	7.683E-02	4.666E-02	NOT IDENT.
CO-60	6.750E-03	4.244E-02	3.651E-02	2.165E-02	NOT IDENT.
ZN-65	-2.160E-01	1.297E-01	6.935E-02	6.617E-02	NOT IDENT.
GE-68	1.505E+00	1.311E+00	1.201E+00	6.689E-01	NOT IDENT.
AS-73	2.340E-01	1.667E+00	1.448E+00	8.504E-01	NOT IDENT.
AS-74	8.492E-02	9.096E-02	8.403E-02	4.641E-02	NOT IDENT.
SE-75	1.587E-02	4.408E-02	3.640E-02	2.249E-02	NOT IDENT.
BR-77	-4.299E+00	1.855E+01	1.505E+01	9.464E+00	FAIL ABUN
SR-82	-4.930E-01	4.239E-01	3.217E-01	2.163E-01	NOT IDENT.
RB-83	-8.440E-03	7.079E-02	5.800E-02	3.612E-02	NOT IDENT.
RB-84	-8.351E-03	7.514E-02	6.228E-02	3.834E-02	NOT IDENT.
KR-85	1.728E+01	8.404E+00	7.169E+00	4.288E+00	NOT IDENT.
SR-85	9.047E-02	4.399E-02	3.752E-02	2.244E-02	NOT IDENT.
RB-86	5.460E-01	8.814E-01	7.718E-01	4.497E-01	NOT IDENT.
Y-88	-1.950E-02	3.174E-02	2.182E-02	1.620E-02	NOT IDENT.
ZR-88	6.033E-03	3.202E-02	2.740E-02	1.634E-02	NOT IDENT.
Y-91	4.625E+00	1.794E+01	1.567E+01	9.152E+00	NOT IDENT.
NB-94	1.471E-02	3.431E-02	3.023E-02	1.750E-02	NOT IDENT.
NB-95	3.116E-02	4.671E-02	3.704E-02	2.383E-02	NOT IDENT.
NB-95M	-3.933E-02	1.381E-01	1.049E-01	7.045E-02	NOT IDENT.
ZR-95	1.496E-02	7.547E-02	6.509E-02	3.851E-02	NOT IDENT.
NB-97	-2.211E+05	6.940E+05	0.000E+00	3.541E+05	SHORT HLIF
ZR-97	9.191E+06	1.324E+07	0.000E+00	6.757E+06	SHORT HLIF
MO-99	1.854E+00	1.960E+01	1.643E+01	9.997E+00	NOT IDENT.
TC-99M	-1.282E+18	8.639E+18	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-3.396E-02	3.387E-02	2.563E-02	1.728E-02	NOT IDENT.
RH-102	-3.265E-03	2.916E-02	2.409E-02	1.488E-02	FAIL ABUN
RU-103	-3.021E-02	4.290E-02	3.302E-02	2.189E-02	FAIL ABUN
RH-106	4.347E-01	3.214E-01	3.005E-01	1.640E-01	FAIL ABUN
RU-106	4.347E-01	3.184E-01	3.005E-01	1.625E-01	FAIL ABUN
AG-108M	-1.072E-02	3.255E-02	2.666E-02	1.661E-02	NOT IDENT.
AG-110M	-1.108E-02	3.618E-02	2.598E-02	1.846E-02	NOT IDENT.
IN-111	5.716E-01	1.797E+00	1.414E+00	9.170E-01	NOT IDENT.
IN-113M	1.465E-02	4.642E-02	4.003E-02	2.369E-02	NOT IDENT.
SN-113	1.465E-02	4.642E-02	4.003E-02	2.369E-02	NOT IDENT.
IN-114M	6.815E-02	2.057E-01	1.542E-01	1.049E-01	NOT IDENT.
CD-115	1.045E+01	1.947E+01	1.680E+01	9.934E+00	NOT IDENT.
SN-117M	-1.024E-02	5.999E-02	4.971E-02	3.061E-02	NOT IDENT.
SB-122	1.641E+00	3.389E+00	2.896E+00	1.729E+00	NOT IDENT.
I-123	-2.900E+07	6.945E+07	0.000E+00	3.543E+07	SHORT HLIF
TE-123M	-1.201E-02	2.876E-02	2.354E-02	1.467E-02	NOT IDENT.
I-124	-4.223E-01	8.772E-01	6.850E-01	4.475E-01	NOT IDENT.
SB-124	3.727E-02	8.472E-02	7.545E-02	4.322E-02	FAIL ABUN
SB-125	-4.158E-03	8.776E-02	7.348E-02	4.478E-02	FAIL ABUN
TE-125M	-1.175E-01	1.075E+01	8.192E+00	5.485E+00	NOT IDENT.
I-126	2.547E-01	2.074E-01	1.583E-01	1.058E-01	FAIL ABUN
SB-126	-1.146E-03	1.605E-01	1.290E-01	8.187E-02	FAIL ABUN
SB-127	-1.246E+00	1.933E+00	1.564E+00	9.862E-02	NOT IDENT.
XE-127	1.396E-03	4.590E-02	4.063E-02	2.342E-02	NOT IDENT.
I-131	6.603E-02	1.335E-01	1.170E-01	6.809E-02	NOT IDENT.
TE-132	-1.937E-01	1.023E+00	8.901E-01	5.220E-01	NOT IDENT.
BA-133	-6.195E-03	4.798E-02	3.544E-02	2.448E-02	FAIL ABUN
I-133	1.092E+04	2.886E+04	0.000E+00	1.472E+04	SHORT HLIF
CS-134	4.638E-02	4.446E-02	4.083E-02	2.268E-02	NOT IDENT.
CS-135	7.182E-02	1.736E-01	1.365E-01	8.858E-02	NOT IDENT.
I-135	-6.729E+17	8.938E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.386E-03	1.132E-01	9.356E-02	5.778E-02	FAIL ABUN
CE-139	-7.898E-03	3.023E-02	2.487E-02	1.542E-02	NOT IDENT.
BA-140	1.432E-01	2.819E-01	2.395E-01	1.438E-01	NOT IDENT.
LA-140	-3.331E-02	9.654E-02	7.549E-02	4.925E-02	FAIL ABUN
CE-141	-1.011E-02	6.665E-02	5.561E-02	3.400E-02	NOT IDENT.
CE-143	1.629E+03	5.636E+02	0.000E+00	2.875E+02	SHORT HLIF
CE-144	-8.349E-02	2.080E-01	1.721E-01	1.061E-01	NOT IDENT.
PM-144	2.180E-02	3.518E-02	3.143E-02	1.795E-02	NOT IDENT.
PR-144	1.479E+00	2.386E+00	2.132E+00	1.218E+00	NOT IDENT.



PM-146	2.014E-03	4.103E-02	3.445E-02	2.093E-02	NOT IDENT.
ND-147	-2.797E-01	6.291E-01	4.988E-01	3.209E-01	FAIL ABUN
PM-149	-7.059E+01	1.647E+02	1.389E+02	8.405E+01	NOT IDENT.
EU-152	-9.462E-02	1.084E-01	7.482E-02	5.529E-02	FAIL ABUN
GD-153	-1.633E-02	9.134E-02	6.888E-02	4.660E-02	FAIL ABUN
EU-154	8.521E-02	1.244E-01	1.126E-01	6.345E-02	NOT IDENT.
TB-160	4.847E-02	1.454E-01	1.257E-01	7.416E-02	FAIL ABUN
HO-166M	4.321E-02	6.083E-02	5.472E-02	3.103E-02	NOT IDENT.
TM-171	-3.278E+01	3.601E+01	3.027E+01	1.837E+01	NOT IDENT.
LU-176	1.609E-02	2.299E-02	2.057E-02	1.173E-02	FAIL ABUN
LU-177	4.516E+00	1.671E+00	1.317E+00	8.525E-01	FAIL ABUN
LU-177M	-2.854E-01	1.757E-01	1.297E-01	8.963E-02	FAIL ABUN
HF-181	8.423E-03	4.380E-02	3.699E-02	2.234E-02	NOT IDENT.
W-181	-4.354E-01	4.865E-01	4.098E-01	2.482E-01	NOT IDENT.
TA-182	4.978E-02	1.904E-01	1.660E-01	9.713E-02	NOT IDENT.
RE-183	1.020E-01	1.098E-01	9.558E-02	5.603E-02	FAIL ABUN
RE-184	-8.485E-02	2.196E-01	1.877E-01	1.121E-01	NOT IDENT.
OS-185	3.508E-02	3.791E-02	3.511E-02	1.934E-02	NOT IDENT.
RE-188	7.765E-02	1.746E-01	1.491E-01	8.910E-02	NOT IDENT.
W-188	8.199E-01	7.999E+00	6.127E+00	4.081E+00	NOT IDENT.
IR-192	-1.107E-02	3.296E-02	2.772E-02	1.681E-02	FAIL ABUN
AU-195	2.768E-01	2.487E-01	2.111E-01	1.269E-01	FAIL ABUN
TL-200	-4.207E+02	1.617E+03	0.000E+00	8.248E+02	SHORT HLIF
TL-201	2.163E+00	1.108E+01	9.310E+00	5.652E+00	NOT IDENT.
TL-202	2.319E-02	7.342E-02	6.300E-02	3.746E-02	NOT IDENT.
HG-203	5.908E-02	4.758E-02	3.917E-02	2.428E-02	FAIL ABUN
BI-207	1.595E-02	5.713E-02	4.839E-02	2.915E-02	FAIL ABUN
TL-207	5.691E-02	7.113E-01	5.393E-01	3.629E-01	FAIL ABUN
PO-209	5.458E+00	7.269E+00	6.517E+00	3.708E+00	NOT IDENT.
BI-210	3.874E+00	9.706E+00	8.620E+00	4.952E+00	NOT IDENT.
PB-210	3.874E+00	9.706E+00	8.620E+00	4.952E+00	NOT IDENT.
PO-210	3.874E+00	9.705E+00	8.620E+00	4.951E+00	NOT IDENT.
PB-211	-4.531E-01	1.006E+00	7.915E-01	5.133E-01	NOT IDENT.
BI-212	8.214E-01	4.457E-01	3.287E-01	2.274E-01	FAIL ABUN
PO-215	5.691E-02	7.113E-01	5.393E-01	3.629E-01	FAIL ABUN
RN-219	-2.452E-02	4.252E-01	3.577E-01	2.170E-01	FAIL ABUN
RN-220	-1.376E+00	2.559E+01	2.098E+01	1.306E+01	NOT IDENT.
RA-223	5.691E-02	7.113E-01	5.393E-01	3.629E-01	FAIL ABUN
AC-227	-1.198E-01	3.654E-01	3.128E-01	1.865E-01	FAIL ABUN
TH-227	-1.198E-01	3.656E-01	3.128E-01	1.865E-01	FAIL ABUN
TH-229	1.203E-01	4.971E-01	4.152E-01	2.536E-01	FAIL ABUN
PA-231	-7.399E-01	1.515E+00	1.274E+00	7.728E-01	NOT IDENT.
TH-231	5.691E-02	7.113E-01	5.393E-01	3.629E-01	FAIL ABUN
U-231	-9.326E-01	1.615E+00	1.197E+00	8.240E-01	FAIL ABUN
PA-233	-4.155E-03	5.818E-02	4.980E-02	2.968E-02	FAIL ABUN
PA-234	-8.347E-03	3.122E-01	2.592E-01	1.593E-01	FAIL ABUN
PA-234M	5.607E+00	4.898E+00	4.388E+00	2.499E+00	NOT IDENT.
TH-234	1.080E+00	1.835E+00	1.624E+00	9.363E-01	FAIL ABUN
NP-236	-2.349E-02	7.959E-02	6.551E-02	4.061E-02	NOT IDENT.
U-238	1.080E+00	1.835E+00	1.624E+00	9.363E-01	FAIL ABUN
NP-239	-1.525E-02	1.906E-01	1.616E-01	9.727E-02	FAIL ABUN
AM-241	-4.495E-03	2.350E-01	2.067E-01	1.199E-01	NOT IDENT.
CM-243	1.960E-01	1.307E-01	8.611E-02	6.669E-02	FAIL ABUN
AM-246	1.801E-01	1.431E-01	1.328E-01	7.299E-02	NOT IDENT.
CM-247	9.164E-03	3.806E-02	3.261E-02	1.942E-02	FAIL ABUN
CF-249	4.567E-03	4.063E-02	3.463E-02	2.073E-02	NOT IDENT.
CF-251	-1.921E-02	1.265E-01	1.042E-01	6.455E-02	NOT IDENT.



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 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON ,SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
46.50	276.7814
46.50	276.7814
46.50	276.7814
48.70	308.7673
49.72	309.6073
51.35	277.6169
52.39	270.9385
52.97	273.1980
53.15	286.3383
53.44	264.2198
54.07	275.8213
56.28	282.0176
56.28	282.0199
57.37	0.0000
57.53	299.7935
57.53	299.7947
57.60	297.9638
57.98	289.7690
57.98	289.7690
59.32	296.3578
59.32	296.3578
59.40	296.4137
59.54	296.5119
59.72	304.1957
60.01	322.3646
61.10	318.4470
61.14	318.4761
61.30	311.0084
63.00	296.9937
63.29	289.5691
63.29	289.5691
63.58	289.7593
64.28	313.1288
65.12	343.3679
65.20	343.4286
65.20	343.4286
66.05	345.9932
66.72	341.7026
66.83	341.7859
66.91	341.8457
67.20	343.0238
67.20	343.0238
67.75	330.9282
67.85	330.9999
68.90	332.1363
68.90	332.1363
69.30	337.3445
69.67	343.4088
70.82	368.9368
70.82	368.9368
70.83	368.9445
72.80	385.0530
72.87	385.1094
72.87	385.1094
74.67	338.7066
74.81	338.8036
74.81	338.8036
74.81	338.8036
74.81	338.8036
74.81	338.8036
74.81	338.8036
74.97	338.9131
75.28	339.1266
75.70	339.4143
77.11	340.3762
77.11	340.3762



77.11	340.3762
77.11	340.3762
77.11	340.3762
77.11	340.3762
77.11	340.3762
78.38	312.7175
79.62	316.4366
79.80	298.7973
79.80	298.7973
80.11	298.9792
80.18	275.3346
80.30	275.3984
80.30	275.3984
80.57	275.5432
81.00	299.4955
81.07	299.5355
81.07	299.5355
81.07	299.5355
81.07	299.5355
82.60	304.8771
83.37	273.0530
83.78	273.2670
83.78	273.2670
83.78	273.2670
83.78	273.2670
84.21	273.4880
84.90	273.8433
85.43	274.1146
86.29	274.5524
86.50	274.6601
86.54	274.6797
86.59	274.7049
86.72	274.7720
86.79	274.8056
86.94	274.8825
87.30	275.0657
87.30	275.0657
87.30	275.0657
87.30	275.0657
87.30	275.0657
87.30	275.0657
87.57	275.2014
87.88	275.3581
88.03	275.4336
88.36	275.6000
88.47	275.6546
89.95	276.3959
91.11	276.9722
92.29	277.5540
92.38	277.5988
92.38	277.5988
93.35	278.0744
94.00	278.3919
94.67	278.7150
94.67	278.7178
94.90	263.1139
94.90	263.1139
94.90	263.1139
94.90	263.1139
95.87	274.2201
95.87	274.2201
96.73	279.2051
97.43	271.9012
98.44	238.7060
98.44	238.7060
98.88	243.7847
99.55	258.5732
99.55	258.5732
99.86	267.9114
100.00	267.9754
100.10	268.0220
103.18	249.8584
103.76	259.3597
105.00	261.9478
105.31	262.0809
108.00	239.3831
109.28	269.4651



111.00	285.2926
111.00	285.2926
111.76	268.9534
112.95	254.8294
115.19	261.9972
116.30	257.1909
117.00	258.5147
117.00	258.5147
117.66	256.6686
121.11	252.7061
121.62	230.6759
121.78	225.4382
122.06	225.5303
122.32	234.0897
122.32	234.0897
122.32	234.0897
122.32	234.0897
123.07	259.7979
127.23	251.7625
129.76	251.5975
131.20	340.0759
133.02	282.8593
133.54	275.5287
135.34	240.6056
136.00	247.3030
136.25	238.7445
136.48	266.9175
140.51	253.1585
140.51	0.0000
142.18	261.3452
142.65	250.6102
143.76	262.9809
144.24	270.7883
144.24	270.7883
144.24	270.7883
144.24	270.7883
145.22	295.1889
145.44	281.0571
147.16	269.6281
152.43	247.1738
152.70	240.6351
153.22	250.7336
154.21	234.4543
154.21	234.4543
154.21	234.4543
154.21	234.4543
155.03	247.9805
156.02	284.8636
158.56	246.8413
159.00	0.0000
159.00	256.9870
160.31	254.0554
161.27	271.0860
162.32	218.9329
162.64	208.9597
163.35	228.1511
163.89	260.7527
165.85	252.3903
167.43	243.8734
171.28	243.8481
171.86	240.6239
172.10	246.3410
176.55	231.7018
176.60	236.2577
181.06	232.8846
184.41	250.9420
185.71	260.4806
186.00	260.5637
190.27	216.2266
192.34	240.4027
193.63	211.8004
197.04	211.4058
198.01	234.8756
198.60	230.3676
200.40	201.6591
201.83	238.1494
202.84	229.6338
205.31	206.6685



208.36	252.4398
208.81	252.5556
209.75	204.7789
209.75	204.7789
210.97	189.4762
215.65	209.5393
216.55	207.0605
218.09	204.7034
222.10	206.3988
223.80	207.6321
226.40	218.9172
227.00	211.8602
227.08	205.5919
227.20	205.6164
228.16	217.4865
228.18	217.4902
228.18	217.4902
231.56	0.0000
235.69	240.3879
236.00	240.4589
236.00	240.4589
238.63	208.7341
238.63	208.7341
238.63	208.7341
238.63	208.7341
239.00	208.8042
240.98	209.1833
241.98	209.3745
241.98	209.3745
241.98	209.3745
244.69	164.9921
245.39	169.4787
247.94	158.9885
248.90	167.6309
249.79	182.4329
252.40	176.4229
252.85	171.8970
252.85	171.8970
254.15	0.0000
256.20	177.9337
256.20	177.9337
260.50	135.1061
260.90	139.7814
262.80	186.3703
264.65	146.1148
268.24	174.3803
268.79	171.4808
269.46	152.1807
269.46	152.1807
269.46	152.1807
269.46	152.1807
271.23	179.3027
273.65	142.2356
276.40	190.7950
277.35	190.5417
277.60	184.0102
277.60	184.0102
278.00	180.3135
278.60	171.3841
279.20	157.9307
279.53	159.4788
280.46	143.0381
281.68	159.5070
283.67	171.7164
284.30	170.8613
285.00	169.0689
285.90	163.5206
286.10	156.9295
286.10	156.9295
287.40	154.2526
288.45	0.0000
290.67	148.7753
290.80	148.7897
291.72	148.8997
293.26	0.0000
293.70	146.0906
295.21	141.6933
295.21	141.6933



295.21	141.6933
295.96	102.9029
296.50	102.9457
297.23	103.0051
298.57	103.1138
299.80	122.3262
299.80	122.3262
300.09	122.3535
300.09	122.3535
300.09	122.3535
300.09	122.3535
300.12	122.3555
301.29	122.4668
302.84	154.8017
303.76	142.6401
303.91	142.6583
304.40	127.3653
304.40	127.3653
304.84	127.4099
306.84	119.1487
308.46	136.6135
311.98	122.5100
316.51	132.6080
318.01	132.7564
319.02	127.0382
319.41	123.1940
320.08	121.3150
323.87	132.3601
323.87	132.3601
323.87	132.3601
323.87	132.3601
325.23	124.6992
328.77	152.3723
333.44	151.5798
334.20	154.9333
334.20	154.9333
334.30	154.9430
338.28	125.8809
338.28	125.8809
338.28	125.8809
338.28	125.8809
338.32	125.8848
338.32	125.8848
338.32	125.8848
340.50	132.3841
340.57	132.3902
344.27	142.2180
345.85	115.2569
350.59	0.0000
351.07	128.6053
351.92	127.0938
351.92	127.0938
351.92	127.0938
355.39	0.0000
356.01	125.8580
364.48	108.1582
366.43	121.3379
367.43	125.4330
367.94	0.0000
369.80	121.6111
374.96	103.8754
383.85	114.6242
387.95	121.0319
388.63	114.9794
391.69	119.2834
391.69	119.2834
392.90	119.3744
398.62	129.0243
400.65	109.7086
401.10	117.9445
401.81	124.1535
402.60	119.0816
404.84	132.6120
410.95	100.0949
411.60	118.7166
413.65	132.3027
414.70	95.1544
415.30	86.9121



415.76	80.7267
417.63	0.0000
418.52	86.0459
423.70	96.7151
427.08	91.7007
427.89	94.8741
432.53	96.1819
433.93	104.6310
439.47	82.9285
439.56	86.0827
439.89	91.3489
443.98	88.4105
444.90	82.1383
445.03	82.1454
445.03	82.1454
445.03	82.1454
453.90	85.7411
463.38	90.4604
468.07	99.0220
473.00	89.8781
475.06	93.1942
475.35	85.7092
476.78	91.1374
477.59	94.3956
477.96	94.4158
482.03	87.0995
484.57	92.6033
487.03	78.7109
490.36	0.0000
492.35	86.5063
497.08	89.9770
507.63	0.0000
510.53	0.0000
510.84	89.5417
511.00	89.5492
511.85	89.5880
511.85	89.5880
513.99	80.5006
513.99	80.5006
520.41	85.5981
520.65	85.6077
527.90	70.5039
528.96	0.0000
529.64	67.2586
529.87	0.0000
531.02	83.8556
537.32	68.6261
543.00	73.2610
546.56	0.0000
549.76	75.7353
552.65	73.6115
555.20	87.1049
563.23	77.3576
563.90	72.8969
568.70	79.8100
569.32	59.5943
569.50	59.5991
569.67	59.6040
573.80	82.9348
574.00	82.9415
574.64	86.5758
578.91	69.2808
579.30	0.0000
583.14	74.2484
585.48	54.3882
591.81	70.9141
592.07	70.9236
593.00	72.7734
595.88	60.1187
600.56	84.8943
602.52	0.0000
602.71	78.8105
602.71	78.8105
603.60	71.6073
604.41	73.1582
604.70	73.1680
609.31	77.9049



609.31	77.9049
609.31	77.9049
609.31	77.9049
610.33	77.9402
612.46	59.6584
614.37	58.1798
618.01	97.5350
621.84	59.9124
621.84	59.9124
631.29	61.0903
633.02	65.7686
633.10	65.7721
634.78	66.7477
635.90	56.5784
636.97	65.8847
645.85	49.3731
646.12	46.5833
656.30	62.3861
657.75	63.9858
657.90	0.0000
661.65	65.6558
661.65	65.6558
664.57	0.0000
666.33	68.9183
666.33	68.9183
675.00	63.1985
677.61	71.7658
685.20	77.6778
692.80	82.6734
695.00	81.7987
696.49	70.4265
696.49	70.4265
697.00	69.4908
697.49	68.5512
698.33	80.9575
698.50	80.9637
699.00	83.8385
702.63	73.4677
706.10	87.9031
706.58	0.0000
706.67	95.5688
709.31	62.1864
711.68	62.2451
713.82	76.6758
717.42	62.3895
720.50	62.4665
721.93	0.0000
722.20	73.7280
722.78	65.7291
722.78	65.7291
722.89	65.7325
722.95	65.7341
723.30	57.7266
724.18	72.1820
727.18	50.1059
733.00	54.7284
735.90	53.1805
739.58	60.0353
742.81	58.1719
744.21	65.9647
747.13	55.3565
751.79	76.8611
752.31	72.9840
753.82	51.6051
755.35	61.3773
756.15	67.2447
756.87	72.1374
763.93	57.0188
765.79	57.0587
766.42	61.9649
766.84	61.9742
776.49	82.4988
778.00	76.6499
778.57	57.9917
778.89	60.9465
783.80	65.9842
785.46	48.2870
792.07	80.0172



795.84	47.4844
796.30	47.4914
798.80	69.3232
801.93	64.4462
805.60	47.6543
810.29	59.6704
810.76	58.6860
815.85	49.8254
817.79	48.8636
818.51	45.8843
819.60	44.9044
826.30	52.0140
828.27	0.0000
831.60	72.1564
831.96	66.1515
834.83	50.1660
836.80	0.0000
846.75	60.4541
848.13	54.4351
856.28	0.0000
856.80	79.8776
860.37	41.5075
867.32	52.7706
867.82	42.6296
871.10	60.9683
873.19	45.7592
874.81	53.9239
875.33	0.0000
876.40	54.9716
879.36	48.9129
880.27	39.7541
880.51	39.7570
881.50	54.0468
883.24	59.1810
884.67	47.9799
889.25	57.2564
896.60	39.9740
898.02	56.4005
899.00	59.4967
903.28	44.9431
911.07	45.3170
911.07	45.3170
911.07	45.3170
919.63	51.6431
920.93	48.5651
925.00	46.5612
925.24	43.4602
926.50	42.4424
935.52	46.7205
937.48	57.1390
944.10	58.3037
946.00	51.0469
949.00	55.2670
962.29	41.8877
964.01	41.9111
966.15	41.9395
968.20	41.9668
969.11	41.9785
969.11	41.9785
969.11	41.9785
977.42	47.3500
980.50	35.1074
983.50	50.6027
989.30	35.9084
996.32	50.8043
1001.03	37.0986
1001.68	38.1656
1004.76	50.9356
1021.30	0.0000
1024.50	0.0000
1034.80	36.4089
1036.00	41.7784
1037.82	42.8730
1038.57	31.0900
1038.76	0.0000
1045.16	40.8185
1046.59	37.6130
1048.07	38.7035



1050.47	43.0352
1050.47	43.0352
1062.04	42.1021
1063.62	48.6013
1076.63	40.1128
1077.35	35.7844
1078.86	31.4610
1085.78	42.3935
1099.22	39.2836
1112.02	54.7583
1112.84	48.5110
1115.52	89.5263
1120.29	45.0059
1120.29	45.0059
1120.29	45.0059
1120.29	45.0059
1120.51	45.0099
1121.28	54.9023
1124.00	0.0000
1129.67	44.9416
1131.51	0.0000
1147.95	0.0000
1167.94	38.9290
1173.22	44.5547
1175.09	40.8615
1177.93	43.6819
1189.05	59.6589
1204.90	43.0614
1205.75	0.0000
1213.00	45.9674
1221.42	47.0093
1230.97	51.4094
1235.34	53.3810
1236.41	0.0000
1238.25	48.1591
1246.25	58.8394
1260.41	0.0000
1271.85	36.1925
1274.45	34.3110
1274.54	39.0765
1291.56	36.3734
1298.22	0.0000
1312.09	26.9382
1325.50	40.5405
1325.50	40.5405
1332.49	32.8739
1333.61	43.5223
1360.21	18.4944
1362.66	0.0000
1365.15	22.4141
1368.21	20.4805
1368.53	0.0000
1376.25	32.2440
1384.27	37.2006
1394.10	22.5686
1395.20	29.4446
1407.95	31.5013
1434.06	29.7107
1436.60	22.7913
1457.56	0.0000
1460.81	13.9499
1489.15	8.0218
1509.49	20.1449
1596.49	20.5249
1620.62	7.2199
1678.03	0.0000
1691.02	12.5552
1691.02	12.5552
1706.46	0.0000
1750.46	0.0000
1764.49	12.7373
1764.49	12.7373
1764.49	12.7373
1764.49	12.7373
1770.23	1.8216
1771.40	7.2882
1791.20	0.0000
1808.65	4.2817



1836.01

11.8352



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G243457003

Total Uranium Activity	3.2104E+00	ug/g
Total Uranium Counting Unc.	5.4604E+00	ug/g
Total Uranium Tpu	2.7859E-06	ug/g
Total Uranium Mda	4.8309E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 936923          SAMPLE ID   : G243457003
*  ANALYST       : MXR1            DETECTOR    : GAM10
*  SAMPLE DATE   : 18-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 4-JAN-2010 13:58:57.23  SAMPLE ALQT: 119.340 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.877E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.257E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.338E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.615E+00

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VAX/VMS Nuclide Identification Report Generated 6-JAN-2010 11:56:45.19

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457004.CNF;1
Sample date   : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:59:18.
Sample ID    : G243457004 Sample quantity : 1.18320E+02 GRAM
Detector name : GAM11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.58 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID      : 936923 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.91*	37	353	0.70	124.70	122	7	5.15E-03	88.7	
2	2	74.70	426	348	0.95	148.29	144	12	5.91E-02	8.4	9.78E-01
3	2	76.98	613	248	0.81	152.86	144	12	8.51E-02	5.7	
4	0	84.10	86	365	1.33	167.11	165	6	1.19E-02	36.8	
5	6	87.04	187	305	0.84	173.01	170	22	2.59E-02	15.2	3.60E+00
6	6	89.78	161	310	0.99	178.48	170	22	2.23E-02	18.8	
7	6	92.60*	210	303	1.17	184.12	170	22	2.92E-02	17.3	
8	0	129.04	88	275	1.14	257.05	253	8	1.23E-02	34.4	
9	0	185.65*	153	237	1.03	370.37	366	8	2.13E-02	20.4	
10	0	209.05*	106	257	0.80	417.20	412	9	1.47E-02	29.5	
11	2	238.37*	1123	166	0.95	475.89	471	15	1.56E-01	3.6	3.23E+00
12	2	240.64	98	162	1.25	480.43	471	15	1.37E-02	31.3	
13	2	241.73	158	135	1.07	482.60	471	15	2.19E-02	15.5	
14	0	269.78	79	228	1.88	538.74	534	13	1.09E-02	41.7	
15	0	294.82*	305	192	1.15	588.85	582	13	4.24E-02	11.1	
16	0	299.51	61	113	1.16	598.26	595	8	8.53E-03	32.5	
17	4	326.09	23	31	0.78	651.44	650	8	3.13E-03	40.7	2.62E+00
18	4	327.65	89	73	1.05	654.56	650	8	1.24E-02	19.3	
19	0	338.02*	183	144	1.19	675.31	671	9	2.54E-02	14.3	
20	0	351.64*	559	112	1.20	702.57	697	11	7.76E-02	5.7	
21	0	409.30	52	90	1.28	817.96	813	9	7.21E-03	35.8	
22	0	462.56	60	72	1.51	924.57	920	10	8.36E-03	29.7	
23	0	510.36*	142	128	1.71	1020.22	1013	15	1.97E-02	22.0	
24	0	582.67*	344	89	1.40	1164.91	1160	12	4.77E-02	7.9	
25	0	608.91*	360	90	1.31	1217.44	1211	13	5.00E-02	7.7	
26	0	726.54	95	63	1.84	1452.82	1447	12	1.32E-02	19.6	
27	3	767.82	49	67	1.94	1535.41	1530	20	6.82E-03	35.6	1.83E+00
28	3	772.15	52	47	1.94	1544.08	1530	20	7.24E-03	32.1	
29	0	794.59	65	42	0.98	1588.99	1583	12	9.07E-03	23.4	
30	0	860.27	39	63	1.58	1720.41	1713	12	5.46E-03	43.4	
31	0	910.62*	199	69	1.30	1821.16	1815	13	2.77E-02	11.4	
32	0	967.22	192	72	1.89	1934.41	1925	18	2.67E-02	12.6	
33	0	1119.61*	114	62	1.54	2239.30	2232	15	1.58E-02	18.2	
34	0	1459.67*	1345	19	1.71	2919.62	2912	15	1.87E-01	2.8	
35	0	1586.76	25	3	1.07	3173.86	3168	11	3.51E-03	23.6	
36	0	1763.29*	67	3	2.22	3526.97	3521	12	9.26E-03	14.0	

Flag: "\*" = Peak area was modified by background subtraction



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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:59:18
Sample ID        : G243457004 Sample quantity : 118.32 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA11 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.58 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	3.260E+01	3.369E+00	4.316E-01	3.732E-02	75.544
CD-109	+	88.03	*	2.408E+00	7.667E-01	9.338E-01	8.855E-02	2.579
SN-126	+	64.28		2.900E-01	5.162E-01	5.680E-01	8.239E-02	0.511
	+	86.94		9.811E-01	5.050E-01	3.757E-01	1.560E-01	2.611
	+	87.57	*	2.360E-01	7.514E-02	9.181E-02	8.660E-03	2.570
TL-208		277.35		2.976E-01	3.317E-01	5.596E-01	9.921E-02	0.532
	+	510.84		7.042E-01	3.245E-01	1.949E-01	2.642E-02	3.614
	+	583.14	*	4.860E-01	9.287E-02	5.510E-02	5.950E-03	8.821
	+	860.37		5.190E-01	4.540E-01	4.280E-01	4.458E-02	1.212
BI-211		72.87		2.356E+00	2.553E+00	3.877E+00	3.080E-01	0.608
	+	351.07	*	3.492E+00	6.080E-01	2.652E-01	3.499E-02	13.169
PB-212	+	74.81		2.185E+00	4.558E-01	3.938E-01	4.872E-02	5.548
	+	77.11		1.797E+00	2.542E-01	2.176E-01	1.808E-02	8.259
	+	87.30		1.091E+00	3.642E-01	4.254E-01	5.839E-02	2.565
	+	238.63	*	1.532E+00	2.406E-01	8.345E-02	1.169E-02	18.362
	+	300.09		1.293E+00	8.651E-01	1.116E+00	1.789E-01	1.159
PO-212	+	74.81		2.185E+00	4.558E-01	3.938E-01	4.872E-02	5.548
	+	77.11		1.797E+00	2.542E-01	2.176E-01	1.808E-02	8.259
	+	87.30		1.091E+00	3.642E-01	4.254E-01	5.839E-02	2.565
		115.19		9.771E-01	2.764E+00	4.779E+00	4.049E-01	0.204
	+	238.63	*	1.532E+00	2.406E-01	8.345E-02	1.169E-02	18.362
	+	300.09		1.293E+00	8.651E-01	1.116E+00	1.789E-01	1.159
BI-214	+	609.31	*	9.594E-01	1.834E-01	9.676E-02	1.094E-02	9.915
	+	1120.29		1.562E+00	5.938E-01	5.058E-01	5.462E-02	3.088
	+	1764.49		1.249E+00	3.657E-01	2.770E-01	2.282E-02	4.510
PB-214	+	74.81		3.765E+00	7.556E-01	6.786E-01	7.451E-02	5.548
	+	77.11		3.081E+00	4.950E-01	3.730E-01	4.206E-02	8.259
	+	87.30		1.870E+00	6.125E-01	7.288E-01	8.860E-02	2.565
	+	241.98		1.295E+00	4.436E-01	4.630E-01	6.746E-02	2.797
	+	295.21		1.127E+00	3.102E-01	1.731E-01	2.823E-02	6.509
	+	351.92	*	1.215E+00	2.208E-01	9.245E-02	1.308E-02	13.141
PO-214	+	74.81		3.765E+00	7.556E-01	6.786E-01	7.451E-02	5.548
	+	77.11		3.081E+00	4.950E-01	3.730E-01	4.206E-02	8.259
	+	87.30		1.870E+00	6.125E-01	7.288E-01	8.860E-02	2.565



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		1.295E+00	4.436E-01	4.630E-01	6.746E-02	2.797
	+	295.21		1.127E+00	3.102E-01	1.731E-01	2.823E-02	6.509
	+	351.92	*	1.215E+00	2.208E-01	9.245E-02	1.308E-02	13.141
	+	74.81		2.185E+00	4.558E-01	3.938E-01	4.872E-02	5.548
	+	77.11		1.797E+00	2.542E-01	2.176E-01	1.808E-02	8.259
	+	87.30		1.091E+00	3.642E-01	4.254E-01	5.839E-02	2.565
PO-218	+	238.63	*	1.532E+00	2.406E-01	8.345E-02	1.169E-02	18.362
	+	300.09		1.293E+00	8.651E-01	1.116E+00	1.789E-01	1.159
	+	74.81		3.765E+00	7.556E-01	6.786E-01	7.451E-02	5.548
	+	77.11		3.081E+00	4.950E-01	3.730E-01	4.206E-02	8.259
	+	87.30		1.870E+00	6.125E-01	7.288E-01	8.860E-02	2.565
	+	241.98		1.295E+00	4.436E-01	4.630E-01	6.746E-02	2.797
RA-224	+	295.21		1.127E+00	3.102E-01	1.731E-01	2.823E-02	6.509
	+	351.92	*	1.215E+00	2.208E-01	9.245E-02	1.308E-02	13.141
	+	240.98	*	1.527E+00	9.769E-01	9.500E-01	1.272E-01	1.608
RA-226	+	609.31	*	9.594E-01	1.834E-01	9.676E-02	1.094E-02	9.915
TH-228	+	1120.29		1.562E+00	5.938E-01	5.058E-01	5.462E-02	3.088
	+	1764.49		1.249E+00	3.657E-01	2.770E-01	2.282E-02	4.510
	+	74.81		2.222E+00	4.153E-01	4.006E-01	3.277E-02	5.548
	+	77.11		1.828E+00	2.586E-01	2.213E-01	1.839E-02	8.259
	+	87.30		1.110E+00	3.535E-01	4.327E-01	4.068E-02	2.565
	+	238.63	*	1.559E+00	2.447E-01	8.488E-02	1.189E-02	18.362
TH-230	+	300.09		1.316E+00	1.168E+00	1.135E+00	6.871E-01	1.159
	+	609.31	*	9.594E-01	1.834E-01	9.676E-02	1.094E-02	9.915
	+	1120.29		1.562E+00	5.938E-01	5.058E-01	5.462E-02	3.088
	+	1764.49		1.249E+00	3.657E-01	2.770E-01	2.282E-02	4.510
TH-234	+	63.29	*	7.327E-01	1.306E+00	1.370E+00	2.383E-01	0.535
U-234	+	92.38		1.748E+00	6.844E-01	6.105E-01	1.120E-01	2.863
	+	609.31	*	9.594E-01	1.834E-01	9.676E-02	1.094E-02	9.915
	+	1120.29		1.562E+00	5.938E-01	5.058E-01	5.462E-02	3.088
NP-237	+	1764.49		1.249E+00	3.657E-01	2.770E-01	2.282E-02	4.510
	+	86.50	*	6.930E-01	2.629E-01	2.967E-01	6.716E-02	2.336
	+	95.87		-1.934E-03	8.182E-01	1.166E+00	2.887E-01	-0.002
U-238	+	63.29	*	7.327E-01	1.306E+00	1.370E+00	2.383E-01	0.535
AM-243	+	92.38		1.748E+00	6.255E-01	6.105E-01	5.590E-02	2.863
	+	74.67	*	3.542E-01	6.607E-02	6.400E-02	5.179E-03	5.534
	+	86.72		2.599E+01	8.274E+00	9.969E+00	9.301E-01	2.607
	+	117.66		-1.397E+00	2.949E+00	4.904E+00	4.148E-01	-0.285
ANH-511	+	142.18		-4.435E-01	1.384E+01	2.328E+01	2.075E+00	-0.019
	+	511.00	*	1.521E-01	6.894E-02	4.210E-02	4.502E-03	3.613

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	5.325E-02	2.669E-01	4.530E-01	5.127E-02	0.118
NA-22		1274.54	*	-2.241E-02	4.313E-02	6.580E-02	5.404E-03	-0.341
NA-24		1368.53	*	-3.050E+00	4.313E-02	Half-Life too short		
AL-26		1129.67		3.339E-01	1.767E+00	2.957E+00	2.498E-01	0.113



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TI-44		1808.65	*	-1.027E-02	2.579E-02	3.836E-02	3.131E-03	-0.268
		67.85		-1.062E-02	3.452E-02	5.377E-02	4.074E-03	-0.198
SC-46	+	78.38	*	3.317E-01	4.692E-02	4.950E-02	4.173E-03	6.701
		889.25	*	1.202E-02	3.502E-02	6.076E-02	5.984E-03	0.198
V-48	+	1120.51		2.717E-01	1.017E-01	1.348E-01	1.149E-02	2.016
		944.10		-1.929E-02	9.209E-01	1.534E+00	1.484E-01	-0.013
		983.50	*	5.570E-02	7.791E-02	1.379E-01	1.308E-02	0.404
		1312.09		-5.638E-02	8.790E-02	1.306E-01	1.077E-02	-0.432
CR-51		320.08	*	1.875E-02	3.626E-01	5.819E-01	8.446E-02	0.032
MN-52		744.21		1.911E-01	2.826E-01	4.852E-01	4.714E-02	0.394
		848.13		-5.399E+00	7.261E+00	1.123E+01	1.106E+00	-0.481
		935.52		1.205E-02	3.023E-01	5.070E-01	4.923E-02	0.024
		1246.25		8.258E+00	9.438E+00	1.662E+01	1.357E+00	0.497
		1333.61		-1.153E+00	6.345E+00	1.013E+01	8.373E-01	-0.114
		1434.06	*	2.878E-01	2.810E-01	5.215E-01	4.369E-02	0.552
MN-54		834.83	*	1.043E-02	3.668E-02	6.325E-02	6.228E-03	0.165
CO-56		846.75	*	-3.608E-02	3.626E-02	5.472E-02	5.391E-03	-0.659
		977.42		-6.876E-01	2.887E+00	4.690E+00	4.464E-01	-0.147
		1037.82		8.618E-02	3.008E-01	5.126E-01	4.919E-02	0.168
		1175.09		-2.426E+00	2.326E+00	3.393E+00	2.727E-01	-0.715
		1238.25		1.044E-01	9.860E-02	1.736E-01	1.461E-02	0.601
		1360.21		-3.917E-01	8.668E-01	1.284E+00	1.066E-01	-0.305
		1771.40		2.448E-02	1.592E-01	2.738E-01	2.253E-02	0.089
		122.06	*	-1.318E-03	1.981E-02	3.355E-02	2.838E-03	-0.039
CO-57		136.48		1.270E-01	1.718E-01	2.990E-01	2.809E-02	0.425
CO-58		810.76	*	-3.332E-02	4.071E-02	5.918E-02	5.827E-03	-0.563
FE-59		142.65		1.295E+00	2.287E+00	3.868E+00	3.455E-01	0.335
		192.34		5.833E-01	8.607E-01	1.465E+00	2.198E-01	0.398
		1099.22	*	-7.894E-02	9.138E-02	1.361E-01	1.280E-02	-0.580
		1291.56		5.761E-02	1.170E-01	2.014E-01	1.901E-02	0.286
CO-60		1173.22		9.556E-03	4.522E-02	7.558E-02	6.072E-03	0.126
		1332.49	*	-1.447E-02	4.102E-02	6.404E-02	5.292E-03	-0.226
ZN-65		1115.52	*	2.134E-02	1.178E-01	1.716E-01	1.472E-02	0.124
GE-68		1077.35	*	-7.632E-01	1.277E+00	1.979E+00	1.757E-01	-0.386
AS-73		53.44	*	-2.570E-01	5.952E-01	9.094E-01	6.829E-02	-0.283
AS-74		595.88	*	5.358E-03	9.641E-02	1.589E-01	1.616E-02	0.034
		634.78		1.216E-01	3.514E-01	5.919E-01	5.790E-02	0.205
SE-75		66.05		-2.129E+00	3.923E+00	5.522E+00	5.248E-01	-0.386
		96.73		-6.811E-01	7.047E-01	9.269E-01	1.281E-01	-0.735
		121.11		-1.643E-02	1.067E-01	1.800E-01	1.997E-02	-0.091
		136.00		1.110E-02	3.252E-02	5.574E-02	4.907E-03	0.199
		198.60		9.000E-01	1.626E+00	2.699E+00	3.228E-01	0.333
		264.65	*	-7.240E-03	4.319E-02	6.149E-02	9.039E-03	-0.118
		279.53		-9.807E-02	1.045E-01	1.567E-01	2.454E-02	-0.626
		303.91		-2.529E-01	2.225E+00	3.147E+00	5.230E-01	-0.080
		400.65		-4.113E-02	2.224E-01	3.709E-01	4.745E-02	-0.111
	+	87.88		9.203E+02	2.930E+02	4.719E+02	4.469E+01	1.950
BR-77		200.40		1.916E+01	2.567E+02	4.254E+02	4.811E+01	0.045
	+	239.00		4.365E+02	6.569E+01	6.613E+01	8.787E+00	6.601



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	249.79			-5.382E+01	1.005E+02	1.574E+02	2.182E+01	-0.342
	281.68			-6.821E+01	1.464E+02	2.283E+02	3.521E+01	-0.299
	297.23			8.124E+01	1.033E+02	1.292E+02	1.939E+01	0.629
	303.76			1.790E+01	3.290E+02	4.725E+02	6.993E+01	0.038
	439.47			2.540E+02	2.241E+02	4.041E+02	4.359E+01	0.629
	484.57			8.637E+01	3.553E+02	5.954E+02	6.410E+01	0.145
	520.65	*		-4.360E+00	1.618E+01	2.619E+01	2.791E+00	-0.166
	574.64			-3.081E+02	3.496E+02	5.288E+02	5.468E+01	-0.583
	578.91			5.721E+01	1.511E+02	2.279E+02	2.349E+01	0.251
	585.48			3.922E+02	3.119E+02	5.073E+02	5.203E+01	0.773
	755.35			6.510E+01	2.996E+02	4.917E+02	4.790E+01	0.132
	817.79			-5.892E+01	2.329E+02	3.617E+02	3.557E+01	-0.163
SR-82	698.33			-3.062E+01	3.787E+01	5.688E+01	5.455E+00	-0.538
	776.49	*		2.627E-02	3.979E-01	5.628E-01	5.505E-02	0.047
	1395.20			3.458E+00	9.710E+00	1.660E+01	1.385E+00	0.208
RB-83	520.41	*		-1.602E-02	6.082E-02	9.850E-02	1.050E-02	-0.163
	529.64			3.164E-02	9.406E-02	1.601E-01	1.700E-02	0.198
	552.65			-5.305E-02	1.956E-01	3.155E-01	3.310E-02	-0.168
RB-84	881.50	*		4.740E-02	6.996E-02	1.244E-01	1.226E-02	0.381
KR-85	513.99	*		3.604E+00	7.167E+00	1.099E+01	1.174E+00	0.328
SR-85	513.99	*		1.887E-02	3.752E-02	5.754E-02	6.147E-03	0.328
RB-86	1076.63	*		-2.900E-01	9.127E-01	1.461E+00	1.298E-01	-0.198
Y-88	898.02			-9.809E-03	3.938E-02	6.299E-02	6.224E-03	-0.156
	1836.01	*		-1.344E-02	3.474E-02	5.263E-02	4.273E-03	-0.255
ZR-88	392.90	*		-5.720E-03	2.464E-02	4.097E-02	4.370E-03	-0.140
Y-91	1204.90	*		-4.774E+00	1.966E+01	3.138E+01	2.541E+00	-0.152
NB-94	702.63	*		7.744E-03	3.426E-02	5.652E-02	5.428E-03	0.137
	871.10			-1.647E-03	3.393E-02	5.677E-02	5.595E-03	-0.029
NB-95	765.79	*		2.120E-02	5.379E-02	7.877E-02	7.689E-03	0.269
NB-95M	235.69	*		9.426E-02	1.266E-01	1.933E-01	2.699E-02	0.488
ZR-95	724.18			1.327E-01	9.413E-02	1.561E-01	1.613E-02	0.851
	756.15	*		5.060E-03	7.356E-02	1.191E-01	1.253E-02	0.042
NB-97	657.90	*		2.533E-02	7.356E-02	Half-Life	too short	
	1024.50			3.788E+01	7.356E-02	Half-Life	too short	
ZR-97	254.15			-1.886E+01	7.356E-02	Half-Life	too short	
	355.39			9.947E+00	7.356E-02	Half-Life	too short	
	507.63	*		2.962E+01	7.356E-02	Half-Life	too short	
	602.52			-2.138E+01	7.356E-02	Half-Life	too short	
	1021.30			2.274E+01	7.356E-02	Half-Life	too short	
	1147.95			1.590E+00	7.356E-02	Half-Life	too short	
	1362.66			4.324E+01	7.356E-02	Half-Life	too short	
	1750.46			2.195E+01	7.356E-02	Half-Life	too short	
MO-99	140.51			-3.476E+01	3.648E+01	5.484E+01	1.523E+01	-0.634
	181.06			-9.402E+00	2.533E+01	3.664E+01	7.029E+00	-0.257
	366.43			-1.647E+01	1.227E+02	1.918E+02	2.324E+01	-0.086
	739.58	*		-4.470E+00	1.808E+01	2.837E+01	4.490E+00	-0.158
	778.00			-7.127E+01	6.690E+01	7.878E+01	7.708E+00	-0.905
TC-99M	140.51	*		-7.042E+12	6.690E+01	Half-Life	too short	
RH-101	127.23			1.086E-02	2.917E-02	4.544E-02	3.881E-03	0.239



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-102	+	198.01	*	-1.554E-02	2.959E-02	4.650E-02	5.204E-03	-0.334
		325.23		1.474E-01	1.217E-01	3.270E-01	4.588E-02	0.451
		418.52		1.950E-02	2.550E-01	4.320E-01	4.644E-02	0.045
	*	475.06		-4.482E-03	2.435E-02	4.003E-02	4.315E-03	-0.112
		631.29		-3.979E-02	5.169E-02	7.802E-02	7.662E-03	-0.510
		697.49		-2.703E-02	7.846E-02	1.232E-01	1.181E-02	-0.219
RU-103	+	766.84		2.181E-01	1.569E-01	2.075E-01	2.026E-02	1.051
		1046.59		2.419E-02	1.094E-01	1.851E-01	1.685E-02	0.131
	*	1112.84		1.590E-01	2.777E-01	4.242E-01	3.646E-02	0.375
		497.08		-5.429E-02	3.857E-02	5.485E-02	8.524E-03	-0.990
RH-106	+	610.33		1.072E+01	2.499E+00	2.621E+00	4.577E-01	4.091
		511.85		7.626E-01	3.456E-01	4.232E-01	4.524E-02	1.802
RU-106	*	621.84		1.154E-01	3.074E-01	5.184E-01	7.377E-02	0.223
		1050.47		-1.772E+00	2.348E+00	3.580E+00	3.249E-01	-0.495
	+	511.85		7.626E-01	3.456E-01	4.232E-01	4.524E-02	1.802
		621.84		1.154E-01	3.072E-01	5.184E-01	5.143E-02	0.223
AG-108M	*	1050.47		-1.772E+00	2.348E+00	3.580E+00	3.249E-01	-0.495
		433.93		-1.515E-04	2.918E-02	4.871E-02	5.385E-03	-0.003
AG-110M	*	614.37		-2.618E-02	4.072E-02	5.352E-02	5.507E-03	-0.489
		722.95		8.667E-03	3.669E-02	5.369E-02	5.350E-03	0.161
		657.75		-1.231E-03	3.391E-02	5.501E-02	5.361E-03	-0.022
	*	677.61		-1.236E-01	2.973E-01	4.633E-01	4.513E-02	-0.267
		706.67		1.174E-02	2.040E-01	3.317E-01	3.261E-02	0.035
		763.93		-2.293E-02	1.900E-01	2.623E-01	2.616E-02	-0.087
IN-111	*	884.67		-3.107E-02	4.573E-02	7.128E-02	7.196E-03	-0.436
		937.48		-8.564E-02	1.103E-01	1.699E-01	1.696E-02	-0.504
	+	1384.27		-6.581E-02	1.512E-01	2.271E-01	1.949E-02	-0.290
		171.28		-2.957E-01	1.327E+00	2.186E+00	2.175E-01	-0.135
IN-113M	*	245.39		4.312E-01	1.689E+00	2.505E+00	3.415E-01	0.172
		391.69		-2.874E-03	3.628E-02	6.107E-02	6.643E-03	-0.047
SN-113	*	391.69		-2.874E-03	3.628E-02	6.107E-02	6.643E-03	-0.047
IN-114M	*	190.27		2.184E-03	1.631E-01	2.704E-01	2.926E-02	0.008
CD-115		260.90		-2.467E+02	2.219E+02	3.294E+02	4.766E+01	-0.749
SN-117M	*	492.35		-1.108E+01	5.829E+01	9.553E+01	1.027E+01	-0.116
		527.90		-7.174E+00	1.822E+01	2.916E+01	3.098E+00	-0.246
		156.02		-1.690E+00	2.212E+00	3.569E+00	3.341E-01	-0.474
SB-122	*	158.56		7.046E-03	5.182E-02	8.731E-02	8.251E-03	0.081
		563.90		-1.628E-01	3.294E+00	5.408E+00	5.633E-01	-0.030
I-123	*	692.80		5.499E+01	7.029E+01	1.214E+02	1.162E+01	0.453
		159.00		2.270E+01	7.029E+01	Half-Life too short		
TE-123M	*	528.96		2.816E+03	7.029E+01	Half-Life too short		
I-124	*	159.00		9.397E-03	2.425E-02	4.131E-02	3.930E-03	0.227
		602.71		-3.986E-01	9.628E-01	1.312E+00	1.326E-01	-0.304
	*	722.78		1.339E+00	5.318E+00	7.798E+00	7.535E-01	0.172
		1325.50		-1.260E+01	4.965E+01	7.783E+01	6.427E+00	-0.162
SB-124	*	1376.25		4.210E+01	4.150E+01	7.540E+01	6.275E+00	0.558
		1509.49		1.615E+01	1.764E+01	3.363E+01	2.830E+00	0.480
		1691.02		1.489E+00	4.585E+00	8.092E+00	6.747E-01	0.184
		602.71		-1.710E-02	4.132E-02	5.630E-02	5.691E-03	-0.304



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		645.85		2.250E-01	4.673E-01	7.954E-01	8.050E-02	0.283
		709.31		-1.618E-01	2.720E+00	4.375E+00	4.210E-01	-0.037
		713.82		-2.828E-01	1.560E+00	2.476E+00	3.166E-01	-0.114
		722.78		8.332E-02	3.308E-01	4.851E-01	4.768E-02	0.172
	+	968.20		2.220E+01	5.995E+00	7.223E+00	6.908E-01	3.073
		1045.16		1.657E+00	2.399E+00	4.238E+00	3.862E-01	0.391
		1325.50		-8.370E-01	3.298E+00	5.171E+00	4.270E-01	-0.162
		1368.21		-4.447E-01	1.479E+00	2.260E+00	3.001E-01	-0.197
		1436.60		-1.946E+00	3.679E+00	5.379E+00	4.508E-01	-0.362
		1691.02	*	2.184E-02	6.727E-02	1.187E-01	1.032E-02	0.184
SB-125		427.89	*	2.273E-02	7.675E-02	1.320E-01	1.439E-02	0.172
	+	463.38		5.852E-01	3.539E-01	4.658E-01	5.281E-02	1.256
		600.56		-1.438E-01	1.705E-01	2.583E-01	2.757E-02	-0.557
		635.90		1.011E-01	2.411E-01	4.089E-01	4.248E-02	0.247
TE-125M		109.28	*	-2.858E+00	7.220E+00	1.210E+01	1.243E+00	-0.236
I-126		388.63		-6.119E-02	1.937E-01	3.208E-01	3.480E-02	-0.191
		666.33	*	4.194E-02	1.955E-01	3.238E-01	3.069E-02	0.130
		753.82		6.517E-01	1.571E+00	2.628E+00	2.559E-01	0.248
SB-126		223.80		8.138E-01	3.945E+00	6.540E+00	8.169E-01	0.124
		278.60		2.826E+00	2.512E+00	4.278E+00	6.609E-01	0.661
		296.50		5.989E+00	2.127E+00	2.983E+00	4.482E-01	2.008
		414.70		-2.374E-02	7.406E-02	1.177E-01	1.264E-02	-0.202
		415.30		8.096E-01	5.960E+00	1.015E+01	1.090E+00	0.080
		555.20		6.865E-01	4.164E+00	6.965E+00	7.295E-01	0.099
		573.80		-4.383E-01	1.112E+00	1.768E+00	1.829E-01	-0.248
		593.00		3.626E-01	9.414E-01	1.597E+00	1.628E-01	0.227
		656.30		1.857E+00	3.598E+00	6.117E+00	5.829E-01	0.304
		666.33		1.760E-02	8.206E-02	1.359E-01	1.288E-02	0.130
		675.00		-4.017E-01	2.036E+00	3.242E+00	3.084E-01	-0.124
		695.00		1.510E-02	8.942E-02	1.469E-01	1.408E-02	0.103
		697.00		2.948E-02	2.973E-01	4.858E-01	4.657E-02	0.061
		720.50	*	2.441E-02	1.531E-01	2.212E-01	2.136E-02	0.110
		856.80		2.930E-01	5.037E-01	7.976E-01	7.861E-02	0.367
		989.30		-5.472E-01	1.468E+00	2.354E+00	2.225E-01	-0.233
		1034.80		-3.435E+00	9.386E+00	1.494E+01	1.371E+00	-0.230
SB-127		1213.00		2.061E+00	5.586E+00	9.415E+00	7.635E-01	0.219
		61.10		-3.517E+01	6.058E+01	8.529E+01	9.178E+00	-0.412
		252.40		2.015E+00	5.277E+00	8.676E+00	3.784E+00	0.232
		290.80		-8.451E+00	2.952E+01	4.115E+01	7.065E+00	-0.205
		411.60		5.553E+00	1.622E+01	2.495E+01	4.335E+00	0.223
		444.90		5.663E+00	1.135E+01	1.976E+01	2.884E+00	0.287
		473.00		4.318E-01	1.989E+00	3.380E+00	5.029E-01	0.128
		543.00		-1.219E+01	2.054E+01	3.195E+01	5.132E+00	-0.381
		603.60		6.653E+00	1.589E+01	2.399E+01	3.376E+00	0.277
		685.20	*	1.383E+00	1.749E+00	3.040E+00	3.849E-01	0.455
		698.50		-1.840E+01	2.290E+01	3.418E+01	5.737E+00	-0.538
		722.20		-8.474E-01	3.889E+01	5.468E+01	6.861E+00	-0.015
		783.80		5.697E+00	5.194E+00	9.111E+00	1.255E+00	0.625
XE-127		57.60		-4.349E+00	4.506E+00	6.807E+00	4.900E-01	-0.639



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131		145.22		-6.354E-01	6.130E-01	9.578E-01	8.628E-02	-0.663
		172.10		9.577E-03	1.011E-01	1.693E-01	1.691E-02	0.057
		202.84	*	-3.275E-02	4.258E-02	6.713E-02	7.672E-03	-0.488
		374.96		-9.578E-02	1.880E-01	2.835E-01	3.302E-02	-0.338
		80.18		4.752E+00	4.329E+00	6.628E+00	5.752E-01	0.717
		284.30		-8.269E-01	1.668E+00	2.595E+00	4.054E-01	-0.319
		364.48	*	-5.417E-02	1.228E-01	1.867E-01	2.345E-02	-0.290
TE-132		636.97		-2.539E-02	1.667E+00	2.716E+00	2.770E-01	-0.009
		722.89		1.771E+00	7.324E+00	1.073E+01	1.043E+00	0.165
		49.72		-7.871E+00	1.798E+01	2.810E+01	3.061E+00	-0.280
		111.76		1.589E+01	3.441E+01	5.982E+01	6.765E+00	0.266
BA-133		116.30		9.783E+00	3.260E+01	5.621E+01	6.340E+00	0.174
		228.16	*	-9.774E-01	9.760E-01	1.459E+00	2.716E-01	-0.670
		53.15		-1.233E+00	2.506E+00	3.814E+00	2.875E-01	-0.323
		79.62		9.585E-01	1.015E+00	1.535E+00	2.331E-01	0.624
		81.00		-4.753E-03	8.055E-02	1.156E-01	1.841E-02	-0.041
I-133		276.40		1.116E-01	3.424E-01	5.383E-01	1.034E-01	0.207
		302.84		3.460E-02	1.425E-01	2.081E-01	3.735E-02	0.166
		356.01	*	2.593E-02	3.810E-02	5.771E-02	9.308E-03	0.449
		383.85		6.905E-02	2.654E-01	4.574E-01	6.605E-02	0.151
	+	510.53		7.455E+00	2.654E-01	Half-Life	too short	
		529.87	*	5.975E-03	2.654E-01	Half-Life	too short	
		706.58		1.261E-01	2.654E-01	Half-Life	too short	
		856.28		7.694E-01	2.654E-01	Half-Life	too short	
		875.33		7.836E-02	2.654E-01	Half-Life	too short	
		1236.41		2.653E+00	2.654E-01	Half-Life	too short	
CS-134		1298.22		1.080E-01	2.654E-01	Half-Life	too short	
		475.35		-4.126E-01	1.594E+00	2.602E+00	2.805E-01	-0.159
		563.23		7.806E-02	3.481E-01	5.838E-01	6.125E-02	0.134
		569.32		1.911E-02	1.923E-01	3.186E-01	3.338E-02	0.060
		604.70		2.084E-02	3.158E-02	4.903E-02	4.956E-03	0.425
	+	795.84	*	1.328E-01	6.343E-02	8.851E-02	8.731E-03	1.501
		801.93		-3.262E-01	4.391E-01	6.539E-01	6.447E-02	-0.499
		1038.57		3.583E-01	3.775E+00	6.311E+00	5.779E-01	0.057
		1167.94		7.956E-01	2.730E+00	4.590E+00	3.712E-01	0.173
		1365.15		-1.386E-01	1.042E+00	1.645E+00	1.434E-01	-0.084
CS-135		268.24	*	1.829E-01	1.618E-01	2.509E-01	3.936E-02	0.729
I-135		288.45		-1.391E+12	1.618E-01	Half-Life	too short	
		417.63		3.502E+11	1.618E-01	Half-Life	too short	
		546.56		1.098E+12	1.618E-01	Half-Life	too short	
		836.80		2.503E+12	1.618E-01	Half-Life	too short	
		1038.76		4.055E+11	1.618E-01	Half-Life	too short	
		1124.00		4.664E+12	1.618E-01	Half-Life	too short	
		1131.51		-2.831E+11	1.618E-01	Half-Life	too short	
		1260.41	*	1.598E+11	1.618E-01	Half-Life	too short	
		1457.56		1.673E+14	1.618E-01	Half-Life	too short	
		1678.03		5.521E+11	1.618E-01	Half-Life	too short	
		1706.46		-9.619E+11	1.618E-01	Half-Life	too short	
		1791.20		-2.018E+12	1.618E-01	Half-Life	too short	



Sample ID : G243457004

Acquisition date : 4-JAN-2010 13:59:18

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		66.91		1.408E-01	6.896E-01	1.015E+00	1.507E-01	0.139
	+	86.29		3.416E+00	1.135E+00	1.845E+00	2.454E-01	1.852
		153.22		5.010E-01	6.504E-01	1.124E+00	1.148E-01	0.446
		163.89		1.637E-02	9.891E-01	1.623E+00	1.718E-01	0.010
		176.55		4.217E-03	3.487E-01	5.806E-01	6.161E-02	0.007
		273.65		-5.115E-01	4.553E-01	5.734E-01	8.890E-02	-0.892
		340.57		1.162E-01	1.388E-01	2.107E-01	2.855E-02	0.551
		818.51		8.661E-03	7.956E-02	1.286E-01	1.266E-02	0.067
		1048.07	*	-1.048E-01	1.155E-01	1.717E-01	1.621E-02	-0.611
		1235.34		4.627E-02	7.345E-01	1.204E+00	1.386E-01	0.038
BA-137M		661.65	*	-1.502E-02	3.515E-02	5.498E-02	5.202E-03	-0.273
CS-137		661.65	*	-1.588E-02	3.716E-02	5.812E-02	5.508E-03	-0.273
CE-139		165.85	*	-1.544E-02	2.333E-02	3.750E-02	3.644E-03	-0.412
BA-140		162.64		-3.161E-01	7.220E-01	1.160E+00	1.165E-01	-0.273
		304.84		-3.233E-01	1.321E+00	2.079E+00	6.336E-01	-0.156
		423.70		1.640E-01	1.787E+00	3.028E+00	1.001E+00	0.054
LA-140		537.32	*	7.326E-02	2.625E-01	4.424E-01	1.491E-01	0.166
	+	328.77		8.423E-01	3.466E-01	5.892E-01	8.364E-02	1.429
		432.53		-8.813E-01	2.007E+00	3.235E+00	3.596E-01	-0.272
		487.03		-5.504E-02	1.343E-01	2.160E-01	2.417E-02	-0.255
		751.79		-3.859E-01	1.797E+00	2.828E+00	2.985E-01	-0.136
		815.85		3.098E-01	3.460E-01	6.023E-01	6.452E-02	0.514
		867.82		5.452E-01	1.451E+00	2.522E+00	2.586E-01	0.216
		919.63		-3.412E+00	3.005E+00	4.405E+00	5.109E-01	-0.775
		925.24		-5.464E-02	1.263E+00	2.104E+00	2.152E-01	-0.026
		1596.49	*	1.389E-02	8.902E-02	1.520E-01	1.278E-02	0.091
CE-141		145.44	*	-5.380E-02	5.319E-02	8.482E-02	7.775E-03	-0.634
CE-143		57.37		-1.239E-03	5.319E-02	Half-Life	too short	
		231.56		7.220E-03	5.319E-02	Half-Life	too short	
		293.26	*	1.568E-03	5.319E-02	Half-Life	too short	
	+	350.59		7.458E-02	5.319E-02	Half-Life	too short	
		490.36		-3.565E-03	5.319E-02	Half-Life	too short	
		664.57		1.592E-03	5.319E-02	Half-Life	too short	
		721.93		-1.751E-03	5.319E-02	Half-Life	too short	
CE-144		80.11		1.837E+00	1.689E+00	2.585E+00	2.223E-01	0.711
		133.54	*	6.664E-03	1.703E-01	2.757E-01	4.302E-02	0.024
PM-144		476.78		-1.023E-02	5.527E-02	9.078E-02	1.038E-02	-0.113
		618.01		1.697E-03	3.111E-02	5.114E-02	5.199E-03	0.033
		696.49	*	1.163E-03	3.494E-02	5.677E-02	5.443E-03	0.020
PR-144		778.57		-1.502E+00	2.339E+00	3.343E+00	3.272E-01	-0.449
		696.49	*	7.890E-02	2.370E+00	3.851E+00	3.691E-01	0.020
PM-146		1489.15		-1.472E+01	1.063E+01	1.321E+01	1.111E+00	-1.114
		453.90	*	4.467E-02	4.022E-02	7.200E-02	9.027E-03	0.620
		633.02		3.158E-01	1.270E+00	2.113E+00	7.957E-01	0.149
ND-147		735.90		8.683E-03	1.446E-01	2.345E-01	6.786E-02	0.037
		747.13		-2.334E-02	8.612E-02	1.346E-01	1.985E-02	-0.173
	+	91.11		7.749E-01	3.013E-01	4.378E-01	4.338E-02	1.770
		319.41		1.286E+00	3.440E+00	5.643E+00	8.046E-01	0.228
		439.89		3.178E+00	5.782E+00	1.008E+01	1.088E+00	0.315



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149 EU-152	531.02	*		4.177E-01	5.504E-01	9.637E-01	1.559E-01	0.433
	285.90	*		-5.693E+00	1.564E+02	2.515E+02	5.043E+01	-0.023
	121.78			-1.689E-03	5.704E-02	9.677E-02	9.466E-03	-0.017
	244.69			5.713E-02	3.199E-01	4.720E-01	6.415E-02	0.121
	344.27	*		-9.476E-02	9.244E-02	1.338E-01	1.814E-02	-0.708
	443.98			-4.552E-02	7.927E-01	1.324E+00	1.429E-01	-0.034
	778.89			-1.637E-01	2.638E-01	3.776E-01	3.694E-02	-0.434
	867.32			-4.995E-02	7.776E-01	1.299E+00	1.281E-01	-0.038
	964.01			4.508E-01	3.245E-01	5.407E-01	5.182E-02	0.834
	1085.78			-1.735E-01	4.380E-01	6.795E-01	5.990E-02	-0.255
GD-153	1112.02			1.754E-01	3.876E-01	6.078E-01	5.228E-02	0.288
	1407.95			6.199E-02	1.646E-01	2.807E-01	2.345E-02	0.221
	69.67			-3.346E-01	1.280E+00	1.996E+00	1.538E-01	-0.168
	83.37	+		1.971E+01	1.460E+01	2.010E+01	1.798E+00	0.981
	97.43	*		-5.829E-02	7.527E-02	1.004E-01	8.921E-03	-0.580
	103.18			-6.966E-02	7.902E-02	1.296E-01	1.125E-02	-0.537
	123.07			-2.321E-02	4.078E-02	6.725E-02	7.564E-03	-0.345
	247.94			-1.033E-02	3.139E-01	5.101E-01	8.015E-02	-0.020
	591.81			-6.155E-02	5.550E-01	9.019E-01	1.162E-01	-0.068
	723.30			7.767E-02	1.479E-01	2.260E-01	2.369E-02	0.344
EU-154	756.87			1.362E-01	7.847E-01	1.283E+00	1.643E-01	0.106
	873.19			1.170E-02	2.894E-01	4.881E-01	6.415E-02	0.024
	996.32			-3.980E-01	3.714E-01	5.384E-01	9.781E-02	-0.739
	1004.76			-1.921E-01	2.089E-01	3.121E-01	3.809E-02	-0.616
	1274.45	*		-6.724E-02	1.200E-01	1.818E-01	1.999E-02	-0.370
	48.70			-9.210E-01	1.483E+00	2.295E+00	1.856E-01	-0.401
	60.01			3.172E+00	3.552E+00	5.493E+00	3.919E-01	0.577
	86.54	+		2.844E-01	9.063E-02	1.562E-01	1.467E-02	1.821
	105.31	*		7.565E-02	8.548E-02	1.511E-01	1.319E-02	0.501
	86.79	+		7.736E-01	2.463E-01	4.227E-01	3.947E-02	1.830
TB-160	197.04			-6.332E-01	5.117E-01	7.654E-01	8.530E-02	-0.827
	215.65			6.261E-01	6.764E-01	1.159E+00	1.399E-01	0.540
	298.57	+		1.918E-01	1.278E-01	1.771E-01	2.649E-02	1.083
	879.36	*		-2.233E-02	1.415E-01	2.342E-01	2.307E-02	-0.095
	962.29			5.391E-01	6.045E-01	9.648E-01	9.253E-02	0.559
	966.15	+		1.704E+00	4.602E-01	5.177E-01	4.956E-02	3.291
	1177.93			3.569E-02	3.582E-01	5.925E-01	4.766E-02	0.060
	1271.85			2.061E-01	7.142E-01	1.199E+00	9.829E-02	0.172
	80.57			2.337E-01	2.003E-01	3.302E-01	2.856E-02	0.708
	184.41	+		1.097E-01	4.618E-02	6.006E-02	6.333E-03	1.826
HO-166M	280.46			-2.822E-02	7.836E-02	1.234E-01	1.906E-02	-0.229
	410.95			2.869E-01	2.296E-01	3.802E-01	4.079E-02	0.755
	711.68	*		-5.008E-03	5.664E-02	9.079E-02	8.744E-03	-0.055
	752.31			-7.563E-02	2.669E-01	4.172E-01	4.061E-02	-0.181
	810.29			-3.672E-02	6.057E-02	9.052E-02	8.895E-03	-0.406
	51.35			9.628E+00	1.941E+01	3.192E+01	2.469E+00	0.302
	52.39			-5.987E-02	1.090E+01	1.705E+01	1.299E+00	-0.004
	59.40			6.731E+00	1.992E+01	2.982E+01	2.121E+00	0.226
	66.72	*		4.624E+00	2.263E+01	3.332E+01	2.500E+00	0.139
TM-171								



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error (pCi/GRAM)	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	88.36		5.597E-01	1.782E-01	2.719E-01	2.058
		201.83		-1.052E-02	2.572E-02	4.153E-02	-0.253
		306.84	*	6.946E-03	2.303E-02	3.767E-02	0.184
		401.10		-3.351E+00	5.840E+00	9.458E+00	-0.354
LU-177	+	112.95		-8.135E-01	1.538E+00	2.558E+00	-0.318
		208.36	*	3.135E+00	1.884E+00	2.317E+00	1.353
LU-177M	+	52.97		-5.243E-01	1.144E+00	1.744E+00	-0.301
		54.07		-4.935E-01	6.212E-01	9.298E-01	-0.531
		61.30		-5.787E-01	1.110E+00	1.570E+00	-0.368
		121.62		-1.127E-02	2.947E-01	4.998E-01	-0.023
		147.16		3.867E-01	5.277E-01	9.155E-01	0.422
		171.86		6.330E-03	3.941E-01	6.573E-01	0.010
		218.09		1.042E-01	7.498E-01	1.240E+00	0.084
		268.79		1.658E+00	1.405E+00	1.340E+00	1.237
		319.02		1.196E-01	2.387E-01	3.947E-01	0.303
		367.43		-2.565E-01	8.147E-01	1.253E+00	-0.205
		413.65	*	1.493E-02	1.709E-01	2.566E-01	0.058
		56.28		2.250E-01	6.789E-01	1.101E+00	0.204
		57.53		-3.593E-01	3.772E-01	5.704E-01	-0.630
		65.20		-6.299E-01	7.749E-01	1.072E+00	-0.587
HF-181		133.02		2.159E-02	5.991E-02	9.311E-02	0.232
		136.25		1.571E-01	3.879E-01	6.665E-01	0.236
		345.85		5.943E-02	1.883E-01	2.910E-01	0.204
		482.03	*	-1.967E-02	3.627E-02	5.752E-02	-0.342
		56.28		8.669E-02	2.603E-01	4.222E-01	0.205
		57.53		-1.378E-01	1.447E-01	2.188E-01	-0.630
W-181	+	65.20	*	-2.397E-01	2.949E-01	4.081E-01	-0.587
		67.75		-2.430E-02	8.340E-02	1.300E-01	-0.187
TA-182		100.10		3.037E-02	1.343E-01	2.326E-01	0.131
		152.43		1.791E-01	2.938E-01	5.055E-01	0.354
		222.10		-7.960E-02	3.078E-01	4.973E-01	-0.160
		1001.68		1.581E+00	2.038E+00	3.591E+00	0.440
		1121.28		4.565E-01	2.007E-01	3.452E-01	1.322
		1189.05		-7.473E-02	3.313E-01	5.308E-01	-0.141
		1221.42	*	5.770E-03	2.165E-01	3.543E-01	0.016
		1230.97		-1.720E-01	5.321E-01	8.327E-01	-0.207
		57.98		-4.581E-02	1.426E-01	2.235E-01	-0.205
		59.32		2.818E-02	8.334E-02	1.248E-01	0.226
RE-183		67.20		-3.529E-02	1.536E-01	2.390E-01	-0.148
		162.32	*	1.956E-02	9.302E-02	1.571E-01	0.124
		208.81		2.346E+00	1.410E+00	1.743E+00	1.346
		291.72		4.058E-02	9.198E-01	1.324E+00	0.031
RE-184	+	57.98		-1.669E-01	5.196E-01	8.141E-01	-0.205
		59.32		1.026E-01	3.034E-01	4.543E-01	0.226
		67.20		-1.285E-01	5.593E-01	8.705E-01	-0.148
		161.27		1.066E-01	3.025E-01	5.142E-01	0.207
		216.55		1.666E-01	2.387E-01	4.051E-01	0.411
		252.85	*	4.695E-02	1.979E-01	3.267E-01	0.144
		318.01		-3.406E-01	4.155E-01	6.188E-01	-0.550



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		792.07	6.601E-01	1.044E+00	1.587E+00	1.556E-01	0.416
		903.28	4.777E-01	9.878E-01	1.645E+00	1.617E-01	0.290
		920.93	1.385E-01	4.426E-01	7.619E-01	7.440E-02	0.182
		59.72	1.275E-01	2.189E-01	3.324E-01	2.367E-02	0.384
		61.14	-7.124E-02	1.226E-01	1.728E-01	1.243E-02	-0.412
		69.30	-1.840E-01	2.358E-01	3.585E-01	2.751E-02	-0.513
		592.07	8.044E-01	2.223E+00	3.770E+00	3.846E-01	0.213
		646.12	* 2.282E-02	3.910E-02	6.715E-02	6.482E-03	0.340
RE-188		717.42	9.666E-02	8.358E-01	1.366E+00	1.318E-01	0.071
		874.81	2.384E-01	5.916E-01	1.021E+00	1.006E-01	0.234
		880.27	2.053E-01	7.715E-01	1.326E+00	1.307E-01	0.155
		155.03	* 6.040E-02	1.552E-01	2.645E-01	2.467E-02	0.228
		477.96	-2.373E-01	2.572E+00	4.258E+00	4.589E-01	-0.056
		633.10	5.355E-01	2.594E+00	4.317E+00	4.231E-01	0.124
	+	63.58	3.003E+01	5.332E+01	6.472E+01	4.738E+00	0.464
		227.08	-1.667E+00	1.180E+01	1.892E+01	2.395E+00	-0.088
IR-192		290.67	* -2.513E+00	7.396E+00	1.026E+01	1.558E+00	-0.245
	+	295.96	8.752E-01	2.348E-01	2.499E-01	3.768E-02	3.502
		308.46	-2.158E-02	9.222E-02	1.454E-01	2.133E-02	-0.148
		316.51	* 5.315E-03	3.132E-02	5.074E-02	7.294E-03	0.105
		468.07	-3.611E-02	5.852E-02	8.451E-02	9.541E-03	-0.427
		604.41	1.962E-01	4.446E-01	6.727E-01	9.442E-02	0.292
		612.46	2.601E-03	6.855E-01	9.839E-01	1.096E-01	0.003
		65.12	-8.746E-02	1.342E-01	1.877E-01	1.390E-02	-0.466
AU-195		66.83	1.537E-02	7.524E-02	1.108E-01	8.320E-03	0.139
	+	75.70	1.155E+00	2.154E-01	3.440E-01	2.814E-02	3.357
		98.88	* 2.033E-01	1.832E-01	3.096E-01	2.732E-02	0.657
	+	129.76	5.062E+00	3.513E+00	4.142E+00	3.560E-01	1.222
		367.94	* 8.494E-05	3.513E+00	Half-Life	too short	
		579.30	5.801E-03	3.513E+00	Half-Life	too short	
		828.27	4.660E-03	3.513E+00	Half-Life	too short	
		1205.75	-2.163E-03	3.513E+00	Half-Life	too short	
TL-201		68.90	-9.502E-01	5.631E+00	8.825E+00	6.749E-01	-0.108
		70.82	2.336E+00	3.518E+00	5.291E+00	4.119E-01	0.442
		80.30	6.955E+00	6.237E+00	9.556E+00	8.237E-01	0.728
		135.34	-1.423E+00	3.267E+01	5.508E+01	4.807E+00	-0.026
		167.43	* -7.390E-01	8.610E+00	1.431E+01	1.400E+00	-0.052
		68.90	-6.106E-02	3.618E-01	5.671E-01	4.337E-02	-0.108
		70.82	1.497E-01	2.255E-01	3.390E-01	2.639E-02	0.442
		80.30	4.459E-01	3.998E-01	6.125E-01	5.280E-02	0.728
HG-203		439.56	* 7.449E-02	6.807E-02	1.225E-01	1.322E-02	0.608
		70.83	5.925E-01	9.019E-01	1.353E+00	1.771E-01	0.438
		72.87	4.825E-01	5.252E-01	7.940E-01	1.014E-01	0.608
	+	82.60	1.500E+00	1.123E+00	1.395E+00	1.938E-01	1.076
		279.20	* -1.394E-02	3.807E-02	5.992E-02	9.360E-03	-0.233
		72.80	1.221E-01	1.485E-01	2.245E-01	1.782E-02	0.544
	+	74.97	6.359E-01	1.186E-01	1.835E-01	1.490E-02	3.465
	+	84.90	2.535E-01	1.878E-01	2.615E-01	2.385E-02	0.969
BI-207		569.67	5.589E-03	2.996E-02	4.997E-02	5.185E-03	0.112



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207		1063.62	*	7.064E-03	5.481E-02	8.990E-02	8.076E-03	0.079
		1770.23		-4.823E-01	4.602E-01	5.905E-01	4.860E-02	-0.817
		81.07		-1.425E-02	1.776E-01	2.546E-01	2.215E-02	-0.056
	+	83.78		1.671E-01	1.238E-01	1.753E-01	1.576E-02	0.953
		94.90		5.456E-02	2.067E-01	2.997E-01	2.700E-02	0.182
		122.32		1.309E-01	1.353E+00	2.309E+00	2.100E-01	0.057
		144.24		2.523E-01	5.681E-01	9.554E-01	9.519E-02	0.264
		154.21		3.190E-01	3.513E-01	6.097E-01	6.158E-02	0.523
	+	269.46		3.849E-01	3.263E-01	3.242E-01	4.878E-02	1.187
	+	323.87	*	-3.159E-02	6.521E-01	9.221E-01	1.929E-01	-0.034
PO-209	+	338.28		5.266E+00	1.727E+00	2.381E+00	3.833E-01	2.212
		445.03		9.689E-01	1.860E+00	3.242E+00	4.448E-01	0.299
		260.50		-1.001E+01	8.950E+00	1.329E+01	1.920E+00	-0.753
		262.80		1.106E+00	2.317E+01	3.770E+01	5.494E+00	0.029
		896.60	*	4.781E+00	6.817E+00	1.217E+01	1.198E+00	0.393
BI-210		46.50	*	1.735E+00	2.222E+00	3.659E+00	3.406E-01	0.474
PB-210		46.50	*	1.735E+00	2.222E+00	3.659E+00	3.406E-01	0.474
PO-210		46.50	*	1.735E+00	2.221E+00	3.659E+00	3.084E-01	0.474
PB-211		404.84	*	1.768E-01	9.504E-01	1.432E+00	9.019E-01	0.123
BI-212		427.08		-5.976E-01	1.830E+00	2.844E+00	1.777E+00	-0.210
		831.96		-1.180E+00	1.436E+00	1.762E+00	1.107E+00	-0.670
	+	727.18	*	1.149E+00	4.675E-01	6.612E-01	7.226E-02	1.737
		785.46		-6.429E-02	1.817E+00	2.917E+00	2.858E-01	-0.022
		1620.62		1.177E+00	1.155E+00	2.221E+00	1.865E-01	0.530
PO-215		81.07		-1.425E-02	1.776E-01	2.546E-01	2.215E-02	-0.056
	+	83.78		1.671E-01	1.238E-01	1.753E-01	1.576E-02	0.953
		94.90		5.456E-02	2.067E-01	2.997E-01	2.700E-02	0.182
		122.32		1.309E-01	1.353E+00	2.309E+00	2.100E-01	0.057
		144.24		2.523E-01	5.681E-01	9.554E-01	9.519E-02	0.264
		154.21		3.190E-01	3.513E-01	6.097E-01	6.158E-02	0.523
	+	269.46		3.849E-01	3.263E-01	3.242E-01	4.878E-02	1.187
	+	323.87	*	-3.159E-02	6.521E-01	9.221E-01	1.929E-01	-0.034
	+	338.28		5.266E+00	1.727E+00	2.381E+00	3.833E-01	2.212
	+	445.03		9.689E-01	1.860E+00	3.242E+00	4.448E-01	0.299
RN-219	+	271.23		4.939E-01	4.194E-01	3.654E-01	5.872E-02	1.351
RN-220		401.81	*	2.089E-01	3.536E-01	6.190E-01	1.009E-01	0.337
RA-223		549.76	*	1.035E+01	2.454E+01	4.187E+01	4.400E+00	0.247
AC-227		81.07		-1.425E-02	1.776E-01	2.546E-01	2.215E-02	-0.056
	+	83.78		1.671E-01	1.238E-01	1.753E-01	1.576E-02	0.953
		94.90		5.456E-02	2.067E-01	2.997E-01	2.700E-02	0.182
		122.32		1.309E-01	1.353E+00	2.309E+00	2.100E-01	0.057
		144.24		2.523E-01	5.681E-01	9.554E-01	9.519E-02	0.264
		154.21		3.190E-01	3.513E-01	6.097E-01	6.158E-02	0.523
	+	269.46		3.849E-01	3.263E-01	3.242E-01	4.878E-02	1.187
	+	323.87	*	-3.159E-02	6.521E-01	9.221E-01	1.929E-01	-0.034
	+	338.28		5.266E+00	1.727E+00	2.381E+00	3.833E-01	2.212
		445.03		9.689E-01	1.860E+00	3.242E+00	4.448E-01	0.299
		79.80		1.343E+00	1.312E+00	1.964E+00	4.220E-01	0.684
		236.00		3.751E-01	2.361E-01	3.704E-01	5.832E-02	1.013



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		256.20	*	3.045E-02	3.363E-01	5.494E-01	1.047E-01	0.055
		286.10		7.168E-02	1.405E+00	2.272E+00	4.156E-01	0.032
	+	299.80		2.397E+00	1.638E+00	2.261E+00	4.818E-01	1.060
		304.40		-6.217E-01	1.860E+00	2.759E+00	6.070E-01	-0.225
		334.20		-2.406E+00	2.495E+00	3.118E+00	6.896E-01	-0.772
		79.80		1.343E+00	1.313E+00	1.964E+00	4.274E-01	0.684
	+	94.00		6.755E+00	2.769E+00	2.951E+00	6.478E-01	2.289
		236.00		3.751E-01	2.353E-01	3.704E-01	5.503E-02	1.013
		256.20	*	3.045E-02	3.363E-01	5.494E-01	1.171E-01	0.055
		286.10		7.168E-02	1.407E+00	2.272E+00	2.299E+00	0.032
	+	299.80		2.397E+00	1.638E+00	2.261E+00	4.818E-01	1.060
		304.40		-6.217E-01	1.860E+00	2.759E+00	6.070E-01	-0.225
AC-228		334.20		-2.406E+00	2.495E+00	3.118E+00	6.896E-01	-0.772
	+	338.32		1.261E+00	6.462E-01	5.699E-01	2.425E-01	2.213
	+	911.07	*	1.245E+00	3.228E-01	4.692E-01	5.712E-02	2.654
RA-228		969.11		1.356E+00	4.793E-01	6.850E-01	1.623E-01	1.980
	+	338.32		1.261E+00	6.462E-01	5.699E-01	2.425E-01	2.213
	+	911.07	*	1.245E+00	3.228E-01	4.692E-01	5.712E-02	2.654
TH-229		969.11		1.356E+00	4.793E-01	6.850E-01	1.623E-01	1.980
	+	85.43		2.502E-01	1.854E-01	2.578E-01	2.366E-02	0.970
	+	88.47		2.716E-01	1.052E-01	1.548E-01	1.462E-02	1.754
PA-231		100.00		8.232E-02	1.372E-01	2.411E-01	2.116E-02	0.341
		193.63	*	2.240E-01	4.459E-01	7.551E-01	8.291E-02	0.297
		210.97		1.490E-01	7.140E-01	1.055E+00	1.249E-01	0.141
		283.67	*	7.419E-01	1.389E+00	2.307E+00	4.572E-01	0.322
TH-231		301.29		2.930E-01	5.766E-01	8.581E-01	1.479E-01	0.341
		81.07		-1.425E-02	1.776E-01	2.546E-01	2.215E-02	-0.056
	+	83.78		1.671E-01	1.238E-01	1.753E-01	1.576E-02	0.953
		94.90		5.456E-02	2.067E-01	2.997E-01	2.700E-02	0.182
		122.32		1.309E-01	1.353E+00	2.309E+00	2.100E-01	0.057
		144.24		2.523E-01	5.681E-01	9.554E-01	9.519E-02	0.264
		154.21		3.190E-01	3.513E-01	6.097E-01	6.158E-02	0.523
	+	269.46		3.849E-01	3.263E-01	3.242E-01	4.878E-02	1.187
		323.87	*	-3.159E-02	6.521E-01	9.221E-01	1.929E-01	-0.034
	+	338.28		5.266E+00	1.727E+00	2.381E+00	3.833E-01	2.212
U-231		445.03		9.689E-01	1.860E+00	3.242E+00	4.448E-01	0.299
	+	84.21		9.955E+00	7.376E+00	1.051E+01	9.502E-01	0.947
	+	92.29		9.227E+00	3.302E+00	4.650E+00	4.261E-01	1.984
		95.87	*	-3.032E-03	1.282E+00	1.828E+00	1.638E-01	-0.002
TH-232		108.00		-7.583E-01	2.274E+00	3.831E+00	3.280E-01	-0.198
	+	338.32		1.261E+00	3.983E-01	5.699E-01	7.685E-02	2.213
	+	911.07	*	1.245E+00	3.228E-01	4.692E-01	5.712E-02	2.654
PA-233		969.11		1.356E+00	4.793E-01	6.850E-01	1.623E-01	1.980
	+	75.28		1.855E+01	4.187E+00	5.383E+00	8.120E-01	3.447
	+	86.59		4.620E+00	1.882E+00	2.543E+00	6.878E-01	1.817
	+	300.12		6.683E-01	4.526E-01	6.244E-01	1.200E-01	1.070
		311.98	*	-8.480E-03	5.971E-02	9.466E-02	1.389E-02	-0.090
		340.50		5.546E-01	6.226E-01	9.310E-01	2.415E-01	0.596
		398.62		-3.022E-01	1.718E+00	2.865E+00	7.842E-01	-0.105



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76		7.799E-02	1.444E+00	2.443E+00	5.493E-01	0.032
		63.00		8.540E-01	1.520E+00	1.894E+00	2.804E-01	0.451
		94.67		1.094E-01	1.508E-01	2.238E-01	2.839E-02	0.489
		98.44		8.320E-02	9.022E-02	1.252E-01	6.988E-02	0.665
		99.86		2.358E-01	3.489E-01	6.145E-01	5.398E-02	0.384
		111.00		-2.679E-02	1.433E-01	2.426E-01	2.914E-02	-0.110
		131.20		6.719E-02	8.738E-02	1.393E-01	1.202E-02	0.482
		152.70		2.638E-01	2.856E-01	4.924E-01	8.554E-02	0.536
	+	186.00		3.948E+00	2.041E+00	2.381E+00	7.578E-01	1.658
		226.40		9.136E-02	3.629E-01	5.945E-01	9.575E-02	0.154
		227.20		-1.233E-01	3.932E-01	6.239E-01	7.903E-02	-0.198
		248.90		-3.502E-01	6.998E-01	1.093E+00	2.718E-01	-0.320
	+	293.70		5.409E+00	1.662E+00	1.536E+00	3.269E-01	3.522
		369.80		-2.474E-01	7.675E-01	1.177E+00	2.740E-01	-0.210
		568.70		-8.674E-02	9.823E-01	1.604E+00	1.665E-01	-0.054
		569.50		4.236E-02	2.652E-01	4.414E-01	4.581E-02	0.096
		574.00		-6.238E-01	1.416E+00	2.241E+00	2.319E-01	-0.278
		699.00		-3.285E-01	7.242E-01	1.121E+00	2.191E-01	-0.293
		706.10		6.973E-01	1.057E+00	1.735E+00	7.772E-01	0.402
		733.00		7.158E-02	4.069E-01	6.176E-01	1.398E-01	0.116
		742.81		2.798E-01	1.313E+00	2.138E+00	1.440E+00	0.131
		796.30		5.664E-01	1.131E+00	1.661E+00	4.559E-01	0.341
		805.60		-6.019E-02	1.082E+00	1.721E+00	5.338E-01	-0.035
		819.60		-4.441E-01	1.163E+00	1.755E+00	6.725E-01	-0.253
		826.30		4.430E-01	8.168E-01	1.340E+00	6.027E-01	0.331
		831.60		-5.904E-01	6.630E-01	9.190E-01	2.777E-01	-0.642
		876.40		8.326E-02	8.469E-01	1.417E+00	1.458E+00	0.059
		880.51		7.316E-02	2.749E-01	4.726E-01	4.656E-02	0.155
		883.24		6.926E-02	2.670E-01	4.525E-01	3.050E-01	0.153
		899.00		-1.111E+00	9.450E-01	1.139E+00	5.009E-01	-0.975
		925.00		2.903E-01	1.161E+00	1.987E+00	1.937E-01	0.146
		926.50		2.799E-02	1.745E-01	2.959E-01	7.599E-02	0.095
		946.00	*	-2.366E-01	3.131E-01	4.801E-01	9.249E-02	-0.493
		949.00		5.971E-01	4.315E-01	8.043E-01	7.763E-02	0.742
		980.50		-7.388E-02	7.245E-01	1.194E+00	1.134E-01	-0.062
		1394.10		2.782E-01	9.365E-01	1.564E+00	1.018E+00	0.178
PA-234M	+	766.42		2.292E+01	2.008E+01	2.176E+01	1.108E+01	1.054
		1001.03	*	2.762E+00	4.530E+00	7.879E+00	8.382E-01	0.351
U-235	+	89.95		2.726E+00	1.329E+00	1.582E+00	4.913E-01	1.724
	+	93.35		2.101E+00	9.378E-01	1.043E+00	2.939E-01	2.014
		105.00		1.153E+00	8.967E-01	1.498E+00	4.470E-01	0.770
		143.76	*	5.129E-02	1.748E-01	2.920E-01	5.162E-02	0.176
		163.35		3.297E-02	4.055E-01	6.683E-01	1.307E-01	0.049
	+	185.71		1.462E-01	6.157E-02	8.774E-02	9.304E-03	1.667
		205.31		1.307E-01	5.063E-01	7.590E-01	1.561E-01	0.172
NP-236		94.67		8.412E-02	1.142E-01	1.699E-01	1.533E-02	0.495
		98.44		6.288E-02	5.873E-02	9.463E-02	8.366E-03	0.664
		111.00		-2.026E-02	1.084E-01	1.835E-01	1.562E-02	-0.110
		160.31	*	-2.134E-02	6.877E-02	1.134E-01	1.078E-02	-0.188



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		7.205E-02	1.212E-01	2.081E-01	1.831E-02	0.346
		117.00	*	-7.261E-02	1.481E-01	2.463E-01	2.084E-02	-0.295
	+	209.75		1.815E+00	1.091E+00	1.336E+00	1.573E-01	1.358
		228.18		-3.009E-01	2.147E-01	3.140E-01	3.993E-02	-0.958
		277.60		2.074E-01	1.593E-01	2.734E-01	4.208E-02	0.759
		334.30		-1.433E+00	1.392E+00	1.751E+00	2.391E-01	-0.818
AM-241		59.54	*	4.900E-02	1.148E-01	1.728E-01	1.358E-02	0.284
CM-243		99.55		7.415E-02	1.247E-01	2.142E-01	1.884E-02	0.346
		103.76	*	4.025E-02	7.236E-02	1.267E-01	1.098E-02	0.318
		117.00		-7.471E-02	1.524E-01	2.534E-01	2.144E-02	-0.295
	+	209.75		1.789E+00	1.075E+00	1.317E+00	1.551E-01	1.358
		228.18		-3.041E-01	2.169E-01	3.173E-01	4.036E-02	-0.958
		277.60		2.091E-01	1.606E-01	2.757E-01	4.243E-02	0.759
AM-246		798.80		4.016E-02	1.572E-01	2.271E-01	2.229E-02	0.177
		1036.00		1.112E-01	2.791E-01	4.811E-01	4.414E-02	0.231
		1062.04		2.440E-01	2.237E-01	3.994E-01	3.592E-02	0.611
		1078.86	*	-2.435E-03	1.437E-01	2.368E-01	2.100E-02	-0.010
		278.00		9.754E-01	6.774E-01	1.165E+00	1.795E-01	0.837
CM-247		287.40		5.720E-01	1.115E+00	1.853E+00	2.832E-01	0.309
		402.60	*	2.061E-02	3.243E-02	5.700E-02	6.101E-03	0.362
CF-249		252.85		1.748E-01	7.368E-01	1.216E+00	1.706E-01	0.144
		333.44		-1.025E-01	1.750E-01	2.327E-01	3.187E-02	-0.440
		387.95	*	-1.941E-03	3.438E-02	5.802E-02	6.318E-03	-0.033
CF-251		176.60	*	4.980E-03	1.086E-01	1.811E-01	1.845E-02	0.027
		227.00		-4.449E-02	3.474E-01	5.574E-01	7.055E-02	-0.080
		285.00		-3.471E-01	1.649E+00	2.621E+00	4.020E-01	-0.132



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457004      *
* Acquisition date   : 4-JAN-2010 13:59:18 Detector SN# :                   *
* Detector ID        : GAM11 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                       *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000            *
* Elapsed real time  : 0 02:00:01.58 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G243457004 Analyst initials: MXR1                 *
* Batch Number       : 936923 Sample Quantity : 1.1832E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                           *
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22 MS Isotope :                   *
* MSD DPM            : 0.000 MSD Isotope :                               *
* LCS DPM            : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	3.260E+01	3.302E+00	4.303E-01	0.000E+00
CD-109	2.408E+00	7.513E-01	9.601E-01	0.000E+00
SN-126	2.360E-01	7.363E-02	9.440E-02	0.000E+00
TL-208	4.860E-01	9.101E-02	5.550E-02	0.000E+00
BI-211	3.492E+00	5.958E-01	2.686E-01	0.000E+00
PB-212	1.532E+00	2.358E-01	8.488E-02	0.000E+00
PO-212	1.532E+00	2.358E-01	8.488E-02	0.000E+00
BI-214	9.594E-01	1.798E-01	9.742E-02	0.000E+00
PB-214	1.215E+00	2.164E-01	9.365E-02	0.000E+00
PO-214	1.215E+00	2.164E-01	9.365E-02	0.000E+00
PO-216	1.532E+00	2.358E-01	8.488E-02	0.000E+00
PO-218	1.215E+00	2.164E-01	9.365E-02	0.000E+00
RA-224	1.527E+00	9.574E-01	9.663E-01	0.000E+00
RA-226	9.594E-01	1.798E-01	9.742E-02	0.000E+00
TH-228	1.559E+00	2.398E-01	8.634E-02	0.000E+00
TH-230	9.594E-01	1.798E-01	9.742E-02	0.000E+00
TH-234	7.327E-01	1.280E+00	1.413E+00	0.000E+00
U-234	9.594E-01	1.798E-01	9.742E-02	0.000E+00
NP-237	6.930E-01	2.577E-01	3.051E-01	0.000E+00
U-238	7.327E-01	1.280E+00	1.413E+00	0.000E+00
AM-243	3.542E-01	6.475E-02	6.592E-02	0.000E+00
ANH-511	1.521E-01	6.757E-02	4.247E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	5.325E-02	2.616E-01	4.573E-01	0.000E+00 NOT IDENT.
NA-22	-2.241E-02	4.227E-02	6.571E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.524E+06	0.000E+00	0.000E+00 SHORT HLIF
AL-26	-1.027E-02	2.527E-02	3.815E-02	0.000E+00 NOT IDENT.
TI-44	0.000E+00	4.598E-02	5.096E-02	0.000E+00 FAIL ABUN



SC-46	1.202E-02	3.432E-02	6.092E-02	0.000E+00	FAIL ABUN
V-48	5.570E-02	7.635E-02	1.381E-01	0.000E+00	NOT IDENT.
CR-51	1.875E-02	3.554E-01	5.901E-01	0.000E+00	NOT IDENT.
MN-52	2.878E-01	2.754E-01	5.201E-01	0.000E+00	NOT IDENT.
MN-54	1.043E-02	3.594E-02	6.346E-02	0.000E+00	NOT IDENT.
CO-56	-3.608E-02	3.553E-02	5.489E-02	0.000E+00	NOT IDENT.
CO-57	-1.318E-03	1.942E-02	3.438E-02	0.000E+00	NOT IDENT.
CO-58	-3.332E-02	3.990E-02	5.940E-02	0.000E+00	NOT IDENT.
FE-59	-7.894E-02	8.955E-02	1.362E-01	0.000E+00	NOT IDENT.
CO-60	-1.447E-02	4.020E-02	6.391E-02	0.000E+00	NOT IDENT.
ZN-65	2.134E-02	1.155E-01	1.716E-01	0.000E+00	NOT IDENT.
GE-68	-7.632E-01	1.252E+00	1.980E+00	0.000E+00	NOT IDENT.
AS-73	-2.570E-01	5.833E-01	9.399E-01	0.000E+00	NOT IDENT.
AS-74	5.358E-03	9.448E-02	1.600E-01	0.000E+00	NOT IDENT.
SE-75	-7.240E-03	4.233E-02	6.248E-02	0.000E+00	NOT IDENT.
BR-77	-4.360E+00	1.585E+01	2.642E+01	0.000E+00	FAIL ABUN
SR-82	2.627E-02	3.899E-01	5.651E-01	0.000E+00	NOT IDENT.
RB-83	-1.602E-02	5.960E-02	9.935E-02	0.000E+00	NOT IDENT.
RB-84	4.740E-02	6.856E-02	1.248E-01	0.000E+00	NOT IDENT.
KR-85	3.604E+00	7.024E+00	1.109E+01	0.000E+00	NOT IDENT.
SR-85	1.887E-02	3.677E-02	5.804E-02	0.000E+00	NOT IDENT.
RB-86	-2.900E-01	8.945E-01	1.462E+00	0.000E+00	NOT IDENT.
Y-88	-1.344E-02	3.404E-02	5.234E-02	0.000E+00	NOT IDENT.
ZR-88	-5.720E-03	2.415E-02	4.145E-02	0.000E+00	NOT IDENT.
Y-91	-4.774E+00	1.927E+01	3.136E+01	0.000E+00	NOT IDENT.
NB-94	7.744E-03	3.358E-02	5.682E-02	0.000E+00	NOT IDENT.
NB-95	2.120E-02	5.272E-02	7.910E-02	0.000E+00	NOT IDENT.
NB-95M	9.426E-02	1.241E-01	1.967E-01	0.000E+00	NOT IDENT.
ZR-95	5.060E-03	7.209E-02	1.196E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	6.272E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.205E+07	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-4.470E+00	1.772E+01	2.851E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.339E+18	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.554E-02	2.899E-02	4.740E-02	0.000E+00	FAIL ABUN
RH-102	-4.482E-03	2.387E-02	4.041E-02	0.000E+00	FAIL ABUN
RU-103	-5.429E-02	3.780E-02	5.535E-02	0.000E+00	FAIL ABUN
RH-106	1.154E-01	3.013E-01	5.218E-01	0.000E+00	FAIL ABUN
RU-106	1.154E-01	3.011E-01	5.218E-01	0.000E+00	FAIL ABUN
AG-108M	-1.515E-04	2.860E-02	4.923E-02	0.000E+00	NOT IDENT.
AG-110M	-1.231E-03	3.323E-02	5.534E-02	0.000E+00	NOT IDENT.
IN-111	4.312E-01	1.655E+00	2.548E+00	0.000E+00	NOT IDENT.
IN-113M	-2.874E-03	3.556E-02	6.179E-02	0.000E+00	NOT IDENT.
SN-113	-2.874E-03	3.556E-02	6.179E-02	0.000E+00	NOT IDENT.
IN-114M	2.184E-03	1.599E-01	2.757E-01	0.000E+00	NOT IDENT.
CD-115	-7.174E+00	1.786E+01	2.940E+01	0.000E+00	NOT IDENT.
SN-117M	7.046E-03	5.078E-02	8.920E-02	0.000E+00	NOT IDENT.
SB-122	-1.628E-01	3.228E+00	5.449E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	5.741E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	9.397E-03	2.376E-02	4.221E-02	0.000E+00	NOT IDENT.
I-124	-3.986E-01	9.435E-01	1.321E+00	0.000E+00	NOT IDENT.
SB-124	2.184E-02	6.592E-02	1.182E-01	0.000E+00	FAIL ABUN
SB-125	2.273E-02	7.522E-02	1.334E-01	0.000E+00	FAIL ABUN
TE-125M	-2.858E+00	7.075E+00	1.242E+01	0.000E+00	NOT IDENT.
I-126	4.194E-02	1.916E-01	3.257E-01	0.000E+00	NOT IDENT.
SB-126	2.441E-02	1.500E-01	2.223E-01	0.000E+00	NOT IDENT.
SB-127	1.383E+00	1.714E+00	3.057E+00	0.000E+00	NOT IDENT.
XE-127	-3.275E-02	4.172E-02	6.841E-02	0.000E+00	NOT IDENT.
I-131	-5.417E-02	1.203E-01	1.890E-01	0.000E+00	NOT IDENT.
TE-132	-9.774E-01	9.565E-01	1.485E+00	0.000E+00	NOT IDENT.
BA-133	2.593E-02	3.733E-02	5.845E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.480E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.216E-02	8.885E-02	0.000E+00	FAIL ABUN
CS-135	1.829E-01	1.586E-01	2.549E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.425E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.048E-01	1.132E-01	1.718E-01	0.000E+00	FAIL ABUN
BA-137M	-1.502E-02	3.445E-02	5.530E-02	0.000E+00	NOT IDENT.
CS-137	-1.588E-02	3.642E-02	5.846E-02	0.000E+00	NOT IDENT.
CE-139	-1.544E-02	2.286E-02	3.830E-02	0.000E+00	NOT IDENT.
BA-140	7.326E-02	2.573E-01	4.461E-01	0.000E+00	NOT IDENT.
LA-140	1.389E-02	8.724E-02	1.514E-01	0.000E+00	FAIL ABUN
CE-141	-5.380E-02	5.213E-02	8.675E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.600E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	6.664E-03	1.669E-01	2.822E-01	0.000E+00	NOT IDENT.
PM-144	1.163E-03	3.424E-02	5.707E-02	0.000E+00	NOT IDENT.
PR-144	7.890E-02	2.323E+00	3.871E+00	0.000E+00	NOT IDENT.
PM-146	4.467E-02	3.942E-02	7.273E-02	0.000E+00	NOT IDENT.
ND-147	4.177E-01	5.393E-01	9.718E-01	0.000E+00	FAIL ABUN
PM-149	-5.693E+00	1.532E+02	2.553E+02	0.000E+00	NOT IDENT.



EU-152	-9.476E-02	9.059E-02	1.356E-01	0.000E+00	NOT IDENT.
GD-153	-5.829E-02	7.376E-02	1.031E-01	0.000E+00	FAIL ABUN
EU-154	-6.724E-02	1.176E-01	1.815E-01	0.000E+00	NOT IDENT.
EU-155	7.565E-02	8.377E-02	1.551E-01	0.000E+00	FAIL ABUN
TB-160	-2.233E-02	1.386E-01	2.348E-01	0.000E+00	FAIL ABUN
HO-166M	-5.008E-03	5.551E-02	9.126E-02	0.000E+00	FAIL ABUN
TM-171	4.624E+00	2.217E+01	3.436E+01	0.000E+00	NOT IDENT.
LU-176	6.946E-03	2.257E-02	3.822E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.846E+00	2.360E+00	0.000E+00	FAIL ABUN
LU-177M	1.493E-02	1.675E-01	2.594E-01	0.000E+00	FAIL ABUN
HF-181	-1.967E-02	3.554E-02	5.807E-02	0.000E+00	NOT IDENT.
W-181	-2.397E-01	2.890E-01	4.210E-01	0.000E+00	NOT IDENT.
TA-182	5.770E-03	2.122E-01	3.540E-01	0.000E+00	NOT IDENT.
RE-183	1.956E-02	9.116E-02	1.605E-01	0.000E+00	FAIL ABUN
RE-184	4.695E-02	1.940E-01	3.321E-01	0.000E+00	NOT IDENT.
OS-185	2.282E-02	3.832E-02	6.756E-02	0.000E+00	NOT IDENT.
RE-188	6.040E-02	1.521E-01	2.703E-01	0.000E+00	NOT IDENT.
W-188	-2.513E+00	7.248E+00	1.041E+01	0.000E+00	FAIL ABUN
IR-192	5.315E-03	3.069E-02	5.146E-02	0.000E+00	FAIL ABUN
AU-195	2.033E-01	1.796E-01	3.180E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.363E+03	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-7.390E-01	8.438E+00	1.461E+01	0.000E+00	NOT IDENT.
TL-202	7.449E-02	6.671E-02	1.238E-01	0.000E+00	NOT IDENT.
HG-203	-1.394E-02	3.731E-02	6.085E-02	0.000E+00	FAIL ABUN
BI-207	7.064E-03	5.371E-02	8.996E-02	0.000E+00	FAIL ABUN
TL-207	-3.159E-02	6.391E-01	9.349E-01	0.000E+00	FAIL ABUN
PO-209	4.781E+00	6.681E+00	1.220E+01	0.000E+00	NOT IDENT.
BI-210	1.735E+00	2.178E+00	3.787E+00	0.000E+00	NOT IDENT.
PB-210	1.735E+00	2.178E+00	3.787E+00	0.000E+00	NOT IDENT.
PO-210	1.735E+00	2.176E+00	3.787E+00	0.000E+00	NOT IDENT.
PB-211	1.768E-01	9.314E-01	1.448E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.581E-01	6.644E-01	0.000E+00	FAIL ABUN
PO-215	-3.159E-02	6.391E-01	9.349E-01	0.000E+00	FAIL ABUN
RN-219	2.089E-01	3.465E-01	6.261E-01	0.000E+00	FAIL ABUN
RN-220	1.035E+01	2.405E+01	4.220E+01	0.000E+00	NOT IDENT.
RA-223	-3.159E-02	6.391E-01	9.349E-01	0.000E+00	FAIL ABUN
AC-227	3.045E-02	3.296E-01	5.585E-01	0.000E+00	FAIL ABUN
TH-227	3.045E-02	3.296E-01	5.585E-01	0.000E+00	FAIL ABUN
AC-228	0.000E+00	3.164E-01	4.703E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	3.164E-01	4.703E-01	0.000E+00	FAIL ABUN
TH-229	2.240E-01	4.370E-01	7.699E-01	0.000E+00	FAIL ABUN
PA-231	7.419E-01	1.361E+00	2.343E+00	0.000E+00	NOT IDENT.
TH-231	-3.159E-02	6.391E-01	9.349E-01	0.000E+00	FAIL ABUN
U-231	-3.032E-03	1.257E+00	1.878E+00	0.000E+00	FAIL ABUN
TH-232	0.000E+00	3.164E-01	4.703E-01	0.000E+00	FAIL ABUN
PA-233	-8.480E-03	5.851E-02	9.601E-02	0.000E+00	FAIL ABUN
PA-234	-2.366E-01	3.068E-01	4.810E-01	0.000E+00	FAIL ABUN
PA-234M	2.762E+00	4.439E+00	7.890E+00	0.000E+00	FAIL ABUN
U-235	5.129E-02	1.713E-01	2.986E-01	0.000E+00	FAIL ABUN
NP-236	-2.134E-02	6.740E-02	1.158E-01	0.000E+00	NOT IDENT.
NP-239	-7.261E-02	1.452E-01	2.525E-01	0.000E+00	FAIL ABUN
AM-241	4.900E-02	1.125E-01	1.784E-01	0.000E+00	NOT IDENT.
CM-243	4.025E-02	7.091E-02	1.301E-01	0.000E+00	FAIL ABUN
AM-246	-2.435E-03	1.408E-01	2.369E-01	0.000E+00	NOT IDENT.
CM-247	2.061E-02	3.179E-02	5.765E-02	0.000E+00	NOT IDENT.
CF-249	-1.941E-03	3.369E-02	5.871E-02	0.000E+00	NOT IDENT.
CF-251	4.980E-03	1.065E-01	1.849E-01	0.000E+00	NOT IDENT.



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457004.CNF;1
Sample date        : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 13:59:18.
Sample ID          : G243457004      Sample quantity      : 1.18320E+02 GRAM
Detector name      : GAM11            Detector geometry   : CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time  : 0 02:00:01.58  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials   : MXR1
Abundance limit    : 75.00000          Sensitivity         : 5.00000
Batch ID           : 936923            Detector SN#        :
Matrix Spike ID    :                   LCS ID              : 1032-A
*****

```

## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1345	10.67*	1.226E+00	3.260E+01	3.260E+01	10.33
CD-109	88.03	187	3.72*	6.780E+00	2.347E+00	2.408E+00	31.84
SN-126	64.28	37	9.60	4.224E+00	2.900E-01	2.900E-01	177.98
	86.94	187	8.90	6.780E+00	9.811E-01	9.811E-01	51.48
	87.57	187	37.00*	6.780E+00	2.360E-01	2.360E-01	31.84
TL-208	277.35	-----	6.80	4.676E+00	-----	Line Not Found	-----
	510.84	142	21.60	2.956E+00	7.042E-01	7.042E-01	46.09
	583.14	344	84.20*	2.663E+00	4.860E-01	4.860E-01	19.11
	860.37	39	12.46	1.927E+00	5.190E-01	5.190E-01	87.48
BI-211	72.87	-----	1.27	5.576E+00	-----	Line Not Found	-----
	351.07	559	12.94*	3.924E+00	3.492E+00	3.492E+00	17.41
PB-212	74.81	426	10.70	5.777E+00	2.185E+00	2.185E+00	20.86
	77.11	613	18.00	6.010E+00	1.797E+00	1.797E+00	14.14
	87.30	187	8.00	6.780E+00	1.091E+00	1.091E+00	33.37
	238.63	1123	44.60*	5.214E+00	1.532E+00	1.532E+00	15.70
	300.09	61	3.41	4.420E+00	1.293E+00	1.293E+00	66.89
PO-212	74.81	426	10.70	5.777E+00	2.185E+00	2.185E+00	20.86
	77.11	613	18.00	6.010E+00	1.797E+00	1.797E+00	14.14
	87.30	187	8.00	6.780E+00	1.091E+00	1.091E+00	33.37
	115.19	-----	0.60	7.407E+00	-----	Line Not Found	-----
	238.63	1123	44.60*	5.214E+00	1.532E+00	1.532E+00	15.70
	300.09	61	3.41	4.420E+00	1.293E+00	1.293E+00	66.89
BI-214	609.31	360	46.30*	2.571E+00	9.594E-01	9.594E-01	19.12
	1120.29	114	15.10	1.532E+00	1.562E+00	1.562E+00	38.02
	1764.49	67	15.80	1.071E+00	1.249E+00	1.249E+00	29.28
PB-214	74.81	426	6.21	5.777E+00	3.765E+00	3.765E+00	20.07
	77.11	613	10.50	6.010E+00	3.081E+00	3.081E+00	16.07
	87.30	187	4.67	6.780E+00	1.870E+00	1.870E+00	32.76
	241.98	158	7.49	5.163E+00	1.295E+00	1.295E+00	34.26
	295.21	305	19.20	4.472E+00	1.127E+00	1.127E+00	27.53
	351.92	559	37.20*	3.924E+00	1.215E+00	1.215E+00	18.17
PO-214	74.81	426	6.21	5.777E+00	3.765E+00	3.765E+00	20.07



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	613	10.50	6.010E+00	3.081E+00	3.081E+00	16.07
	87.30	187	4.67	6.780E+00	1.870E+00	1.870E+00	32.76
	241.98	158	7.49	5.163E+00	1.295E+00	1.295E+00	34.26
	295.21	305	19.20	4.472E+00	1.127E+00	1.127E+00	27.53
	351.92	559	37.20*	3.924E+00	1.215E+00	1.215E+00	18.17
PO-216	74.81	426	10.70	5.777E+00	2.185E+00	2.185E+00	20.86
	77.11	613	18.00	6.010E+00	1.797E+00	1.797E+00	14.14
	87.30	187	8.00	6.780E+00	1.091E+00	1.091E+00	33.37
	238.63	1123	44.60*	5.214E+00	1.532E+00	1.532E+00	15.70
	300.09	61	3.41	4.420E+00	1.293E+00	1.293E+00	66.89
PO-218	74.81	426	6.21	5.777E+00	3.765E+00	3.765E+00	20.07
	77.11	613	10.50	6.010E+00	3.081E+00	3.081E+00	16.07
	87.30	187	4.67	6.780E+00	1.870E+00	1.870E+00	32.76
	241.98	158	7.49	5.163E+00	1.295E+00	1.295E+00	34.26
	295.21	305	19.20	4.472E+00	1.127E+00	1.127E+00	27.53
	351.92	559	37.20*	3.924E+00	1.215E+00	1.215E+00	18.17
RA-224	240.98	98	3.95*	5.179E+00	1.527E+00	1.527E+00	63.97
RA-226	609.31	360	46.30*	2.571E+00	9.594E-01	9.594E-01	19.12
	1120.29	114	15.10	1.532E+00	1.562E+00	1.562E+00	38.02
	1764.49	67	15.80	1.071E+00	1.249E+00	1.249E+00	29.28
TH-228	74.81	426	10.70	5.777E+00	2.185E+00	2.222E+00	18.69
	77.11	613	18.00	6.010E+00	1.797E+00	1.828E+00	14.15
	87.30	187	8.00	6.780E+00	1.091E+00	1.110E+00	31.84
	238.63	1123	44.60*	5.214E+00	1.532E+00	1.559E+00	15.70
	300.09	61	3.41	4.420E+00	1.293E+00	1.316E+00	88.76
TH-230	609.31	360	46.30*	2.571E+00	9.594E-01	9.594E-01	19.12
	1120.29	114	15.10	1.532E+00	1.562E+00	1.562E+00	38.02
	1764.49	67	15.80	1.071E+00	1.249E+00	1.249E+00	29.28
TH-234	63.29	37	3.80*	4.224E+00	7.327E-01	7.327E-01	178.24
	92.38	210	5.41	7.052E+00	1.748E+00	1.748E+00	35.78
U-234	609.31	360	46.30*	2.571E+00	9.594E-01	9.594E-01	19.12
	1120.29	114	15.10	1.532E+00	1.562E+00	1.562E+00	38.02
	1764.49	67	15.80	1.071E+00	1.249E+00	1.249E+00	29.28
NP-237	86.50	187	12.60*	6.780E+00	6.930E-01	6.930E-01	37.94
	95.87	-----	2.60	7.169E+00	-----	Line Not Found	-----
U-238	63.29	37	3.80*	4.224E+00	7.327E-01	7.327E-01	178.24
	92.38	210	5.41	7.052E+00	1.748E+00	1.748E+00	35.78
AM-243	74.67	426	66.00*	5.777E+00	3.542E-01	3.542E-01	18.65
	86.72	187	0.34	6.780E+00	2.599E+01	2.599E+01	31.84
	117.66	-----	0.55	7.397E+00	-----	Line Not Found	-----
	142.18	-----	0.13	7.065E+00	-----	Line Not Found	-----
ANH-511	511.00	142	100.00*	2.956E+00	1.521E-01	1.521E-01	45.33

Flag: "\*" = Keyline



Total number of lines in spectrum 36  
Number of unidentified lines 3  
Number of lines tentatively identified by NID 33 91.67%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.260E+01	3.260E+01	0.337E+01	10.33	
CD-109	464.00D	1.03	2.347E+00	2.408E+00	0.767E+00	31.84	
SN-126	1.00E+05Y	1.00	2.360E-01	2.360E-01	0.751E-01	31.84	
TL-208	1.41E+10Y	1.00	4.860E-01	4.860E-01	0.929E-01	19.11	
BI-211	7.04E+08Y	1.00	3.492E+00	3.492E+00	0.608E+00	17.41	
PB-212	1.41E+10Y	1.00	1.532E+00	1.532E+00	0.241E+00	15.70	
PO-212	1.41E+10Y	1.00	1.532E+00	1.532E+00	0.241E+00	15.70	
BI-214	1600.00Y	1.00	9.594E-01	9.594E-01	1.834E-01	19.12	
PB-214	1600.00Y	1.00	1.215E+00	1.215E+00	0.221E+00	18.17	
PO-214	1600.00Y	1.00	1.215E+00	1.215E+00	0.221E+00	18.17	
PO-216	1.41E+10Y	1.00	1.532E+00	1.532E+00	0.241E+00	15.70	
PO-218	1600.00Y	1.00	1.215E+00	1.215E+00	0.221E+00	18.17	
RA-224	1.41E+10Y	1.00	1.527E+00	1.527E+00	0.977E+00	63.97	
RA-226	1600.00Y	1.00	9.594E-01	9.594E-01	1.834E-01	19.12	
TH-228	1.91Y	1.02	1.532E+00	1.559E+00	0.245E+00	15.70	
TH-230	4.47E+09Y	1.00	9.594E-01	9.594E-01	1.834E-01	19.12	
TH-234	4.47E+09Y	1.00	7.327E-01	7.327E-01	13.06E-01	178.24	
U-234	4.47E+09Y	1.00	9.594E-01	9.594E-01	1.834E-01	19.12	
NP-237	2.14E+06Y	1.00	6.930E-01	6.930E-01	2.629E-01	37.94	
U-238	4.47E+09Y	1.00	7.327E-01	7.327E-01	13.06E-01	178.24	
AM-243	7380.00Y	1.00	3.542E-01	3.542E-01	0.661E-01	18.65	
ANH-511	1.00E+09Y	1.00	1.521E-01	1.521E-01	0.689E-01	45.33	

Total Activity : 5.697E+01 5.706E+01

Grand Total Activity : 5.697E+01 5.706E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.10	86	365	1.33	167.11	165	6	1.19E-02	73.5	6.59E+00	T
6	89.78	161	310	0.99	178.48	170	22	2.23E-02	37.6	6.93E+00	T
0	129.04	88	275	1.14	257.05	253	8	1.23E-02	68.9	7.28E+00	T
0	185.65	153	237	1.03	370.37	366	8	2.13E-02	40.7	6.16E+00	T
0	209.05	106	257	0.80	417.20	412	9	1.47E-02	58.9	5.71E+00	T
0	269.78	79	228	1.88	538.74	534	13	1.09E-02	83.4	4.77E+00	T
4	326.09	23	31	0.78	651.44	650	8	3.13E-03	81.4	4.15E+00	T
4	327.65	89	73	1.05	654.56	650	8	1.24E-02	38.6	4.14E+00	T
0	338.02	183	144	1.19	675.31	671	9	2.54E-02	28.6	4.04E+00	T
0	409.30	52	90	1.28	817.96	813	9	7.21E-03	71.5	3.50E+00	
0	462.56	60	72	1.51	924.57	920	10	8.36E-03	59.4	3.19E+00	T
0	726.54	95	63	1.84	1452.82	1447	12	1.32E-02	39.2	2.22E+00	T
3	767.82	49	67	1.94	1535.41	1530	20	6.82E-03	71.3	2.12E+00	T
3	772.15	52	47	1.94	1544.08	1530	20	7.24E-03	64.2	2.11E+00	
0	794.59	65	42	0.98	1588.99	1583	12	9.07E-03	46.7	2.06E+00	T
0	910.62	199	69	1.30	1821.16	1815	13	2.77E-02	22.9	1.83E+00	T
0	967.22	192	72	1.89	1934.41	1925	18	2.67E-02	25.3	1.74E+00	T
0	1586.76	25	3	1.07	3173.86	3168	11	3.51E-03	47.2	1.15E+00	

Flags: "T" = Tentatively associated



```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243457004.CNF;1
* Acquisition date   : 4-JAN-2010 13:59:18.   Detector SN#      :
* Detector ID        : GAM11                  Sensitivity         : 5.00000
* Geometry           : CAN                    Energy tolerance   : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:01.58          Half life ratio     : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 18-DEC-2009 12:00:00   Nuclide Library    : SOLID
* Sample ID          : G243457004             Analyst initials   : MXR1
* Batch Number       : 936923                 Sample Quantity    : 1.18320E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22.2MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope         :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.260E+01	3.369E+00	4.316E-01	3.732E-02	75.544
CD-109	2.408E+00	7.667E-01	9.338E-01	8.855E-02	2.579
SN-126	2.360E-01	7.514E-02	9.181E-02	8.660E-03	2.570
TL-208	4.860E-01	9.287E-02	5.510E-02	5.950E-03	8.821
BI-211	3.492E+00	6.080E-01	2.652E-01	3.499E-02	13.169
PB-212	1.532E+00	2.406E-01	8.345E-02	1.169E-02	18.362
PO-212	1.532E+00	2.406E-01	8.345E-02	1.169E-02	18.362
BI-214	9.594E-01	1.834E-01	9.676E-02	1.094E-02	9.915
PB-214	1.215E+00	2.208E-01	9.245E-02	1.308E-02	13.141
PO-214	1.215E+00	2.208E-01	9.245E-02	1.308E-02	13.141
PO-216	1.532E+00	2.406E-01	8.345E-02	1.169E-02	18.362
PO-218	1.215E+00	2.208E-01	9.245E-02	1.308E-02	13.141
RA-224	1.527E+00	9.769E-01	9.500E-01	1.272E-01	1.608
RA-226	9.594E-01	1.834E-01	9.676E-02	1.094E-02	9.915
TH-228	1.559E+00	2.447E-01	8.488E-02	1.189E-02	18.362
TH-230	9.594E-01	1.834E-01	9.676E-02	1.094E-02	9.915
TH-234	7.327E-01	1.306E+00	1.370E+00	2.383E-01	0.535
U-234	9.594E-01	1.834E-01	9.676E-02	1.094E-02	9.915



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	6.930E-01	2.629E-01	2.967E-01	6.716E-02	2.336
U-238	7.327E-01	1.306E+00	1.370E+00	2.383E-01	0.535
AM-243	3.542E-01	6.607E-02	6.400E-02	5.179E-03	5.534
ANH-511	1.521E-01	6.894E-02	4.210E-02	4.502E-03	3.613

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.325E-02		2.669E-01	4.530E-01	5.127E-02	0.118
NA-22	-2.241E-02		4.313E-02	6.580E-02	5.404E-03	-0.341
NA-24	-3.050E+00		2.818E+00	Half-Life	too short	
AL-26	-1.027E-02		2.579E-02	3.836E-02	3.131E-03	-0.268
TI-44	3.317E-01	+	4.692E-02	4.950E-02	4.173E-03	6.701
SC-46	1.202E-02		3.502E-02	6.076E-02	5.984E-03	0.198
V-48	5.570E-02		7.791E-02	1.379E-01	1.308E-02	0.404
CR-51	1.875E-02		3.626E-01	5.819E-01	8.446E-02	0.032
MN-52	2.878E-01		2.810E-01	5.215E-01	4.369E-02	0.552
MN-54	1.043E-02		3.668E-02	6.325E-02	6.228E-03	0.165
CO-56	-3.608E-02		3.626E-02	5.472E-02	5.391E-03	-0.659
CO-57	-1.318E-03		1.981E-02	3.355E-02	2.838E-03	-0.039
CO-58	-3.332E-02		4.071E-02	5.918E-02	5.827E-03	-0.563
FE-59	-7.894E-02		9.138E-02	1.361E-01	1.280E-02	-0.580
CO-60	-1.447E-02		4.102E-02	6.404E-02	5.292E-03	-0.226
ZN-65	2.134E-02		1.178E-01	1.716E-01	1.472E-02	0.124
GE-68	-7.632E-01		1.277E+00	1.979E+00	1.757E-01	-0.386
AS-73	-2.570E-01		5.952E-01	9.094E-01	6.829E-02	-0.283
AS-74	5.358E-03		9.641E-02	1.589E-01	1.616E-02	0.034
SE-75	-7.240E-03		4.319E-02	6.149E-02	9.039E-03	-0.118
BR-77	-4.360E+00		1.618E+01	2.619E+01	2.791E+00	-0.166
SR-82	2.627E-02		3.979E-01	5.628E-01	5.505E-02	0.047
RB-83	-1.602E-02		6.082E-02	9.850E-02	1.050E-02	-0.163
RB-84	4.740E-02		6.996E-02	1.244E-01	1.226E-02	0.381
KR-85	3.604E+00		7.167E+00	1.099E+01	1.174E+00	0.328
SR-85	1.887E-02		3.752E-02	5.754E-02	6.147E-03	0.328
RB-86	-2.900E-01		9.127E-01	1.461E+00	1.298E-01	-0.198
Y-88	-1.344E-02		3.474E-02	5.263E-02	4.273E-03	-0.255
ZR-88	-5.720E-03		2.464E-02	4.097E-02	4.370E-03	-0.140
Y-91	-4.774E+00		1.966E+01	3.138E+01	2.541E+00	-0.152
NB-94	7.744E-03		3.426E-02	5.652E-02	5.428E-03	0.137
NB-95	2.120E-02		5.379E-02	7.877E-02	7.689E-03	0.269
NB-95M	9.426E-02		1.266E-01	1.933E-01	2.699E-02	0.488
ZR-95	5.060E-03		7.356E-02	1.191E-01	1.253E-02	0.042
NB-97	2.533E-02		3.200E-01	Half-Life	too short	
ZR-97	2.962E+01		6.149E+00	Half-Life	too short	
MO-99	-4.470E+00		1.808E+01	2.837E+01	4.490E+00	-0.158
TC-99M	-7.042E+12		3.744E+12	Half-Life	too short	
RH-101	-1.554E-02		2.959E-02	4.650E-02	5.204E-03	-0.334



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-102	-4.482E-03		2.435E-02	4.003E-02	4.315E-03	-0.112
RU-103	-5.429E-02		3.857E-02	5.485E-02	8.524E-03	-0.990
RH-106	1.154E-01		3.074E-01	5.184E-01	7.377E-02	0.223
RU-106	1.154E-01		3.072E-01	5.184E-01	5.143E-02	0.223
AG-108M	-1.515E-04		2.918E-02	4.871E-02	5.385E-03	-0.003
AG-110M	-1.231E-03		3.391E-02	5.501E-02	5.361E-03	-0.022
IN-111	4.312E-01		1.689E+00	2.505E+00	3.415E-01	0.172
IN-113M	-2.874E-03		3.628E-02	6.107E-02	6.643E-03	-0.047
SN-113	-2.874E-03		3.628E-02	6.107E-02	6.643E-03	-0.047
IN-114M	2.184E-03		1.631E-01	2.704E-01	2.926E-02	0.008
CD-115	-7.174E+00		1.822E+01	2.916E+01	3.098E+00	-0.246
SN-117M	7.046E-03		5.182E-02	8.731E-02	8.251E-03	0.081
SB-122	-1.628E-01		3.294E+00	5.408E+00	5.633E-01	-0.030
I-123	2.270E+01		2.929E+01	Half-Life	too short	
TE-123M	9.397E-03		2.425E-02	4.131E-02	3.930E-03	0.227
I-124	-3.986E-01		9.628E-01	1.312E+00	1.326E-01	-0.304
SB-124	2.184E-02		6.727E-02	1.187E-01	1.032E-02	0.184
SB-125	2.273E-02		7.675E-02	1.320E-01	1.439E-02	0.172
TE-125M	-2.858E+00		7.220E+00	1.210E+01	1.243E+00	-0.236
I-126	4.194E-02		1.955E-01	3.238E-01	3.069E-02	0.130
SB-126	2.441E-02		1.531E-01	2.212E-01	2.136E-02	0.110
SB-127	1.383E+00		1.749E+00	3.040E+00	3.849E-01	0.455
XE-127	-3.275E-02		4.258E-02	6.713E-02	7.672E-03	-0.488
I-131	-5.417E-02		1.228E-01	1.867E-01	2.345E-02	-0.290
TE-132	-9.774E-01		9.760E-01	1.459E+00	2.716E-01	-0.670
BA-133	2.593E-02		3.810E-02	5.771E-02	9.308E-03	0.449
I-133	5.975E-03		1.266E-02	Half-Life	too short	
CS-134	1.328E-01	+	6.343E-02	8.851E-02	8.731E-03	1.501
CS-135	1.829E-01		1.618E-01	2.509E-01	3.936E-02	0.729
I-135	1.598E+11		3.788E+11	Half-Life	too short	
CS-136	-1.048E-01		1.155E-01	1.717E-01	1.621E-02	-0.611
BA-137M	-1.502E-02		3.515E-02	5.498E-02	5.202E-03	-0.273
CS-137	-1.588E-02		3.716E-02	5.812E-02	5.508E-03	-0.273
CE-139	-1.544E-02		2.333E-02	3.750E-02	3.644E-03	-0.412
BA-140	7.326E-02		2.625E-01	4.424E-01	1.491E-01	0.166
LA-140	1.389E-02		8.902E-02	1.520E-01	1.278E-02	0.091
CE-141	-5.380E-02		5.319E-02	8.482E-02	7.775E-03	-0.634
CE-143	1.568E-03		2.857E-04	Half-Life	too short	
CE-144	6.664E-03		1.703E-01	2.757E-01	4.302E-02	0.024
PM-144	1.163E-03		3.494E-02	5.677E-02	5.443E-03	0.020
PR-144	7.890E-02		2.370E+00	3.851E+00	3.691E-01	0.020
PM-146	4.467E-02		4.022E-02	7.200E-02	9.027E-03	0.620
ND-147	4.177E-01		5.504E-01	9.637E-01	1.559E-01	0.433
PM-149	-5.693E+00		1.564E+02	2.515E+02	5.043E+01	-0.023
EU-152	-9.476E-02		9.244E-02	1.338E-01	1.814E-02	-0.708
GD-153	-5.829E-02		7.527E-02	1.004E-01	8.921E-03	-0.580
EU-154	-6.724E-02		1.200E-01	1.818E-01	1.999E-02	-0.370
EU-155	7.565E-02		8.548E-02	1.511E-01	1.319E-02	0.501



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	-2.233E-02		1.415E-01	2.342E-01	2.307E-02	-0.095
HO-166M	-5.008E-03		5.664E-02	9.079E-02	8.744E-03	-0.055
TM-171	4.624E+00		2.263E+01	3.332E+01	2.500E+00	0.139
LU-176	6.946E-03		2.303E-02	3.767E-02	5.538E-03	0.184
LU-177	3.135E+00	+	1.884E+00	2.317E+00	2.712E-01	1.353
LU-177M	1.493E-02		1.709E-01	2.566E-01	2.755E-02	0.058
HF-181	-1.967E-02		3.627E-02	5.752E-02	6.195E-03	-0.342
W-181	-2.397E-01		2.949E-01	4.081E-01	3.025E-02	-0.587
TA-182	5.770E-03		2.165E-01	3.543E-01	2.878E-02	0.016
RE-183	1.956E-02		9.302E-02	1.571E-01	1.506E-02	0.124
RE-184	4.695E-02		1.979E-01	3.267E-01	4.584E-02	0.144
OS-185	2.282E-02		3.910E-02	6.715E-02	6.482E-03	0.340
RE-188	6.040E-02		1.552E-01	2.645E-01	2.467E-02	0.228
W-188	-2.513E+00		7.396E+00	1.026E+01	1.558E+00	-0.245
IR-192	5.315E-03		3.132E-02	5.074E-02	7.294E-03	0.105
AU-195	2.033E-01		1.832E-01	3.096E-01	2.732E-02	0.657
TL-200	8.494E-05		6.956E-04	Half-Life too short		
TL-201	-7.390E-01		8.610E+00	1.431E+01	1.400E+00	-0.052
TL-202	7.449E-02		6.807E-02	1.225E-01	1.322E-02	0.608
HG-203	-1.394E-02		3.807E-02	5.992E-02	9.360E-03	-0.233
BI-207	7.064E-03		5.481E-02	8.990E-02	8.076E-03	0.079
TL-207	-3.159E-02		6.521E-01	9.221E-01	1.929E-01	-0.034
PO-209	4.781E+00		6.817E+00	1.217E+01	1.198E+00	0.393
BI-210	1.735E+00		2.222E+00	3.659E+00	3.406E-01	0.474
PB-210	1.735E+00		2.222E+00	3.659E+00	3.406E-01	0.474
PO-210	1.735E+00		2.221E+00	3.659E+00	3.084E-01	0.474
PB-211	1.768E-01		9.504E-01	1.432E+00	9.019E-01	0.123
BI-212	1.149E+00	+	4.675E-01	6.612E-01	7.226E-02	1.737
PO-215	-3.159E-02		6.521E-01	9.221E-01	1.929E-01	-0.034
RN-219	2.089E-01		3.536E-01	6.190E-01	1.009E-01	0.337
RN-220	1.035E+01		2.454E+01	4.187E+01	4.400E+00	0.247
RA-223	-3.159E-02		6.521E-01	9.221E-01	1.929E-01	-0.034
AC-227	3.045E-02		3.363E-01	5.494E-01	1.047E-01	0.055
TH-227	3.045E-02		3.363E-01	5.494E-01	1.171E-01	0.055
AC-228	1.245E+00	+	3.228E-01	4.692E-01	5.712E-02	2.654
RA-228	1.245E+00	+	3.228E-01	4.692E-01	5.712E-02	2.654
TH-229	2.240E-01		4.459E-01	7.551E-01	8.291E-02	0.297
PA-231	7.419E-01		1.389E+00	2.307E+00	4.572E-01	0.322
TH-231	-3.159E-02		6.521E-01	9.221E-01	1.929E-01	-0.034
U-231	-3.032E-03		1.282E+00	1.828E+00	1.638E-01	-0.002
TH-232	1.245E+00	+	3.228E-01	4.692E-01	5.712E-02	2.654
PA-233	-8.480E-03		5.971E-02	9.466E-02	1.389E-02	-0.090
PA-234	-2.366E-01		3.131E-01	4.801E-01	9.249E-02	-0.493
PA-234M	2.762E+00		4.530E+00	7.879E+00	8.382E-01	0.351
U-235	5.129E-02		1.748E-01	2.920E-01	5.162E-02	0.176
NP-236	-2.134E-02		6.877E-02	1.134E-01	1.078E-02	-0.188
NP-239	-7.261E-02		1.481E-01	2.463E-01	2.084E-02	-0.295
AM-241	4.900E-02		1.148E-01	1.728E-01	1.358E-02	0.284



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	4.025E-02		7.236E-02	1.267E-01	1.098E-02	0.318
AM-246	-2.435E-03		1.437E-01	2.368E-01	2.100E-02	-0.010
CM-247	2.061E-02		3.243E-02	5.700E-02	6.101E-03	0.362
CF-249	-1.941E-03		3.438E-02	5.802E-02	6.318E-03	-0.033
CF-251	4.980E-03		1.086E-01	1.811E-01	1.845E-02	0.027



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G243457004          *
* Acquisition date   : 4-JAN-2010 13:59:18 Detector SN# :                  *
* Detector ID        : GAM11 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000           *
* Elapsed real time  : 0 02:00:01.58 Half life ratio : 8.000            *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243457004 Analyst initials: MXR1                 *
* Batch Number       : 936923 Sample Quantity : 1.1832E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                              *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	3.260E+01	3.302E+00	2.153E-01	1.685E+00
CD-109	2.408E+00	7.513E-01	4.804E-01	3.833E-01
SN-126	2.360E-01	7.361E-02	4.723E-02	3.757E-02
TL-208	4.860E-01	9.101E-02	2.777E-02	4.643E-02
BI-211	3.492E+00	5.958E-01	1.344E-01	3.040E-01
PB-212	1.532E+00	2.358E-01	4.247E-02	1.203E-01
PO-212	1.532E+00	2.358E-01	4.247E-02	1.203E-01
BI-214	9.594E-01	1.798E-01	4.874E-02	9.172E-02
PB-214	1.215E+00	2.164E-01	4.685E-02	1.104E-01
PO-214	1.215E+00	2.164E-01	4.685E-02	1.104E-01
PO-216	1.532E+00	2.358E-01	4.247E-02	1.203E-01
PO-218	1.215E+00	2.164E-01	4.685E-02	1.104E-01
RA-224	1.527E+00	9.574E-01	4.834E-01	4.885E-01
RA-226	9.594E-01	1.798E-01	4.874E-02	9.172E-02
TH-228	1.559E+00	2.398E-01	4.320E-02	1.223E-01
TH-230	9.594E-01	1.798E-01	4.874E-02	9.171E-02
TH-234	7.327E-01	1.280E+00	7.071E-01	6.529E-01
U-234	9.594E-01	1.798E-01	4.874E-02	9.171E-02
NP-237	6.930E-01	2.577E-01	1.526E-01	1.315E-01
U-238	7.327E-01	1.280E+00	7.071E-01	6.529E-01
AM-243	3.542E-01	6.475E-02	3.298E-02	3.304E-02
ANH-511	1.521E-01	6.757E-02	2.125E-02	3.447E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	5.325E-02	2.616E-01	2.288E-01	1.335E-01 NOT IDENT.
NA-22	-2.241E-02	4.227E-02	3.287E-02	2.157E-02 NOT IDENT.
NA-24	-3.050E+06	5.524E+06	0.000E+00	2.818E+06 SHORT HLIF
AL-26	-1.027E-02	2.527E-02	1.909E-02	1.289E-02 NOT IDENT.
TI-44	3.317E-01	4.598E-02	2.549E-02	2.346E-02 FAIL ABUN



SC-46	1.202E-02	3.432E-02	3.048E-02	1.751E-02	FAIL ABUN
V-48	5.570E-02	7.635E-02	6.908E-02	3.895E-02	NOT IDENT.
CR-51	1.875E-02	3.554E-01	2.952E-01	1.813E-01	NOT IDENT.
MN-52	2.878E-01	2.754E-01	2.602E-01	1.405E-01	NOT IDENT.
MN-54	1.043E-02	3.594E-02	3.175E-02	1.834E-02	NOT IDENT.
CO-56	-3.608E-02	3.553E-02	2.746E-02	1.813E-02	NOT IDENT.
CO-57	-1.318E-03	1.942E-02	1.720E-02	9.907E-03	NOT IDENT.
CO-58	-3.332E-02	3.990E-02	2.972E-02	2.036E-02	NOT IDENT.
FE-59	-7.894E-02	8.955E-02	6.812E-02	4.569E-02	NOT IDENT.
CO-60	-1.447E-02	4.020E-02	3.198E-02	2.051E-02	NOT IDENT.
ZN-65	2.134E-02	1.155E-01	8.586E-02	5.892E-02	NOT IDENT.
GE-68	-7.632E-01	1.252E+00	9.905E-01	6.387E-01	NOT IDENT.
AS-73	-2.570E-01	5.833E-01	4.703E-01	2.976E-01	NOT IDENT.
AS-74	5.358E-03	9.448E-02	8.007E-02	4.820E-02	NOT IDENT.
SE-75	-7.240E-03	4.233E-02	3.126E-02	2.160E-02	NOT IDENT.
BR-77	-4.360E+00	1.585E+01	1.322E+01	8.089E+00	FAIL ABUN
SR-82	2.627E-02	3.899E-01	2.827E-01	1.989E-01	NOT IDENT.
RB-83	-1.602E-02	5.960E-02	4.970E-02	3.041E-02	NOT IDENT.
RB-84	4.740E-02	6.856E-02	6.242E-02	3.498E-02	NOT IDENT.
KR-85	3.604E+00	7.024E+00	5.548E+00	3.584E+00	NOT IDENT.
SR-85	1.887E-02	3.677E-02	2.904E-02	1.876E-02	NOT IDENT.
RB-86	-2.900E-01	8.945E-01	7.314E-01	4.564E-01	NOT IDENT.
Y-88	-1.344E-02	3.404E-02	2.619E-02	1.737E-02	NOT IDENT.
ZR-88	-5.720E-03	2.415E-02	2.074E-02	1.232E-02	NOT IDENT.
Y-91	-4.774E+00	1.927E+01	1.569E+01	9.829E+00	NOT IDENT.
NB-94	7.744E-03	3.358E-02	2.843E-02	1.713E-02	NOT IDENT.
NB-95	2.120E-02	5.272E-02	3.958E-02	2.690E-02	NOT IDENT.
NB-95M	9.426E-02	1.241E-01	9.840E-02	6.331E-02	NOT IDENT.
ZR-95	5.060E-03	7.209E-02	5.985E-02	3.678E-02	NOT IDENT.
NB-97	2.533E+04	6.272E+05	0.000E+00	3.200E+05	SHORT HLIF
ZR-97	2.962E+07	1.205E+07	0.000E+00	6.149E+06	SHORT HLIF
MO-99	-4.470E+00	1.772E+01	1.426E+01	9.038E+00	NOT IDENT.
TC-99M	-7.042E+18	7.339E+18	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.554E-02	2.899E-02	2.371E-02	1.479E-02	FAIL ABUN
RH-102	-4.482E-03	2.387E-02	2.022E-02	1.218E-02	FAIL ABUN
RU-103	-5.429E-02	3.780E-02	2.769E-02	1.929E-02	FAIL ABUN
RH-106	1.154E-01	3.013E-01	2.611E-01	1.537E-01	FAIL ABUN
RU-106	1.154E-01	3.011E-01	2.611E-01	1.536E-01	FAIL ABUN
AG-108M	-1.515E-04	2.860E-02	2.463E-02	1.459E-02	NOT IDENT.
AG-110M	-1.231E-03	3.323E-02	2.769E-02	1.695E-02	NOT IDENT.
IN-111	4.312E-01	1.655E+00	1.275E+00	8.444E-01	NOT IDENT.
IN-113M	-2.874E-03	3.556E-02	3.091E-02	1.814E-02	NOT IDENT.
SN-113	-2.874E-03	3.556E-02	3.091E-02	1.814E-02	NOT IDENT.
IN-114M	2.184E-03	1.599E-01	1.380E-01	8.157E-02	NOT IDENT.
CD-115	-7.174E+00	1.786E+01	1.471E+01	9.112E+00	NOT IDENT.
SN-117M	7.046E-03	5.078E-02	4.463E-02	2.591E-02	NOT IDENT.
SB-122	-1.628E-01	3.228E+00	2.726E+00	1.647E+00	NOT IDENT.
I-123	2.270E+07	5.741E+07	0.000E+00	2.929E+07	SHORT HLIF
TE-123M	9.397E-03	2.376E-02	2.112E-02	1.212E-02	NOT IDENT.
I-124	-3.986E-01	9.435E-01	6.610E-01	4.814E-01	NOT IDENT.
SB-124	2.184E-02	6.592E-02	5.913E-02	3.363E-02	FAIL ABUN
SB-125	2.273E-02	7.522E-02	6.674E-02	3.838E-02	FAIL ABUN
TE-125M	-2.858E+00	7.075E+00	6.212E+00	3.610E+00	NOT IDENT.
I-126	4.194E-02	1.916E-01	1.629E-01	9.775E-02	NOT IDENT.
SB-126	2.441E-02	1.500E-01	1.112E-01	7.654E-02	NOT IDENT.
SB-127	1.383E+00	1.714E+00	1.530E+00	8.745E-01	NOT IDENT.
XE-127	-3.275E-02	4.172E-02	3.422E-02	2.129E-02	NOT IDENT.
I-131	-5.417E-02	1.203E-01	9.457E-02	6.138E-02	NOT IDENT.
TE-132	-9.774E-01	9.565E-01	7.430E-01	4.880E-01	NOT IDENT.
BA-133	2.593E-02	3.733E-02	2.924E-02	1.905E-02	NOT IDENT.
I-133	5.975E+03	2.480E+04	0.000E+00	1.266E+04	SHORT HLIF
CS-134	1.328E-01	6.216E-02	4.445E-02	3.171E-02	FAIL ABUN
CS-135	1.829E-01	1.586E-01	1.275E-01	8.090E-02	NOT IDENT.
I-135	1.598E+17	7.425E+17	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.048E-01	1.132E-01	8.597E-02	5.775E-02	FAIL ABUN
BA-137M	-1.502E-02	3.445E-02	2.767E-02	1.758E-02	NOT IDENT.
CS-137	-1.588E-02	3.642E-02	2.925E-02	1.858E-02	NOT IDENT.
CE-139	-1.544E-02	2.286E-02	1.916E-02	1.167E-02	NOT IDENT.
BA-140	7.326E-02	2.573E-01	2.232E-01	1.313E-01	NOT IDENT.
LA-140	1.389E-02	8.724E-02	7.572E-02	4.451E-02	FAIL ABUN
CE-141	-5.380E-02	5.213E-02	4.340E-02	2.660E-02	NOT IDENT.
CE-143	1.568E+03	5.600E+02	0.000E+00	2.857E+02	SHORT HLIF
CE-144	6.664E-03	1.669E-01	1.412E-01	8.513E-02	NOT IDENT.
PM-144	1.163E-03	3.424E-02	2.855E-02	1.747E-02	NOT IDENT.
PR-144	7.890E-02	2.323E+00	1.937E+00	1.185E+00	NOT IDENT.
PM-146	4.467E-02	3.942E-02	3.638E-02	2.011E-02	NOT IDENT.
ND-147	4.177E-01	5.393E-01	4.862E-01	2.752E-01	FAIL ABUN
PM-149	-5.693E+00	1.532E+02	1.277E+02	7.818E+01	NOT IDENT.



EU-152	-9.476E-02	9.059E-02	6.783E-02	4.622E-02	NOT IDENT.
GD-153	-5.829E-02	7.376E-02	5.160E-02	3.763E-02	FAIL ABUN
EU-154	-6.724E-02	1.176E-01	9.082E-02	5.998E-02	NOT IDENT.
EU-155	7.565E-02	8.377E-02	7.759E-02	4.274E-02	FAIL ABUN
TB-160	-2.233E-02	1.386E-01	1.175E-01	7.074E-02	FAIL ABUN
HO-166M	-5.008E-03	5.551E-02	4.565E-02	2.832E-02	FAIL ABUN
TM-171	4.624E+00	2.217E+01	1.719E+01	1.131E+01	NOT IDENT.
LU-176	6.946E-03	2.257E-02	1.912E-02	1.151E-02	FAIL ABUN
LU-177	3.135E+00	1.846E+00	1.181E+00	9.420E-01	FAIL ABUN
LU-177M	1.493E-02	1.675E-01	1.298E-01	8.544E-02	FAIL ABUN
HF-181	-1.967E-02	3.554E-02	2.905E-02	1.813E-02	NOT IDENT.
W-181	-2.397E-01	2.890E-01	2.106E-01	1.475E-01	NOT IDENT.
TA-182	5.770E-03	2.122E-01	1.771E-01	1.083E-01	NOT IDENT.
RE-183	1.956E-02	9.116E-02	8.028E-02	4.651E-02	FAIL ABUN
RE-184	4.695E-02	1.940E-01	1.662E-01	9.897E-02	NOT IDENT.
OS-185	2.282E-02	3.832E-02	3.380E-02	1.955E-02	NOT IDENT.
RE-188	6.040E-02	1.521E-01	1.352E-01	7.761E-02	NOT IDENT.
W-188	-2.513E+00	7.248E+00	5.209E+00	3.698E+00	FAIL ABUN
IR-192	5.315E-03	3.069E-02	2.574E-02	1.566E-02	FAIL ABUN
AU-195	2.033E-01	1.796E-01	1.591E-01	9.162E-02	FAIL ABUN
TL-200	8.494E+01	1.363E+03	0.000E+00	6.956E+02	SHORT HLIF
TL-201	-7.390E-01	8.438E+00	7.309E+00	4.305E+00	NOT IDENT.
TL-202	7.449E-02	6.671E-02	6.194E-02	3.404E-02	NOT IDENT.
HG-203	-1.394E-02	3.731E-02	3.044E-02	1.904E-02	FAIL ABUN
BI-207	7.064E-03	5.371E-02	4.501E-02	2.740E-02	FAIL ABUN
TL-207	-3.159E-02	6.391E-01	4.677E-01	3.261E-01	FAIL ABUN
PO-209	4.781E+00	6.681E+00	6.102E+00	3.408E+00	NOT IDENT.
BI-210	1.735E+00	2.178E+00	1.895E+00	1.111E+00	NOT IDENT.
PB-210	1.735E+00	2.178E+00	1.895E+00	1.111E+00	NOT IDENT.
PO-210	1.735E+00	2.176E+00	1.895E+00	1.110E+00	NOT IDENT.
PB-211	1.768E-01	9.314E-01	7.246E-01	4.752E-01	NOT IDENT.
BI-212	1.149E+00	4.581E-01	3.324E-01	2.337E-01	FAIL ABUN
PO-215	-3.159E-02	6.391E-01	4.677E-01	3.261E-01	FAIL ABUN
RN-219	2.089E-01	3.465E-01	3.132E-01	1.768E-01	FAIL ABUN
RN-220	1.035E+01	2.405E+01	2.111E+01	1.227E+01	NOT IDENT.
RA-223	-3.159E-02	6.391E-01	4.677E-01	3.261E-01	FAIL ABUN
AC-227	3.045E-02	3.296E-01	2.794E-01	1.682E-01	FAIL ABUN
TH-227	3.045E-02	3.296E-01	2.794E-01	1.682E-01	FAIL ABUN
AC-228	1.245E+00	3.164E-01	2.353E-01	1.614E-01	FAIL ABUN
RA-228	1.245E+00	3.164E-01	2.353E-01	1.614E-01	FAIL ABUN
TH-229	2.240E-01	4.370E-01	3.852E-01	2.229E-01	FAIL ABUN
PA-231	7.419E-01	1.361E+00	1.172E+00	6.946E-01	NOT IDENT.
TH-231	-3.159E-02	6.391E-01	4.677E-01	3.261E-01	FAIL ABUN
U-231	-3.032E-03	1.257E+00	9.396E-01	6.412E-01	FAIL ABUN
TH-232	1.245E+00	3.164E-01	2.353E-01	1.614E-01	FAIL ABUN
PA-233	-8.480E-03	5.851E-02	4.803E-02	2.985E-02	FAIL ABUN
PA-234	-2.366E-01	3.068E-01	2.406E-01	1.566E-01	FAIL ABUN
PA-234M	2.762E+00	4.439E+00	3.947E+00	2.265E+00	FAIL ABUN
U-235	5.129E-02	1.713E-01	1.494E-01	8.741E-02	FAIL ABUN
NP-236	-2.134E-02	6.740E-02	5.794E-02	3.439E-02	NOT IDENT.
NP-239	-7.261E-02	1.452E-01	1.263E-01	7.406E-02	FAIL ABUN
AM-241	4.900E-02	1.125E-01	8.925E-02	5.741E-02	NOT IDENT.
CM-243	4.025E-02	7.091E-02	6.509E-02	3.618E-02	FAIL ABUN
AM-246	-2.435E-03	1.408E-01	1.185E-01	7.185E-02	NOT IDENT.
CM-247	2.061E-02	3.179E-02	2.884E-02	1.622E-02	NOT IDENT.
CF-249	-1.941E-03	3.369E-02	2.937E-02	1.719E-02	NOT IDENT.
CF-251	4.980E-03	1.065E-01	9.249E-02	5.431E-02	NOT IDENT.



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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
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ENERGY          MDA COUNTS

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46.50	172.9097
46.50	172.9097
46.50	172.9097
48.70	198.3561
49.72	191.3519
51.35	180.2405
52.39	204.1622
52.97	217.8906
53.15	218.0184
53.44	220.4501
54.07	237.6335
56.28	216.8327
56.28	216.8349
57.37	0.0000
57.53	258.2810
57.53	258.2828
57.60	258.3369
57.98	238.3095
57.98	238.3095
59.32	223.7841
59.32	223.7841
59.40	223.8383
59.54	219.3932
59.72	211.9426
60.01	196.9754
61.10	247.7798
61.14	247.8088
61.30	247.9257
63.00	228.1436
63.29	228.3349
63.29	228.3349
63.58	228.5262
64.28	268.4926
65.12	270.6727
65.20	281.5018
65.20	281.5018
66.05	280.6352
66.72	259.5315
66.83	259.6135
66.91	259.6699
67.20	281.9235
67.20	281.9235
67.75	289.3235
67.85	289.4032
68.90	293.7340
68.90	293.7340
69.30	331.3933
69.67	308.3679
70.82	287.4495
70.82	287.4495
70.83	287.4569
72.80	293.6732
72.87	293.7264
72.87	293.7264
74.67	273.4049
74.81	273.5036
74.81	273.5036
74.81	273.5036
74.81	273.5036
74.81	273.5036
74.81	273.5036
74.97	273.6164
75.28	273.8349
75.70	274.1292
77.11	255.6586
77.11	255.6586



77.11	255.6586
77.11	255.6586
77.11	255.6586
77.11	255.6586
77.11	255.6586
78.38	264.4392
79.62	225.3054
79.80	225.4058
79.80	225.4058
80.11	230.3774
80.18	230.4170
80.30	230.4844
80.30	230.4844
80.57	231.8380
81.00	272.5665
81.07	272.6132
81.07	272.6132
81.07	272.6132
81.07	272.6132
82.60	291.3282
83.37	267.6763
83.78	245.3425
83.78	245.3425
83.78	245.3425
83.78	245.3425
84.21	264.9819
84.90	291.3098
85.43	291.6724
86.29	292.2601
86.50	292.4030
86.54	235.5689
86.59	235.5970
86.72	235.6678
86.79	235.7047
86.94	235.7872
87.30	245.7498
87.30	245.7498
87.30	245.7498
87.30	245.7498
87.30	245.7498
87.30	245.7498
87.57	245.9019
87.88	246.0785
88.03	246.1630
88.36	246.3504
88.47	246.4118
89.95	247.2444
91.11	247.8911
92.29	248.5454
92.38	248.5946
92.38	248.5946
93.35	249.1291
94.00	249.4855
94.67	249.8495
94.67	249.8526
94.90	249.9770
94.90	249.9770
94.90	249.9770
94.90	249.9770
95.87	217.3259
95.87	217.3259
96.73	242.6620
97.43	244.6890
98.44	186.4137
98.44	186.4148
98.88	185.3365
99.55	193.9587
99.55	193.9587
99.86	194.0862
100.00	194.1428
100.10	204.2294
103.18	219.8577
103.76	188.9157
105.00	190.2386
105.31	204.7414
108.00	235.6208
109.28	211.4877



111.00	213.9142
111.00	213.9142
111.76	193.6647
112.95	217.4009
115.19	194.9429
116.30	193.6245
117.00	206.8627
117.00	206.8627
117.66	203.6528
121.11	191.0023
121.62	188.5616
121.78	188.6166
122.06	190.4606
122.32	184.4318
122.32	184.4318
122.32	184.4318
122.32	184.4318
123.07	204.8143
127.23	212.9572
129.76	204.6047
131.20	163.8267
133.02	191.0631
133.54	193.6404
135.34	209.2560
136.00	197.8510
136.25	197.0386
136.48	188.1549
140.51	207.4595
140.51	0.0000
142.18	195.3633
142.65	172.8859
143.76	184.0782
144.24	181.4982
144.24	181.4982
144.24	181.4982
144.24	181.4982
145.22	219.0510
145.44	222.7640
147.16	180.5251
152.43	205.9258
152.70	203.2533
153.22	216.3036
154.21	209.2564
154.21	209.2564
154.21	209.2564
154.21	209.2564
155.03	221.5198
156.02	241.2678
158.56	201.3669
159.00	0.0000
159.00	190.3566
160.31	213.9896
161.27	191.0030
162.32	187.5685
162.64	188.5901
163.35	175.7030
163.89	164.6187
165.85	175.4095
167.43	168.2896
171.28	177.7302
171.86	170.3064
172.10	170.3650
176.55	188.5737
176.60	188.5878
181.06	181.1231
184.41	176.1699
185.71	178.4077
186.00	172.2046
190.27	193.0707
192.34	177.0568
193.63	179.3019
197.04	196.7307
198.01	186.1944
198.60	162.7966
200.40	189.7095
201.83	203.8372
202.84	199.1664
205.31	183.9565



208.36	183.6563
208.81	183.7579
209.75	168.5551
209.75	168.5551
210.97	159.8437
215.65	156.2396
216.55	161.4209
218.09	163.7263
222.10	169.5466
223.80	158.7600
226.40	150.1093
227.00	158.3328
227.08	158.3470
227.20	163.4452
228.16	176.8373
228.18	193.1021
228.18	193.1021
231.56	0.0000
235.69	172.1990
236.00	158.4166
236.00	158.4166
238.63	172.7629
238.63	172.7629
238.63	172.7629
238.63	172.7629
239.00	172.8330
240.98	173.2107
241.98	147.0821
241.98	147.0821
241.98	147.0821
244.69	142.8586
245.39	141.4127
247.94	134.0115
248.90	134.1493
249.79	135.3175
252.40	115.8621
252.85	119.0504
252.85	119.0504
254.15	0.0000
256.20	132.0472
256.20	132.0472
260.50	160.0094
260.90	156.9150
262.80	123.4579
264.65	125.2770
268.24	125.7351
268.79	113.5961
269.46	113.6744
269.46	113.6744
269.46	113.6744
269.46	113.6744
271.23	113.8769
273.65	128.0200
276.40	127.0879
277.35	115.6421
277.60	106.0314
277.60	106.0314
278.00	108.2166
278.60	116.8570
279.20	140.5254
279.53	159.8858
280.46	141.7727
281.68	138.7159
283.67	115.2810
284.30	141.2237
285.00	137.0045
285.90	128.4857
286.10	125.2702
286.10	125.2702
287.40	114.6155
288.45	0.0000
290.67	123.6508
290.80	120.4126
291.72	115.6307
293.26	0.0000
293.70	101.1625
295.21	101.3063
295.21	101.3063



295.21	101.3063
295.96	101.3782
296.50	88.3416
297.23	88.4026
298.57	88.5130
299.80	121.4333
299.80	121.4333
300.09	129.6745
300.09	129.6745
300.09	129.6745
300.09	129.6745
300.12	129.6769
301.29	119.9572
302.84	111.9008
303.76	123.5252
303.91	128.4829
304.40	133.1568
304.40	133.1568
304.84	127.4957
306.84	113.4127
308.46	123.5049
311.98	117.2616
316.51	101.0772
318.01	120.1179
319.02	101.3012
319.41	103.5635
320.08	111.4237
323.87	103.9703
323.87	103.9703
323.87	103.9703
323.87	103.9703
325.23	104.0933
328.77	126.3062
333.44	120.0508
334.20	133.6645
334.20	133.6645
334.30	133.6765
338.28	126.7702
338.28	126.7702
338.28	126.7702
338.28	126.7702
338.32	126.7747
338.32	126.7747
338.32	126.7747
340.50	98.6573
340.57	98.6644
344.27	122.8601
345.85	86.1144
350.59	0.0000
351.07	83.5122
351.92	83.5701
351.92	83.5701
351.92	83.5701
355.39	0.0000
356.01	63.7484
364.48	92.5163
366.43	85.7100
367.43	89.2553
367.94	0.0000
369.80	90.5842
374.96	95.6150
383.85	90.6971
387.95	90.9800
388.63	92.7946
391.69	78.8365
391.69	78.8365
392.90	77.1339
398.62	81.9164
400.65	90.0641
401.10	98.1232
401.81	78.5402
402.60	82.1579
404.84	93.0265
410.95	66.1272
411.60	76.2263
413.65	82.1003
414.70	86.4873
415.30	80.2149



415.76	84.7500
417.63	0.0000
418.52	85.8212
423.70	76.1635
427.08	79.0708
427.89	70.0221
432.53	79.3721
433.93	76.7095
439.47	64.1702
439.56	64.1734
439.89	71.5242
443.98	69.8851
444.90	60.7279
445.03	60.7330
445.03	60.7330
445.03	60.7330
445.03	60.7330
453.90	68.5033
463.38	59.6191
468.07	69.7699
473.00	62.8064
475.06	67.5835
475.35	68.5344
476.78	64.8391
477.59	59.2317
477.96	63.9482
482.03	68.8285
484.57	57.6073
487.03	74.7219
490.36	0.0000
492.35	70.2275
497.08	88.5200
507.63	0.0000
510.53	0.0000
510.84	71.0332
511.00	71.0399
511.85	71.0772
511.85	71.0772
513.99	75.4003
513.99	75.4003
520.41	66.6163
520.65	67.5925
527.90	73.7039
528.96	0.0000
529.64	60.1874
529.87	0.0000
531.02	52.4641
537.32	64.3605
543.00	67.5092
546.56	0.0000
549.76	65.8080
552.65	78.7061
555.20	67.9829
563.23	74.2287
563.90	77.2264
568.70	71.4792
569.32	67.5310
569.50	66.5440
569.67	66.5502
573.80	78.6504
574.00	77.6620
574.64	81.6747
578.91	59.1042
579.30	0.0000
583.14	70.0491
585.48	59.3156
591.81	62.3349
592.07	53.2944
593.00	58.3505
595.88	73.5547
600.56	84.8511
602.52	0.0000
602.71	74.4311
602.71	74.4311
603.60	56.6580
604.41	56.6836
604.70	51.8328
609.31	60.8899



609.31	60.8899
609.31	60.8899
609.31	60.8899
610.33	58.4842
612.46	60.1774
614.37	74.8893
618.01	69.3219
621.84	62.3105
621.84	62.3105
631.29	70.8257
633.02	55.4782
633.10	55.4799
634.78	54.4994
635.90	50.4146
636.97	57.6475
645.85	51.7029
646.12	49.6406
656.30	59.2492
657.75	66.5723
657.90	0.0000
661.65	75.0388
661.65	75.0388
664.57	0.0000
666.33	65.8089
666.33	65.8089
675.00	58.7446
677.61	66.1704
685.20	45.3293
692.80	57.1311
695.00	73.0767
696.49	72.0674
696.49	72.0674
697.00	68.9058
697.49	78.4647
698.33	89.1039
698.50	89.1090
699.00	78.5189
702.63	71.2141
706.10	57.4887
706.58	0.0000
706.67	64.9577
709.31	62.9054
711.68	58.7061
713.82	58.7631
717.42	53.5110
720.50	44.5834
721.93	0.0000
722.20	44.6189
722.78	39.4807
722.78	39.4807
722.89	39.4830
722.95	39.4841
723.30	34.3389
724.18	39.5054
727.18	56.9740
733.00	61.7950
735.90	57.2005
739.58	57.2943
742.81	53.0479
744.21	45.4979
747.13	56.4037
751.79	56.5195
752.31	60.8826
753.82	52.2188
755.35	60.9629
756.15	62.0741
756.87	61.0039
763.93	68.1872
765.79	76.9914
766.42	73.5123
766.84	66.5223
776.49	43.9478
778.00	73.8814
778.57	62.8401
778.89	60.3348
783.80	45.1891
785.46	61.7644
792.07	46.0116



795.84	63.8103
796.30	67.3684
798.80	55.0159
801.93	71.0820
805.60	66.7419
810.29	63.5284
810.76	64.6553
815.85	40.2155
817.79	53.6631
818.51	48.0876
819.60	49.2288
826.30	43.7548
828.27	0.0000
831.60	68.5840
831.96	68.5952
834.83	60.3442
836.80	0.0000
846.75	57.9188
848.13	47.9911
856.28	0.0000
856.80	37.8591
860.37	48.5286
867.32	50.1821
867.82	45.6287
871.10	54.8247
873.19	51.2121
874.81	46.6682
875.33	0.0000
876.40	51.2764
879.36	55.9187
880.27	49.5189
880.51	49.5235
881.50	43.1204
883.24	43.1491
884.67	52.3590
889.25	38.6480
896.60	38.7577
898.02	46.1646
899.00	60.9598
903.28	43.9445
911.07	53.8171
911.07	53.8171
911.07	53.8171
919.63	60.5059
920.93	46.5649
925.00	48.5012
925.24	53.1703
926.50	50.3956
935.52	47.7540
937.48	60.9073
944.10	46.9653
946.00	63.9177
949.00	34.8167
962.29	53.5802
964.01	48.8828
966.15	46.3945
968.20	46.4292
969.11	45.8128
969.11	45.8128
969.11	45.8128
977.42	49.4343
980.50	50.4393
983.50	43.8247
989.30	58.2330
996.32	62.2054
1001.03	38.3428
1001.68	37.3928
1004.76	58.5487
1021.30	0.0000
1024.50	0.0000
1034.80	47.5166
1036.00	38.8047
1037.82	41.7402
1038.57	45.6345
1038.76	0.0000
1045.16	37.9526
1046.59	42.8377
1048.07	54.5480



1050.47	58.4912
1050.47	58.4912
1062.04	29.3584
1063.62	46.0178
1076.63	59.9813
1077.35	57.0456
1078.86	50.1857
1085.78	57.2014
1099.22	55.4695
1112.02	59.6748
1112.84	54.7180
1115.52	69.6992
1120.29	62.8247
1120.29	62.8247
1120.29	62.8247
1120.29	62.8247
1120.51	62.8277
1121.28	58.1881
1124.00	0.0000
1129.67	54.0079
1131.51	0.0000
1147.95	0.0000
1167.94	59.7116
1173.22	51.6973
1175.09	65.9268
1177.93	49.7417
1189.05	64.1689
1204.90	61.4033
1205.75	0.0000
1213.00	61.5498
1221.42	68.9007
1230.97	72.1875
1235.34	82.6055
1236.41	0.0000
1238.25	64.0737
1246.25	44.5411
1260.41	0.0000
1271.85	38.6079
1274.45	45.9465
1274.54	45.9465
1291.56	29.3795
1298.22	0.0000
1312.09	41.1557
1325.50	37.0713
1325.50	37.0713
1332.49	30.7743
1333.61	25.4766
1360.21	21.3828
1362.66	0.0000
1365.15	20.3406
1368.21	20.3573
1368.53	0.0000
1376.25	22.5483
1384.27	26.8994
1394.10	14.0239
1395.20	16.1865
1407.95	19.4880
1434.06	14.1699
1436.60	25.0855
1457.56	0.0000
1460.81	14.6322
1489.15	25.7874
1509.49	11.1074
1596.49	17.9555
1620.62	10.4535
1678.03	0.0000
1691.02	9.6549
1691.02	9.6549
1706.46	0.0000
1750.46	0.0000
1764.49	10.0907
1764.49	10.0907
1764.49	10.0907
1764.49	10.0907
1770.23	19.6452
1771.40	5.8950
1791.20	0.0000
1808.65	10.8926



1836.01

14.9377



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G243457004

Total Uranium Activity	2.2034E+00	ug/g
Total Uranium Counting Unc.	3.8082E+00	ug/g
Total Uranium Tpu	1.9429E-06	ug/g
Total Uranium Mda	2.1046E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 936923                          SAMPLE ID   : G243457004
*  ANALYST       : MXR1                             DETECTOR    : GAM11
*  SAMPLE DATE   : 18-DEC-2009 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 4-JAN-2010 13:59:18.30          SAMPLE ALQT  : 118.320 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.134E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.457E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.867E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.381E+00

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VAX/VMS Nuclide Identification Report Generated 6-JAN-2010 12:02:09.91

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004732.CNF;1
Sample date        : 28-DEC-2009 00:00:00 Acquisition date : 4-JAN-2010 14:05:52.
Sample ID          : G1202004732      Sample quantity   : 1.37860E+02 GRAM
Detector name      : GAM22             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.99  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 936923            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	64.30*	56	198	4.23	128.85	123	14	7.75E-03	59.2	
2	0	185.83*	13	161	1.17	371.68	367	9	1.80E-03	210.5	
3	0	510.93*	109	75	3.21	1021.37	1012	21	1.51E-02	28.7	
4	0	583.44*	21	77	0.80	1166.30	1155	17	2.85E-03	108.3	

Flag: "\*" = Peak area was modified by background subtraction



## VMS Nuclide Identification Report V3.1 Generated 6-JAN-2010 12:02:12

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004732.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 28-DEC-2009 00:00:00 Acquisition date : 4-JAN-2010 14:05:52
Sample ID        : G1202004732 Sample quantity : 137.86 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.99 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

```

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-208	277.35			-2.664E-02	2.280E-01	3.622E-01	5.972E-02	-0.074
	510.84			3.187E-01	1.875E-01	1.078E-01	1.405E-02	2.956
	583.14	*		1.691E-02	3.667E-02	2.974E-02	3.225E-03	0.569
	860.37			-4.346E-02	1.469E-01	2.372E-01	2.764E-02	-0.183
ANH-511	511.00	*		6.883E-02	4.009E-02	2.330E-02	2.334E-03	2.955

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	477.59	*		3.413E-02	1.606E-01	2.641E-01	2.756E-02	0.129
NA-22	1274.54	*		-4.296E-03	1.843E-02	2.951E-02	2.544E-03	-0.146
NA-24	1368.53	*		-2.654E-05	1.843E-02	Half-Life too short		
AL-26	1129.67			-7.004E-02	6.814E-01	1.087E+00	9.467E-02	-0.064
	1808.65	*		-6.436E-03	1.435E-02	2.108E-02	1.724E-03	-0.305
K-40	1460.81	*		-1.427E-01	2.683E-01	4.499E-01	4.121E-02	-0.317
TI-44	67.85			-1.741E-02	2.127E-02	2.884E-02	2.201E-03	-0.604
	78.38	*		-1.061E-02	1.447E-02	2.196E-02	1.862E-03	-0.483
SC-46	889.25	*		9.418E-03	1.841E-02	3.212E-02	3.595E-03	0.293
	1120.51			-9.088E-03	2.541E-02	4.038E-02	3.570E-03	-0.225
V-48	944.10			-7.805E-02	3.348E-01	5.381E-01	5.836E-02	-0.145
	983.50	*		1.073E-02	2.719E-02	4.647E-02	4.874E-03	0.231
	1312.09			1.908E-03	2.554E-02	4.260E-02	3.753E-03	0.045
CR-51	320.08	*		1.384E-02	1.800E-01	3.025E-01	3.917E-02	0.046
MN-52	744.21			-5.042E-02	5.250E-02	7.654E-02	8.317E-03	-0.659
	848.13			1.972E-01	1.378E+00	2.328E+00	2.592E-01	0.085
	935.52			9.348E-03	4.913E-02	8.274E-02	9.033E-03	0.113
	1246.25			-5.673E-03	9.994E-01	1.656E+00	1.400E-01	-0.003
	1333.61			-2.392E-01	1.098E+00	1.760E+00	1.570E-01	-0.136
	1434.06	*		-4.311E-03	5.148E-02	8.318E-02	7.433E-03	-0.052
MN-54	834.83	*		1.770E-02	1.855E-02	3.346E-02	3.717E-03	0.529
CO-56	846.75	*		5.915E-03	1.894E-02	3.250E-02	3.618E-03	0.182
	977.42			2.471E-02	1.483E+00	2.442E+00	2.576E-01	0.010
	1037.82			5.601E-02	1.499E-01	2.550E-01	2.629E-02	0.220



----- Non-Identified Nuclides -----

	Line Energy Nuclide Ided (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1175.09	2.333E-01	8.705E-01	1.499E+00	1.207E-01	0.156
	1238.25	1.910E-02	3.228E-02	5.719E-02	4.956E-03	0.334
	1360.21	3.167E-02	4.725E-01	7.843E-01	7.005E-02	0.040
	1771.40	-1.860E-01	1.702E-01	2.369E-01	1.969E-02	-0.785
CO-57	122.06 *	8.009E-03	1.392E-02	2.282E-02	1.882E-03	0.351
	136.48	-6.663E-02	1.057E-01	1.724E-01	1.599E-02	-0.387
CO-58	810.76 *	2.692E-03	1.742E-02	2.960E-02	3.277E-03	0.091
FE-59	142.65	-9.913E-01	1.413E+00	2.187E+00	1.935E-01	-0.453
	192.34	-5.149E-01	4.567E-01	6.919E-01	1.027E-01	-0.744
	1099.22 *	1.085E-02	3.419E-02	5.792E-02	5.676E-03	0.187
	1291.56	-3.914E-02	4.928E-02	7.193E-02	7.090E-03	-0.544
CO-60	1173.22	1.986E-02	1.798E-02	3.383E-02	2.721E-03	0.587
	1332.49 *	-1.045E-02	2.130E-02	3.285E-02	2.929E-03	-0.318
ZN-65	1115.52 *	2.195E-02	4.519E-02	7.701E-02	6.869E-03	0.285
GE-68	1077.35 *	-2.502E-01	5.703E-01	8.742E-01	8.241E-02	-0.286
AS-73	53.44 *	-2.708E-01	3.575E-01	5.381E-01	4.066E-02	-0.503
AS-74	595.88 *	-1.677E-02	3.792E-02	6.050E-02	6.271E-03	-0.277
	634.78	-1.659E-02	1.442E-01	2.351E-01	2.464E-02	-0.071
SE-75	66.05	-1.732E+00	1.972E+00	2.957E+00	2.821E-01	-0.586
	96.73	-2.021E-01	3.821E-01	5.950E-01	8.189E-02	-0.340
	121.11	3.770E-02	7.080E-02	1.159E-01	1.267E-02	0.325
	136.00	-1.703E-02	1.905E-02	3.054E-02	2.650E-03	-0.557
	198.60	-2.033E-01	1.100E+00	1.641E+00	1.918E-01	-0.124
	264.65 *	2.001E-02	2.507E-02	4.211E-02	5.668E-03	0.475
	279.53	4.107E-02	6.279E-02	1.042E-01	1.479E-02	0.394
	303.91	2.298E-01	1.076E+00	1.832E+00	2.791E-01	0.125
	400.65	4.725E-02	1.465E-01	2.456E-01	2.874E-02	0.192
BR-77	87.88	-4.139E+00	8.752E+00	1.314E+01	1.245E+00	-0.315
	200.40	-1.461E+00	1.038E+01	1.693E+01	1.862E+00	-0.086
	239.00	-8.412E-03	6.614E-01	1.074E+00	1.336E-01	-0.008
	249.79	-3.114E+00	4.494E+00	6.911E+00	8.885E-01	-0.451
	281.68	1.014E+00	6.002E+00	9.700E+00	1.351E+00	0.105
	297.23	1.314E+00	3.044E+00	5.247E+00	7.056E-01	0.250
	303.76	2.491E+00	1.067E+01	1.818E+01	2.405E+00	0.137
	439.47	-1.825E+00	8.695E+00	1.391E+01	1.339E+00	-0.131
	484.57	1.882E+00	1.328E+01	2.170E+01	2.145E+00	0.087
	520.65 *	2.224E-01	7.164E-01	1.113E+00	1.120E-01	0.200
	574.64	-1.526E+01	1.579E+01	1.993E+01	2.051E+00	-0.766
	578.91	-4.011E+00	6.010E+00	7.873E+00	8.114E-01	-0.509
	585.48	1.047E+01	1.163E+01	1.821E+01	1.881E+00	0.575
	755.35	-4.616E+00	1.031E+01	1.597E+01	1.741E+00	-0.289
	817.79	-1.074E+00	7.444E+00	1.226E+01	1.358E+00	-0.088
SR-82	698.33	8.015E-01	1.746E+01	2.861E+01	3.061E+00	0.028
	776.49 *	-1.036E-01	1.621E-01	2.434E-01	2.669E-02	-0.425
	1395.20	-1.981E+00	4.482E+00	6.837E+00	6.113E-01	-0.290
RB-83	520.41 *	9.589E-03	3.985E-02	6.150E-02	6.189E-03	0.156
	529.64	1.991E-02	5.371E-02	9.250E-02	9.348E-03	0.215
	552.65	1.117E-02	9.532E-02	1.607E-01	1.639E-02	0.070
RB-84	881.50 *	-8.581E-03	3.145E-02	5.074E-02	5.675E-03	-0.169



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
KR-85	513.99	*		2.162E+01	5.670E+00	9.836E+00	9.870E-01	2.198
SR-85	513.99	*		1.024E-01	2.686E-02	4.659E-02	4.675E-03	2.198
RB-86	1076.63	*		-1.175E-01	2.875E-01	4.436E-01	4.186E-02	-0.265
Y-88	898.02			1.157E-02	1.983E-02	3.477E-02	3.907E-03	0.333
	1836.01	*		1.693E-02	1.994E-02	3.714E-02	3.002E-03	0.456
ZR-88	392.90	*		1.068E-02	1.583E-02	2.725E-02	2.537E-03	0.392
Y-91	1204.90	*		1.074E+00	7.072E+00	1.198E+01	9.853E-01	0.090
NB-94	702.63	*		-1.214E-02	1.985E-02	3.065E-02	3.285E-03	-0.396
	871.10			9.874E-04	1.738E-02	2.906E-02	3.246E-03	0.034
NB-95	765.79	*		-6.198E-03	2.099E-02	3.301E-02	3.610E-03	-0.188
NB-95M	235.69	*		-9.005E-02	6.859E-02	1.013E-01	1.340E-02	-0.889
ZR-95	724.18			-4.149E-03	4.441E-02	7.164E-02	8.168E-03	-0.058
	756.15	*		-2.553E-02	3.649E-02	5.484E-02	6.366E-03	-0.466
NB-97	657.90	*		-6.312E-07	3.649E-02	Half-Life	too short	
	1024.50			1.117E-03	3.649E-02	Half-Life	too short	
ZR-97	254.15			8.644E-04	3.649E-02	Half-Life	too short	
	355.39			-4.927E-04	3.649E-02	Half-Life	too short	
	507.63	*		2.255E-03	3.649E-02	Half-Life	too short	
	602.52			-1.198E-03	3.649E-02	Half-Life	too short	
	1021.30			-1.172E-03	3.649E-02	Half-Life	too short	
	1147.95			-5.128E-04	3.649E-02	Half-Life	too short	
	1362.66			-1.255E-03	3.649E-02	Half-Life	too short	
	1750.46			-4.275E-04	3.649E-02	Half-Life	too short	
MO-99	140.51			-8.819E-01	2.161E+00	3.550E+00	9.848E-01	-0.248
	181.06			6.949E-01	1.636E+00	2.448E+00	4.687E-01	0.284
	366.43			1.420E+00	7.427E+00	1.244E+01	1.320E+00	0.114
	739.58	*		6.766E-01	9.398E-01	1.621E+00	2.683E-01	0.417
	778.00			-2.300E+00	2.784E+00	4.090E+00	4.487E-01	-0.562
TC-99M	140.51	*		-7.860E+00	2.784E+00	Half-Life	too short	
RH-101	127.23			7.043E-03	1.744E-02	2.824E-02	2.360E-03	0.249
	198.01	*		1.087E-03	2.114E-02	3.205E-02	3.496E-03	0.034
	325.23			-9.463E-02	1.266E-01	2.007E-01	2.495E-02	-0.471
RH-102	418.52			1.156E-02	1.506E-01	2.477E-01	2.351E-02	0.047
	475.06	*		2.629E-04	1.581E-02	2.560E-02	2.518E-03	0.010
	631.29			4.766E-03	2.969E-02	4.964E-02	5.197E-03	0.096
	697.49			2.994E-02	4.744E-02	8.105E-02	8.669E-03	0.369
	766.84			-3.944E-02	5.766E-02	8.695E-02	9.511E-03	-0.454
	1046.59			3.932E-02	5.617E-02	9.882E-02	9.691E-03	0.398
	1112.84			-3.664E-02	1.126E-01	1.756E-01	1.572E-02	-0.209
RU-103	497.08	*		-9.323E-03	2.060E-02	3.178E-02	4.770E-03	-0.293
	610.33			1.885E-01	4.441E-01	7.536E-01	1.332E-01	0.250
RH-106	511.85	+		3.390E-01	1.974E-01	2.833E-01	2.840E-02	1.196
	621.84	*		8.070E-02	1.674E-01	2.872E-01	4.194E-02	0.281
	1050.47			2.194E-01	1.129E+00	1.884E+00	1.839E-01	0.116
RU-106	511.85	+		3.390E-01	1.974E-01	2.833E-01	2.840E-02	1.196
	621.84	*		8.070E-02	1.672E-01	2.872E-01	3.000E-02	0.281
	1050.47			2.194E-01	1.129E+00	1.884E+00	1.839E-01	0.116
AG-108M	433.93	*		5.824E-03	1.807E-02	3.019E-02	2.989E-03	0.193
	614.37			-1.192E-02	2.367E-02	3.762E-02	4.028E-03	-0.317



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	722.95			-1.609E-02	2.205E-02	3.324E-02	3.678E-03	-0.484
CD-109	88.03	*		-1.554E-01	3.604E-01	5.427E-01	5.150E-02	-0.286
AG-110M	657.75	*		-6.103E-04	1.697E-02	2.777E-02	2.985E-03	-0.022
	677.61			-1.271E-01	1.566E-01	2.346E-01	2.537E-02	-0.542
	706.67			-1.339E-02	1.127E-01	1.819E-01	1.987E-02	-0.074
	763.93			7.861E-02	8.580E-02	1.500E-01	1.668E-02	0.524
	884.67			-4.748E-03	2.504E-02	4.072E-02	4.644E-03	-0.117
	937.48			4.401E-02	5.339E-02	9.544E-02	1.064E-02	0.461
	1384.27			-4.415E-02	7.213E-02	1.059E-01	9.711E-03	-0.417
IN-111	171.28			1.064E-04	8.670E-02	1.443E-01	1.440E-02	0.001
	245.39	*		2.647E-02	9.587E-02	1.576E-01	2.000E-02	0.168
IN-113M	391.69	*		1.200E-02	2.361E-02	4.021E-02	3.840E-03	0.298
SN-113	391.69	*		1.200E-02	2.361E-02	4.021E-02	3.840E-03	0.298
IN-114M	190.27	*		5.956E-02	9.410E-02	1.432E-01	1.522E-02	0.416
CD-115	260.90			-4.929E+00	7.486E+00	1.148E+01	1.525E+00	-0.430
	492.35			1.575E+00	1.897E+00	3.265E+00	3.241E-01	0.482
	527.90	*		-4.491E-01	6.308E-01	9.559E-01	9.653E-02	-0.470
SN-117M	156.02			5.665E-01	8.276E-01	1.432E+00	1.343E-01	0.396
	158.56	*		-7.364E-03	2.302E-02	3.412E-02	3.236E-03	-0.216
SB-122	563.90	*		-3.936E-02	1.577E-01	2.572E-01	2.636E-02	-0.153
	692.80			-2.038E+00	3.815E+00	5.950E+00	6.353E-01	-0.343
I-123	159.00	*		-1.156E-04	3.815E+00	Half-Life too short		
	528.96			-4.386E-03	3.815E+00	Half-Life too short		
TE-123M	159.00	*		-7.599E-03	1.698E-02	2.503E-02	2.390E-03	-0.304
I-124	602.71	*		-9.353E-02	1.131E-01	1.749E-01	1.817E-02	-0.535
	722.78			-4.219E-01	6.656E-01	1.015E+00	1.096E-01	-0.415
	1325.50			1.455E+00	4.922E+00	8.430E+00	7.487E-01	0.173
	1376.25			2.852E-01	4.697E+00	7.755E+00	6.931E-01	0.037
	1509.49			2.041E+00	2.404E+00	4.382E+00	3.895E-01	0.466
	1691.02			1.353E-01	7.292E-01	1.240E+00	1.060E-01	0.109
SB-124	602.71			-1.737E-02	2.101E-02	3.249E-02	3.375E-03	-0.535
	645.85			-2.698E-01	2.524E-01	3.709E-01	4.056E-02	-0.727
	709.31			-7.804E-02	1.395E+00	2.263E+00	2.431E-01	-0.034
	713.82			-5.260E-01	8.327E-01	1.271E+00	1.735E-01	-0.414
	722.78			-1.136E-01	1.792E-01	2.734E-01	2.992E-02	-0.415
	968.20			-1.894E-01	1.325E+00	2.172E+00	2.309E-01	-0.087
	1045.16			5.118E-01	1.143E+00	1.958E+00	1.924E-01	0.261
	1325.50			4.184E-01	1.416E+00	2.424E+00	2.153E-01	0.173
	1368.21			-1.194E-01	8.385E-01	1.350E+00	1.846E-01	-0.088
	1436.60			-2.936E-01	1.860E+00	2.968E+00	2.653E-01	-0.099
	1691.02	*		8.594E-03	4.631E-02	7.873E-02	7.003E-03	0.109
SB-125	427.89	*		1.524E-02	5.405E-02	9.001E-02	8.733E-03	0.169
	463.38			-3.277E-02	1.502E-01	2.389E-01	2.477E-02	-0.137
	600.56			7.919E-02	9.874E-02	1.730E-01	1.888E-02	0.458
	635.90			-1.229E-02	1.447E-01	2.367E-01	2.619E-02	-0.052
TE-125M	109.28	*		9.556E-01	4.599E+00	7.441E+00	7.524E-01	0.128
I-126	388.63			-6.707E-02	7.807E-02	1.200E-01	1.136E-02	-0.559
	666.33	*		3.005E-02	5.990E-02	1.028E-01	1.086E-02	0.292
	753.82			-3.557E-01	5.338E-01	8.047E-01	8.769E-02	-0.442



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SB-126	223.80			1.045E+00	1.455E+00	2.466E+00	2.926E-01	0.424
	278.60			1.780E-01	9.797E-01	1.585E+00	2.216E-01	0.112
	296.50			-1.004E-01	5.205E-01	8.083E-01	1.089E-01	-0.124
	414.70			2.740E-03	2.721E-02	4.487E-02	4.247E-03	0.061
	415.30			-3.614E-01	2.252E+00	3.638E+00	3.445E-01	-0.099
	555.20			5.020E-02	1.369E+00	2.290E+00	2.339E-01	0.022
	573.80			-1.839E-01	4.426E-01	6.021E-01	6.194E-02	-0.305
	593.00			-2.785E-01	3.353E-01	5.143E-01	5.326E-02	-0.542
	656.30			-4.783E-01	1.163E+00	1.837E+00	1.934E-01	-0.260
	666.33			1.234E-02	2.460E-02	4.221E-02	4.460E-03	0.292
	675.00			1.443E-01	6.704E-01	1.121E+00	1.189E-01	0.129
	695.00			2.591E-02	3.136E-02	5.430E-02	5.802E-03	0.477
	697.00			1.346E-01	1.081E-01	1.917E-01	2.050E-02	0.702
	720.50	*		2.906E-02	4.840E-02	8.321E-02	8.973E-03	0.349
	856.80			-2.828E-02	1.589E-01	2.599E-01	2.897E-02	-0.109
	989.30			-5.168E-02	4.334E-01	7.020E-01	7.322E-02	-0.074
	1034.80			2.158E+00	2.812E+00	4.992E+00	4.964E-01	0.432
	1213.00			1.194E+00	1.394E+00	2.519E+00	2.083E-01	0.474
SN-126	64.28		+	3.504E-01	4.180E-01	3.676E-01	5.339E-02	0.953
	86.94			-1.227E-01	1.597E-01	2.227E-01	9.246E-02	-0.551
	87.57	*		-2.485E-02	3.607E-02	5.333E-02	5.036E-03	-0.466
SB-127	61.10			1.687E+00	6.567E+00	9.978E+00	8.000E-01	0.169
	252.40			-2.527E-02	6.823E-01	1.098E+00	4.690E-01	-0.023
	290.80			1.123E-01	3.144E+00	5.312E+00	7.496E-01	0.021
	411.60			1.058E+00	1.727E+00	2.944E+00	4.413E-01	0.359
	444.90			5.819E-01	1.369E+00	2.301E+00	2.708E-01	0.253
	473.00			4.096E-02	2.618E-01	3.829E-01	4.692E-02	0.107
	543.00			2.812E-01	2.116E+00	3.578E+00	5.043E-01	0.079
	603.60			-2.424E+00	1.812E+00	2.655E+00	3.280E-01	-0.913
	685.20	*		-2.295E-04	1.897E-01	3.104E-01	3.554E-02	-0.001
	698.50			-4.318E-02	2.458E+00	4.009E+00	6.375E-01	-0.011
	722.20			3.872E-01	4.055E+00	6.660E+00	7.569E-01	0.058
	783.80			1.319E-01	5.332E-01	8.137E-01	1.039E-01	0.162
XE-127	57.60			-5.588E-01	2.214E+00	3.628E+00	2.606E-01	-0.154
	145.22			-8.736E-02	3.489E-01	5.523E-01	4.940E-02	-0.158
	172.10			-1.374E-02	5.746E-02	9.429E-02	9.437E-03	-0.146
	202.84	*		-1.939E-02	2.324E-02	3.621E-02	4.014E-03	-0.535
	374.96			2.690E-02	9.807E-02	1.649E-01	1.679E-02	0.163
I-131	80.18			2.133E-01	9.369E-01	1.552E+00	1.344E-01	0.137
	284.30			-3.973E-01	4.723E-01	7.045E-01	9.942E-02	-0.564
	364.48	*		1.878E-03	3.471E-02	5.766E-02	6.371E-03	0.033
	636.97			5.375E-02	4.318E-01	7.194E-01	7.808E-02	0.075
	722.89			-1.353E+00	1.945E+00	2.945E+00	3.182E-01	-0.459
TE-132	49.72			-1.098E+00	1.554E+00	2.476E+00	2.147E-01	-0.443
	111.76			6.783E-02	3.691E+00	5.536E+00	4.965E-01	0.012
	116.30			3.361E-01	3.020E+00	4.839E+00	4.313E-01	0.069
BA-133	228.16	*		-6.233E-02	7.808E-02	1.195E-01	2.017E-02	-0.522
	53.15			-1.162E+00	1.559E+00	2.462E+00	1.868E-01	-0.472
	79.62			-3.161E-04	5.144E-01	8.402E-01	1.278E-01	0.000



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I-133		81.00		-2.955E-02	3.903E-02	6.006E-02	9.572E-03	-0.492
		276.40		-2.963E-02	2.233E-01	3.545E-01	6.414E-02	-0.084
		302.84		-1.484E-02	7.755E-02	1.287E-01	2.146E-02	-0.115
		356.01	*	-2.195E-02	2.495E-02	3.854E-02	5.759E-03	-0.570
		383.85		-7.925E-04	1.697E-01	2.796E-01	3.741E-02	-0.003
	+	510.53		1.698E-03	1.697E-01	Half-Life	too short	
		529.87	*	4.919E-06	1.697E-01	Half-Life	too short	
		706.58		-6.986E-05	1.697E-01	Half-Life	too short	
		856.28		-1.849E-04	1.697E-01	Half-Life	too short	
		875.33		4.512E-05	1.697E-01	Half-Life	too short	
CS-134		1236.41		5.439E-04	1.697E-01	Half-Life	too short	
		1298.22		4.963E-05	1.697E-01	Half-Life	too short	
		475.35		5.773E-02	1.035E+00	1.681E+00	1.653E-01	0.034
		563.23		-2.934E-02	1.834E-01	3.015E-01	3.110E-02	-0.097
		569.32		-4.883E-02	1.211E-01	1.808E-01	1.875E-02	-0.270
		604.70		-2.011E-02	1.977E-02	3.003E-02	3.127E-03	-0.669
		795.84	*	8.552E-03	2.536E-02	4.024E-02	4.454E-03	0.213
		801.93		4.398E-02	2.087E-01	3.436E-01	3.804E-02	0.128
		1038.57		5.501E-01	1.935E+00	3.263E+00	3.230E-01	0.169
		1167.94		-2.598E-01	1.009E+00	1.629E+00	1.324E-01	-0.160
CS-135		1365.15		-3.617E-01	6.840E-01	1.000E+00	9.314E-02	-0.362
		268.24	*	-2.005E-02	9.202E-02	1.456E-01	2.105E-02	-0.138
		288.45		6.362E+01	9.202E-02	Half-Life	too short	
		417.63		-4.155E+01	9.202E-02	Half-Life	too short	
		546.56		-1.504E+01	9.202E-02	Half-Life	too short	
		836.80		7.891E+01	9.202E-02	Half-Life	too short	
		1038.76		1.625E+01	9.202E-02	Half-Life	too short	
		1124.00		-7.577E+01	9.202E-02	Half-Life	too short	
		1131.51		-4.461E+00	9.202E-02	Half-Life	too short	
		1260.41	*	1.304E+00	9.202E-02	Half-Life	too short	
CS-136		1457.56		9.181E+01	9.202E-02	Half-Life	too short	
		1678.03		-2.173E+01	9.202E-02	Half-Life	too short	
		1706.46		5.761E+01	9.202E-02	Half-Life	too short	
		1791.20		3.394E+00	9.202E-02	Half-Life	too short	
		66.91		-1.938E-01	2.393E-01	3.228E-01	4.800E-02	-0.600
		86.29		-8.202E-02	3.160E-01	4.813E-01	6.405E-02	-0.170
		153.22		-2.286E-01	2.361E-01	3.735E-01	3.812E-02	-0.612
		163.89		6.247E-01	4.034E-01	7.164E-01	7.624E-02	0.872
		176.55		1.096E-02	1.499E-01	2.398E-01	2.536E-02	0.046
		273.65		5.886E-03	1.742E-01	2.798E-01	3.957E-02	0.021
BA-137M		340.57		3.359E-03	4.553E-02	7.613E-02	9.118E-03	0.044
		818.51		1.051E-02	2.457E-02	4.278E-02	4.738E-03	0.246
		1048.07	*	-9.913E-03	3.754E-02	5.940E-02	6.005E-03	-0.167
		1235.34		5.920E-02	1.601E-01	2.767E-01	3.232E-02	0.214
		661.65	*	-4.963E-03	1.746E-02	2.785E-02	2.937E-03	-0.178
		661.65	*	-5.246E-03	1.845E-02	2.944E-02	3.108E-03	-0.178
		165.85	*	-1.148E-02	1.606E-02	2.570E-02	2.521E-03	-0.447
		162.64		1.716E-01	2.818E-01	4.841E-01	4.895E-02	0.354
		304.84		1.256E-01	4.593E-01	7.819E-01	2.326E-01	0.161



---- Non-Identified Nuclides ----

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LA-140		423.70		-2.886E-01	7.246E-01	1.137E+00	3.715E-01	-0.254
		537.32	*	-2.135E-02	8.854E-02	1.446E-01	4.855E-02	-0.148
		328.77		1.565E-01	1.131E-01	2.010E-01	2.539E-02	0.779
		432.53		1.426E-01	7.897E-01	1.305E+00	1.300E-01	0.109
		487.03		-3.866E-02	5.037E-02	7.531E-02	7.807E-03	-0.513
		751.79		1.996E-01	6.058E-01	1.014E+00	1.179E-01	0.197
		815.85		6.010E-04	1.058E-01	1.770E-01	2.098E-02	0.003
		867.82		-2.206E-01	4.940E-01	7.837E-01	9.030E-02	-0.282
		919.63		1.510E+00	9.074E-01	1.727E+00	2.192E-01	0.874
		925.24		-2.243E-01	3.702E-01	5.673E-01	6.484E-02	-0.395
CE-141		1596.49	*	-2.143E-04	3.614E-02	6.015E-02	5.273E-03	-0.004
		145.44	*	1.735E-02	2.859E-02	4.950E-02	4.506E-03	0.351
CE-143		57.37		-1.302E+00	9.867E+00	1.630E+01	1.398E+00	-0.080
		231.56		-3.970E+00	3.296E+01	5.314E+01	1.738E+01	-0.075
		293.26	*	-2.796E-02	1.559E+00	2.624E+00	6.258E-01	-0.011
		350.59		-1.426E+01	2.428E+01	3.650E+01	1.163E+01	-0.391
		490.36		2.910E+01	3.662E+01	6.108E+01	1.951E+01	0.476
		664.57		-4.964E-01	1.413E+01	2.311E+01	7.593E+00	-0.021
		721.93		8.013E-01	1.655E+01	2.707E+01	8.083E+00	0.030
CE-144		80.11		2.095E-01	8.120E-01	1.347E+00	1.165E-01	0.155
		133.54	*	-5.508E-02	9.988E-02	1.634E-01	2.537E-02	-0.337
PM-144		476.78		8.609E-03	3.610E-02	5.952E-02	6.283E-03	0.145
		618.01		-1.248E-02	1.765E-02	2.733E-02	2.905E-03	-0.457
		696.49	*	2.934E-02	2.077E-02	3.720E-02	3.977E-03	0.789
		778.57		-9.267E-01	1.216E+00	1.799E+00	1.974E-01	-0.515
PR-144		696.49	*	1.981E+00	1.402E+00	2.511E+00	2.684E-01	0.789
		1489.15		2.633E-01	7.167E+00	1.174E+01	1.045E+00	0.022
PM-146		453.90	*	4.518E-03	2.409E-02	3.969E-02	4.612E-03	0.114
		633.02		-5.218E-01	7.938E-01	1.191E+00	4.507E-01	-0.438
		735.90		2.987E-02	7.705E-02	1.293E-01	3.794E-02	0.231
		747.13		7.595E-03	4.733E-02	7.804E-02	1.212E-02	0.097
ND-147		91.11		1.434E-01	8.548E-02	1.466E-01	1.448E-02	0.978
		319.41		-1.548E-01	1.189E+00	1.973E+00	2.497E-01	-0.078
		439.89		4.394E-01	1.956E+00	3.241E+00	3.121E-01	0.136
		531.02	*	1.115E-01	1.889E-01	3.295E-01	5.224E-02	0.338
PM-149		285.90	*	-3.141E+00	5.222E+00	7.934E+00	1.500E+00	-0.396
EU-152		121.78		3.281E-02	4.078E-02	6.768E-02	6.497E-03	0.485
		244.69		8.876E-03	1.879E-01	3.048E-01	3.859E-02	0.029
		344.27	*	-3.232E-04	5.482E-02	9.113E-02	1.095E-02	-0.004
		443.98		7.414E-02	5.276E-01	8.680E-01	8.379E-02	0.085
		778.89		-3.748E-02	1.400E-01	2.198E-01	2.412E-02	-0.171
		867.32		-1.830E-02	4.298E-01	7.116E-01	7.945E-02	-0.026
		964.01		-6.028E-02	1.638E-01	2.423E-01	2.586E-02	-0.249
		1085.78		-9.378E-02	1.685E-01	2.504E-01	2.334E-02	-0.374
		1112.02		-4.141E-02	1.550E-01	2.433E-01	2.180E-02	-0.170
GD-153		1407.95		4.231E-02	8.614E-02	1.516E-01	1.355E-02	0.279
		69.67		3.364E-01	6.826E-01	1.048E+00	8.132E-02	0.321
		83.37		-9.787E-01	6.174E+00	9.520E+00	8.544E-01	-0.103
		97.43	*	1.304E-02	3.846E-02	6.322E-02	5.559E-03	0.206



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154	103.18			2.640E-02	5.093E-02	8.437E-02	7.210E-03	0.313
	123.07			2.395E-03	2.896E-02	4.611E-02	5.115E-03	0.052
	247.94			1.211E-02	2.140E-01	3.471E-01	5.158E-02	0.035
	591.81			-7.881E-02	3.276E-01	5.318E-01	6.915E-02	-0.148
	723.30			-8.776E-02	9.281E-02	1.363E-01	1.571E-02	-0.644
	756.87			-2.426E-01	4.316E-01	6.587E-01	9.035E-02	-0.368
	873.19			7.003E-03	1.533E-01	2.559E-01	3.623E-02	0.027
	996.32			3.555E-03	2.001E-01	3.288E-01	6.139E-02	0.011
	1004.76			1.469E-02	1.125E-01	1.870E-01	2.414E-02	0.079
	1274.45	*		-1.270E-02	5.161E-02	8.245E-02	9.318E-03	-0.154
EU-155	48.70			-1.970E+00	1.023E+00	1.467E+00	1.195E-01	-1.343
	60.01			7.826E-01	2.214E+00	3.395E+00	2.411E-01	0.230
	86.54			-1.356E-02	4.300E-02	6.522E-02	6.134E-03	-0.208
TB-160	105.31	*		-4.338E-02	5.407E-02	8.184E-02	7.025E-03	-0.530
	86.79			-8.757E-02	1.095E-01	1.607E-01	1.503E-02	-0.545
	197.04			5.074E-02	3.301E-01	5.018E-01	5.456E-02	0.101
	215.65			1.888E-01	3.967E-01	6.650E-01	7.687E-02	0.284
	298.57			-3.484E-02	5.433E-02	8.741E-02	1.171E-02	-0.399
	879.36	*		-1.159E-02	6.828E-02	1.114E-01	1.246E-02	-0.104
	962.29			-1.334E-01	2.498E-01	3.886E-01	4.153E-02	-0.343
	966.15			7.708E-02	9.354E-02	1.652E-01	1.760E-02	0.466
	1177.93			-1.049E-02	1.435E-01	2.372E-01	1.914E-02	-0.044
	1271.85			-1.434E-01	2.700E-01	4.112E-01	3.534E-02	-0.349
HO-166M	80.57			-2.563E-02	1.056E-01	1.696E-01	1.473E-02	-0.151
	184.41	+		6.459E-03	2.720E-02	3.734E-02	3.893E-03	0.173
	280.46			2.259E-02	5.092E-02	8.362E-02	1.168E-02	0.270
	410.95			1.227E-01	1.345E-01	2.340E-01	2.209E-02	0.525
	711.68	*		2.231E-02	3.198E-02	5.538E-02	5.954E-03	0.403
	752.31			1.145E-01	1.440E-01	2.508E-01	2.732E-02	0.456
	810.29			3.717E-03	2.814E-02	4.773E-02	5.276E-03	0.078
TM-171	51.35			-2.960E+00	1.288E+01	2.111E+01	1.647E+00	-0.140
	52.39			2.844E-01	6.541E+00	1.090E+01	8.369E-01	0.026
	59.40			6.662E+00	1.179E+01	1.840E+01	1.301E+00	0.362
	66.72	*		-1.053E+01	1.277E+01	1.730E+01	1.307E+00	-0.609
LU-176	88.36			1.557E-02	8.397E-02	1.315E-01	1.244E-02	0.118
	201.83			-1.254E-02	1.637E-02	2.564E-02	2.833E-03	-0.489
	306.84	*		-6.649E-04	1.356E-02	2.270E-02	2.977E-03	-0.029
LU-177	401.10			-5.090E-02	3.979E+00	6.526E+00	6.115E-01	-0.008
	112.95			-8.050E-02	4.589E-01	6.788E-01	5.643E-02	-0.119
	208.36	*		-7.463E-02	2.758E-01	4.449E-01	5.022E-02	-0.168
LU-177M	52.97			-1.369E-01	6.636E-01	1.088E+00	8.275E-02	-0.126
	54.07			-2.050E-01	3.808E-01	5.832E-01	4.368E-02	-0.351
	61.30			2.543E-01	6.421E-01	9.858E-01	7.092E-02	0.258
	121.62			1.666E-01	2.027E-01	3.369E-01	2.775E-02	0.495
	147.16			-1.739E-01	3.391E-01	5.548E-01	5.003E-02	-0.313
	171.86			-4.082E-02	2.598E-01	4.284E-01	4.284E-02	-0.095
	218.09			1.938E-01	4.557E-01	7.622E-01	8.880E-02	0.254
	268.79			-2.261E-01	4.523E-01	7.006E-01	9.524E-02	-0.323
	319.02			3.528E-02	1.434E-01	2.435E-01	3.085E-02	0.145



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HF-181		367.43		9.091E-02	5.134E-01	8.590E-01	9.069E-02	0.106
		413.65	*	2.057E-02	9.391E-02	1.562E-01	1.477E-02	0.132
		56.28		-4.484E-02	3.536E-01	5.850E-01	4.261E-02	-0.077
		57.53		-1.424E-02	1.869E-01	3.098E-01	2.227E-02	-0.046
	+	65.20		6.048E-01	7.176E-01	5.412E-01	4.035E-02	1.117
		133.02		-4.083E-04	2.885E-02	4.883E-02	4.162E-03	-0.008
W-181		136.25		-1.498E-01	2.070E-01	3.357E-01	2.896E-02	-0.446
		345.85		2.177E-02	9.791E-02	1.650E-01	1.908E-02	0.132
		482.03	*	-1.016E-02	2.050E-02	3.159E-02	3.118E-03	-0.322
		56.28		-1.913E-02	1.499E-01	2.480E-01	1.807E-02	-0.077
	+	57.53		-6.096E-03	7.931E-02	1.315E-01	9.449E-03	-0.046
		65.20	*	2.546E-01	3.021E-01	2.278E-01	1.698E-02	1.117
TA-182		67.75		-4.028E-02	4.851E-02	6.568E-02	5.009E-03	-0.613
		100.10		-3.053E-02	8.780E-02	1.381E-01	1.197E-02	-0.221
		152.43		-1.468E-01	1.705E-01	2.719E-01	2.509E-02	-0.540
		222.10		7.872E-04	1.800E-01	2.935E-01	3.464E-02	0.003
		1001.68		-5.358E-01	1.132E+00	1.766E+00	1.820E-01	-0.303
		1121.28		-3.553E-02	7.047E-02	1.101E-01	9.724E-03	-0.323
RE-183		1189.05		7.425E-02	1.207E-01	2.156E-01	1.753E-02	0.344
		1221.42	*	-6.031E-02	7.957E-02	1.198E-01	9.961E-03	-0.504
		1230.97		-4.061E-02	1.934E-01	3.134E-01	2.623E-02	-0.130
		57.98		-2.354E-02	7.816E-02	1.276E-01	9.134E-03	-0.184
		59.32		2.520E-02	4.534E-02	7.072E-02	5.002E-03	0.356
		67.20		-7.533E-02	8.469E-02	1.140E-01	8.652E-03	-0.661
RE-184		162.32	*	3.040E-02	5.812E-02	9.947E-02	9.596E-03	0.306
		208.81		-3.037E-01	5.057E-01	7.988E-01	9.030E-02	-0.380
		291.72		-1.700E-01	4.946E-01	8.165E-01	1.112E-01	-0.208
		57.98		-9.060E-02	3.009E-01	4.913E-01	3.516E-02	-0.184
		59.32		9.691E-02	1.744E-01	2.720E-01	1.924E-02	0.356
		67.20		-2.899E-01	3.259E-01	4.387E-01	3.329E-02	-0.661
OS-185		161.27		-1.943E-01	1.970E-01	3.109E-01	2.985E-02	-0.625
		216.55		1.099E-01	1.437E-01	2.443E-01	2.832E-02	0.450
		252.85	*	6.214E-02	1.333E-01	2.210E-01	2.867E-02	0.281
		318.01		9.364E-02	2.516E-01	4.301E-01	5.467E-02	0.218
		792.07		1.252E-02	4.741E-01	7.671E-01	8.446E-02	0.016
		903.28		-2.354E-01	4.773E-01	7.466E-01	8.337E-02	-0.315
RE-188		920.93		2.487E-01	2.131E-01	3.933E-01	4.340E-02	0.632
		59.72		5.085E-02	1.256E-01	1.934E-01	1.370E-02	0.263
		61.14		1.808E-02	6.855E-02	1.042E-01	7.485E-03	0.174
		69.30		-7.179E-03	1.189E-01	1.744E-01	1.349E-02	-0.041
		592.07		-6.343E-01	1.286E+00	2.039E+00	2.111E-01	-0.311
		646.12	*	-2.161E-02	2.178E-02	3.226E-02	3.390E-03	-0.670
W-188		717.42		6.817E-02	4.488E-01	7.417E-01	7.990E-02	0.092
		874.81		5.585E-03	2.876E-01	4.787E-01	5.350E-02	0.012
		880.27		-9.842E-02	3.837E-01	6.200E-01	6.933E-02	-0.159
		155.03	*	6.839E-02	8.598E-02	1.495E-01	1.395E-02	0.457
		477.96		3.121E-01	1.561E+00	2.564E+00	2.526E-01	0.122
	+	633.10		-1.050E+00	1.454E+00	2.237E+00	2.343E-01	-0.469



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IR-192		227.08		-3.337E+00	6.400E+00	1.005E+01	1.205E+00	-0.332
		290.67	*	4.922E-01	3.940E+00	6.689E+00	9.135E-01	0.074
		295.96		-2.587E-02	5.710E-02	8.721E-02	1.180E-02	-0.297
		308.46		-2.917E-02	4.924E-02	7.921E-02	1.037E-02	-0.368
		316.51	*	-1.912E-03	1.841E-02	3.062E-02	3.914E-03	-0.062
		468.07		-2.770E-03	3.476E-02	5.589E-02	5.782E-03	-0.050
		604.41		-3.041E-01	2.587E-01	3.849E-01	5.486E-02	-0.790
AU-195	+	612.46		3.519E-01	3.921E-01	6.856E-01	7.884E-02	0.513
		65.12		1.194E-01	1.416E-01	1.075E-01	8.011E-03	1.110
		66.83		-3.383E-02	4.133E-02	5.602E-02	4.237E-03	-0.604
		75.70		2.574E-02	7.293E-02	1.155E-01	9.519E-03	0.223
		98.88	*	-3.049E-02	1.117E-01	1.767E-01	1.541E-02	-0.173
TL-200		129.76		-1.639E-01	1.405E+00	2.369E+00	1.997E-01	-0.069
		367.94	*	-8.035E-02	2.166E+00	3.574E+00	3.764E-01	-0.022
		579.30		-3.702E+00	1.759E+01	2.452E+01	2.527E+00	-0.151
		828.27		-9.219E+00	2.153E+01	3.442E+01	3.819E+00	-0.268
		1205.75		-1.079E+00	8.582E+00	1.407E+01	1.157E+00	-0.077
TL-201		68.90		-1.113E-01	3.623E-01	5.196E-01	4.005E-02	-0.214
		70.82		9.481E-02	1.967E-01	3.190E-01	2.503E-02	0.297
		80.30		-2.575E-02	3.552E-01	5.771E-01	4.999E-02	-0.045
		135.34		-2.508E+00	2.278E+00	3.600E+00	3.094E-01	-0.697
		167.43	*	-1.081E+00	7.060E-01	1.064E+00	1.048E-01	-1.017
TL-202		68.90		-3.628E-02	1.181E-01	1.694E-01	1.305E-02	-0.214
		70.82		3.082E-02	6.396E-02	1.037E-01	8.138E-03	0.297
		80.30		-8.373E-03	1.155E-01	1.877E-01	1.626E-02	-0.045
		439.56	*	7.779E-03	2.376E-02	3.973E-02	3.824E-03	0.196
		70.83		1.827E-01	3.802E-01	6.156E-01	8.083E-02	0.297
HG-203		72.87		-6.450E-02	2.117E-01	3.408E-01	4.366E-02	-0.189
		82.60		-1.506E-02	3.954E-01	6.426E-01	8.944E-02	-0.023
		279.20	*	1.350E-02	2.186E-02	3.622E-02	5.127E-03	0.373
		72.80		-2.118E-02	6.945E-02	1.119E-01	8.949E-03	-0.189
		74.97		1.644E-02	4.214E-02	6.693E-02	5.472E-03	0.246
BI-207		84.90		-8.942E-03	8.154E-02	1.262E-01	1.154E-02	-0.071
		569.67		-1.112E-02	1.905E-02	2.798E-02	2.874E-03	-0.397
		1063.62	*	1.000E-02	2.734E-02	4.633E-02	4.448E-03	0.216
		1770.23		-3.881E-01	3.675E-01	5.168E-01	4.296E-02	-0.751
		81.07		-6.643E-02	8.574E-02	1.325E-01	1.158E-02	-0.502
TL-207		83.78		1.829E-02	5.324E-02	8.470E-02	7.639E-03	0.216
		94.90		-4.116E-01	1.387E-01	1.805E-01	1.613E-02	-2.281
		122.32		5.087E-01	9.779E-01	1.598E+00	1.422E-01	0.318
		144.24		-1.042E-01	3.952E-01	6.257E-01	6.194E-02	-0.167
		154.21		-7.216E-03	2.102E-01	3.517E-01	3.552E-02	-0.021
PO-209		269.46		-1.042E-01	1.100E-01	1.639E-01	2.251E-02	-0.636
		323.87	*	-3.380E-01	3.900E-01	6.070E-01	1.206E-01	-0.557
		338.28		-2.108E-01	5.944E-01	9.193E-01	1.360E-01	-0.229
		445.03		5.001E-01	1.235E+00	2.073E+00	2.663E-01	0.241
		260.50		-3.077E+00	5.656E+00	8.748E+00	1.161E+00	-0.352
		262.80		-1.462E+01	1.625E+01	2.439E+01	3.259E+00	-0.599
		896.60	*	9.639E-01	3.775E+00	6.421E+00	7.192E-01	0.150



---- Non-Identified Nuclides ----

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BI-210		46.50	*	4.531E-02	1.664E+00	2.682E+00	2.492E-01	0.017
PB-210		46.50	*	4.531E-02	1.664E+00	2.682E+00	2.492E-01	0.017
PO-210		46.50	*	4.531E-02	1.664E+00	2.682E+00	2.256E-01	0.017
BI-211		72.87		-3.627E-01	1.190E+00	1.917E+00	1.534E-01	-0.189
		351.07	*	-4.182E-02	1.355E-01	2.114E-01	2.466E-02	-0.198
PB-211		404.84	*	3.375E-01	5.675E-01	9.027E-01	5.667E-01	0.374
		427.08		4.586E-01	1.233E+00	2.013E+00	1.254E+00	0.228
		831.96		-1.096E-01	6.359E-01	1.038E+00	6.545E-01	-0.106
BI-212		727.18	*	8.584E-02	1.555E-01	2.528E-01	3.019E-02	0.340
		785.46		-3.424E-02	1.001E+00	1.481E+00	1.628E-01	-0.023
		1620.62		3.588E-01	6.678E-01	1.200E+00	1.046E-01	0.299
PB-212		74.81		4.081E-02	1.444E-01	2.277E-01	2.826E-02	0.179
		77.11		-6.577E-02	8.220E-02	1.246E-01	1.042E-02	-0.528
		87.30		-1.176E-01	1.675E-01	2.468E-01	3.389E-02	-0.476
		238.63	*	-1.170E-02	3.733E-02	5.963E-02	7.879E-03	-0.196
		300.09		-2.106E-01	4.136E-01	6.722E-01	9.803E-02	-0.313
PO-212		74.81		4.081E-02	1.444E-01	2.277E-01	2.826E-02	0.179
		77.11		-6.577E-02	8.220E-02	1.246E-01	1.042E-02	-0.528
		87.30		-1.176E-01	1.675E-01	2.468E-01	3.389E-02	-0.476
		115.19		2.593E-01	1.984E+00	3.183E+00	2.637E-01	0.081
		238.63	*	-1.170E-02	3.733E-02	5.963E-02	7.879E-03	-0.196
		300.09		-2.106E-01	4.136E-01	6.722E-01	9.803E-02	-0.313
BI-214		609.31	*	7.597E-05	4.760E-02	7.889E-02	9.173E-03	0.001
		1120.29		-5.197E-02	1.584E-01	2.525E-01	2.789E-02	-0.206
		1764.49		-9.050E-02	1.865E-01	3.117E-01	2.597E-02	-0.290
PB-214		74.81		7.032E-02	2.488E-01	3.924E-01	4.325E-02	0.179
		77.11		-1.128E-01	1.412E-01	2.136E-01	2.416E-02	-0.528
		87.30		-2.014E-01	2.867E-01	4.228E-01	5.143E-02	-0.476
		241.98		-2.700E-01	2.072E-01	3.043E-01	4.184E-02	-0.887
		295.21		-5.908E-02	8.185E-02	1.227E-01	1.827E-02	-0.482
		351.92	*	-4.322E-03	4.691E-02	7.413E-02	9.449E-03	-0.058
PO-214		74.81		7.032E-02	2.488E-01	3.924E-01	4.325E-02	0.179
		77.11		-1.128E-01	1.412E-01	2.136E-01	2.416E-02	-0.528
		87.30		-2.014E-01	2.867E-01	4.228E-01	5.143E-02	-0.476
		241.98		-2.700E-01	2.072E-01	3.043E-01	4.184E-02	-0.887
		295.21		-5.908E-02	8.185E-02	1.227E-01	1.827E-02	-0.482
		351.92	*	-4.322E-03	4.691E-02	7.413E-02	9.449E-03	-0.058
PO-215		81.07		-6.643E-02	8.574E-02	1.325E-01	1.158E-02	-0.502
		83.78		1.829E-02	5.324E-02	8.470E-02	7.639E-03	0.216
		94.90		-4.116E-01	1.387E-01	1.805E-01	1.613E-02	-2.281
		122.32		5.087E-01	9.779E-01	1.598E+00	1.422E-01	0.318
		144.24		-1.042E-01	3.952E-01	6.257E-01	6.194E-02	-0.167
		154.21		-7.216E-03	2.102E-01	3.517E-01	3.552E-02	-0.021
		269.46		-1.042E-01	1.100E-01	1.639E-01	2.251E-02	-0.636
		323.87	*	-3.380E-01	3.900E-01	6.070E-01	1.206E-01	-0.557
		338.28		-2.108E-01	5.944E-01	9.193E-01	1.360E-01	-0.229
		445.03		5.001E-01	1.235E+00	2.073E+00	2.663E-01	0.241
PO-216		74.81		4.081E-02	1.444E-01	2.277E-01	2.826E-02	0.179
		77.11		-6.577E-02	8.220E-02	1.246E-01	1.042E-02	-0.528



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-218	87.30			-1.176E-01	1.675E-01	2.468E-01	3.389E-02	-0.476
	238.63	*		-1.170E-02	3.733E-02	5.963E-02	7.879E-03	-0.196
	300.09			-2.106E-01	4.136E-01	6.722E-01	9.803E-02	-0.313
	74.81			7.032E-02	2.488E-01	3.924E-01	4.325E-02	0.179
	77.11			-1.128E-01	1.412E-01	2.136E-01	2.416E-02	-0.528
	87.30			-2.014E-01	2.867E-01	4.228E-01	5.143E-02	-0.476
	241.98			-2.700E-01	2.072E-01	3.043E-01	4.184E-02	-0.887
RN-219	295.21			-5.908E-02	8.185E-02	1.227E-01	1.827E-02	-0.482
	351.92	*		-4.322E-03	4.691E-02	7.413E-02	9.449E-03	-0.058
	271.23			-2.359E-02	1.360E-01	2.155E-01	3.193E-02	-0.109
	401.81	*		4.771E-03	2.492E-01	4.096E-01	6.337E-02	0.012
RN-220	549.76	*		-2.101E+00	1.306E+01	2.151E+01	2.192E+00	-0.098
RA-223	81.07			-6.643E-02	8.574E-02	1.325E-01	1.158E-02	-0.502
	83.78			1.829E-02	5.324E-02	8.470E-02	7.639E-03	0.216
	94.90			-4.116E-01	1.387E-01	1.805E-01	1.613E-02	-2.281
	122.32			5.087E-01	9.779E-01	1.598E+00	1.422E-01	0.318
RA-224	144.24			-1.042E-01	3.952E-01	6.257E-01	6.194E-02	-0.167
	154.21			-7.216E-03	2.102E-01	3.517E-01	3.552E-02	-0.021
	269.46			-1.042E-01	1.100E-01	1.639E-01	2.251E-02	-0.636
	323.87	*		-3.380E-01	3.900E-01	6.070E-01	1.206E-01	-0.557
	338.28			-2.108E-01	5.944E-01	9.193E-01	1.360E-01	-0.229
	445.03			5.001E-01	1.235E+00	2.073E+00	2.663E-01	0.241
	240.98	*		7.666E-02	3.842E-01	6.293E-01	7.877E-02	0.122
	609.31	*		7.597E-05	4.760E-02	7.889E-02	9.173E-03	0.001
	1120.29			-5.197E-02	1.584E-01	2.525E-01	2.789E-02	-0.206
	1764.49			-9.050E-02	1.865E-01	3.117E-01	2.597E-02	-0.290
	79.80			3.988E-01	6.344E-01	1.068E+00	2.297E-01	0.373
	236.00			-1.343E-01	1.365E-01	2.068E-01	3.119E-02	-0.650
AC-227	256.20	*		-4.852E-02	2.307E-01	3.665E-01	6.689E-02	-0.132
	286.10			-3.091E-01	9.090E-01	1.414E+00	2.410E-01	-0.219
	299.80			-4.164E-01	7.610E-01	1.229E+00	2.489E-01	-0.339
	304.40			1.135E-01	1.009E+00	1.707E+00	3.580E-01	0.066
	334.20			-9.451E-01	1.350E+00	2.129E+00	4.506E-01	-0.444
	79.80			3.988E-01	6.345E-01	1.068E+00	2.326E-01	0.373
	94.00			-2.634E+00	1.269E+00	1.790E+00	3.927E-01	-1.471
	236.00			-1.343E-01	1.363E-01	2.068E-01	2.927E-02	-0.650
	256.20	*		-4.852E-02	2.307E-01	3.665E-01	7.545E-02	-0.132
	286.10			-3.091E-01	9.596E-01	1.414E+00	1.427E+00	-0.219
	299.80			-4.164E-01	7.610E-01	1.229E+00	2.489E-01	-0.339
	304.40			1.135E-01	1.009E+00	1.707E+00	3.580E-01	0.066
TH-227	334.20			-9.451E-01	1.350E+00	2.129E+00	4.506E-01	-0.444
	338.32			-5.255E-02	1.438E-01	2.197E-01	9.243E-02	-0.239
	911.07	*		-2.530E-02	8.425E-02	1.329E-01	1.761E-02	-0.190
	969.11			-9.580E-03	1.371E-01	2.261E-01	5.461E-02	-0.042
RA-228	338.32			-5.255E-02	1.438E-01	2.197E-01	9.243E-02	-0.239
	911.07	*		-2.530E-02	8.425E-02	1.329E-01	1.761E-02	-0.190
	969.11			-9.580E-03	1.371E-01	2.261E-01	5.461E-02	-0.042
TH-228	74.81			4.112E-02	1.455E-01	2.295E-01	1.891E-02	0.179
	77.11			-6.627E-02	8.282E-02	1.255E-01	1.050E-02	-0.528



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Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229		87.30		-1.185E-01	1.684E-01	2.487E-01	2.340E-02	-0.476
		238.63	*	-1.178E-02	3.762E-02	6.009E-02	7.939E-03	-0.196
		300.09		-2.122E-01	4.348E-01	6.773E-01	4.074E-01	-0.313
		85.43		-5.128E-02	8.054E-02	1.202E-01	1.105E-02	-0.427
		88.47		1.305E-02	4.853E-02	7.641E-02	7.218E-03	0.171
		100.00		-1.636E-02	9.422E-02	1.499E-01	1.300E-02	-0.109
TH-230		193.63	*	-3.332E-01	2.743E-01	4.153E-01	4.465E-02	-0.802
		210.97		1.040E-01	4.135E-01	6.864E-01	7.815E-02	0.152
		609.31	*	7.597E-05	4.760E-02	7.889E-02	9.173E-03	0.001
		1120.29		-5.197E-02	1.584E-01	2.524E-01	2.789E-02	-0.206
PA-231		1764.49		-9.050E-02	1.865E-01	3.117E-01	2.597E-02	-0.290
		283.67	*	-7.326E-01	9.296E-01	1.387E+00	2.591E-01	-0.528
TH-231		301.29		-2.801E-02	2.920E-01	4.878E-01	7.757E-02	-0.057
		81.07		-6.643E-02	8.574E-02	1.325E-01	1.158E-02	-0.502
		83.78		1.829E-02	5.324E-02	8.470E-02	7.639E-03	0.216
		94.90		-4.116E-01	1.387E-01	1.805E-01	1.613E-02	-2.281
		122.32		5.087E-01	9.779E-01	1.598E+00	1.422E-01	0.318
		144.24		-1.042E-01	3.952E-01	6.257E-01	6.194E-02	-0.167
		154.21		-7.216E-03	2.102E-01	3.517E-01	3.552E-02	-0.021
		269.46		-1.042E-01	1.100E-01	1.639E-01	2.251E-02	-0.636
		323.87	*	-3.380E-01	3.900E-01	6.070E-01	1.206E-01	-0.557
		338.28		-2.108E-01	5.944E-01	9.193E-01	1.360E-01	-0.229
		445.03		5.001E-01	1.235E+00	2.073E+00	2.663E-01	0.241
		84.21		1.954E-01	6.728E-01	1.068E+00	9.684E-02	0.183
		92.29		-7.706E-02	3.312E-01	5.746E-01	5.240E-02	-0.134
		95.87	*	-3.576E-01	1.739E-01	2.428E-01	2.156E-02	-1.473
TH-232		108.00		-1.320E-01	3.166E-01	4.932E-01	4.146E-02	-0.268
		338.32		-5.255E-02	1.422E-01	2.197E-01	2.613E-02	-0.239
		911.07	*	-2.530E-02	8.425E-02	1.329E-01	1.761E-02	-0.190
		969.11		-9.580E-03	1.371E-01	2.261E-01	5.461E-02	-0.042
PA-233		75.28		2.634E-01	1.243E+00	1.955E+00	2.955E-01	0.135
		86.59		-5.153E-01	7.296E-01	1.061E+00	2.870E-01	-0.486
		300.12		-1.067E-01	2.141E-01	3.478E-01	6.271E-02	-0.307
		311.98	*	9.680E-04	3.550E-02	5.962E-02	7.810E-03	0.016
		340.50		3.805E-02	3.293E-01	5.519E-01	1.389E-01	0.069
		398.62		7.118E-01	1.235E+00	2.084E+00	5.600E-01	0.342
PA-234		415.76		-4.704E-01	9.108E-01	1.420E+00	3.111E-01	-0.331
	+	63.00		1.032E+00	1.231E+00	1.203E+00	1.782E-01	0.858
		94.67		-1.248E-01	9.117E-02	1.341E-01	1.694E-02	-0.931
		98.44		-7.823E-03	4.675E-02	7.417E-02	4.139E-02	-0.105
		99.86		-5.659E-02	2.377E-01	3.766E-01	3.267E-02	-0.150
		111.00		1.128E-01	1.023E-01	1.724E-01	2.051E-02	0.654
		131.20		3.576E-02	5.206E-02	9.127E-02	7.729E-03	0.392
		152.70		-1.508E-01	1.731E-01	2.735E-01	4.750E-02	-0.551
	+	186.00		2.325E-01	9.818E-01	1.338E+00	4.253E-01	0.174
		226.40		-8.936E-02	2.226E-01	3.526E-01	5.498E-02	-0.253
		227.20		-1.689E-01	2.361E-01	3.653E-01	4.381E-02	-0.462
		248.90		-1.989E-01	4.917E-01	7.702E-01	1.875E-01	-0.258
		293.70		-1.833E-01	3.898E-01	5.946E-01	1.202E-01	-0.308



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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	369.80			3.155E-01	4.922E-01	8.405E-01	1.896E-01	0.375
	568.70			-1.160E-01	6.270E-01	9.573E-01	9.830E-02	-0.121
	569.50			-9.240E-02	1.695E-01	2.501E-01	2.569E-02	-0.369
	574.00			-6.882E-01	9.913E-01	1.300E+00	1.337E-01	-0.529
	699.00			4.067E-02	4.424E-01	7.276E-01	1.463E-01	0.056
	706.10			8.872E-02	5.670E-01	9.358E-01	4.216E-01	0.095
	733.00			-2.982E-01	2.135E-01	2.778E-01	6.429E-02	-1.074
	742.81			-1.738E-01	7.373E-01	1.153E+00	7.791E-01	-0.151
	796.30			2.115E-01	4.701E-01	7.867E-01	2.196E-01	0.269
	805.60			-4.223E-01	6.588E-01	8.370E-01	2.630E-01	-0.505
	819.60			-6.098E-02	6.310E-01	1.044E+00	4.036E-01	-0.058
	826.30			1.517E-01	4.196E-01	7.162E-01	3.243E-01	0.212
	831.60			-1.159E-01	3.262E-01	5.228E-01	1.602E-01	-0.222
	876.40			2.604E-01	5.059E-01	7.558E-01	7.788E-01	0.345
	880.51			-3.535E-02	1.438E-01	2.325E-01	2.600E-02	-0.152
	883.24			-2.583E-02	1.477E-01	2.389E-01	1.615E-01	-0.108
	899.00			3.269E-01	4.384E-01	7.417E-01	3.285E-01	0.441
	925.00			-3.922E-01	5.884E-01	8.956E-01	9.854E-02	-0.438
	926.50			-2.106E-02	8.190E-02	1.308E-01	3.426E-02	-0.161
	946.00	*		4.005E-02	1.517E-01	2.569E-01	5.107E-02	0.156
	949.00			1.495E-01	2.123E-01	3.764E-01	4.067E-02	0.397
	980.50			2.045E-01	3.948E-01	6.823E-01	7.175E-02	0.300
PA-234M	1394.10			-2.996E-01	6.346E-01	9.144E-01	5.956E-01	-0.328
	766.42			-4.677E+00	6.536E+00	9.116E+00	4.666E+00	-0.513
TH-234	1001.03	*		-1.520E+00	2.690E+00	4.155E+00	4.761E-01	-0.366
	63.29	*		8.851E-01	1.059E+00	1.019E+00	1.774E-01	0.869
	92.38			-6.534E-02	3.009E-01	5.220E-01	9.565E-02	-0.125
U-234	609.31	*		7.597E-05	4.760E-02	7.889E-02	9.173E-03	0.001
	1120.29			-5.197E-02	1.584E-01	2.524E-01	2.789E-02	-0.206
	1764.49			-9.050E-02	1.865E-01	3.117E-01	2.597E-02	-0.290
U-235	89.95			-2.107E+00	8.757E-01	7.519E-01	2.335E-01	-2.802
	93.35			-1.684E-01	3.614E-01	6.157E-01	1.734E-01	-0.274
	105.00			-4.120E-01	5.472E-01	8.113E-01	2.418E-01	-0.508
	143.76	*		-6.400E-02	1.239E-01	1.931E-01	3.407E-02	-0.331
	163.35			3.454E-01	2.729E-01	4.700E-01	9.206E-02	0.735
	185.71			8.612E-03	3.627E-02	4.990E-02	5.225E-03	0.173
NP-236	205.31			-9.052E-03	3.160E-01	4.932E-01	1.004E-01	-0.018
	94.67			-9.376E-02	6.867E-02	1.019E-01	9.121E-03	-0.920
	98.44			-5.916E-03	3.519E-02	5.607E-02	4.901E-03	-0.106
	111.00			8.529E-02	7.706E-02	1.304E-01	1.088E-02	0.654
	160.31	*		-4.815E-02	5.087E-02	7.292E-02	6.970E-03	-0.660
NP-237	86.50	*		-3.224E-02	1.054E-01	1.597E-01	3.616E-02	-0.202
	95.87			-1.093E+00	5.885E-01	7.423E-01	1.835E-01	-1.473
U-238	63.29	*		8.851E-01	1.059E+00	1.019E+00	1.774E-01	0.869
	92.38			-6.534E-02	3.007E-01	5.220E-01	4.756E-02	-0.125
NP-239	99.55			-3.938E-02	7.994E-02	1.245E-01	1.082E-02	-0.316
	117.00	*		-1.291E-02	1.025E-01	1.617E-01	1.336E-02	-0.080
	209.75			-2.197E-01	4.292E-01	6.817E-01	7.730E-02	-0.322
	228.18			-1.009E-01	1.262E-01	1.940E-01	2.334E-02	-0.520



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	277.60			2.632E-02	1.090E-01	1.770E-01	2.467E-02	0.149
	334.30			-4.625E-01	7.547E-01	1.207E+00	1.456E-01	-0.383
AM-241	59.54	*		4.011E-02	6.905E-02	1.079E-01	8.431E-03	0.372
AM-243	74.67	*		4.373E-03	2.334E-02	3.658E-02	2.982E-03	0.120
	86.72			-3.093E+00	4.023E+00	5.920E+00	5.532E-01	-0.522
	117.66			-5.236E-01	2.080E+00	3.253E+00	2.687E-01	-0.161
	142.18			-7.555E-01	9.335E+00	1.567E+01	1.384E+00	-0.048
CM-243	99.55			-4.051E-02	8.221E-02	1.281E-01	1.113E-02	-0.316
	103.76	*		1.447E-02	4.859E-02	7.940E-02	6.769E-03	0.182
	117.00			-1.327E-02	1.054E-01	1.663E-01	1.374E-02	-0.080
	209.75			-2.164E-01	4.229E-01	6.717E-01	7.616E-02	-0.322
	228.18			-1.019E-01	1.274E-01	1.959E-01	2.357E-02	-0.520
	277.60			2.652E-02	1.098E-01	1.783E-01	2.486E-02	0.149
AM-246	798.80			-3.056E-02	7.589E-02	1.171E-01	1.292E-02	-0.261
	1036.00			3.259E-02	1.517E-01	2.539E-01	2.521E-02	0.128
	1062.04			8.411E-02	1.181E-01	2.072E-01	1.993E-02	0.406
	1078.86	*		-4.639E-02	6.721E-02	1.023E-01	9.621E-03	-0.454
CM-247	278.00			7.055E-02	4.535E-01	7.327E-01	1.023E-01	0.096
	287.40			2.361E-02	7.322E-01	1.171E+00	1.611E-01	0.020
	402.60	*		7.459E-03	2.191E-02	3.677E-02	3.450E-03	0.203
CF-249	252.85			2.405E-01	5.157E-01	8.551E-01	1.110E-01	0.281
	333.44			-4.997E-02	9.698E-02	1.562E-01	1.890E-02	-0.320
	387.95	*		-1.215E-02	2.252E-02	3.556E-02	3.380E-03	-0.342
CF-251	176.60	*		4.624E-03	7.679E-02	1.227E-01	1.247E-02	0.038
	227.00			-1.059E-01	2.072E-01	3.255E-01	3.902E-02	-0.325
	285.00			-8.617E-01	1.051E+00	1.571E+00	2.173E-01	-0.549



# VAX/VMS Nuclide Identification Report Generated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004732
* Acquisition date   : 4-JAN-2010 14:05:52 Detector SN#      :
* Detector ID        : GAM22 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit        : 75.000
* Elapsed real time  : 0 02:00:00.99 Half life ratio       : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 28-DEC-2009 00:00:00 Nuclide Library  : SOLID
* Sample ID          : G1202004732 Analyst initials       : MXR1
* Batch Number       : 936923 Sample Quantity            : 1.3786E+02 GRAM
* Recovery           : 1.00000 Carrier Weight            : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope                  :
* LCS DPM             : 0.000 LCS Isotope                   :
* LCSD DPM            : 0.000 LCSD Isotope                  :
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
TL-208	1.691E-02	3.594E-02	3.039E-02	0.000E+00
ANH-511	6.883E-02	3.928E-02	2.386E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	3.413E-02	1.574E-01	2.708E-01	0.000E+00 NOT IDENT.
NA-22	-4.296E-03	1.807E-02	2.969E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	8.920E+01	0.000E+00	0.000E+00 SHORT HLIF
AL-26	-6.436E-03	1.406E-02	2.106E-02	0.000E+00 NOT IDENT.
K-40	-1.427E-01	2.629E-01	4.513E-01	0.000E+00 NOT IDENT.
TI-44	-1.061E-02	1.418E-02	2.330E-02	0.000E+00 NOT IDENT.
SC-46	9.418E-03	1.804E-02	3.254E-02	0.000E+00 NOT IDENT.
V-48	1.073E-02	2.664E-02	4.699E-02	0.000E+00 NOT IDENT.
CR-51	1.384E-02	1.764E-01	3.127E-01	0.000E+00 NOT IDENT.
MN-52	-4.311E-03	5.045E-02	8.347E-02	0.000E+00 NOT IDENT.
MN-54	1.770E-02	1.818E-02	3.394E-02	0.000E+00 NOT IDENT.
CO-56	5.915E-03	1.856E-02	3.296E-02	0.000E+00 NOT IDENT.
CO-57	8.009E-03	1.364E-02	2.402E-02	0.000E+00 NOT IDENT.
CO-58	2.692E-03	1.707E-02	3.004E-02	0.000E+00 NOT IDENT.
FE-59	1.085E-02	3.350E-02	5.843E-02	0.000E+00 NOT IDENT.
CO-60	-1.045E-02	2.087E-02	3.301E-02	0.000E+00 NOT IDENT.
ZN-65	2.195E-02	4.429E-02	7.767E-02	0.000E+00 NOT IDENT.
GE-68	-2.502E-01	5.589E-01	8.823E-01	0.000E+00 NOT IDENT.
AS-73	-2.708E-01	3.503E-01	5.749E-01	0.000E+00 NOT IDENT.
AS-74	-1.677E-02	3.716E-02	6.179E-02	0.000E+00 NOT IDENT.
SE-75	2.001E-02	2.456E-02	4.369E-02	0.000E+00 NOT IDENT.
BR-77	2.224E-01	7.021E-01	1.139E+00	0.000E+00 NOT IDENT.
SR-82	-1.036E-01	1.588E-01	2.473E-01	0.000E+00 NOT IDENT.
RB-83	9.589E-03	3.905E-02	6.297E-02	0.000E+00 NOT IDENT.
RB-84	-8.581E-03	3.083E-02	5.141E-02	0.000E+00 NOT IDENT.



KR-85	0.000E+00	5.556E+00	1.007E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	2.632E-02	4.772E-02	0.000E+00	NOT IDENT.
RB-86	-1.175E-01	2.818E-01	4.477E-01	0.000E+00	NOT IDENT.
Y-88	1.693E-02	1.954E-02	3.708E-02	0.000E+00	NOT IDENT.
ZR-88	1.068E-02	1.551E-02	2.806E-02	0.000E+00	NOT IDENT.
Y-91	1.074E+00	6.931E+00	1.207E+01	0.000E+00	NOT IDENT.
NB-94	-1.214E-02	1.945E-02	3.120E-02	0.000E+00	NOT IDENT.
NB-95	-6.198E-03	2.057E-02	3.354E-02	0.000E+00	NOT IDENT.
NB-95M	-9.005E-02	6.722E-02	1.054E-01	0.000E+00	NOT IDENT.
ZR-95	-2.553E-02	3.576E-02	5.574E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.864E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.447E+02	0.000E+00	0.000E+00	SHORT HLIF
MO-99	6.766E-01	9.210E-01	1.648E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.880E+07	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.087E-03	2.071E-02	3.343E-02	0.000E+00	NOT IDENT.
RH-102	2.629E-04	1.550E-02	2.626E-02	0.000E+00	NOT IDENT.
RU-103	-9.323E-03	2.018E-02	3.257E-02	0.000E+00	NOT IDENT.
RH-106	8.070E-02	1.640E-01	2.930E-01	0.000E+00	FAIL ABUN
RU-106	8.070E-02	1.638E-01	2.930E-01	0.000E+00	FAIL ABUN
AG-108M	5.824E-03	1.771E-02	3.102E-02	0.000E+00	NOT IDENT.
CD-109	-1.554E-01	3.531E-01	5.746E-01	0.000E+00	NOT IDENT.
AG-110M	-6.103E-04	1.663E-02	2.831E-02	0.000E+00	NOT IDENT.
IN-111	2.647E-02	9.395E-02	1.638E-01	0.000E+00	NOT IDENT.
IN-113M	1.200E-02	2.314E-02	4.140E-02	0.000E+00	NOT IDENT.
SN-113	1.200E-02	2.314E-02	4.140E-02	0.000E+00	NOT IDENT.
IN-114M	5.956E-02	9.222E-02	1.495E-01	0.000E+00	NOT IDENT.
CD-115	-4.491E-01	6.182E-01	9.785E-01	0.000E+00	NOT IDENT.
SN-117M	-7.364E-03	2.256E-02	3.574E-02	0.000E+00	NOT IDENT.
SB-122	-3.936E-02	1.545E-01	2.629E-01	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.530E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-7.599E-03	1.664E-02	2.622E-02	0.000E+00	NOT IDENT.
I-124	-9.353E-02	1.109E-01	1.786E-01	0.000E+00	NOT IDENT.
SB-124	8.594E-03	4.539E-02	7.874E-02	0.000E+00	NOT IDENT.
SB-125	1.524E-02	5.297E-02	9.251E-02	0.000E+00	NOT IDENT.
TE-125M	9.556E-01	4.507E+00	7.847E+00	0.000E+00	NOT IDENT.
I-126	3.005E-02	5.870E-02	1.047E-01	0.000E+00	NOT IDENT.
SB-126	2.906E-02	4.743E-02	8.466E-02	0.000E+00	NOT IDENT.
SN-126	-2.485E-02	3.535E-02	5.648E-02	0.000E+00	FAIL ABUN
SB-127	-2.295E-04	1.859E-01	3.161E-01	0.000E+00	NOT IDENT.
XE-127	-1.939E-02	2.277E-02	3.775E-02	0.000E+00	NOT IDENT.
I-131	1.878E-03	3.402E-02	5.945E-02	0.000E+00	NOT IDENT.
TE-132	-6.233E-02	7.652E-02	1.243E-01	0.000E+00	NOT IDENT.
BA-133	-2.195E-02	2.445E-02	3.975E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	7.694E+00	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.552E-03	2.486E-02	4.086E-02	0.000E+00	NOT IDENT.
CS-135	-2.005E-02	9.018E-02	1.510E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.386E+07	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-9.913E-03	3.679E-02	5.999E-02	0.000E+00	NOT IDENT.
BA-137M	-4.963E-03	1.711E-02	2.838E-02	0.000E+00	NOT IDENT.
CS-137	-5.246E-03	1.809E-02	3.000E-02	0.000E+00	NOT IDENT.
CE-139	-1.148E-02	1.574E-02	2.690E-02	0.000E+00	NOT IDENT.
BA-140	-2.135E-02	8.677E-02	1.480E-01	0.000E+00	NOT IDENT.
LA-140	-2.143E-04	3.542E-02	6.023E-02	0.000E+00	NOT IDENT.
CE-141	1.735E-02	2.801E-02	5.193E-02	0.000E+00	NOT IDENT.
CE-143	-2.796E-02	1.528E+00	2.717E+00	0.000E+00	NOT IDENT.
CE-144	-5.508E-02	9.789E-02	1.717E-01	0.000E+00	NOT IDENT.
PM-144	2.934E-02	2.036E-02	3.787E-02	0.000E+00	NOT IDENT.
PR-144	1.981E+00	1.374E+00	2.556E+00	0.000E+00	NOT IDENT.
PM-146	4.518E-03	2.361E-02	4.075E-02	0.000E+00	NOT IDENT.
ND-147	1.115E-01	1.851E-01	3.372E+00	0.000E+00	NOT IDENT.
PM-149	-3.141E+00	5.118E+00	8.219E+00	0.000E+00	NOT IDENT.
EU-152	-3.232E-04	5.372E-02	9.406E-02	0.000E+00	NOT IDENT.
GD-153	1.304E-02	3.769E-02	6.682E-02	0.000E+00	NOT IDENT.
EU-154	-1.270E-02	5.058E-02	8.293E-02	0.000E+00	NOT IDENT.
EU-155	-4.338E-02	5.299E-02	8.637E-02	0.000E+00	NOT IDENT.
TB-160	-1.159E-02	6.691E-02	1.129E-01	0.000E+00	NOT IDENT.
HO-166M	2.231E-02	3.134E-02	5.636E-02	0.000E+00	FAIL ABUN
TM-171	-1.053E+01	1.251E+01	1.841E+01	0.000E+00	NOT IDENT.
LU-176	-6.649E-04	1.329E-02	2.348E-02	0.000E+00	NOT IDENT.
LU-177	-7.463E-02	2.702E-01	4.636E-01	0.000E+00	NOT IDENT.
LU-177M	2.057E-02	9.203E-02	1.607E-01	0.000E+00	NOT IDENT.
HF-181	-1.016E-02	2.009E-02	3.239E-02	0.000E+00	FAIL ABUN
W-181	0.000E+00	2.961E-01	2.426E-01	0.000E+00	FAIL ABUN
TA-182	-6.031E-02	7.798E-02	1.206E-01	0.000E+00	NOT IDENT.
RE-183	3.040E-02	5.695E-02	1.041E-01	0.000E+00	NOT IDENT.
RE-184	6.214E-02	1.306E-01	2.294E-01	0.000E+00	NOT IDENT.
OS-185	-2.161E-02	2.134E-02	3.289E-02	0.000E+00	NOT IDENT.
RE-188	6.839E-02	8.426E-02	1.566E-01	0.000E+00	NOT IDENT.



W-188	4.922E-01	3.861E+00	6.926E+00	0.000E+00	FAIL ABUN
IR-192	-1.912E-03	1.804E-02	3.166E-02	0.000E+00	NOT IDENT.
AU-195	-3.049E-02	1.094E-01	1.867E-01	0.000E+00	FAIL ABUN
TL-200	-8.035E-02	2.123E+00	3.684E+00	0.000E+00	NOT IDENT.
TL-201	-1.081E+00	6.918E-01	1.113E+00	0.000E+00	NOT IDENT.
TL-202	7.779E-03	2.329E-02	4.081E-02	0.000E+00	NOT IDENT.
HG-203	1.350E-02	2.142E-02	3.754E-02	0.000E+00	NOT IDENT.
BI-207	1.000E-02	2.679E-02	4.677E-02	0.000E+00	NOT IDENT.
TL-207	-3.380E-01	3.822E-01	6.273E-01	0.000E+00	NOT IDENT.
PO-209	9.639E-01	3.700E+00	6.504E+00	0.000E+00	NOT IDENT.
BI-210	4.531E-02	1.631E+00	2.873E+00	0.000E+00	NOT IDENT.
PB-210	4.531E-02	1.631E+00	2.873E+00	0.000E+00	NOT IDENT.
PO-210	4.531E-02	1.631E+00	2.873E+00	0.000E+00	NOT IDENT.
BI-211	-4.182E-02	1.328E-01	2.181E-01	0.000E+00	NOT IDENT.
PB-211	3.375E-01	5.562E-01	9.288E-01	0.000E+00	NOT IDENT.
BI-212	8.584E-02	1.524E-01	2.571E-01	0.000E+00	NOT IDENT.
PB-212	-1.170E-02	3.659E-02	6.198E-02	0.000E+00	NOT IDENT.
PO-212	-1.170E-02	3.659E-02	6.198E-02	0.000E+00	NOT IDENT.
BI-214	7.597E-05	4.664E-02	8.053E-02	0.000E+00	NOT IDENT.
PB-214	-4.322E-03	4.597E-02	7.648E-02	0.000E+00	NOT IDENT.
PO-214	-4.322E-03	4.597E-02	7.648E-02	0.000E+00	NOT IDENT.
PO-215	-3.380E-01	3.822E-01	6.273E-01	0.000E+00	NOT IDENT.
PO-216	-1.170E-02	3.659E-02	6.198E-02	0.000E+00	NOT IDENT.
PO-218	-4.322E-03	4.597E-02	7.648E-02	0.000E+00	NOT IDENT.
RN-219	4.771E-03	2.443E-01	4.215E-01	0.000E+00	NOT IDENT.
RN-220	-2.101E+00	1.280E+01	2.200E+01	0.000E+00	NOT IDENT.
RA-223	-3.380E-01	3.822E-01	6.273E-01	0.000E+00	NOT IDENT.
RA-224	7.666E-02	3.765E-01	6.539E-01	0.000E+00	NOT IDENT.
RA-226	7.597E-05	4.664E-02	8.053E-02	0.000E+00	NOT IDENT.
AC-227	-4.852E-02	2.261E-01	3.805E-01	0.000E+00	NOT IDENT.
TH-227	-4.852E-02	2.261E-01	3.805E-01	0.000E+00	NOT IDENT.
AC-228	-2.530E-02	8.257E-02	1.346E-01	0.000E+00	NOT IDENT.
RA-228	-2.530E-02	8.257E-02	1.346E-01	0.000E+00	NOT IDENT.
TH-228	-1.178E-02	3.686E-02	6.245E-02	0.000E+00	NOT IDENT.
TH-229	-3.332E-01	2.688E-01	4.334E-01	0.000E+00	NOT IDENT.
TH-230	7.597E-05	4.664E-02	8.053E-02	0.000E+00	NOT IDENT.
PA-231	-7.326E-01	9.111E-01	1.437E+00	0.000E+00	NOT IDENT.
TH-231	-3.380E-01	3.822E-01	6.273E-01	0.000E+00	NOT IDENT.
U-231	-3.576E-01	1.704E-01	2.567E-01	0.000E+00	NOT IDENT.
TH-232	-2.530E-02	8.257E-02	1.346E-01	0.000E+00	NOT IDENT.
PA-233	9.680E-04	3.479E-02	6.165E-02	0.000E+00	NOT IDENT.
PA-234	4.005E-02	1.487E-01	2.600E-01	0.000E+00	FAIL ABUN
PA-234M	-1.520E+00	2.636E+00	4.200E+00	0.000E+00	NOT IDENT.
TH-234	8.851E-01	1.038E+00	1.085E+00	0.000E+00	FAIL ABUN
U-234	7.597E-05	4.664E-02	8.053E-02	0.000E+00	NOT IDENT.
U-235	-6.400E-02	1.214E-01	2.027E-01	0.000E+00	FAIL ABUN
NP-236	-4.815E-02	4.985E-02	7.636E-02	0.000E+00	NOT IDENT.
NP-237	-3.224E-02	1.033E-01	1.692E-01	0.000E+00	NOT IDENT.
U-238	8.851E-01	1.038E+00	1.085E+00	0.000E+00	FAIL ABUN
NP-239	-1.291E-02	1.005E-01	1.703E-01	0.000E+00	NOT IDENT.
AM-241	4.011E-02	6.767E-02	1.150E-01	0.000E+00	NOT IDENT.
AM-243	4.373E-03	2.287E-02	3.885E-02	0.000E+00	NOT IDENT.
CM-243	1.447E-02	4.762E-02	8.382E-02	0.000E+00	NOT IDENT.
AM-246	-4.639E-02	6.587E-02	1.032E-01	0.000E+00	NOT IDENT.
CM-247	7.459E-03	2.147E-02	3.784E-02	0.000E+00	NOT IDENT.
CF-249	-1.215E-02	2.207E-02	3.662E-02	0.000E+00	NOT IDENT.
CF-251	4.624E-03	7.525E-02	1.283E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004732.CNF;1
Sample date        : 28-DEC-2009 00:00:00 Acquisition date : 4-JAN-2010 14:05:52.
Sample ID          : G1202004732          Sample quantity  : 1.37860E+02 GRAM
Detector name      : GAM22                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:00.99  0.0%
Energy tolerance  : 1.50000 keV          Analyst Initials : MXR1
Abundance limit   : 75.00000             Sensitivity       : 5.00000
Batch ID          : 936923               Detector SN#      :
Matrix Spike ID   :                     LCS ID           : 1032-A
*****

```

## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TL-208	277.35	-----	6.80	6.182E+00	-----	Line Not Found	-----
	510.84	109	21.60	4.298E+00	3.187E-01	3.187E-01	58.83
	583.14	21	84.20*	3.929E+00	1.691E-02	1.691E-02	216.84
	860.37	-----	12.46	2.924E+00	-----	Line Not Found	-----
ANH-511	511.00	109	100.00*	4.298E+00	6.883E-02	6.883E-02	58.24

Flag: "\*" = Keyline



Total number of lines in spectrum 4  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 4 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TL-208	1.41E+10Y	1.00	1.691E-02	1.691E-02	3.667E-02	216.84	
ANH-511	1.00E+09Y	1.00	6.883E-02	6.883E-02	4.009E-02	58.24	
Total Activity :			8.574E-02	8.574E-02			

Grand Total Activity : 8.574E-02 8.574E-02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Unidentified Energy Lines  
Sample ID : G1202004732

Page : 3  
Acquisition date : 4-JAN-2010 14:05:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	64.30	56	198	4.23	128.85	123	14	7.75E-03	****	4.52E+00	T
0	185.83	13	161	1.17	371.68	367	9	1.80E-03	****	7.61E+00	T

Flags: "T" = Tentatively associated



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004732.CNF;1
* Acquisition date   : 4-JAN-2010 14:05:52.  Detector SN#      :
* Detector ID        : GAM22                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:00.99             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 28-DEC-2009 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202004732          Analyst initials: MXR1
* Batch Number       : 936923              Sample Quantity : 1.37860E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 2-DEC-2009 16:47:28.08MS Isotope      :
* MSD ID            :                               MSD Isotope :
* LCS ID            : 1032-A                      LCS Isotope  :
*****

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## Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-208	1.691E-02	3.667E-02	2.974E-02	3.225E-03	0.569
ANH-511	6.883E-02	4.009E-02	2.330E-02	2.334E-03	2.955

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.413E-02		1.606E-01	2.641E-01	2.756E-02	0.129
NA-22	-4.296E-03		1.843E-02	2.951E-02	2.544E-03	-0.146
NA-24	-2.654E-05		4.551E-05	Half-Life too short		
AL-26	-6.436E-03		1.435E-02	2.108E-02	1.724E-03	-0.305
K-40	-1.427E-01		2.683E-01	4.499E-01	4.121E-02	-0.317
TI-44	-1.061E-02		1.447E-02	2.196E-02	1.862E-03	-0.483
SC-46	9.418E-03		1.841E-02	3.212E-02	3.595E-03	0.293
V-48	1.073E-02		2.719E-02	4.647E-02	4.874E-03	0.231
CR-51	1.384E-02		1.800E-01	3.025E-01	3.917E-02	0.046
MN-52	-4.311E-03		5.148E-02	8.318E-02	7.433E-03	-0.052



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MN-54	1.770E-02		1.855E-02	3.346E-02	3.717E-03	0.529
CO-56	5.915E-03		1.894E-02	3.250E-02	3.618E-03	0.182
CO-57	8.009E-03		1.392E-02	2.282E-02	1.882E-03	0.351
CO-58	2.692E-03		1.742E-02	2.960E-02	3.277E-03	0.091
FE-59	1.085E-02		3.419E-02	5.792E-02	5.676E-03	0.187
CO-60	-1.045E-02		2.130E-02	3.285E-02	2.929E-03	-0.318
ZN-65	2.195E-02		4.519E-02	7.701E-02	6.869E-03	0.285
GE-68	-2.502E-01		5.703E-01	8.742E-01	8.241E-02	-0.286
AS-73	-2.708E-01		3.575E-01	5.381E-01	4.066E-02	-0.503
AS-74	-1.677E-02		3.792E-02	6.050E-02	6.271E-03	-0.277
SE-75	2.001E-02		2.507E-02	4.211E-02	5.668E-03	0.475
BR-77	2.224E-01		7.164E-01	1.113E+00	1.120E-01	0.200
SR-82	-1.036E-01		1.621E-01	2.434E-01	2.669E-02	-0.425
RB-83	9.589E-03		3.985E-02	6.150E-02	6.189E-03	0.156
RB-84	-8.581E-03		3.145E-02	5.074E-02	5.675E-03	-0.169
KR-85	2.162E+01		5.670E+00	9.836E+00	9.870E-01	2.198
SR-85	1.024E-01		2.686E-02	4.659E-02	4.675E-03	2.198
RB-86	-1.175E-01		2.875E-01	4.436E-01	4.186E-02	-0.265
Y-88	1.693E-02		1.994E-02	3.714E-02	3.002E-03	0.456
ZR-88	1.068E-02		1.583E-02	2.725E-02	2.537E-03	0.392
Y-91	1.074E+00		7.072E+00	1.198E+01	9.853E-01	0.090
NB-94	-1.214E-02		1.985E-02	3.065E-02	3.285E-03	-0.396
NB-95	-6.198E-03		2.099E-02	3.301E-02	3.610E-03	-0.188
NB-95M	-9.005E-02		6.859E-02	1.013E-01	1.340E-02	-0.889
ZR-95	-2.553E-02		3.649E-02	5.484E-02	6.366E-03	-0.466
NB-97	-6.312E-07		1.461E-05	Half-Life	too short	
ZR-97	2.255E-03		3.799E-04	Half-Life	too short	
MO-99	6.766E-01		9.398E-01	1.621E+00	2.683E-01	0.417
TC-99M	-7.860E+00		9.593E+00	Half-Life	too short	
RH-101	1.087E-03		2.114E-02	3.205E-02	3.496E-03	0.034
RH-102	2.629E-04		1.581E-02	2.560E-02	2.518E-03	0.010
RU-103	-9.323E-03		2.060E-02	3.178E-02	4.770E-03	-0.293
RH-106	8.070E-02		1.674E-01	2.872E-01	4.194E-02	0.281
RU-106	8.070E-02		1.672E-01	2.872E-01	3.000E-02	0.281
AG-108M	5.824E-03		1.807E-02	3.019E-02	2.989E-03	0.193
CD-109	-1.554E-01		3.604E-01	5.427E-01	5.150E-02	-0.286
AG-110M	-6.103E-04		1.697E-02	2.777E-02	2.985E-03	-0.022
IN-111	2.647E-02		9.587E-02	1.576E-01	2.000E-02	0.168
IN-113M	1.200E-02		2.361E-02	4.021E-02	3.840E-03	0.298
SN-113	1.200E-02		2.361E-02	4.021E-02	3.840E-03	0.298
IN-114M	5.956E-02		9.410E-02	1.432E-01	1.522E-02	0.416
CD-115	-4.491E-01		6.308E-01	9.559E-01	9.653E-02	-0.470
SN-117M	-7.364E-03		2.302E-02	3.412E-02	3.236E-03	-0.216
SB-122	-3.936E-02		1.577E-01	2.572E-01	2.636E-02	-0.153
I-123	-1.156E-04		1.291E-04	Half-Life	too short	
TE-123M	-7.599E-03		1.698E-02	2.503E-02	2.390E-03	-0.304
I-124	-9.353E-02		1.131E-01	1.749E-01	1.817E-02	-0.535
SB-124	8.594E-03		4.631E-02	7.873E-02	7.003E-03	0.109



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	1.524E-02		5.405E-02	9.001E-02	8.733E-03	0.169
TE-125M	9.556E-01		4.599E+00	7.441E+00	7.524E-01	0.128
I-126	3.005E-02		5.990E-02	1.028E-01	1.086E-02	0.292
SB-126	2.906E-02		4.840E-02	8.321E-02	8.973E-03	0.349
SN-126	-2.485E-02		3.607E-02	5.333E-02	5.036E-03	-0.466
SB-127	-2.295E-04		1.897E-01	3.104E-01	3.554E-02	-0.001
XE-127	-1.939E-02		2.324E-02	3.621E-02	4.014E-03	-0.535
I-131	1.878E-03		3.471E-02	5.766E-02	6.371E-03	0.033
TE-132	-6.233E-02		7.808E-02	1.195E-01	2.017E-02	-0.522
BA-133	-2.195E-02		2.495E-02	3.854E-02	5.759E-03	-0.570
I-133	4.919E-06		3.926E-06	Half-Life	too short	
CS-134	8.552E-03		2.536E-02	4.024E-02	4.454E-03	0.213
CS-135	-2.005E-02		9.202E-02	1.456E-01	2.105E-02	-0.138
I-135	1.304E+00		7.071E+00	Half-Life	too short	
CS-136	-9.913E-03		3.754E-02	5.940E-02	6.005E-03	-0.167
BA-137M	-4.963E-03		1.746E-02	2.785E-02	2.937E-03	-0.178
CS-137	-5.246E-03		1.845E-02	2.944E-02	3.108E-03	-0.178
CE-139	-1.148E-02		1.606E-02	2.570E-02	2.521E-03	-0.447
BA-140	-2.135E-02		8.854E-02	1.446E-01	4.855E-02	-0.148
LA-140	-2.143E-04		3.614E-02	6.015E-02	5.273E-03	-0.004
CE-141	1.735E-02		2.859E-02	4.950E-02	4.506E-03	0.351
CE-143	-2.796E-02		1.559E+00	2.624E+00	6.258E-01	-0.011
CE-144	-5.508E-02		9.988E-02	1.634E-01	2.537E-02	-0.337
PM-144	2.934E-02		2.077E-02	3.720E-02	3.977E-03	0.789
PR-144	1.981E+00		1.402E+00	2.511E+00	2.684E-01	0.789
PM-146	4.518E-03		2.409E-02	3.969E-02	4.612E-03	0.114
ND-147	1.115E-01		1.889E-01	3.295E-01	5.224E-02	0.338
PM-149	-3.141E+00		5.222E+00	7.934E+00	1.500E+00	-0.396
EU-152	-3.232E-04		5.482E-02	9.113E-02	1.095E-02	-0.004
GD-153	1.304E-02		3.846E-02	6.322E-02	5.559E-03	0.206
EU-154	-1.270E-02		5.161E-02	8.245E-02	9.318E-03	-0.154
EU-155	-4.338E-02		5.407E-02	8.184E-02	7.025E-03	-0.530
TB-160	-1.159E-02		6.828E-02	1.114E-01	1.246E-02	-0.104
HO-166M	2.231E-02		3.198E-02	5.538E-02	5.954E-03	0.403
TM-171	-1.053E+01		1.277E+01	1.730E+01	1.307E+00	-0.609
LU-176	-6.649E-04		1.356E-02	2.270E-02	2.977E-03	-0.029
LU-177	-7.463E-02		2.758E-01	4.449E-01	5.022E-02	-0.168
LU-177M	2.057E-02		9.391E-02	1.562E-01	1.477E-02	0.132
HF-181	-1.016E-02		2.050E-02	3.159E-02	3.118E-03	-0.322
W-181	2.546E-01	+	3.021E-01	2.278E-01	1.698E-02	1.117
TA-182	-6.031E-02		7.957E-02	1.198E-01	9.961E-03	-0.504
RE-183	3.040E-02		5.812E-02	9.947E-02	9.596E-03	0.306
RE-184	6.214E-02		1.333E-01	2.210E-01	2.867E-02	0.281
OS-185	-2.161E-02		2.178E-02	3.226E-02	3.390E-03	-0.670
RE-188	6.839E-02		8.598E-02	1.495E-01	1.395E-02	0.457
W-188	4.922E-01		3.940E+00	6.689E+00	9.135E-01	0.074
IR-192	-1.912E-03		1.841E-02	3.062E-02	3.914E-03	-0.062
AU-195	-3.049E-02		1.117E-01	1.767E-01	1.541E-02	-0.173



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-200	-8.035E-02		2.166E+00	3.574E+00	3.764E-01	-0.022
TL-201	-1.081E+00		7.060E-01	1.064E+00	1.048E-01	-1.017
TL-202	7.779E-03		2.376E-02	3.973E-02	3.824E-03	0.196
HG-203	1.350E-02		2.186E-02	3.622E-02	5.127E-03	0.373
BI-207	1.000E-02		2.734E-02	4.633E-02	4.448E-03	0.216
TL-207	-3.380E-01		3.900E-01	6.070E-01	1.206E-01	-0.557
PO-209	9.639E-01		3.775E+00	6.421E+00	7.192E-01	0.150
BI-210	4.531E-02		1.664E+00	2.682E+00	2.492E-01	0.017
PB-210	4.531E-02		1.664E+00	2.682E+00	2.492E-01	0.017
PO-210	4.531E-02		1.664E+00	2.682E+00	2.256E-01	0.017
BI-211	-4.182E-02		1.355E-01	2.114E-01	2.466E-02	-0.198
PB-211	3.375E-01		5.675E-01	9.027E-01	5.667E-01	0.374
BI-212	8.584E-02		1.555E-01	2.528E-01	3.019E-02	0.340
PB-212	-1.170E-02		3.733E-02	5.963E-02	7.879E-03	-0.196
PO-212	-1.170E-02		3.733E-02	5.963E-02	7.879E-03	-0.196
BI-214	7.597E-05		4.760E-02	7.889E-02	9.173E-03	0.001
PB-214	-4.322E-03		4.691E-02	7.413E-02	9.449E-03	-0.058
PO-214	-4.322E-03		4.691E-02	7.413E-02	9.449E-03	-0.058
PO-215	-3.380E-01		3.900E-01	6.070E-01	1.206E-01	-0.557
PO-216	-1.170E-02		3.733E-02	5.963E-02	7.879E-03	-0.196
PO-218	-4.322E-03		4.691E-02	7.413E-02	9.449E-03	-0.058
RN-219	4.771E-03		2.492E-01	4.096E-01	6.337E-02	0.012
RN-220	-2.101E+00		1.306E+01	2.151E+01	2.192E+00	-0.098
RA-223	-3.380E-01		3.900E-01	6.070E-01	1.206E-01	-0.557
RA-224	7.666E-02		3.842E-01	6.293E-01	7.877E-02	0.122
RA-226	7.597E-05		4.760E-02	7.889E-02	9.173E-03	0.001
AC-227	-4.852E-02		2.307E-01	3.665E-01	6.689E-02	-0.132
TH-227	-4.852E-02		2.307E-01	3.665E-01	7.545E-02	-0.132
AC-228	-2.530E-02		8.425E-02	1.329E-01	1.761E-02	-0.190
RA-228	-2.530E-02		8.425E-02	1.329E-01	1.761E-02	-0.190
TH-228	-1.178E-02		3.762E-02	6.009E-02	7.939E-03	-0.196
TH-229	-3.332E-01		2.743E-01	4.153E-01	4.465E-02	-0.802
TH-230	7.597E-05		4.760E-02	7.889E-02	9.173E-03	0.001
PA-231	-7.326E-01		9.296E-01	1.387E+00	2.591E-01	-0.528
TH-231	-3.380E-01		3.900E-01	6.070E-01	1.206E-01	-0.557
U-231	-3.576E-01		1.739E-01	2.428E-01	2.156E-02	-1.473
TH-232	-2.530E-02		8.425E-02	1.329E-01	1.761E-02	-0.190
PA-233	9.680E-04		3.550E-02	5.962E-02	7.810E-03	0.016
PA-234	4.005E-02		1.517E-01	2.569E-01	5.107E-02	0.156
PA-234M	-1.520E+00		2.690E+00	4.155E+00	4.761E-01	-0.366
TH-234	8.851E-01	+	1.059E+00	1.019E+00	1.774E-01	0.869
U-234	7.597E-05		4.760E-02	7.889E-02	9.173E-03	0.001
U-235	-6.400E-02		1.239E-01	1.931E-01	3.407E-02	-0.331
NP-236	-4.815E-02		5.087E-02	7.292E-02	6.970E-03	-0.660
NP-237	-3.224E-02		1.054E-01	1.597E-01	3.616E-02	-0.202
U-238	8.851E-01	+	1.059E+00	1.019E+00	1.774E-01	0.869
NP-239	-1.291E-02		1.025E-01	1.617E-01	1.336E-02	-0.080
AM-241	4.011E-02		6.905E-02	1.079E-01	8.431E-03	0.372



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	4.373E-03		2.334E-02	3.658E-02	2.982E-03	0.120
CM-243	1.447E-02		4.859E-02	7.940E-02	6.769E-03	0.182
AM-246	-4.639E-02		6.721E-02	1.023E-01	9.621E-03	-0.454
CM-247	7.459E-03		2.191E-02	3.677E-02	3.450E-03	0.203
CF-249	-1.215E-02		2.252E-02	3.556E-02	3.380E-03	-0.342
CF-251	4.624E-03		7.679E-02	1.227E-01	1.247E-02	0.038



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                                     DETECTOR DATA
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202004732
* Acquisition date   : 4-JAN-2010 14:05:52 Detector SN#      :
* Detector ID        : GAM22                      Sensitivity   : 5.000
* Geometry           : CAN                        Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000
* Elapsed real time  : 0 02:00:00.99             Half life ratio : 8.000
*****
*
*                                     SAMPLE DATA
*
* Sample date        : 28-DEC-2009 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202004732             Analyst initials: MXR1
* Batch Number       : 936923                  Sample Quantity : 1.3786E+02 GRAM
* Recovery           : 1.00000                 Carrier Weight  : 0.00000
*****
*
*                                     QC DATA
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28 MS Isotope      :
* MSD DPM             : 0.000                      MSD Isotope   :
* LCS DPM             : 0.000                      LCS Isotope   :
* LCSD DPM            : 0.000                      LCSD Isotope  :
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
TL-208	1.691E-02	3.594E-02	1.520E-02	1.834E-02
ANH-511	6.883E-02	3.928E-02	1.194E-02	2.004E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU	
BE-7	3.413E-02	1.574E-01	1.355E-01	8.028E-02	NOT IDENT.
NA-22	-4.296E-03	1.807E-02	1.485E-02	9.217E-03	NOT IDENT.
NA-24	-2.654E+01	8.920E+01	0.000E+00	4.551E+01	SHORT HLIF
AL-26	-6.436E-03	1.406E-02	1.053E-02	7.175E-03	NOT IDENT.
K-40	-1.427E-01	2.629E-01	2.258E-01	1.342E-01	NOT IDENT.
TI-44	-1.061E-02	1.418E-02	1.166E-02	7.236E-03	NOT IDENT.
SC-46	9.418E-03	1.804E-02	1.628E-02	9.206E-03	NOT IDENT.
V-48	1.073E-02	2.664E-02	2.351E-02	1.359E-02	NOT IDENT.
CR-51	1.384E-02	1.764E-01	1.564E-01	8.998E-02	NOT IDENT.
MN-52	-4.311E-03	5.045E-02	4.176E-02	2.574E-02	NOT IDENT.
MN-54	1.770E-02	1.818E-02	1.698E-02	9.277E-03	NOT IDENT.
CO-56	5.915E-03	1.856E-02	1.649E-02	9.471E-03	NOT IDENT.
CO-57	8.009E-03	1.364E-02	1.202E-02	6.958E-03	NOT IDENT.
CO-58	2.692E-03	1.707E-02	1.503E-02	8.708E-03	NOT IDENT.
FE-59	1.085E-02	3.350E-02	2.923E-02	1.709E-02	NOT IDENT.
CO-60	-1.045E-02	2.087E-02	1.651E-02	1.065E-02	NOT IDENT.
ZN-65	2.195E-02	4.429E-02	3.886E-02	2.259E-02	NOT IDENT.
GE-68	-2.502E-01	5.589E-01	4.414E-01	2.851E-01	NOT IDENT.
AS-73	-2.708E-01	3.503E-01	2.876E-01	1.787E-01	NOT IDENT.
AS-74	-1.677E-02	3.716E-02	3.091E-02	1.896E-02	NOT IDENT.
SE-75	2.001E-02	2.456E-02	2.186E-02	1.253E-02	NOT IDENT.
BR-77	2.224E-01	7.021E-01	5.700E-01	3.582E-01	NOT IDENT.
SR-82	-1.036E-01	1.588E-01	1.237E-01	8.104E-02	NOT IDENT.
RB-83	9.589E-03	3.905E-02	3.150E-02	1.992E-02	NOT IDENT.
RB-84	-8.581E-03	3.083E-02	2.572E-02	1.573E-02	NOT IDENT.



KR-85	2.162E+01	5.556E+00	5.040E+00	2.835E+00	NOT IDENT.
SR-85	1.024E-01	2.632E-02	2.388E-02	1.343E-02	NOT IDENT.
RB-86	-1.175E-01	2.818E-01	2.240E-01	1.438E-01	NOT IDENT.
Y-88	1.693E-02	1.954E-02	1.855E-02	9.969E-03	NOT IDENT.
ZR-88	1.068E-02	1.551E-02	1.404E-02	7.913E-03	NOT IDENT.
Y-91	1.074E+00	6.931E+00	6.037E+00	3.536E+00	NOT IDENT.
NB-94	-1.214E-02	1.945E-02	1.561E-02	9.924E-03	NOT IDENT.
NB-95	-6.198E-03	2.057E-02	1.678E-02	1.049E-02	NOT IDENT.
NB-95M	-9.005E-02	6.722E-02	5.271E-02	3.430E-02	NOT IDENT.
ZR-95	-2.553E-02	3.576E-02	2.789E-02	1.825E-02	NOT IDENT.
NB-97	-6.312E-01	2.864E+01	0.000E+00	1.461E+01	SHORT HLIF
ZR-97	2.255E+03	7.447E+02	0.000E+00	3.799E+02	SHORT HLIF
MO-99	6.766E-01	9.210E-01	8.247E-01	4.699E-01	NOT IDENT.
TC-99M	-7.860E+06	1.880E+07	0.000E+00	9.593E+06	SHORT HLIF
RH-101	1.087E-03	2.071E-02	1.672E-02	1.057E-02	NOT IDENT.
RH-102	2.629E-04	1.550E-02	1.314E-02	7.907E-03	NOT IDENT.
RU-103	-9.323E-03	2.018E-02	1.630E-02	1.030E-02	NOT IDENT.
RH-106	8.070E-02	1.640E-01	1.466E-01	8.368E-02	FAIL ABUN
RU-106	8.070E-02	1.638E-01	1.466E-01	8.358E-02	FAIL ABUN
AG-108M	5.824E-03	1.771E-02	1.552E-02	9.035E-03	NOT IDENT.
CD-109	-1.554E-01	3.531E-01	2.875E-01	1.802E-01	NOT IDENT.
AG-110M	-6.103E-04	1.663E-02	1.416E-02	8.483E-03	NOT IDENT.
IN-111	2.647E-02	9.395E-02	8.194E-02	4.793E-02	NOT IDENT.
IN-113M	1.200E-02	2.314E-02	2.071E-02	1.180E-02	NOT IDENT.
SN-113	1.200E-02	2.314E-02	2.071E-02	1.180E-02	NOT IDENT.
IN-114M	5.956E-02	9.222E-02	7.478E-02	4.705E-02	NOT IDENT.
CD-115	-4.491E-01	6.182E-01	4.895E-01	3.154E-01	NOT IDENT.
SN-117M	-7.364E-03	2.256E-02	1.788E-02	1.151E-02	NOT IDENT.
SB-122	-3.936E-02	1.545E-01	1.315E-01	7.883E-02	NOT IDENT.
I-123	-1.156E+02	2.530E+02	0.000E+00	1.291E+02	SHORT HLIF
TE-123M	-7.599E-03	1.664E-02	1.312E-02	8.489E-03	NOT IDENT.
I-124	-9.353E-02	1.109E-01	8.935E-02	5.657E-02	NOT IDENT.
SB-124	8.594E-03	4.539E-02	3.939E-02	2.316E-02	NOT IDENT.
SB-125	1.524E-02	5.297E-02	4.628E-02	2.703E-02	NOT IDENT.
TE-125M	9.556E-01	4.507E+00	3.926E+00	2.299E+00	NOT IDENT.
I-126	3.005E-02	5.870E-02	5.239E-02	2.995E-02	NOT IDENT.
SB-126	2.906E-02	4.743E-02	4.236E-02	2.420E-02	NOT IDENT.
SN-126	-2.485E-02	3.535E-02	2.826E-02	1.803E-02	FAIL ABUN
SB-127	-2.295E-04	1.859E-01	1.582E-01	9.486E-02	NOT IDENT.
XE-127	-1.939E-02	2.277E-02	1.889E-02	1.162E-02	NOT IDENT.
I-131	1.878E-03	3.402E-02	2.974E-02	1.735E-02	NOT IDENT.
TE-132	-6.233E-02	7.652E-02	6.220E-02	3.904E-02	NOT IDENT.
BA-133	-2.195E-02	2.445E-02	1.989E-02	1.248E-02	NOT IDENT.
I-133	4.919E+00	7.694E+00	0.000E+00	3.926E+00	SHORT HLIF
CS-134	8.552E-03	2.486E-02	2.044E-02	1.268E-02	NOT IDENT.
CS-135	-2.005E-02	9.018E-02	7.552E-02	4.601E-02	NOT IDENT.
I-135	1.304E+06	1.386E+07	0.000E+00	7.071E+06	SHORT HLIF
CS-136	-9.913E-03	3.679E-02	3.001E-02	1.877E-02	NOT IDENT.
BA-137M	-4.963E-03	1.711E-02	1.420E-02	8.729E-03	NOT IDENT.
CS-137	-5.246E-03	1.809E-02	1.501E-02	9.227E-03	NOT IDENT.
CE-139	-1.148E-02	1.574E-02	1.346E-02	8.030E-03	NOT IDENT.
BA-140	-2.135E-02	8.677E-02	7.405E-02	4.427E-02	NOT IDENT.
LA-140	-2.143E-04	3.542E-02	3.013E-02	1.807E-02	NOT IDENT.
CE-141	1.735E-02	2.801E-02	2.598E-02	1.429E-02	NOT IDENT.
CE-143	-2.796E-02	1.528E+00	1.359E+00	7.795E-01	NOT IDENT.
CE-144	-5.508E-02	9.789E-02	8.590E-02	4.994E-02	NOT IDENT.
PM-144	2.934E-02	2.036E-02	1.895E-02	1.039E-02	NOT IDENT.
PR-144	1.981E+00	1.374E+00	1.279E+00	7.010E-01	NOT IDENT.
PM-146	4.518E-03	2.361E-02	2.039E-02	1.204E-02	NOT IDENT.
ND-147	1.115E-01	1.851E-01	1.687E-01	9.445E-02	NOT IDENT.
PM-149	-3.141E+00	5.118E+00	4.112E+00	2.611E+00	NOT IDENT.
EU-152	-3.232E-04	5.372E-02	4.706E-02	2.741E-02	NOT IDENT.
GD-153	1.304E-02	3.769E-02	3.343E-02	1.923E-02	NOT IDENT.
EU-154	-1.270E-02	5.058E-02	4.149E-02	2.580E-02	NOT IDENT.
EU-155	-4.338E-02	5.299E-02	4.321E-02	2.704E-02	NOT IDENT.
TB-160	-1.159E-02	6.691E-02	5.648E-02	3.414E-02	NOT IDENT.
HO-166M	2.231E-02	3.134E-02	2.820E-02	1.599E-02	FAIL ABUN
TM-171	-1.053E+01	1.251E+01	9.209E+00	6.384E+00	NOT IDENT.
LU-176	-6.649E-04	1.329E-02	1.175E-02	6.781E-03	NOT IDENT.
LU-177	-7.463E-02	2.702E-01	2.320E-01	1.379E-01	NOT IDENT.
LU-177M	2.057E-02	9.203E-02	8.039E-02	4.695E-02	NOT IDENT.
HF-181	-1.016E-02	2.009E-02	1.621E-02	1.025E-02	FAIL ABUN
W-181	2.546E-01	2.961E-01	1.214E-01	1.510E-01	FAIL ABUN
TA-182	-6.031E-02	7.798E-02	6.033E-02	3.978E-02	NOT IDENT.
RE-183	3.040E-02	5.695E-02	5.210E-02	2.906E-02	NOT IDENT.
RE-184	6.214E-02	1.306E-01	1.148E-01	6.663E-02	NOT IDENT.
OS-185	-2.161E-02	2.134E-02	1.646E-02	1.089E-02	NOT IDENT.
RE-188	6.839E-02	8.426E-02	7.837E-02	4.299E-02	NOT IDENT.



W-188	4.922E-01	3.861E+00	3.465E+00	1.970E+00	FAIL ABUN
IR-192	-1.912E-03	1.804E-02	1.584E-02	9.204E-03	NOT IDENT.
AU-195	-3.049E-02	1.094E-01	9.339E-02	5.583E-02	FAIL ABUN
TL-200	-8.035E-02	2.123E+00	1.843E+00	1.083E+00	NOT IDENT.
TL-201	-1.081E+00	6.918E-01	5.569E-01	3.530E-01	NOT IDENT.
TL-202	7.779E-03	2.329E-02	2.042E-02	1.188E-02	NOT IDENT.
HG-203	1.350E-02	2.142E-02	1.878E-02	1.093E-02	NOT IDENT.
BI-207	1.000E-02	2.679E-02	2.340E-02	1.367E-02	NOT IDENT.
TL-207	-3.380E-01	3.822E-01	3.138E-01	1.950E-01	NOT IDENT.
PO-209	9.639E-01	3.700E+00	3.254E+00	1.888E+00	NOT IDENT.
BI-210	4.531E-02	1.631E+00	1.437E+00	8.320E-01	NOT IDENT.
PB-210	4.531E-02	1.631E+00	1.437E+00	8.320E-01	NOT IDENT.
PO-210	4.531E-02	1.631E+00	1.437E+00	8.320E-01	NOT IDENT.
BI-211	-4.182E-02	1.328E-01	1.091E-01	6.776E-02	NOT IDENT.
PB-211	3.375E-01	5.562E-01	4.647E-01	2.838E-01	NOT IDENT.
BI-212	8.584E-02	1.524E-01	1.286E-01	7.774E-02	NOT IDENT.
PB-212	-1.170E-02	3.659E-02	3.101E-02	1.867E-02	NOT IDENT.
PO-212	-1.170E-02	3.659E-02	3.101E-02	1.867E-02	NOT IDENT.
BI-214	7.597E-05	4.664E-02	4.029E-02	2.380E-02	NOT IDENT.
PB-214	-4.322E-03	4.597E-02	3.826E-02	2.345E-02	NOT IDENT.
PO-214	-4.322E-03	4.597E-02	3.826E-02	2.345E-02	NOT IDENT.
PO-215	-3.380E-01	3.822E-01	3.138E-01	1.950E-01	NOT IDENT.
PO-216	-1.170E-02	3.659E-02	3.101E-02	1.867E-02	NOT IDENT.
PO-218	-4.322E-03	4.597E-02	3.826E-02	2.345E-02	NOT IDENT.
RN-219	4.771E-03	2.443E-01	2.109E-01	1.246E-01	NOT IDENT.
RN-220	-2.101E+00	1.280E+01	1.100E+01	6.532E+00	NOT IDENT.
RA-223	-3.380E-01	3.822E-01	3.138E-01	1.950E-01	NOT IDENT.
RA-224	7.666E-02	3.765E-01	3.272E-01	1.921E-01	NOT IDENT.
RA-226	7.597E-05	4.664E-02	4.029E-02	2.380E-02	NOT IDENT.
AC-227	-4.852E-02	2.261E-01	1.903E-01	1.153E-01	NOT IDENT.
TH-227	-4.852E-02	2.261E-01	1.903E-01	1.154E-01	NOT IDENT.
AC-228	-2.530E-02	8.257E-02	6.734E-02	4.213E-02	NOT IDENT.
RA-228	-2.530E-02	8.257E-02	6.734E-02	4.213E-02	NOT IDENT.
TH-228	-1.178E-02	3.686E-02	3.125E-02	1.881E-02	NOT IDENT.
TH-229	-3.332E-01	2.688E-01	2.168E-01	1.371E-01	NOT IDENT.
TH-230	7.597E-05	4.664E-02	4.029E-02	2.380E-02	NOT IDENT.
PA-231	-7.326E-01	9.111E-01	7.191E-01	4.648E-01	NOT IDENT.
TH-231	-3.380E-01	3.822E-01	3.138E-01	1.950E-01	NOT IDENT.
U-231	-3.576E-01	1.704E-01	1.284E-01	8.693E-02	NOT IDENT.
TH-232	-2.530E-02	8.257E-02	6.734E-02	4.213E-02	NOT IDENT.
PA-233	9.680E-04	3.479E-02	3.085E-02	1.775E-02	NOT IDENT.
PA-234	4.005E-02	1.487E-01	1.301E-01	7.585E-02	FAIL ABUN
PA-234M	-1.520E+00	2.636E+00	2.101E+00	1.345E+00	NOT IDENT.
TH-234	8.851E-01	1.038E+00	5.430E-01	5.297E-01	FAIL ABUN
U-234	7.597E-05	4.664E-02	4.029E-02	2.380E-02	NOT IDENT.
U-235	-6.400E-02	1.214E-01	1.014E-01	6.194E-02	FAIL ABUN
NP-236	-4.815E-02	4.985E-02	3.820E-02	2.543E-02	NOT IDENT.
NP-237	-3.224E-02	1.033E-01	8.464E-02	5.272E-02	NOT IDENT.
U-238	8.851E-01	1.038E+00	5.430E-01	5.297E-01	FAIL ABUN
NP-239	-1.291E-02	1.005E-01	8.521E-02	5.125E-02	NOT IDENT.
AM-241	4.011E-02	6.767E-02	5.755E-02	3.453E-02	NOT IDENT.
AM-243	4.373E-03	2.287E-02	1.944E-02	1.167E-02	NOT IDENT.
CM-243	1.447E-02	4.762E-02	4.194E-02	2.429E-02	NOT IDENT.
AM-246	-4.639E-02	6.587E-02	5.164E-02	3.361E-02	NOT IDENT.
CM-247	7.459E-03	2.147E-02	1.893E-02	1.096E-02	NOT IDENT.
CF-249	-1.215E-02	2.207E-02	1.832E-02	1.126E-02	NOT IDENT.
CF-251	4.624E-03	7.525E-02	6.419E-02	3.839E-02	NOT IDENT.



\*\*\*\*\*  
 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON ,SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY	MDA COUNTS
46.50	102.0585
46.50	102.0585
46.50	102.0585
48.70	131.4023
49.72	103.5960
51.35	100.6612
52.39	94.6281
52.97	101.3775
53.15	116.3492
53.44	112.7667
54.07	111.2024
56.28	116.0113
56.28	116.0126
57.37	113.6914
57.53	113.7656
57.53	113.7665
57.60	120.4364
57.98	123.4718
57.98	123.4718
59.32	104.5627
59.32	104.5627
59.40	104.5958
59.54	104.6540
59.72	110.4675
60.01	110.5944
61.10	115.3958
61.14	115.4137
61.30	115.4855
63.00	123.9933
63.29	124.1304
63.29	124.1304
63.58	124.2668
64.28	124.5951
65.12	124.9868
65.20	125.0241
65.20	125.0241
66.05	125.4173
66.72	116.3941
66.83	116.4411
66.91	116.4755
67.20	119.5503
67.20	119.5503
67.75	119.7882
67.85	119.8318
68.90	120.2838
68.90	120.2838
69.30	118.9679
69.67	110.1904
70.82	117.2142
70.82	117.2142
70.83	117.2184
72.80	138.4920
72.87	138.5257
72.87	138.5257
74.67	122.2038
74.81	122.2610
74.81	122.2610
74.81	122.2610
74.81	122.2610
74.81	122.2610
74.81	122.2610
74.81	122.2610
74.97	122.3269
75.28	130.5498
75.70	123.6382
77.11	143.5596
77.11	143.5596



77.11	143.5596
77.11	143.5596
77.11	143.5596
77.11	143.5596
77.11	143.5596
78.38	134.9534
79.62	130.3609
79.80	110.9218
79.80	110.9218
80.11	121.3124
80.18	121.3394
80.30	128.5865
80.30	128.5865
80.57	128.6964
81.00	141.2436
81.07	141.2750
81.07	141.2750
81.07	141.2750
81.07	141.2750
82.60	130.5559
83.37	125.6736
83.78	115.4342
83.78	115.4342
83.78	115.4342
83.78	115.4342
84.21	122.8764
84.90	130.4404
85.43	141.1029
86.29	141.4696
86.50	141.5588
86.54	141.5760
86.59	156.2815
86.72	156.3428
86.79	157.4242
86.94	157.4959
87.30	153.4608
87.30	153.4608
87.30	153.4608
87.30	153.4608
87.30	153.4608
87.30	153.4608
87.57	153.5841
87.88	148.4614
88.03	148.5273
88.36	134.9648
88.47	135.0091
89.95	300.8544
91.11	159.4383
92.29	153.5808
92.38	153.6204
92.38	153.6204
93.35	158.3234
94.00	191.8381
94.67	232.9995
94.67	233.0028
94.90	297.6192
94.90	297.6192
94.90	297.6192
94.90	297.6192
95.87	233.7843
95.87	233.7843
96.73	172.7873
97.43	141.7414
98.44	152.9824
98.44	152.9831
98.88	155.3385
99.55	157.7972
99.55	157.7972
99.86	151.3935
100.00	151.4508
100.10	158.0325
103.18	127.4627
103.76	134.2597
105.00	153.4622
105.31	152.4803
108.00	164.6595
109.28	157.3786



111.00	144.6040
111.00	144.6040
111.76	171.8301
112.95	172.3336
115.19	161.9485
116.30	152.1615
117.00	151.2783
117.00	151.2783
117.66	157.2118
121.11	137.8162
121.62	139.1290
121.78	139.1800
122.06	146.1758
122.32	146.2630
122.32	146.2630
122.32	146.2630
122.32	146.2630
123.07	155.7449
127.23	151.3926
129.76	161.6121
131.20	133.9266
133.02	145.9549
133.54	153.2030
135.34	162.6828
136.00	163.8006
136.25	163.8876
136.48	164.8588
140.51	186.9194
140.51	0.0000
142.18	171.3308
142.65	172.3972
143.76	169.1677
144.24	158.4656
144.24	158.4656
144.24	158.4656
144.24	158.4656
145.22	156.9647
145.44	157.9424
147.16	179.4346
152.43	176.6968
152.70	176.7891
153.22	180.6531
154.21	162.5280
154.21	162.5280
154.21	162.5280
154.21	162.5280
155.03	151.6842
156.02	150.1175
158.56	164.8059
159.00	0.0000
159.00	172.3959
160.31	192.4350
161.27	197.4567
162.32	168.7720
162.64	163.2431
163.35	148.4252
163.89	139.1678
165.85	183.0739
167.43	194.0065
171.28	156.2712
171.86	165.0147
172.10	165.0847
176.55	167.3279
176.60	167.3425
181.06	164.3531
184.41	169.9546
185.71	181.6491
186.00	154.7697
190.27	124.3671
192.34	166.8377
193.63	168.1725
197.04	138.2513
198.01	148.4225
198.60	149.5560
200.40	169.9741
201.83	180.3722
202.84	181.6559
205.31	160.1803



208.36	170.0303
208.81	178.2478
209.75	175.4563
209.75	175.4563
210.97	151.3907
215.65	147.3245
216.55	134.2002
218.09	136.5545
222.10	137.3450
223.80	126.2909
226.40	146.4960
227.00	141.4204
227.08	141.4360
227.20	147.7007
228.16	154.1482
228.18	154.1527
228.18	154.1527
231.56	153.8312
235.69	206.2716
236.00	198.9899
236.00	198.9899
238.63	154.2640
238.63	154.2640
238.63	154.2640
238.63	154.2640
239.00	144.8267
240.98	164.2902
241.98	193.1667
241.98	193.1667
241.98	193.1667
244.69	140.6025
245.39	133.2693
247.94	139.0643
248.90	147.8063
249.79	156.5552
252.40	145.2492
252.85	128.1080
252.85	128.1080
254.15	0.0000
256.20	145.9563
256.20	145.9563
260.50	140.2277
260.90	145.7365
262.80	152.6230
264.65	119.1007
268.24	141.5760
268.79	148.2619
269.46	154.9782
269.46	154.9782
269.46	154.9782
269.46	154.9782
271.23	133.2817
273.65	134.7760
276.40	147.4129
277.35	148.6890
277.60	139.8524
277.60	139.8524
278.00	142.1406
278.60	140.0197
279.20	126.7749
279.53	126.8236
280.46	126.9628
281.68	129.3760
283.67	140.8560
284.30	140.9598
285.00	138.8359
285.90	136.7399
286.10	128.9240
286.10	128.9240
287.40	124.6260
288.45	0.0000
290.67	134.3364
290.80	134.3565
291.72	140.8170
293.26	124.7862
293.70	122.1345
295.21	127.7813
295.21	127.7813



295.21	127.7813
295.96	117.9125
296.50	110.7233
297.23	109.9059
298.57	125.5359
299.80	128.4405
299.80	128.4405
300.09	130.3060
300.09	130.3060
300.09	130.3060
300.09	130.3060
300.12	130.3094
301.29	112.2300
302.84	118.8218
303.76	108.8780
303.91	108.8955
304.40	110.7862
304.40	110.7862
304.84	108.0913
306.84	111.0831
308.46	118.6368
311.98	109.8571
316.51	117.8130
318.01	112.4272
319.02	112.5468
319.41	120.0383
320.08	120.1218
323.87	138.3652
323.87	138.3652
323.87	138.3652
323.87	138.3652
325.23	133.8792
328.77	102.4230
333.44	129.3523
334.20	137.9568
334.20	137.9568
334.30	135.1360
338.28	110.0627
338.28	110.0627
338.28	110.0627
338.28	110.0627
338.32	110.0683
338.32	110.0683
338.32	110.0683
340.50	113.1618
340.57	113.1691
344.27	108.8149
345.85	109.9421
350.59	110.4559
351.07	108.5859
351.92	102.9052
351.92	102.9052
351.92	102.9052
355.39	0.0000
356.01	121.6595
364.48	101.2337
366.43	102.3955
367.43	102.4916
367.94	101.5638
369.80	90.9792
374.96	96.3324
383.85	97.1183
387.95	104.4399
388.63	111.4709
391.69	85.8278
391.69	85.8278
392.90	80.9249
398.62	93.3837
400.65	102.6026
401.10	106.6690
401.81	109.7558
402.60	100.7629
404.84	87.8337
410.95	79.1626
411.60	82.2528
413.65	86.4651
414.70	86.5429
415.30	88.6238



415.76	92.7351
417.63	0.0000
418.52	77.6291
423.70	95.4067
427.08	88.4733
427.89	91.6205
432.53	86.8034
433.93	77.5919
439.47	82.0985
439.56	69.6327
439.89	74.8494
443.98	78.2245
444.90	72.0196
445.03	72.0272
445.03	72.0272
445.03	72.0272
445.03	72.0272
453.90	77.7903
463.38	84.7207
468.07	82.9007
473.00	69.3434
475.06	73.7252
475.35	73.7421
476.78	70.6116
477.59	72.7954
477.96	71.7453
482.03	78.4082
484.57	64.5674
487.03	81.9338
490.36	62.6821
492.35	60.6095
497.08	84.7117
507.63	0.0000
510.53	0.0000
510.84	62.5191
511.00	62.5260
511.85	62.5633
511.85	62.5633
513.99	60.4597
513.99	60.4597
520.41	73.1548
520.65	73.1678
527.90	88.7988
528.96	0.0000
529.64	67.6043
529.87	0.0000
531.02	63.9617
537.32	67.0298
543.00	57.9421
546.56	0.0000
549.76	61.9596
552.65	61.1385
555.20	65.0104
563.23	67.2472
563.90	72.0154
568.70	76.0417
569.32	76.0710
569.50	78.9338
569.67	78.9422
573.80	80.1052
574.00	86.6555
574.64	93.2353
578.91	80.3684
579.30	72.1844
583.14	60.4378
585.48	65.8803
591.81	67.5206
592.07	72.3541
593.00	79.1539
595.88	78.3287
600.56	66.9182
602.52	0.0000
602.71	100.0243
602.71	100.0243
603.60	111.7385
604.41	111.7946
604.70	105.0073
609.31	79.9530



609.31	79.9530
609.31	79.9530
609.31	79.9530
610.33	69.2709
612.46	80.1065
614.37	98.7808
618.01	79.3949
621.84	56.9817
621.84	56.9817
631.29	62.2412
633.02	74.1730
633.10	75.1650
634.78	64.3494
635.90	62.4104
636.97	59.4763
645.85	74.7299
646.12	71.7524
656.30	65.1560
657.75	54.1747
657.90	0.0000
661.65	56.3053
661.65	56.3053
664.57	53.3774
666.33	49.3978
666.33	49.3978
675.00	52.6771
677.61	63.9126
685.20	60.1067
692.80	85.9312
695.00	71.6947
696.49	62.5277
696.49	62.5277
697.00	65.6211
697.49	76.9196
698.33	88.2413
698.50	88.2501
699.00	84.1671
702.63	84.3323
706.10	61.8213
706.58	0.0000
706.67	66.9942
709.31	63.9917
711.68	49.6045
713.82	69.3187
717.42	54.9388
720.50	47.7604
721.93	60.2644
722.20	59.2335
722.78	68.6077
722.78	68.6077
722.89	68.6117
722.95	68.6130
723.30	71.7458
724.18	60.3352
727.18	45.8432
733.00	73.1531
735.90	47.0984
739.58	47.1872
742.81	56.7191
744.21	69.3717
747.13	49.4747
751.79	50.6475
752.31	44.3285
753.82	63.3740
755.35	64.4799
756.15	66.6209
756.87	65.5874
763.93	48.8348
765.79	65.8813
766.42	72.2791
766.84	71.2311
776.49	57.6854
778.00	63.0728
778.57	60.9521
778.89	54.5444
783.80	42.8833
785.46	45.0642
792.07	47.3614



795.84	42.0556
796.30	47.4581
798.80	59.3942
801.93	48.6685
805.60	44.5748
810.29	40.9515
810.76	40.9607
815.85	43.8584
817.79	46.7006
818.51	39.2417
819.60	47.6746
826.30	42.1985
828.27	55.3773
831.60	55.4627
831.96	54.5318
834.83	41.4242
836.80	0.0000
846.75	44.4912
848.13	46.4135
856.28	0.0000
856.80	51.3510
860.37	52.3854
867.32	46.8168
867.82	53.5166
871.10	43.0672
873.19	44.0652
874.81	45.0551
875.33	0.0000
876.40	38.3719
879.36	48.0277
880.27	48.0469
880.51	46.1300
881.50	49.0345
883.24	45.2231
884.67	46.2146
889.25	36.6601
896.60	40.6487
898.02	36.7999
899.00	33.9087
903.28	46.5896
911.07	32.1374
911.07	32.1374
911.07	32.1374
919.63	22.4806
920.93	27.3828
925.00	46.0427
925.24	44.0881
926.50	37.2499
935.52	39.3590
937.48	32.4976
944.10	45.4240
946.00	38.5423
949.00	30.6740
962.29	57.7036
964.01	56.7475
966.15	43.8435
968.20	44.8768
969.11	40.9035
969.11	40.9035
969.11	40.9035
977.42	45.0439
980.50	40.0886
983.50	40.1367
989.30	43.2467
996.32	47.4016
1001.03	48.4997
1001.68	47.5016
1004.76	43.5114
1021.30	0.0000
1024.50	0.0000
1034.80	28.6641
1036.00	36.8701
1037.82	36.8952
1038.57	35.8813
1038.76	0.0000
1045.16	34.9427
1046.59	30.8486
1048.07	43.2129



1050.47	36.0425
1050.47	36.0425
1062.04	34.1302
1063.62	38.2905
1076.63	38.4750
1077.35	36.4050
1078.86	33.3036
1085.78	28.1705
1099.22	25.1635
1112.02	41.0784
1112.84	44.2515
1115.52	41.1301
1120.29	40.1431
1120.29	40.1431
1120.29	40.1431
1120.29	40.1431
1120.51	40.1470
1121.28	40.1576
1124.00	0.0000
1129.67	26.4980
1131.51	0.0000
1147.95	0.0000
1167.94	31.0150
1173.22	19.7721
1175.09	28.2642
1177.93	33.0069
1189.05	25.5580
1204.90	30.4521
1205.75	34.2686
1213.00	31.4884
1221.42	41.1445
1230.97	38.3936
1235.34	32.6812
1236.41	0.0000
1238.25	27.9017
1246.25	21.2212
1260.41	0.0000
1271.85	27.2310
1274.45	27.2532
1274.54	27.2540
1291.56	32.2930
1298.22	0.0000
1312.09	22.6512
1325.50	24.7223
1325.50	24.7223
1332.49	35.6759
1333.61	34.6967
1360.21	23.9832
1362.66	0.0000
1365.15	27.0206
1368.21	26.0436
1368.53	0.0000
1376.25	17.0690
1384.27	23.1481
1394.10	26.2428
1395.20	25.2411
1407.95	17.2278
1434.06	25.5249
1436.60	24.5222
1457.56	0.0000
1460.81	24.6899
1489.15	25.9209
1509.49	16.6816
1596.49	29.3980
1620.62	15.2674
1678.03	0.0000
1691.02	21.3644
1691.02	21.3644
1706.46	0.0000
1750.46	0.0000
1764.49	23.7207
1764.49	23.7207
1764.49	23.7207
1764.49	23.7207
1770.23	39.5877
1771.40	38.6086
1791.20	0.0000
1808.65	11.9827



1836.01

12.0579



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202004732

Total Uranium Activity	2.6036E+00	ug/g
Total Uranium Counting Unc.	3.0892E+00	ug/g
Total Uranium Tpu	1.5761E-06	ug/g
Total Uranium Mda	1.6162E+00	ug/g



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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 936923          SAMPLE ID   : G1202004732
*  ANALYST       : MXR1           DETECTOR    : GAM22
*  SAMPLE DATE   : 28-DEC-2009 00:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 4-JAN-2010 14:05:52.98  SAMPLE ALQT: 137.860 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.214E-01
GROSS GAMMA ERROR   (pCi/GRAM ) : 9.053E-02
GROSS GAMMA MDA     (pCi/GRAM ) : 1.180E-01
GROSS GAMMA DLC     (pCi/GRAM ) : 5.595E-02

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## VAX/VMS Nuclide Identification Report Generated 5-JAN-2010 14:05:30.78

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004733.CNF;1
Sample date        : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 16:16:25.
Sample ID          : G1202004733 Sample quantity : 1.11113E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 03:00:00.00 Elapsed real time: 0 03:00:01.81 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 936923 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.35*	51	488	1.48	125.20	122	8	4.70E-03	79.8	
2	4	74.22	412	722	1.69	148.93	143	16	3.82E-02	13.9	4.73E-01
3	4	76.52*	605	579	1.32	153.52	143	16	5.60E-02	8.8	
4	1	86.68*	204	570	1.20	173.84	168	23	1.89E-02	20.2	2.44E+00
5	1	89.40	135	497	1.22	179.27	168	23	1.25E-02	28.7	
6	1	92.16*	278	552	1.46	184.79	168	23	2.58E-02	18.5	
7	0	104.46	95	469	1.28	209.39	206	9	8.75E-03	42.4	
8	0	185.35*	209	569	1.25	371.09	366	12	1.93E-02	25.3	
9	0	208.48	195	491	1.60	417.33	410	12	1.81E-02	23.8	
10	3	238.11*	1597	296	1.37	476.56	468	20	1.48E-01	3.3	1.07E+00
11	3	240.93*	359	396	1.91	482.20	468	20	3.33E-02	16.2	
12	0	269.58	203	291	2.79	539.49	534	12	1.88E-02	18.2	
13	1	294.70*	510	264	1.47	589.70	584	21	4.73E-02	7.3	1.15E+00
14	1	299.70*	89	263	1.73	599.69	584	21	8.27E-03	37.6	
15	0	337.88*	358	281	1.47	676.03	671	13	3.32E-02	11.2	
16	0	351.52*	850	267	1.47	703.29	697	12	7.87E-02	5.3	
17	0	462.44	99	149	1.44	925.04	920	11	9.17E-03	25.9	
18	0	510.69*	158	250	1.72	1021.52	1013	18	1.46E-02	28.0	
19	0	582.89*	505	182	1.72	1165.86	1157	17	4.67E-02	7.8	
20	0	609.06*	655	171	1.58	1218.19	1210	14	6.06E-02	5.9	
21	0	661.99	191	175	1.57	1324.01	1317	17	1.77E-02	17.4	
22	0	727.14*	96	139	1.35	1454.27	1446	16	8.86E-03	30.6	
23	0	767.86	69	55	2.34	1535.69	1532	8	6.41E-03	22.2	
24	0	795.14	71	68	1.13	1590.25	1585	12	6.59E-03	26.1	
25	0	860.29*	82	60	1.81	1720.50	1714	12	7.64E-03	22.7	
26	0	910.88*	346	105	1.80	1821.66	1812	17	3.20E-02	8.9	
27	3	964.33	70	33	1.90	1928.54	1924	21	6.49E-03	18.6	1.23E+00
28	3	968.71*	199	40	2.46	1937.29	1924	21	1.84E-02	10.8	
29	0	1121.01*	113	136	1.11	2241.83	2231	22	1.05E-02	28.6	
30	0	1377.65	58	46	1.54	2755.05	2746	17	5.39E-03	29.9	
31	0	1460.87*	1041	22	2.02	2921.46	2914	15	9.64E-02	3.3	
32	0	1510.65	36	39	3.62	3021.01	3010	25	3.35E-03	48.6	
33	0	1590.70	48	36	1.31	3181.10	3172	21	4.45E-03	34.6	
34	0	1764.78*	89	39	1.61	3529.26	3521	17	8.26E-03	20.1	
35	0	1848.42	16	16	1.41	3696.53	3689	11	1.49E-03	54.6	

Flag: "\*" = Peak area was modified by background subtraction



## VMS Nuclide Identification Report V3.1 Generated 5-JAN-2010 14:05:33

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004733.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 16:16:25
Sample ID         : G1202004733 Sample quantity : 111.11 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA15 Detector geometry: CAN
Elapsed live time : 0 03:00:00.00 Elapsed real time: 0 03:00:01.81 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.200E+01	2.219E+00	5.313E-01	4.062E-02	41.396
CD-109	+	88.03	*	2.877E+00	1.206E+00	1.510E+00	1.746E-01	1.906
SN-126		64.28		4.506E-02	9.371E-01	1.351E+00	2.316E-01	0.033
	+	86.94		1.172E+00	6.826E-01	6.266E-01	2.635E-01	1.870
	+	87.57	*	2.819E-01	1.181E-01	1.491E-01	1.720E-02	1.891
CS-135	+	268.24	*	7.384E-01	2.766E-01	2.723E-01	2.328E-02	2.711
BA-137M	+	661.65	*	2.375E-01	8.349E-02	5.664E-02	2.850E-03	4.194
CS-137	+	661.65	*	2.511E-01	8.826E-02	5.987E-02	3.029E-03	4.194
EU-155		48.70		4.812E-01	7.283E+00	1.217E+01	1.566E+00	0.040
		60.01		4.176E+00	9.890E+00	1.469E+01	1.796E+00	0.284
	+	86.54		3.398E-01	1.425E-01	1.830E-01	2.110E-02	1.857
	+	105.31	*	1.911E-01	1.629E-01	1.953E-01	1.691E-02	0.978
TL-208		277.35		6.914E-01	4.582E-01	7.802E-01	8.742E-02	0.886
	+	510.84		6.703E-01	3.820E-01	2.434E-01	2.450E-02	2.754
	+	583.14	*	6.055E-01	1.023E-01	6.415E-02	4.084E-03	9.440
	+	860.37		9.242E-01	4.262E-01	4.646E-01	3.993E-02	1.989
BI-211	+	72.87		2.320E+01	6.931E+00	6.686E+00	7.455E-01	3.470
	+	351.07	*	4.613E+00	5.824E-01	3.664E-01	2.517E-02	12.592
PB-212	+	74.81		2.754E+00	8.620E-01	7.304E-01	1.061E-01	3.770
	+	77.11		2.216E+00	4.602E-01	3.889E-01	4.319E-02	5.697
	+	87.30		1.304E+00	5.617E-01	6.927E-01	1.057E-01	1.882
	+	238.63	*	1.911E+00	2.020E-01	1.046E-01	8.658E-03	18.266
	+	300.09		1.644E+00	1.244E+00	1.405E+00	1.260E-01	1.171
PO-212	+	74.81		2.754E+00	8.620E-01	7.304E-01	1.061E-01	3.770
	+	77.11		2.216E+00	4.602E-01	3.889E-01	4.319E-02	5.697
	+	87.30		1.304E+00	5.617E-01	6.927E-01	1.057E-01	1.882
		115.19		-1.891E+00	3.945E+00	6.329E+00	4.842E-01	-0.299
	+	238.63	*	1.911E+00	2.020E-01	1.046E-01	8.658E-03	18.266
	+	300.09		1.644E+00	1.244E+00	1.405E+00	1.260E-01	1.171
BI-214	+	609.31	*	1.478E+00	2.063E-01	1.217E-01	9.036E-03	12.145
	+	1120.29		1.337E+00	7.755E-01	4.790E-01	4.419E-02	2.790
	+	1764.49		1.443E+00	5.875E-01	3.669E-01	2.283E-02	3.934
PB-214	+	74.81		4.745E+00	1.460E+00	1.259E+00	1.681E-01	3.770
	+	77.11		3.799E+00	8.404E-01	6.667E-01	8.979E-02	5.697



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	87.30		2.234E+00	9.517E-01	1.187E+00	1.645E-01	1.882
	+	241.98		2.582E+00	8.696E-01	5.981E-01	5.346E-02	4.317
	+	295.21		1.650E+00	2.862E-01	2.454E-01	2.269E-02	6.723
	+	351.92	*	1.605E+00	2.192E-01	1.228E-01	1.059E-02	13.067
	+	74.81		4.745E+00	1.460E+00	1.259E+00	1.681E-01	3.770
	+	77.11		3.799E+00	8.404E-01	6.667E-01	8.979E-02	5.697
PO-216	+	87.30		2.234E+00	9.517E-01	1.187E+00	1.645E-01	1.882
	+	241.98		2.582E+00	8.696E-01	5.981E-01	5.346E-02	4.317
	+	295.21		1.650E+00	2.862E-01	2.454E-01	2.269E-02	6.723
	+	351.92	*	1.605E+00	2.192E-01	1.228E-01	1.059E-02	13.067
	+	74.81		2.754E+00	8.620E-01	7.304E-01	1.061E-01	3.770
	+	77.11		2.216E+00	4.602E-01	3.889E-01	4.319E-02	5.697
PO-218	+	87.30		1.304E+00	5.617E-01	6.927E-01	1.057E-01	1.882
	+	238.63	*	1.911E+00	2.020E-01	1.046E-01	8.658E-03	18.266
	+	300.09		1.644E+00	1.244E+00	1.405E+00	1.260E-01	1.171
	+	74.81		4.745E+00	1.460E+00	1.259E+00	1.681E-01	3.770
	+	77.11		3.799E+00	8.404E-01	6.667E-01	8.979E-02	5.697
	+	87.30		2.234E+00	9.517E-01	1.187E+00	1.645E-01	1.882
RA-224	+	241.98		2.582E+00	8.696E-01	5.981E-01	5.346E-02	4.317
	+	295.21		1.650E+00	2.862E-01	2.454E-01	2.269E-02	6.723
	+	351.92	*	1.605E+00	2.192E-01	1.228E-01	1.059E-02	13.067
	+	240.98	*	4.895E+00	1.626E+00	1.190E+00	8.283E-02	4.113
	+	609.31	*	1.478E+00	2.063E-01	1.217E-01	9.036E-03	12.145
	+	1120.29		1.337E+00	7.755E-01	4.790E-01	4.419E-02	2.790
AC-228	+	1764.49		1.443E+00	5.875E-01	3.669E-01	2.283E-02	3.934
	+	338.32		2.146E+00	9.993E-01	4.308E-01	1.760E-01	4.982
	+	911.07	*	1.837E+00	3.856E-01	2.356E-01	2.619E-02	7.796
	+	969.11		1.868E+00	5.919E-01	3.558E-01	8.227E-02	5.251
	+	338.32		2.146E+00	9.993E-01	4.308E-01	1.760E-01	4.982
	+	911.07	*	1.837E+00	3.856E-01	2.356E-01	2.619E-02	7.796
TH-228	+	969.11		1.868E+00	5.919E-01	3.558E-01	8.227E-02	5.251
	+	74.81		2.802E+00	8.375E-01	7.431E-01	8.298E-02	3.770
	+	77.11		2.254E+00	4.682E-01	3.956E-01	4.393E-02	5.697
	+	87.30		1.326E+00	5.558E-01	7.047E-01	8.118E-02	1.882
	+	238.63	*	1.944E+00	2.055E-01	1.064E-01	8.808E-03	18.266
	+	300.09		1.673E+00	1.598E+00	1.429E+00	8.436E-01	1.171
TH-230	+	609.31	*	1.478E+00	2.063E-01	1.217E-01	9.036E-03	12.145
	+	1120.29		1.337E+00	7.755E-01	4.790E-01	4.419E-02	2.790
	+	1764.49		1.443E+00	5.875E-01	3.669E-01	2.283E-02	3.934
	+	338.32		2.146E+00	4.984E-01	4.308E-01	2.773E-02	4.982
	+	911.07	*	1.837E+00	3.856E-01	2.356E-01	2.619E-02	7.796
	+	969.11		1.868E+00	5.919E-01	3.558E-01	8.227E-02	5.251
TH-234	+	63.29	*	1.775E+00	2.856E+00	3.605E+00	7.116E-01	0.492
	+	92.38		2.404E+00	1.003E+00	9.487E-01	1.808E-01	2.534
	+	609.31	*	1.478E+00	2.063E-01	1.217E-01	9.036E-03	12.145
	+	1120.29		1.337E+00	7.755E-01	4.790E-01	4.419E-02	2.790
	+	1764.49		1.443E+00	5.875E-01	3.669E-01	2.283E-02	3.934
	+	89.95		2.437E+00	1.599E+00	1.966E+00	6.219E-01	1.239
U-235	+	93.35		2.890E+00	1.355E+00	1.025E+00	2.930E-01	2.820



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	105.00		1.871E+00	1.682E+00	1.848E+00	5.513E-01	1.012
		143.76	*	8.046E-02	2.542E-01	4.000E-01	6.675E-02	0.201
		163.35		1.045E-01	5.409E-01	8.785E-01	1.606E-01	0.119
	+	185.71		1.746E-01	8.898E-02	7.953E-02	5.372E-03	2.196
		205.31		-1.122E-01	7.144E-01	9.886E-01	1.814E-01	-0.113
NP-237	+	86.50	*	8.278E-01	3.867E-01	4.462E-01	1.053E-01	1.855
		95.87		-1.442E+00	1.337E+00	1.722E+00	4.321E-01	-0.837
U-238	+	63.29	*	1.775E+00	2.856E+00	3.605E+00	7.116E-01	0.492
	+	92.38		2.404E+00	9.269E-01	9.487E-01	9.980E-02	2.534
AM-243	+	74.67	*	4.465E-01	1.334E-01	1.190E-01	1.323E-02	3.752
	+	86.72		3.104E+01	1.301E+01	1.666E+01	1.913E+00	1.863
		117.66		-2.701E+00	4.248E+00	6.769E+00	5.056E-01	-0.399
		142.18		3.802E+00	2.136E+01	3.352E+01	2.284E+00	0.113
ANH-511	+	511.00	*	1.448E-01	8.162E-02	5.258E-02	2.969E-03	2.753

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	3.198E-01	3.606E-01	6.186E-01	4.122E-02	0.517
NA-22		1274.54	*	1.637E-02	4.844E-02	8.074E-02	5.541E-03	0.203
NA-24		1368.53	*	-3.588E+00	4.844E-02	Half-Life too short		
AL-26		1129.67		-1.020E+00	2.063E+00	2.701E+00	1.702E-01	-0.378
		1808.65	*	2.558E-03	2.588E-02	4.339E-02	2.596E-03	0.059
TI-44		67.85		7.035E-03	8.383E-02	1.141E-01	1.301E-02	0.062
		78.38	*	2.371E-01	6.089E-02	9.122E-02	1.014E-02	2.599
SC-46		889.25	*	3.751E-03	4.119E-02	6.865E-02	5.758E-03	0.055
	+	1120.51		2.328E-01	1.342E-01	1.393E-01	8.945E-03	1.671
V-48		944.10		-1.427E-01	9.786E-01	1.594E+00	1.310E-01	-0.090
		983.50	*	-3.884E-02	7.719E-02	1.213E-01	9.580E-03	-0.320
		1312.09		1.664E-02	8.985E-02	1.480E-01	1.081E-02	0.112
CR-51		320.08	*	2.937E-01	4.468E-01	7.638E-01	5.508E-02	0.385
MN-52		744.21		1.482E-01	3.271E-01	5.627E-01	3.452E-02	0.263
		848.13		1.084E+00	8.637E+00	1.447E+01	1.115E+00	0.075
		935.52		1.941E-01	3.307E-01	5.704E-01	4.725E-02	0.340
		1246.25		4.732E+00	9.669E+00	1.632E+01	1.064E+00	0.290
		1333.61		-3.863E+00	7.162E+00	1.088E+01	8.210E-01	-0.355
		1434.06	*	-3.835E-01	3.313E-01	4.567E-01	3.386E-02	-0.840
MN-54		834.83	*	7.090E-03	4.112E-02	6.906E-02	5.176E-03	0.103
CO-56		846.75	*	7.713E-03	3.979E-02	6.701E-02	5.150E-03	0.115
		977.42		-9.121E-02	3.109E+00	4.865E+00	3.869E-01	-0.019
		1037.82		-2.705E-02	3.163E-01	5.149E-01	4.074E-02	-0.053
		1175.09		-1.555E+00	2.376E+00	3.648E+00	2.085E-01	-0.426
		1238.25		1.528E-01	9.993E-02	1.782E-01	1.205E-02	0.858
		1360.21		-1.116E+00	1.129E+00	1.603E+00	1.206E-01	-0.696
		1771.40		-9.518E-02	3.241E-01	4.269E-01	2.641E-02	-0.223
CO-57		122.06	*	-1.574E-03	2.896E-02	4.711E-02	3.387E-03	-0.033
		136.48		-2.869E-02	2.387E-01	3.860E-01	2.962E-02	-0.074
CO-58		810.76	*	-2.630E-02	4.178E-02	6.622E-02	4.730E-03	-0.397



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
FE-59		142.65		4.690E-01	3.401E+00	5.331E+00	3.630E-01	0.088
		192.34		7.027E-01	1.166E+00	1.845E+00	2.274E-01	0.381
		1099.22	*	-1.435E-01	9.951E-02	1.406E-01	1.064E-02	-1.020
CO-60		1291.56		-1.107E-01	1.316E-01	1.937E-01	1.635E-02	-0.571
		1173.22		1.463E-02	4.524E-02	7.564E-02	4.308E-03	0.193
		1332.49	*	-9.009E-03	4.305E-02	6.794E-02	5.128E-03	-0.133
ZN-65		1115.52	*	2.495E-02	1.080E-01	1.552E-01	1.008E-02	0.161
GE-68		1077.35	*	-9.852E-01	1.263E+00	1.917E+00	1.332E-01	-0.514
AS-73		53.44	*	-9.297E-01	1.949E+00	3.184E+00	4.352E-01	-0.292
AS-74		595.88	*	4.843E-02	1.147E-01	1.902E-01	1.023E-02	0.255
SE-75		634.78		-3.760E-01	4.090E-01	6.122E-01	3.175E-02	-0.614
		66.05		-5.928E+00	8.818E+00	1.228E+01	1.592E+00	-0.483
		96.73		-2.082E-01	1.054E+00	1.470E+00	2.109E-01	-0.142
		121.11		-1.245E-01	1.575E-01	2.488E-01	2.537E-02	-0.500
		136.00		-3.940E-03	4.524E-02	7.325E-02	5.101E-03	-0.054
		198.60		4.621E-01	2.218E+00	3.444E+00	2.748E-01	0.134
		264.65	*	-1.939E-02	5.593E-02	7.992E-02	5.590E-03	-0.243
		279.53		-8.315E-02	1.308E-01	2.133E-01	1.556E-02	-0.390
		303.91		2.471E+00	2.624E+00	4.009E+00	4.070E-01	0.616
BR-77		400.65		7.535E-03	2.962E-01	4.852E-01	4.382E-02	0.016
	+	87.88		1.137E+03	4.766E+02	7.660E+02	8.857E+01	1.485
		200.40		-4.869E+01	3.708E+02	5.699E+02	3.895E+01	-0.085
	+	239.00		5.631E+02	5.392E+01	7.870E+01	5.476E+00	7.155
		249.79		2.747E+01	1.360E+02	2.303E+02	1.604E+01	0.119
		281.68		-1.605E+02	1.965E+02	3.177E+02	2.188E+01	-0.505
		297.23		5.157E+02	1.296E+02	2.361E+02	1.607E+01	2.184
		303.76		3.670E+02	4.037E+02	6.171E+02	4.171E+01	0.595
		439.47		2.690E+01	2.918E+02	4.812E+02	2.750E+01	0.056
		484.57		-2.375E+02	4.452E+02	7.023E+02	3.996E+01	-0.338
		520.65	*	1.562E+01	2.118E+01	3.598E+01	2.025E+00	0.434
		574.64		-2.238E+02	4.834E+02	6.450E+02	3.523E+01	-0.347
		578.91		1.605E+02	2.009E+02	3.001E+02	1.634E+01	0.535
		585.48		2.557E+03	5.117E+02	9.061E+02	4.911E+01	2.822
		755.35		-2.877E+01	3.095E+02	5.135E+02	3.232E+01	-0.056
SR-82		817.79		5.464E+00	2.515E+02	4.189E+02	3.027E+01	0.013
		698.33		9.450E+00	3.926E+01	6.676E+01	3.675E+00	0.142
		776.49	*	-2.853E-01	4.250E-01	6.751E-01	4.456E-02	-0.423
RB-83		1395.20		-8.165E+00	1.158E+01	1.778E+01	1.329E+00	-0.459
		520.41	*	4.854E-02	7.793E-02	1.315E-01	7.402E-03	0.369
		529.64		3.381E-02	1.134E-01	1.879E-01	1.053E-02	0.180
RB-84		552.65		-4.849E-02	2.224E-01	3.557E-01	1.970E-02	-0.136
		881.50	*	5.803E-03	7.020E-02	1.170E-01	9.665E-03	0.050
		513.99	*	1.902E+01	9.209E+00	1.487E+01	8.385E-01	1.279
SR-85		513.99	*	9.968E-02	4.826E-02	7.791E-02	4.395E-03	1.279
RB-86		1076.63	*	-1.196E-01	8.546E-01	1.381E+00	9.608E-02	-0.087
Y-88		898.02		-2.535E-02	4.335E-02	6.825E-02	5.855E-03	-0.372
ZR-88		1836.01	*	1.112E-02	3.510E-02	6.064E-02	3.542E-03	0.183
		392.90	*	9.323E-03	3.571E-02	5.965E-02	3.383E-03	0.156
		1204.90	*	9.208E+00	1.850E+01	3.134E+01	1.895E+00	0.294



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-94	702.63	*		-6.314E-03	3.492E-02	5.788E-02	3.220E-03	-0.109
	871.10			-1.202E-02	3.480E-02	5.605E-02	4.531E-03	-0.214
NB-95	765.79	*		7.989E-02	5.472E-02	8.792E-02	5.666E-03	0.909
NB-95M	235.69	*		1.792E+00	2.575E-01	3.911E-01	3.304E-02	4.583
ZR-95	724.18			1.537E-01	1.212E-01	1.927E-01	1.331E-02	0.798
	756.15	*		7.385E-03	7.274E-02	1.223E-01	9.119E-03	0.060
NB-97	657.90	*		4.542E-01	7.274E-02	Half-Life	too short	
	1024.50			7.020E+01	7.274E-02	Half-Life	too short	
ZR-97	254.15			8.527E+00	7.274E-02	Half-Life	too short	
	355.39			-2.710E+00	7.274E-02	Half-Life	too short	
	507.63	*		5.932E+01	7.274E-02	Half-Life	too short	
	602.52			-1.933E+01	7.274E-02	Half-Life	too short	
	1021.30			3.887E+01	7.274E-02	Half-Life	too short	
	1147.95			4.079E+01	7.274E-02	Half-Life	too short	
	1362.66			7.894E+01	7.274E-02	Half-Life	too short	
	1750.46			-2.113E+01	7.274E-02	Half-Life	too short	
MO-99	140.51			-1.762E+01	5.133E+01	8.196E+01	2.228E+01	-0.215
	181.06			5.170E+00	3.899E+01	5.507E+01	9.624E+00	0.094
	366.43			1.949E+01	1.606E+02	2.673E+02	1.624E+01	0.073
	739.58	*		-1.651E+01	2.036E+01	3.161E+01	4.393E+00	-0.522
	778.00			-3.609E+01	5.842E+01	9.298E+01	6.159E+00	-0.388
TC-99M	140.51	*		-4.764E+12	5.842E+01	Half-Life	too short	
RH-101	127.23			4.057E-02	3.793E-02	6.364E-02	4.484E-03	0.638
	198.01	*		1.324E-02	4.005E-02	6.245E-02	4.260E-03	0.212
	325.23			-2.890E-02	2.683E-01	4.442E-01	2.921E-02	-0.065
RH-102	418.52			-3.008E-01	3.192E-01	4.970E-01	2.835E-02	-0.605
	475.06	*		1.640E-02	3.330E-02	5.592E-02	3.188E-03	0.293
	631.29			1.190E-03	5.897E-02	9.513E-02	4.952E-03	0.013
	697.49			5.528E-02	8.369E-02	1.456E-01	8.001E-03	0.380
	+ 766.84			2.601E-01	1.167E-01	2.205E-01	1.424E-02	1.179
	1046.59			6.517E-02	1.226E-01	2.094E-01	1.526E-02	0.311
	1112.84			4.027E-04	2.790E-01	3.904E-01	2.545E-02	0.001
RU-103	497.08	*		2.151E-02	4.441E-02	7.450E-02	9.377E-03	0.289
	+ 610.33			1.656E+01	3.194E+00	3.394E+00	5.172E-01	4.879
RH-106	+ 511.85			7.260E-01	4.093E-01	4.848E-01	2.736E-02	1.498
	621.84	*		-1.217E-01	3.556E-01	5.593E-01	6.420E-02	-0.218
	1050.47			1.196E+00	2.444E+00	4.163E+00	3.018E-01	0.287
RU-106	+ 511.85			7.260E-01	4.093E-01	4.848E-01	2.736E-02	1.498
	621.84	*		-1.217E-01	3.554E-01	5.593E-01	2.939E-02	-0.218
	1050.47			1.196E+00	2.444E+00	4.163E+00	3.018E-01	0.287
AG-108M	433.93	*		-1.335E-02	3.683E-02	5.924E-02	3.683E-03	-0.225
	614.37			3.396E-02	4.710E-02	6.887E-02	4.013E-03	0.493
	722.95			3.583E-03	4.995E-02	7.260E-02	4.593E-03	0.049
AG-110M	657.75	*		1.334E-02	4.409E-02	6.288E-02	3.446E-03	0.212
	677.61			-1.568E-01	3.429E-01	5.317E-01	2.990E-02	-0.295
	706.67			-8.357E-02	2.107E-01	3.438E-01	2.054E-02	-0.243
	763.93			3.721E-02	1.967E-01	2.881E-01	1.942E-02	0.129
	884.67			-2.092E-02	4.956E-02	7.914E-02	6.804E-03	-0.264
	937.48			-8.758E-02	1.120E-01	1.721E-01	1.479E-02	-0.509



## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IN-111		1384.27		-9.362E-02	2.102E-01	2.813E-01	2.186E-02	-0.333
		171.28		1.060E+00	1.933E+00	3.175E+00	2.119E-01	0.334
		245.39	*	-3.865E-01	2.230E+00	3.236E+00	2.253E-01	-0.119
IN-113M		391.69	*	-2.462E-02	5.149E-02	8.286E-02	5.027E-03	-0.297
SN-113		391.69	*	-2.462E-02	5.149E-02	8.286E-02	5.027E-03	-0.297
IN-114M		190.27	*	-1.479E-01	2.506E-01	3.399E-01	2.305E-02	-0.435
CD-115		260.90		2.041E+02	2.763E+02	4.763E+02	3.311E+01	0.429
		492.35		-1.707E+01	7.680E+01	1.236E+02	7.021E+00	-0.138
		527.90	*	-1.508E+01	2.294E+01	3.571E+01	2.003E+00	-0.422
SN-117M		156.02		3.648E-01	2.892E+00	4.696E+00	3.147E-01	0.078
		158.56	*	-6.002E-02	7.019E-02	1.097E-01	7.337E-03	-0.547
		563.90	*	3.456E+00	3.674E+00	6.312E+00	3.473E-01	0.548
SB-122		692.80		-4.132E+01	8.093E+01	1.315E+02	7.144E+00	-0.314
		159.00	*	-6.838E+01	8.093E+01	Half-Life	too short	
		528.96		2.371E+03	8.093E+01	Half-Life	too short	
TE-123M		159.00	*	-2.447E-02	3.314E-02	5.206E-02	3.514E-03	-0.470
I-124		602.71	*	-3.609E-01	1.288E+00	1.750E+00	9.358E-02	-0.206
		722.78		5.281E-01	7.368E+00	1.071E+01	6.250E-01	0.049
		1325.50		-8.384E+00	5.213E+01	8.272E+01	6.173E+00	-0.101
+ SB-124		1376.25		1.348E+02	8.115E+01	1.011E+02	7.588E+00	1.333
		1509.49		5.020E+01	4.894E+01	4.400E+01	3.187E+00	1.141
		1691.02		5.353E-01	4.902E+00	8.250E+00	5.431E-01	0.065
SB-124		602.71		-1.521E-02	5.430E-02	7.378E-02	3.946E-03	-0.206
		645.85		1.379E-01	5.524E-01	9.046E-01	5.386E-02	0.152
		709.31		-1.310E+00	2.864E+00	4.651E+00	2.629E-01	-0.282
+ SB-124		713.82		-5.356E-01	1.730E+00	2.837E+00	2.883E-01	-0.189
		722.78		3.227E-02	4.502E-01	6.544E-01	3.997E-02	0.049
		968.20		1.970E+01	4.551E+00	7.336E+00	5.890E-01	2.685
+ SB-124		1045.16		-6.287E-01	2.728E+00	4.387E+00	3.205E-01	-0.143
		1325.50		-5.471E-01	3.402E+00	5.399E+00	4.029E-01	-0.101
		1368.21		-8.002E-01	2.194E+00	2.965E+00	3.794E-01	-0.270
+ SB-125		1436.60		-3.954E+00	4.137E+00	5.872E+00	4.351E-01	-0.673
		1691.02	*	7.715E-03	7.066E-02	1.189E-01	8.351E-03	0.065
		427.89	*	1.199E-02	1.053E-01	1.740E-01	1.037E-02	0.069
+ SB-125		463.38		8.253E-01	4.304E-01	5.946E-01	3.975E-02	1.388
		600.56		2.112E-02	2.266E-01	3.336E-01	2.111E-02	0.063
		635.90		-1.306E-01	2.819E-01	4.379E-01	2.746E-02	-0.298
TE-125M		109.28	*	-9.992E-01	1.200E+01	1.712E+01	1.702E+00	-0.058
I-126		388.63		9.093E-03	2.515E-01	4.157E-01	2.379E-02	0.022
		666.33	*	2.054E-01	2.572E-01	3.828E-01	1.948E-02	0.537
		753.82		-2.262E-01	1.681E+00	2.781E+00	1.744E-01	-0.081
SB-126		223.80		3.473E-01	5.333E+00	8.531E+00	5.910E-01	0.041
		278.60		2.520E+00	3.292E+00	5.655E+00	3.902E-01	0.446
		296.50		1.584E+01	2.487E+00	4.474E+00	3.046E-01	3.540
+ SB-126		414.70		-8.107E-03	9.304E-02	1.524E-01	8.686E-03	-0.053
		415.30		-3.152E+00	7.606E+00	1.223E+01	6.970E-01	-0.258
		555.20		2.522E+00	4.723E+00	7.929E+00	4.385E-01	0.318
+ SB-126		573.80		-3.991E-01	1.329E+00	1.977E+00	1.081E-01	-0.202
		593.00		-1.143E+00	1.222E+00	1.854E+00	9.988E-02	-0.617



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		656.30	-1.285E+00	4.584E+00	6.156E+00	3.117E-01	-0.209
		666.33	8.623E-02	1.080E-01	1.607E-01	8.179E-03	0.537
		675.00	2.119E-01	2.367E+00	3.825E+00	1.989E-01	0.055
		695.00	1.000E-01	9.272E-02	1.652E-01	9.019E-03	0.606
		697.00	3.368E-01	3.297E-01	5.844E-01	3.207E-02	0.576
		720.50	* -9.036E-03	1.948E-01	2.801E-01	1.626E-02	-0.032
		856.80	7.254E-01	5.916E-01	9.532E-01	7.481E-02	0.761
		989.30	4.910E-01	1.361E+00	2.310E+00	1.813E-01	0.213
		1034.80	-4.440E+00	9.410E+00	1.473E+01	1.092E+00	-0.301
		1213.00	-8.051E-01	4.909E+00	7.854E+00	4.822E-01	-0.103
SB-127	+	61.10	1.059E+02	1.697E+02	2.505E+02	3.641E+01	0.423
		252.40	-2.392E+00	7.155E+00	1.175E+01	4.922E+00	-0.204
		290.80	-2.725E+01	4.083E+01	5.684E+01	6.010E+00	-0.479
		411.60	8.592E+00	2.009E+01	3.370E+01	5.001E+00	0.255
		444.90	-5.214E+00	1.508E+01	2.420E+01	2.761E+00	-0.215
		473.00	-3.756E+00	2.948E+00	4.420E+00	5.202E-01	-0.850
		543.00	-2.179E+01	2.673E+01	4.083E+01	5.457E+00	-0.534
		603.60	-3.656E+00	2.223E+01	3.050E+01	3.416E+00	-0.120
		685.20	* -8.980E-01	2.041E+00	3.324E+00	3.298E-01	-0.270
		698.50	3.288E+00	2.411E+01	4.075E+01	6.058E+00	0.081
		722.20	1.764E+01	5.075E+01	7.564E+01	7.524E+00	0.233
		783.80	4.770E+00	5.457E+00	9.571E+00	1.131E+00	0.498
XE-127		57.60	2.387E+00	1.401E+01	2.047E+01	2.607E+00	0.117
		145.22	5.596E-01	8.247E-01	1.366E+00	9.262E-02	0.410
		172.10	-3.086E-03	1.457E-01	2.346E-01	1.567E-02	-0.013
		202.84	* -1.563E-02	6.696E-02	9.236E-02	6.323E-03	-0.169
		374.96	1.146E-01	2.252E-01	3.816E-01	2.268E-02	0.300
I-131		80.18	-1.179E+01	9.632E+00	1.081E+01	1.213E+00	-1.090
		284.30	1.121E+00	2.063E+00	3.521E+00	2.623E-01	0.319
		364.48	* 1.087E-02	1.521E-01	2.526E-01	1.709E-02	0.043
		636.97	2.180E-01	1.907E+00	3.096E+00	1.847E-01	0.070
		722.89	7.218E-01	1.007E+01	1.463E+01	8.693E-01	0.049
TE-132		49.72	-1.708E+01	8.491E+01	1.405E+02	2.167E+01	-0.122
		111.76	1.161E+01	5.087E+01	8.374E+01	9.141E+00	0.139
		116.30	6.922E-02	4.731E+01	7.721E+01	8.229E+00	0.001
		228.16	* 4.420E-01	1.234E+00	2.102E+00	3.212E-01	0.210
BA-133		53.15	-4.714E+00	8.346E+00	1.358E+01	1.862E+00	-0.347
		79.62	-2.700E+00	2.096E+00	2.588E+00	4.343E-01	-1.043
		81.00	-5.030E-02	1.920E-01	1.965E-01	3.419E-02	-0.256
		276.40	8.535E-01	4.730E-01	7.612E-01	1.027E-01	1.121
		302.84	1.182E-01	1.809E-01	2.719E-01	3.309E-02	0.435
		356.01	* -2.643E-03	5.284E-02	7.567E-02	8.911E-03	-0.035
		383.85	-2.062E-01	3.339E-01	5.324E-01	5.789E-02	-0.387
I-133	+	510.53	7.785E+00	3.339E-01	Half-Life	too short	
		529.87	* 5.507E-03	3.339E-01	Half-Life	too short	
		706.58	-8.678E-01	3.339E-01	Half-Life	too short	
		856.28	2.374E+00	3.339E-01	Half-Life	too short	
		875.33	-5.846E-02	3.339E-01	Half-Life	too short	
		1236.41	4.616E+00	3.339E-01	Half-Life	too short	



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134		1298.22		-6.855E-01	3.339E-01	Half-Life	too short	
		475.35		1.813E+00	2.158E+00	3.690E+00	2.103E-01	0.491
		563.23		5.345E-01	3.781E-01	6.664E-01	3.753E-02	0.802
		569.32		4.113E-03	2.028E-01	3.290E-01	1.864E-02	0.013
		604.70		1.140E-03	4.328E-02	6.040E-02	3.245E-03	0.019
	+	795.84	*	1.225E-01	6.460E-02	9.285E-02	6.470E-03	1.319
		801.93		-2.325E-01	4.875E-01	6.606E-01	4.652E-02	-0.352
		1038.57		-4.541E-01	3.984E+00	6.470E+00	4.771E-01	-0.070
		1167.94		2.293E+00	2.409E+00	4.240E+00	2.447E-01	0.541
I-135		1365.15		1.001E+00	1.358E+00	2.362E+00	1.881E-01	0.424
		288.45		-5.043E+12	1.358E+00	Half-Life	too short	
		417.63		-6.121E+12	1.358E+00	Half-Life	too short	
		546.56		6.896E+11	1.358E+00	Half-Life	too short	
		836.80		4.793E+12	1.358E+00	Half-Life	too short	
		1038.76		-2.269E+11	1.358E+00	Half-Life	too short	
		1124.00		1.272E+13	1.358E+00	Half-Life	too short	
		1131.51		-1.248E+11	1.358E+00	Half-Life	too short	
		1260.41	*	-3.941E+11	1.358E+00	Half-Life	too short	
		1457.56		9.514E+13	1.358E+00	Half-Life	too short	
		1678.03		2.251E+11	1.358E+00	Half-Life	too short	
		1706.46		2.595E+11	1.358E+00	Half-Life	too short	
		1791.20		9.881E+10	1.358E+00	Half-Life	too short	
	CS-136		66.91		-2.447E-01	1.522E+00	2.172E+00	3.735E-01
+		86.29		4.105E+00	1.764E+00	2.721E+00	4.054E-01	1.509
		153.22		1.105E+00	8.493E-01	1.427E+00	1.139E-01	0.775
		163.89		6.305E-01	1.367E+00	2.241E+00	1.783E-01	0.281
		176.55		-1.944E-01	4.970E-01	7.887E-01	5.785E-02	-0.246
		273.65		-1.351E+00	6.961E-01	8.954E-01	6.821E-02	-1.508
		340.57		4.745E-01	1.880E-01	3.056E-01	2.062E-02	1.552
		818.51		-2.443E-02	8.806E-02	1.434E-01	1.040E-02	-0.170
		1048.07	*	-3.255E-02	1.306E-01	2.097E-01	1.616E-02	-0.155
		1235.34		5.192E-01	7.094E-01	1.208E+00	1.249E-01	0.430
CE-139		165.85	*	-1.189E-02	3.483E-02	5.549E-02	3.690E-03	-0.214
BA-140		162.64		7.054E-02	9.707E-01	1.571E+00	1.147E-01	0.045
		304.84		1.122E+00	1.815E+00	2.693E+00	7.408E-01	0.416
		423.70		1.066E+00	2.472E+00	4.115E+00	1.307E+00	0.259
		537.32	*	6.961E-02	3.131E-01	5.146E-01	1.672E-01	0.135
LA-140		328.77		5.897E-01	3.986E-01	6.971E-01	4.995E-02	0.846
		432.53		-1.150E+00	2.581E+00	4.132E+00	2.615E-01	-0.278
		487.03		4.952E-02	1.653E-01	2.747E-01	1.776E-02	0.180
		751.79		9.867E-04	1.972E+00	3.295E+00	2.459E-01	0.000
		815.85		-1.053E-01	3.657E-01	5.947E-01	4.972E-02	-0.177
		867.82		3.387E-01	1.602E+00	2.582E+00	2.199E-01	0.131
		919.63		6.707E-01	3.488E+00	5.588E+00	5.848E-01	0.120
		925.24		-3.735E-01	1.355E+00	2.141E+00	1.908E-01	-0.174
CE-141		1596.49	*	1.004E-01	1.042E-01	1.746E-01	1.217E-02	0.575
CE-143		145.44	*	2.837E-02	7.493E-02	1.229E-01	8.581E-03	0.231
		57.37		9.592E-04	7.493E-02	Half-Life	too short	
	231.56		1.486E-03	7.493E-02	Half-Life	too short		



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	293.26	*	4.486E-03	7.493E-02	Half-Life	too short	
	+	350.59		1.044E-01	7.493E-02	Half-Life	too short	
		490.36		4.979E-03	7.493E-02	Half-Life	too short	
		664.57		9.044E-03	7.493E-02	Half-Life	too short	
		721.93		3.581E-04	7.493E-02	Half-Life	too short	
CE-144		80.11		-4.682E+00	3.726E+00	4.173E+00	4.655E-01	-1.122
		133.54	*	-1.359E-01	2.351E-01	3.731E-01	5.483E-02	-0.364
PM-144		476.78		2.453E-02	7.595E-02	1.264E-01	8.670E-03	0.194
		618.01		-1.534E-02	3.540E-02	5.537E-02	3.132E-03	-0.277
		696.49	*	4.331E-02	3.776E-02	6.736E-02	3.696E-03	0.643
		778.57		-1.249E+00	2.387E+00	3.831E+00	2.543E-01	-0.326
PR-144		696.49	*	2.938E+00	2.562E+00	4.570E+00	2.505E-01	0.643
		1489.15		5.074E+00	1.025E+01	1.827E+01	1.333E+00	0.278
PM-146		453.90	*	-5.682E-03	4.784E-02	7.784E-02	6.666E-03	-0.073
		633.02		-8.445E-02	1.460E+00	2.341E+00	8.599E-01	-0.036
		735.90		7.806E-02	1.520E-01	2.504E-01	6.994E-02	0.312
		747.13		7.791E-02	9.868E-02	1.724E-01	2.187E-02	0.452
ND-147	+	91.11		1.379E+00	5.341E-01	7.468E-01	8.494E-02	1.847
		319.41		-5.270E-01	4.334E+00	7.174E+00	4.759E-01	-0.073
		439.89		1.067E-02	7.325E+00	1.202E+01	6.873E-01	0.001
		531.02	*	6.559E-01	7.019E-01	1.198E+00	1.610E-01	0.547
PM-149		285.90	*	4.748E+01	1.998E+02	3.370E+02	4.938E+01	0.141
EU-152		121.78		-3.362E-02	8.437E-02	1.355E-01	1.182E-02	-0.248
		244.69		-6.896E-02	4.182E-01	6.073E-01	4.228E-02	-0.114
		344.27	*	-1.130E-01	1.692E-01	1.782E-01	1.256E-02	-0.634
		443.98		-3.591E-01	1.024E+00	1.644E+00	9.395E-02	-0.218
		778.89		-9.932E-02	2.654E-01	4.303E-01	2.856E-02	-0.231
		867.32		4.668E-01	8.623E-01	1.394E+00	1.118E-01	0.335
	+	964.01		7.565E-01	2.885E-01	5.768E-01	4.651E-02	1.311
		1085.78		1.180E-01	3.936E-01	6.607E-01	4.526E-02	0.179
		1112.02		1.425E-01	3.867E-01	5.648E-01	3.687E-02	0.252
		1407.95		1.116E-01	1.844E-01	3.275E-01	2.443E-02	0.341
GD-153		69.67		-2.031E-02	2.703E+00	3.928E+00	4.434E-01	-0.005
		83.37		2.776E+00	2.174E+01	3.057E+01	3.449E+00	0.091
		97.43	*	7.897E-02	1.074E-01	1.558E-01	1.495E-02	0.507
	+	103.18		1.860E-01	1.585E-01	2.016E-01	1.773E-02	0.923
EU-154		123.07		-3.531E-03	5.899E-02	9.591E-02	9.873E-03	-0.037
		247.94		-1.117E-01	4.189E-01	6.785E-01	6.981E-02	-0.165
		591.81		6.709E-02	7.284E-01	1.152E+00	1.099E-01	0.058
		723.30		2.363E-02	2.124E-01	3.097E-01	2.204E-02	0.076
		756.87		8.548E-02	7.749E-01	1.304E+00	1.361E-01	0.066
		873.19		-4.004E-02	2.962E-01	4.853E-01	5.773E-02	-0.083
		996.32		3.165E-02	3.658E-01	6.058E-01	1.053E-01	0.052
		1004.76		-2.329E-01	2.275E-01	3.395E-01	3.728E-02	-0.686
		1274.45	*	4.057E-02	1.347E-01	2.239E-01	2.245E-02	0.181
TB-160	+	86.79		9.252E-01	3.877E-01	6.114E-01	7.021E-02	1.513
		197.04		1.424E-01	6.690E-01	1.081E+00	7.368E-02	0.132
		215.65		7.121E-02	8.964E-01	1.437E+00	9.914E-02	0.050
	+	298.57		2.441E-01	1.841E-01	2.369E-01	1.610E-02	1.031



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		879.36	*	-2.318E-02	1.403E-01	2.291E-01	1.884E-02	-0.101
		962.29		1.125E+00	6.215E-01	1.033E+00	8.346E-02	1.089
		966.15		1.410E+00	2.931E-01	5.596E-01	4.502E-02	2.520
		1177.93		1.619E-01	3.599E-01	6.084E-01	3.496E-02	0.266
		1271.85		8.578E-02	7.942E-01	1.298E+00	8.855E-02	0.066
		80.57		-4.693E-01	5.518E-01	5.382E-01	6.012E-02	-0.872
	+	184.41		1.310E-01	6.674E-02	8.010E-02	5.405E-03	1.635
		280.46		-1.056E-01	1.016E-01	1.627E-01	1.121E-02	-0.649
		410.95		2.864E-01	2.785E-01	4.806E-01	2.738E-02	0.596
		711.68	*	7.416E-03	6.131E-02	1.035E-01	5.885E-03	0.072
TM-171		752.31		6.643E-02	2.814E-01	4.775E-01	2.984E-02	0.139
		810.29		-2.496E-02	6.099E-02	9.836E-02	6.994E-03	-0.254
		51.35		-2.697E+01	7.907E+01	1.301E+02	1.797E+01	-0.207
		52.39		-4.069E+00	3.801E+01	6.307E+01	8.700E+00	-0.065
		59.40		3.178E+01	5.351E+01	8.002E+01	9.848E+00	0.397
LU-176		66.72	*	-9.274E+00	4.987E+01	7.111E+01	8.177E+00	-0.130
	+	88.36		4.218E-01	2.470E-01	4.353E-01	4.994E-02	0.969
		201.83		-3.159E-02	4.014E-02	5.370E-02	3.674E-03	-0.588
		306.84	*	-1.083E-02	2.851E-02	4.543E-02	3.061E-03	-0.238
LU-177		401.10		1.612E+00	7.643E+00	1.264E+01	7.183E-01	0.128
		112.95		2.646E+00	2.195E+00	3.716E+00	2.909E-01	0.712
LU-177M	+	208.36	*	5.135E+00	2.470E+00	2.851E+00	1.959E-01	1.801
		52.97		-1.861E+00	3.826E+00	6.249E+00	8.583E-01	-0.298
		54.07		-9.919E-01	1.927E+00	3.142E+00	4.259E-01	-0.316
	+	61.30		1.913E+00	3.062E+00	4.504E+00	5.437E-01	0.425
		121.62		-1.716E-01	4.365E-01	7.016E-01	5.055E-02	-0.245
		147.16		-1.905E-01	7.558E-01	1.214E+00	8.211E-02	-0.157
		171.86		2.000E-01	5.652E-01	9.221E-01	6.158E-02	0.217
		218.09		2.633E-01	1.019E+00	1.644E+00	1.136E-01	0.160
	+	268.79		3.744E+00	1.390E+00	1.746E+00	1.210E-01	2.145
		319.02		-6.142E-02	2.937E-01	4.841E-01	3.212E-02	-0.127
HF-181		367.43		6.437E-01	9.885E-01	1.688E+00	1.022E-01	0.381
		413.65	*	-1.288E-01	1.994E-01	3.168E-01	1.806E-02	-0.407
		56.28		-7.230E-01	2.038E+00	3.300E+00	4.309E-01	-0.219
		57.53		-9.764E-02	1.126E+00	1.713E+00	2.184E-01	-0.057
		65.20		-1.181E+00	1.771E+00	2.466E+00	2.870E-01	-0.479
		133.02		-2.910E-02	7.749E-02	1.243E-01	8.619E-03	-0.234
		136.25		6.842E-02	5.357E-01	8.738E-01	6.017E-02	0.078
		345.85		-1.090E-01	3.019E-01	3.680E-01	2.336E-02	-0.296
		482.03	*	-3.713E-02	4.752E-02	7.377E-02	4.200E-03	-0.503
	W-181	56.28		-2.762E-01	7.802E-01	1.263E+00	1.650E-01	-0.219
TA-182		57.53		-3.787E-02	4.316E-01	6.562E-01	8.369E-02	-0.058
		65.20	*	-4.489E-01	6.731E-01	9.375E-01	1.091E-01	-0.479
		67.75		1.703E-02	2.031E-01	2.763E-01	3.155E-02	0.062
		100.10		4.576E-02	2.405E-01	3.485E-01	3.205E-02	0.131
		152.43		2.734E-01	3.998E-01	6.609E-01	4.445E-02	0.414
		222.10		1.917E-01	4.140E-01	6.726E-01	4.656E-02	0.285
		1001.68		2.706E-01	2.176E+00	3.515E+00	2.719E-01	0.077
	+	1121.28		6.399E-01	3.689E-01	3.799E-01	2.435E-02	1.685



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183		1189.05		1.471E-01	3.190E-01	5.383E-01	3.160E-02	0.273
		1221.42	*	1.382E-01	2.068E-01	3.530E-01	2.201E-02	0.392
		1230.97		-4.878E-01	4.916E-01	7.295E-01	4.628E-02	-0.669
		57.98		3.259E-01	4.407E-01	6.575E-01	8.313E-02	0.496
		59.32		1.368E-01	2.250E-01	3.367E-01	4.149E-02	0.406
		67.20		-2.353E-02	3.748E-01	5.065E-01	5.804E-02	-0.046
RE-184		162.32	*	2.016E-02	1.289E-01	2.093E-01	1.395E-02	0.096
	+	208.81		3.801E+00	1.828E+00	2.097E+00	1.442E-01	1.812
		291.72		1.426E+00	1.287E+00	1.977E+00	1.352E-01	0.721
		57.98		1.186E+00	1.604E+00	2.394E+00	3.027E-01	0.496
		59.32		4.975E-01	8.185E-01	1.225E+00	1.509E-01	0.406
		67.20		-8.564E-02	1.364E+00	1.843E+00	2.112E-01	-0.046
OS-185		161.27		1.348E-01	4.075E-01	6.657E-01	4.441E-02	0.203
		216.55		2.858E-01	3.124E-01	5.161E-01	3.563E-02	0.554
		252.85	*	2.068E-02	2.632E-01	4.433E-01	3.086E-02	0.047
		318.01		-7.184E-01	5.159E-01	8.006E-01	5.319E-02	-0.897
		792.07		2.761E-01	1.228E+00	1.801E+00	1.230E-01	0.153
		903.28		3.568E-01	1.151E+00	1.695E+00	1.441E-01	0.211
RE-188		920.93		-7.548E-02	4.850E-01	7.913E-01	6.637E-02	-0.095
		59.72		3.266E-01	5.956E-01	8.890E-01	1.090E-01	0.367
	+	61.14		2.106E-01	3.371E-01	4.977E-01	6.017E-02	0.423
		69.30		1.487E-01	4.881E-01	7.180E-01	8.120E-02	0.207
		592.07		-1.388E+00	3.029E+00	4.753E+00	2.563E-01	-0.292
		646.12	*	5.923E-03	4.693E-02	7.618E-02	3.903E-03	0.078
W-188		717.42		6.175E-01	9.584E-01	1.639E+00	9.446E-02	0.377
		874.81		-3.862E-02	5.941E-01	9.790E-01	7.974E-02	-0.039
		880.27		-1.152E-01	7.584E-01	1.240E+00	1.021E-01	-0.093
		155.03	*	1.928E-01	2.045E-01	3.404E-01	2.284E-02	0.566
		477.96		1.291E+00	3.530E+00	5.888E+00	3.354E-01	0.219
		633.10		-2.229E-01	3.007E+00	4.816E+00	2.502E-01	-0.046
IR-192	+	63.58		7.285E+01	1.166E+02	1.485E+02	1.753E+01	0.491
		227.08		-7.886E+00	1.490E+01	2.466E+01	1.711E+00	-0.320
		290.67	*	-7.003E+00	9.898E+00	1.376E+01	9.416E-01	-0.509
	+	295.96		1.283E+00	2.080E-01	3.258E-01	2.245E-02	3.937
		308.46		-4.740E-02	1.092E-01	1.783E-01	1.209E-02	-0.266
		316.51	*	-4.395E-02	3.968E-02	6.254E-02	4.180E-03	-0.703
AU-195		468.07		9.848E-02	8.523E-02	1.314E-01	8.682E-03	0.749
		604.41		-1.174E-02	5.943E-01	8.259E-01	9.185E-02	-0.014
		612.46		2.307E+00	9.839E-01	1.600E+00	1.151E-01	1.442
		65.12		-2.057E-01	3.113E-01	4.337E-01	5.051E-02	-0.474
		66.83		-2.833E-02	1.654E-01	2.360E-01	2.712E-02	-0.120
	+	75.70		1.971E+00	4.094E-01	6.112E-01	6.786E-02	3.225
TL-200		98.88	*	3.757E-01	2.839E-01	4.500E-01	4.218E-02	0.835
		129.76		5.020E+00	3.307E+00	5.611E+00	3.924E-01	0.895
		367.94	*	7.577E-04	3.307E+00	Half-Life	too short	
		579.30		3.282E-02	3.307E+00	Half-Life	too short	
		828.27		-4.417E-04	3.307E+00	Half-Life	too short	
		1205.75		2.558E-03	3.307E+00	Half-Life	too short	
TL-201		68.90		4.972E+00	1.263E+01	1.863E+01	2.112E+00	0.267



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		70.82		2.162E+00	6.850E+00	1.007E+01	1.131E+00	0.215
		80.30		-1.645E+01	1.407E+01	1.587E+01	1.771E+00	-1.037
		135.34		-2.433E+01	4.614E+01	7.352E+01	5.072E+00	-0.331
		167.43	*	9.644E-01	1.294E+01	2.092E+01	1.392E+00	0.046
		68.90		3.132E-01	7.954E-01	1.174E+00	1.331E-01	0.267
		70.82		1.358E-01	4.304E-01	6.328E-01	7.105E-02	0.215
HG-203		80.30		-1.034E+00	8.843E-01	9.974E-01	1.113E-01	-1.037
		439.56	*	9.699E-03	8.669E-02	1.431E-01	8.179E-03	0.068
		70.83		5.425E-01	1.710E+00	2.514E+00	3.868E-01	0.216
	+	72.87		4.760E+00	1.500E+00	1.684E+00	2.522E-01	2.827
BI-207		82.60		1.324E-01	1.798E+00	2.367E+00	3.674E-01	0.056
		279.20	*	-4.563E-03	4.955E-02	8.262E-02	5.950E-03	-0.055
	+	72.80		1.353E+00	4.042E-01	4.765E-01	5.315E-02	2.839
	+	74.97		8.015E-01	2.394E-01	3.375E-01	3.750E-02	2.375
TL-207		84.90		5.674E-01	2.897E-01	4.257E-01	4.837E-02	1.333
		569.67		1.125E-02	3.096E-02	5.140E-02	2.817E-03	0.219
		1063.62	*	-1.846E-03	5.534E-02	9.038E-02	6.421E-03	-0.020
		1770.23		3.079E-02	6.362E-01	9.029E-01	5.591E-02	0.034
		81.07		-2.297E-01	4.324E-01	4.334E-01	4.848E-02	-0.530
		83.78		1.540E-01	1.817E-01	2.615E-01	2.955E-02	0.589
		94.90		9.913E-02	2.994E-01	4.369E-01	4.381E-02	0.227
		122.32		-1.165E-01	2.002E+00	3.257E+00	2.578E-01	-0.036
		144.24		2.643E-01	8.225E-01	1.296E+00	1.043E-01	0.204
		154.21		6.174E-01	4.595E-01	7.727E-01	6.016E-02	0.799
PO-209	+	269.46		8.686E-01	3.228E-01	4.114E-01	2.943E-02	2.111
	+	323.87	*	-7.462E-01	8.017E-01	1.265E+00	2.126E-01	-0.590
	+	338.28		8.963E+00	2.226E+00	2.794E+00	3.044E-01	3.208
		445.03		-8.166E-01	2.415E+00	3.879E+00	3.965E-01	-0.211
		260.50		5.066E+00	1.070E+01	1.828E+01	1.271E+00	0.277
		262.80		-5.479E+00	3.229E+01	4.888E+01	3.396E+00	-0.112
BI-210		896.60	*	4.986E-01	7.652E+00	1.272E+01	1.083E+00	0.039
		46.50	*	7.160E-01	1.262E+01	2.033E+01	2.111E+00	0.035
		46.50	*	7.160E-01	1.262E+01	2.033E+01	2.111E+00	0.035
		46.50	*	7.160E-01	1.262E+01	2.033E+01	1.953E+00	0.035
PB-211		404.84	*	-1.927E+00	1.671E+00	1.669E+00	1.040E+00	-1.155
		427.08		-9.508E-01	2.449E+00	3.823E+00	2.363E+00	-0.249
		831.96		-7.430E-01	1.413E+00	2.132E+00	1.333E+00	-0.349
	+	727.18	*	9.775E-01	6.038E-01	6.940E-01	5.404E-02	1.408
PO-215		785.46		1.435E+00	1.812E+00	3.175E+00	2.138E-01	0.452
		1620.62		1.957E+00	1.402E+00	2.681E+00	1.844E-01	0.730
		81.07		-2.297E-01	4.324E-01	4.334E-01	4.848E-02	-0.530
		83.78		1.540E-01	1.817E-01	2.615E-01	2.955E-02	0.589
		94.90		9.913E-02	2.994E-01	4.369E-01	4.381E-02	0.227
		122.32		-1.165E-01	2.002E+00	3.257E+00	2.578E-01	-0.036
		144.24		2.643E-01	8.225E-01	1.296E+00	1.043E-01	0.204
		154.21		6.174E-01	4.595E-01	7.727E-01	6.016E-02	0.799
	+	269.46		8.686E-01	3.228E-01	4.114E-01	2.943E-02	2.111
	+	323.87	*	-7.462E-01	8.017E-01	1.265E+00	2.126E-01	-0.590
	+	338.28		8.963E+00	2.226E+00	2.794E+00	3.044E-01	3.208



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	445.03			-8.166E-01	2.415E+00	3.879E+00	3.965E-01	-0.211
	271.23			4.435E-01	3.236E-01	5.013E-01	4.485E-02	0.885
	401.81		*	6.702E-02	4.645E-01	7.708E-01	1.045E-01	0.087
RN-220	549.76		*	1.572E+01	2.893E+01	4.853E+01	2.692E+00	0.324
RA-223	81.07			-2.297E-01	4.324E-01	4.334E-01	4.848E-02	-0.530
	83.78			1.540E-01	1.817E-01	2.615E-01	2.955E-02	0.589
	94.90			9.913E-02	2.994E-01	4.369E-01	4.381E-02	0.227
	122.32			-1.165E-01	2.002E+00	3.257E+00	2.578E-01	-0.036
	144.24			2.643E-01	8.225E-01	1.296E+00	1.043E-01	0.204
	154.21			6.174E-01	4.595E-01	7.727E-01	6.016E-02	0.799
+	269.46			8.686E-01	3.228E-01	4.114E-01	2.943E-02	2.111
	323.87		*	-7.462E-01	8.017E-01	1.265E+00	2.126E-01	-0.590
	338.28		+	8.963E+00	2.226E+00	2.794E+00	3.044E-01	3.208
AC-227	445.03			-8.166E-01	2.415E+00	3.879E+00	3.965E-01	-0.211
	79.80			-3.695E+00	2.715E+00	3.246E+00	7.346E-01	-1.138
	236.00			4.947E+00	6.721E-01	8.094E-01	9.012E-02	6.112
	256.20		*	-1.389E-01	4.267E-01	7.066E-01	1.023E-01	-0.197
	286.10			-2.424E-02	1.756E+00	2.934E+00	3.559E-01	-0.008
	299.80		+	3.048E+00	2.345E+00	2.939E+00	4.897E-01	1.037
	304.40			1.513E+00	2.394E+00	3.582E+00	6.319E-01	0.422
	334.20			-1.336E+00	3.103E+00	4.342E+00	8.060E-01	-0.308
TH-227	79.80			-3.695E+00	2.718E+00	3.246E+00	7.431E-01	-1.138
	94.00			8.171E+00	3.139E+00	4.123E+00	9.255E-01	1.982
	236.00			4.947E+00	6.205E-01	8.094E-01	7.961E-02	6.112
	256.20		*	-1.389E-01	4.269E-01	7.066E-01	1.225E-01	-0.197
	286.10			-2.424E-02	1.756E+00	2.934E+00	2.941E+00	-0.008
	299.80		+	3.048E+00	2.345E+00	2.939E+00	4.897E-01	1.037
	304.40			1.513E+00	2.394E+00	3.582E+00	6.319E-01	0.422
	334.20			-1.336E+00	3.103E+00	4.342E+00	8.060E-01	-0.308
TH-229	85.43		+	6.321E-01	2.649E-01	4.305E-01	4.906E-02	1.468
	88.47		+	2.428E-01	1.422E-01	2.479E-01	2.837E-02	0.979
	100.00			1.496E-01	2.437E-01	3.593E-01	3.310E-02	0.416
	193.63		*	-3.920E-01	5.899E-01	9.214E-01	6.264E-02	-0.425
	210.97			1.480E+00	9.942E-01	1.486E+00	1.023E-01	0.996
	283.67		*	9.259E-01	1.775E+00	3.021E+00	4.310E-01	0.306
PA-231	301.29			8.079E-01	7.597E-01	1.159E+00	1.278E-01	0.697
TH-231	81.07			-2.297E-01	4.324E-01	4.334E-01	4.848E-02	-0.530
	83.78			1.540E-01	1.817E-01	2.615E-01	2.955E-02	0.589
	94.90			9.913E-02	2.994E-01	4.369E-01	4.381E-02	0.227
	122.32			-1.165E-01	2.002E+00	3.257E+00	2.578E-01	-0.036
	144.24			2.643E-01	8.225E-01	1.296E+00	1.043E-01	0.204
	154.21			6.174E-01	4.595E-01	7.727E-01	6.016E-02	0.799
+	269.46			8.686E-01	3.228E-01	4.114E-01	2.943E-02	2.111
	323.87		*	-7.462E-01	8.017E-01	1.265E+00	2.126E-01	-0.590
	338.28		+	8.963E+00	2.226E+00	2.794E+00	3.044E-01	3.208
U-231	445.03			-8.166E-01	2.415E+00	3.879E+00	3.965E-01	-0.211
	84.21			1.377E+01	1.115E+01	1.621E+01	1.835E+00	0.849
	92.29		+	1.293E+01	4.988E+00	6.694E+00	7.055E-01	1.932
	95.87		*	-2.304E+00	2.069E+00	2.751E+00	2.711E-01	-0.837



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233	+	108.00		-2.164E+00	3.789E+00	5.278E+00	4.367E-01	-0.410
	+	75.28		2.339E+01	7.591E+00	9.942E+00	1.677E+00	2.352
	+	86.59		5.519E+00	2.704E+00	3.639E+00	1.014E+00	1.516
	+	300.12		8.497E-01	6.491E-01	8.250E-01	1.146E-01	1.030
		311.98	*	6.017E-02	7.082E-02	1.222E-01	8.564E-03	0.492
		340.50		2.254E+00	9.651E-01	1.352E+00	3.127E-01	1.667
		398.62		-1.278E+00	2.465E+00	3.892E+00	1.005E+00	-0.328
PA-234		415.76		-1.077E+00	1.809E+00	2.856E+00	5.871E-01	-0.377
	+	63.00		2.069E+00	3.324E+00	4.346E+00	7.614E-01	0.476
		94.67		1.861E-01	2.185E-01	3.237E-01	4.354E-02	0.575
		98.44		1.830E-01	1.549E-01	1.829E-01	1.023E-01	1.001
		99.86		5.305E-01	6.151E-01	9.156E-01	8.452E-02	0.579
		111.00		-5.837E-02	2.160E-01	3.373E-01	3.929E-02	-0.173
		131.20		-1.544E-01	1.246E-01	1.935E-01	1.348E-02	-0.798
		152.70		4.441E-01	3.831E-01	6.329E-01	1.023E-01	0.702
	+	186.00		4.715E+00	2.788E+00	2.905E+00	8.933E-01	1.623
		226.40		-2.366E-01	4.609E-01	7.622E-01	9.275E-02	-0.310
		227.20		-2.718E-01	4.927E-01	8.147E-01	5.651E-02	-0.334
		248.90		-1.197E-01	9.201E-01	1.538E+00	3.358E-01	-0.078
	+	293.70		7.918E+00	1.747E+00	2.021E+00	3.330E-01	3.919
		369.80		-6.446E-01	9.588E-01	1.516E+00	3.166E-01	-0.425
		568.70		-5.469E-01	1.031E+00	1.609E+00	8.823E-02	-0.340
		569.50		1.214E-01	2.736E-01	4.566E-01	2.503E-02	0.266
		574.00		-3.666E-01	1.689E+00	2.530E+00	1.383E-01	-0.145
		699.00		-5.924E-02	7.759E-01	1.295E+00	2.317E-01	-0.046
		706.10		-3.332E-01	1.048E+00	1.702E+00	7.508E-01	-0.196
		733.00		1.492E-01	4.204E-01	6.269E-01	1.336E-01	0.238
		742.81		7.013E-01	1.509E+00	2.474E+00	1.656E+00	0.284
	+	796.30		2.376E+00	1.393E+00	1.780E+00	4.727E-01	1.335
		805.60		6.746E-01	1.046E+00	1.786E+00	5.401E-01	0.378
		819.60		-1.915E-01	1.286E+00	2.111E+00	7.967E-01	-0.091
		826.30		-2.643E-01	8.966E-01	1.446E+00	6.436E-01	-0.183
		831.60		-2.864E-01	6.802E-01	1.088E+00	3.213E-01	-0.263
		876.40		1.287E-01	8.339E-01	1.381E+00	1.419E+00	0.093
		880.51		7.792E-03	2.684E-01	4.456E-01	3.672E-02	0.017
		883.24		8.359E-03	2.728E-01	4.528E-01	3.042E-01	0.018
		899.00		-8.748E-01	9.594E-01	1.340E+00	5.855E-01	-0.653
		925.00		-3.707E-01	1.255E+00	1.980E+00	1.655E-01	-0.187
		926.50		5.852E-02	1.806E-01	3.050E-01	7.681E-02	0.192
		946.00	*	-3.568E-02	3.029E-01	4.946E-01	9.188E-02	-0.072
		949.00		4.310E-01	4.203E-01	7.507E-01	6.142E-02	0.574
		980.50		3.776E-01	7.165E-01	1.231E+00	9.759E-02	0.307
PA-234M	+	1394.10		-2.830E-01	1.199E+00	1.929E+00	1.253E+00	-0.147
		766.42		2.732E+01	1.835E+01	2.334E+01	1.177E+01	1.171
NP-236		1001.03	*	-7.590E-01	5.006E+00	7.918E+00	7.298E-01	-0.096
		94.67		1.430E-01	1.653E-01	2.457E-01	2.475E-02	0.582
		98.44		1.384E-01	8.885E-02	1.382E-01	1.305E-02	1.001
		111.00		-4.415E-02	1.633E-01	2.551E-01	2.039E-02	-0.173
		160.31	*	-2.980E-02	9.096E-02	1.452E-01	9.691E-03	-0.205



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239		99.55		2.154E-01	2.069E-01	3.099E-01	2.874E-02	0.695
		117.00	*	-3.803E-02	2.117E-01	3.433E-01	2.580E-02	-0.111
	+	209.75		2.937E+00	1.413E+00	1.606E+00	1.105E-01	1.829
		228.18		9.418E-02	2.588E-01	4.416E-01	3.064E-02	0.213
		277.60		3.793E-01	2.134E-01	3.773E-01	2.605E-02	1.005
		334.30		-5.988E-01	1.759E+00	2.484E+00	1.610E-01	-0.241
AM-241		59.54	*	1.464E-01	3.104E-01	4.620E-01	5.879E-02	0.317
CM-243		99.55		2.217E-01	2.130E-01	3.189E-01	2.958E-02	0.695
	+	103.76	*	1.710E-01	1.458E-01	1.870E-01	1.632E-02	0.915
		117.00		-3.913E-02	2.178E-01	3.532E-01	2.655E-02	-0.111
	+	209.75		2.896E+00	1.393E+00	1.584E+00	1.089E-01	1.829
		228.18		9.518E-02	2.616E-01	4.463E-01	3.097E-02	0.213
		277.60		3.825E-01	2.152E-01	3.804E-01	2.627E-02	1.005
AM-246		798.80		-1.694E-02	1.561E-01	2.212E-01	1.534E-02	-0.077
		1036.00		-1.653E-01	2.922E-01	4.538E-01	3.359E-02	-0.364
		1062.04		1.296E-01	2.449E-01	4.179E-01	2.976E-02	0.310
		1078.86	*	-1.048E-01	1.442E-01	2.202E-01	1.526E-02	-0.476
CM-247		278.00		1.409E+00	8.894E-01	1.564E+00	1.080E-01	0.901
		287.40		-6.519E-01	1.513E+00	2.338E+00	1.604E-01	-0.279
		402.60	*	-1.283E-02	4.456E-02	6.878E-02	3.911E-03	-0.187
CF-249		252.85		7.695E-02	9.791E-01	1.649E+00	1.148E-01	0.047
		333.44		-9.325E-02	2.308E-01	3.245E-01	2.106E-02	-0.287
		387.95	*	3.718E-03	4.382E-02	7.263E-02	4.164E-03	0.051
CF-251		176.60	*	-5.659E-02	1.537E-01	2.441E-01	1.636E-02	-0.232
		227.00		-2.251E-01	4.383E-01	7.257E-01	5.034E-02	-0.310
		285.00		7.518E-01	1.995E+00	3.384E+00	2.326E-01	0.222



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004733      *
* Acquisition date   : 4-JAN-2010 16:16:25 Detector SN# :                      *
* Detector ID        : GAM15 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 03:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 03:00:01.81 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 18-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G1202004733 Analyst initials: MXR1                 *
* Batch Number      : 936923 Sample Quantity : 1.111E+02 GRAM             *
* Recovery          : 1.00000 Carrier Weight : 0.00000                   *
*****
*
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                              *
* CALIB. DATE/TIME  : 16-FEB-2009 10:54:12 MS Isotope :                    *
* MSD DPM           : 0.000 MSD Isotope :                                *
* LCS DPM           : 0.000 LCS Isotope :                                *
* LCSD DPM          : 0.000 LCSD Isotope :                                *
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
K-40	2.200E+01	2.175E+00	5.286E-01	0.000E+00
CD-109	2.877E+00	1.182E+00	1.535E+00	0.000E+00
SN-126	2.819E-01	1.158E-01	1.516E-01	0.000E+00
CS-135	7.384E-01	2.710E-01	2.745E-01	0.000E+00
BA-137M	2.375E-01	8.182E-02	5.669E-02	0.000E+00
CS-137	2.511E-01	8.650E-02	5.993E-02	0.000E+00
EU-155	1.911E-01	1.596E-01	1.983E-01	0.000E+00
TL-208	6.055E-01	1.003E-01	6.427E-02	0.000E+00
BI-211	4.613E+00	5.708E-01	3.686E-01	0.000E+00
PB-212	1.911E+00	1.980E-01	1.055E-01	0.000E+00
PO-212	1.911E+00	1.980E-01	1.055E-01	0.000E+00
BI-214	1.478E+00	2.022E-01	1.219E-01	0.000E+00
PB-214	1.605E+00	2.148E-01	1.235E-01	0.000E+00
PO-214	1.605E+00	2.148E-01	1.235E-01	0.000E+00
PO-216	1.911E+00	1.980E-01	1.055E-01	0.000E+00
PO-218	1.605E+00	2.148E-01	1.235E-01	0.000E+00
RA-224	4.895E+00	1.593E+00	1.201E+00	0.000E+00
RA-226	1.478E+00	2.022E-01	1.219E-01	0.000E+00
AC-228	1.837E+00	3.778E-01	2.352E-01	0.000E+00
RA-228	1.837E+00	3.778E-01	2.352E-01	0.000E+00
TH-228	1.944E+00	2.014E-01	1.074E-01	0.000E+00
TH-230	1.478E+00	2.022E-01	1.219E-01	0.000E+00
TH-232	1.837E+00	3.778E-01	2.352E-01	0.000E+00
TH-234	1.775E+00	2.799E+00	3.675E+00	0.000E+00
U-234	1.478E+00	2.022E-01	1.219E-01	0.000E+00
U-235	8.046E-02	2.491E-01	4.052E-01	0.000E+00
NP-237	8.278E-01	3.790E-01	4.536E-01	0.000E+00
U-238	1.775E+00	2.799E+00	3.675E+00	0.000E+00
AM-243	4.465E-01	1.307E-01	1.211E-01	0.000E+00
ANH-511	1.448E-01	7.999E-02	5.274E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Key-Line



Nuclide	Activity (pCi/GRAM	K.L. Act error ) Ided	MDA (pCi/GRAM	)	
BE-7	3.198E-01	3.534E-01	6.208E-01	0.000E+00	NOT IDENT.
NA-22	1.637E-02	4.747E-02	8.040E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	8.879E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.558E-03	2.536E-02	4.309E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.967E-02	9.282E-02	0.000E+00	NOT IDENT.
SC-46	3.751E-03	4.036E-02	6.856E-02	0.000E+00	FAIL ABUN
V-48	-3.884E-02	7.564E-02	1.210E-01	0.000E+00	NOT IDENT.
CR-51	2.937E-01	4.378E-01	7.689E-01	0.000E+00	NOT IDENT.
MN-52	-3.835E-01	3.247E-01	4.544E-01	0.000E+00	NOT IDENT.
MN-54	7.090E-03	4.030E-02	6.901E-02	0.000E+00	NOT IDENT.
CO-56	7.713E-03	3.899E-02	6.695E-02	0.000E+00	NOT IDENT.
CO-57	-1.574E-03	2.838E-02	4.777E-02	0.000E+00	NOT IDENT.
CO-58	-2.630E-02	4.095E-02	6.618E-02	0.000E+00	NOT IDENT.
FE-59	-1.435E-01	9.752E-02	1.402E-01	0.000E+00	NOT IDENT.
CO-60	-9.009E-03	4.219E-02	6.764E-02	0.000E+00	NOT IDENT.
ZN-65	2.495E-02	1.058E-01	1.547E-01	0.000E+00	NOT IDENT.
GE-68	-9.852E-01	1.238E+00	1.912E+00	0.000E+00	NOT IDENT.
AS-73	-9.297E-01	1.910E+00	3.249E+00	0.000E+00	NOT IDENT.
AS-74	4.843E-02	1.124E-01	1.906E-01	0.000E+00	NOT IDENT.
SE-75	-1.939E-02	5.481E-02	8.057E-02	0.000E+00	NOT IDENT.
BR-77	1.562E+01	2.076E+01	3.609E+01	0.000E+00	FAIL ABUN
SR-82	-2.853E-01	4.165E-01	6.749E-01	0.000E+00	NOT IDENT.
RB-83	4.854E-02	7.637E-02	1.319E-01	0.000E+00	NOT IDENT.
RB-84	5.803E-03	6.880E-02	1.169E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	9.025E+00	1.491E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.730E-02	7.814E-02	0.000E+00	NOT IDENT.
RB-86	-1.196E-01	8.375E-01	1.377E+00	0.000E+00	NOT IDENT.
Y-88	1.112E-02	3.440E-02	6.022E-02	0.000E+00	NOT IDENT.
ZR-88	9.323E-03	3.500E-02	5.996E-02	0.000E+00	NOT IDENT.
Y-91	9.208E+00	1.813E+01	3.122E+01	0.000E+00	NOT IDENT.
NB-94	-6.314E-03	3.422E-02	5.791E-02	0.000E+00	NOT IDENT.
NB-95	7.989E-02	5.363E-02	8.791E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.523E-01	3.946E-01	0.000E+00	NOT IDENT.
ZR-95	7.385E-03	7.128E-02	1.223E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	9.388E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.893E+07	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.651E+01	1.995E+01	3.161E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.363E+19	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.324E-02	3.925E-02	6.310E-02	0.000E+00	NOT IDENT.
RH-102	1.640E-02	3.264E-02	5.612E-02	0.000E+00	FAIL ABUN
RU-103	2.151E-02	4.352E-02	7.474E-02	0.000E+00	FAIL ABUN
RH-106	-1.217E-01	3.485E-01	5.602E-01	0.000E+00	FAIL ABUN
RU-106	-1.217E-01	3.483E-01	5.602E-01	0.000E+00	FAIL ABUN
AG-108M	-1.335E-02	3.609E-02	5.949E-02	0.000E+00	NOT IDENT.
AG-110M	1.334E-02	4.321E-02	6.294E-02	0.000E+00	NOT IDENT.
IN-111	-3.865E-01	2.186E+00	3.264E+00	0.000E+00	NOT IDENT.
IN-113M	-2.462E-02	5.046E-02	8.328E-02	0.000E+00	NOT IDENT.
SN-113	-2.462E-02	5.046E-02	8.328E-02	0.000E+00	NOT IDENT.
IN-114M	-1.479E-01	2.456E-01	3.435E-01	0.000E+00	NOT IDENT.
CD-115	-1.508E+01	2.248E+01	3.581E+01	0.000E+00	NOT IDENT.
SN-117M	-6.002E-02	6.878E-02	1.111E-01	0.000E+00	NOT IDENT.
SB-122	3.456E+00	3.601E+00	6.327E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	9.076E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.447E-02	3.247E-02	5.268E-02	0.000E+00	NOT IDENT.
I-124	-3.609E-01	1.263E+00	1.753E+00	0.000E+00	FAIL ABUN
SB-124	7.715E-03	6.924E-02	1.182E-01	0.000E+00	FAIL ABUN
SB-125	1.199E-02	1.032E-01	1.747E-01	0.000E+00	FAIL ABUN
TE-125M	-9.992E-01	1.176E+01	1.737E+01	0.000E+00	NOT IDENT.
I-126	2.054E-01	2.520E-01	3.831E-01	0.000E+00	NOT IDENT.
SB-126	-9.036E-03	1.909E-01	2.802E-01	0.000E+00	NOT IDENT.
SB-127	-8.980E-01	2.000E+00	3.327E+00	0.000E+00	FAIL ABUN
XE-127	-1.563E-02	6.562E-02	9.330E-02	0.000E+00	NOT IDENT.
I-131	1.087E-02	1.491E-01	2.541E-01	0.000E+00	NOT IDENT.
TE-132	4.420E-01	1.209E+00	2.121E+00	0.000E+00	NOT IDENT.
BA-133	-2.643E-03	5.178E-02	7.611E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.349E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.330E-02	9.281E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	1.051E+18	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.255E-02	1.280E-01	2.092E-01	0.000E+00	FAIL ABUN
CE-139	-1.189E-02	3.413E-02	5.614E-02	0.000E+00	NOT IDENT.
BA-140	6.961E-02	3.068E-01	5.160E-01	0.000E+00	NOT IDENT.
LA-140	1.004E-01	1.022E-01	1.736E-01	0.000E+00	NOT IDENT.
CE-141	2.837E-02	7.343E-02	1.245E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.192E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.359E-01	2.304E-01	3.781E-01	0.000E+00	NOT IDENT.



PM-144	4.331E-02	3.701E-02	6.740E-02	0.000E+00	NOT IDENT.
PR-144	2.938E+00	2.510E+00	4.573E+00	0.000E+00	NOT IDENT.
PM-146	-5.682E-03	4.688E-02	7.814E-02	0.000E+00	NOT IDENT.
ND-147	6.559E-01	6.879E-01	1.202E+00	0.000E+00	FAIL ABUN
PM-149	4.748E+01	1.958E+02	3.395E+02	0.000E+00	NOT IDENT.
EU-152	-1.130E-01	1.658E-01	1.793E-01	0.000E+00	FAIL ABUN
GD-153	7.897E-02	1.052E-01	1.583E-01	0.000E+00	FAIL ABUN
EU-154	4.057E-02	1.321E-01	2.229E-01	0.000E+00	NOT IDENT.
TB-160	-2.318E-02	1.374E-01	2.288E-01	0.000E+00	FAIL ABUN
HO-166M	7.416E-03	6.008E-02	1.036E-01	0.000E+00	FAIL ABUN
TM-171	-9.274E+00	4.888E+01	7.244E+01	0.000E+00	NOT IDENT.
LU-176	-1.083E-02	2.794E-02	4.575E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	2.420E+00	2.879E+00	0.000E+00	FAIL ABUN
LU-177M	-1.288E-01	1.955E-01	3.183E-01	0.000E+00	FAIL ABUN
HF-181	-3.713E-02	4.657E-02	7.403E-02	0.000E+00	NOT IDENT.
W-181	-4.489E-01	6.597E-01	9.553E-01	0.000E+00	NOT IDENT.
TA-182	1.382E-01	2.026E-01	3.516E-01	0.000E+00	FAIL ABUN
RE-183	2.016E-02	1.264E-01	2.118E-01	0.000E+00	FAIL ABUN
RE-184	2.068E-02	2.579E-01	4.471E-01	0.000E+00	NOT IDENT.
OS-185	5.923E-03	4.599E-02	7.627E-02	0.000E+00	FAIL ABUN
RE-188	1.928E-01	2.004E-01	3.446E-01	0.000E+00	NOT IDENT.
W-188	-7.003E+00	9.700E+00	1.386E+01	0.000E+00	FAIL ABUN
IR-192	-4.395E-02	3.889E-02	6.297E-02	0.000E+00	FAIL ABUN
AU-195	3.757E-01	2.782E-01	4.571E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.860E+03	0.000E+00	0.000E+00	SHORT HLIF
TL-201	9.644E-01	1.268E+01	2.116E+01	0.000E+00	NOT IDENT.
TL-202	9.699E-03	8.496E-02	1.437E-01	0.000E+00	NOT IDENT.
HG-203	-4.563E-03	4.856E-02	8.326E-02	0.000E+00	FAIL ABUN
BI-207	-1.846E-03	5.423E-02	9.013E-02	0.000E+00	FAIL ABUN
TL-207	-7.462E-01	7.856E-01	1.273E+00	0.000E+00	FAIL ABUN
PO-209	4.986E-01	7.499E+00	1.271E+01	0.000E+00	NOT IDENT.
BI-210	7.160E-01	1.236E+01	2.077E+01	0.000E+00	NOT IDENT.
PB-210	7.160E-01	1.236E+01	2.077E+01	0.000E+00	NOT IDENT.
PO-210	7.160E-01	1.236E+01	2.077E+01	0.000E+00	NOT IDENT.
PB-211	-1.927E+00	1.638E+00	1.677E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.917E-01	6.942E-01	0.000E+00	FAIL ABUN
PO-215	-7.462E-01	7.856E-01	1.273E+00	0.000E+00	FAIL ABUN
RN-219	6.702E-02	4.552E-01	7.745E-01	0.000E+00	NOT IDENT.
RN-220	1.572E+01	2.835E+01	4.864E+01	0.000E+00	NOT IDENT.
RA-223	-7.462E-01	7.856E-01	1.273E+00	0.000E+00	FAIL ABUN
AC-227	-1.389E-01	4.182E-01	7.125E-01	0.000E+00	FAIL ABUN
TH-227	-1.389E-01	4.184E-01	7.125E-01	0.000E+00	FAIL ABUN
TH-229	-3.920E-01	5.781E-01	9.311E-01	0.000E+00	FAIL ABUN
PA-231	9.259E-01	1.739E+00	3.044E+00	0.000E+00	NOT IDENT.
TH-231	-7.462E-01	7.856E-01	1.273E+00	0.000E+00	FAIL ABUN
U-231	-2.304E+00	2.028E+00	2.795E+00	0.000E+00	FAIL ABUN
PA-233	6.017E-02	6.941E-02	1.230E-01	0.000E+00	FAIL ABUN
PA-234	-3.568E-02	2.969E-01	4.937E-01	0.000E+00	FAIL ABUN
PA-234M	-7.590E-01	4.906E+00	7.900E+00	0.000E+00	FAIL ABUN
NP-236	-2.980E-02	8.914E-02	1.469E-01	0.000E+00	NOT IDENT.
NP-239	-3.803E-02	2.075E-01	3.482E-01	0.000E+00	FAIL ABUN
AM-241	1.464E-01	3.042E-01	4.711E-01	0.000E+00	NOT IDENT.
CM-243	1.710E-01	1.429E-01	1.899E-01	0.000E+00	FAIL ABUN
AM-246	-1.048E-01	1.413E-01	2.195E-01	0.000E+00	NOT IDENT.
CM-247	-1.283E-02	4.367E-02	6.911E-02	0.000E+00	NOT IDENT.
CF-249	3.718E-03	4.294E-02	7.300E-02	0.000E+00	NOT IDENT.
CF-251	-5.659E-02	1.506E-01	2.469E-01	0.000E+00	NOT IDENT.



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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004733.CNF;1
Sample date    : 18-DEC-2009 12:00:00 Acquisition date : 4-JAN-2010 16:16:25.
Sample ID     : G1202004733 Sample quantity : 1.11113E+02 GRAM
Detector name  : GAM15 Detector geometry: CAN
Elapsed live time: 0 03:00:00.00 Elapsed real time: 0 03:00:01.81 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit: 75.00000 Sensitivity : 5.00000
Batch ID      : 936923 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1041	10.67*	9.987E-01	2.200E+01	2.200E+01	10.09
CD-109	88.03	204	3.72*	4.410E+00	2.804E+00	2.877E+00	41.91
SN-126	64.28	-----	9.60	1.930E+00	-----	Line Not Found	-----
	86.94	204	8.90	4.410E+00	1.172E+00	1.172E+00	58.24
	87.57	204	37.00*	4.410E+00	2.819E-01	2.819E-01	41.91
CS-135	268.24	203	16.00*	3.865E+00	7.384E-01	7.384E-01	37.46
BA-137M	661.65	191	89.98*	2.018E+00	2.373E-01	2.375E-01	35.15
CS-137	661.65	191	85.12*	2.018E+00	2.508E-01	2.511E-01	35.15
EU-155	48.70	-----	4.60	3.809E-01	-----	Line Not Found	-----
	60.01	-----	1.11	1.416E+00	-----	Line Not Found	-----
	86.54	204	30.90	4.410E+00	3.376E-01	3.398E-01	41.93
	105.31	95	20.70*	5.420E+00	1.898E-01	1.911E-01	85.25
TL-208	277.35	-----	6.80	3.788E+00	-----	Line Not Found	-----
	510.84	158	21.60	2.461E+00	6.703E-01	6.703E-01	56.99
	583.14	505	84.20*	2.229E+00	6.055E-01	6.055E-01	16.90
	860.37	82	12.46	1.613E+00	9.242E-01	9.242E-01	46.12
BI-211	72.87	412	1.27	3.152E+00	2.320E+01	2.320E+01	29.87
	351.07	850	12.94*	3.205E+00	4.613E+00	4.613E+00	12.62
PB-212	74.81	412	10.70	3.152E+00	2.754E+00	2.754E+00	31.30
	77.11	605	18.00	3.416E+00	2.216E+00	2.216E+00	20.77
	87.30	204	8.00	4.410E+00	1.304E+00	1.304E+00	43.08
	238.63	1597	44.60*	4.220E+00	1.911E+00	1.911E+00	10.57
	300.09	89	3.41	3.586E+00	1.644E+00	1.644E+00	75.65
PO-212	74.81	412	10.70	3.152E+00	2.754E+00	2.754E+00	31.30
	77.11	605	18.00	3.416E+00	2.216E+00	2.216E+00	20.77
	87.30	204	8.00	4.410E+00	1.304E+00	1.304E+00	43.08
	115.19	-----	0.60	5.666E+00	-----	Line Not Found	-----
	238.63	1597	44.60*	4.220E+00	1.911E+00	1.911E+00	10.57
	300.09	89	3.41	3.586E+00	1.644E+00	1.644E+00	75.65
BI-214	609.31	655	46.30*	2.155E+00	1.478E+00	1.478E+00	13.96
	1120.29	113	15.10	1.262E+00	1.337E+00	1.337E+00	58.02
	1764.49	89	15.80	8.815E-01	1.443E+00	1.443E+00	40.71



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-214	74.81	412	6.21	3.152E+00	4.745E+00	4.745E+00	30.78
	77.11	605	10.50	3.416E+00	3.799E+00	3.799E+00	22.12
	87.30	204	4.67	4.410E+00	2.233E+00	2.234E+00	42.61
	241.98	359	7.49	4.185E+00	2.581E+00	2.582E+00	33.68
	295.21	510	19.20	3.629E+00	1.650E+00	1.650E+00	17.35
	351.92	850	37.20*	3.205E+00	1.605E+00	1.605E+00	13.66
PO-214	74.81	412	6.21	3.152E+00	4.745E+00	4.745E+00	30.78
	77.11	605	10.50	3.416E+00	3.799E+00	3.799E+00	22.12
	87.30	204	4.67	4.410E+00	2.233E+00	2.234E+00	42.61
	241.98	359	7.49	4.185E+00	2.581E+00	2.582E+00	33.68
	295.21	510	19.20	3.629E+00	1.650E+00	1.650E+00	17.35
	351.92	850	37.20*	3.205E+00	1.605E+00	1.605E+00	13.66
PO-216	74.81	412	10.70	3.152E+00	2.754E+00	2.754E+00	31.30
	77.11	605	18.00	3.416E+00	2.216E+00	2.216E+00	20.77
	87.30	204	8.00	4.410E+00	1.304E+00	1.304E+00	43.08
	238.63	1597	44.60*	4.220E+00	1.911E+00	1.911E+00	10.57
	300.09	89	3.41	3.586E+00	1.644E+00	1.644E+00	75.65
	74.81	412	6.21	3.152E+00	4.745E+00	4.745E+00	30.78
PO-218	77.11	605	10.50	3.416E+00	3.799E+00	3.799E+00	22.12
	87.30	204	4.67	4.410E+00	2.233E+00	2.234E+00	42.61
	241.98	359	7.49	4.185E+00	2.581E+00	2.582E+00	33.68
	295.21	510	19.20	3.629E+00	1.650E+00	1.650E+00	17.35
	351.92	850	37.20*	3.205E+00	1.605E+00	1.605E+00	13.66
	240.98	359	3.95*	4.185E+00	4.895E+00	4.895E+00	33.21
RA-224	609.31	655	46.30*	2.155E+00	1.478E+00	1.478E+00	13.96
RA-226	1120.29	113	15.10	1.262E+00	1.337E+00	1.337E+00	58.02
	1764.49	89	15.80	8.815E-01	1.443E+00	1.443E+00	40.71
AC-228	338.32	358	11.40	3.295E+00	2.146E+00	2.146E+00	46.56
	911.07	346	27.70*	1.532E+00	1.837E+00	1.837E+00	20.99
	969.11	199	16.60	1.447E+00	1.868E+00	1.868E+00	31.69
RA-228	338.32	358	11.40	3.295E+00	2.146E+00	2.146E+00	46.56
	911.07	346	27.70*	1.532E+00	1.837E+00	1.837E+00	20.99
	969.11	199	16.60	1.447E+00	1.868E+00	1.868E+00	31.69
TH-228	74.81	412	10.70	3.152E+00	2.754E+00	2.802E+00	29.89
	77.11	605	18.00	3.416E+00	2.216E+00	2.254E+00	20.77
	87.30	204	8.00	4.410E+00	1.304E+00	1.326E+00	41.91
	238.63	1597	44.60*	4.220E+00	1.911E+00	1.944E+00	10.57
TH-230	300.09	89	3.41	3.586E+00	1.644E+00	1.673E+00	95.54
	609.31	655	46.30*	2.155E+00	1.478E+00	1.478E+00	13.96
	1120.29	113	15.10	1.262E+00	1.337E+00	1.337E+00	58.02
	1764.49	89	15.80	8.815E-01	1.443E+00	1.443E+00	40.71
TH-232	338.32	358	11.40	3.295E+00	2.146E+00	2.146E+00	23.22
	911.07	346	27.70*	1.532E+00	1.837E+00	1.837E+00	20.99
	969.11	199	16.60	1.447E+00	1.868E+00	1.868E+00	31.69
TH-234	63.29	51	3.80*	1.693E+00	1.775E+00	1.775E+00	160.88
	92.38	278	5.41	4.817E+00	2.404E+00	2.404E+00	41.71
U-234	609.31	655	46.30*	2.155E+00	1.478E+00	1.478E+00	13.96
	1120.29	113	15.10	1.262E+00	1.337E+00	1.337E+00	58.02
	1764.49	89	15.80	8.815E-01	1.443E+00	1.443E+00	40.71



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-235	89.95	135	2.70	4.623E+00	2.437E+00	2.437E+00	65.63
	93.35	278	4.50	4.817E+00	2.890E+00	2.890E+00	46.89
	105.00	95	2.10	5.420E+00	1.871E+00	1.871E+00	89.90
	143.76	-----	10.50*	5.619E+00	-----	Line Not Found	-----
	163.35	-----	4.70	5.342E+00	-----	Line Not Found	-----
	185.71	209	54.00	4.984E+00	1.746E-01	1.746E-01	50.95
	205.31	-----	4.70	4.671E+00	-----	Line Not Found	-----
NP-237	86.50	204	12.60*	4.410E+00	8.278E-01	8.278E-01	46.71
	95.87	-----	2.60	5.041E+00	-----	Line Not Found	-----
U-238	63.29	51	3.80*	1.693E+00	1.775E+00	1.775E+00	160.88
	92.38	278	5.41	4.817E+00	2.404E+00	2.404E+00	38.56
AM-243	74.67	412	66.00*	3.152E+00	4.465E-01	4.465E-01	29.87
	86.72	204	0.34	4.410E+00	3.104E+01	3.104E+01	41.91
	117.66	-----	0.55	5.694E+00	-----	Line Not Found	-----
ANH-511	142.18	-----	0.13	5.637E+00	-----	Line Not Found	-----
	511.00	158	100.00*	2.461E+00	1.448E-01	1.448E-01	56.38

Flag: "\*" = Keyline



Total number of lines in spectrum 35  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 33 94.29%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.200E+01	2.200E+01	0.222E+01	10.09	
CD-109	464.00D	1.03	2.804E+00	2.877E+00	1.206E+00	41.91	
SN-126	1.00E+05Y	1.00	2.819E-01	2.819E-01	1.181E-01	41.91	
CS-135	2.30E+06Y	1.00	7.384E-01	7.384E-01	2.766E-01	37.46	
BA-137M	30.17Y	1.00	2.373E-01	2.375E-01	0.835E-01	35.15	
CS-137	30.17Y	1.00	2.508E-01	2.511E-01	0.883E-01	35.15	
EU-155	4.96Y	1.01	1.898E-01	1.911E-01	1.629E-01	85.25	
TL-208	1.41E+10Y	1.00	6.055E-01	6.055E-01	1.023E-01	16.90	
BI-211	7.04E+08Y	1.00	4.613E+00	4.613E+00	0.582E+00	12.62	
PB-212	1.41E+10Y	1.00	1.911E+00	1.911E+00	0.202E+00	10.57	
PO-212	1.41E+10Y	1.00	1.911E+00	1.911E+00	0.202E+00	10.57	
BI-214	1600.00Y	1.00	1.478E+00	1.478E+00	0.206E+00	13.96	
PB-214	1600.00Y	1.00	1.605E+00	1.605E+00	0.219E+00	13.66	
PO-214	1600.00Y	1.00	1.605E+00	1.605E+00	0.219E+00	13.66	
PO-216	1.41E+10Y	1.00	1.911E+00	1.911E+00	0.202E+00	10.57	
PO-218	1600.00Y	1.00	1.605E+00	1.605E+00	0.219E+00	13.66	
RA-224	1.41E+10Y	1.00	4.895E+00	4.895E+00	1.626E+00	33.21	
RA-226	1600.00Y	1.00	1.478E+00	1.478E+00	0.206E+00	13.96	
AC-228	1.41E+10Y	1.00	1.837E+00	1.837E+00	0.386E+00	20.99	
RA-228	1.41E+10Y	1.00	1.837E+00	1.837E+00	0.386E+00	20.99	
TH-228	1.91Y	1.02	1.911E+00	1.944E+00	0.206E+00	10.57	
TH-230	4.47E+09Y	1.00	1.478E+00	1.478E+00	0.206E+00	13.96	
TH-232	1.41E+10Y	1.00	1.837E+00	1.837E+00	0.386E+00	20.99	
TH-234	4.47E+09Y	1.00	1.775E+00	1.775E+00	2.856E+00	160.88	
U-234	4.47E+09Y	1.00	1.478E+00	1.478E+00	0.206E+00	13.96	
U-235	7.04E+08Y	1.00	1.746E-01	1.746E-01	0.890E-01	50.95	K
NP-237	2.14E+06Y	1.00	8.278E-01	8.278E-01	3.867E-01	46.71	
U-238	4.47E+09Y	1.00	1.775E+00	1.775E+00	2.856E+00	160.88	
AM-243	7380.00Y	1.00	4.465E-01	4.465E-01	1.334E-01	29.87	
ANH-511	1.00E+09Y	1.00	1.448E-01	1.448E-01	0.816E-01	56.38	

Total Activity : 6.563E+01 6.574E+01

Grand Total Activity : 6.563E+01 6.574E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Unidentified Energy Lines  
Sample ID : G1202004733

Page : 5  
Acquisition date : 4-JAN-2010 16:16:25

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	208.48	195	491	1.60	417.33	410	12	1.81E-02	47.6	4.62E+00	T
0	462.44	99	149	1.44	925.04	920	11	9.17E-03	51.7	2.64E+00	T
0	727.14	96	139	1.35	1454.27	1446	16	8.86E-03	61.3	1.87E+00	T
0	767.86	69	55	2.34	1535.69	1532	8	6.41E-03	44.4	1.78E+00	T
0	795.14	71	68	1.13	1590.25	1585	12	6.59E-03	52.3	1.73E+00	T
3	964.33	70	33	1.90	1928.54	1924	21	6.49E-03	37.3	1.45E+00	T
0	1377.65	58	46	1.54	2755.05	2746	17	5.39E-03	59.8	1.05E+00	T
0	1510.65	36	39	3.62	3021.01	3010	25	3.35E-03	97.2	9.73E-01	T
0	1590.70	48	36	1.31	3181.10	3172	21	4.45E-03	69.2	9.38E-01	
0	1848.42	16	16	1.41	3696.53	3689	11	1.49E-03	****	8.64E-01	

Flags: "T" = Tentatively associated



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*****
*                               GEL Laboratories LLC
*                               2040 Savage Road
*                               Charleston, SC 29414
*****
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004733.CNF;1
* Acquisition date   : 4-JAN-2010 16:16:25.  Detector SN#      :
* Detector ID        : GAM15                      Sensitivity    : 5.00000
* Geometry           : CAN                        Energy tolerance: 1.50000
* Elapsed live time  : 0 03:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 03:00:01.81             Half life ratio  : 8.00000
*****
*                               SAMPLE DATA
*
* Sample date        : 18-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G1202004733           Analyst initials: MXR1
* Batch Number       : 936923                Sample Quantity : 1.11113E+02 GRAM
*****
*                               QC DATA
*
* CALIB. DATE/TIME   : 16-FEB-2009 10:54:12.9MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A               LCS Isotope      :
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.200E+01	2.219E+00	5.313E-01	4.062E-02	41.396
CD-109	2.877E+00	1.206E+00	1.510E+00	1.746E-01	1.906
SN-126	2.819E-01	1.181E-01	1.491E-01	1.720E-02	1.891
CS-135	7.384E-01	2.766E-01	2.723E-01	2.328E-02	2.711
BA-137M	2.375E-01	8.349E-02	5.664E-02	2.850E-03	4.194
CS-137	2.511E-01	8.826E-02	5.987E-02	3.029E-03	4.194
EU-155	1.911E-01	1.629E-01	1.953E-01	1.691E-02	0.978
TL-208	6.055E-01	1.023E-01	6.415E-02	4.084E-03	9.440
BI-211	4.613E+00	5.824E-01	3.664E-01	2.517E-02	12.592
PB-212	1.911E+00	2.020E-01	1.046E-01	8.658E-03	18.266
PO-212	1.911E+00	2.020E-01	1.046E-01	8.658E-03	18.266
BI-214	1.478E+00	2.063E-01	1.217E-01	9.036E-03	12.145
PB-214	1.605E+00	2.192E-01	1.228E-01	1.059E-02	13.067
PO-214	1.605E+00	2.192E-01	1.228E-01	1.059E-02	13.067
PO-216	1.911E+00	2.020E-01	1.046E-01	8.658E-03	18.266
PO-218	1.605E+00	2.192E-01	1.228E-01	1.059E-02	13.067
RA-224	4.895E+00	1.626E+00	1.190E+00	8.283E-02	4.113
RA-226	1.478E+00	2.063E-01	1.217E-01	9.036E-03	12.145



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.837E+00	3.856E-01	2.356E-01	2.619E-02	7.796
RA-228	1.837E+00	3.856E-01	2.356E-01	2.619E-02	7.796
TH-228	1.944E+00	2.055E-01	1.064E-01	8.808E-03	18.266
TH-230	1.478E+00	2.063E-01	1.217E-01	9.036E-03	12.145
TH-232	1.837E+00	3.856E-01	2.356E-01	2.619E-02	7.796
TH-234	1.775E+00	2.856E+00	3.605E+00	7.116E-01	0.492
U-234	1.478E+00	2.063E-01	1.217E-01	9.036E-03	12.145
U-235	1.746E-01	8.898E-02	4.000E-01	6.675E-02	0.437
NP-237	8.278E-01	3.867E-01	4.462E-01	1.053E-01	1.855
U-238	1.775E+00	2.856E+00	3.605E+00	7.116E-01	0.492
AM-243	4.465E-01	1.334E-01	1.190E-01	1.323E-02	3.752
ANH-511	1.448E-01	8.162E-02	5.258E-02	2.969E-03	2.753

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.198E-01		3.606E-01	6.186E-01	4.122E-02	0.517
NA-22	1.637E-02		4.844E-02	8.074E-02	5.541E-03	0.203
NA-24	-3.588E+00		4.530E+00	Half-Life too short		
AL-26	2.558E-03		2.588E-02	4.339E-02	2.596E-03	0.059
TI-44	2.371E-01		6.089E-02	9.122E-02	1.014E-02	2.599
SC-46	3.751E-03		4.119E-02	6.865E-02	5.758E-03	0.055
V-48	-3.884E-02		7.719E-02	1.213E-01	9.580E-03	-0.320
CR-51	2.937E-01		4.468E-01	7.638E-01	5.508E-02	0.385
MN-52	-3.835E-01		3.313E-01	4.567E-01	3.386E-02	-0.840
MN-54	7.090E-03		4.112E-02	6.906E-02	5.176E-03	0.103
CO-56	7.713E-03		3.979E-02	6.701E-02	5.150E-03	0.115
CO-57	-1.574E-03		2.896E-02	4.711E-02	3.387E-03	-0.033
CO-58	-2.630E-02		4.178E-02	6.622E-02	4.730E-03	-0.397
FE-59	-1.435E-01		9.951E-02	1.406E-01	1.064E-02	-1.020
CO-60	-9.009E-03		4.305E-02	6.794E-02	5.128E-03	-0.133
ZN-65	2.495E-02		1.080E-01	1.552E-01	1.008E-02	0.161
GE-68	-9.852E-01		1.263E+00	1.917E+00	1.332E-01	-0.514
AS-73	-9.297E-01		1.949E+00	3.184E+00	4.352E-01	-0.292
AS-74	4.843E-02		1.147E-01	1.902E-01	1.023E-02	0.255
SE-75	-1.939E-02		5.593E-02	7.992E-02	5.590E-03	-0.243
BR-77	1.562E+01		2.118E+01	3.598E+01	2.025E+00	0.434
SR-82	-2.853E-01		4.250E-01	6.751E-01	4.456E-02	-0.423
RB-83	4.854E-02		7.793E-02	1.315E-01	7.402E-03	0.369
RB-84	5.803E-03		7.020E-02	1.170E-01	9.665E-03	0.050
KR-85	1.902E+01		9.209E+00	1.487E+01	8.385E-01	1.279
SR-85	9.968E-02		4.826E-02	7.791E-02	4.395E-03	1.279
RB-86	-1.196E-01		8.546E-01	1.381E+00	9.608E-02	-0.087
Y-88	1.112E-02		3.510E-02	6.064E-02	3.542E-03	0.183
ZR-88	9.323E-03		3.571E-02	5.965E-02	3.383E-03	0.156
Y-91	9.208E+00		1.850E+01	3.134E+01	1.895E+00	0.294
NB-94	-6.314E-03		3.492E-02	5.788E-02	3.220E-03	-0.109



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95	7.989E-02		5.472E-02	8.792E-02	5.666E-03	0.909
NB-95M	1.792E+00		2.575E-01	3.911E-01	3.304E-02	4.583
ZR-95	7.385E-03		7.274E-02	1.223E-01	9.119E-03	0.060
NB-97	4.542E-01		4.790E-01	Half-Life too short		
ZR-97	5.932E+01		9.659E+00	Half-Life too short		
MO-99	-1.651E+01		2.036E+01	3.161E+01	4.393E+00	-0.522
TC-99M	-4.764E+12		6.953E+12	Half-Life too short		
RH-101	1.324E-02		4.005E-02	6.245E-02	4.260E-03	0.212
RH-102	1.640E-02		3.330E-02	5.592E-02	3.188E-03	0.293
RU-103	2.151E-02		4.441E-02	7.450E-02	9.377E-03	0.289
RH-106	-1.217E-01		3.556E-01	5.593E-01	6.420E-02	-0.218
RU-106	-1.217E-01		3.554E-01	5.593E-01	2.939E-02	-0.218
AG-108M	-1.335E-02		3.683E-02	5.924E-02	3.683E-03	-0.225
AG-110M	1.334E-02		4.409E-02	6.288E-02	3.446E-03	0.212
IN-111	-3.865E-01		2.230E+00	3.236E+00	2.253E-01	-0.119
IN-113M	-2.462E-02		5.149E-02	8.286E-02	5.027E-03	-0.297
SN-113	-2.462E-02		5.149E-02	8.286E-02	5.027E-03	-0.297
IN-114M	-1.479E-01		2.506E-01	3.399E-01	2.305E-02	-0.435
CD-115	-1.508E+01		2.294E+01	3.571E+01	2.003E+00	-0.422
SN-117M	-6.002E-02		7.019E-02	1.097E-01	7.337E-03	-0.547
SB-122	3.456E+00		3.674E+00	6.312E+00	3.473E-01	0.548
I-123	-6.838E+01		4.631E+01	Half-Life too short		
TE-123M	-2.447E-02		3.314E-02	5.206E-02	3.514E-03	-0.470
I-124	-3.609E-01		1.288E+00	1.750E+00	9.358E-02	-0.206
SB-124	7.715E-03		7.066E-02	1.189E-01	8.351E-03	0.065
SB-125	1.199E-02		1.053E-01	1.740E-01	1.037E-02	0.069
TE-125M	-9.992E-01		1.200E+01	1.712E+01	1.702E+00	-0.058
I-126	2.054E-01		2.572E-01	3.828E-01	1.948E-02	0.537
SB-126	-9.036E-03		1.948E-01	2.801E-01	1.626E-02	-0.032
SB-127	-8.980E-01		2.041E+00	3.324E+00	3.298E-01	-0.270
XE-127	-1.563E-02		6.696E-02	9.236E-02	6.323E-03	-0.169
I-131	1.087E-02		1.521E-01	2.526E-01	1.709E-02	0.043
TE-132	4.420E-01		1.234E+00	2.102E+00	3.212E-01	0.210
BA-133	-2.643E-03		5.284E-02	7.567E-02	8.911E-03	-0.035
I-133	5.507E-03		1.709E-02	Half-Life too short		
CS-134	1.225E-01	+	6.460E-02	9.285E-02	6.470E-03	1.319
I-135	-3.941E+11		5.361E+11	Half-Life too short		
CS-136	-3.255E-02		1.306E-01	2.097E-01	1.616E-02	-0.155
CE-139	-1.189E-02		3.483E-02	5.549E-02	3.690E-03	-0.214
BA-140	6.961E-02		3.131E-01	5.146E-01	1.672E-01	0.135
LA-140	1.004E-01		1.042E-01	1.746E-01	1.217E-02	0.575
CE-141	2.837E-02		7.493E-02	1.229E-01	8.581E-03	0.231
CE-143	4.486E-03	+	6.084E-04	Half-Life too short		
CE-144	-1.359E-01		2.351E-01	3.731E-01	5.483E-02	-0.364
PM-144	4.331E-02		3.776E-02	6.736E-02	3.696E-03	0.643
PR-144	2.938E+00		2.562E+00	4.570E+00	2.505E-01	0.643
PM-146	-5.682E-03		4.784E-02	7.784E-02	6.666E-03	-0.073
ND-147	6.559E-01		7.019E-01	1.198E+00	1.610E-01	0.547



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149	4.748E+01		1.998E+02	3.370E+02	4.938E+01	0.141
EU-152	-1.130E-01		1.692E-01	1.782E-01	1.256E-02	-0.634
GD-153	7.897E-02		1.074E-01	1.558E-01	1.495E-02	0.507
EU-154	4.057E-02		1.347E-01	2.239E-01	2.245E-02	0.181
TB-160	-2.318E-02		1.403E-01	2.291E-01	1.884E-02	-0.101
HO-166M	7.416E-03		6.131E-02	1.035E-01	5.885E-03	0.072
TM-171	-9.274E+00		4.987E+01	7.111E+01	8.177E+00	-0.130
LU-176	-1.083E-02		2.851E-02	4.543E-02	3.061E-03	-0.238
LU-177	5.135E+00	+	2.470E+00	2.851E+00	1.959E-01	1.801
LU-177M	-1.288E-01		1.994E-01	3.168E-01	1.806E-02	-0.407
HF-181	-3.713E-02		4.752E-02	7.377E-02	4.200E-03	-0.503
W-181	-4.489E-01		6.731E-01	9.375E-01	1.091E-01	-0.479
TA-182	1.382E-01		2.068E-01	3.530E-01	2.201E-02	0.392
RE-183	2.016E-02		1.289E-01	2.093E-01	1.395E-02	0.096
RE-184	2.068E-02		2.632E-01	4.433E-01	3.086E-02	0.047
OS-185	5.923E-03		4.693E-02	7.618E-02	3.903E-03	0.078
RE-188	1.928E-01		2.045E-01	3.404E-01	2.284E-02	0.566
W-188	-7.003E+00		9.898E+00	1.376E+01	9.416E-01	-0.509
IR-192	-4.395E-02		3.968E-02	6.254E-02	4.180E-03	-0.703
AU-195	3.757E-01		2.839E-01	4.500E-01	4.218E-02	0.835
TL-200	7.577E-04		9.489E-04	Half-Life too short		
TL-201	9.644E-01		1.294E+01	2.092E+01	1.392E+00	0.046
TL-202	9.699E-03		8.669E-02	1.431E-01	8.179E-03	0.068
HG-203	-4.563E-03		4.955E-02	8.262E-02	5.950E-03	-0.055
BI-207	-1.846E-03		5.534E-02	9.038E-02	6.421E-03	-0.020
TL-207	-7.462E-01		8.017E-01	1.265E+00	2.126E-01	-0.590
PO-209	4.986E-01		7.652E+00	1.272E+01	1.083E+00	0.039
BI-210	7.160E-01		1.262E+01	2.033E+01	2.111E+00	0.035
PB-210	7.160E-01		1.262E+01	2.033E+01	2.111E+00	0.035
PO-210	7.160E-01		1.262E+01	2.033E+01	1.953E+00	0.035
PB-211	-1.927E+00		1.671E+00	1.669E+00	1.040E+00	-1.155
BI-212	9.775E-01	+	6.038E-01	6.940E-01	5.404E-02	1.408
PO-215	-7.462E-01		8.017E-01	1.265E+00	2.126E-01	-0.590
RN-219	6.702E-02		4.645E-01	7.708E-01	1.045E-01	0.087
RN-220	1.572E+01		2.893E+01	4.853E+01	2.692E+00	0.324
RA-223	-7.462E-01		8.017E-01	1.265E+00	2.126E-01	-0.590
AC-227	-1.389E-01		4.267E-01	7.066E-01	1.023E-01	-0.197
TH-227	-1.389E-01		4.269E-01	7.066E-01	1.225E-01	-0.197
TH-229	-3.920E-01		5.899E-01	9.214E-01	6.264E-02	-0.425
PA-231	9.259E-01		1.775E+00	3.021E+00	4.310E-01	0.306
TH-231	-7.462E-01		8.017E-01	1.265E+00	2.126E-01	-0.590
U-231	-2.304E+00		2.069E+00	2.751E+00	2.711E-01	-0.837
PA-233	6.017E-02		7.082E-02	1.222E-01	8.564E-03	0.492
PA-234	-3.568E-02		3.029E-01	4.946E-01	9.188E-02	-0.072
PA-234M	-7.590E-01		5.006E+00	7.918E+00	7.298E-01	-0.096
NP-236	-2.980E-02		9.096E-02	1.452E-01	9.691E-03	-0.205
NP-239	-3.803E-02		2.117E-01	3.433E-01	2.580E-02	-0.111
AM-241	1.464E-01		3.104E-01	4.620E-01	5.879E-02	0.317



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.710E-01	+	1.458E-01	1.870E-01	1.632E-02	0.915
AM-246	-1.048E-01		1.442E-01	2.202E-01	1.526E-02	-0.476
CM-247	-1.283E-02		4.456E-02	6.878E-02	3.911E-03	-0.187
CF-249	3.718E-03		4.382E-02	7.263E-02	4.164E-03	0.051
CF-251	-5.659E-02		1.537E-01	2.441E-01	1.636E-02	-0.232



# VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202004733          *
* Acquisition date   : 4-JAN-2010 16:16:25 Detector SN# :                   *
* Detector ID        : GAM15 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 03:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 03:00:01.81 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 18-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202004733 Analyst initials: MXR1                 *
* Batch Number       : 936923 Sample Quantity : 1.1111E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 16-FEB-2009 10:54:12 MS Isotope :                   *
* MSD DPM           : 0.000 MSD Isotope :                               *
* LCS DPM           : 0.000 LCS Isotope :                               *
* LCSD DPM          : 0.000 LCSD Isotope :                               *
*****

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## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
K-40	2.200E+01	2.175E+00	2.644E-01	1.110E+00
CD-109	2.877E+00	1.182E+00	7.678E-01	6.029E-01
SN-126	2.819E-01	1.158E-01	7.583E-02	5.907E-02
CS-135	7.384E-01	2.710E-01	1.373E-01	1.383E-01
BA-137M	2.375E-01	8.182E-02	2.836E-02	4.174E-02
CS-137	2.511E-01	8.650E-02	2.998E-02	4.413E-02
EU-155	1.911E-01	1.596E-01	9.920E-02	8.144E-02
TL-208	6.055E-01	1.003E-01	3.216E-02	5.116E-02
BI-211	4.613E+00	5.708E-01	1.844E-01	2.912E-01
PB-212	1.911E+00	1.980E-01	5.280E-02	1.010E-01
PO-212	1.911E+00	1.980E-01	5.280E-02	1.010E-01
BI-214	1.478E+00	2.022E-01	6.099E-02	1.032E-01
PB-214	1.605E+00	2.148E-01	6.181E-02	1.096E-01
PO-214	1.605E+00	2.148E-01	6.181E-02	1.096E-01
PO-216	1.911E+00	1.980E-01	5.280E-02	1.010E-01
PO-218	1.605E+00	2.148E-01	6.181E-02	1.096E-01
RA-224	4.895E+00	1.593E+00	6.007E-01	8.129E-01
RA-226	1.478E+00	2.022E-01	6.099E-02	1.032E-01
AC-228	1.837E+00	3.778E-01	1.177E-01	1.928E-01
RA-228	1.837E+00	3.778E-01	1.177E-01	1.928E-01
TH-228	1.944E+00	2.014E-01	5.371E-02	1.028E-01
TH-230	1.478E+00	2.022E-01	6.099E-02	1.032E-01
TH-232	1.837E+00	3.778E-01	1.177E-01	1.928E-01
TH-234	1.775E+00	2.799E+00	1.838E+00	1.428E+00
U-234	1.478E+00	2.022E-01	6.099E-02	1.032E-01
U-235	8.046E-02	2.491E-01	2.027E-01	1.271E-01
NP-237	8.278E-01	3.790E-01	2.270E-01	1.933E-01
U-238	1.775E+00	2.799E+00	1.838E+00	1.428E+00
AM-243	4.465E-01	1.307E-01	6.061E-02	6.669E-02
ANH-511	1.448E-01	7.999E-02	2.639E-02	4.081E-02

---- Non-Identified Nuclides ----

Key-Line



Nuclide	Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	3.198E-01	3.534E-01	3.106E-01	1.803E-01 NOT IDENT.
NA-22	1.637E-02	4.747E-02	4.022E-02	2.422E-02 NOT IDENT.
NA-24	-3.588E+06	8.879E+06	0.000E+00	4.530E+06 SHORT HLIF
AL-26	2.558E-03	2.536E-02	2.156E-02	1.294E-02 NOT IDENT.
TI-44	2.371E-01	5.967E-02	4.644E-02	3.045E-02 NOT IDENT.
SC-46	3.751E-03	4.036E-02	3.430E-02	2.059E-02 FAIL ABUN
V-48	-3.884E-02	7.564E-02	6.054E-02	3.859E-02 NOT IDENT.
CR-51	2.937E-01	4.378E-01	3.847E-01	2.234E-01 NOT IDENT.
MN-52	-3.835E-01	3.247E-01	2.273E-01	1.657E-01 NOT IDENT.
MN-54	7.090E-03	4.030E-02	3.452E-02	2.056E-02 NOT IDENT.
CO-56	7.713E-03	3.899E-02	3.349E-02	1.989E-02 NOT IDENT.
CO-57	-1.574E-03	2.838E-02	2.390E-02	1.448E-02 NOT IDENT.
CO-58	-2.630E-02	4.095E-02	3.311E-02	2.089E-02 NOT IDENT.
FE-59	-1.435E-01	9.752E-02	7.015E-02	4.976E-02 NOT IDENT.
CO-60	-9.009E-03	4.219E-02	3.384E-02	2.152E-02 NOT IDENT.
ZN-65	2.495E-02	1.058E-01	7.742E-02	5.400E-02 NOT IDENT.
GE-68	-9.852E-01	1.238E+00	9.563E-01	6.316E-01 NOT IDENT.
AS-73	-9.297E-01	1.910E+00	1.626E+00	9.743E-01 NOT IDENT.
AS-74	4.843E-02	1.124E-01	9.534E-02	5.737E-02 NOT IDENT.
SE-75	-1.939E-02	5.481E-02	4.031E-02	2.796E-02 NOT IDENT.
BR-77	1.562E+01	2.076E+01	1.805E+01	1.059E+01 FAIL ABUN
SR-82	-2.853E-01	4.165E-01	3.377E-01	2.125E-01 NOT IDENT.
RB-83	4.854E-02	7.637E-02	6.600E-02	3.897E-02 NOT IDENT.
RB-84	5.803E-03	6.880E-02	5.848E-02	3.510E-02 NOT IDENT.
KR-85	1.902E+01	9.025E+00	7.459E+00	4.605E+00 NOT IDENT.
SR-85	9.968E-02	4.730E-02	3.909E-02	2.413E-02 NOT IDENT.
RB-86	-1.196E-01	8.375E-01	6.890E-01	4.273E-01 NOT IDENT.
Y-88	1.112E-02	3.440E-02	3.013E-02	1.755E-02 NOT IDENT.
ZR-88	9.323E-03	3.500E-02	3.000E-02	1.786E-02 NOT IDENT.
Y-91	9.208E+00	1.813E+01	1.562E+01	9.248E+00 NOT IDENT.
NB-94	-6.314E-03	3.422E-02	2.897E-02	1.746E-02 NOT IDENT.
NB-95	7.989E-02	5.363E-02	4.398E-02	2.736E-02 NOT IDENT.
NB-95M	1.792E+00	2.523E-01	1.974E-01	1.287E-01 NOT IDENT.
ZR-95	7.385E-03	7.128E-02	6.120E-02	3.637E-02 NOT IDENT.
NB-97	4.542E+05	9.388E+05	0.000E+00	4.790E+05 SHORT HLIF
ZR-97	5.932E+07	1.893E+07	0.000E+00	9.659E+06 SHORT HLIF
MO-99	-1.651E+01	1.995E+01	1.582E+01	1.018E+01 NOT IDENT.
TC-99M	-4.764E+18	1.363E+19	0.000E+00	0.000E+00 SHORT HLIF
RH-101	1.324E-02	3.925E-02	3.157E-02	2.003E-02 NOT IDENT.
RH-102	1.640E-02	3.264E-02	2.808E-02	1.665E-02 FAIL ABUN
RU-103	2.151E-02	4.352E-02	3.739E-02	2.220E-02 FAIL ABUN
RH-106	-1.217E-01	3.485E-01	2.803E-01	1.778E-01 FAIL ABUN
RU-106	-1.217E-01	3.483E-01	2.803E-01	1.777E-01 FAIL ABUN
AG-108M	-1.335E-02	3.609E-02	2.976E-02	1.841E-02 NOT IDENT.
AG-110M	1.334E-02	4.321E-02	3.149E-02	2.204E-02 NOT IDENT.
IN-111	-3.865E-01	2.186E+00	1.633E+00	1.115E+00 NOT IDENT.
IN-113M	-2.462E-02	5.046E-02	4.167E-02	2.575E-02 NOT IDENT.
SN-113	-2.462E-02	5.046E-02	4.167E-02	2.575E-02 NOT IDENT.
IN-114M	-1.479E-01	2.456E-01	1.719E-01	1.253E-01 NOT IDENT.
CD-115	-1.508E+01	2.248E+01	1.792E+01	1.147E+01 NOT IDENT.
SN-117M	-6.002E-02	6.878E-02	5.557E-02	3.509E-02 NOT IDENT.
SB-122	3.456E+00	3.601E+00	3.165E+00	1.837E+00 NOT IDENT.
I-123	-6.838E+07	9.076E+07	0.000E+00	4.631E+07 SHORT HLIF
TE-123M	-2.447E-02	3.247E-02	2.636E-02	1.657E-02 NOT IDENT.
I-124	-3.609E-01	1.263E+00	8.773E-01	6.441E-01 FAIL ABUN
SB-124	7.715E-03	6.924E-02	5.911E-02	3.533E-02 FAIL ABUN
SB-125	1.199E-02	1.032E-01	8.742E-02	5.263E-02 FAIL ABUN
TE-125M	-9.992E-01	1.176E+01	8.691E+00	5.999E+00 NOT IDENT.
I-126	2.054E-01	2.520E-01	1.917E-01	1.286E-01 NOT IDENT.
SB-126	-9.036E-03	1.909E-01	1.402E-01	9.739E-02 NOT IDENT.
SB-127	-8.980E-01	2.000E+00	1.664E+00	1.021E+00 FAIL ABUN
XE-127	-1.563E-02	6.562E-02	4.668E-02	3.348E-02 NOT IDENT.
I-131	1.087E-02	1.491E-01	1.271E-01	7.606E-02 NOT IDENT.
TE-132	4.420E-01	1.209E+00	1.061E+00	6.168E-01 NOT IDENT.
BA-133	-2.643E-03	5.178E-02	3.808E-02	2.642E-02 NOT IDENT.
I-133	5.507E+03	3.349E+04	0.000E+00	1.709E+04 SHORT HLIF
CS-134	1.225E-01	6.330E-02	4.643E-02	3.230E-02 FAIL ABUN
I-135	-3.941E+17	1.051E+18	0.000E+00	0.000E+00 SHORT HLIF
CS-136	-3.255E-02	1.280E-01	1.047E-01	6.532E-02 FAIL ABUN
CE-139	-1.189E-02	3.413E-02	2.809E-02	1.742E-02 NOT IDENT.
BA-140	6.961E-02	3.068E-01	2.581E-01	1.565E-01 NOT IDENT.
LA-140	1.004E-01	1.022E-01	6.686E-02	5.212E-02 NOT IDENT.
CE-141	2.837E-02	7.343E-02	6.229E-02	3.746E-02 NOT IDENT.
CE-143	4.486E+03	1.192E+03	0.000E+00	6.084E+02 SHORT HLIF
CE-144	-1.359E-01	2.304E-01	1.891E-01	1.175E-01 NOT IDENT.



PM-144	4.331E-02	3.701E-02	3.372E-02	1.888E-02	NOT IDENT.
PR-144	2.938E+00	2.510E+00	2.288E+00	1.281E+00	NOT IDENT.
PM-146	-5.682E-03	4.688E-02	3.910E-02	2.392E-02	NOT IDENT.
ND-147	6.559E-01	6.879E-01	6.012E-01	3.510E-01	FAIL ABUN
PM-149	4.748E+01	1.958E+02	1.699E+02	9.989E+01	NOT IDENT.
EU-152	-1.130E-01	1.658E-01	8.968E-02	8.458E-02	FAIL ABUN
GD-153	7.897E-02	1.052E-01	7.918E-02	5.368E-02	FAIL ABUN
EU-154	4.057E-02	1.321E-01	1.115E-01	6.737E-02	NOT IDENT.
TB-160	-2.318E-02	1.374E-01	1.145E-01	7.013E-02	FAIL ABUN
HO-166M	7.416E-03	6.008E-02	5.182E-02	3.065E-02	FAIL ABUN
TM-171	-9.274E+00	4.888E+01	3.624E+01	2.494E+01	NOT IDENT.
LU-176	-1.083E-02	2.794E-02	2.289E-02	1.425E-02	FAIL ABUN
LU-177	5.135E+00	2.420E+00	1.440E+00	1.235E+00	FAIL ABUN
LU-177M	-1.288E-01	1.955E-01	1.592E-01	9.972E-02	FAIL ABUN
HF-181	-3.713E-02	4.657E-02	3.704E-02	2.376E-02	NOT IDENT.
W-181	-4.489E-01	6.597E-01	4.779E-01	3.366E-01	NOT IDENT.
TA-182	1.382E-01	2.026E-01	1.759E-01	1.034E-01	FAIL ABUN
RE-183	2.016E-02	1.264E-01	1.060E-01	6.447E-02	FAIL ABUN
RE-184	2.068E-02	2.579E-01	2.237E-01	1.316E-01	NOT IDENT.
OS-185	5.923E-03	4.599E-02	3.816E-02	2.346E-02	FAIL ABUN
RE-188	1.928E-01	2.004E-01	1.724E-01	1.022E-01	NOT IDENT.
W-188	-7.003E+00	9.700E+00	6.935E+00	4.949E+00	FAIL ABUN
IR-192	-4.395E-02	3.889E-02	3.150E-02	1.984E-02	FAIL ABUN
AU-195	3.757E-01	2.782E-01	2.419E-01	1.419E-01	FAIL ABUN
TL-200	7.577E+02	1.860E+03	0.000E+00	9.489E+02	SHORT HLIF
TL-201	9.644E-01	1.268E+01	1.059E+01	6.468E+00	NOT IDENT.
TL-202	9.699E-03	8.496E-02	7.190E-02	4.335E-02	NOT IDENT.
HG-203	-4.563E-03	4.856E-02	4.165E-02	2.477E-02	FAIL ABUN
BI-207	-1.846E-03	5.423E-02	4.509E-02	2.767E-02	FAIL ABUN
TL-207	-7.462E-01	7.856E-01	6.369E-01	4.008E-01	FAIL ABUN
PO-209	4.986E-01	7.499E+00	6.356E+00	3.826E+00	NOT IDENT.
BI-210	7.160E-01	1.236E+01	1.039E+01	6.308E+00	NOT IDENT.
PB-210	7.160E-01	1.236E+01	1.039E+01	6.308E+00	NOT IDENT.
PO-210	7.160E-01	1.236E+01	1.039E+01	6.308E+00	NOT IDENT.
PB-211	-1.927E+00	1.638E+00	8.389E-01	8.355E-01	NOT IDENT.
BI-212	9.775E-01	5.917E-01	3.473E-01	3.019E-01	FAIL ABUN
PO-215	-7.462E-01	7.856E-01	6.369E-01	4.008E-01	FAIL ABUN
RN-219	6.702E-02	4.552E-01	3.875E-01	2.322E-01	NOT IDENT.
RN-220	1.572E+01	2.835E+01	2.434E+01	1.446E+01	NOT IDENT.
RA-223	-7.462E-01	7.856E-01	6.369E-01	4.008E-01	FAIL ABUN
AC-227	-1.389E-01	4.182E-01	3.565E-01	2.134E-01	FAIL ABUN
TH-227	-1.389E-01	4.184E-01	3.565E-01	2.135E-01	FAIL ABUN
TH-229	-3.920E-01	5.781E-01	4.658E-01	2.950E-01	FAIL ABUN
PA-231	9.259E-01	1.739E+00	1.523E+00	8.875E-01	NOT IDENT.
TH-231	-7.462E-01	7.856E-01	6.369E-01	4.008E-01	FAIL ABUN
U-231	-2.304E+00	2.028E+00	1.398E+00	1.035E+00	FAIL ABUN
PA-233	6.017E-02	6.941E-02	6.155E-02	3.541E-02	FAIL ABUN
PA-234	-3.568E-02	2.969E-01	2.470E-01	1.515E-01	FAIL ABUN
PA-234M	-7.590E-01	4.906E+00	3.952E+00	2.503E+00	FAIL ABUN
NP-236	-2.980E-02	8.914E-02	7.349E-02	4.548E-02	NOT IDENT.
NP-239	-3.803E-02	2.075E-01	1.742E-01	1.059E-01	FAIL ABUN
AM-241	1.464E-01	3.042E-01	2.357E-01	1.552E-01	NOT IDENT.
CM-243	1.710E-01	1.429E-01	9.499E-02	7.289E-02	FAIL ABUN
AM-246	-1.048E-01	1.413E-01	1.098E-01	7.211E-02	NOT IDENT.
CM-247	-1.283E-02	4.367E-02	3.458E-02	2.228E-02	NOT IDENT.
CF-249	3.718E-03	4.294E-02	3.652E-02	2.191E-02	NOT IDENT.
CF-251	-5.659E-02	1.506E-01	1.235E-01	7.685E-02	NOT IDENT.



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*****
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON , SC 29417                          *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT            *
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ENERGY	MDA COUNTS
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46.50	402.1961
46.50	402.1961
46.50	402.1961
48.70	405.6273
49.72	412.9490
51.35	417.8728
52.39	402.4566
52.97	413.2910
53.15	419.1152
53.44	422.1653
54.07	424.5008
56.28	435.5513
56.28	435.5530
57.37	0.0000
57.53	440.2361
57.53	440.2379
57.60	425.7358
57.98	403.0021
57.98	403.0021
59.32	423.7966
59.32	423.7966
59.40	423.8488
59.54	433.1550
59.72	433.2747
60.01	450.3739
61.10	463.4342
61.14	463.4617
61.30	463.5729
63.00	537.3168
63.29	559.1711
63.29	559.1711
63.58	540.8663
64.28	550.7027
65.12	557.5710
65.20	557.6353
65.20	557.6353
66.05	576.9293
66.72	552.6431
66.83	552.7321
66.91	552.7952
67.20	565.0624
67.20	565.0624
67.75	557.7288
67.85	557.8076
68.90	551.2366
68.90	551.2366
69.30	548.4295
69.67	570.5369
70.82	562.0759
70.82	562.0759
70.83	562.0847
72.80	588.6475
72.87	588.7025
72.87	588.7025
74.67	577.7702
74.81	577.8781
74.81	577.8781
74.81	577.8781
74.81	577.8781
74.81	577.8781
74.81	577.8781
74.81	577.8781
74.97	578.0016
75.28	578.2398
75.70	578.5611
77.11	541.6489
77.11	541.6489



77.11	541.6489
77.11	541.6489
77.11	541.6489
77.11	541.6489
77.11	541.6489
78.38	574.0887
79.62	669.3951
79.80	669.5504
79.80	669.5504
80.11	661.2546
80.18	661.3134
80.30	661.4155
80.30	661.4155
80.57	656.3707
81.00	605.2997
81.07	637.0059
81.07	637.0059
81.07	637.0059
81.07	637.0059
82.60	596.6125
83.37	595.2026
83.78	558.9848
83.78	558.9848
83.78	558.9848
83.78	558.9848
84.21	565.6389
84.90	591.5672
85.43	609.4572
86.29	556.5370
86.50	556.6799
86.54	556.7076
86.59	556.7418
86.72	556.8292
86.79	556.8761
86.94	556.9785
87.30	557.2237
87.30	557.2237
87.30	557.2237
87.30	557.2237
87.30	557.2237
87.30	557.2237
87.57	557.4050
87.88	557.6140
88.03	557.7163
88.36	557.9380
88.47	558.0127
89.95	559.0021
91.11	559.7740
92.29	560.5524
92.38	560.6121
92.38	560.6121
93.35	464.2592
94.00	488.7267
94.67	518.0635
94.67	518.0655
94.90	518.2031
94.90	518.2031
94.90	518.2031
94.90	518.2031
95.87	536.5052
95.87	536.5052
96.73	488.6531
97.43	450.3047
98.44	408.0008
98.44	408.0008
98.88	431.1051
99.55	443.2950
99.55	443.2950
99.86	443.4489
100.00	454.8482
100.10	479.1843
103.18	467.8242
103.76	443.7400
105.00	405.8873
105.31	436.3473
108.00	489.8639
109.28	443.1125



111.00	469.1894
111.00	469.1894
111.76	435.4586
112.95	392.9102
115.19	453.4573
116.30	430.2955
117.00	438.8437
117.00	438.8437
117.66	453.5687
121.11	469.6215
121.62	464.6858
121.78	464.7595
122.06	447.2864
122.32	452.5783
122.32	452.5783
122.32	452.5783
122.32	452.5783
123.07	451.8770
127.23	480.7677
129.76	445.4250
131.20	545.2661
133.02	478.1883
133.54	479.4688
135.34	469.7861
136.00	460.6298
136.25	448.1428
136.48	459.7844
140.51	498.3584
140.51	0.0000
142.18	480.1154
142.65	484.5410
143.76	470.2289
144.24	468.3149
144.24	468.3149
144.24	468.3149
144.24	468.3149
145.22	454.9690
145.44	461.4072
147.16	482.2468
152.43	461.0370
152.70	437.7160
153.22	426.1902
154.21	425.4839
154.21	425.4839
154.21	425.4839
154.21	425.4839
155.03	444.9905
156.02	451.7740
158.56	466.6596
159.00	0.0000
159.00	463.6171
160.31	444.8319
161.27	421.5863
162.32	436.9835
162.64	442.4713
163.35	431.9832
163.89	422.5008
165.85	449.0214
167.43	428.0353
171.28	404.4885
171.86	413.3330
172.10	430.7274
176.55	470.2572
176.60	470.2737
181.06	448.1500
184.41	440.5601
185.71	416.7159
186.00	416.8060
190.27	435.4894
192.34	380.6364
193.63	422.4946
197.04	410.3177
198.01	395.1569
198.60	401.9491
200.40	427.1181
201.83	462.2173
202.84	430.6516
205.31	440.2908



208.36	389.6446
208.81	389.7676
209.75	349.0652
209.75	349.0652
210.97	352.9268
215.65	375.5365
216.55	343.3349
218.09	369.4473
222.10	353.6180
223.80	358.5197
226.40	391.7947
227.00	390.1493
227.08	390.1704
227.20	390.1995
228.16	365.2020
228.18	365.2070
228.18	365.2070
231.56	0.0000
235.69	382.1174
236.00	351.6795
236.00	351.6795
238.63	352.2786
238.63	352.2786
238.63	352.2786
238.63	352.2786
239.00	352.3615
240.98	352.8114
241.98	318.4607
241.98	318.4607
241.98	318.4607
244.69	331.1647
245.39	319.1528
247.94	318.6529
248.90	309.8072
249.79	297.1794
252.40	308.6541
252.85	298.6629
252.85	298.6629
254.15	0.0000
256.20	305.7080
256.20	305.7080
260.50	276.1395
260.90	266.0797
262.80	281.7930
264.65	279.9094
268.24	260.4763
268.79	243.6026
269.46	263.7537
269.46	263.7537
269.46	263.7537
269.46	263.7537
271.23	301.0852
273.65	395.8386
276.40	261.5169
277.35	289.2589
277.60	279.8984
277.60	279.8984
278.00	288.3356
278.60	309.8380
279.20	321.1170
279.53	337.9330
280.46	345.5662
281.68	330.8971
283.67	271.5550
284.30	267.9204
285.00	265.2273
285.90	266.2969
286.10	276.6075
286.10	276.6075
287.40	293.4129
288.45	0.0000
290.67	299.8125
290.80	299.8359
291.72	278.1177
293.26	0.0000
293.70	256.5303
295.21	265.8272
295.21	265.8272



295.21	265.8272
295.96	265.9378
296.50	266.0207
297.23	266.1278
298.57	266.3282
299.80	268.3912
299.80	268.3912
300.09	268.4365
300.09	268.4365
300.09	268.4365
300.09	268.4365
300.12	268.4399
301.29	271.7556
302.84	235.8276
303.76	217.0709
303.91	217.0906
304.40	236.0291
304.40	236.0291
304.84	228.2175
306.84	251.0524
308.46	246.9623
311.98	210.4610
316.51	258.4930
318.01	269.1609
319.02	238.8544
319.41	245.5661
320.08	225.6592
323.87	296.7142
323.87	296.7142
323.87	296.7142
323.87	296.7142
325.23	286.4246
328.77	253.4774
333.44	276.4649
334.20	273.3766
334.20	273.3766
334.30	273.3906
338.28	238.3851
338.28	238.3851
338.28	238.3851
338.28	238.3851
338.32	238.3912
338.32	238.3912
338.32	238.3912
340.50	214.9174
340.57	214.9256
344.27	257.1094
345.85	238.8200
350.59	0.0000
351.07	210.9081
351.92	195.1873
351.92	195.1873
351.92	195.1873
355.39	0.0000
356.01	190.7345
364.48	188.9321
366.43	194.9609
367.43	169.6989
367.94	0.0000
369.80	206.9950
374.96	176.1855
383.85	200.5211
387.95	184.1626
388.63	186.1922
391.69	208.1616
391.69	208.1616
392.90	192.4839
398.62	208.8261
400.65	190.1977
401.10	186.2742
401.81	189.3073
402.60	189.3772
404.84	236.2162
410.95	177.1548
411.60	185.1690
413.65	198.2931
414.70	177.4503
415.30	176.5009



415.76	180.5272
417.63	0.0000
418.52	191.7328
423.70	176.1568
427.08	191.4547
427.89	176.4812
432.53	175.8331
433.93	175.9378
439.47	162.2500
439.56	162.2558
439.89	161.2715
443.98	155.4945
444.90	152.5244
445.03	152.5336
445.03	152.5336
445.03	152.5336
453.90	158.1747
463.38	174.7471
468.07	134.2881
473.00	200.3066
475.06	151.3784
475.35	142.1899
476.78	149.4379
477.59	131.0563
477.96	148.4852
482.03	153.8562
484.57	143.7461
487.03	132.5825
490.36	0.0000
492.35	148.3119
497.08	121.7610
507.63	0.0000
510.53	0.0000
510.84	152.4999
511.00	152.5098
511.85	152.5600
511.85	152.5600
513.99	136.7585
513.99	136.7585
520.41	128.0719
520.65	124.9600
527.90	146.1865
528.96	0.0000
529.64	119.1155
529.87	0.0000
531.02	114.9951
537.32	123.6494
543.00	144.9135
546.56	0.0000
549.76	123.1671
552.65	133.8368
555.20	110.7550
563.23	99.4413
563.90	105.8130
568.70	126.1353
569.32	116.6226
569.50	104.9651
569.67	107.0930
573.80	128.7541
574.00	126.1081
574.64	134.5462
578.91	124.1121
579.30	0.0000
583.14	132.1102
585.48	131.5084
591.81	132.9879
592.07	150.6903
593.00	156.0874
595.88	133.7677
600.56	145.4688
602.52	0.0000
602.71	162.6899
602.71	162.6899
603.60	152.0081
604.41	143.1071
604.70	143.1217
609.31	134.3872



609.31	134.3872
609.31	134.3872
609.31	134.3872
610.33	123.6812
612.46	121.9744
614.37	104.1055
618.01	129.3926
621.84	126.3206
621.84	126.3206
631.29	110.4743
633.02	106.2042
633.10	106.2065
634.78	119.2786
635.90	108.4741
636.97	98.7470
645.85	104.4773
646.12	107.7519
656.30	109.2017
657.75	109.2529
657.90	0.0000
661.65	96.2629
661.65	96.2629
664.57	0.0000
666.33	107.7273
666.33	107.7273
675.00	102.1660
677.61	118.7446
685.20	112.0468
692.80	132.5684
695.00	102.2581
696.49	107.8356
696.49	107.8356
697.00	110.6177
697.49	116.1665
698.33	123.5721
698.50	126.3470
699.00	128.2113
702.63	118.1979
706.10	108.1545
706.58	0.0000
706.67	110.9473
709.31	110.1123
711.68	100.0063
713.82	109.3358
717.42	94.1084
720.50	108.2327
721.93	0.0000
722.20	101.9174
722.78	111.4917
722.78	111.4917
722.89	111.4966
722.95	111.4990
723.30	114.6973
724.18	109.9471
727.18	105.1283
733.00	84.6758
735.90	79.4711
739.58	101.7839
742.81	94.4039
744.21	96.3131
747.13	93.5872
751.79	97.4640
752.31	93.7297
753.82	98.4610
755.35	96.6275
756.15	91.0204
756.87	91.0401
763.93	103.1853
765.79	93.5622
766.42	96.8052
766.84	104.4825
776.49	109.4934
778.00	100.0975
778.57	102.9459
778.89	94.4560
783.80	87.0212
785.46	87.0623
792.07	102.3948



795.84	71.5890
796.30	76.4799
798.80	84.6759
801.93	92.8993
805.60	80.8946
810.29	93.3883
810.76	98.1677
815.85	85.8984
817.79	84.0343
818.51	93.6016
819.60	87.8971
826.30	97.6317
828.27	0.0000
831.60	105.4413
831.96	112.1631
834.83	105.5353
836.80	0.0000
846.75	76.0378
848.13	75.1039
856.28	0.0000
856.80	62.8699
860.37	79.4900
867.32	64.5196
867.82	70.8529
871.10	81.3767
873.19	74.6360
874.81	74.6674
875.33	0.0000
876.40	69.8481
879.36	73.7858
880.27	69.9199
880.51	67.0108
881.50	67.0276
883.24	66.0867
884.67	77.7783
889.25	76.8977
896.60	77.0440
898.02	85.8516
899.00	94.6575
903.28	70.3374
911.07	91.0341
911.07	91.0341
911.07	91.0341
919.63	78.8722
920.93	82.4312
925.00	78.5872
925.24	78.5921
926.50	70.7549
935.52	67.9612
937.48	82.7747
944.10	72.0539
946.00	73.0756
949.00	51.3885
962.29	64.5889
964.01	68.0162
966.15	66.4929
968.20	66.5256
969.11	66.5406
969.11	66.5406
969.11	66.5406
977.42	66.8746
980.50	58.7575
983.50	72.7535
989.30	57.8844
996.32	67.9792
1001.03	77.0627
1001.68	69.0674
1004.76	91.1555
1021.30	0.0000
1024.50	0.0000
1034.80	63.5537
1036.00	68.6170
1037.82	66.6284
1038.57	70.6779
1038.76	0.0000
1045.16	79.8872
1046.59	68.7858
1048.07	80.9505



1050.47	67.8342
1050.47	67.8342
1062.04	69.0293
1063.62	74.1317
1076.63	67.2219
1077.35	75.3821
1078.86	75.4062
1085.78	60.2148
1099.22	91.1077
1112.02	72.1533
1112.84	79.2083
1115.52	75.7299
1120.29	76.1047
1120.29	76.1047
1120.29	76.1047
1120.29	76.1047
1120.51	76.1077
1121.28	76.1198
1124.00	0.0000
1129.67	79.5002
1131.51	0.0000
1147.95	0.0000
1167.94	54.0313
1173.22	67.6158
1175.09	84.2926
1177.93	62.4756
1189.05	69.9280
1204.90	62.8296
1205.75	0.0000
1213.00	68.1791
1221.42	74.6026
1230.97	95.8025
1235.34	90.6191
1236.41	0.0000
1238.25	82.2402
1246.25	66.5325
1260.41	0.0000
1271.85	65.8145
1274.45	64.7852
1274.54	64.7852
1291.56	63.9404
1298.22	0.0000
1312.09	47.0776
1325.50	50.4175
1325.50	50.4175
1332.49	52.6347
1333.61	55.8700
1360.21	55.0736
1362.66	0.0000
1365.15	36.7503
1368.21	45.4231
1368.53	0.0000
1376.25	36.8264
1384.27	52.0684
1394.10	39.1230
1395.20	42.8587
1407.95	33.6207
1434.06	44.1035
1436.60	41.3083
1457.56	0.0000
1460.81	29.2301
1489.15	18.0060
1509.49	29.4842
1596.49	18.5833
1620.62	20.3540
1678.03	0.0000
1691.02	15.6869
1691.02	15.6869
1706.46	0.0000
1750.46	0.0000
1764.49	23.8050
1764.49	23.8050
1764.49	23.8050
1764.49	23.8050
1770.23	26.0596
1771.40	27.8018
1791.20	0.0000
1808.65	11.9833



1836.01

16.0441



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202004733

Total Uranium Activity	5.3184E+00	ug/g
Total Uranium Counting Unc.	8.3269E+00	ug/g
Total Uranium Tpu	4.2484E-06	ug/g
Total Uranium Mda	5.4699E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 936923                          SAMPLE ID   : G1202004733
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 18-DEC-2009 12:00:00.00          COUNT TIME   : 0 03:00:00.00
*  ANALYSIS DATE : 4-JAN-2010 16:16:25.96          SAMPLE ALQT  : 111.113 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.786E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.549E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.167E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.030E+00

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VAX/VMS Nuclide Identification Report Generated 5-JAN-2010 08:39:42.22

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004734.CNF;1
Sample date        : 28-JAN-2009 00:00:00 Acquisition date : 5-JAN-2010 07:39:15.
Sample ID          : G1202004734      Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM05             Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00     Elapsed real time: 0 01:00:01.72  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 936923             Detector SN#      :
Matrix Spike ID    :                    LCS ID           : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	10	50.27	628	1298	3.30	101.53	96	29	1.75E-01	11.2	1.71E+01
2	10	53.50*	242	930	1.55	107.98	96	29	6.73E-02	23.2	
3	10	59.31	8308	512	1.22	119.61	96	29	2.31E+00	1.2	
4	2	74.74*	280	413	1.20	150.46	146	12	7.79E-02	13.5	2.17E+00
5	2	76.95*	405	397	1.13	154.87	146	12	1.12E-01	10.1	
6	0	87.91*	2003	554	1.25	176.79	172	11	5.56E-01	3.2	
7	0	92.90*	79	328	1.48	186.77	183	8	2.21E-02	42.2	
8	0	121.87	295	342	1.24	244.72	240	12	8.18E-02	13.8	
9	0	185.95*	35	280	1.57	372.84	369	9	9.84E-03	88.1	
10	0	238.63*	409	312	1.47	478.18	471	11	1.13E-01	9.8	
11	0	295.15*	121	232	1.39	591.21	585	13	3.35E-02	27.6	
12	0	338.15	152	186	1.41	677.18	672	13	4.23E-02	20.1	
13	0	351.98*	200	155	1.60	704.82	700	9	5.56E-02	13.4	
14	0	510.55*	71	161	2.28	1021.84	1015	14	1.98E-02	42.1	
15	0	583.33*	149	97	1.58	1167.34	1162	12	4.13E-02	15.8	
16	0	610.05*	190	82	1.67	1220.75	1214	16	5.29E-02	13.2	
17	0	661.68	2025	144	1.81	1323.96	1315	19	5.62E-01	2.6	
18	0	911.08*	76	111	1.71	1822.42	1816	13	2.10E-02	31.1	
19	0	1173.48	1523	147	2.17	2346.74	2337	22	4.23E-01	3.3	
20	0	1257.58	7	20	1.02	2514.77	2504	13	1.81E-03	145.4	
21	0	1332.66	1395	37	2.16	2664.77	2654	19	3.88E-01	2.9	
22	0	1764.89*	19	6	2.30	3528.10	3522	12	5.21E-03	36.6	

Flag: "\*" = Peak area was modified by background subtraction



Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004734.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 28-JAN-2009 00:00:00 Acquisition date : 5-JAN-2010 07:39:15  
 Sample ID : G1202004734 Sample quantity : 155.44 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA5 Detector geometry: CAN  
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.72 0.0%  
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %  
 Energy tolerance : 1.50 keV Half life ratio : 8.00  
 Errors propagated: Yes Systematic Error : 0.00 %  
 Efficiency type : Empirical Efficiencies at : Peak Energy  
 Abundance limit : 75.00 WTM error limit : 3.00

## Full Combined Activity-MDA Report

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	+	122.06	*	5.644E-01	1.751E-01	1.454E-01	2.064E-02	3.880
		136.48		3.572E-01	7.873E-01	1.299E+00	1.740E-01	0.275
CO-60	+	1173.22		6.888E+00	6.046E-01	1.690E-01	9.801E-03	40.766
	+	1332.49	*	7.036E+00	5.743E-01	1.263E-01	7.310E-03	55.693
AS-73	+	53.44	*	2.758E+01	1.297E+01	1.440E+01	1.084E+00	1.915
CD-109	+	88.03	*	5.526E+01	5.500E+00	2.877E+00	2.191E-01	19.205
SN-126		64.28		-4.658E-01	4.596E-01	6.407E-01	9.548E-02	-0.727
	+	86.94		1.385E+01	5.769E+00	7.382E-01	3.038E-01	18.762
	+	87.57	*	3.331E+00	3.316E-01	1.732E-01	1.319E-02	19.231
BA-137M	+	661.65	*	5.510E+00	4.650E-01	1.258E-01	8.270E-03	43.810
CS-137	+	661.65	*	5.824E+00	4.926E-01	1.329E-01	8.771E-03	43.810
TM-171	+	51.35		1.882E+02	4.410E+01	3.761E+01	2.737E+00	5.003
	+	52.39		3.991E+01	1.876E+01	2.090E+01	1.547E+00	1.909
	+	59.40		3.292E+03	2.836E+02	5.033E+01	4.171E+00	65.415
		66.72	*	2.211E+01	3.369E+01	5.671E+01	4.557E+00	0.390
TL-208		277.35		1.646E-01	6.871E-01	1.160E+00	1.488E-01	0.142
	+	510.84		6.262E-01	5.308E-01	4.683E-01	4.920E-02	1.337
	+	583.14	*	3.779E-01	1.227E-01	1.209E-01	8.894E-03	3.126
		860.37		6.533E-01	7.588E-01	1.319E+00	1.338E-01	0.495
BI-211		72.87		9.270E+00	3.506E+00	5.516E+00	4.343E-01	1.680
	+	351.07	*	2.124E+00	5.925E-01	6.501E-01	5.152E-02	3.268
PB-212	+	74.81		1.575E+00	4.658E-01	5.671E-01	6.914E-02	2.778
	+	77.11		1.355E+00	2.930E-01	3.220E-01	2.506E-02	4.208
	+	87.30		1.541E+01	2.174E+00	8.006E-01	1.006E-01	19.246
	+	238.63	*	9.271E-01	2.078E-01	1.785E-01	1.925E-02	5.193
		300.09		7.085E-02	1.655E+00	2.403E+00	2.555E-01	0.029
PO-212	+	74.81		1.575E+00	4.658E-01	5.671E-01	6.914E-02	2.778
	+	77.11		1.355E+00	2.930E-01	3.220E-01	2.506E-02	4.208
	+	87.30		1.541E+01	2.174E+00	8.006E-01	1.006E-01	19.246
		115.19		-6.448E-01	5.136E+00	8.318E+00	1.058E+00	-0.078
	+	238.63	*	9.271E-01	2.078E-01	1.785E-01	1.925E-02	5.193
		300.09		7.085E-02	1.655E+00	2.403E+00	2.555E-01	0.029
BI-214	+	609.31	*	9.161E-01	2.546E-01	2.333E-01	1.956E-02	3.927
		1120.29		6.788E-01	6.550E-01	1.151E+00	1.099E-01	0.590



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-214	+	1764.49		6.662E-01	4.893E-01	4.934E-01	2.852E-02	1.350
	+	74.81		2.715E+00	7.878E-01	9.775E-01	1.054E-01	2.778
	+	77.11		2.323E+00	5.328E-01	5.522E-01	6.014E-02	4.208
	+	87.30		2.640E+01	3.324E+00	1.372E+00	1.487E-01	19.246
	+	241.98		1.208E+00	7.061E-01	1.115E+00	1.256E-01	1.084
PO-214	+	295.21		7.489E-01	4.217E-01	4.205E-01	4.597E-02	1.781
	+	351.92	*	7.392E-01	2.098E-01	2.286E-01	2.164E-02	3.233
	+	74.81		2.715E+00	7.878E-01	9.775E-01	1.054E-01	2.778
	+	77.11		2.323E+00	5.328E-01	5.522E-01	6.014E-02	4.208
	+	87.30		2.640E+01	3.324E+00	1.372E+00	1.487E-01	19.246
PO-216	+	241.98		1.208E+00	7.061E-01	1.115E+00	1.256E-01	1.084
	+	295.21		7.489E-01	4.217E-01	4.205E-01	4.597E-02	1.781
	+	351.92	*	7.392E-01	2.098E-01	2.286E-01	2.164E-02	3.233
	+	74.81		1.575E+00	4.658E-01	5.671E-01	6.914E-02	2.778
	+	77.11		1.355E+00	2.930E-01	3.220E-01	2.506E-02	4.208
PO-218	+	87.30		1.541E+01	2.174E+00	8.006E-01	1.006E-01	19.246
	+	238.63	*	9.271E-01	2.078E-01	1.785E-01	1.925E-02	5.193
	+	300.09		7.085E-02	1.655E+00	2.403E+00	2.555E-01	0.029
	+	74.81		2.715E+00	7.878E-01	9.775E-01	1.054E-01	2.778
	+	77.11		2.323E+00	5.328E-01	5.522E-01	6.014E-02	4.208
RA-226	+	87.30		2.640E+01	3.324E+00	1.372E+00	1.487E-01	19.246
	+	241.98		1.208E+00	7.061E-01	1.115E+00	1.256E-01	1.084
	+	295.21		7.489E-01	4.217E-01	4.205E-01	4.597E-02	1.781
	+	351.92	*	7.392E-01	2.098E-01	2.286E-01	2.164E-02	3.233
	+	609.31	*	9.161E-01	2.546E-01	2.333E-01	1.956E-02	3.927
TH-228	+	1120.29		6.788E-01	6.550E-01	1.151E+00	1.099E-01	0.590
	+	1764.49		6.662E-01	4.893E-01	4.934E-01	2.852E-02	1.350
	+	74.81		2.213E+00	6.215E-01	7.969E-01	6.309E-02	2.778
	+	77.11		1.904E+00	4.118E-01	4.524E-01	3.525E-02	4.208
	+	87.30		2.165E+01	2.156E+00	1.125E+00	8.580E-02	19.246
TH-230	+	238.63	*	1.303E+00	2.920E-01	2.509E-01	2.706E-02	5.193
	+	300.09		9.956E-02	2.327E+00	3.377E+00	2.003E+00	0.029
	+	609.31	*	9.157E-01	2.545E-01	2.332E-01	1.955E-02	3.927
	+	1120.29		6.786E-01	6.547E-01	1.151E+00	1.099E-01	0.590
	+	1764.49		6.659E-01	4.891E-01	4.932E-01	2.851E-02	1.350
U-234	+	609.31	*	9.157E-01	2.545E-01	2.332E-01	1.955E-02	3.927
	+	1120.29		6.786E-01	6.547E-01	1.151E+00	1.099E-01	0.590
	+	1764.49		6.659E-01	4.891E-01	4.932E-01	2.851E-02	1.350
NP-237	+	86.50	*	9.783E+00	2.241E+00	4.973E-01	1.094E-01	19.673
	+	95.87		-4.333E-02	1.393E+00	1.995E+00	4.940E-01	-0.022
AM-241	+	59.54	*	1.395E+01	1.289E+00	2.132E-01	1.907E-02	65.423
AM-243	+	74.67	*	2.554E-01	7.164E-02	9.192E-02	7.200E-03	2.778
	+	86.72		3.669E+02	3.652E+01	1.866E+01	1.423E+00	19.660
	+	117.66		7.851E-01	6.331E+00	9.090E+00	1.204E+00	0.086
ANH-511	+	142.18		7.900E+00	2.737E+01	4.485E+01	5.574E+00	0.176
	+	511.00	*	1.353E-01	1.141E-01	1.012E-01	6.475E-03	1.337

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-1.023E+01	5.540E+01	8.953E+01	6.551E+00	-0.114



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		-4.157E-02	7.409E-02	1.087E-01	6.331E-03	-0.382
NA-24	1368.53	*		-1.000E+35	7.409E-02	Half-Life	too short	
AL-26	1129.67			1.758E+00	3.762E+00	6.372E+00	4.269E-01	0.276
	1808.65	*		1.707E-02	4.434E-02	7.982E-02	4.580E-03	0.214
K-40	1460.81	*		6.073E-01	6.769E-01	1.260E+00	7.838E-02	0.482
TI-44	67.85			4.707E-02	4.154E-02	7.072E-02	5.659E-03	0.666
	78.38	*		2.533E-01	5.479E-02	8.251E-02	6.402E-03	3.070
SC-46	889.25	*		2.310E-01	1.616E+00	2.698E+00	2.710E-01	0.086
	1120.51			1.672E+00	1.668E+00	2.931E+00	2.016E-01	0.570
V-48	944.10			3.037E+00	1.668E+00	Half-Life	too short	
	983.50	*		-7.551E-02	1.668E+00	Half-Life	too short	
	1312.09			-3.301E-02	1.668E+00	Half-Life	too short	
CR-51	320.08	*		-1.009E-03	1.668E+00	Half-Life	too short	
MN-52	744.21			1.670E+11	1.668E+00	Half-Life	too short	
	848.13			-3.700E+12	1.668E+00	Half-Life	too short	
	935.52			3.691E+11	1.668E+00	Half-Life	too short	
	1246.25			-5.466E+12	1.668E+00	Half-Life	too short	
	1333.61	*		3.319E+14	1.668E+00	Half-Life	too short	
	1434.06	*		7.518E+10	1.668E+00	Half-Life	too short	
MN-54	834.83	*		7.389E-02	1.815E-01	3.092E-01	2.833E-02	0.239
CO-56	846.75	*		-1.188E+00	1.754E+00	2.768E+00	2.601E-01	-0.429
	977.42			-3.335E+01	1.395E+02	2.256E+02	2.095E+01	-0.148
	1037.82			-1.246E+00	1.469E+01	2.394E+01	2.123E+00	-0.052
	1175.09			5.164E+03	4.153E+02	6.454E+02	3.791E+01	8.000
	1238.25			4.154E-01	2.136E+00	3.547E+00	2.216E-01	0.117
	1360.21			-2.791E+00	2.083E+01	3.255E+01	1.915E+00	-0.086
	1771.40			-1.192E+01	8.293E+00	9.511E+00	5.561E-01	-1.253
CO-58	810.76	*		-1.341E-01	2.319E+00	3.840E+00	3.389E-01	-0.035
FE-59	142.65			-5.654E+01	6.845E+02	1.104E+03	1.387E+02	-0.051
	192.34			-3.059E+02	2.821E+02	4.050E+02	5.873E+01	-0.755
	1099.22	*		-2.853E+01	3.811E+01	5.862E+01	4.911E+00	-0.487
	1291.56			-9.694E+00	2.777E+01	4.236E+01	3.274E+00	-0.229
ZN-65	1115.52	*		-4.381E-01	5.418E-01	8.270E-01	5.780E-02	-0.530
GE-68	1077.35	*		9.434E+00	7.448E+00	1.317E+01	1.012E+00	0.716
AS-74	595.88	*		1.085E-02	7.448E+00	Half-Life	too short	
	634.78			-9.040E-02	7.448E+00	Half-Life	too short	
SE-75	66.05			8.131E+00	2.649E+01	4.419E+01	4.410E+00	0.184
	96.73			2.760E+00	7.351E+00	1.076E+01	1.503E+00	0.256
	121.11	*		8.726E+00	2.779E+00	3.107E+00	4.883E-01	2.809
	136.00			2.247E-01	4.232E-01	7.001E-01	9.131E-02	0.321
	198.60			-7.871E+00	2.143E+01	3.384E+01	3.658E+00	-0.233
	264.65	*		-1.543E-01	5.305E-01	8.758E-01	8.363E-02	-0.176
	279.53			1.580E+00	1.327E+00	2.322E+00	2.224E-01	0.680
	303.91			4.431E+00	2.598E+01	4.362E+01	5.058E+00	0.102
	400.65			-1.914E+00	3.664E+00	5.854E+00	5.358E-01	-0.327
BR-77	87.88	*		1.000E+35	3.664E+00	Half-Life	too short	
	200.40			-1.000E+35	3.664E+00	Half-Life	too short	
	239.00	*		1.000E+35	3.664E+00	Half-Life	too short	
	249.79			-1.000E+35	3.664E+00	Half-Life	too short	



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	281.68			-1.000E+35	3.664E+00	Half-Life	too short	
	297.23			1.000E+35	3.664E+00	Half-Life	too short	
	303.76			1.000E+35	3.664E+00	Half-Life	too short	
	439.47			1.000E+35	3.664E+00	Half-Life	too short	
	484.57			-1.000E+35	3.664E+00	Half-Life	too short	
	520.65	*		1.000E+35	3.664E+00	Half-Life	too short	
	574.64			-1.000E+35	3.664E+00	Half-Life	too short	
	578.91			1.000E+35	3.664E+00	Half-Life	too short	
	585.48			1.000E+35	3.664E+00	Half-Life	too short	
	755.35			-1.000E+35	3.664E+00	Half-Life	too short	
	817.79			-1.000E+35	3.664E+00	Half-Life	too short	
SR-82	698.33			-6.069E-01	3.664E+00	Half-Life	too short	
	776.49	*		-1.282E-03	3.664E+00	Half-Life	too short	
	1395.20			4.166E-02	3.664E+00	Half-Life	too short	
RB-83	520.41	*		8.029E-01	2.044E+00	3.409E+00	2.192E-01	0.235
	529.64			-2.500E-01	3.271E+00	5.266E+00	3.400E-01	-0.047
	552.65			-3.401E+00	6.034E+00	9.389E+00	6.115E-01	-0.362
RB-84	881.50	*		-5.089E-05	6.034E+00	Half-Life	too short	
KR-85	513.99	*		5.184E+00	1.906E+01	2.739E+01	1.756E+00	0.189
SR-85	513.99	*		8.286E-01	3.047E+00	4.378E+00	2.810E-01	0.189
RB-86	1076.63	*		2.990E-01	3.047E+00	Half-Life	too short	
Y-88	898.02			-1.331E-01	9.573E-01	1.568E+00	1.604E-01	-0.085
	1836.01	*		1.666E-01	4.962E-01	8.727E-01	4.995E-02	0.191
ZR-88	392.90	*		2.686E-01	1.017E+00	1.698E+00	9.891E-02	0.158
Y-91	1204.90	*		-1.591E+02	1.265E+03	2.020E+03	1.174E+02	-0.079
NB-94	702.63	*		4.271E-02	6.883E-02	1.200E-01	8.584E-03	0.356
	871.10			-1.816E-02	9.154E-02	1.496E-01	1.458E-02	-0.121
NB-95	765.79	*		7.427E-02	2.997E+00	5.007E+00	4.083E-01	0.015
NB-95M	235.69	*		1.085E+01	8.644E+00	1.343E+01	1.470E+00	0.808
ZR-95	724.18			-9.550E+00	6.956E+00	1.028E+01	8.565E-01	-0.929
	756.15	*		-1.835E-01	5.259E+00	8.754E+00	7.787E-01	-0.021
NB-97	657.90	*		1.000E+35	5.259E+00	Half-Life	too short	
	1024.50			-1.000E+35	5.259E+00	Half-Life	too short	
ZR-97	254.15			-1.000E+35	5.259E+00	Half-Life	too short	
	355.39			1.000E+35	5.259E+00	Half-Life	too short	
	507.63	*		1.000E+35	5.259E+00	Half-Life	too short	
	602.52			-1.000E+35	5.259E+00	Half-Life	too short	
	1021.30			-1.000E+35	5.259E+00	Half-Life	too short	
	1147.95			1.000E+35	5.259E+00	Half-Life	too short	
	1362.66			1.000E+35	5.259E+00	Half-Life	too short	
	1750.46			1.000E+35	5.259E+00	Half-Life	too short	
MO-99	140.51			-8.414E+30	5.259E+00	Half-Life	too short	
	181.06			-1.026E+31	5.259E+00	Half-Life	too short	
	366.43			-2.552E+31	5.259E+00	Half-Life	too short	
	739.58	*		-2.726E+30	5.259E+00	Half-Life	too short	
	778.00			-4.249E+31	5.259E+00	Half-Life	too short	
TC-99M	140.51	*		-1.000E+35	5.259E+00	Half-Life	too short	
RH-101	127.23			3.279E-02	6.729E-02	9.824E-02	1.352E-02	0.334
	198.01	*		8.988E-03	6.967E-02	1.127E-01	1.126E-02	0.080



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-102		325.23		-3.333E-01	5.078E-01	8.137E-01	6.697E-02	-0.410
		418.52		-4.824E-01	7.995E-01	1.270E+00	7.592E-02	-0.380
		475.06	*	6.751E-03	9.187E-02	1.506E-01	9.434E-03	0.045
		631.29		4.179E-02	1.487E-01	2.443E-01	1.611E-02	0.171
		697.49		-1.593E-01	1.857E-01	2.910E-01	2.061E-02	-0.547
		766.84		3.156E-02	2.794E-01	4.695E-01	3.805E-02	0.067
		1046.59		-2.250E-01	3.744E-01	5.856E-01	4.805E-02	-0.384
		1112.84		-7.959E-01	7.167E-01	1.068E+00	7.507E-02	-0.745
RU-103		497.08	*	-8.381E-06	7.167E-01	Half-Life	too short	
		610.33		3.148E-03	7.167E-01	Half-Life	too short	
RH-106	+	511.85		1.251E+00	1.055E+00	1.305E+00	8.373E-02	0.959
		621.84	*	7.365E-01	1.316E+00	2.199E+00	2.673E-01	0.335
RU-106		1050.47		-2.132E-01	1.106E+01	1.809E+01	1.475E+00	-0.012
	+	511.85		1.251E+00	1.055E+00	1.305E+00	8.355E-02	0.959
		621.84	*	7.365E-01	1.314E+00	2.199E+00	1.450E-01	0.335
AG-108M		1050.47		-2.132E-01	1.106E+01	1.809E+01	1.473E+00	-0.012
		433.93	*	-1.812E-02	7.608E-02	1.231E-01	8.060E-03	-0.147
		614.37		-2.413E-02	9.583E-02	1.296E-01	9.109E-03	-0.186
AG-110M		722.95		-1.536E-01	8.916E-02	1.294E-01	1.014E-02	-1.187
		657.75	*	1.046E+00	2.782E-01	4.832E-01	3.340E-02	2.164
		677.61		-3.295E-01	1.612E+00	2.668E+00	1.895E-01	-0.124
		706.67		-5.480E-01	1.129E+00	1.830E+00	1.372E-01	-0.299
		763.93		-4.804E-01	8.784E-01	1.408E+00	1.171E-01	-0.341
		884.67		1.405E-02	3.237E-01	5.372E-01	5.484E-02	0.026
		937.48		-1.592E-01	8.156E-01	1.329E+00	1.333E-01	-0.120
		1384.27		-1.247E-01	5.191E-01	8.310E-01	5.137E-02	-0.150
IN-111		171.28		-1.739E+28	5.191E-01	Half-Life	too short	
		245.39	*	-1.863E+29	5.191E-01	Half-Life	too short	
IN-113M		391.69	*	4.912E-01	6.982E-01	1.190E+00	7.494E-02	0.413
SN-113		391.69	*	4.912E-01	6.982E-01	1.190E+00	7.494E-02	0.413
IN-114M		190.27	*	2.170E+01	3.333E+01	4.854E+01	4.847E+00	0.447
CD-115		260.90		-1.000E+35	3.333E+01	Half-Life	too short	
		492.35		1.000E+35	3.333E+01	Half-Life	too short	
		527.90	*	1.000E+35	3.333E+01	Half-Life	too short	
SN-117M		156.02		4.302E+00	3.333E+01	Half-Life	too short	
		158.56	*	-3.280E-01	3.333E+01	Half-Life	too short	
SB-122		563.90	*	9.747E+30	3.333E+01	Half-Life	too short	
		692.80		7.455E+31	3.333E+01	Half-Life	too short	
I-123		159.00	*	-1.000E+35	3.333E+01	Half-Life	too short	
		528.96		-1.000E+35	3.333E+01	Half-Life	too short	
TE-123M		159.00	*	-6.955E-02	3.091E-01	4.931E-01	5.301E-02	-0.141
I-124		602.71	*	-2.140E+16	3.091E-01	Half-Life	too short	
		722.78		-5.110E+18	3.091E-01	Half-Life	too short	
		1325.50		1.050E+19	3.091E-01	Half-Life	too short	
		1376.25		4.306E+18	3.091E-01	Half-Life	too short	
		1509.49		-5.778E+18	3.091E-01	Half-Life	too short	
		1691.02		7.077E+17	3.091E-01	Half-Life	too short	
SB-124		602.71		-1.473E-01	3.712E+00	5.397E+00	3.560E-01	-0.027
		645.85		-2.598E+00	4.562E+01	7.300E+01	5.301E+00	-0.036



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		709.31		5.368E+01	2.565E+02	4.355E+02	3.162E+01	0.123
		713.82		2.662E+01	1.508E+02	2.554E+02	2.847E+01	0.104
		722.78		-5.099E+01	3.312E+01	4.884E+01	3.747E+00	-1.044
		968.20		3.304E+02	2.900E+02	5.083E+02	4.765E+01	0.650
		1045.16		6.298E+01	2.831E+02	4.711E+02	3.881E+01	0.134
		1325.50		1.120E+02	2.455E+02	3.722E+02	2.160E+01	0.301
		1368.21		-9.353E+00	9.548E+01	1.506E+02	1.790E+01	-0.062
		1436.60		3.642E+01	1.825E+02	3.178E+02	1.866E+01	0.115
		1691.02	*	1.666E+00	5.390E+00	9.457E+00	5.997E-01	0.176
SB-125		427.89	*	-2.609E-01	2.665E-01	4.132E-01	2.606E-02	-0.631
		463.38		6.651E-01	8.732E-01	1.479E+00	1.058E-01	0.450
		600.56		-5.850E-02	4.454E-01	7.116E-01	5.284E-02	-0.082
		635.90		-3.980E-02	7.482E-01	1.199E+00	9.003E-02	-0.033
TE-125M		109.28	*	-2.537E+02	6.460E+02	1.033E+03	1.969E+02	-0.246
I-126		388.63		-5.854E+00	6.460E+02	Half-Life	too short	
		666.33	*	1.744E+01	6.460E+02	Half-Life	too short	
		753.82		-4.747E+01	6.460E+02	Half-Life	too short	
SB-126		223.80		7.054E+01	6.460E+02	Half-Life	too short	
		278.60		2.651E+02	6.460E+02	Half-Life	too short	
	+	296.50		6.534E+02	6.460E+02	Half-Life	too short	
		414.70		-1.115E+01	6.460E+02	Half-Life	too short	
		415.30		-7.627E+02	6.460E+02	Half-Life	too short	
		555.20		1.828E+02	6.460E+02	Half-Life	too short	
		573.80		-2.072E+00	6.460E+02	Half-Life	too short	
		593.00		3.503E+01	6.460E+02	Half-Life	too short	
		656.30		3.722E+02	6.460E+02	Half-Life	too short	
		666.33		1.542E+01	6.460E+02	Half-Life	too short	
		675.00		-1.104E+02	6.460E+02	Half-Life	too short	
		695.00		2.674E+00	6.460E+02	Half-Life	too short	
		697.00		-3.680E+01	6.460E+02	Half-Life	too short	
		720.50	*	-8.883E+00	6.460E+02	Half-Life	too short	
		856.80		1.827E+01	6.460E+02	Half-Life	too short	
		989.30		8.283E+01	6.460E+02	Half-Life	too short	
		1034.80		-8.697E+02	6.460E+02	Half-Life	too short	
		1213.00		5.927E+01	6.460E+02	Half-Life	too short	
SB-127		61.10		1.254E+23	6.460E+02	Half-Life	too short	
		252.40		1.223E+20	6.460E+02	Half-Life	too short	
		290.80		-4.693E+20	6.460E+02	Half-Life	too short	
		411.60		9.481E+20	6.460E+02	Half-Life	too short	
		444.90		2.280E+20	6.460E+02	Half-Life	too short	
		473.00		3.337E+19	6.460E+02	Half-Life	too short	
		543.00		-5.130E+20	6.460E+02	Half-Life	too short	
		603.60		7.387E+20	6.460E+02	Half-Life	too short	
		685.20	*	5.044E+19	6.460E+02	Half-Life	too short	
		698.50		-1.231E+21	6.460E+02	Half-Life	too short	
		722.20		-2.347E+21	6.460E+02	Half-Life	too short	
		783.80		3.109E+20	6.460E+02	Half-Life	too short	
XE-127		57.60		1.810E-01	6.460E+02	Half-Life	too short	
		145.22		6.688E-05	6.460E+02	Half-Life	too short	



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131		172.10		-1.151E-04	6.460E+02	Half-Life	too short	
		202.84	*	-2.802E-05	6.460E+02	Half-Life	too short	
		374.96		-6.517E-07	6.460E+02	Half-Life	too short	
		80.18		-3.108E+06	6.460E+02	Half-Life	too short	
		284.30		1.403E+06	6.460E+02	Half-Life	too short	
		364.48	*	2.305E+05	6.460E+02	Half-Life	too short	
		636.97		7.097E+05	6.460E+02	Half-Life	too short	
TE-132	+	722.89		-4.603E+07	6.460E+02	Half-Life	too short	
		49.72		1.261E+26	6.460E+02	Half-Life	too short	
		111.76		3.578E+25	6.460E+02	Half-Life	too short	
		116.30		2.751E+24	6.460E+02	Half-Life	too short	
BA-133	+	228.16	*	-5.271E+23	6.460E+02	Half-Life	too short	
		53.15		7.354E+00	3.457E+00	5.080E+00	3.806E-01	1.448
		79.62		1.085E+00	1.727E+00	2.555E+00	3.766E-01	0.425
		81.00		-1.915E-01	1.432E-01	1.894E-01	2.918E-02	-1.011
		276.40		4.771E-01	7.147E-01	1.225E+00	1.822E-01	0.390
		302.84		-1.373E-02	2.915E-01	4.717E-01	6.325E-02	-0.029
		356.01	*	4.679E-02	9.680E-02	1.441E-01	1.780E-02	0.325
I-133	+	383.85		-1.430E-01	6.743E-01	1.099E+00	1.216E-01	-0.130
		510.53		1.000E+35	6.743E-01	Half-Life	too short	
		529.87	*	1.000E+35	6.743E-01	Half-Life	too short	
		706.58		-1.000E+35	6.743E-01	Half-Life	too short	
		856.28		-1.000E+35	6.743E-01	Half-Life	too short	
		875.33		1.000E+35	6.743E-01	Half-Life	too short	
		1236.41		-1.000E+35	6.743E-01	Half-Life	too short	
CS-134		1298.22		1.000E+35	6.743E-01	Half-Life	too short	
		475.35		-1.128E+00	6.471E+00	1.047E+01	6.561E-01	-0.108
		563.23		1.094E+00	1.004E+00	1.745E+00	1.159E-01	0.627
		569.32		-1.590E-01	5.431E-01	8.597E-01	5.759E-02	-0.185
		604.70		-1.053E-01	1.072E-01	1.327E-01	8.777E-03	-0.793
		795.84	*	1.102E-01	1.406E-01	2.456E-01	2.116E-02	0.449
		801.93		-8.157E-01	1.226E+00	1.951E+00	1.696E-01	-0.418
CS-135		1038.57		-9.611E-01	1.412E+01	2.304E+01	1.921E+00	-0.042
		1167.94		1.409E+01	8.730E+00	1.435E+01	8.486E-01	0.982
		1365.15		6.490E-01	2.080E+00	3.567E+00	2.277E-01	0.182
		268.24	*	9.420E-02	2.908E-01	4.913E-01	5.256E-02	0.192
		288.45		1.000E+35	2.908E-01	Half-Life	too short	
		417.63		1.000E+35	2.908E-01	Half-Life	too short	
		546.56		1.000E+35	2.908E-01	Half-Life	too short	
I-135		836.80		-1.000E+35	2.908E-01	Half-Life	too short	
		1038.76		-1.000E+35	2.908E-01	Half-Life	too short	
		1124.00		-1.000E+35	2.908E-01	Half-Life	too short	
		1131.51		1.000E+35	2.908E-01	Half-Life	too short	
		1260.41	*	1.000E+35	2.908E-01	Half-Life	too short	
		1457.56		1.000E+35	2.908E-01	Half-Life	too short	
		1678.03		-1.000E+35	2.908E-01	Half-Life	too short	
CS-136		1706.46		-1.000E+35	2.908E-01	Half-Life	too short	
		1791.20		1.000E+35	2.908E-01	Half-Life	too short	
		66.91		2.001E+01	2.908E-01	Half-Life	too short	



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		86.29		1.042E+03	2.908E-01	Half-Life	too short	
		153.22		8.368E+00	2.908E-01	Half-Life	too short	
		163.89		3.616E+01	2.908E-01	Half-Life	too short	
		176.55		9.614E+00	2.908E-01	Half-Life	too short	
		273.65		-3.634E+01	2.908E-01	Half-Life	too short	
		340.57		1.063E+01	2.908E-01	Half-Life	too short	
		818.51		2.241E+00	2.908E-01	Half-Life	too short	
		1048.07	*	-5.056E+00	2.908E-01	Half-Life	too short	
		1235.34		4.746E+00	2.908E-01	Half-Life	too short	
CE-139		165.85	*	-4.529E-02	2.645E-01	4.224E-01	4.196E-02	-0.107
BA-140		162.64		-1.233E+01	2.645E-01	Half-Life	too short	
		304.84		4.708E-02	2.645E-01	Half-Life	too short	
		423.70		-1.484E+01	2.645E-01	Half-Life	too short	
		537.32	*	-1.555E+01	2.645E-01	Half-Life	too short	
LA-140		328.77		1.226E+01	2.645E-01	Half-Life	too short	
		432.53		-8.160E+01	2.645E-01	Half-Life	too short	
		487.03		-1.233E+01	2.645E-01	Half-Life	too short	
		751.79		-3.780E+01	2.645E-01	Half-Life	too short	
		815.85		-2.470E+01	2.645E-01	Half-Life	too short	
		867.82		1.039E+01	2.645E-01	Half-Life	too short	
		919.63		-1.148E+01	2.645E-01	Half-Life	too short	
		925.24		-2.901E+00	2.645E-01	Half-Life	too short	
		1596.49	*	2.123E+00	2.645E-01	Half-Life	too short	
CE-141		145.44	*	-2.336E-05	2.645E-01	Half-Life	too short	
CE-143		57.37		1.000E+35	2.645E-01	Half-Life	too short	
		231.56		1.000E+35	2.645E-01	Half-Life	too short	
		293.26	*	1.000E+35	2.645E-01	Half-Life	too short	
	+	350.59		1.000E+35	2.645E-01	Half-Life	too short	
		490.36		1.000E+35	2.645E-01	Half-Life	too short	
		664.57		1.000E+35	2.645E-01	Half-Life	too short	
		721.93		-1.000E+35	2.645E-01	Half-Life	too short	
CE-144		80.11		-1.710E+00	6.007E+00	8.552E+00	6.611E-01	-0.200
		133.54	*	-3.533E-01	7.314E-01	1.156E+00	2.141E-01	-0.306
PM-144		476.78		-4.909E-02	3.168E-01	5.129E-01	4.567E-02	-0.096
		618.01		6.913E-02	1.533E-01	2.224E-01	1.900E-02	0.311
		696.49	*	-8.653E-02	1.257E-01	1.996E-01	1.733E-02	-0.433
		778.57		-8.221E+00	9.982E+00	1.563E+01	1.516E+00	-0.526
PR-144		696.49	*	-6.970E+00	1.012E+01	1.608E+01	1.137E+00	-0.433
		1489.15		-1.971E+01	4.699E+01	7.310E+01	4.295E+00	-0.270
PM-146		453.90	*	-5.219E-02	1.190E-01	1.900E-01	1.687E-02	-0.275
		633.02		5.402E-01	3.463E+00	5.628E+00	2.080E+00	0.096
		735.90		-2.512E-02	3.808E-01	6.334E-01	1.794E-01	-0.040
		747.13		-1.077E-01	2.285E-01	3.683E-01	4.993E-02	-0.292
ND-147		91.11		7.834E+02	2.285E-01	Half-Life	too short	
		319.41		-2.138E+03	2.285E-01	Half-Life	too short	
		439.89		4.263E+02	2.285E-01	Half-Life	too short	
		531.02	*	5.845E+02	2.285E-01	Half-Life	too short	
PM-149		285.90	*	-1.000E+35	2.285E-01	Half-Life	too short	
EU-152	+	121.78		7.423E-01	2.332E-01	2.697E-01	4.034E-02	2.752



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		244.69		-7.560E-01	6.479E-01	9.951E-01	9.702E-02	-0.760
		344.27	*	3.290E-02	2.297E-01	3.337E-01	2.744E-02	0.099
		443.98		1.282E+00	2.328E+00	3.924E+00	2.402E-01	0.327
		778.89		-3.981E-01	6.391E-01	1.017E+00	8.433E-02	-0.391
		867.32		2.198E-01	2.303E+00	3.838E+00	3.717E-01	0.057
		964.01		-1.225E+00	8.150E-01	1.200E+00	1.131E-01	-1.021
		1085.78		-3.455E-01	1.062E+00	1.692E+00	1.275E-01	-0.204
		1112.02		-4.521E-01	8.467E-01	1.326E+00	9.342E-02	-0.341
		1407.95		1.319E-01	2.553E-01	4.632E-01	2.707E-02	0.285
GD-153		69.67		-4.186E-01	4.452E+00	6.425E+00	5.109E-01	-0.065
		83.37		2.557E+01	5.157E+01	7.626E+01	5.854E+00	0.335
		97.43	*	1.764E-01	2.871E-01	4.263E-01	3.952E-02	0.414
		103.18		-9.425E-02	3.621E-01	5.847E-01	6.046E-02	-0.161
EU-154	+	123.07		5.343E-01	1.704E-01	1.921E-01	3.062E-02	2.781
		247.94		-6.093E-01	6.964E-01	1.115E+00	1.374E-01	-0.546
		591.81		5.661E-01	1.407E+00	2.337E+00	2.396E-01	0.242
		723.30		-5.015E-01	3.898E-01	5.879E-01	4.992E-02	-0.853
		756.87		-1.916E-01	1.768E+00	2.928E+00	3.369E-01	-0.065
		873.19		-8.039E-02	8.577E-01	1.411E+00	1.847E-01	-0.057
		996.32		-9.690E-01	9.915E-01	1.481E+00	2.657E-01	-0.654
		1004.76		-2.020E-01	6.139E-01	9.846E-01	1.163E-01	-0.205
		1274.45	*	-9.581E-02	1.754E-01	2.579E-01	2.412E-02	-0.371
EU-155		48.70		4.325E+00	1.607E+00	2.491E+00	1.736E-01	1.736
	+	60.01		5.134E+02	4.423E+01	2.660E+01	2.202E+00	19.304
	+	86.54		4.547E+00	4.561E-01	4.954E-01	3.828E-02	9.179
		105.31	*	8.152E-02	1.625E-01	2.709E-01	2.935E-02	0.301
TB-160	+	86.79		2.468E+02	2.456E+01	2.768E+01	2.111E+00	8.915
		197.04		-3.917E+00	2.262E+01	3.607E+01	3.603E+00	-0.109
		215.65		-1.528E+00	3.051E+01	5.135E+01	5.108E+00	-0.030
		298.57		2.196E+00	5.566E+00	8.266E+00	7.356E-01	0.266
		879.36	*	7.809E-01	8.469E+00	1.410E+01	1.394E+00	0.055
		962.29		6.925E+00	3.084E+01	5.149E+01	4.863E+00	0.134
		966.15		-2.453E+00	1.212E+01	1.971E+01	1.852E+00	-0.124
		1177.93		8.267E+01	2.281E+01	4.260E+01	2.472E+00	1.940
		1271.85		5.141E+00	1.957E+01	3.312E+01	1.925E+00	0.155
HO-166M		80.57		-3.399E-01	3.594E-01	4.945E-01	3.818E-02	-0.687
		184.41		2.344E-02	6.800E-02	9.849E-02	9.828E-03	0.238
		280.46		5.096E-02	1.551E-01	2.630E-01	2.435E-02	0.194
		410.95		3.831E-01	5.271E-01	8.985E-01	5.333E-02	0.426
		711.68	*	1.128E-03	1.312E-01	2.197E-01	1.601E-02	0.005
		752.31		-1.665E-01	5.765E-01	9.416E-01	7.425E-02	-0.177
		810.29		7.238E-02	1.390E-01	2.391E-01	2.097E-02	0.303
LU-176	+	88.36		7.901E+00	7.864E-01	8.996E-01	6.901E-02	8.784
		201.83		7.409E-03	5.151E-02	8.290E-02	8.275E-03	0.089
		306.84	*	-2.776E-02	4.613E-02	7.431E-02	6.472E-03	-0.374
		401.10		-1.466E+00	1.428E+01	2.337E+01	1.373E+00	-0.063
LU-177		112.95		-1.046E+08	1.428E+01	Half-Life	too short	
		208.36	*	7.201E+08	1.428E+01	Half-Life	too short	
LU-177M	+	52.97		1.277E+01	6.003E+00	8.826E+00	6.593E-01	1.447



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	54.07		7.237E+00	3.402E+00	4.977E+00	3.785E-01	1.454
		61.30		2.726E+02	2.450E+01	2.133E+01	1.755E+00	12.783
	+	121.62		1.500E+01	4.652E+00	5.425E+00	7.642E-01	2.764
		147.16		-1.127E+00	4.342E+00	6.934E+00	8.281E-01	-0.163
		171.86		-2.651E+00	3.260E+00	5.013E+00	4.985E-01	-0.529
		218.09		8.445E+00	6.303E+00	1.109E+01	1.102E+00	0.761
		268.79		7.723E+00	6.056E+00	1.058E+01	9.996E-01	0.730
		319.02		3.204E-01	2.065E+00	3.459E+00	2.906E-01	0.093
		367.43		-6.456E+00	7.917E+00	1.249E+01	8.524E-01	-0.517
		413.65	*	-6.427E-01	1.614E+00	2.596E+00	1.545E-01	-0.248
HF-181		56.28		1.460E-03	1.614E+00	Half-Life	too short	
		57.53		5.852E-03	1.614E+00	Half-Life	too short	
		65.20		-1.134E-04	1.614E+00	Half-Life	too short	
		133.02		-1.163E-05	1.614E+00	Half-Life	too short	
		136.25		7.095E-05	1.614E+00	Half-Life	too short	
		345.85		-2.455E-06	1.614E+00	Half-Life	too short	
		482.03	*	1.373E-05	1.614E+00	Half-Life	too short	
W-181		56.28		1.772E+01	2.585E+00	4.165E+00	3.283E-01	4.255
		57.53		7.082E+01	6.098E+00	4.792E+00	3.854E-01	14.778
		65.20	*	-1.364E+00	2.111E+00	3.149E+00	2.546E-01	-0.433
TA-182		67.75		9.674E-01	7.026E-01	1.203E+00	9.628E-02	0.804
		100.10		-6.734E-01	1.688E+00	2.710E+00	2.645E-01	-0.248
		152.43		2.164E+00	4.011E+00	6.621E+00	7.552E-01	0.327
		222.10		-3.977E+00	4.472E+00	7.228E+00	7.169E-01	-0.550
		1001.68		-4.193E+00	3.675E+01	5.998E+01	5.340E+00	-0.070
		1121.28		1.625E+00	2.245E+00	3.871E+00	2.657E-01	0.420
		1189.05		4.050E+00	3.529E+00	6.446E+00	3.743E-01	0.628
		1221.42	*	1.691E-01	1.762E+00	2.899E+00	1.686E-01	0.058
		1230.97		3.698E-02	4.775E+00	7.753E+00	4.508E-01	0.005
RE-183	+	57.98		4.336E+02	3.735E+01	2.209E+01	1.790E+00	19.625
	+	59.32		2.492E+02	2.147E+01	1.314E+01	1.087E+00	18.973
		67.20		4.653E+00	4.446E+00	7.555E+00	6.060E-01	0.616
		162.32	*	-2.356E+00	4.647E+00	7.300E+00	7.542E-01	-0.323
		208.81		2.135E+01	4.601E+01	7.490E+01	7.467E+00	0.285
		291.72		1.777E+01	4.677E+01	6.965E+01	6.298E+00	0.255
RE-184	+	57.98		2.395E+02	2.063E+01	1.220E+01	9.885E-01	19.625
	+	59.32		1.375E+02	1.185E+01	7.249E+00	6.001E-01	18.973
		67.20		2.569E+00	2.455E+00	4.171E+00	3.346E-01	0.616
		161.27		-1.663E+00	2.242E+00	3.476E+00	3.633E-01	-0.478
		216.55		1.447E+00	1.819E+00	3.153E+00	3.135E-01	0.459
		252.85	*	2.475E-02	1.618E+00	2.716E+00	2.624E-01	0.009
		318.01		2.664E+00	3.334E+00	5.747E+00	4.843E-01	0.464
		792.07		-2.118E+00	8.513E+00	1.393E+01	1.182E+00	-0.152
		903.28		-5.292E+00	1.100E+01	1.553E+01	1.574E+00	-0.341
		920.93		-2.682E-01	4.707E+00	7.741E+00	7.697E-01	-0.035
OS-185	+	59.72		3.004E+02	2.588E+01	1.570E+01	1.302E+00	19.132
		61.14		1.010E+02	8.917E+00	7.035E+00	5.792E-01	14.362
		69.30		1.072E-01	3.498E+00	5.077E+00	4.042E-01	0.021
		592.07		2.752E+01	6.056E+01	1.010E+02	6.638E+00	0.273



----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-188	646.12	*		-1.172E-01	1.008E+00	1.605E+00	1.057E-01	-0.073
	717.42			3.117E+00	2.097E+01	3.545E+01	2.612E+00	0.088
	874.81			8.223E+00	1.763E+01	3.003E+01	2.945E+00	0.274
	880.27			6.867E-01	2.303E+01	3.819E+01	3.780E+00	0.018
	155.03	*		2.774E+00	7.512E+00	1.231E+01	1.371E+00	0.225
W-188	477.96			-5.334E+01	1.981E+02	3.185E+02	1.999E+01	-0.167
	633.10			3.097E+01	1.644E+02	2.681E+02	1.767E+01	0.116
	63.58			-1.168E+03	1.192E+03	1.680E+03	1.367E+02	-0.696
IR-192	227.08			-1.205E+02	5.794E+02	9.666E+02	9.560E+01	-0.125
	290.67	*		-1.399E+02	3.917E+02	5.529E+02	5.012E+01	-0.253
	295.96		+	1.222E+01	6.842E+00	8.003E+00	7.322E-01	1.527
	308.46			-1.369E+00	3.800E+00	6.202E+00	5.491E-01	-0.221
	316.51	*		9.809E-01	1.441E+00	2.472E+00	2.133E-01	0.397
AU-195	468.07			-5.923E-01	3.724E+00	6.037E+00	4.368E-01	-0.098
	604.41			-2.449E+01	2.337E+01	2.852E+01	3.387E+00	-0.858
	612.46			4.042E+01	3.689E+01	5.644E+01	4.707E+00	0.716
	65.12			-3.302E-01	5.165E-01	7.708E-01	6.233E-02	-0.428
	66.83		+	2.660E-01	2.780E-01	4.714E-01	3.787E-02	0.564
TL-200	75.70			2.854E+00	8.005E-01	1.589E+00	1.241E-01	1.796
	98.88	*		9.168E-02	1.019E+00	1.674E+00	1.596E-01	0.055
	129.76			7.611E+00	1.506E+01	2.494E+01	3.379E+00	0.305
	367.94	*		-1.000E+35	1.506E+01	Half-Life	too short	
	579.30			1.000E+35	1.506E+01	Half-Life	too short	
TL-201	828.27			-1.000E+35	1.506E+01	Half-Life	too short	
	1205.75			1.000E+35	1.506E+01	Half-Life	too short	
	68.90			5.070E+26	1.506E+01	Half-Life	too short	
	70.82			-6.405E+26	1.506E+01	Half-Life	too short	
	80.30			-1.368E+27	1.506E+01	Half-Life	too short	
TL-202	135.34			7.475E+27	1.506E+01	Half-Life	too short	
	167.43	*		2.366E+27	1.506E+01	Half-Life	too short	
	68.90			2.281E+01	1.506E+01	Half-Life	too short	
	70.82			-2.874E+01	1.506E+01	Half-Life	too short	
	80.30			-6.138E+01	1.506E+01	Half-Life	too short	
HG-203	439.56	*		1.072E+00	1.506E+01	Half-Life	too short	
	70.83			-1.434E+02	1.498E+02	2.059E+02	2.722E+01	-0.697
	72.87			2.395E+02	9.371E+01	1.425E+02	1.820E+01	1.680
	82.60			-6.056E+01	1.962E+02	2.798E+02	3.700E+01	-0.216
	279.20	*		1.363E+01	9.804E+00	1.726E+01	1.651E+00	0.790
BI-207	72.80			5.139E-01	2.066E-01	3.242E-01	2.553E-02	1.585
	74.97		+	4.670E-01	1.310E-01	2.378E-01	1.861E-02	1.964
	84.90			5.168E-01	2.791E-01	4.313E-01	3.301E-02	1.198
	569.67			-1.856E-03	6.299E-02	1.017E-01	6.656E-03	-0.018
	1063.62	*		5.654E-02	1.355E-01	2.285E-01	1.809E-02	0.247
TL-207	1770.23			7.958E-02	7.492E-01	1.095E+00	6.327E-02	0.073
	81.07			-4.050E-01	2.933E-01	3.937E-01	3.037E-02	-1.029
	83.78			5.561E-02	1.722E-01	2.528E-01	1.939E-02	0.220
	94.90			4.063E-01	3.253E-01	4.958E-01	4.370E-02	0.819
	122.32		+	1.689E+01	5.270E+00	6.184E+00	9.007E-01	2.731
	144.24			-2.844E-01	1.092E+00	1.737E+00	2.253E-01	-0.164



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		154.21		9.019E-02	6.621E-01	1.075E+00	1.279E-01	0.084
		269.46		2.366E-01	3.457E-01	5.922E-01	5.687E-02	0.400
		323.87	*	-6.013E-01	1.268E+00	2.048E+00	3.591E-01	-0.294
	+	338.28		7.416E+00	3.110E+00	3.879E+00	4.569E-01	1.912
		445.03		1.278E+00	5.395E+00	8.946E+00	9.354E-01	0.143
PO-209		260.50		-7.296E+00	1.773E+01	2.912E+01	2.785E+00	-0.251
		262.80		-2.978E+01	4.889E+01	7.939E+01	7.571E+00	-0.375
		896.60	*	-2.130E+00	2.110E+01	3.467E+01	3.524E+00	-0.061
BI-210		46.50	*	2.929E+00	1.403E+00	2.254E+00	1.807E-01	1.299
PB-210		46.50	*	2.929E+00	1.403E+00	2.254E+00	1.807E-01	1.299
PO-210		46.50	*	2.929E+00	1.397E+00	2.254E+00	1.516E-01	1.299
PB-211		404.84	*	-2.152E-01	2.075E+00	3.389E+00	2.113E+00	-0.063
		427.08		-1.570E+00	4.747E+00	7.486E+00	4.629E+00	-0.210
		831.96		6.508E-01	2.894E+00	4.830E+00	3.030E+00	0.135
BI-212		727.18	*	7.619E-01	6.273E-01	1.124E+00	1.019E-01	0.678
		785.46		1.208E+00	3.934E+00	6.687E+00	5.609E-01	0.181
		1620.62		-2.610E-01	1.769E+00	2.839E+00	1.666E-01	-0.092
PO-215		81.07		-4.050E-01	2.933E-01	3.937E-01	3.037E-02	-1.029
		83.78		5.561E-02	1.722E-01	2.528E-01	1.939E-02	0.220
		94.90		4.063E-01	3.253E-01	4.958E-01	4.370E-02	0.819
	+	122.32		1.689E+01	5.270E+00	6.184E+00	9.007E-01	2.731
		144.24		-2.844E-01	1.092E+00	1.737E+00	2.253E-01	-0.164
		154.21		9.019E-02	6.621E-01	1.075E+00	1.279E-01	0.084
		269.46		2.366E-01	3.457E-01	5.922E-01	5.687E-02	0.400
		323.87	*	-6.013E-01	1.268E+00	2.048E+00	3.591E-01	-0.294
	+	338.28		7.416E+00	3.110E+00	3.879E+00	4.569E-01	1.912
		445.03		1.278E+00	5.395E+00	8.946E+00	9.354E-01	0.143
RN-219		271.23		1.996E-01	4.461E-01	7.598E-01	8.345E-02	0.263
		401.81	*	1.141E-01	8.962E-01	1.484E+00	2.025E-01	0.077
RN-220		549.76	*	-7.758E-01	5.824E+01	9.432E+01	6.137E+00	-0.008
RA-223		81.07		-4.050E-01	2.933E-01	3.937E-01	3.037E-02	-1.029
		83.78		5.561E-02	1.722E-01	2.528E-01	1.939E-02	0.220
		94.90		4.063E-01	3.253E-01	4.958E-01	4.370E-02	0.819
	+	122.32		1.689E+01	5.270E+00	6.184E+00	9.007E-01	2.731
		144.24		-2.844E-01	1.092E+00	1.737E+00	2.253E-01	-0.164
		154.21		9.019E-02	6.621E-01	1.075E+00	1.279E-01	0.084
		269.46		2.366E-01	3.457E-01	5.922E-01	5.687E-02	0.400
		323.87	*	-6.013E-01	1.268E+00	2.048E+00	3.591E-01	-0.294
	+	338.28		7.416E+00	3.110E+00	3.879E+00	4.569E-01	1.912
		445.03		1.278E+00	5.395E+00	8.946E+00	9.354E-01	0.143
RA-224		240.98	*	6.226E+00	1.636E+00	2.652E+00	2.594E-01	2.348
AC-227		79.80		-4.803E-01	2.089E+00	2.980E+00	6.306E-01	-0.161
		236.00		1.144E+00	5.017E-01	7.885E-01	1.035E-01	1.450
		256.20	*	-7.691E-02	6.898E-01	1.150E+00	1.833E-01	-0.067
		286.10		-5.711E-01	2.819E+00	4.658E+00	6.314E-01	-0.123
		299.80		1.770E+00	3.037E+00	4.545E+00	8.006E-01	0.389
		304.40		-2.326E-01	3.500E+00	5.809E+00	1.075E+00	-0.040
		334.20		5.295E+00	5.170E+00	7.833E+00	1.498E+00	0.676
TH-227		79.80		-4.803E-01	2.089E+00	2.980E+00	6.390E-01	-0.161



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	+	94.00		3.536E+00	3.084E+00	4.340E+00	9.458E-01	0.815
		236.00		1.144E+00	4.981E-01	7.885E-01	9.493E-02	1.450
		256.20	*	-7.691E-02	6.899E-01	1.150E+00	2.135E-01	-0.067
		286.10		-5.711E-01	2.876E+00	4.658E+00	4.677E+00	-0.123
		299.80		1.770E+00	3.037E+00	4.545E+00	8.006E-01	0.389
		304.40		-2.326E-01	3.500E+00	5.809E+00	1.075E+00	-0.040
		334.20		5.295E+00	5.170E+00	7.833E+00	1.498E+00	0.676
	+	338.32		1.776E+00	1.022E+00	9.290E-01	3.819E-01	1.911
	+	911.07	*	8.740E-01	5.545E-01	7.246E-01	8.968E-02	1.206
		969.11		7.298E-01	6.747E-01	1.148E+00	2.711E-01	0.636
RA-228	+	338.32		1.776E+00	1.022E+00	9.290E-01	3.819E-01	1.911
	+	911.07	*	8.740E-01	5.545E-01	7.246E-01	8.968E-02	1.206
TH-229		969.11		7.298E-01	6.747E-01	1.148E+00	2.711E-01	0.636
		85.43		1.843E+00	3.346E-01	5.312E-01	4.061E-02	3.470
	+	88.47		4.549E+00	4.528E-01	5.170E-01	3.976E-02	8.798
		100.00		-9.998E-02	2.424E-01	3.890E-01	3.790E-02	-0.257
PA-231		193.63	*	3.826E-01	8.594E-01	1.405E+00	1.403E-01	0.272
		210.97		1.959E+00	1.383E+00	2.327E+00	2.319E-01	0.842
		283.67	*	-7.503E-01	2.796E+00	4.604E+00	7.145E-01	-0.163
		301.29		3.241E-01	1.212E+00	1.785E+00	2.213E-01	0.182
TH-231		81.07		-4.050E-01	2.933E-01	3.937E-01	3.037E-02	-1.029
		83.78		5.561E-02	1.722E-01	2.528E-01	1.939E-02	0.220
		94.90		4.063E-01	3.253E-01	4.958E-01	4.370E-02	0.819
	+	122.32		1.689E+01	5.270E+00	6.184E+00	9.007E-01	2.731
U-231		144.24		-2.844E-01	1.092E+00	1.737E+00	2.253E-01	-0.164
		154.21		9.019E-02	6.621E-01	1.075E+00	1.279E-01	0.084
		269.46		2.366E-01	3.457E-01	5.922E-01	5.687E-02	0.400
		323.87	*	-6.013E-01	1.268E+00	2.048E+00	3.591E-01	-0.294
	+	338.28		7.416E+00	3.110E+00	3.879E+00	4.569E-01	1.912
		445.03		1.278E+00	5.395E+00	8.946E+00	9.354E-01	0.143
		84.21		6.749E+17	5.395E+00	Half-Life	too short	
	+	92.29		9.850E+17	5.395E+00	Half-Life	too short	
		95.87	*	-1.385E+16	5.395E+00	Half-Life	too short	
		108.00		-7.089E+17	5.395E+00	Half-Life	too short	
TH-232	+	338.32		1.776E+00	7.283E-01	9.290E-01	7.283E-02	1.911
	+	911.07	*	8.740E-01	5.545E-01	7.246E-01	8.968E-02	1.206
		969.11		7.298E-01	6.747E-01	1.148E+00	2.711E-01	0.636
PA-233	+	75.28		1.338E+01	4.119E+00	7.160E+00	1.068E+00	1.868
	+	86.59		6.522E+01	1.779E+01	7.154E+00	1.897E+00	9.116
		300.12		1.358E-02	8.543E-01	1.238E+00	1.859E-01	0.011
		311.98	*	-8.020E-02	1.214E-01	1.947E-01	1.719E-02	-0.412
PA-234		340.50		1.786E+00	1.418E+00	2.121E+00	4.994E-01	0.842
		398.62		-2.980E+00	4.490E+00	7.011E+00	1.814E+00	-0.425
		415.76		3.947E-01	3.623E+00	5.986E+00	1.235E+00	0.066
		63.00		-1.164E+00	1.310E+00	1.841E+00	2.808E-01	-0.632
		94.67		2.692E-01	2.397E-01	3.611E-01	4.517E-02	0.745
		98.44		7.916E-02	1.307E-01	2.001E-01	1.119E-01	0.396
		99.86		-2.638E-01	6.126E-01	9.824E-01	9.545E-02	-0.269
		111.00		1.727E-01	2.585E-01	4.321E-01	6.301E-02	0.400



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		131.20		-3.963E-02	1.638E-01	2.628E-01	3.528E-02	-0.151
		152.70		2.675E-01	5.378E-01	8.839E-01	1.643E-01	0.303
	+	186.00		1.512E+00	2.708E+00	3.610E+00	1.141E+00	0.419
		226.40		-2.185E-01	6.922E-01	1.149E+00	1.616E-01	-0.190
		227.20		-1.510E-01	7.457E-01	1.244E+00	1.231E-01	-0.121
		248.90		-6.607E-01	1.485E+00	2.429E+00	5.552E-01	-0.272
	+	293.70		3.593E+00	2.082E+00	2.242E+00	3.922E-01	1.603
		369.80		-1.930E-01	1.826E+00	2.999E+00	6.328E-01	-0.064
		568.70		-1.381E+00	2.046E+00	3.141E+00	2.055E-01	-0.440
		569.50		-1.559E-01	5.564E-01	8.816E-01	5.769E-02	-0.177
		574.00		1.345E-01	3.090E+00	5.014E+00	3.285E-01	0.027
		699.00		-1.400E+00	1.442E+00	2.207E+00	4.070E-01	-0.634
		706.10		-7.169E-01	2.273E+00	3.692E+00	1.637E+00	-0.194
		733.00		-2.125E-01	8.744E-01	1.437E+00	3.135E-01	-0.148
		742.81		2.930E+00	3.646E+00	5.450E+00	3.658E+00	0.538
		796.30		1.386E+00	2.076E+00	3.551E+00	9.598E-01	0.390
		805.60		1.975E+00	2.407E+00	4.095E+00	1.256E+00	0.482
		819.60		2.013E+00	3.048E+00	5.130E+00	1.954E+00	0.392
		826.30		-1.460E+00	2.104E+00	3.151E+00	1.412E+00	-0.463
		831.60		4.159E-01	1.487E+00	2.507E+00	7.518E-01	0.166
		876.40		2.515E-01	2.242E+00	3.711E+00	3.819E+00	0.068
		880.51		-1.445E-02	7.358E-01	1.216E+00	1.204E-01	-0.012
		883.24		-3.543E-01	7.807E-01	1.190E+00	8.018E-01	-0.298
		899.00		-6.414E-01	2.278E+00	3.667E+00	1.615E+00	-0.175
		925.00		-1.524E+00	3.254E+00	5.198E+00	5.144E-01	-0.293
		926.50		2.169E-01	4.891E-01	8.249E-01	2.123E-01	0.263
		946.00	*	4.117E-01	9.367E-01	1.578E+00	3.038E-01	0.261
		949.00		-4.141E-01	1.388E+00	2.247E+00	2.160E-01	-0.184
		980.50		1.064E+00	1.871E+00	3.198E+00	2.943E-01	0.333
PA-234M		1394.10		1.084E+00	1.706E+00	2.907E+00	1.883E+00	0.373
		766.42		9.920E+00	2.386E+01	4.003E+01	2.028E+01	0.248
		1001.03	*	-5.900E+00	1.148E+01	1.815E+01	1.855E+00	-0.325
TH-234		63.29	*	-9.818E-01	1.127E+00	1.582E+00	2.810E-01	-0.621
	+	92.38		9.151E-01	7.904E-01	1.153E+00	2.071E-01	0.794
U-235		89.95		2.144E+01	6.992E+00	3.816E+00	1.170E+00	5.619
	+	93.35		1.100E+00	9.789E-01	1.382E+00	3.870E-01	0.796
		105.00		1.051E+00	1.436E+00	2.363E+00	7.207E-01	0.445
		143.76	*	-1.163E-02	3.342E-01	5.373E-01	1.051E-01	-0.022
		163.35		2.255E-01	7.728E-01	1.260E+00	2.501E-01	0.179
	+	185.71		5.601E-02	9.886E-02	1.343E-01	1.340E-02	0.417
		205.31		-4.024E-01	9.628E-01	1.504E+00	2.967E-01	-0.268
NP-236		94.67		2.056E-01	1.809E-01	2.741E-01	2.404E-02	0.750
		98.44		5.988E-02	9.312E-02	1.513E-01	1.430E-02	0.396
		111.00		1.306E-01	1.953E-01	3.268E-01	3.879E-02	0.400
		160.31	*	-9.938E-02	1.314E-01	2.035E-01	2.149E-02	-0.488
U-238		63.29	*	-9.818E-01	1.127E+00	1.582E+00	2.810E-01	-0.621
	+	92.38		9.151E-01	7.768E-01	1.153E+00	9.647E-02	0.794
NP-239		99.55		-1.015E-01	2.050E-01	3.277E-01	3.165E-02	-0.310
		117.00	*	1.327E-01	3.151E-01	4.602E-01	6.029E-02	0.288



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243		209.75		4.794E-01	1.413E+00	2.290E+00	2.282E-01	0.209
		228.18		-1.028E-01	3.936E-01	6.550E-01	6.473E-02	-0.157
		277.60		4.470E-02	3.327E-01	5.593E-01	5.205E-02	0.080
		334.30		3.492E+00	2.860E+00	4.451E+00	3.545E-01	0.785
		99.55		-1.068E-01	2.155E-01	3.446E-01	3.328E-02	-0.310
		103.76	*	8.365E-02	1.326E-01	2.222E-01	2.323E-02	0.376
		117.00		1.395E-01	3.312E-01	4.838E-01	6.339E-02	0.288
		209.75		4.830E-01	1.424E+00	2.307E+00	2.299E-01	0.209
AM-246		228.18		-1.062E-01	4.064E-01	6.764E-01	6.684E-02	-0.157
		277.60		4.606E-02	3.427E-01	5.762E-01	5.363E-02	0.080
		798.80		-2.667E-01	3.203E-01	5.003E-01	4.300E-02	-0.533
		1036.00		1.438E-01	7.991E-01	1.327E+00	1.111E-01	0.108
		1062.04		-2.135E-01	5.927E-01	9.438E-01	7.500E-02	-0.226
CM-247		1078.86	*	2.813E-01	3.906E-01	6.693E-01	5.123E-02	0.420
		278.00		2.362E-01	1.381E+00	2.325E+00	2.162E-01	0.102
		287.40		-8.980E-04	2.267E+00	3.685E+00	3.364E-01	0.000
CF-249		402.60	*	6.686E-02	7.968E-02	1.367E-01	8.043E-03	0.489
		252.85		2.431E-02	1.590E+00	2.668E+00	2.578E-01	0.009
		333.44		2.168E-01	3.749E-01	5.616E-01	4.487E-02	0.386
CF-251		387.95	*	-4.291E-02	8.866E-02	1.425E-01	8.520E-03	-0.301
		176.60	*	1.371E-01	2.059E-01	3.408E-01	3.395E-02	0.402
		227.00		-2.328E-01	6.660E-01	1.104E+00	1.092E-01	-0.211
		285.00		5.510E-02	3.186E+00	5.323E+00	4.884E-01	0.010



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004734      *
* Acquisition date   : 5-JAN-2010 07:39:15 Detector SN# :                   *
* Detector ID        : GAM05 Sensitivity      : 5.000                        *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 01:00:00.00 Abundance limit : 75.000              *
* Elapsed real time  : 0 01:00:01.72 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 28-JAN-2009 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202004734 Analyst initials: MXR1                 *
* Batch Number       : 936923 Sample Quantity : 1.5544E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                   *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                              *
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                               *
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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act error	MDA (pCi/GRAM )	
CO-57	5.644E-01	1.716E-01	1.566E-01	0.000E+00
CO-60	7.036E+00	5.628E-01	1.277E-01	0.000E+00
AS-73	2.758E+01	1.271E+01	1.583E+01	0.000E+00
CD-109	5.526E+01	5.390E+00	3.124E+00	0.000E+00
SN-126	3.331E+00	3.250E-01	1.881E-01	0.000E+00
BA-137M	5.510E+00	4.557E-01	1.296E-01	0.000E+00
CS-137	5.824E+00	4.827E-01	1.371E-01	0.000E+00
TM-171	2.211E+01	3.301E+01	6.198E+01	0.000E+00
TL-208	3.779E-01	1.203E-01	1.250E-01	0.000E+00
BI-211	2.124E+00	5.807E-01	6.816E-01	0.000E+00
PB-212	9.271E-01	2.037E-01	1.891E-01	0.000E+00
PO-212	9.271E-01	2.037E-01	1.891E-01	0.000E+00
BI-214	9.161E-01	2.495E-01	2.410E-01	0.000E+00
PB-214	7.392E-01	2.056E-01	2.397E-01	0.000E+00
PO-214	7.392E-01	2.056E-01	2.397E-01	0.000E+00
PO-216	9.271E-01	2.037E-01	1.891E-01	0.000E+00
PO-218	7.392E-01	2.056E-01	2.397E-01	0.000E+00
RA-226	9.161E-01	2.495E-01	2.410E-01	0.000E+00
TH-228	1.303E+00	2.862E-01	2.657E-01	0.000E+00
TH-230	9.157E-01	2.494E-01	2.409E-01	0.000E+00
U-234	9.157E-01	2.494E-01	2.409E-01	0.000E+00
NP-237	9.783E+00	2.196E+00	5.401E-01	0.000E+00
AM-241	1.395E+01	1.263E+00	2.336E-01	0.000E+00
AM-243	2.554E-01	7.021E-02	1.002E-01	0.000E+00
ANH-511	1.353E-01	1.118E-01	1.050E-01	0.000E+00

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	-1.023E+01	5.429E+01	9.310E+01	0.000E+00 NOT IDENT.
NA-22	-4.157E-02	7.261E-02	1.100E-01	0.000E+00 NOT IDENT.



NA-24	0.000E+00	1.029E+42	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.707E-02	4.345E-02	8.002E-02	0.000E+00	NOT IDENT.
K-40	6.073E-01	6.633E-01	1.271E+00	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.369E-02	8.983E-02	0.000E+00	FAIL ABUN
SC-46	2.310E-01	1.584E+00	2.759E+00	0.000E+00	NOT IDENT.
V-48	0.000E+00	2.639E+05	0.000E+00	0.000E+00	SHORT HLIF
CR-51	0.000E+00	2.539E+03	0.000E+00	0.000E+00	SHORT HLIF
MN-52	0.000E+00	9.734E+16	0.000E+00	0.000E+00	SHORT HLIF
MN-54	7.389E-02	1.779E-01	3.167E-01	0.000E+00	NOT IDENT.
CO-56	-1.188E+00	1.719E+00	2.834E+00	0.000E+00	NOT IDENT.
CO-58	-1.341E-01	2.272E+00	3.937E+00	0.000E+00	NOT IDENT.
FE-59	-2.853E+01	3.735E+01	5.959E+01	0.000E+00	NOT IDENT.
ZN-65	-4.381E-01	5.310E-01	8.404E-01	0.000E+00	NOT IDENT.
GE-68	9.434E+00	7.299E+00	1.340E+01	0.000E+00	NOT IDENT.
AS-74	0.000E+00	6.746E+04	0.000E+00	0.000E+00	SHORT HLIF
SE-75	-1.543E-01	5.199E-01	9.250E-01	0.000E+00	FAIL ABUN
BR-77	0.000E+00	3.929E+41	0.000E+00	0.000E+00	SHORT HLIF
SR-82	0.000E+00	7.213E+03	0.000E+00	0.000E+00	SHORT HLIF
RB-83	8.029E-01	2.004E+00	3.537E+00	0.000E+00	NOT IDENT.
RB-84	0.000E+00	1.803E+02	0.000E+00	0.000E+00	SHORT HLIF
KR-85	5.184E+00	1.868E+01	2.843E+01	0.000E+00	NOT IDENT.
SR-85	8.286E-01	2.986E+00	4.544E+00	0.000E+00	NOT IDENT.
RB-86	0.000E+00	4.032E+05	0.000E+00	0.000E+00	SHORT HLIF
Y-88	1.666E-01	4.863E-01	8.744E-01	0.000E+00	NOT IDENT.
ZR-88	2.686E-01	9.970E-01	1.775E+00	0.000E+00	NOT IDENT.
Y-91	-1.591E+02	1.239E+03	2.049E+03	0.000E+00	NOT IDENT.
NB-94	4.271E-02	6.746E-02	1.235E-01	0.000E+00	NOT IDENT.
NB-95	7.427E-02	2.937E+00	5.142E+00	0.000E+00	NOT IDENT.
NB-95M	1.085E+01	8.471E+00	1.423E+01	0.000E+00	NOT IDENT.
ZR-95	-1.835E-01	5.154E+00	8.992E+00	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.026E+40	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	9.645E+40	0.000E+00	0.000E+00	SHORT HLIF
MO-99	0.000E+00	1.669E+37	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	6.903E+41	0.000E+00	0.000E+00	SHORT HLIF
RH-101	8.988E-03	6.828E-02	1.199E-01	0.000E+00	NOT IDENT.
RH-102	6.751E-03	9.003E-02	1.566E-01	0.000E+00	NOT IDENT.
RU-103	0.000E+00	2.740E+01	0.000E+00	0.000E+00	SHORT HLIF
RH-106	7.365E-01	1.290E+00	2.271E+00	0.000E+00	FAIL ABUN
RU-106	7.365E-01	1.287E+00	2.271E+00	0.000E+00	FAIL ABUN
AG-108M	-1.812E-02	7.456E-02	1.284E-01	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	2.727E-01	4.982E-01	0.000E+00	NOT IDENT.
IN-111	0.000E+00	1.234E+35	0.000E+00	0.000E+00	SHORT HLIF
IN-113M	4.912E-01	6.842E-01	1.244E+00	0.000E+00	NOT IDENT.
SN-113	4.912E-01	6.842E-01	1.244E+00	0.000E+00	NOT IDENT.
IN-114M	2.170E+01	3.266E+01	5.170E+01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.314E+42	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.534E+06	0.000E+00	0.000E+00	SHORT HLIF
SB-122	0.000E+00	1.234E+37	0.000E+00	0.000E+00	SHORT HLIF
I-123	0.000E+00	4.356E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-6.955E-02	3.030E-01	5.276E-01	0.000E+00	NOT IDENT.
I-124	0.000E+00	5.284E+23	0.000E+00	0.000E+00	SHORT HLIF
SB-124	1.666E+00	5.282E+00	9.498E+00	0.000E+00	NOT IDENT.
SB-125	-2.609E-01	2.612E-01	4.310E-01	0.000E+00	NOT IDENT.
TE-125M	-2.537E+02	6.331E+02	1.115E+03	0.000E+00	NOT IDENT.
I-126	0.000E+00	1.644E+07	0.000E+00	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.482E+07	0.000E+00	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.363E+26	0.000E+00	0.000E+00	SHORT HLIF
XE-127	0.000E+00	4.291E+01	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	4.028E+11	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.136E+30	0.000E+00	0.000E+00	SHORT HLIF
BA-133	4.679E-02	9.486E-02	1.510E-01	0.000E+00	FAIL ABUN
I-133	0.000E+00	6.153E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.102E-01	1.377E-01	2.520E-01	0.000E+00	NOT IDENT.
CS-135	9.420E-02	2.849E-01	5.187E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.375E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	0.000E+00	8.608E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-139	-4.529E-02	2.592E-01	4.515E-01	0.000E+00	NOT IDENT.
BA-140	0.000E+00	2.797E+07	0.000E+00	0.000E+00	SHORT HLIF
LA-140	0.000E+00	5.744E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-141	0.000E+00	1.061E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-143	0.000E+00	2.160E+41	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.533E-01	7.168E-01	1.242E+00	0.000E+00	NOT IDENT.
PM-144	-8.653E-02	1.232E-01	2.055E-01	0.000E+00	NOT IDENT.
PR-144	-6.970E+00	9.917E+00	1.656E+01	0.000E+00	NOT IDENT.
PM-146	-5.219E-02	1.166E-01	1.979E-01	0.000E+00	NOT IDENT.
ND-147	0.000E+00	1.124E+09	0.000E+00	0.000E+00	SHORT HLIF
PM-149	0.000E+00	2.661E+42	0.000E+00	0.000E+00	SHORT HLIF
EU-152	3.290E-02	2.251E-01	3.500E-01	0.000E+00	FAIL ABUN



GD-153	1.764E-01	2.814E-01	4.617E-01	0.000E+00	NOT IDENT.
EU-154	-9.581E-02	1.719E-01	2.611E-01	0.000E+00	FAIL ABUN
EU-155	8.152E-02	1.593E-01	2.929E-01	0.000E+00	FAIL ABUN
TB-160	7.809E-01	8.300E+00	1.443E+01	0.000E+00	FAIL ABUN
HO-166M	1.128E-03	1.286E-01	2.261E-01	0.000E+00	NOT IDENT.
LU-176	-2.776E-02	4.521E-02	7.818E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	9.280E+14	0.000E+00	0.000E+00	SHORT HLIF
LU-177M	-6.427E-01	1.582E+00	2.710E+00	0.000E+00	FAIL ABUN
HF-181	0.000E+00	2.008E+01	0.000E+00	0.000E+00	SHORT HLIF
W-181	-1.364E+00	2.069E+00	3.444E+00	0.000E+00	NOT IDENT.
TA-182	1.691E-01	1.727E+00	2.939E+00	0.000E+00	NOT IDENT.
RE-183	-2.356E+00	4.554E+00	7.806E+00	0.000E+00	FAIL ABUN
RE-184	2.475E-02	1.586E+00	2.872E+00	0.000E+00	FAIL ABUN
OS-185	-1.172E-01	9.877E-01	1.656E+00	0.000E+00	FAIL ABUN
RE-188	2.774E+00	7.361E+00	1.318E+01	0.000E+00	NOT IDENT.
W-188	-1.399E+02	3.839E+02	5.826E+02	0.000E+00	NOT IDENT.
IR-192	9.809E-01	1.412E+00	2.599E+00	0.000E+00	FAIL ABUN
AU-195	9.168E-02	9.988E-01	1.812E+00	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.742E+41	0.000E+00	0.000E+00	SHORT HLIF
TL-201	0.000E+00	2.632E+33	0.000E+00	0.000E+00	SHORT HLIF
TL-202	0.000E+00	1.743E+07	0.000E+00	0.000E+00	SHORT HLIF
HG-203	1.363E+01	9.608E+00	1.820E+01	0.000E+00	NOT IDENT.
BI-207	5.654E-02	1.328E-01	2.325E-01	0.000E+00	FAIL ABUN
TL-207	-6.013E-01	1.243E+00	2.152E+00	0.000E+00	FAIL ABUN
PO-209	-2.130E+00	2.068E+01	3.544E+01	0.000E+00	NOT IDENT.
BI-210	0.000E+00	1.374E+00	2.486E+00	0.000E+00	NOT IDENT.
PB-210	0.000E+00	1.374E+00	2.486E+00	0.000E+00	NOT IDENT.
PO-210	0.000E+00	1.369E+00	2.486E+00	0.000E+00	NOT IDENT.
PB-211	-2.152E-01	2.034E+00	3.539E+00	0.000E+00	NOT IDENT.
BI-212	7.619E-01	6.148E-01	1.156E+00	0.000E+00	NOT IDENT.
PO-215	-6.013E-01	1.243E+00	2.152E+00	0.000E+00	FAIL ABUN
RN-219	1.141E-01	8.783E-01	1.551E+00	0.000E+00	NOT IDENT.
RN-220	-7.758E-01	5.707E+01	9.772E+01	0.000E+00	NOT IDENT.
RA-223	-6.013E-01	1.243E+00	2.152E+00	0.000E+00	FAIL ABUN
RA-224	0.000E+00	1.603E+00	2.807E+00	0.000E+00	NOT IDENT.
AC-227	-7.691E-02	6.760E-01	1.216E+00	0.000E+00	NOT IDENT.
TH-227	-7.691E-02	6.761E-01	1.216E+00	0.000E+00	FAIL ABUN
AC-228	0.000E+00	5.434E-01	7.405E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	5.434E-01	7.405E-01	0.000E+00	FAIL ABUN
TH-229	3.826E-01	8.423E-01	1.496E+00	0.000E+00	FAIL ABUN
PA-231	-7.503E-01	2.740E+00	4.854E+00	0.000E+00	NOT IDENT.
TH-231	-6.013E-01	1.243E+00	2.152E+00	0.000E+00	FAIL ABUN
U-231	0.000E+00	4.362E+23	0.000E+00	0.000E+00	SHORT HLIF
TH-232	0.000E+00	5.434E-01	7.405E-01	0.000E+00	FAIL ABUN
PA-233	-8.020E-02	1.189E-01	2.047E-01	0.000E+00	FAIL ABUN
PA-234	4.117E-01	9.179E-01	1.610E+00	0.000E+00	FAIL ABUN
PA-234M	-5.900E+00	1.125E+01	1.850E+01	0.000E+00	NOT IDENT.
TH-234	-9.818E-01	1.105E+00	1.731E+00	0.000E+00	FAIL ABUN
U-235	-1.163E-02	3.275E-01	5.763E-01	0.000E+00	FAIL ABUN
NP-236	-9.938E-02	1.288E-01	2.177E-01	0.000E+00	NOT IDENT.
U-238	-9.818E-01	1.105E+00	1.731E+00	0.000E+00	FAIL ABUN
NP-239	1.327E-01	3.088E-01	4.962E-01	0.000E+00	NOT IDENT.
CM-243	8.365E-02	1.300E-01	2.403E-01	0.000E+00	NOT IDENT.
AM-246	2.813E-01	3.828E-01	6.808E-01	0.000E+00	NOT IDENT.
CM-247	6.686E-02	7.808E-02	1.428E-01	0.000E+00	NOT IDENT.
CF-249	-4.291E-02	8.689E-02	1.490E-01	0.000E+00	NOT IDENT.
CF-251	1.371E-01	2.018E-01	3.637E-01	0.000E+00	NOT IDENT.



```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004734.CNF;1
Sample date       : 28-JAN-2009 00:00:00 Acquisition date : 5-JAN-2010 07:39:15.
Sample ID        : G1202004734 Sample quantity : 1.55440E+02 GRAM
Detector name    : GAM05 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.72 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 936923 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

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## Nuclide Line Activity Report

## Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	295	85.51*	7.079E+00	2.350E-01	5.644E-01	31.03
	136.48	-----	10.60	6.728E+00	-----	Line Not Found	-----
CO-60	1173.22	1523	100.00	1.208E+00	6.089E+00	6.888E+00	8.78
	1332.49	1395	100.00*	1.083E+00	6.220E+00	7.036E+00	8.16
AS-73	53.44	242	10.30*	7.908E+00	1.436E+00	2.758E+01	47.01
CD-109	88.03	2003	3.72*	7.847E+00	3.313E+01	5.526E+01	9.95
SN-126	64.28	-----	9.60	8.070E+00	-----	Line Not Found	-----
	86.94	2003	8.90	7.847E+00	1.385E+01	1.385E+01	41.66
	87.57	2003	37.00*	7.847E+00	3.331E+00	3.331E+00	9.95
BA-137M	661.65	2025	89.98*	2.015E+00	5.392E+00	5.510E+00	8.44
CS-137	661.65	2025	85.12*	2.015E+00	5.700E+00	5.824E+00	8.46
TM-171	51.35	628	0.29	7.801E+00	1.341E+02	1.882E+02	23.44
	52.39	242	0.52	7.908E+00	2.845E+01	3.991E+01	47.01
	59.40	8308	0.21	8.027E+00	2.347E+03	3.292E+03	8.62
	66.72	-----	0.16*	8.075E+00	-----	Line Not Found	-----
TL-208	277.35	-----	6.80	4.261E+00	-----	Line Not Found	-----
	510.84	71	21.60	2.545E+00	6.262E-01	6.262E-01	84.77
	583.14	149	84.20*	2.258E+00	3.779E-01	3.779E-01	32.47
	860.37	-----	12.46	1.590E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	8.052E+00	-----	Line Not Found	-----
	351.07	200	12.94*	3.515E+00	2.124E+00	2.124E+00	27.89
PB-212	74.81	280	10.70	8.037E+00	1.575E+00	1.575E+00	29.57
	77.11	405	18.00	8.014E+00	1.355E+00	1.355E+00	21.63
	87.30	2003	8.00	7.847E+00	1.541E+01	1.541E+01	14.11
	238.63	409	44.60*	4.773E+00	9.271E-01	9.271E-01	22.41
	300.09	-----	3.41	4.005E+00	-----	Line Not Found	-----
PO-212	74.81	280	10.70	8.037E+00	1.575E+00	1.575E+00	29.57
	77.11	405	18.00	8.014E+00	1.355E+00	1.355E+00	21.63
	87.30	2003	8.00	7.847E+00	1.541E+01	1.541E+01	14.11
	115.19	-----	0.60	7.241E+00	-----	Line Not Found	-----
	238.63	409	44.60*	4.773E+00	9.271E-01	9.271E-01	22.41
	300.09	-----	3.41	4.005E+00	-----	Line Not Found	-----



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
BI-214	609.31	190	46.30*	2.169E+00	9.157E-01	9.161E-01	27.79
	1120.29	-----	15.10	1.258E+00	-----	Line Not Found	-----
	1764.49	19	15.80	8.610E-01	6.659E-01	6.662E-01	73.45
PB-214	74.81	280	6.21	8.037E+00	2.714E+00	2.715E+00	29.01
	77.11	405	10.50	8.014E+00	2.323E+00	2.323E+00	22.93
	87.30	2003	4.67	7.847E+00	2.639E+01	2.640E+01	12.59
	241.98	-----	7.49	4.724E+00	-----	Line Not Found	-----
	295.21	121	19.20	4.058E+00	7.486E-01	7.489E-01	56.31
	351.92	200	37.20*	3.515E+00	7.389E-01	7.392E-01	28.38
PO-214	74.81	280	6.21	8.037E+00	2.714E+00	2.715E+00	29.01
	77.11	405	10.50	8.014E+00	2.323E+00	2.323E+00	22.93
	87.30	2003	4.67	7.847E+00	2.639E+01	2.640E+01	12.59
	241.98	-----	7.49	4.724E+00	-----	Line Not Found	-----
	295.21	121	19.20	4.058E+00	7.486E-01	7.489E-01	56.31
	351.92	200	37.20*	3.515E+00	7.389E-01	7.392E-01	28.38
PO-216	74.81	280	10.70	8.037E+00	1.575E+00	1.575E+00	29.57
	77.11	405	18.00	8.014E+00	1.355E+00	1.355E+00	21.63
	87.30	2003	8.00	7.847E+00	1.541E+01	1.541E+01	14.11
	238.63	409	44.60*	4.773E+00	9.271E-01	9.271E-01	22.41
	300.09	-----	3.41	4.005E+00	-----	Line Not Found	-----
PO-218	74.81	280	6.21	8.037E+00	2.714E+00	2.715E+00	29.01
	77.11	405	10.50	8.014E+00	2.323E+00	2.323E+00	22.93
	87.30	2003	4.67	7.847E+00	2.639E+01	2.640E+01	12.59
	241.98	-----	7.49	4.724E+00	-----	Line Not Found	-----
	295.21	121	19.20	4.058E+00	7.486E-01	7.489E-01	56.31
	351.92	200	37.20*	3.515E+00	7.389E-01	7.392E-01	28.38
RA-226	609.31	190	46.30*	2.169E+00	9.157E-01	9.161E-01	27.79
	1120.29	-----	15.10	1.258E+00	-----	Line Not Found	-----
	1764.49	19	15.80	8.610E-01	6.659E-01	6.662E-01	73.45
TH-228	74.81	280	10.70	8.037E+00	1.575E+00	2.213E+00	28.08
	77.11	405	18.00	8.014E+00	1.355E+00	1.904E+00	21.63
	87.30	2003	8.00	7.847E+00	1.541E+01	2.165E+01	9.96
	238.63	409	44.60*	4.773E+00	9.271E-01	1.303E+00	22.42
	300.09	-----	3.41	4.005E+00	-----	Line Not Found	-----
TH-230	609.31	190	46.30*	2.169E+00	9.157E-01	9.157E-01	27.79
	1120.29	-----	15.10	1.258E+00	-----	Line Not Found	-----
	1764.49	19	15.80	8.610E-01	6.659E-01	6.659E-01	73.45
U-234	609.31	190	46.30*	2.169E+00	9.157E-01	9.157E-01	27.79
	1120.29	-----	15.10	1.258E+00	-----	Line Not Found	-----
	1764.49	19	15.80	8.610E-01	6.659E-01	6.659E-01	73.45
NP-237	86.50	2003	12.60*	7.847E+00	9.783E+00	9.783E+00	22.91
	95.87	-----	2.60	7.687E+00	-----	Line Not Found	-----
AM-241	59.54	8308	35.90*	8.027E+00	1.393E+01	1.395E+01	9.24
AM-243	74.67	280	66.00*	8.037E+00	2.554E-01	2.554E-01	28.05
	86.72	2003	0.34	7.847E+00	3.668E+02	3.669E+02	9.95
	117.66	-----	0.55	7.181E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.593E+00	-----	Line Not Found	-----
ANH-511	511.00	71	100.00*	2.545E+00	1.353E-01	1.353E-01	84.36



Flag: "\*" = Keyline



Total number of lines in spectrum 22  
Number of unidentified lines 1  
Number of lines tentatively identified by NID 21 95.45%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	2.40	2.350E-01	5.644E-01	1.751E-01	31.03	
CO-60	5.27Y	1.13	6.220E+00	7.036E+00	0.574E+00	8.16	
AS-73	80.30D	19.2	1.436E+00	2.758E+01	1.297E+01	47.01	
CD-109	464.00D	1.67	3.313E+01	5.526E+01	0.550E+01	9.95	
SN-126	1.00E+05Y	1.00	3.331E+00	3.331E+00	0.332E+00	9.95	
BA-137M	30.17Y	1.02	5.392E+00	5.510E+00	0.465E+00	8.44	
CS-137	30.17Y	1.02	5.700E+00	5.824E+00	0.493E+00	8.46	
TM-171	1.92Y	1.40	2.845E+01	3.991E+01	1.876E+01	47.01	K
TL-208	1.41E+10Y	1.00	3.779E-01	3.779E-01	1.227E-01	32.47	
BI-211	7.04E+08Y	1.00	2.124E+00	2.124E+00	0.593E+00	27.89	
PB-212	1.41E+10Y	1.00	9.271E-01	9.271E-01	2.078E-01	22.41	
PO-212	1.41E+10Y	1.00	9.271E-01	9.271E-01	2.078E-01	22.41	
BI-214	1600.00Y	1.00	9.157E-01	9.161E-01	2.546E-01	27.79	
PB-214	1600.00Y	1.00	7.389E-01	7.392E-01	2.098E-01	28.38	
PO-214	1600.00Y	1.00	7.389E-01	7.392E-01	2.098E-01	28.38	
PO-216	1.41E+10Y	1.00	9.271E-01	9.271E-01	2.078E-01	22.41	
PO-218	1600.00Y	1.00	7.389E-01	7.392E-01	2.098E-01	28.38	
RA-226	1600.00Y	1.00	9.157E-01	9.161E-01	2.546E-01	27.79	
TH-228	1.91Y	1.41	9.271E-01	1.303E+00	0.292E+00	22.42	
TH-230	4.47E+09Y	1.00	9.157E-01	9.157E-01	2.545E-01	27.79	
U-234	4.47E+09Y	1.00	9.157E-01	9.157E-01	2.545E-01	27.79	
NP-237	2.14E+06Y	1.00	9.783E+00	9.783E+00	2.241E+00	22.91	
AM-241	432.20Y	1.00	1.393E+01	1.395E+01	0.129E+01	9.24	
AM-243	7380.00Y	1.00	2.554E-01	2.554E-01	0.716E-01	28.05	
ANH-511	1.00E+09Y	1.00	1.353E-01	1.353E-01	1.141E-01	84.36	
Total Activity :			1.201E+02	1.816E+02			

Grand Total Activity : 1.201E+02 1.816E+02

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit



Unidentified Energy Lines  
Sample ID : G1202004734

Page : 5  
Acquisition date : 5-JAN-2010 07:39:15

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.90	79	328	1.48	186.77	183	8	2.21E-02	84.5	7.75E+00	T
0	185.95	35	280	1.57	372.84	369	9	9.84E-03	****	5.66E+00	T
0	338.15	152	186	1.41	677.18	672	13	4.23E-02	40.3	3.63E+00	T
0	911.08	76	111	1.71	1822.42	1816	13	2.10E-02	62.2	1.51E+00	T
0	1257.58	7	20	1.02	2514.77	2504	13	1.81E-03	****	1.14E+00	

Flags: "T" = Tentatively associated



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202004734.CNF;1
* Acquisition date   : 5-JAN-2010 07:39:15.  Detector SN#      :
* Detector ID        : GAM05                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 01:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 01:00:01.72             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 28-JAN-2009 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202004734           Analyst initials: MXR1
* Batch Number       : 936923                Sample Quantity : 1.55440E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 11-JUN-2009 16:41:00.5MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope     :
*****

```

## Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	5.644E-01	1.751E-01	1.454E-01	2.064E-02	3.880
CO-60	7.036E+00	5.743E-01	1.263E-01	7.310E-03	55.693
AS-73	2.758E+01	1.297E+01	1.440E+01	1.084E+00	1.915
CD-109	5.526E+01	5.500E+00	2.877E+00	2.191E-01	19.205
SN-126	3.331E+00	3.316E-01	1.732E-01	1.319E-02	19.231
BA-137M	5.510E+00	4.650E-01	1.258E-01	8.270E-03	43.810
CS-137	5.824E+00	4.926E-01	1.329E-01	8.771E-03	43.810
TM-171	3.991E+01	1.876E+01	5.671E+01	4.557E+00	0.704
TL-208	3.779E-01	1.227E-01	1.209E-01	8.894E-03	3.126
BI-211	2.124E+00	5.925E-01	6.501E-01	5.152E-02	3.268
PB-212	9.271E-01	2.078E-01	1.785E-01	1.925E-02	5.193
PO-212	9.271E-01	2.078E-01	1.785E-01	1.925E-02	5.193
BI-214	9.161E-01	2.546E-01	2.333E-01	1.956E-02	3.927
PB-214	7.392E-01	2.098E-01	2.286E-01	2.164E-02	3.233
PO-214	7.392E-01	2.098E-01	2.286E-01	2.164E-02	3.233
PO-216	9.271E-01	2.078E-01	1.785E-01	1.925E-02	5.193
PO-218	7.392E-01	2.098E-01	2.286E-01	2.164E-02	3.233
RA-226	9.161E-01	2.546E-01	2.333E-01	1.956E-02	3.927



---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.303E+00	2.920E-01	2.509E-01	2.706E-02	5.193
TH-230	9.157E-01	2.545E-01	2.332E-01	1.955E-02	3.927
U-234	9.157E-01	2.545E-01	2.332E-01	1.955E-02	3.927
NP-237	9.783E+00	2.241E+00	4.973E-01	1.094E-01	19.673
AM-241	1.395E+01	1.289E+00	2.132E-01	1.907E-02	65.423
AM-243	2.554E-01	7.164E-02	9.192E-02	7.200E-03	2.778
ANH-511	1.353E-01	1.141E-01	1.012E-01	6.475E-03	1.337

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.023E+01		5.540E+01	8.953E+01	6.551E+00	-0.114
NA-22	-4.157E-02		7.409E-02	1.087E-01	6.331E-03	-0.382
NA-24	-1.000E+35		5.252E+35	Half-Life	too short	
AL-26	1.707E-02		4.434E-02	7.982E-02	4.580E-03	0.214
K-40	6.073E-01		6.769E-01	1.260E+00	7.838E-02	0.482
TI-44	2.533E-01	+	5.479E-02	8.251E-02	6.402E-03	3.070
SC-46	2.310E-01		1.616E+00	2.698E+00	2.710E-01	0.086
V-48	-7.551E-02		1.346E-01	Half-Life	too short	
CR-51	-1.009E-03		1.295E-03	Half-Life	too short	
MN-52	7.518E+10		4.967E+10	Half-Life	too short	
MN-54	7.389E-02		1.815E-01	3.092E-01	2.833E-02	0.239
CO-56	-1.188E+00		1.754E+00	2.768E+00	2.601E-01	-0.429
CO-58	-1.341E-01		2.319E+00	3.840E+00	3.389E-01	-0.035
FE-59	-2.853E+01		3.811E+01	5.862E+01	4.911E+00	-0.487
ZN-65	-4.381E-01		5.418E-01	8.270E-01	5.780E-02	-0.530
GE-68	9.434E+00		7.448E+00	1.317E+01	1.012E+00	0.716
AS-74	1.085E-02		3.442E-02	Half-Life	too short	
SE-75	-1.543E-01		5.305E-01	8.758E-01	8.363E-02	-0.176
BR-77	1.000E+35		2.005E+35	Half-Life	too short	
SR-82	-1.282E-03		3.680E-03	Half-Life	too short	
RB-83	8.029E-01		2.044E+00	3.409E+00	2.192E-01	0.235
RB-84	-5.089E-05		9.201E-05	Half-Life	too short	
KR-85	5.184E+00		1.906E+01	2.739E+01	1.756E+00	0.189
SR-85	8.286E-01		3.047E+00	4.378E+00	2.810E-01	0.189
RB-86	2.990E-01		2.057E-01	Half-Life	too short	
Y-88	1.666E-01		4.962E-01	8.727E-01	4.995E-02	0.191
ZR-88	2.686E-01		1.017E+00	1.698E+00	9.891E-02	0.158
Y-91	-1.591E+02		1.265E+03	2.020E+03	1.174E+02	-0.079
NB-94	4.271E-02		6.883E-02	1.200E-01	8.584E-03	0.356
NB-95	7.427E-02		2.997E+00	5.007E+00	4.083E-01	0.015
NB-95M	1.085E+01		8.644E+00	1.343E+01	1.470E+00	0.808
ZR-95	-1.835E-01		5.259E+00	8.754E+00	7.787E-01	-0.021
NB-97	1.000E+35		1.034E+34	Half-Life	too short	
ZR-97	1.000E+35		4.921E+34	Half-Life	too short	
MO-99	-2.726E+30		8.516E+30	Half-Life	too short	
TC-99M	-1.000E+35		3.522E+35	Half-Life	too short	



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-101	8.988E-03		6.967E-02	1.127E-01	1.126E-02	0.080
RH-102	6.751E-03		9.187E-02	1.506E-01	9.434E-03	0.045
RU-103	-8.381E-06		1.398E-05	Half-Life too short		
RH-106	7.365E-01		1.316E+00	2.199E+00	2.673E-01	0.335
RU-106	7.365E-01		1.314E+00	2.199E+00	1.450E-01	0.335
AG-108M	-1.812E-02		7.608E-02	1.231E-01	8.060E-03	-0.147
AG-110M	1.046E+00		2.782E-01	4.832E-01	3.340E-02	2.164
IN-111	-1.863E+29		6.294E+28	Half-Life too short		
IN-113M	4.912E-01		6.982E-01	1.190E+00	7.494E-02	0.413
SN-113	4.912E-01		6.982E-01	1.190E+00	7.494E-02	0.413
IN-114M	2.170E+01		3.333E+01	4.854E+01	4.847E+00	0.447
CD-115	1.000E+35		6.704E+35	Half-Life too short		
SN-117M	-3.280E-01		7.825E-01	Half-Life too short		
SB-122	9.747E+30		6.295E+30	Half-Life too short		
I-123	-1.000E+35		2.222E+35	Half-Life too short		
TE-123M	-6.955E-02		3.091E-01	4.931E-01	5.301E-02	-0.141
I-124	-2.140E+16		2.696E+17	Half-Life too short		
SB-124	1.666E+00		5.390E+00	9.457E+00	5.997E-01	0.176
SB-125	-2.609E-01		2.665E-01	4.132E-01	2.606E-02	-0.631
TE-125M	-2.537E+02		6.460E+02	1.033E+03	1.969E+02	-0.246
I-126	1.744E+01		8.386E+00	Half-Life too short		
SB-126	-8.883E+00		1.267E+01	Half-Life too short		
SB-127	5.044E+19		6.955E+19	Half-Life too short		
XE-127	-2.802E-05		2.189E-05	Half-Life too short		
I-131	2.305E+05		2.055E+05	Half-Life too short		
TE-132	-5.271E+23		1.090E+24	Half-Life too short		
BA-133	4.679E-02		9.680E-02	1.441E-01	1.780E-02	0.325
I-133	1.000E+35		3.139E+35	Half-Life too short		
CS-134	1.102E-01		1.406E-01	2.456E-01	2.116E-02	0.449
CS-135	9.420E-02		2.908E-01	4.913E-01	5.256E-02	0.192
I-135	1.000E+35		2.742E+35	Half-Life too short		
CS-136	-5.056E+00		4.392E+00	Half-Life too short		
CE-139	-4.529E-02		2.645E-01	4.224E-01	4.196E-02	-0.107
BA-140	-1.555E+01		1.427E+01	Half-Life too short		
LA-140	2.123E+00		2.931E+00	Half-Life too short		
CE-141	-2.336E-05		5.414E-05	Half-Life too short		
CE-143	1.000E+35		1.102E+35	Half-Life too short		
CE-144	-3.533E-01		7.314E-01	1.156E+00	2.141E-01	-0.306
PM-144	-8.653E-02		1.257E-01	1.996E-01	1.733E-02	-0.433
PR-144	-6.970E+00		1.012E+01	1.608E+01	1.137E+00	-0.433
PM-146	-5.219E-02		1.190E-01	1.900E-01	1.687E-02	-0.275
ND-147	5.845E+02		5.737E+02	Half-Life too short		
PM-149	-1.000E+35		1.358E+36	Half-Life too short		
EU-152	3.290E-02		2.297E-01	3.337E-01	2.744E-02	0.099
GD-153	1.764E-01		2.871E-01	4.263E-01	3.952E-02	0.414
EU-154	-9.581E-02		1.754E-01	2.579E-01	2.412E-02	-0.371
EU-155	8.152E-02		1.625E-01	2.709E-01	2.935E-02	0.301
TB-160	7.809E-01		8.469E+00	1.410E+01	1.394E+00	0.055



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	1.128E-03		1.312E-01	2.197E-01	1.601E-02	0.005
LU-176	-2.776E-02		4.613E-02	7.431E-02	6.472E-03	-0.374
LU-177	7.201E+08		4.734E+08	Half-Life	too short	
LU-177M	-6.427E-01		1.614E+00	2.596E+00	1.545E-01	-0.248
HF-181	1.373E-05		1.025E-05	Half-Life	too short	
W-181	-1.364E+00		2.111E+00	3.149E+00	2.546E-01	-0.433
TA-182	1.691E-01		1.762E+00	2.899E+00	1.686E-01	0.058
RE-183	-2.356E+00		4.647E+00	7.300E+00	7.542E-01	-0.323
RE-184	2.475E-02		1.618E+00	2.716E+00	2.624E-01	0.009
OS-185	-1.172E-01		1.008E+00	1.605E+00	1.057E-01	-0.073
RE-188	2.774E+00		7.512E+00	1.231E+01	1.371E+00	0.225
W-188	-1.399E+02		3.917E+02	5.529E+02	5.012E+01	-0.253
IR-192	9.809E-01		1.441E+00	2.472E+00	2.133E-01	0.397
AU-195	9.168E-02		1.019E+00	1.674E+00	1.596E-01	0.055
TL-200	-1.000E+35		8.889E+34	Half-Life	too short	
TL-201	2.366E+27		1.343E+27	Half-Life	too short	
TL-202	1.072E+00		8.894E+00	Half-Life	too short	
HG-203	1.363E+01		9.804E+00	1.726E+01	1.651E+00	0.790
BI-207	5.654E-02		1.355E-01	2.285E-01	1.809E-02	0.247
TL-207	-6.013E-01		1.268E+00	2.048E+00	3.591E-01	-0.294
PO-209	-2.130E+00		2.110E+01	3.467E+01	3.524E+00	-0.061
BI-210	2.929E+00		1.403E+00	2.254E+00	1.807E-01	1.299
PB-210	2.929E+00		1.403E+00	2.254E+00	1.807E-01	1.299
PO-210	2.929E+00		1.397E+00	2.254E+00	1.516E-01	1.299
PB-211	-2.152E-01		2.075E+00	3.389E+00	2.113E+00	-0.063
BI-212	7.619E-01		6.273E-01	1.124E+00	1.019E-01	0.678
PO-215	-6.013E-01		1.268E+00	2.048E+00	3.591E-01	-0.294
RN-219	1.141E-01		8.962E-01	1.484E+00	2.025E-01	0.077
RN-220	-7.758E-01		5.824E+01	9.432E+01	6.137E+00	-0.008
RA-223	-6.013E-01		1.268E+00	2.048E+00	3.591E-01	-0.294
RA-224	6.226E+00		1.636E+00	2.652E+00	2.594E-01	2.348
AC-227	-7.691E-02		6.898E-01	1.150E+00	1.833E-01	-0.067
TH-227	-7.691E-02		6.899E-01	1.150E+00	2.135E-01	-0.067
AC-228	8.740E-01	+	5.545E-01	7.246E-01	8.968E-02	1.206
RA-228	8.740E-01	+	5.545E-01	7.246E-01	8.968E-02	1.206
TH-229	3.826E-01		8.594E-01	1.405E+00	1.403E-01	0.272
PA-231	-7.503E-01		2.796E+00	4.604E+00	7.145E-01	-0.163
TH-231	-6.013E-01		1.268E+00	2.048E+00	3.591E-01	-0.294
U-231	-1.385E+16		2.225E+17	Half-Life	too short	
TH-232	8.740E-01	+	5.545E-01	7.246E-01	8.968E-02	1.206
PA-233	-8.020E-02		1.214E-01	1.947E-01	1.719E-02	-0.412
PA-234	4.117E-01		9.367E-01	1.578E+00	3.038E-01	0.261
PA-234M	-5.900E+00		1.148E+01	1.815E+01	1.855E+00	-0.325
TH-234	-9.818E-01		1.127E+00	1.582E+00	2.810E-01	-0.621
U-235	-1.163E-02		3.342E-01	5.373E-01	1.051E-01	-0.022
NP-236	-9.938E-02		1.314E-01	2.035E-01	2.149E-02	-0.488
U-238	-9.818E-01		1.127E+00	1.582E+00	2.810E-01	-0.621
NP-239	1.327E-01		3.151E-01	4.602E-01	6.029E-02	0.288



---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	8.365E-02		1.326E-01	2.222E-01	2.323E-02	0.376
AM-246	2.813E-01		3.906E-01	6.693E-01	5.123E-02	0.420
CM-247	6.686E-02		7.968E-02	1.367E-01	8.043E-03	0.489
CF-249	-4.291E-02		8.866E-02	1.425E-01	8.520E-03	-0.301
CF-251	1.371E-01		2.059E-01	3.408E-01	3.395E-02	0.402



# VAX/VMS Nuclide Identification Report Generated

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*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202004734
* Acquisition date   : 5-JAN-2010 07:39:15 Detector SN#      :
* Detector ID        : GAM05                               Sensitivity      : 5.000
* Geometry           : CAN                                 Energy tolerance: 1.500
* Elapsed live time  : 0 01:00:00.00                      Abundance limit : 75.000
* Elapsed real time  : 0 01:00:01.72                      Half life ratio  : 8.000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 28-JAN-2009 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202004734           Analyst initials: MXR1
* Batch Number       : 936923                Sample Quantity : 1.5544E+02 GRAM
* Recovery           : 1.00000               Carrier Weight  : 0.00000
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME  : 11-JUN-2009 16:41:00 MS Isotope      :
* MSD DPM           : 0.000                    MSD Isotope   :
* LCS DPM           : 0.000                    LCS Isotope   :
* LCSD DPM          : 0.000                    LCSD Isotope  :
*****

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## Combined Activity-MDA Report

### ---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM )	Act Error	DLC (pCi/GRAM )	TPU
CO-57	5.644E-01	1.716E-01	7.837E-02	8.756E-02
CO-60	7.036E+00	5.628E-01	6.391E-02	2.871E-01
AS-73	2.758E+01	1.271E+01	7.918E+00	6.483E+00
CD-109	5.526E+01	5.390E+00	1.563E+00	2.750E+00
SN-126	3.331E+00	3.250E-01	9.411E-02	1.658E-01
BA-137M	5.510E+00	4.557E-01	6.486E-02	2.325E-01
CS-137	5.824E+00	4.827E-01	6.857E-02	2.463E-01
TM-171	2.211E+01	3.301E+01	3.101E+01	1.684E+01
TL-208	3.779E-01	1.203E-01	6.255E-02	6.136E-02
BI-211	2.124E+00	5.807E-01	3.410E-01	2.963E-01
PB-212	9.271E-01	2.037E-01	9.459E-02	1.039E-01
PO-212	9.271E-01	2.037E-01	9.459E-02	1.039E-01
BI-214	9.161E-01	2.495E-01	1.206E-01	1.273E-01
PB-214	7.392E-01	2.056E-01	1.199E-01	1.049E-01
PO-214	7.392E-01	2.056E-01	1.199E-01	1.049E-01
PO-216	9.271E-01	2.037E-01	9.459E-02	1.039E-01
PO-218	7.392E-01	2.056E-01	1.199E-01	1.049E-01
RA-226	9.161E-01	2.495E-01	1.206E-01	1.273E-01
TH-228	1.303E+00	2.862E-01	1.329E-01	1.460E-01
TH-230	9.157E-01	2.494E-01	1.205E-01	1.272E-01
U-234	9.157E-01	2.494E-01	1.205E-01	1.272E-01
NP-237	9.783E+00	2.196E+00	2.702E-01	1.121E+00
AM-241	1.395E+01	1.263E+00	1.169E-01	6.444E-01
AM-243	2.554E-01	7.021E-02	5.013E-02	3.582E-02
ANH-511	1.353E-01	1.118E-01	5.254E-02	5.705E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	-1.023E+01	5.429E+01	4.658E+01	2.770E+01 NOT IDENT.
NA-22	-4.157E-02	7.261E-02	5.505E-02	3.705E-02 NOT IDENT.



NA-24	-1.000E+41	1.029E+42	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.707E-02	4.345E-02	4.003E-02	2.217E-02	NOT IDENT.
K-40	6.073E-01	6.633E-01	6.359E-01	3.384E-01	NOT IDENT.
TI-44	2.533E-01	5.369E-02	4.494E-02	2.739E-02	FAIL ABUN
SC-46	2.310E-01	1.584E+00	1.380E+00	8.082E-01	NOT IDENT.
V-48	-7.551E+04	2.639E+05	0.000E+00	1.346E+05	SHORT HLIF
CR-51	-1.009E+03	2.539E+03	0.000E+00	1.295E+03	SHORT HLIF
MN-52	7.518E+16	9.734E+16	0.000E+00	0.000E+00	SHORT HLIF
MN-54	7.389E-02	1.779E-01	1.584E-01	9.075E-02	NOT IDENT.
CO-56	-1.188E+00	1.719E+00	1.418E+00	8.770E-01	NOT IDENT.
CO-58	-1.341E-01	2.272E+00	1.970E+00	1.159E+00	NOT IDENT.
FE-59	-2.853E+01	3.735E+01	2.981E+01	1.906E+01	NOT IDENT.
ZN-65	-4.381E-01	5.310E-01	4.205E-01	2.709E-01	NOT IDENT.
GE-68	9.434E+00	7.299E+00	6.703E+00	3.724E+00	NOT IDENT.
AS-74	1.085E+04	6.746E+04	0.000E+00	3.442E+04	SHORT HLIF
SE-75	-1.543E-01	5.199E-01	4.628E-01	2.653E-01	FAIL ABUN
BR-77	1.000E+41	3.929E+41	0.000E+00	0.000E+00	SHORT HLIF
SR-82	-1.282E+03	7.213E+03	0.000E+00	3.680E+03	SHORT HLIF
RB-83	8.029E-01	2.004E+00	1.770E+00	1.022E+00	NOT IDENT.
RB-84	-5.089E+01	1.803E+02	0.000E+00	9.201E+01	SHORT HLIF
KR-85	5.184E+00	1.868E+01	1.422E+01	9.530E+00	NOT IDENT.
SR-85	8.286E-01	2.986E+00	2.273E+00	1.523E+00	NOT IDENT.
RB-86	2.990E+05	4.032E+05	0.000E+00	2.057E+05	SHORT HLIF
Y-88	1.666E-01	4.863E-01	4.375E-01	2.481E-01	NOT IDENT.
ZR-88	2.686E-01	9.970E-01	8.883E-01	5.086E-01	NOT IDENT.
Y-91	-1.591E+02	1.239E+03	1.025E+03	6.323E+02	NOT IDENT.
NB-94	4.271E-02	6.746E-02	6.177E-02	3.442E-02	NOT IDENT.
NB-95	7.427E-02	2.937E+00	2.572E+00	1.499E+00	NOT IDENT.
NB-95M	1.085E+01	8.471E+00	7.117E+00	4.322E+00	NOT IDENT.
ZR-95	-1.835E-01	5.154E+00	4.499E+00	2.630E+00	NOT IDENT.
NB-97	1.000E+41	2.026E+40	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	1.000E+41	9.645E+40	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-2.726E+36	1.669E+37	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	-1.000E+41	6.903E+41	0.000E+00	0.000E+00	SHORT HLIF
RH-101	8.988E-03	6.828E-02	6.000E-02	3.484E-02	NOT IDENT.
RH-102	6.751E-03	9.003E-02	7.836E-02	4.594E-02	NOT IDENT.
RU-103	-8.381E+00	2.740E+01	0.000E+00	1.398E+01	SHORT HLIF
RH-106	7.365E-01	1.290E+00	1.136E+00	6.579E-01	FAIL ABUN
RU-106	7.365E-01	1.287E+00	1.136E+00	6.569E-01	FAIL ABUN
AG-108M	-1.812E-02	7.456E-02	6.423E-02	3.804E-02	NOT IDENT.
AG-110M	1.046E+00	2.727E-01	2.492E-01	1.391E-01	NOT IDENT.
IN-111	-1.863E+35	1.234E+35	0.000E+00	0.000E+00	SHORT HLIF
IN-113M	4.912E-01	6.842E-01	6.226E-01	3.491E-01	NOT IDENT.
SN-113	4.912E-01	6.842E-01	6.226E-01	3.491E-01	NOT IDENT.
IN-114M	2.170E+01	3.266E+01	2.587E+01	1.666E+01	NOT IDENT.
CD-115	1.000E+41	1.314E+42	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-3.280E+05	1.534E+06	0.000E+00	7.825E+05	SHORT HLIF
SB-122	9.747E+36	1.234E+37	0.000E+00	0.000E+00	SHORT HLIF
I-123	-1.000E+41	4.356E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-6.955E-02	3.030E-01	2.639E-01	1.546E-01	NOT IDENT.
I-124	-2.140E+22	5.284E+23	0.000E+00	0.000E+00	SHORT HLIF
SB-124	1.666E+00	5.282E+00	4.752E+00	2.695E+00	NOT IDENT.
SB-125	-2.609E-01	2.612E-01	2.156E-01	1.333E-01	NOT IDENT.
TE-125M	-2.537E+02	6.331E+02	5.579E+02	3.230E+02	NOT IDENT.
I-126	1.744E+07	1.644E+07	0.000E+00	8.386E+06	SHORT HLIF
SB-126	-8.883E+06	2.482E+07	0.000E+00	1.267E+07	SHORT HLIF
SB-127	5.044E+25	1.363E+26	0.000E+00	0.000E+00	SHORT HLIF
XE-127	-2.802E+01	4.291E+01	0.000E+00	2.189E+01	SHORT HLIF
I-131	2.305E+11	4.028E+11	0.000E+00	2.055E+11	SHORT HLIF
TE-132	-5.271E+29	2.136E+30	0.000E+00	0.000E+00	SHORT HLIF
BA-133	4.679E-02	9.486E-02	7.556E-02	4.840E-02	FAIL ABUN
I-133	1.000E+41	6.153E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.102E-01	1.377E-01	1.261E-01	7.028E-02	NOT IDENT.
CS-135	9.420E-02	2.849E-01	2.595E-01	1.454E-01	NOT IDENT.
I-135	1.000E+41	5.375E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-5.056E+06	8.608E+06	0.000E+00	4.392E+06	SHORT HLIF
CE-139	-4.529E-02	2.592E-01	2.259E-01	1.322E-01	NOT IDENT.
BA-140	-1.555E+07	2.797E+07	0.000E+00	1.427E+07	SHORT HLIF
LA-140	2.123E+06	5.744E+06	0.000E+00	2.931E+06	SHORT HLIF
CE-141	-2.336E+01	1.061E+02	0.000E+00	5.414E+01	SHORT HLIF
CE-143	1.000E+41	2.160E+41	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.533E-01	7.168E-01	6.215E-01	3.657E-01	NOT IDENT.
PM-144	-8.653E-02	1.232E-01	1.028E-01	6.285E-02	NOT IDENT.
PR-144	-6.970E+00	9.917E+00	8.283E+00	5.060E+00	NOT IDENT.
PM-146	-5.219E-02	1.166E-01	9.899E-02	5.949E-02	NOT IDENT.
ND-147	5.845E+08	1.124E+09	0.000E+00	5.737E+08	SHORT HLIF
PM-149	-1.000E+41	2.661E+42	0.000E+00	0.000E+00	SHORT HLIF
EU-152	3.290E-02	2.251E-01	1.751E-01	1.148E-01	FAIL ABUN



GD-153	1.764E-01	2.814E-01	2.310E-01	1.436E-01	NOT IDENT.
EU-154	-9.581E-02	1.719E-01	1.306E-01	8.771E-02	FAIL ABUN
EU-155	8.152E-02	1.593E-01	1.465E-01	8.125E-02	FAIL ABUN
TB-160	7.809E-01	8.300E+00	7.217E+00	4.235E+00	FAIL ABUN
HO-166M	1.128E-03	1.286E-01	1.131E-01	6.559E-02	NOT IDENT.
LU-176	-2.776E-02	4.521E-02	3.911E-02	2.307E-02	FAIL ABUN
LU-177	7.201E+14	9.280E+14	0.000E+00	4.734E+14	SHORT HLIF
LU-177M	-6.427E-01	1.582E+00	1.356E+00	8.072E-01	FAIL ABUN
HF-181	1.373E+01	2.008E+01	0.000E+00	1.025E+01	SHORT HLIF
W-181	-1.364E+00	2.069E+00	1.723E+00	1.055E+00	NOT IDENT.
TA-182	1.691E-01	1.727E+00	1.470E+00	8.811E-01	NOT IDENT.
RE-183	-2.356E+00	4.554E+00	3.905E+00	2.324E+00	FAIL ABUN
RE-184	2.475E-02	1.586E+00	1.437E+00	8.091E-01	FAIL ABUN
OS-185	-1.172E-01	9.877E-01	8.283E-01	5.039E-01	FAIL ABUN
RE-188	2.774E+00	7.361E+00	6.594E+00	3.756E+00	NOT IDENT.
W-188	-1.399E+02	3.839E+02	2.914E+02	1.959E+02	NOT IDENT.
IR-192	9.809E-01	1.412E+00	1.300E+00	7.206E-01	FAIL ABUN
AU-195	9.168E-02	9.988E-01	9.066E-01	5.096E-01	FAIL ABUN
TL-200	-1.000E+41	1.742E+41	0.000E+00	0.000E+00	SHORT HLIF
TL-201	2.366E+33	2.632E+33	0.000E+00	0.000E+00	SHORT HLIF
TL-202	1.072E+06	1.743E+07	0.000E+00	8.894E+06	SHORT HLIF
HG-203	1.363E+01	9.608E+00	9.105E+00	4.902E+00	NOT IDENT.
BI-207	5.654E-02	1.328E-01	1.163E-01	6.774E-02	FAIL ABUN
TL-207	-6.013E-01	1.243E+00	1.077E+00	6.340E-01	FAIL ABUN
PO-209	-2.130E+00	2.068E+01	1.773E+01	1.055E+01	NOT IDENT.
BI-210	2.929E+00	1.374E+00	1.244E+00	7.013E-01	NOT IDENT.
PB-210	2.929E+00	1.374E+00	1.244E+00	7.013E-01	NOT IDENT.
PO-210	2.929E+00	1.369E+00	1.244E+00	6.984E-01	NOT IDENT.
PB-211	-2.152E-01	2.034E+00	1.771E+00	1.038E+00	NOT IDENT.
BI-212	7.619E-01	6.148E-01	5.781E-01	3.137E-01	NOT IDENT.
PO-215	-6.013E-01	1.243E+00	1.077E+00	6.340E-01	FAIL ABUN
RN-219	1.141E-01	8.783E-01	7.759E-01	4.481E-01	NOT IDENT.
RN-220	-7.758E-01	5.707E+01	4.889E+01	2.912E+01	NOT IDENT.
RA-223	-6.013E-01	1.243E+00	1.077E+00	6.340E-01	FAIL ABUN
RA-224	6.226E+00	1.603E+00	1.404E+00	8.179E-01	NOT IDENT.
AC-227	-7.691E-02	6.760E-01	6.083E-01	3.449E-01	NOT IDENT.
TH-227	-7.691E-02	6.761E-01	6.083E-01	3.449E-01	FAIL ABUN
AC-228	8.740E-01	5.434E-01	3.705E-01	2.773E-01	FAIL ABUN
RA-228	8.740E-01	5.434E-01	3.705E-01	2.773E-01	FAIL ABUN
TH-229	3.826E-01	8.423E-01	7.482E-01	4.297E-01	FAIL ABUN
PA-231	-7.503E-01	2.740E+00	2.428E+00	1.398E+00	NOT IDENT.
TH-231	-6.013E-01	1.243E+00	1.077E+00	6.340E-01	FAIL ABUN
U-231	-1.385E+22	4.362E+23	0.000E+00	0.000E+00	SHORT HLIF
TH-232	8.740E-01	5.434E-01	3.705E-01	2.773E-01	FAIL ABUN
PA-233	-8.020E-02	1.189E-01	1.024E-01	6.068E-02	FAIL ABUN
PA-234	4.117E-01	9.179E-01	8.057E-01	4.683E-01	FAIL ABUN
PA-234M	-5.900E+00	1.125E+01	9.255E+00	5.739E+00	NOT IDENT.
TH-234	-9.818E-01	1.105E+00	8.659E-01	5.637E-01	FAIL ABUN
U-235	-1.163E-02	3.275E-01	2.883E-01	1.671E-01	FAIL ABUN
NP-236	-9.938E-02	1.288E-01	1.089E-01	6.569E-02	NOT IDENT.
U-238	-9.818E-01	1.105E+00	8.659E-01	5.637E-01	FAIL ABUN
NP-239	1.327E-01	3.088E-01	2.482E-01	1.575E-01	NOT IDENT.
CM-243	8.365E-02	1.300E-01	1.202E-01	6.632E-02	NOT IDENT.
AM-246	2.813E-01	3.828E-01	3.406E-01	1.953E-01	NOT IDENT.
CM-247	6.686E-02	7.808E-02	7.143E-02	3.984E-02	NOT IDENT.
CF-249	-4.291E-02	8.689E-02	7.452E-02	4.433E-02	NOT IDENT.
CF-251	1.371E-01	2.018E-01	1.820E-01	1.029E-01	NOT IDENT.



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 \* GEL Laboratories LLC \*  
 \* 2040 SAVAGE ROAD \*  
 \* CHARLESTON , SC 29417 \*  
 \* GAMMA SPECTROSCOPY BACKGROUND REPORT \*  
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ENERGY MDA COUNTS

46.50	603.0443
46.50	603.0443
46.50	603.0443
48.70	919.3983
49.72	0.0000
51.35	736.9890
52.39	738.2314
52.97	738.9195
53.15	739.1317
53.44	739.4739
54.07	740.2141
56.28	0.0000
56.28	742.7740
57.37	0.0000
57.53	744.2001
57.53	0.0000
57.60	0.0000
57.98	744.7097
57.98	744.7097
59.32	746.2151
59.32	746.2151
59.40	746.3047
59.54	746.4603
59.72	746.6616
60.01	499.7997
61.10	0.0000
61.14	432.2260
61.30	432.3278
63.00	494.2005
63.29	494.4070
63.29	494.4070
63.58	508.6567
64.28	529.4708
65.12	526.4552
65.20	0.0000
65.20	526.5148
66.05	480.4999
66.72	485.8470
66.83	470.2478
66.91	0.0000
67.20	470.4904
67.20	470.4904
67.75	448.2869
67.85	460.1225
68.90	0.0000
68.90	0.0000
69.30	500.1649
69.67	500.4191
70.82	0.0000
70.82	0.0000
70.83	535.8798
72.80	434.5752
72.87	434.6155
72.87	434.6155
74.67	471.2898
74.81	471.3752
74.81	471.3752
74.81	471.3752
74.81	471.3752
74.81	471.3752
74.81	471.3752
74.81	471.3752
74.97	471.4732
75.28	471.6639
75.70	471.9217
77.11	427.4874
77.11	427.4874



77.11	427.4874
77.11	427.4874
77.11	427.4874
77.11	427.4874
77.11	427.4874
78.38	423.4050
79.62	430.4460
79.80	464.0299
79.80	464.0299
80.11	464.2111
80.18	0.0000
80.30	0.0000
80.30	0.0000
80.57	507.5733
81.00	531.8000
81.07	531.8467
81.07	531.8467
81.07	531.8467
81.07	531.8467
82.60	475.2490
83.37	445.2632
83.78	450.2963
83.78	450.2963
83.78	450.2963
83.78	450.2963
84.21	0.0000
84.90	441.2807
85.43	451.1967
86.29	0.0000
86.50	482.3236
86.54	482.3474
86.59	482.3767
86.72	482.4518
86.79	529.1310
86.94	529.2274
87.30	502.0964
87.30	502.0964
87.30	502.0964
87.30	502.0964
87.30	502.0964
87.30	502.0964
87.57	502.2564
87.88	0.0000
88.03	502.5306
88.36	502.7268
88.47	502.7915
89.95	347.0772
91.11	0.0000
92.29	0.0000
92.38	291.3959
92.38	291.3959
93.35	306.3060
94.00	306.5332
94.67	311.6332
94.67	311.6356
94.90	290.6106
94.90	290.6106
94.90	290.6106
94.90	290.6106
95.87	0.0000
95.87	316.9333
96.73	278.1954
97.43	257.2457
98.44	266.6152
98.44	266.6152
98.88	282.3246
99.55	289.6725
99.55	289.6725
99.86	285.6898
100.00	285.7336
100.10	285.7657
103.18	277.5046
103.76	250.0119
105.00	239.0573
105.31	245.2935
108.00	0.0000
109.28	276.2053



111.00	246.7550
111.00	246.7550
111.76	0.0000
112.95	0.0000
115.19	266.4714
116.30	0.0000
117.00	245.9714
117.00	245.9714
117.66	252.7844
121.11	251.9739
121.62	266.0815
121.78	266.1224
122.06	266.1953
122.32	266.2615
122.32	266.2615
122.32	266.2615
122.32	266.2615
123.07	266.4551
127.23	261.8499
129.76	262.8937
131.20	279.0393
133.02	0.0000
133.54	292.3048
135.34	0.0000
136.00	268.6367
136.25	0.0000
136.48	272.9853
140.51	0.0000
140.51	0.0000
142.18	257.3613
142.65	271.2994
143.76	266.2392
144.24	274.8730
144.24	274.8730
144.24	274.8730
144.24	274.8730
145.22	0.0000
145.44	0.0000
147.16	279.8442
152.43	262.8658
152.70	265.0720
153.22	0.0000
154.21	278.3017
154.21	278.3017
154.21	278.3017
154.21	278.3017
155.03	269.8913
156.02	0.0000
158.56	0.0000
159.00	0.0000
159.00	259.9918
160.31	274.3108
161.27	273.4451
162.32	271.5152
162.64	0.0000
163.35	246.8405
163.89	0.0000
165.85	275.5413
167.43	0.0000
171.28	0.0000
171.86	253.9656
172.10	0.0000
176.55	0.0000
176.60	216.6108
181.06	0.0000
184.41	281.7246
185.71	253.3576
186.00	255.6174
190.27	219.2872
192.34	285.9091
193.63	230.4612
197.04	253.2419
198.01	246.7487
198.60	270.2029
200.40	0.0000
201.83	265.2515
202.84	0.0000
205.31	299.4165



208.36	0.0000
208.81	283.3472
209.75	281.2892
209.75	281.2892
210.97	241.1467
215.65	269.1456
216.55	250.3951
218.09	232.6220
222.10	281.1604
223.80	0.0000
226.40	244.7880
227.00	249.4185
227.08	243.9898
227.20	244.0095
228.16	0.0000
228.18	247.7961
228.18	247.7961
231.56	0.0000
235.69	246.2629
236.00	246.3124
236.00	246.3124
238.63	286.3221
238.63	286.3221
238.63	286.3221
238.63	286.3221
239.00	0.0000
240.98	247.0902
241.98	219.7734
241.98	219.7734
241.98	219.7734
244.69	272.1261
245.39	0.0000
247.94	235.2969
248.90	228.9982
249.79	0.0000
252.40	0.0000
252.85	218.4916
252.85	218.4916
254.15	0.0000
256.20	218.0119
256.20	218.0119
260.50	224.1336
260.90	0.0000
262.80	221.6585
264.65	213.5474
268.24	218.6516
268.79	196.3830
269.46	213.2199
269.46	213.2199
269.46	213.2199
269.46	213.2199
271.23	222.7613
273.65	0.0000
276.40	200.9930
277.35	214.1983
277.60	217.9710
277.60	217.9710
278.00	217.0837
278.60	0.0000
279.20	182.5887
279.53	183.5586
280.46	197.7121
281.68	0.0000
283.67	199.0114
284.30	0.0000
285.00	190.7065
285.90	0.0000
286.10	198.3457
286.10	198.3457
287.40	185.0064
288.45	0.0000
290.67	190.0570
290.80	0.0000
291.72	168.1649
293.26	0.0000
293.70	185.6546
295.21	212.5800
295.21	212.5800



295.21	212.5800
295.96	223.6951
296.50	0.0000
297.23	0.0000
298.57	208.2400
299.80	195.7506
299.80	195.7506
300.09	211.5696
300.09	211.5696
300.09	211.5696
300.09	211.5696
300.12	211.5724
301.29	200.6492
302.84	197.1277
303.76	0.0000
303.91	189.8584
304.40	193.7079
304.40	193.7079
304.84	0.0000
306.84	192.0603
308.46	182.7117
311.98	193.5414
316.51	174.8910
318.01	170.2473
319.02	182.7767
319.41	0.0000
320.08	0.0000
323.87	195.7100
323.87	195.7100
323.87	195.7100
323.87	195.7100
325.23	198.7296
328.77	0.0000
333.44	176.7493
334.20	170.3867
334.20	170.3867
334.30	163.9653
338.28	198.1208
338.28	198.1208
338.28	198.1208
338.28	198.1208
338.32	198.1258
338.32	198.1258
338.32	198.1258
340.50	175.7678
340.57	0.0000
344.27	174.4827
345.85	0.0000
350.59	0.0000
351.07	174.0967
351.92	177.0879
351.92	177.0879
351.92	177.0879
355.39	0.0000
356.01	139.7430
364.48	0.0000
366.43	0.0000
367.43	196.0645
367.94	0.0000
369.80	186.4723
374.96	0.0000
383.85	178.8104
387.95	201.9132
388.63	0.0000
391.69	170.5303
391.69	170.5303
392.90	177.5688
398.62	182.0081
400.65	186.1554
401.10	175.2416
401.81	177.2895
402.60	160.4124
404.84	190.4941
410.95	163.0099
411.60	0.0000
413.65	189.2353
414.70	0.0000
415.30	0.0000



415.76	169.3672
417.63	0.0000
418.52	188.6357
423.70	0.0000
427.08	179.2646
427.89	198.4669
432.53	0.0000
433.93	179.7893
439.47	0.0000
439.56	0.0000
439.89	0.0000
443.98	161.2806
444.90	0.0000
445.03	173.5278
445.03	173.5278
445.03	173.5278
445.03	173.5278
453.90	194.5393
463.38	192.2272
468.07	214.1051
473.00	0.0000
475.06	187.9972
475.35	188.0195
476.78	188.1268
477.59	182.0170
477.96	179.9860
482.03	0.0000
484.57	0.0000
487.03	0.0000
490.36	0.0000
492.35	0.0000
497.08	0.0000
507.63	0.0000
510.53	0.0000
510.84	131.2572
511.00	131.2649
511.85	107.6851
511.85	107.6851
513.99	147.7531
513.99	147.7531
520.41	111.8667
520.65	0.0000
527.90	0.0000
528.96	0.0000
529.64	125.8916
529.87	0.0000
531.02	0.0000
537.32	0.0000
543.00	0.0000
546.56	0.0000
549.76	121.5361
552.65	124.8363
555.20	0.0000
563.23	90.2648
563.90	0.0000
568.70	113.8468
569.32	107.4876
569.50	107.4925
569.67	101.1138
573.80	0.0000
574.00	103.3988
574.64	0.0000
578.91	0.0000
579.30	0.0000
583.14	104.7973
585.48	0.0000
591.81	96.5303
592.07	96.5391
593.00	0.0000
595.88	0.0000
600.56	100.0477
602.52	0.0000
602.71	0.0000
602.71	101.5045
603.60	0.0000
604.41	122.0796
604.70	118.4998
609.31	108.9745



609.31	108.9745
609.31	108.9745
609.31	108.9745
610.33	0.0000
612.46	99.0094
614.37	111.6812
618.01	102.7999
621.84	98.5959
621.84	98.5959
631.29	96.7288
633.02	101.1330
633.10	101.1375
634.78	0.0000
635.90	101.2283
636.97	0.0000
645.85	90.6354
646.12	90.6435
656.30	0.0000
657.75	93.1742
657.90	0.0000
661.65	98.7759
661.65	98.7759
664.57	0.0000
666.33	0.0000
666.33	0.0000
675.00	0.0000
677.61	99.2725
685.20	0.0000
692.80	0.0000
695.00	0.0000
696.49	96.1543
696.49	96.1543
697.00	0.0000
697.49	98.9585
698.33	0.0000
698.50	0.0000
699.00	104.5558
702.63	87.0713
706.10	105.7084
706.58	0.0000
706.67	110.3641
709.31	96.5288
711.68	99.3851
713.82	92.9423
717.42	87.4595
720.50	0.0000
721.93	0.0000
722.20	0.0000
722.78	0.0000
722.78	118.3545
722.89	0.0000
722.95	124.8835
723.30	114.6443
724.18	117.4713
727.18	84.9145
733.00	114.0374
735.90	103.8434
739.58	0.0000
742.81	85.3069
744.21	0.0000
747.13	103.2481
751.79	0.0000
752.31	90.2422
753.82	0.0000
755.35	0.0000
756.15	90.3418
756.87	90.3613
763.93	106.5766
765.79	92.4791
766.42	89.6636
766.84	97.2268
776.49	0.0000
778.00	0.0000
778.57	113.6499
778.89	108.9262
783.80	0.0000
785.46	93.9445
792.07	103.6245



795.84	87.5546
796.30	91.3730
798.80	111.4371
801.93	101.0485
805.60	85.8820
810.29	88.8601
810.76	101.2943
815.85	0.0000
817.79	0.0000
818.51	0.0000
819.60	86.2115
826.30	110.3604
828.27	0.0000
831.60	97.0629
831.96	98.0322
834.83	99.0709
836.80	0.0000
846.75	114.8237
848.13	0.0000
856.28	0.0000
856.80	0.0000
860.37	108.4590
867.32	111.5677
867.82	0.0000
871.10	115.5621
873.19	113.6818
874.81	104.0089
875.33	0.0000
876.40	106.9676
879.36	107.0504
880.27	107.0750
880.51	107.0817
881.50	0.0000
883.24	111.0544
884.67	107.1958
889.25	115.1287
896.60	125.1198
898.02	120.2748
899.00	118.3487
903.28	113.0914
911.07	113.8052
911.07	113.8052
911.07	113.8052
919.63	0.0000
920.93	112.1190
925.00	121.0931
925.24	0.0000
926.50	108.3372
935.52	0.0000
937.48	139.2444
944.10	0.0000
946.00	136.5681
949.00	151.5245
962.29	117.2390
964.01	161.0211
966.15	137.2391
968.20	106.4623
969.11	108.4744
969.11	108.4744
969.11	108.4744
977.42	105.7002
980.50	85.8198
983.50	0.0000
989.30	0.0000
996.32	104.1714
1001.03	99.2739
1001.68	95.2764
1004.76	111.4042
1021.30	0.0000
1024.50	0.0000
1034.80	0.0000
1036.00	97.0508
1037.82	100.1239
1038.57	103.1746
1038.76	0.0000
1045.16	96.2408
1046.59	106.4056
1048.07	0.0000



1050.47	95.3425
1050.47	95.3425
1062.04	99.6589
1063.62	85.4526
1076.63	0.0000
1077.35	84.6954
1078.86	94.9299
1085.78	95.0737
1099.22	106.6364
1112.02	104.8762
1112.84	115.1810
1115.52	101.8722
1120.29	65.9245
1120.29	65.9245
1120.29	65.9245
1120.29	65.9245
1120.51	65.9271
1121.28	71.0889
1124.00	0.0000
1129.67	67.0894
1131.51	0.0000
1147.95	0.0000
1167.94	57.0826
1173.22	64.5859
1175.09	64.6111
1177.93	41.1131
1189.05	29.2635
1204.90	32.5048
1205.75	0.0000
1213.00	0.0000
1221.42	25.2500
1230.97	33.7318
1235.34	0.0000
1236.41	0.0000
1238.25	32.7256
1246.25	0.0000
1260.41	0.0000
1271.85	15.9412
1274.45	25.5186
1274.54	25.5186
1291.56	24.5367
1298.22	0.0000
1312.09	0.0000
1325.50	0.0000
1325.50	20.2490
1332.49	29.0314
1333.61	0.0000
1360.21	11.8898
1362.66	0.0000
1365.15	10.8187
1368.21	12.9897
1368.53	0.0000
1376.25	0.0000
1384.27	15.8207
1394.10	10.2553
1395.20	0.0000
1407.95	12.1508
1434.06	0.0000
1436.60	8.4557
1457.56	0.0000
1460.81	19.8149
1489.15	22.7586
1509.49	0.0000
1596.49	0.0000
1620.62	11.6350
1678.03	0.0000
1691.02	0.0000
1691.02	9.8064
1706.46	0.0000
1750.46	0.0000
1764.49	8.9272
1764.49	8.9272
1764.49	8.9272
1764.49	8.9272
1770.23	6.9495
1771.40	23.8309
1791.20	0.0000
1808.65	5.9916



1836.01

9.0242



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202004734

Total Uranium Activity	-2.9262E+00	ug/g
Total Uranium Counting Unc.	3.2907E+00	ug/g
Total Uranium Tpu	1.6789E-06	ug/g
Total Uranium Mda	2.5796E+00	ug/g



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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*   BATCH ID      : 936923                        SAMPLE ID   : G1202004734
*   ANALYST       : MXR1                          DETECTOR    : GAM05
*   SAMPLE DATE   : 28-JAN-2009 00:00:00.00        COUNT TIME   : 0 01:00:00.00
*   ANALYSIS DATE : 5-JAN-2010 07:39:15.79        SAMPLE ALQT  : 155.440 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.691E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 2.424E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.210E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 2.051E+00

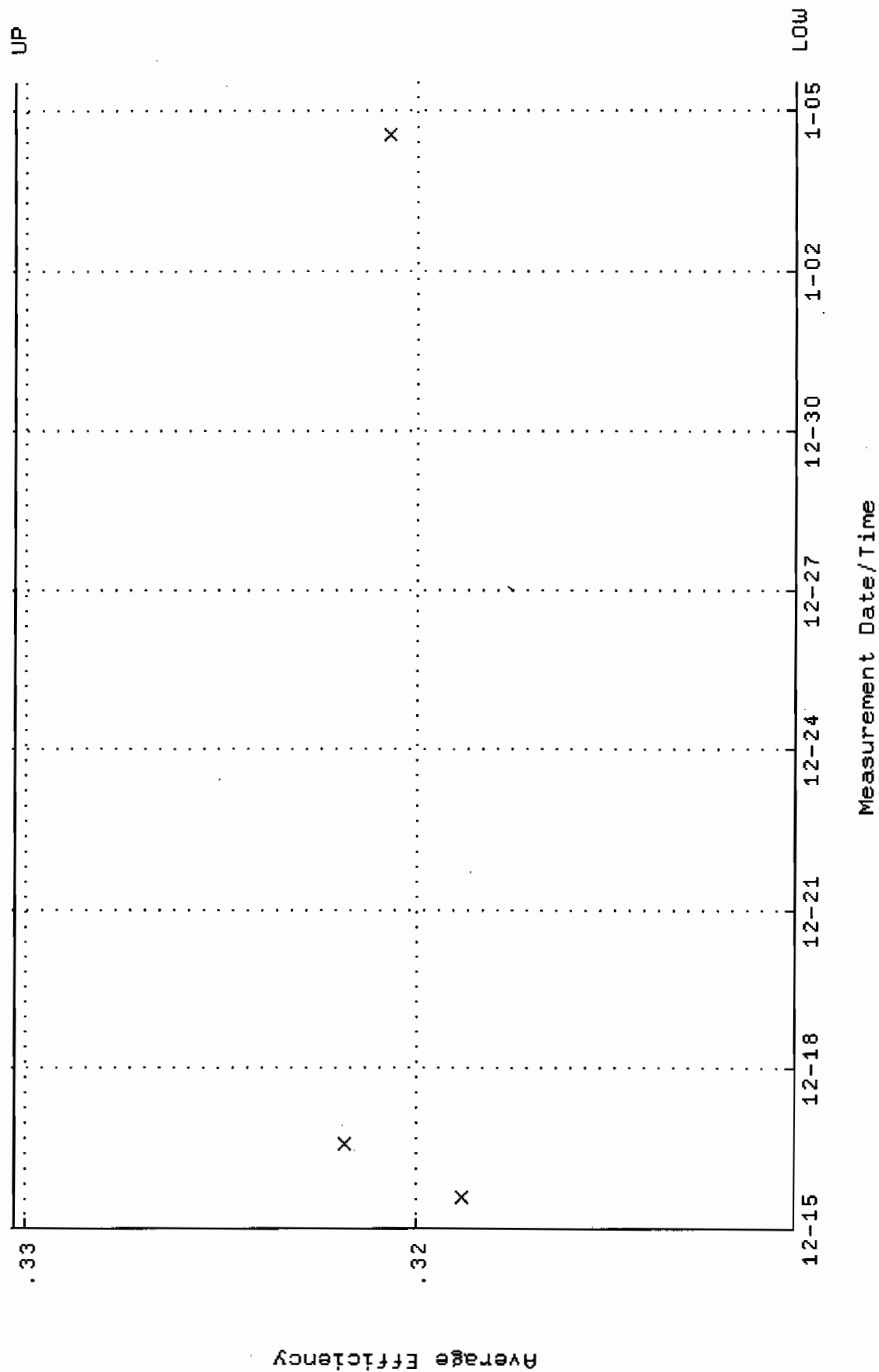
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# BACKGROUND AND EFFICIENCY DATA

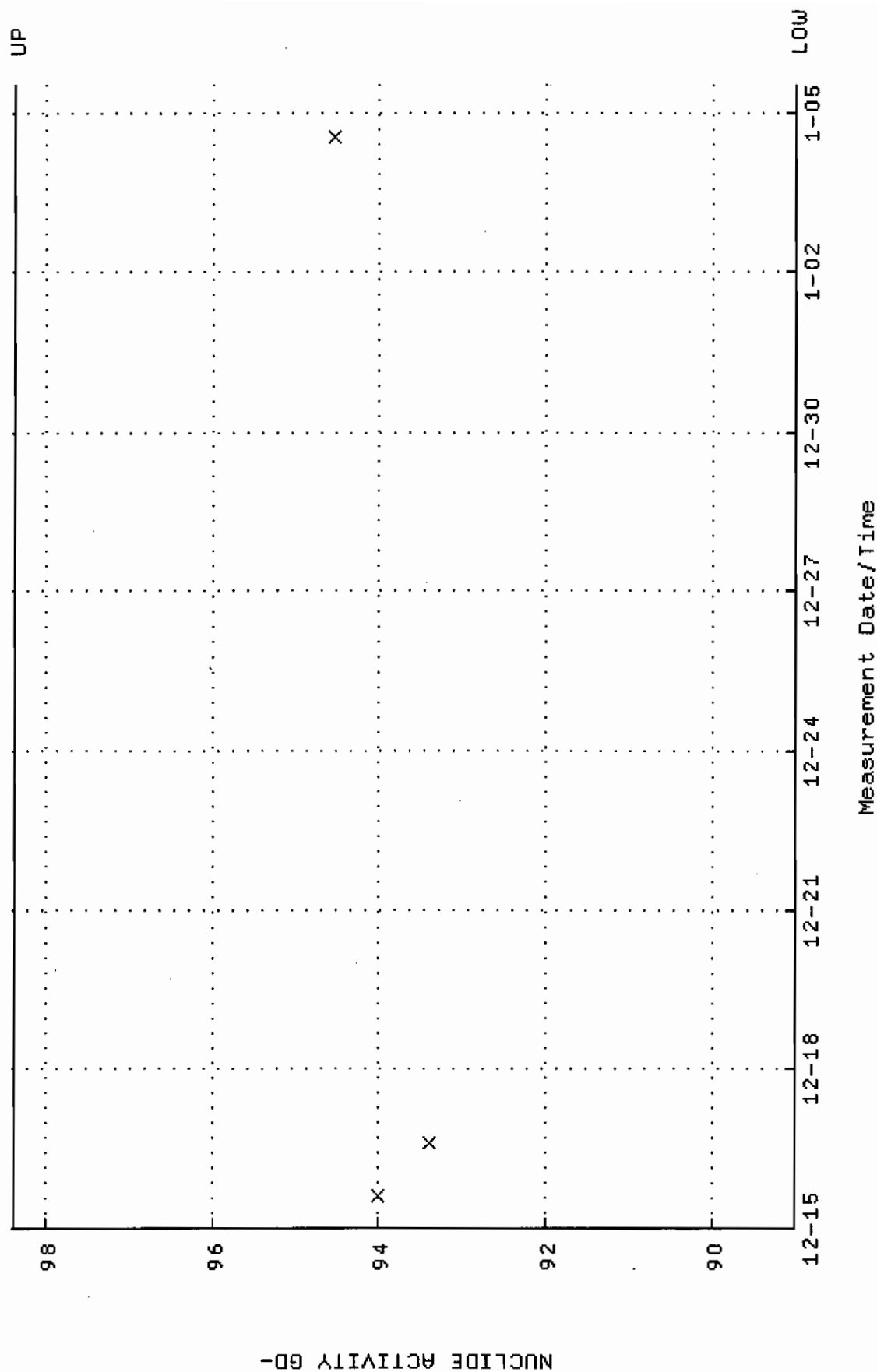


QA filename : DKA100:[ENV\_ALPHA.QA.W]W005.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.310305 through 0.330305



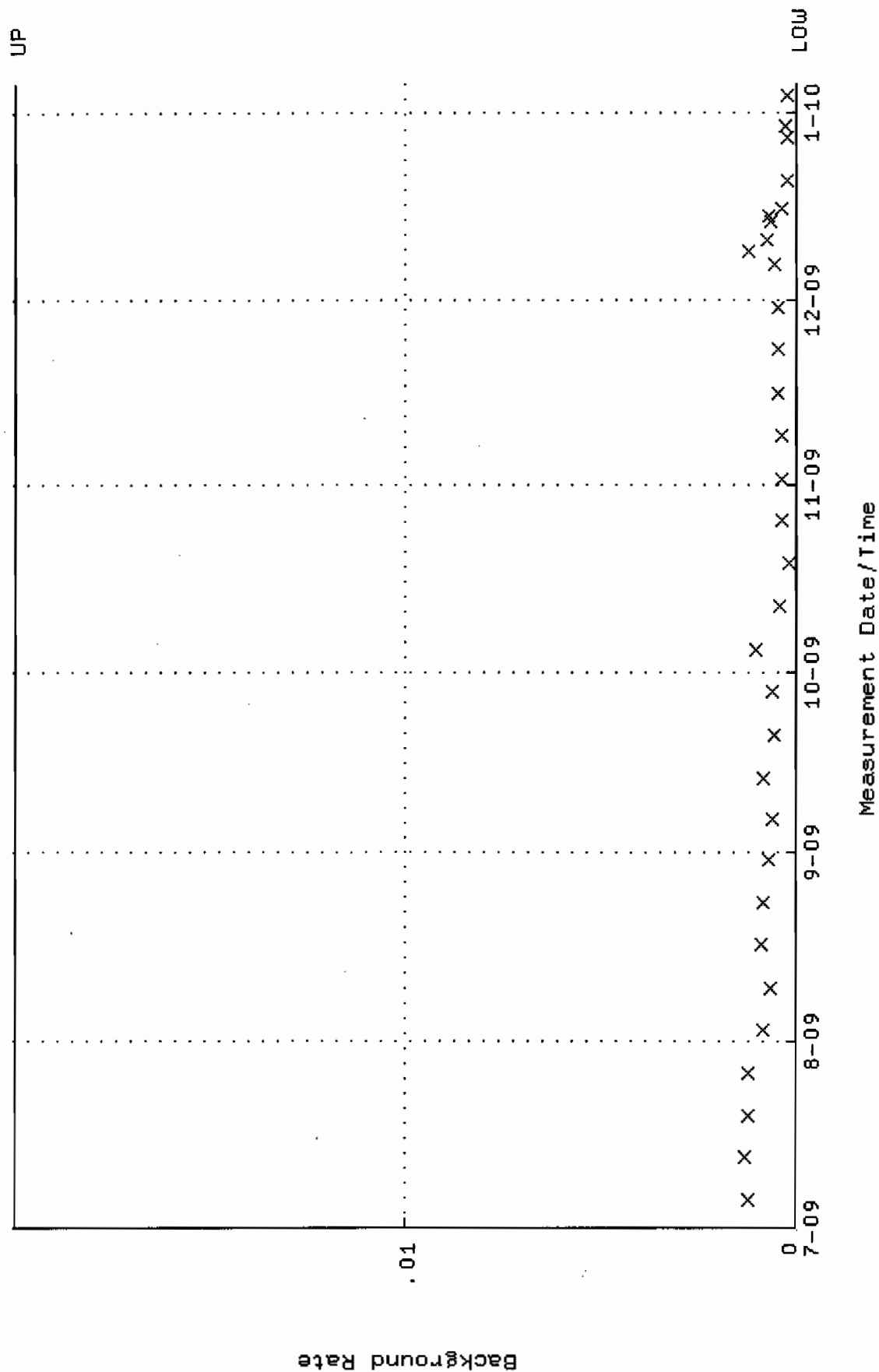


QA filename : DKA100:[ENV\_ALPHA.QA.W]W005.QAF;6  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 89.0042 through 98.3730



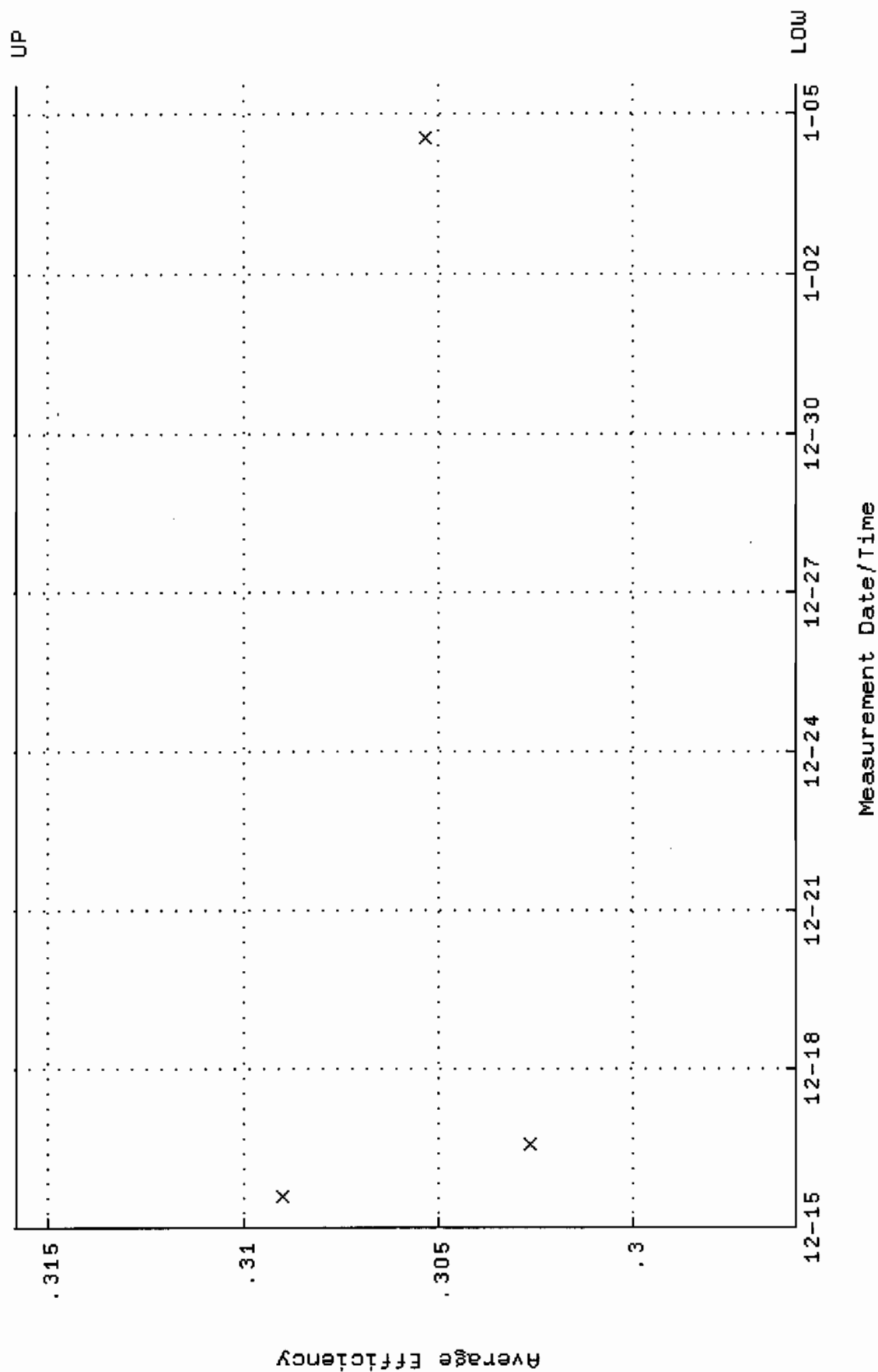


QA filename : DKA100:[ENV\_ALPHA.QA.B]B005.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:54 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



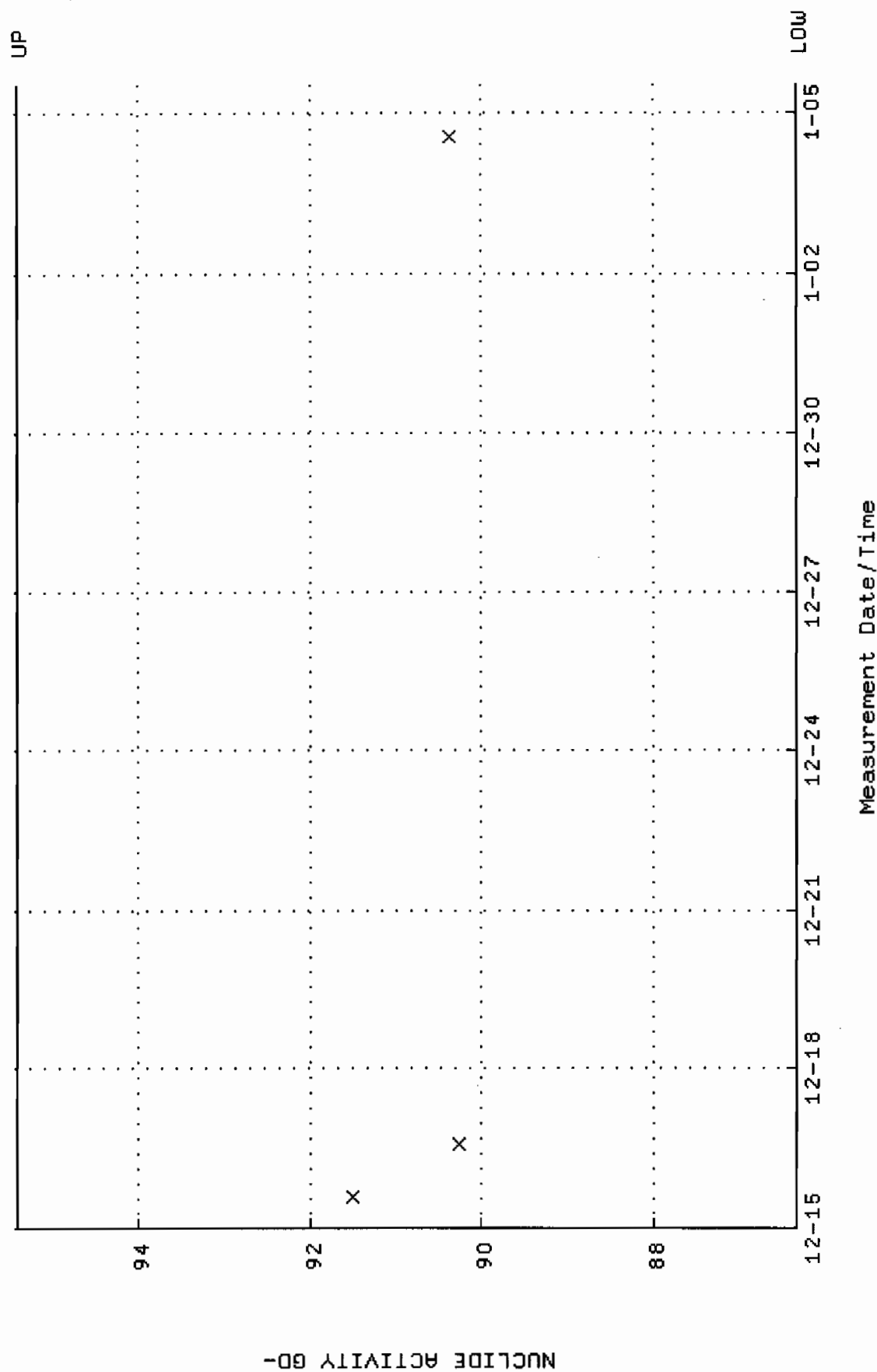


QA filename : DKA100:[ENV\_ALPHA.QA.W]W006.QAF;6  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.295821 through 0.315821



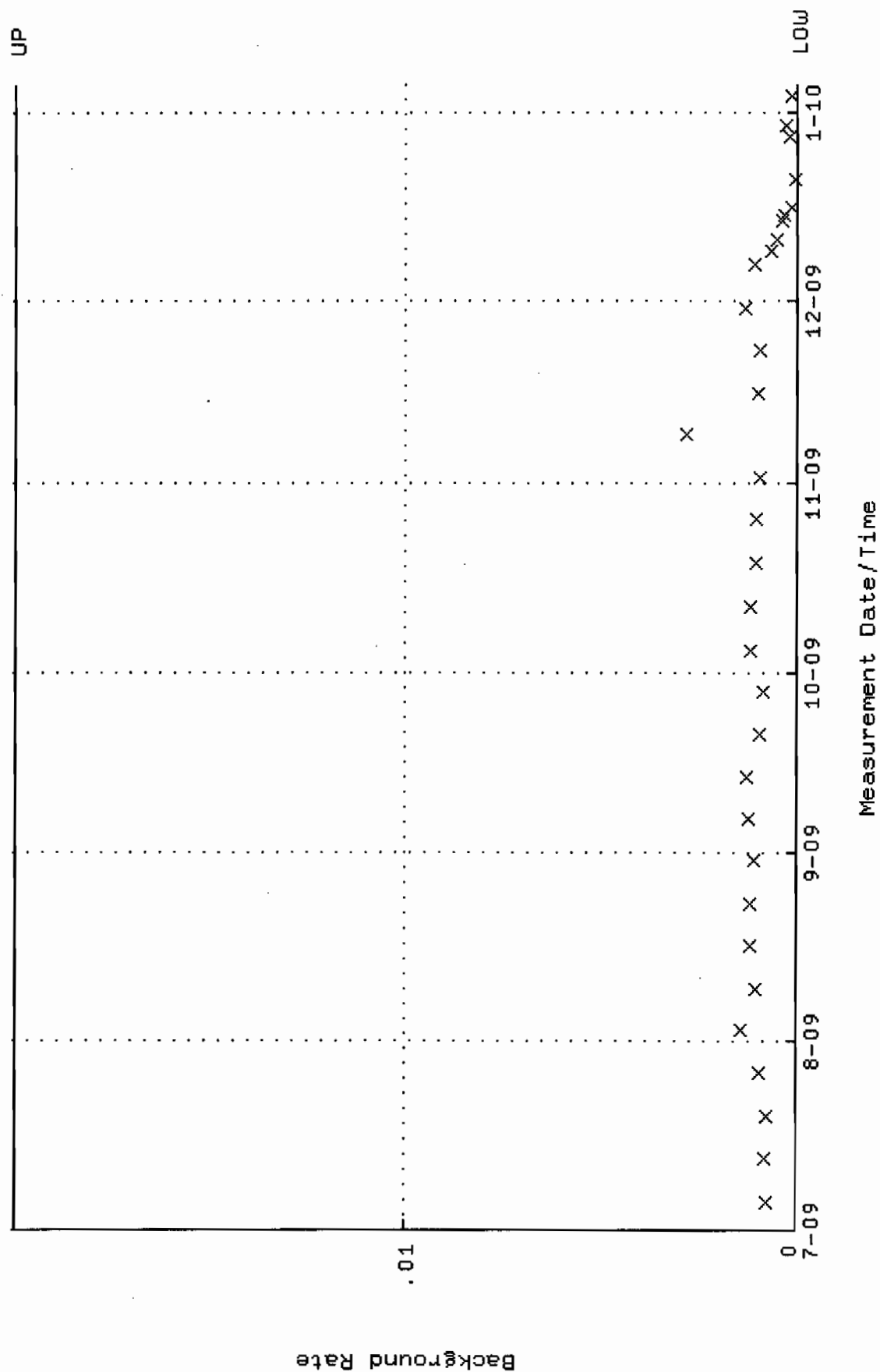


QA filename : DKA100:[ENV\_ALPHA,QA,W]W006.QAF;6  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.3237 through 95.4105



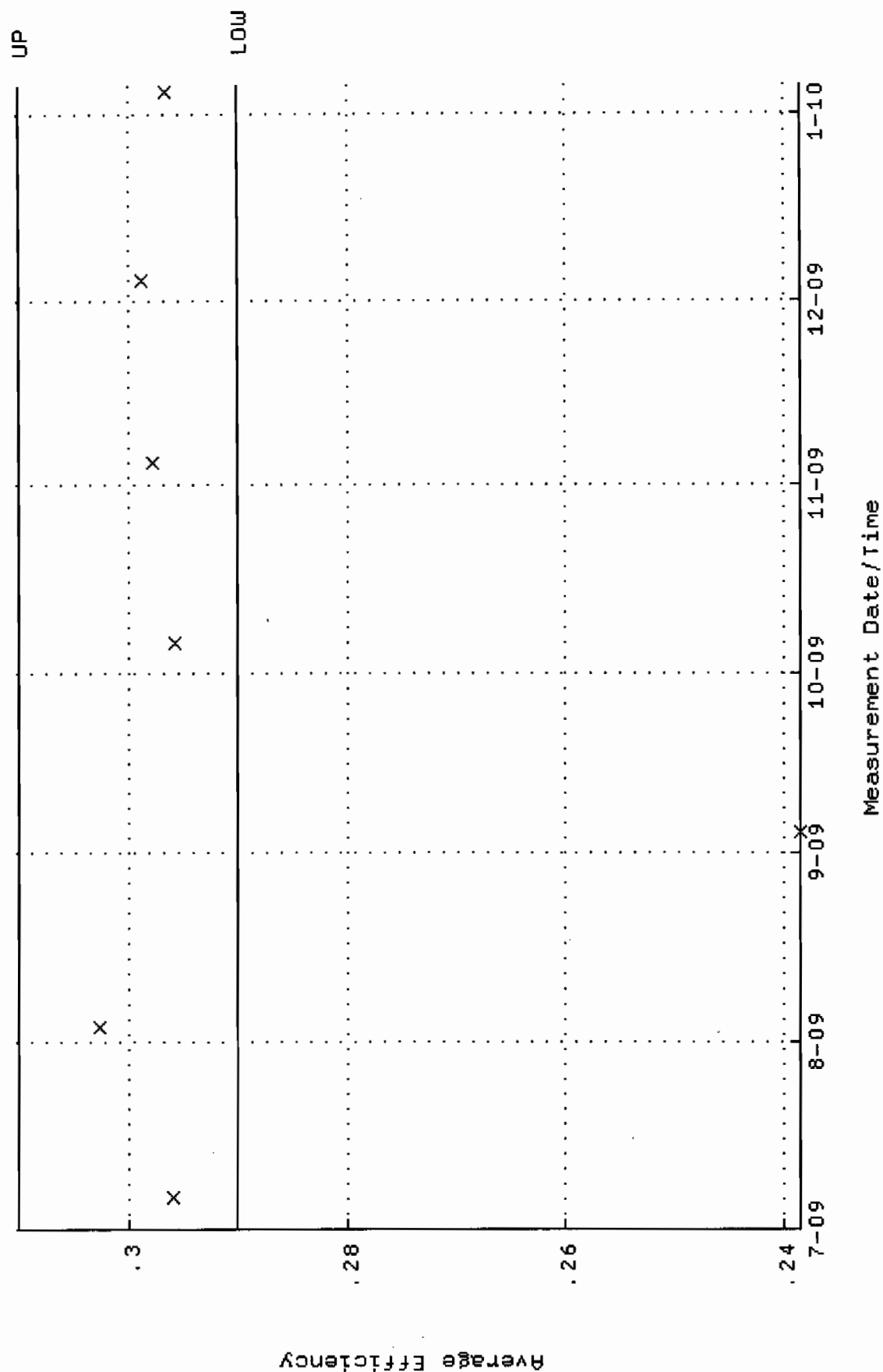


QA filename : DKA100:[ENV\_ALPHA.QA.B]B0006.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:54 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



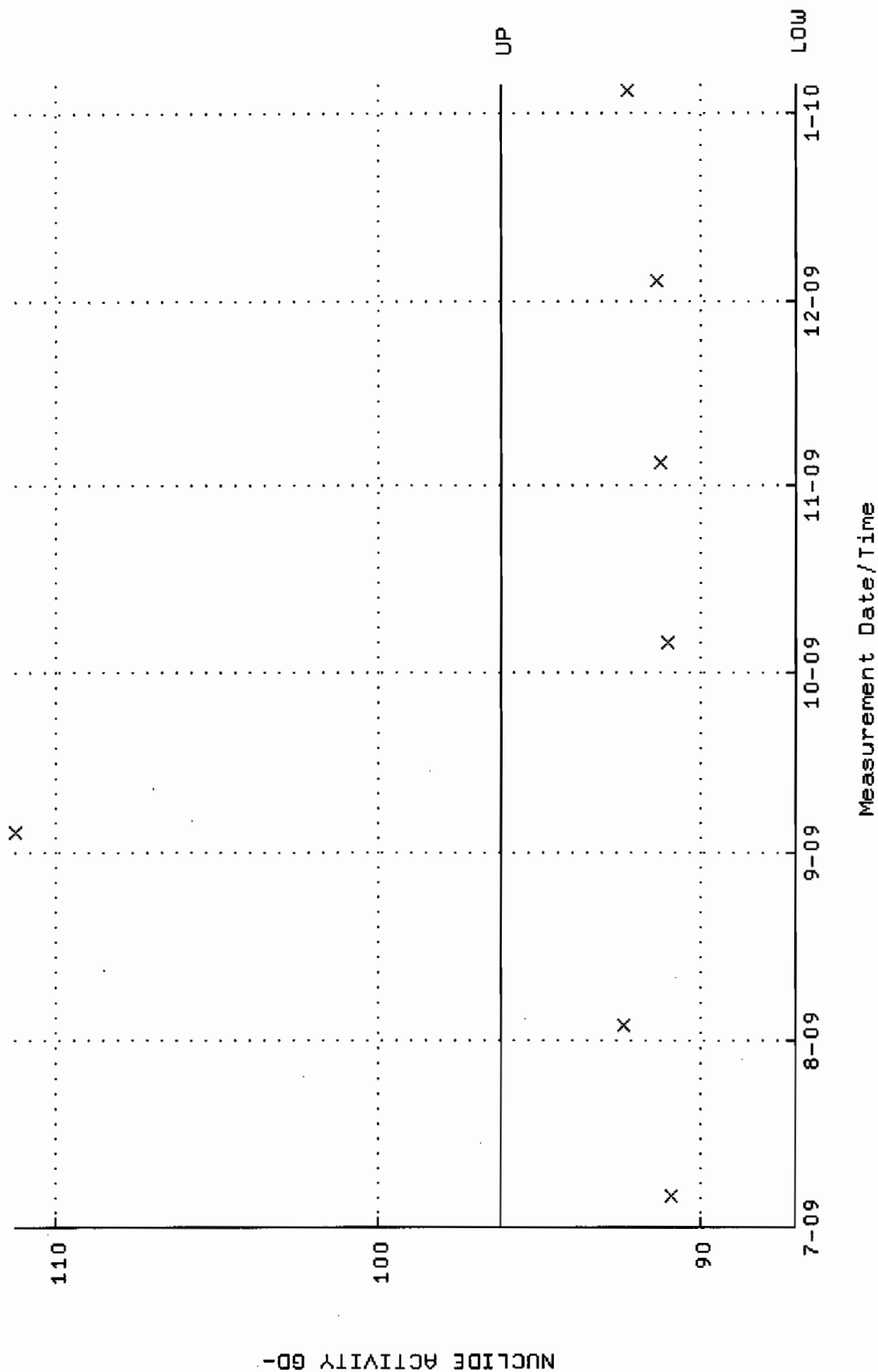


QA filename : DKA100:[ENV-ALPHA.QA.W]W007.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.290108 through 0.310108



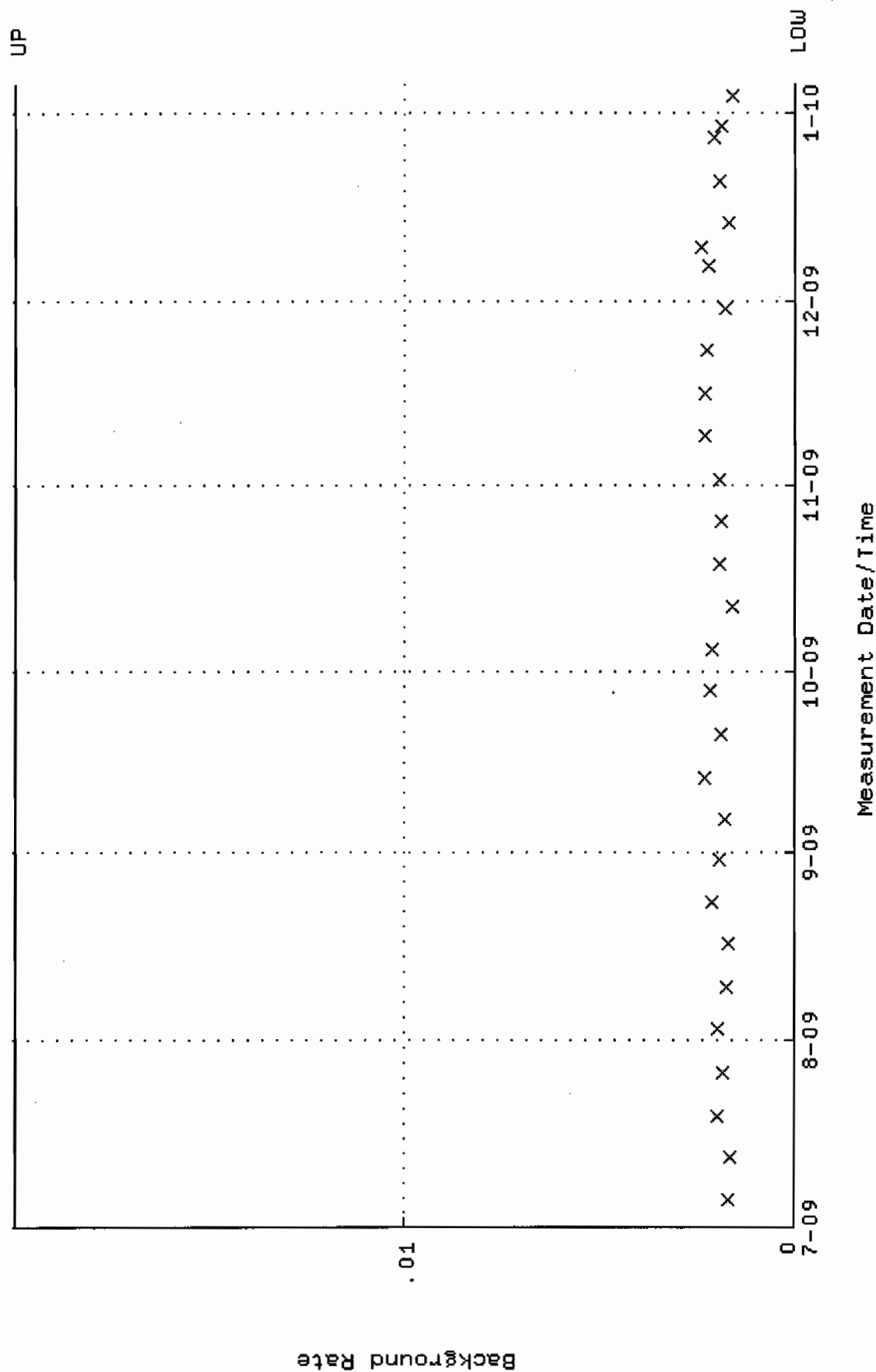


QA filename : DKA100:[ENV\_ALPHA.QA.W]W007.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.0687 through 96.2339



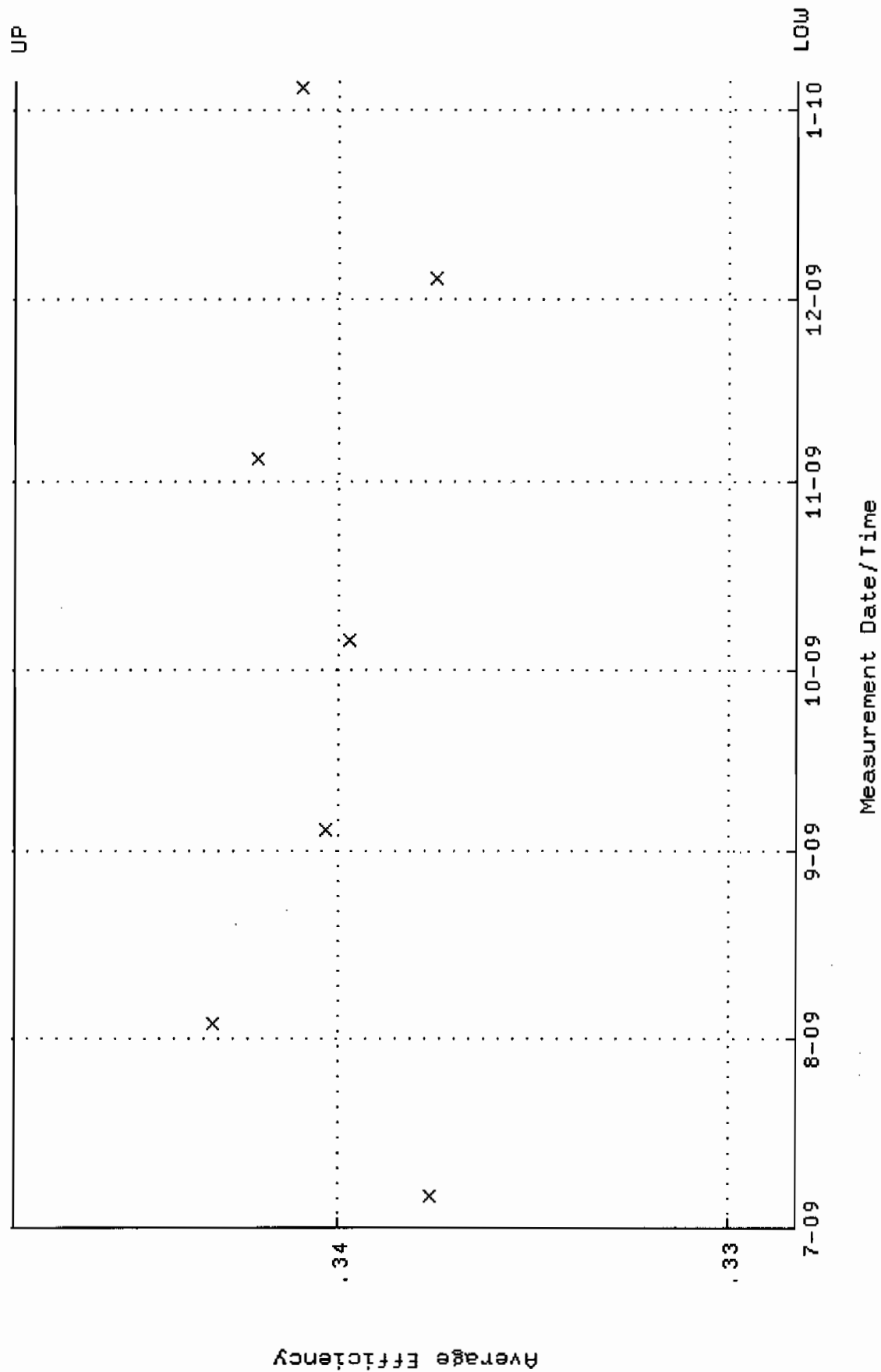


QA filename : DKA100:[ENV\_ALPHA.QA.B]B007.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:55 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



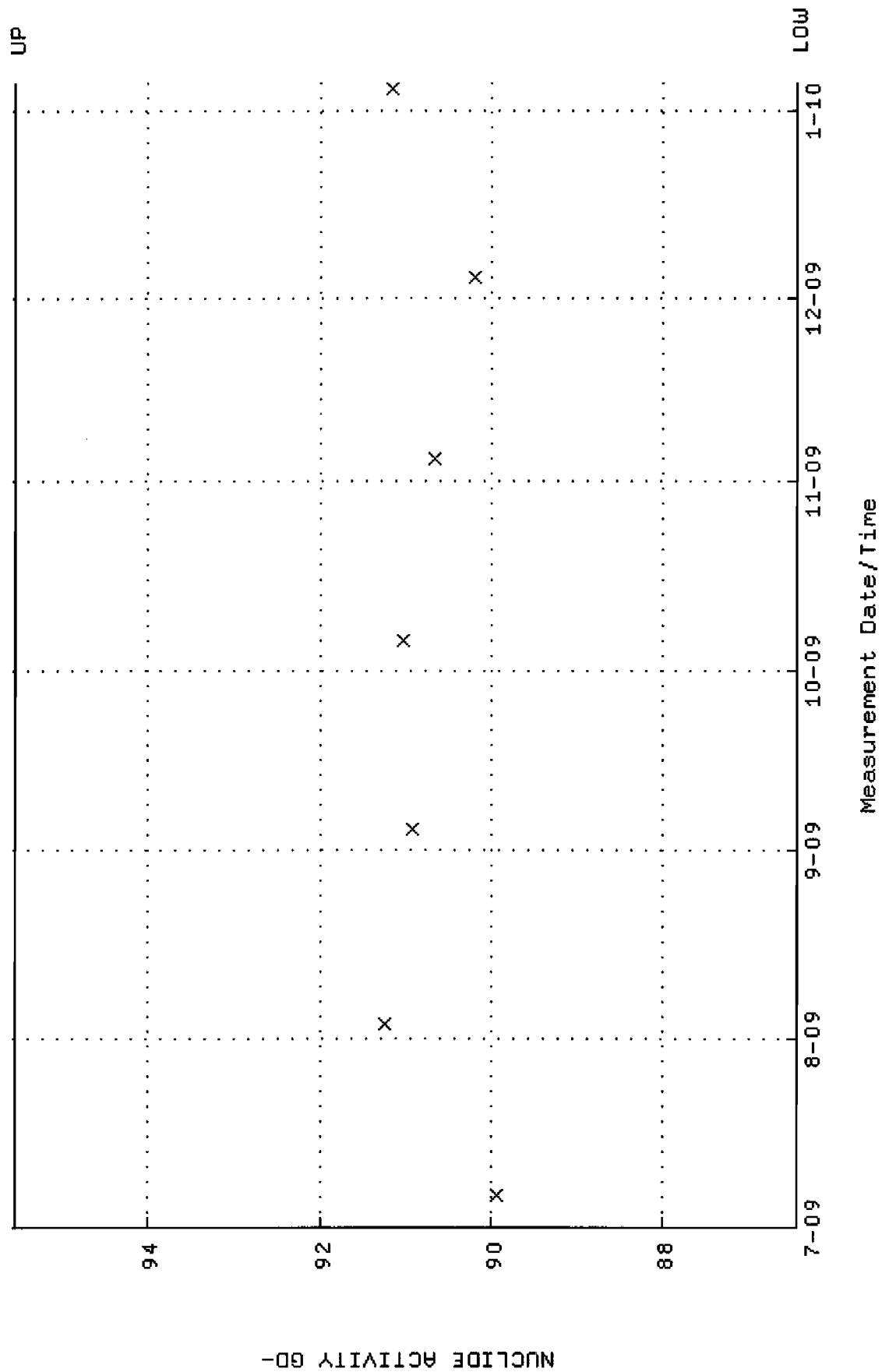


QA filename : DKA100:[ENV\_ALPHA.QA.W]W009.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.328261 through 0.348261



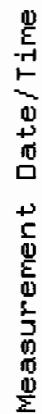


QA filename : DKA100:[ENV\_ALPHA.QA.W]W009.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:11 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.4475 through 95.5473



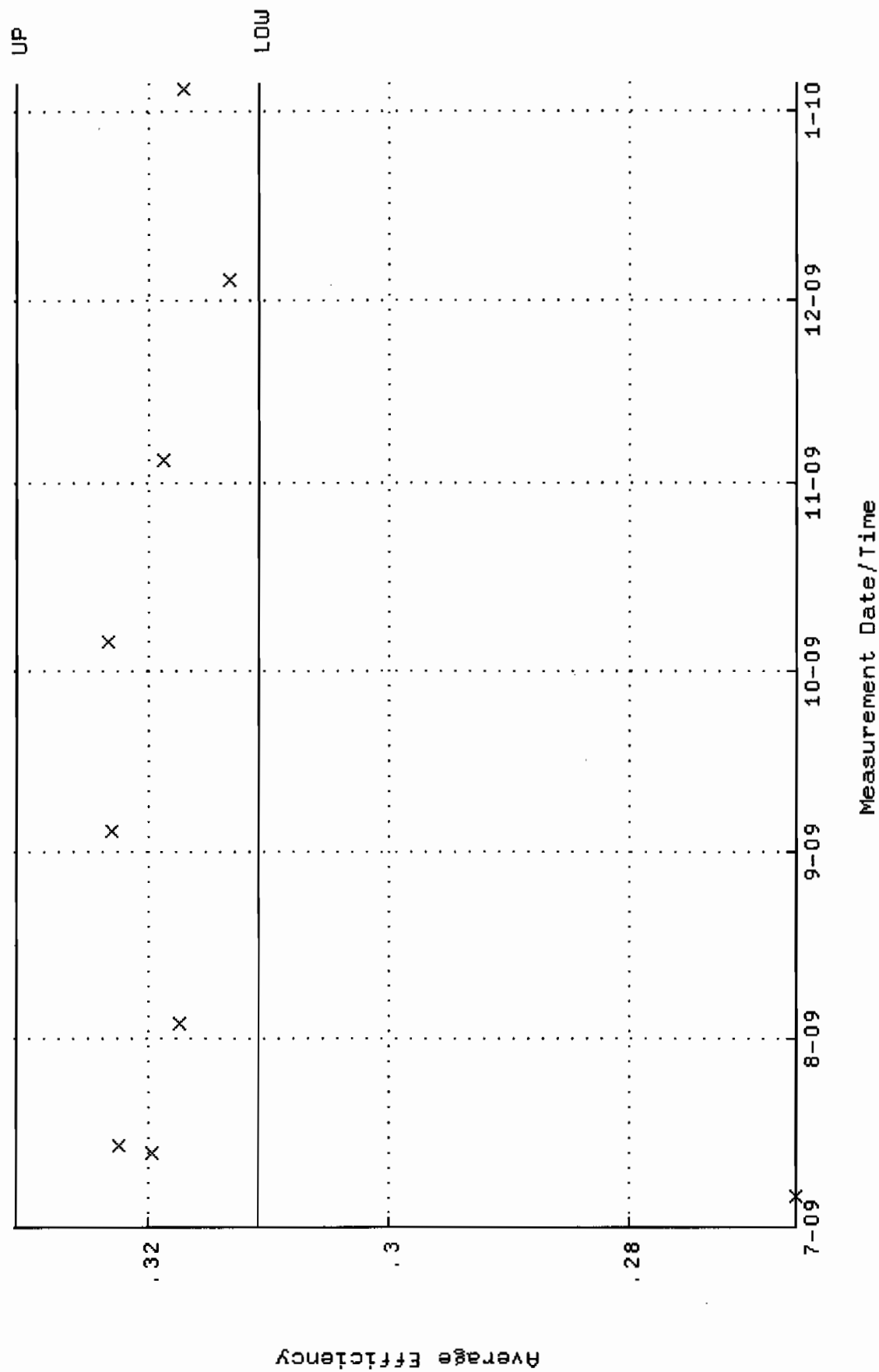


Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



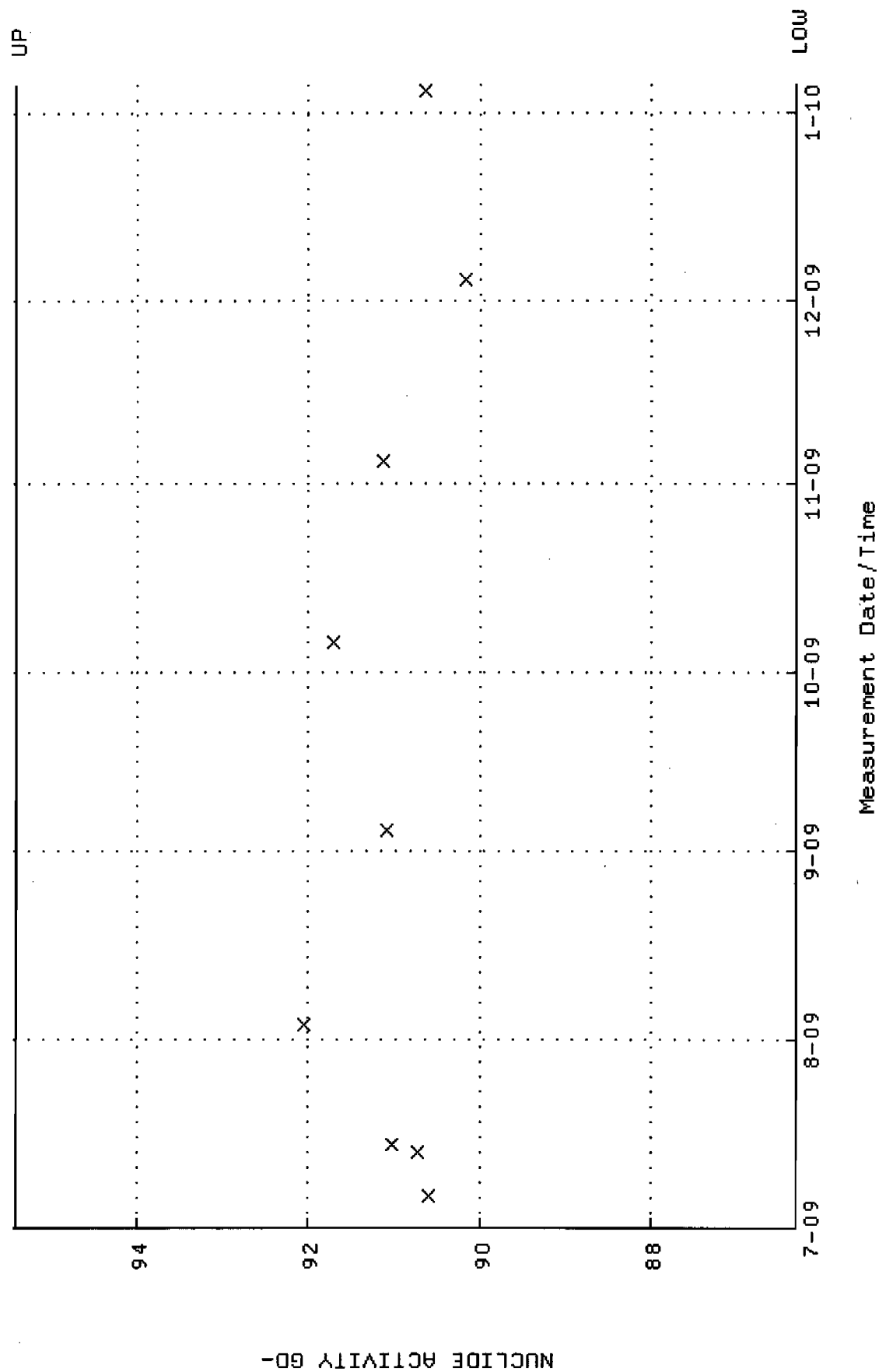


QA filename : DKA100:[ENV\_ALPHA.QA.W]W018.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.310950 through 0.330950



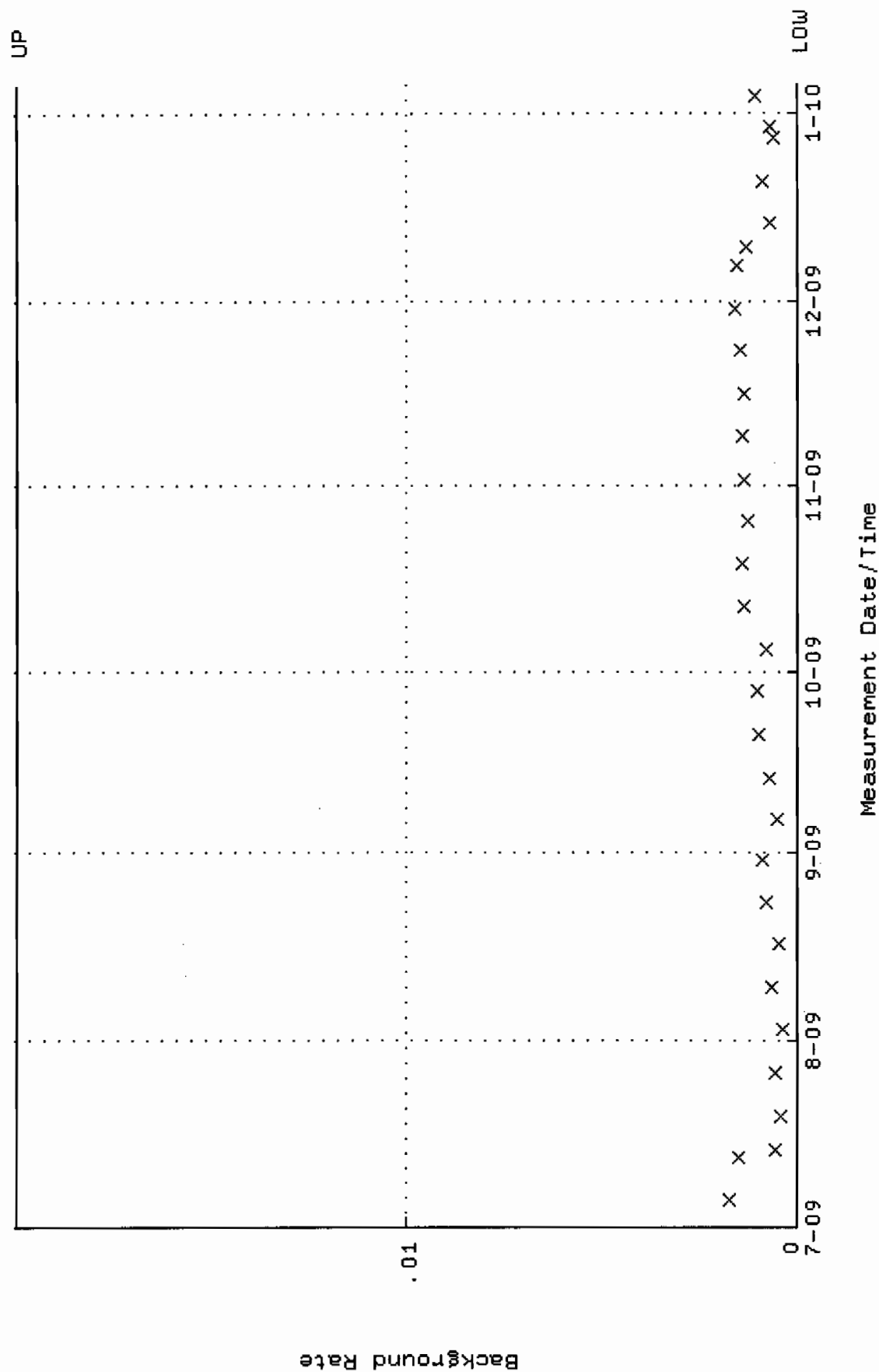


QA filename : DKA100:[ENV\_ALPHA.QA.W]W018.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 86.3167 through 95.4027



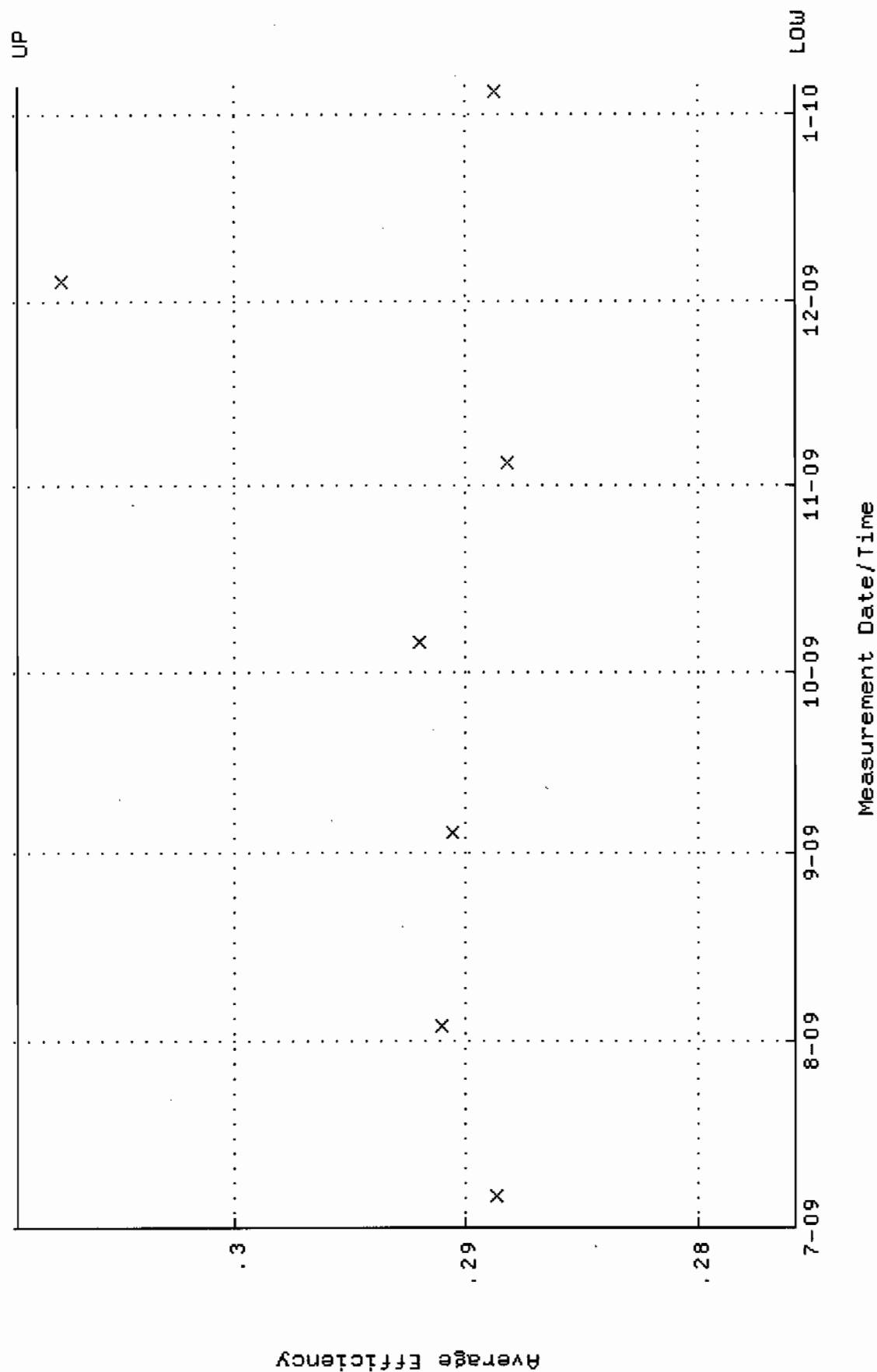


QA filename : DKA100:[ENV\_ALPHA.QA.B]B018.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:56 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



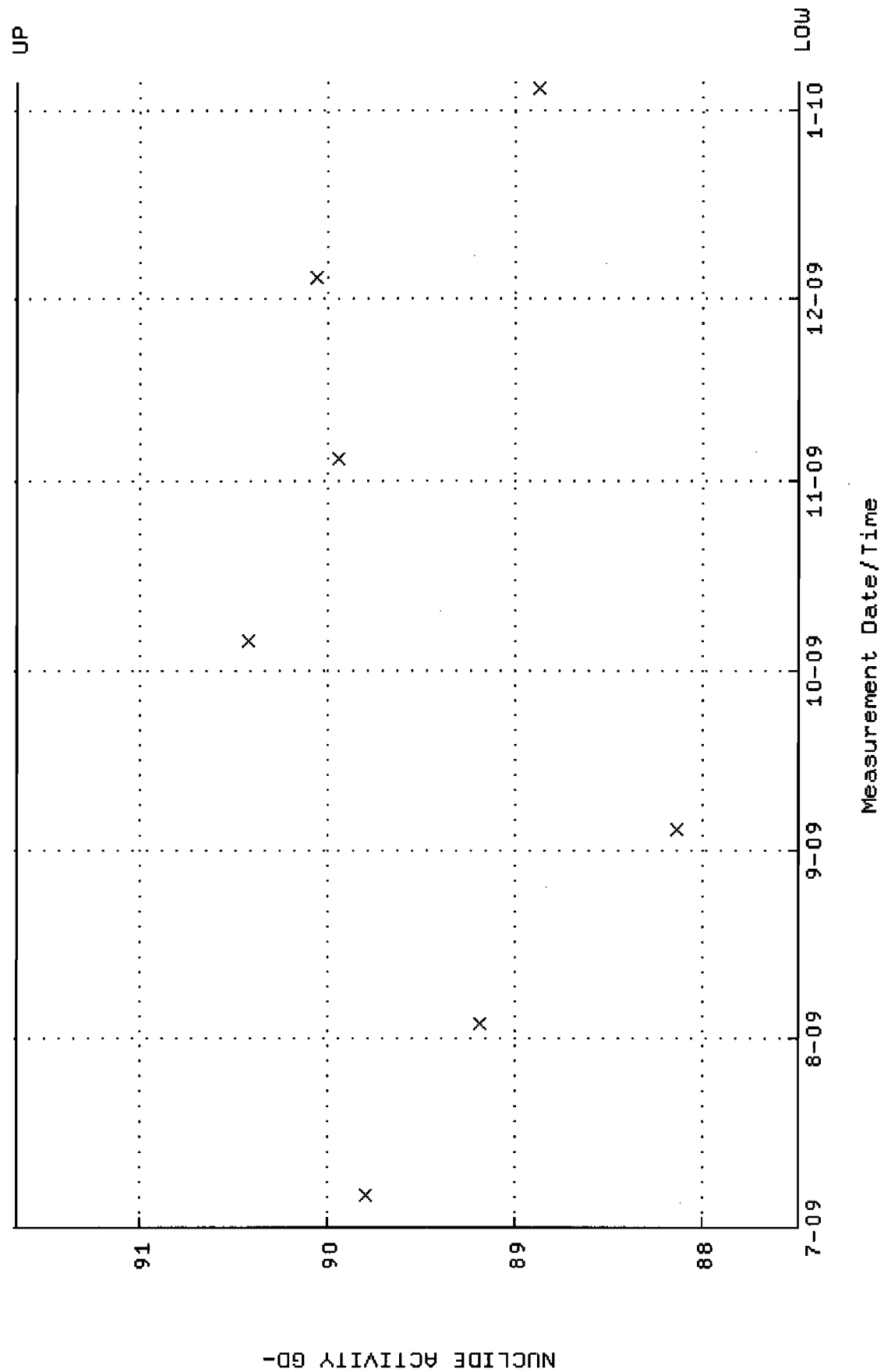


QA filename : DKA100:[ENV\_ALPHA.QA.W]W019.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.275780 through 0.309420



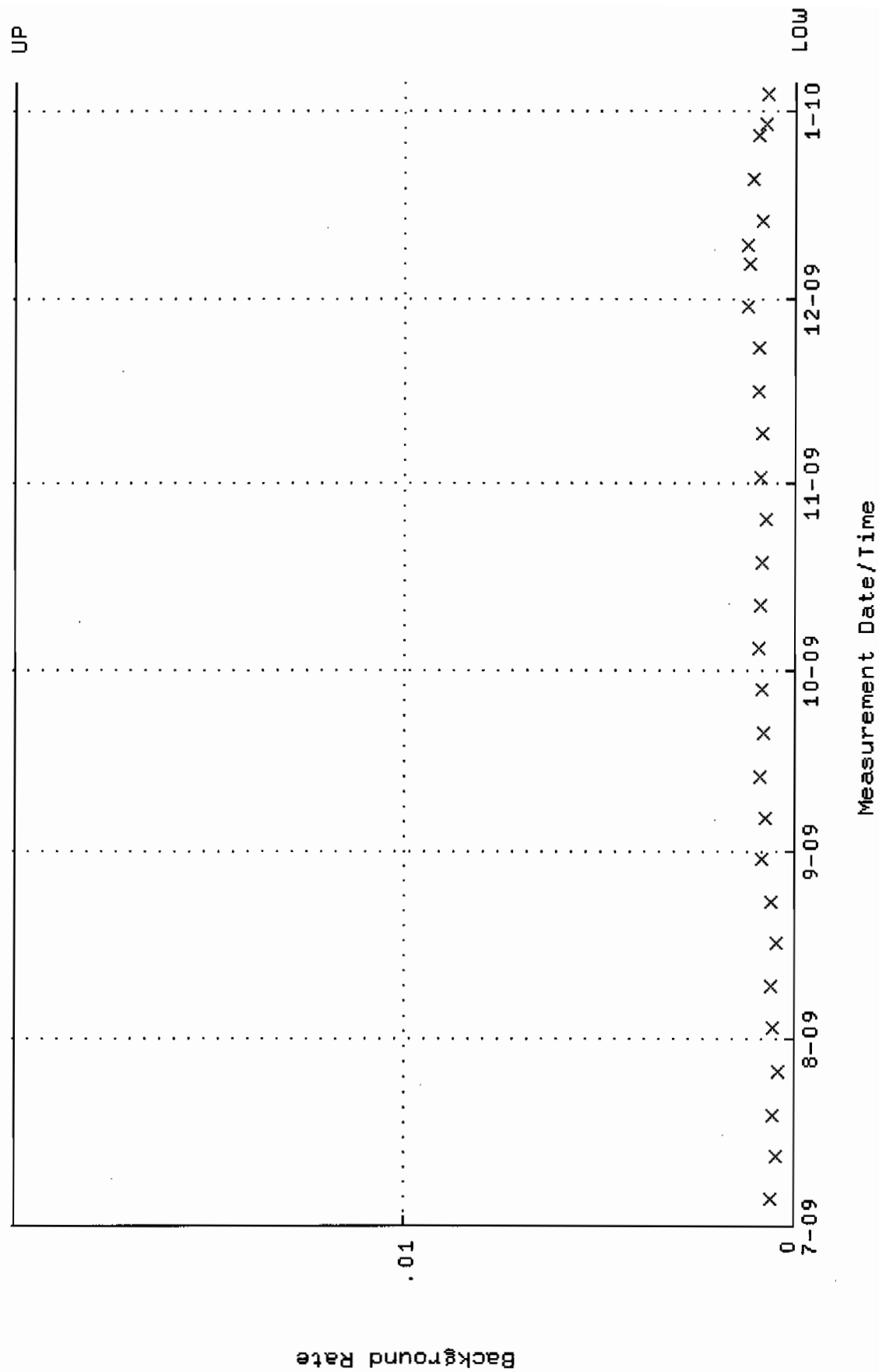


QA filename : DKA100:[ENV\_ALPHA.QA.W]W019.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 87.4952 through 91.6516



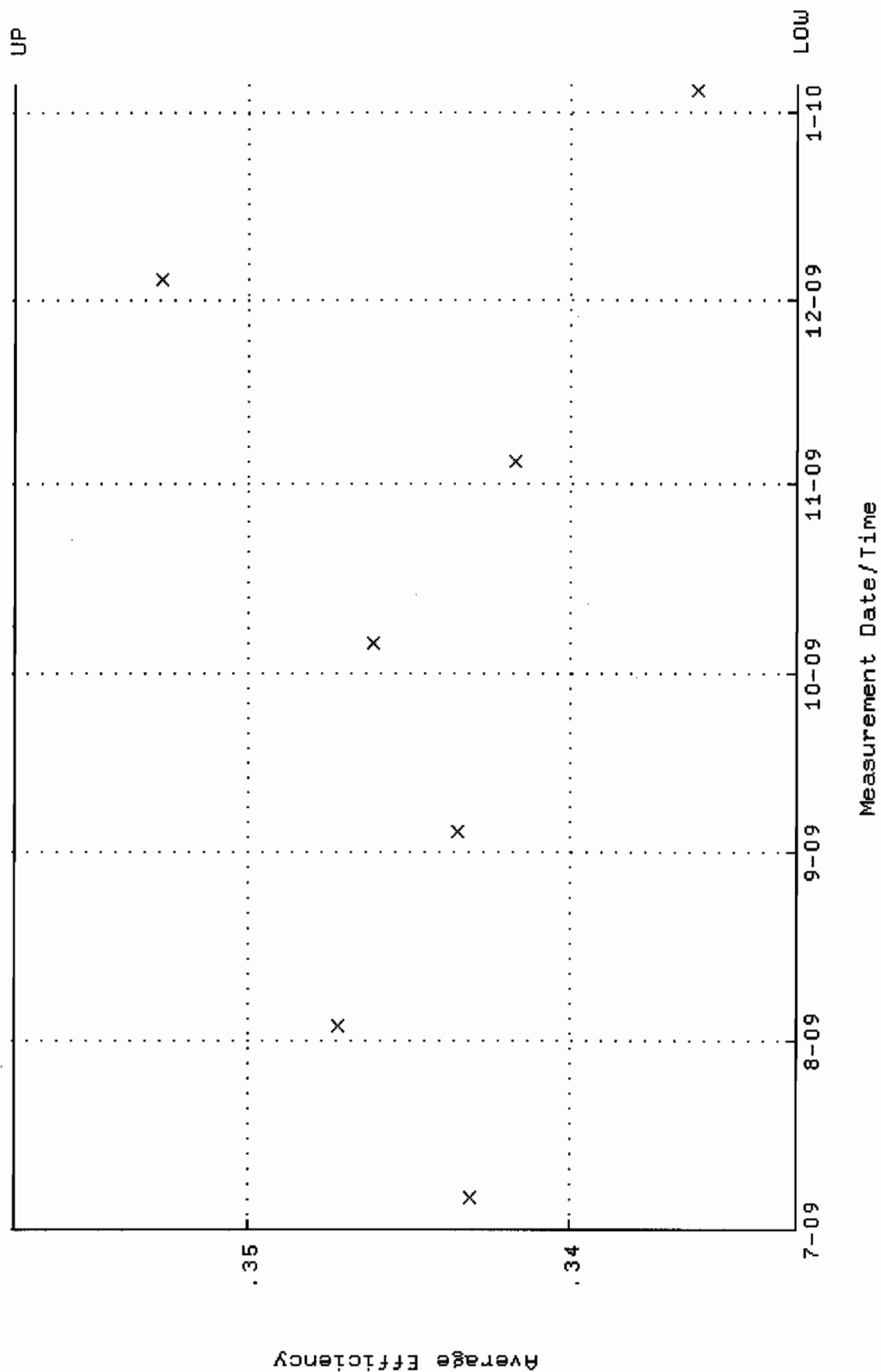


QA filename : DKA100:[ENV\_ALPHA.QA.B]B019.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:57 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



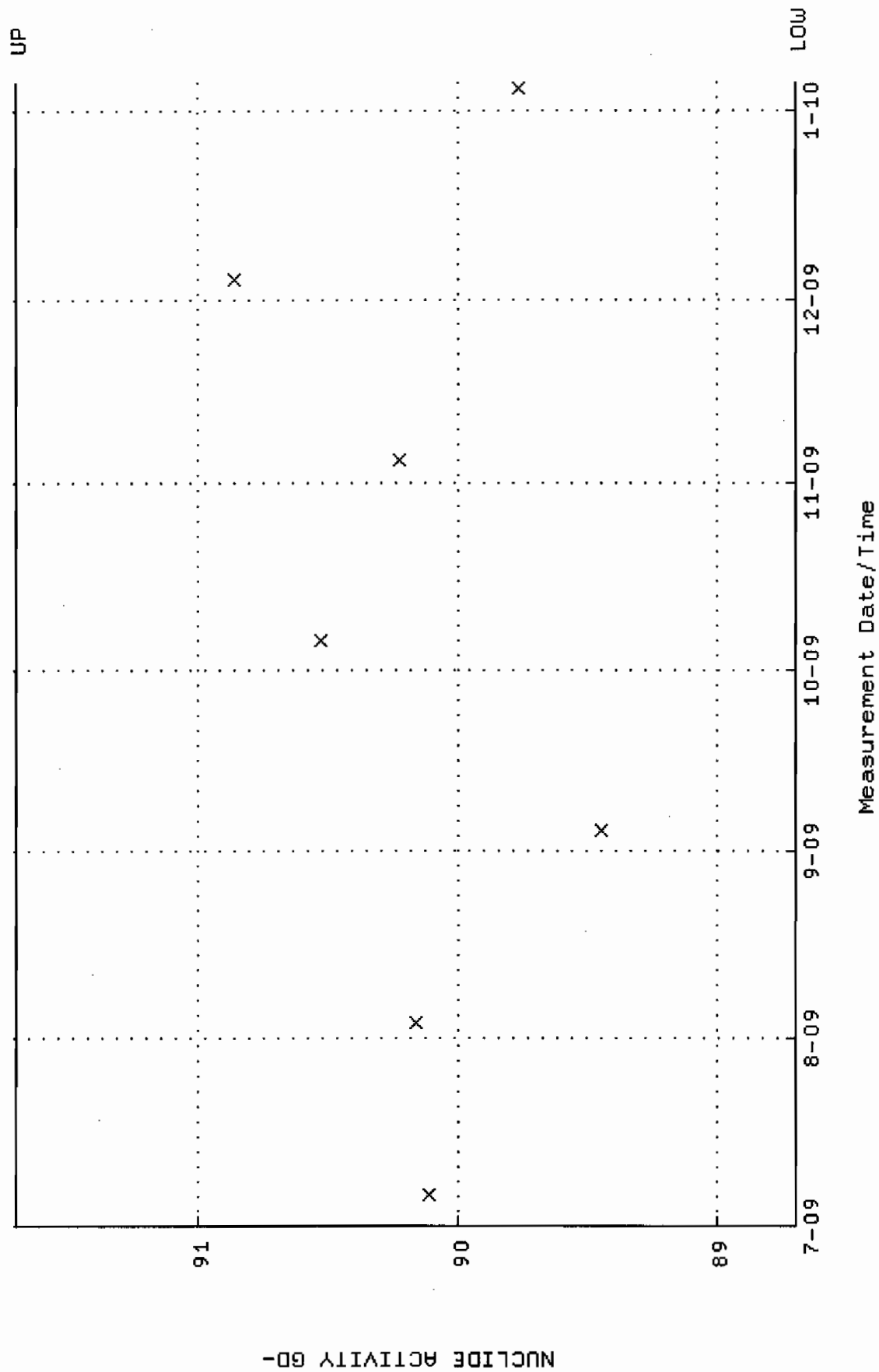


QA filename : DKA100:[ENV\_ALPHA.QA.W]W020.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.332991 through 0.357265



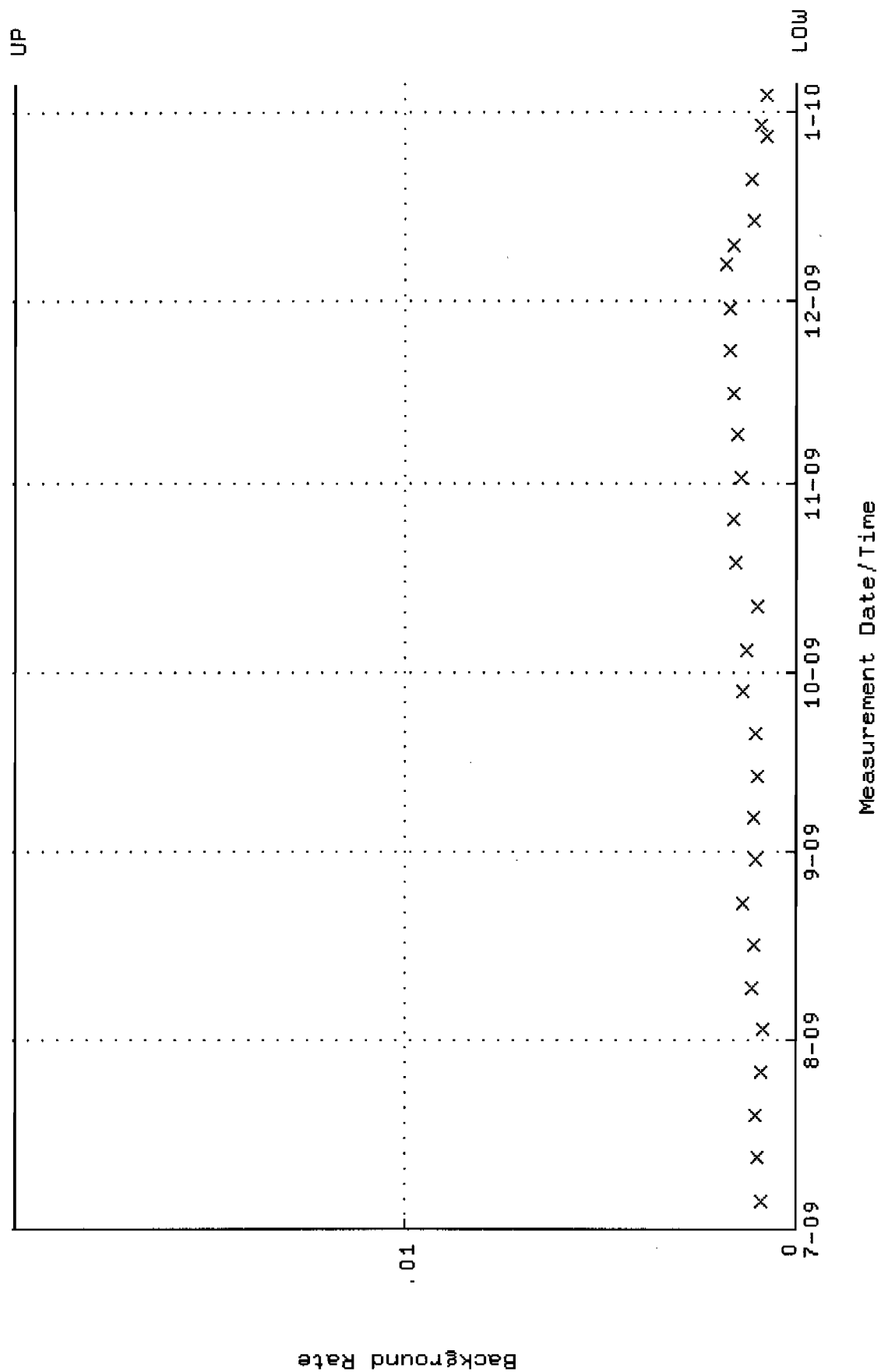


QA filename : DKA100:[ENV\_ALPHA.QA.W]W020.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 88.6996 through 91.6996



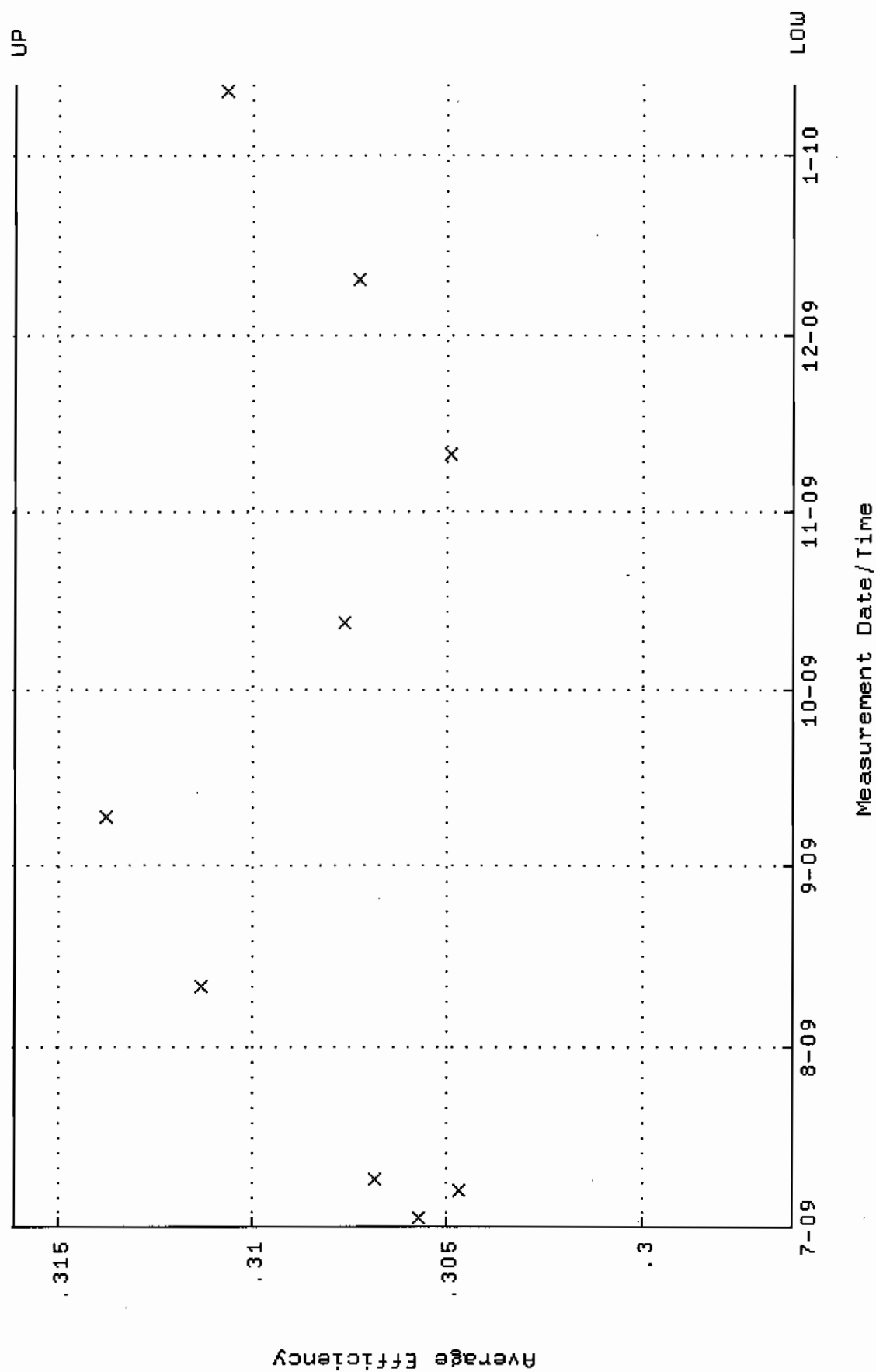


QA filename : DKA100:[ENV\_ALPHA.QA.B]B020.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:57 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



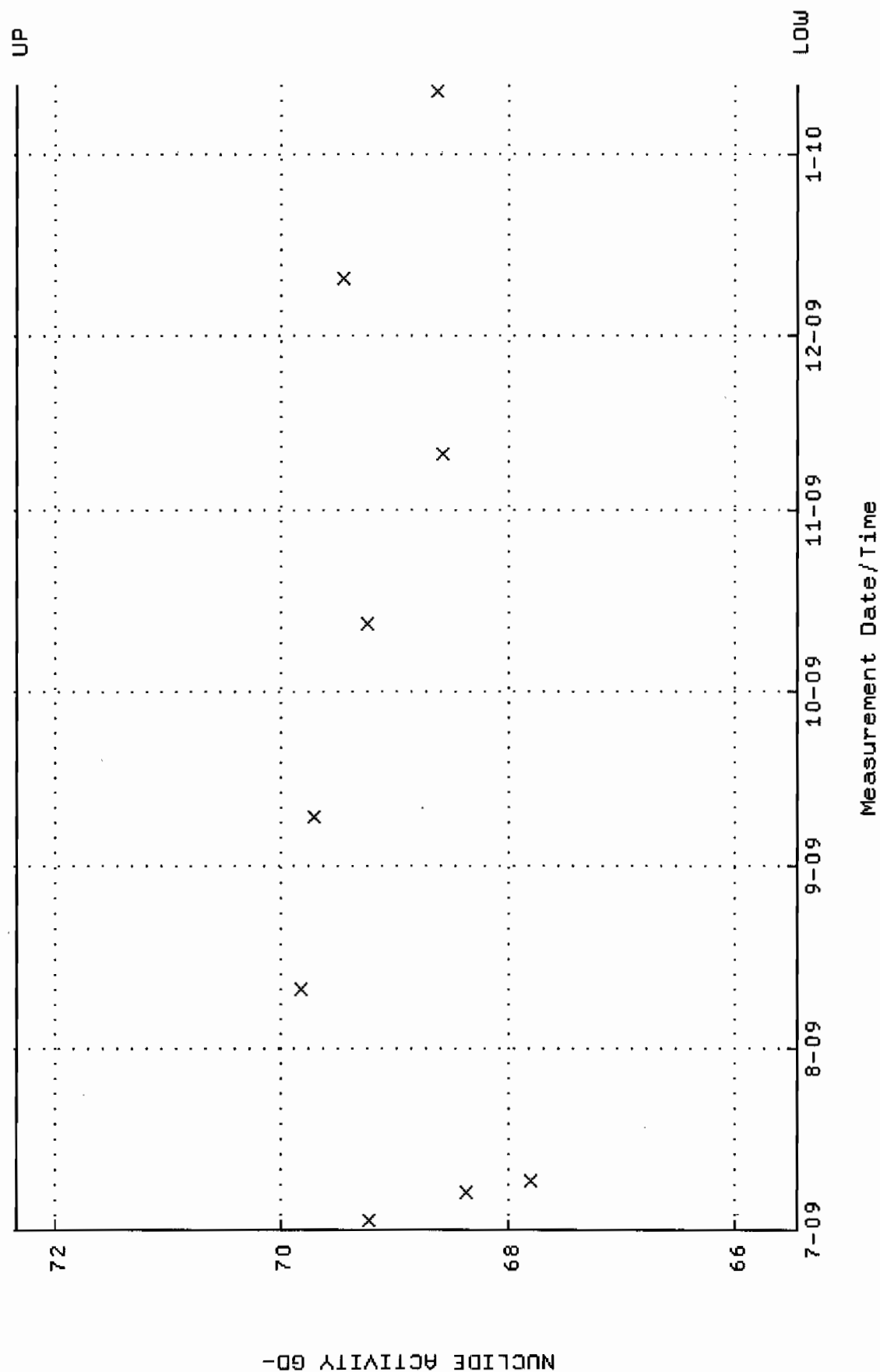


QA filename : DKA100:[ENV\_ALPHA.QA.W]W095.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUL-2009 15:04:15 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.296122 through 0.316122



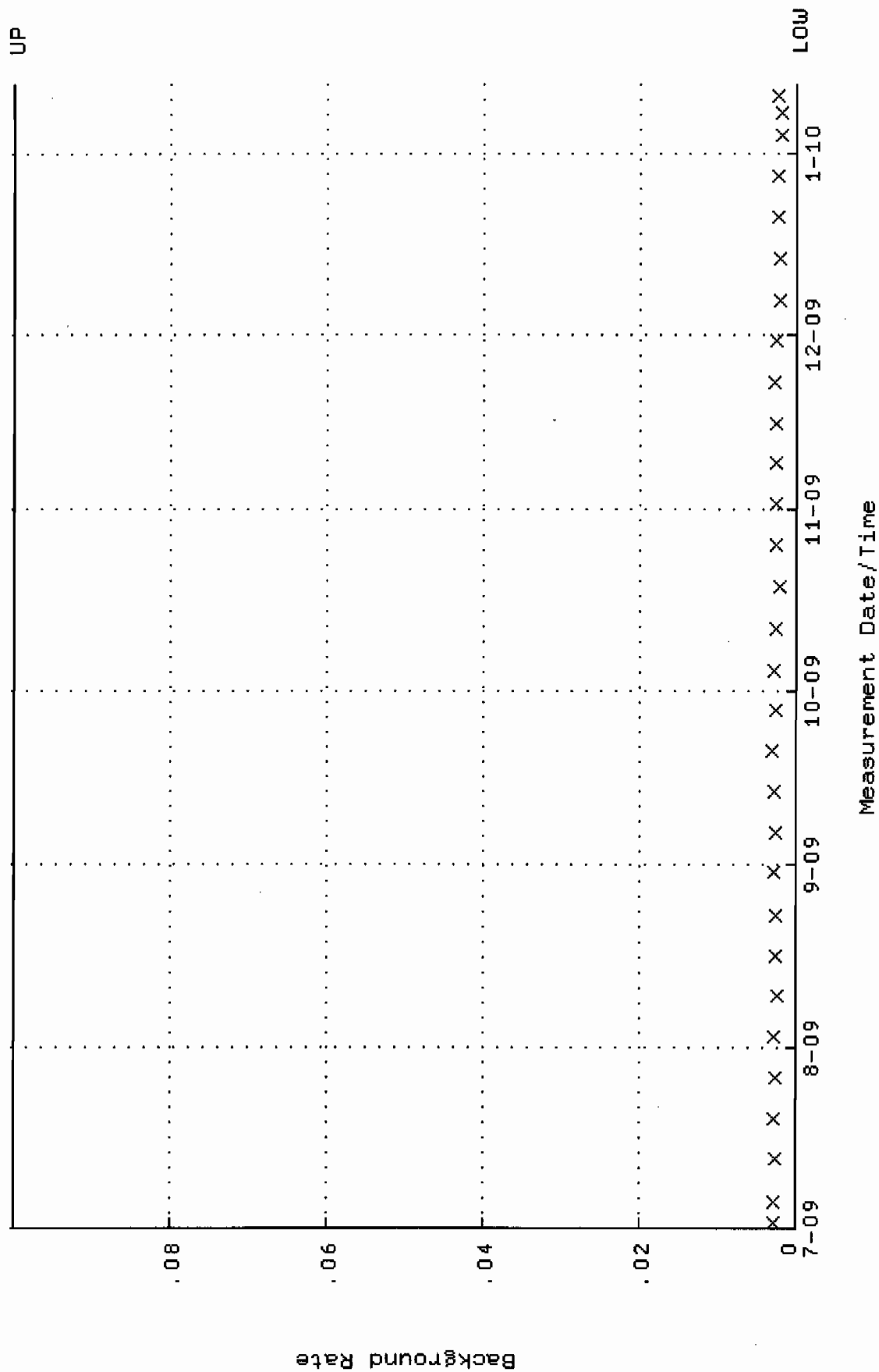


QA filename : DKA100:[ENV\_ALPHA.QA.W]W095.QAF;3  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUL-2009 15:04:15 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 65.4492 through 72.3386



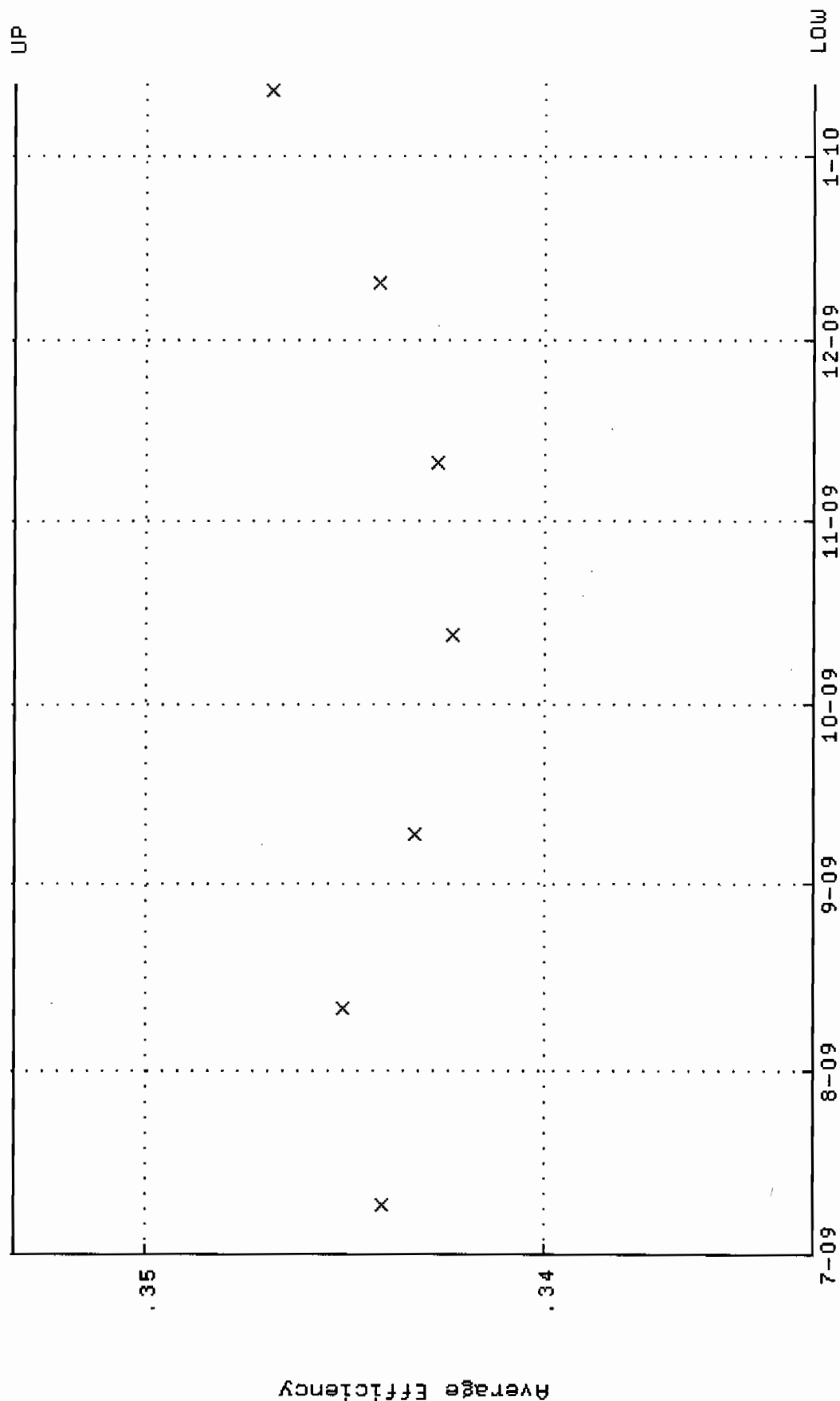


QA filename : DKA100:[ENV\_ALPHA.QA.B]B095.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUL-2009 21:40:00 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



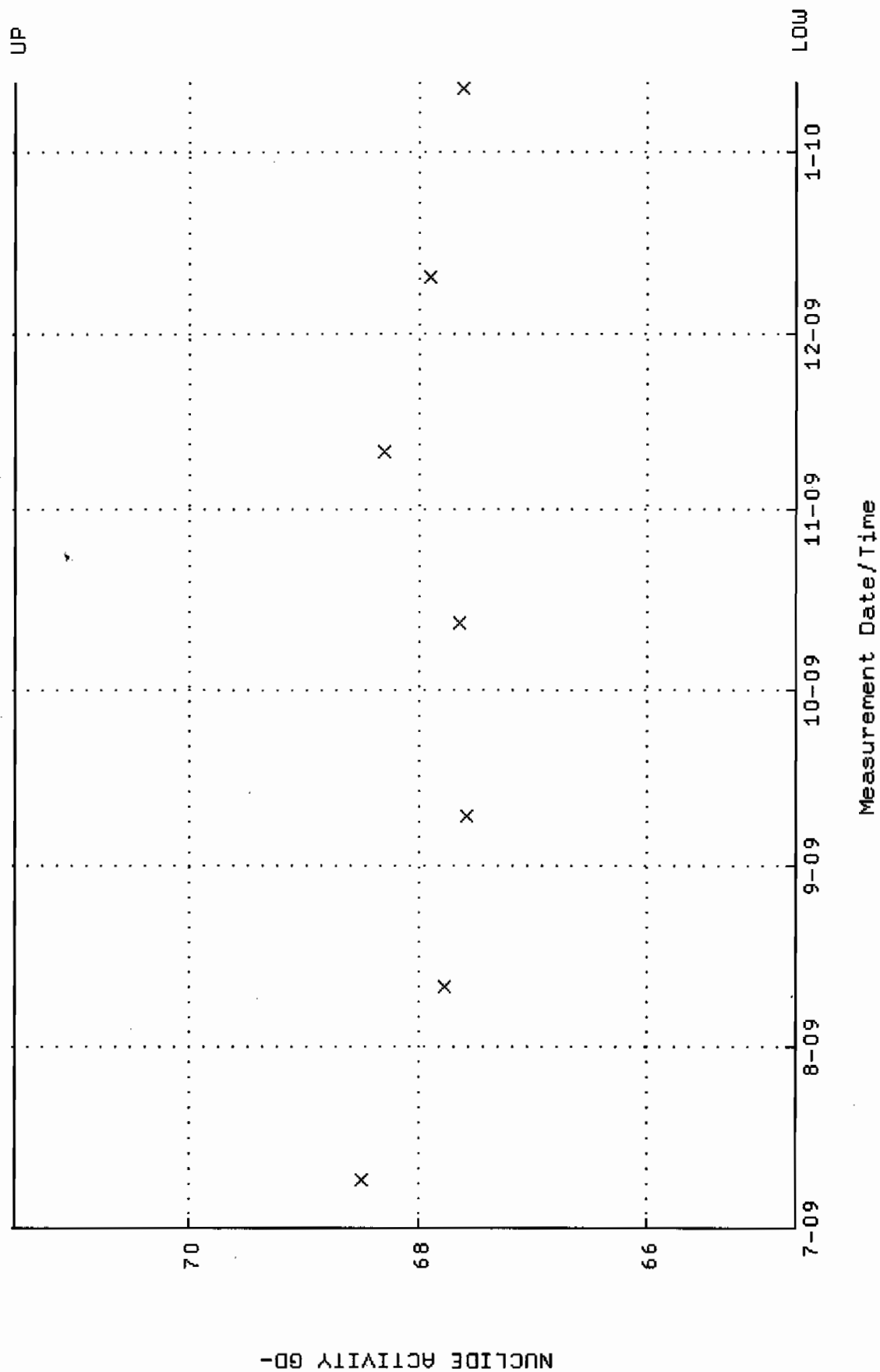


QA filename : DKA100:[ENV\_ALPHA.QA.W]W097.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:14 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.333275 through 0.353275



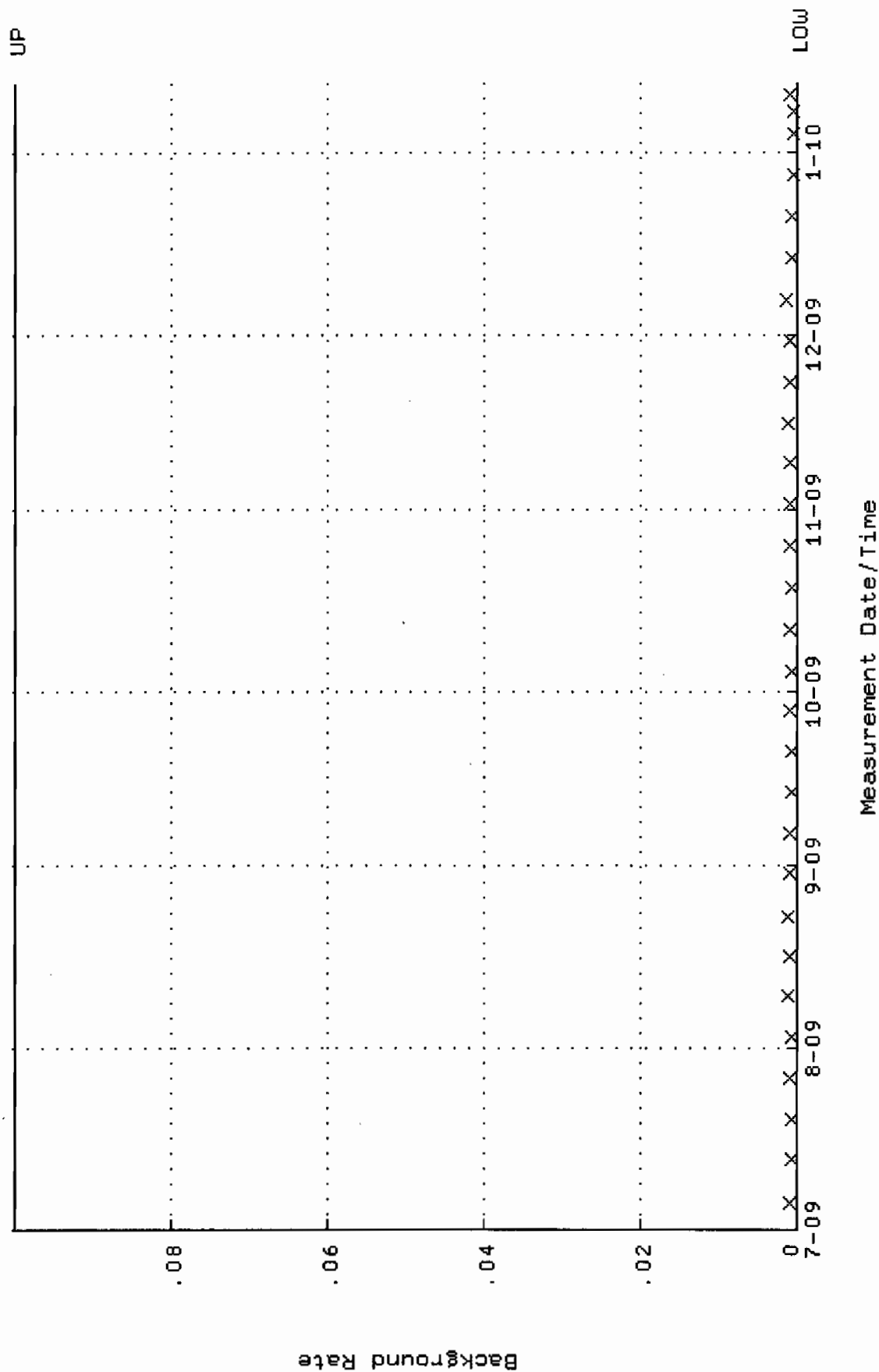


QA filename : DKA100:[ENV\_ALPHA.QA.W]W097.QAF;2  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:14 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 64.7068 through 71.5180



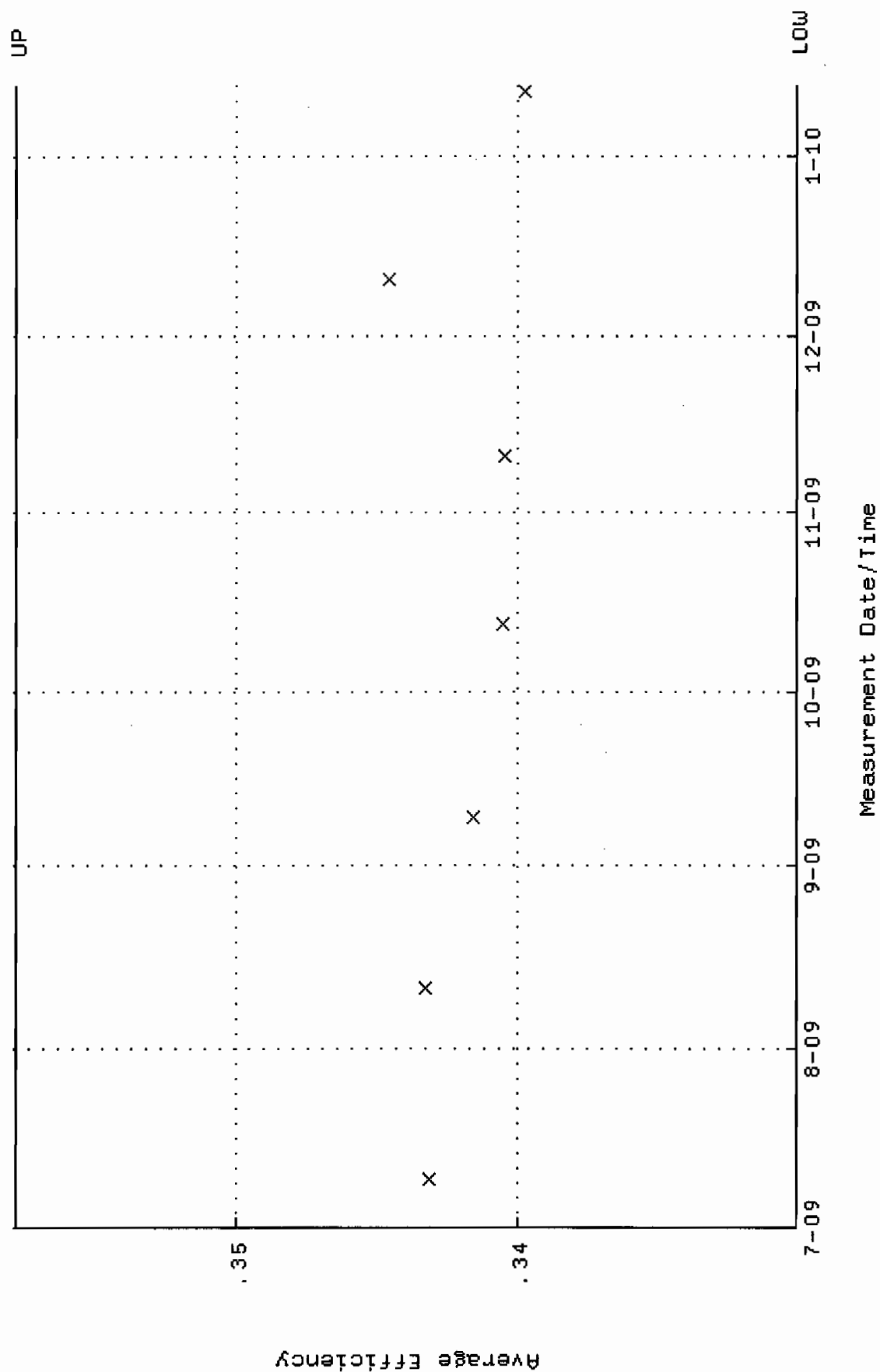


QA filename : DKA100:[ENV\_ALPHA.QA.B]B097.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:05 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



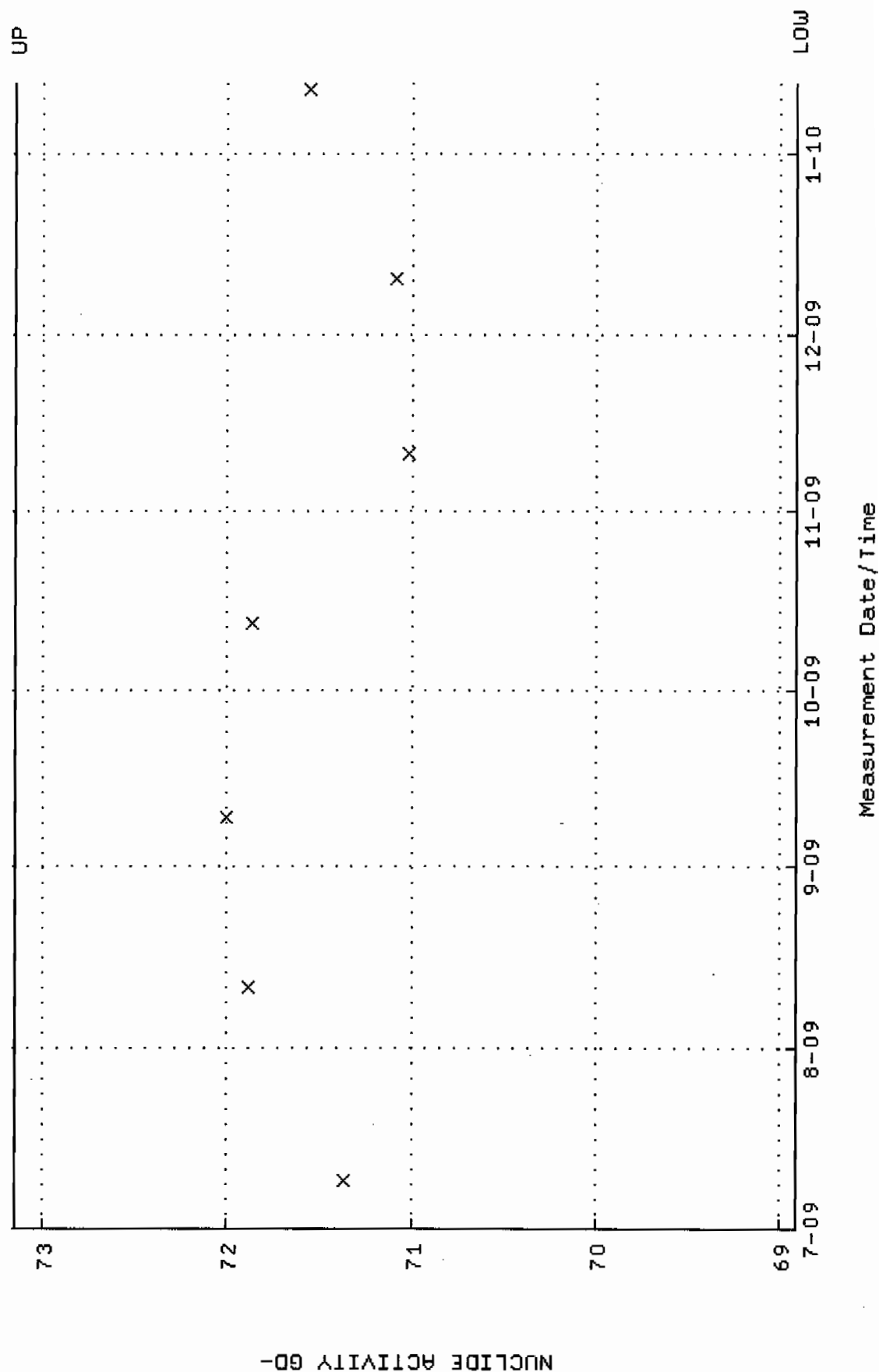


QA filename : DKA100:[ENV\_ALPHA.QA.W]W099.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:14 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.330127 through 0.357809



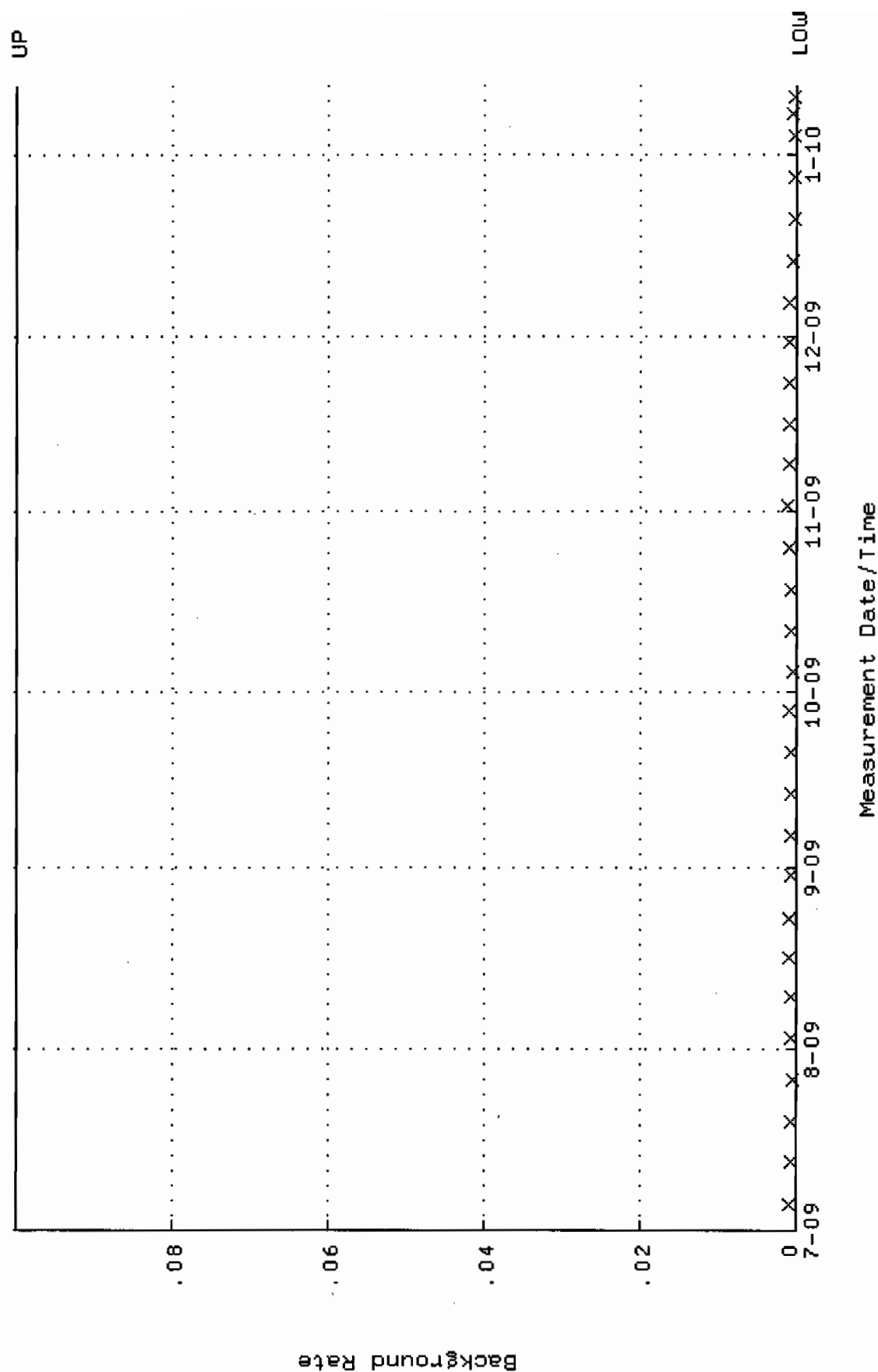


QA filename : DKA100:[ENV\_ALPHA.QA.W]W099.QAF;2  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:14 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 68.9116 through 73.1498



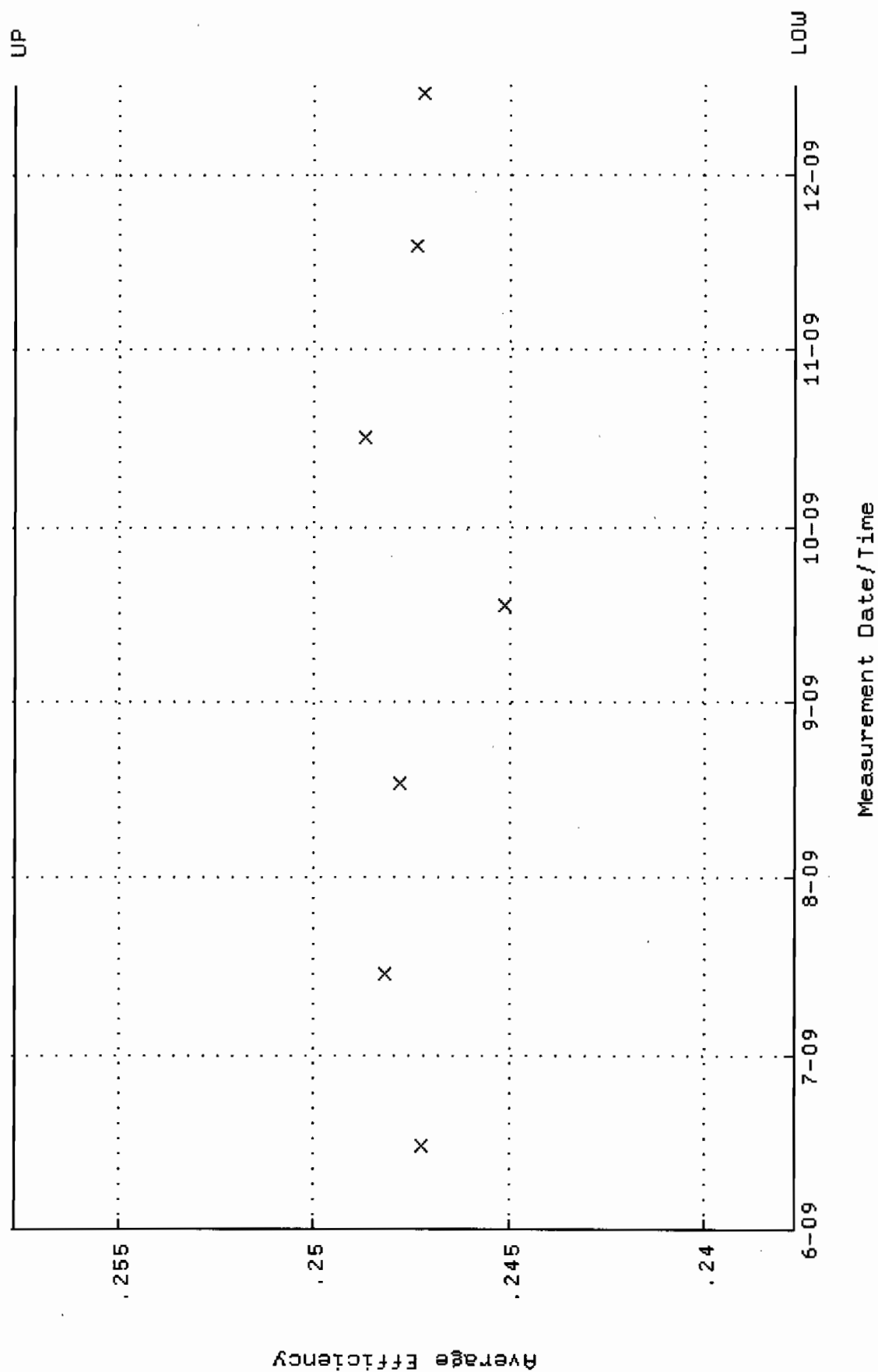


QA filename : DKA100:[ENV\_ALPHA.QA.B]B099.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:05 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



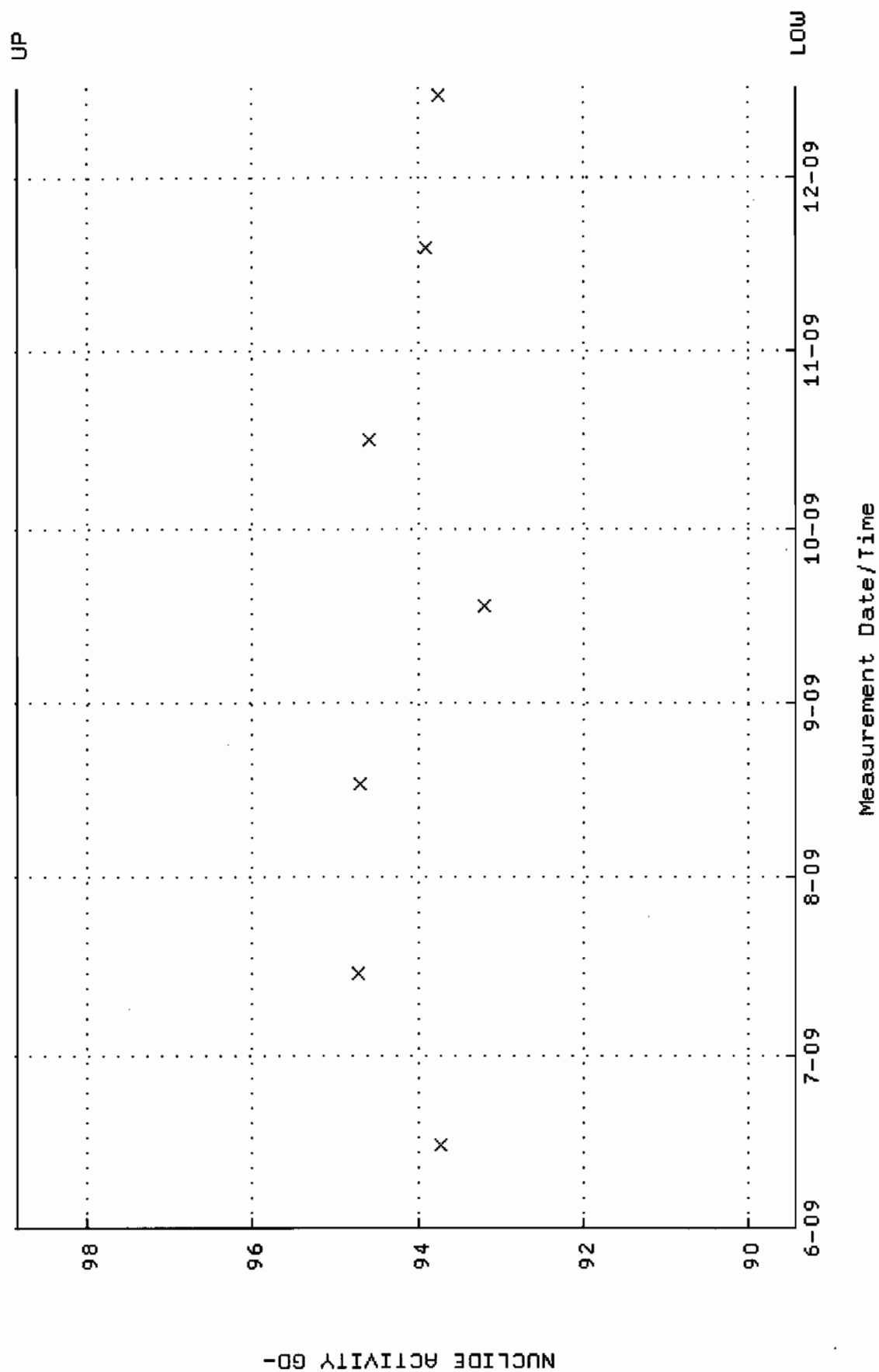


QA filename : DKA100:[ENV\_ALPHA.QA.W]W121.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-JUN-2009 10:34:51 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.237686 through 0.257686



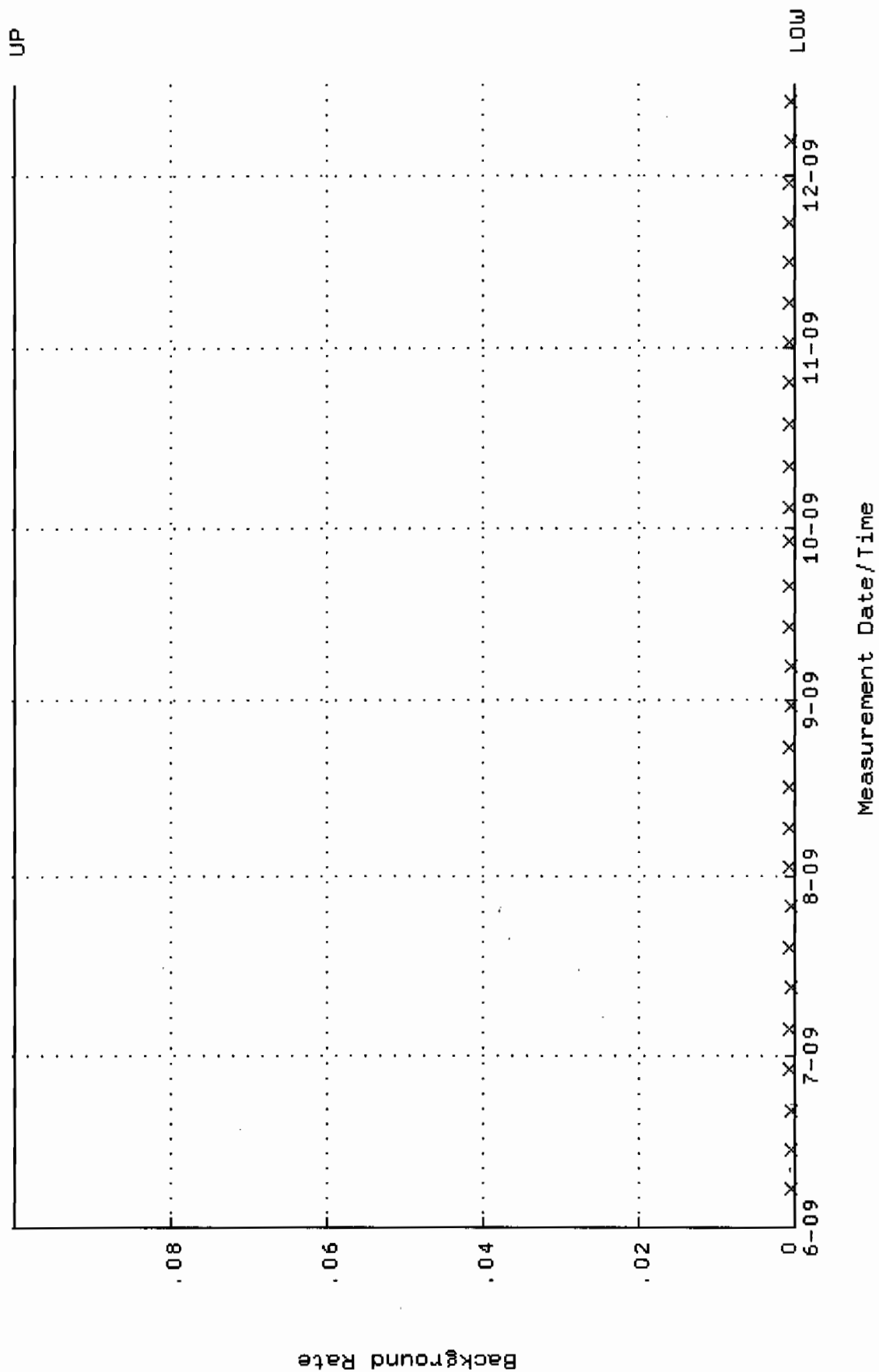


QA filename : DKA100:[ENV\_ALPHA.QA.W]W121.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-JUN-2009 10:34:51 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 89.4263 through 98.8395



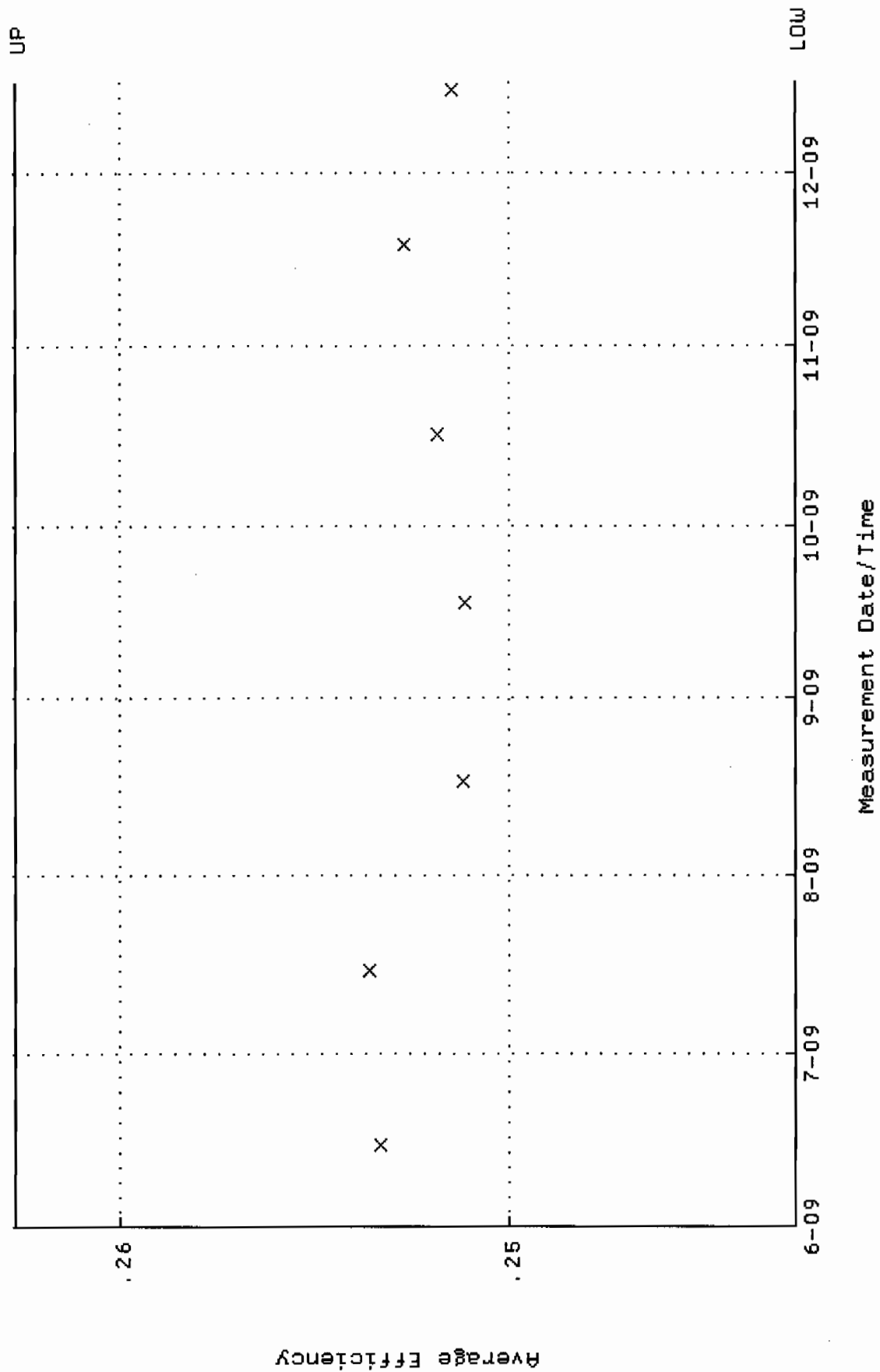


QA filename : DKA100:[ENV\_ALPHA.QA.B]B121.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:09:14 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



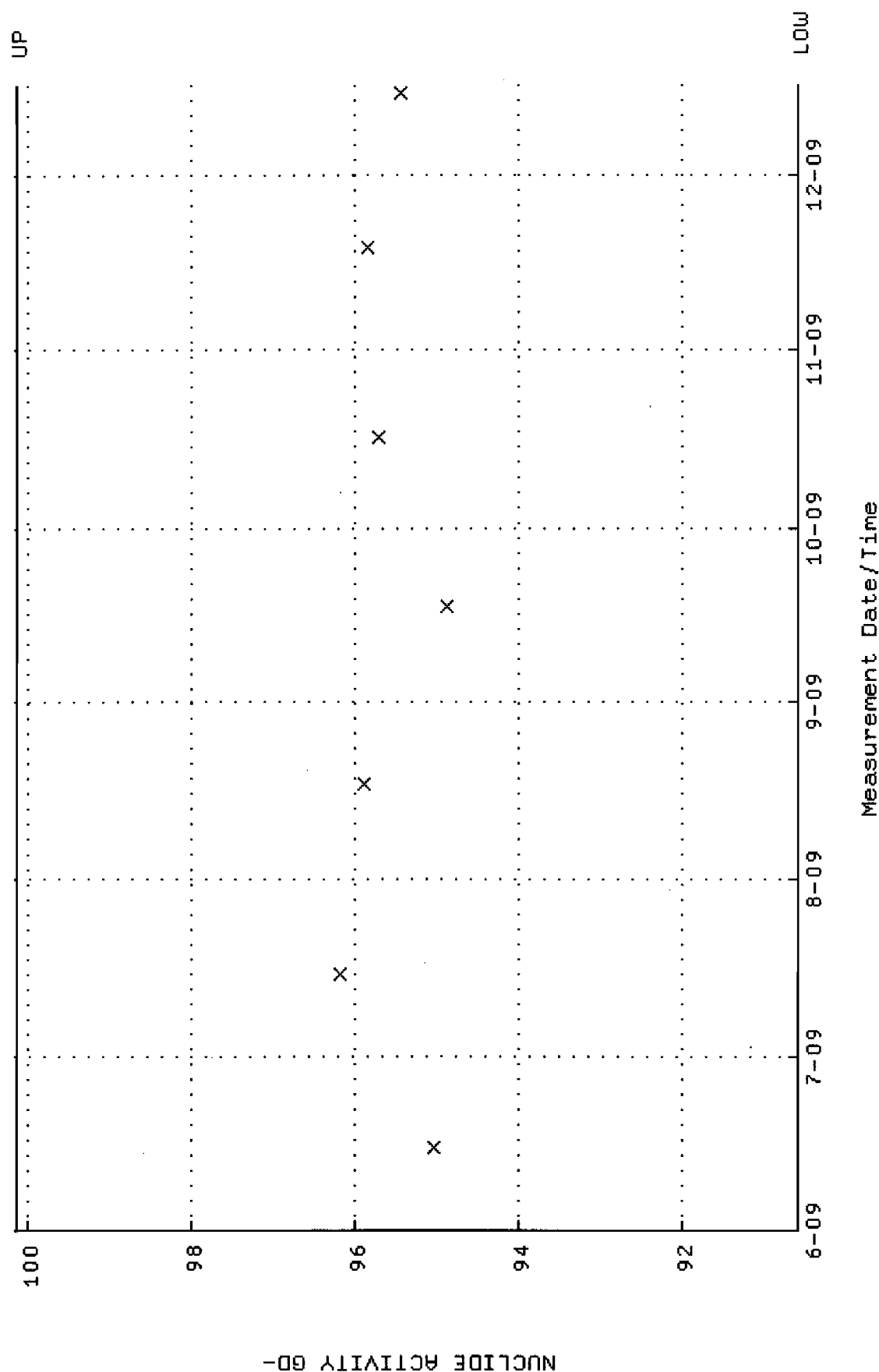


QA filename : DKA100:[ENV\_ALPHA.QA.W]W122.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-JUN-2009 10:34:57 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.242659 through 0.262659



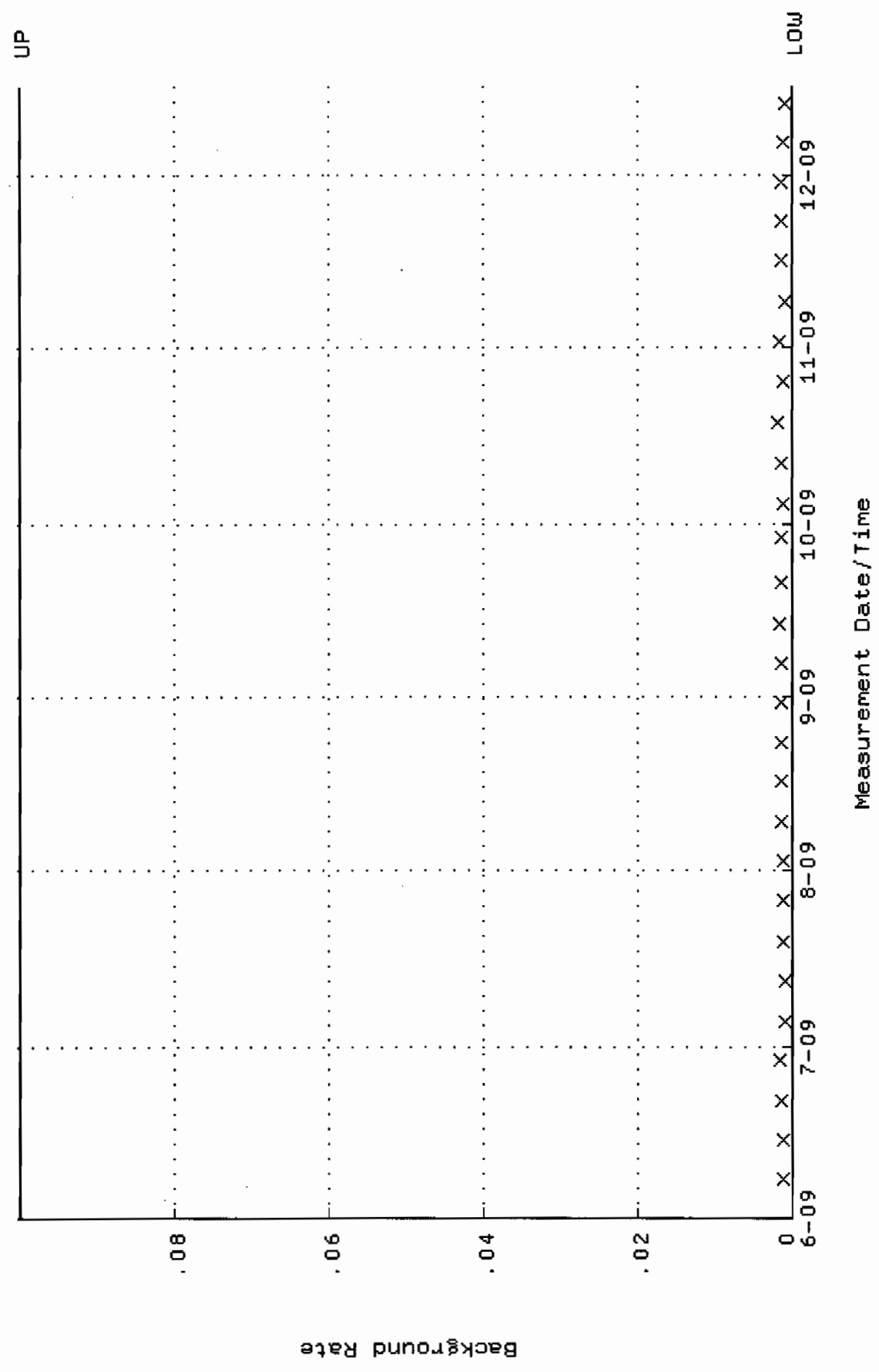


QA filename : DKA100:[ENV\_ALPHA.QA.W]W122.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-JUN-2009 10:34:57 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 90.5949 through 100.131



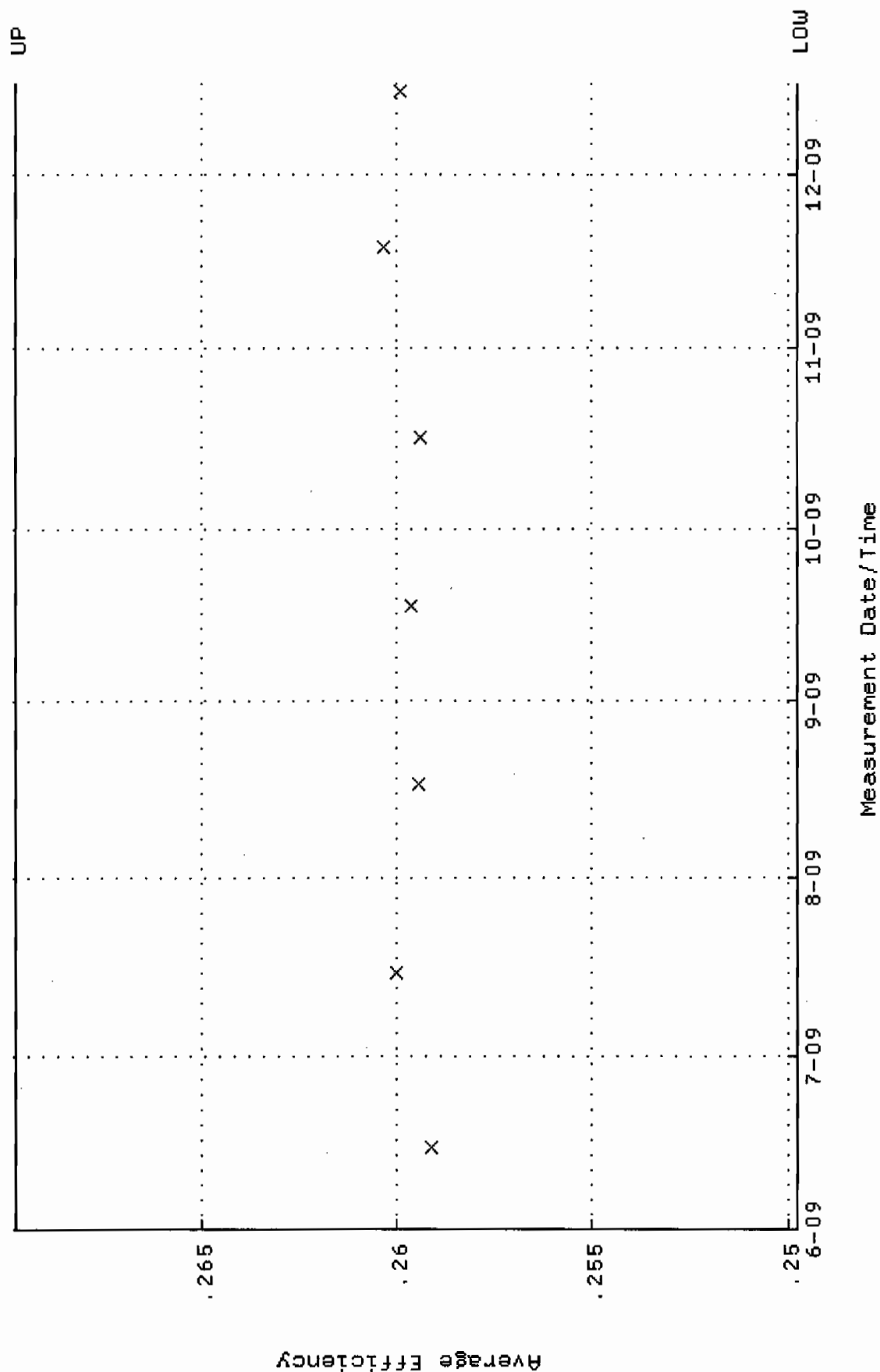


QA filename : DKA100:[ENV\_ALPHA.QA.B]B122.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:09:18 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



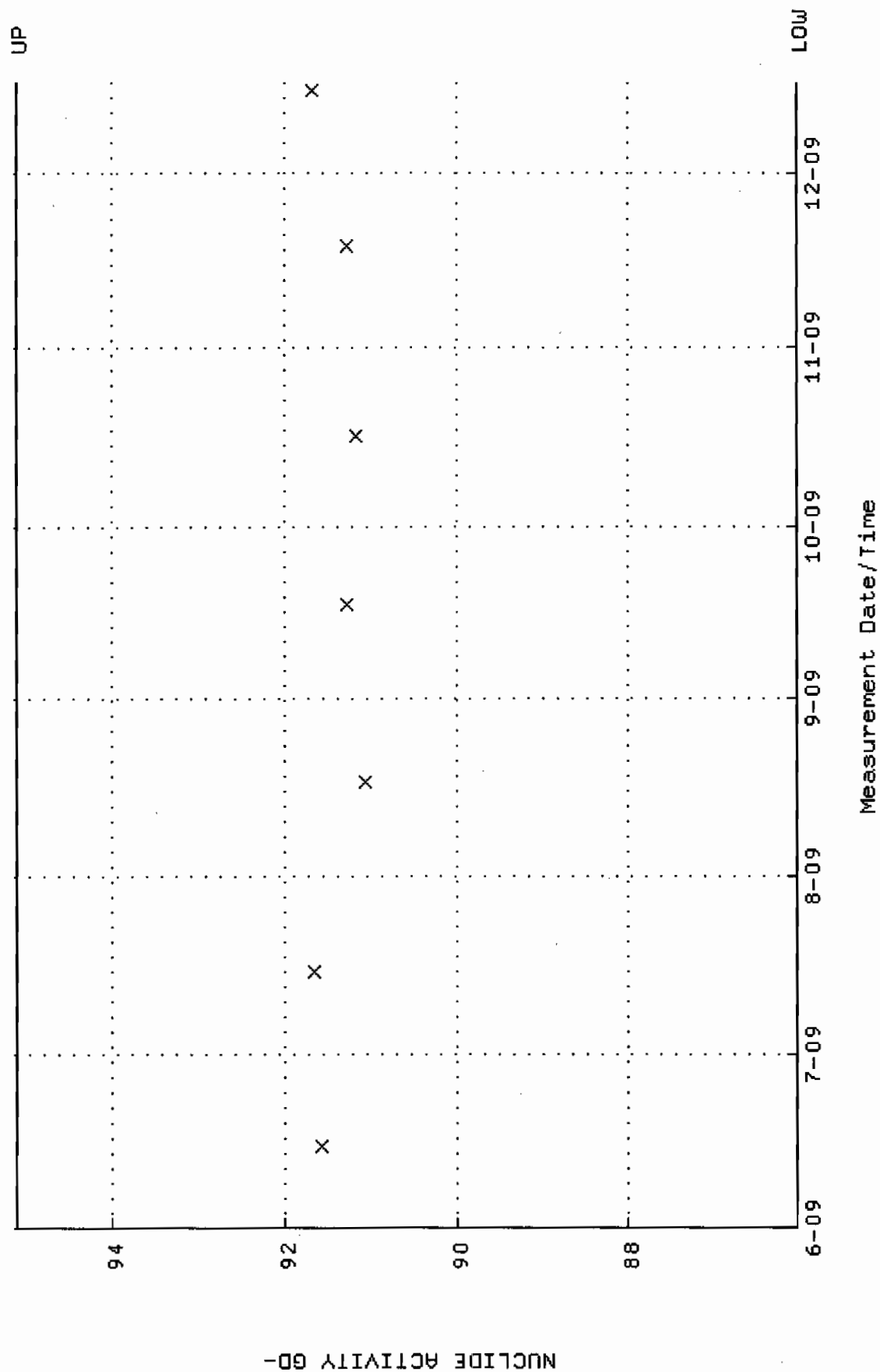


QA filename : DKA100:[ENV\_ALPHA.QA.W]w123.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-JUN-2009 10:35:03 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.249752 through 0.269752



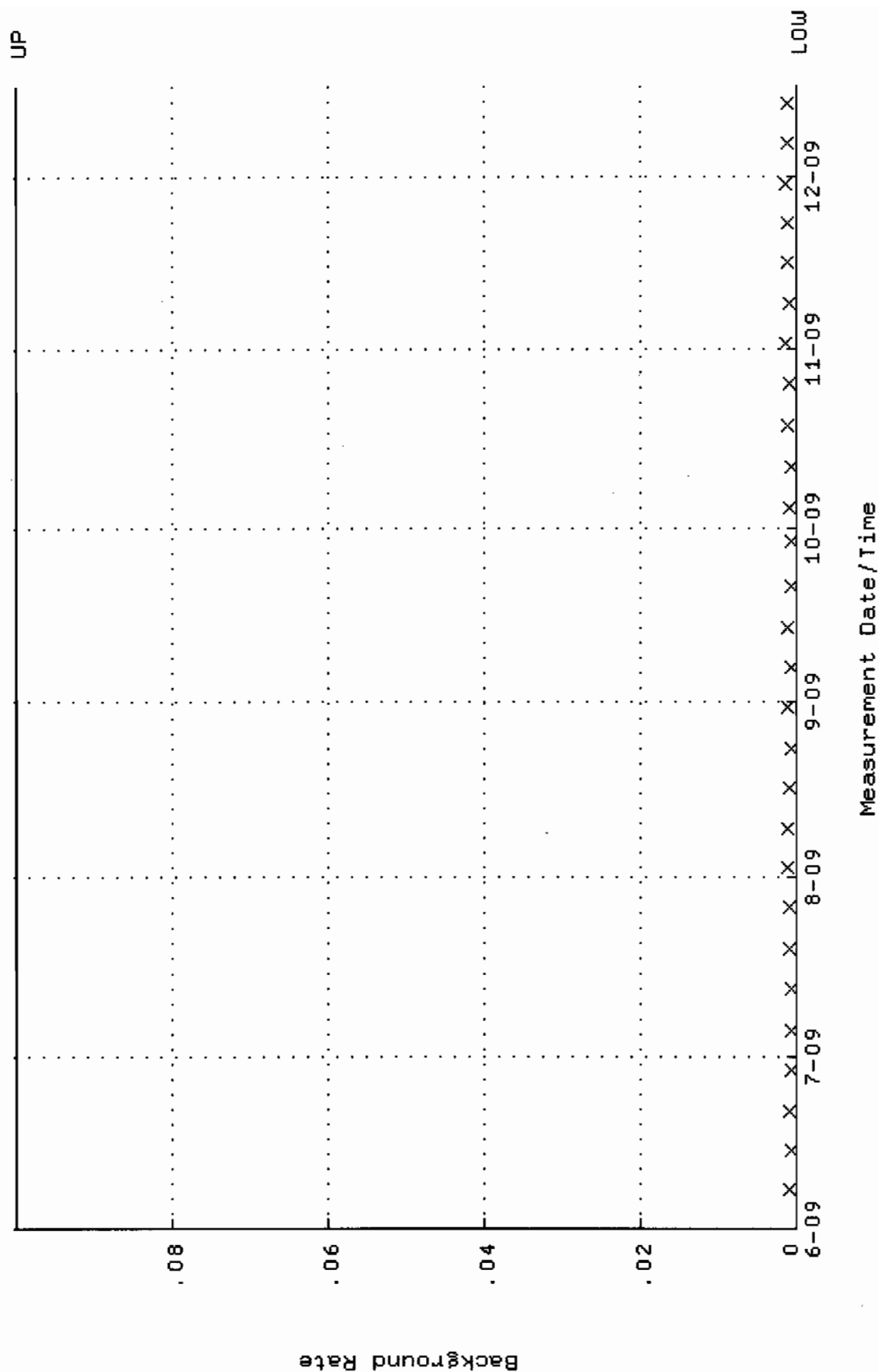


QA filename : DKA100:[ENV\_ALPHA.QA.W]W123.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-JUN-2009 10:35:03 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 86.0496 through 95.1074



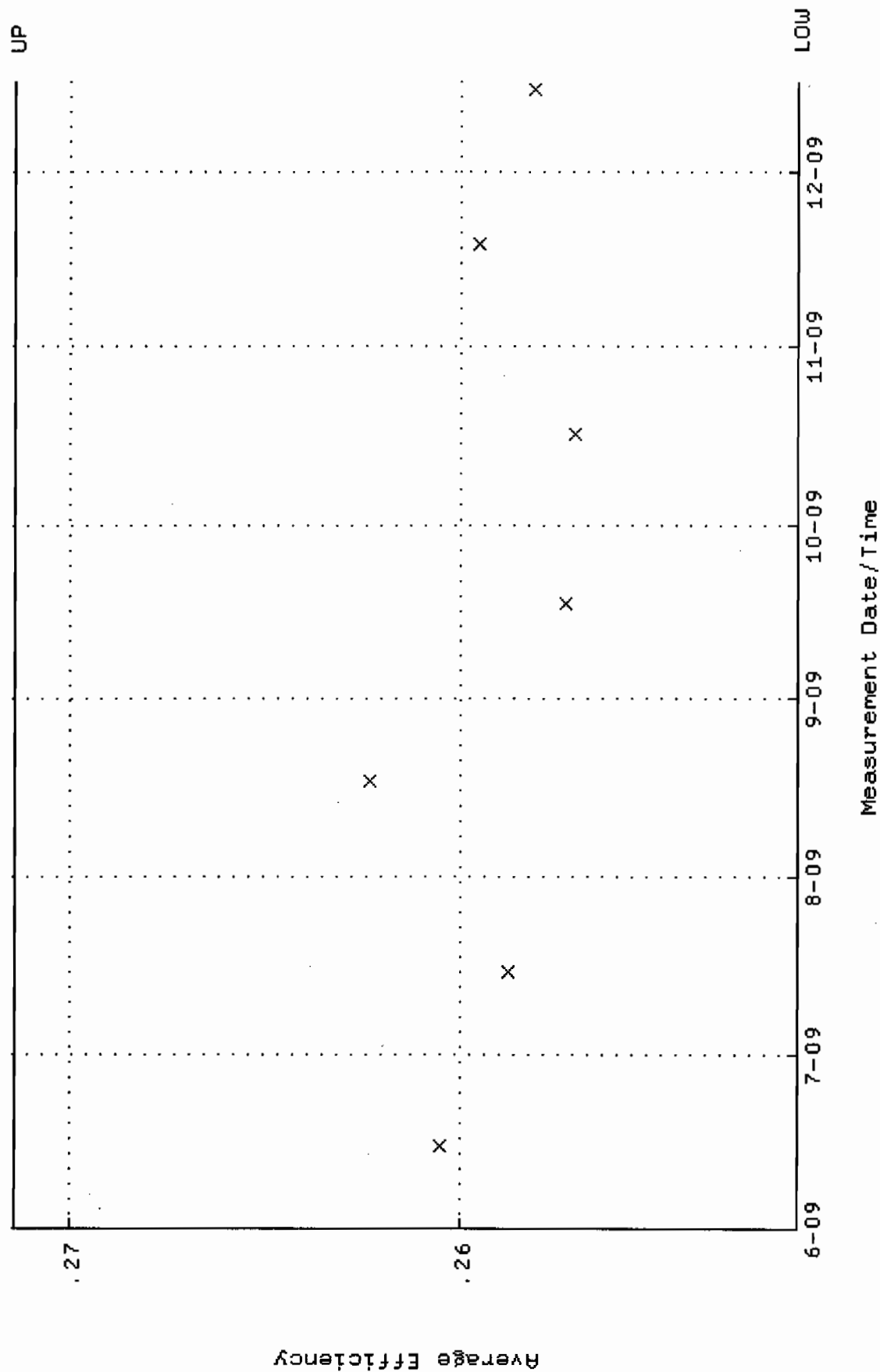


QA filename : DKA100:[ENV\_ALPHA.QA.B]B123.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:09:22 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



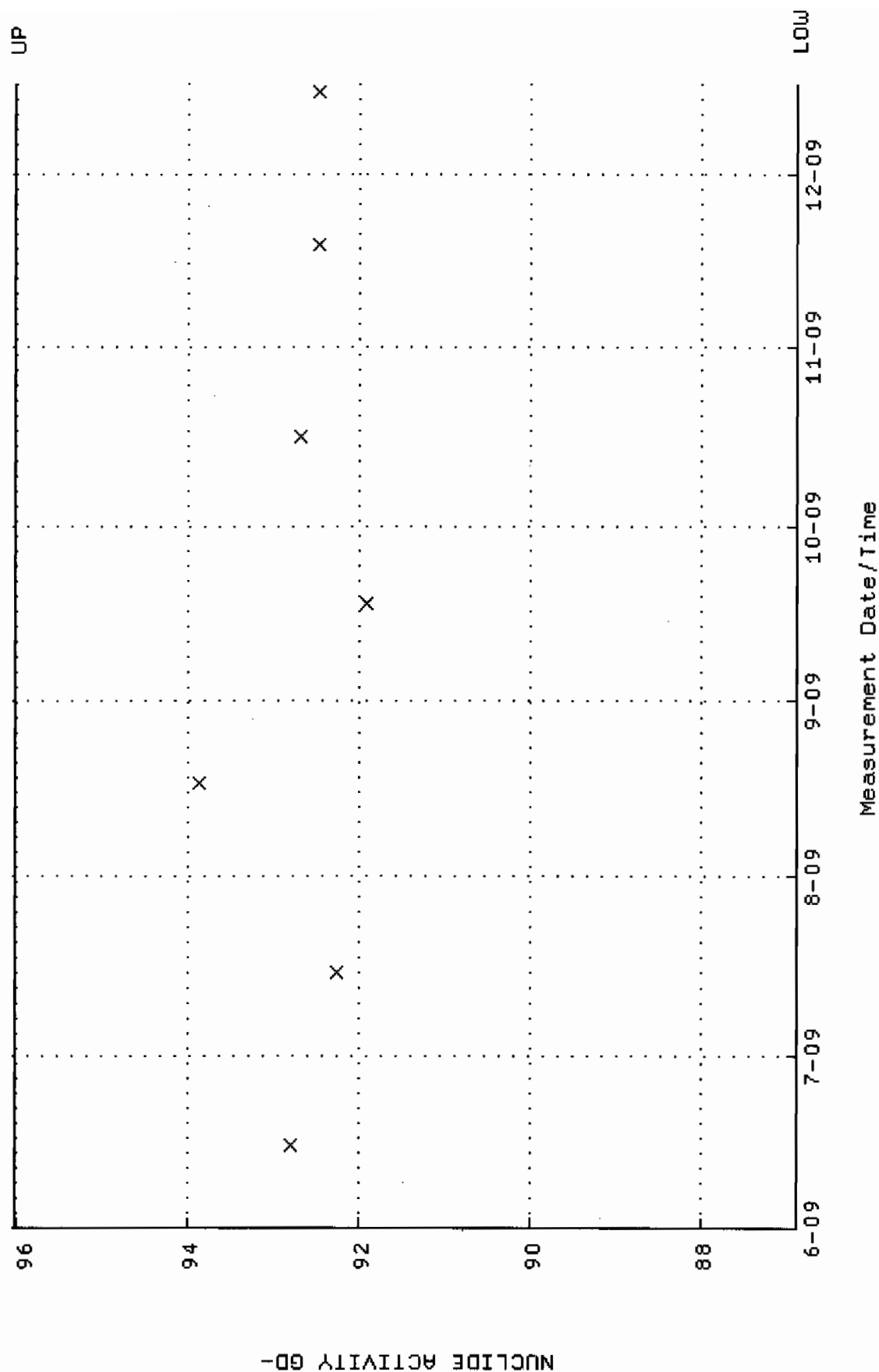


QA filename : DKA100:[ENV\_ALPHA.QA.W]w124.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-JUN-2009 10:35:08 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.251398 through 0.271398



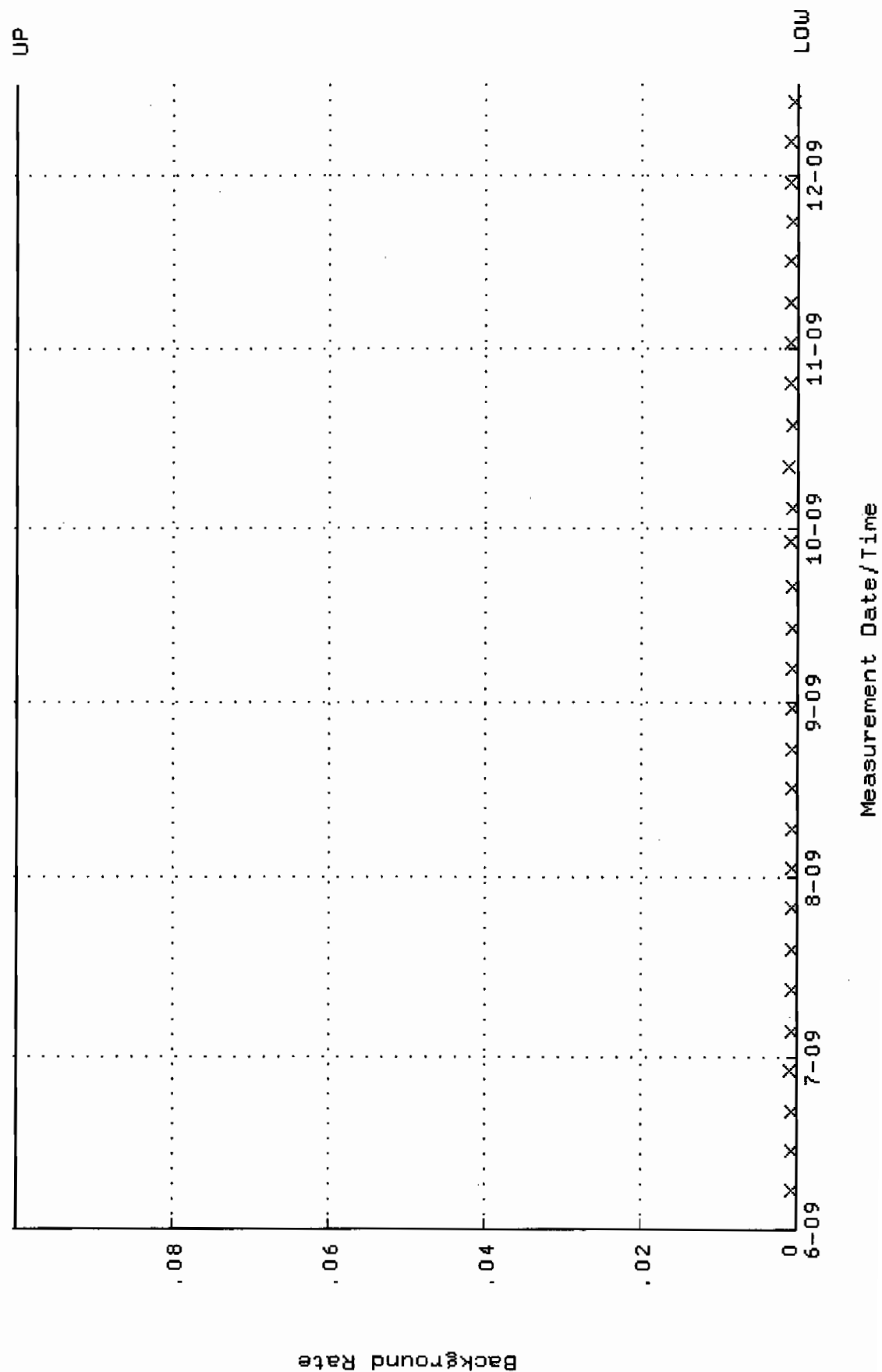


QA filename : DKA100:[ENV\_ALPHA.QA.W]W124.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-JUN-2009 10:35:08 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 86.8862 through 96.0322



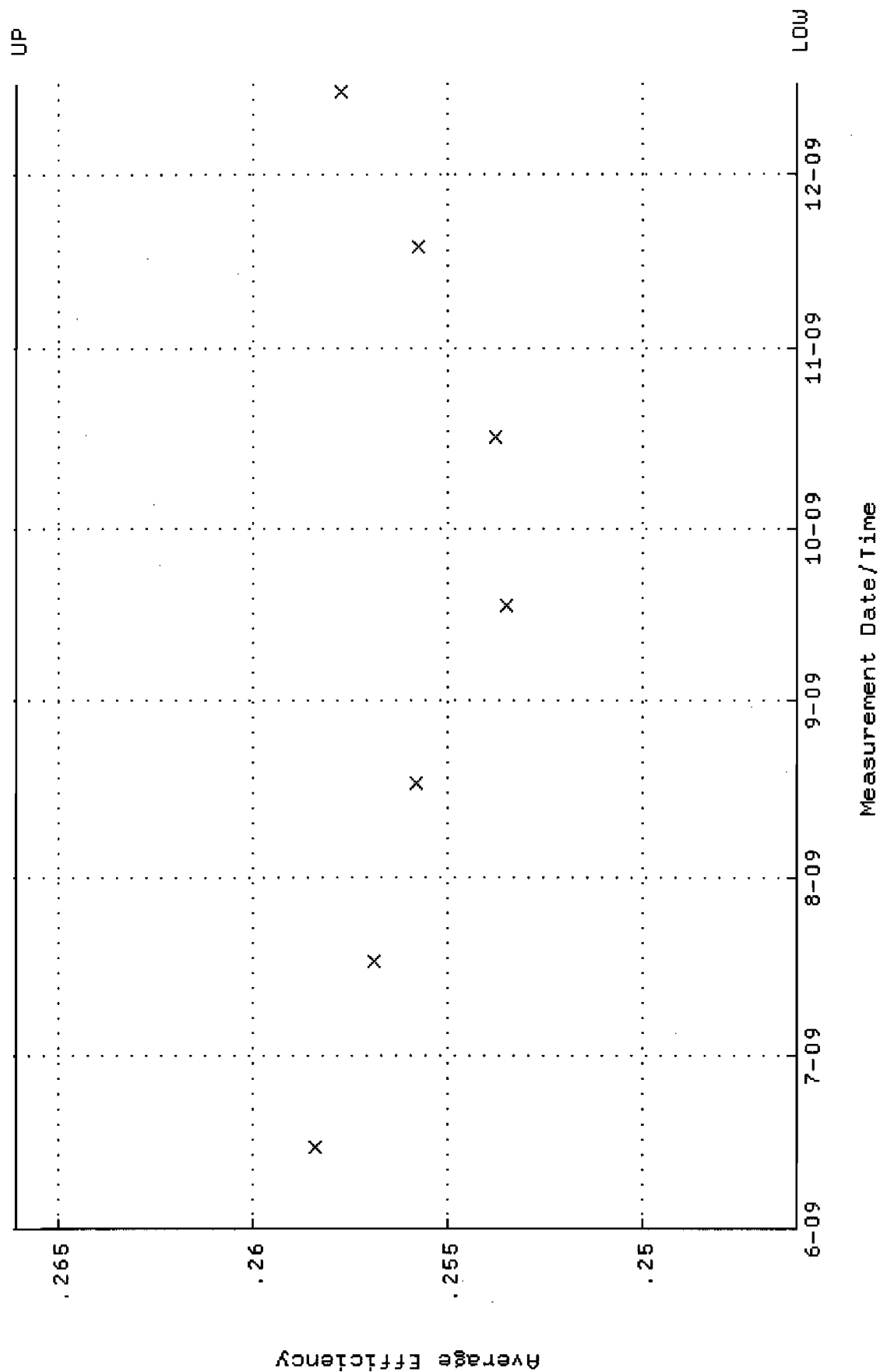


QA filename : DKA100:[ENV\_ALPHA.QA.B]B124.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:09:27 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



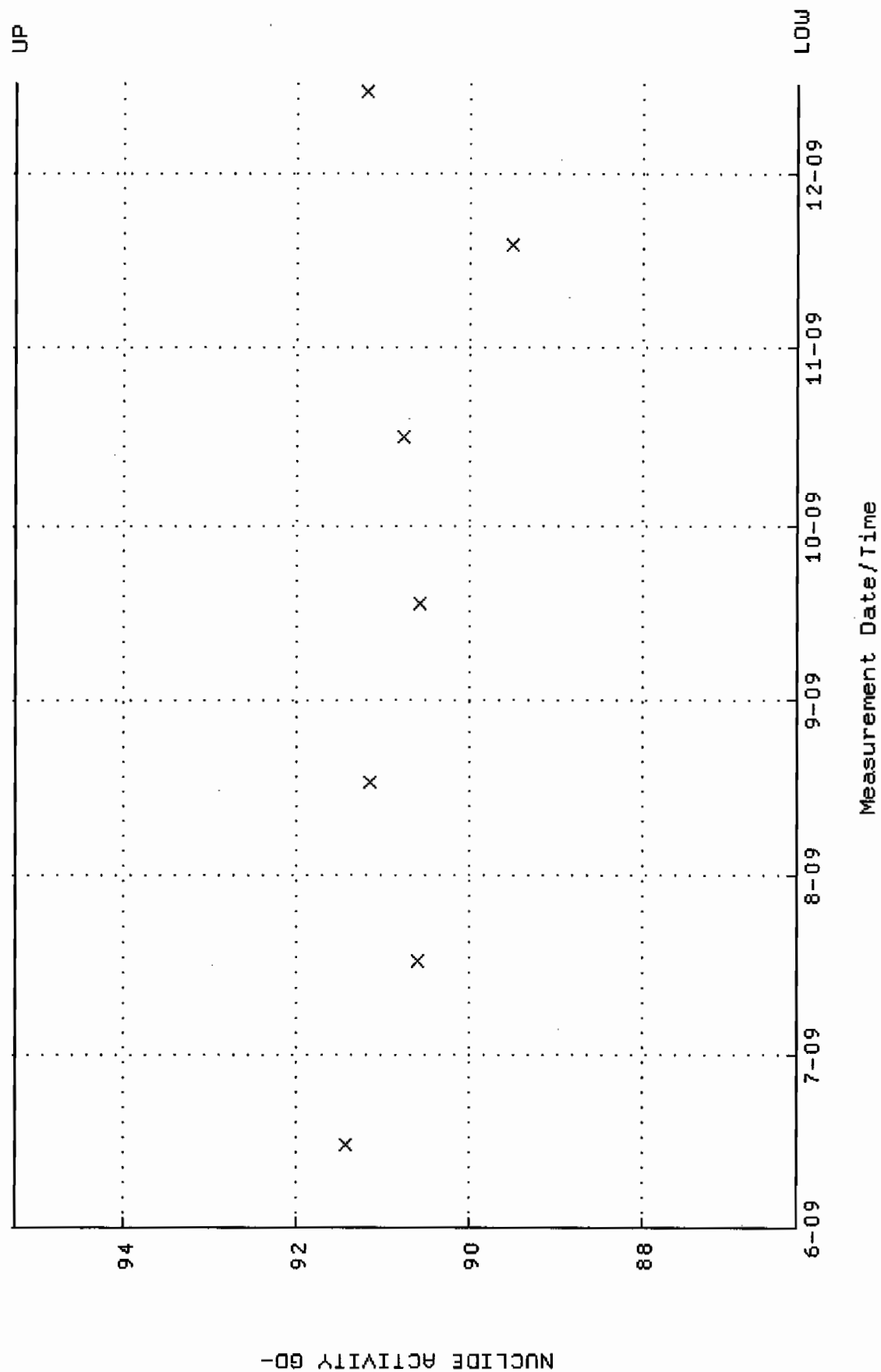


QA filename : DKA100:[ENV\_ALPHA.QA.W]W128.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-JUN-2009 10:35:31 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.246062 through 0.266062



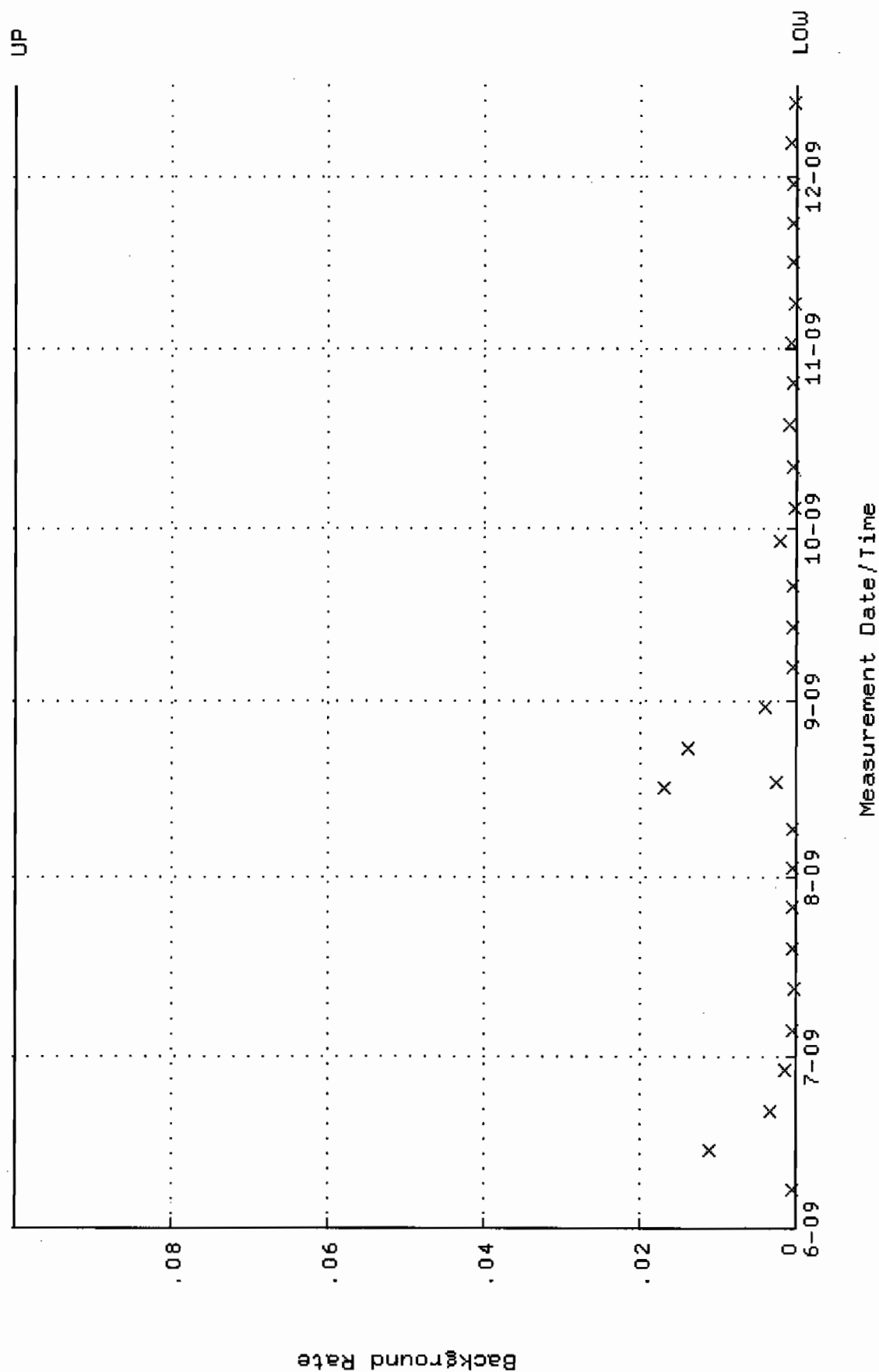


QA filename : DKA100:[ENV\_ALPHA.QA.W]W128.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-JUN-2009 10:35:31 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 86.1964 through 95.2697



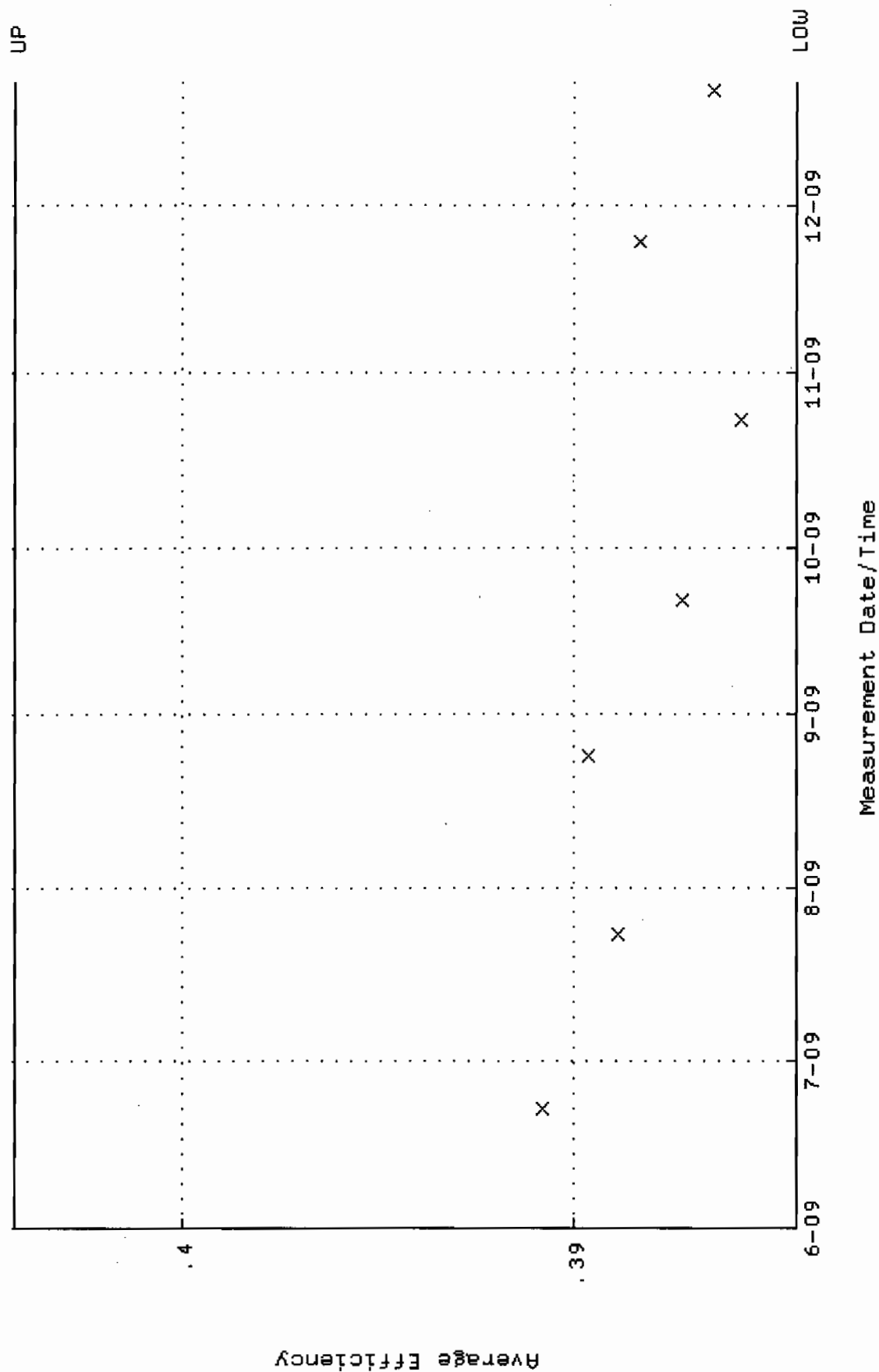


QA filename : DKA100:[ENV\_ALPHA.QA.B]B128.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:09:44 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



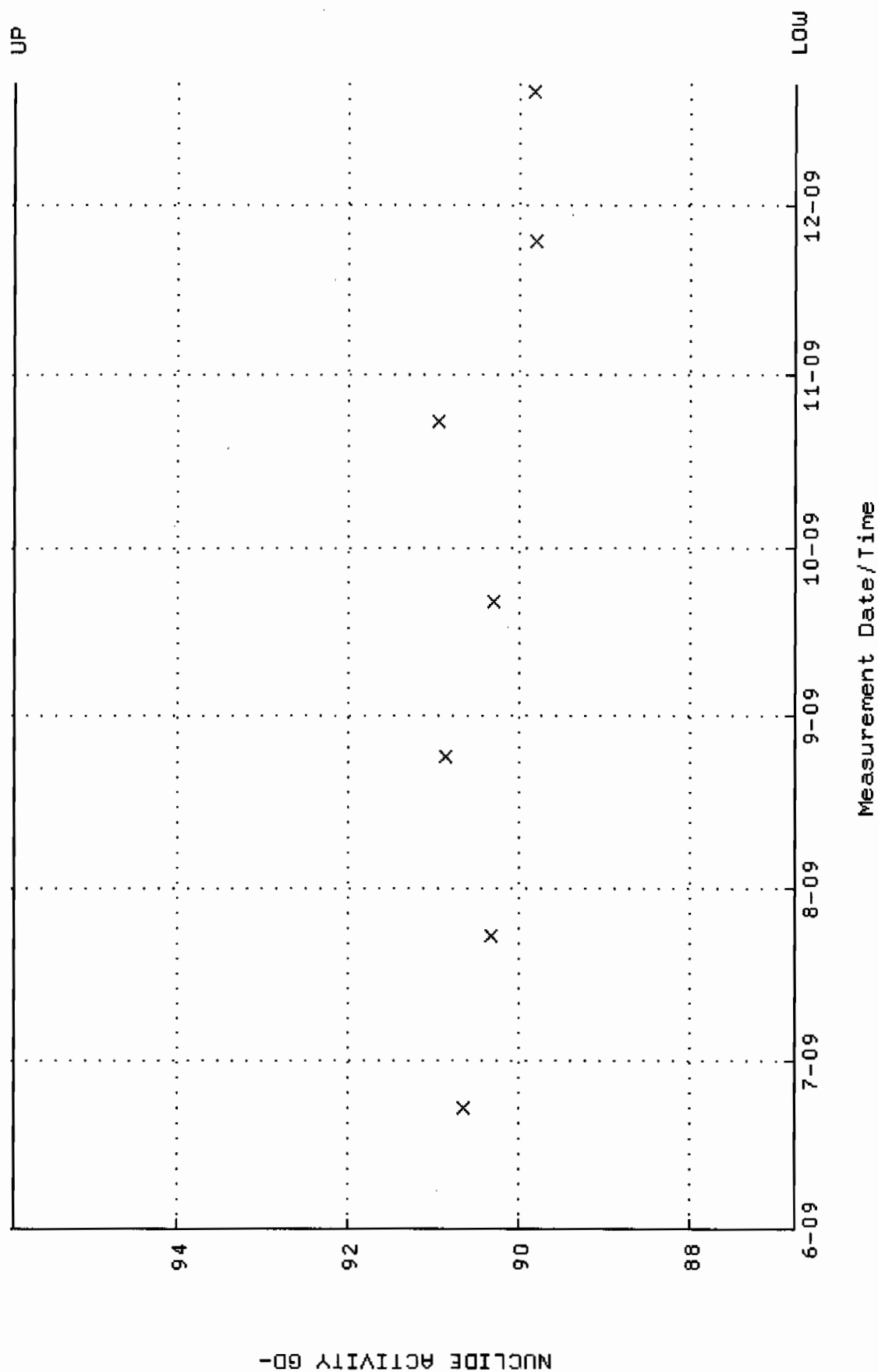


QA filename : DKA100:[ENV\_ALPHA.QA.W]W167.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 22-JUN-2009 09:49:28 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.384285 through 0.404285



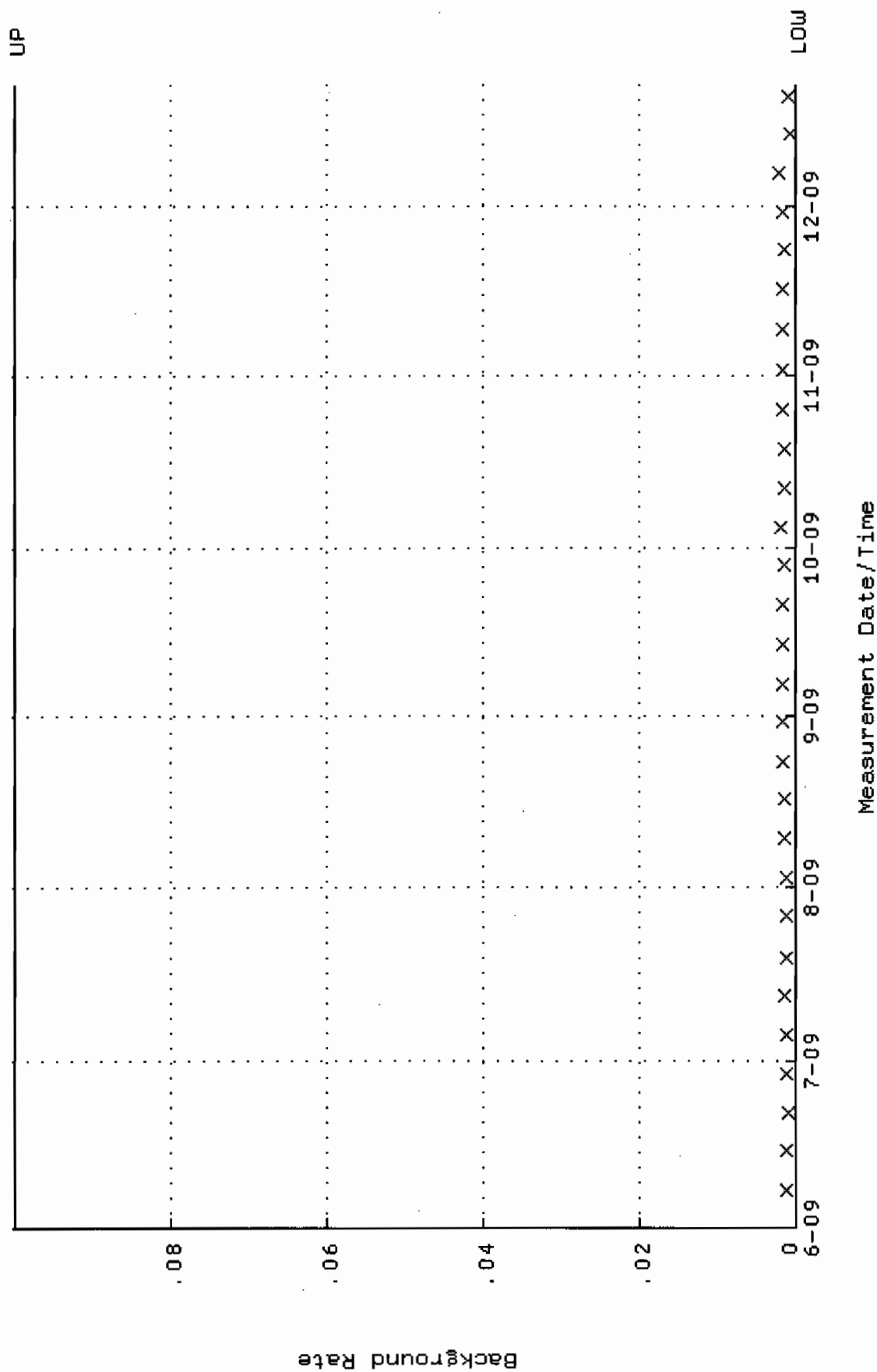


QA filename : DKA100:[ENV\_ALPHA.QA.W]W167.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 22-JUN-2009 09:49:28 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 86.7740 through 95.9082



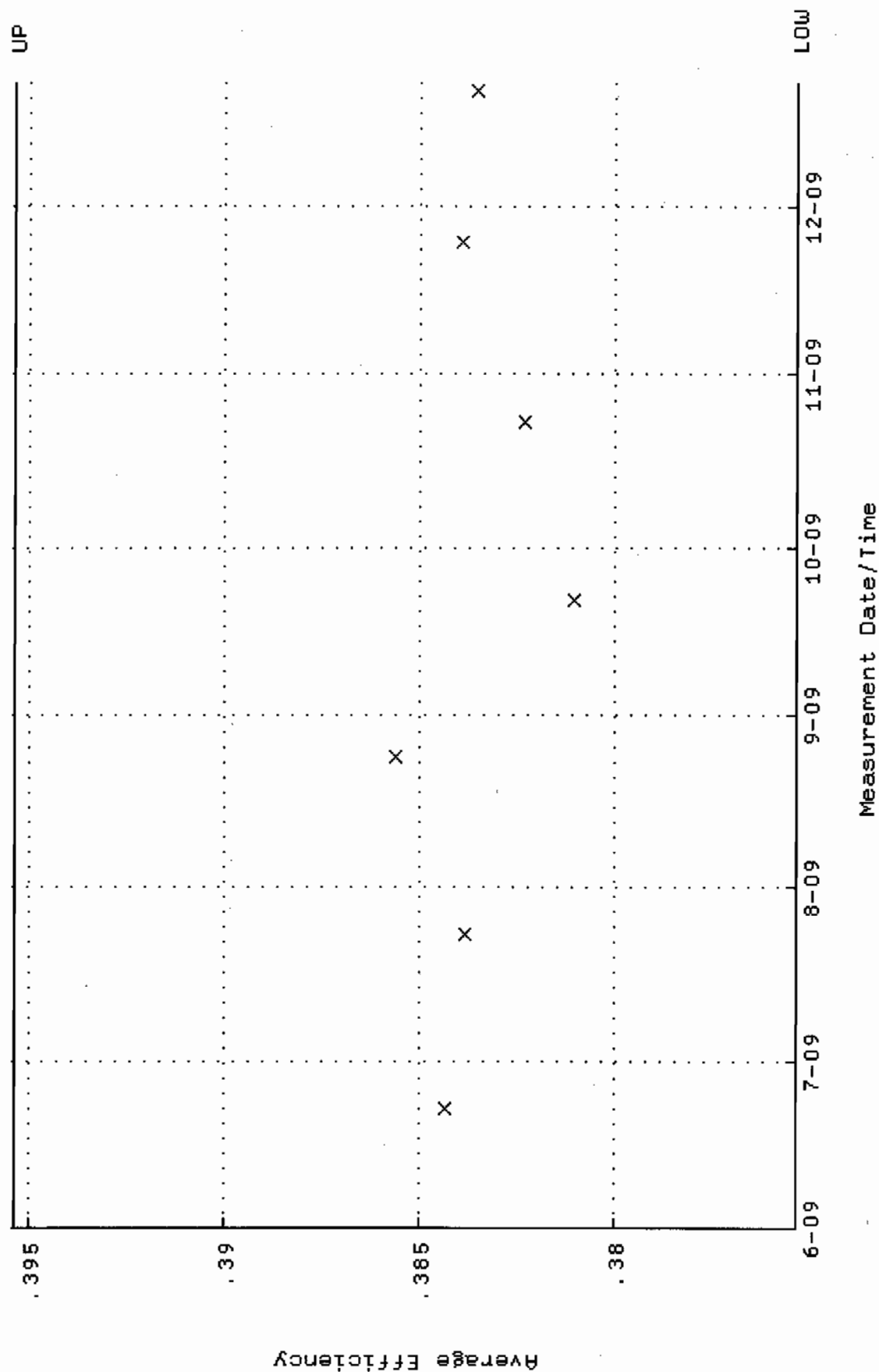


QA filename : DKA100:[ENV\_ALPHA.QA.B]B167.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:12:24 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



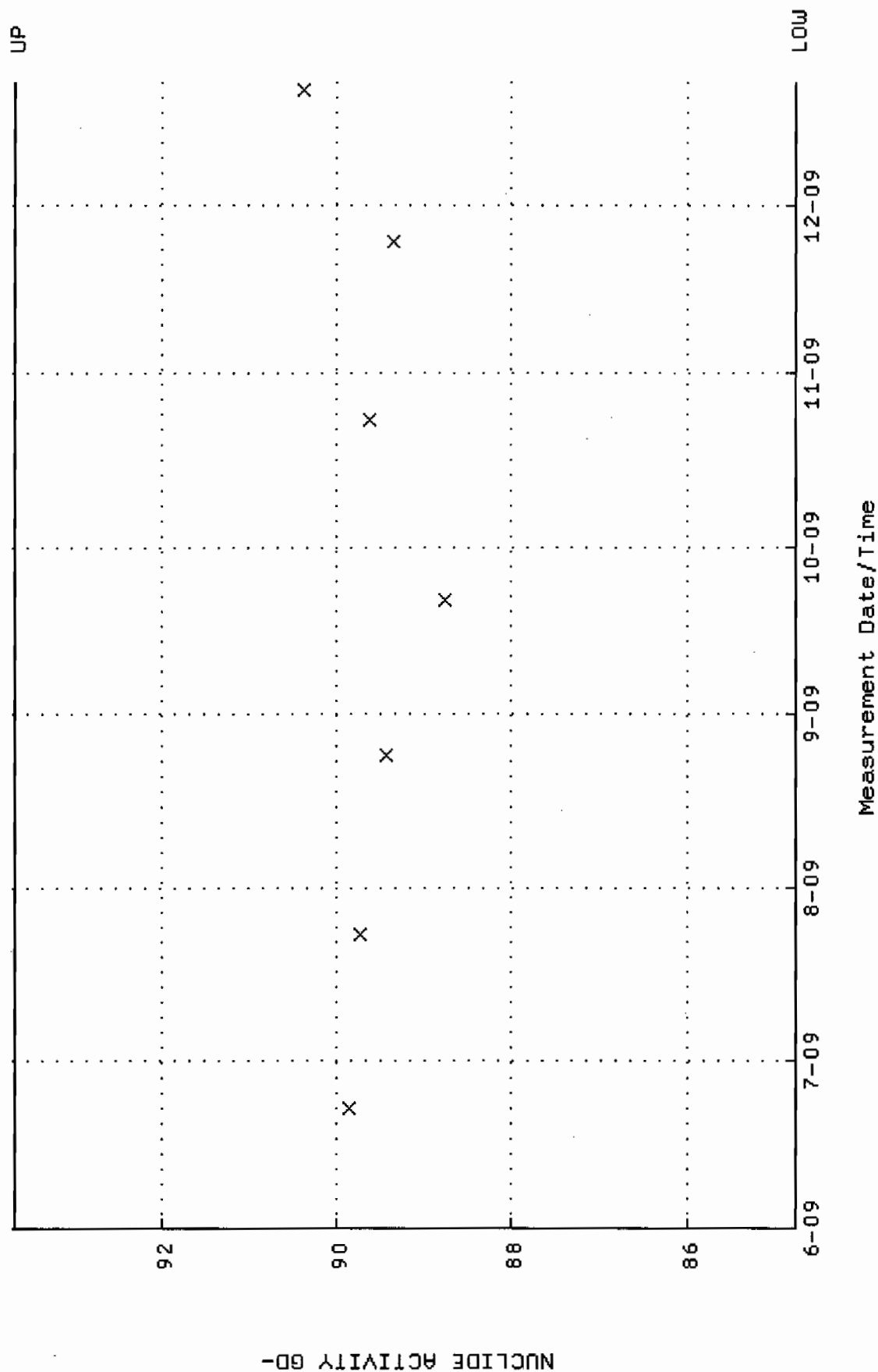


QA filename : DKA100:[ENV\_ALPHA.QA.W]W171.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 22-JUN-2009 09:49:50 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.375364 through 0.395364



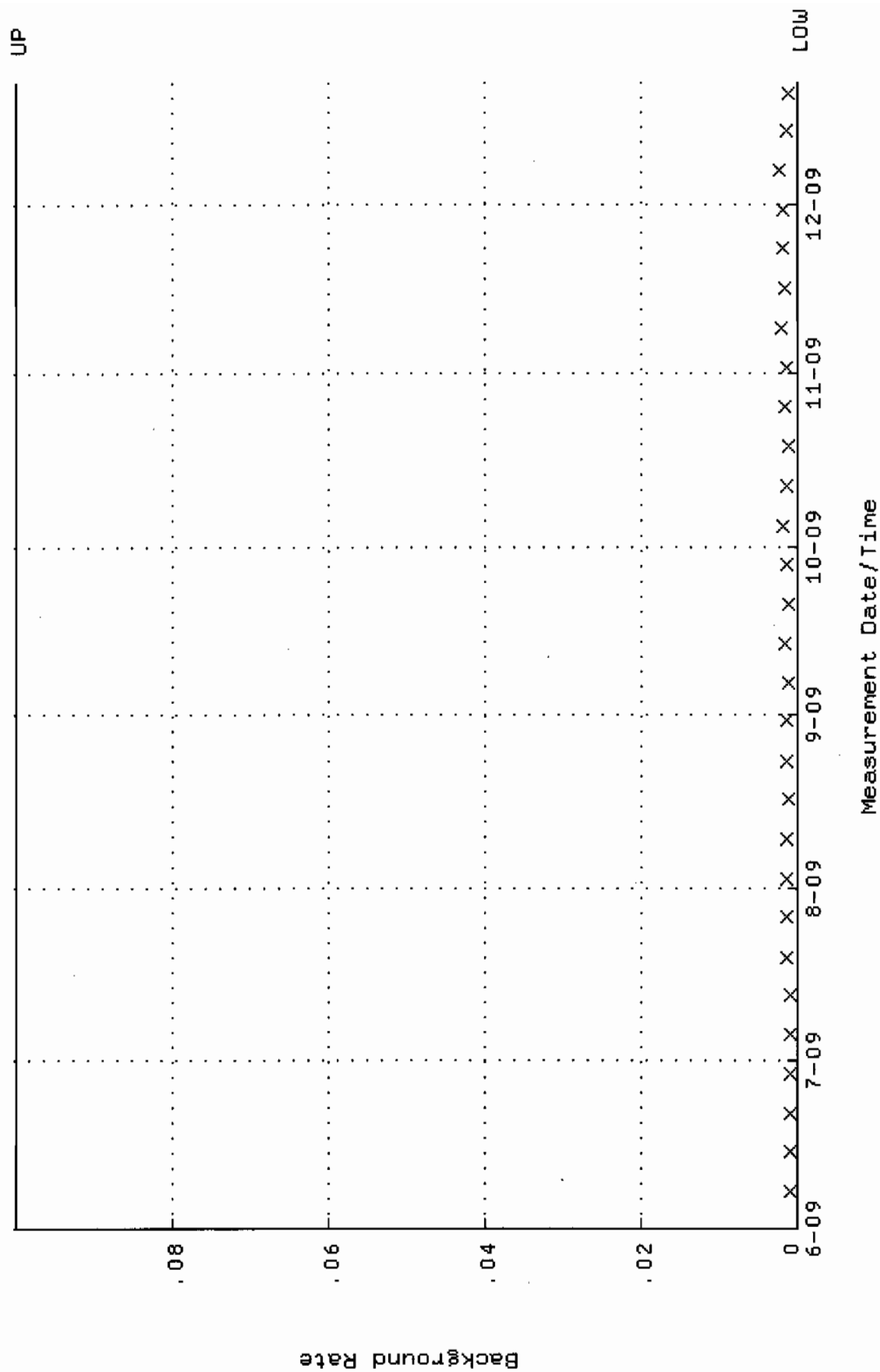


QA filename : DKA100:[ENV\_ALPHA.QA.W]w171.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 22-JUN-2009 09:49:50 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 84.7539 through 93.6753



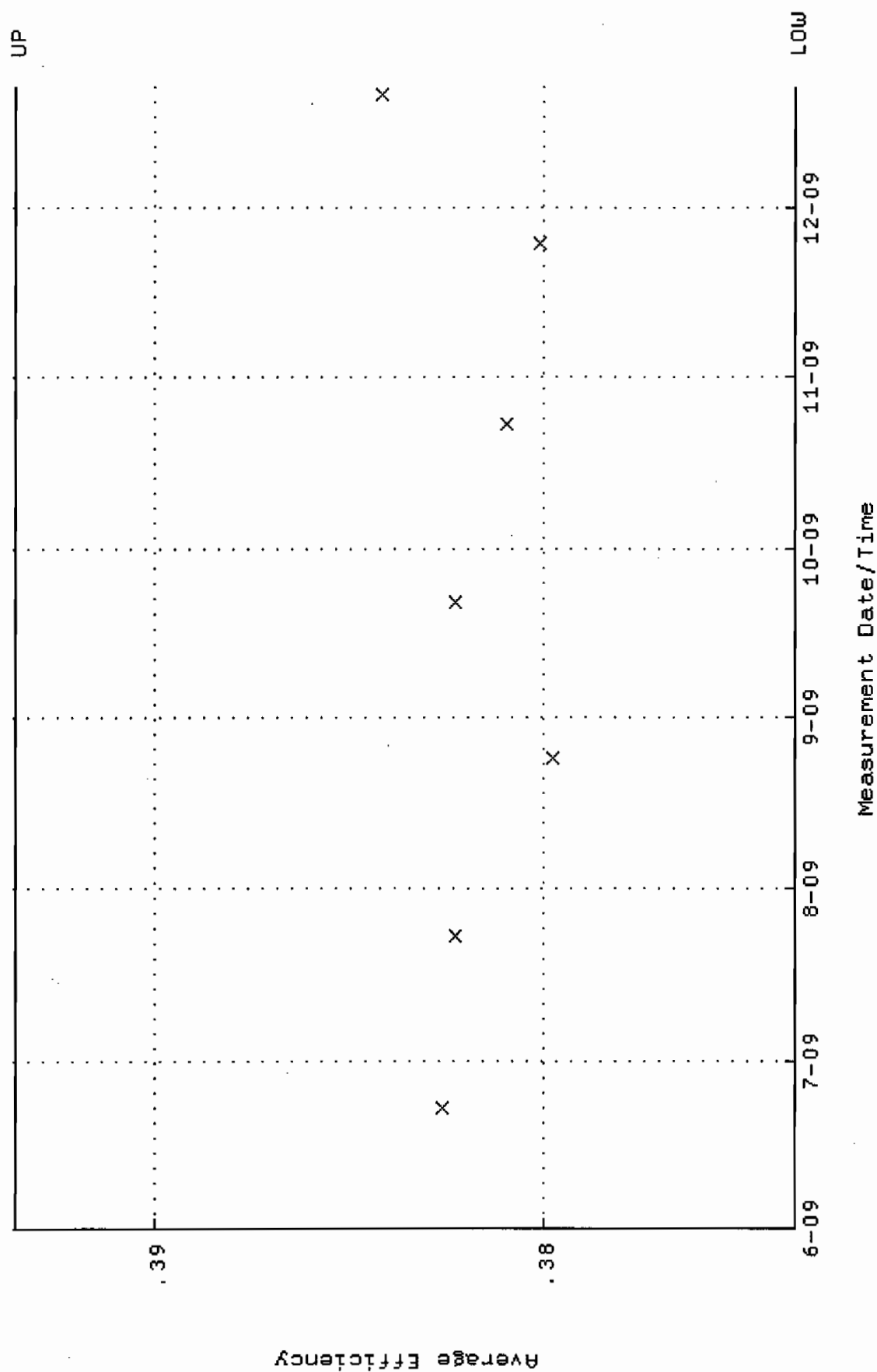


QA filename : DKA100:[ENV\_ALPHA.QA.B]B171.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:12:40 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



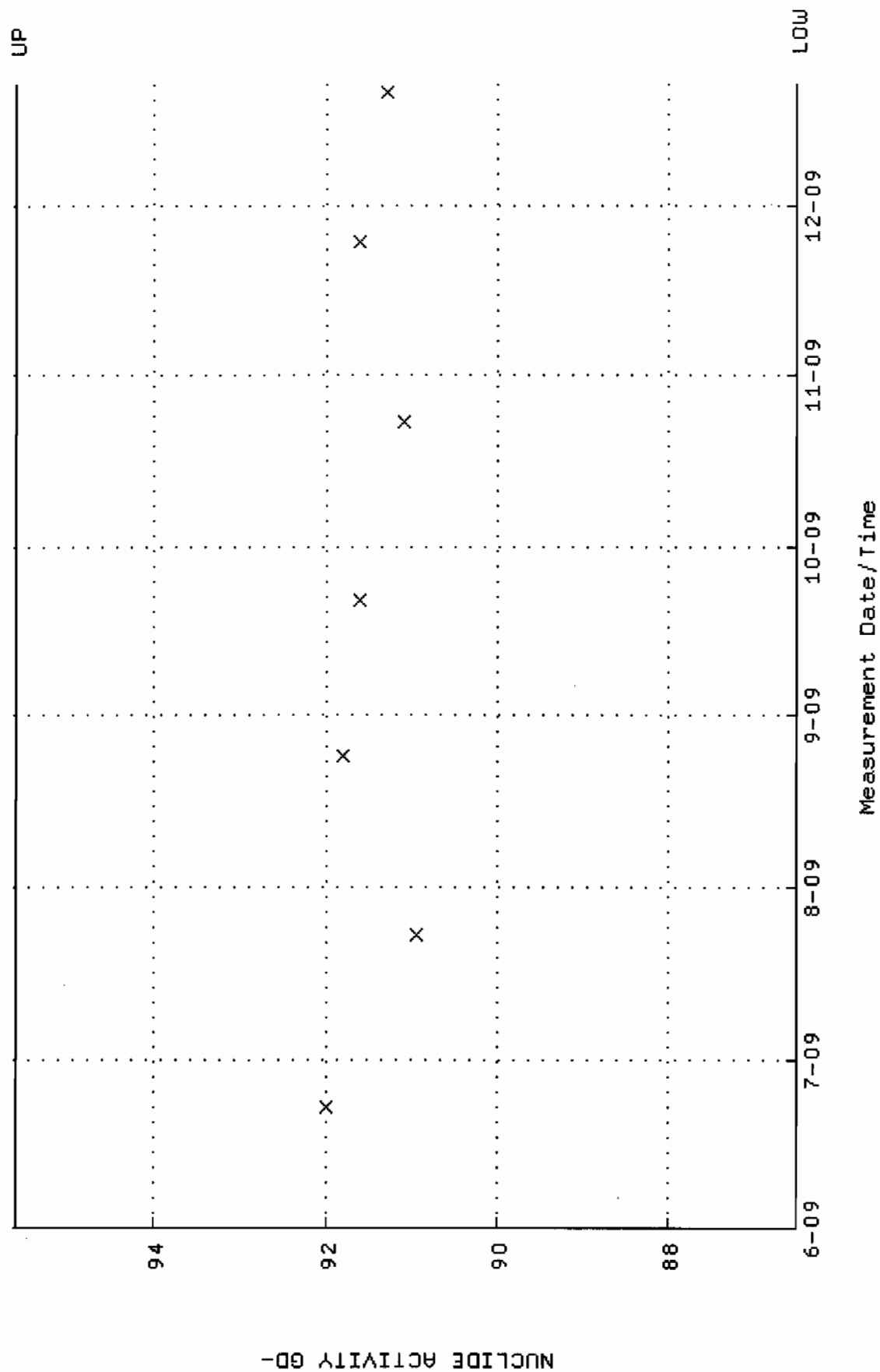


QA filename : DKA100:[ENV\_ALPHA.QA.W]W172.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 22-JUN-2009 09:49:55 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.373575 through 0.393575



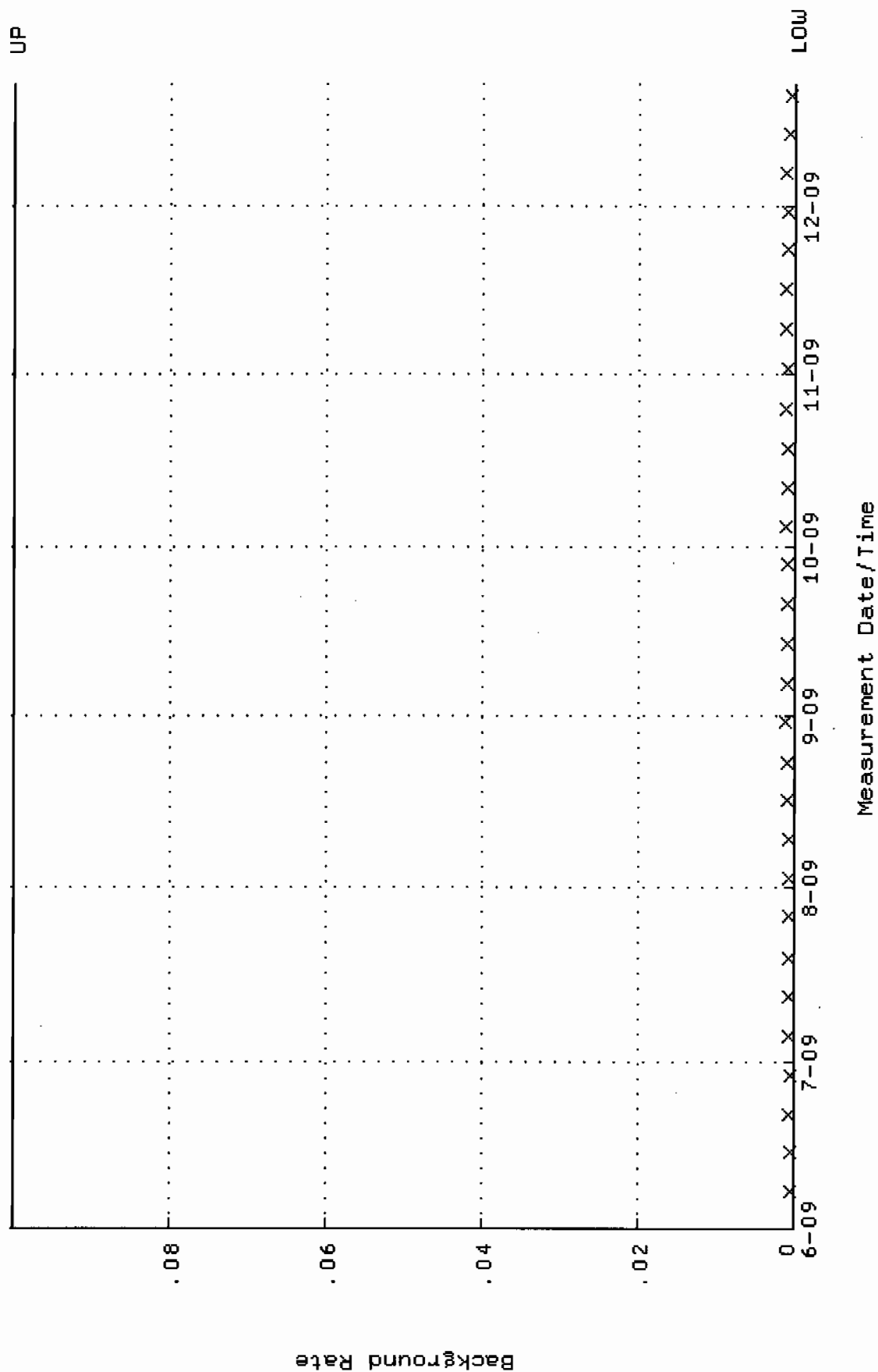


QA filename : DKA100:[ENV\_ALPHA.QA.W]W172.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 22-JUN-2009 09:49:55 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 86.5089 through 95.6151



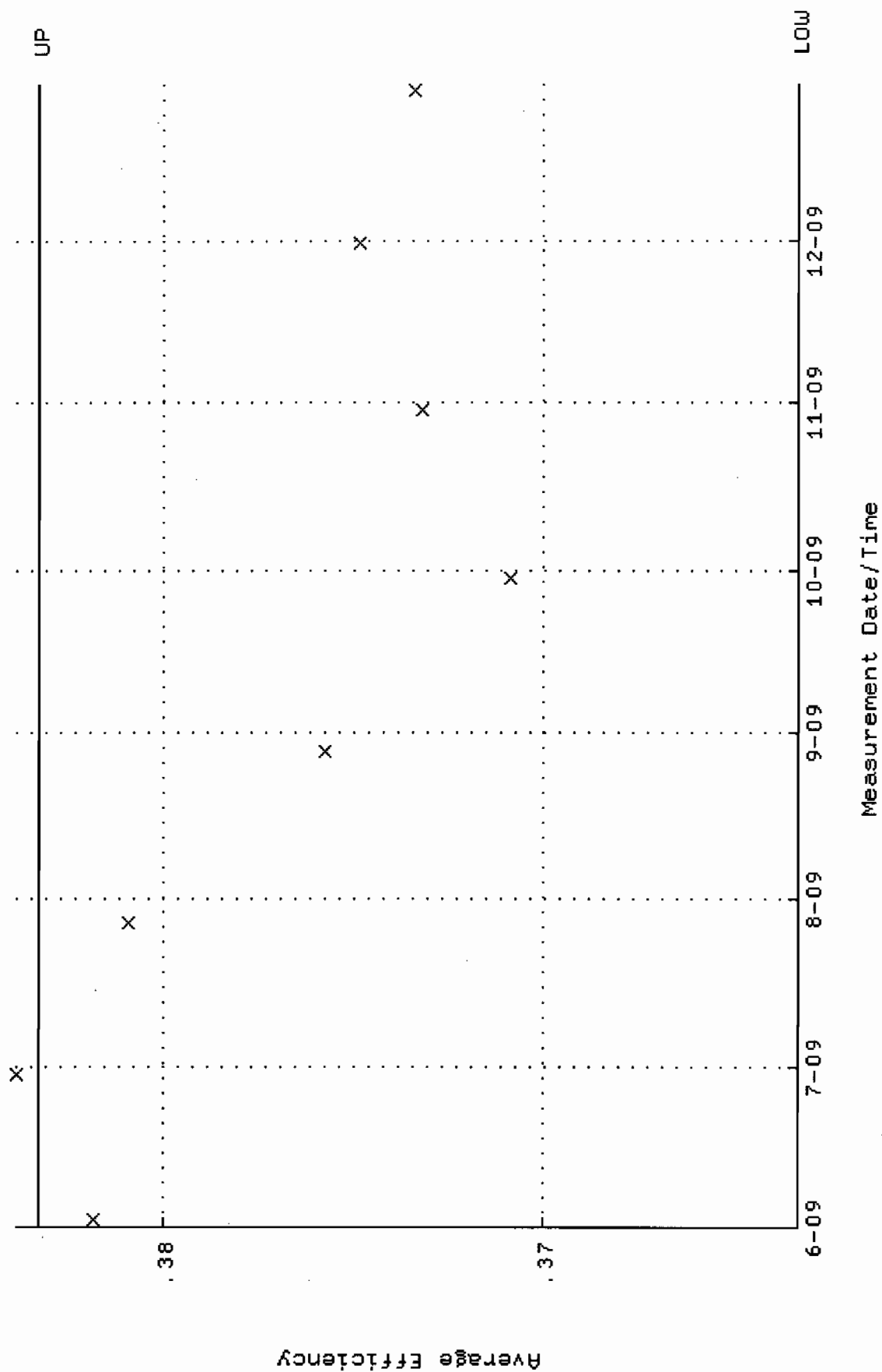


QA filename : DKA100:[ENV\_ALPHA.QA.B]B172.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:12:44 through 22-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



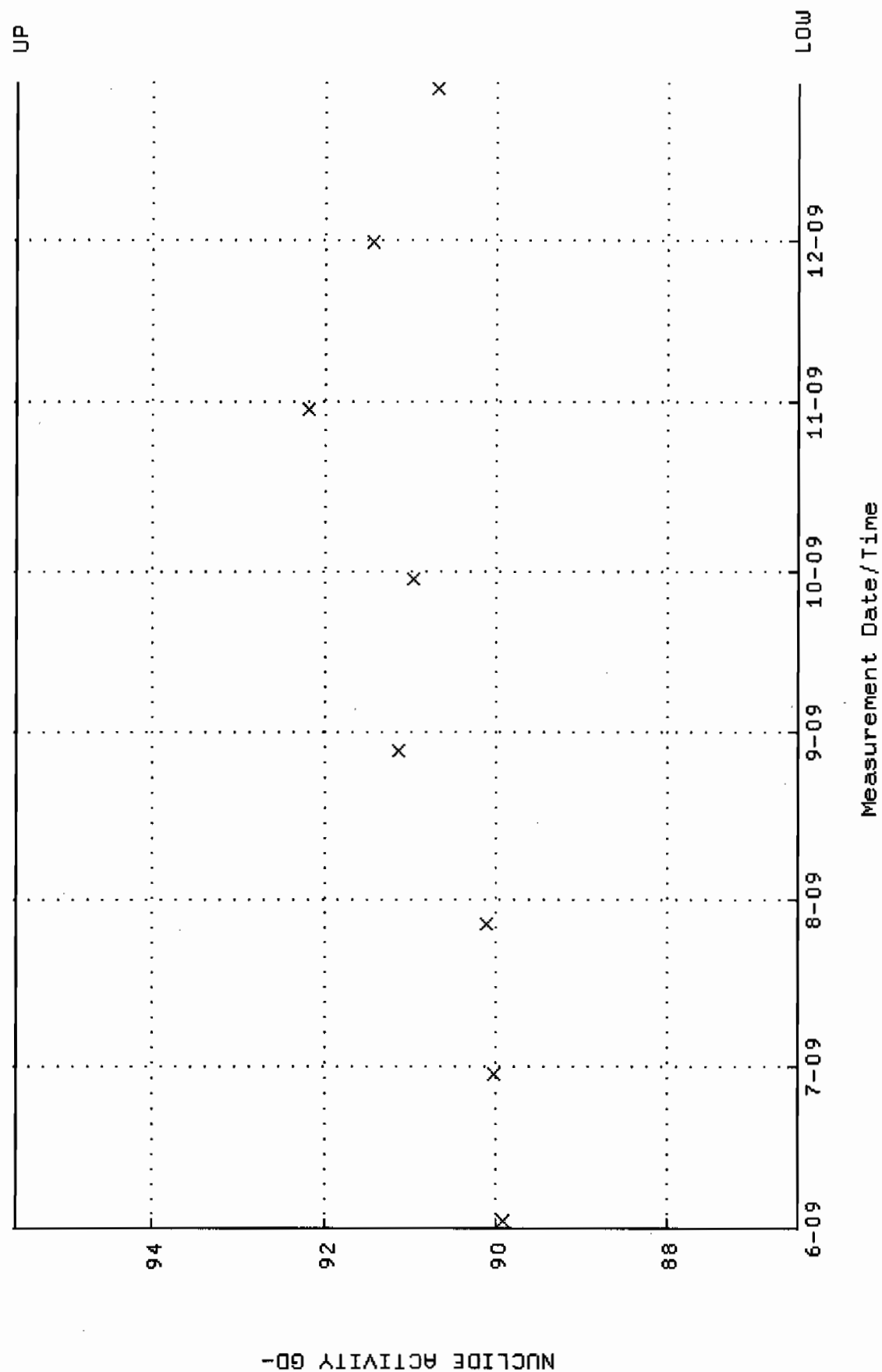


QA filename : DKA100: [ENV\_ALPHA.QA.W]W226.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:36 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.363285 through 0.383285



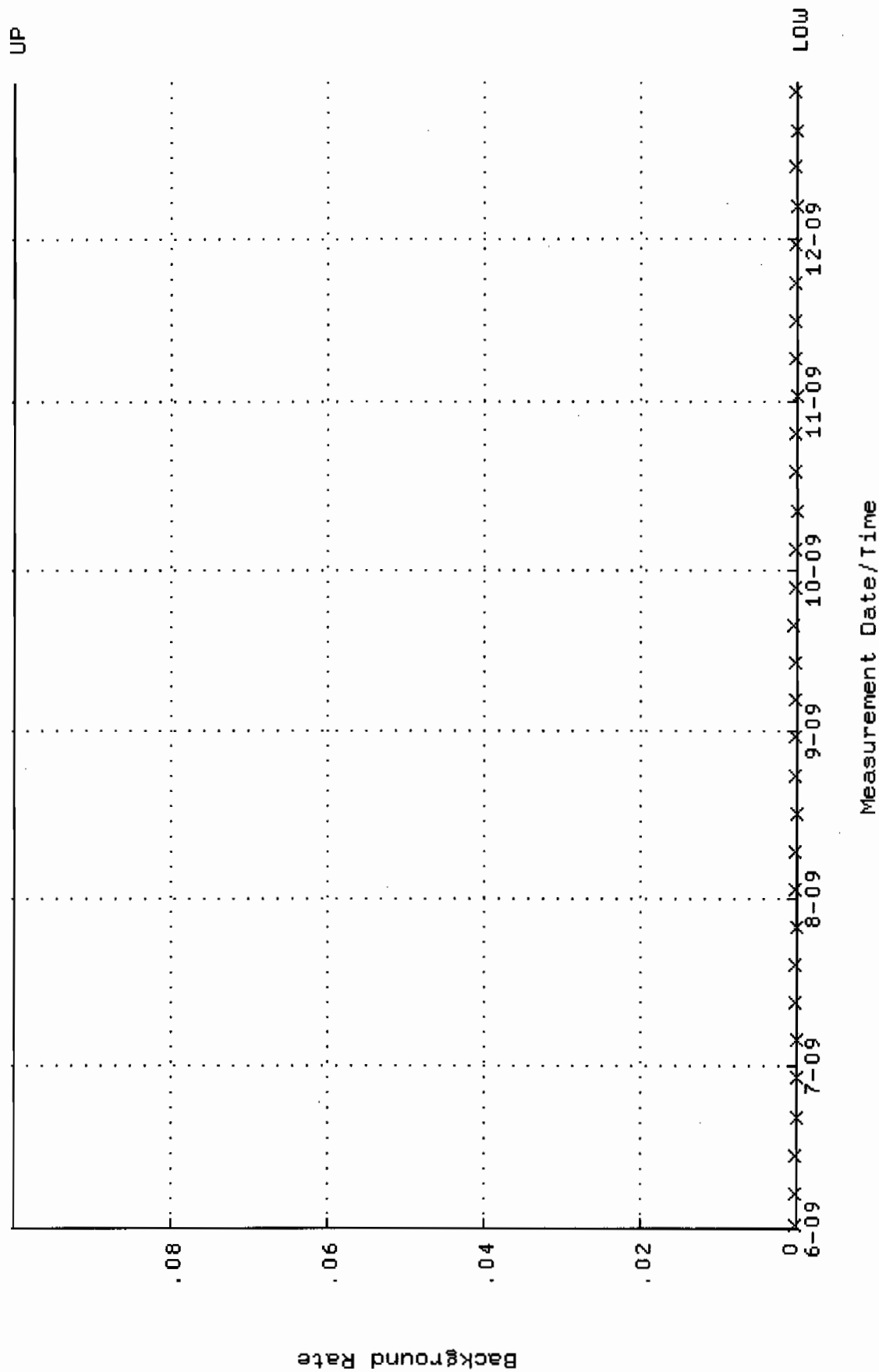


QA filename : DKA100:[ENV\_ALPHA.QA.W]W226.QAF;1  
 Parameter Name : NLACTVY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:36 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 86.4888 through 95.5928



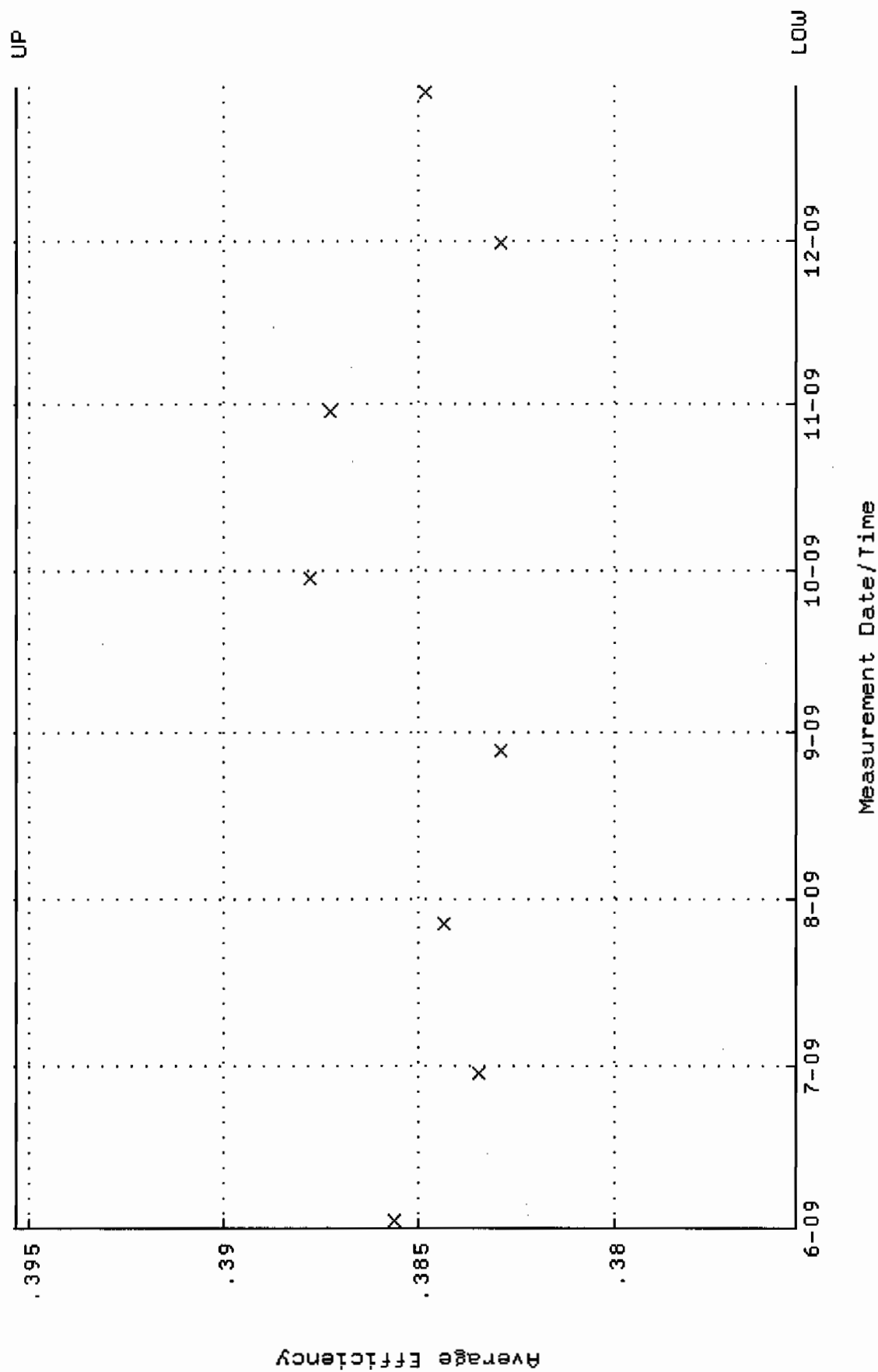


QA filename : DKA100:[ENV\_ALPHA.QA.B]B226.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:44:47 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



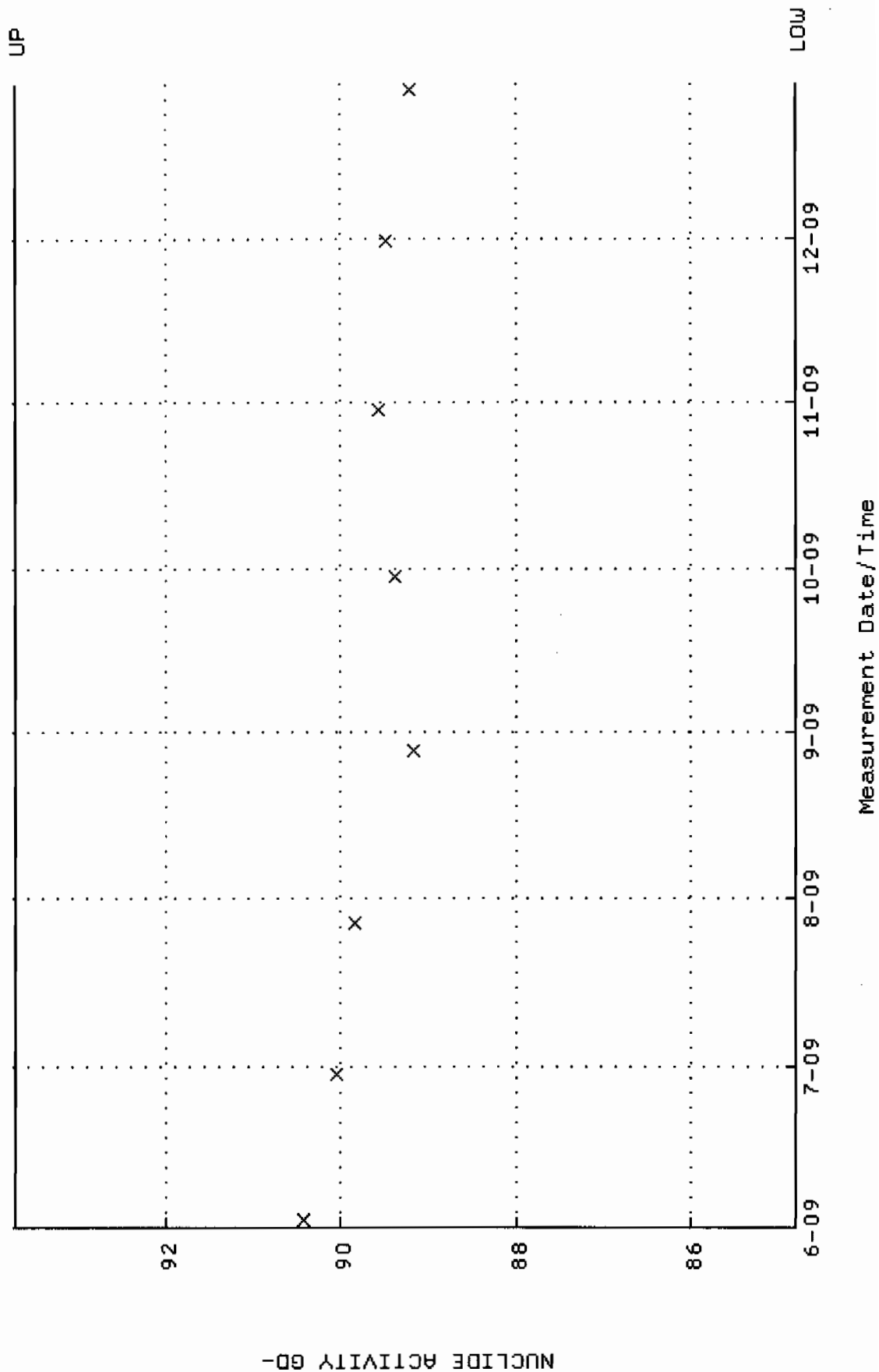


QA filename : DKA100:[ENV\_ALPHA.QA.W]W227.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:41 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.375328 through 0.395328



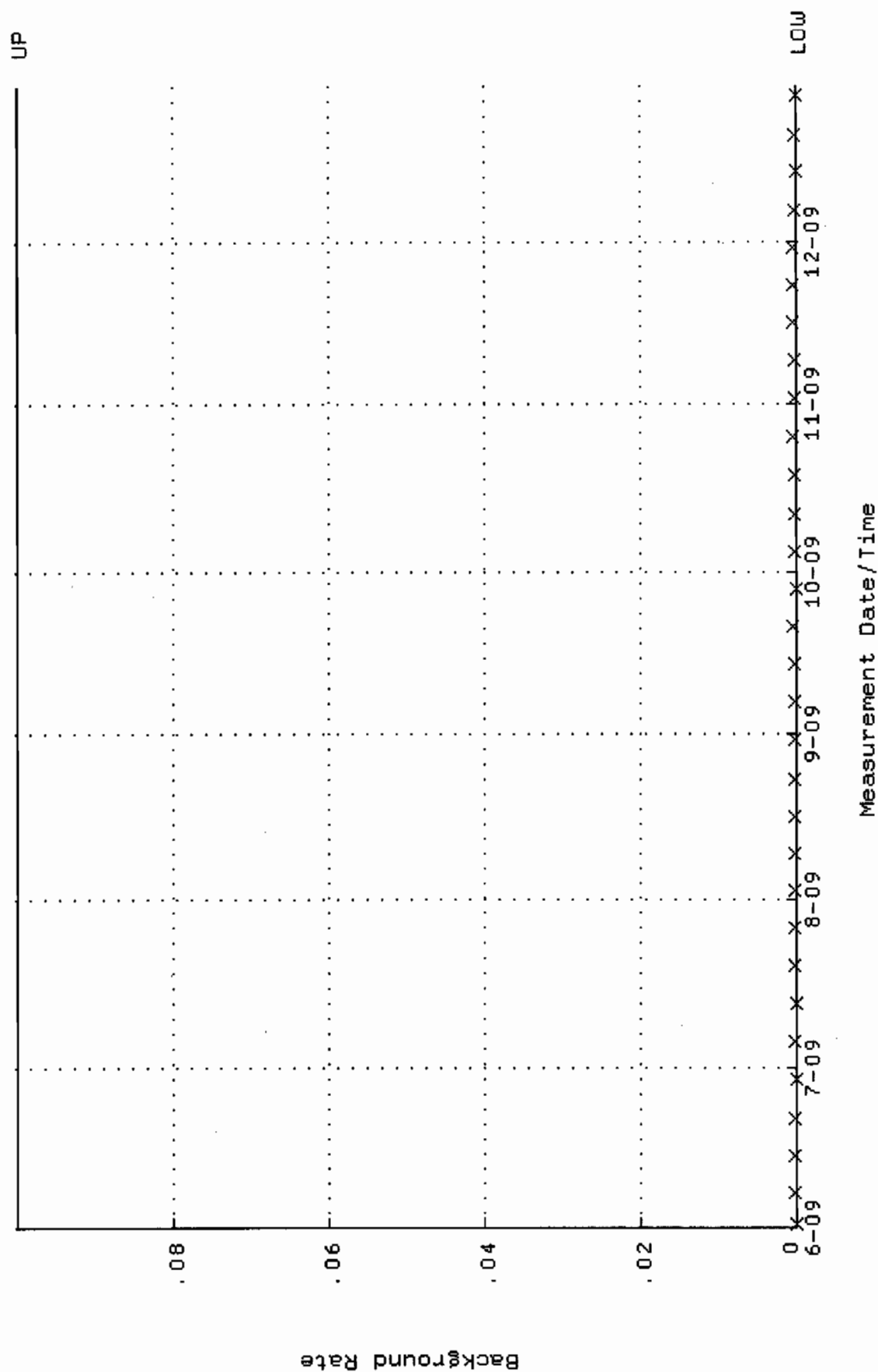


QA filename : DKA100:[ENV\_ALPHA.QA.W]W227.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:41 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 84.8011 through 93.7275



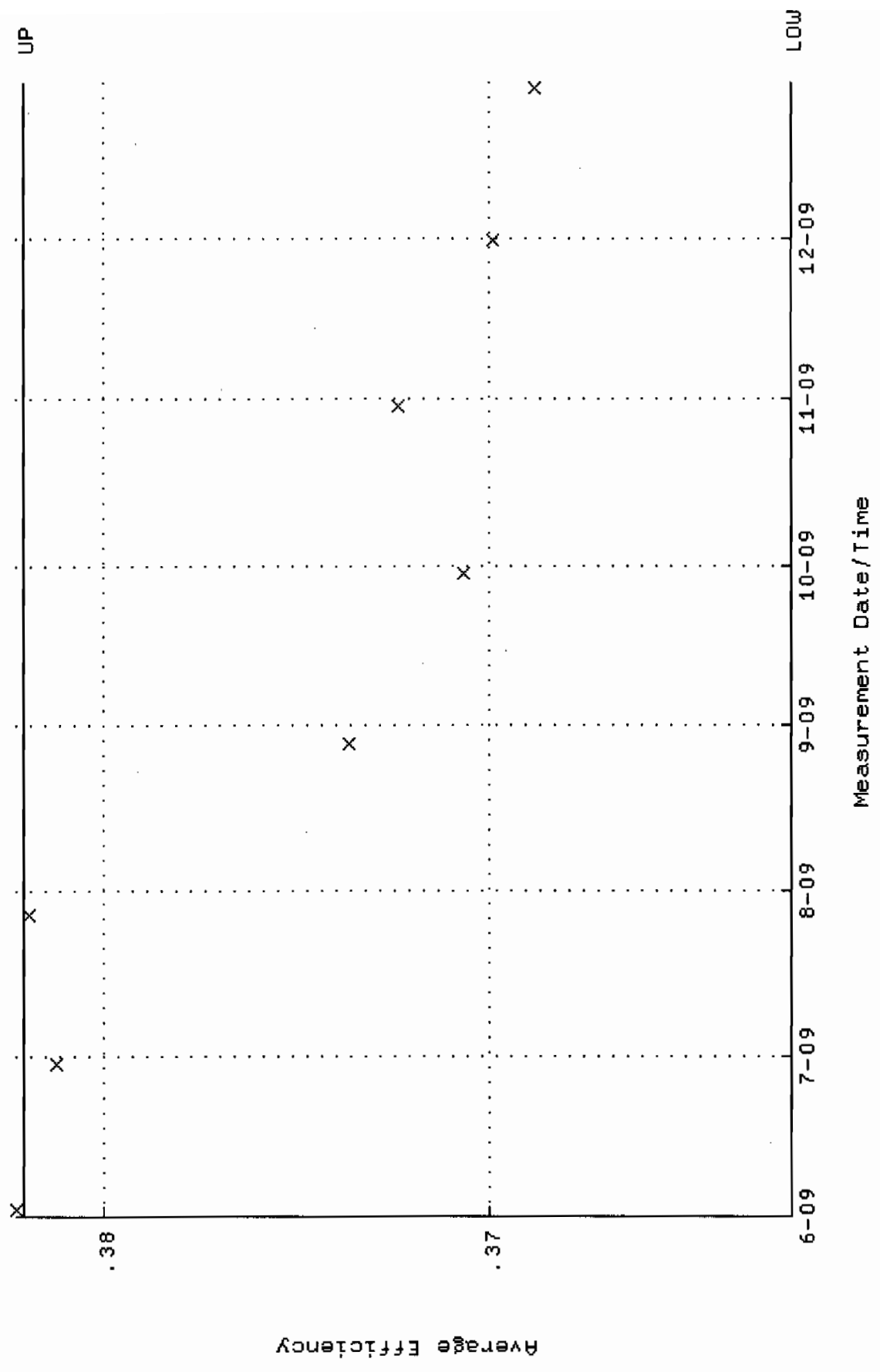


QA filename : DKA100:[ENV\_ALPHA.QA.B]B227.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:44:52 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



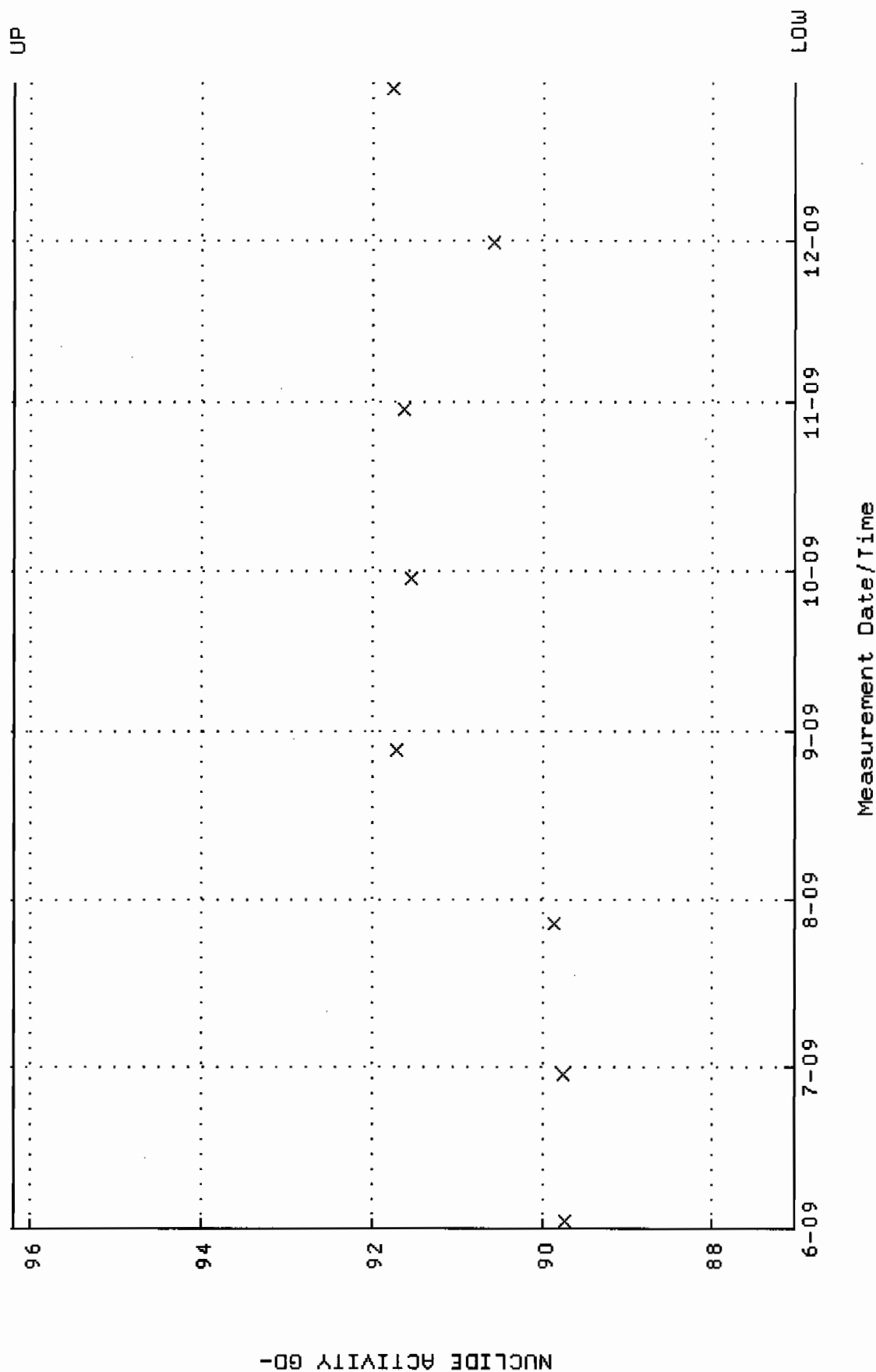


QA filename : DKA100:[ENV\_ALPHA.QA.w]w228.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:47 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.362134 through 0.382134



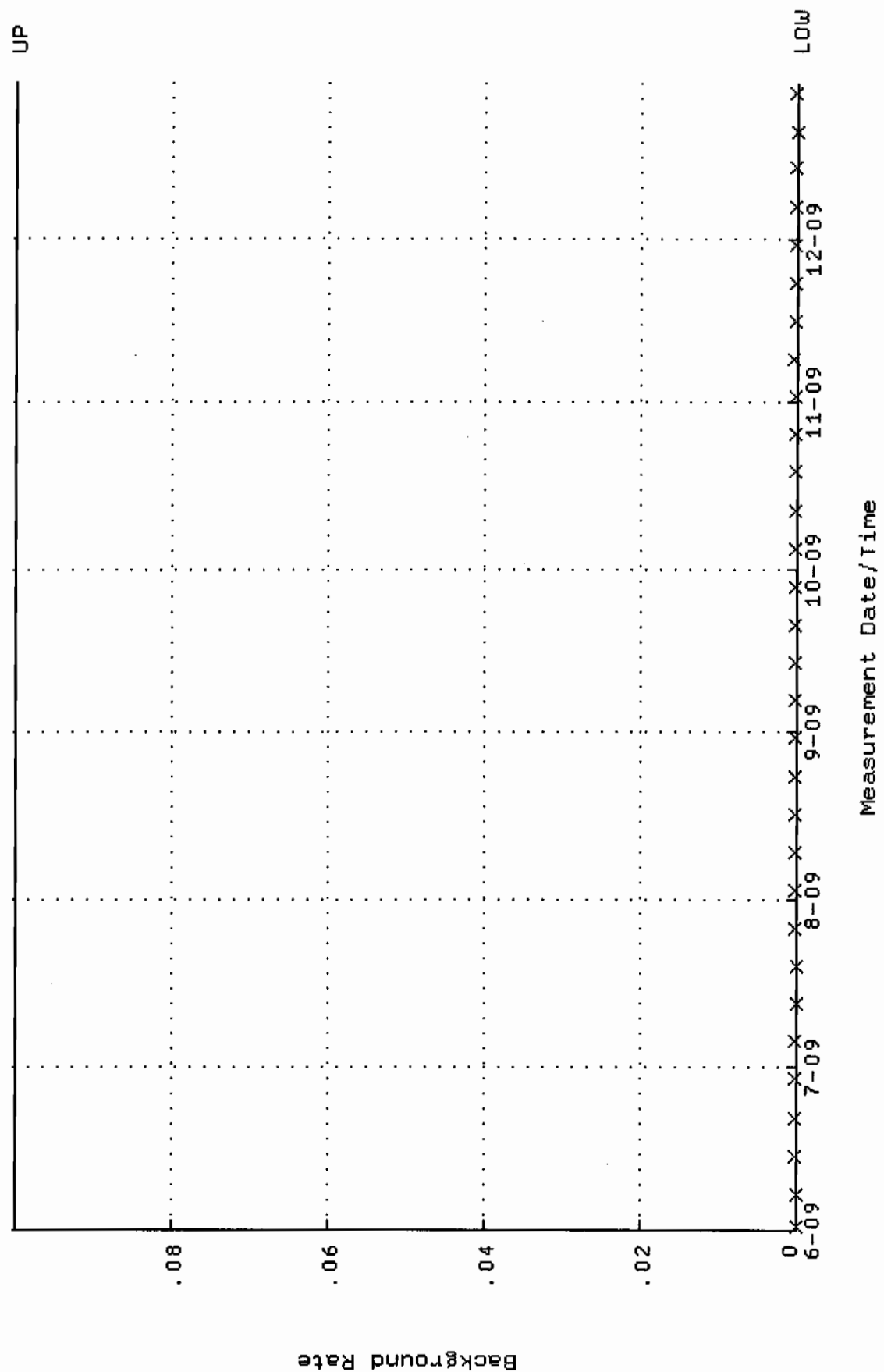


QA filename : DKA100:[ENV\_ALPHA.QA.W]W228.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:47 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 87.0370 through 96.1988



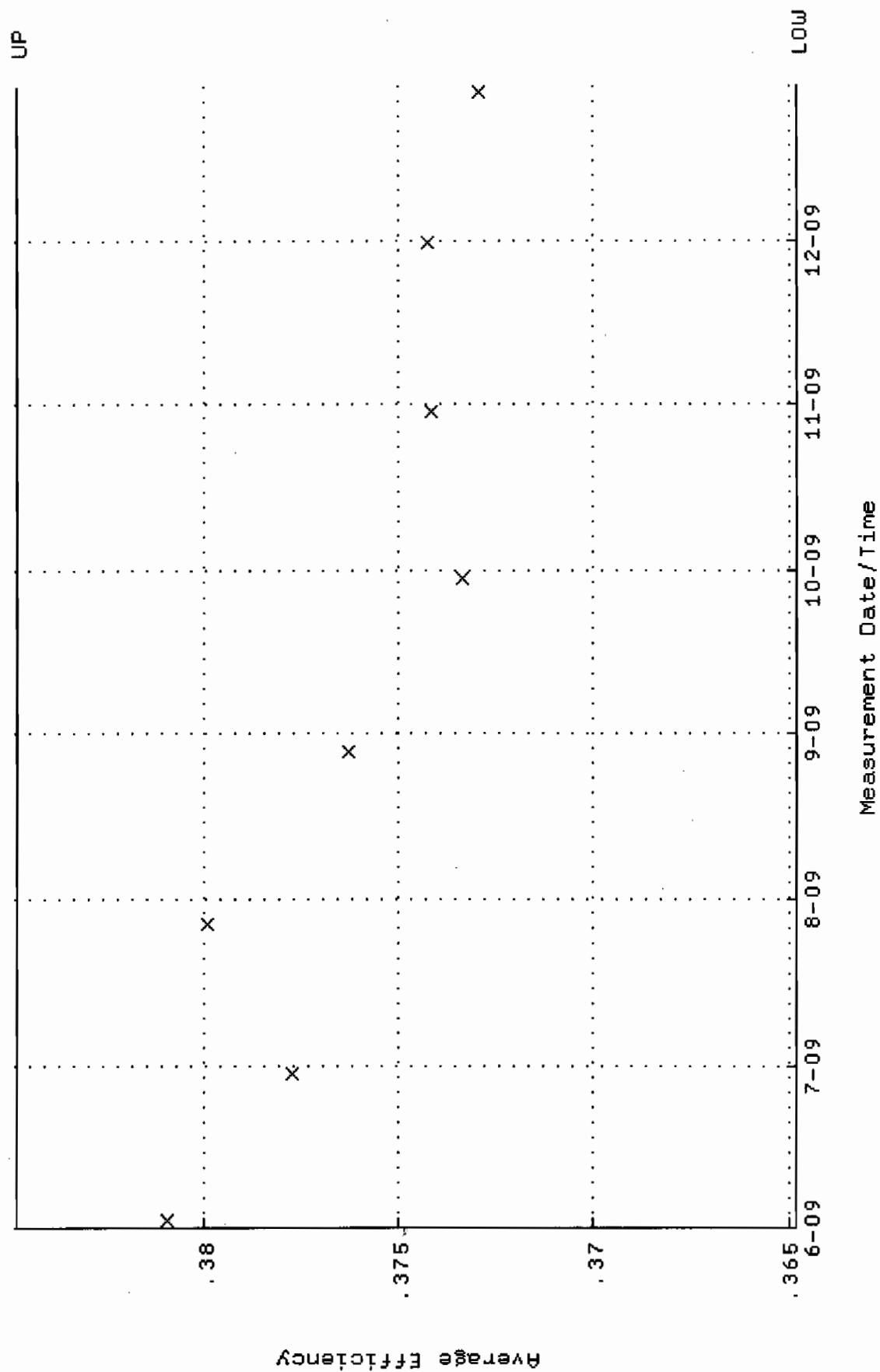


QA filename : DKA100:[ENV\_ALPHA.QA.B]B228.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:44:57 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



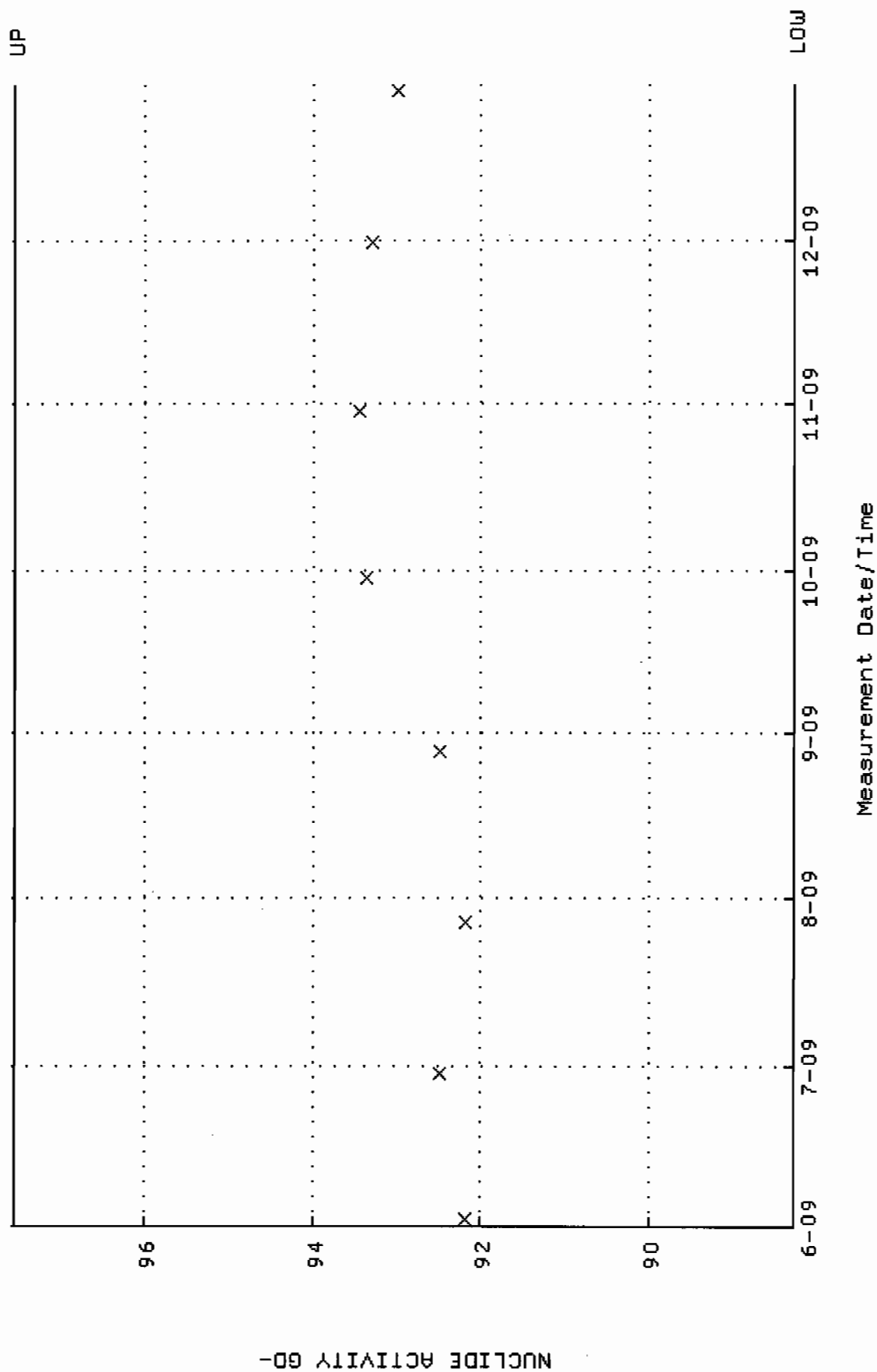


QA filename : DKA100:[ENV-ALPHA.QA.W]W229.QAF;1  
 Parameter Name : AVREFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:53 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.364789 through 0.384789



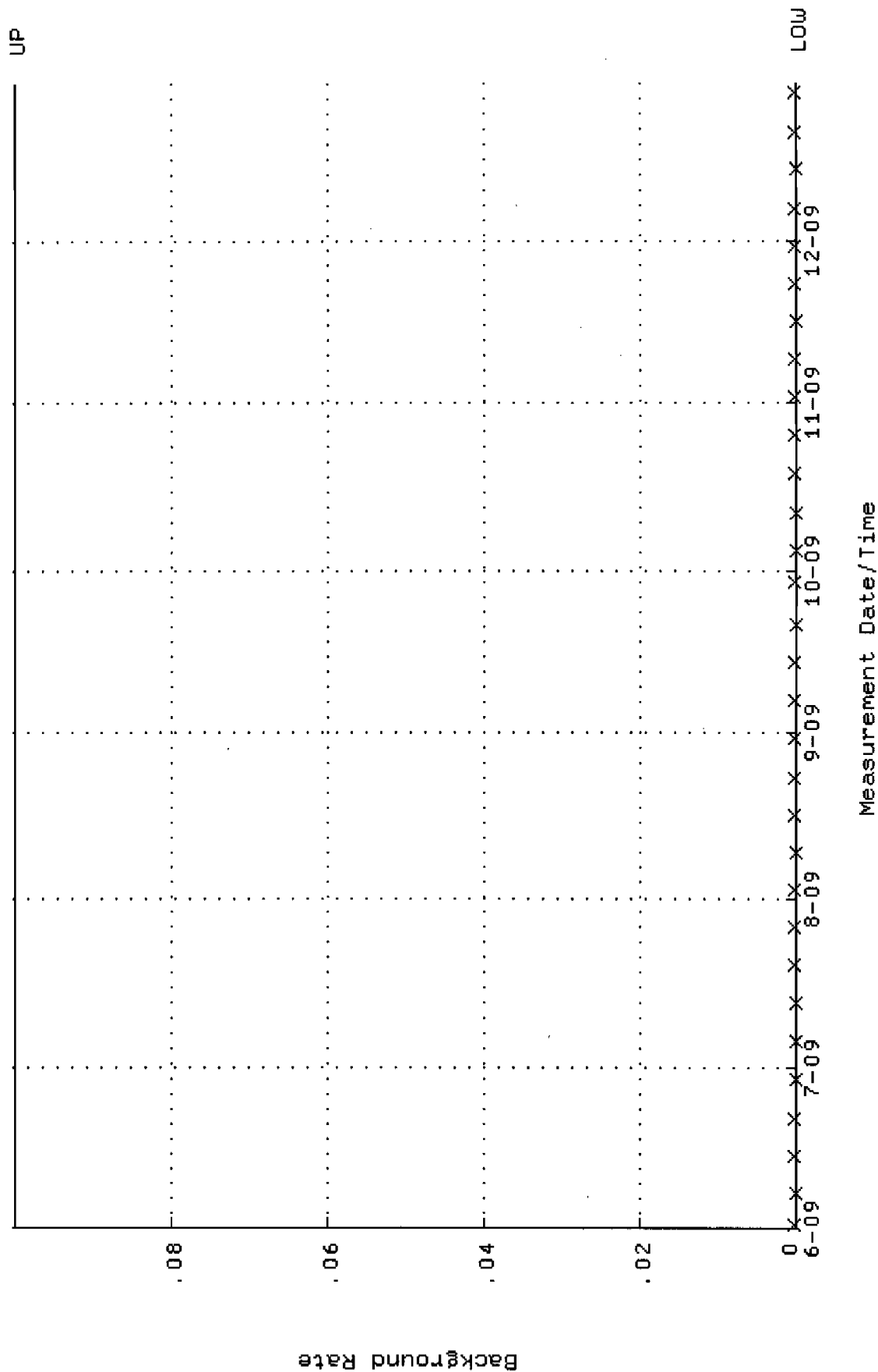


QA filename : DKA100:[ENV\_ALPHA.QA.W]W229.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:53 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 88.2691 through 97.5605



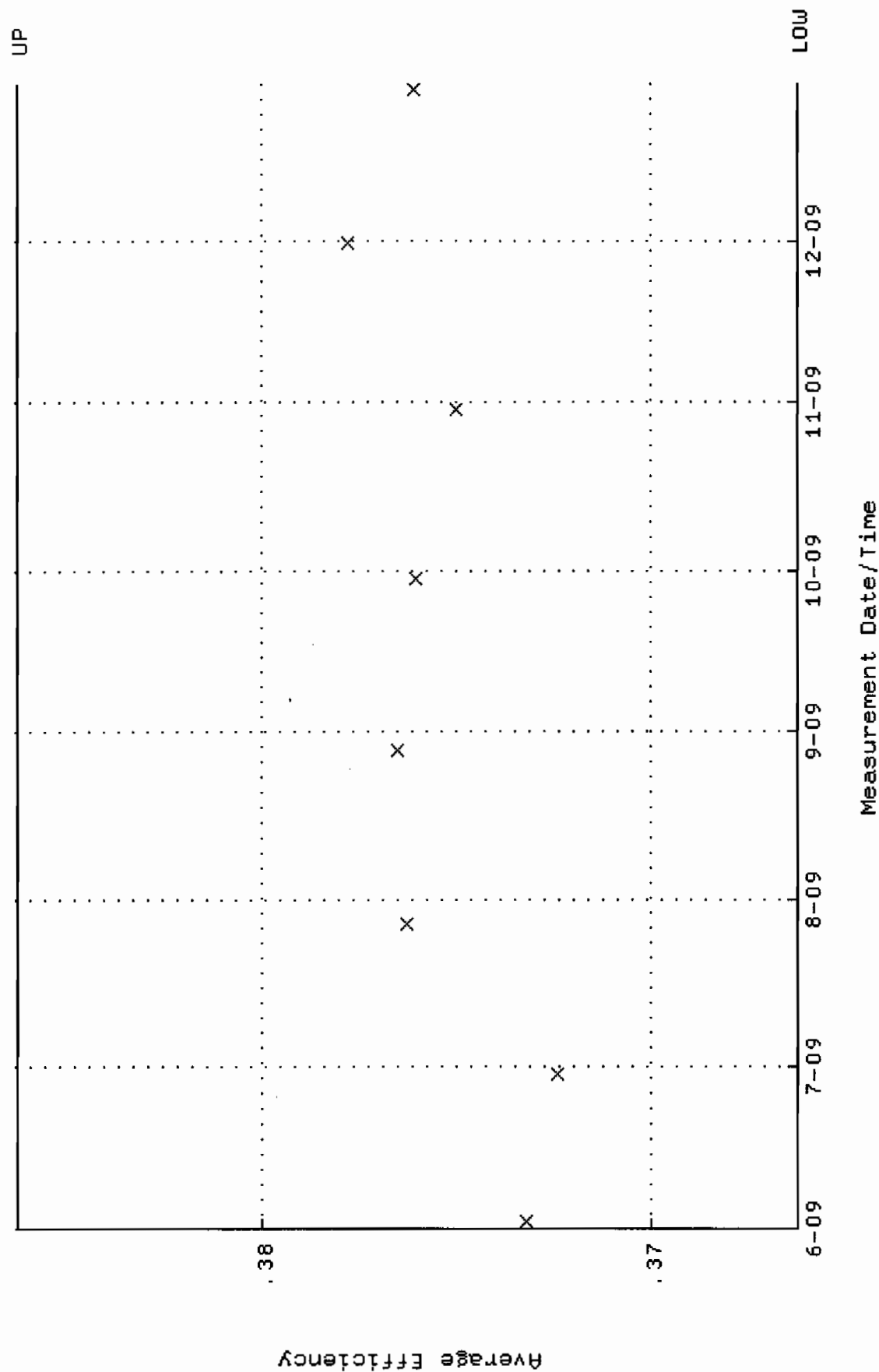


QA filename : DKA100:[ENV\_ALPHA.QA.B]B229.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:45:01 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



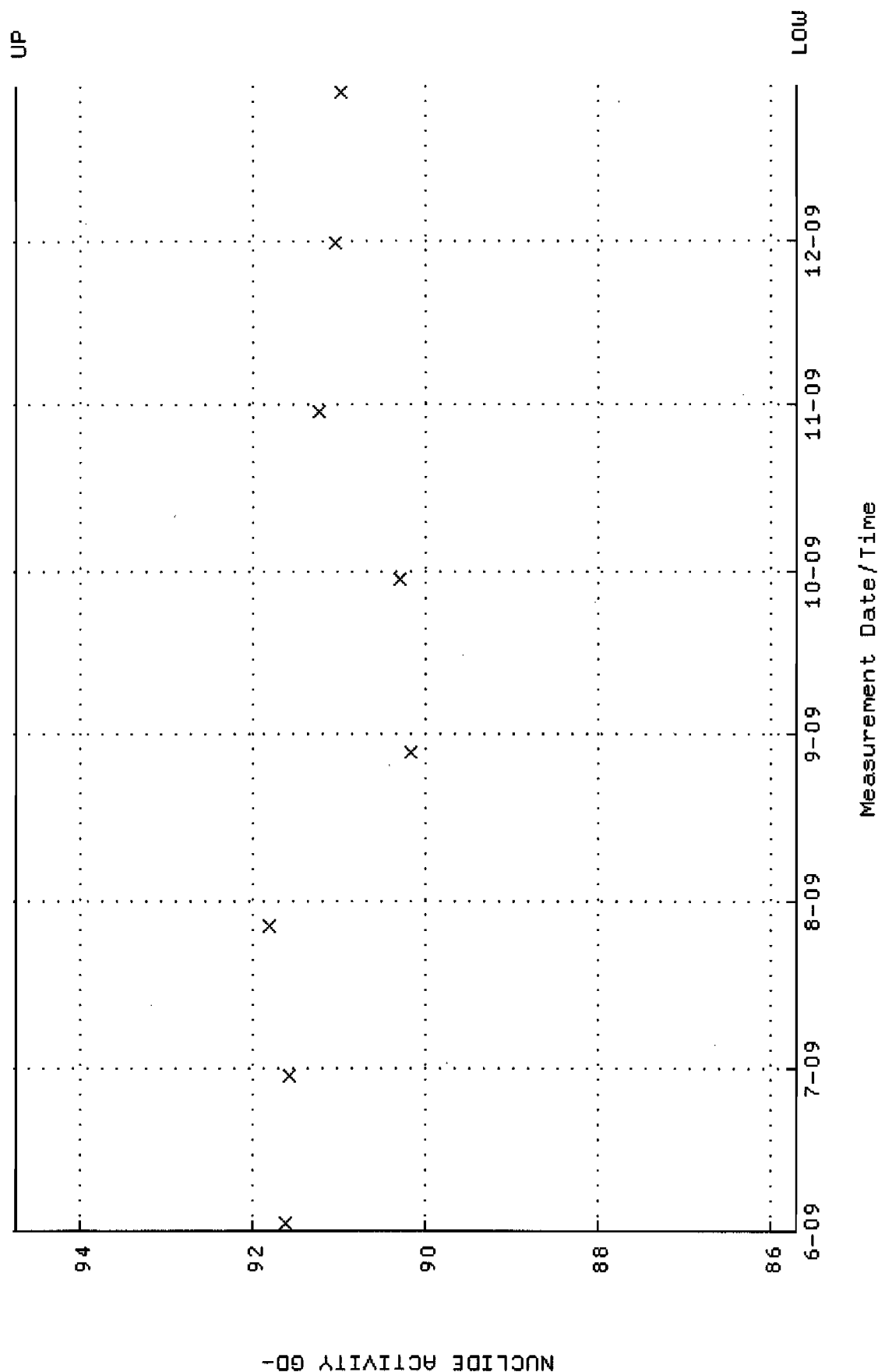


QA filename : DKA100:[ENV\_ALPHA.QA.W]W230.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:58 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.366240 through 0.386240



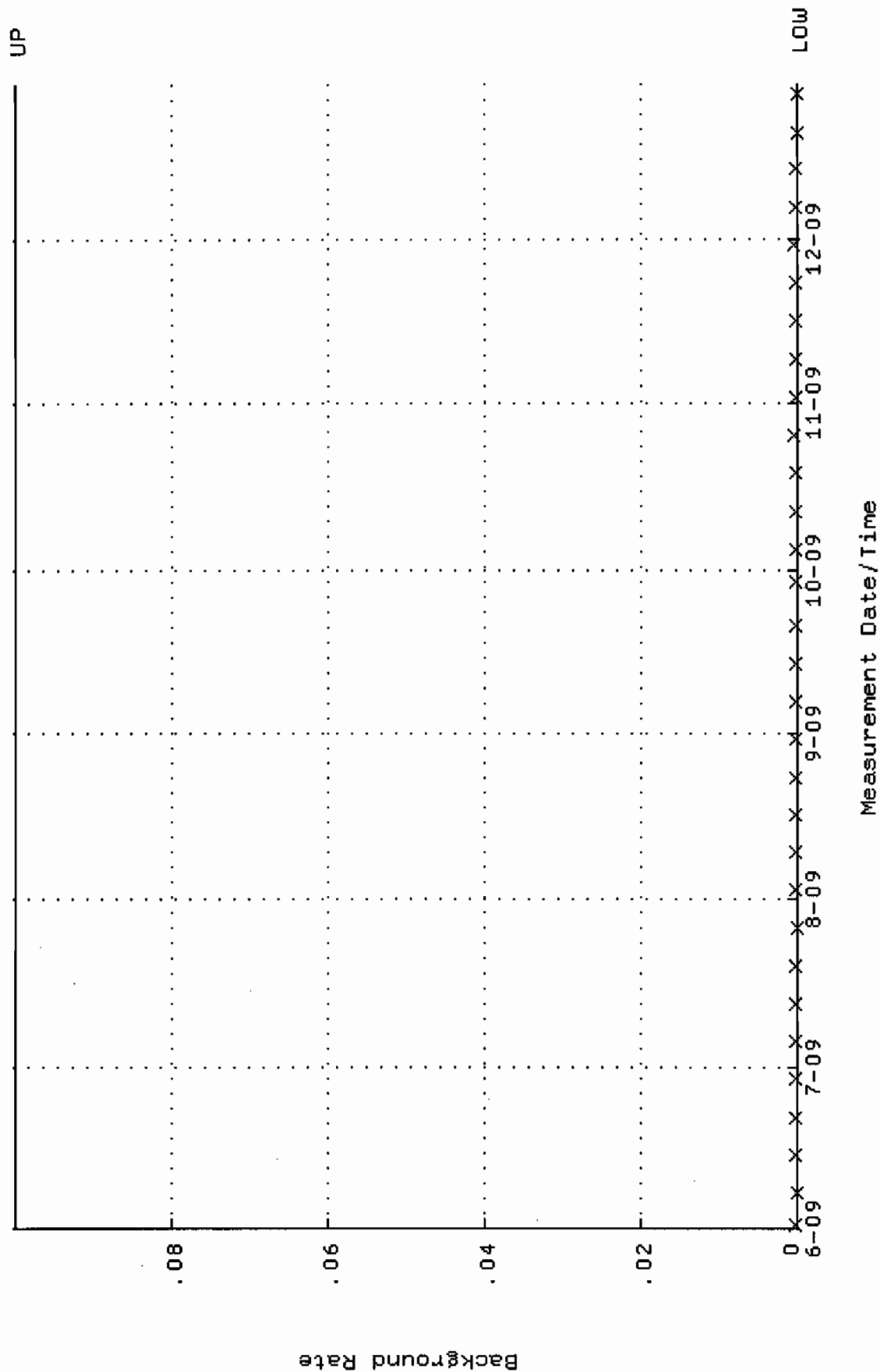


QA filename : DKA100:[ENV\_ALPHA.QA.W]W230.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:58 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 85.7127 through 94.7351



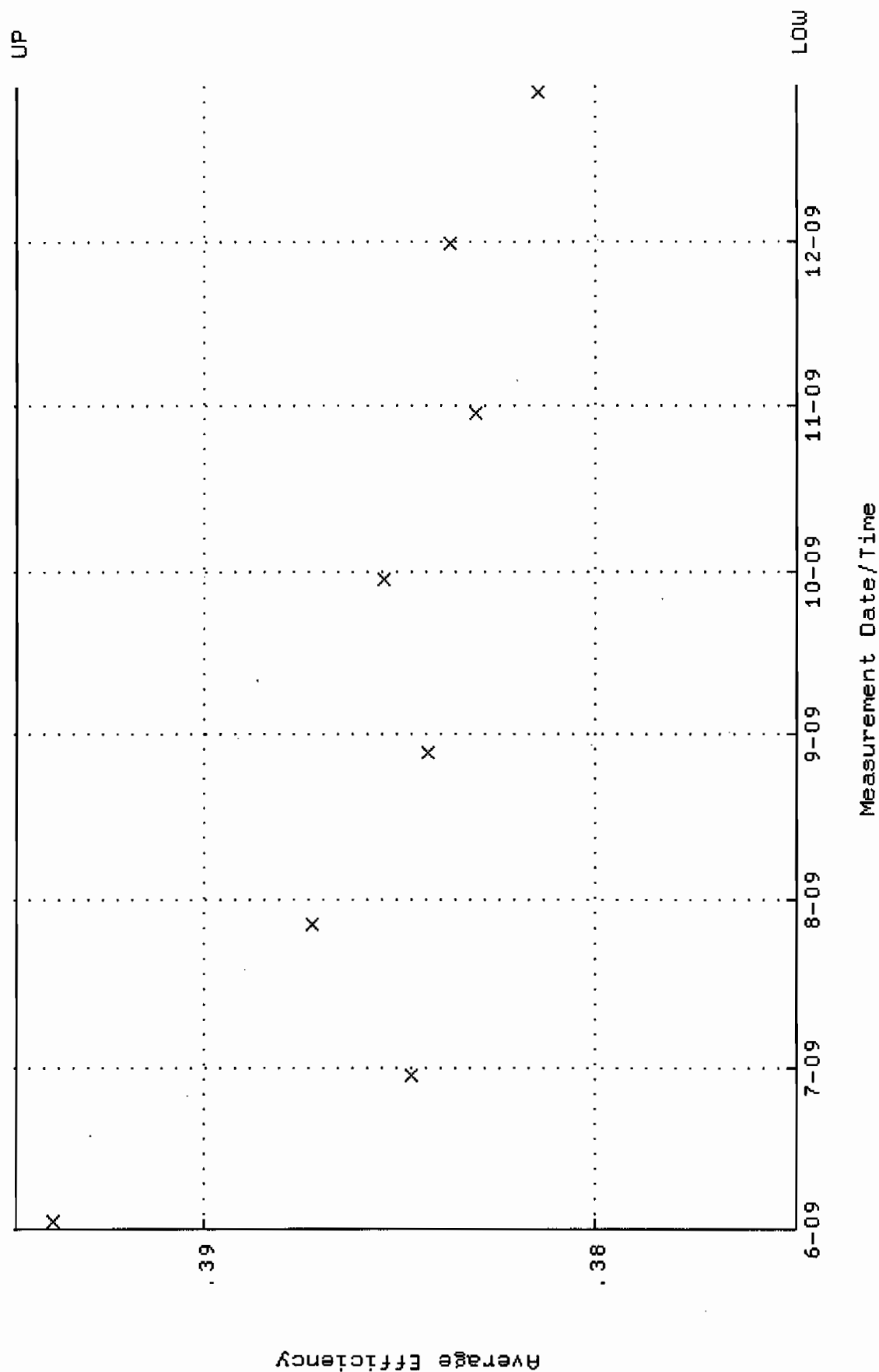


QA filename : DKA100:[ENV\_ALPHA.QA.B]B230.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:45:05 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



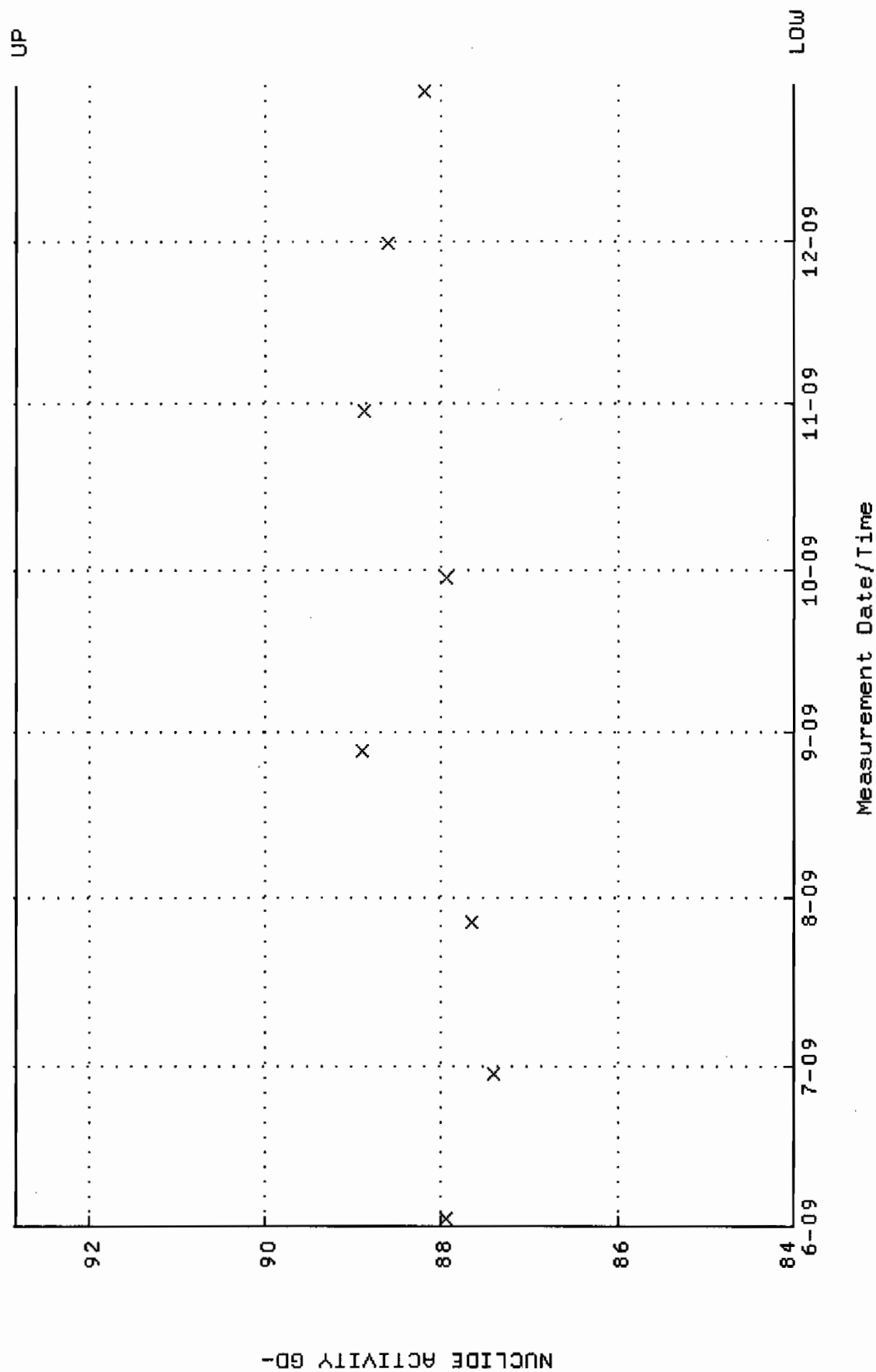


QA filename : DKA100:[ENV-ALPHA.QA.W]W242.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:19:56 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.374815 through 0.394815



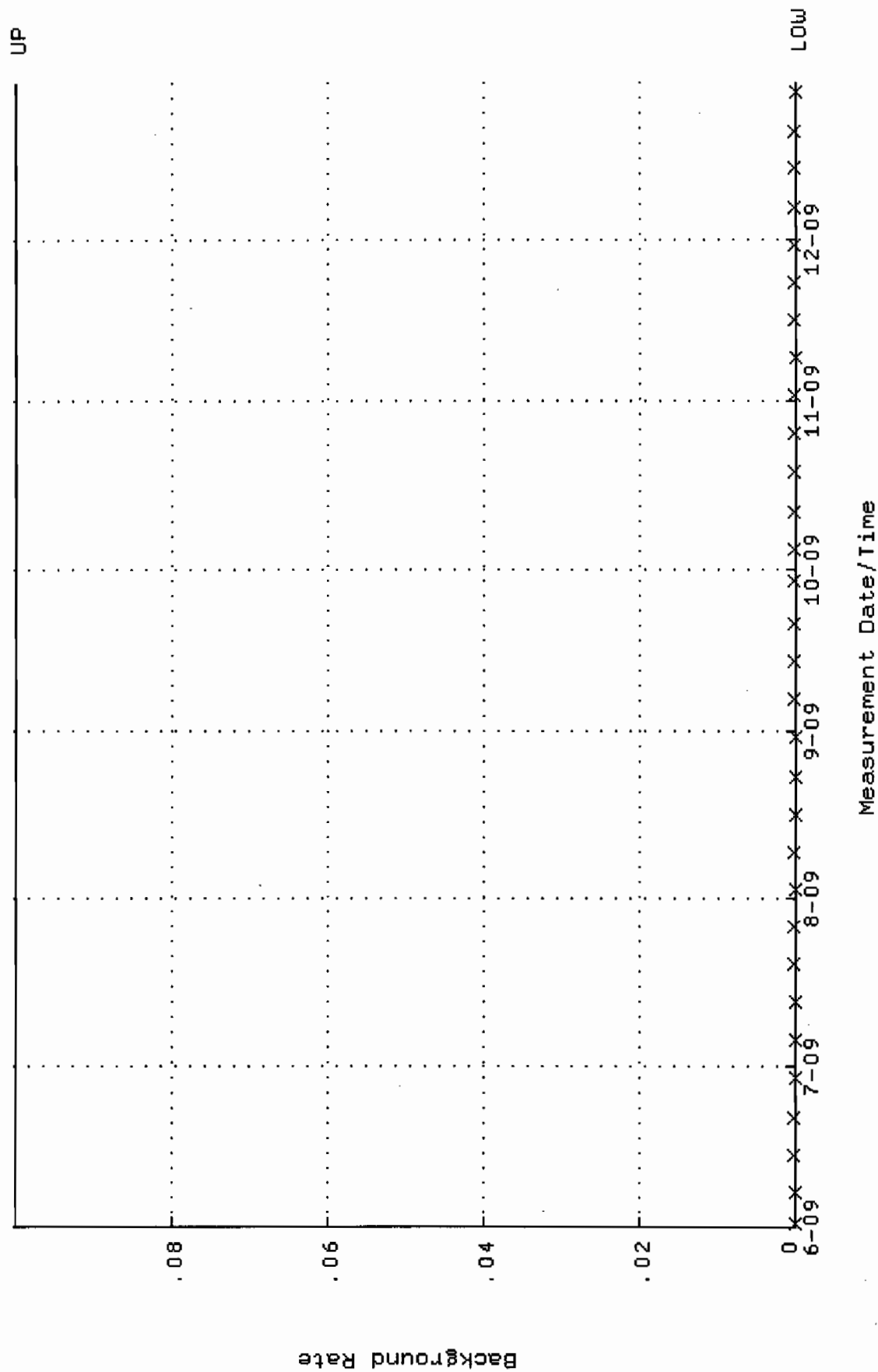


QA filename : DKA100:[ENV-ALPHA.QA.W]W242.QAF;1  
 Parameter Name : NLAactivity-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:19:56 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 83.9949 through 92.8365



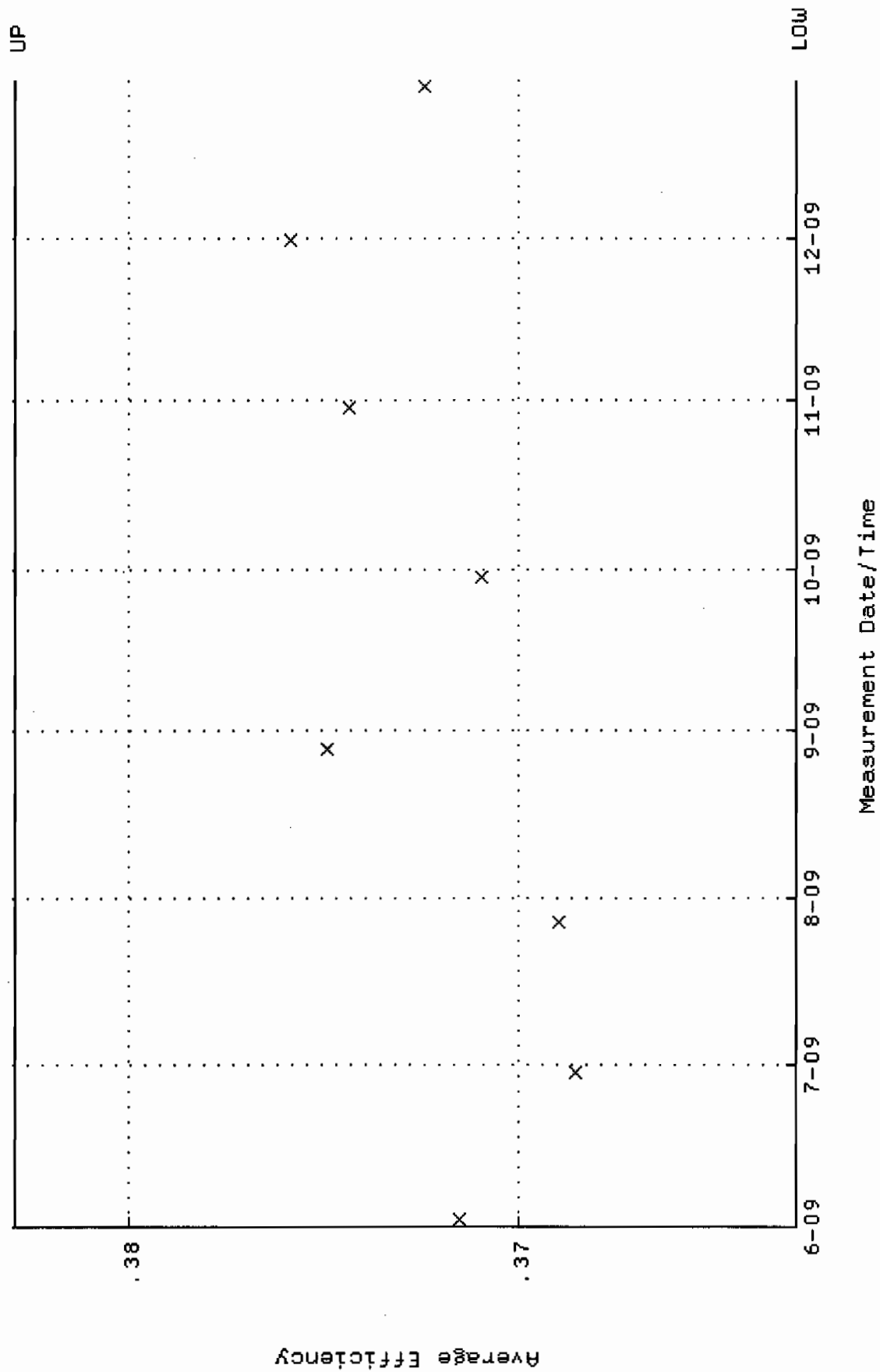


QA filename : DKA100:[ENV\_ALPHA.QA.B]B242.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:46:32 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



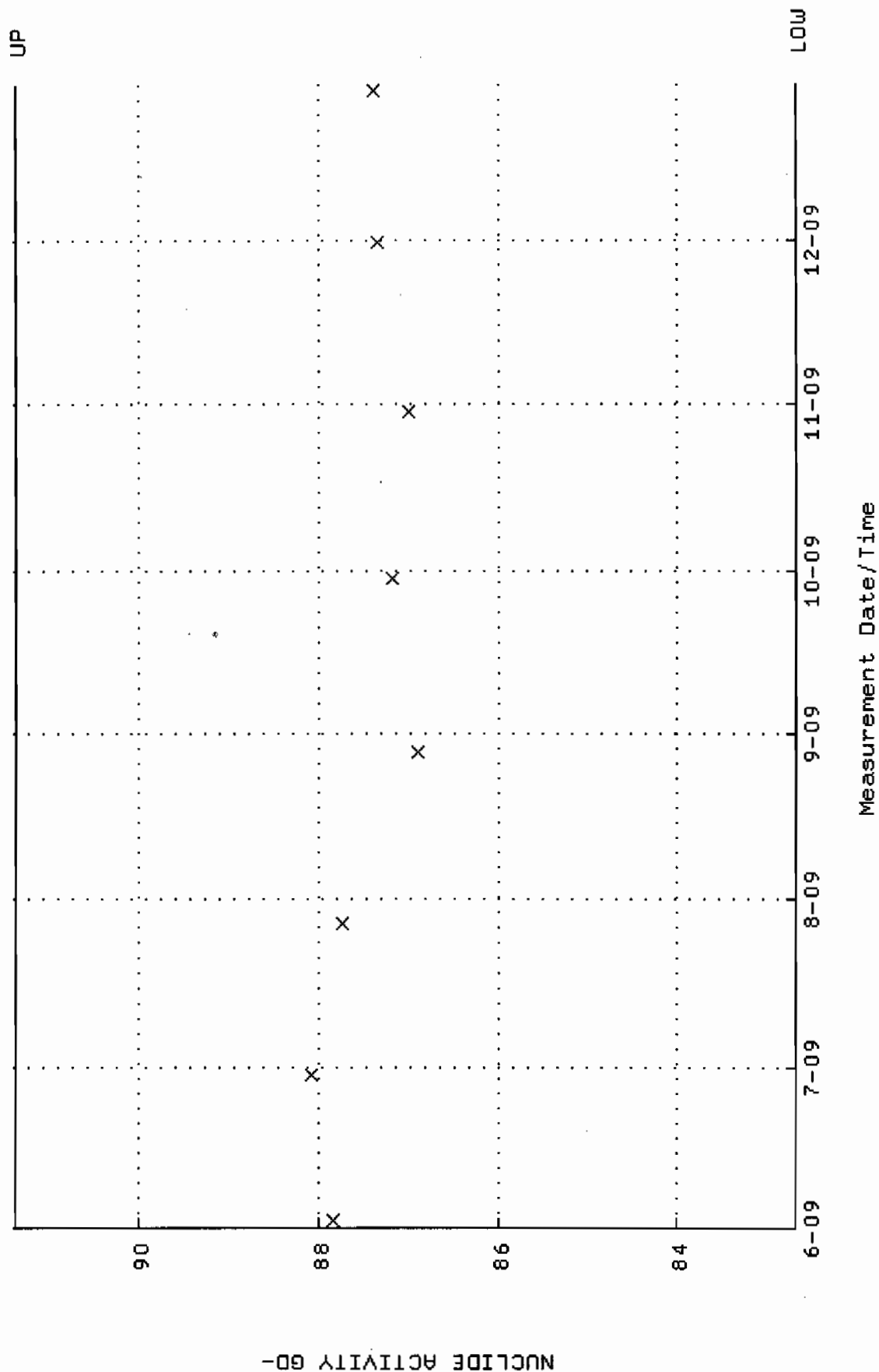


QA filename : DKA100:[ENV\_ALPHA.QA.W]W243.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:20:01 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.362914 through 0.382914



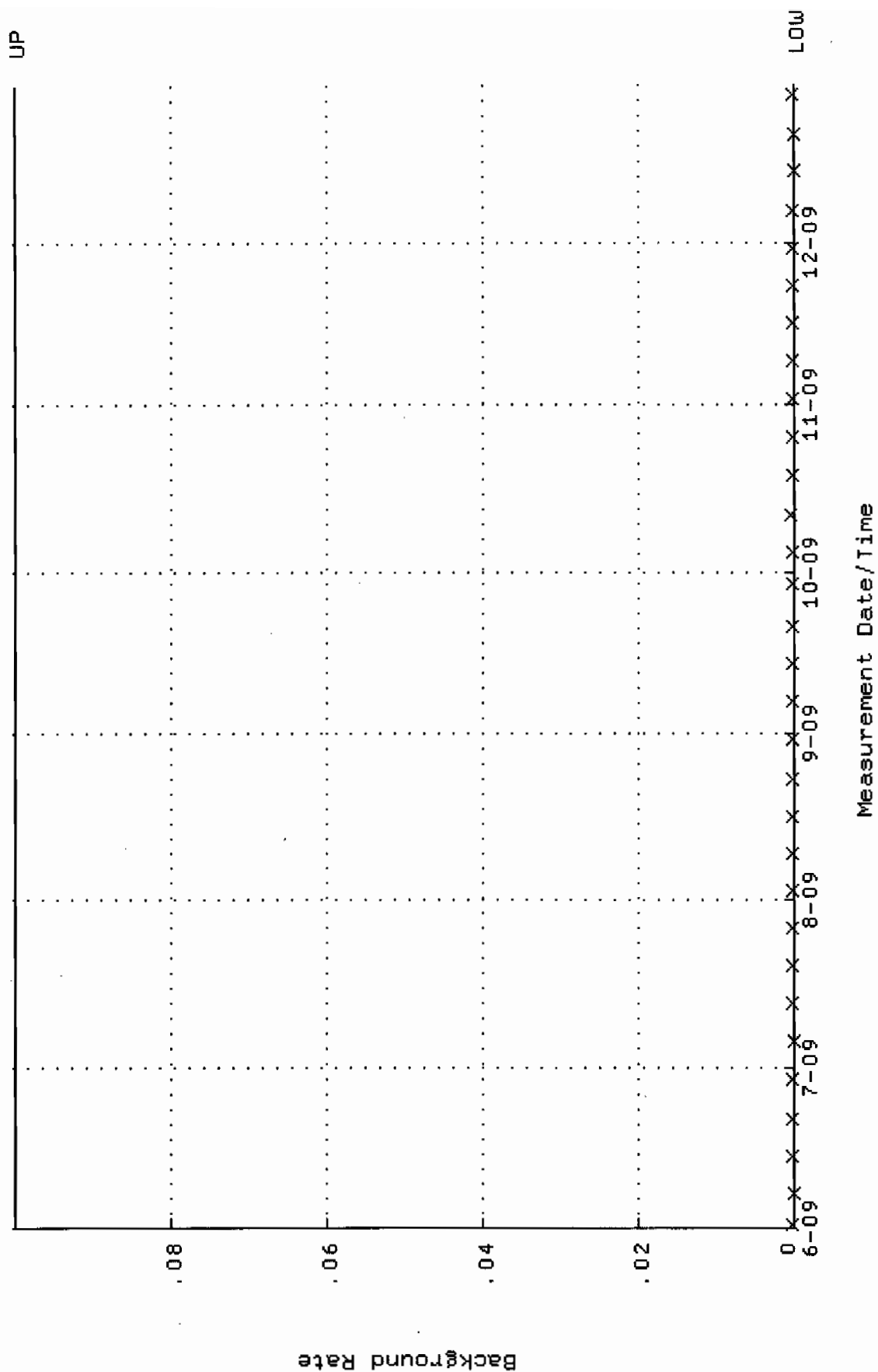


QA filename : DKA100:[ENV\_ALPHA.QA.W]W243.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:20:01 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 82.6788 through 91.3818



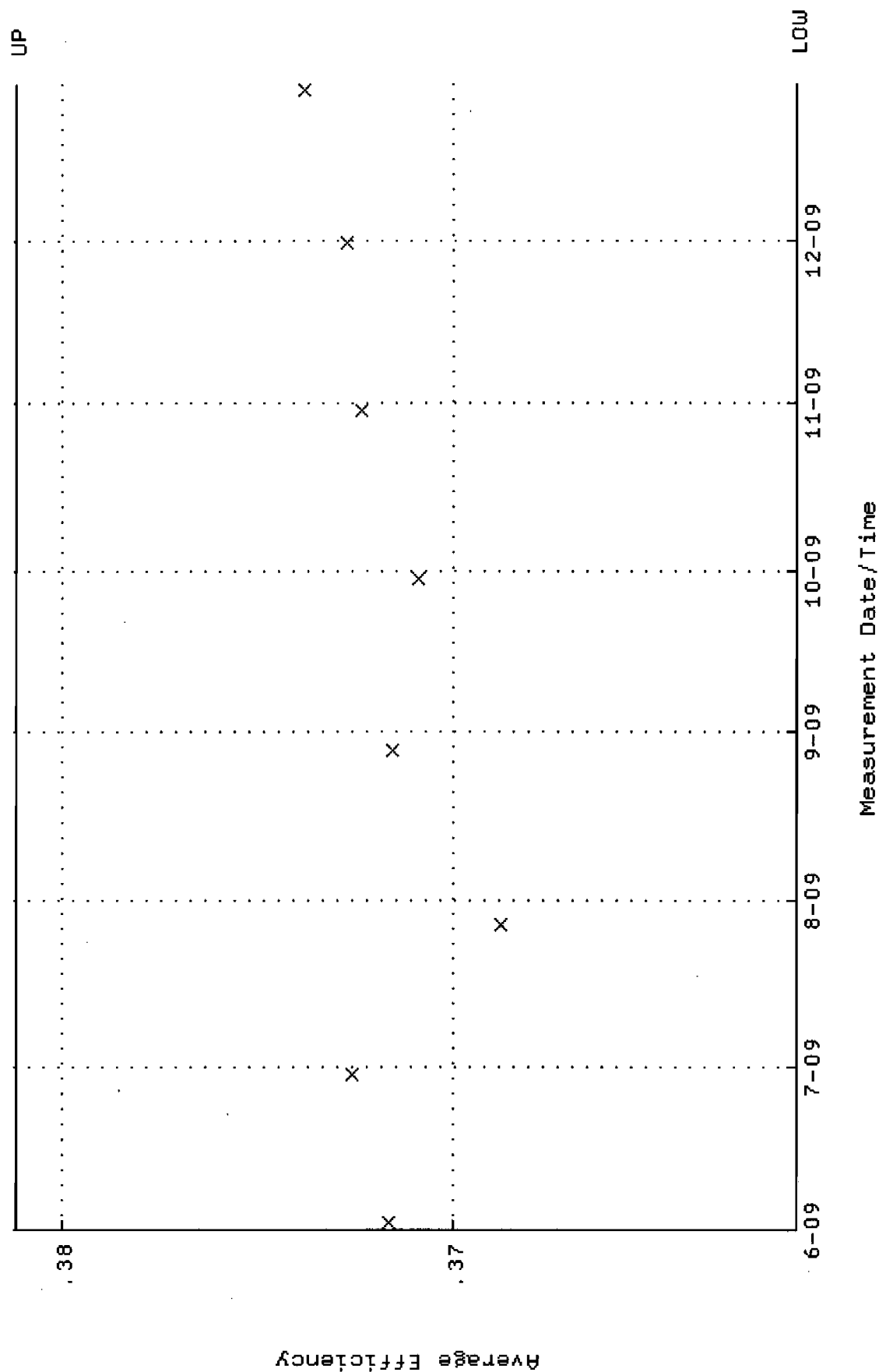


QA filename : DKA100:[ENV\_ALPHA.QA.B]B243.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:46:38 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



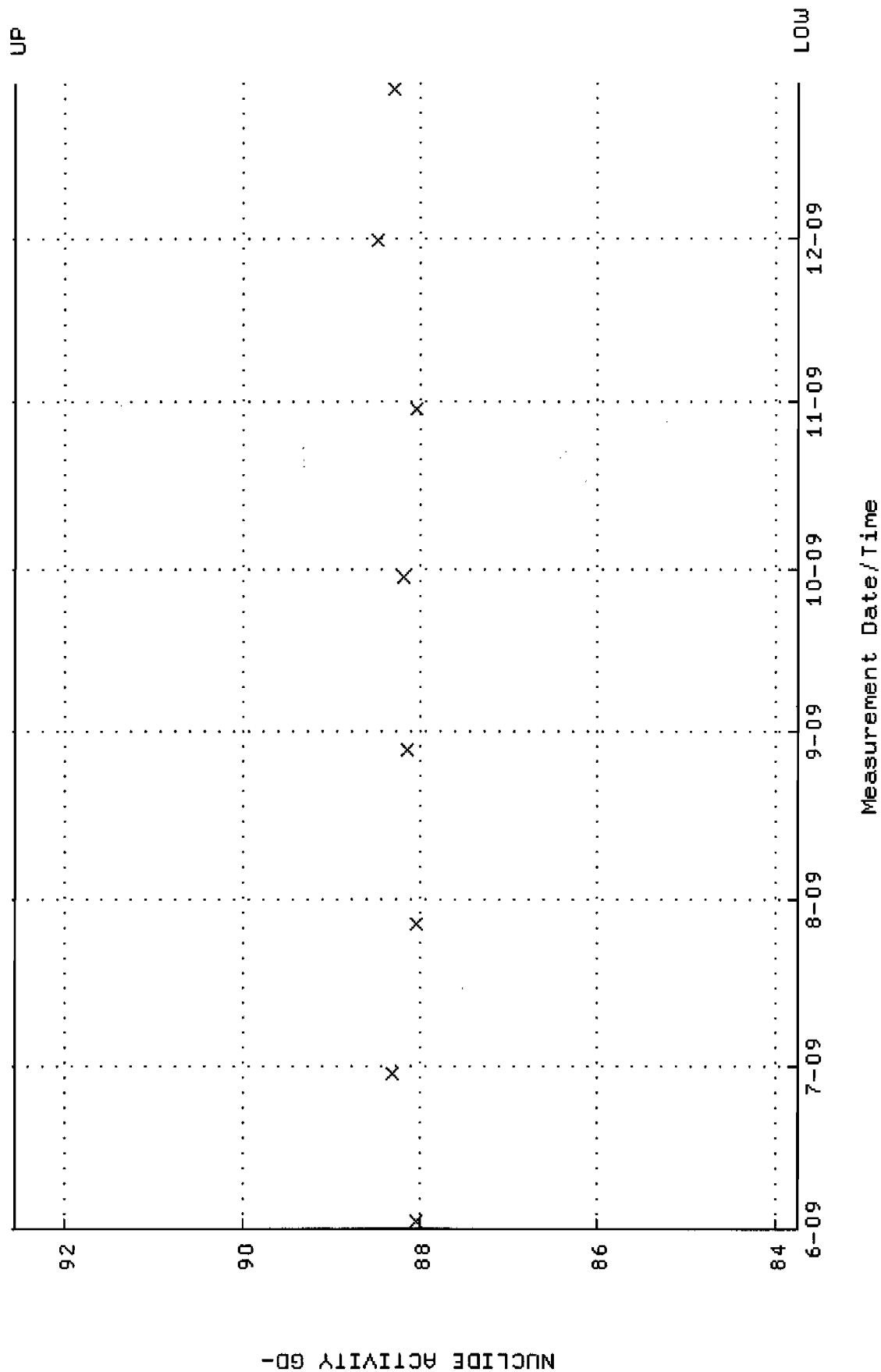


QA filename : DKA100:[ENV\_ALPHA.QA.W]W244.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:20:06 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.361192 through 0.381192



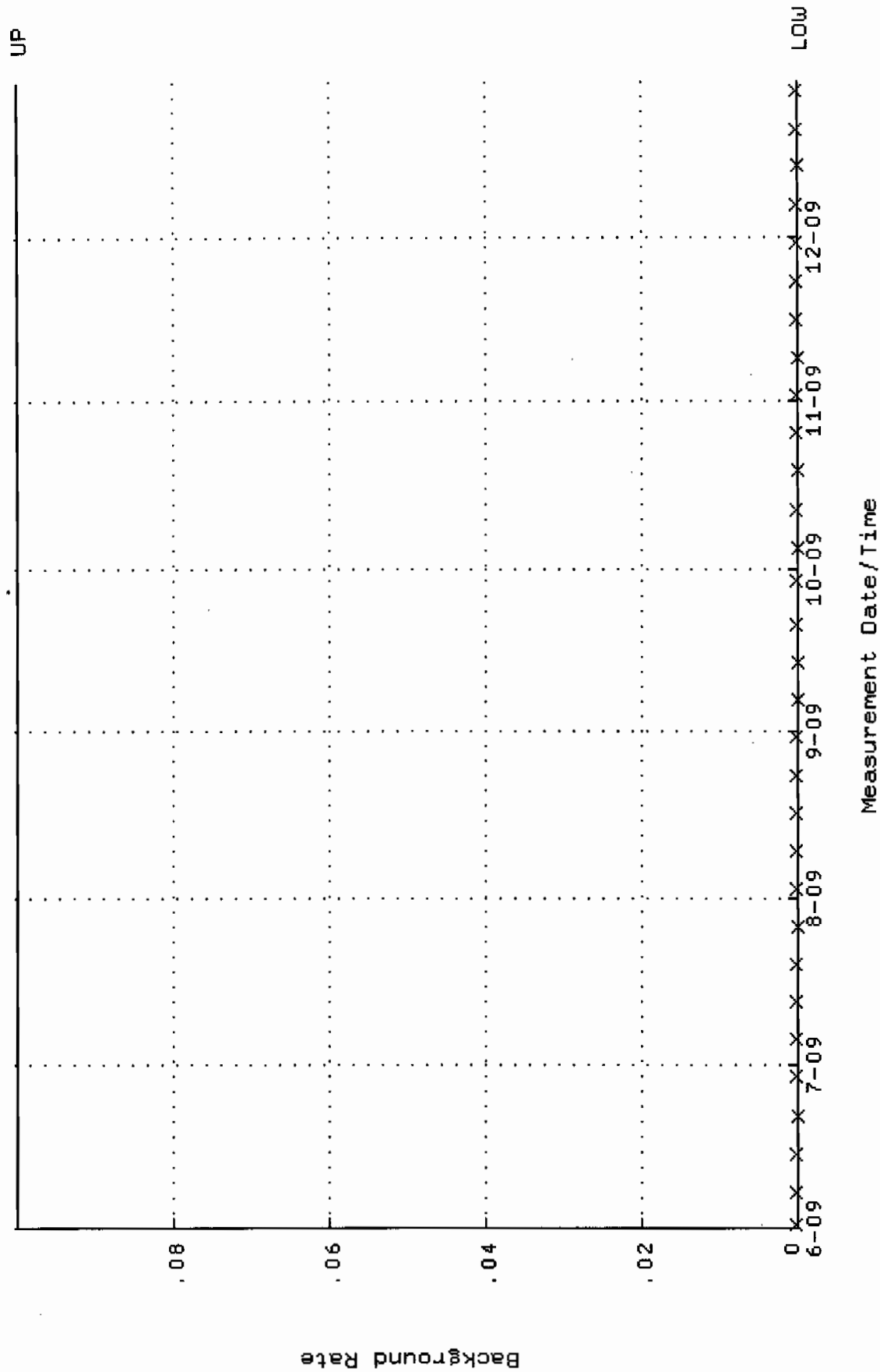


QA filename : DKA100:[ENV\_ALPHA.QA.W]W244.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:20:06 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 83.7473 through 92.5629



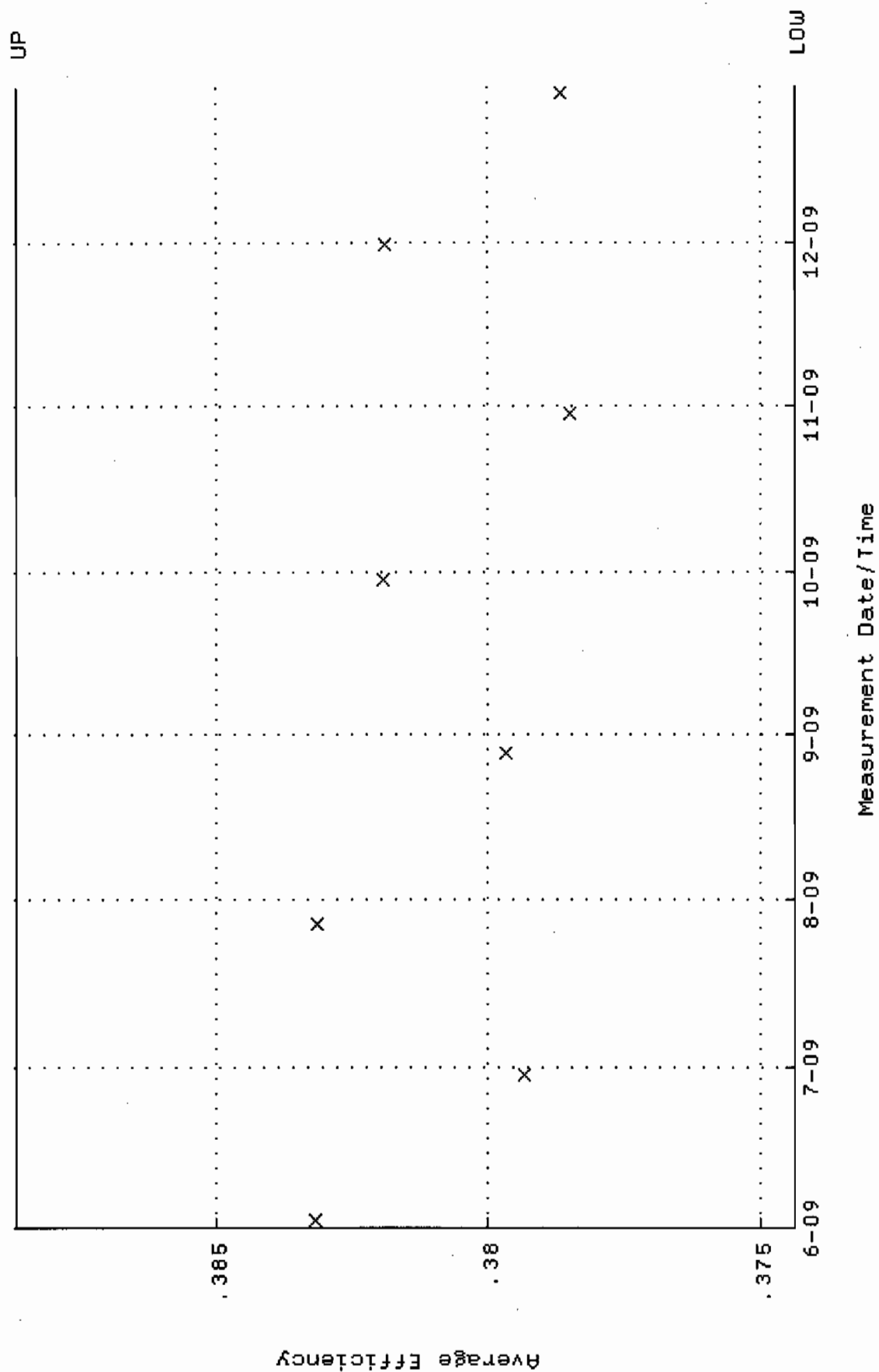


QA filename : DKA100:[ENV\_ALPHA.QA.B]B244.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:46:44 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



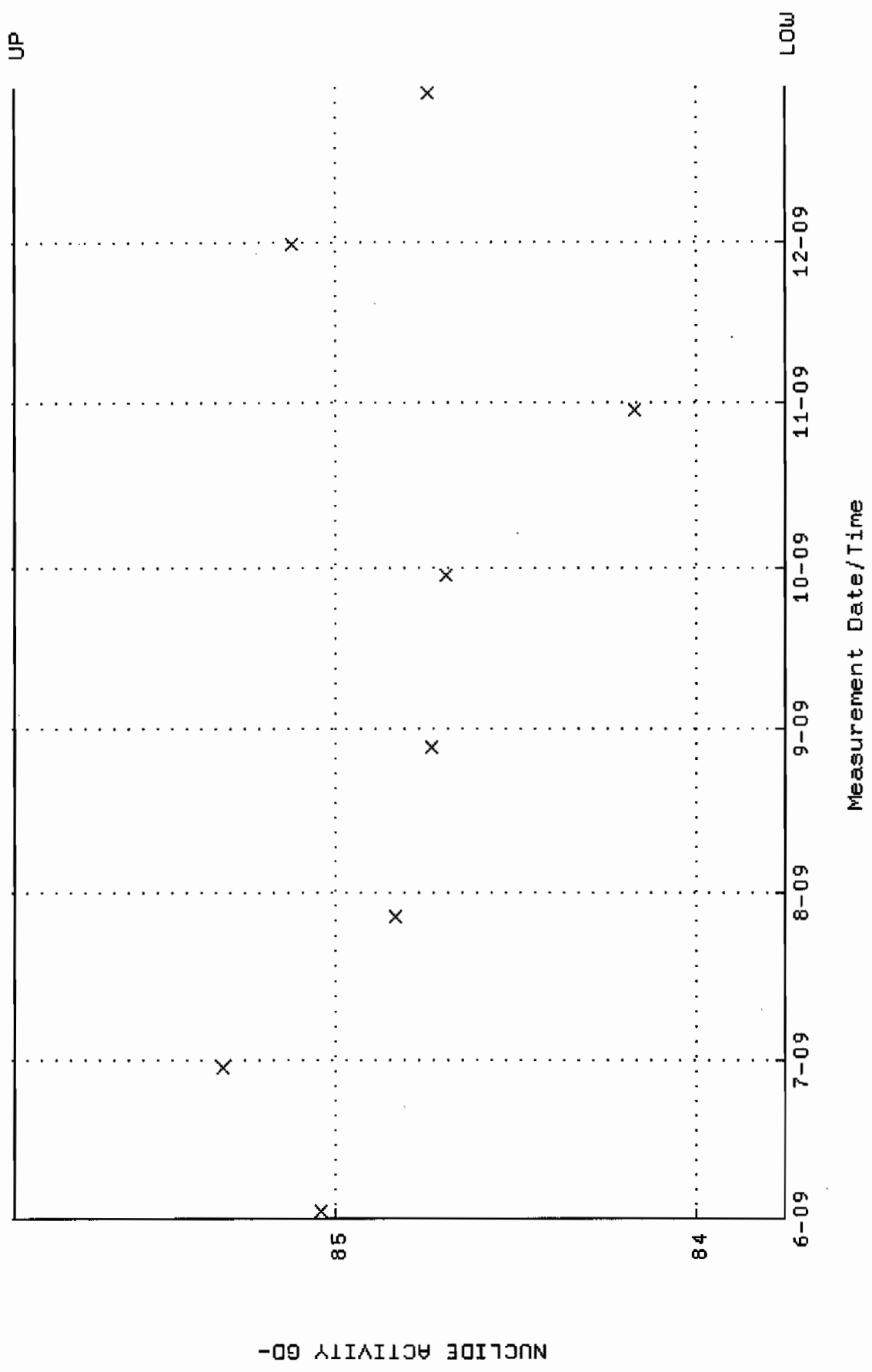


QA filename : DKA100:[ENV\_ALPHA.QA.W]W256.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:21:01 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.374371 through 0.388647



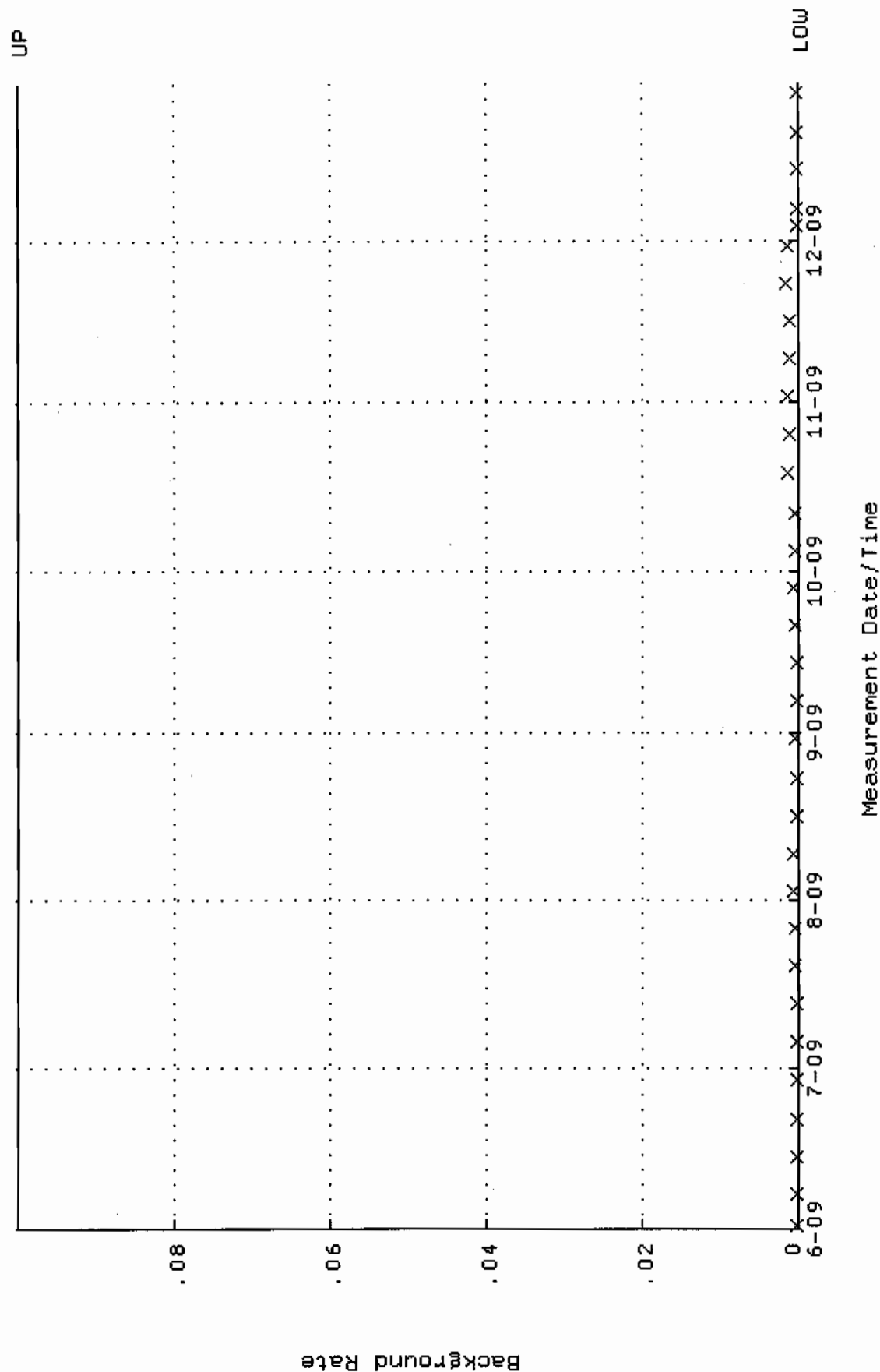


QA filename : DKA100:[ENV\_ALPHA.QA.W]W256.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:21:01 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 83.7553 through 85.8901



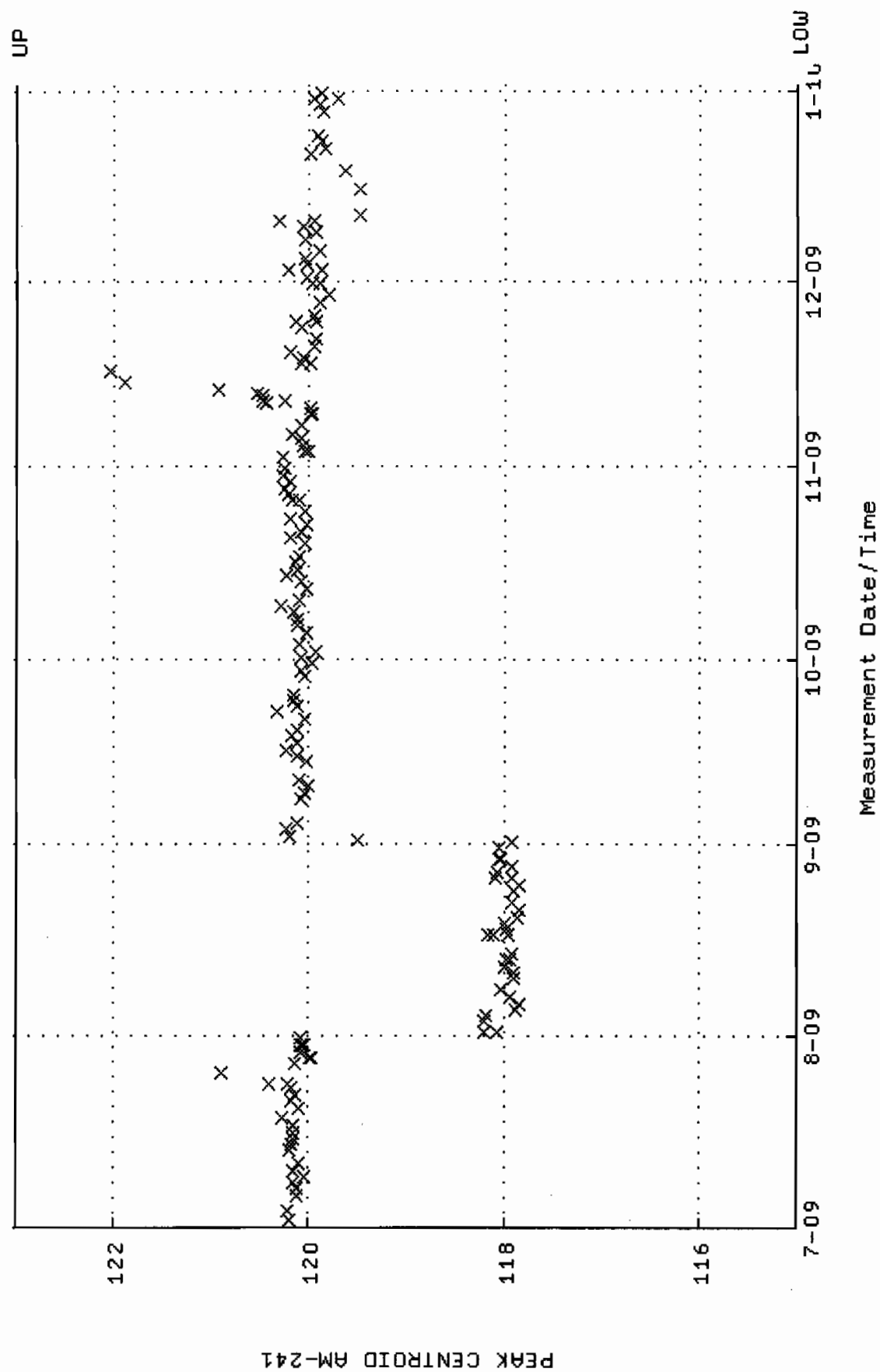


QA filename : DKA100:[ENV\_ALPHA.QA.B]B256.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:47:52 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



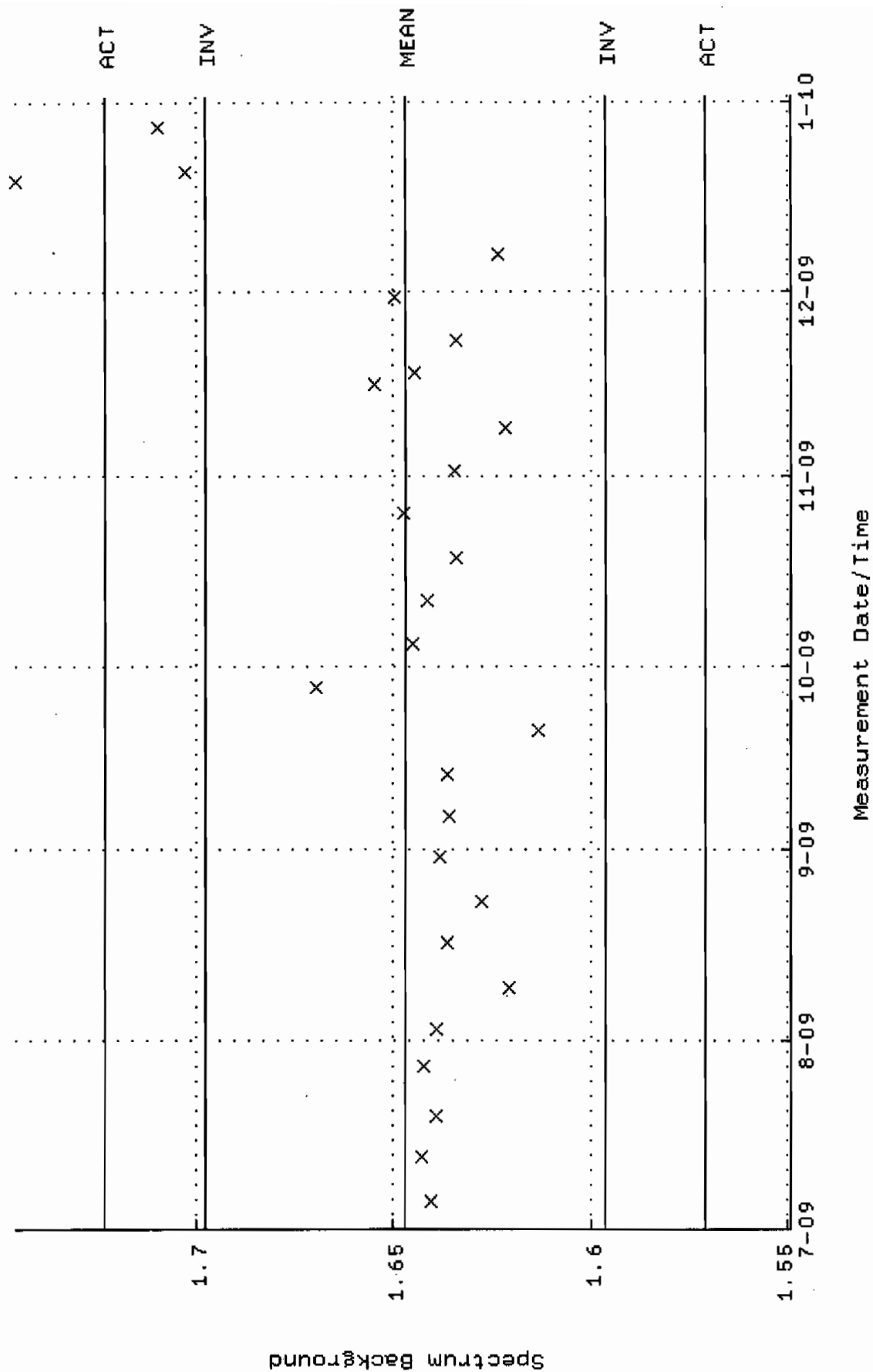


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM05\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 04:59:08 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



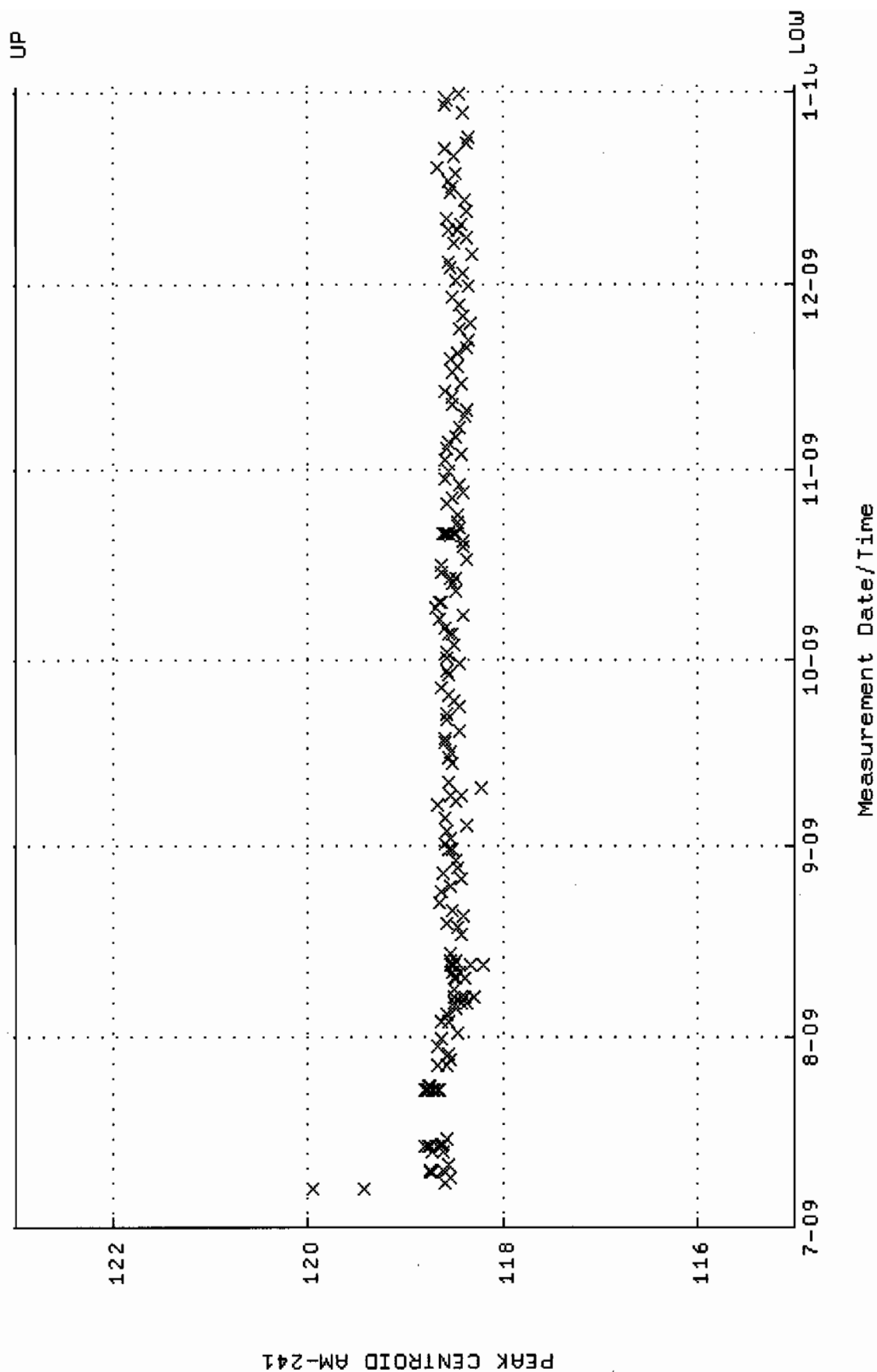


QA filename : DKA100: [CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM05.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:50:04 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



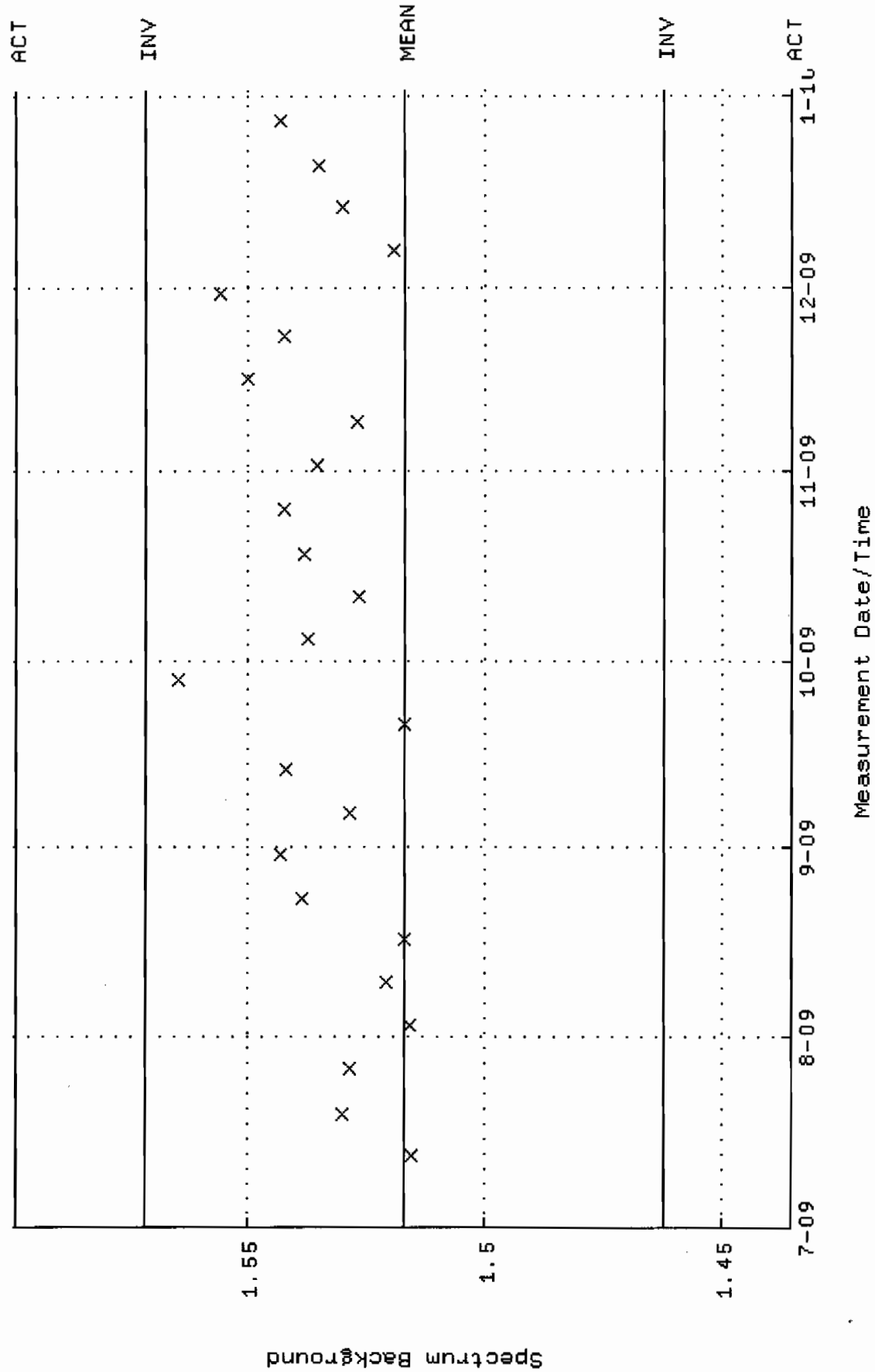


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM07-JAR.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 7-JUL-2009 09:02:00 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



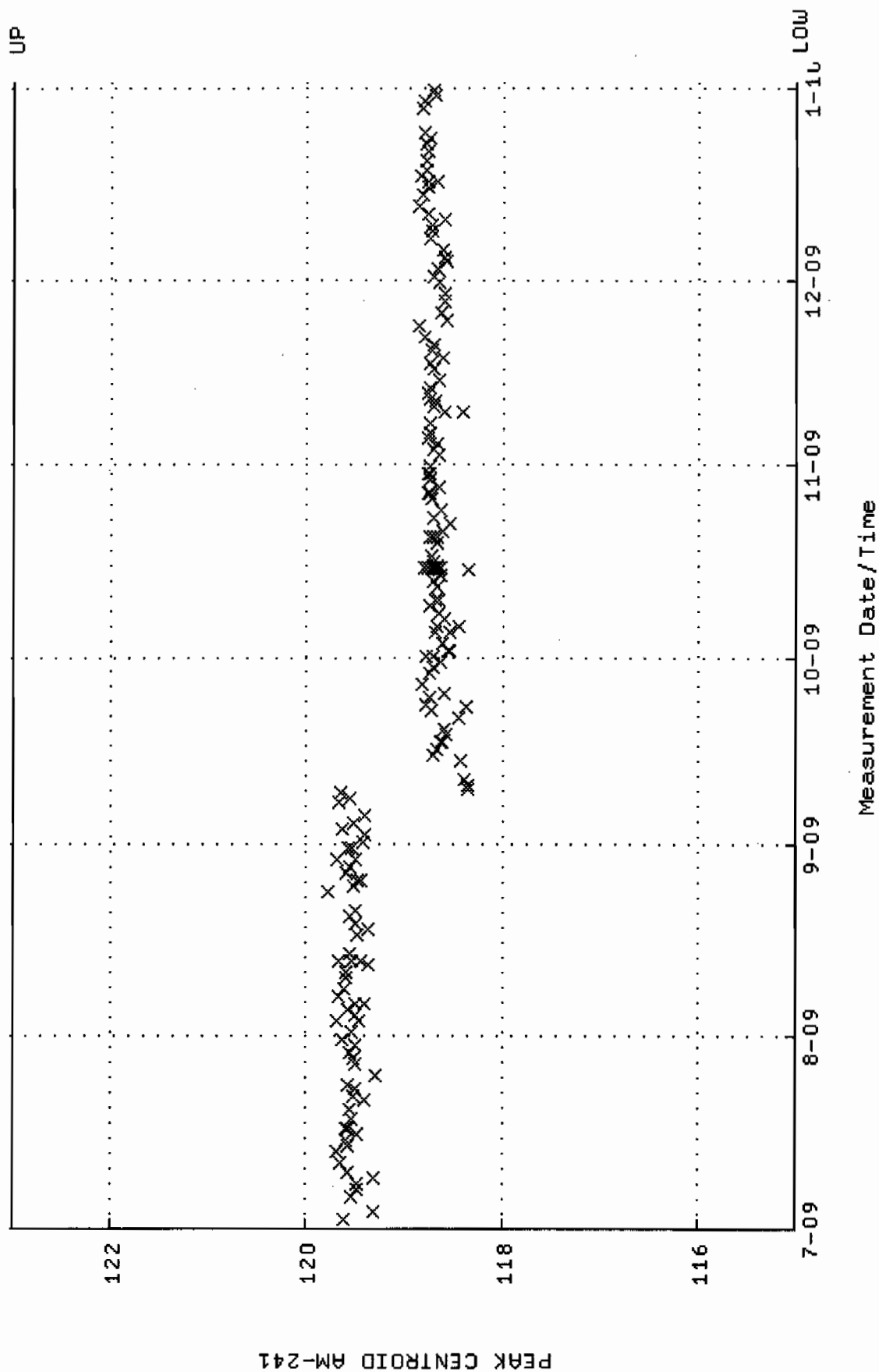


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM07.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 12-JUL-2009 17:17:31 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)



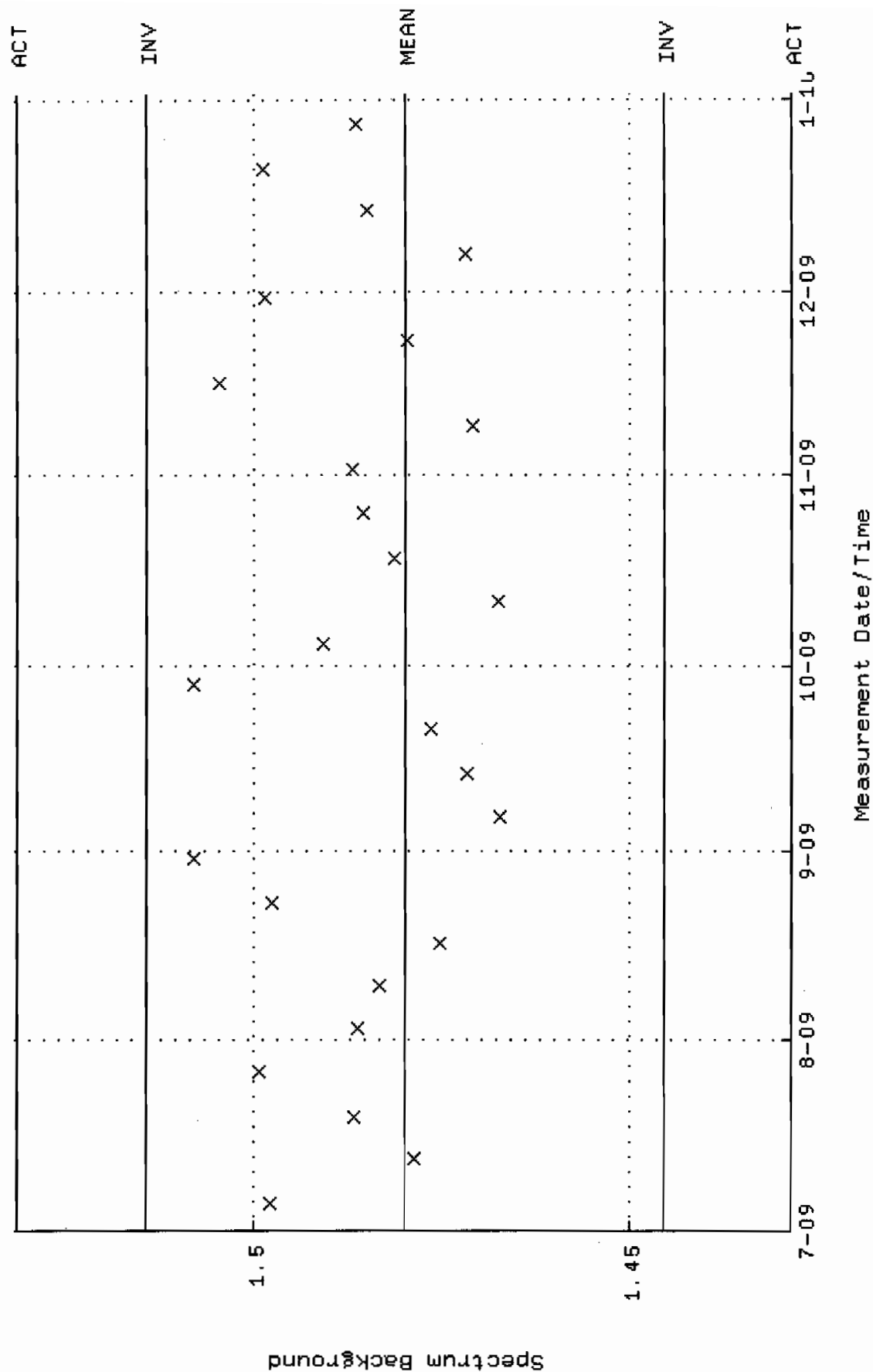


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM10\_500MLMB.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 10:47:17 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



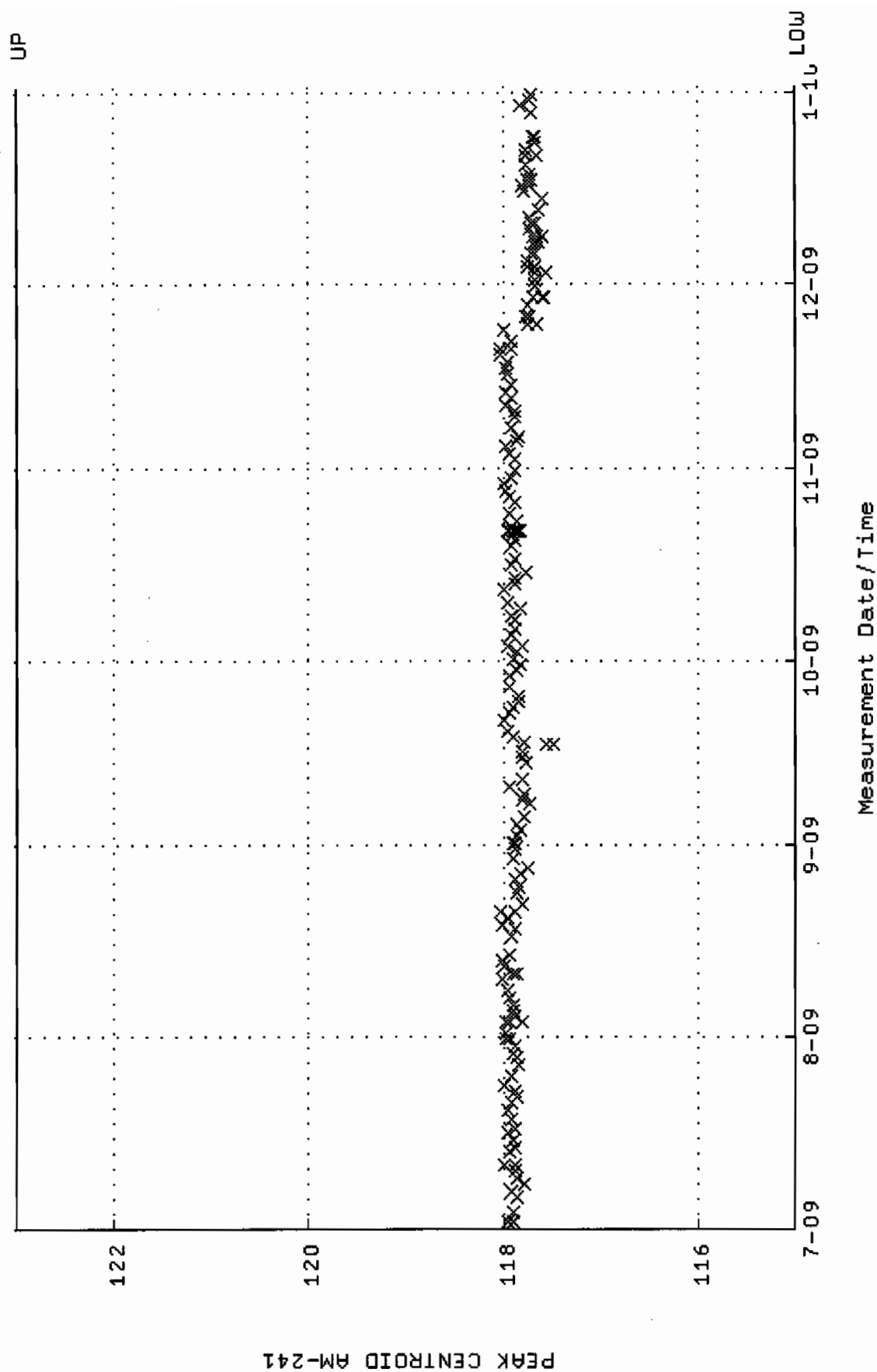


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM10.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:51:14 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.48000 +- 1.723892E-02 (1.16 %)



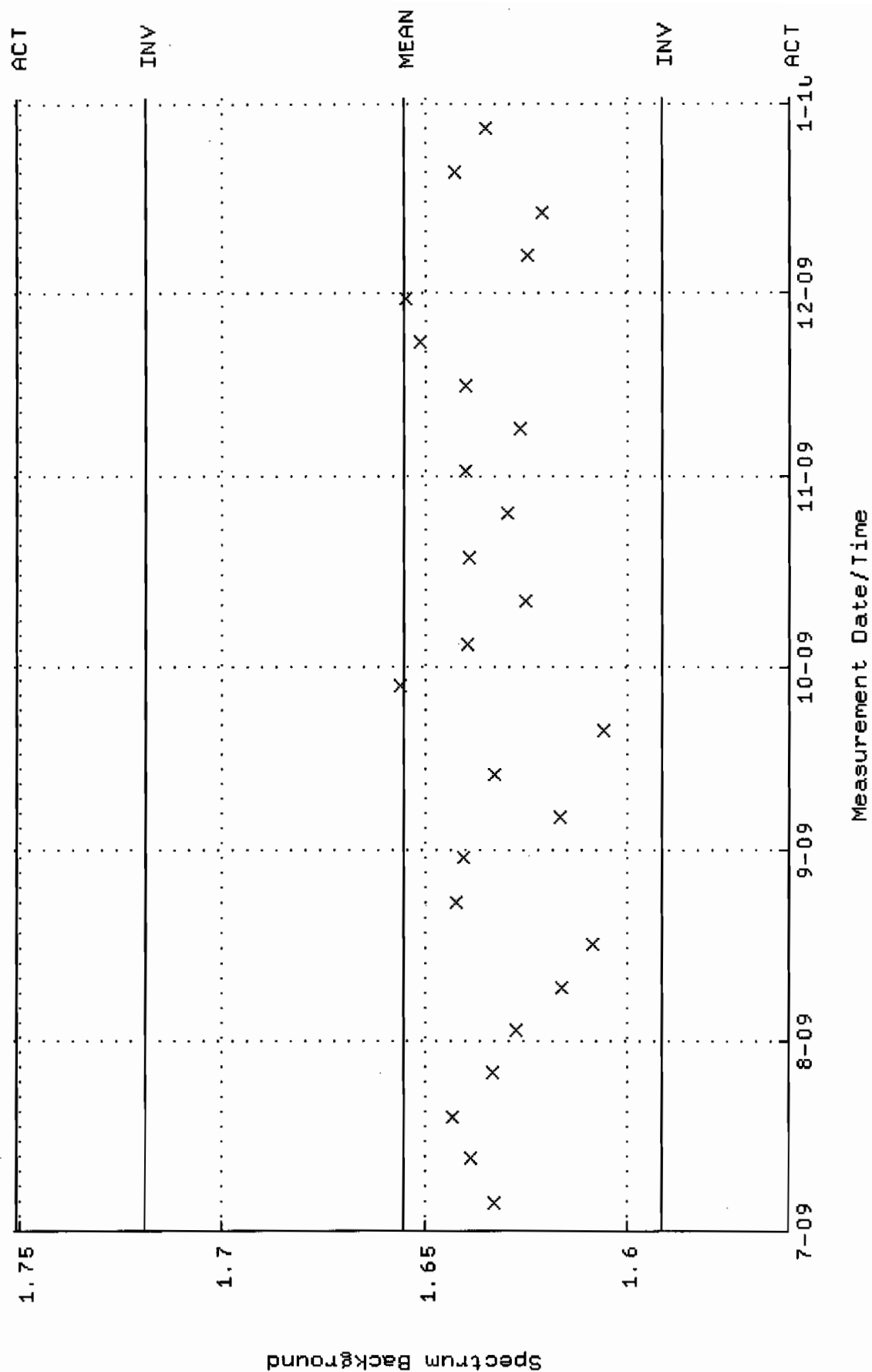


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM11-JAR.QAF;1  
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:04 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



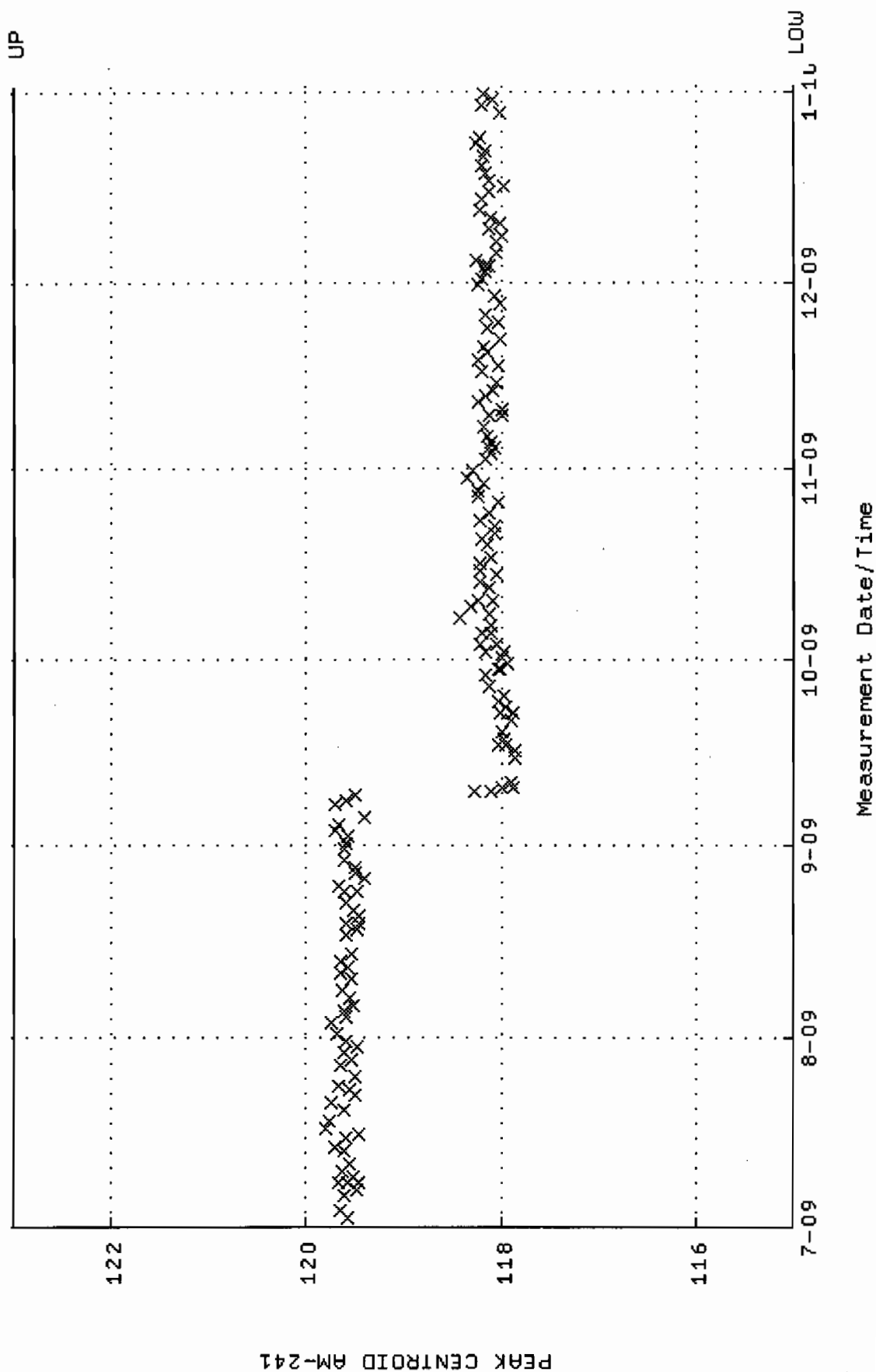


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM11.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:51:39 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



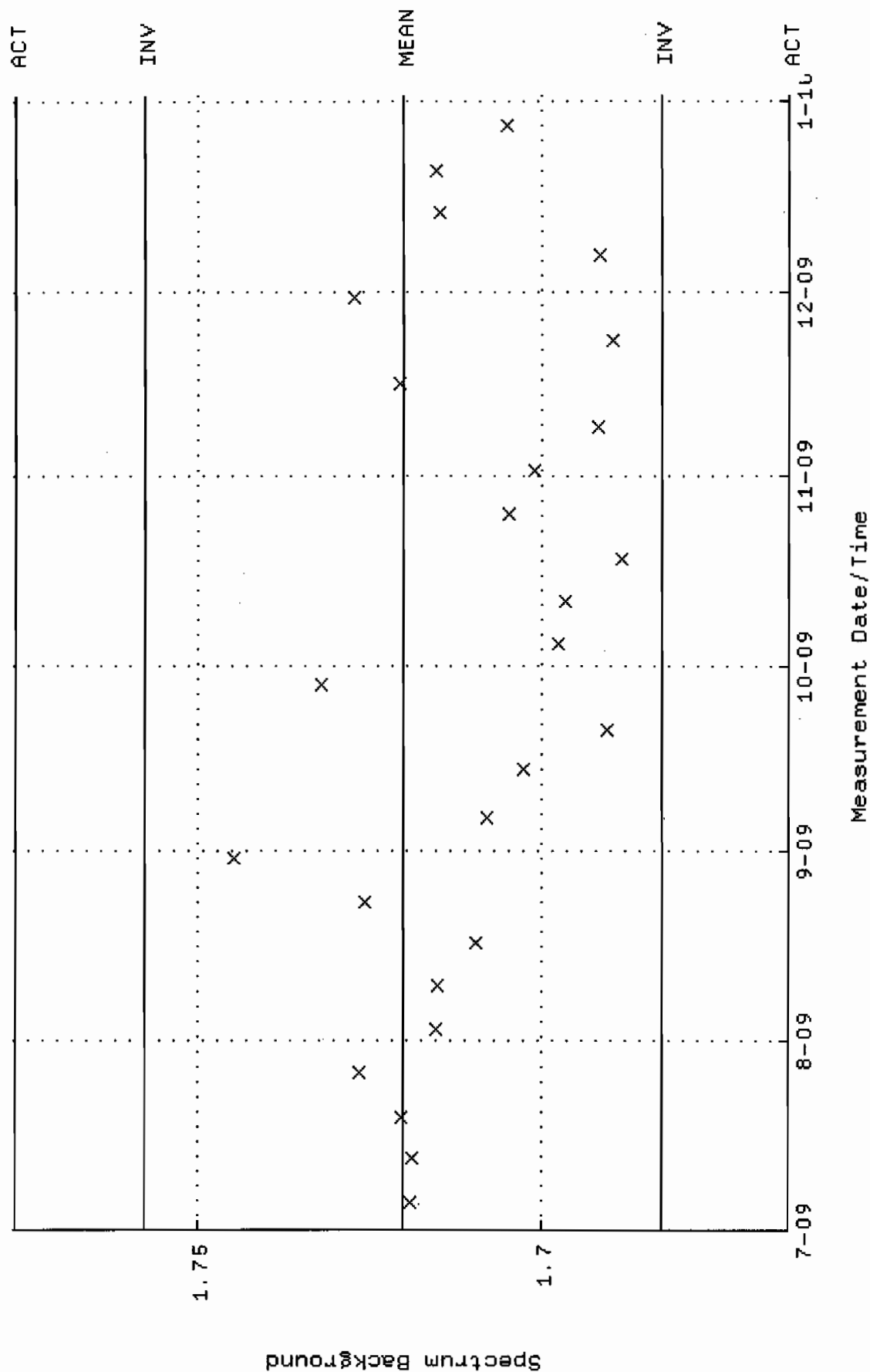


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM15-CAN.QAF;1  
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 10:47:40 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



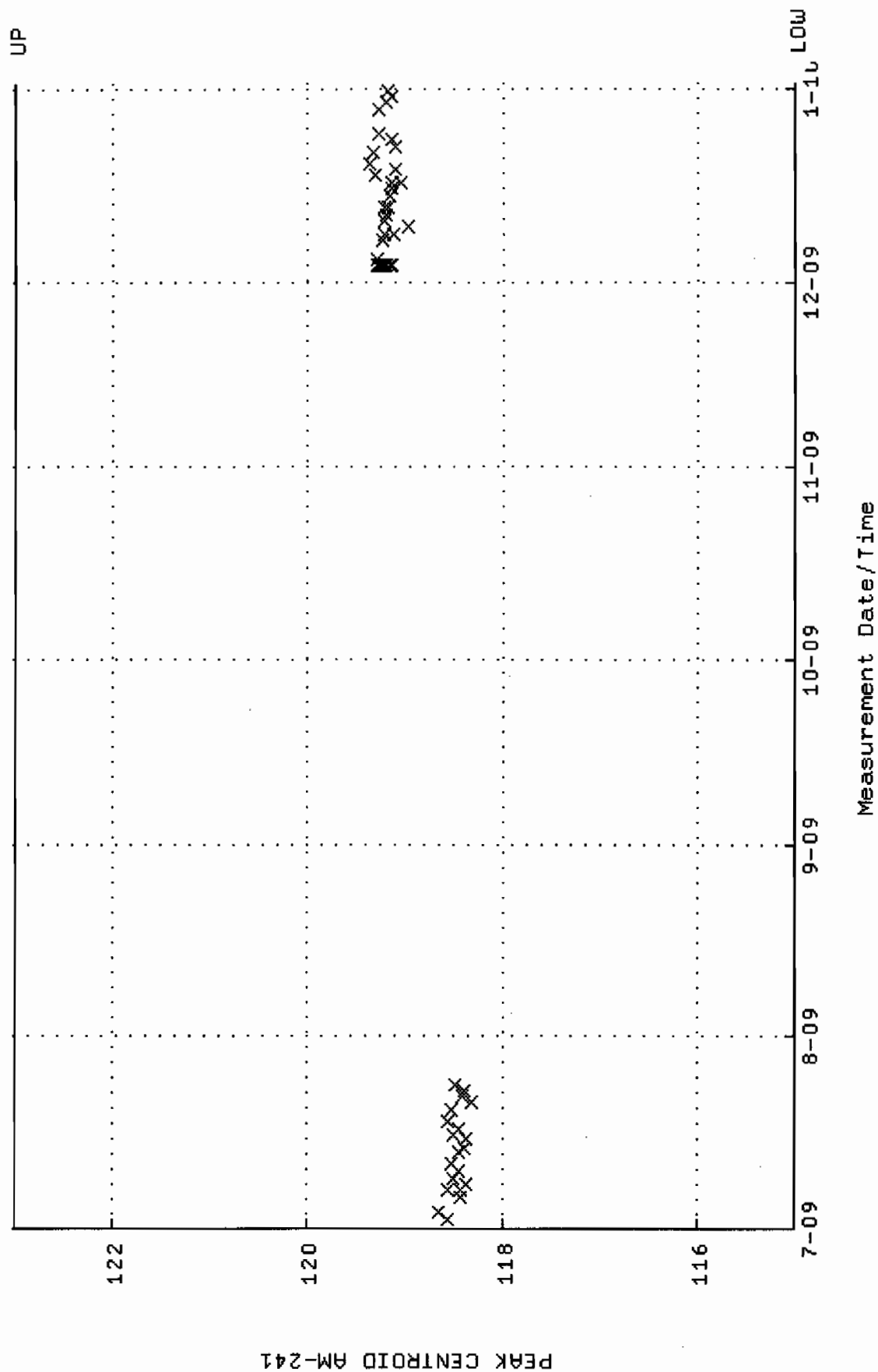


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM15.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:45 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)



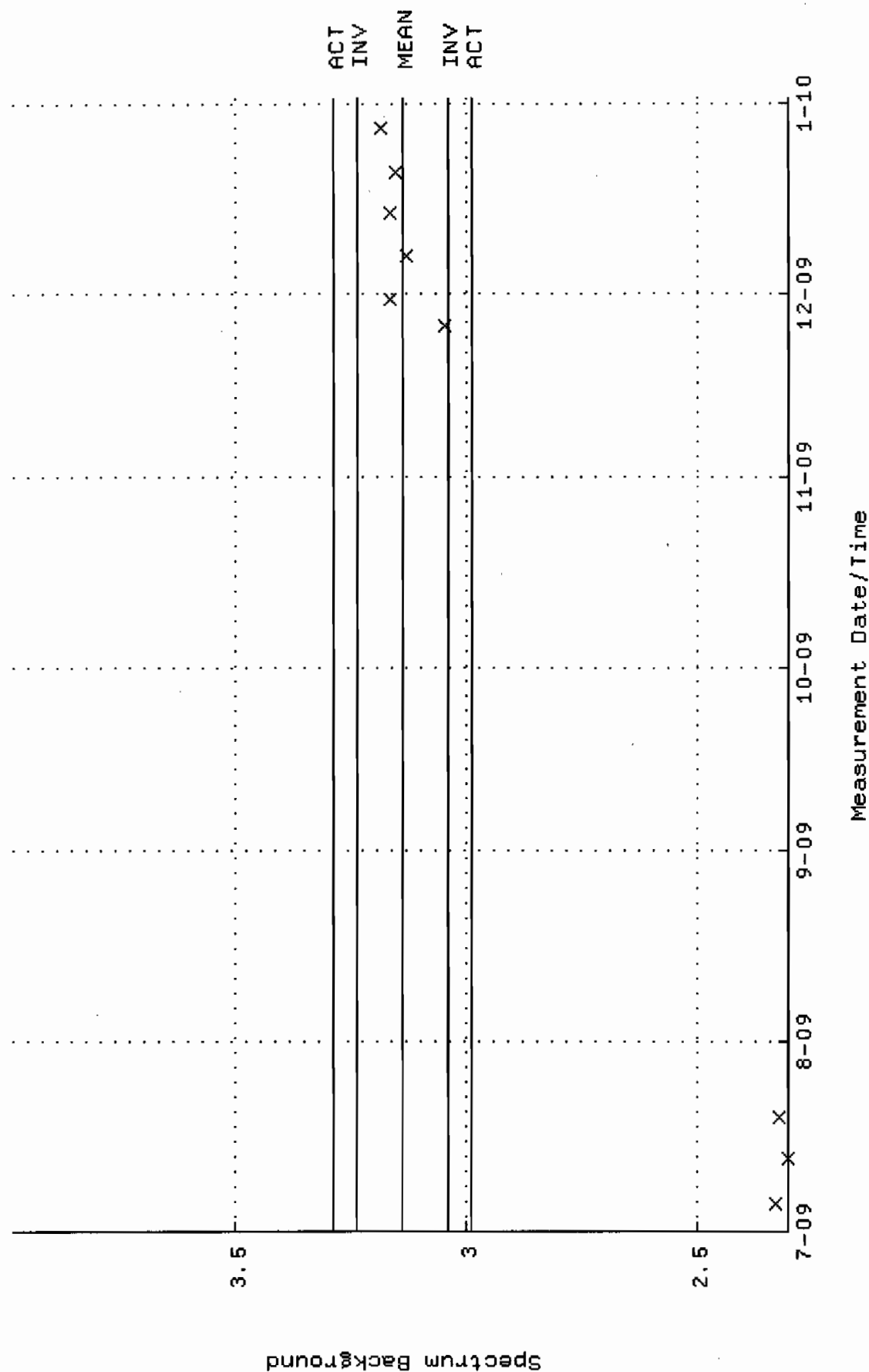


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM22-CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 10:47:50 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000





QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM22.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:54:18 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 3.13961 +- 4.985064E-02 (1.59 %)





# STANDARDS DATA



1032

## CERTIFICATE OF CALIBRATION

### Standard Radionuclide Source

74047-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE	GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432 y	3339	3.0
Cd-109	88	462.6 d	4815	3.3
Co-57	122	271.79 d	2409	3.0
Ce-139	166	137.6 d	3408	2.8
Hg-203	279	46.61 d	7522	2.7
Sn-113	392	115.1 d	4728	2.6
Cs-137	662	30.07 y	2973	3.0
Y-88	898	106.6 d	11600	2.6
Co-60	1173	5.2714 y	5780	2.7
Co-60	1332	5.2714 y	5783	2.6
Y-88	1836	106.6 d	12260	2.6

5.31725 grams 4M HCl solution.  
P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova  
M. Dimitrova, Radiochemist

Q A APPROVED:

Don. M. J. 11-28-06

This standard will expire one year after the calibration date.

rec'd 11/30/06  
RC-S-045-073-0



1380 Seaboard Industrial Blvd.  
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytiscinc.com

**ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS  
 BATCH 127  
 CALIBRATION DATE: October 1, 2006 12:00 EST**

Isotope	Energy (keV)	Calibration Method <sup>1</sup>	Statistics <sup>2</sup>	Calibration <sup>2</sup>	Peak Fitting <sup>2</sup>	Geometry <sup>2</sup>	Impurities <sup>2</sup>	Weighing	Combined Standard Uncertainty	Relative Expanded Uncertainty (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

**Optional Additional Isotopes**

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

**Calibration Methods:**

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

<sup>2</sup>As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.



# Standard Traceability Log Rad

Source Material Info	
Parent Code:	1032
Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL
Reference Date:	10/01/2006
Ampoule Mass (g):	5.31725 g
Uncertainty:	+/- 2.81 %
LogBook No:	RC-S-045-073

A Solution Material Info	
Isotope:	Mixed Gamma
Prepared By:	Daniel Roy
Prep Date:	11/30/2006
Verification Date:	12/02/2009
Expiration Date:	12/02/2010
Primary Code:	1032-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.2579 g
Density(g/mL):	1.0611
Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$

$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$

$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
-----------	----------	--------------	---------------	------	-------------	-------------------	-----------------

GEL Laboratories LLC  
Version 1.0 9/18/2000



# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Am-241

Isotope	Result	pCi/L - Var. Jar. 1
Mixed Gamma N1	2534	pCi/L
Mixed Gamma N2	2510	pCi/L
Mixed Gamma N3	2413	pCi/L

Mean Value (Counting) = 2485.67  
Stdev = 64.065  
Rule 3 (Pass/Fail) Pass

Certificate Value = 2485.68018  
Lower Limit = 2357.536524  
Upper Limit = 2613.796809  
Rule 1 (Pass/Fail) Pass  
Two sigma = 128.1301422  
10 % of Mean = 248.5666667  
Rule 2 (Pass/Fail) Pass

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

M. Stamps  
12/2/09  
independent  
12/2/09



# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Ce-137

Isotope	Result	pCi/L - Ver. Jar. 1
Mixed Gamma N1	854.2	pCi/L - Ver. Jar. 3
Mixed Gamma N2	907.6	pCi/L - Ver. Jar. 2
Mixed Gamma N3	898.9	

Mean Value (Counting) = 886.90  
Stdev = 28.651  
Rule 3 (Pass/Fail) Pass

Certificate Value = 933.44144  
Lower Limit = 829.597644  
Upper Limit = 944.202356  
Rule 1 (Pass/Fail) Pass  
Two sigma = 57.30235597  
10 % of Mean = 88.69000000  
Rule 2 (Pass/Fail) Pass

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

*12/2/09*  
*12/2/09*  
*12/2/09*



# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver-Int-5
Mixed Gamma N1	1572	pCi/L - Ver-Int-2
Mixed Gamma N2	1495	pCi/L - Ver-Int-3
Mixed Gamma N3	1501	

Mean Value (Counting) =  
Stdev =

98.50 Pass  
Rule 3 (Pass/Fail)

Certificate Value =  
Lower Limit =  
Upper Limit =  
Rule 1 (Pass/Fail)  
Two sigma =  
10 % of Mean =  
Rule 2 (Pass/Fail)

1522.67  
42.829  
1545.8378  
1437.008431  
1608.324902  
Pass  
85.65823564  
152.26666667  
Pass

pCi/L  
pCi/L  
pCi/L

*U.S. Stamps issued 12/2/09*

## Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.



# 0244-A Characterization

Sample #	Uranium-233/234 Result (pCi/g)	Uranium-238 Result (pCi/g)	Thorium-230 Result (pCi/g)
0244-A 1	6.59	6.12	25.3
0244-A 2	6.36	6.07	28.5
0244-A 3	5.78	5.53	26.5
0244-A 4	6.48	5.97	25.5
0244-A 5	5.65	5.59	26.2
0244-A 6	6.96	5.78	27.0
0244-A 7	5.95	5.75	24.2
0244-A 8	5.29	5.67	27.2
0244-A 9	5.51	6.05	24.3
0244-A 10	6.37	5.57	25.6
0244-A 11	6.50	5.80	25.8
0244-A 12	6.13	5.42	22.4
0244-A 13	5.49	5.24	24.7
0244-A 14	6.19	5.21	26.9
0244-A 15	6.50	6.27	27.6
0244-A 16	6.50	5.24	24.9
0244-A 17	6.25	6.05	24.7
0244-A 18	6.14	6.00	25.4
0244-A 19	6.19	6.14	26.4
0244-A 20	5.67	5.61	23.2
Mean Value	6.13	5.75	25.62
1 sigma	0.439	0.325	1.493
2 sigma	0.878	0.650	2.986
75% Limit	4.60	4.31	19.22
125% Limit	7.66	7.19	32.03
Expected Result	6.2 +/- 4.0	6.0 +/- 4.0	24.5 +/- 0.6
Achieved Results	6.13 +/- 0.439	5.75 +/- 0.325	25.62 +/- 1.493

REFERENCE DATA 4/14/2000 *fit c hall 12/1/04*

*angela d. johnson 12/8/04*



TRM

Invoice:

5 boxes of TRM-1  
 10 " " TRM-2 and 3  
 5 " each of NRM-1 through 6  
 7 " baghouse dirt

Use 1/4 gm x 10 samples with together  
 for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

	TRM-1	TRM-2	TRM-3	TRM-4
U-238	99 ± 6	6.0 ± 4.0	19.6 ± 1.4	44.9 ± 1.6
U-234	105 ± 6	6.2 ± 4.0	19.6 ± 1.9	44.6 ± 1.2
Th-230	471 ± 11	24.5 ± 0.6	58.5 ± 2.1	44.0 ± 1.6
Ra-226	489 ± 17	25.4 ± 0.9	60.3 ± 2.3	42.9 ± 1.2
Pb-210	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0	



9911627-01-00

Page 1 of 1

AR/COC- 602945

Internal Lab  
Batch No.

SF 2001-COC (10-97)  
Supervisor (4-07) JMS

ANALYSIS REQUEST AND CHAIN OF CUSTODY

Press F1 for instructions for each field.

SARWR No. N/A

Dept. No./Mail Stop: 7132 / 1042		Contract No.: AJ-2480A	
Project/Task Manager: PAM PUISSANT		Case No.: 10204 13	
Project Name:		SMO Authorization: <i>[Signature]</i>	
Record Center Code: N/A		Bill to: Sandia National Laboratories	
Logbook Ref. No.: N/A		Supplier Services Dept.	
Service Order No.:		P.O. Box 5800 MS 0154	
Location		Reference LOV (available at SMO)	
Building N/A	Tech Area V1	Container	Sample Type
Sample No. - Fraction	ER Sample ID or Sample Location Detail	Type Volume	Method
050484 - 001	PEM-1	P 1 L	G SA
050485 - 001	TRM-2	G 1 L	G SA
050486 - 001	HRM-2 N.B.H.D	G 1 L	G SA
-			
-			
-			
-			
-			
-			
-			
RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No.		Special Instructions/QC Requirements	
Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Date		Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Sample Team Members		These samples are not characterized and materials being sent to GEL for back history.	
1. Relinquished by <i>[Signature]</i> Date 11-16-99 Time 0900		Please list as separate report.	
1. Received by		Date	
2. Relinquished by		Date	
2. Received by		Date	
3. Relinquished by		Date	
3. Received by		Date	
1st Copy To Accompany Samples, Laboratory Copy (White)		2nd Copy SMO Suspense Copy (Yellow)	
1st Copy To Accompany Samples, Return to SMO (Blue)		3rd Copy Field Copy (Pink)	



### 0244-B Characterization

Sample #	Plutonium-239 Result (pCi/g)	Plutonium-238 Result (pCi/g)	Americium-241 Result (pCi/g)
0244-B 1	39.9	7.88	38.4
0244-B 2	44.1	7.97	40.6
0244-B 3	45.8	6.56	31.8
0244-B 4	43.6	7.69	31.5
0244-B 5	43	7.9	40.2
0244-B 6	43.5	7.84	29.4
0244-B 7	41.3	7.67	36
0244-B 8	44.3	6.95	33.2
0244-B 9	42.7	7.2	29.2
0244-B 10	44.9	7.69	30
0244-B 11	41.4	7.22	30.2
0244-B 12	41.3	7.74	36
0244-B 13	39.2	6.65	33.8
0244-B 14	39.6	7.78	31.1
0244-B 15	45.3	8.41	37.3
0244-B 16	38.1	6.74	33.6
0244-B 17	48.5	8.51	30.5
0244-B 18	36.5	7.23	38.6
0244-B 19	35.3	6.98	30.9
0244-B 20	37.4	8.55	31.3
Mean Value	41.79	7.56	33.68
1 sigma	3.418	0.596	3.724
2 sigma	6.835	1.193	7.448
75% Limit	30.75	6.02	24.38
125% Limit	51.25	10.04	40.63
Expected Result	41.0 +/- 3.0	8.03 +/- 0.37	32.5 +/- 1.1
Achieved Results	41.79 +/- 3.418	7.56 +/- .596	33.68 +/- 3.724

REFERENCE DATE 4/14/2000

Amanda L. Fehr 4/30/04  
 Lott & Stakeholder



## PREPARATION AND CHARACTERIZATION OF THE PERFORMANCE EVALUATION SOIL SAMPLE PEM-1

### INTRODUCTION

Rust Geotech (Rust) was contracted by Los Alamos National Laboratory (LANL) to prepare and characterize a soil performance evaluation sample designated PEM-1. This report describes sample preparation, homogeneity assessment, and determination of the concentrations of 28 elements and radioactive isotopes in the sample.

### SAMPLE PREPARATION

Rust received nine five-gallon buckets of soil from LANL. The soils were dried overnight in ovens at 103 °C. The large pieces of leaves and sticks were removed and the soils were ground with ceramic-plate grinders to a particle size that passed through a 325 mesh screen. The samples were blended at the proportions specified by LANL for 48 hours in a 3-cubic-foot cross-flow blender. The sample identifications and the amounts used are listed in Table 1.

Table 1. Sample Identifications and Amounts Used to Prepare PEM-1

LANL Sample ID	Amount Used (kg)
AAA 1592	1.7
AAA 2505-1	10.9
AAA 2505-2	12.8
AAA 2750-1	8.4
AAA 2750-2	8.4
AAA 3205	12.6
AAA 8581	4.2
AAB 3417	12.8
AAB 3475	12.6

The blended sample was transferred to three five-gallon plastic containers. While the sample was being transferred, 10 samples were taken at pre-determined time intervals to be used for homogeneity assessment and sample characterization. These samples are believed to be representative of the bulk material.



Attention Nancy Slater At GEL  
Not For Log In

9911627-01-20

SF 2001-COC (10-97)

Internal Lab

Batch No.

SAR/WR No.

N/A

ANALYSIS REQUEST AND CHAIN OF CUSTODY

Press F1 for instructions for each field.

AR/COC-

602945

Page 1 of 1

Dept. No./Mail Stop: 7132/1042		Contract No.: AJ-2480A	
Project/Task Manager: PAM PUISSANT		Case No.: 10204 13	
Project Name:		SMO Authorization: Doug Salimi	
Record Center Code: N/A		Bill to: Sandia National Laboratories	
Logbook Ref. No.: N/A		Supplier Services, Dept.	
Service Order No.:		P.O. Box 5800 MS 0154	
Location		Reference LOV (available at SMO)	
Building N/A	Tech Area VI	Container	Sample Type
Sample No. - Fraction	ER Sample ID or Sample Location Detail	Type	Volume
050484 - 001	PEM-1	P	1 L
050485 - 001	TRM-2	G	1 L
050486 - 001	WRM-2 NBHD	G	1 L
-			
-			
-			
-			
-			
-			
-			
-			
RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No.		Special Instructions/QC Requirements	
Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Date		Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Name Douglas E. Perry		These samples are for the identification and analysis being sent to GEL and back to Hack Mission	
Signature: [Signature]		Please list as separate report.	
1. Relinquished by [Signature]		4. Relinquished by	
2. Relinquished by		5. Relinquished by	
3. Relinquished by		6. Relinquished by	
3. Received by		6. Received by	

Original To Accompany Samples, Laboratory Copy (White) 1<sup>st</sup> Copy To Accompany Samples, Return to SMO (Blue) 2<sup>nd</sup> Copy SMO Suspense Copy (Yellow) 3<sup>rd</sup> Copy Field Copy (Pink)







THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO  
DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE



1. STANDARD WIPE TEST

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.



2. SOAK TEST

The source is immersed in distilled water and maintained at  $50 \pm 10^\circ \text{C}$  for a minimum of four hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.



3. SOAK TEST -- BERYLLIUM WINDOW

The source is immersed in distilled water and maintained at  $50 \pm 10^\circ \text{C}$  for 20 minutes. The entire surface of the source is then wiped with a moistened cotton swab or filter paper disk. After drying, the swab or disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.



4. GAS SOURCE TEST (Radioactive Gas)

The source is placed in a vacuum desiccator and maintained at a pressure of less than 1 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. Activity levels exceeding 1000 cpm are cause for rejection of the source.



5. OTHER LEAK TEST

The ampoule is kept in an inverted position on a filter paper disk for a minimum of 16 hours. The filter paper disk is then checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha are cause for rejection of the source.



6. LEAK TEST NOT APPLICABLE

The active area of this source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001  $\mu\text{Ci}$  beta-gamma or 0.0001  $\mu\text{Ci}$  alpha at the time of shipment.



# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	445-96-2	Isotope:	Americium-243
Prepared By:	Genie Bost	Prepared By:	Angela Johnson
Carrier Conc:	2M HNO3	Prep Date:	01/05/1994
Reference Date:	01/01/1994	Verification Date:	05/11/2009
Ampoule Mass (g):	5.3739 g	Expiration Date:	05/11/2010
Uncertainty:	+/- 3 %	Primary Code:	445-96-2-A
LogBook No:	RC S 005 032	Dilution(mL):	100 mL
		Mass of Parent(g):	5.3419 g
		Density(g/mL):	1.0785
		Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$



## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009



09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Julie Strock	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/30/2008	09/29/2009
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003



07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/ml	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/ml	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC  
Version 1.0 9/18/2000



## Verification for Am-243 Standard 445-96-2-SS

M. Aders 5/15/2009	Isotope	Value	Uncertainty
	445-96-2-SS #1	1.360	0.1690
	445-96-2-SS #2	1.370	0.1690
	445-96-2-SS #3	1.290	0.1590
Mean Value (Counting) =	1.340	101.99	Pass
Stdev =	0.043588989	Rule 3 (Pass/Fail)	
Target =	1.314		
Lower Limit =	1.252822021		
Upper Limit =	1.427177979		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.087177979		
10 % of Mean =	0.134		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard **445-96-2-SS** using 0.1 mL for each source. Each standard was combined with 0.1 mL of **Cm-244** standard **0533-O** and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

*M. Aders 5/15/09*  
*Taheri*  
 007509



1374



# National Institute of Standards & Technology Certificate

## Standard Reference Material 4334H Plutonium-242 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive plutonium-242 nitrate and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

**Radiological Hazard:** The SRM ampoule contains plutonium-242 with a total activity of approximately 150 Bq. Plutonium-242 decays by alpha-particle emission. None of the alpha particles escape from the SRM ampoule. During the decay process, X-rays and gamma rays with energies from 10 keV to 160 keV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. The SRM should be used only by persons qualified to handle radioactive material.

**Chemical Hazard:** The SRM ampoule contains nitric acid ( $\text{HNO}_3$ ) with a concentration of 3 moles per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

**Storage and Handling:** The SRM should be stored and used at a temperature between 5 °C and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least January 2015. The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

**Preparation:** This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, M.P. Unterwieser, Acting Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group. The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program.

RECEIVED  
21/2/05

Lisa R. Karam, Acting Chief  
Ionizing Radiation Division

Gaithersburg, Maryland 20899  
January 2005

Robert L. Watters, Jr., Chief  
Measurement Services Division



### **Recommended Procedure for Opening the SRM Ampoule**

- 1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.
- 2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.
- 3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.
- 4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.
- 5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.
- 6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.
- 7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.
- 8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. **NEVER PIPETTE BY MOUTH.**
- 9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]\*.



# PROPERTIES OF SRM 4334H

## Certified values

Radionuclide	Plutonium-242
Reference time	1200 EST, 07 June 1994 [b]*
Massic activity of the solution [c]	26.31 Bq·g <sup>-1</sup>
Relative expanded uncertainty (k=2)	0.72% [d] [e]
Solution density	(1.105 ± 0.002) g·mL <sup>-1</sup> at 20 °C [f]

## Uncertified values

Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter	(16.5 ± 0.5) mm	
	Wall thickness	(0.60 ± 0.04) mm	
	Barium content	Less than 2.5%	
	Lead-oxide content	Less than 0.02%	
	Other heavy elements	Trace quantities	
Solution mass	Approximately 5.5 g		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L <sup>-1</sup> )	Mass Fraction (g·g <sup>-1</sup> )
	H <sub>2</sub> O	50	0.81
	HNO <sub>3</sub>	3.2	0.19
	<sup>242</sup> Pu <sup>+6</sup>	8 × 10 <sup>-7</sup>	2 × 10 <sup>-7</sup>
Radiological Properties:			
Alpha-particle-emitting impurities	None detected [g] [h]. See table on page 5.		
Beta-particle-emitting impurities	Plutonium-241: (0.092 ± 0.018) Bq·g <sup>-1</sup> [f] [h]		
Photon-emitting impurities	None detected [i]		
Half lives used	Plutonium-242: (373 500 ± 1100) a [j] [5] Plutonium-241: (14.35 ± 0.10) a [j] [5] Americium-241: (432.2 ± 0.7) a [j] [5]		
Calibration method and measuring instrument(s)	Three 4π $\alpha$ liquid-scintillation counters, a calibrated germanium detector system, and a silicon surface-barrier detector		



**EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d] [e]\***

Input Quantity $x_i$ , the source of uncertainty  (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$ , the standard uncertainty of $x_i$ (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$ , (%) [k]	Relative Sensitivity Factor, $ \partial y/\partial x_i  \cdot$ $(x_i/y)$ [m]	Relative Uncertainty Of Output Quantity, $u(y)/y$ , (%) [n]
Massic alpha-particle emission rate, corrected for background and decay	Standard deviation of the mean for 80 sets of $4\pi\alpha$ liquid- scintillation measurements (A)	0.05	1.0	0.05
Half life of Pu-242	Standard uncertainty of the half life (A)	0.32 [p]	0.00001 [q]	0.000003
Decay-scheme data	Standard uncertainty of the probability of decay by alpha- particle emission (A)	0.001	1.0	0.001
Extrapolation of alpha- particle-count-rate- versus-energy to zero energy	Estimated (B)	0.25	1.0	0.25
Gravimetric measurements	Estimated (B)	0.10	1.0	0.10
Live time [r]	Estimated (B)	0.10	1.0	0.10
Alpha-particle detection efficiency of scintillators	Estimated (B)	0.15	1.0	0.15
Alpha-particle-emitting impurities	Limit of detection (B) [s]	100.	0.001	0.10
Photon-emitting impurities	Limit of detection (B) [s]	100.	0.001	0.10
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$ , (%)				0.36
Coverage Factor, $k$				<u>x 2</u>
Relative Expanded Uncertainty of the Output Quantity, $U/y$ , (%)				0.72



RELATIVE ACTIVITIES OF RADIONUCLIDIC IMPURITIES AT THE REFERENCE TIME [b]

Radionuclide	Half Life (years) [j] [5]	Relative Activity As Determined By	
		LLNL	NIST
Plutonium-242	373 500 ± 1100	1.000 000	1.000 000
Plutonium-241	14.35 ± 0.10	- -	0.0035 ± 0.0004 [t]
Plutonium-240	6 564 ± 11	<sup>239</sup> Pu + <sup>240</sup> Pu <0.000 001 [u]	<sup>239</sup> Pu + <sup>240</sup> Pu 0.000 020 ± 0.000 021 [v]
Plutonium-239	24 110 ± 30		
Plutonium-238	87.7 ± 0.1	<sup>238</sup> Pu + <sup>241</sup> Am <0.000 016 [u]	0.000 009 ± 0.000 016 [v]
Americium-241	432.2 ± 0.7		0.000 000 assumed [t]

NOTES

- [a] The Sievert is the SI unit for dose equivalent. See reference [1]. One  $\mu\text{Sv}$  is equal to 0.1 mrem.  
Distance from Ampoule (cm): 1 30 100  
Approximate Dose Rate ( $\mu\text{Sv/h}$ ): <0.1 - -
- [b] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994.
- [c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].
- [d] The reported value,  $y$ , of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as  $y = f(x_1, x_2, x_3, \dots, x_n)$ , where  $f$  is a mathematical function derived from the assumed model of the measurement process. The value,  $x_i$ , used for each input quantity  $i$  has a **standard uncertainty**,  $u(x_i)$ , that generates a corresponding uncertainty in  $y$ ,  $u_i(y) \approx |\partial y / \partial x_i| \cdot u(x_i)$ , called a **component of combined standard uncertainty** of  $y$ . The **combined standard uncertainty** of  $y$ ,  $u_c(y)$ , is the positive square root of the sum of the squares of the components of combined standard uncertainty. The combined standard uncertainty is multiplied by a **coverage factor** of  $k=2$  to obtain  $U$ , the **expanded uncertainty** of  $y$ .

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation  $u_c(y)$ , the unknown value of the massic activity is believed to lie in the interval  $y \pm U$  with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].



- [e] The value of each component of combined standard uncertainty, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic response is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval  $U/2$  to  $2U$  (i.e., within a factor of 2 of the estimated value).
- [f] The stated uncertainty is two times the standard uncertainty.
- [g] Estimated limits of detection for alpha-particle-emitting impurities, expressed as massic alpha-particle emission rates (numbers of alpha particles per second per gram), are:  
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies less than 3.1 MeV,  
 $0.03 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 3.1 and 4.4 MeV, and  
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies greater than 5.0 MeV.
- [h] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994. Americium-241, the daughter of plutonium-241, was removed but has been growing in since that time.
- [i] Estimated limits of detection for photon-emitting impurities, expressed as massic photon emission rates (numbers of photons per second per gram), are:  
 $5 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 19 and 39 keV,  
 $7 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 49 and 92 keV,  
 $2 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 106 and 507 keV,  
 $1 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 515 and 1456 keV, and  
 $5 \times 10^{-6} \text{ s}^{-1}\cdot\text{g}^{-1}$  for energies between 1465 and 2750 keV,  
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of plutonium-242, plutonium-241, or americium-241.
- [j] The stated uncertainty is the standard uncertainty.
- [k] Relative standard uncertainty of the input quantity  $x_i$ .
- [m] The relative change in the output quantity  $y$  divided by the relative change in the input quantity  $x_i$ . If  $|\partial y / \partial x_i| \cdot (x_i / y) = 1.0$ , then a 1% change in  $x_i$  results in a 1% change in  $y$ . If  $|\partial y / \partial x_i| \cdot (x_i / y) = 0.05$ , then a 1% change in  $x_i$  results in a 0.05% change in  $y$ .
- [n] Relative component of combined standard uncertainty of output quantity  $y$ , rounded to two significant figures or less. The relative component of combined standard uncertainty of  $y$  is given by  $u_i(y)/y \equiv |\partial y / \partial x_i| \cdot u(x_i)/y = |\partial y / \partial x_i| \cdot (x_i / y) \cdot u(x_i)/x_i$ . The numerical values of  $u(x_i)/x_i$ ,  $|\partial y / \partial x_i| \cdot (x_i / y)$ , and  $u_i(y)/y$ , all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.



- [p] The relative standard uncertainty of  $\lambda t$  is determined by the relative standard uncertainty of  $\lambda$  (i.e., of the half life). The relative standard uncertainty of  $t$  is negligible.
- [q]  $|\partial y / \partial x_i| \cdot (x_i / y) = |\lambda t|$
- [r] The live time is determined by counting the pulses from a gated crystal-controlled oscillator.
- [s] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e.  $u(x_i) / x_i = 100\%$ .  $|\partial y / \partial x_i| \cdot (x_i / y) = \{(\text{response per Bq of impurity}) / (\text{response per Bq of Pu-242})\} \cdot \{(\text{Bq of impurity}) / (\text{Bq of Pu-242})\}$ . Thus  $u(y) / y$  is the relative change in  $y$  if the impurity were present with a massic activity equal to the estimated limit of detection.
- [t] The stated uncertainty is the standard uncertainty. The plutonium-241 activity was calculated from a gamma-ray measurement of the americium-241 ingrowth as of 25 November 1998, assuming that americium-241 was completely removed at the time of chemical purification.
- [u] Using alpha-particle spectrometry, no alpha-particle emission was detected that could reliably be ascribed to these radionuclides. The value shown is an estimated upper limit based upon background and counting statistics. Measurements were made at the Lawrence Livermore National Laboratory (LLNL) in July of 1994.
- [v] Using alpha-particle spectrometry, no alpha-particle emission was detected that could reliably be ascribed to these radionuclides. The stated uncertainty is the standard uncertainty. Measurements were made at the National Institute of Standards and Technology (NIST) in June and July of 1999.

#### REFERENCES

- [1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from Global Engineering Documents, 12 Inverness Way East, Englewood, CO 80112, U.S.A. Telephone 1-800-854-7179.
- [2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993 (corrected and reprinted, 1995). Available from Global Engineering Documents, 12 Inverness Way East, Englewood, CO 80112, U.S.A. Telephone 1-800-854-7179.
- [3] B.N. Taylor and C.E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.
- [4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.
- [5] Evaluated Nuclear Structure Data File (ENSDF), January 2005.



# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1374	Isotope:	Plutonium-242
Prepared By:	Mary Aders	Prepared By:	Ashley Drochter
Carrier Conc:	0.5M HNO3	Prep Date:	12/02/2009
Reference Date:	06/07/1994	Verification Date:	12/08/2009
Ampoule Mass (g):	5.5 g	Expiration Date:	12/08/2010
Uncertainty:	+/- .72 %	Primary Code:	1374-A
LogBook No:	RC-S-051-093	Dilution(mL):	250 mL
		Mass of Parent(g):	5.3616 g
		Density(g/mL):	1.0136
		Balance ID:	38080204

## Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parent Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parent Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3616 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (250 \text{ mL}) = 33.8553 \text{ dpm/mL}$
$(5.3616 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0136 \text{ g/mL}) / (250 \text{ mL}) = 33.4010 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
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GEL Laboratories LLC  
Version 1.0 9/18/2000



## Verification for Pu-242 Standard 1374-A

A.Drochter 12/8/2009	Isotope	Value	Uncertainty
	1374-A	1.610	0.2480
	1374-A	1.580	0.2510
	1374-A	1.530	0.2440
Mean Value (Counting) =	1.573	103.17	Pass
Stdev =	0.040414519		Rule 3 (Pass/Fail)
Target =	1.52		
Lower Limit =	1.492504296		
Upper Limit =	1.654162371		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.080829038		
10 % of Mean =	0.157333333		
Rule 2 (Pass/Fail)	Pass		

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

The analyst prepared three standard verification sources for standard 1374-A using 0.1 mL for each source. Each standard was combined with 0.1 mL of Pu239 standard 0338-BB and 50 micrograms of neodymium carrier in a disposable centrifuge tube containing 4 mL of 2 M HCl and 6 mL of DI water. Four drops of 25% Hydrazine dihydrochloride were added to each centrifuge tube and swirled. Two mL of 49% HF was added to precipitate neodymium (and plutonium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Pu-242 were calculated by comparison to Pu-239 certified values.

*Handwritten:* Not called  
12/14/09  
12/19/09  
12/19/09





Eckert & Ziegler

Analytics

1380 Seaboard Industrial Blvd.  
Atlanta, Georgia 30318  
Tel 404-352-8677  
Fax 404-352-2837  
www.analytiscinc.com

**CERTIFICATE OF CALIBRATION**  
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC  
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-Life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

**Comments:**

Impurities: U-233 <0.3%, Am-241 <0.15%  
5.20453 grams 1M HNO<sub>3</sub> solution.

Source Prepared By:

WLS  
W. Mao, Radiochemist

QA Approved:

DM Montgomery  
D. M. Montgomery, QA Manager

Date: 12-11-08



# Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1283	Isotope:	Uranium-232
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3	Prep Date:	12/16/2008
Reference Date:	12/09/2008	Verification Date:	12/30/2008
Ampoule Mass (g):	5.20453 g	Expiration Date:	12/30/2009
Uncertainty:	+/- 5 %	Primary Code:	1283-A
LogBook No:	RC-S-051-002	Dilution(mL):	100 mL
		Mass of Parent(g):	5.0245 g
		Density(g/mL):	1.0285
		Balance ID:	

## Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

## Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/mL	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/30/2008	12/30/2009
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/mL	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/09/2009	12/30/2009
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010



## Verification for Uranium-232 Standard 1283-H

<b>Analyst: A. Drochter</b>	<b>Serial #</b>	<b>Value</b>	<b>Uncertainty</b>					
<b>Date: 12/10/09</b>	1283-H N1	2.020	pCi/L	0.238	pCi/L			
	1283-H N2	2.000	pCi/L	0.234	pCi/L			
	1283-H N3	2.060	pCi/L	0.242	pCi/L			
<b>Mean Value (Counting) =</b>	2.027	pCi/L	<b>99.66904</b>	<b>Pass</b>				
<b>Stdev =</b>	0.030550505	pCi/L	<b>Rule 3 (Pass/Fail)</b>					
<b>Target =</b>	2.033	pCi/L						
<b>Lower Limit =</b>	1.965565657	pCi/L						
<b>Upper Limit =</b>	2.087767676	pCi/L						
<b>Rule 1 Pass/Fail</b>	<b>Pass</b>							
<b>Two sigma =</b>	0.061101009							
<b>10 % of Mean =</b>	0.202666667							
<b>Rule 2 (Pass/Fail)</b>	<b>Pass</b>							

**Rule 1 =** The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

**Rule 2 =** The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

**Rule 3 =** The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

*A. Drochter*  
12/14/09



# RUNLOGS



# Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 936923

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243457001	SAMPLE	MXR1	GAM05	04-JAN-10 13:58	DONE	CAN	11-JUN-09 00:00
243457002	SAMPLE	MXR1	GAM07	04-JAN-10 13:58	DONE	CAN	20-JUL-09 00:00
243457003	SAMPLE	MXR1	GAM10	04-JAN-10 13:58	DONE	CAN	16-MAR-09 00:00
243457004	SAMPLE	MXR1	GAM11	04-JAN-10 13:59	DONE	CAN	18-NOV-09 00:00
243492001	SAMPLE	MXR1	GAM12	04-JAN-10 13:59	DONE	CAN	10-FEB-09 00:00
243492002	SAMPLE	MXR1	GAM13	04-JAN-10 14:00	DONE	CAN	02-FEB-09 00:00
243492004	SAMPLE	MXR1	GAM15	04-JAN-10 14:01	DONE	CAN	16-FEB-09 00:00
243492005	SAMPLE	MXR1	GAM16	04-JAN-10 14:01	DONE	CAN	16-NOV-09 00:00
243492006	SAMPLE	MXR1	GAM17	04-JAN-10 14:02	DONE	CAN	27-JAN-09 00:00
243492007	SAMPLE	MXR1	GAM18	04-JAN-10 14:02	DONE	CAN	23-APR-09 00:00
1202004732	MB	MXR1	GAM22	04-JAN-10 14:05	DONE	CAN	02-DEC-09 00:00
1202004733	DUP	MXR1	GAM15	04-JAN-10 16:16	DONE	CAN	16-FEB-09 00:00
1202004734	LCS	MXR1	GAM05	05-JAN-10 07:39	DONE	CAN	11-JUN-09 00:00
243492003	SAMPLE	MXR1	GAM13	05-JAN-10 14:15	DONE	CAN	02-FEB-09 00:00



# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 936962**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243397001	SAMPLE	MXE1	1018	06-JAN-10 18:09	DONE		
243397002	SAMPLE	MXE1	1223	06-JAN-10 18:20	DONE		
243397003	SAMPLE	MXE1	1224	06-JAN-10 18:20	DONE		
243397004	SAMPLE	MXE1	1225	06-JAN-10 18:20	DONE		
243397005	SAMPLE	MXE1	1226	06-JAN-10 18:20	DONE		
243457001	SAMPLE	MXE1	1227	06-JAN-10 18:20	DONE		
243457002	SAMPLE	MXE1	1228	06-JAN-10 18:20	DONE		
243457003	SAMPLE	MXE1	1229	06-JAN-10 18:20	DONE		
243457004	SAMPLE	MXE1	1230	06-JAN-10 18:20	DONE		
243472001	SAMPLE	MXE1	1231	06-JAN-10 18:20	DONE		
243472002	SAMPLE	MXE1	1232	06-JAN-10 18:20	DONE		
243472003	SAMPLE	MXE1	1233	06-JAN-10 18:20	DONE		
243509001	SAMPLE	MXE1	1234	06-JAN-10 18:20	DONE		
243509002	SAMPLE	MXE1	1235	06-JAN-10 18:20	DONE		
243509003	SAMPLE	MXE1	1236	06-JAN-10 18:20	DONE		
243555001	SAMPLE	MXE1	1237	06-JAN-10 18:20	DONE		
243555002	SAMPLE	MXE1	1238	06-JAN-10 18:21	DONE		
243611001	SAMPLE	MXE1	1239	06-JAN-10 18:21	DONE		
243611002	SAMPLE	MXE1	1240	06-JAN-10 18:21	DONE		
243611003	SAMPLE	MXE1	1241	06-JAN-10 18:21	DONE		
1202004879	MB	MXE1	1242	06-JAN-10 18:21	DONE		
1202004880	DUP	MXE1	1243	06-JAN-10 18:21	DONE		
1202004881	LCS	MXE1	1244	06-JAN-10 18:21	DONE		



# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 936975**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202004923	LCS	MXE1	1167	06-JAN-10 10:35	DONE		
243611001	SAMPLE	MXE1	1168	06-JAN-10 10:35	DONE		
243611002	SAMPLE	MXE1	1169	06-JAN-10 10:35	DONE		
243611003	SAMPLE	MXE1	1170	06-JAN-10 10:35	DONE		
1202004921	MB	MXE1	1171	06-JAN-10 10:36	DONE		
1202004922	DUP	MXE1	1172	06-JAN-10 10:36	DONE		
243397001	SAMPLE	MXE1	1114	06-JAN-10 13:51	DONE		
243397002	SAMPLE	MXE1	1115	06-JAN-10 13:51	DONE		
243397003	SAMPLE	MXE1	1117	06-JAN-10 13:51	DONE		
243397004	SAMPLE	MXE1	1118	06-JAN-10 13:51	DONE		
243397005	SAMPLE	MXE1	1121	06-JAN-10 13:51	DONE		
243457001	SAMPLE	MXE1	1122	06-JAN-10 13:51	DONE		
243457002	SAMPLE	MXE1	1123	06-JAN-10 13:51	DONE		
243457003	SAMPLE	MXE1	1124	06-JAN-10 13:51	DONE		
243457004	SAMPLE	MXE1	1128	06-JAN-10 13:51	DONE		
243472001	SAMPLE	MXE1	1129	06-JAN-10 13:52	DONE		
243472002	SAMPLE	MXE1	1130	06-JAN-10 13:52	DONE		
243472003	SAMPLE	MXE1	1132	06-JAN-10 13:52	DONE		
243509001	SAMPLE	MXE1	1133	06-JAN-10 13:52	DONE		
243509002	SAMPLE	MXE1	1134	06-JAN-10 13:52	DONE		
243509003	SAMPLE	MXE1	1152	06-JAN-10 13:52	DONE		
243555001	SAMPLE	MXE1	1153	06-JAN-10 13:52	DUSE		
243555002	SAMPLE	MXE1	1154	06-JAN-10 13:52	DUSE		



# Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 939255

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243555002	SAMPLE	MXE1	1241	09-JAN-10 10:06	DUSE		
243611001	SAMPLE	MXE1	1242	09-JAN-10 10:06	DONE		
243611002	SAMPLE	MXE1	1243	09-JAN-10 10:06	DONE		
243611003	SAMPLE	MXE1	1244	09-JAN-10 10:06	DONE		
243397001	SAMPLE	MXE1	1001	09-JAN-10 12:01	DONE		
243397002	SAMPLE	MXE1	1002	09-JAN-10 12:01	DONE		
243397003	SAMPLE	MXE1	1003	09-JAN-10 12:01	DONE		
243397004	SAMPLE	MXE1	1004	09-JAN-10 12:01	DUSE		
243397005	SAMPLE	MXE1	1005	09-JAN-10 12:01	DONE		
243457001	SAMPLE	MXE1	1006	09-JAN-10 12:01	DONE		
243457002	SAMPLE	MXE1	1007	09-JAN-10 12:01	DONE		
243457003	SAMPLE	MXE1	1008	09-JAN-10 12:01	DUSE		
243457004	SAMPLE	MXE1	1009	09-JAN-10 12:01	DONE		
243472001	SAMPLE	MXE1	1010	09-JAN-10 12:01	DONE		
243472002	SAMPLE	MXE1	1011	09-JAN-10 12:01	DONE		
243472003	SAMPLE	MXE1	1012	09-JAN-10 12:01	DONE		
243509001	SAMPLE	MXE1	1013	09-JAN-10 12:01	DONE		
243509002	SAMPLE	MXE1	1014	09-JAN-10 12:01	DONE		
243509003	SAMPLE	MXE1	1016	09-JAN-10 12:01	DONE		
243555001	SAMPLE	MXE1	1017	09-JAN-10 12:01	DUSE		
1202009994	MB	MXE1	1018	09-JAN-10 12:01	DONE		
1202009995	DUP	MXE1	1019	09-JAN-10 12:01	DONE		
1202009996	LCS	MXE1	1020	09-JAN-10 12:01	DONE		
243397004	SAMPLE	MXE1	1209	11-JAN-10 11:55	DONE		
243457003	SAMPLE	MXE1	1210	11-JAN-10 11:55	DUSE		
243555001	SAMPLE	MXE1	1211	11-JAN-10 11:56	DUSE		
243555002	SAMPLE	MXE1	1212	11-JAN-10 11:56	DUSE		



## Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 940420

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243457003	SAMPLE	MXE1	1095	12-JAN-10 11:28	DONE		
1202012591	DUP	MXE1	1097	12-JAN-10 11:28	DONE		
1202012592	LCS	MXE1	1099	12-JAN-10 11:28	DONE		
1202012590	MB	MXE1	1005	12-JAN-10 15:55	DUSE		
1202012590	MB	MXE1	1256	13-JAN-10 15:58	DONE		