

Thursday, December 17, 2009

Page 1 of 2  
REQUEST NUMBER: 10-988

**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: 10-988  
Per Agreement Number: 126310011  
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples  
according to the schedule indicated:

SHIP DATE: 12/17/2009  
TURNAROUND/REPORT DUE: 1/16/2010  
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background  
LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE12-10-7351	R	12/15/2009	
		1	RE12-10-7351	R	12/15/2009	
	HASL-300:AM-241	1	RE12-10-7351	R	12/15/2009	
	HASL-300:ISOPU	1	RE12-10-7351	R	12/15/2009	
	HASL-300:ISOU	1	RE12-10-7351	R	12/15/2009	
	SW-846:6020	1	RE12-10-7351	R	12/15/2009	
	SW-846:6850	1	RE12-10-7351	R	12/15/2009	
	SW-846:7471A	1	RE12-10-7351	R	12/15/2009	
	SW-846:8082	1	RE12-10-7351	R	12/15/2009	

Thursday, December 17, 2009

Page 2 of 2  
REQUEST NUMBER: 10-988

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	SW-846:8321A_MOD	1	RE12-10-7351	R	12/15/2009	
	SW-846:9012A	1	RE12-10-7351	R	12/15/2009	

Final Page of REQUEST NUMBER 10-988

Thursday, December 17, 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-988C

**LOS ALAMOS**

REQUEST NUMBER: 10-988

**NATIONAL LABORATORY**

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/16/2010

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
RE12-10-7351	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7351	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7351	1	8 IN RESEALABLE POLY BAG	RADVANA+B+G	None	R
RE12-10-7351	1	AMBER GLASS	8082+NMED-HEXP	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time


 12/17/09 3:00

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: 2484

EVENT NAME: 4th Qtr. FY09 - AOC C-12-004 - Threemile Canyon

SAMPLE ID: RE12-10-7351

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/15/2009		MEDIA:		OBT3	
TIME COLLECTED (HH:MM)		1450		SUB-MEDIA:		TUFF 1	
PRS ID:	C-12-004	ok		SAMPLE TECH CODE:		HA	
LOCATION ID:	12-610569	↓		FIELD QC TYPE:		NA	
LOCATION TYPE:	GENERIC	↓		FIELD PREP:		NA	
TOP DEPTH:	0	0.0		SAMPLE USAGE:		INV	
BOTTOM DEPTH:	0	0.5		SCREEN/PORT DESC:		NA	
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA		NA	
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA		NA	
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA		NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY 12/15/09	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:

Dark brown soil with many cobbles, some sand

SAMPLE COMMENTS: NA

LOCATION DESC: 4-1

South of rd 4 ft

## FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 16$  dpmPID  $\frac{\text{ambient}}{\text{reading}} \frac{0.0}{0.0}$  ppmBY  $\leq 2120$  dpm

HE negative

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Nickolas Gallegos

RELINQUISHED BY (Printed Name) LARRY A. LOYEB (Signature) Larry A. Loyeb	Date/Time 12/15/09 16:15	RECEIVED BY (Printed Name) Sheri Sherwood (Signature) Sheri Sherwood	Date/Time 12/15/09 1615
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



## Rad Screening Data Release Form

The Following samples were received at the Field Support Facility (FSF) without screening data  
(list sample number): RE12-10-7351

These samples will not be shipped until radiological screening data documentation arrives at the FSF. I understand that it is my responsibility to ensure this information arrives at the FSF in a timely manner. If holding times are missed because screening data does not arrive, I will pick up the samples.

.....  
The following samples do not require rad screening data for the reasons stated (list sample numbers):

Reason:

.....  
Print Last Name

Lopez

Signature

Randy A. Lopez

Date

12/15/09



133 State Road 4, White Rock, NM 87152  
505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-09-00161  
Client Sample ID: RE12-10-7351  
Sample Collection Date: 12/15/09 13:45  
Sample Matrix: Soil/Solid

Request or PO Number:  
ARS Sample ID: ARS2-09-00161-001  
Date Received: 12/16/09 00:00  
Report Date: 12/17/09 07:17

1A

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	YPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	195.84	43.16	25.57	49.37		pCi/g	EPA 900.0M	12/16/2009	ME	N/A
GROSS BETA	118.70	12.12	12.63	22.34		pCi/g	EPA 900.0M	12/16/2009	ME	N/A
NA-22	0.00	0.00	0.08	0.00		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
K-40	14.08	5.77	1.32	5.78		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
CO-60	0.00	8.66	0.09	8.66		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
CS-134	0.00	0.00	0.06	0.00		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
CS-137	0.13	0.13	0.05	0.13		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
EU-152	0.41	0.41	0.10	0.41		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
PB-212	-0.07	128.23	0.23	128.23		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
RA-228	0.74	0.69	0.23	0.89		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
U-235	1.33	0.67	0.13	0.67		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
U-238	3.39	2.53	0.97	2.65		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
AM-241	0.01	0.10	0.07	0.10		pCi/g	EPA 901.1M	12/16/2009	ME	N/A
NOTES: % Moisture: 0.72										

*Matthew A. Edey*  
Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

LELAP Certificate# 30658

NELAP Certificate # E87558

**DATA VALIDATION COVER SHEET**

5121-1

**Data Validation Cover Sheet**

Records Use only

**Section I.**REQUEST NUMBER: 10-988 VALIDATION DATE: 02/04/10 LAB CODE: GELCONTRACT LABORATORY NAME: GEL Laboratories LLCVALIDATOR: Susan Ball 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 | 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):

- The MS and MSD %R calculations were performed incorrectly. The parent sample result was < the MDL and, thus, a result of 0 µg/kg should have been used to calculate the %Rs. The laboratory subtracted the parent sample concentration. The %Rs were within the acceptance limits when calculated correctly. No sample results were qualified.


Reviewed by: Mary Donovan Level: I Date: 02/08/10VALIDATOR'S SIGNATURE: DATE: 02/04/10

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 type="checkbox"/>	<input checked="" 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	
5121-2	Records Use only
LC/MS/MS Perchlorate 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"/>	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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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

P perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: SOIL

Extraction Batch ID: 935070

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7351

Date Received: 18-DEC-09

GEL Job No (SDG): 10-988

GEL Sample ID: 243273001

Date Filtered: 24-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	.559	2.24	0.559	ug/kg	U	1	24-DEC-09 20:14	per1224072a
	Perchlorate Isotope Ratio						1	24-DEC-09 20:14	per1224072a
14797-73-0	Perchlorate-101	.559	2.24	0.559	ug/kg	U	1	24-DEC-09 20:14	per1224072a
	Perchlorate-O(18)			5.78	ug/kg		1	24-DEC-09 20:14	per1224072a

<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 <sup>1</sup>  
Aliquot %Solids

**DATA VALIDATION COVER SHEET**

5122-1

**Data Validation Cover Sheet**

Records Use only

**Section I.**

REQUEST NUMBER: 10-988 VALIDATION DATE: 02/05/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Susan Ball 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. It should be noted that the raw ICAL data from the instrument used for the secondary HE analysis were not reported in the data package. Thus, the surrogate RT criteria could not be evaluated. No sample data were qualified as a result.
2. The CCV %Ds for HMX and RDX were >20% with positive bias. The sample results were NDs and, thus, were not qualified.
3. The LCS %R for TATB was > the laboratory UAL. The associated sample result was an ND and, thus, was not qualified.
4. It should be noted that the parent QC sample was from another LANL RN. In addition, the raw data for the parent sample were not included in the data package. No sample data were qualified as a result.

Reviewed by: Mary Donovan Level: 1 Date: 02/08/10


VALIDATOR'S SIGNATURE: Susan Ball

DATE: 02/05/10




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				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				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				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	
<b>5122-2</b>  <b>LC/MS/MS High Explosive 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"/>	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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	32. The MS/MSD percent recover was >70%.	N/A	J+, HE12f
<input type="checkbox"/>	<input checked="" 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				Assign Qualifier Listed Below if Criterion = Yes	
(Check One)				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: RE12-10-7351

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 243273001

Sample Amount 2

Moisture: 10.5

Amount Units g

Date Received: 18-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0102069a

Date Analyzed: 03-JAN-10 23:00

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	Concentrated Extract Volume	X	Dilution Factor
		Sample Amount		

1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7351

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 243273001

Sample Amount 2

Moisture: 10.5

Amount Units g

Date Received: 18-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01030059.wiff

Date Analyzed: 04-JAN-10 02:51

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

**DATA VALIDATION COVER SHEET****5116-1****Data Validation Cover Sheet**

Records Use only

**Section I.**REQUEST NUMBER: 10-988 VALIDATION DATE: 02/06/10 LAB CODE: GELCONTRACT LABORATORY NAME: GEL Laboratories LLCVALIDATOR: Susan Ball 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): <u>PCBs</u> |  |   |  |

**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):

- The parent QC sample was from another LANL RN, and the raw data for the parent QC sample were not included in the data package. Since the analysis of an MS/MSD pair is not a client requirement, no sample results were qualified.

Reviewed by: Mary Donovan Level: 1 Date: 02/08/10VALIDATOR'S SIGNATURE: DATE: 02/06/10

# **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 (Check One)				Assign Qualifier Listed Below If Criterion = Yes	
				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: 10-988  
Lab Sample ID: 243273001

Date Collected: 12/15/2009 12:00  
Date Received: 12/18/2009 09:25  
Client: LANL010  
Method: SW846 8082  
Inst: ECD1A.I  
Analyst: JAOC  
Aliquot: 30.14 g  
Column: 1 CLP1  
2 CLP2

Matrix: R  
%Moisture: 10.5  
Project: LANL01004  
SOP Ref: GL-OA-E-040  
Dilution: 1  
Inj. Vol: 1 uL  
Final Volume: 1 mL  
Level: LOW

CAS No.	Parname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.71	ug/kg	1.24	3.71	1
11104-28-2	Aroclor-1221	U	3.71	ug/kg	1.24	3.71	1
11141-16-5	Aroclor-1232	U	3.71	ug/kg	1.24	3.71	1
53469-21-9	Aroclor-1242	U	3.71	ug/kg	1.24	3.71	1
12672-29-6	Aroclor-1248	U	3.71	ug/kg	1.24	3.71	1
11097-69-1	Aroclor-1254	U	3.71	ug/kg	1.24	3.71	1
11096-82-5	Aroclor-1260	U	3.71	ug/kg	1.24	3.71	1

SEB  
2/6/10

**DATA VALIDATION COVER SHEET**

5118-1

**Data Validation Cover Sheet**

Records Use only

**Section I.**

REQUEST NUMBER: 10-988 VALIDATION DATE: 02/06/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Susan Ball 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. In the MB, Sb was detected. The sample result was an ND and, thus, was not qualified.
2. In the CCBs, K and Sb were detected. The K result was a detect >5X the greatest blank concentration, the Sb result was an ND and, thus, no sample results were qualified.
3. The MS %Rs for Ba and Sb were < the laboratory LAL but  $\geq 10\%$ . The Ba result was a detect and, thus, was qualified J-,16a. The Sb result was an ND and, thus, was qualified UJ,16a. The MS %Rs for Al, Fe, Mg and K were > the laboratory UAL and the MS %R for Ca was < the laboratory LAL but  $\geq 10\%$ . However, the parent sample concentrations were >4X the spike concentrations and, thus, the associated Al, Ca, Fe, Mg, and K sample results were not qualified, based on professional judgment.
4. It should be noted that the parent QC sample was from another LANL RN. It should also be noted that ICP and ICP-MS raw data were not included in the data package. No sample results were qualified.

Reviewed by: Mary Donovan


Level: I


Date: 02/08/10

VALIDATOR'S SIGNATURE:


A handwritten signature, likely of Susan Ball, in dark ink.

DATE: 02/06/10

DATA VALIDATION COVER SHEET	
<b>5118-1</b>  <b>Data Validation Cover Sheet</b>	Records Use only   Los Alamos NATIONAL LABORATORY EST. 1942
Form 5118-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project


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"/>	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 checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23. The associated matrix spike recovery was $<$ 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 $>$ 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 $\geq 5X$ 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: 10-988

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243273001

BASIS: Dry Weight

DATE COLLECTED 15-DEC-09

CLIENT ID: RE12-10-7351

LEVEL: Low

DATE RECEIVED 18-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	5470000	ug/Kg		6920	20400	20400	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-36-0	Antimony UJ, 16a	1020	ug/Kg	U	336	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-38-2	Arsenic	0.593	mg/kg	J	0.215	1.07	1.07	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-39-3	Barium J-, 16a	260000	ug/Kg		102	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-41-7	Beryllium	0.303	mg/kg		0.0215	0.107	0.107	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-43-9	Cadmium	832	ug/Kg		102	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-70-2	Calcium	2660000	ug/Kg		8140	25500	25500	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-47-3	Chromium	16800	ug/Kg		153	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-48-4	Cobalt	4610	ug/Kg		153	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-50-8	Copper	28100	ug/Kg		305	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381
7439-89-6	Iron	9480000	ug/Kg		8140	25500	25500	1	P	HSC	01/06/10 12:53	010610A-2	935381
7439-92-1	Lead	8610	ug/Kg		255	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381
7439-95-4	Magnesium	1570000	ug/Kg		8650	30500	30500	1	P	HSC	01/05/10 18:38	010510-1	935381
7439-96-5	Manganese	322000	ug/Kg		204	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381
7439-97-6	Mercury	5.51	ug/kg	J	4.22	12.4	12.4	1	AV	JXL1	01/08/10 10:48	010810S1-5	935670
7440-02-0	Nickel	7.3	mg/kg		0.107	0.429	0.429	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-09-7	Potassium	997000	ug/Kg		6520	25500	25500	1	P	HSC	01/06/10 12:53	010610A-2	935381
7782-49-2	Selenium	1.07	mg/kg	U	0.536	1.07	1.07	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-22-4	Silver	2560	ug/Kg		102	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-23-5	Sodium	237000	ug/Kg		7130	25500	25500	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-28-0	Thallium	0.0886	mg/kg	J	0.0644	0.215	0.215	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-61-1	Uranium	3.86	mg/kg		0.0142	0.0429	0.0429	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-62-2	Vanadium	20500	ug/Kg		102	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-66-6	Zinc	38200	ug/Kg		336	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
935378	935377	SW846 3050B	0.521	g	50	mL	12/21/09	BXA1
935381	935380	SW846 3050B	0.549	g	50	mL	12/21/09	BXA1
935670	935669	SW846 7471A Prep	0.54	g	30	mL	01/07/10	AXG2

SEB  
2/6/10

**DATA VALIDATION COVER SHEET**

5120-1

**Data Validation Cover Sheet**

Records Use only

**Section I.**

REQUEST NUMBER: 10-988 VALIDATION DATE: 02/06/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Susan Ball 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 | 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 parent QC samples were from other LANL RNs. No sample results were qualified.


Reviewed by: Mary Donivan Level: 1 Date: 02/08/10

VALIDATOR'S SIGNATURE:


DATE: 02/06/10

GENERAL CHEMISTRY ANALYTICAL DATA VALIDATION CHECKLIST	
5120-2  General Chemistry 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 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	
<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"/>	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 ≤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 ≤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 4, 2010

Client SDG: 10-988

Client Sample ID: RE12-10-7351  
Sample ID: 243273001  
Matrix: R  
Collect Date: 15-DEC-09 12:00  
Receive Date: 18-DEC-09  
Collector: Client  
Moisture: 10.5%

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	76.0	279	ug/kg	1	AXC2	12/29/09	1349	935219	1
----------------	---	----	------	-----	-------	---	------	----------	------	--------	---

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/29/09	1259	935217

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	



**DATA VALIDATION COVER SHEET**

5119-1

**Data Validation Cover Sheet**

Records Use only

**Section I.**

REQUEST NUMBER: 10-988 VALIDATION DATE: 02/06/10 LAB CODE: GEL

CONTRACT LABORATORY NAME: GEL Laboratories LLC

VALIDATOR: Susan Ball 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 | 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. The gamma spec results that were rejected by the laboratory due to interference or low abundance were qualified R,R5a. In the QC samples, several results were also rejected by the laboratory. No sample data were qualified as a result.
2. It should be noted that the parent QC samples were from other LANL RNs. No sample data were qualified.


Reviewed by: Mary Donovan Level: I Date: 02/08/10

VALIDATOR'S SIGNATURE: \_\_\_\_\_


DATE: 02/06/10

RAD ANALYTICAL DATA VALIDATION CHECKLIST	
5119-2	Records Use only
<div style="display: flex; justify-content: space-between; align-items: center;"> <div>Rad Analytical Data Validation Checklist</div> <div>  </div> </div>	

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, 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
<div style="display: flex; justify-content: space-between; align-items: center;"> <div>Rad Analytical Data Validation Checklist</div> <div>  </div> </div>	

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	
<b>5119-2</b>  <b>Rad 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"/>	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

**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 12, 2010

Client Sample ID:	RE12-10-7351	Project:	LANL01004
Sample ID:	243273001	Client ID:	LANL010
Matrix:	R		
Collect Date:	15-DEC-09		
Receive Date:	18-DEC-09		
Collector:	Client		
Moisture:	10.5%		

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	0.022	0.0224	+/-0.00669	0.050	pCi/g		KXM4	12/30/09	1044	935836	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00117	0.019	+/-0.00117	0.050	pCi/g		KXM4	12/29/09	1535	935838	3
Plutonium-239/240		0.0387	0.0214	+/-0.00701	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.54	0.106	+/-0.131	0.100	pCi/g		KXM4	01/07/10	1757	938206	4
Uranium-235/236		0.0929	0.0657	+/-0.0209	0.100	pCi/g						
Uranium-238		1.88	0.0614	+/-0.154	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0968	0.290	+/-0.0886	0.200	pCi/g		MXR1	12/30/09	2247	935341	7
Bismuth-211	UI	2.11	R,R5a	0.235	+/-0.185	pCi/g						
Bismuth-214		0.612		0.0743	+/-0.0551	0.200	pCi/g					
Cadmium-109	U	0.959		1.17	+/-0.365	pCi/g						
Cerium-139	U	-0.00989		0.0346	+/-0.0102	0.050	pCi/g					
Cesium-134	U	0.029		0.0527	+/-0.0155	0.100	pCi/g					
Cesium-137		0.584		0.0404	+/-0.0309	0.100	pCi/g					
Cobalt-60	U	-0.0106		0.0374	+/-0.012	0.100	pCi/g					
Europium-152	U	0.0221		0.111	+/-0.0535	0.200	pCi/g					
Lanthanum-140	U	-0.0143		0.0805	+/-0.0275	pCi/g						
Lead-212		0.914		0.0631	+/-0.051	0.100	pCi/g					
Lead-214		0.734		0.0819	+/-0.067	0.100	pCi/g					
Mercury-203	U	0.00167		0.0478	+/-0.0135	0.100	pCi/g					
Potassium-40		17.8		0.362	+/-0.840	1.00	pCi/g					
Radium-223	U	-0.263		0.790	+/-0.232	pCi/g						
Radium-224	UI	2.68	R,R5a	0.717	+/-0.356	pCi/g						
Radium-226		0.612		0.0743	+/-0.0551	pCi/g						
Radium-228		0.804		0.130	+/-0.0868	0.500	pCi/g					
Ruthenium-106	U	-0.078		0.340	+/-0.105	0.800	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 12, 2010

Client Sample ID: RE12-10-7351  
Sample ID: 243273001  
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	-0.00337	0.0416	+/-0.0128	0.080	pCi/g					
Strontium-85	UI	0.0592	R, R5a	0.0472	+/-0.0143	pCi/g					
Thallium-208		0.270	0.0376	+/-0.0242	0.080	pCi/g					
Thorium-227	U	0.151	0.460	+/-0.128		pCi/g					
Thorium-231	U	-0.263	0.790	+/-0.232		pCi/g					
Thorium-234	U	0.825	2.11	+/-0.924	2.00	pCi/g					
Tin-113	U	0.00687	0.0531	+/-0.0152	0.100	pCi/g					
Uranium-235	U	0.0893	0.250	+/-0.0709	0.500	pCi/g					
Yttrium-88	U	-0.000693	0.0326	+/-0.00994	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, U-02-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE EML HASL-300, U-02-RC Modified
7	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	94.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	80.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(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

Thursday, December 17, 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-988C

LOS ALAMOS

REQUEST NUMBER: 10-988

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/16/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

243873%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7351	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7351	1	POLY	Met+U+CLD4+CN	Ice	R
RE12-10-7351	1	8 IN RESEALABLE POLY BAG	RADVANA+B+G	None	R
RE12-10-7351	1	AMBER GLASS	8082+NMED-HEXP	Ice	R

Relinquished By:

Date Time

Received By:

Date Time

Printed Name

Signature

12/17/09

3:00

Printed Name

Signature

Patricia Dover-Dent P. H. Dent 12-18-09 09:25

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

Thursday, December 17, 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: 10-988

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples  
according to the schedule indicated:

SHIP DATE: 12/17/2009

TURNAROUND/REPORT DUE: 1/16/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature: 

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA-901.1	1	RE12-10-7351	R	12/15/2009	
		1	RE12-10-7351	R	12/15/2009	
	HASL-300:AM-241	1	RE12-10-7351	R	12/15/2009	
	HASL-300:ISOPU	1	RE12-10-7351	R	12/15/2009	
	HASL-300:ISOU	1	RE12-10-7351	R	12/15/2009	
	SW-846:6020	1	RE12-10-7351	R	12/15/2009	
	SW-846:6850	1	RE12-10-7351	R	12/15/2009	
	SW-846:7471A	1	RE12-10-7351	R	12/15/2009	
	SW-846:6082	1	RE12-10-7351	R	12/15/2009	



REQUEST NUMBER: 10-988

Thursday, December 17, 2009

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	SW-846-8321A_MOD	1	RE12-10-7351	R	12/15/2009	
	SW-846-9012A	1	RE12-10-7351	R	12/15/2009	

Final Page of REQUEST NUMBER 10-988



January 04, 2010

[www.gel.com](http://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: 243273  
SDG: 10-988

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on December 18, 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: 10-988  
Enclosures

**Los Alamos National Laboratory (72733-001-09)**  
**LANL ER Project**  
**Work Order #: 243273**  
**SDG: 10-988**

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# Case Narrative

**Case Narrative for  
Los Alamos National Laboratory (72733-001-09)  
LANL ER Project  
Workorder #: 243273  
SDG # : 10-988**

**January 04, 2010**

**Laboratory Identification:**

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

**Summary**

**Sample receipt** The sample arrived at GEL Laboratories LLC, Charleston, South Carolina on December 18, 2009 for analysis. The sample was prepared/analyzed within the required holding time. Shipping container temperature was checked, documented, and within specifications. The samples were screened according to GEL Standard Operating Procedure. The lab did not receive a resealable poly bag as listed on the COC. 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 13/15C temperatures. Shipping container temperature was within specification (0 - 6C).

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

<u>Laboratory ID</u>	<u>Client ID</u>
243273001	RE12-10-7351

**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 04 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**

Thursday, December 17, 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-988C

LOS ALAMOS

REQUEST NUMBER: 10-988

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/16/2010

General Engineering Laboratories, Inc.,  
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

243873%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7351	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7351	1	POLY	Met+U+CLO4+CN	Ice	R
RE12-10-7351	1	8 IN RESEALABLE POLY BAG	RADVANA+B+G	None	R
RE12-10-7351	1	AMBER GLASS	8082+NMED-HEXP	Ice	R

Relinquished By:

Date

Time

Received By:

Date

Time

12/17/09 3:00

Patricia Dover-Dent P. H. H. 12-18-09 09:25

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

Thursday, December 17, 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: 10-988

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

REQUEST NUMBER: 10-988

Please analyse the enclosed samples  
according to the schedule indicated:

SHIP DATE: 12/17/2009

TURNAROUND/REPORT DUE: 1/16/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature: 

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE12-10-7351	R	12/15/2009	
		1	RE12-10-7351	R	12/15/2009	
	HASL-300:AM-241	1	RE12-10-7351	R	12/15/2009	
	HASL-300:ISOPU	1	RE12-10-7351	R	12/15/2009	
	HASL-300:ISOU	1	RE12-10-7351	R	12/15/2009	
	SW-846:6020	1	RE12-10-7351	R	12/15/2009	
	SW-846:6850	1	RE12-10-7351	R	12/15/2009	
	SW-846:7471A	1	RE12-10-7351	R	12/15/2009	
	SW-846:8082	1	RE12-10-7351	R	12/15/2009	

REQUEST NUMBER: 10-988

Thursday, December 17, 2009

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	SW-846:8321A_MOD	1	RE12-10-7351	R	12/15/2009	
	SW-846:9012A	1	RE12-10-7351	R	12/15/2009	

Final Page of REQUEST NUMBER 10-988

Client:LANL			SDG/ARCOC/Work Order:10-988		
Received By:Patricia Dover-Dent			Date Received:December 18, 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*:60CPM		
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) 1-5,13,15
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:RE12-10-7351 for RADVANA+B+G chain states, 8/ IN. RESEALABLE POLY BAG not received in lab.
12	COC form is properly signed in relinquished/received sections?	X			

Comments:FED EX #'S

7209 7849 2726 1C	7209 7849 2737 3C	7209 7849 2689 13C
7209 7849 2759 1C	7209 7849 2829 3C	7209 7849 2678 15C
7209 7849 2781 1C	7209 7849 2748 4C	
7209 7849 2760 2C	7209 7849 2792 4C	
7209 7849 2770 2C	7209 7849 2807 4C	
7209 7849 2818 2C	7209 7849 2704 5C	RADIOACTIVE SAMPLES
7209 7849 2715 3C	7209 7849 2667 13C	

**Subject:** Sample Receipt for 12/18/09

**From:** Dionne Francis <Dionne.Francis@gel.com>

**Date:** Tue, 22 Dec 2009 09:02:53 -0500

**To:** "Keith R. Greene" <kgreene@lanl.gov>, Joylene Valdez <joylenev@lanl.gov>, Valerie Davis <vsd@gel.com>

Keith,

RN 10-987 : the lab rec'd (1) 40ml vial 8260B container each for samples WST21-10-9086, 9087 and 9085 instead of (2) as indicated on the COC.

RN 10-969: the lab rec'd (1) 40ml vial 8260B container each for samples RE16-10-8536 and 8535 instead of (2) as indicated on the COC.

RN 10-970: the lab rec'd (1) 40ml vial 8260B container for sample RE16-10-311 instead of (2) as indicated on the COC.

RN 10-988: the lab did not receive the 8 in resealable poly bag for sample RE12-10-7351.

RN 10-991: the lab rec'd (1) 40ml vial 8260B container each for samples RE16-10-161 and 160 instead of (2) as indicated on the COC.

RN 10-972: the lab rec'd (1) 40ml vial 8260B container each for samples CAPA-10-6766 and 6092 instead of (2) as indicated on the COC. Also, we rec'd (1) 1L amber glass container each for samples CAPA-10-6753 and 6767 (PEST, PCB, SVOA, HEXP, HERB) instead of (3) as indicated on the COC.

RN 10-976: the lab rec'd (1) 40ml vial 8260B container each for samples CAPA-10-6174 and 6172 instead of (2) as indicated on the COC.

Thanks,  
Dionne

--

Dionne Francis  
Project Manager Assistant  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC (USA) 29407  
Direct: 843.769.7376 Ext. 4432  
Main: 843.556.8171  
Fax: 843.766.1178  
E-mail: [daf@gel.com](mailto:daf@gel.com)  
Web: [www.gel.com](http://www.gel.com)

Let the Bible fill the memory, rule the heart, and guide the feet.



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

SHIP DATE: 17DEC09  
ACTMGT: 55.0 LB MAN  
CAD: 0014176/CAFE2434  
BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)656-8171  
REF: 68010AMR3A0352VA00

2c



1 of 2  
TRKH 7209 7849 2770  
0201  
NN MASTER NN

FRI - 18DEC A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA



Part # 156148-434 NRT V3 09-09

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

SHIP DATE: 17DEC09  
ACTMGT: 52.0 LB MAN  
CAD: 0014176/CAFE2434  
BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)656-8171  
REF: 68010AMR3A0352VA00

3c



2 of 3  
TRKH 7209 7849 2715  
0263  
Matr# 7209 7849 2704 0201

FRI - 18DEC A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

CHSA

11 of 1340

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

SHIP DATE: 17DEC09  
ACTMGT: 55.0 LB MAN  
CAD: 0014176/CAFE2434  
BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)656-8171  
REF: 68010AMR3A0352VA00

2c



3 of 3  
TRKH 7209 7849 2818  
0263  
Matr# 7209 7849 2792 0201

FRI - 18DEC A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA



Part # 156148-434 NRT V3 09-09

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

SHIP DATE: 17DEC09  
ACTMGT: 48.0 LB MAN  
CAD: 0014176/CAFE2434  
BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)656-8171  
REF: 68010AMR3A0352VA00

3c



1 of 2  
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0201  
NN MASTER NN

FRI - 18DEC A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA



IN ID: SAFA (505)665-9969  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TAGS BLDG 1237 DPU 03  
LOS ALAMOS, NM 87545  
UNITED STATES US

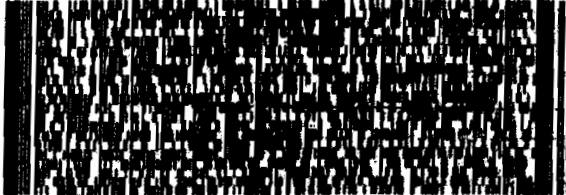
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VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)856-8171  
REF: 6B010AMEL11550000

3c



CN120000212224

TRK# 7209 7849 2829  
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FRI - 18DEC A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

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ORIGIN ID: SAFA (505)665-9969  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TAGS BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

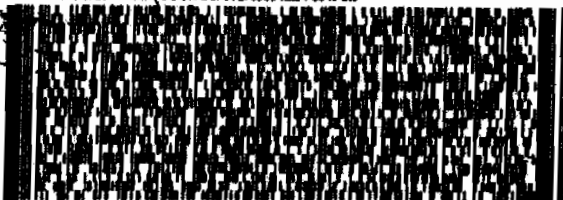
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GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)856-8171  
REF: 6B010AMR3A0352VA00

4c



CN120000212224

1 of 3  
TRK# 7209 7849 2792  
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FRI - 18DEC A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA

2 of 1340

ORIGIN ID: SAFA (505)665-9969  
JOYLENE VALDEZ  
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TAGS BLDG 1237 DPU 03  
LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 17DEC09  
ACTWT: 50.8 LB HAN  
CAO: 0014178/CAFE2434

BILL SENDER

VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)856-8171  
REF: 6B010AMR3A0352VA00

4c



2 of 2  
TRK# 7209 7849 2748  
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Matr# 7209 7849 2737 0201

FRI - 18DEC A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA



ORIGIN ID: SAFA (505)665-9969  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TAGS BLDG 1237 DPU 03

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 17DEC09  
ACTWT: 11.9 LB HAN  
CAO: 0014178/CAFE2434

BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407  
(843)856-8171  
REF: 6B010AMR3A0352VA00

4c



2 of 3  
TRK# 7209 7849 2807  
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Matr# 7209 7849 2792 0201

FRI - 18DEC A1  
PRIORITY OVERNIGHT

29407  
SC-US  
CHS

XX CHSA

ORIGIN ID: SAFA (505)655-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 83

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 17DEC89  
ACTWGT: 18.0 LB MAN  
CAD: 0014176/CAFE2434

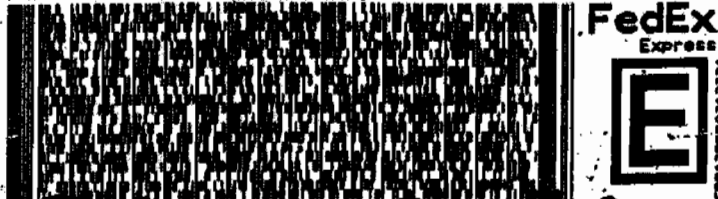
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TO VALERIE DAVIS  
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CHARLESTON SC 29407

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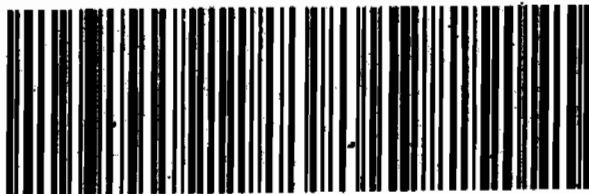
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NM MASTER NM

FRI - 18DEC A1  
PRIORITY OVERNIGHT

**XX CHSA**

29407  
SC-US  
CHS



Part # 156148-434 NRT V3 06-09

ORIGIN ID: SAFA (505)655-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 83

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 17DEC89  
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CAD: 0014176/CAFE2434

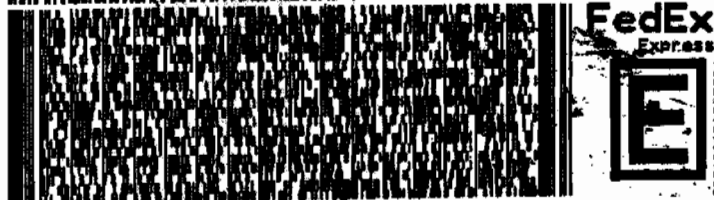
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TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843)556-8171  
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DATE OF INFORMATION: 17 DEC 1989 11:00 AM



FRI - 18DEC A1  
PRIORITY OVERNIGHT

TRKH 7209 7849 2689  
0201

**XX CHSA**

29407  
SC-US  
CHS

3 of 1340

ORIGIN ID: SAFA (505)655-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 83

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 17DEC89  
ACTWGT: 32.0 LB MAN  
CAD: 0014176/CAFE2434

BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843)556-8171  
REF: 6B010AMR1A015AGWMO

DATE OF INFORMATION: 17 DEC 1989 11:00 AM



2 of 3  
NPSH 7209 7849 2667  
0203  
Matr# 7209 7849 2656 0201

FRI - 18DEC A1  
PRIORITY OVERNIGHT

**XX CHSA**

29407  
SC-US  
CHS



ORIGIN ID: SAFA (505)655-9968  
JOYLENE VALDEZ  
LOS ALAMOS NATL LAB  
TA00 BLDG 1237 DPU 83

LOS ALAMOS, NM 87545  
UNITED STATES US

SHIP DATE: 17DEC89  
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CAD: 0014176/CAFE2434

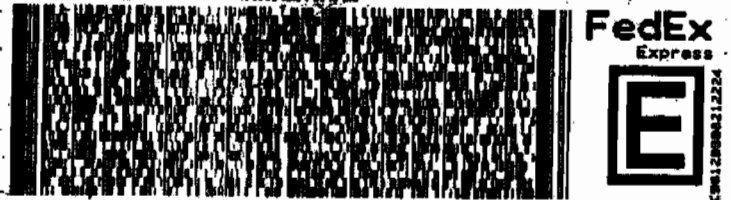
BILL SENDER

TO VALERIE DAVIS  
GENERAL ENGINEERING LAB  
2040 SAVAGE RD

CHARLESTON SC 29407

(843)556-8171  
REF: 6B010AMR1A015AGWMO

DATE OF INFORMATION: 17 DEC 1989 11:00 AM



FRI - 18DEC A1  
PRIORITY OVERNIGHT

3 of 3  
NPSH 7209 7849 2676  
0203  
Matr# 7209 7849 2656 0201

**XX CHSA**

29407  
SC-US  
CHS

# **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 10-988**

**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:** 935071

**Prep Batch Number:** 935070

**Sample Analysis**

<b>Sample ID</b>	<b>Client ID</b>
243273001	RE12-10-7351
1202000647	Interference Check Sample (ICS)
1202000643	Method Blank (MB)
1202000644	Laboratory Control Sample (LCS)
1202000645	243273001(RE12-10-7351) Matrix Spike (MS)
1202000646	243273001(RE12-10-7351) 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.

**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.

10-988-PERLCMS

Page 1 of 4

**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 243273001 (RE12-10-7351) 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 sample in this SDG was 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: Nestor M. Mauer Date: 01/07/10

# 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: 235070

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7351

Date Received: 18-DEC-09

GEL Job No (SDG): 10-988

GEL Sample ID: 243273001

Date Filtered: 24-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	.559	2.24	0.559	ug/kg	U	1	24-DEC-09 20:14	per1224072a
	Perchlorate Isotope Ratio						1	24-DEC-09 20:14	per1224072a
14797-73-0	Perchlorate-101	.559	2.24	0.559	ug/kg	U	1	24-DEC-09 20:14	per1224072a
	Perchlorate-O(18)			5.78	ug/kg		1	24-DEC-09 20:14	per1224072a

<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 <sup>1</sup>  
Aliquot %Solids

# QUALITY CONTROL SUMMARY

Form 5

Perchlorate Laboratory Control Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL GEL Job No. (SDG): 10-988

Extract Batch Code: 935070 Date Filtered: 24-DEC-09

Matrix: SOIL Sample ID: 1202000644

Analyte <sup>^</sup>	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	2.00	2	ug/kg	100		70 - 130
Perchlorate Isotope Ratio		2.91				-
Perchlorate-101	2.00	2.06	ug/kg	103		70 - 130
Perchlorate-O(18)		4.97	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.

Perchlorate Interference Check Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL GEL Job No. (SDG): 10-988

Extract Batch Code: 935070 Date Filtered: 24-DEC-09

Matrix: SOIL Sample ID: 1202000647

Analyte <sup>^</sup>	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	2.00	1.97	ug/kg	98.7		70 - 130
Perchlorate Isotope Ratio		2.88				
Perchlorate-101	2.00	2.05	ug/kg	102		70 - 130
Perchlorate-O(18)		5.1	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\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224048a

Date: 24-Dec-2009

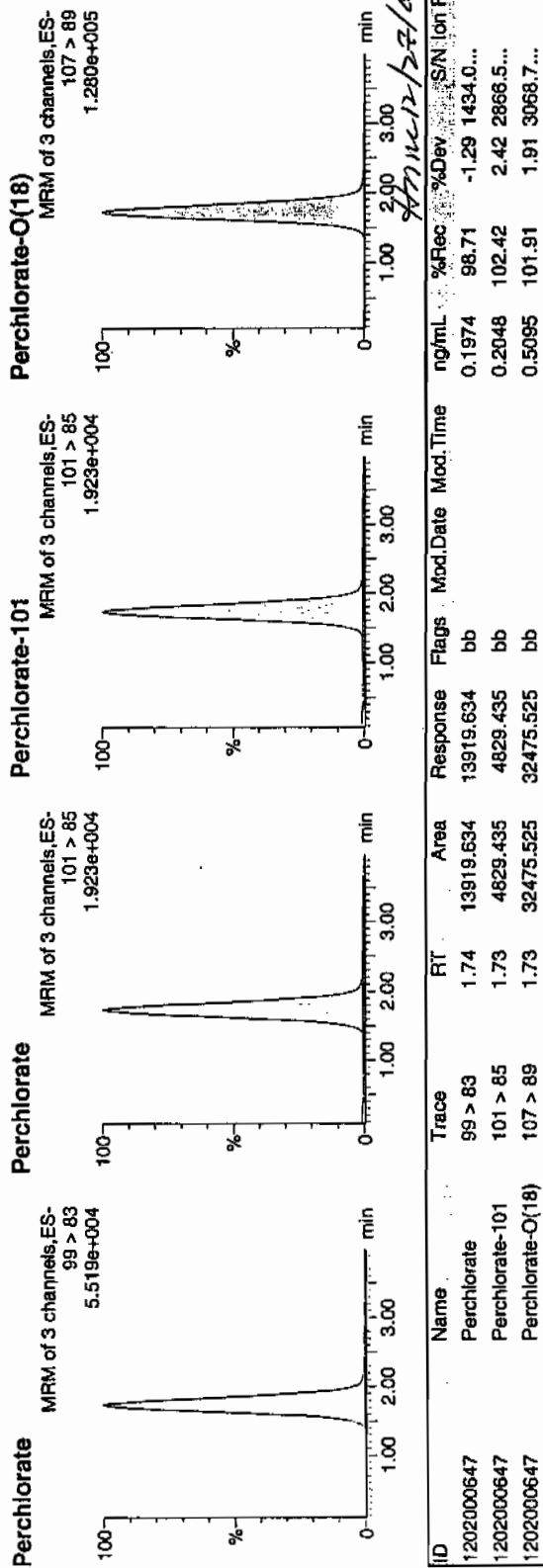
Time: 17:23:57

ID: 1202000647

Vial: 2:1,C

12/26/09

WAL-935024 / 8000 / ICS / 1 /



Perchlorate Spike/Spike Duplicate Summary

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No (SDG): 10-988

Extract Batch Code: 935070

Date Extracted: 24-DEC-09

GEL MS/PS ID: 1202000645

Client ID: RE12-10-7351

GEL MSD/PSD ID: 1202000646

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	2.24	0.337	ug/kg	2.68	105	2.64	103	1.52	30	75 - 125
Perchlorate Isotope Ratio	0	0.00		3.05		3.12		0		-
Perchlorate-101	2.24	0.341	ug/kg	2.63	102	2.54	98.3	3.55	30	75 - 125
Perchlorate-O(18)	0	5.78	ug/kg	5.66		5.75		1.54		-

<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): 10-288

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	24-DEC-09	per1224001a	IPB001
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224001a	IPB001
Perchlorate	0.00	0	NA	24-DEC-09	per1224002a	IPB001
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224002a	IPB001

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

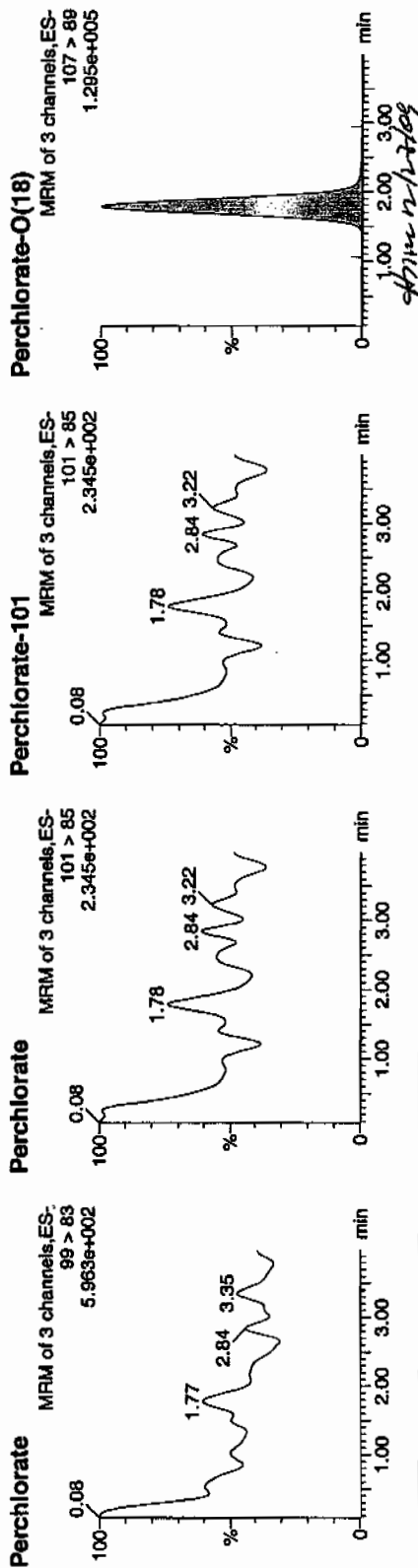
Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Method: C:\MassLynx\Perchlorate.PRO\MethDB\per122409a.mdb 24 Dec 2009 12:35:24  
Calibration: C:\MassLynx\Perchlorate.PRO\CurveDB\per122409a.cdb 26 Dec 2009 09:05:13

Name: per1224001a  
Date: 24-Dec-2009  
Time: 11:52:35  
ID: IPB001  
Vial: 1:1,A

1.77  
2.84



ID	Name	Trace	RT	Area	Response	Flags	Mod Date	Mod Time	ng/mL	% Rec	Dev	S/N	Ion Ratio
IPB001	Perchlorate	99 > 83											0.00
IPB001	Perchlorate-101	101 > 85	1.78	33547.434	33547.434	bb			0.5284	105.27	5.27	6123.4...	
IPB001	Perchlorate-O(18)	107 > 89											

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

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224002a

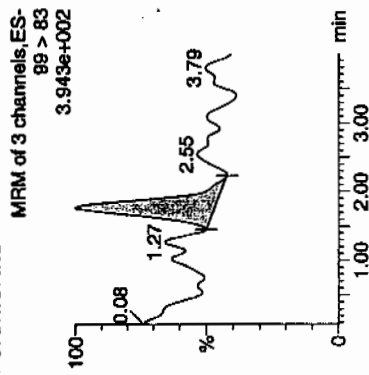
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Time: 11:59:44

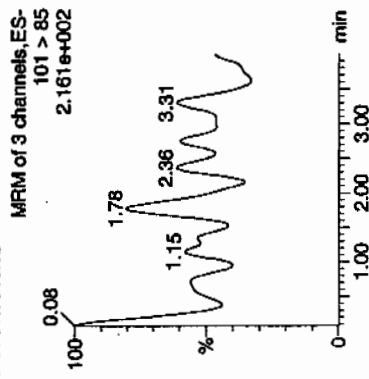
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Vial: 1:1,A

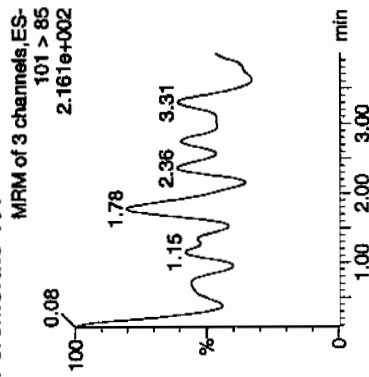
Perchlorate



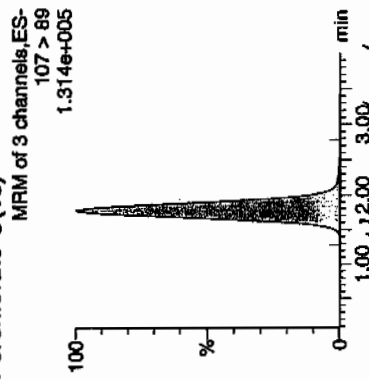
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod Date	Mod Time	Conc/mL	% Rec	Dev	S/N	Ion Ratio
IPB001	Perchlorate	99 > 83	1.78	55.719	55.719	bb			0.0008				0.00
IPB001	Perchlorate-101	101 > 85											
IPB001	Perchlorate-O(18)	107 > 89	1.78	33985.297	33985.297	bb			0.5332	108.64	6.64	18972....	

Perchlorate Continuing Calibration Blank

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-988

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id	GEL Sample ID
Perchlorate	0.00	0	NA	24-DEC-09	per1224008a	IPB002
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224008a	IPB002
Perchlorate	0.00	0	NA	24-DEC-09	per1224010a	IPB003
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224010a	IPB003
Perchlorate	0.00	0	NA	24-DEC-09	per1224023a	IPB004
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224023a	IPB004
Perchlorate	0.00	0	NA	24-DEC-09	per1224036a	IPB005
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224036a	IPB005
Perchlorate	0.00	0	NA	24-DEC-09	per1224044a	IPB006
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224044a	IPB006
Perchlorate	0.00	0	NA	24-DEC-09	per1224057a	IPB007
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224057a	IPB007
Perchlorate	0.00	0	NA	24-DEC-09	per1224070a	IPB008

Perchlorate Continuing Calibration Blank

GEL Job No.(SDG): 10-988

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-101	0.00	0	NA	24-DEC-09	per1224070a	IPB008
Perchlorate	0.00	0	NA	24-DEC-09	per1224076a	IPB009
Perchlorate-101	0.00	0	NA	24-DEC-09	per1224076a	IPB009

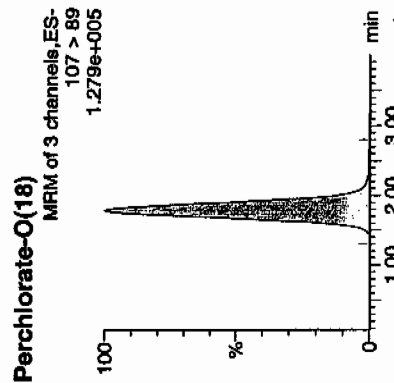
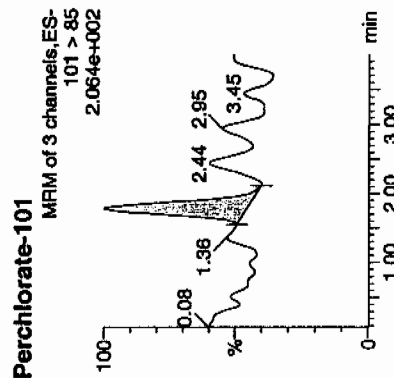
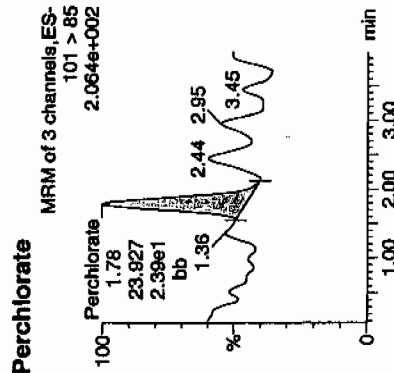
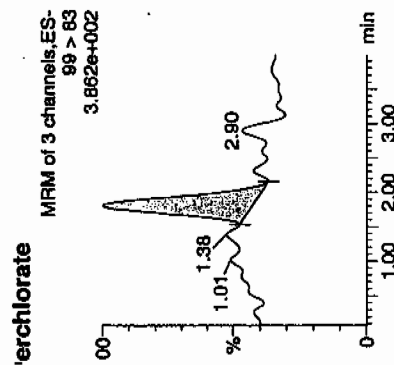
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Sample Name: per1224008a  
Date: 24-Dec-2009  
Time: 12:41:53  
Job: IPB002  
Label: 1:1,A

MRM



Sample	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
B002	Perchlorate	99 > 83	1.78	61.953	61.953	bb			0.0009	20.035		2.59	
B002	Perchlorate-101	101 > 85	1.78	23.927	23.927	bb			0.0010	10.970			
B002	Perchlorate-O(18)	107 > 89	1.78	33204.773	33204.773	bb			0.5210	104.20	4.20	3551.0...	

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

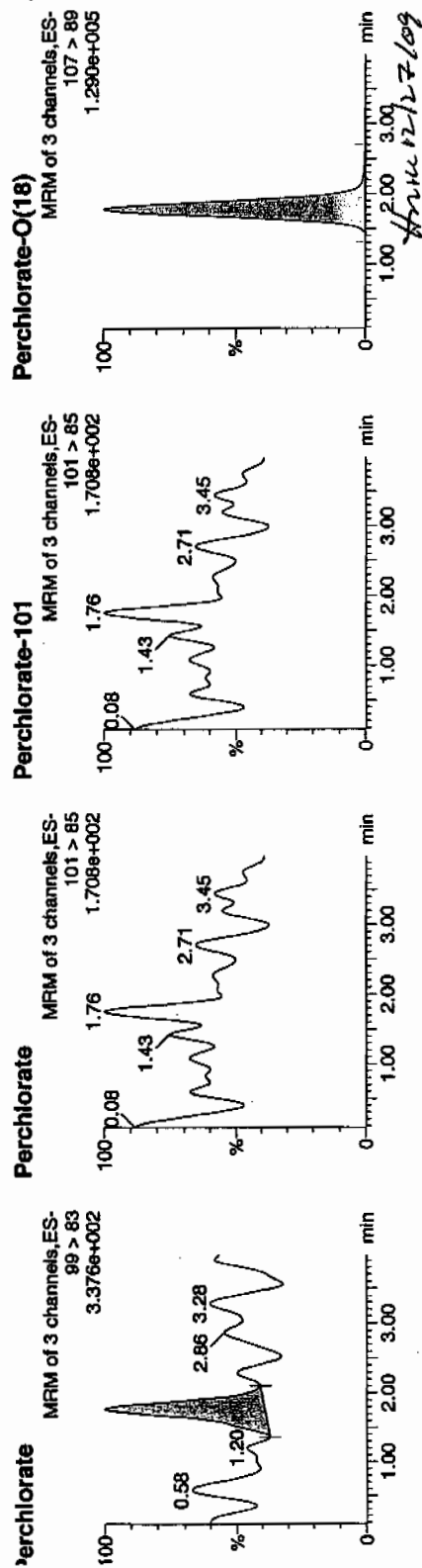
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Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Page 34 of 1340

Sample Name: per1224010a  
Date: 24-Dec-2009  
Time: 12:55:59  
ID: IPB003  
File: 1:1.A

WTF  
12/16/09



D	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	SN	Ion Ratio
PB003	Perchlorate	99 > 83	1.77	58.566	58.566	bb			0.0008		5.769	0.00
PB003	Perchlorate-101	101 > 85										
PB003	Perchlorate-O(18)	107 > 89	1.78	33323.047	33323.047	bb			0.5228	104.57	4.57	8498.6...

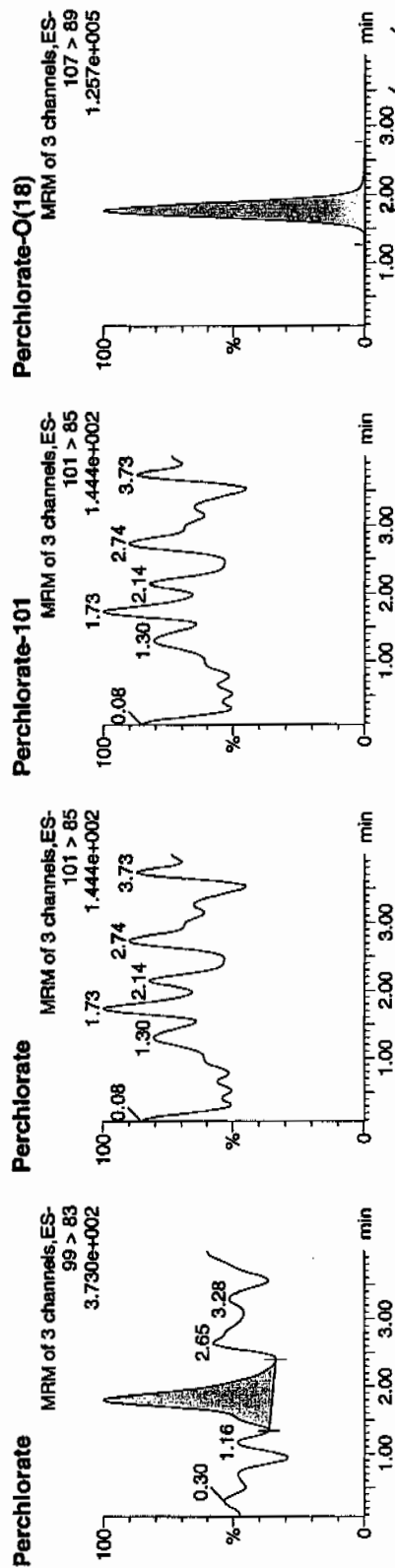
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224023a  
Date: 24-Dec-2009  
Time: 14:27:34  
ID: IPB004  
Vial: 1:1,A

*Handwritten:* 1.16, 2.65, 3.28



ID	Name	Trace	RT	Area	Response	Flags	Mod Date	Mod Time	Conc/mL	%Rec	%Dev	SN	Ion Ratio
IPB004	Perchlorate	99 > 83	1.79	84.027	84.027	bb			0.0012			5.724	0.00
IPB004	Perchlorate-101	101 > 85											
IPB004	Perchlorate-O(18)	107 > 89	1.77	32344.129	32344.129	bb			0.5075	101.49	1.49	10823	...

*Handwritten:* 4/11/12/27/09



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

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224036a

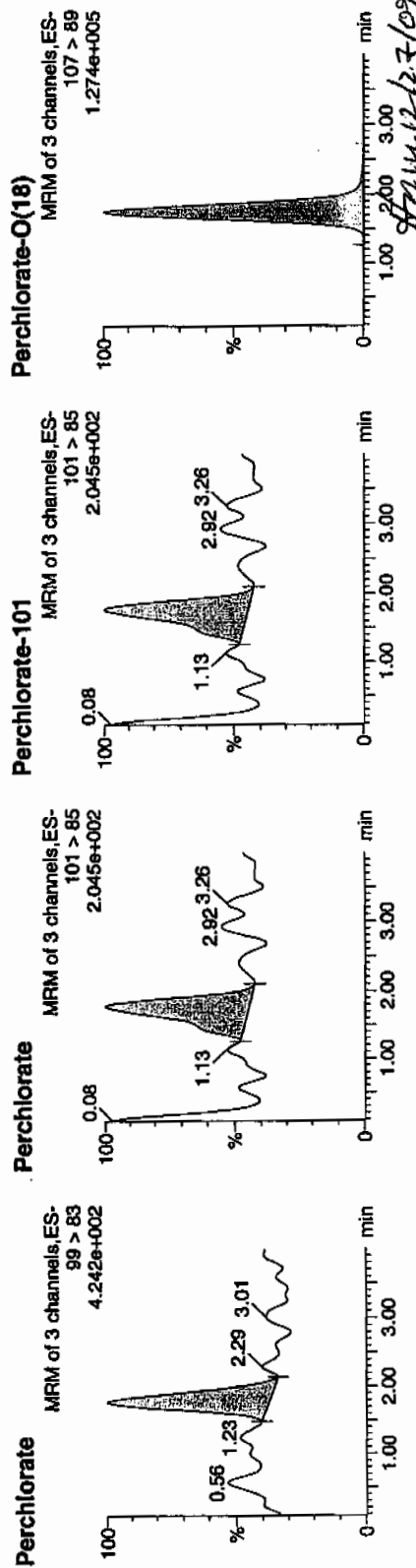
Date: 24-Dec-2009

Time: 15:59:13

ID: IPB005

Vial: 1:1,A

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ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	% Rec	Dev	SN	Ion Ratio
IPB005	Perchlorate	99 > 83	1.77	75.287	75.287	bb			0.0011			9.598	1.87
IPB005	Perchlorate-101	101 > 85	1.77	40.295	40.295	bb			0.0017			9.481	
IPB005	Perchlorate-O(18)	107 > 89	1.76	32864.230	32864.230	bb			0.5156	103.13	3.13	7831.2...	

Quantify Sample Report MassLynx 4.0 SP4

The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Acquired: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
 Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

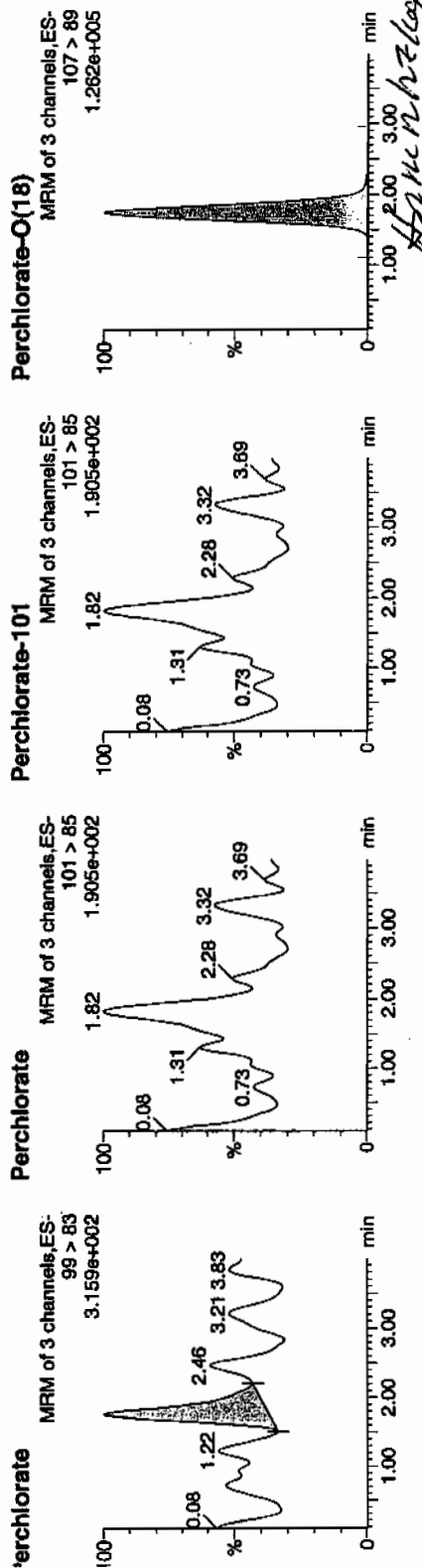
Sample Name: per1224044a

Date: 24-Dec-2009

Time: 16:55:38

Job: IPB006

Ratio: 1:1,A



Name	Trace	RT	Area	Response	Flags	Mod Date	Mod Time	Conc	Dev	SN	Ion Ratio
Perchlorate	99 > 83	1.76	53.931	53.931	bb			0.0008	10.566		0.00
Perchlorate-101	101 > 85										
Perchlorate-O(18)	107 > 89	1.74	32620.119	32620.119	bb			0.5118	102.36	2.36	9989.8...

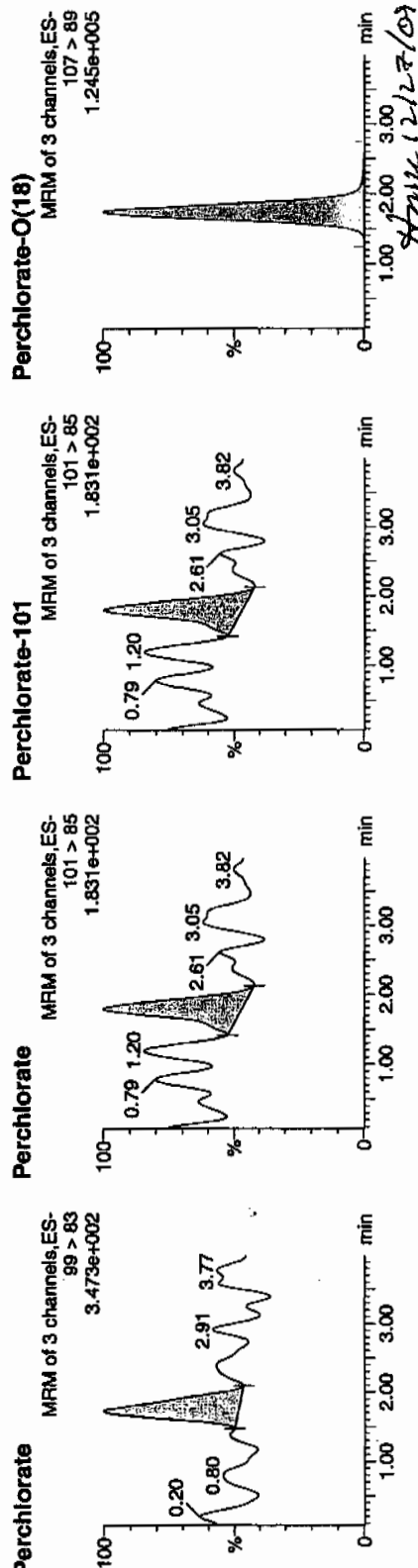
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224057a  
Date: 24-Dec-2009  
Time: 18:28:05  
D: IPB007  
Vial: 1:1.A

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ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
PB007	Perchlorate	99 > 83	1.72	53.273	53.273	bb			0.0008			9.437	1.87
PB007	Perchlorate-101	101 > 85	1.79	28.438	28.438	bb			0.0012			6.610	
PB007	Perchlorate-O(18)	107 > 89	1.74	32151.426	32151.426	bb			0.5044	100.89	0.89	6801.0...	

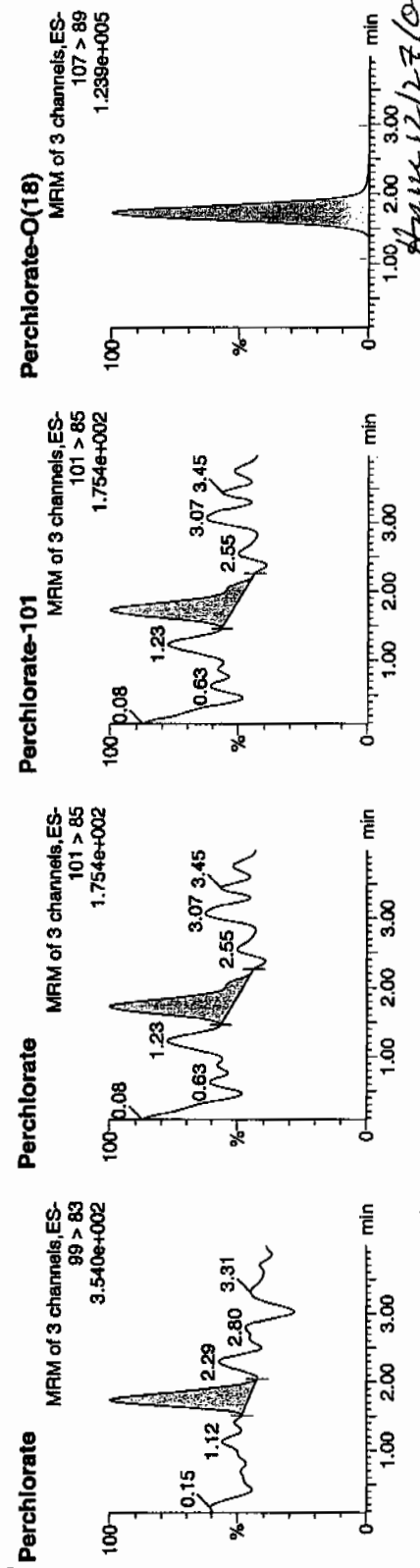
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224070a  
Date: 24-Dec-2009  
Time: 20:00:15  
ID: IPB008  
Vial: 1:1,A

WTR  
in 100%  
12/27/09



ID	Name	Trace	RT	Area	Response	Flags	Mod Date	Mod Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
IPB008	Perchlorate	99 > 83	1.73	45.361	45.361	bb			0.0006			19.089	1.90
IPB008	Perchlorate-101	101 > 85	1.73	23.898	23.898	bb			0.0010			4.531	
IPB008	Perchlorate-O(18)	107 > 89	1.72	32117.711	32117.711	bb			0.5039	100.78	0.78	8383.9...	

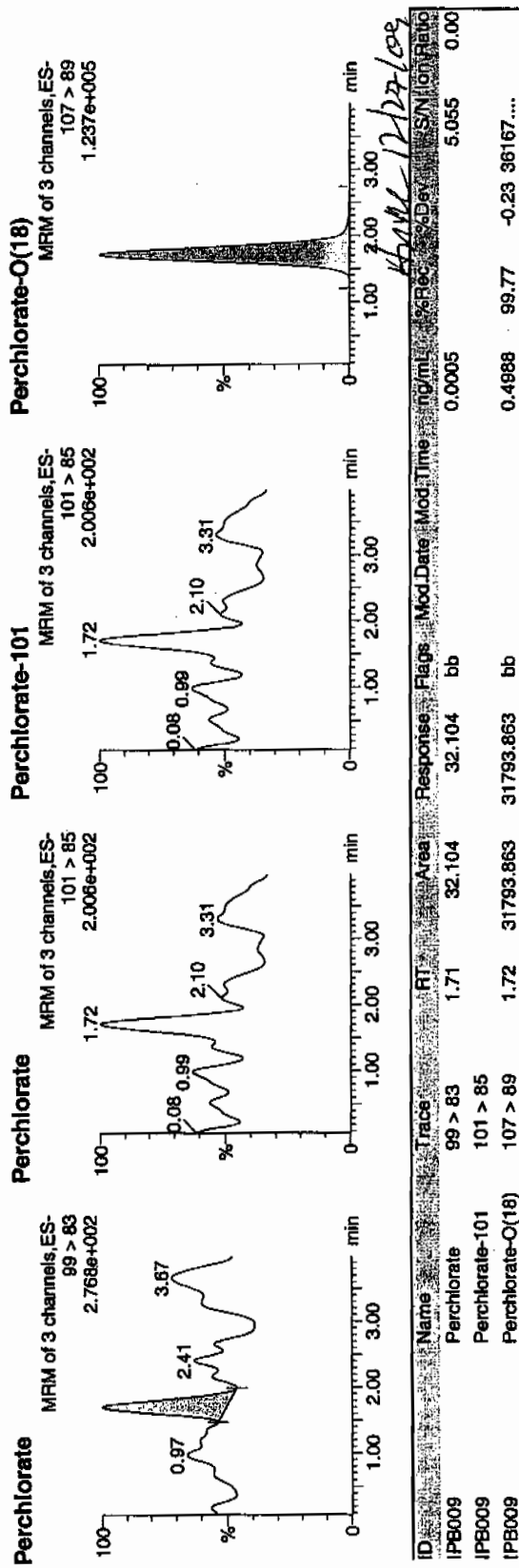
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224076a  
Date: 24-Dec-2009  
Time: 20:42:52  
ID: IPB009  
Vial: 1:1.A

TR  
12/26/09



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
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; 3620.4515	100
; 3770.3457	100
; 3920.2400	100

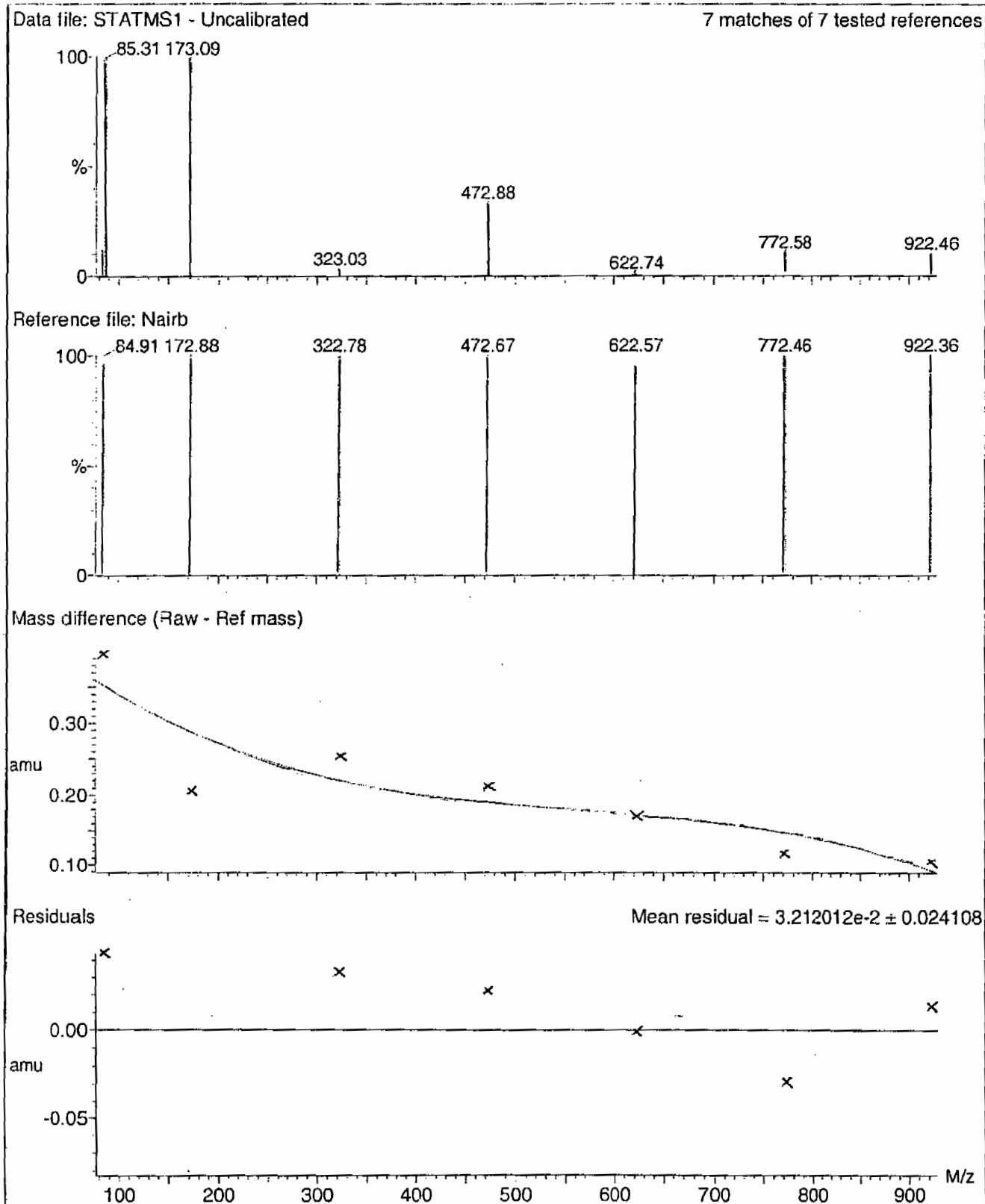
QUATRO ULTIMA: nairb\_01\_08\_08.cal

Calibration Report - MS1 Static

Page 1 of 1

Printed: Tue Jan 08 12:19:12 2008

POINTS HIGHLIGHTED BY CURSOR 01-07-03



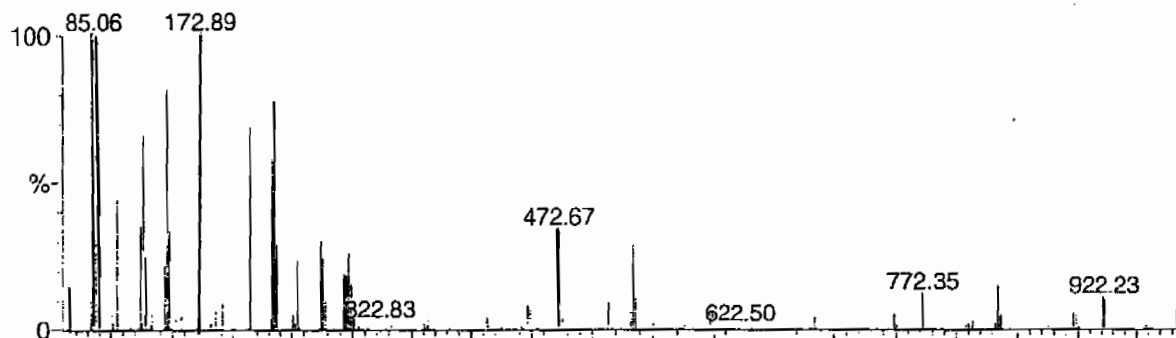
Calibration Report - MS1 Scanning

Page 1 of 1

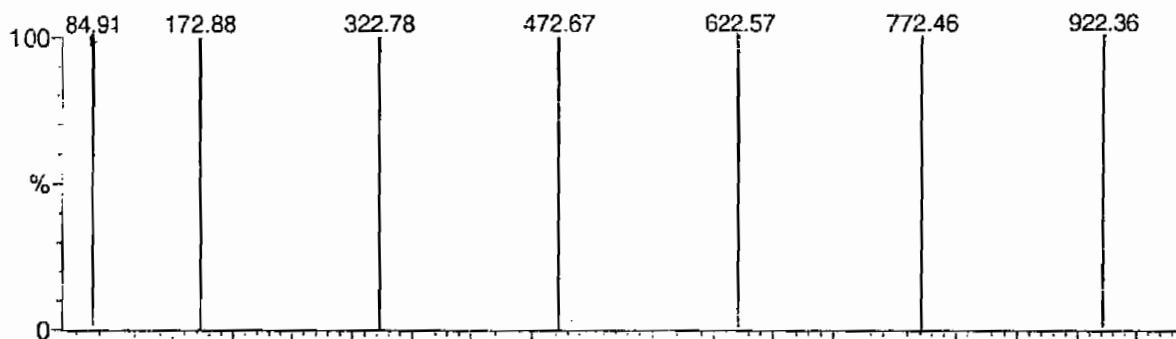
Printed: Tue Jan 08 12:20:09 2008

Data file: SCNMS1 - Uncalibrated

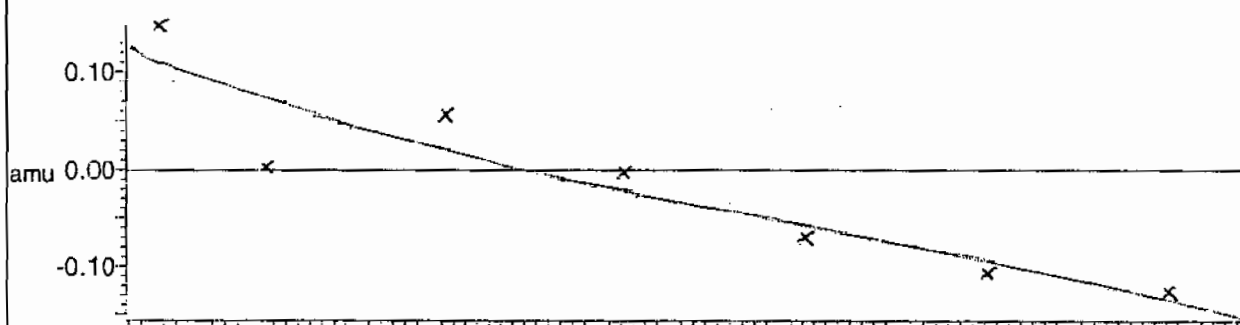
7 matches of 7 tested references



Reference file: Nairb

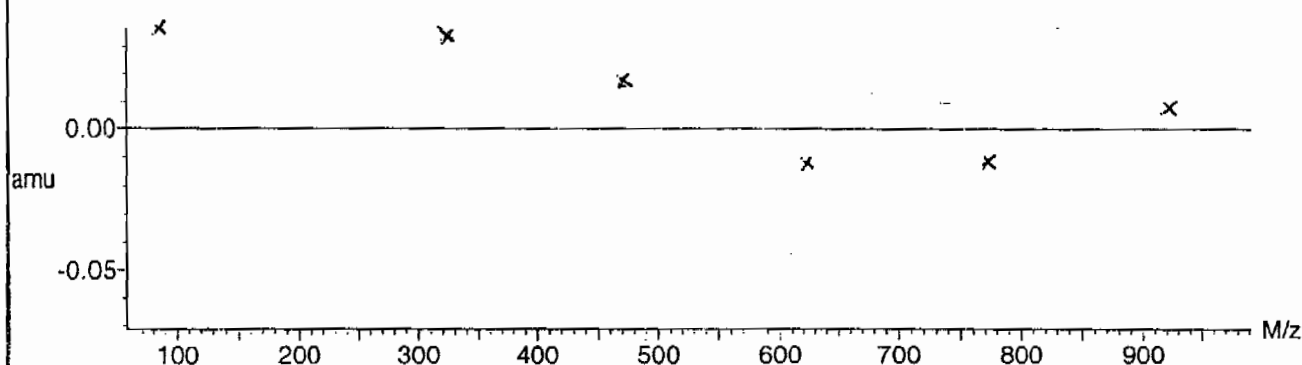


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $2.732691 \times 10^{-2} \pm 0.020653$

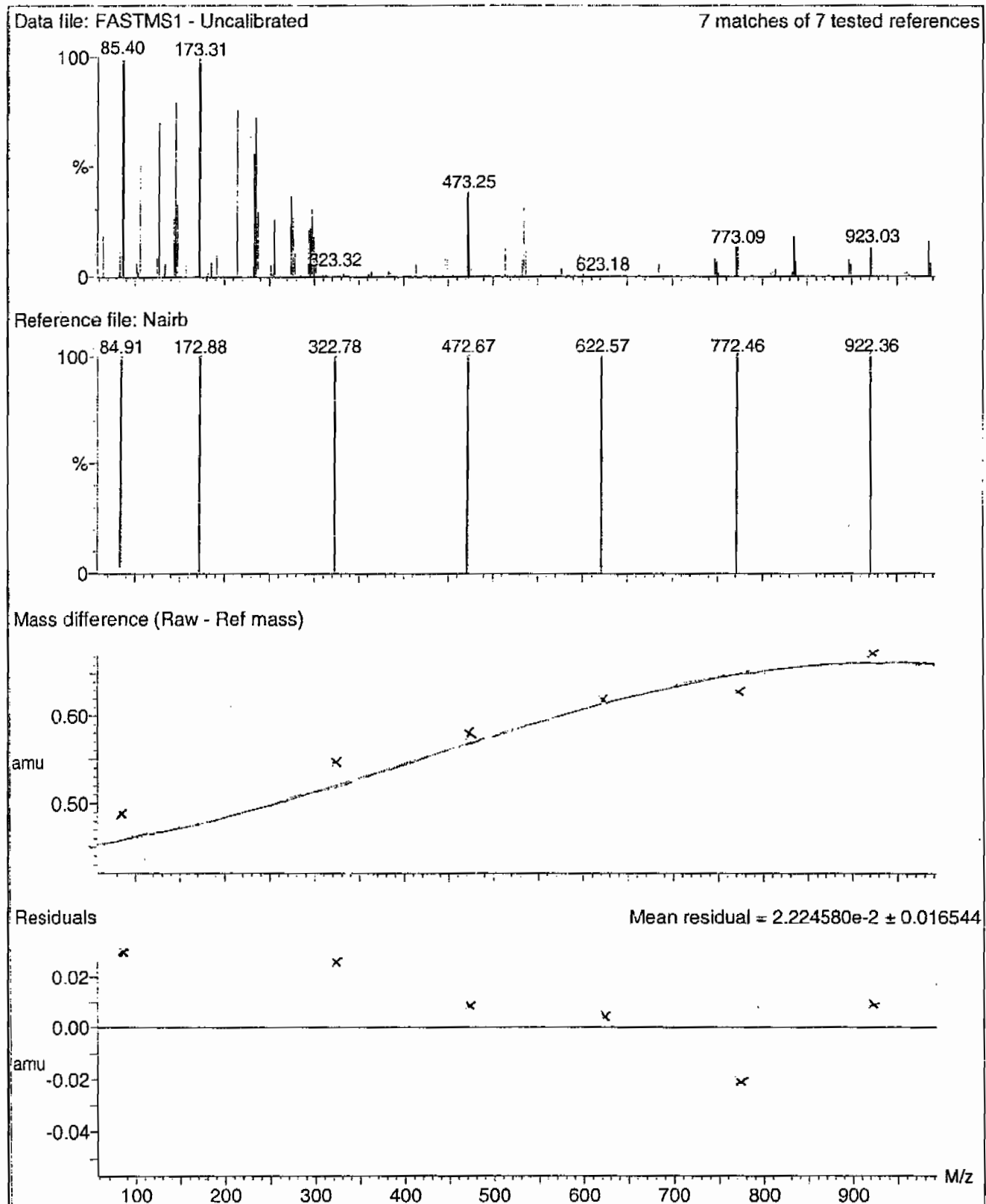




Calibration Report - MS1 Scan Speed Compensation

Page 1 of 1

Printed: Tue Jan 08 12:21:04 2008



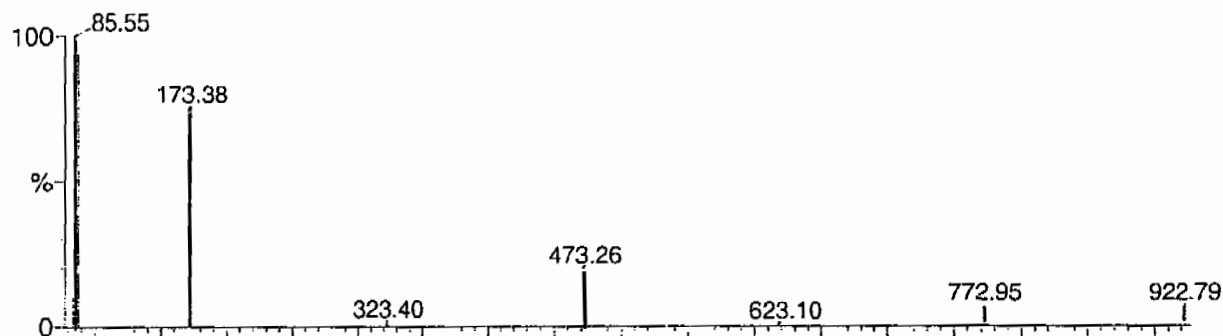
Calibration Report - MS2 Static

Page 1 of 1

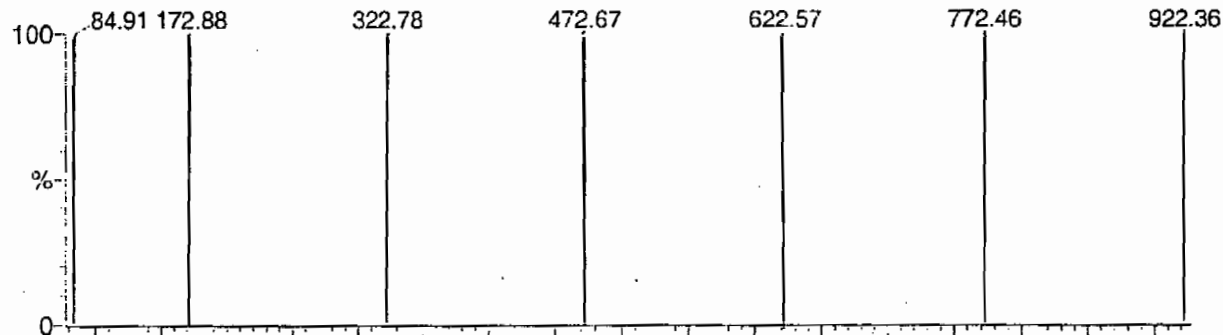
Printed: Tue Jan 08 12:21:59 2008

Data file: STATMS2 - Uncalibrated

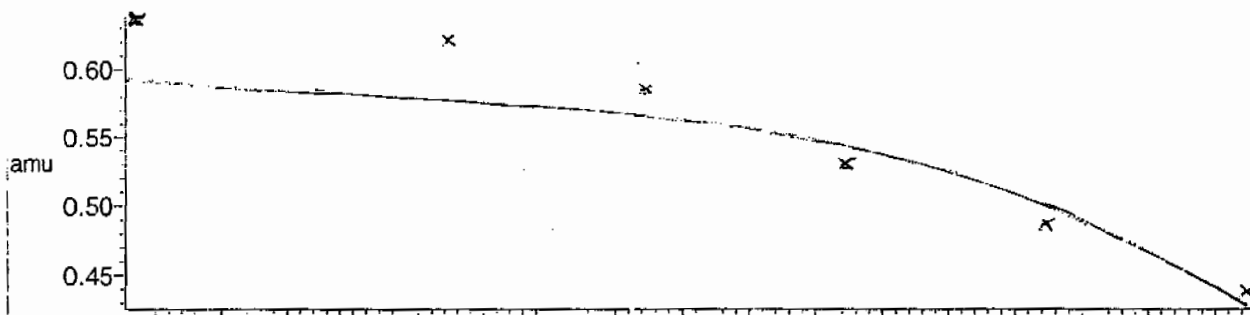
7 matches of 7 tested references



Reference file: Nairb

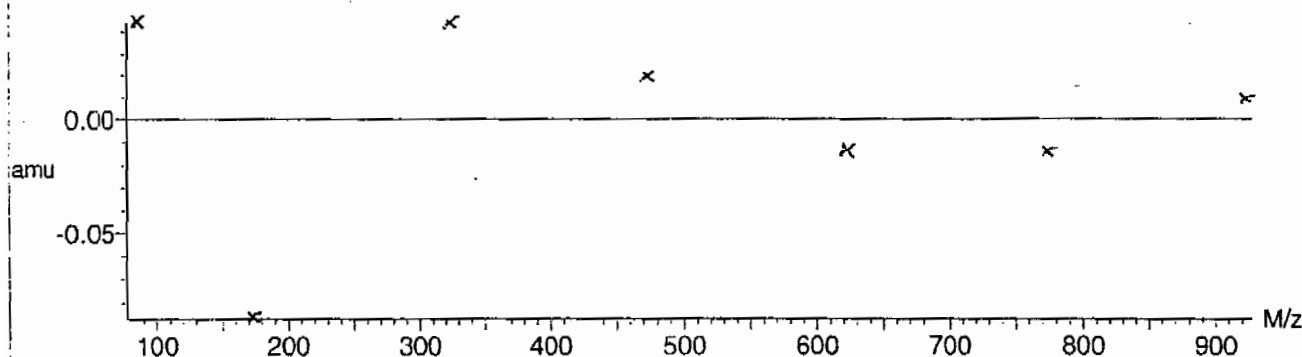


Mass difference (Raw - Ref mass)



Residuals

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



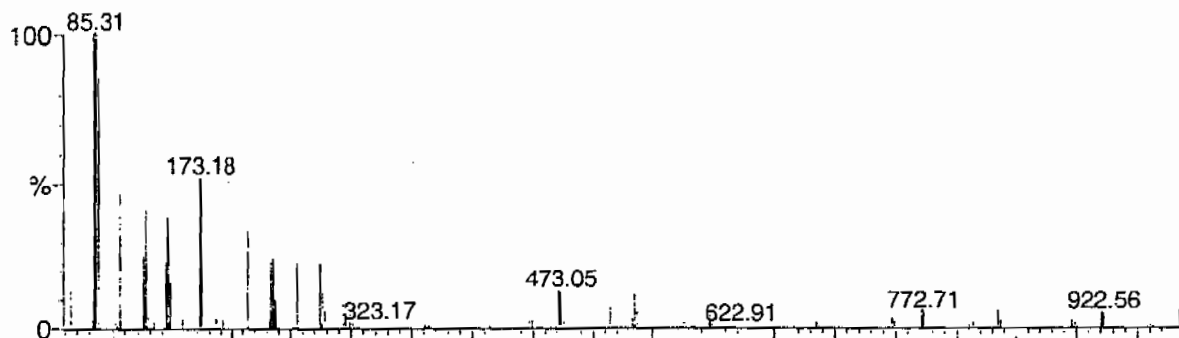
Calibration Report - MS2 Scanning

Page 1 of 1

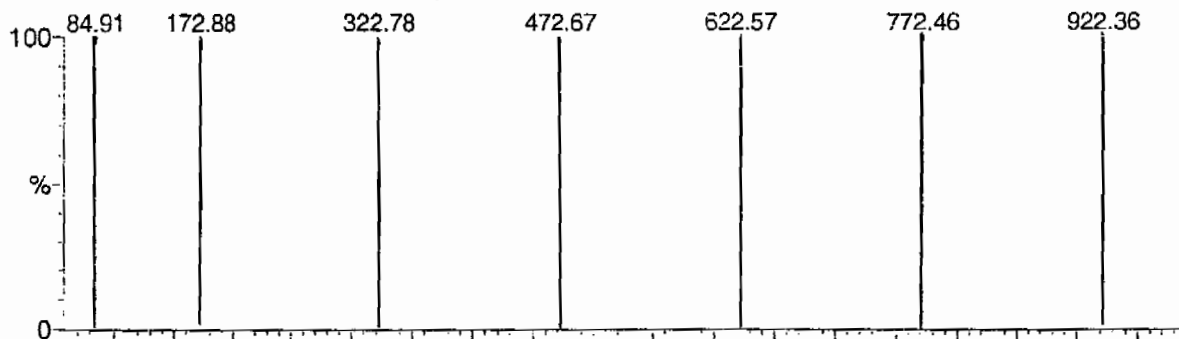
Printed: Tue Jan 08 12:22:56 2008

Data file: SCNMS2 - Uncalibrated

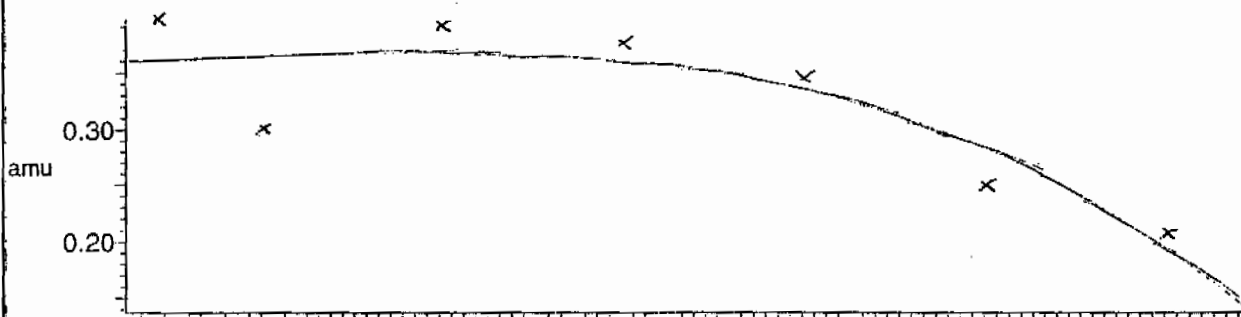
7 matches of 7 tested references



Reference file: Nairb

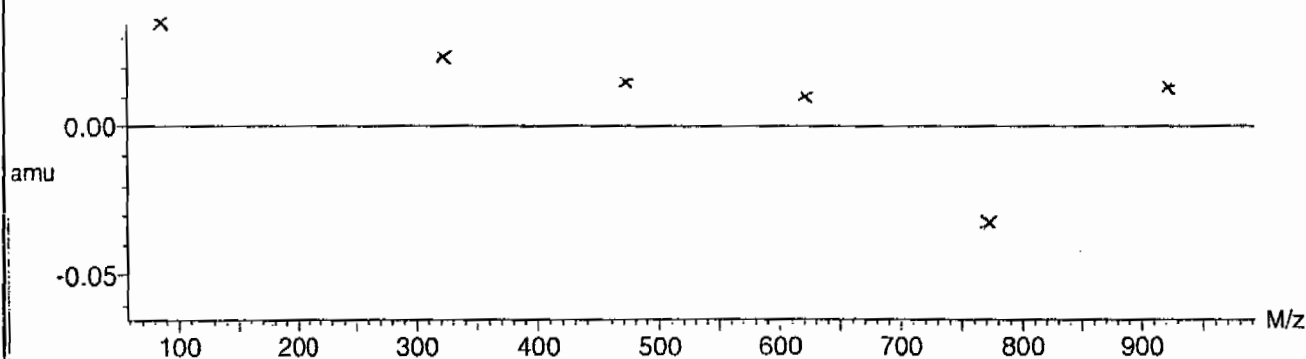


Mass difference (Raw - Ref mass)



Residuals

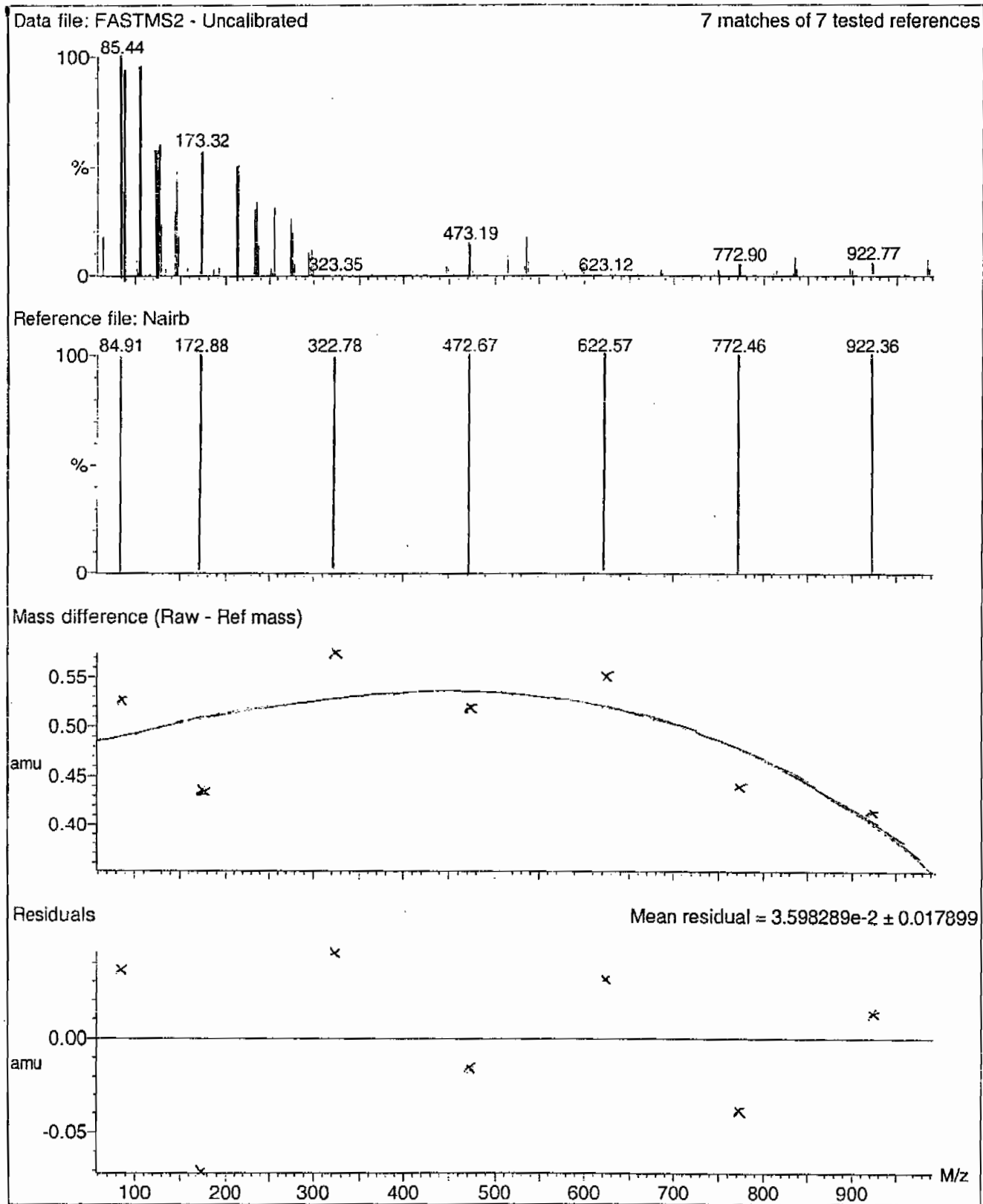
Mean residual =  $2.782494 \times 10^{-2} \pm 0.017442$



Calibration Report - MS2 Scan Speed Compensation

Page 1 of 1

Printed: Tue Jan 08 12:23:51 2008



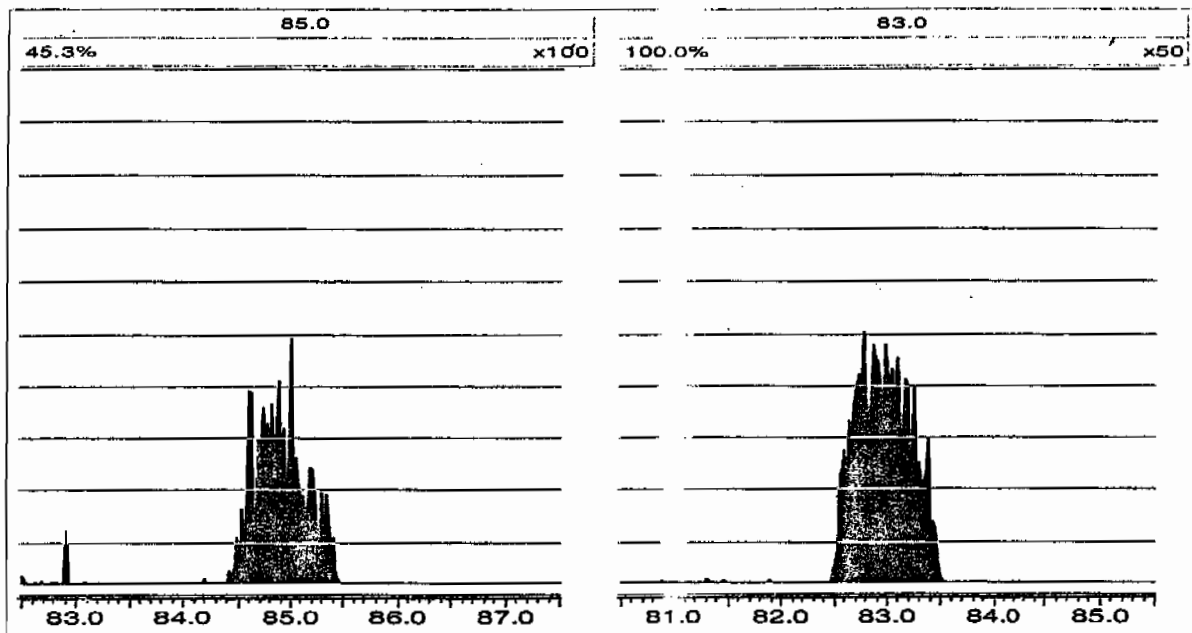
Tune Parameters

MassLynx 4.0 SP4

Page 1 of 1

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

Printed: Thursday, December 24, 2009 11:50:54 Eastern Standard Time



Perchlorate RT And Area Summary

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-988

Lab Code: GEL

Instrument ID: LCMSMS

HP/LC 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	per1224006a	24-DEC-09	32778.8				
Lower Area Limit			16389.4				
Upper Area Limit			65557.6				
1202000643	per1224046a	24-DEC-09 17:09	31516.7	1.74	1.7562	1.009	
1202000644	per1224047a	24-DEC-09 17:16	31669.5	1.74	1.75623	1.009	
1202000647	per1224048a	24-DEC-09 17:23	32475.5	1.73	1.74378	1.008	
243273001	per1224072a	24-DEC-09 20:14	32939.9	1.72	1.7313	1.007	
1202000645	per1224073a	24-DEC-09 20:21	32265.9	1.72	1.7312	1.007	
1202000646	per1224074a	24-DEC-09 20:28	32767.5	1.72	1.73128	1.007	

# 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: 935070

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-7351

Date Received: 18-DEC-09

GEL Job No (SDG): 10-988

GEL Sample ID: 243273001

Date Filtered: 24-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	.559	2.24	0.559	ug/kg	U	1	24-DEC-09 20:14	per1224072a
	Perchlorate Isotope Ratio						1	24-DEC-09 20:14	per1224072a
14797-73-0	Perchlorate-101	.559	2.24	0.559	ug/kg	U	1	24-DEC-09 20:14	per1224072a
	Perchlorate-O(18)			5.78	ug/kg		1	24-DEC-09 20:14	per1224072a

<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  $\frac{1}{\text{Aliquot}}$  %Solids

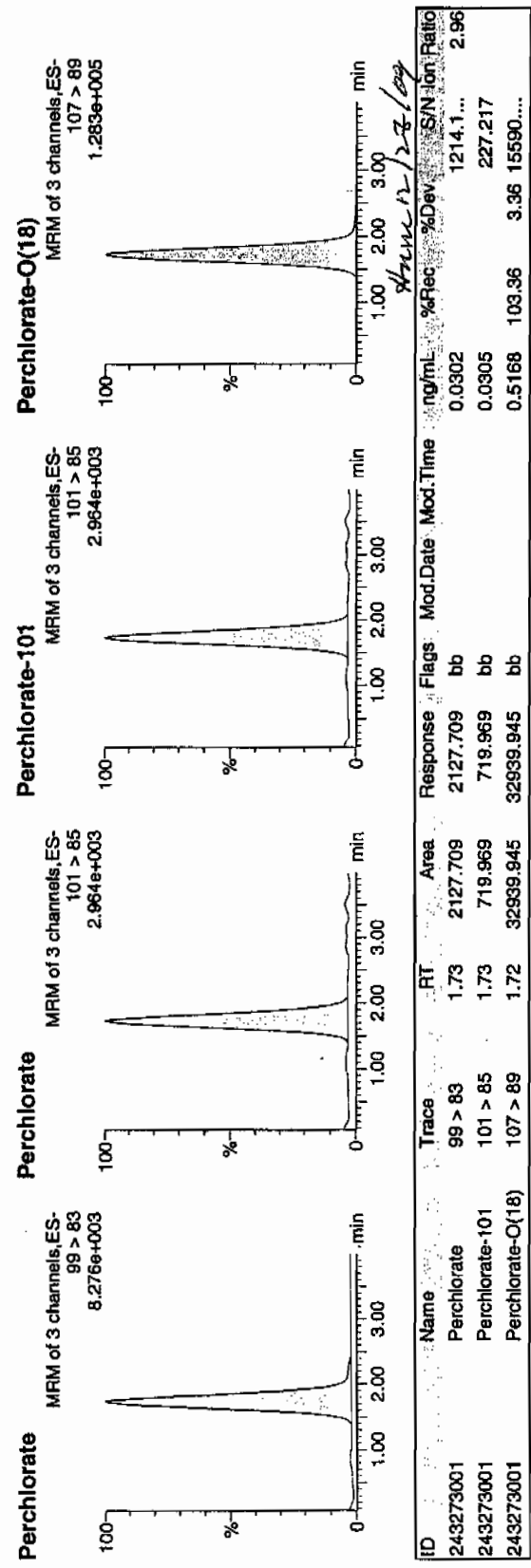


**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224072a  
Date: 24-Dec-2009  
Time: 20:14:18  
ID: 243273001  
Vial: 2:4.C  
*WAV 935071 / 2002 / 1 /*  
*12/26/09*



# STANDARDS DATA

Perchlorate Initial Calibration

GEL Job No.(SDG): 10-988

Lab Name: General Engineering Laboratories

Lab Code: GEL

Instrument ID: LCMSMS Date Analyzed: 24-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: 70510.42

Response Type: External Standard

Curve Type: RF

Perchlorate Initial Calibration

Lab Name: General Engineering Laboratories GEL Job No.(SDG): 10-988

Lab Code: GEL

Instrument ID: LCMSMS Date Analyzed: 24-DEC-02

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: 23577.58

Response Type: External Standard

Curve Type: RF

Quantify Calibration Report MassLynx 4.0 SP4

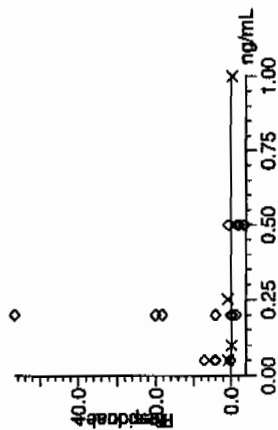
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

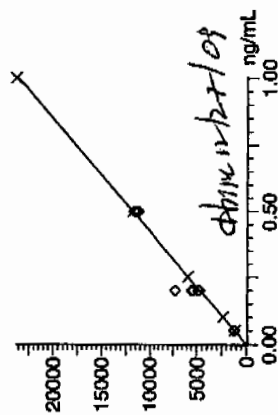
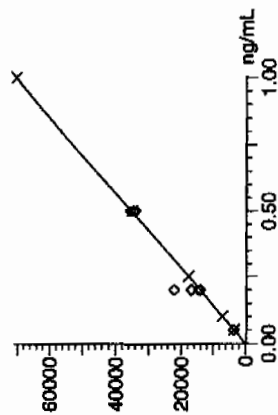
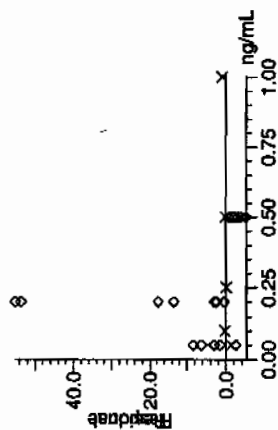
Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Method: C:\MassLynx\Perchlorate.PRO\MethDB\per122409a.mdb 24 Dec 2009 12:35:24  
Calibration: C:\MassLynx\Perchlorate.PRO\CurveDB\per122409a.cdb 26 Dec 2009 09:05:13

Compound name: Perchlorate  
Response Factor: 70510.4  
RF SD: 566.383, % Relative SD: 0.803261  
Response type: External Std, Area  
Curve type: RF



Compound name: Perchlorate-101  
Response Factor: 23577.6  
RF SD: 206.89, % Relative SD: 0.877488  
Response type: External Std, Area  
Curve type: RF



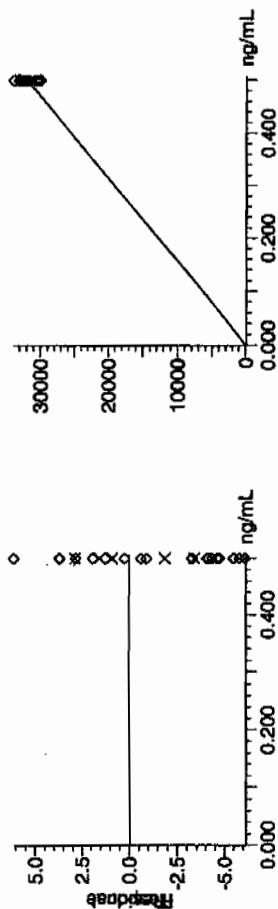
Quantify Calibration Report MassLynx 4.0 SP4

The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
 Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Compound name: Perchlorate-O<sup>-</sup>(18)  
 Response Factor: 63735.6  
 RRF SD: 1638.56, % Relative SD: 2.57087  
 Response type: External Std, Area  
 Curve type: RIF



Form 3

Perchlorate Initial Calibration Verification

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-988

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.5	.5	100.73	24-DEC-09 12:48	per1224009a
Perchlorate Isotope Ratio		3.03		24-DEC-09 12:48	per1224009a
Perchlorate-101	.5	.5	99.33	24-DEC-09 12:48	per1224009a

**Quantify Sample Report    MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
 Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

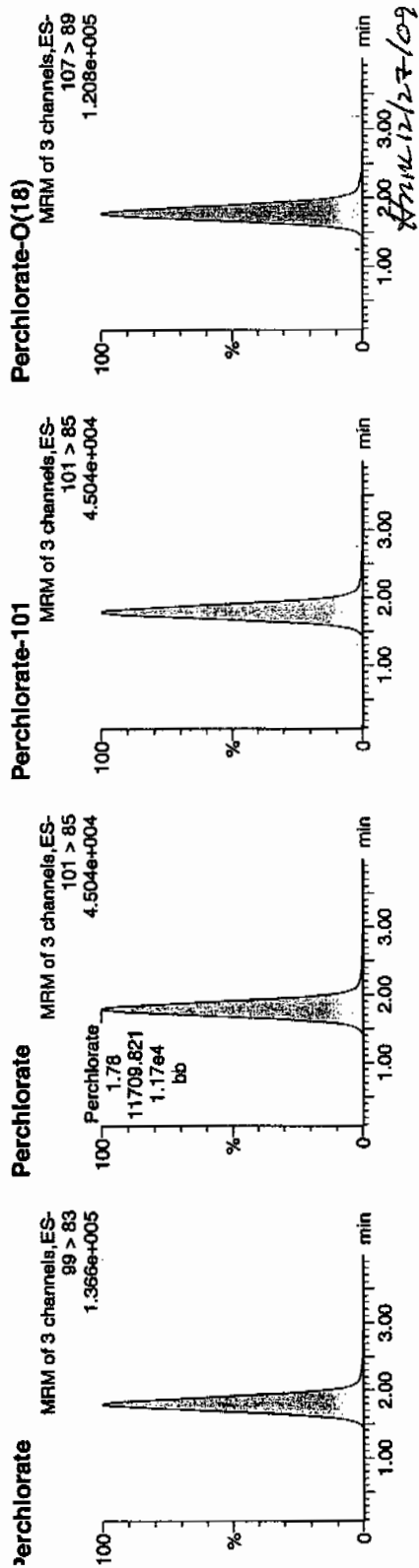
name: perl224009a

Date: 24-Dec-2009

**Time: 12:48:55**

**D: WCL091218-061CV**

**vial: 1:2,A**



Name	D	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	mg/mL	%Rec.	%Dev.	US/Nominal Ratio	
Pechlorate	WCL091218-06ICV	99 > 83	1.79	35512.238	35512.238	bb			0.5036	100.73	0.73	7186.1...	3.03
Pechlorate-101	WCL091218-06ICV	101 > 85	1.78	11709.821	11709.821	bb			0.4967	99.33	-0.67	3047.4...	
Pechlorate-Q(18)	WCL091218-06ICV	107 > 89	1.78	31574.010	31574.010	bb			0.4954	99.08	-0.92	5177.7...	



Form 3

Perchlorate Continuing Calibration Verification

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-988

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.5	.48	96.26	24-DEC-09 14:20	per1224022a
Perchlorate Isotope Ratio		2.94		24-DEC-09 14:20	per1224022a
Perchlorate-101	.5	.49	97.83	24-DEC-09 14:20	per1224022a
Perchlorate	.5	.49	98.37	24-DEC-09 15:52	per1224035a
Perchlorate Isotope Ratio		3.04		24-DEC-09 15:52	per1224035a
Perchlorate-101	.5	.48	96.9	24-DEC-09 15:52	per1224035a
Perchlorate	.5	.49	98.47	24-DEC-09 16:48	per1224043a
Perchlorate Isotope Ratio		3.02		24-DEC-09 16:48	per1224043a
Perchlorate-101	.5	.49	97.61	24-DEC-09 16:48	per1224043a
Perchlorate	.5	.49	97.91	24-DEC-09 18:20	per1224056a
Perchlorate Isotope Ratio		2.98		24-DEC-09 18:20	per1224056a
Perchlorate-101	.5	.49	98.34	24-DEC-09 18:20	per1224056a
Perchlorate	.5	.48	96.74	24-DEC-09 19:52	per1224069a

Form 3

Perchlorate Continuing Calibration Verification

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-988

Lab Code: GEL

Reporting Units: ug/kg

Perchlorate Isotope Ratio		3.05		24-DEC-09 19:52	per1224069a
Perchlorate-101	.5	.47	94.99	24-DEC-09 19:52	per1224069a
Perchlorate	.5	.49	97.84	24-DEC-09 20:35	per1224075a
Perchlorate Isotope Ratio		3.04		24-DEC-09 20:35	per1224075a
Perchlorate-101	.5	.48	96.18	24-DEC-09 20:35	per1224075a

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

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

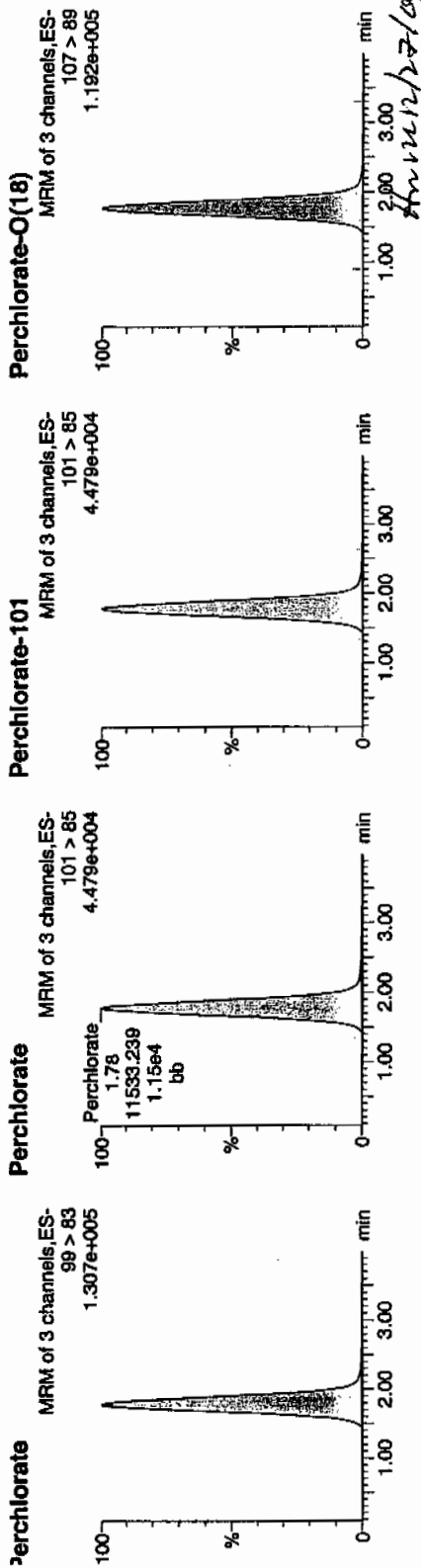
Name: per1224022a

Date: 24-Dec-2009

Time: 14:20:31

D: WCL091218-06CCV

/file: 1:2,A



D	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	Conc	%Rec	%Dev	Signal	Ratio
WCL091218-06CCV	Perchlorate	99 > 83	1.78	33937.723	33937.723	bb			0.4813	96.26	-3.74	831.137	2.94
WCL091218-06CCV	Perchlorate-101	101 > 85	1.78	11533.239	11533.239	bb			0.4892	97.83	-2.17	2372.0...	
WCL091218-06CCV	Perchlorate-O(18)	107 > 89	1.77	30814.051	30814.051	bb			0.4835	96.69	-3.31	4630.1...	

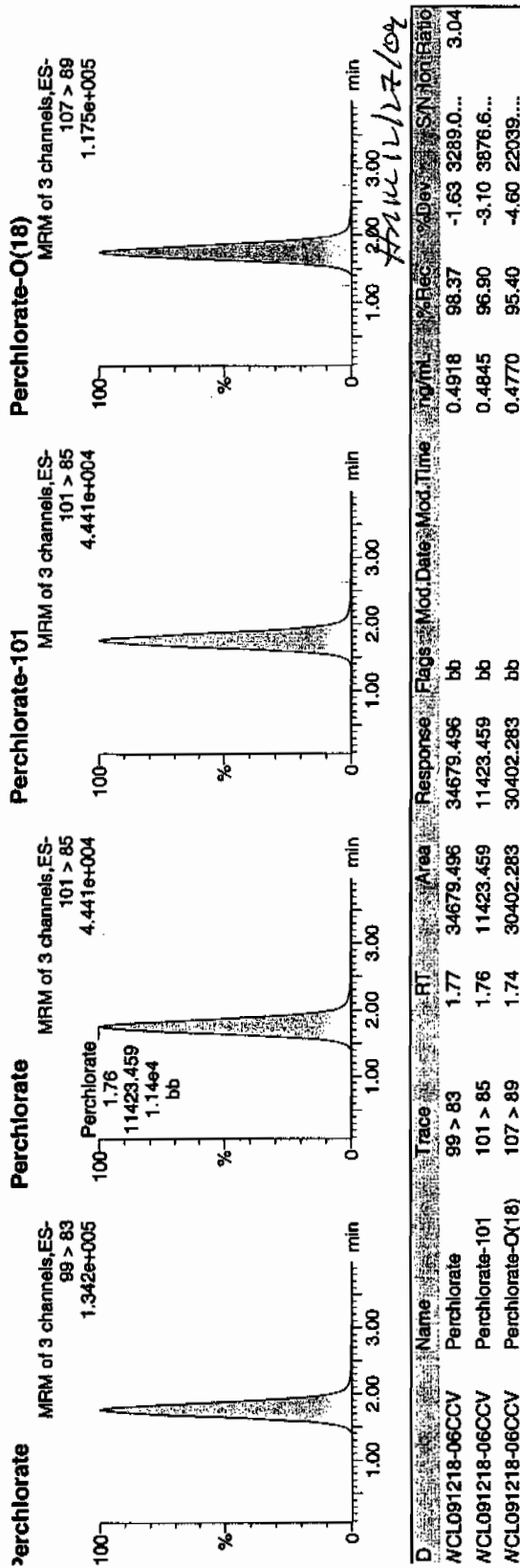
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224035a  
Date: 24-Dec-2009  
Time: 15:52:10  
D: WCL091218-06CCV  
/lal: 1:2,A

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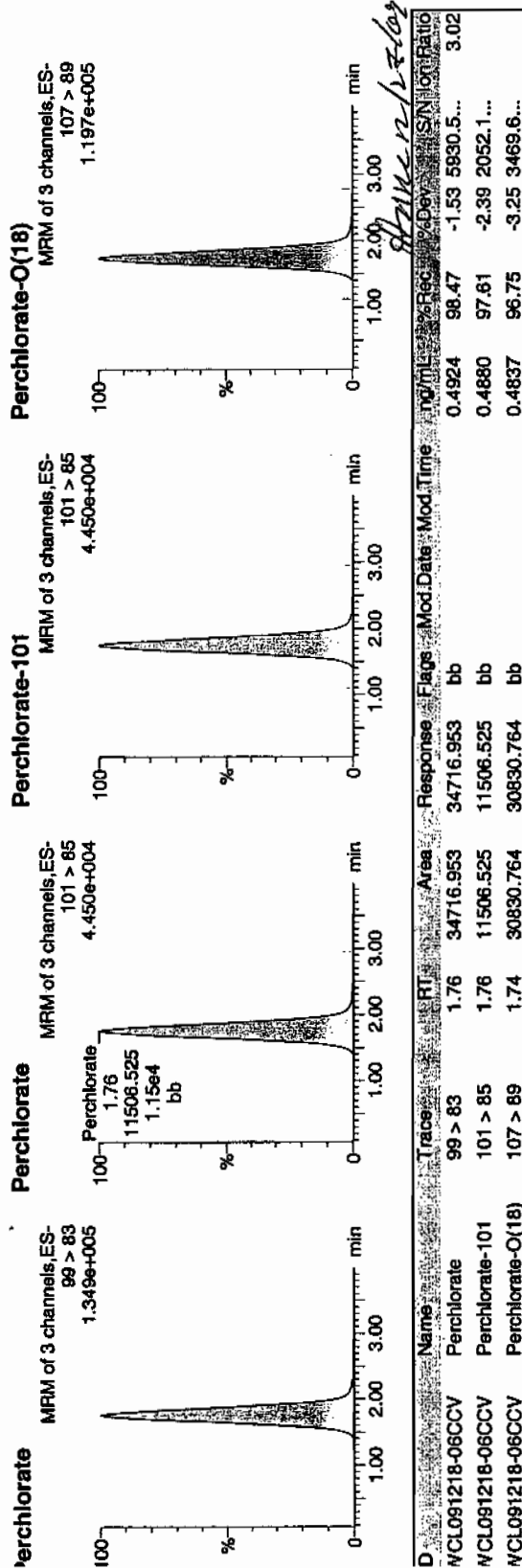
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

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Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Sample Name: per1224043a  
Date: 24-Dec-2009  
Time: 16:48:35  
D: WCL091218-06CCV  
File: 1:2,A

WCL  
12/26/09



8/21/12/2/09

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

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Sample Name: per1224056a

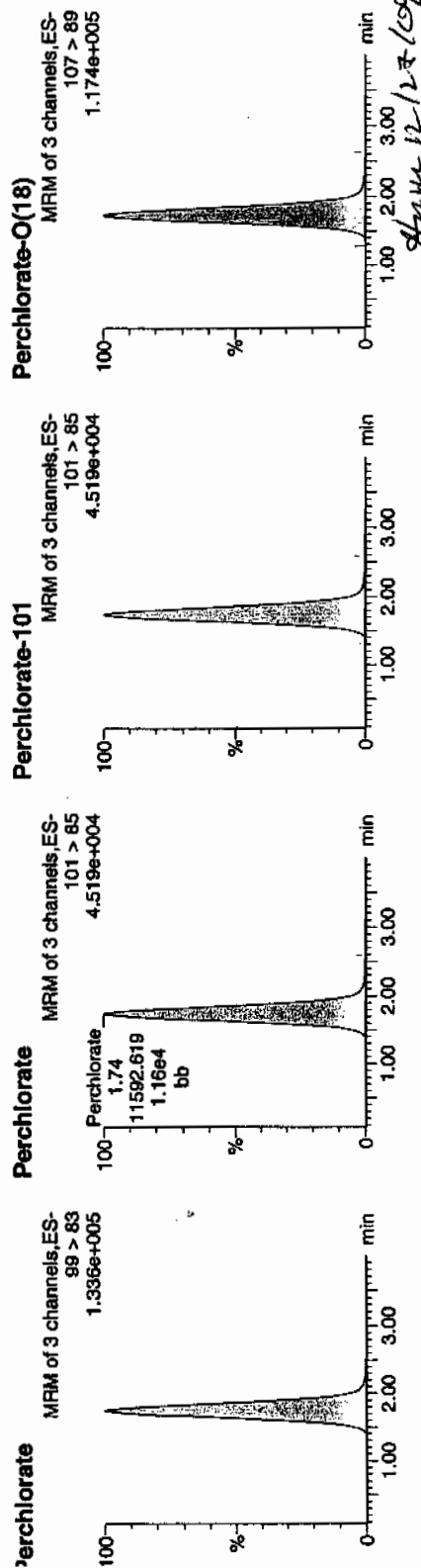
Date: 24-Dec-2009

Time: 18:20:40

ID: WCL091218-06CCV

Label: 1:2,A

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Sample Name	Trace	RT	Area	Response	Flags	Mod Date	Mod Time	Conc (ng/mL)	% Rec	% Dev	S/N	Ion Ratio
WCL091218-06CCV	Perchlorate	99 > 83	1.74	34519.199	bb			0.4896	97.91	-2.09	4885.1...	2.98
WCL091218-06CCV	Perchlorate-101	101 > 85	1.74	11592.619	bb			0.4917	98.34	-1.66	12341...	
WCL091218-06CCV	Perchlorate-O(18)	107 > 89	1.73	30386.760	bb			0.4768	95.35	-4.65	1822.1...	

CEL SOP GL-OA-E-067, Method 6850-Modified / MM = Manual Modification

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

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per122409a

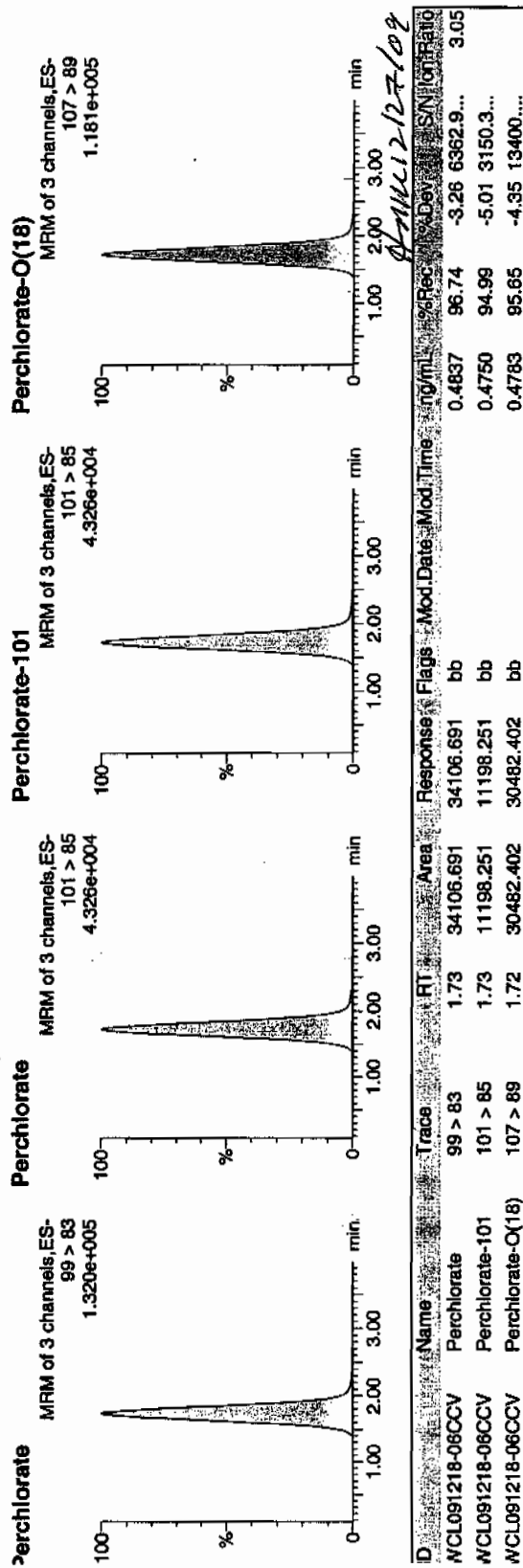
Date: 24-Dec-2009

Time: 19:52:58

D: WCL091218-06CCV

Vial: 1:2,A

Page 66 of 1340



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

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224075a

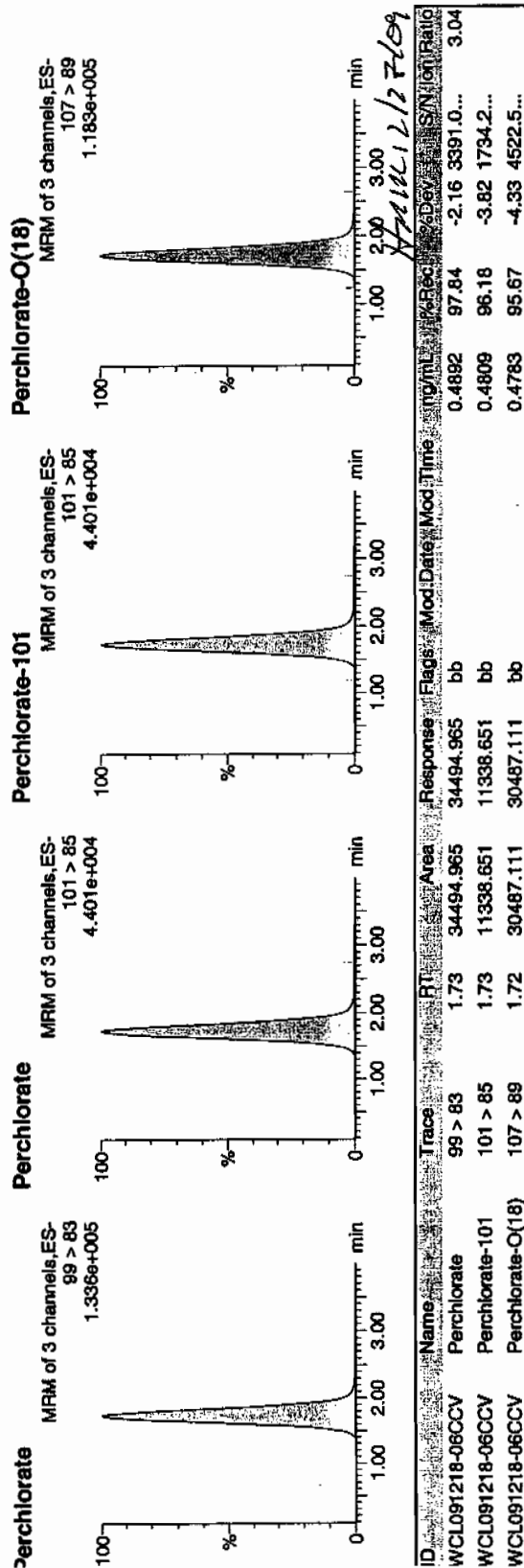
Date: 24-Dec-2009

Time: 20:35:35

D: WCL091218-06CCV

Vial: 1:2,A

Page 67 of 1340



GEL SOP GL-OA-E-067, Method 6850-Modified / MM = Manual Modification



Perchlorate MDL Verification

Lab Name: General Engineering Laboratories

GEL Job No.(SDG): 10-988

Lab Code: GEL

Reporting Units: ug/kg

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.05	.05	107.17	24-DEC-09 13:03	per1224011a
Perchlorate Isotope Ratio		2.96		24-DEC-09 13:03	per1224011a
Perchlorate-101	.05	.05	108.37	24-DEC-09 13:03	per1224011a
Perchlorate	.05	.05	104	24-DEC-09 14:34	per1224024a
Perchlorate Isotope Ratio		3.19		24-DEC-09 14:34	per1224024a
Perchlorate-101	.05	.05	97.61	24-DEC-09 14:34	per1224024a
Perchlorate	.05	.05	103.94	24-DEC-09 16:06	per1224037a
Perchlorate Isotope Ratio		3.06		24-DEC-09 16:06	per1224037a
Perchlorate-101	.05	.05	101.59	24-DEC-09 16:06	per1224037a
Perchlorate	.05	.05	100.17	24-DEC-09 17:02	per1224045a
Perchlorate Isotope Ratio		2.82		24-DEC-09 17:02	per1224045a

Perchlorate MDL Verification

GEL Job No.(SDG): 10-988

Lab Name: General Engineering Laboratories

Lab Code: GEL

Reporting Units: ug/kg

Perchlorate-101	.05	.05	106.38	24-DEC-09 17:02	per1224045a
Perchlorate	.05	.05	104.37	24-DEC-09 18:35	per1224058a
Perchlorate Isotope Ratio		3.03		24-DEC-09 18:35	per1224058a
Perchlorate-101	.05	.05	103.08	24-DEC-09 18:35	per1224058a
Perchlorate	.05	.05	104.16	24-DEC-09 20:07	per1224071a
Perchlorate Isotope Ratio		3.02		24-DEC-09 20:07	per1224071a
Perchlorate-101	.05	.05	103.05	24-DEC-09 20:07	per1224071a
Perchlorate	.05	.05	103.94	24-DEC-09 20:49	per1224077a
Perchlorate Isotope Ratio		3.01		24-DEC-09 20:49	per1224077a
Perchlorate-101	.05	.05	103.25	24-DEC-09 20:49	per1224077a

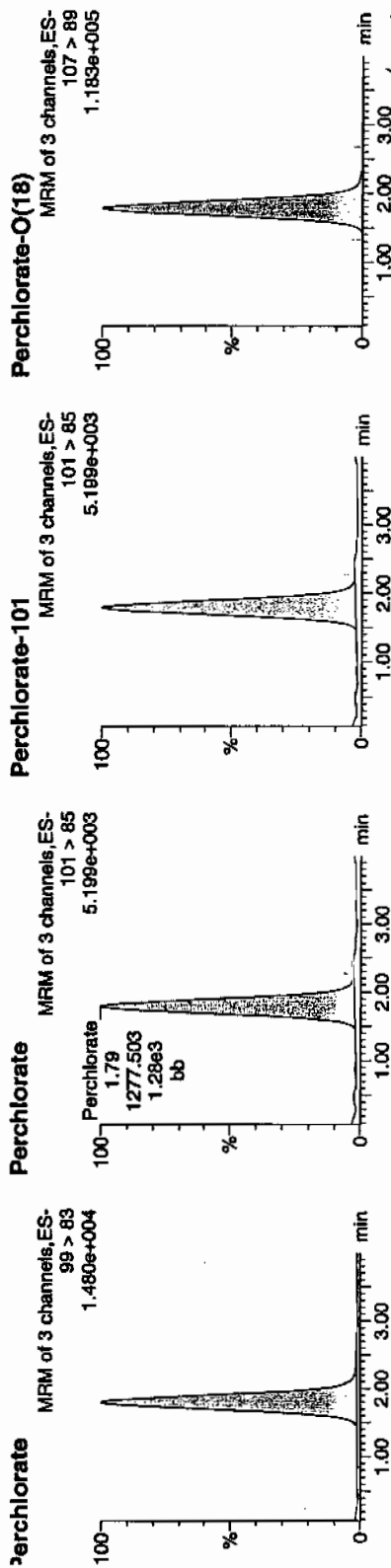
Quantify Sample Report MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

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Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

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Time: 13:03:01  
D: WCL091218-07CRI  
/ial: 1:2,B

Page 70 of 1340



D	Name	Trace	HT	Area	Response	Flags	Mod Date	Mod Time	ng/ml	% Res	Day	SN	Ion Ratio
	Perchlorate	99 > 83	1.79	3778.272	3778.272	bb			0.0536	107.17	7.17	716.684	2.96
	Perchlorate-101	101 > 85	1.79	1277.503	1277.503	bb			0.0542	108.37	8.37	366.151	
	Perchlorate-O(18)	107 > 89	1.78	30546.498	30546.498	bb			0.4793	95.85	-4.15	3199.7...	

CEL SOP GL-OA-E-067, Method 6850-Modified / MM = Manual Modification

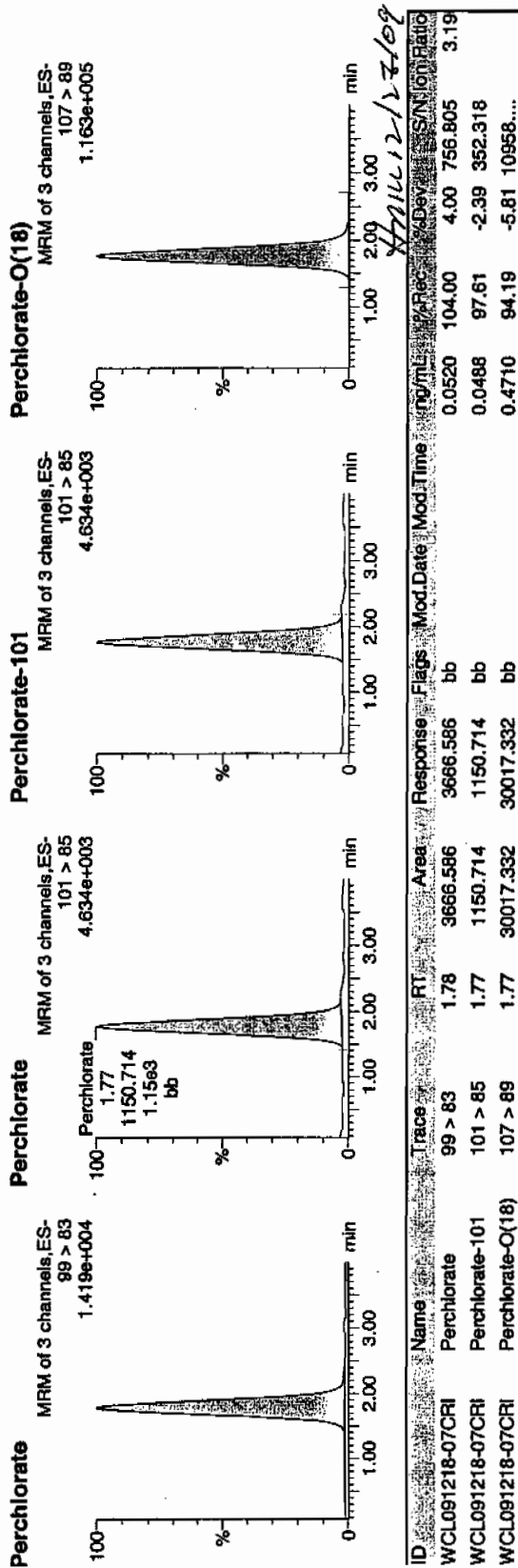
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224024a  
Date: 24-Dec-2009  
Time: 14:34:36  
ID: WCL091218-07CRI  
Vial: 1:2,B

WCL  
12/26/09

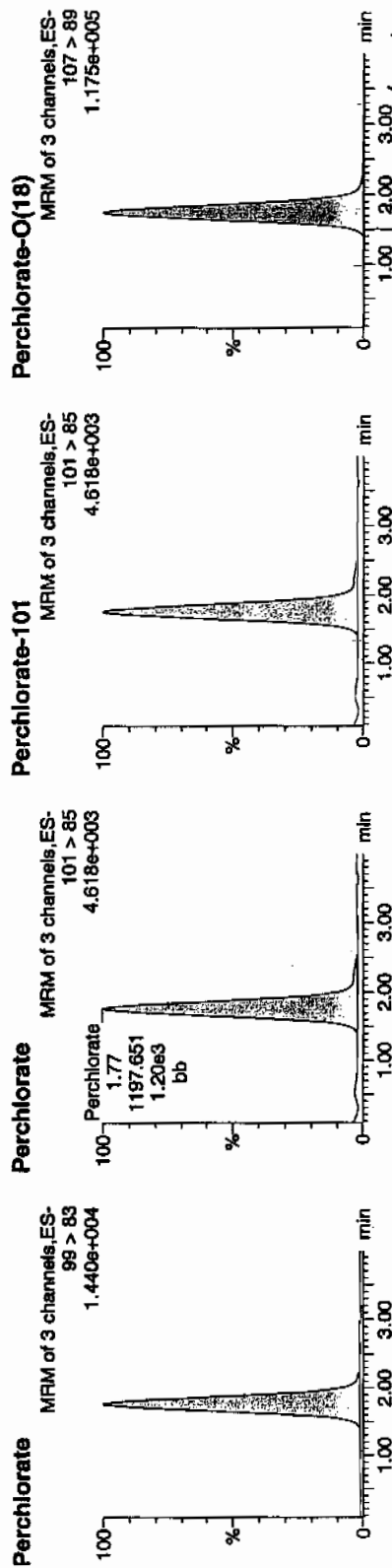


**Quantify Sample Report - MassLynx 4.0 SP4**  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224037a  
Date: 24-Dec-2009  
Time: 16:08:15  
ID: WCL091218-07CRI  
Vial: 1:2,B



ID	Name	Trace	RT	Area	Response	Flags	Mod	Date	Mod	Time	ng/mL	%Rec	%Dev	SN	Ion	Ratio
WCL091218-07CRI	Perchlorate	99 > 83	1.77	3664.350	3664.350	bb					0.0520	103.94	3.94	905.596		3.06
WCL091218-07CRI	Perchlorate-101	101 > 85	1.77	1197.651	1197.651	bb					0.0508	101.59	1.59	206.037		
WCL091218-07CRI	Perchlorate-O(18)	107 > 89	1.76	30354.973	30354.973	bb					0.4763	95.25	-4.75	8594.9...		

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

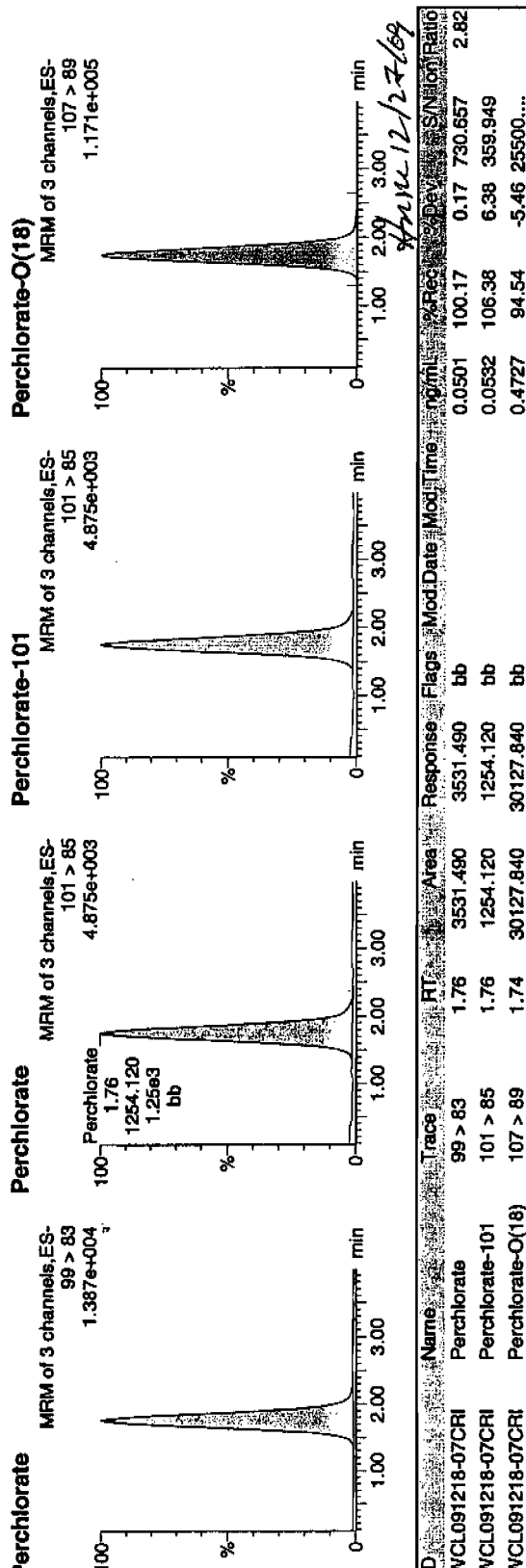
Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Acquired: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Sample Name: per1224045a  
Date: 24-Dec-2009  
Time: 17:02:40  
Job: WCL091218-07CRI  
Label: 1:2,B

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12/26/09  
17:02:40



# Quantify Sample Report

The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

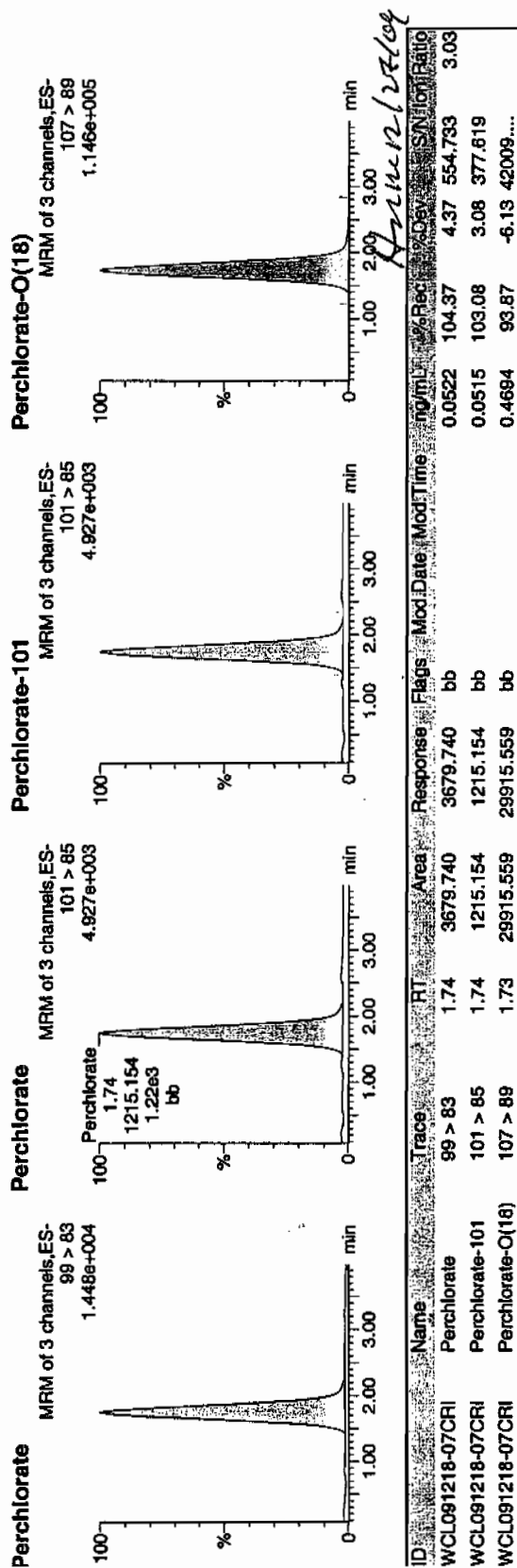
Name: per1224058a

**Date: 24-Dec-2009**

Time: 18:35:15

ID: WCL091218-07CRI

Vial: 1:2,B



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

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Sample Name: per1224071a

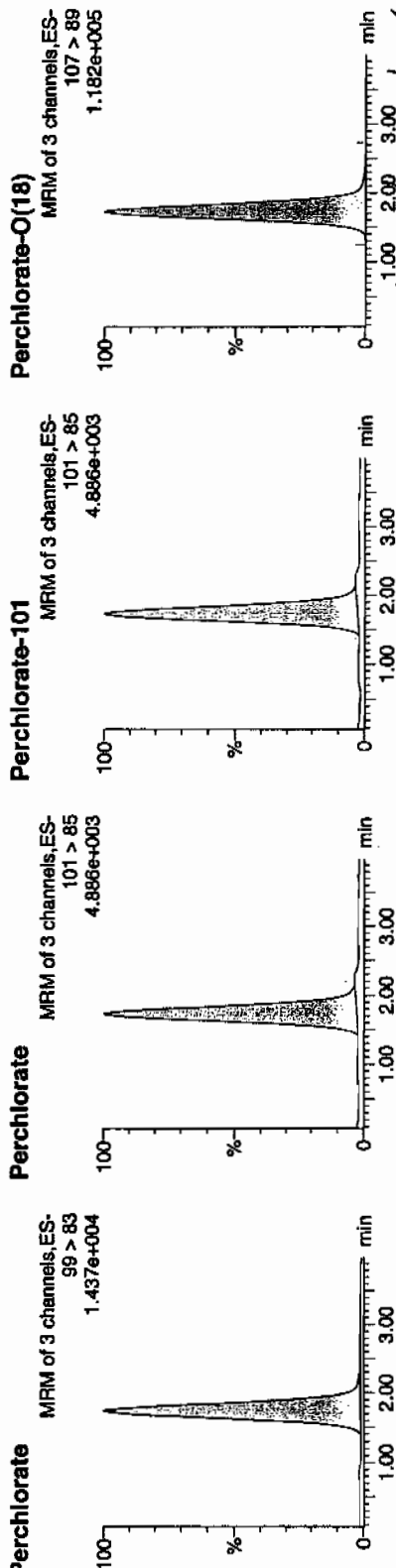
Date: 24-Dec-2009

Time: 20:07:16

ID: WCL091218-07CRI

File: 1-2.B

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Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ratio
WCL091218-07CRI	Perchlorate	1.73	3672.233	3672.233	bb			0.0521	104.16	4.16	277.987	3.02
WCL091218-07CRI	Perchlorate-101	1.73	1214.817	1214.817	bb			0.0515	103.05	3.05	255.579	
WCL091218-07CRI	Perchlorate-Q(18)	1.73	30579.768	30579.768	bb			0.4798	95.96	-4.04	26095...	



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

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224077a

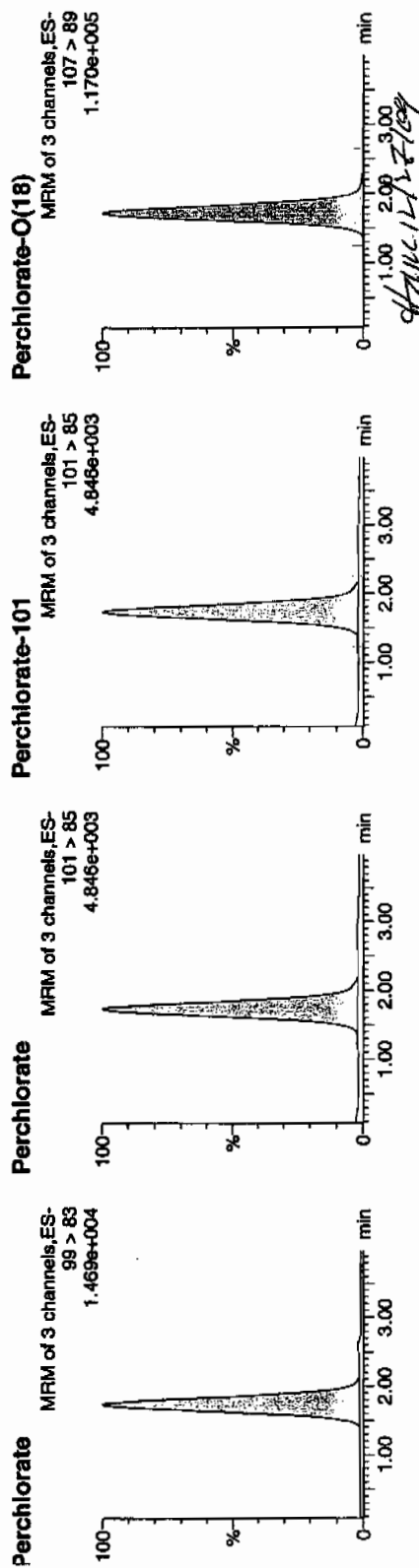
Date: 24-Dec-2009

Time: 20:49:54

ID: WCL091218-07CRI

Vial: 1:2,B

WCL  
2/26/09



ID	Name	Trace	RT	Area	Response	Flags	Mod Date	Mod Time	ng/mL	%Rec	%Dev	SN	Ion Ratio
WCL091218-07CRI	Perchlorate	99 > 83	1.73	3664.280	3664.280	bb			0.0520	103.94	3.94	769.331	3.01
WCL091218-07CRI	Perchlorate-101	101 > 85	1.73	1217.251	1217.251	bb			0.0516	103.25	3.25	2026.0...	
WCL091218-07CRI	Perchlorate-O(18)	107 > 89	1.72	30102.664	30102.664	bb			0.4723	94.46	-5.54	8754.5...	

# QUALITY CONTROL

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: 935070

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

MB

Date Received: 24-DEC-09

GEL Job No (SDG): 10-988

GEL Sample ID: 1202000643

Date Filtered: 24-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	0.500	ug/kg	U	1	24-DEC-09 17:09	per1224046a
	Perchlorate Isotope Ratio						1	24-DEC-09 17:09	per1224046a
14797-73-0	Perchlorate-101	.5	2	0.500	ug/kg	U	1	24-DEC-09 17:09	per1224046a
	Perchlorate-O(18)			4.94	ug/kg		1	24-DEC-09 17:09	per1224046a

<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\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224046a

Date: 24-Dec-2009

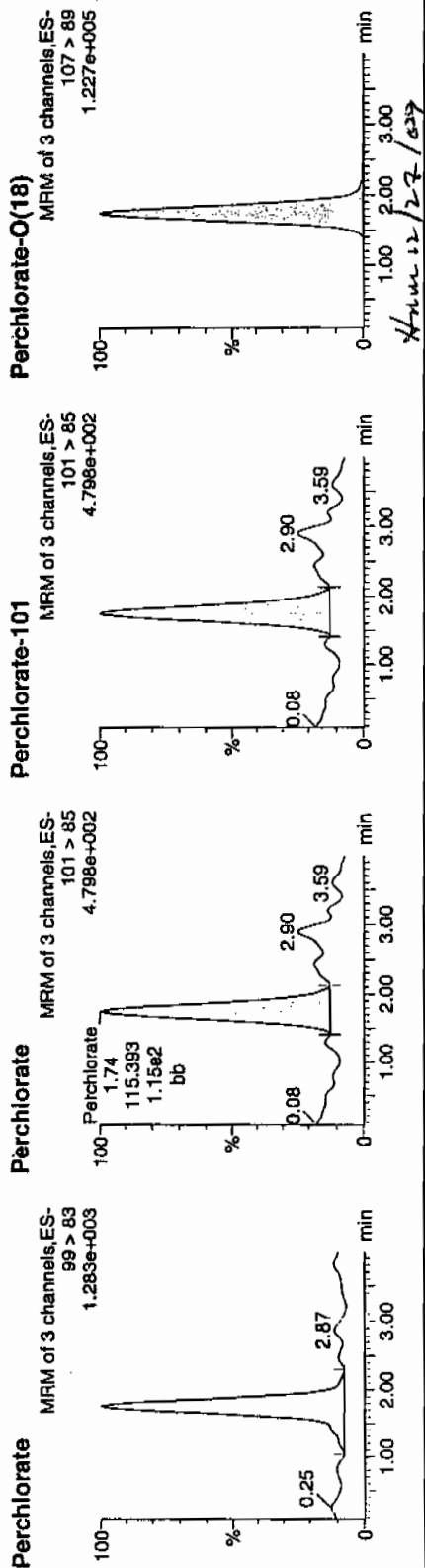
Time: 17:09:42

ID: 1202000643

Vial: 2:1,A

14/12/09

WAL-93504 / 8000 / 11 / 1



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
1202000643	Perchlorate	99 > 83	1.76	327.098	327.098	bb			0.0046			88.563	2.83
1202000643	Perchlorate-101	101 > 85	1.74	115.393	115.393	bb			0.0049			52.023	
1202000643	Perchlorate-O(18)	107 > 89	1.74	31516.684	31516.684	bb			0.4945	98.90	-1.10	7103.1...	

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: 935070

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

LCS

Date Received: 24-DEC-09

GEL Job No (SDG): 10-988

GEL Sample ID: 1202000644

Date Filtered: 24-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	2.00	ug/kg		1	24-DEC-09 17:16	per1224047a
	Perchlorate Isotope Ratio			2.91			1	24-DEC-09 17:16	per1224047a
14797-73-0	Perchlorate-101	.5	2	2.06	ug/kg		1	24-DEC-09 17:16	per1224047a
	Perchlorate-O(18)			4.97	ug/kg		1	24-DEC-09 17:16	per1224047a

<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\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224047a

Date: 24-Dec-2009

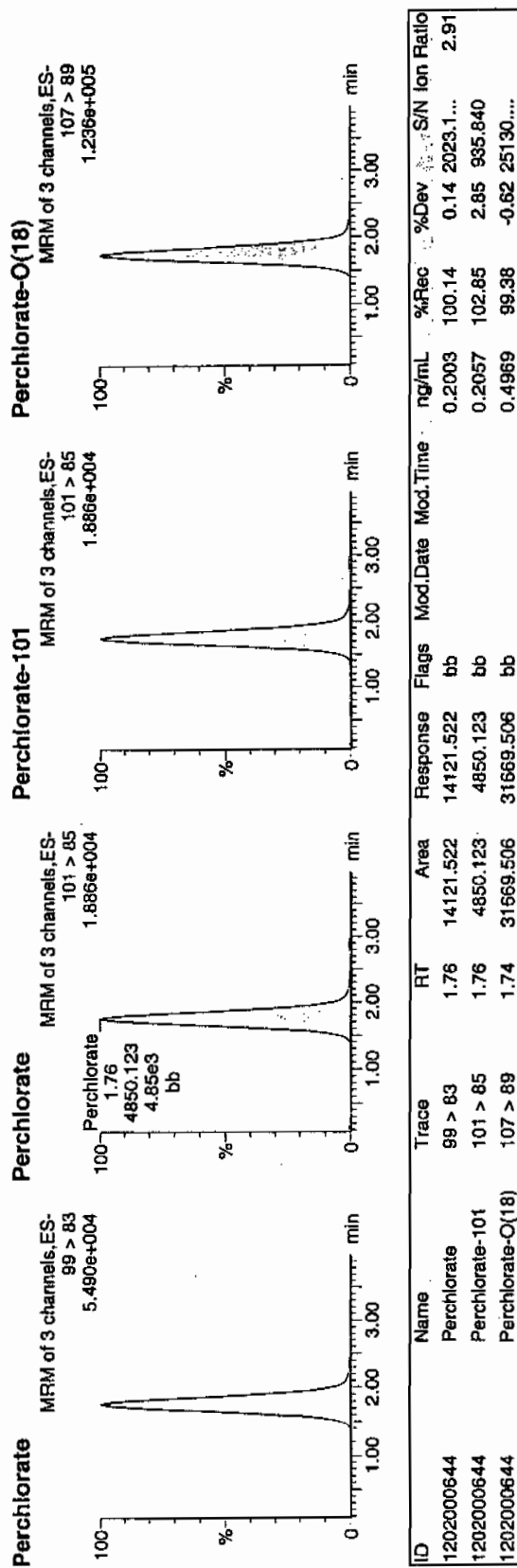
Time: 17:16:55

ID: 1202000644

Vial: 2:1,B

WAVE | 935071 | 80222 | LCS | 11 |

12/27/09  
14/6/09



14121.522  
70512.4 = 0.2003  
411m.12/24/09

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: 935070

Extraction Type: Solid Prep

Sample Volume/Weight: 2.00 g

Concentrated Extract Volume: 20.0

Client Sample No.

RE12-10-735IMS

Date Received: 18-DEC-09

GEL Job No (SDG): 10-988

GEL Sample ID: 1202000645

Date Filtered: 24-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	.559	2.24	2.68	ug/kg		1	24-DEC-09 20:21	per1224073a
	Perchlorate Isotope Ratio			3.05			1	24-DEC-09 20:21	per1224073a
14797-73-0	Perchlorate-101	.559	2.24	2.63	ug/kg		1	24-DEC-09 20:21	per1224073a
	Perchlorate-O(18)			5.66	ug/kg		1	24-DEC-09 20:21	per1224073a

<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

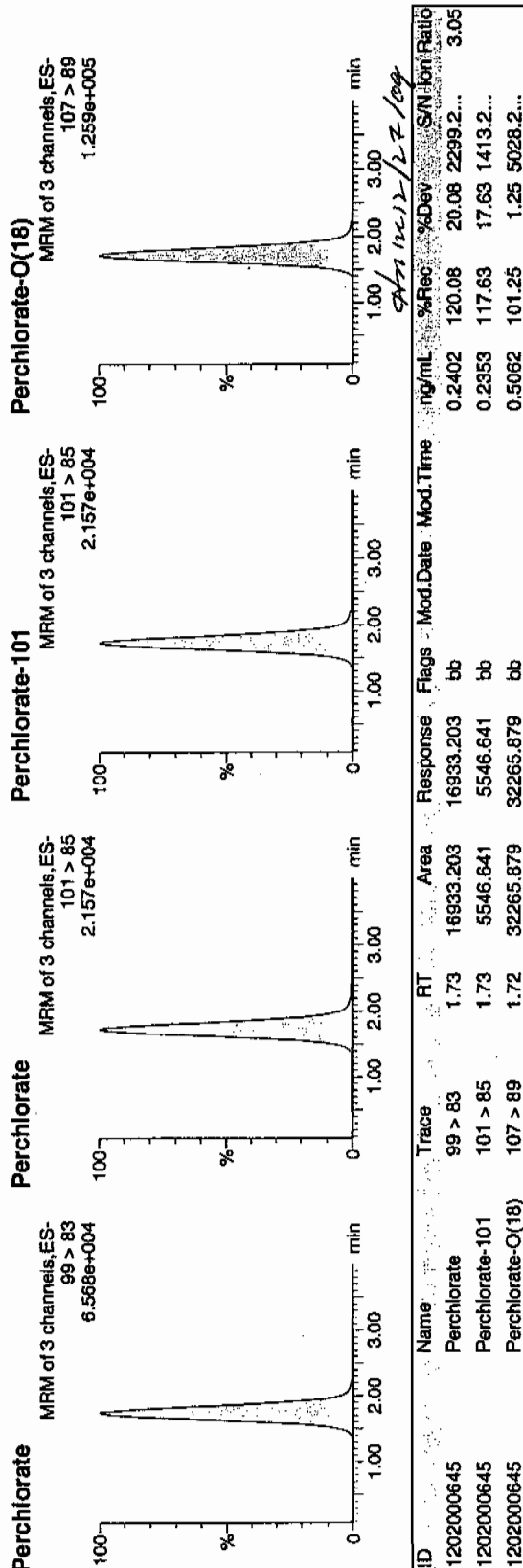
Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

11/17  
12/26/09

Name: per1224073a  
Date: 24-Dec-2009  
Time: 20:21:31  
D: 1202000645  
Vial: 2:4,D  
LANL | 93504 | 243273001 us | 11

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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: 935070

Extraction Type: Solid Prep

Client Sample No.

RE12-10-735IMSD

Date Received: 18-DEC-02

GEL Job No (SDG): 10-988

GEL Sample ID: 1202000646

Date Filtered: 24-DEC-09

Injection Volume (uL): 20

%Solids: 89

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	.559	2.24	2.64	ug/kg		1	24-DEC-09 20:28	per1224074a
	Perchlorate Isotope Ratio			3.12			1	24-DEC-09 20:28	per1224074a
14797-73-0	Perchlorate-101	.559	2.24	2.54	ug/kg		1	24-DEC-09 20:28	per1224074a
	Perchlorate-O(18)			5.75	ug/kg		1	24-DEC-09 20:28	per1224074a

<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  $\frac{1}{\% \text{Solids}}$

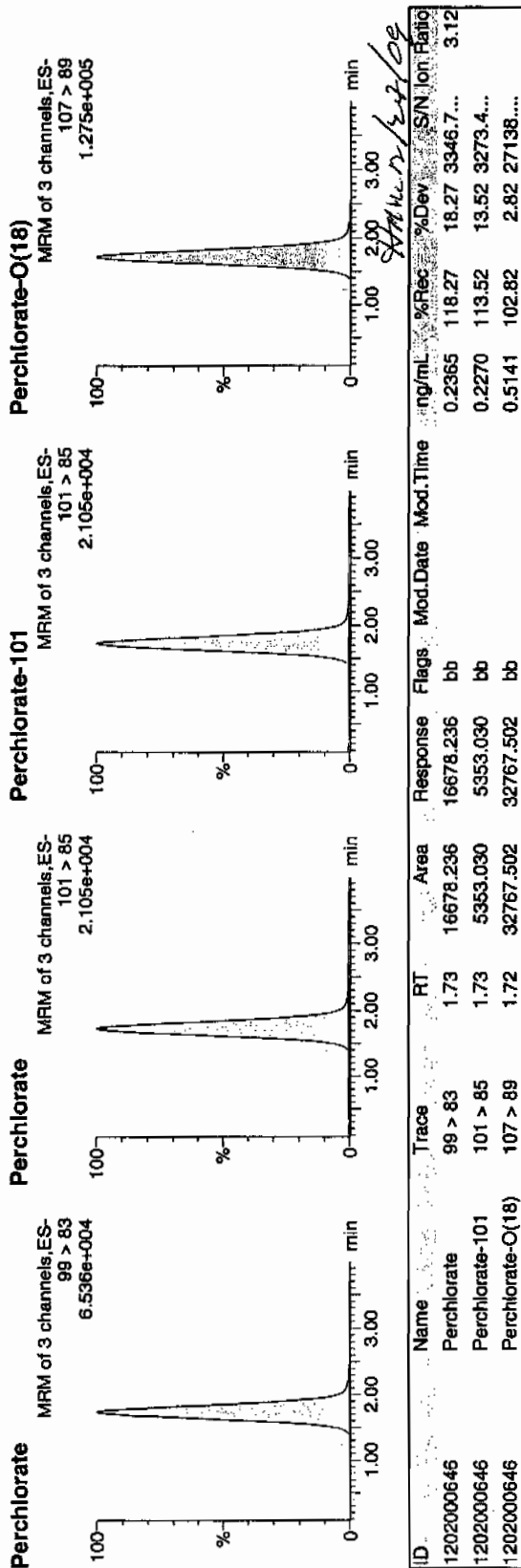
**Quantify Sample Report** MassLynx 4.0 SP4  
The GEL Group, LLC Analyst: Michael A. Penny

Dataset: C:\MassLynx\Perchlorate.PRO\per122409a.qld

Last Altered: Saturday, December 26, 2009 9:05:14 AM Eastern Standard Time  
Printed: Saturday, December 26, 2009 9:10:01 AM Eastern Standard Time

Name: per1224074a  
Date: 24-Dec-2009  
Time: 20:28:33  
ID: 1202000646  
Vial: 2:4,E

WAVE | 935074 | Save | 243273001455 | 11 |  
12/26/09



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	S/N	Ion Ratio
1202000646	Perchlorate	99 > 83	1.73	16678.236	16678.236	bb			0.2365	118.27	18.27	3346.7...	3.12
1202000646	Perchlorate-101	101 > 85	1.73	5353.030	5353.030	bb			0.2270	113.52	13.52	3273.4...	
1202000646	Perchlorate-O(18)	107 > 89	1.72	32767.502	32767.502	bb			0.5141	102.82	2.82	27138...	

# 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: 935070 Verified by: \_\_\_\_\_  
 Analyst: Lynne Russell  
 Method: SW846 6850 Modified  
 Lab SOP: GL-OA-E-067 REV# 6  
 Instrument: MicroMass Quattro Ultima

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1202000643 MB	24-DEC-2009 11:15:48	2	20	10
1202000644 LCS	24-DEC-2009 11:15:48	2	20	10
243092001	24-DEC-2009 11:15:48	2	20	10
243092002	24-DEC-2009 11:15:48	2	20	10
243092003	24-DEC-2009 11:15:48	2	20	10
243267001	24-DEC-2009 11:15:48	2	20	10
243267002	24-DEC-2009 11:15:48	2	20	10
243267003	24-DEC-2009 11:15:48	2	20	10
243267004	24-DEC-2009 11:15:48	2	20	10
243267005	24-DEC-2009 11:15:48	2	20	10
243267006	24-DEC-2009 11:15:48	2	20	10
243267007	24-DEC-2009 11:15:48	2	20	10
243267008	24-DEC-2009 11:15:48	2	20	10
243267009	24-DEC-2009 11:15:48	2	20	10
243267010	24-DEC-2009 11:15:48	2	20	10
243267011	24-DEC-2009 11:15:48	2	20	10
243267012	24-DEC-2009 11:15:48	2	20	10
243267013	24-DEC-2009 11:15:48	2	20	10
243267014	24-DEC-2009 11:15:48	2	20	10
243273001	24-DEC-2009 11:15:48	2	20	10
1202000647 ICS	24-DEC-2009 11:15:48	2	20	10
1202000645 MS (243273001)	24-DEC-2009 11:15:48	2	20	10
1202000646 MSD (243273001)	24-DEC-2009 11:15:48	2	20	10

Comments:

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

Type	Sample Id	Description	Serial Number	Spike Amt	Units
ICS	1202000647	10 ug/L ICV/CCV Second Source	UCL091201-01.1	.4	mL
LCS	1202000644	10 ug/L ICV/CCV Second Source	UCL091201-01.1	.4	mL
MS	1202000645	10 ug/L ICV/CCV Second Source	UCL091201-01.1	.4	mL
MSD	1202000646	10 ug/L ICV/CCV Second Source	UCL091201-01.1	.4	mL

GEL ORGANIC RUN LOG

INSTRUMENT ID: LCMSMS#2

Date: 12/24/09

Method: EPA 6850-Modified

Extr. Injection Volume: 20ul

Int. Std.: UCL091019-03.2

Sequence Number: per122409a

Mobile Phase Lot#: 1233781, 1233976

Initial Calibration Date: 12/24/09

Standard-Samp Reagent Lot#: 1233976

Reviewed BY: *hjm*  
Date: 1/22/10  
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
per1224001a	IPB001	MAP	12/24/2009 11:52			1		USE	B
per1224002a	IPB001	MAP	12/24/2009 11:59			1		USE	B
per1224003a	WCLICAL-01	MAP	12/24/2009 12:06			1		USE	I
per1224004a	WCLICAL-02	MAP	12/24/2009 12:13			1		USE	I
per1224005a	WCLICAL-03	MAP	12/24/2009 12:20			1		USE	I
per1224006a	WCLICAL-04	MAP	12/24/2009 12:27			1		USE	I
per1224007a	WCLICAL-05	MAP	12/24/2009 12:34			1		USE	I
per1224008a	IPB002	MAP	12/24/2009 12:41			1		USE	B
per1224009a	WCLICV	MAP	12/24/2009 12:48			1		USE	C
per1224010a	IPB003	MAP	12/24/2009 12:55			1		USE	B
per1224011a	WCLCRI	MAP	12/24/2009 13:03			1		USE	C
per1224012a	1202000638	MAP	12/24/2009 13:10	935068	Various	1	LANL	USE	S
per1224013a	1202000639	MAP	12/24/2009 13:17	935068	Various	1	LANL	USE	S
per1224014a	1202000642	MAP	12/24/2009 13:24	935068	Various	1	LANL	USE	S
per1224015a	243088001	MAP	12/24/2009 13:31	935068	10-946	1	LANL	USE	S
per1224016a	243088002	MAP	12/24/2009 13:38	935068	10-946	1	LANL	USE	S
per1224017a	243249001	MAP	12/24/2009 13:45	935068	10-971	1	LANL	USE	S
per1224018a	243249002	MAP	12/24/2009 13:52	935068	10-971	1	LANL	USE	S
per1224019a	243249003	MAP	12/24/2009 13:59	935068	10-971	1	LANL	USE	S
per1224020a	243249004	MAP	12/24/2009 14:06	935068	10-971	1	LANL	USE	S
per1224021a	243249005	MAP	12/24/2009 14:13	935068	10-971	1	LANL	USE	S
per1224022a	WCLCCV	MAP	12/24/2009 14:20			1		USE	C
per1224023a	IPB004	MAP	12/24/2009 14:27			1		USE	B
per1224024a	WCLCRI	MAP	12/24/2009 14:34			1		USE	C
per1224025a	243256001	MAP	12/24/2009 14:41	935068	10-970	1	LANL	USE	S
per1224026a	243256002	MAP	12/24/2009 14:48	935068	10-970	1	LANL	USE	S
per1224027a	243256003	MAP	12/24/2009 14:55	935068	10-970	1	LANL	USE	S
per1224028a	243270001	MAP	12/24/2009 15:02	935068	10-990	1	LANL	USE	S
per1224029a	1202000640	MAP	12/24/2009 15:09	935068	10-990	1	LANL	USE	S

per1224030a	1202000641	MAP	12/24/2009 15:16	935068	10-990	1	LANL	USE	S
per1224031a	243270002	MAP	12/24/2009 15:23	935068	10-990	1	LANL	USE	S
per1224032a	243270003	MAP	12/24/2009 15:30	935068	10-990	1	LANL	USE	S
per1224033a	243270004	MAP	12/24/2009 15:38	935068	10-990	1	LANL	USE	S
per1224034a	243270005	MAP	12/24/2009 15:45	935068	10-990	1	LANL	USE	S
per1224035a	WCLCCV	MAP	12/24/2009 15:52			1		USE	C
per1224036a	IPB005	MAP	12/24/2009 15:59			1		USE	B
per1224037a	WCLCRI	MAP	12/24/2009 16:06			1		USE	C
per1224038a	243270006	MAP	12/24/2009 16:13	935068	10-990	1	LANL	USE	S
per1224039a	243270007	MAP	12/24/2009 16:20	935068	10-990	1	LANL	USE	S
per1224040a	243270008	MAP	12/24/2009 16:27	935068	10-990	1	LANL	USE	S
per1224041a	243270009	MAP	12/24/2009 16:34	935068	10-990	1	LANL	USE	S
per1224042a	243270010	MAP	12/24/2009 16:41	935068	10-990	1	LANL	USE	S
per1224043a	WCLCCV	MAP	12/24/2009 16:48			1		USE	C
per1224044a	IPB006	MAP	12/24/2009 16:55			1		USE	B
per1224045a	WCLCRI	MAP	12/24/2009 17:02			1		USE	C
per1224046a	1202000643	MAP	12/24/2009 17:09	935071	Various	1	LANL	USE	S
per1224047a	1202000644	MAP	12/24/2009 17:16	935071	Various	1	LANL	USE	S
per1224048a	1202000647	MAP	12/24/2009 17:23	935071	Various	1	LANL	USE	S
per1224049a	243092001	MAP	12/24/2009 17:30	935071	10-947	1	LANL	USE	S
per1224050a	243092002	MAP	12/24/2009 17:38	935071	10-947	1	LANL	USE	S
per1224051a	243092003	MAP	12/24/2009 17:45	935071	10-947	1	LANL	USE	S
per1224052a	243267001	MAP	12/24/2009 17:52	935071	10-992	1	LANL	USE	S
per1224053a	243267002	MAP	12/24/2009 17:59	935071	10-992	1	LANL	USE	S
per1224054a	243267003	MAP	12/24/2009 18:06	935071	10-992	1	LANL	USE	S
per1224055a	243267004	MAP	12/24/2009 18:13	935071	10-992	1	LANL	USE	S
per1224056a	WCLCCV	MAP	12/24/2009 18:20			1		USE	C
per1224057a	IPB007	MAP	12/24/2009 18:28			1		USE	B
per1224058a	WCLCRI	MAP	12/24/2009 18:35			1		USE	C
per1224059a	243267005	MAP	12/24/2009 18:42	935071	10-992	1	LANL	USE	S
per1224060a	243267006	MAP	12/24/2009 18:49	935071	10-992	1	LANL	USE	S
per1224061a	243267007	MAP	12/24/2009 18:56	935071	10-992	1	LANL	USE	S
per1224062a	243267008	MAP	12/24/2009 19:03	935071	10-992	1	LANL	USE	S
per1224063a	243267009	MAP	12/24/2009 19:10	935071	10-992	1	LANL	USE	S
per1224064a	243267010	MAP	12/24/2009 19:17	935071	10-992	1	LANL	USE	S
per1224065a	243267011	MAP	12/24/2009 19:24	935071	10-992	1	LANL	USE	S
per1224066a	243267012	MAP	12/24/2009 19:31	935071	10-992	1	LANL	USE	S

per1224067a	243267013	MAP	12/24/2009 19:38	935071	10-992	1	LANL	USE	S
per1224068a	243267014	MAP	12/24/2009 19:45	935071	10-992	1	LANL	USE	S
per1224069a	WCLCCV	MAP	12/24/2009 19:52			1		USE	C
per1224070a	IPB008	MAP	12/24/2009 20:00			1		USE	B
per1224071a	WCLCRI	MAP	12/24/2009 20:07			1		USE	C
per1224072a	243273001	MAP	12/24/2009 20:14	935071	10-988	1	LANL	USE	S
per1224073a	1202000645	MAP	12/24/2009 20:21	935071	10-988	1	LANL	USE	S
per1224074a	1202000646	MAP	12/24/2009 20:28	935071	10-988	1	LANL	USE	S
per1224075a	WCLCCV	MAP	12/24/2009 20:35			1		USE	C
per1224076a	IPB009	MAP	12/24/2009 20:42			1		USE	B
per1224077a	WCLCRI	MAP	12/24/2009 20:49			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 10-988**

**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:** 935248

**Prep Batch Number:** 935247

**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>
243273001	RE12-10-7351
1202001039	Method Blank (MB)
1202001040	Laboratory Control Sample (LCS)
1202001041	243274001(RE12-10-7352) Matrix Spike (MS)
1202001042	243274001(RE12-10-7352) 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.

**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.

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#### **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 spike recoveries were within the established acceptance limits.

##### **QC Sample Designation**

Client sample 243274001 (RE12-10-7352) from SDG 10-989 was chosen for matrix spike and matrix spike duplicate analysis. Please see the raw data in the Miscellaneous Section.

##### **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**

QC sample 1202001040 (LCS) failed ISTD acceptance criteria. Please see the Form 8 in the data package for the exact recoveries. The sample was re-analyzed and similar recoveries were observed. The re-analysis data are reported. The confirmation raw data are located in the Miscellaneous Section of the data package. Please see nonconformance report 776908.

#### **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.

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#### **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**

QC sample 1202001040 (LCS) failed ISTD acceptance criteria. Please see the Form 8 in the data package for the exact recoveries. The sample was re-analyzed and similar recoveries were observed. The re-analysis data are reported. The confirmation raw data are located in the Miscellaneous Section of the data package. Please see nonconformance report 776908.

#### **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 TATB at 256%. The recovery limits are 47-166%. The Matrix Spike and Matrix Spike Duplicate both met acceptance limits for TATB. Since TATB was not detected in the associated samples, the data are reported. Please see nonconformance report 776908.

##### **QC Sample Designation**

Client sample 243274001 (RE12-10-7352) from SDG 10-989 was chosen for matrix spike and matrix spike duplicate analysis. Please see the raw data in the Miscellaneous Section.

##### **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.

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

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

**Internal Standard (ISTD) Acceptance**

Internal standard solution is not added to the secondary analyte analyses.

**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**

**Nonconformance (NCR) Documentation**

Nonconformance report 776908 was generated for this SDG.

The LCS recovered TATB at 256%. The recovery limits are 47-166%. The Matrix Spike and Matrix Spike Duplicate both met acceptance limits for TATB. Since TATB was not detected in the associated samples, the data are reported.

QC sample 1202001040 (LCS) failed ISTD acceptance criteria. Please see the Form 8 in the data package for the exact recoveries. The sample was re-analyzed and similar recoveries were observed. The re-analysis data are reported. The confirmation raw data are located in the Miscellaneous Section of the data package.

**Manual Integrations**

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

**Flagging Convention**

The sample was 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 K. Mauer

Date: 01/10/10

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# SAMPLE DATA SUMMARY

1  
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7351

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 243273001

Sample Amount 2

Moisture: 10.5

Amount Units g

Date Received: 18-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0102069a

Date Analyzed: 03-JAN-10 23:00

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



High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RB12-10-7351

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 243273001

Sample Amount 2

Moisture: 10.5

Amount Units g

Date Received: 18-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01030059.wiff

Date Analyzed: 04-JAN-10 02:51

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): 10-988

Lab Code: GEL

HPLC Column: Phenomenex Ultracarb 5u ODS(20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
243273001	RE12-10-7351	113	73.7 - 133.3	
243273001	RE12-10-7351	101	73.7 - 133.3	
1202001039	MB for batch 935247	96.8	73.7 - 133.3	
1202001039	MB for batch 935247	103	73.7 - 133.3	
1202001040	LCS for batch 935247	112	73.7 - 133.3	
1202001040	LCS for batch 935247	102	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) 10-988

Extract Batch Code: 935247

Date Extracted: 29-DEC-09

GEL LCS ID: 1202001040

GEL LCSDUP ID:

Analysis Date/Time: 04-JAN-10 21:38

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
p-Nitrotoluene	5000	4480	89.6					73.7 - 124
1,3,5-Trinitrobenzene	5000	5020	100					62.1 - 124
2,4,6-Trinitrotoluene	5000	5850	117					78.3 - 132
2,4-Dinitrotoluene	5000	4970	99.4					82.7 - 132
2,6-Dinitrotoluene	5000	4870	97.3					86.9 - 122
2-Amino-4,6-dinitrotoluene	5000	5890	118					84.2 - 149
4-Amino-2,6-dinitrotoluene	5000	5170	103					85.6 - 133
HMX	5000	5730	115					66.5 - 142
Nitrobenzene	5000	4700	94.1					71.8 - 126
PETN	5000	4510	90.3					64.6 - 147
RDX	5000	5600	112					78.7 - 144
Tetryl	5000	4070	81.5					31.2 - 119
m-Dinitrobenzene	5000	5020	100					80.9 - 127
m-Nitrotoluene	5000	4180	83.5					71.9 - 126
o-Nitrotoluene	5000	4260	85.2					75 - 123

# 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) 10-988

Extract Batch Code: 935247

Date Extracted: 29-DEC-09

GEL LCS ID: 1202001040

GEL LCSDUP ID:

Analysis Date/Time: 03-JAN-10 23:43

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	3710	74.2					64.8 - 128
2,6-Diamino-4-nitrotoluene	5000	4450	89					69.6 - 133
3,5-Dinitroaniline	5000	4830	96.6					77.3 - 123
TATB	5000	12800	256 *					46.8 - 166
tris(o-cresyl) phosphate	5000	5580	112					84.3 - 120

# 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: RE12-10-7352

Lab Code: GEL

GEL Job No (SDG) 10-988

Extract Batch Code: 935247

Date Extracted: 29-DEC-09

GEL Spike ID: 1202001041

GEL SpikeDup ID: 1202001042

Analysis Date/Time: 03-JAN-10 23:59

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
HMX	5000	0	5550	111	5420	108	2.48	30	66.7 - 144
Nitrobenzene	5000	0	4420	88.5	4700	94	6.02	30	70.4 - 129
PETN	5000	0	5270	105	5530	111	4.8	30	61.9 - 153
RDX	5000	0	5280	106	5020	100	5	30	73 - 140
Tetryl	5000	0	4150	83	3570	71.4	15.1	30	46.8 - 138
m-Dinitrobenzene	5000	0	4910	98.2	4870	97.3	.846	30	83.5 - 126
m-Nitrotoluene	5000	0	4440	88.8	4330	86.6	2.51	30	68.6 - 135
o-Nitrotoluene	5000	0	4490	89.7	4850	97.1	7.86	30	71.2 - 131
2,4-Dinitrotoluene	5000	0	5060	101	4920	98.3	2.93	30	79.1 - 137
4-Amino-2,6-dinitrotoluene	5000	0	5120	102	5410	108	5.53	30	77.3 - 140
2-Amino-4,6-dinitrotoluene	5000	0	5710	114	5920	118	3.59	30	77.4 - 154
2,6-Dinitrotoluene	5000	0	5080	102	5060	101	.223	30	85.4 - 125
1,3,5-Trinitrobenzene	5000	0	4840	96.9	4930	98.5	1.65	30	70.7 - 130
2,4,6-Trinitrotoluene	5000	0	5830	117	6570	131	12	30	83.4 - 138
p-Nitrotoluene	5000	0	4700	94	4670	93.5	.529	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: RE12-10-7352

Lab Code: GEL

GEL Job No (SDG) 10-988

Extract Batch Code: 935247

Date Extracted: 29-DEC-09

GEL Spike ID: 1202001041

GEL SpikeDup ID: 1202001042

Analysis Date/Time: 04-JAN-10 03:23

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	4150	83	4370	87.4	5.16	30	51.6 - 127
2,6-Diamino-4-nitrotoluene	5000	0	4510	90.2	5100	102	12.3	30	58.9 - 135
3,5-Dinitroaniline	5000	0	5010	100	4940	98.8	1.41	30	72.8 - 125
TATB	5000	0	5680	114	4790	95.8	17	30	43.9 - 166
tris(o-cresyl) phosphate	5000	0	5080	102	5050	101	.592	30	79.1 - 124

#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): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 02-JAN-10 13:33

GEL Data File: EXP0102001a

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	475.473
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	502.559
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



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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Method: C:\MASSLYNX\New\_Exp.PRO\MethDB\010210expa.mdb, Time: Mon Jan 04 10:47:42 2010  
Calibration: Untitled, Time: Mon Jan 04 12:58:28 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP01020001a

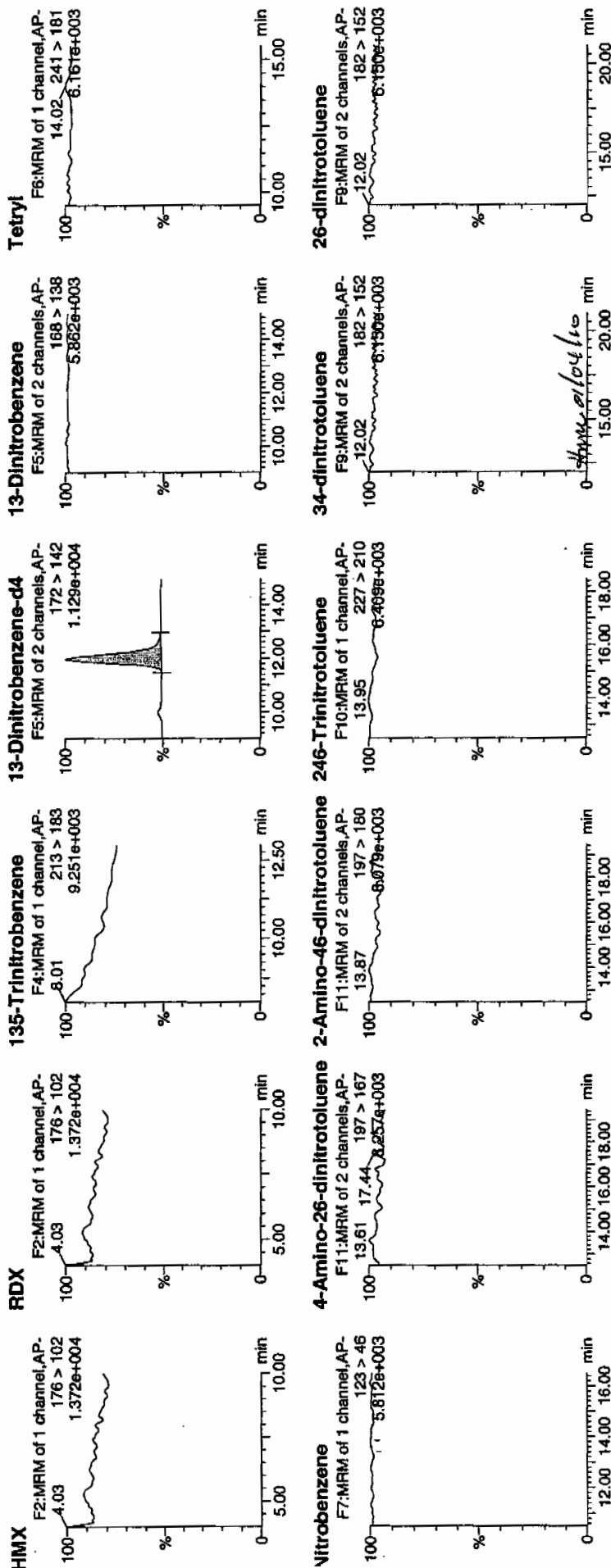
Date: 02-Jan-2010

Time: 13:33:58

ID: XIBLK01

Vial: 1:1,A

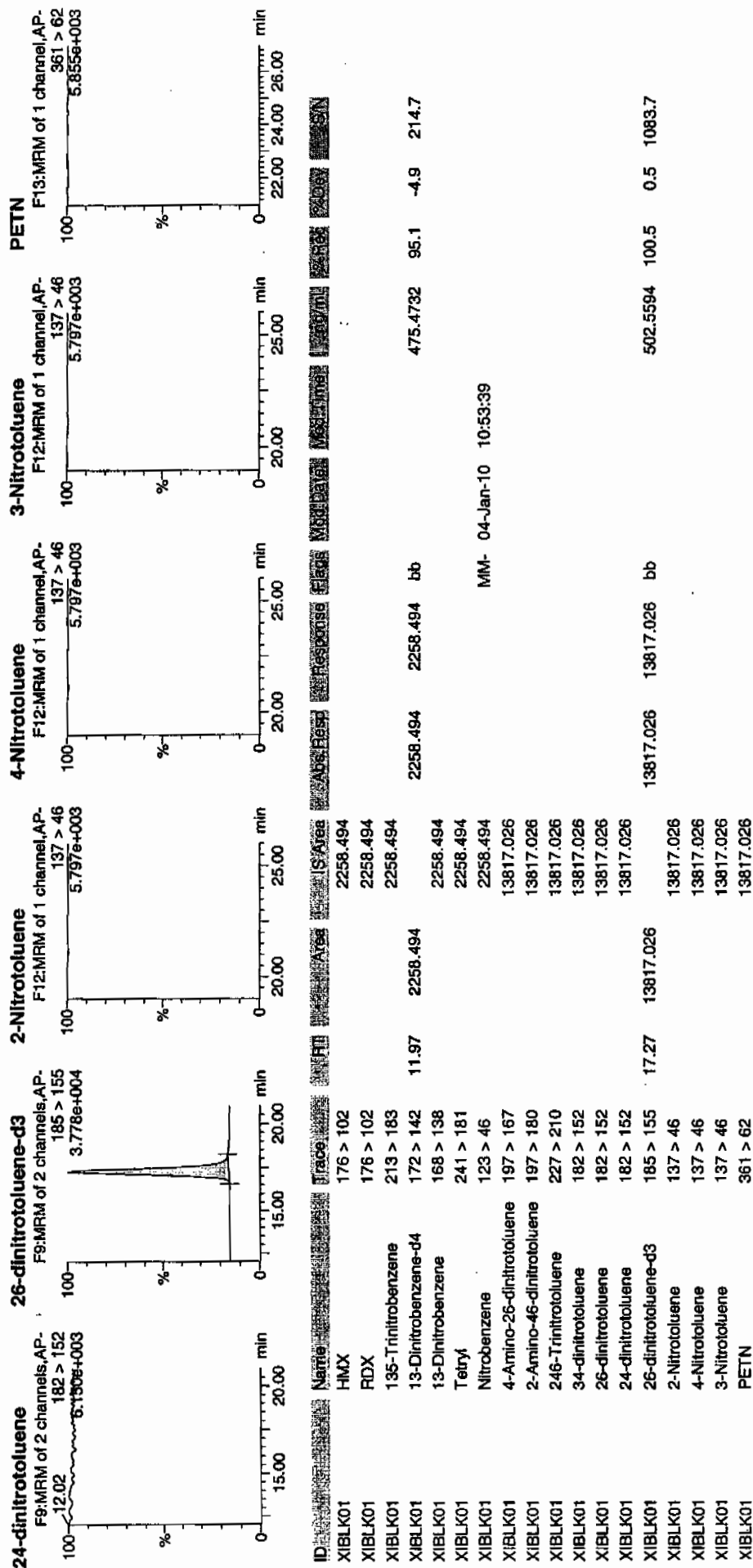
1/4/10



Printed: Mon Jan 04 12:59:32 2010, Page 2 of 175

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 02-JAN-10 14:03

GEL Data File: EXP0102002a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
RDX	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	477.712
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	507.343
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102002a

Date: 02-Jan-2010

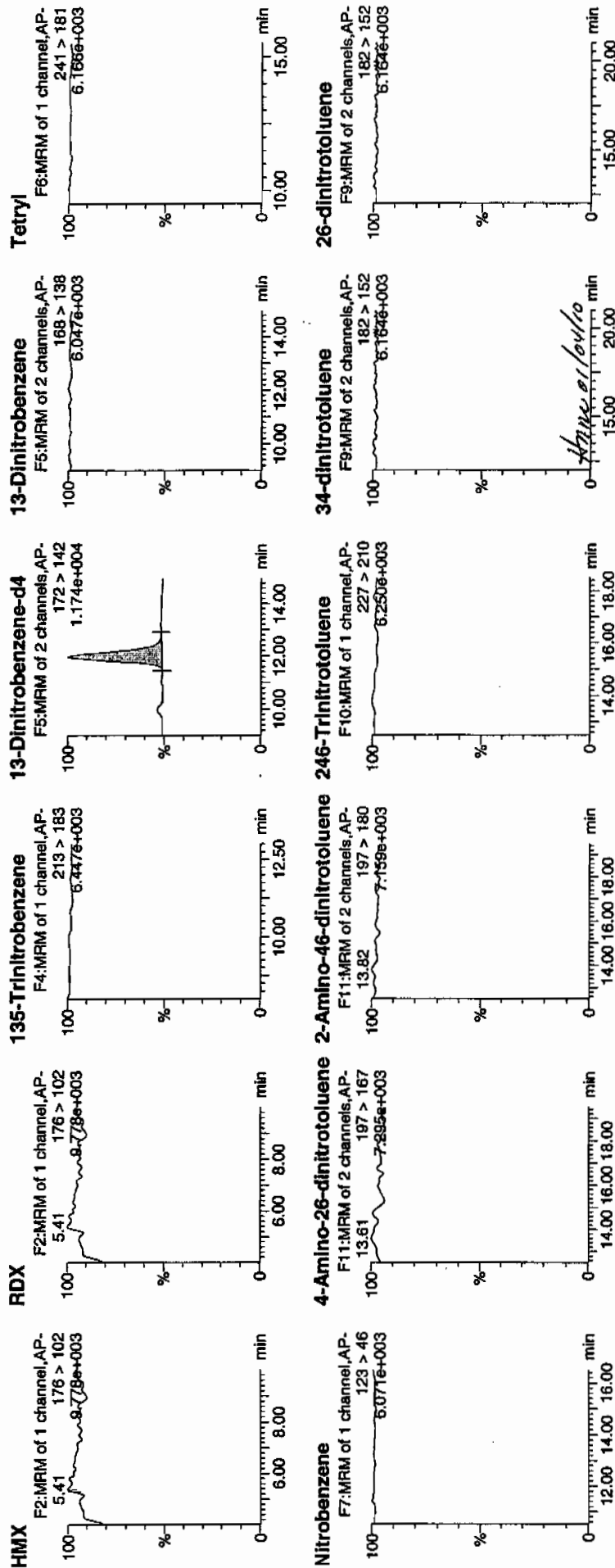
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ID: XIBLK01

Vial: 1:1,A

1/4/10

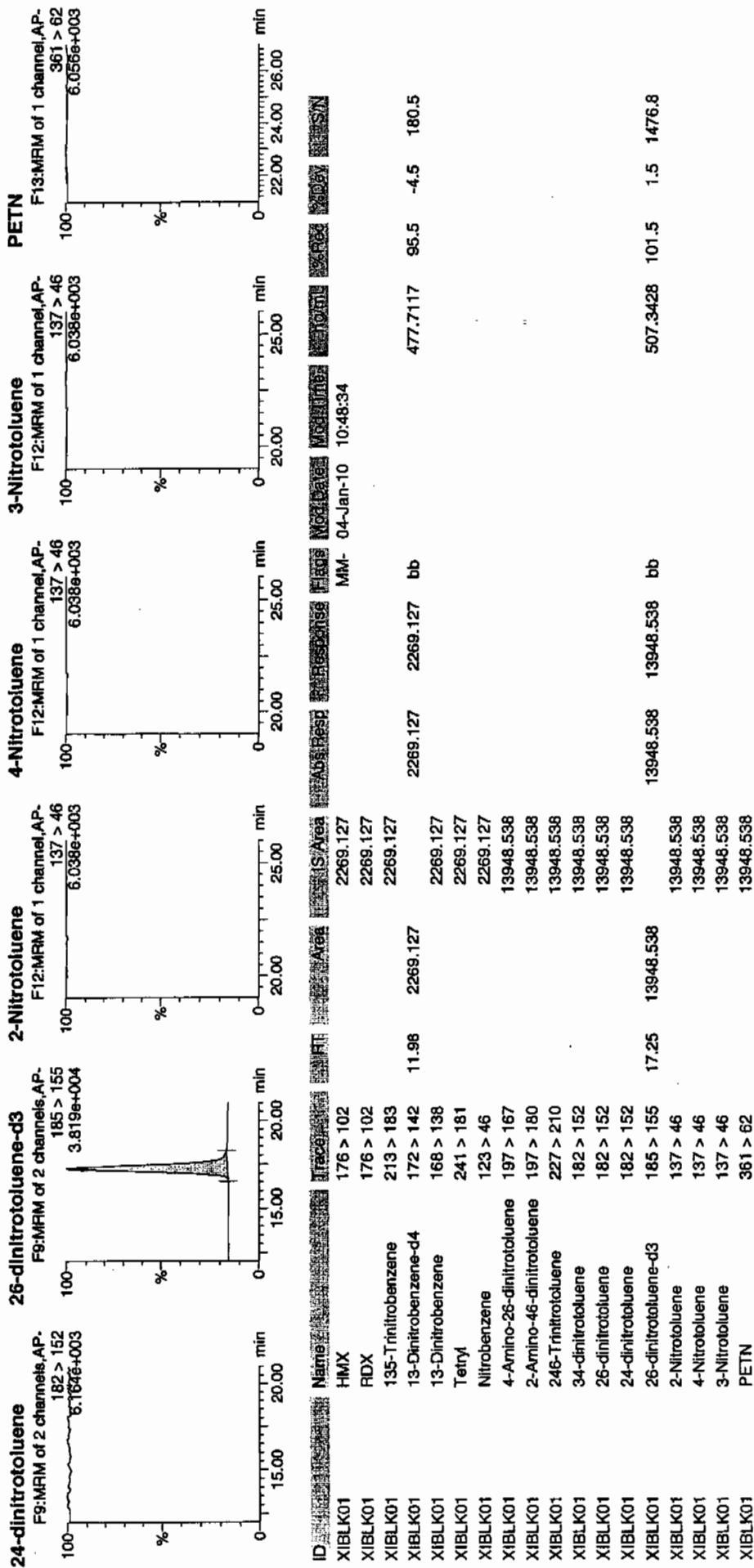
Page 111 of 1340



Printed: Mon Jan 04 12:59:32 2010, Page 4 of 175

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 03-JAN-10 11:40

GEL Data File: EXS01030001.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

1/17/10  
Joh

File Name: "XBL001" Sample ID: "11111" File: "EX01000001.wif"

Peak Name: "35-Dinitroaniline" Mass(es): "237.22049 and"

Comment: "LCMS-EXP\_B" Annotation: "

Sample Index: 1

Sample Type: Unknown

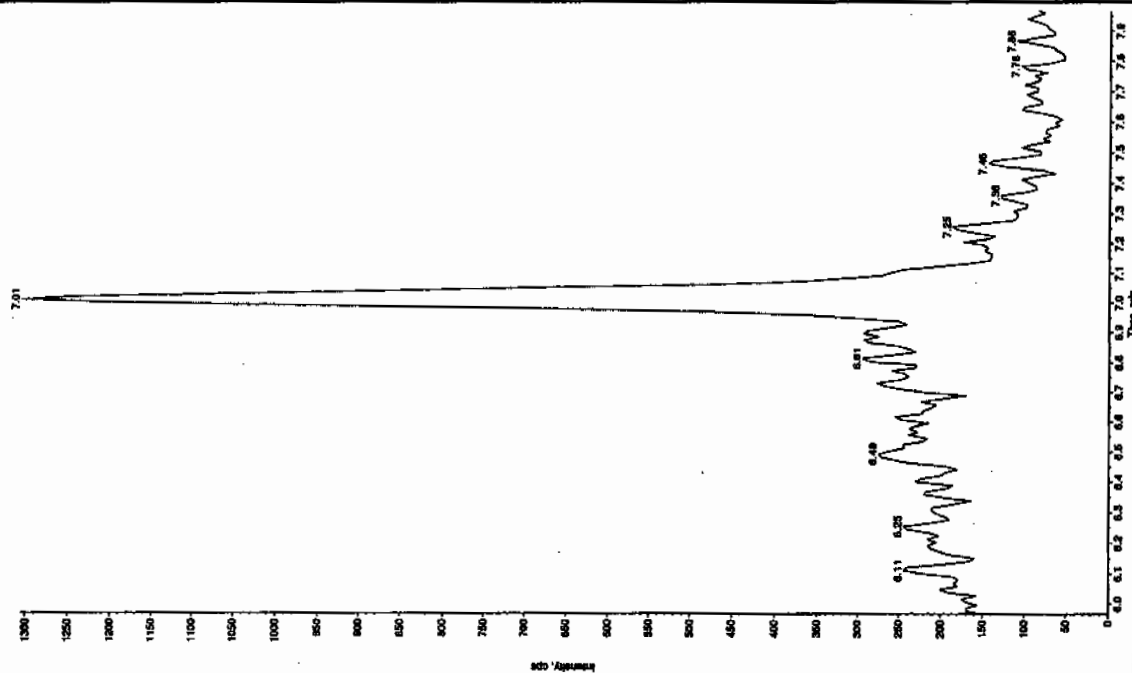
Concentration: N/A

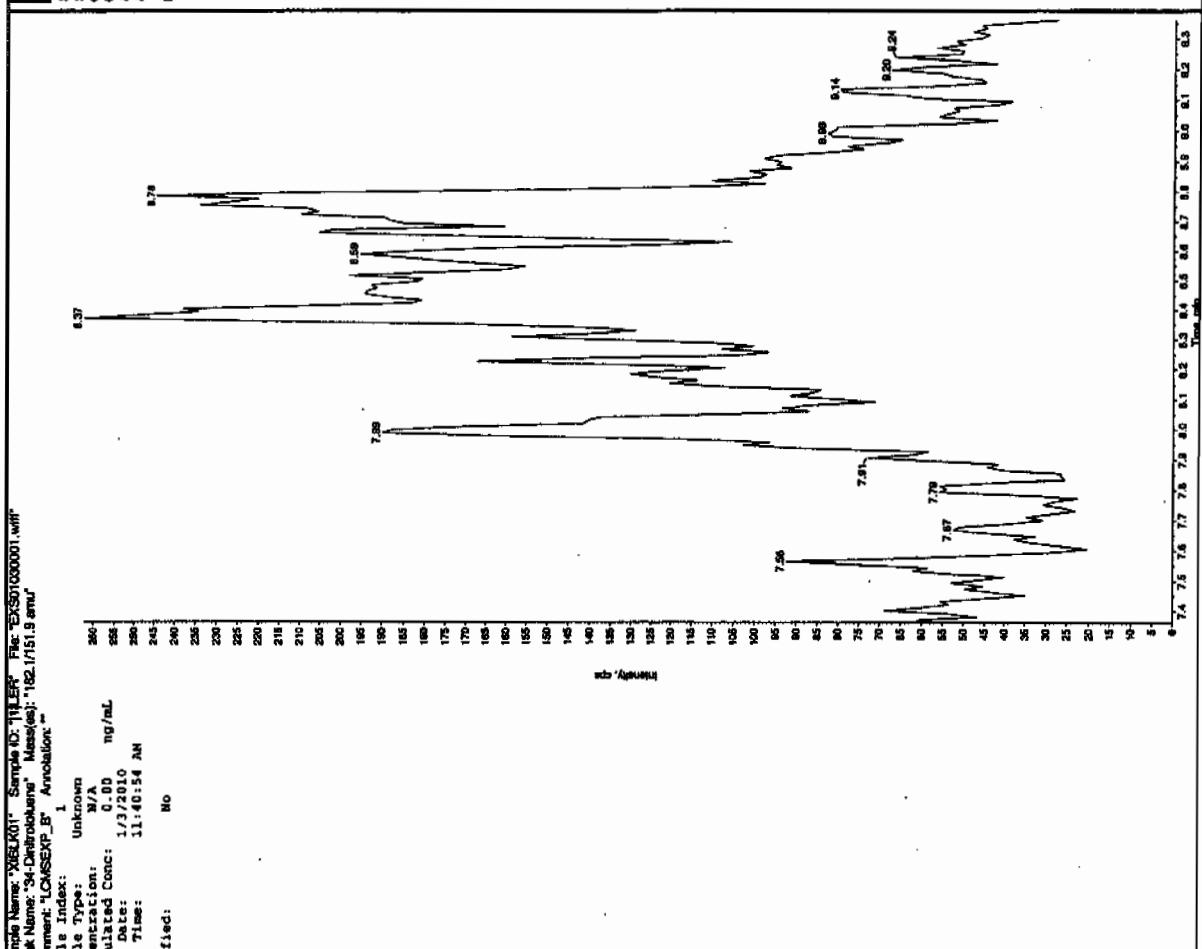
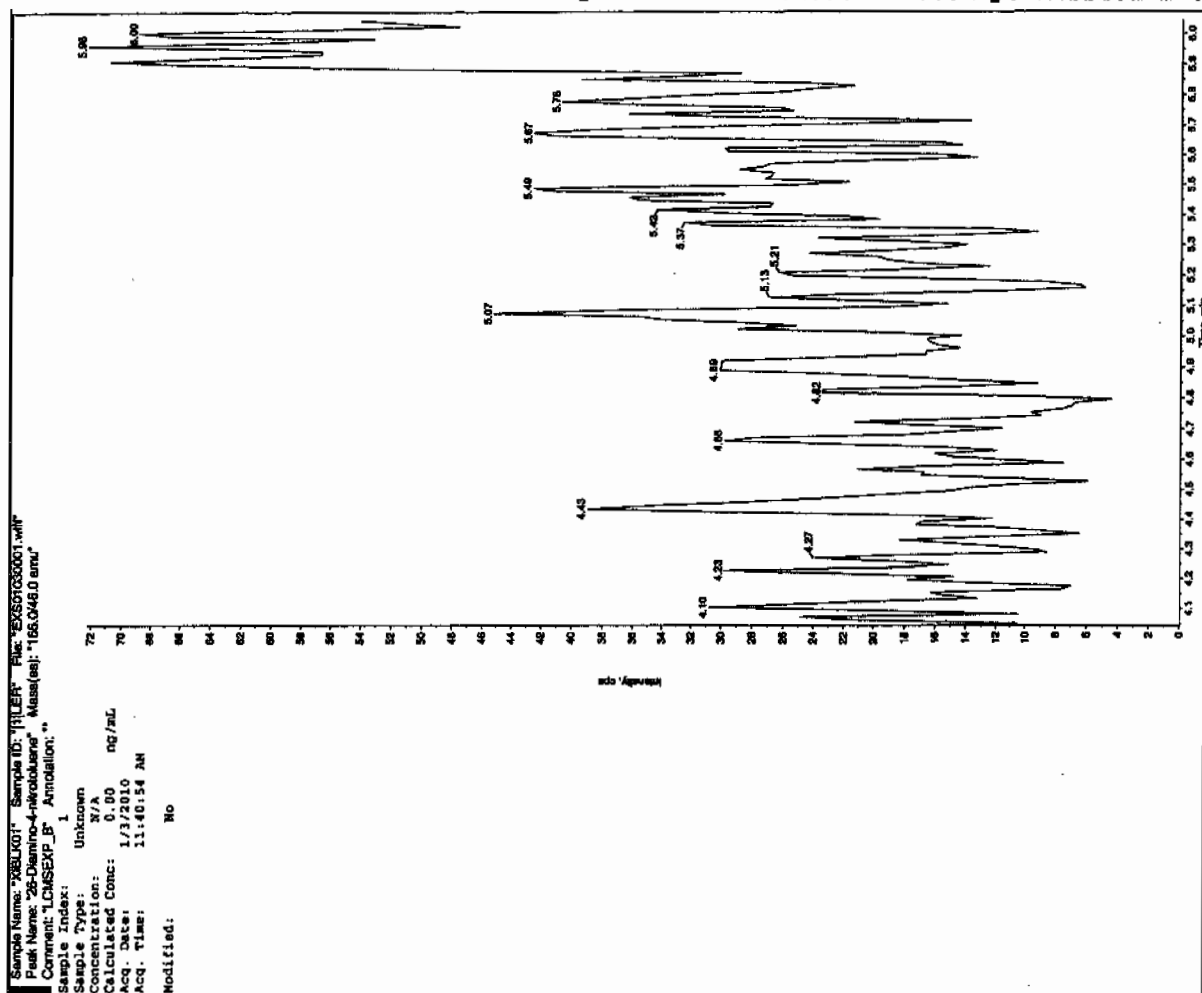
Calculated Conc: 0.00 ng/mL

Acq. Date: 1/3/2010

Acq. Time: 11:40:54 AM

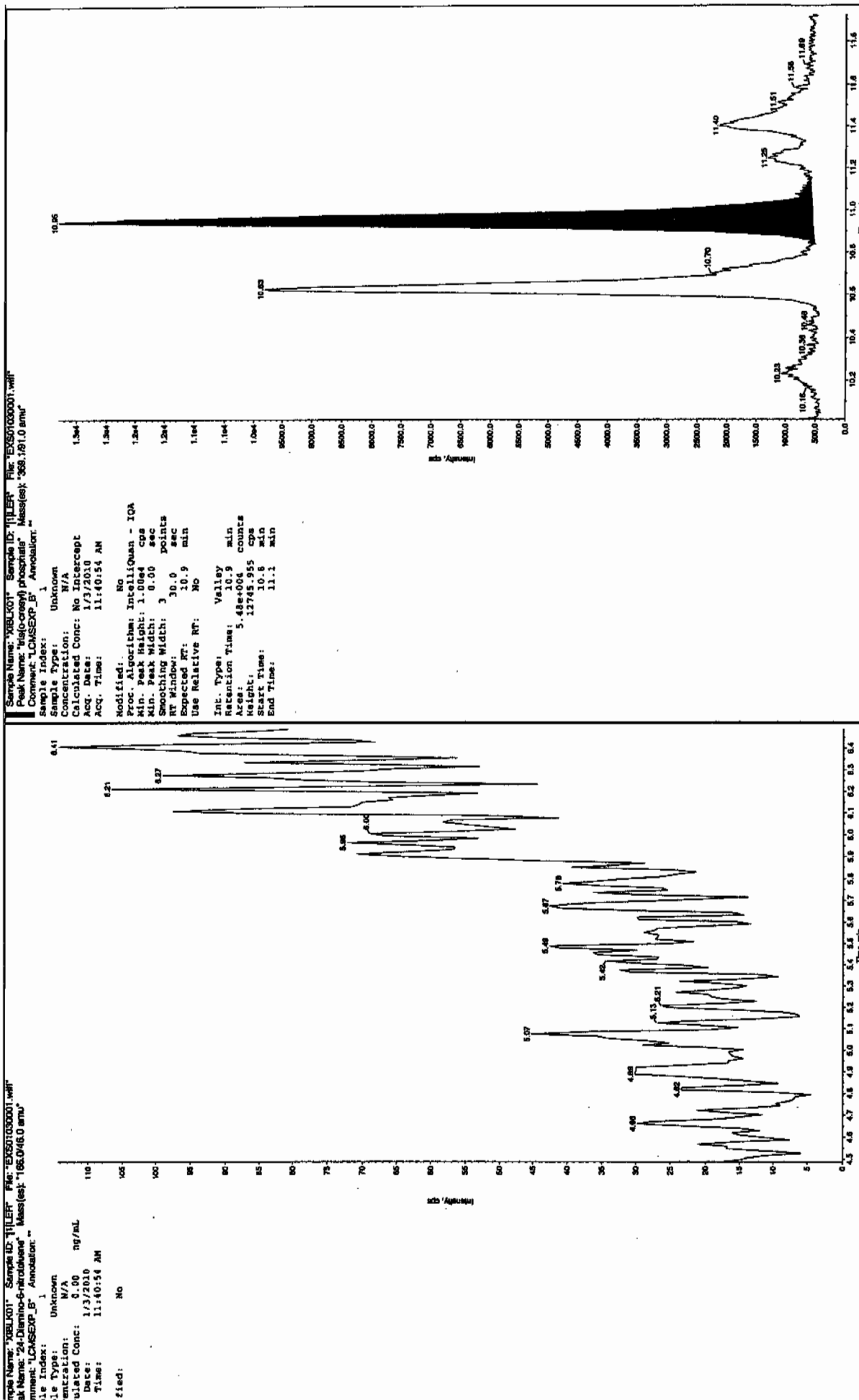
Modified: No





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





3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 03-JAN-10 11:56

GEL Data File: EXS01030002.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

Sample Name: "XBLX01" Sample ID: "11111" File: "EXS01030002.wif"  
 Peak Name: "TATB" Mass(es): "257.2/204.9 amu"  
 Comment: "LCMSEXP\_B" Annotation: ""

le Index:	1
le Type:	Unknown
eneration:	N/A
ulated Conc:	0.00 ng/mL
Date:	1/3/2010
Time:	11:56:42 AM
fied:	No

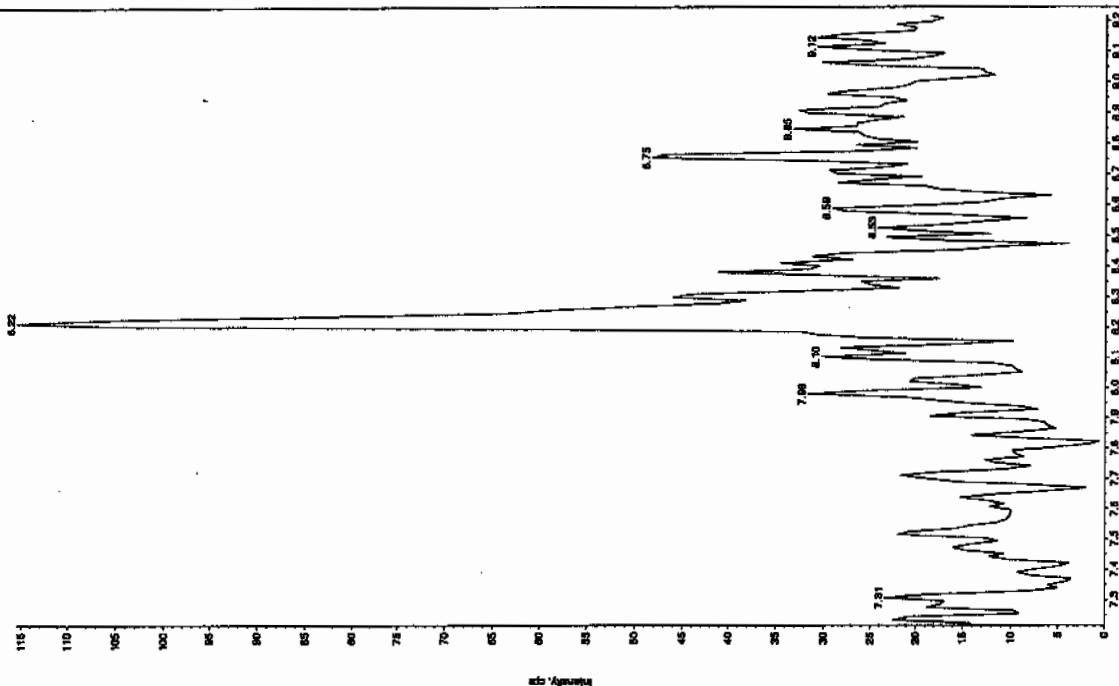


TEL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

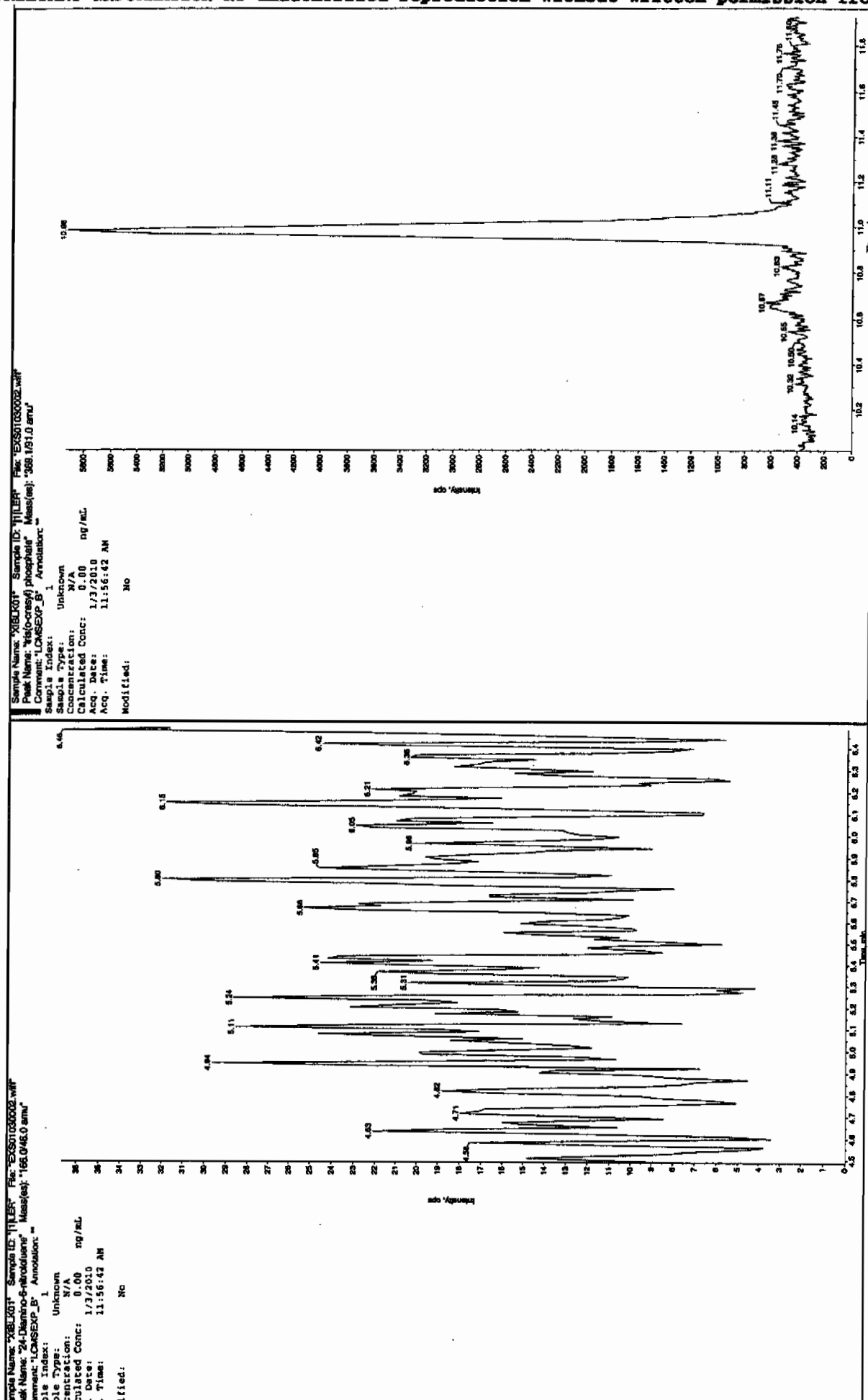
4/14/05/10

Sample Name: "CBLK01" Sample ID: "11LEA" File: "XS01030002.wif"  
Peak Name: "35-Dinitroaniline" Mass(es): "192.046.0 amu"  
Comment: "LCMSEXP B" Annotation: "

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.00
Acq. Date:	1/3/2010
Acq. Time:	11:56:42 AM
Modified:	NO







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

4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 02-JAN-10 17:29

GEL Data File: EXP0102009a

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	467.689
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	519.135
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 04 12:59:32 2010, Page 17 of 175

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102009a

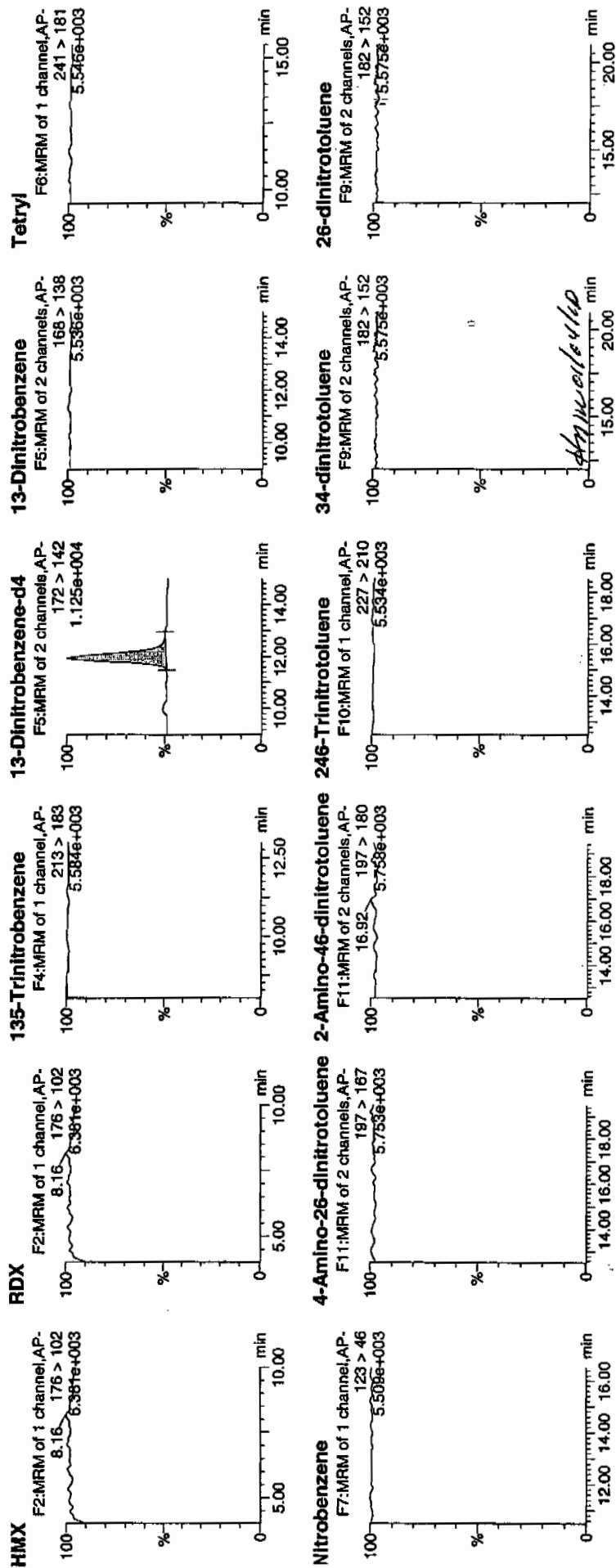
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Time: 17:29:46

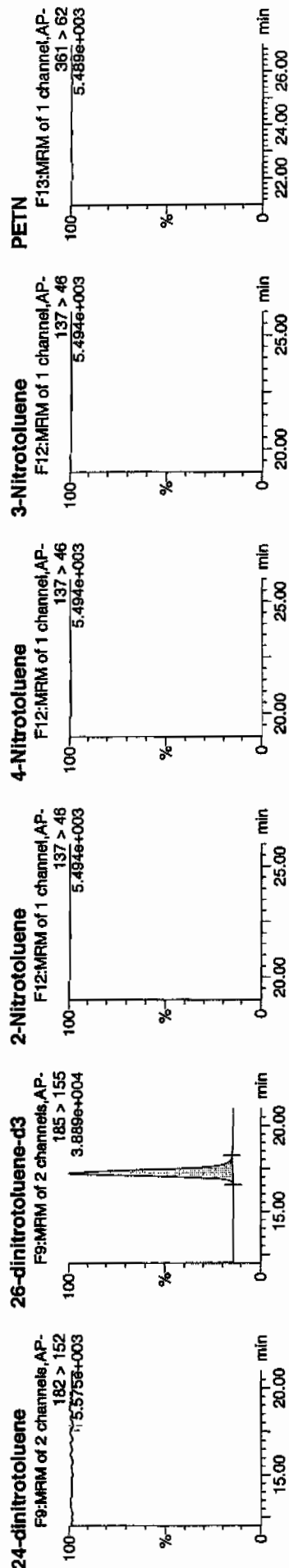
ID: XIBLK02

Vial: 1:1,A

11/4/10



Dataset: C:\MASS\YNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

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4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 02-JAN-10 18:28

GEL Data File: EXP0102011a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	509.266
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	484.222
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102011a

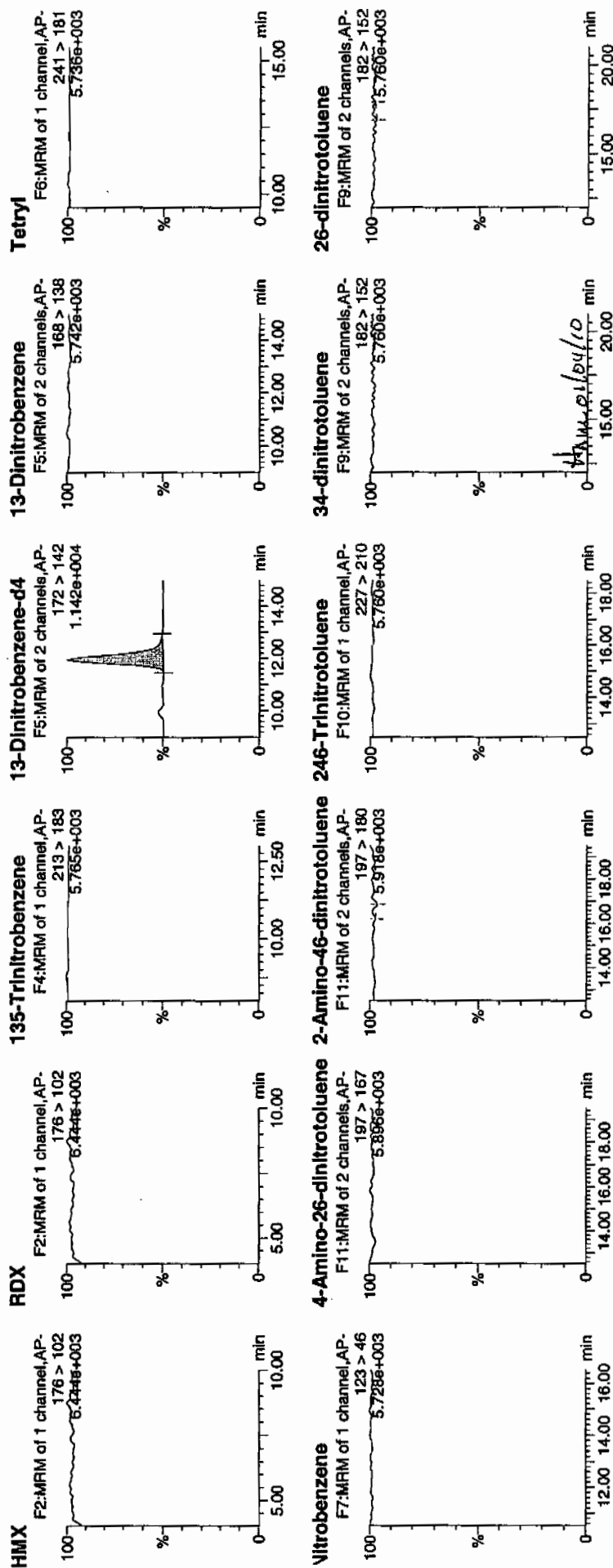
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Time: 18:28:43

ID: XIBLK03

Vial: 1:1,A

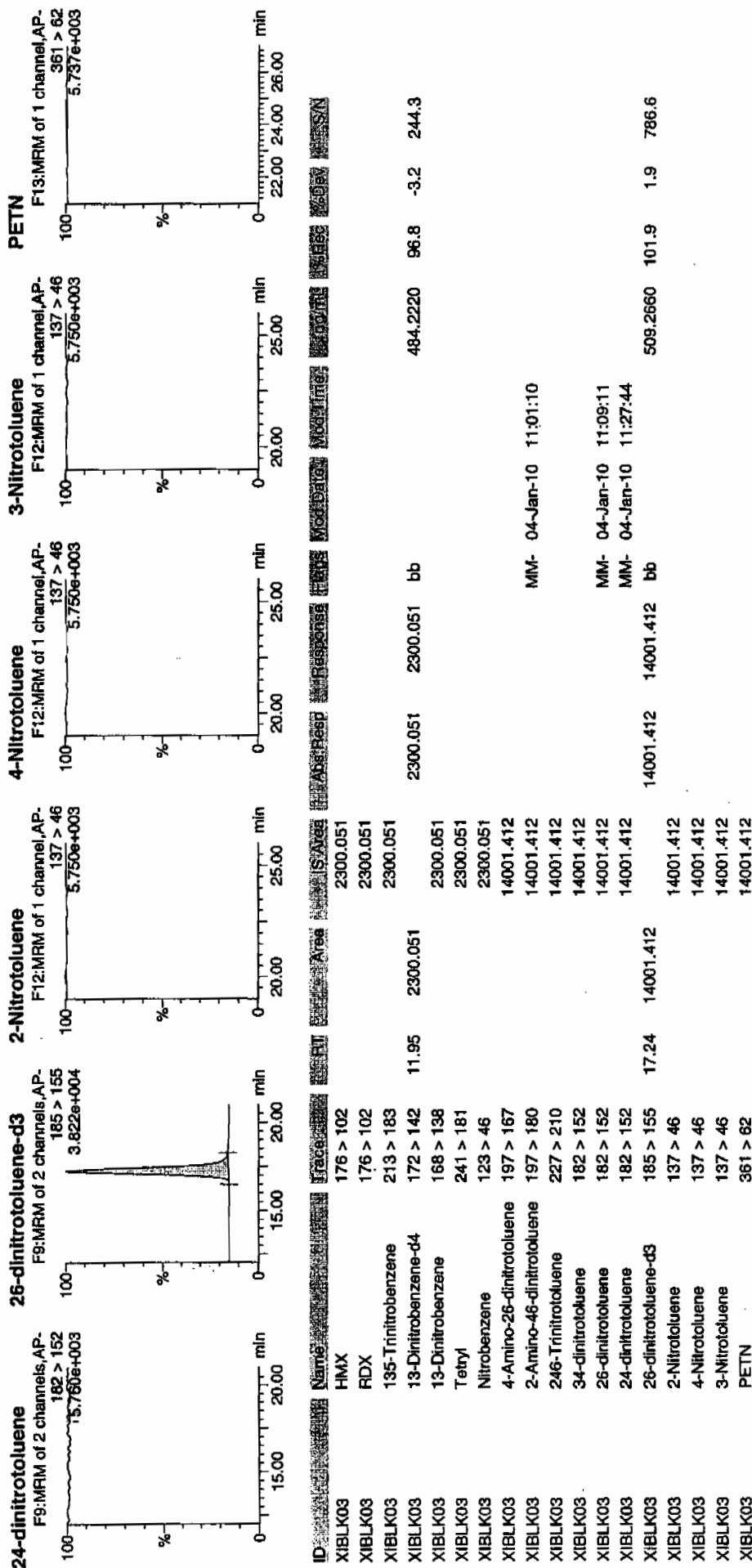
1410



Printed: Mon Jan 04 12:59:32 2010, Page 22 of 175

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 02-JAN-10 23:53

GEL Data File: EXP0102022a

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	513.9
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	518.256
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

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102022a

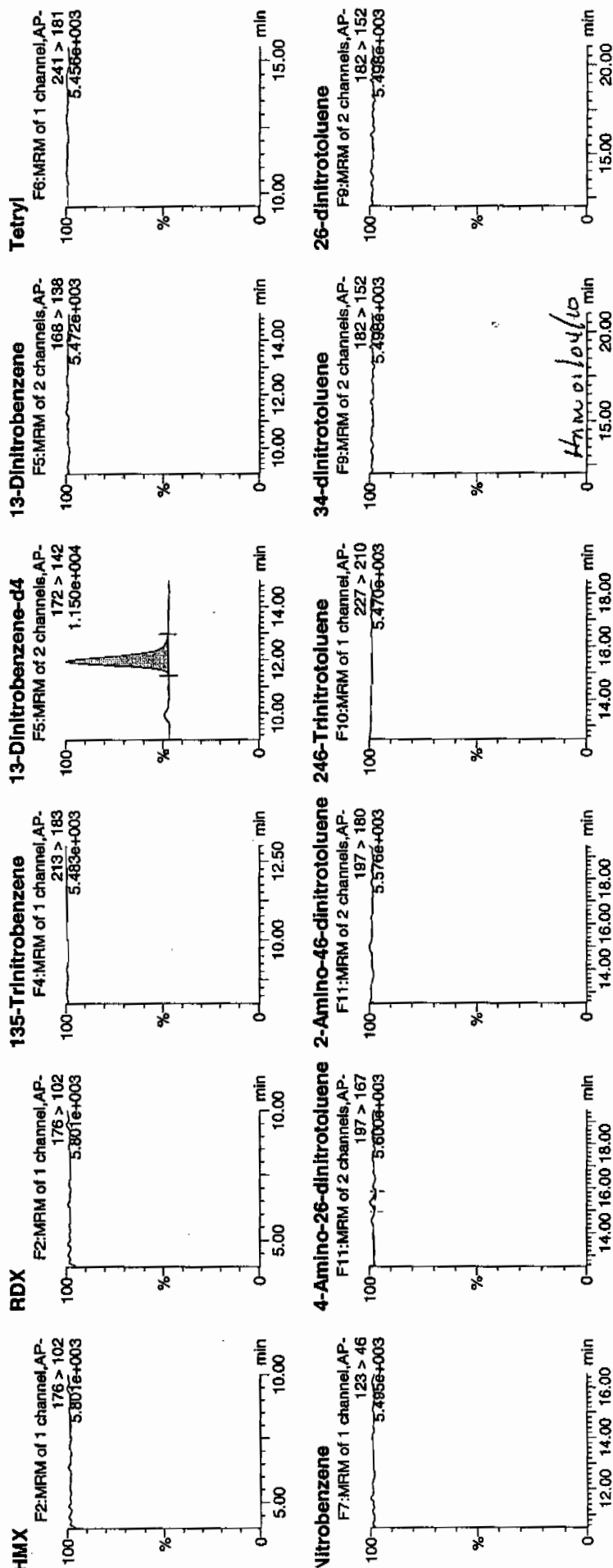
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Time: 23:53:19

ID: XIBLK04

Vial: 1:1,A

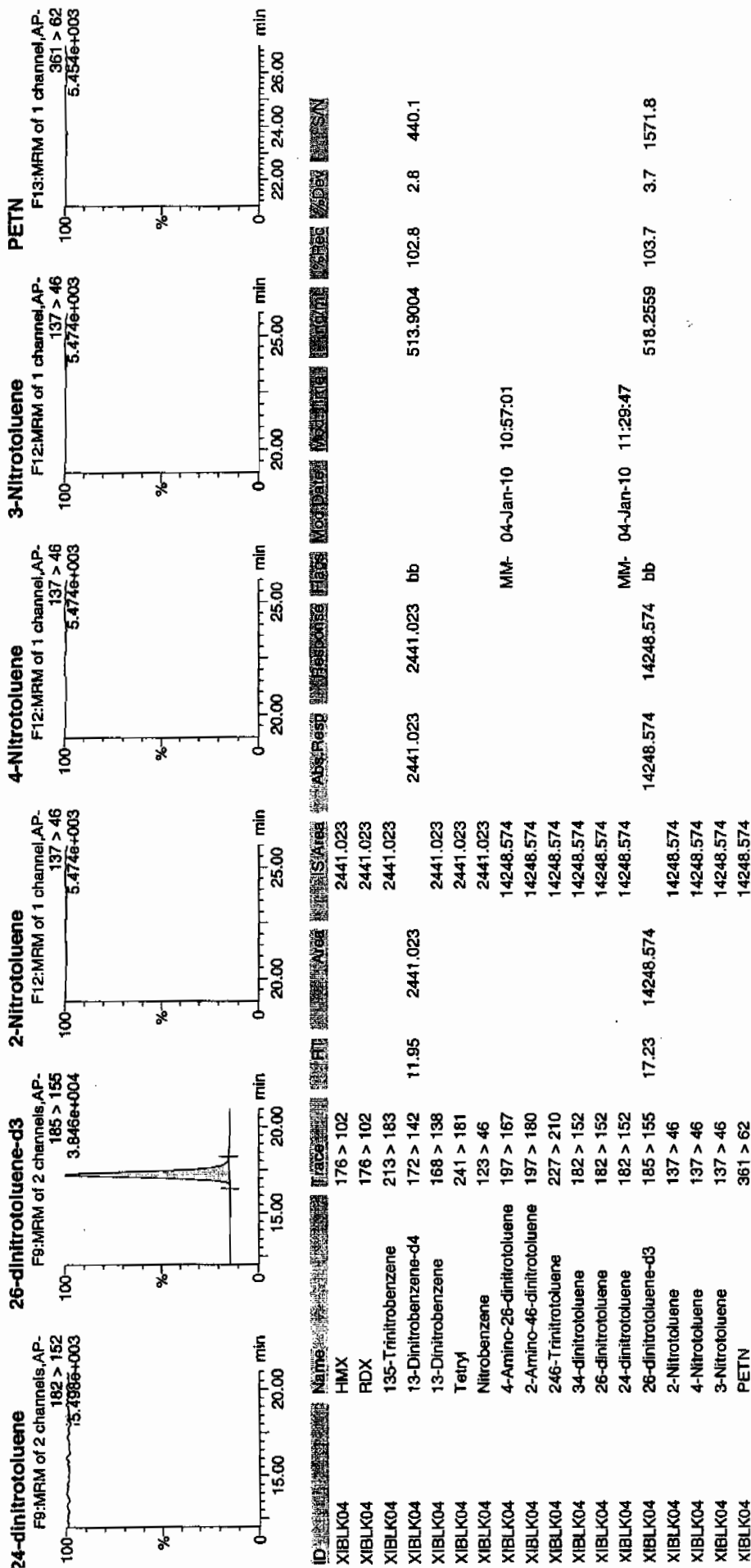
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Printed: Mon Jan 04 12:59:32 2010, Page 44 of 175

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 03-JAN-10 06:16

GEL Data File: EXP0102035a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2,6-Dinitrotoluene-d3	500	653.268
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
2,6-Dinitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	670.96
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\10210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102035a

Date: 03-Jan-2010

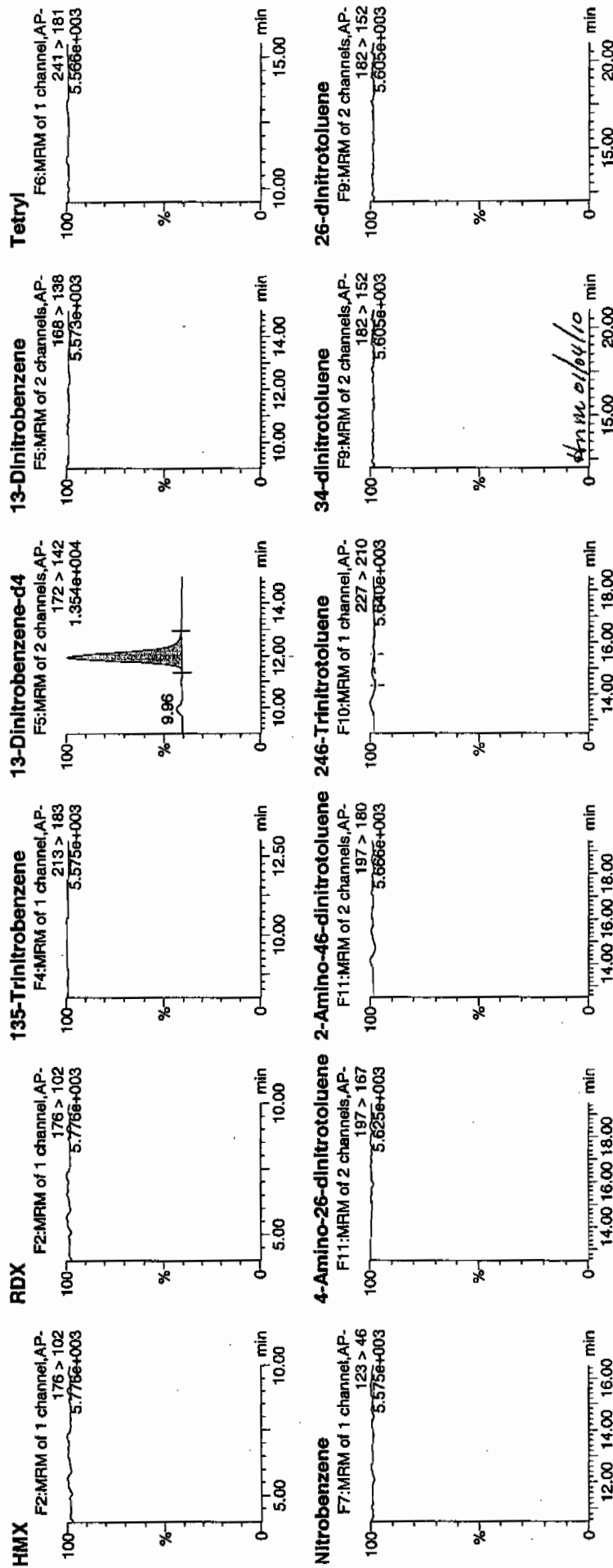
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ID: XIBLK05

Vial: 1:1,A

14/10

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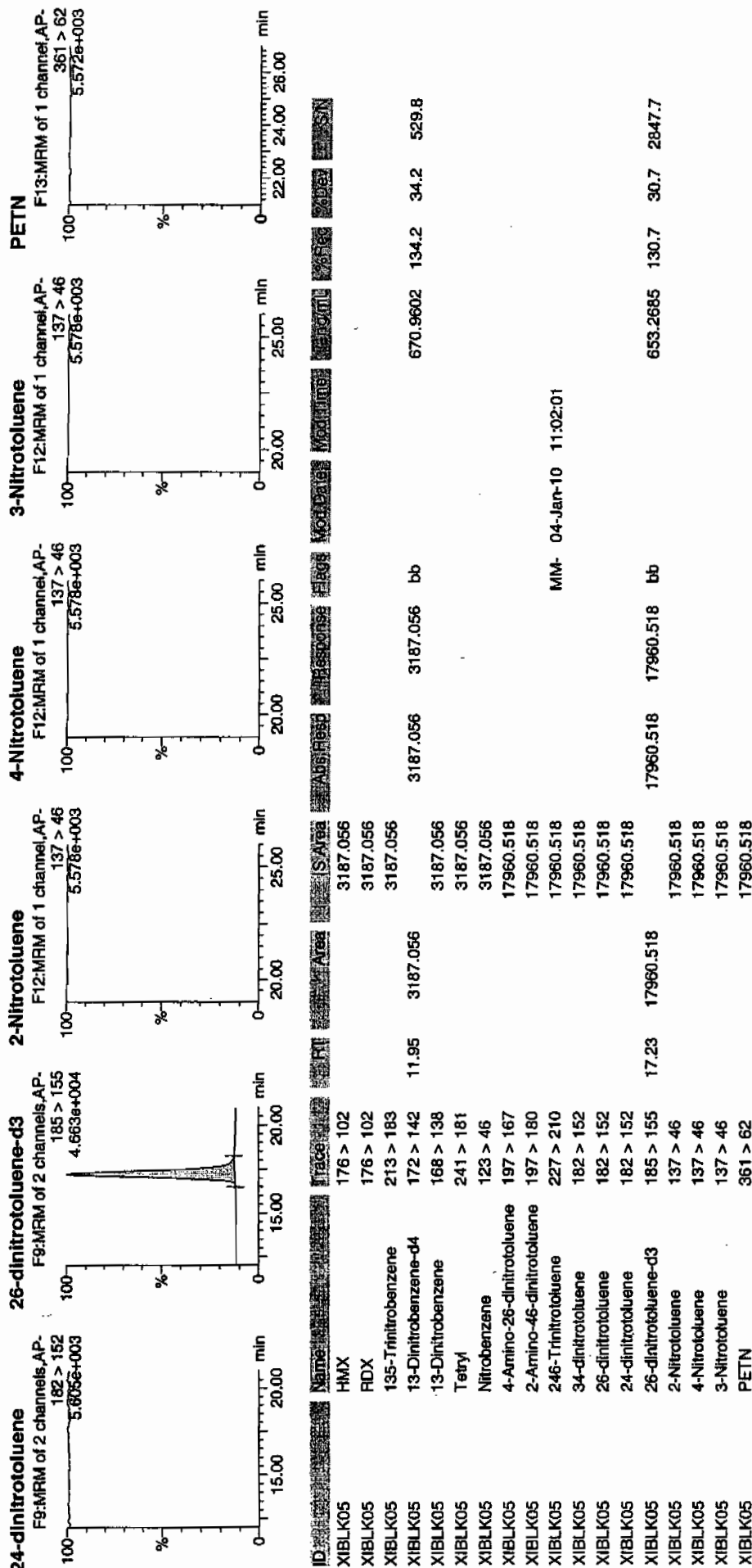




Printed: Mon Jan 04 12:59:32 2010, Page 70 of 175

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

Dataset: C:\MASSLYNX\New\_Exp\PRO1010210expA.qld, Time: Mon Jan 04 12:58:29 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 03-JAN-10 12:40

GEL Data File: EXP0102048a

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	517.299
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	503.498
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

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102048a

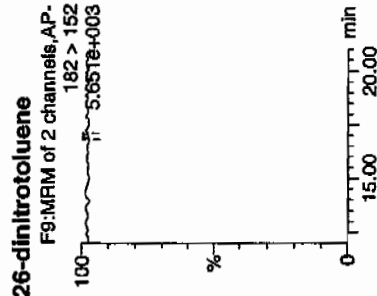
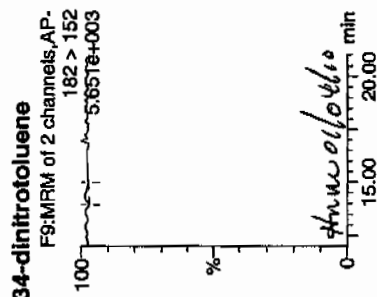
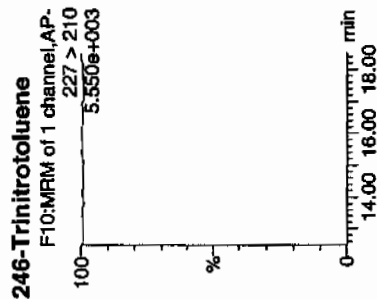
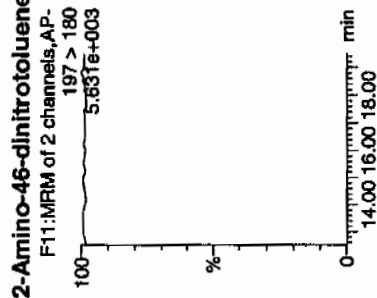
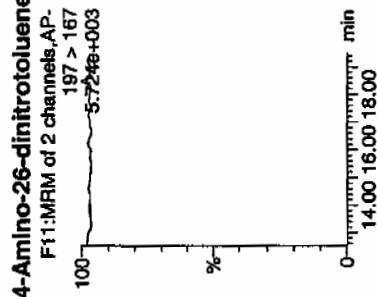
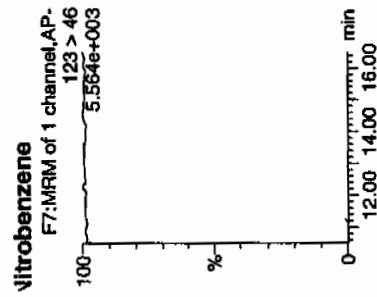
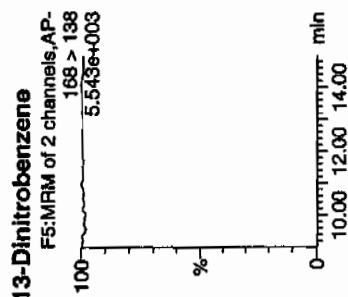
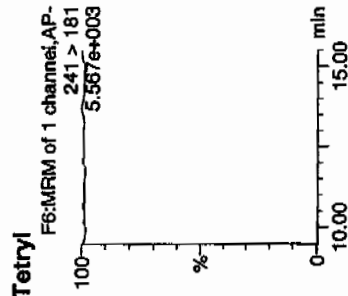
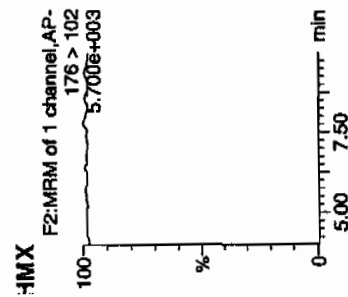
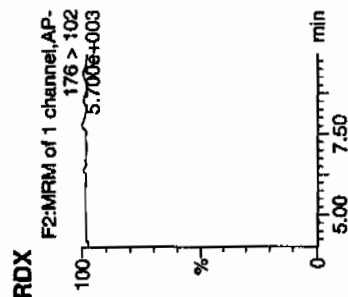
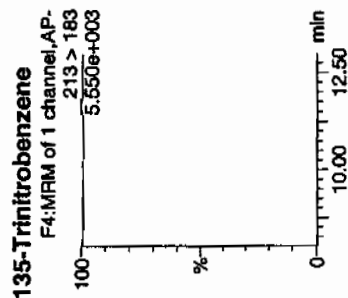
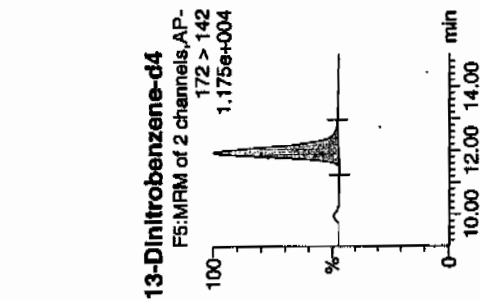
Date: 03-Jan-2010

Time: 12:40:23

D: XIBLK06

Vial: 1:1,A

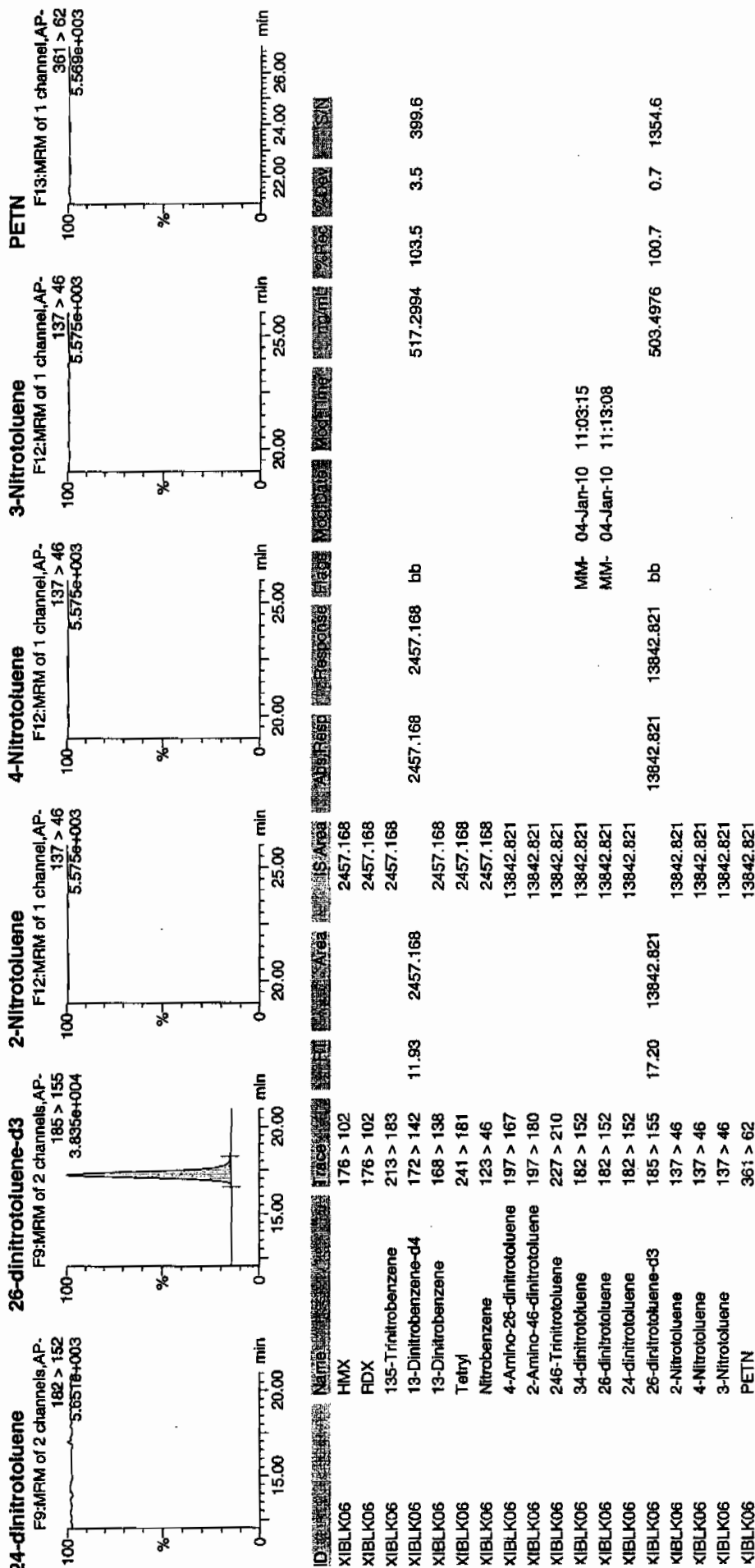
1410



Printed: Mon Jan 04 12:59:32 2010, Page 96 of 175

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 03-JAN-10 15:07

GEL Data File: EXP0102053a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	511.062
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	503.827
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0

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

Dataset: C:\MASSLYNX\New\_Exp\PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP\PRO\Data\EXP0102053a

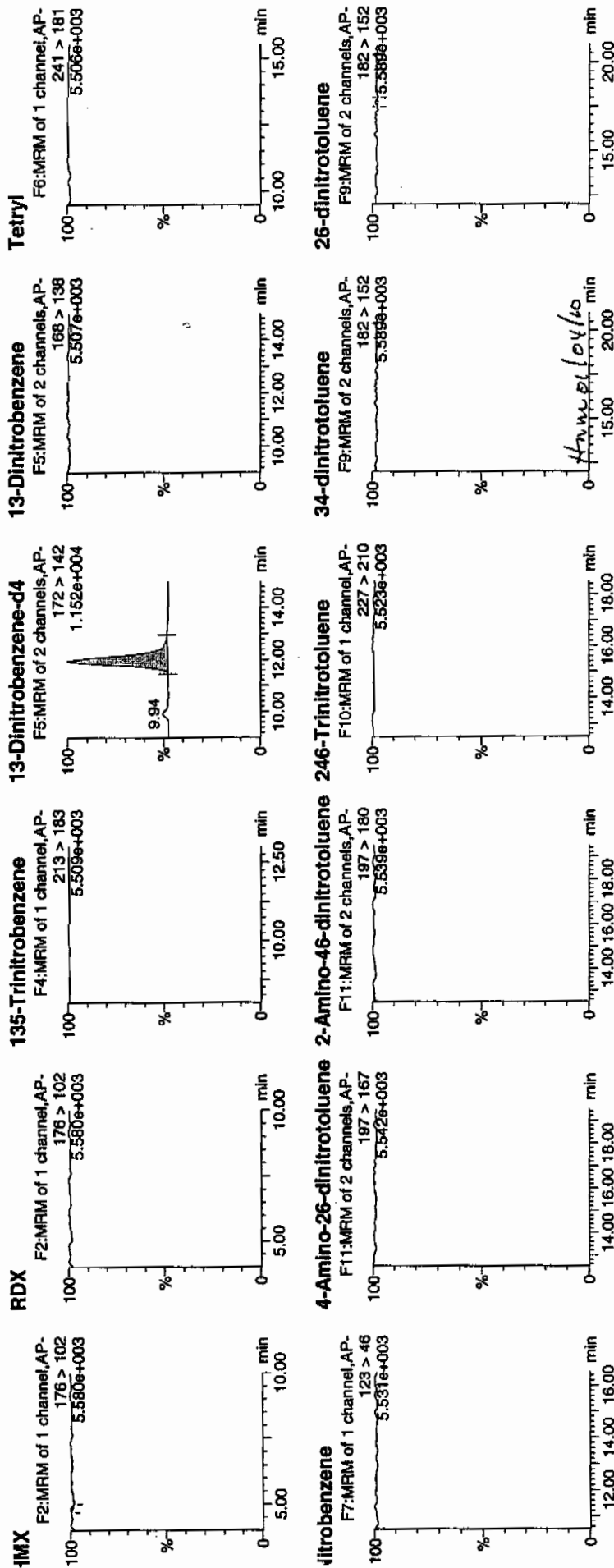
Date: 03-Jan-2010

Time: 15:07:50

D: XIBLK07

/ial: 1:1,F

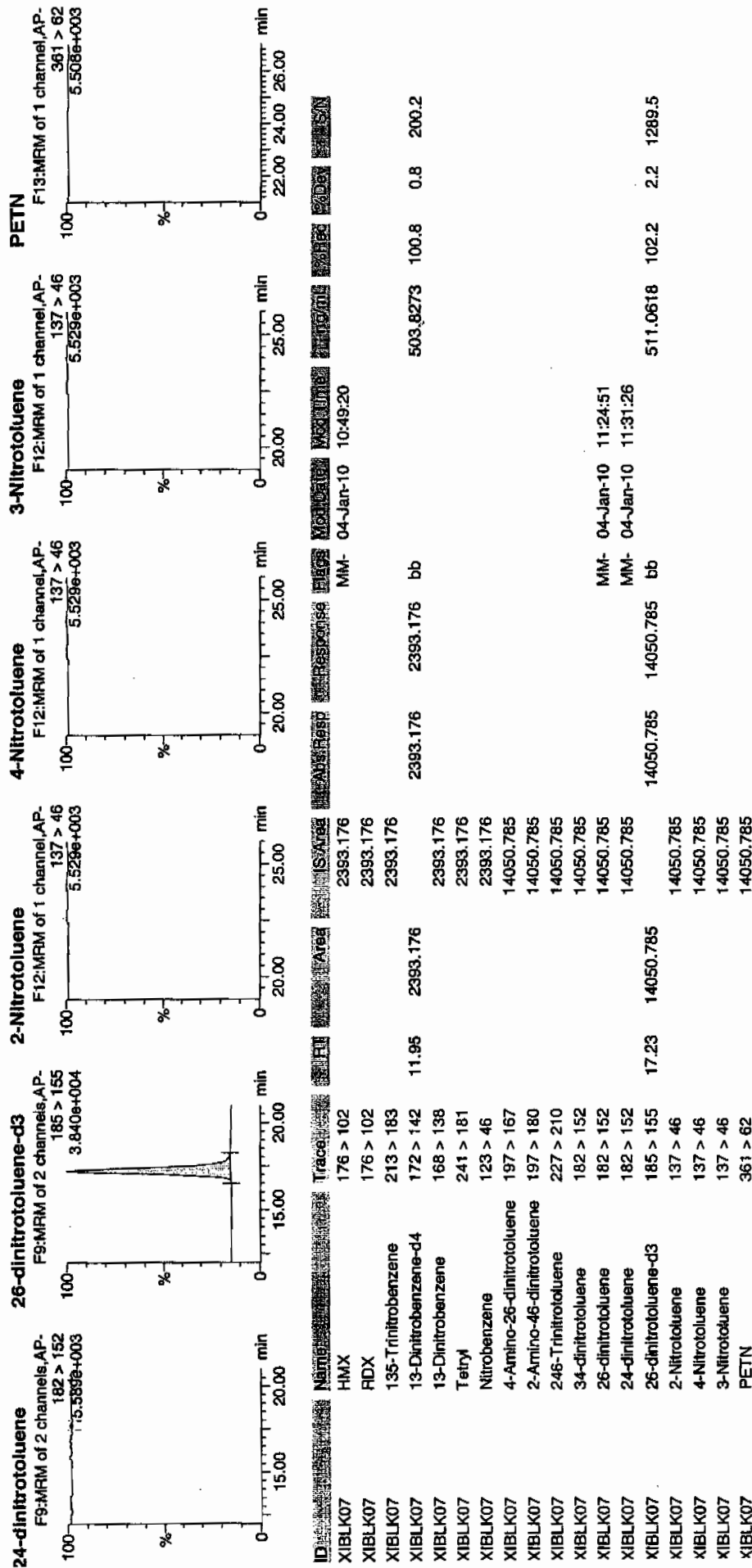
14/10



Printed: Mon Jan 04 12:59:32 2010, Page 106 of 175

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

Dataset: C:\MASSLYNX\New\_Exp\_PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 03-JAN-10 19:04

GEL Data File: EXP0102061a

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	503.703
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	514.188
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



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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102061a

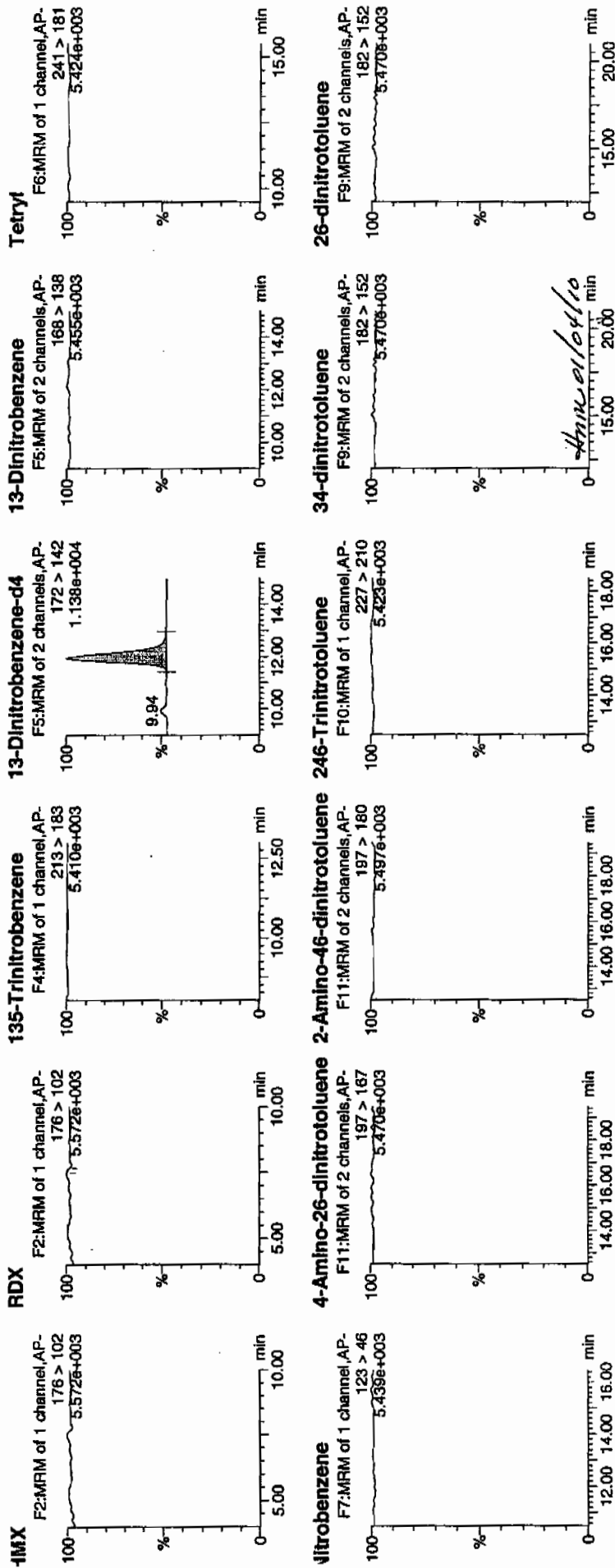
Date: 03-Jan-2010

Time: 19:04:12

D: XBLK08

/tail: 1:1,E

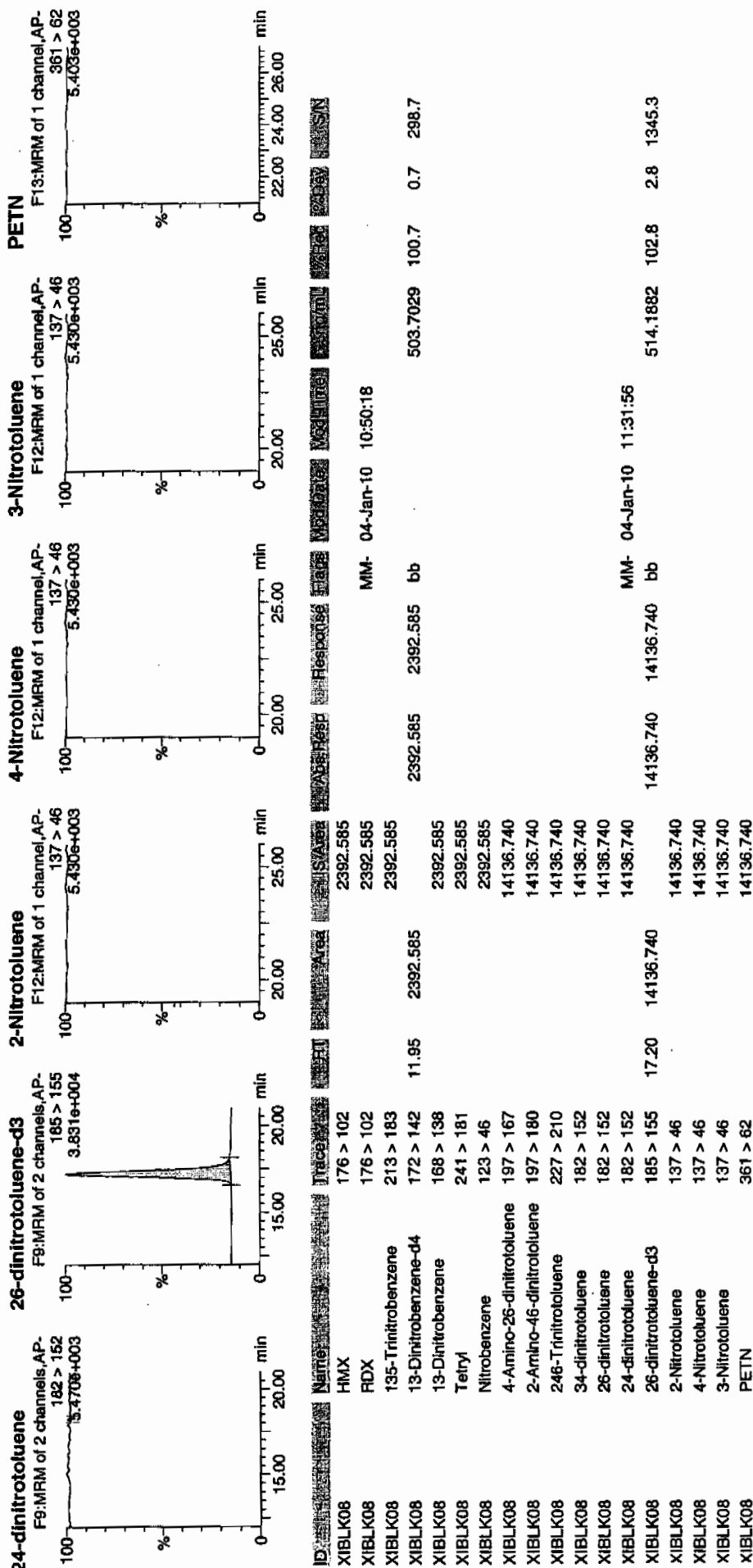
10/10



Printed: Mon Jan 04 12:59:32 2010, Page 122 of 175

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 03-JAN-10 20:32

GEL Data File: EXP0102064a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	679.821
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	624.065
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0

Printed: Mon Jan 04 12:59:32 2010, Page 127 of 175

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

Dataset: C:\MASSLYNX\New\_Exp\PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP\PRO\Data\EXP0102064a

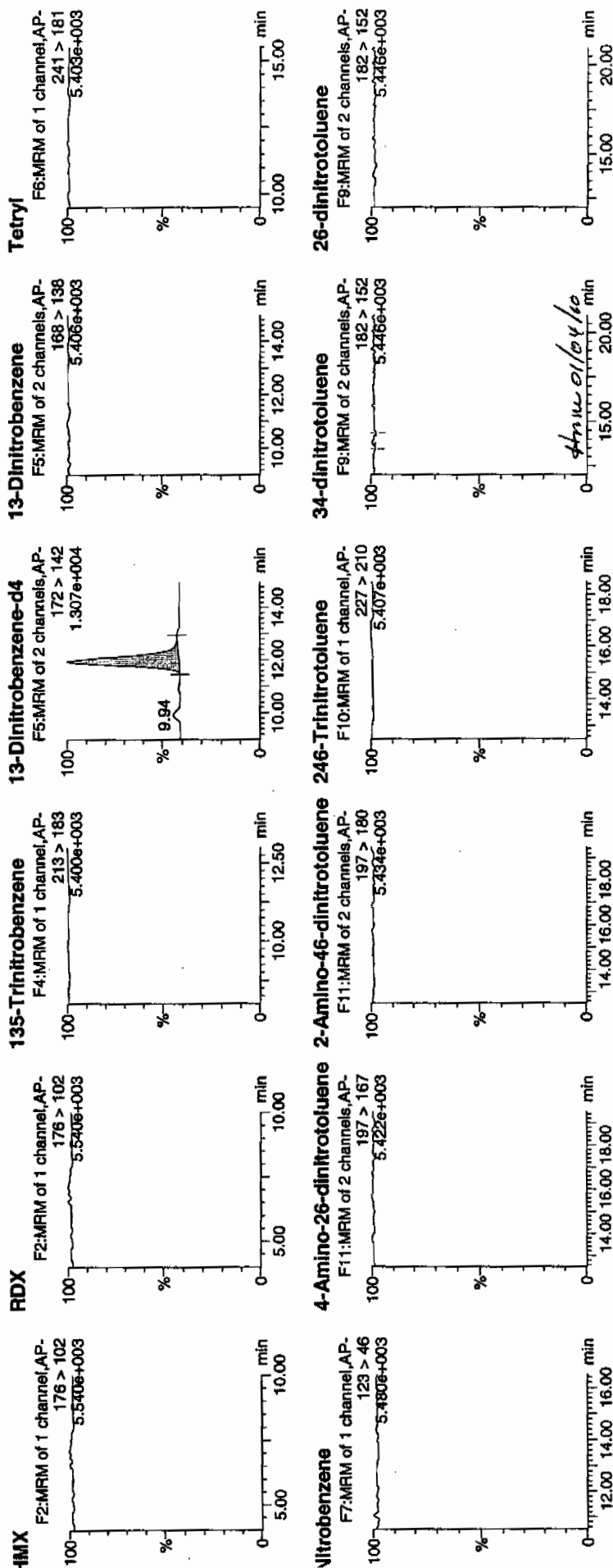
Date: 03-Jan-2010

Time: 20:32:43

ID: XIBLK09

Vial: 1:1,F

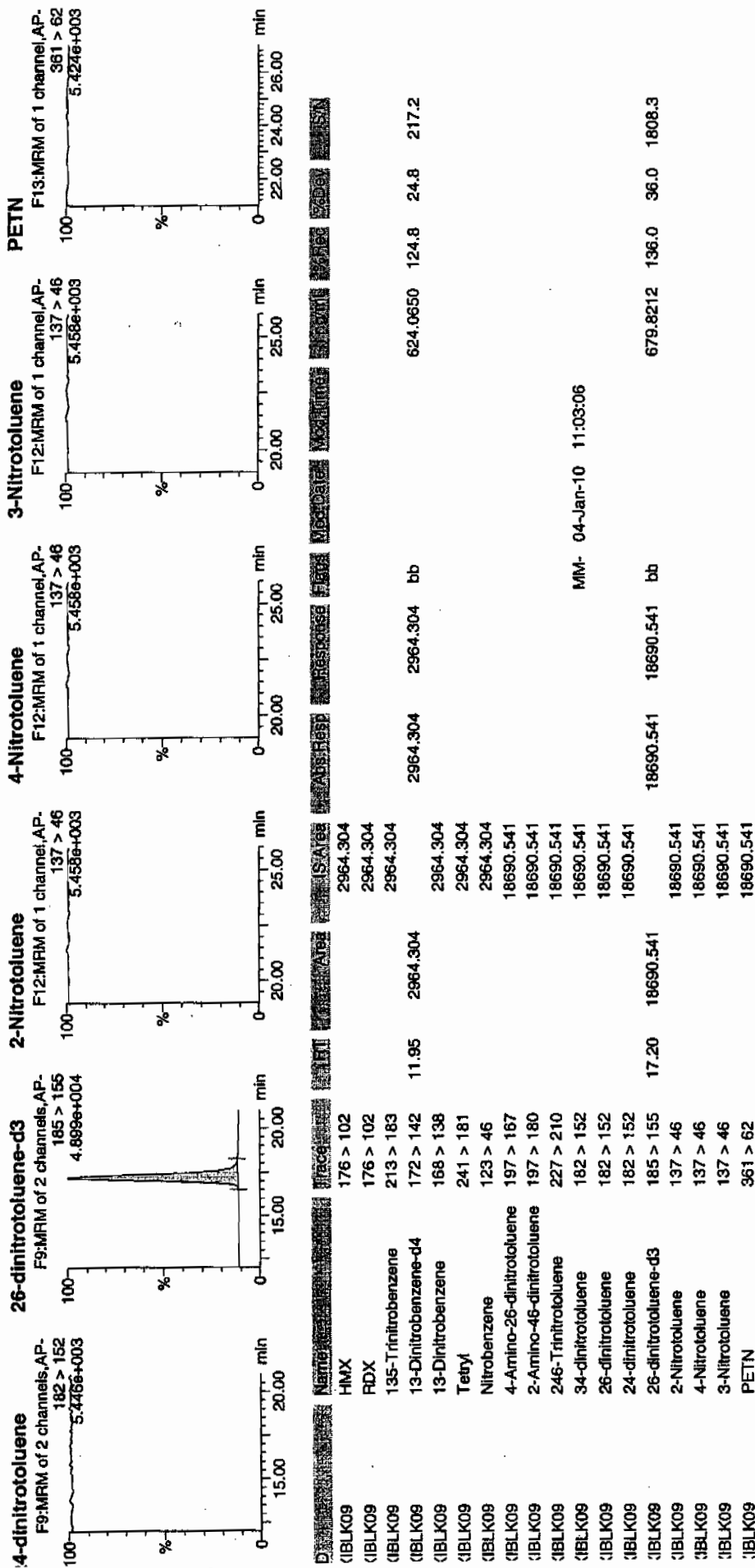
1410



Printed: Mon Jan 04 12:59:32 2010, Page 128 of 175

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

Dataset: C:\MASSLYNX\New\_Exp\PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK10

Analysis Date: 04-JAN-10 01:28

GEL Data File: EXP0102074a

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	554.495
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	520.555
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

Quantify Sample Report  
 3EL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\1010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102074a

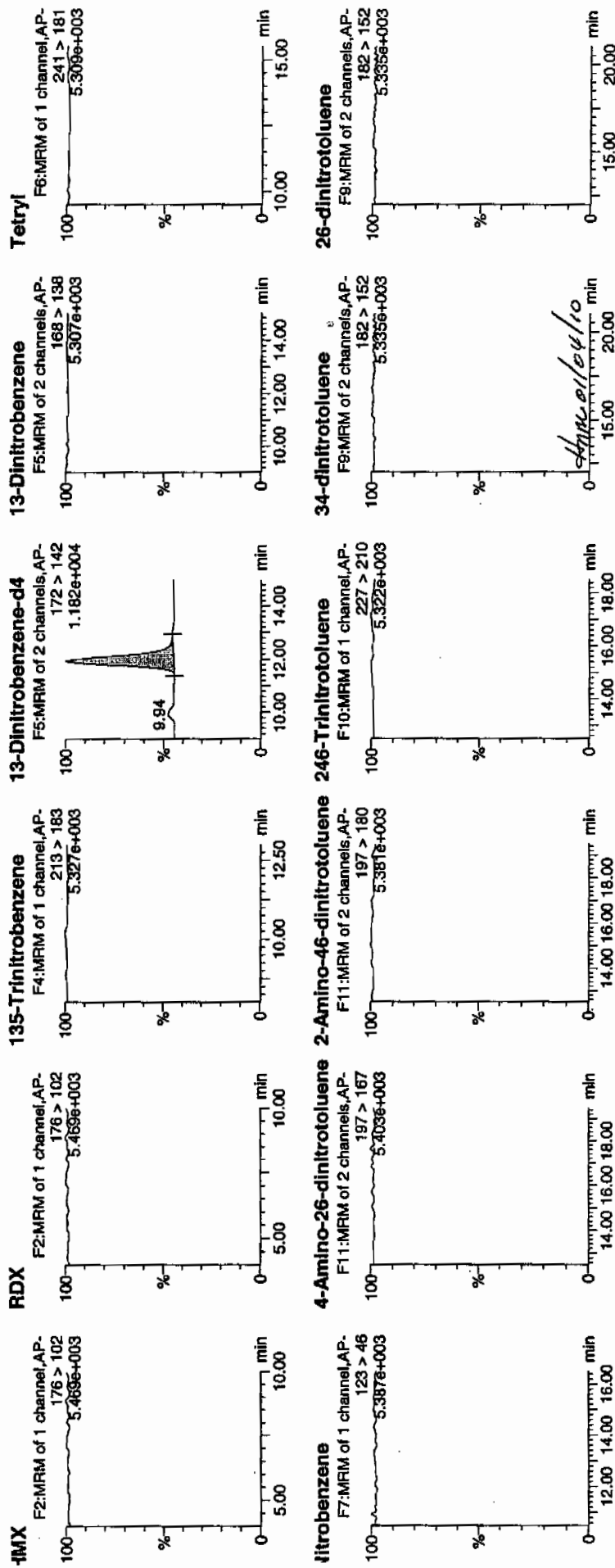
Date: 04-Jan-2010

Time: 01:28:12

D: XIBLK10

/lal: 1:1,E

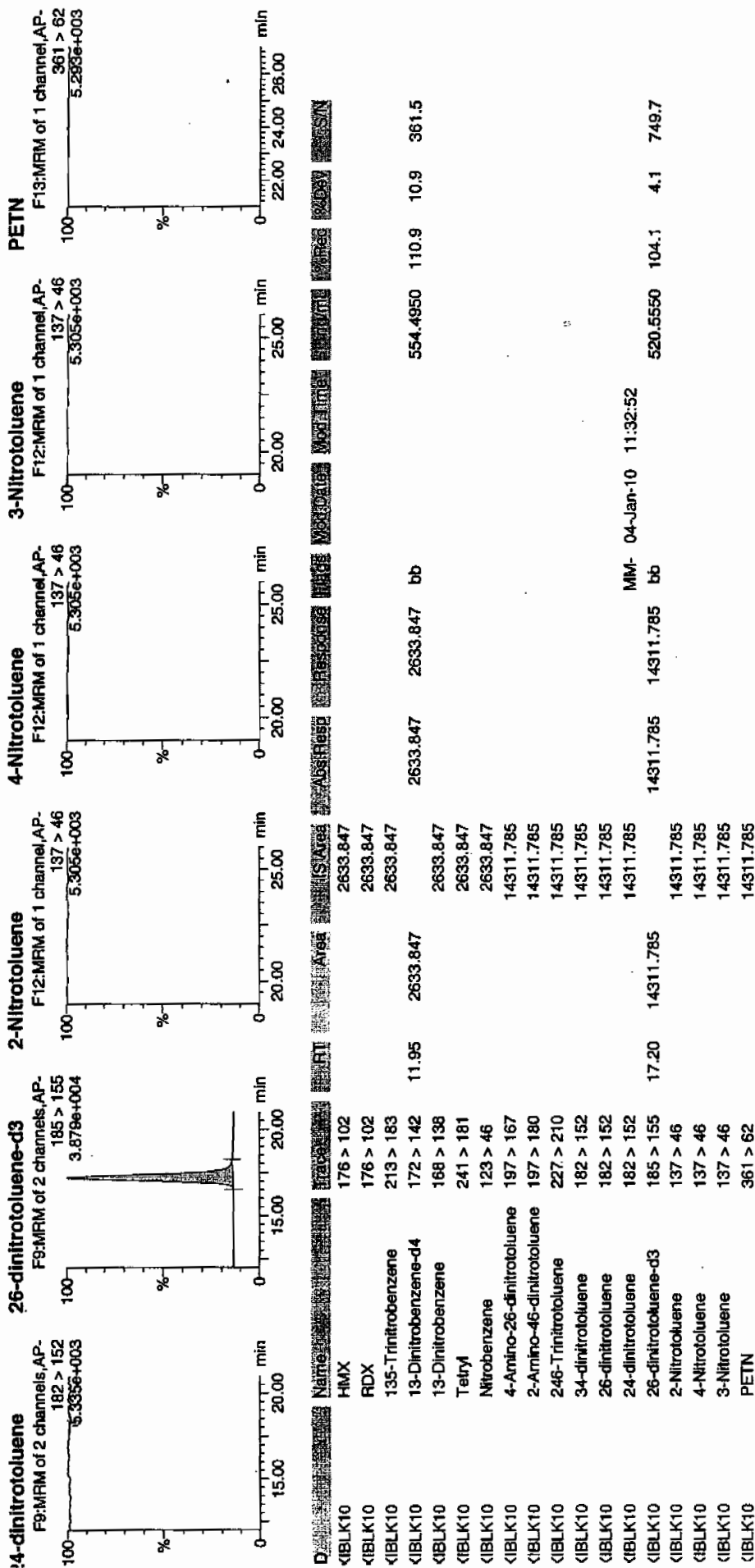
14/10



Printed: Mon Jan 04 12:59:32 2010, Page 148 of 175

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

Dataset: C:\MASSLYNX\New\_Exp\PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010





4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK11

Analysis Date: 04-JAN-10 07:22

GEL Data File: EXP0102086a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
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	505.023
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	507.225
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102086a

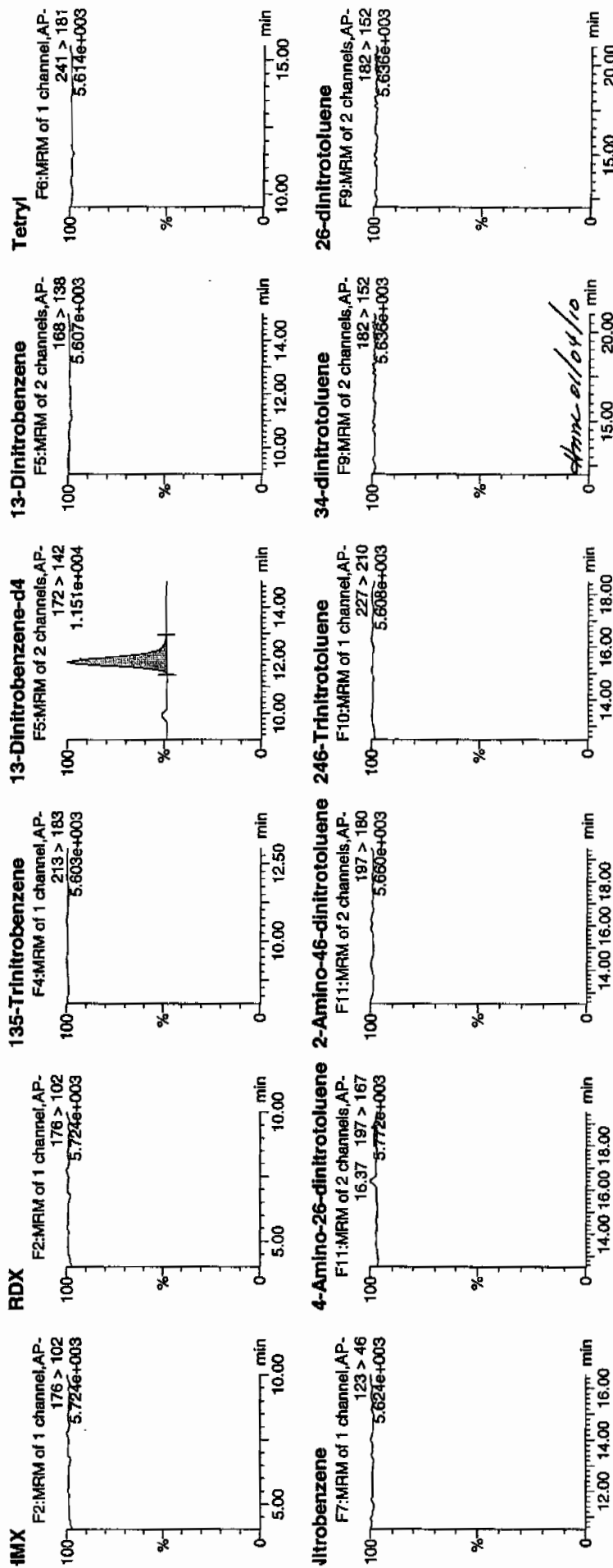
Date: 04-Jan-2010

Time: 07:22:18

D: XIBLK11

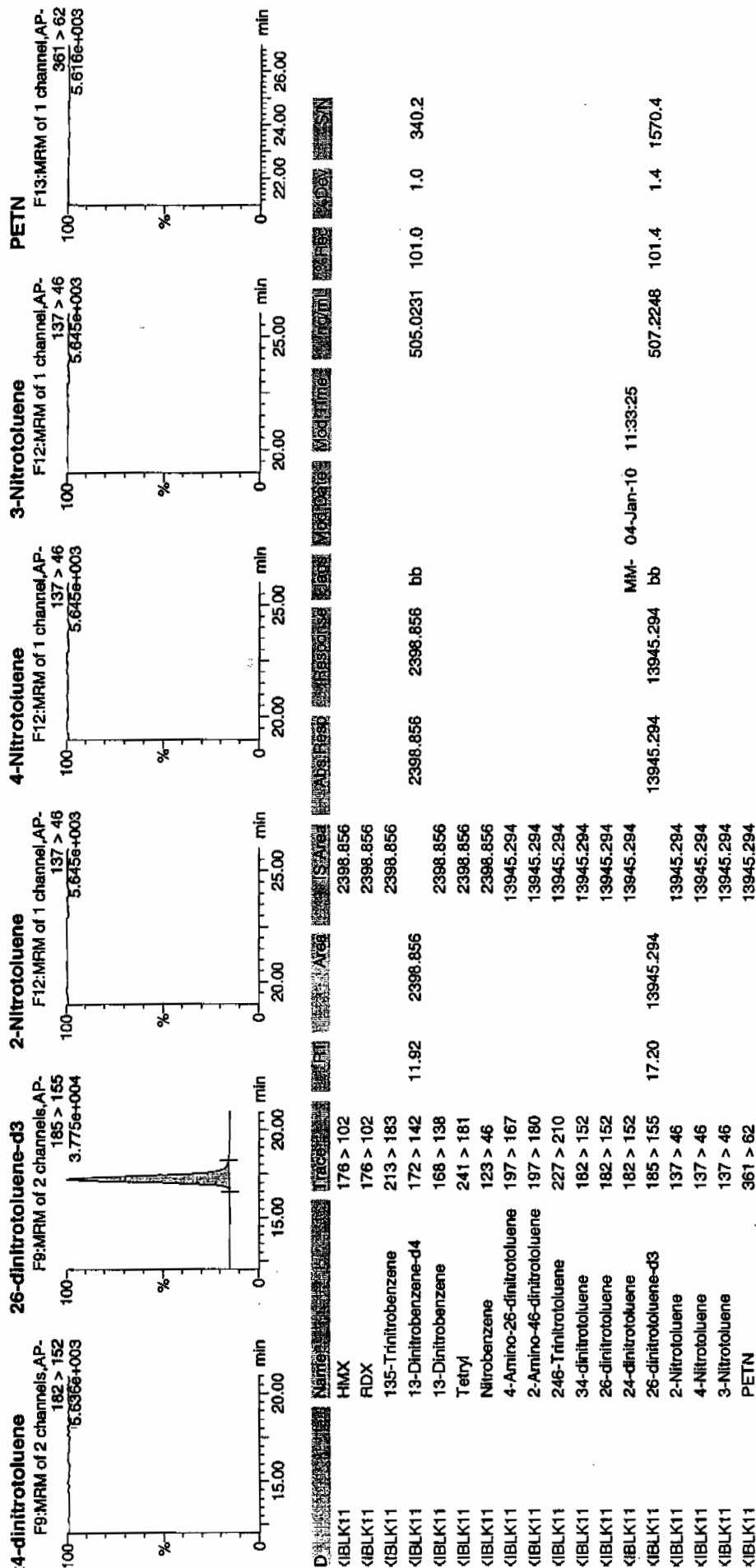
/lat: 1:1,E

1/4/10



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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK12

Analysis Date: 04-JAN-10 13:46

GEL Data File: EXP0102099a

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	541.72
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	510.561
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: Tue Jan 05 09:04:48 2010, Page 23 of 85

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

Dataset: C:\MASSLYNX\New\_Exp\PRO10210expA1.qld, Time: Tue Jan 05 09:00:03 2010

Sample Name: C:\MASSLYNX\NEW\_EXP\PRO10210expA1.qld, Time: Tue Jan 05 09:00:03 2010

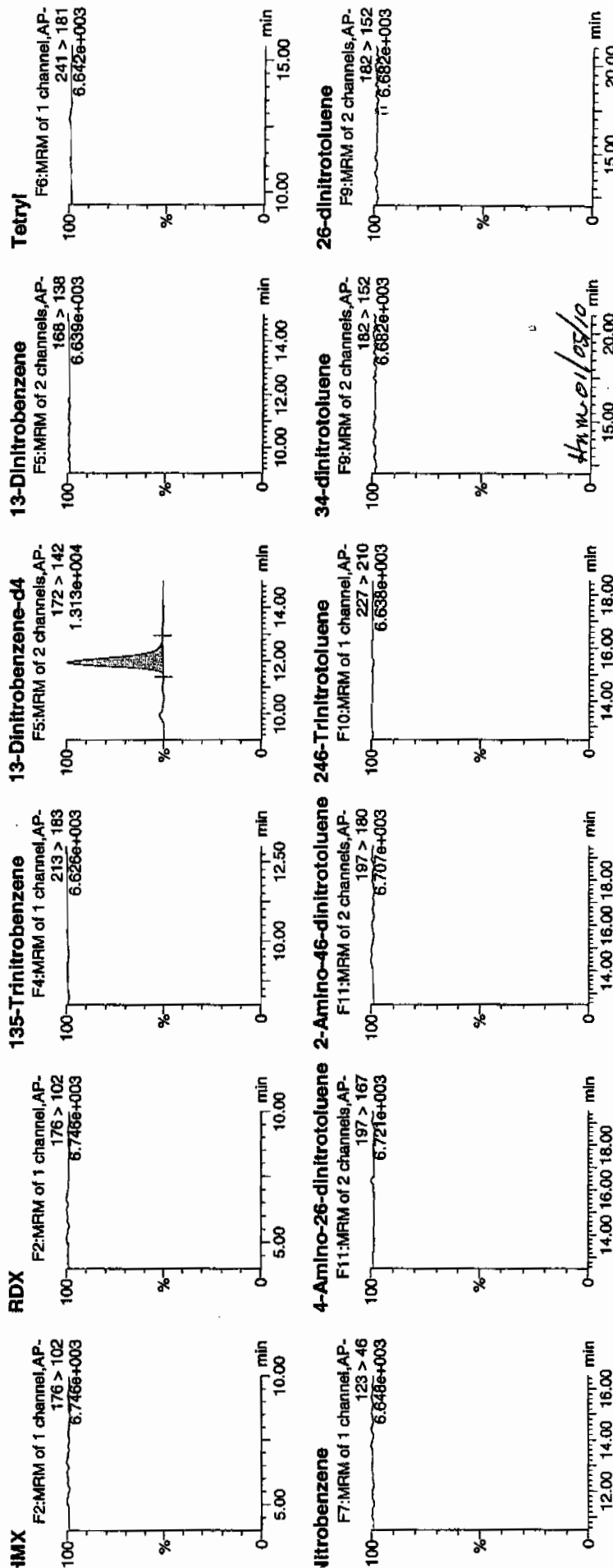
Date: 04-Jan-2010

Time: 13:46:03

D: XIBLK12

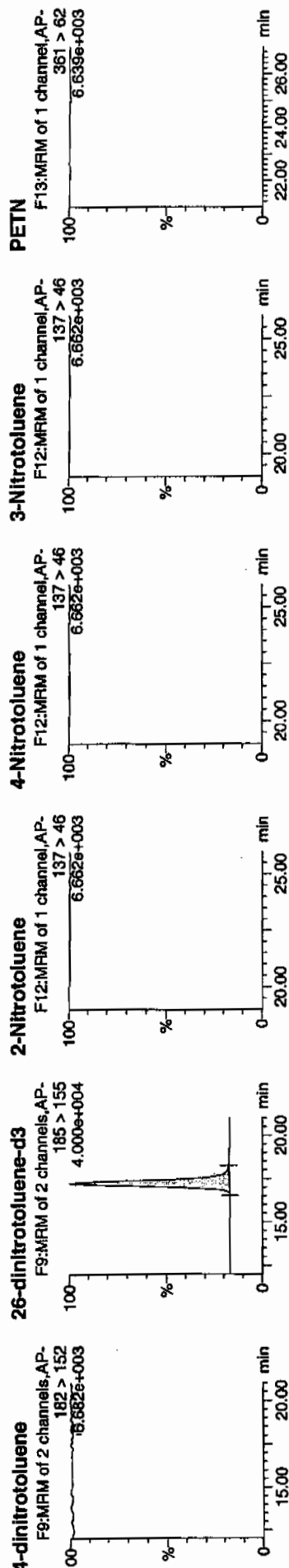
File: 1:1,E

Page 152 of 1340



EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



Name	Trace	RT	Area	IS Area	Abs Resp	Response	Class	Molecular Weight	%Det	SSN
HMX	IBLK12	176 > 102		2573.165						
RDX	IBLK12	176 > 102		2573.165						
135-Trinitrobenzene	IBLK12	213 > 183		2573.165						
13-Dinitrobenzene-d4	IBLK12	172 > 142	11.95	2573.165	2573.165	2573.165	bb	541.7198	108.3	219.7
13-Dinitrobenzene	IBLK12	168 > 138		2573.165						
Tetryl	IBLK12	241 > 181		2573.165						
Nitrobenzene	IBLK12	123 > 46		2573.165						
4-Amino-26-dinitrotoluene	IBLK12	197 > 167		14037.015						
2-Amino-46-dinitrotoluene	IBLK12	197 > 180		14037.015						
246-Trinitrotoluene	IBLK12	227 > 210		14037.015						
34-dinitrotoluene	IBLK12	182 > 152		14037.015						
26-dinitrotoluene	IBLK12	182 > 152		14037.015			MM-	05-Jan-10	08:51:49	
24-dinitrotoluene	IBLK12	182 > 152		14037.015			MM-	05-Jan-10	08:56:31	
26-dinitrotoluene-d3	IBLK12	185 > 155	17.23	14037.015	14037.015	14037.015	bb	510.5610	102.1	1313.7
2-Nitrotoluene	IBLK12	137 > 46		14037.015						
4-Nitrotoluene	IBLK12	137 > 46		14037.015						
3-Nitrotoluene	IBLK12	137 > 46		14037.015						
PETN	IBLK12	361 > 62		14037.015						

4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK13

Analysis Date: 04-JAN-10 19:10

GEL Data File: EXP0102110a

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	559
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	554.669
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

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102110a

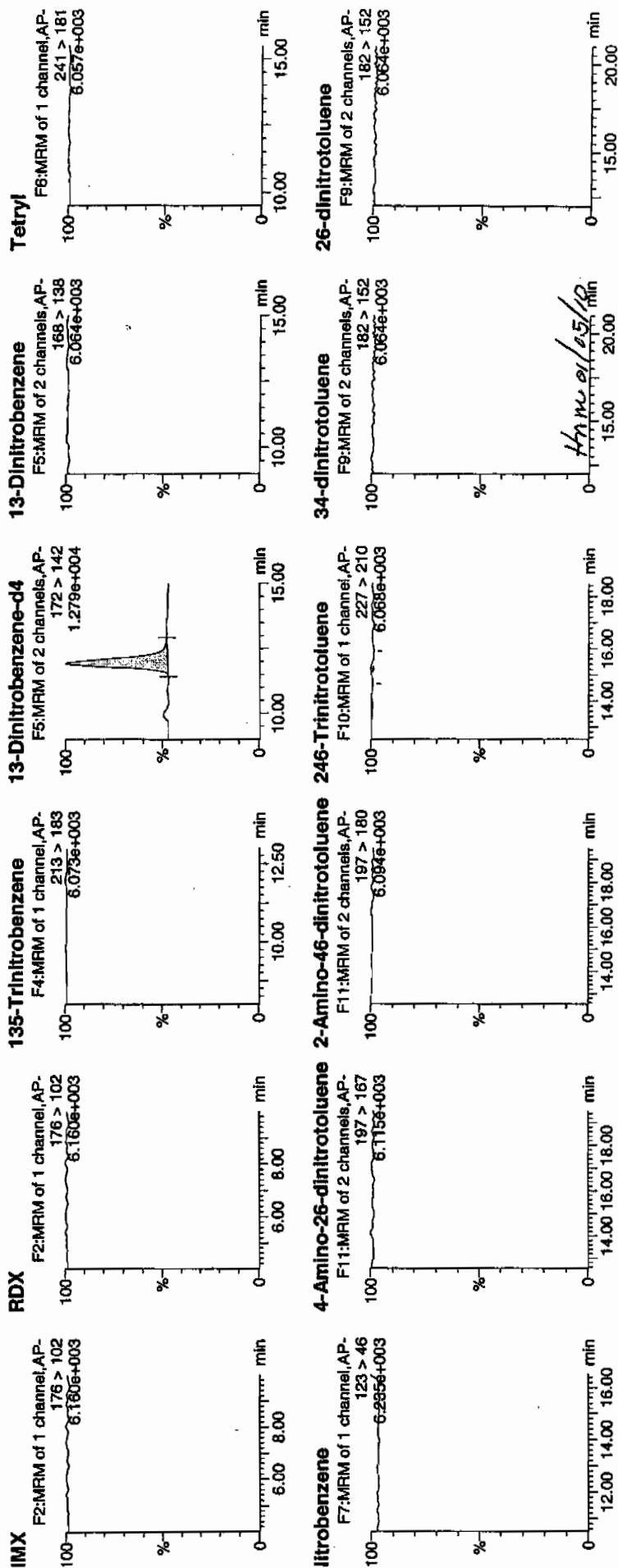
Date: 04-Jan-2010

Time: 19:10:37

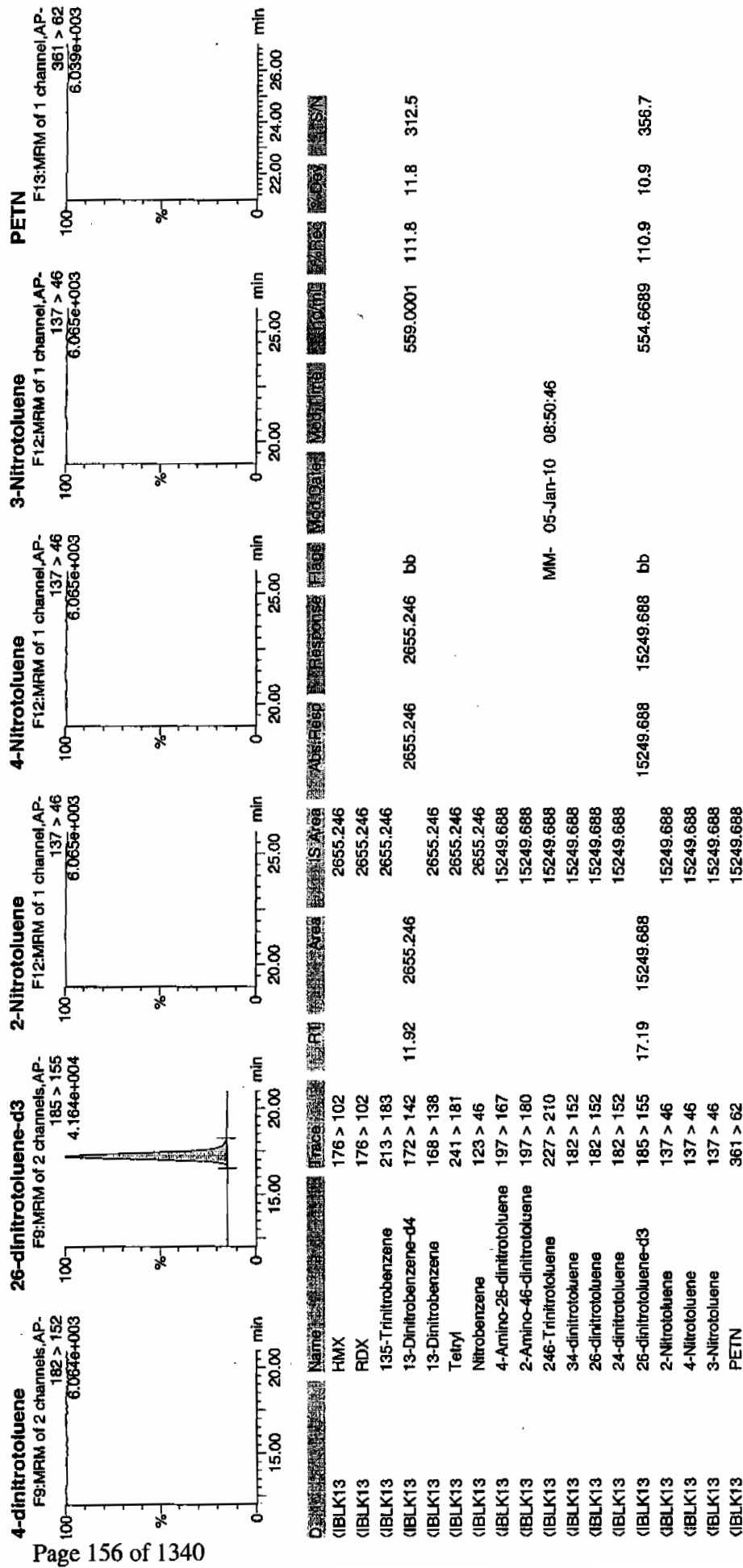
ID: XIBLK13

Tail: 1:1,E

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4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK14

Analysis Date: 04-JAN-10 23:07

GEL Data File: EXP0102118a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
2,6-Dinitrotoluene-d3	500	552.215
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	540.348
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0

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

Dataset: C:\MASSLYNX\New\_Exp\_PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010

Sample Name: C:\MASSLYNX\NEW\_EXP\_PRO\Data\EXP0102118a

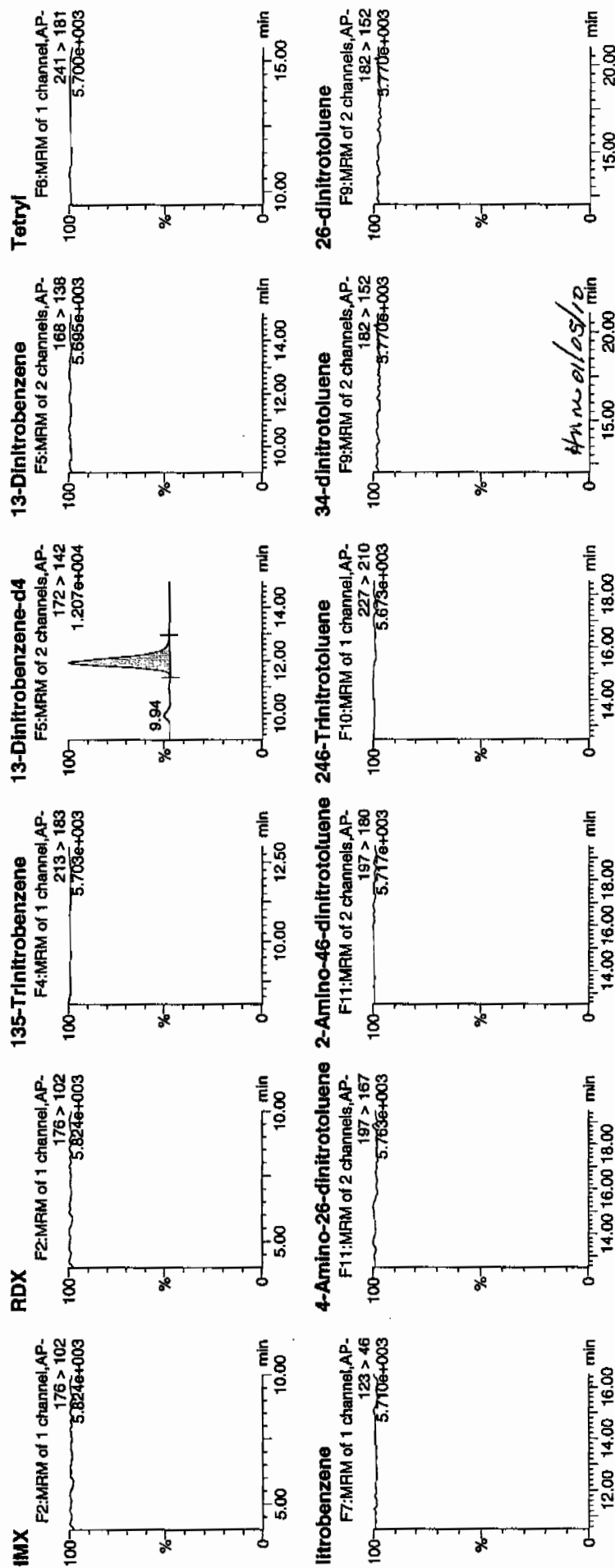
Date: 04-Jan-2010

Time: 23:07:05

D: XIBLK14

File: 1:1,E

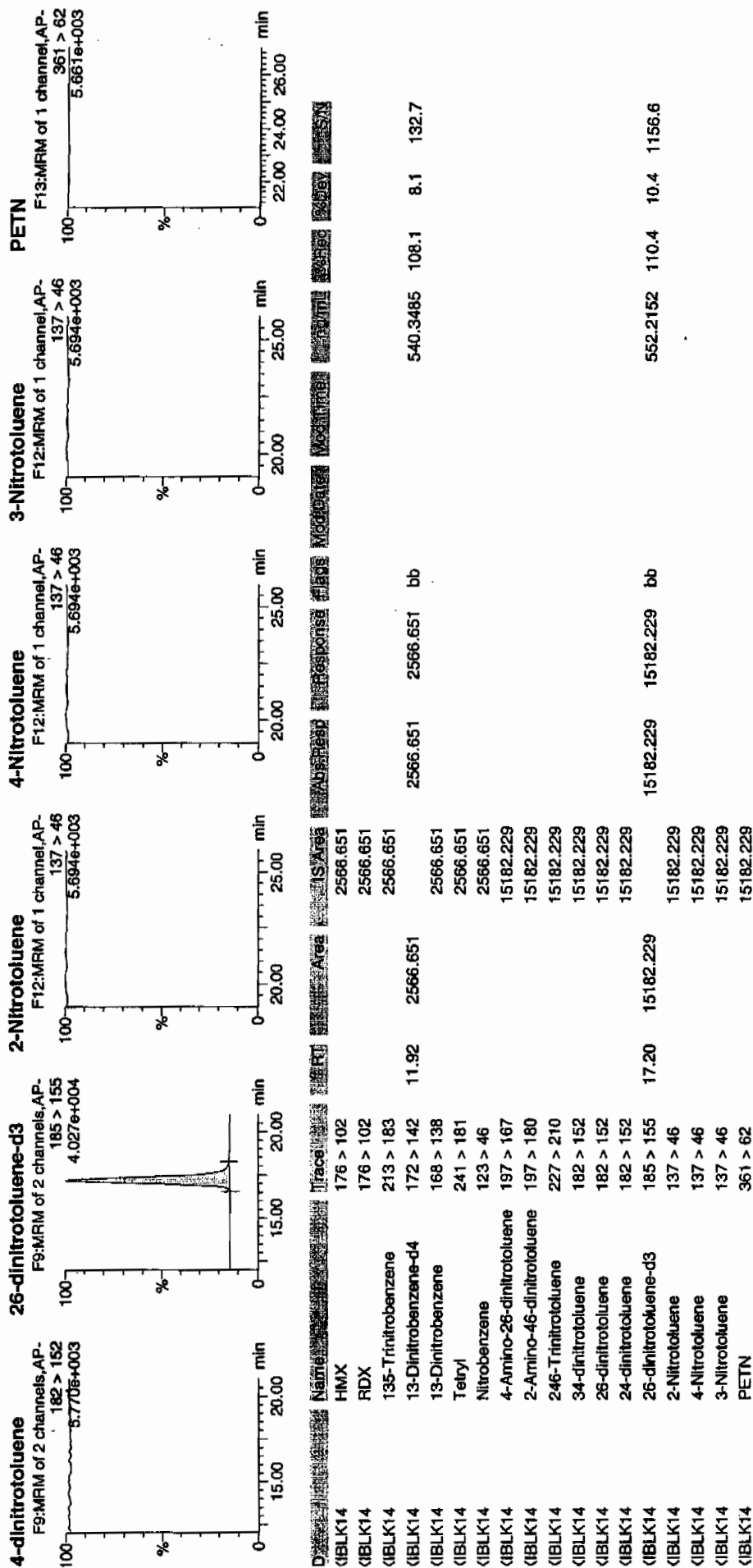
MR  
 1510



Printed: Tue Jan 05 09:04:48 2010, Page 62 of 85

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

Dataset: C:\MASSLYNX\New\_Exp\PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 03-JAN-10 14:02

GEL Data File: EXS01030010.wiff

Instrument ID: LCMSMS

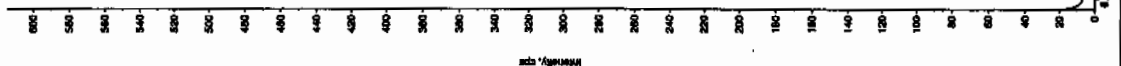
Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	1.68
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

08/11/17

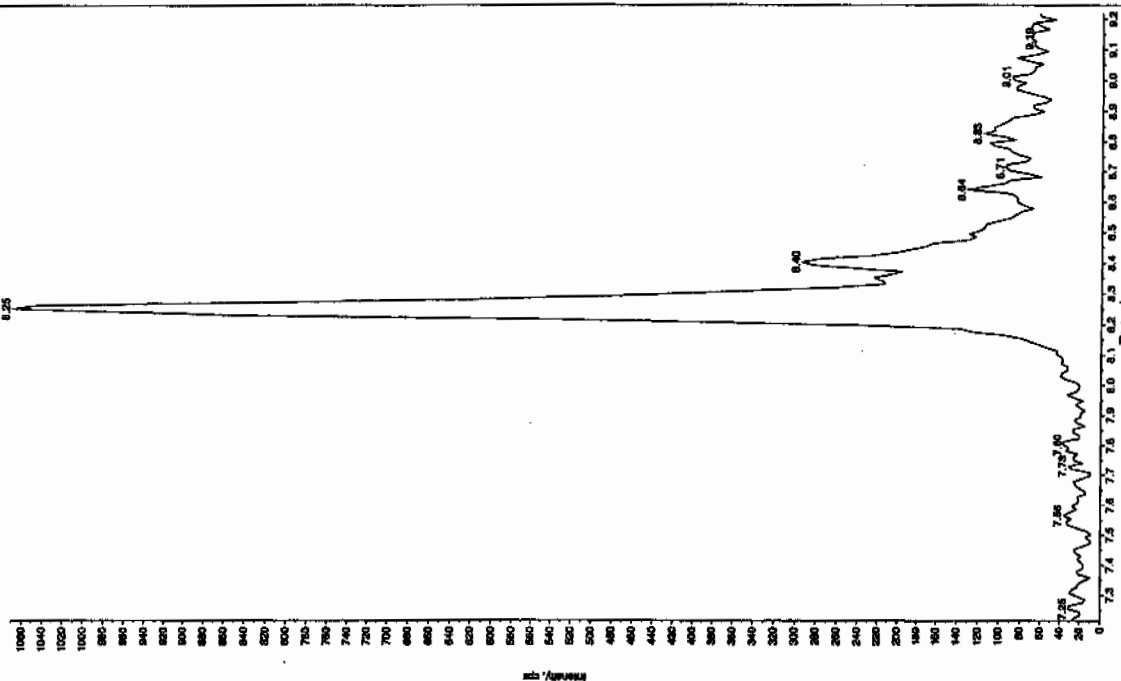
Sample Name: "XBL002" Sample ID: "11154" File: "EX50100010.vdi"  
 Peak Name: "TATB" Mass(es): "257.2204.9 amu"  
 Comment: "LONSEXP\_5" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Calculated Conc: 1/3/2010  
 Acq. Date: 2:02:16 PM  
 Acq. Time: 2:02:16 PM  
 Modified: No



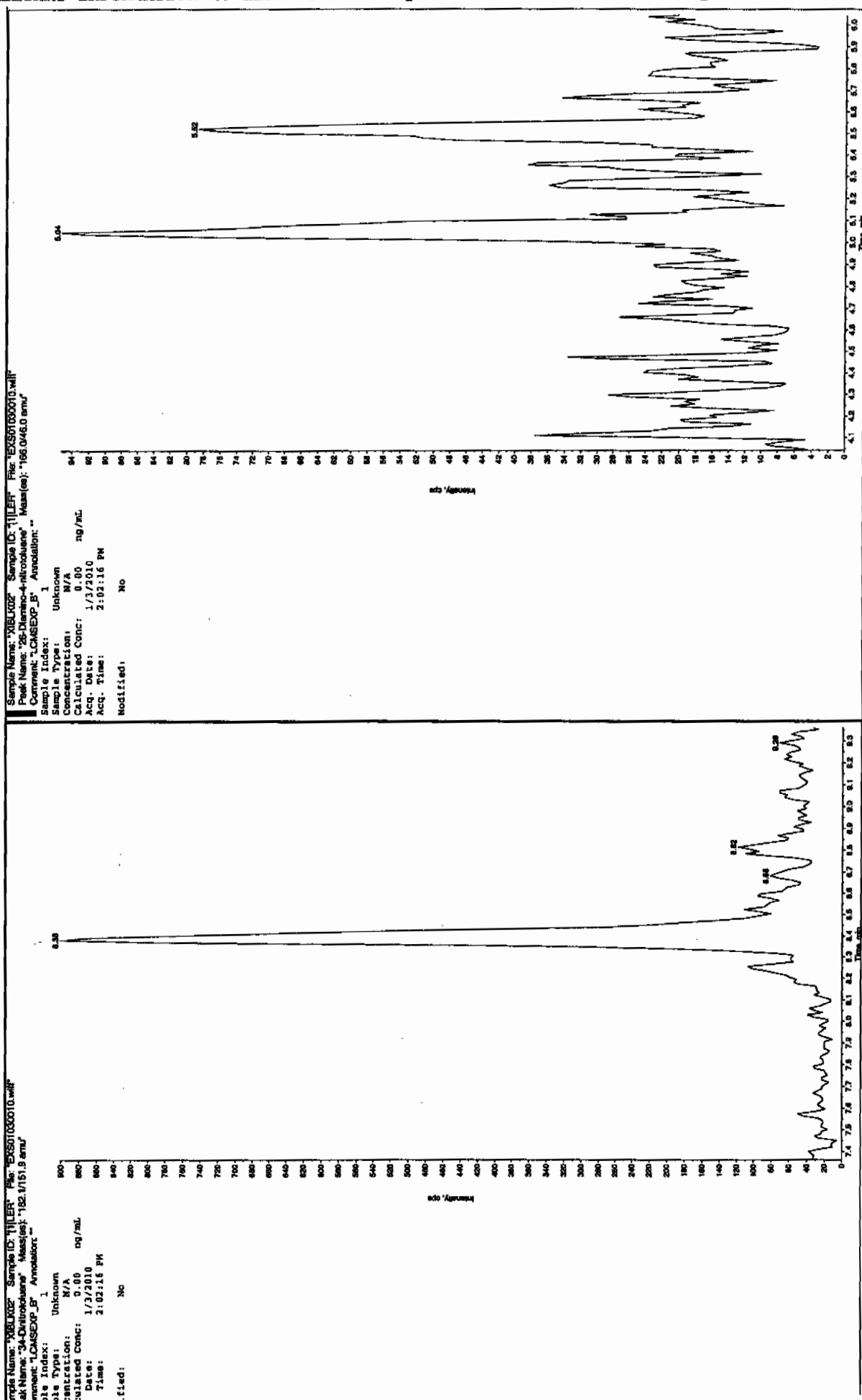
Sample Name: "XBL002" Sample ID: "11154" File: "EX50100010.vdi"  
 Peak Name: "35-Dinitroarlene" Mass(es): "182.046.0 amu"  
 Comment: "LONSEXP\_5" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Calculated Conc: 1/3/2010  
 Acq. Date: 2:02:16 PM  
 Acq. Time: 2:02:16 PM  
 Modified: No

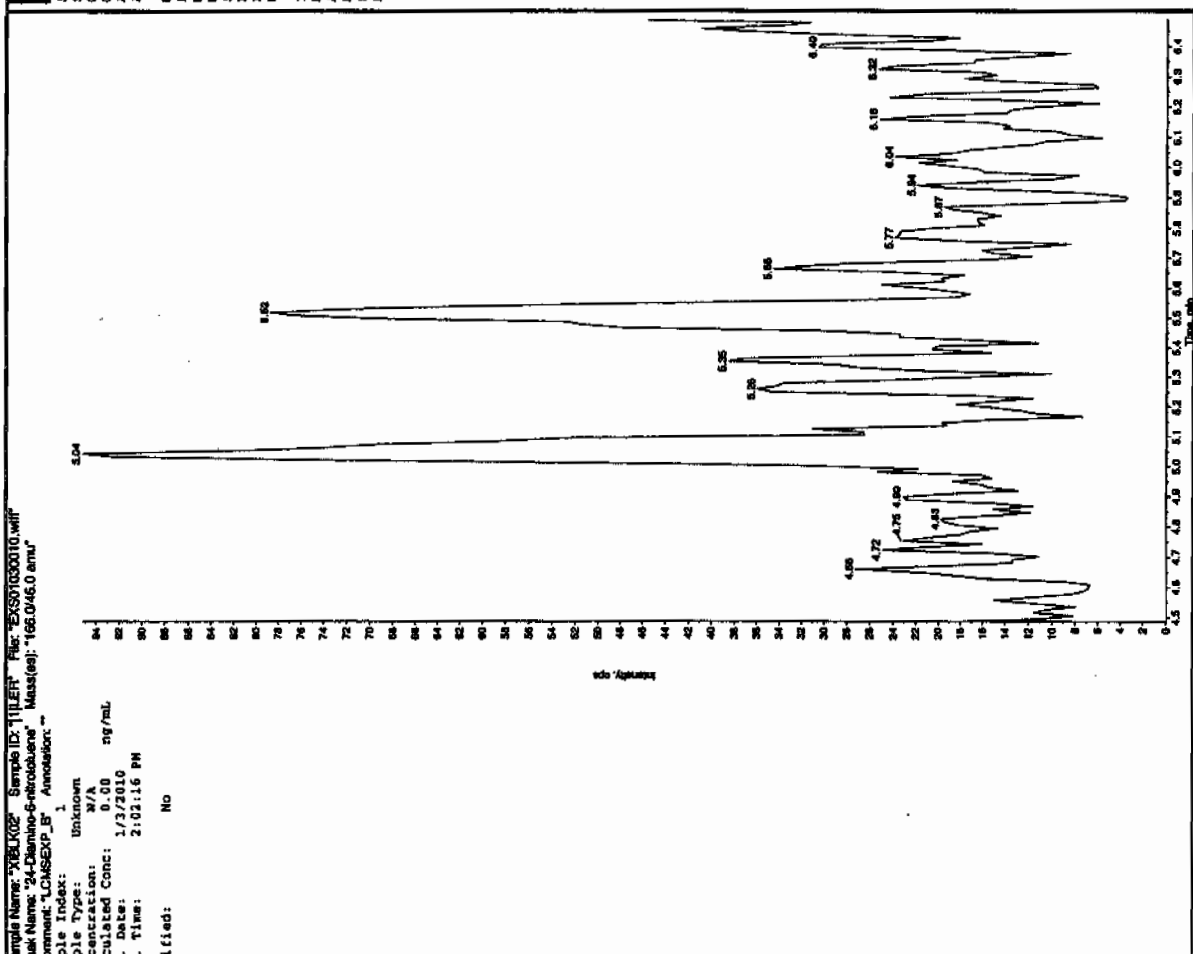
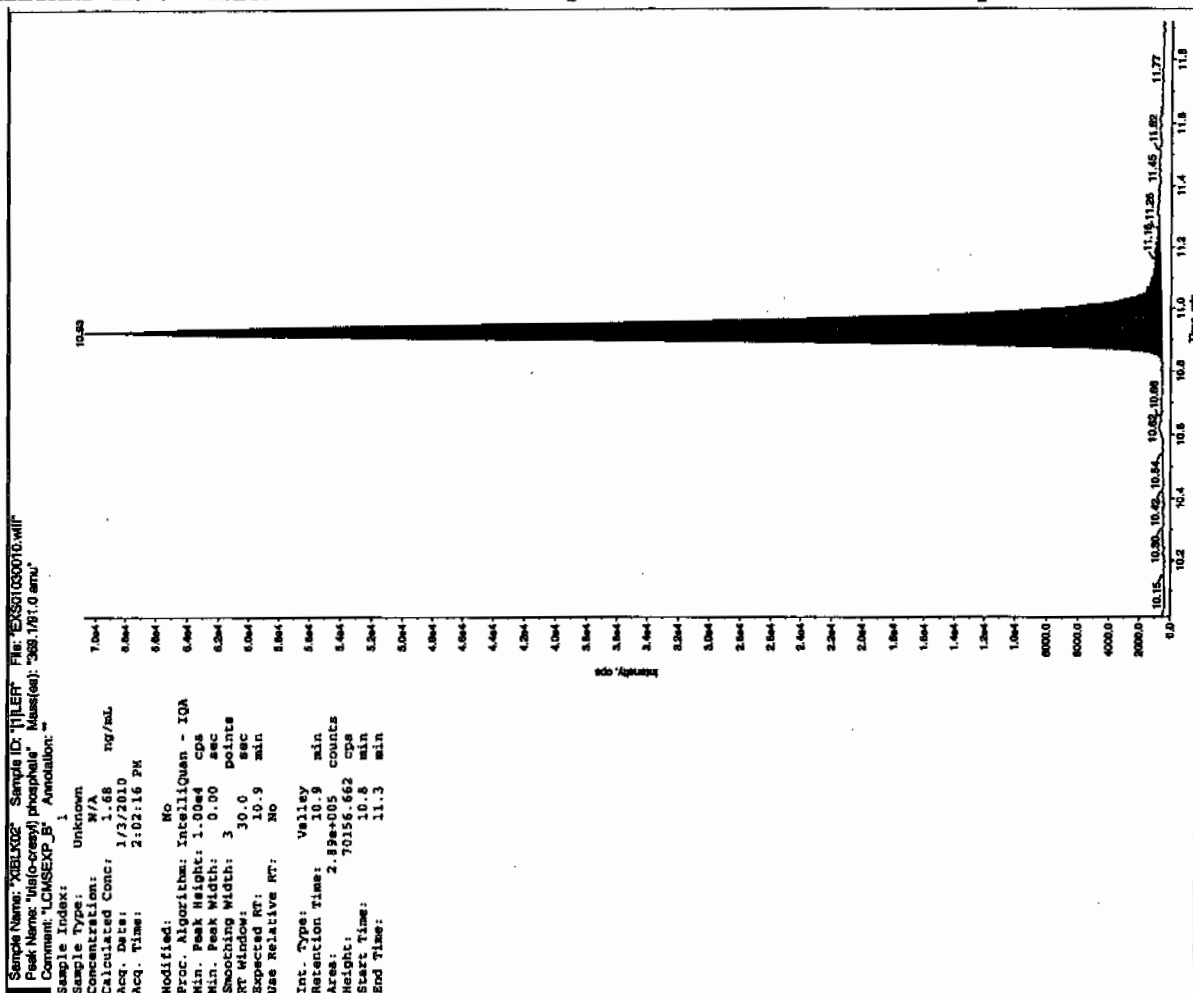


4/11/05/10

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



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XTBLK03

Analysis Date: 03-JAN-10 14:33

GEL Data File: EXS01030012.wiff

Instrument ID: LCMSMS

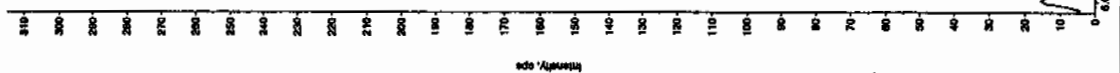
Column: Phenomenex Ultracarb 5u ODS(20)

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

01/15/10  
202

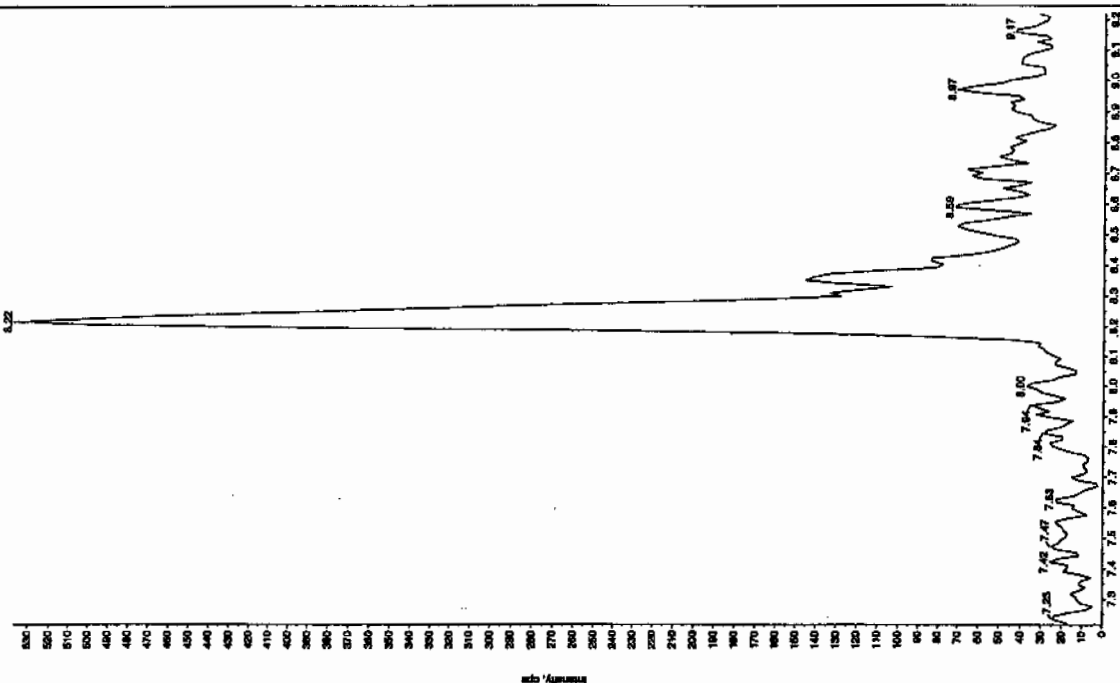
Sample Name: "XBL003" Sample ID: "T1LER" File: "EX00100012.w" Peak Name: "35-Dimethylamino" Mass(es): "257.2004.9 amu" Comment: "LONSEXP\_B" Annotation: "1"

Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A  
Calculated Conc: 0.00 ng/mL  
Acq. Date: 1/3/2010  
Acq. Time: 2:33:40 PM  
Modified: No

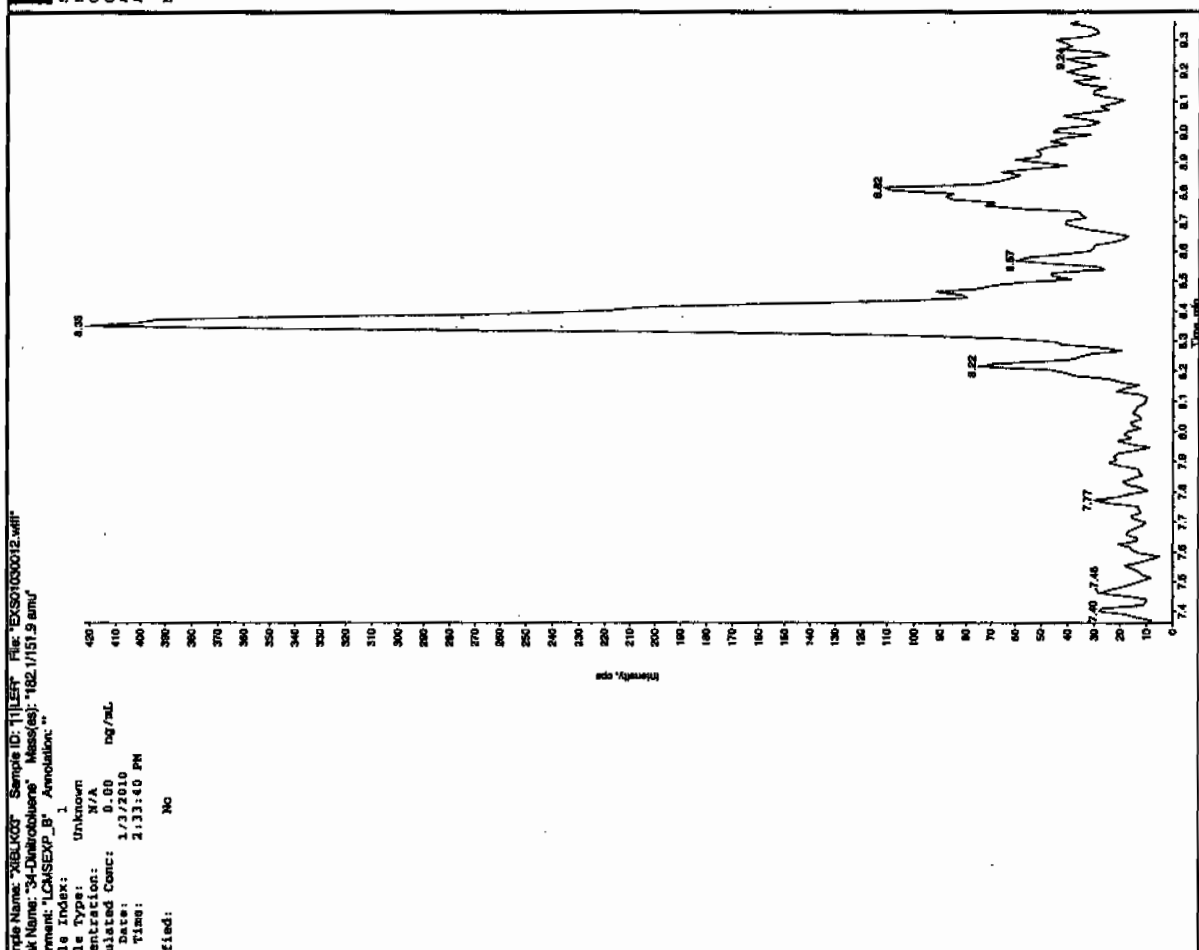
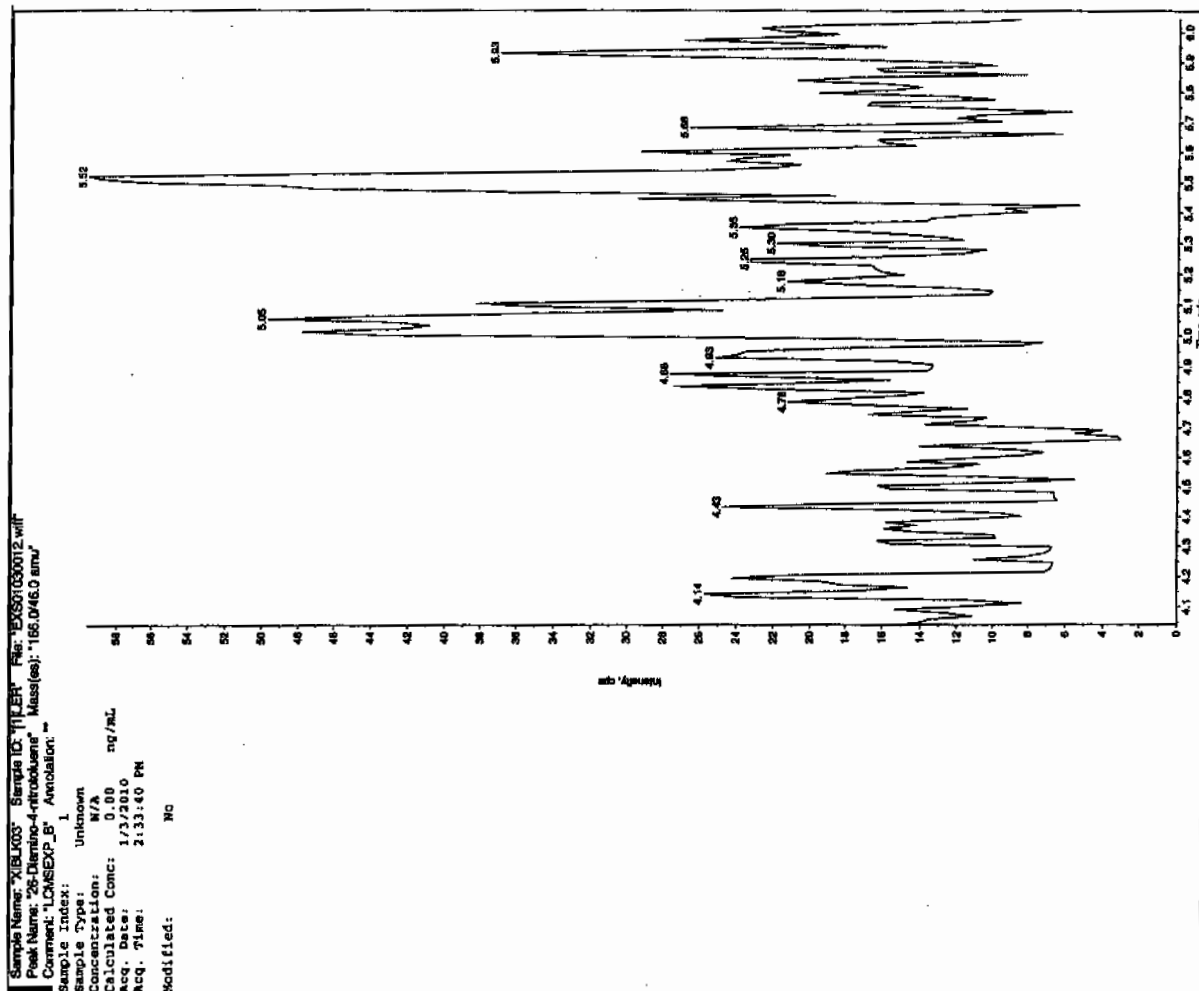


Sample Name: "XBL003" Sample ID: "T1LER" File: "EX00100012.w" Peak Name: "35-Dimethylamino" Mass(es): "182.046.0 amu" Comment: "LONSEXP\_B" Annotation: "1"

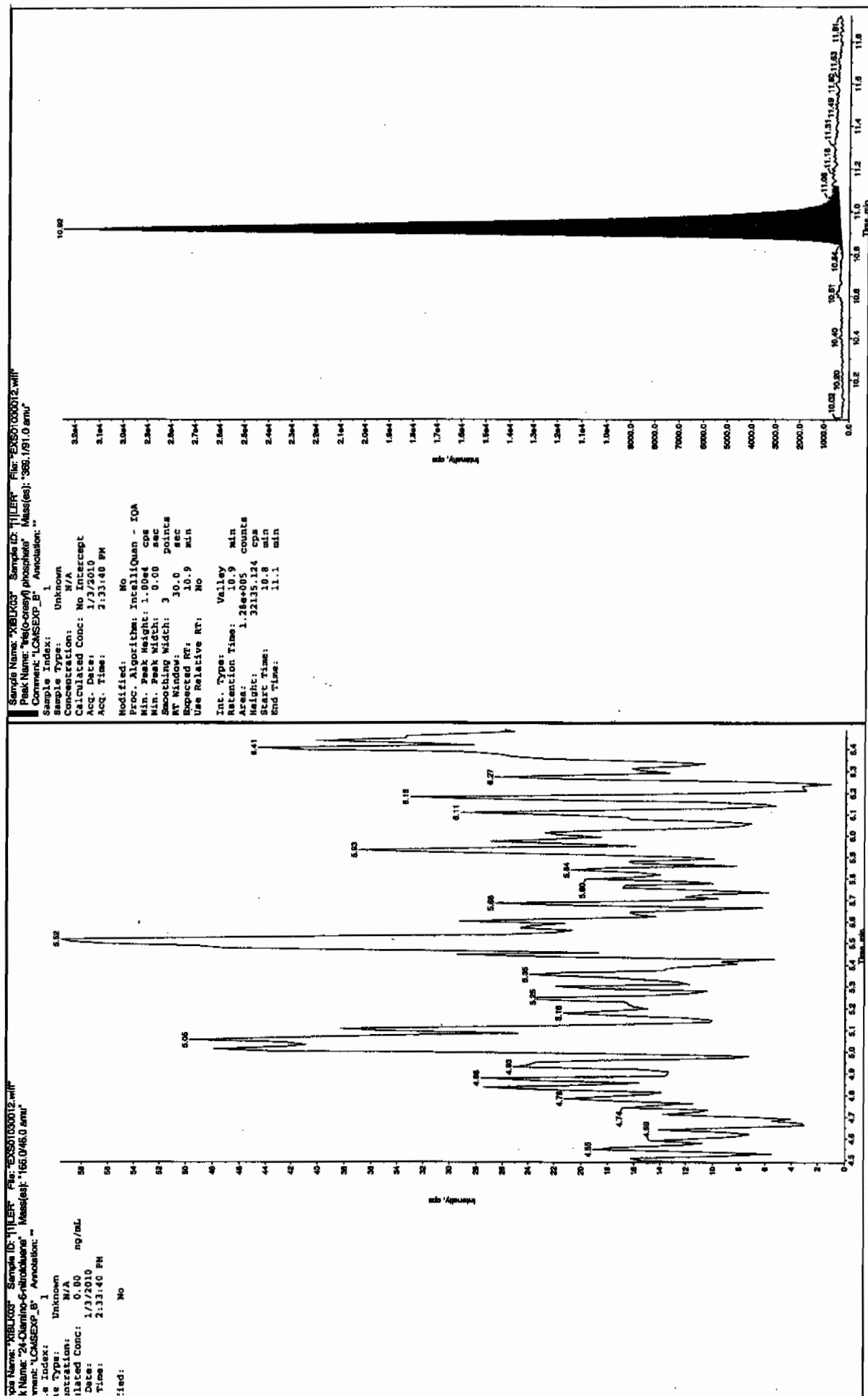
Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A  
Calculated Conc: 0.00 ng/mL  
Acq. Date: 1/3/2010  
Acq. Time: 2:33:40 PM  
Modified: No



Am 01/05/10



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



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

4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 03-JAN-10 17:57

GEL Data File: EXS01030025.wiff

Instrument ID: LCMSMS

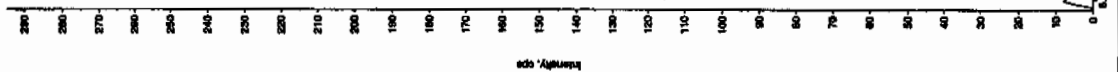
Column: Phenomenex Ultracarb 5u ODS(20)

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

8/13/10

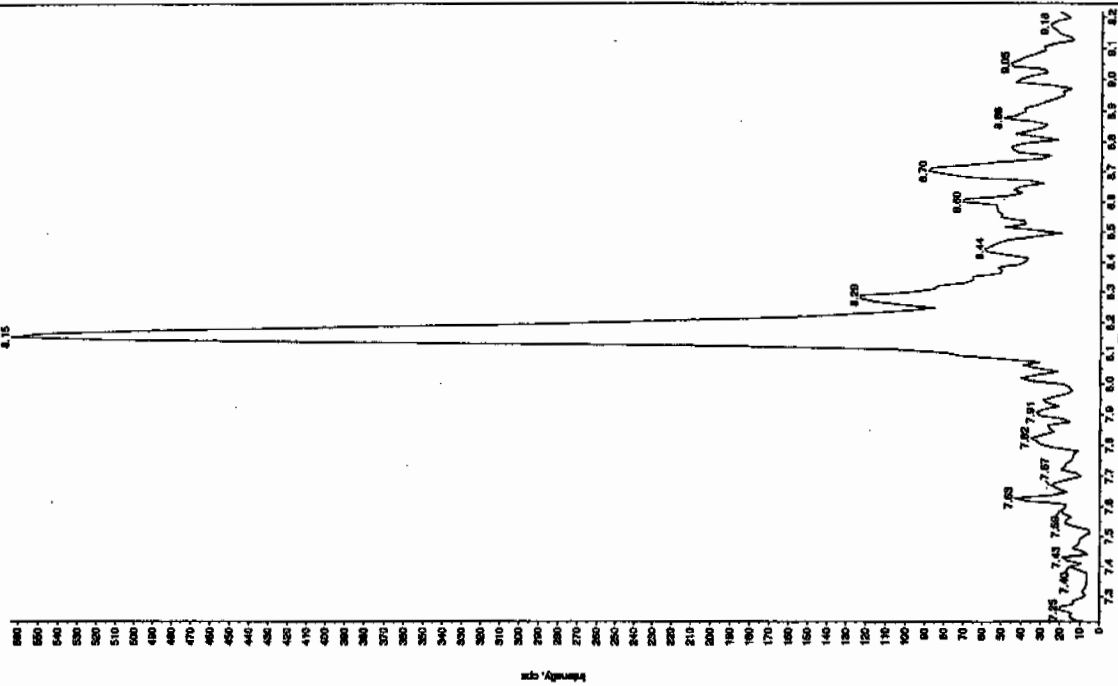
Sample Name: "XBLR04" Sample ID: "11111" File: "EX601000025.wif"  
 Peak Name: "TA1B" Mass(es): "257.2204.9 amu"  
 Comment: "LONSEXP\_B" Annotation: "

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 5:57:50 PM  
 Modified: No

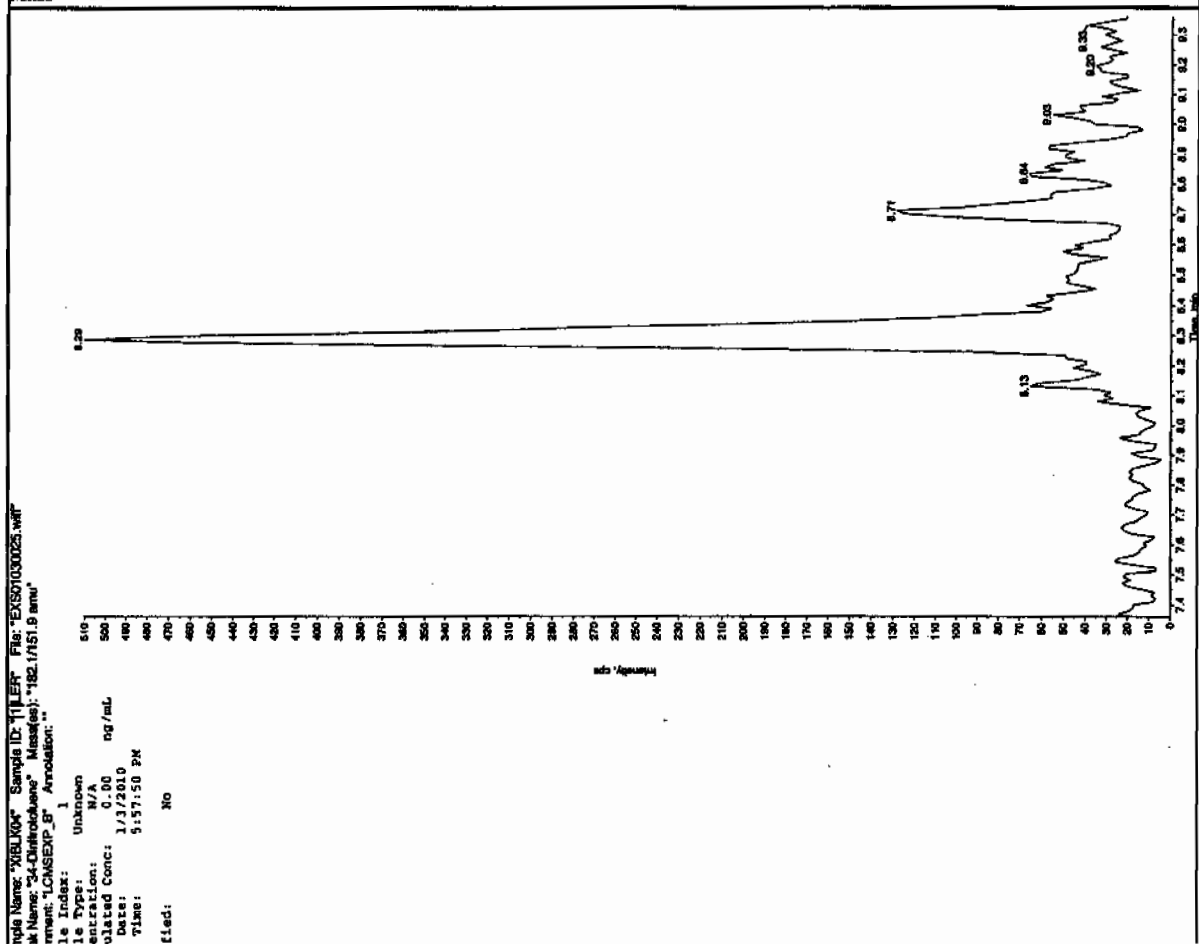
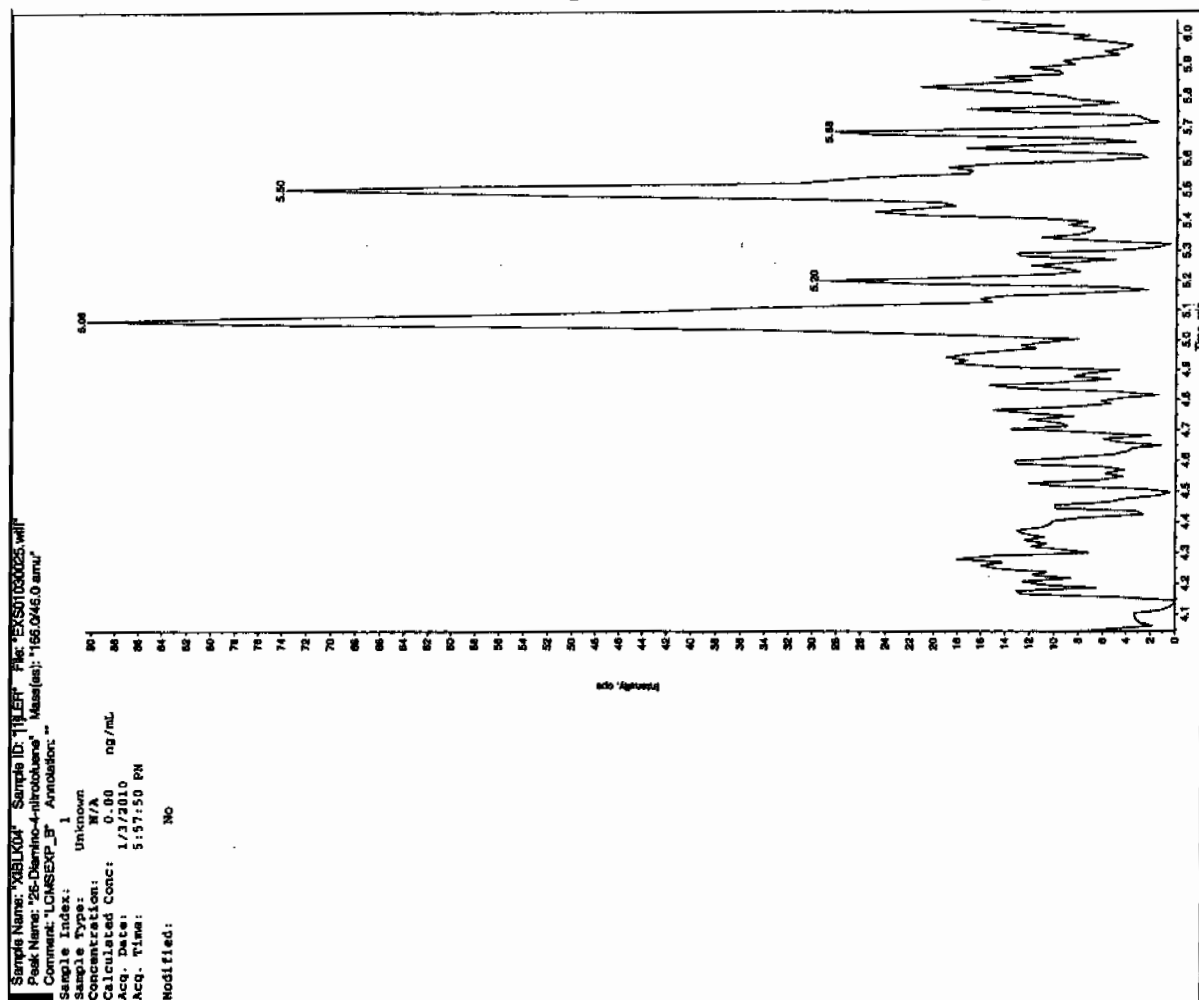


Sample Name: "XBLR04" Sample ID: "11111" File: "EX601000025.wif"  
 Peak Name: "3S-Dinitroalkene" Mass(es): "182.046.0 amu"  
 Comment: "LONSEXP\_B" Annotation: "

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 5:57:50 PM  
 Modified: No



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





4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 03-JAN-10 21:22

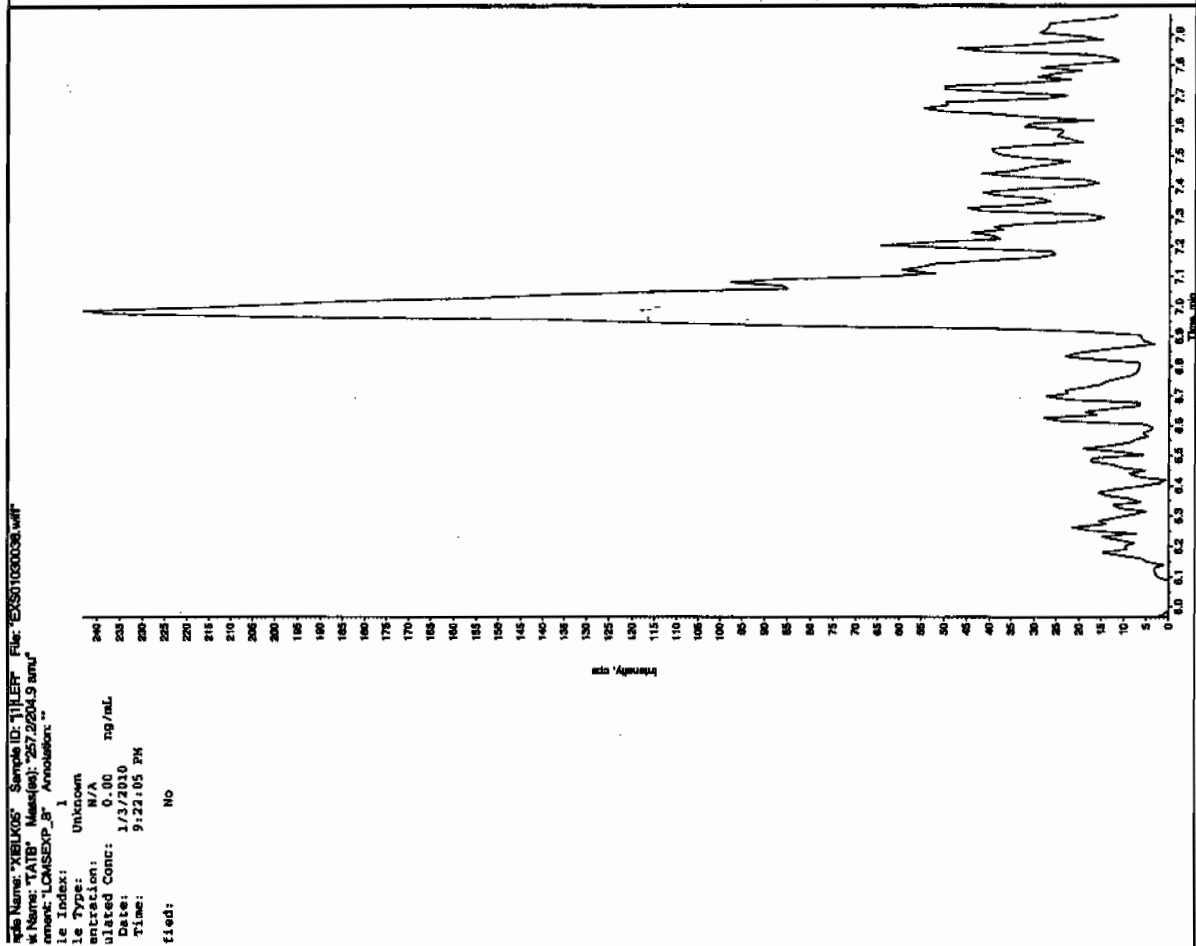
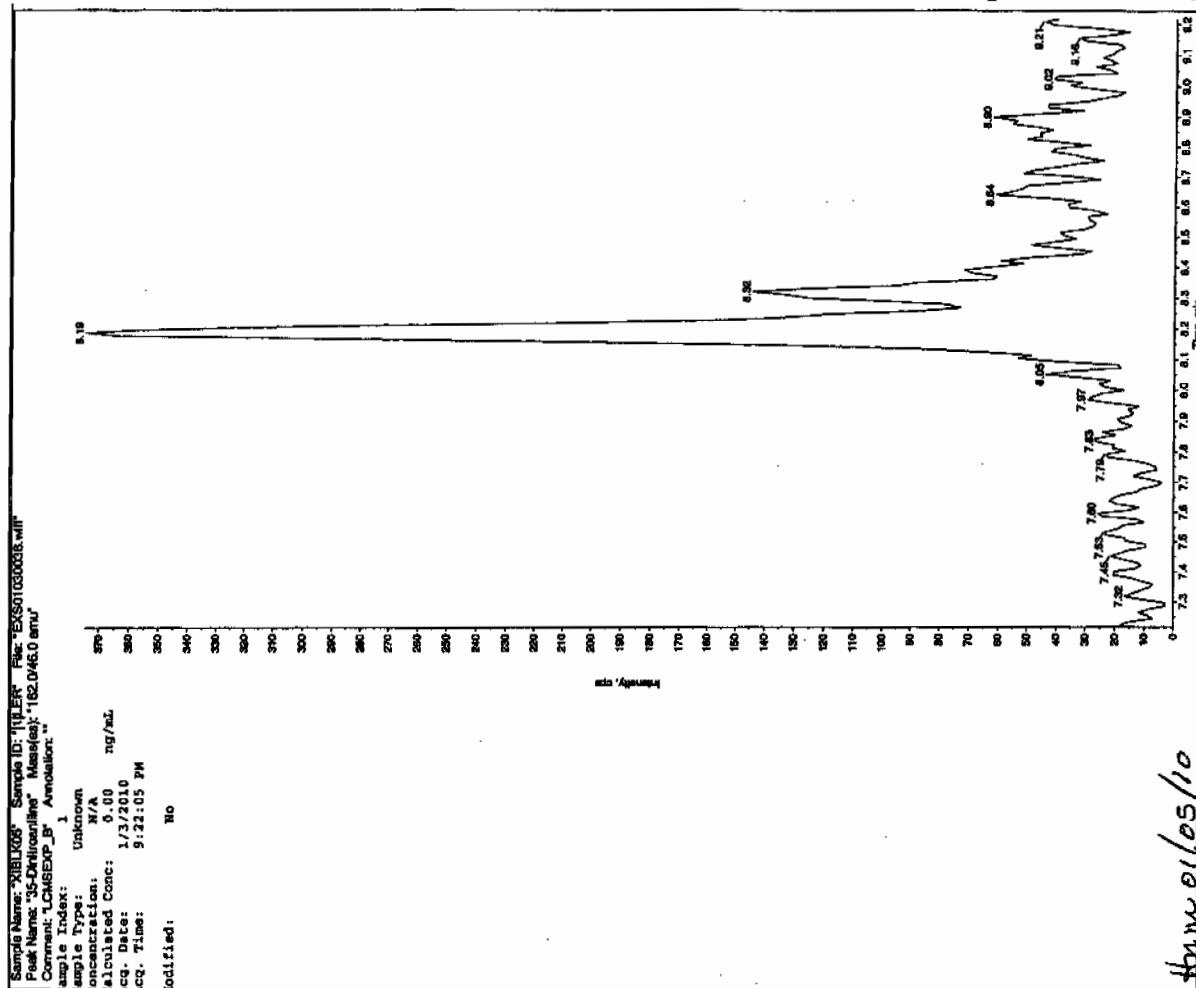
GEL Data File: EXS01030038.wiff

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

11/17/10  
Jag

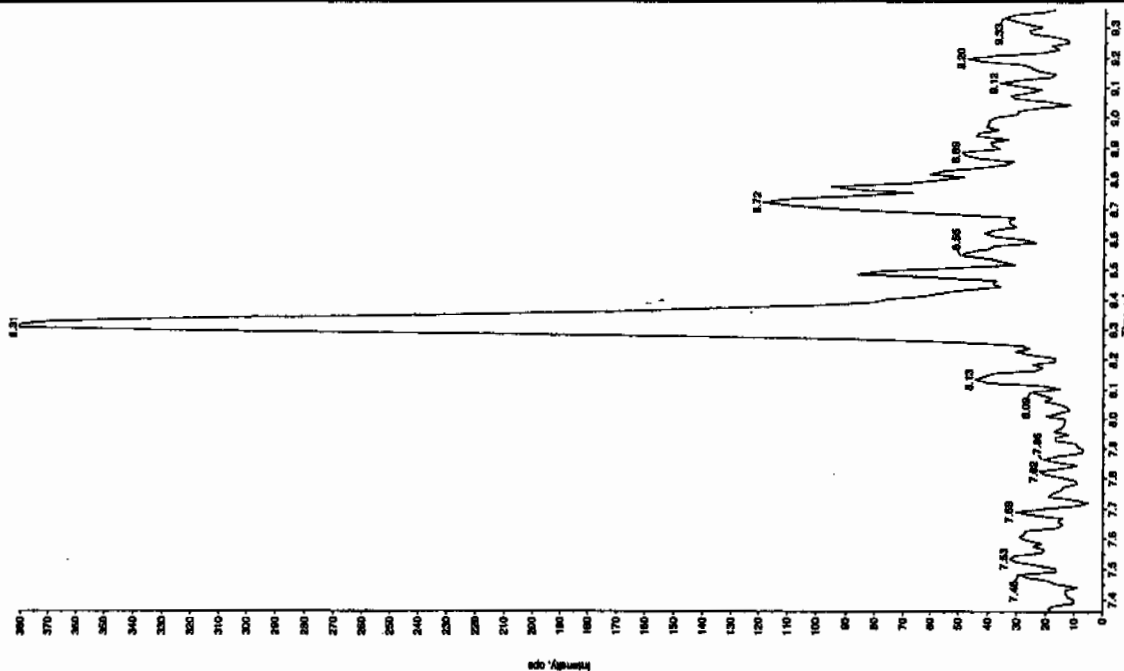


thru 01/05/10

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

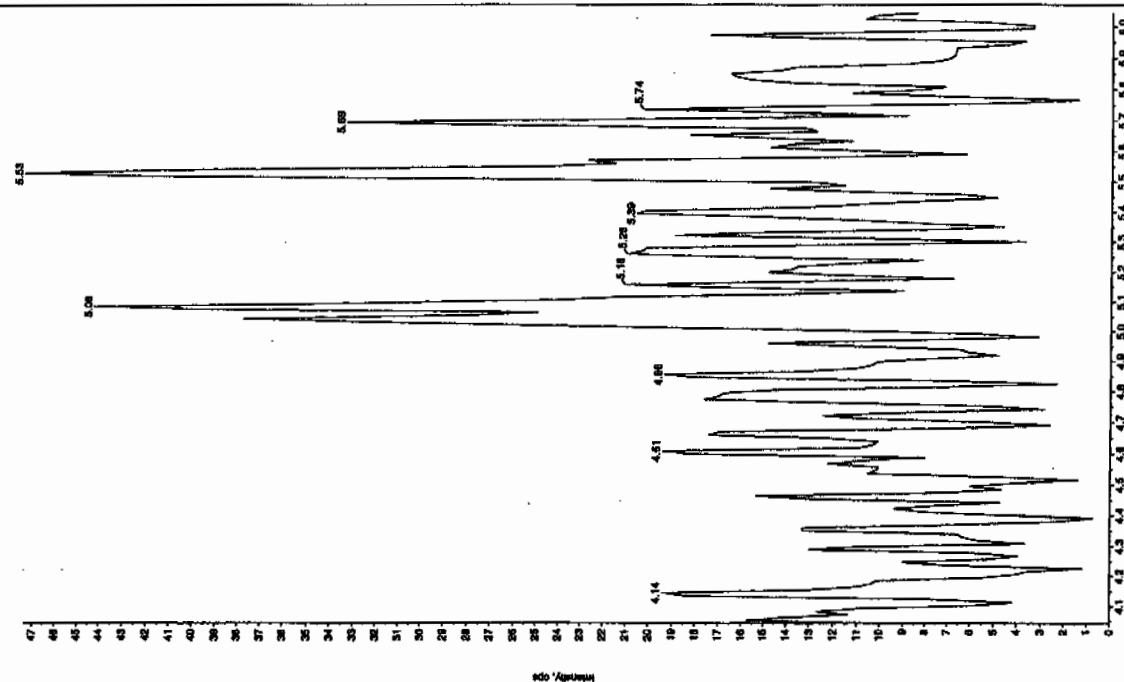
Sample Name: "HBLK05" Sample ID: "HLEF" File: "EX501000008.wif"  
 Peak Name: "3,4-Dinitrofluorene" Mass(es): "182.17151.9 amu"  
 Comment: "LONSEXP\_5" Annotation: ""

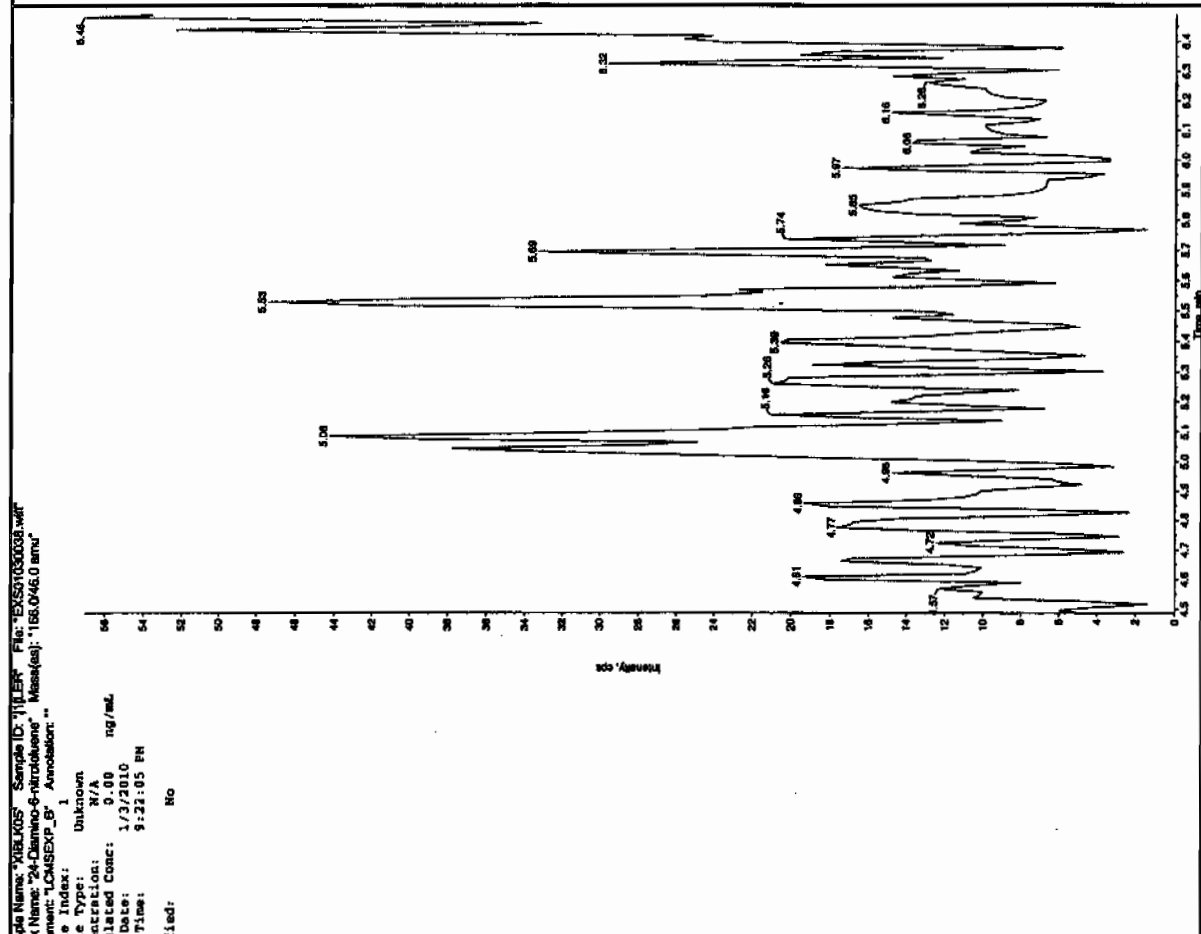
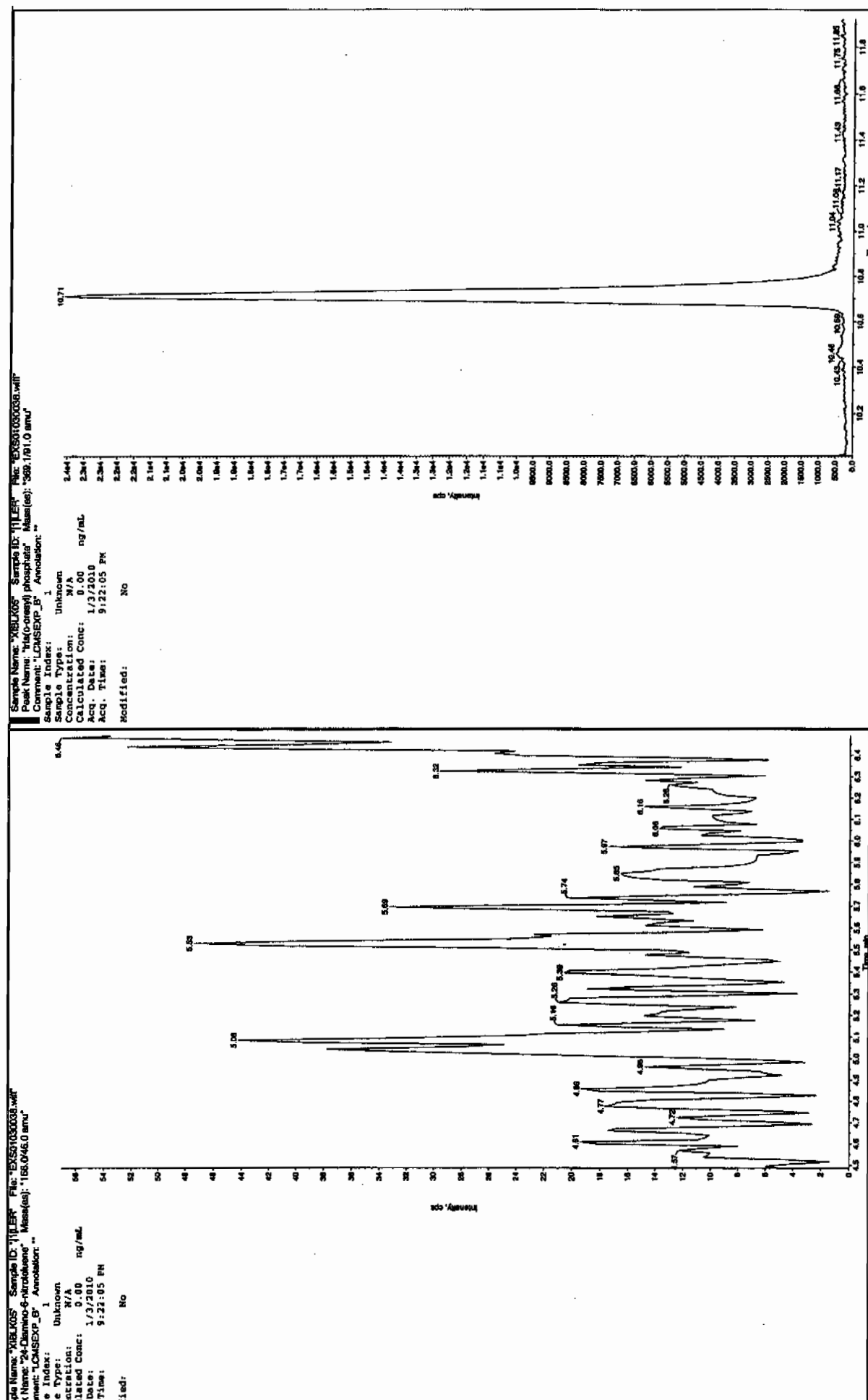
Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Date: 1/3/2010  
 Time: 9:22:05 PM  
 Filed: No



Sample Name: "HBLK05" Sample ID: "HLEF" File: "EX501000008.wif"  
 Peak Name: "2,6-Dinitro-4-nitrofluorene" Mass(es): "186.0466.0 amu"  
 Comment: "LONSEXP\_5" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Date: 1/3/2010  
 Time: 9:22:05 PM  
 Filed: No





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

4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 03-JAN-10 22:40

GEL Data File: EXS01030043.wiff

Instrument ID: LCMSMS

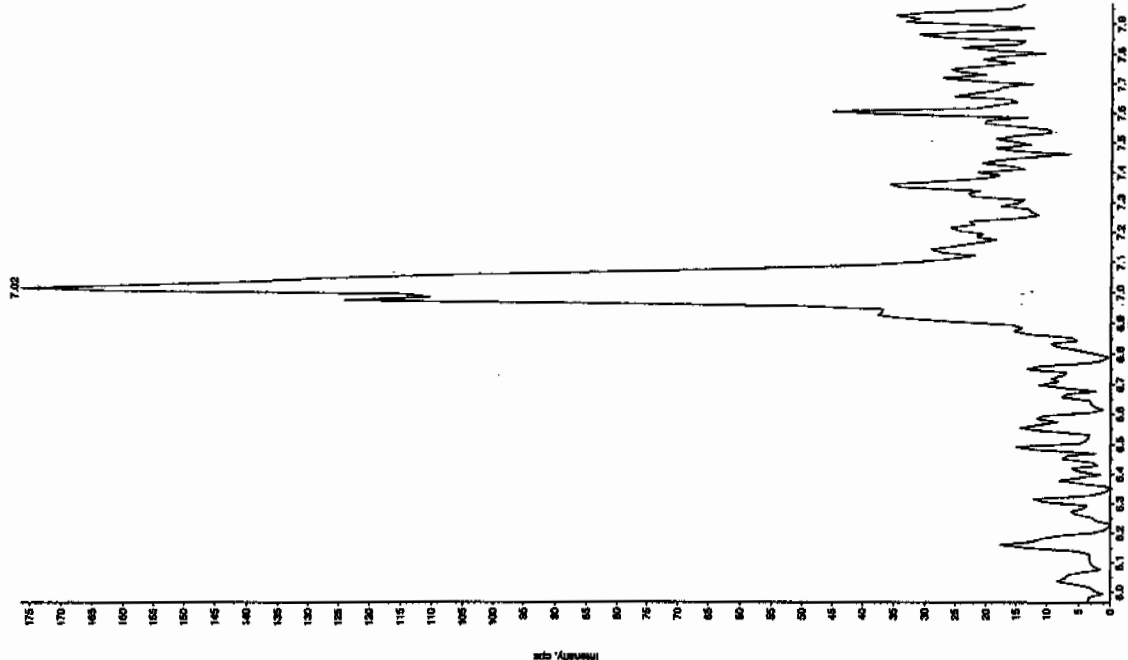
Column: Phenomenex Ultracarb 5u ODS(20)

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

8/15/10

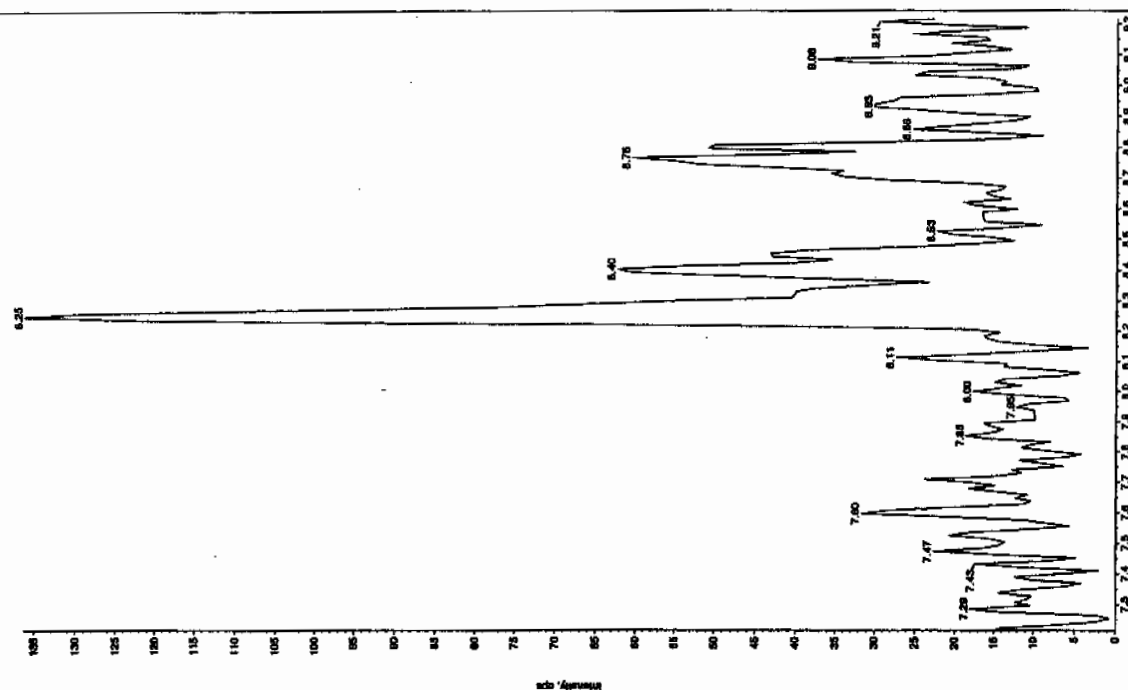
Sample Name: "XBL006" Sample ID: "11111" File: "EX051000043.w" File: "EX051000043.w"  
 Peak Name: "TATB" Mass(es): "257.2204.9 amu"  
 Comment: "LCMS-EXP\_B" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 10:40:38 PM  
 Modified: No



Sample Name: "XBL006" Sample ID: "11111" File: "EX051000043.w" File: "EX051000043.w"  
 Peak Name: "35-Dinitroaniline" Mass(es): "182.046.0 amu"  
 Comment: "LCMS-EXP\_B" Annotation: ""

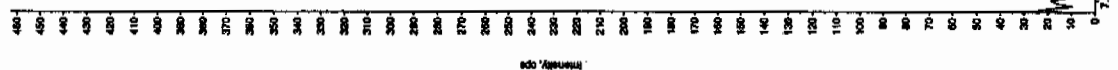
Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 10:40:38 PM  
 Modified: No



8/15/10

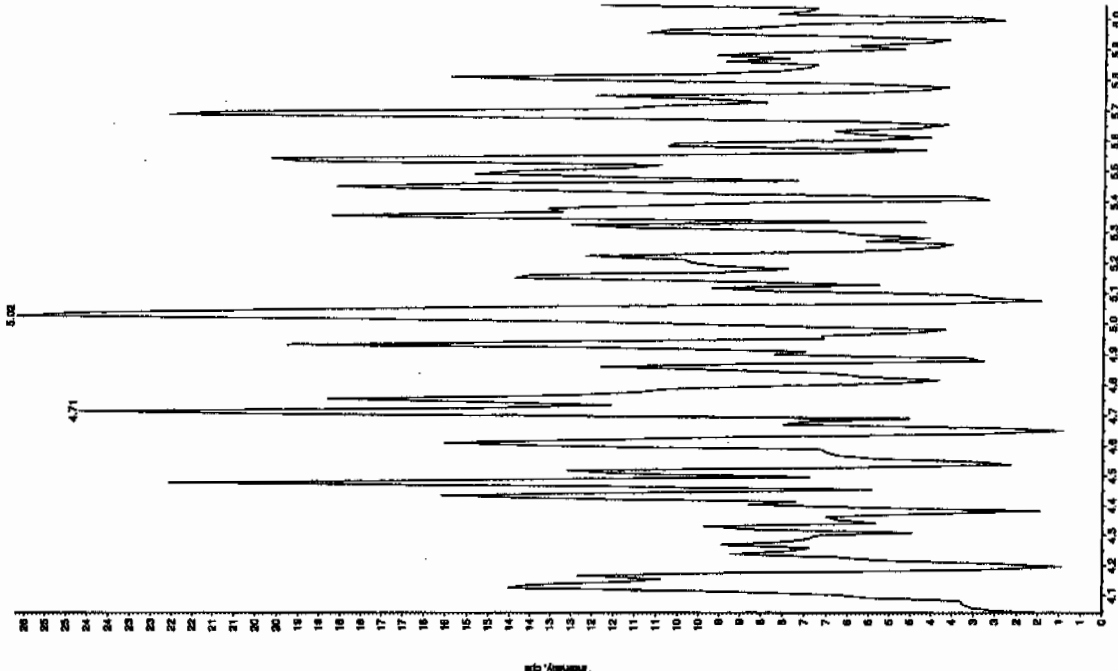
File Name: "XBLX06" Sample ID: "11111" File: "EX501030043.wif"  
 Name: "34-Dinitrofluorene" Mass(es): "162.17151.8 amu"  
 Comment: "LCMSXP\_B" Annotation: ""

e Index: 1  
 e Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Date: 1/3/2010  
 Time: 10:40:38 PM  
 Modified: No

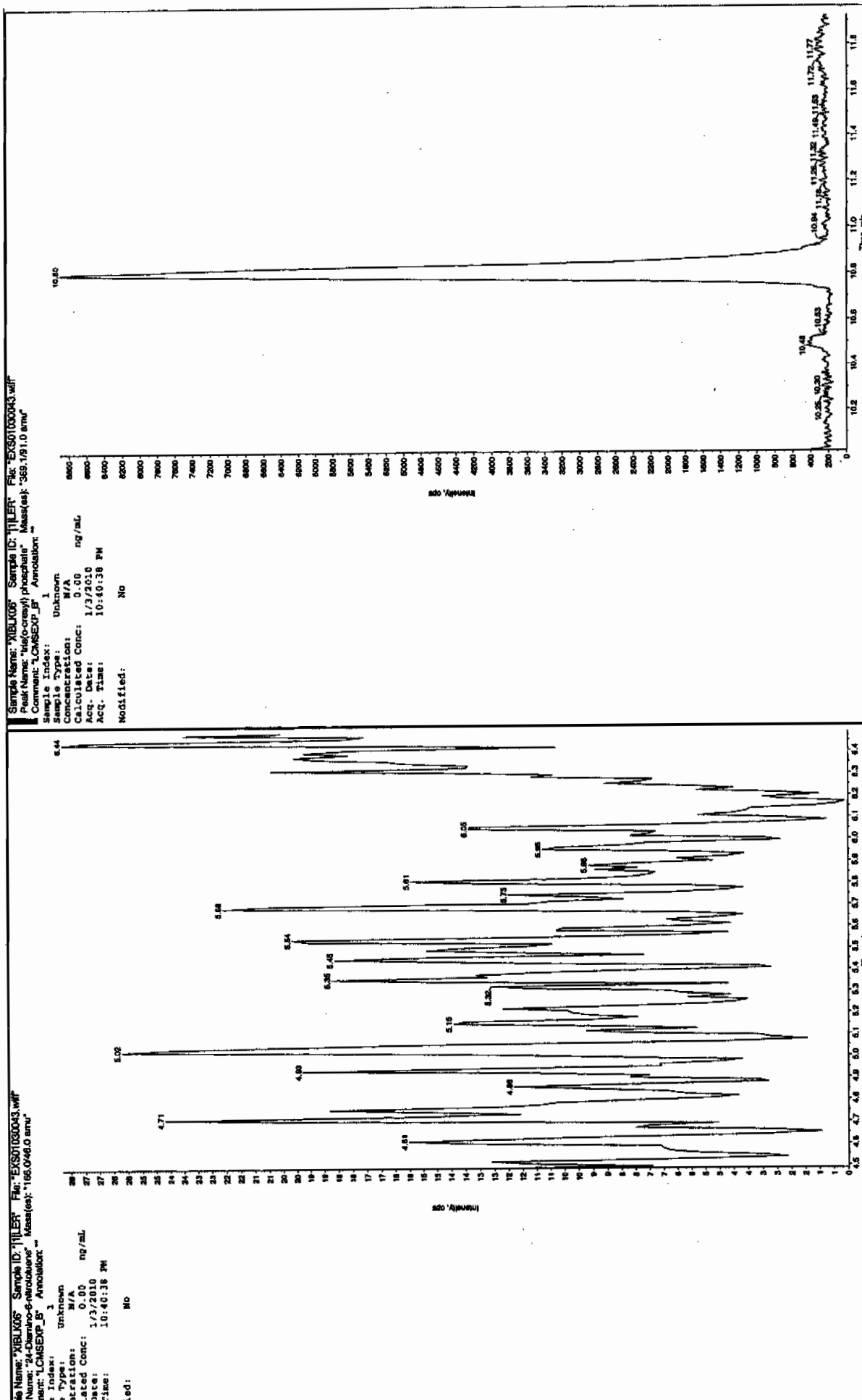


Sample Name: "XBLX06" Sample ID: "11111" File: "EX501030043.wif"  
 Peak Name: "25-Dinitro-4-nitrofluorene" Mass(es): "166.046.0 amu"  
 Comment: "LCMSXP\_B" Annotation: ""

e Index: 1  
 e Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Date: 1/3/2010  
 Time: 10:40:38 PM  
 Modified: No



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



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



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 03-JAN-10 23:12

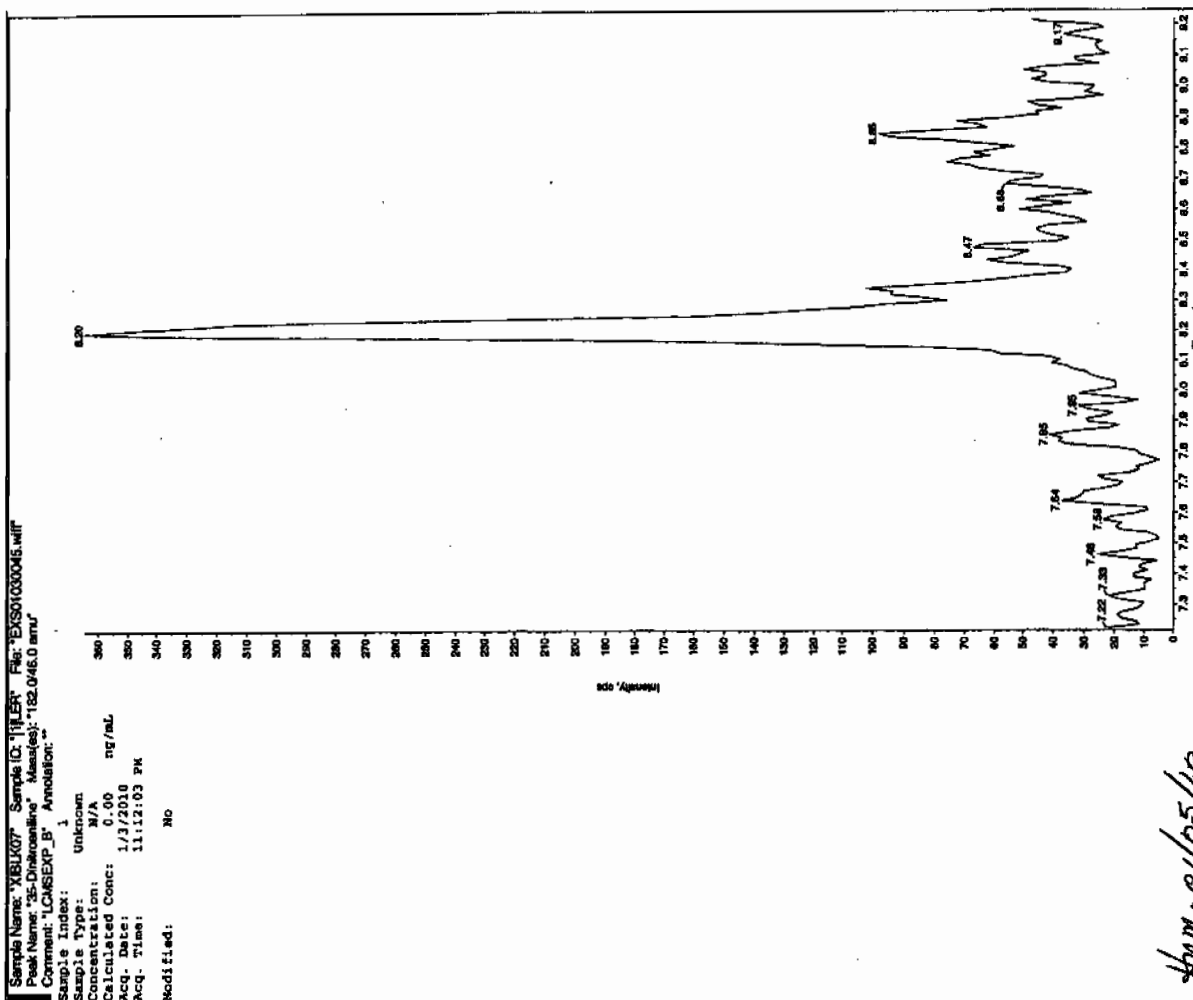
GEL Data File: EXS01030045.wiff

Instrument ID: LCMSMS

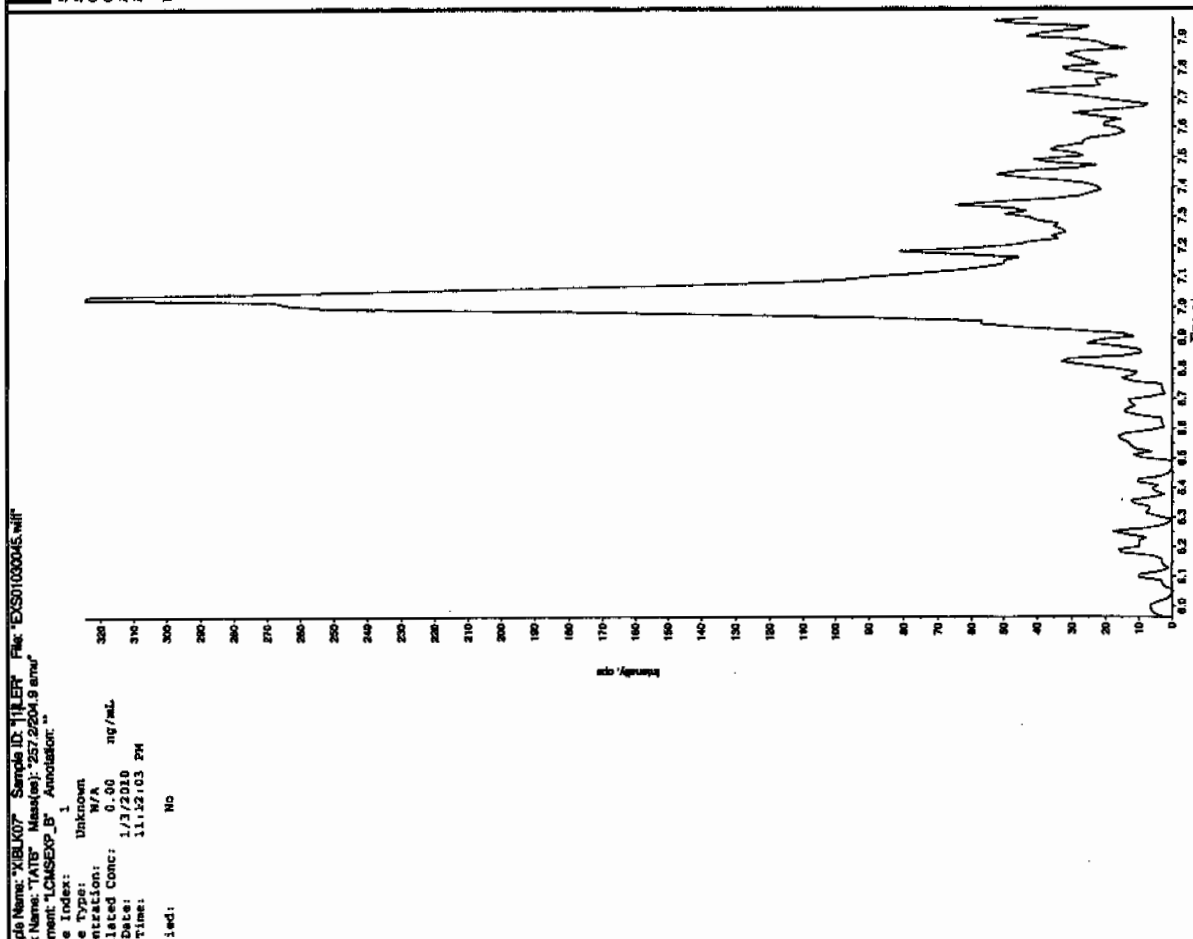
Column: Phenomenex Ultracarb 5u ODS(20)

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

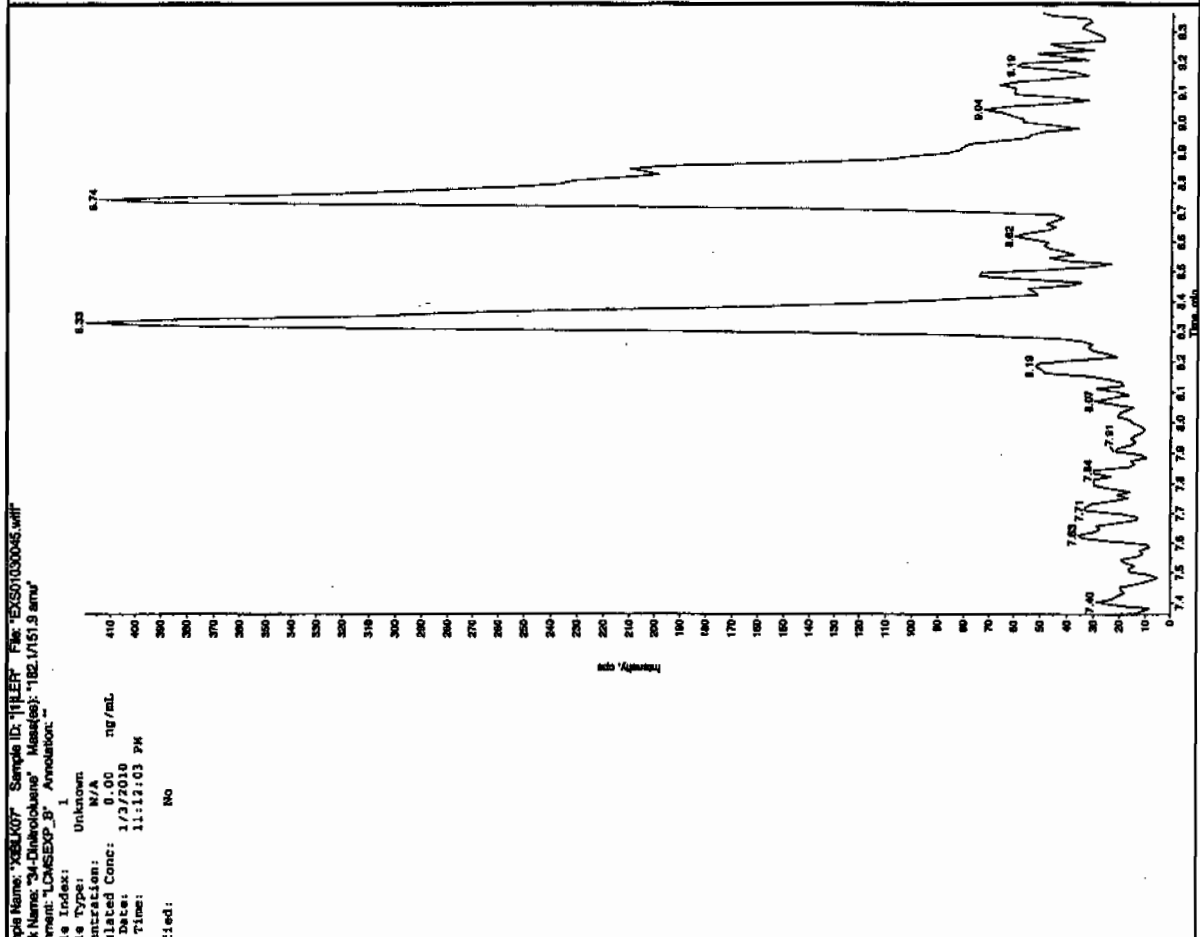
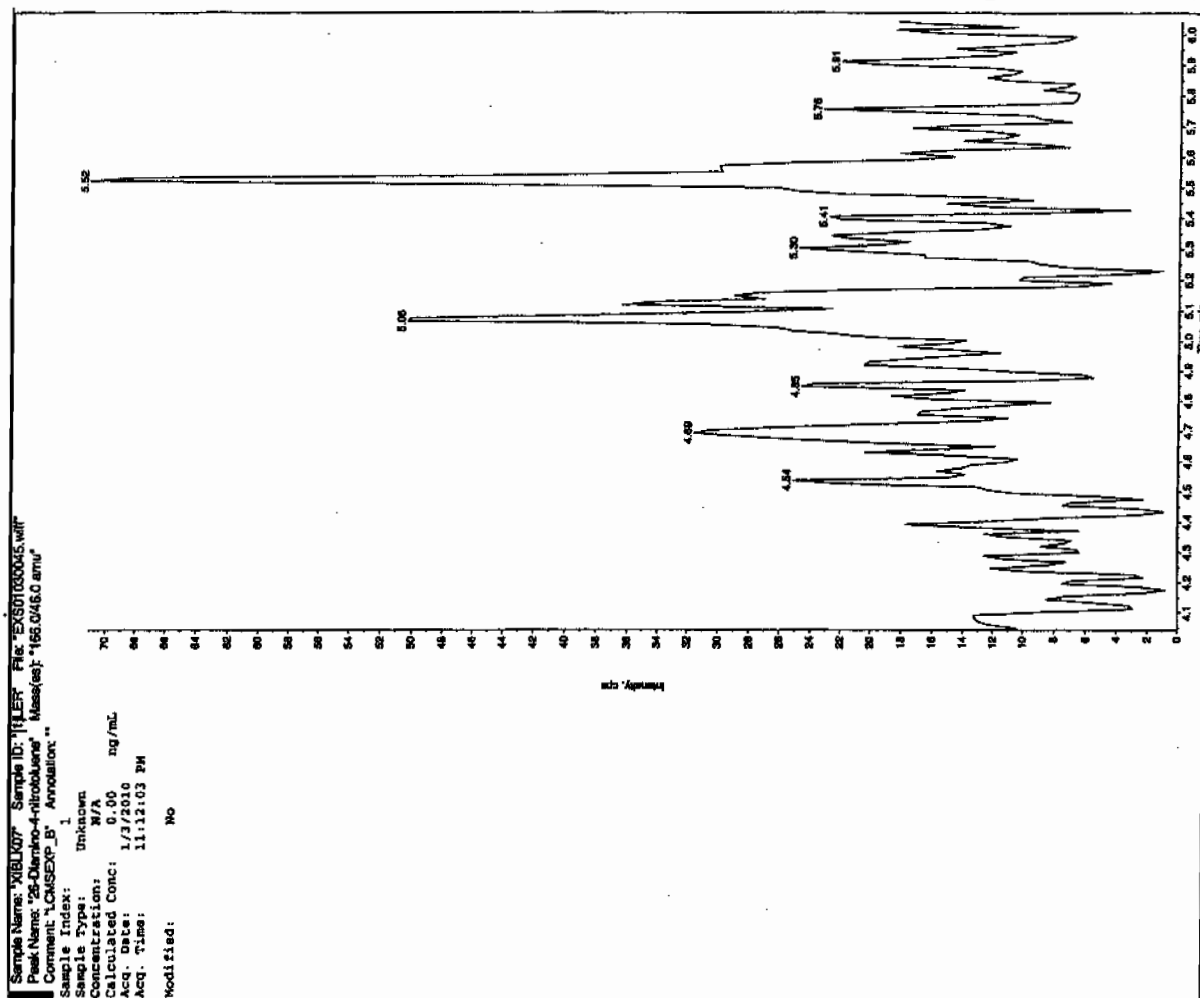
8021510



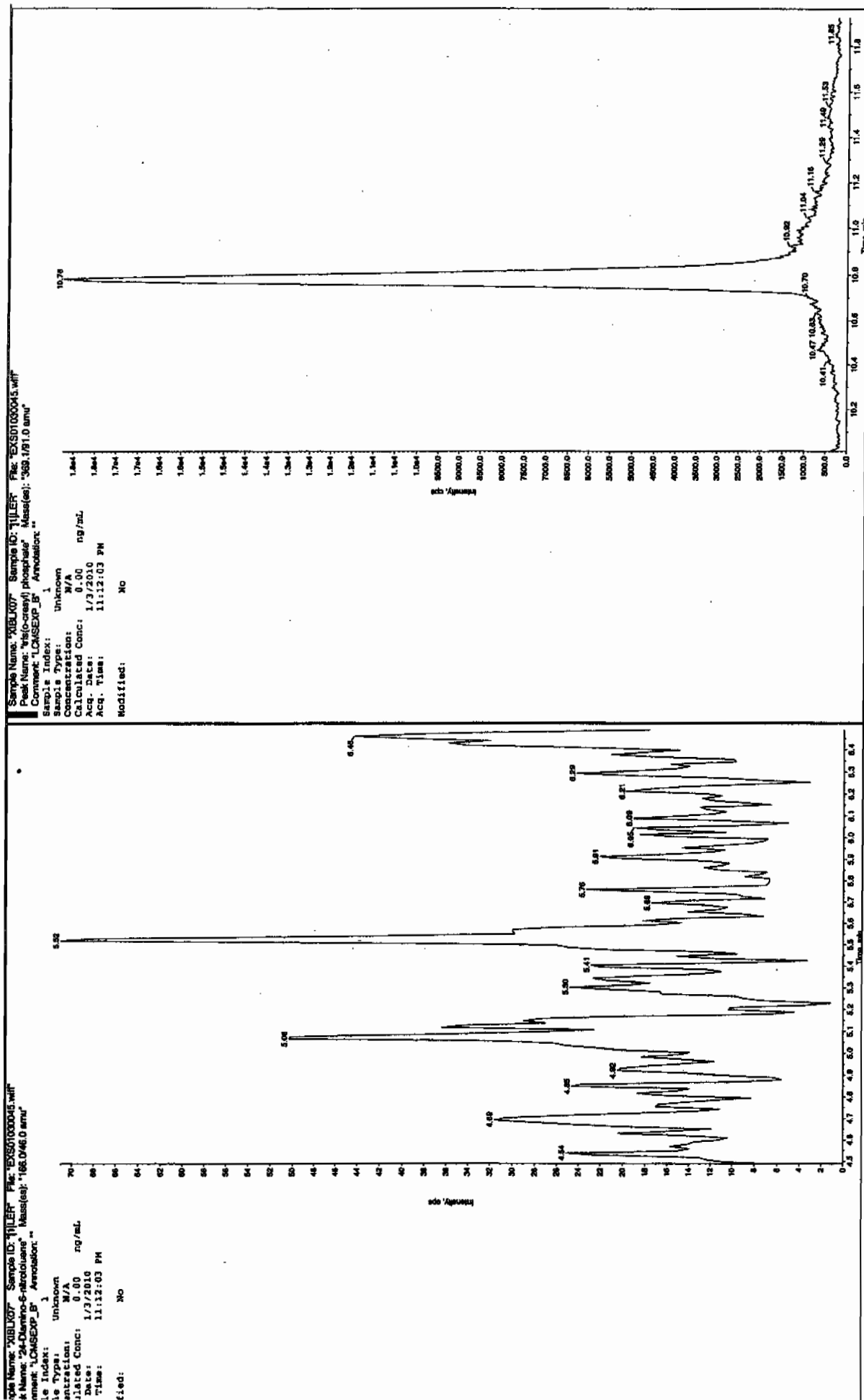
44m-01/05/18



3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 04-JAN-10 00:46

GEL Data File: EXS01030051.wiff

Instrument ID: LCMSMS

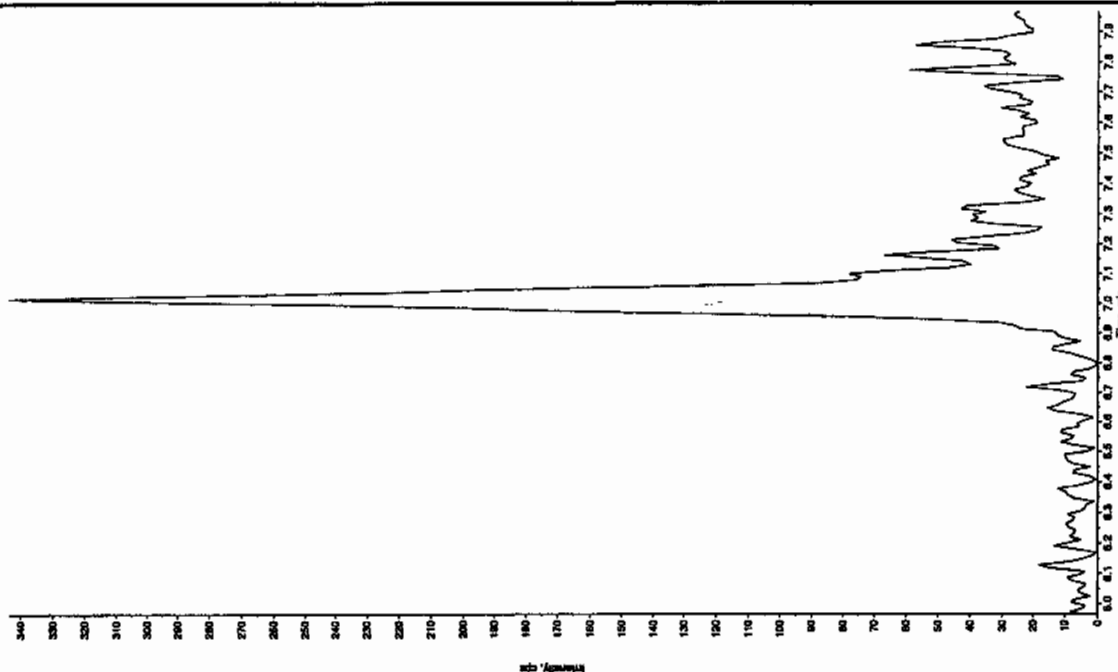
Column: Phenomenex Ultracarb 5u ODS(20)

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

802-1510

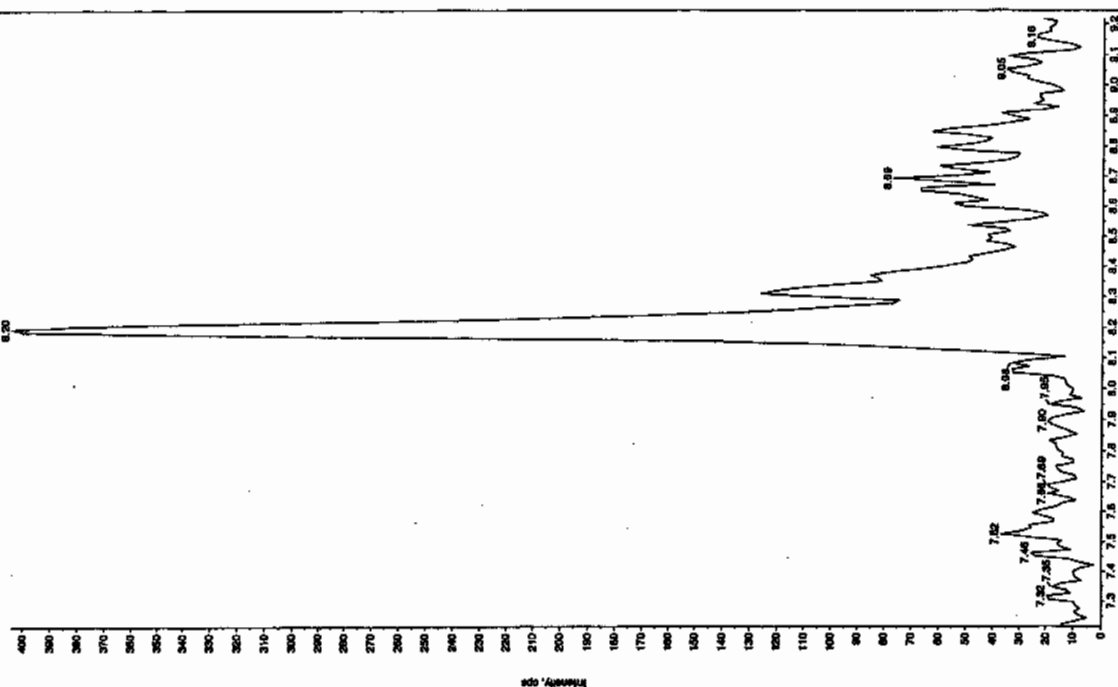
Sample Name: "821A" Sample ID: "1111" File: "EX501030051.wif"  
 Peak Name: "35-Chloroaniline" Mass(es): "182.046.0 amu"  
 Comment: "LMSEXP\_B" Annotation: "1"

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/4/2010  
 Acq. Time: 12:46:16 AM  
 Modified: No

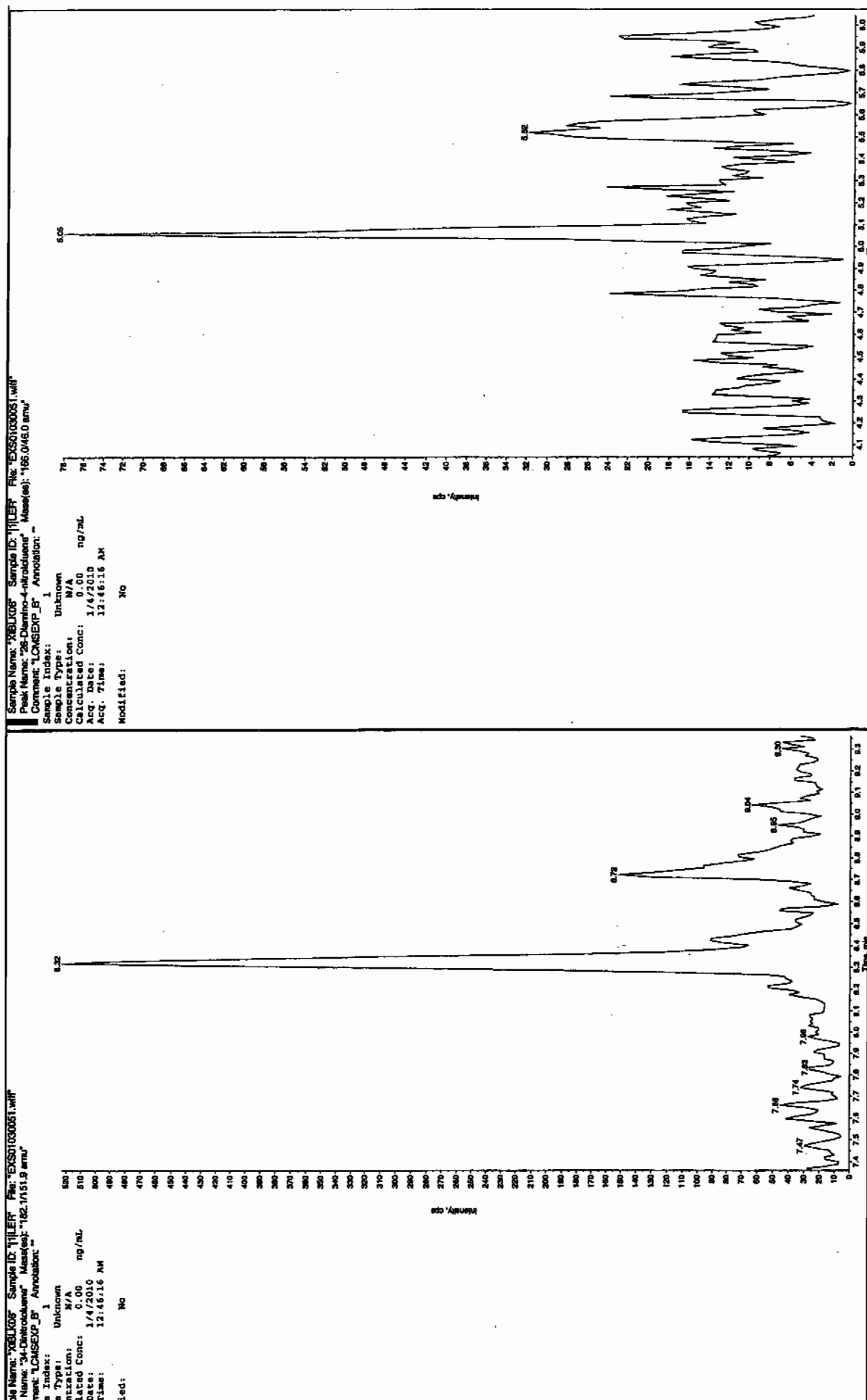


Sample Name: "821A" Sample ID: "1111" File: "EX501030051.wif"  
 Peak Name: "35-Chloroaniline" Mass(es): "182.046.0 amu"  
 Comment: "LMSEXP\_B" Annotation: "1"

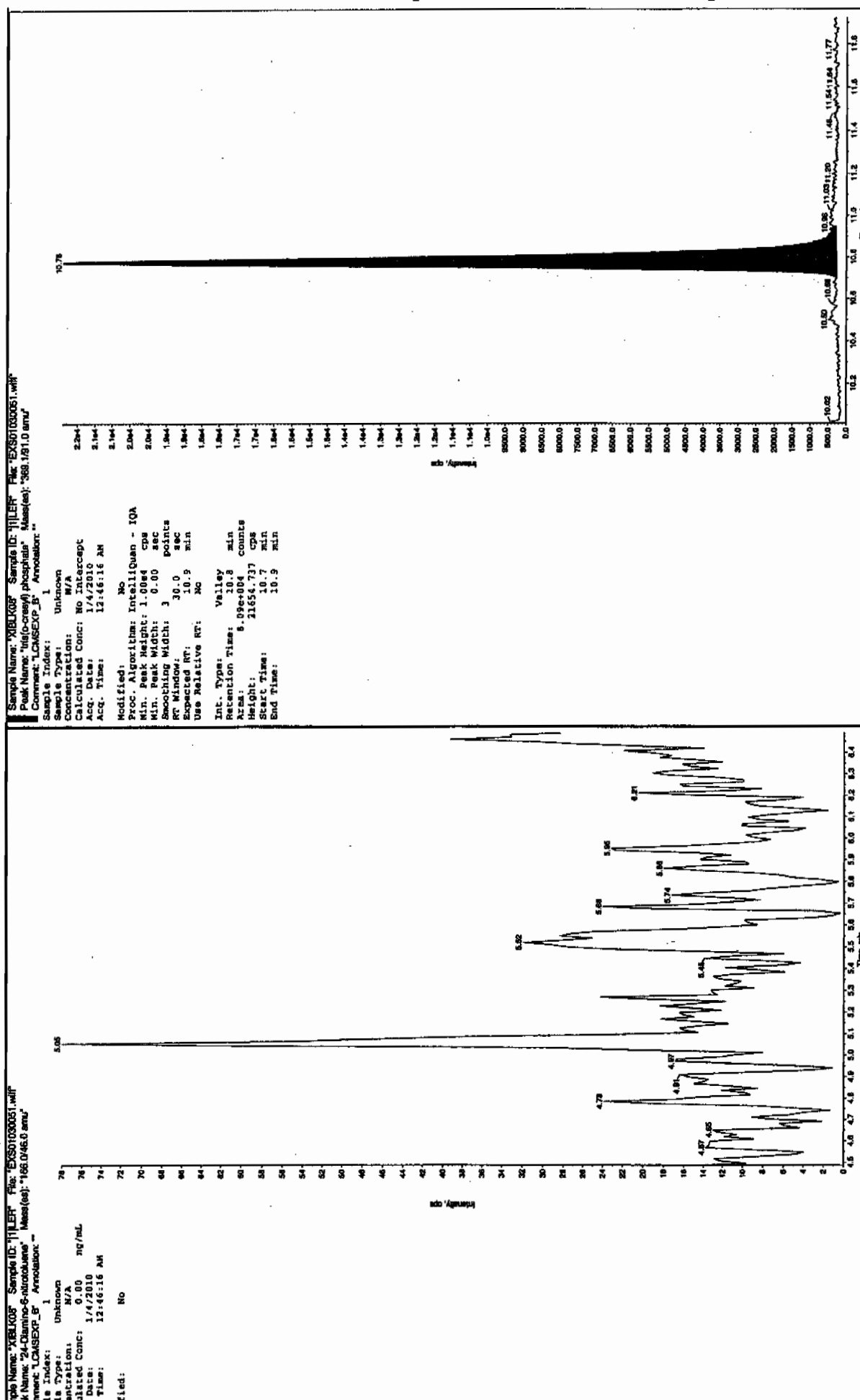
Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/4/2010  
 Acq. Time: 12:46:16 AM  
 Modified: No



4/11/05/10



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



3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-988

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 04-JAN-10 04:10

GEL Data File: EXS01030064.wiff

Instrument ID: LCMSMS

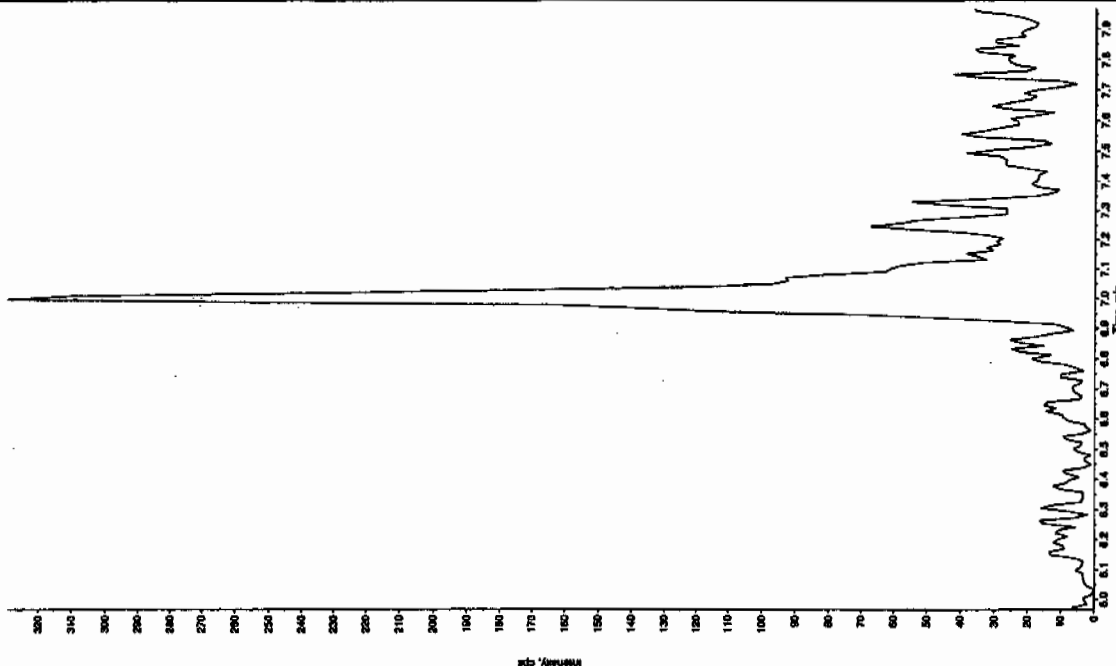
Column: Phenomenex Ultracarb 5u ODS(20)

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

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11/15/10

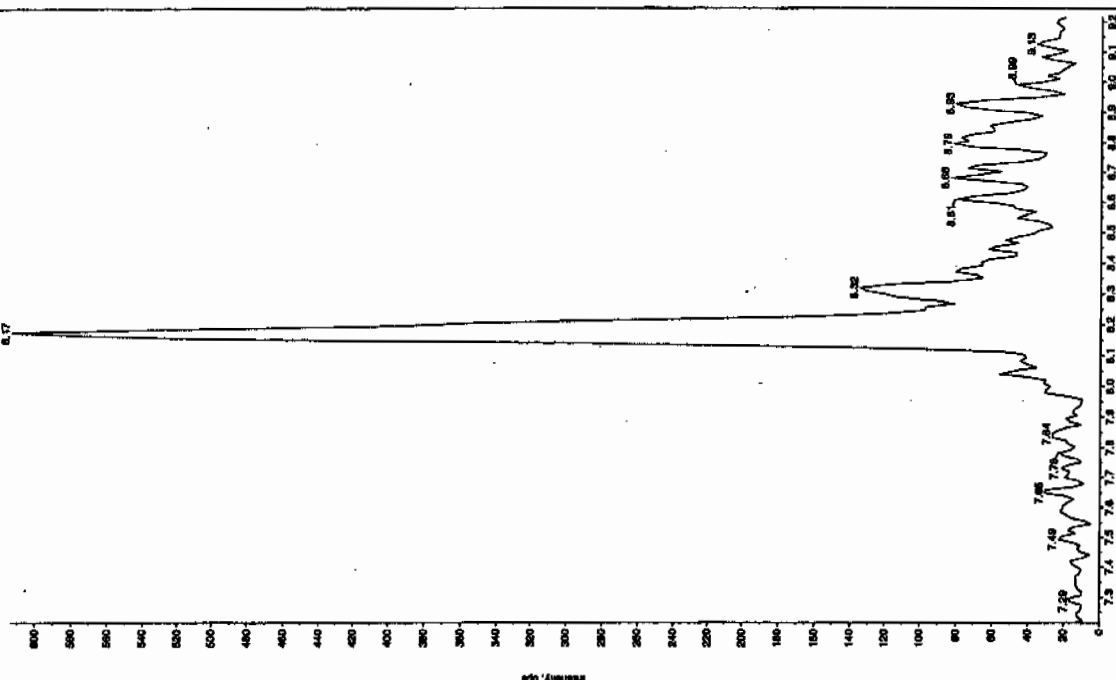
PR Name: "XBLK03" Sample ID: "TILER" File: "EXS01030364.wif"  
 (Name: "TATB" Mass(es): "257.2204.9 amu"  
 ment: "LCMSEXP\_B" Annotation: "

Index: 1  
 e Type: Unknown  
 Injection: 1  
 Injected Conc: 0.00 ng/mL  
 Date: 1/4/2010  
 Time: 4:10:24 AM  
 Iod: No



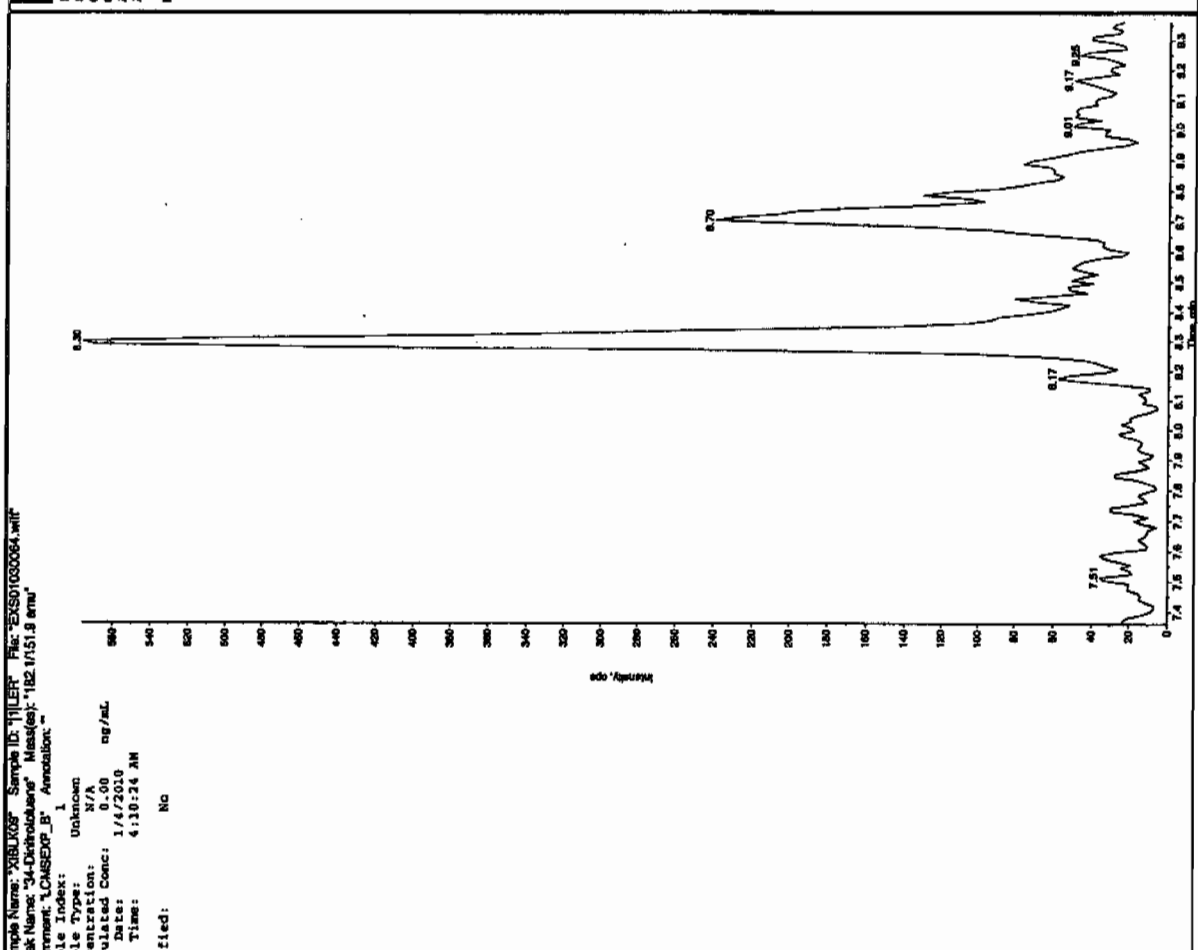
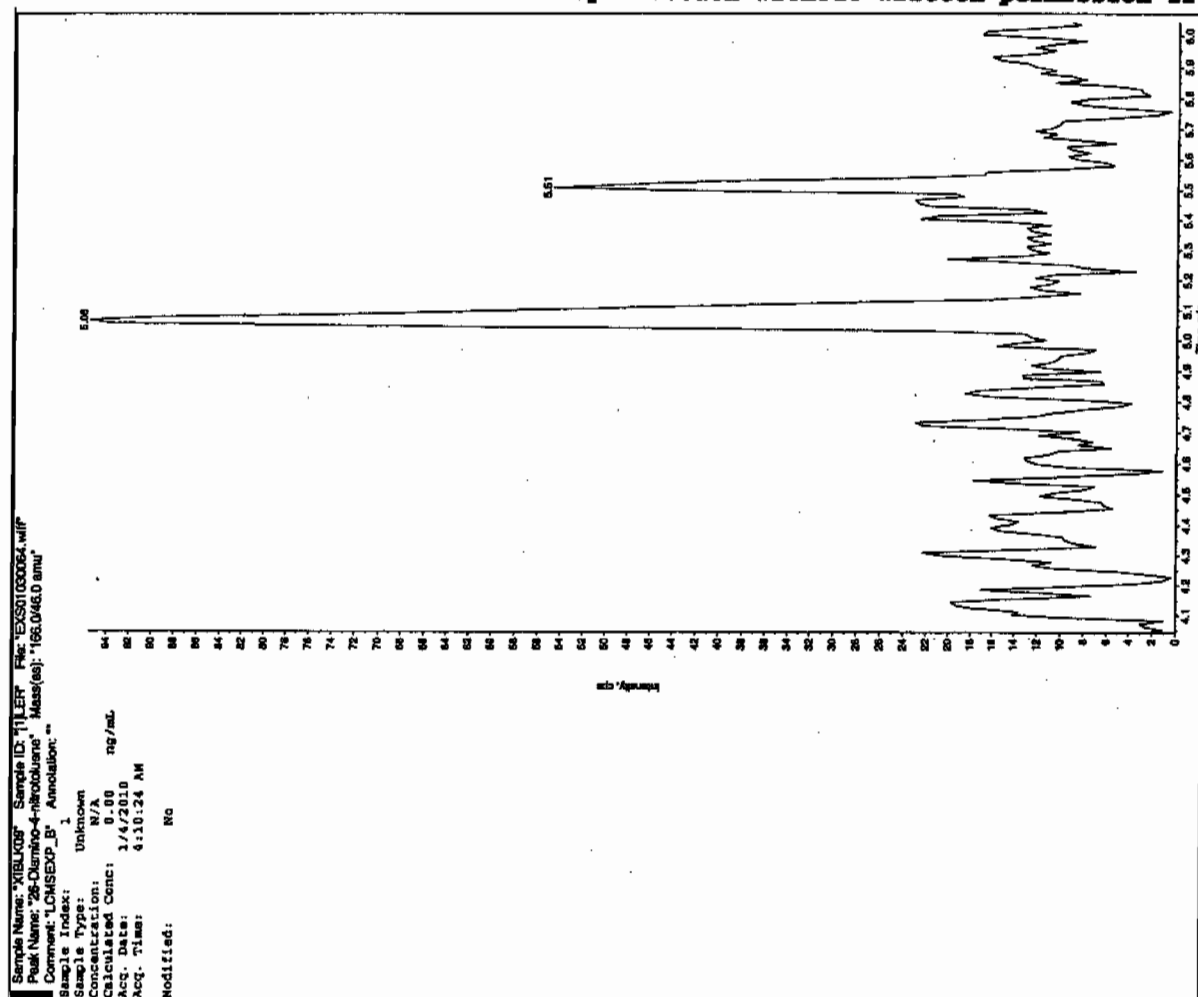
Sample Name: "XBLK03" Sample ID: "TILER" File: "EXS01030364.wif"  
 Peak Name: "35-Oxotropane" Mass(es): "182.046.0 amu"  
 Comment: "LCMSEXP\_B" Annotation: "

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: n/a  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/4/2010  
 Acq. Time: 4:10:24 AM  
 Modified: No

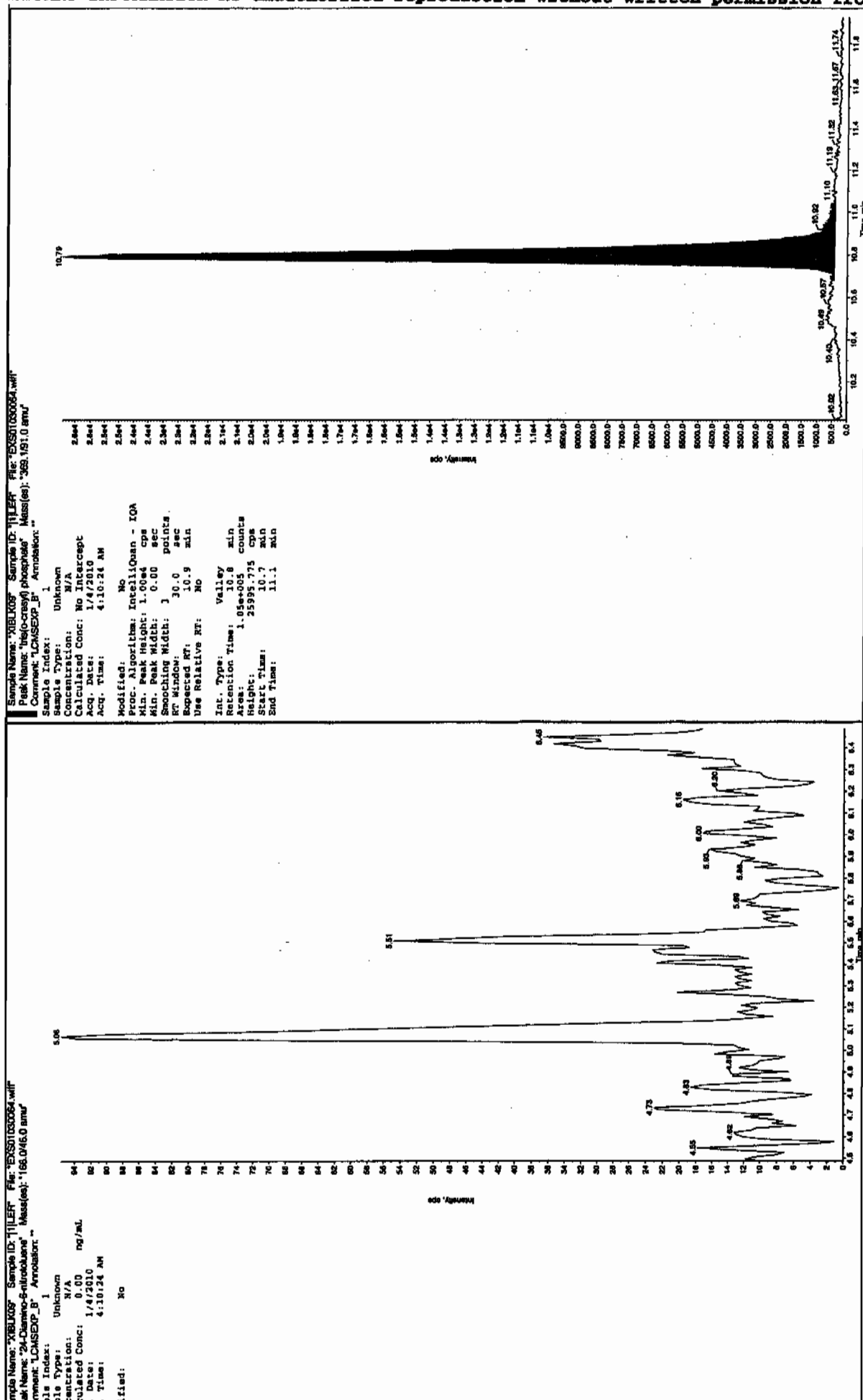


HW-01/05/10

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 LCMSEXP#4

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

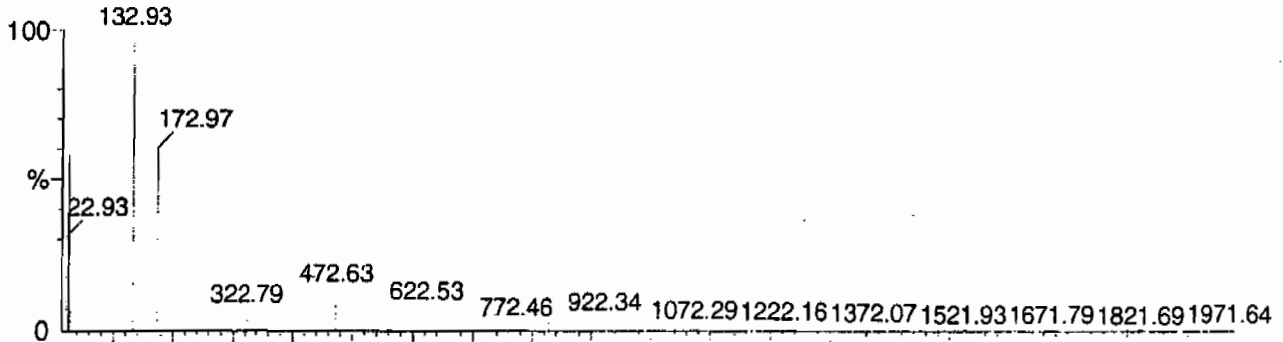
Calibration Report - MS1 Static

Page 1 of 1

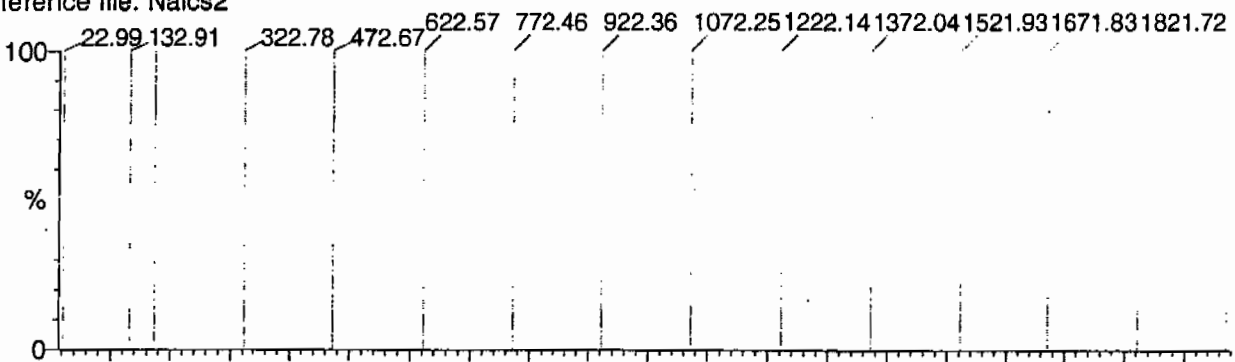
Printed: Fri Aug 25 10:50:01 2006

Data file: STATMS1 - Calibrated

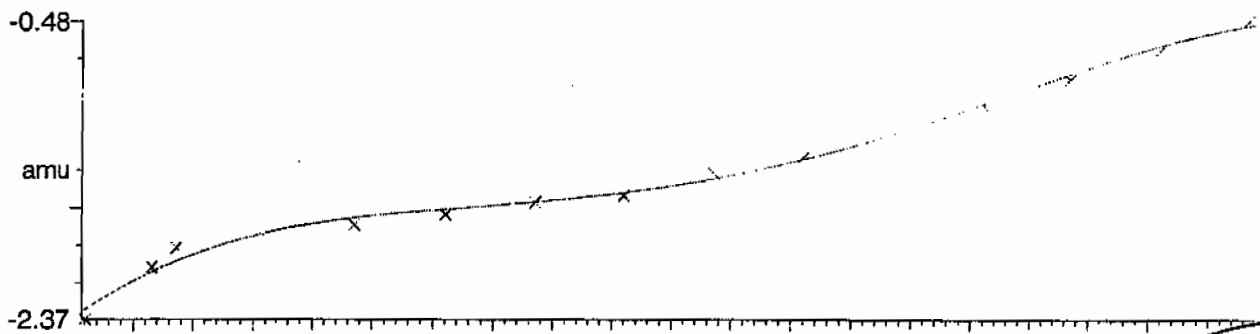
15 matches of 15 tested references



Reference file: Naics2

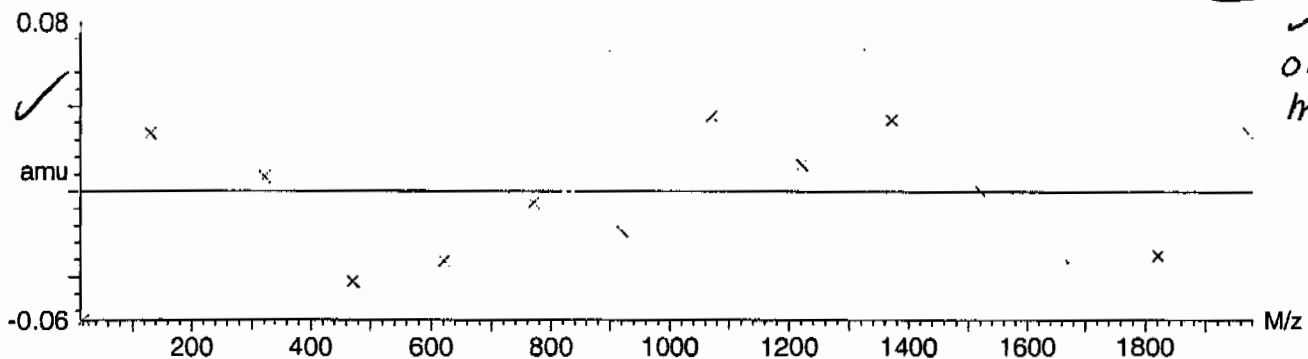


Mass difference (Raw - Ref mass)



Residuals

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



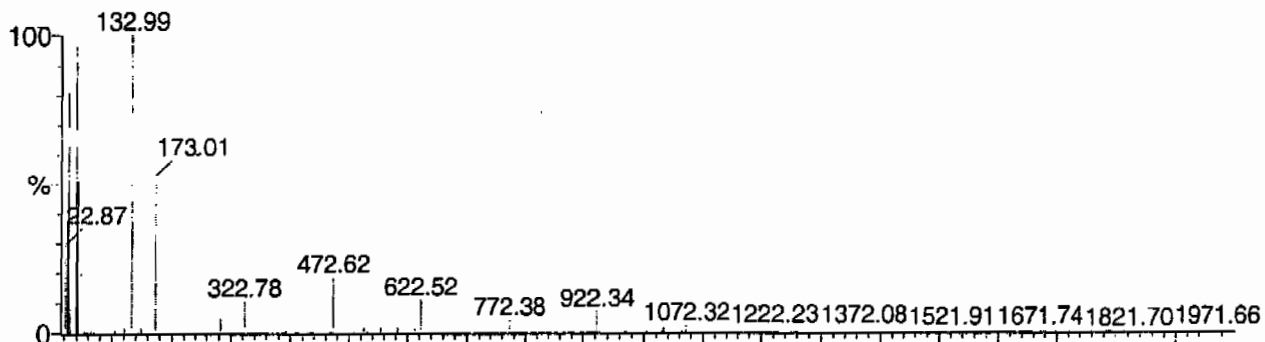
Calibration Report - MS1 Scanning

Page 1 of 1

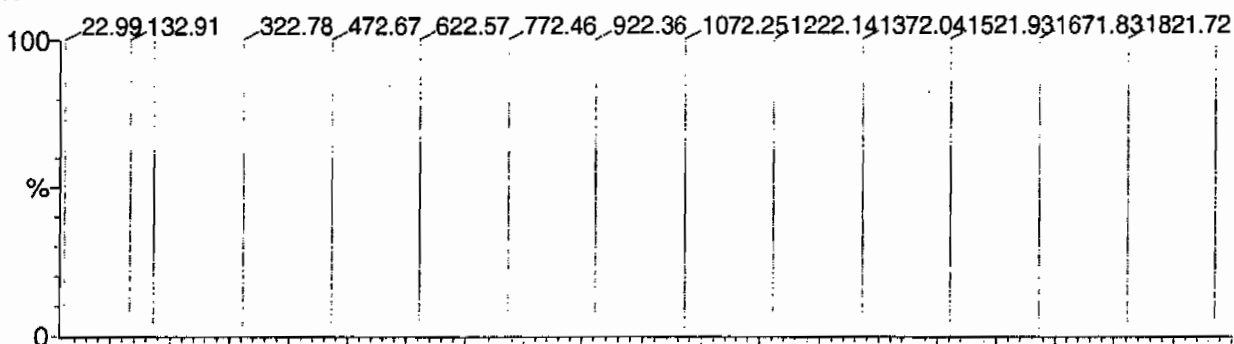
Printed: Fri Aug 25 10:51:06 2006

Data file: SCNMS1 - Calibrated

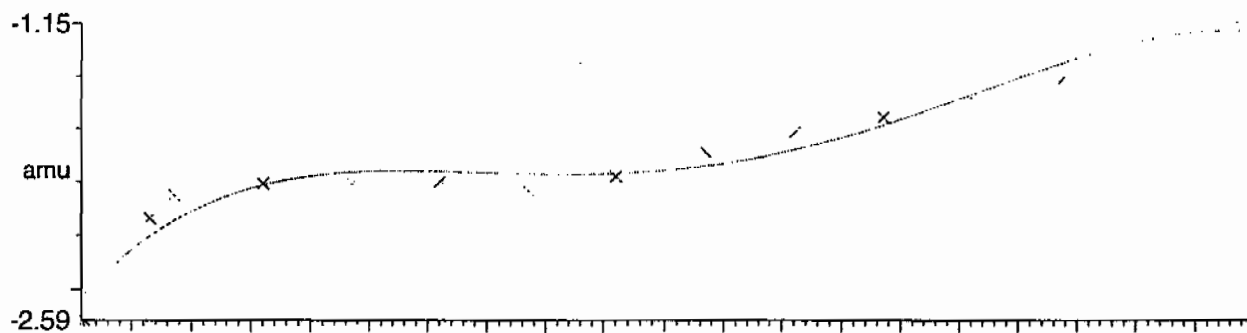
15 matches of 15 tested references



Reference file: Naics2

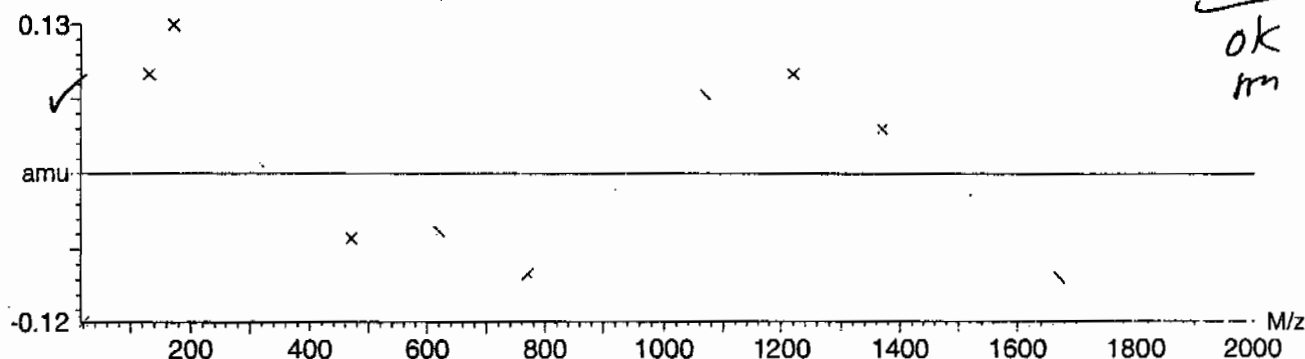


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $-5.432715 \times 10^{-9} \pm 0.069858$



ok  
rm

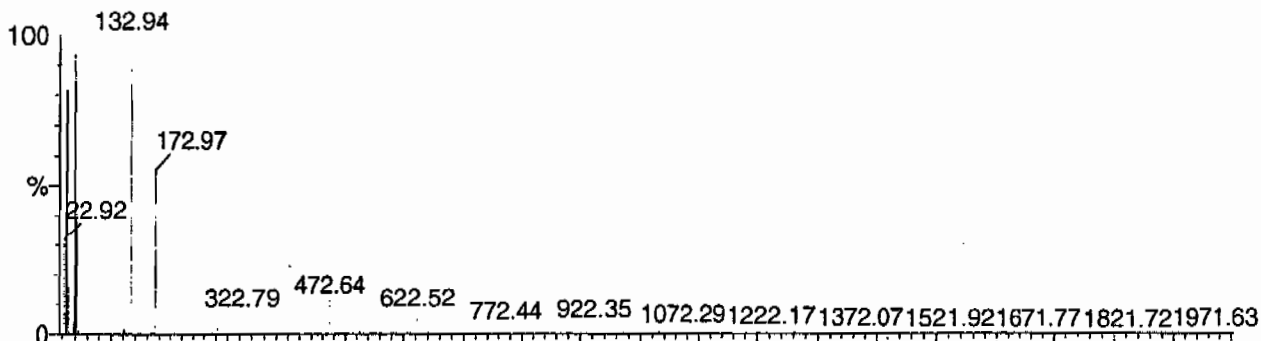
Calibration Report - MS1 Scan Speed Compensation

Page 1 of 1

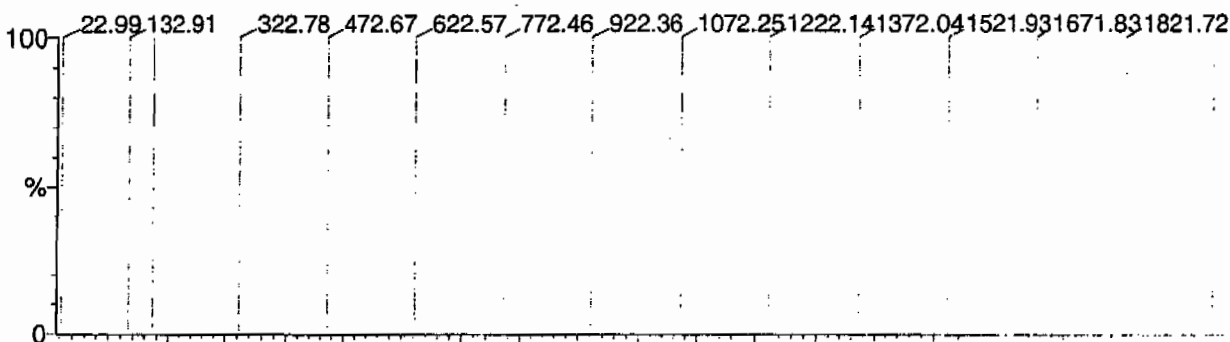
Printed: Fri Aug 25 10:52:01 2006

Data file: FASTMS1 - Calibrated

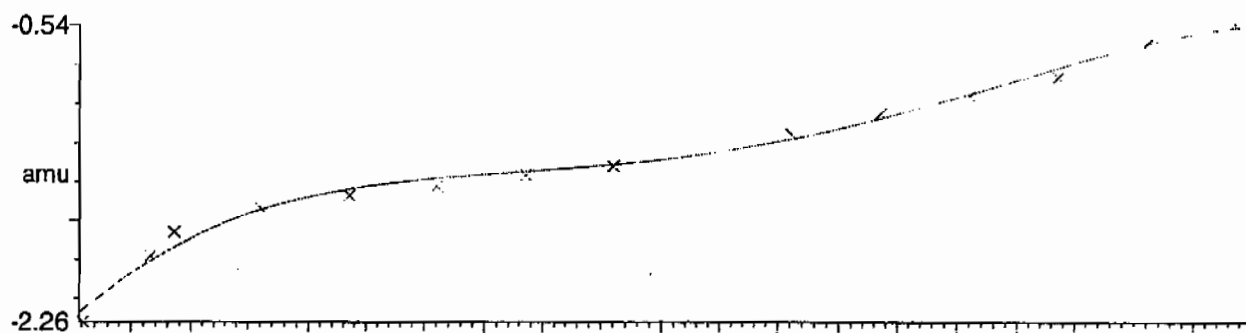
15 matches of 15 tested references



Reference file: Naics2

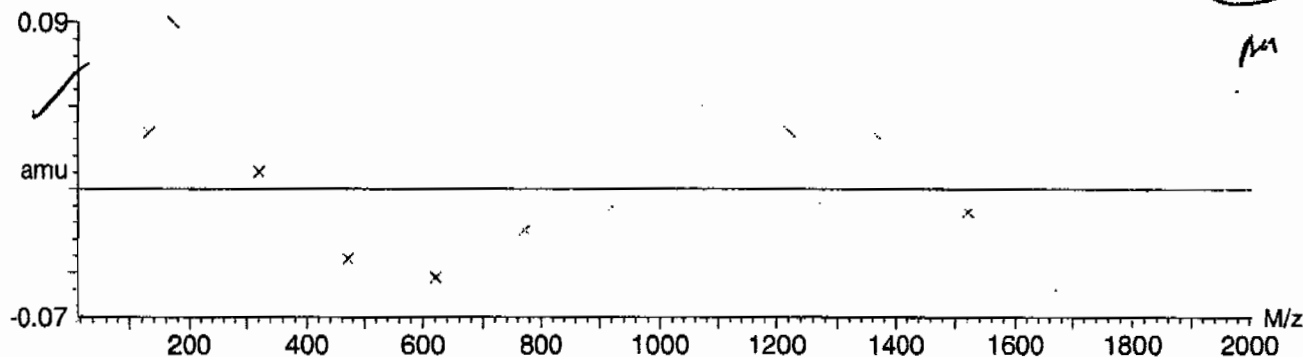


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $3.486639e-9 \pm 0.040487$





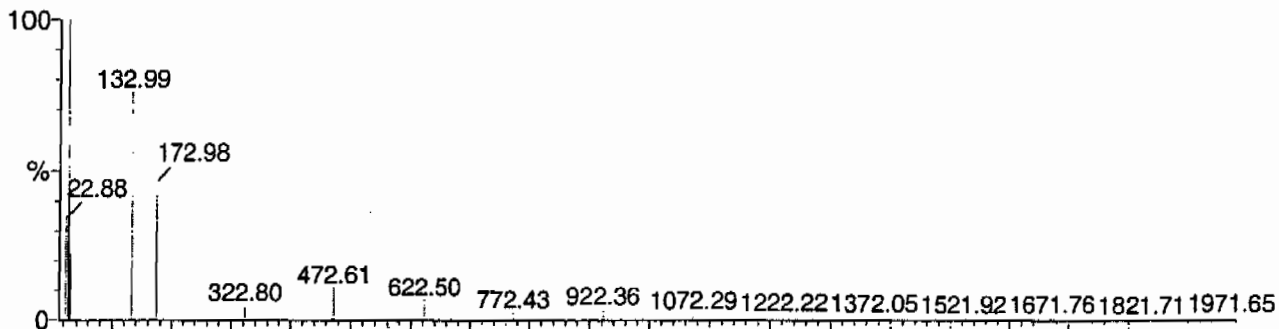
Calibration Report - MS2 Static

Page 1 of 1

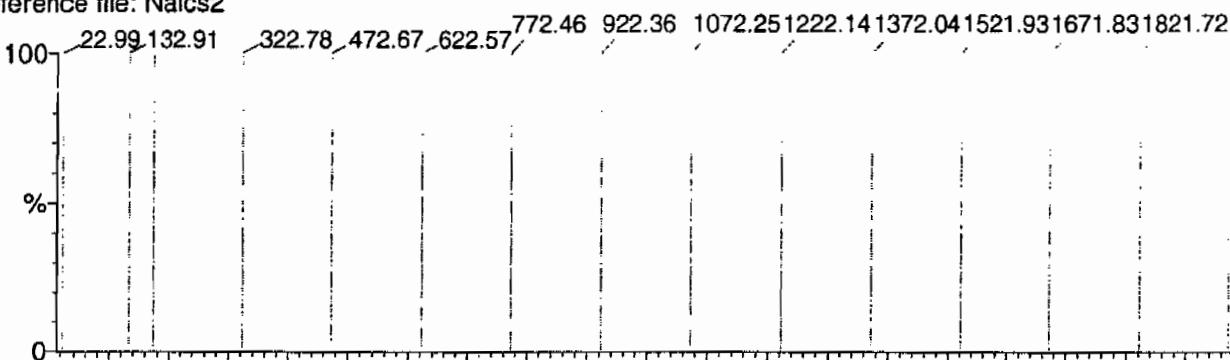
Printed: Fri Aug 25 10:52:54 2006

Data file: STATMS2 - Calibrated

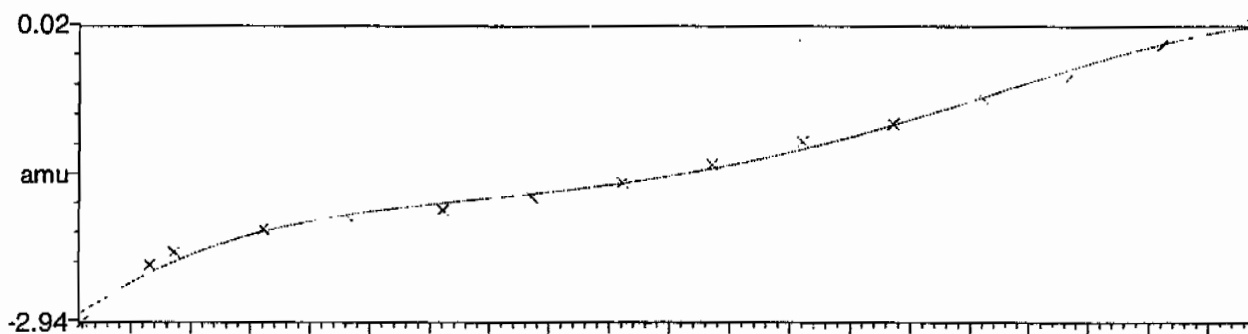
15 matches of 15 tested references



Reference file: Naics2

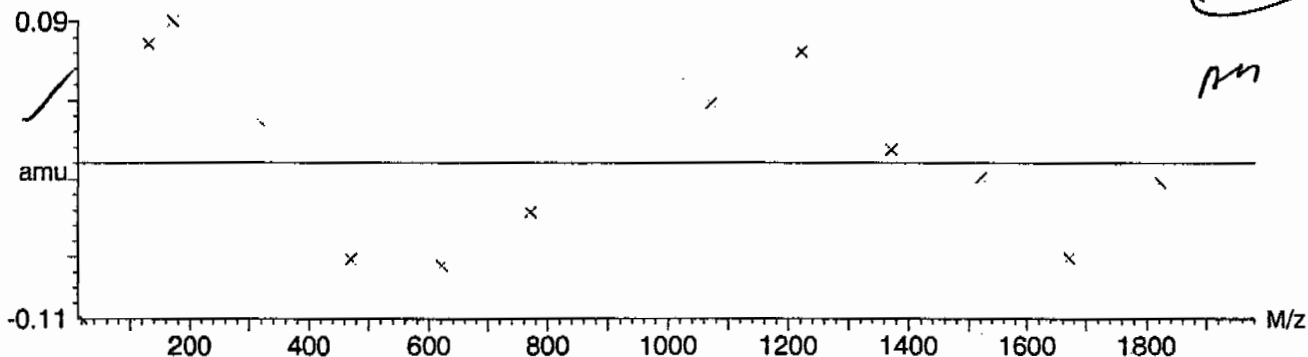


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $2.048910 \times 10^{-9} \pm 0.057803$



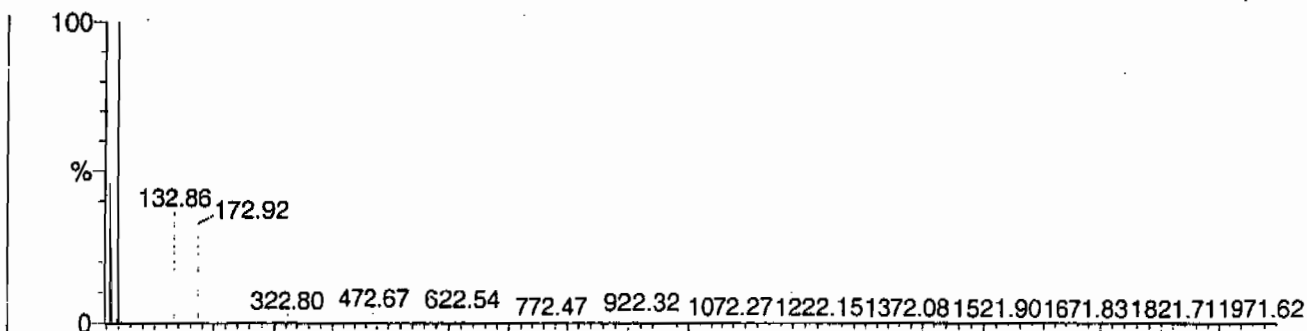
Calibration Report - MS2 Scanning

Page 1 of 1

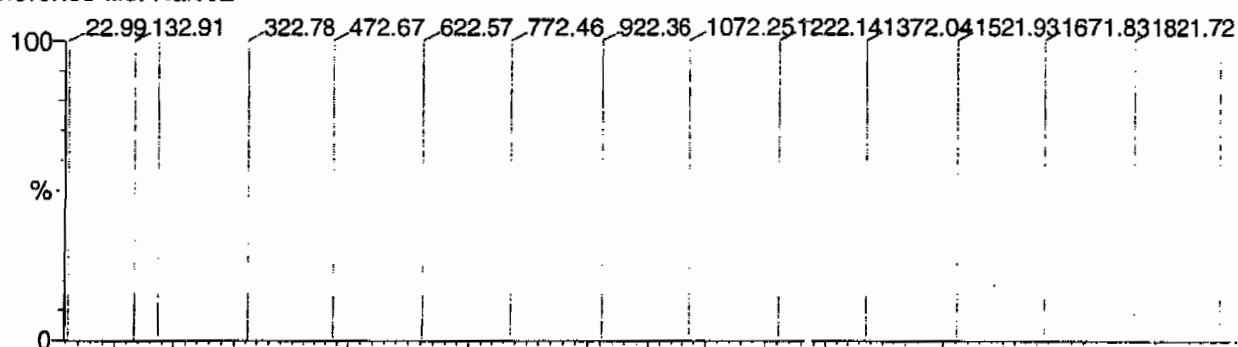
Printed: Fri Aug 25 10:54:00 2006

Data file: SCNMS2 - Calibrated

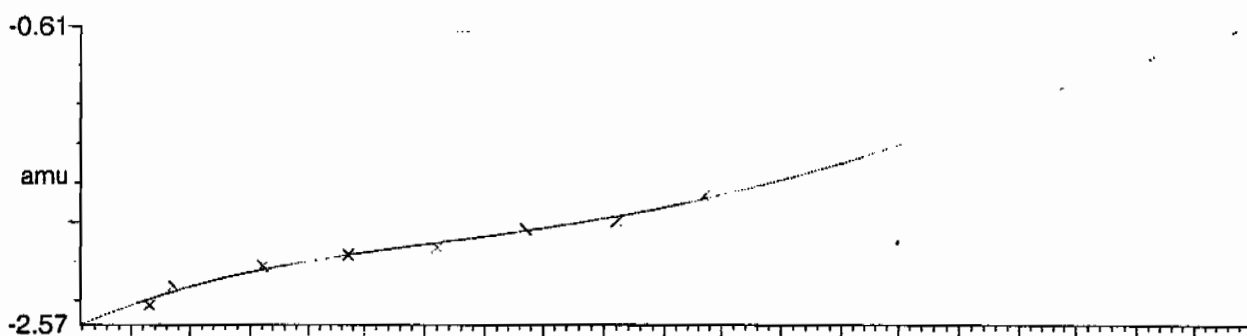
14 matches of 15 tested references



Reference file: Naics2

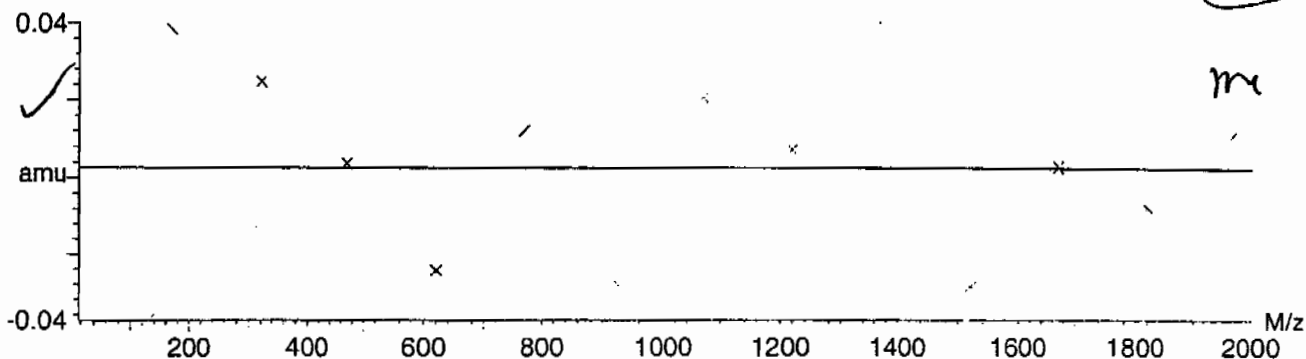


Mass difference (Raw - Ref mass)



Residuals

Mean residual =  $-2.623502e-9 \pm 0.025622$



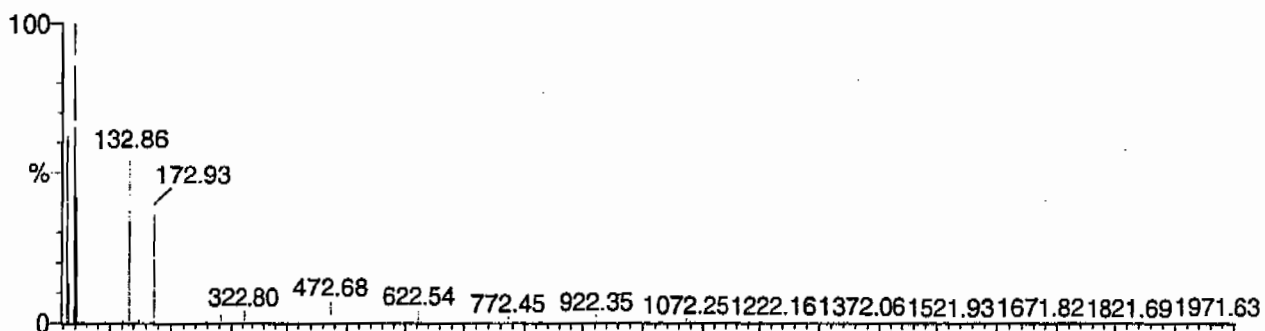
Calibration Report - MS2 Scan Speed Compensation

Page 1 of 1

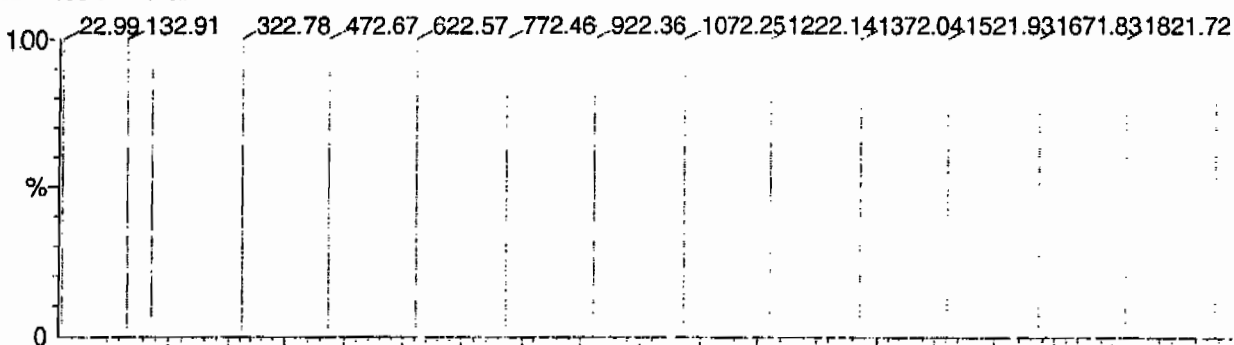
Printed: Fri Aug 25 10:54:54 2006

Data file: FASTMS2 - Calibrated

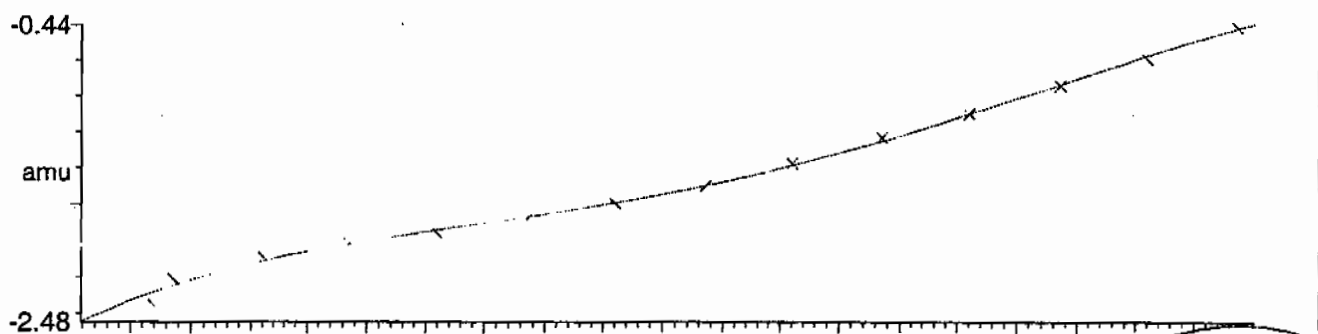
14 matches of 15 tested references



Reference file: Naics2

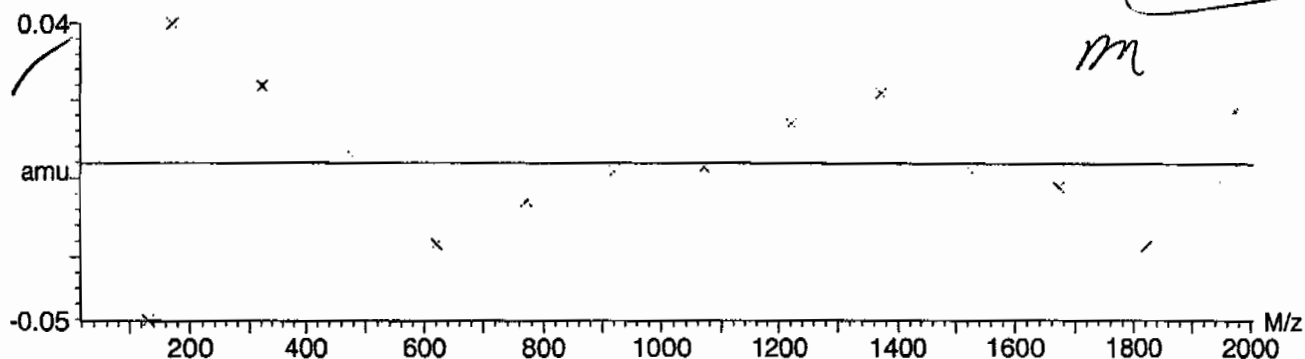


Mass difference (Raw - Ref mass)



Residuals

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

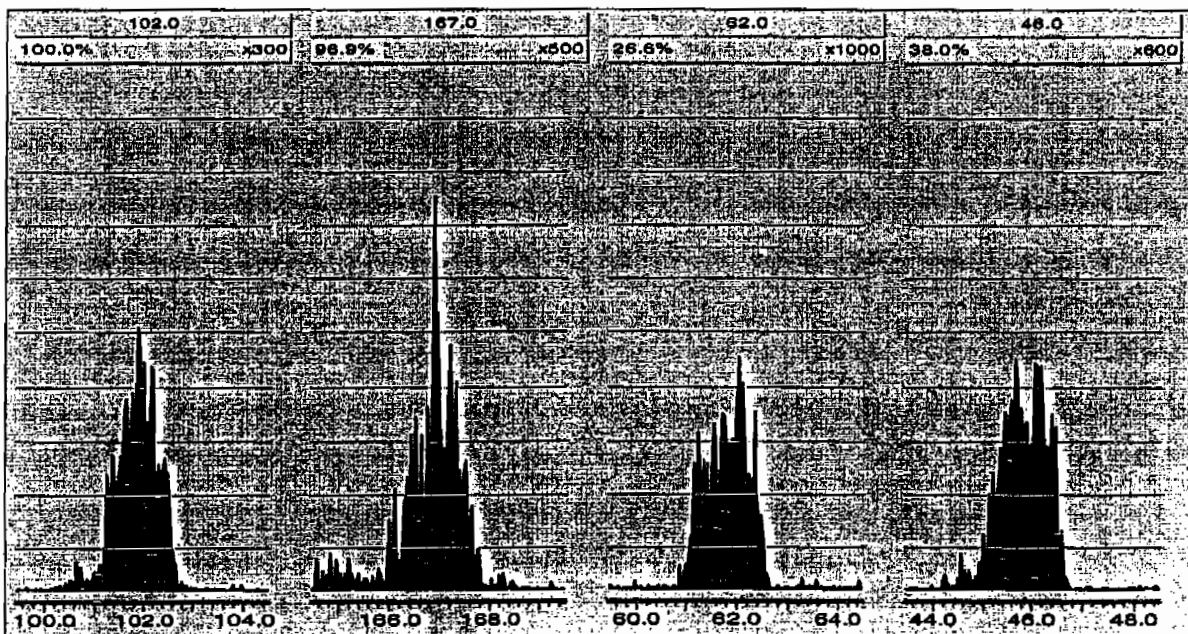


Quattro Micro Tune Parameters

Page 1

Parameter File: C:\MASSLYNX\NEW\_EXP.PRO\ACQUDB\explosives04.IPR

Printed : Sat Jan 02 13:30:25 2010



High Explosives Internal Standard Summary

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-988

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) #
			2374.997	11.966	13746.65	17.25
Upper Limit			3087.4961	12.466	17870.645	17.75
Lower Limit			1662.4979	11.466	9622.655	16.75
MB for batch 935247	03-jan-10 15:37	EXP0102054a	2755.89	11.947	16086.8	17.201
RE12-10-7351	03-jan-10 23:00	EXP0102069a	2666.99	11.944	14853.9	17.216
LCS for batch 935247	04-jan-10 21:38	EXP0102115a	3414.07 *	11.946	20452.6 *	17.204

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: RE12-10-7351

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 243273001

Sample Amount 2

Moisture: 10.5

Amount Units g

Date Received: 18-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0102069a

Date Analyzed: 03-JAN-10 23:00

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  
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102069a

Date: 03-Jan-2010

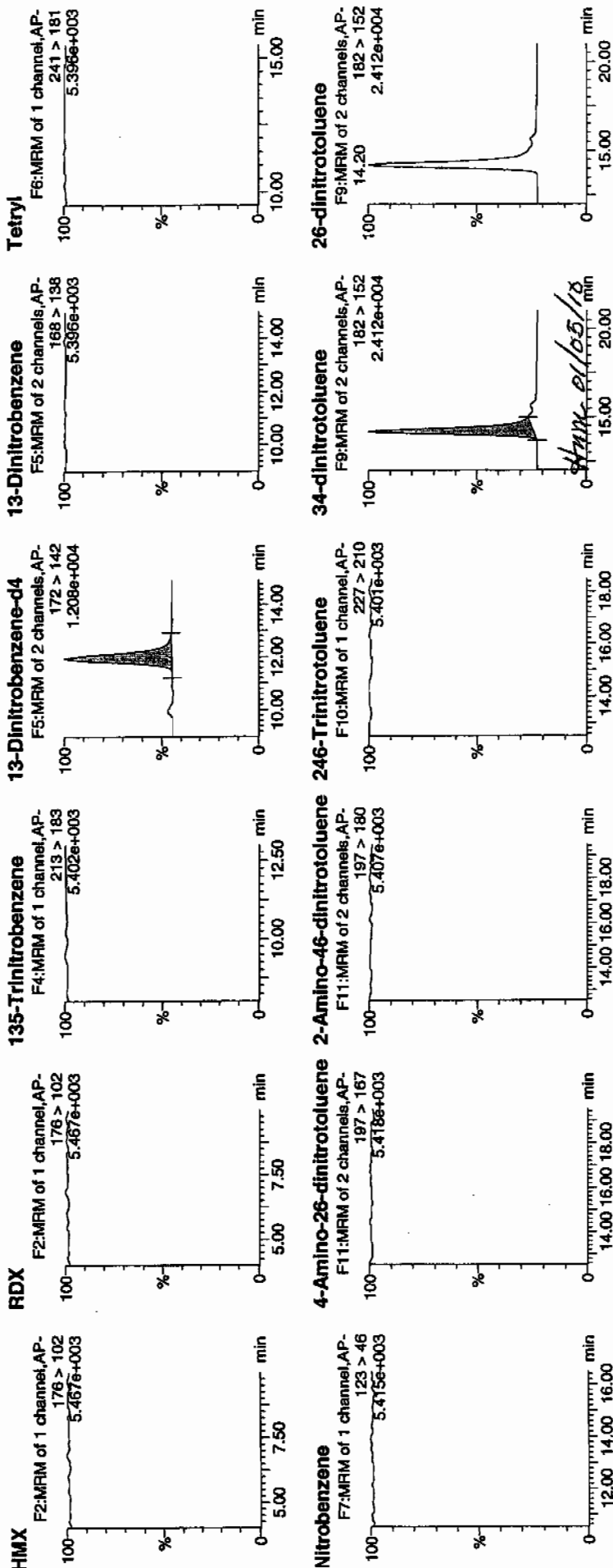
Time: 23:00:20

ID: 243273001

Vial: 2:6,F

1/4/10

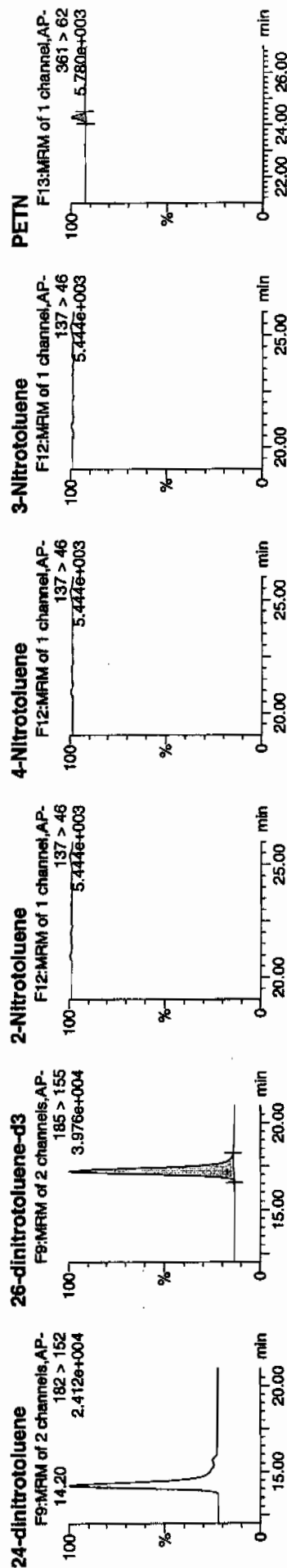
935248 / 8232 / 21





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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



ID	Name	Trace	176 > 102	176 > 102	213 > 183	172 > 142	168 > 138	241 > 181	123 > 46	197 > 167	197 > 180	227 > 210	182 > 152	182 > 152	182 > 152	185 > 155	137 > 46	137 > 46	137 > 46	361 > 62	
243273001	HMX																				
243273001	RDX																				
243273001	135-Trinitrobenzene																				
243273001	13-Dinitrobenzene-d4																				
243273001	13-Dinitrobenzene																				
243273001	Tetryl																				
243273001	Nitrobenzene																				
243273001	4-Amino-26-dinitrotoluene																				
243273001	2-Amino-46-dinitrotoluene																				
243273001	246-Trinitrotoluene																				
243273001	34-dinitrotoluene																				
243273001	26-dinitrotoluene																				
243273001	26-dinitrotoluene-d3																				
243273001	2-Nitrotoluene																				
243273001	4-Nitrotoluene																				
243273001	3-Nitrotoluene																				
243273001	PETN																				

1

# High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7351

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 243273001

Sample Amount 2

Moisture: 10.5

Amount Units g

Date Received: 18-DEC-09

Extraction Type Sonication

Extraction Batch ID: 235247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01030059.wiff

Date Analyzed: 04-JAN-10 02:51

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

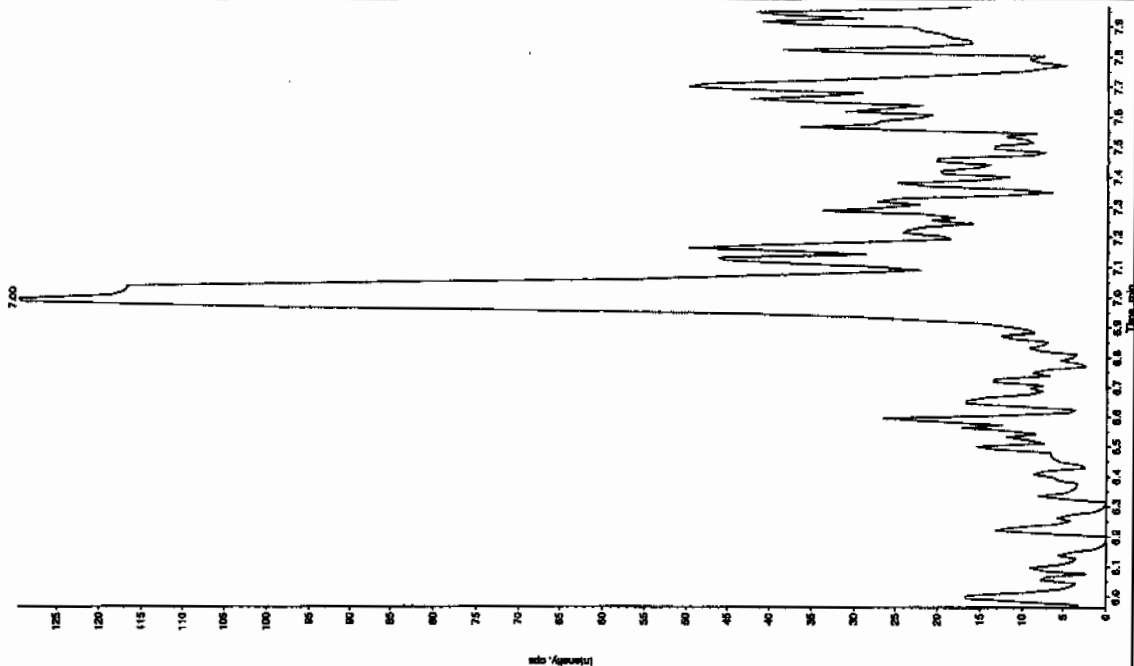
\*Concentration =

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

8/2/11

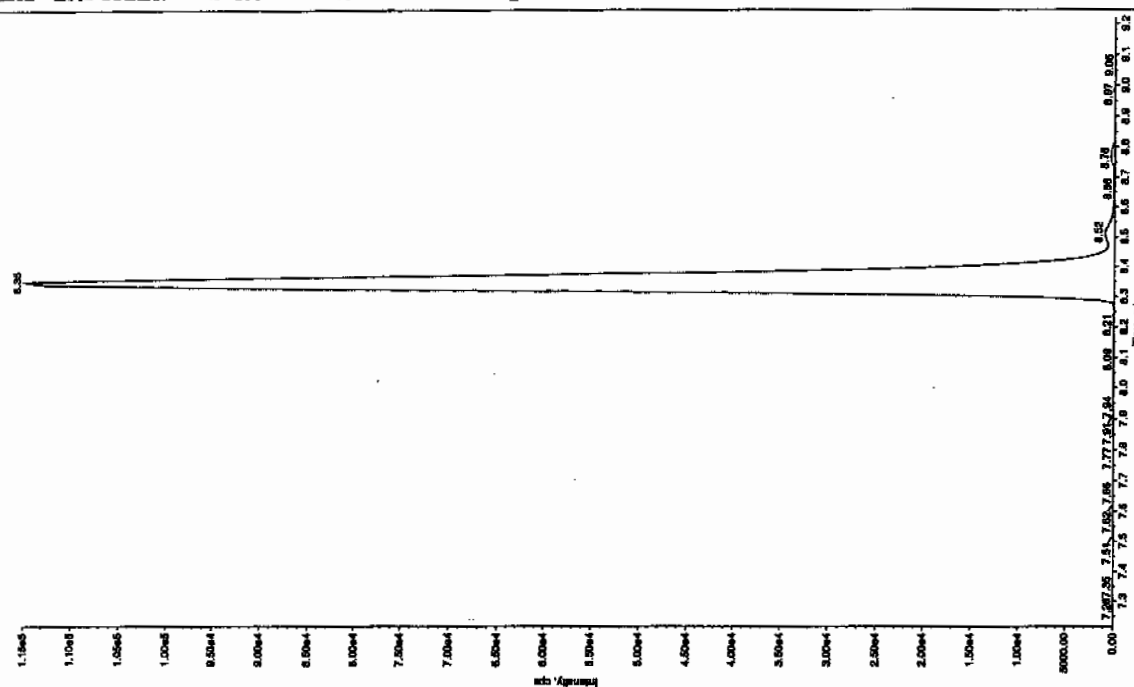
Sample Name: "243273001" Sample ID: "33324851.ER" File: "EX601030059.wif"  
 Peak Name: "TAIB" Mass(es): "257.2004.9 amu"  
 Comment: "LCX032125" Annotation: "1"

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Calculated Conc: 1/4/2010  
 Acq. Date: 2:51:53 AM  
 Acq. Time: 2:51:53 AM  
 Modified: No

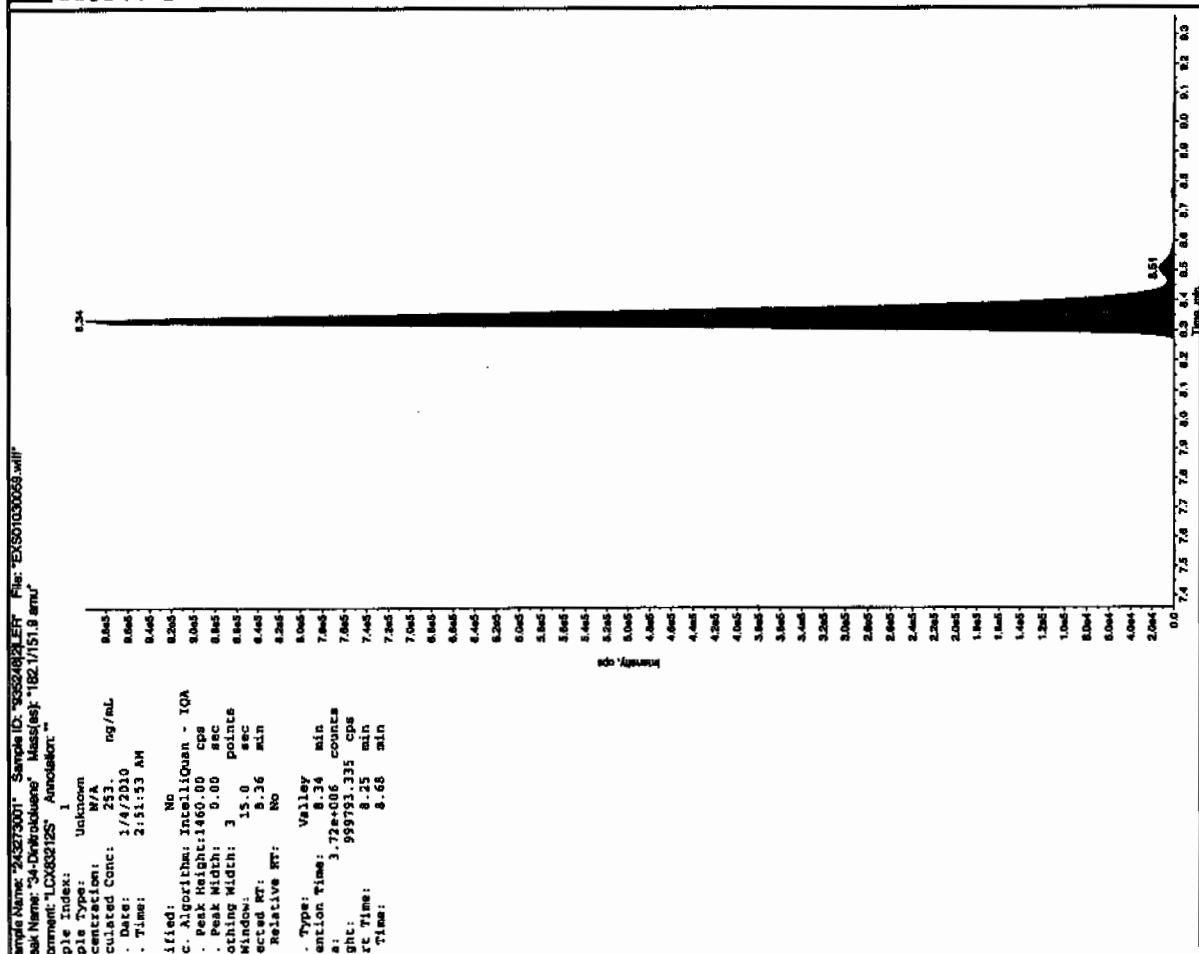
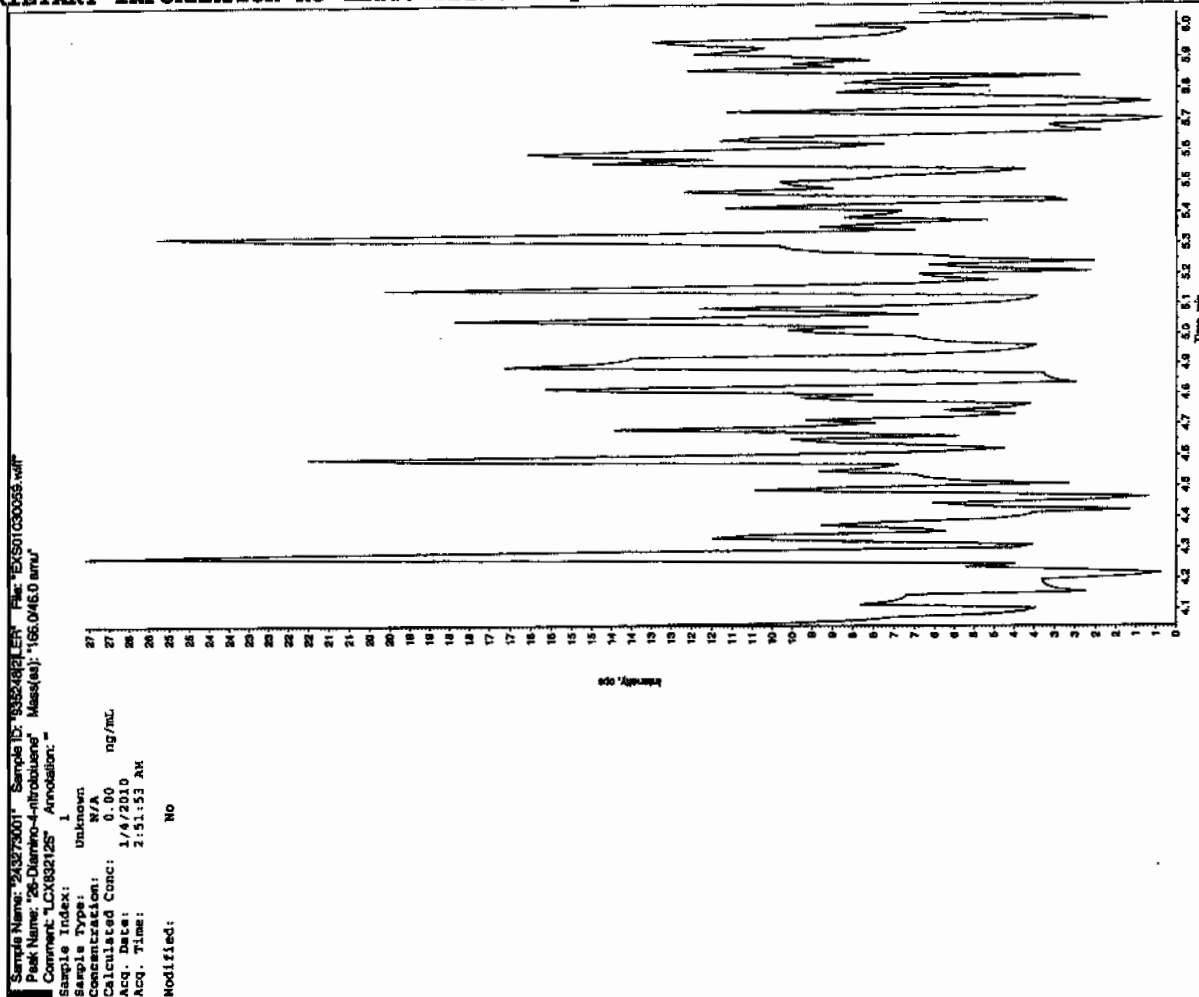


Sample Name: "243273001" Sample ID: "33324851.ER" File: "EX601030059.wif"  
 Peak Name: "35-Dinitroazobenzene" Mass(es): "182.046.0 amu"  
 Comment: "LCX032125" Annotation: "1"

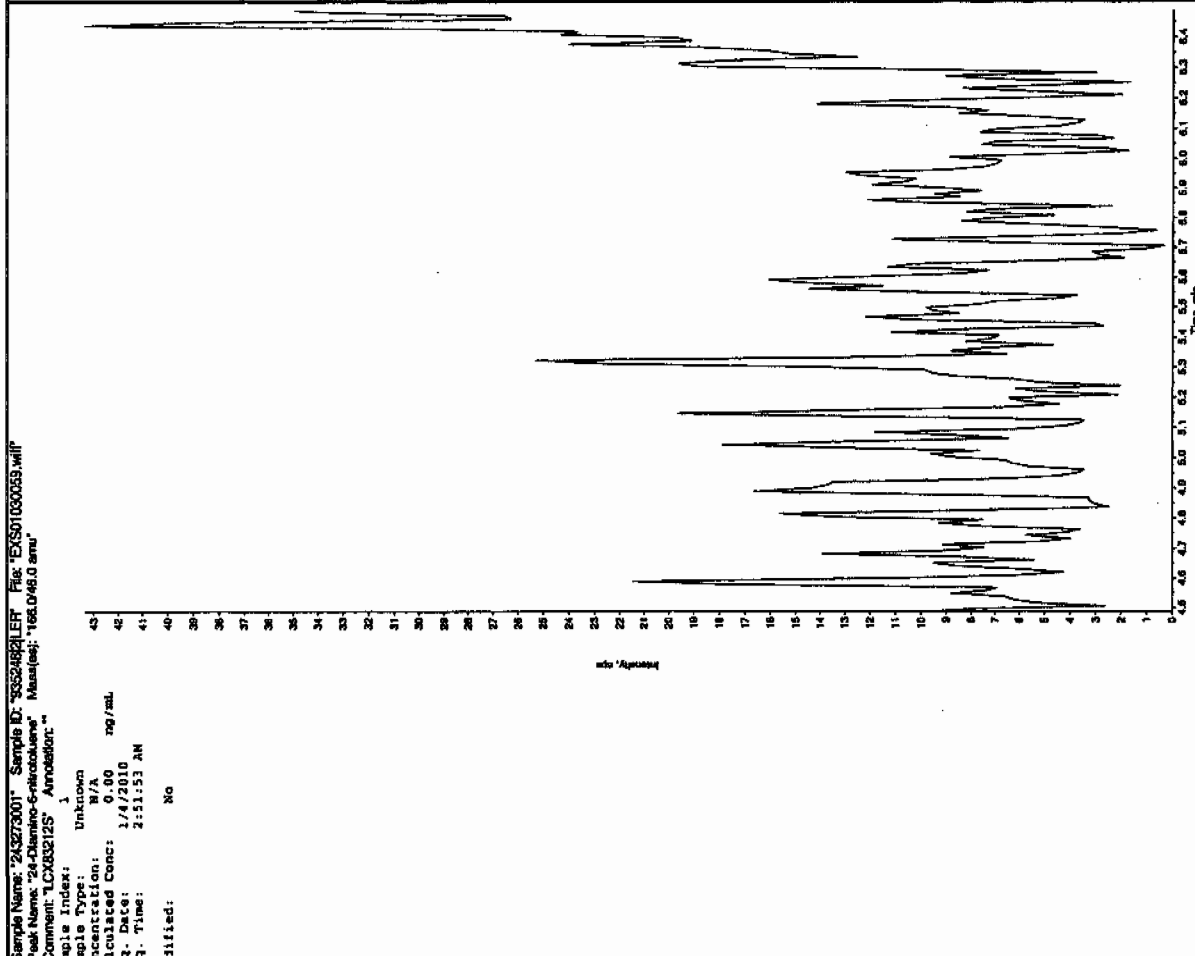
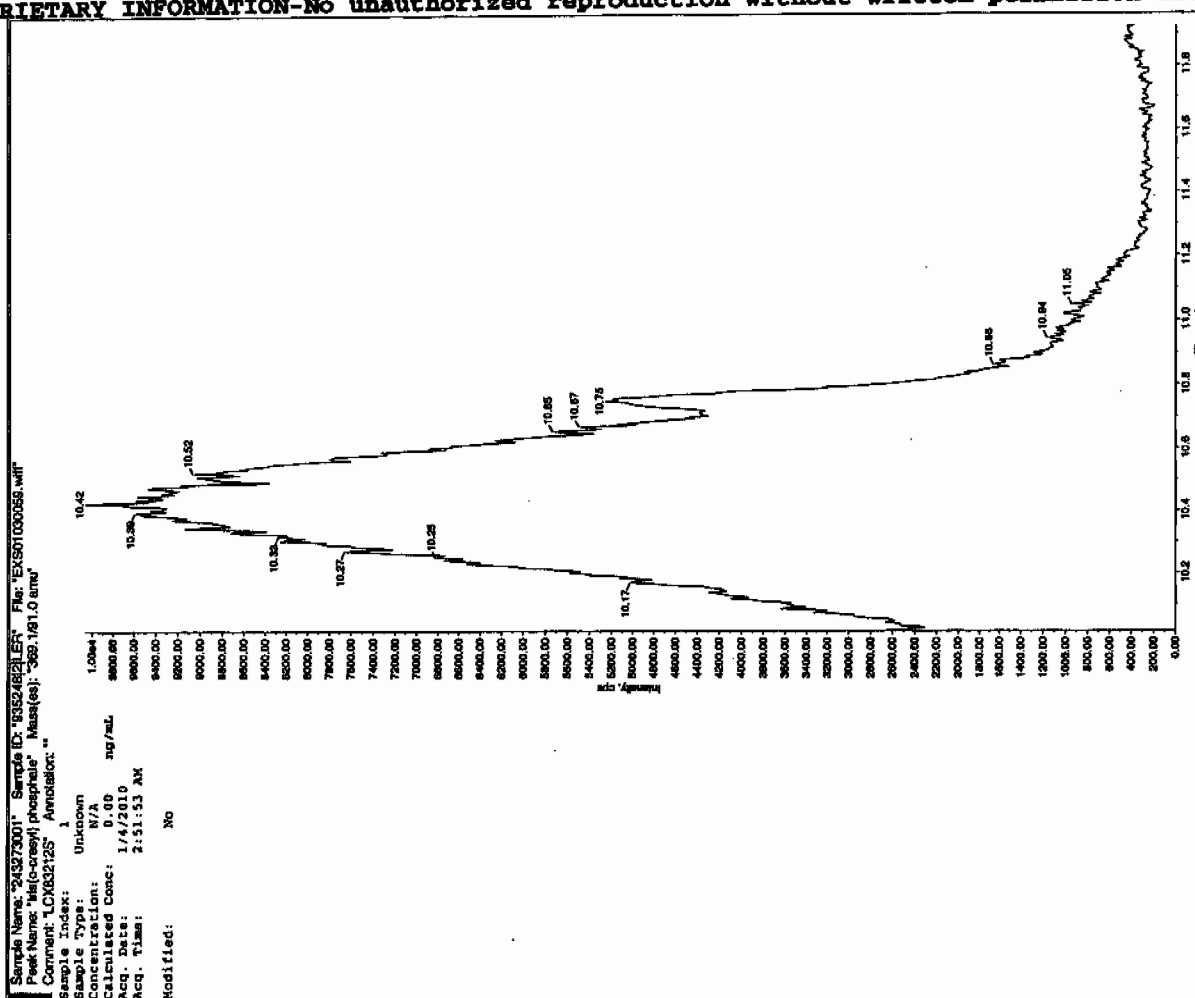
Sample Index: 1  
 Sample Type: Unknown  
 Concentration: 0.00 ng/mL  
 Calculated Conc: 3/4/2010  
 Acq. Date: 2:51:53 AM  
 Acq. Time: 2:51:53 AM  
 Modified: No



8/2/11



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
MX	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: 10-988

Lab Code: GEL

Run Date: 02-JAN-10.03-JAN-10

LCMSMS Instrument ID: LCMSMS

Method: 8321A Modified

HPLC Column: Phenomenex Ultracarb 5 ODS(20)

Calibration Type: Average RF

Paramname	1	2	3	4	5	6	Ave RF	RSD	Q
	EXP0102003a	EXP0102004a	EXP0102005a	EXP0102006a	EXP0102007a	EXP0102008a			
1,3,5-Trinitrobenzene	4.318	4.089	3.38	3.337	3.596	3.609	3.722	10.642	
1,3-Dinitrobenzene-d4	4.594	4.892	5.245	4.853	4.74	4.176	4.750	7.469	
2,4,6-Trinitrotoluene	.324	.27	.296	.376	.317	.352	0.323	11.715	
2,4-Dinitrotoluene	.333	.257	.23	.238	.248	.25	0.259	14.298	
2,6-Dinitrotoluene	1.056	1.067	1.046	1.047	1.098	1.109	1.071	2.49	
2,6-Dinitrotoluene-d3	26.342	28.851	28.407	29.409	27.735	24.216	27.493	6.991	
2-Amino-4,6-dinitrotoluene	.366	.397	.389	.324	.401	.403	0.380	8.056	
3,4-Dinitrotoluene	.84	.931	.854	.829	.955	.941	0.892	6.336	
4-Amino-2,6-dinitrotoluene	.388	.28	.282	.252	.275	.291	0.295	16.213	
HMX	3.197	3.098	2.824	2.818	3.024	3.057	3.003	5.079	
Nitrobenzene	.952	.969	.952	.998	.968	1.038	0.980	3.385	
PETN	2.383	2.307	2.016	1.75	1.626	1.798	1.980	15.68	
RDX	2.307	2.462	1.821	2.321	2.614	2.547	2.345	12.109	
m-Dinitrobenzene	1.07	1.209	1.189	1.17	1.18	1.201	1.170	4.341	
m-Nitrotoluene	.109	.108	.096	.092	.103	.095	0.101	7.208	
o-Nitrotoluene	.201	.199	.161	.151	.153	.158	0.171	13.445	
p-Nitrotoluene	.077	.116	.082	.076	.082	.079	0.085	17.926	

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: 10-988

Lab Code: GEL

Run Date: 02-JAN-10.03-JAN-10

LCMSMS Instrument ID: LCMSMS

Method: 8321A Modified

HPLC Column: Phenomenex Ultracarb 5 ODS(20)

Calibration Type: 2nd Order

	1	2	3	4	5	6	X	X^2	Intercept	COD	Q
Calibration Level:											
Data File:	EXP0102003a	EXP0102004a	EXP0102005a	EXP0102006a	EXP0102007a	EXP0102008a					
Paraname:											
Tetryl	192.024	383.95	1295.68	2365.49	4002.92	4420.34	1.199	-.0001699	17.217	.9988	

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)

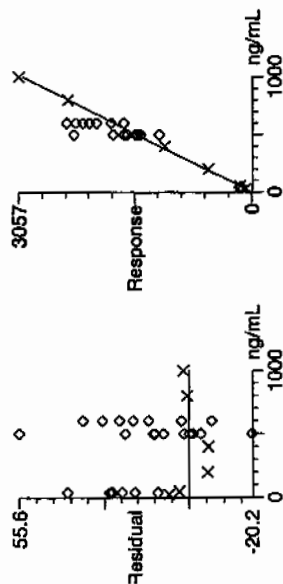
\* Values outside of QC Limit

Quantify Calibration Report  
GEL Laboratories, LLC / Analyst : Michael A. Penny

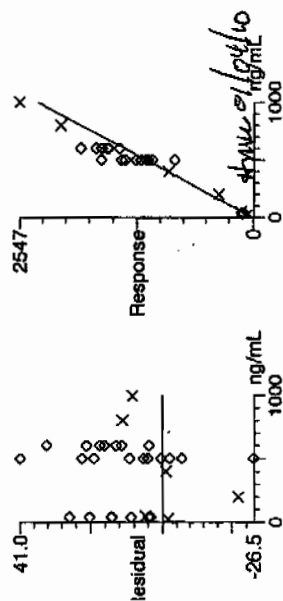
Dataset: C:\MASSLYNX\New\_Exp.PRO\10210expA.qld, Time: Mon Jan 04 12:58:29 2010

Method: C:\MASSLYNX\New\_Exp.PRO\MethDB\10210expa.mdb, Time: Mon Jan 04 10:47:42 2010  
Calibration: Untitled, Time: Mon Jan 04 12:58:28 2010

Compound name: HMX  
Response Factor: 3.00294  
RF SD: 0.152528, % Relative SD: 5.07929  
Response type: Internal Std ( Ref 4 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF



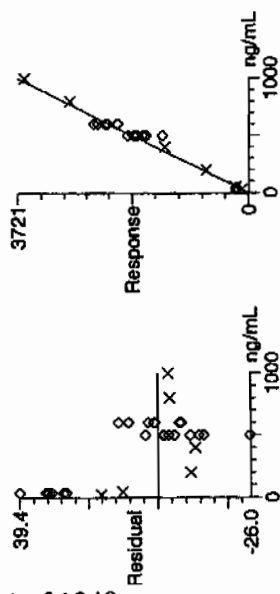
Compound name: RDX  
Response Factor: 2.34556  
RF SD: 0.284023, % Relative SD: 12.1089  
Response type: Internal Std ( Ref 4 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF



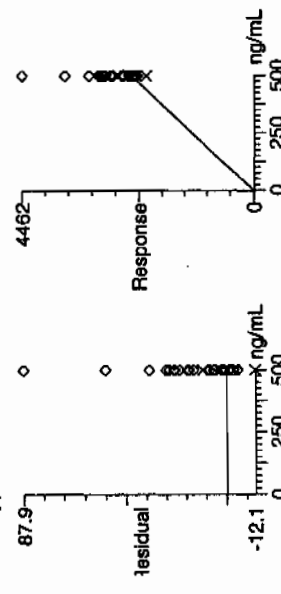
# Quantify Calibration Report GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qid, Time: Mon Jan 04 12:58:29 2010

Compound name: 135-Trinitrobenzene  
Response Factor: 3.72139  
RF SD: 0.39604, % Relative SD: 10.6423  
Response type: Internal Std (Ref 4), Area \* (IS Conc. / IS Area)  
Curve type: RF



Compound name: 13-Dinitrobenzene-d4  
Response Factor: 4.74999  
RF SD: 0.354763, % Relative SD: 7.46871  
Response type: External Std, Area  
Curve type: RF



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

atset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

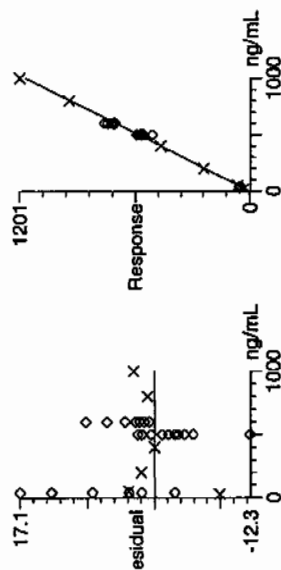
Compound name: 13-Dinitrobenzene

Response Factor: 1.16963

RF SD: 0.05077, % Relative SD: 4.3407

Response type: Internal Std (Ref 4), Area \* (IS Conc. / IS Area)

Curve type: RF



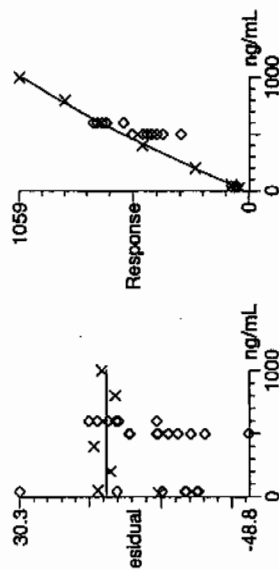
Compound name: Tetral

Coefficient of Determination: 0.998799

Calibration curve:  $-0.000169874 \cdot x^2 + 1.199 \cdot x + 17.2166$

Response type: Internal Std (Ref 4), Area \* (IS Conc. / IS Area)

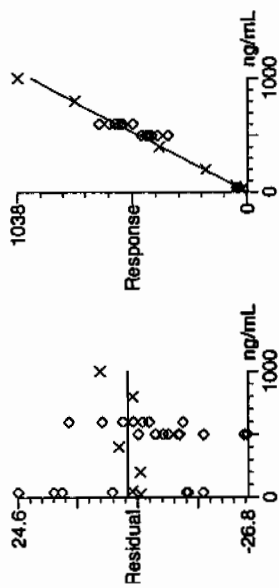
Curve type: 2nd Order, Origin: Exclude, Weighting: Null, Axis trans: None



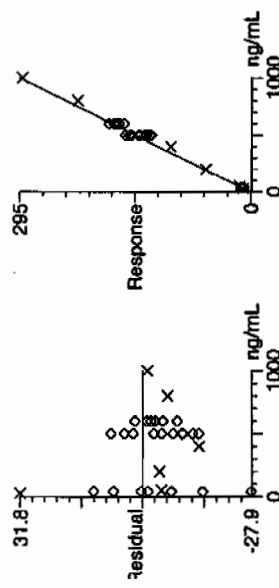
**Quantify Calibration Report**  
 GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO1010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Compound name: Nitrobenzene  
 Response Factor: 0.979524  
 RF SD: 0.0331575, % Relative SD: 3.38506  
 Response type: Internal Std ( Ref 4 ), Area \* ( IS Conc. / IS Area )  
 Curve type: RF



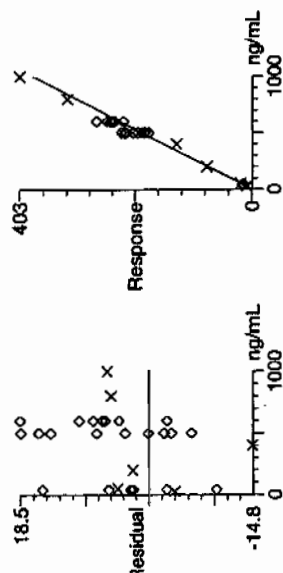
Compound name: 4-Amino-26-dinitrotoluene  
 Response Factor: 0.294613  
 RF SD: 0.0477657, % Relative SD: 16.2131  
 Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
 Curve type: RF



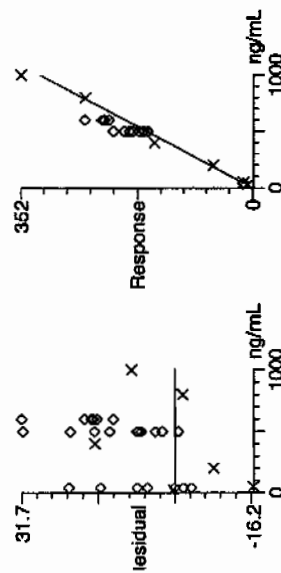
Quantify Calibration Report  
IEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO1010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Compound name: 2-Amino-46-dinitrotoluene  
Response Factor: 0.379884  
RF SD: 0.0306017, % Relative SD: 8.05555  
Response type: Internal Std (Ref 14), Area \* (IS Conc. / IS Area)  
Curve type: RF



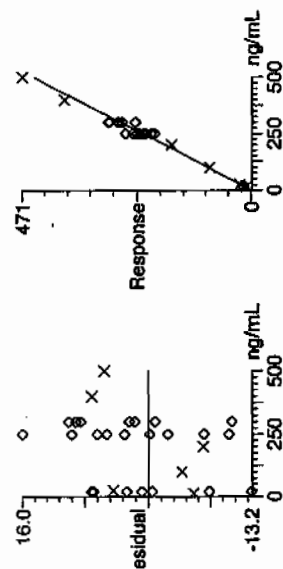
Compound name: 246-Trinitrotoluene  
Response Factor: 0.322644  
RF SD: 0.0377987, % Relative SD: 11.7153  
Response type: Internal Std (Ref 14), Area \* (IS Conc. / IS Area)  
Curve type: RF



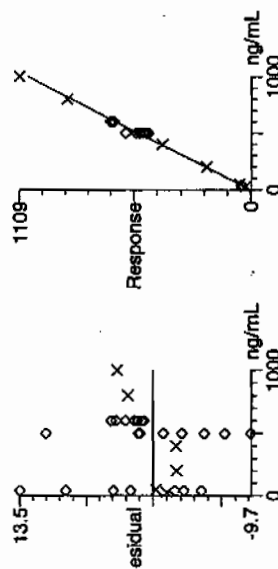
Quantify Calibration Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

atlas: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

compound name: 34-dinitrotoluene  
response factor: 0.891834  
RF SD: 0.0565042, % Relative SD: 6.33572  
response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
curve type: RF



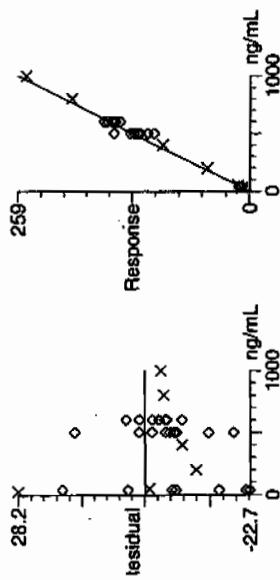
compound name: 26-dinitrotoluene  
response factor: 1.07058  
RF SD: 0.0266558, % Relative SD: 2.48985  
response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
curve type: RF



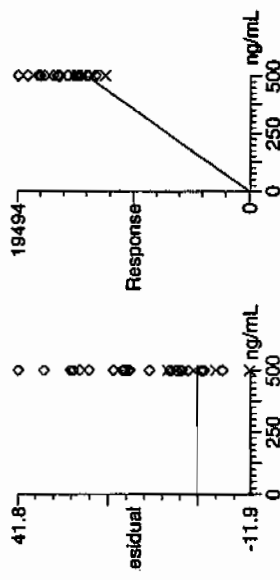
Quantify Calibration Report  
 iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO\010210expA.qtd, Time: Mon Jan 04 12:58:29 2010

Compound name: 24-dinitrotoluene  
 Response Factor: 0.259433  
 RF SD: 0.0370927, % Relative SD: 14.2976  
 Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
 Curve type: RF



Compound name: 26-dinitrotoluene-d3  
 Response Factor: 27.4933  
 RF SD: 1.92214, % Relative SD: 6.9913  
 Response type: External Std, Area  
 Curve type: RF

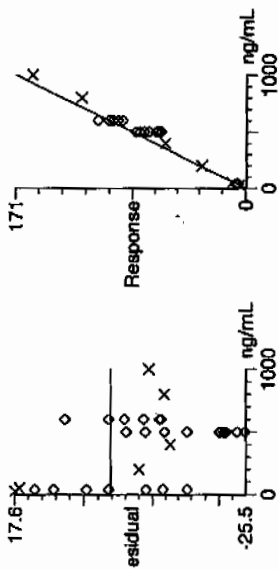




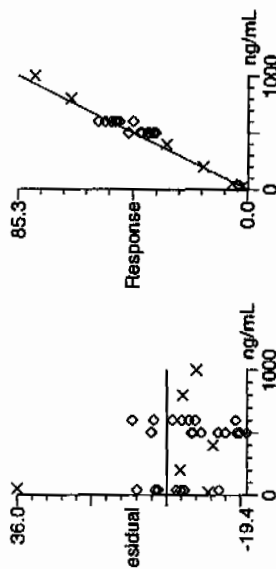
Identify Calibration Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

atset: C:\MASSLYNX\New\_Exp\PRO1010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Compound name: 2-Nitrotoluene  
Response Factor: 0.170739  
RF SD: 0.0229553, % Relative SD: 13.4447  
Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF



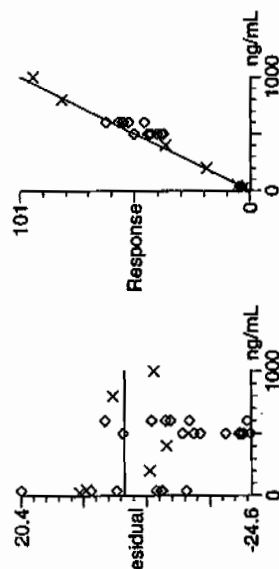
Compound name: 4-Nitrotoluene  
Response Factor: 0.0853292  
RF SD: 0.0152961, % Relative SD: 17.926  
Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
Curve type: RF



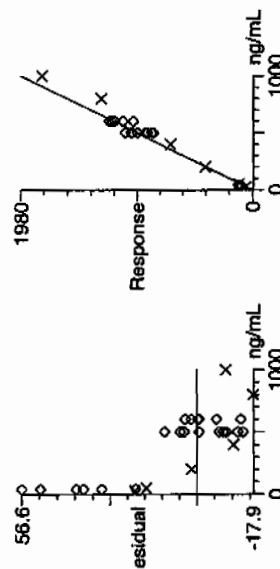
uantify Calibration Report  
EL Laboratories, LLC / Analyst : Michael A. Penny

atasset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

ompound name: 3-Nitrotoluene  
esponse Factor: 0.100565  
RF SD: 0.00724884, % Relative SD: 7.20812  
esponse type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
urve type: RF



ompound name: PETN  
esponse Factor: 1.98004  
RF SD: 0.310463, % Relative SD: 15.6796  
esponse type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )  
urve type: RF



Explosives Initial Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-988

Lab Code: GEL

GEL Sample ID: WXXICV

GEL Data File EXP0102010a

Analysis Date: 02-JAN-10 17:59

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	648.798	108	
1,3-Dinitrobenzene-d4	500	485.534	97	
2,4,6-Trinitrotoluene	600	676.637	113	
2,4-Dinitrotoluene	600	570.991	95	
2,6-Dinitrotoluene	600	622.033	104	
2,6-Dinitrotoluene-d3	500	494.502	99	
2-Amino-4,6-dinitrotoluene	600	638.21	106	
3,4-Dinitrotoluene	300	297.504	99	
4-Amino-2,6-dinitrotoluene	600	545.798	91	
HMX	600	557.551	93	
Nitrobenzene	600	678.114	113	
PETN	600	595.938	99	
RDX	600	679.547	113	
Tetryl	600	618.252	103	
m-Dinitrobenzene	600	603.855	101	
m-Nitrotoluene	600	568.922	95	
o-Nitrotoluene	600	601.903	100	
p-Nitrotoluene	600	618.825	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 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits

Printed: Mon Jan 04 12:59:32 2010, Page 19 of 175

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

atlas: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

ame: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102010a

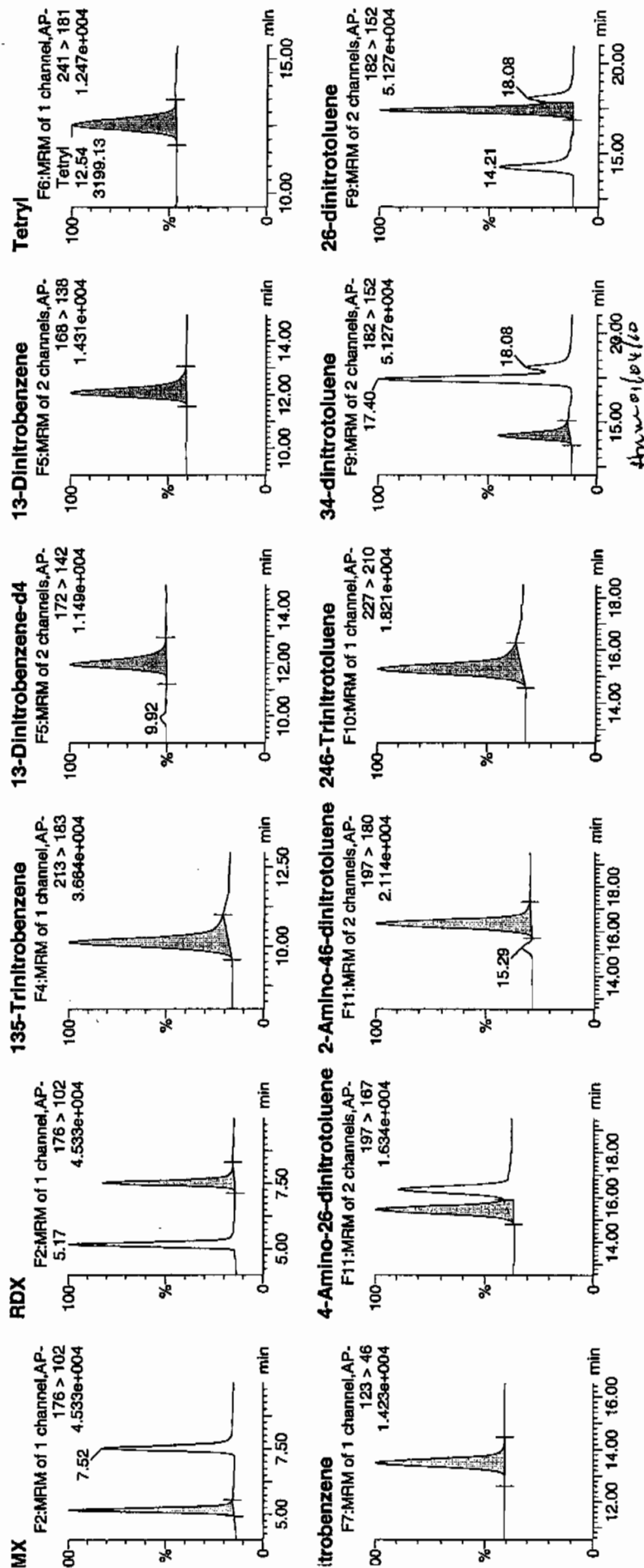
ate: 02-Jan-2010

me: 17:59:15

i: WXX100102-07ICV

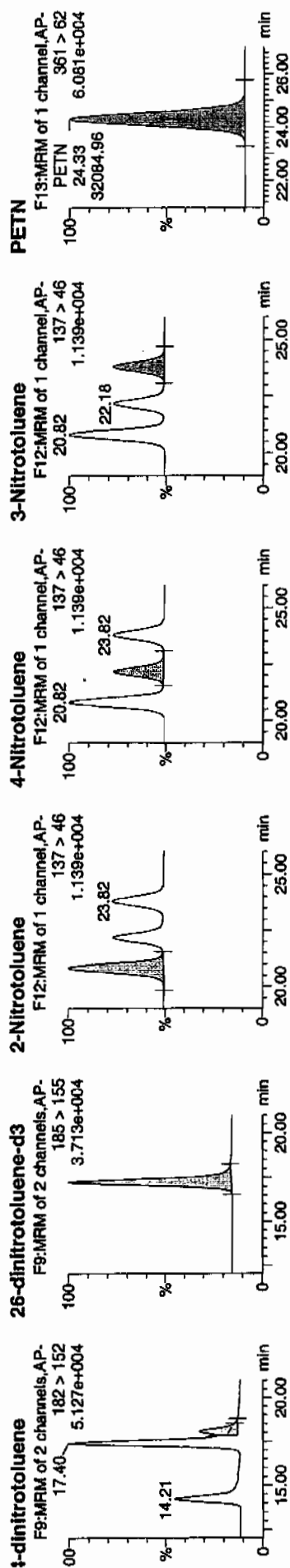
al: 1:1,B

1/14/10



EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



Name	Trace	Area	State	Age	Mass	Notes	Ref	Ref	Ref
XX100102-07ICV	176 > 102	5.17	2306.284	7722.791	1674.293	bb	557.5509	92.9	-7.1
XX100102-07ICV	176 > 102	7.52	7352.066	2306.284	1593.920	bb	679.5465	113.3	13.3
135-Trinitrobenzene	213 > 183	10.11	11136.717	2306.284	2414.429	bb	648.7976	108.1	8.1
13-Dinitrobenzene-d4	172 > 142	11.95	2306.284	2306.284	2306.284	bb	485.5343	97.1	-2.9
13-Dinitrobenzene	168 > 138	12.07	3257.784	2306.284	706.284	bb	603.8547	100.6	0.6
XX100102-07ICV	241 > 181	12.54	3199.129	2306.284	693.568	bb	618.2521	103.0	3.0
Tetral	123 > 46	13.50	3063.801	4372.283	664.229	bb	678.1138	113.0	13.0
Nitrobenzene	197 > 167	15.43	4372.283	13595.504	160.799	MM	545.7977	91.0	-9.0
4-Aminoo-26-dinitrotoluene	197 > 180	16.34	6592.334	13595.504	242.445	bb	638.2098	106.4	6.4
2-Aminoo-46-dinitrotoluene	227 > 210	15.28	5936.142	13595.504	218.313	bb	676.6366	112.8	12.8
246-Trinitrotoluene	182 > 152	17.41	7214.438	13595.504	265.324	bb	297.5041	99.2	-0.8
34-dinitrotoluene	182 > 152	17.40	18107.439	13595.504	665.935	MM	622.0327	103.7	3.7
26-dinitrotoluene	182 > 152	18.08	4027.907	13595.504	148.134	MM	570.9910	95.2	-4.8
XX100102-07ICV	185 > 155	17.22	13595.504	13595.504	13595.504	bb	494.5021	98.9	-1.1
2-Nitrotoluene	137 > 46	20.82	2794.380	13595.504	102.769	bb	601.9030	100.3	0.3
XX100102-07ICV	137 > 46	22.18	1435.789	13595.504	52.804	bb	618.8249	103.1	3.1
4-Nitrotoluene	137 > 46	23.82	1555.694	13595.504	57.214	bb	568.9215	94.8	-5.2
3-Nitrotoluene	361 > 62	24.33	32084.961	13595.504	1179.984	bb	595.9384	99.3	-0.7
PETN									

GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/02/10  
 Time of Injection: 1759  
 Standard Number: WXX100102-07ICV  
 Data File: EXP0102010a

HMX	92.9
RDX	113.3
135-TNB	108.1
13-DNB	100.6
Tetryl	103.0
Nitrobenzene	113.0
4A-26-DNT	91.0
2A-46-DNT	106.4
246-TNT	112.8
34-DNT(surr)	99.2
26-DNT	103.7
24-DNT	95.2
2-NT	100.3
4-NT	103.1
3-NT	94.8
PETN	99.3
Total	1636.7

*Handwritten:*  
 11/4/10

Average

102.3

*Handwritten:* 01/04/10

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: 10-988

Lab Code: GEL

Run Date: 02-JAN-10.03-JAN-10

LCMSMS Instrument ID: LCMSMS4

Method: 8321A Modified

HPLC Column: YMC J-Sphere ODS-H8Q

Calibration Type: 2nd Order

Calibration Level:	19	20	21	22	23	24	25	X	X^2	Intercept	COD	Q
Data File:	EXS01030003.wiff	EXS01030004.wiff	EXS01030005.wiff	EXS01030006.wiff	EXS01030007.wiff	EXS01030008.wiff	EXS01030009.wiff					
Parname:												
2,4-Diamino-6-nitrotoluene	145000	283000	723000	1290000	2030000	2670000	5080000	8370	2750	-1.07	.9998	
2,6-Diamino-4-nitrotoluene	238000	423000	1070000	1840000	2880000	3680000	7470000	86000	3600	.045	.9998	
3,4-Dinitrotoluene	382000	730000	1740000	3570000	5200000	6660000	12100000	-38700	15800	-3.7	.9983	
3,5-Dinitroaniline	597000	1060000	2760000	5020000	7220000	8910000	14700000	102000	10600	-1.65	.9998	
TATB	71500	149000	368000	691000	1050000	1400000	2740000	5520	1410	-.02	1	
tris(o-cresyl) phosphate	1440000	2790000	6700000	12200000	17200000	21700000	33600000	245000	26300	-4.8	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

010310ICAL

Peak Name: TATB  
No Internal Standard  
Q1/Q3 Masses: 257.20/204.90 amu

Fit	Quadratic	weighting	None	Iterate No
a0	5.52e+003			
a1	1.41e+003			
a2	-0.0198			
Correlation coefficient 1.0000				
Use Area				

Peak Name: 35-Dinitroaniline  
No Internal Standard  
Q1/Q3 Masses: 182.00/46.00 amu

Fit	Quadratic	weighting	None	Iterate No
a0	1.02e+005			
a1	1.06e+004			
a2	-1.65			
Correlation coefficient 0.9998				
Use Area				

Peak Name: 34-Dinitrotoluene  
No Internal Standard  
Q1/Q3 Masses: 182.08/151.90 amu

Fit	Quadratic	weighting	None	Iterate No
a0	-3.87e+004			
a1	1.58e+004			
a2	-3.7			
Correlation coefficient 0.9983				
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	8.6e+004			
a1	3.6e+003			
a2	0.0447			
Correlation coefficient 0.9998				
Use Area				

Peak Name: 24-Diamino-6-nitrotoluene  
No Internal Standard  
Q1/Q3 Masses: 165.97/46.00 amu

8/20/11

HAW 01/05/10



010310ICAL

Iterate No

None

Weighting

Quadratic

8.37e+003

2.75e+003

-0.107

Correlation coefficient 0.9998

Use Area

Peak Name: tris(o-cresyl) phosphate

No Internal Standard

Q1/Q3 Masses: 369.15/91.00 amu

Iterate No

None

Weighting

Quadratic

2.45e+005

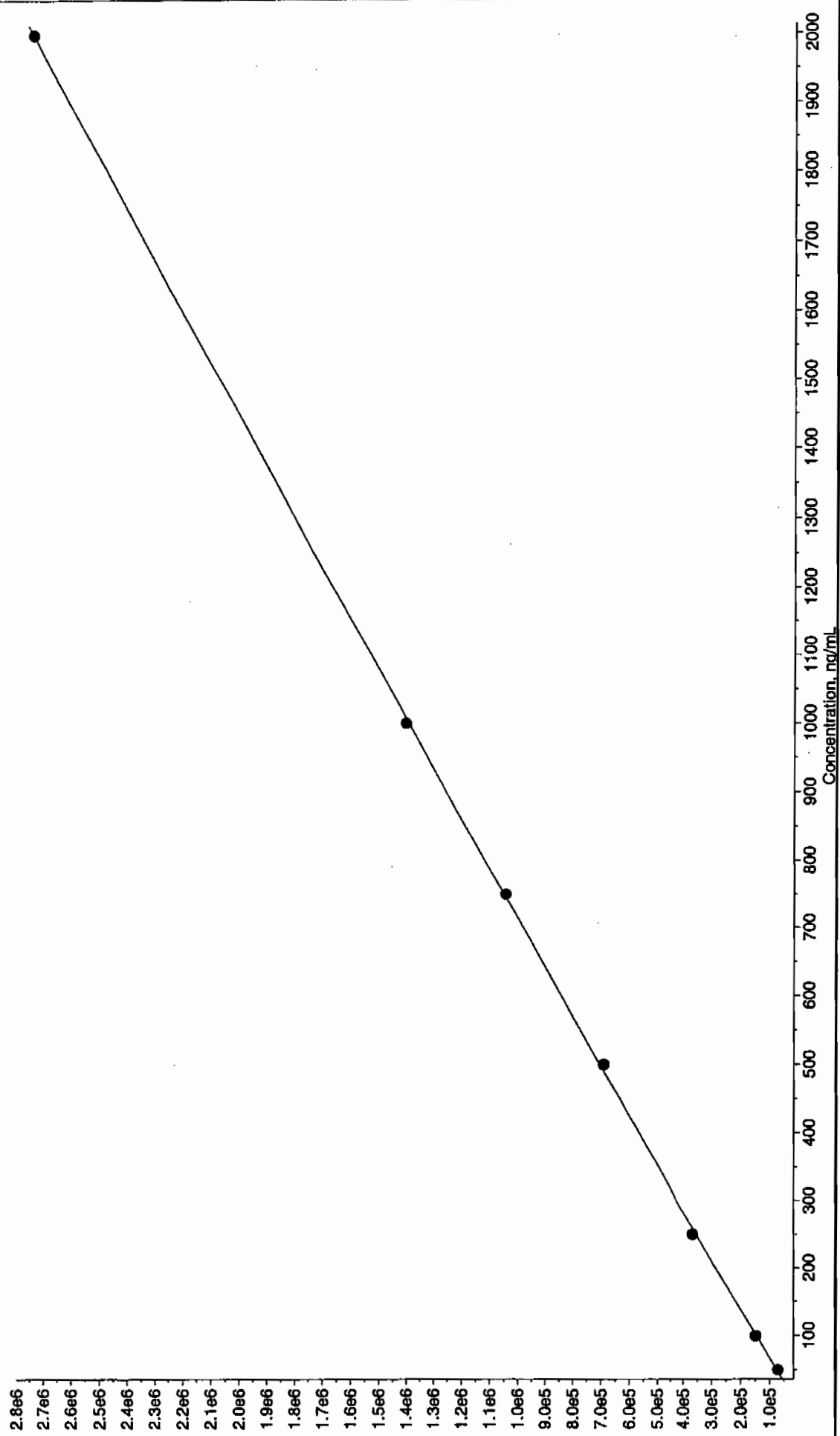
2.63e+004

-4.8

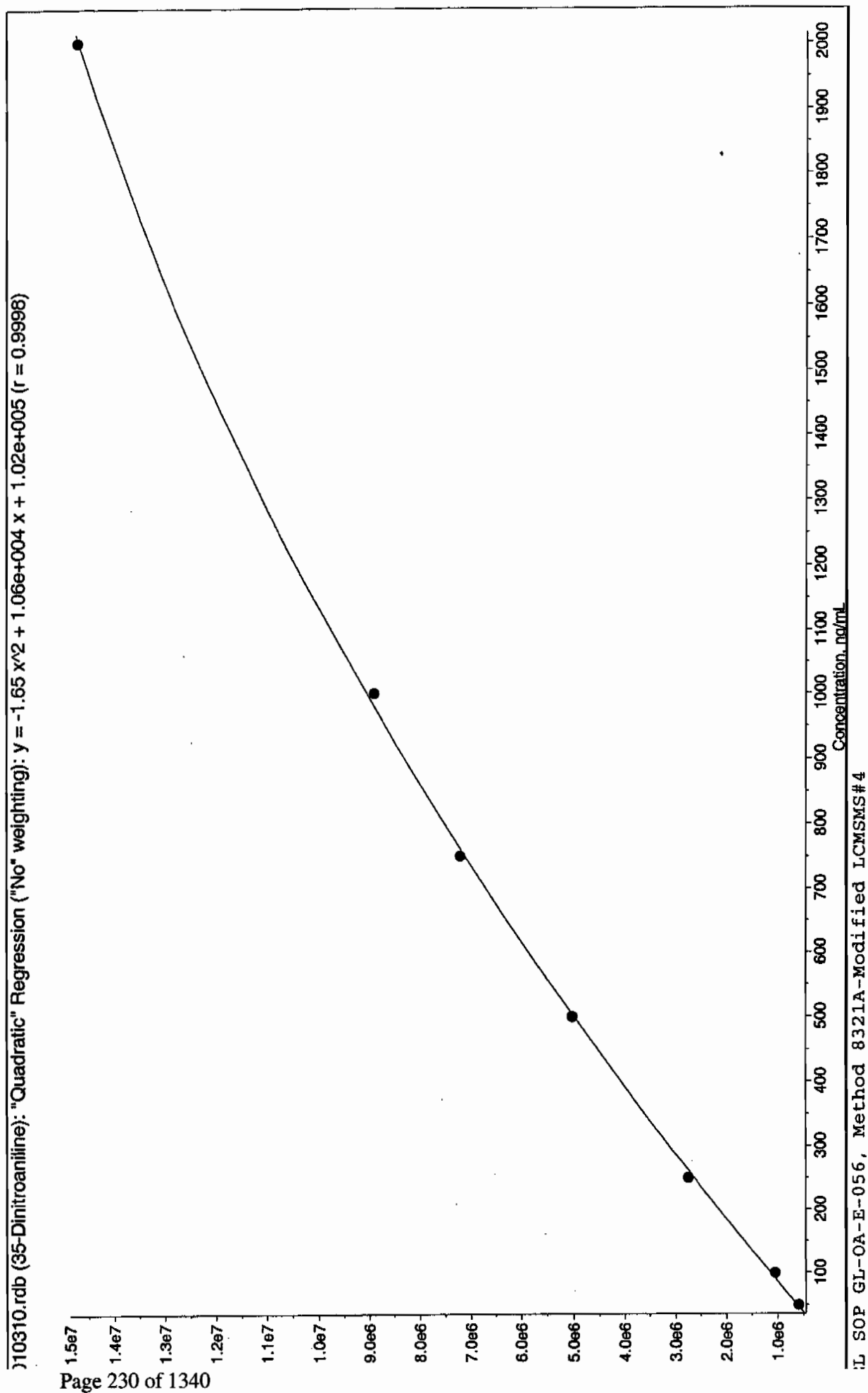
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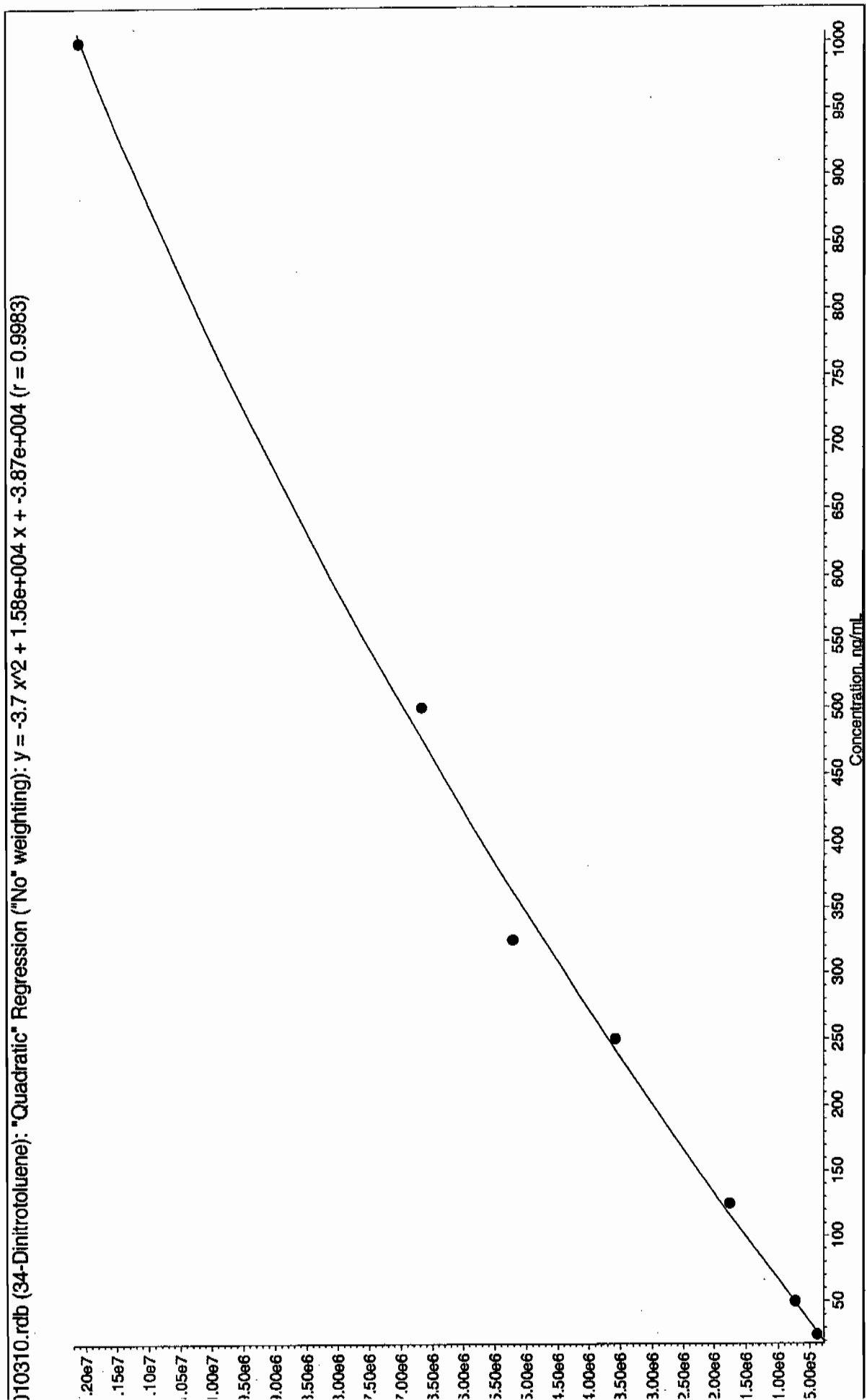
Use Area

J10310.rdb (TATB): "Quadratic" Regression ("No" weighting):  $y = -0.0198 x^2 + 1.41e+003 x + 5.52e+003$  ( $r = 1.0000$ )



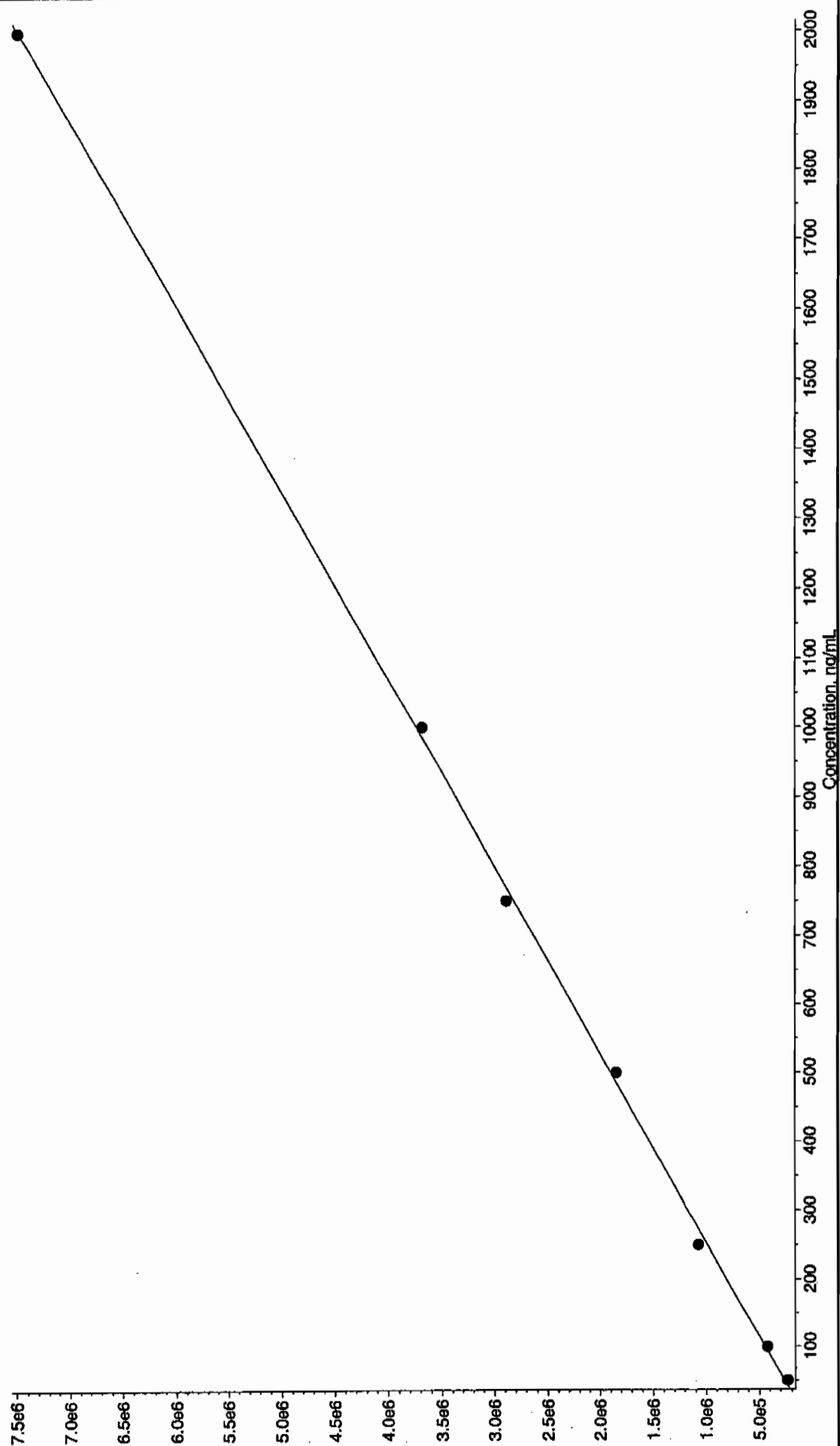
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





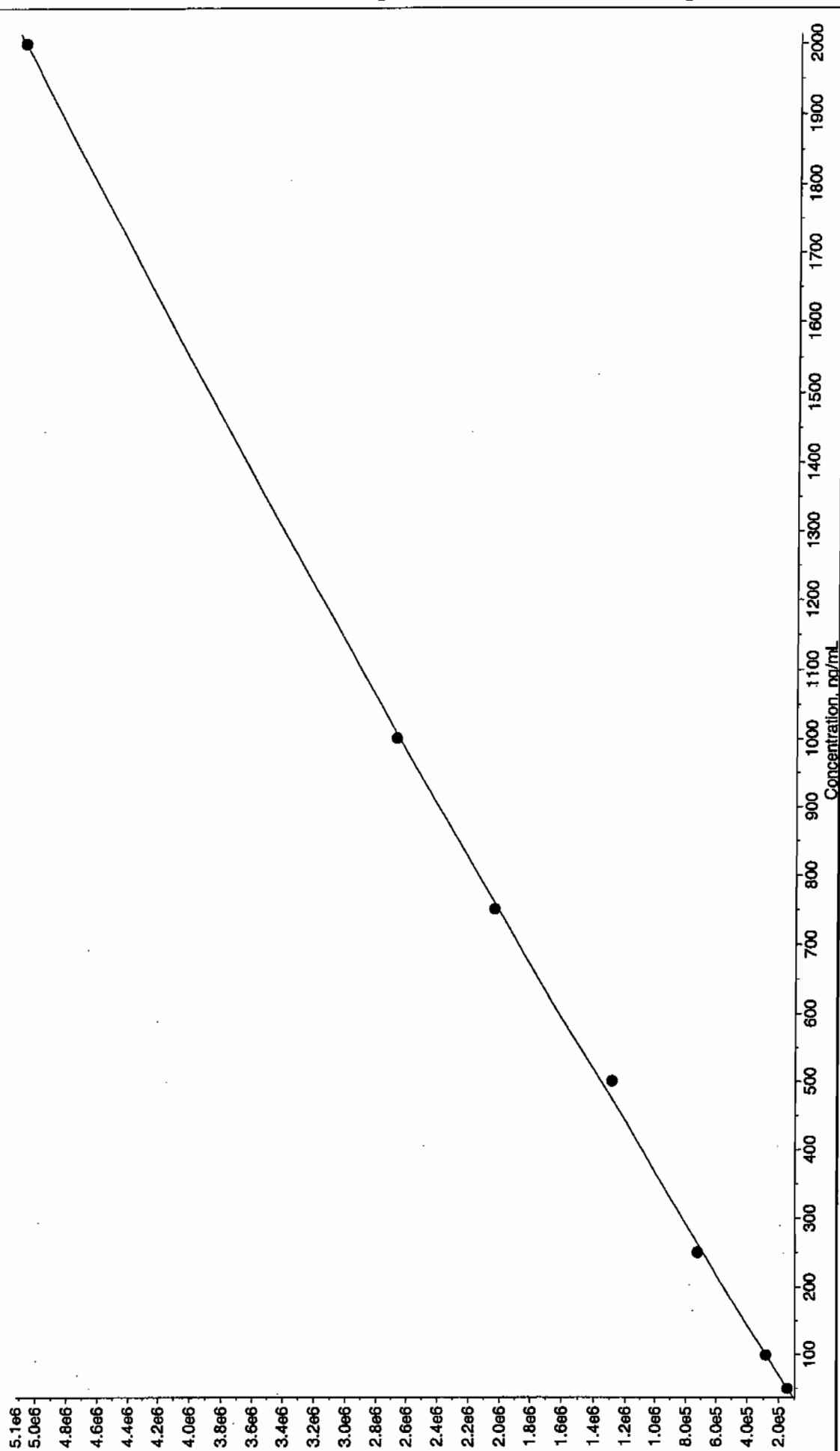
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

310310.rdb (26-Diamino-4-nitrotoluene): "Quadratic" Regression ("No" weighting):  $y = 0.0447 x^2 + 3.6e+003 x + 8.6e+004$  ( $r = 0.9998$ )

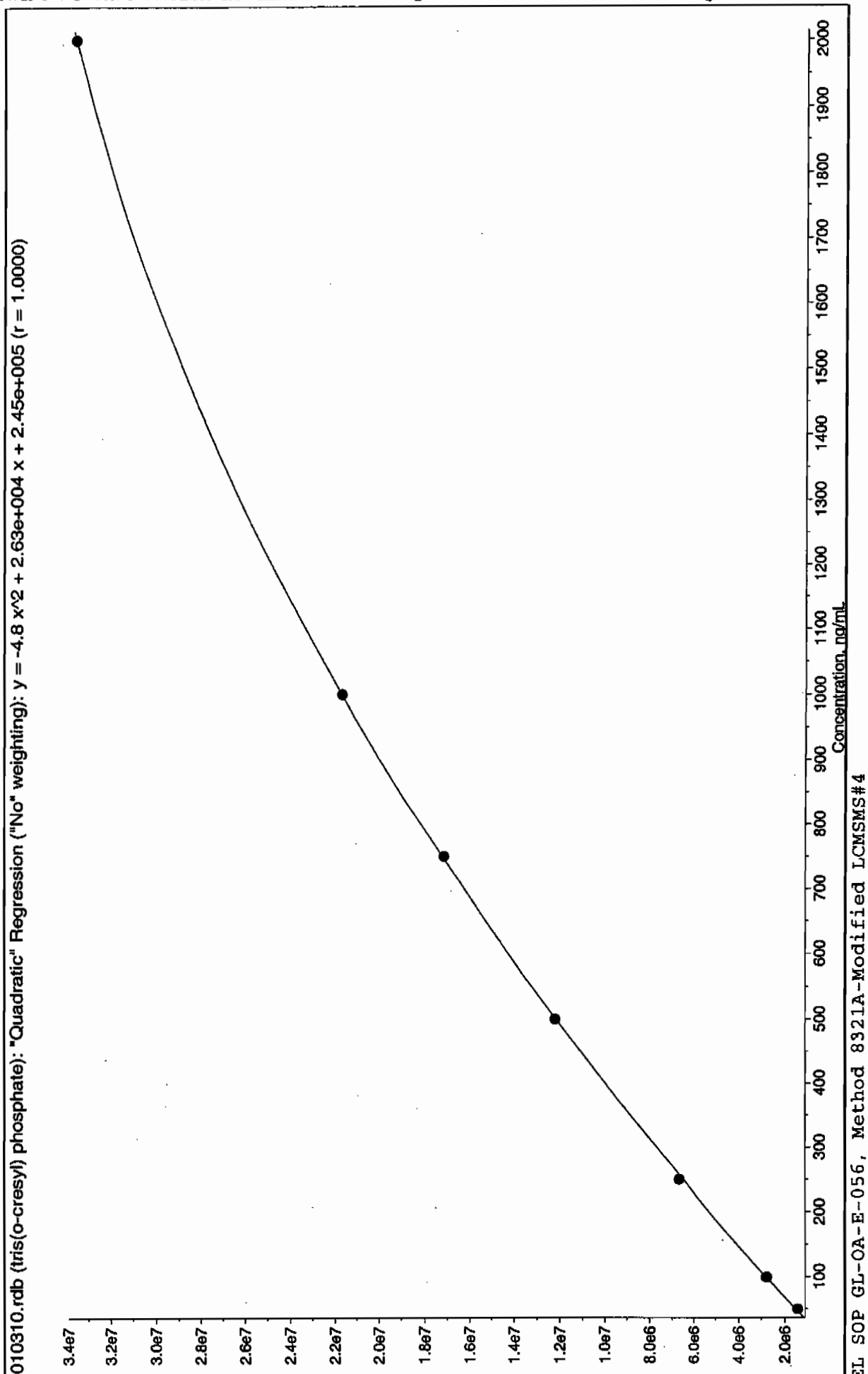


L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

010310.rdb (24-Diamino-6-nitrotoluene): "Quadratic" Regression ("No" weighting):  $y = -0.107 x^2 + 2.75e+003 x + 8.37e+003$  ( $r = 0.9998$ )



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



Explosives Initial Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-988

Lab Code: GEL

GEL Sample ID: WXXICV

GEL Data File EXS01030011.wiff

Analysis Date: 03-JAN-10 14:17

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
TATB	500	504	101	
tris(o-cresyl) phosphate	500	493	99	
3,5-Dinitroaniline	500	506	101	
2,4-Diamino-6-nitrotoluene	500	528	106	
2,6-Diamino-4-nitrotoluene	500	626	125	
3,4-Dinitrotoluene	250	234	94	

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

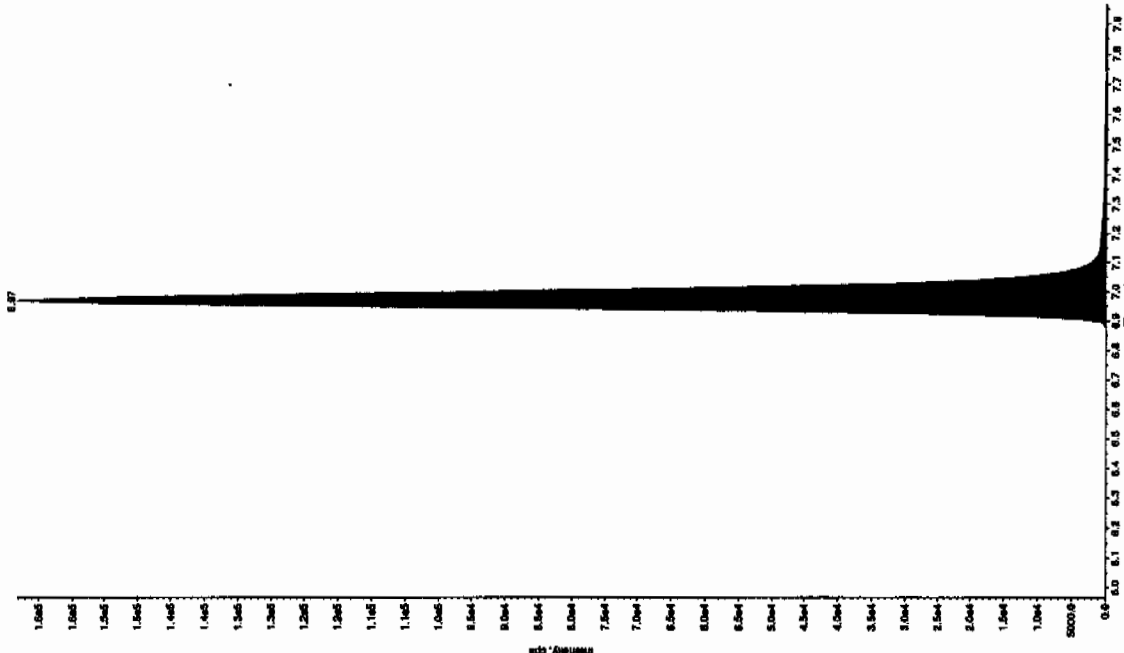
\* Value outside of Recovery Limits



Before  
Dec 11/17/10

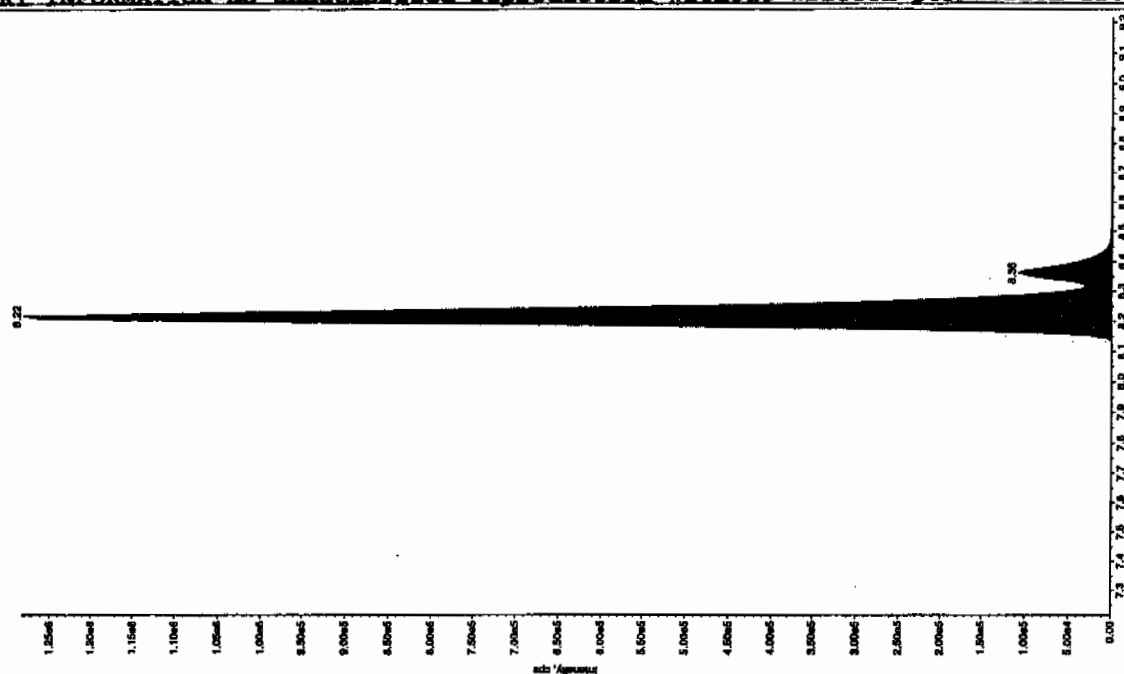
Sample Name: "WVX100103-2610V" Sample ID: "11LEP" File: "EXSD1030011.wif"  
 Peak Name: "TATB" Mass(es): "257.2204.9 amu"  
 Comment: "LCMSEXP\_C" Annotation: "

Sample Index: 1  
 Sample Type: QC  
 Concentration: 500. ng/mL  
 Calculated Conc: 504. ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 2:17:58 PM  
 Modified: NO  
 Proc. Algorithm: IntelliQuan - IOA  
 Min. Peak Height: 2500.00 cps  
 Min. Peak Width: 3.00 sec  
 Smoothing Width: 3.00 points  
 RT Window: 30.0 sec  
 Expected RT: 6.97 min  
 Use Relative RT: NO  
 Int. Type: Valley  
 Retention Time: 6.97 min  
 Area: 7.10e+005 counts  
 Height: 163154.800 cps  
 Start Time: 6.84 min  
 End Time: 7.50 min



Sample Name: "WVX100103-2610V" Sample ID: "11LEP" File: "EXSD1030011.wif"  
 Peak Name: "SS-Dibenzofullene" Mass(es): "182.0460 amu"  
 Comment: "LCMSEXP\_C" Annotation: "

Sample Index: 1  
 Sample Type: QC  
 Concentration: 500. ng/mL  
 Calculated Conc: 558. ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 2:17:58 PM  
 Modified: NO  
 Proc. Algorithm: IntelliQuan - IOA  
 Min. Peak Height: 2000.00 cps  
 Min. Peak Width: 3.00 sec  
 Smoothing Width: 3.00 points  
 RT Window: 35.0 sec  
 Expected RT: 8.22 min  
 Use Relative RT: NO  
 Int. Type: Valley  
 Retention Time: 8.22 min  
 Area: 5.50e+006 counts  
 Height: 1281735.718 cps  
 Start Time: 8.10 min  
 End Time: 8.58 min

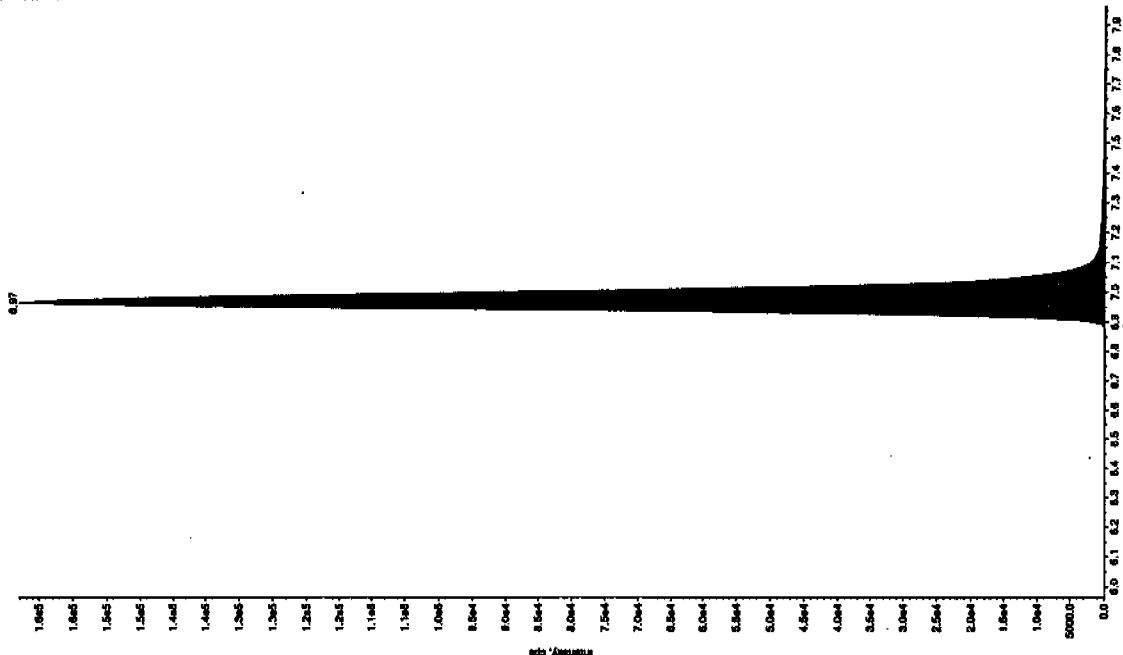


Ann-01/05/10

27202501511

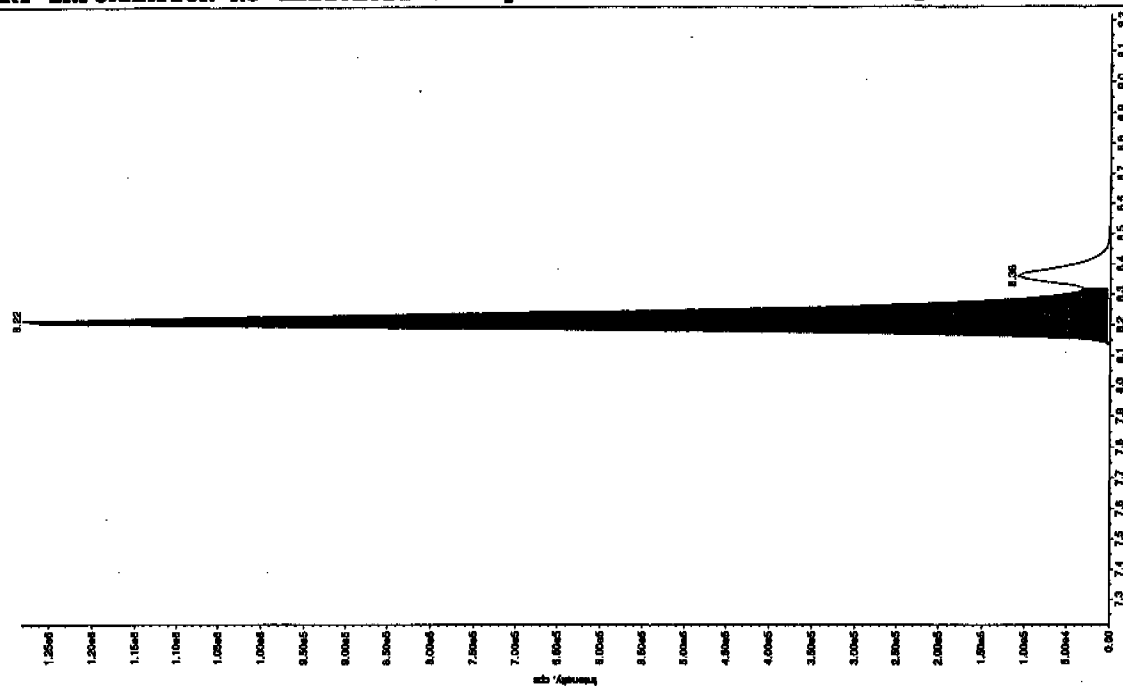
Sample Name: "WXX100103-2800" Sample ID: "11LEFF" File: "EX501000011.wif"  
 Peak Name: "TATB" Mass(es): "257.2204.9 amu"  
 Comment: "LCMSEXP\_C" Annotation: "

Sample Index: 1  
 Sample Type: QC  
 Concentration: 500. ng/mL  
 Calculated Conc: 504. ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 2:17:58 PM  
 Modified: No  
 RT Window: 15.0 sec  
 Expected RT: 8.22 min  
 Use Relative RT: No  
 Int. Type: Manual  
 Retention Time: 0.97 min  
 Peak Height: 1294368 counts  
 Peak Width: 30.0 points  
 Start Time: 8.13 min  
 End Time: 8.32 min  
 Type: Valley  
 Retention Time: 6.97 min  
 Area: 7.10e+005 counts  
 Height: 163154.800 cps  
 RT Time: 6.84 min  
 Time: 7.50 min

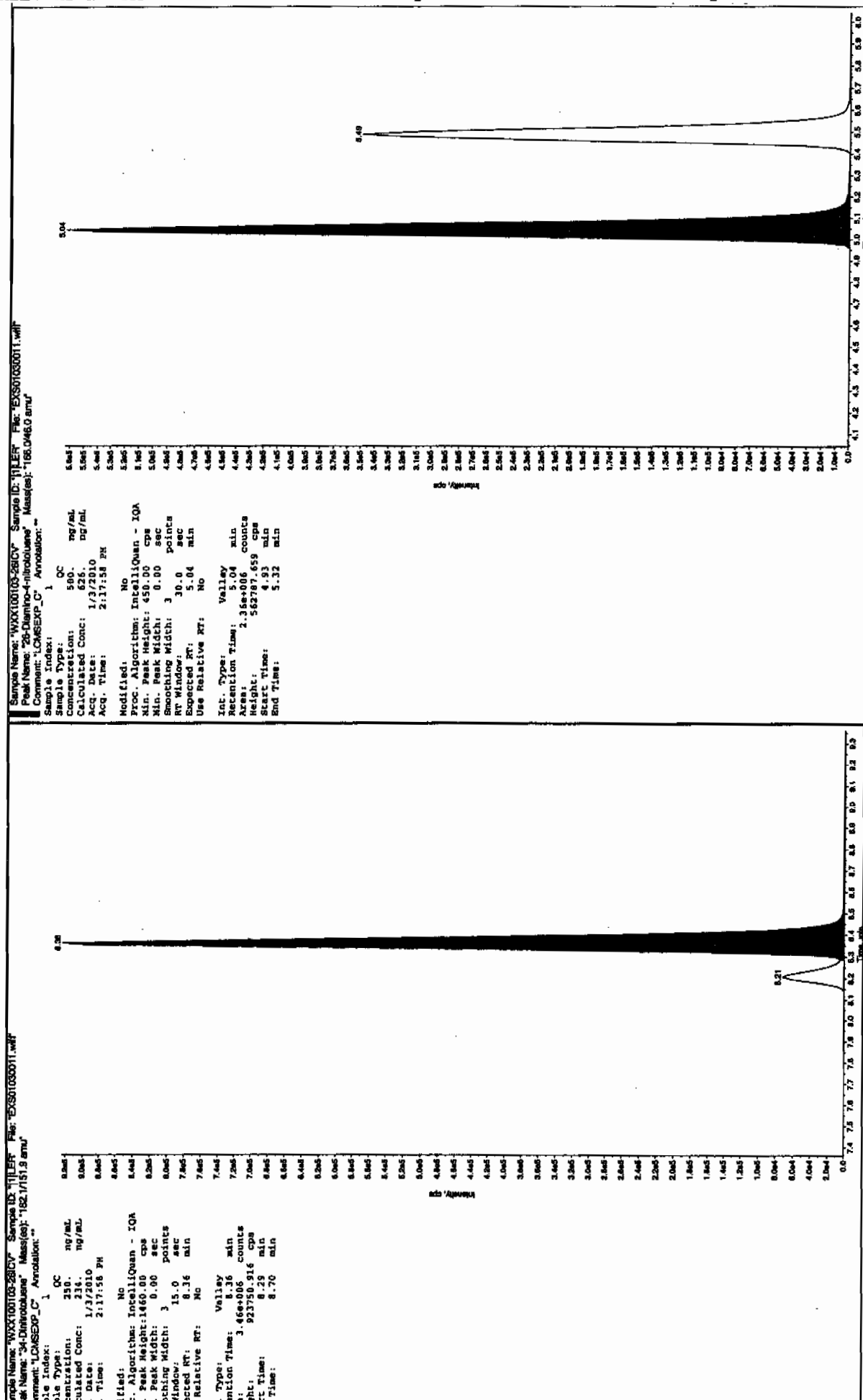


Sample Name: "WXX100103-2800" Sample ID: "11LEFF" File: "EX501000011.wif"  
 Peak Name: "TATB" Mass(es): "182.0461.0 amu"  
 Comment: "LCMSEXP\_C" Annotation: "

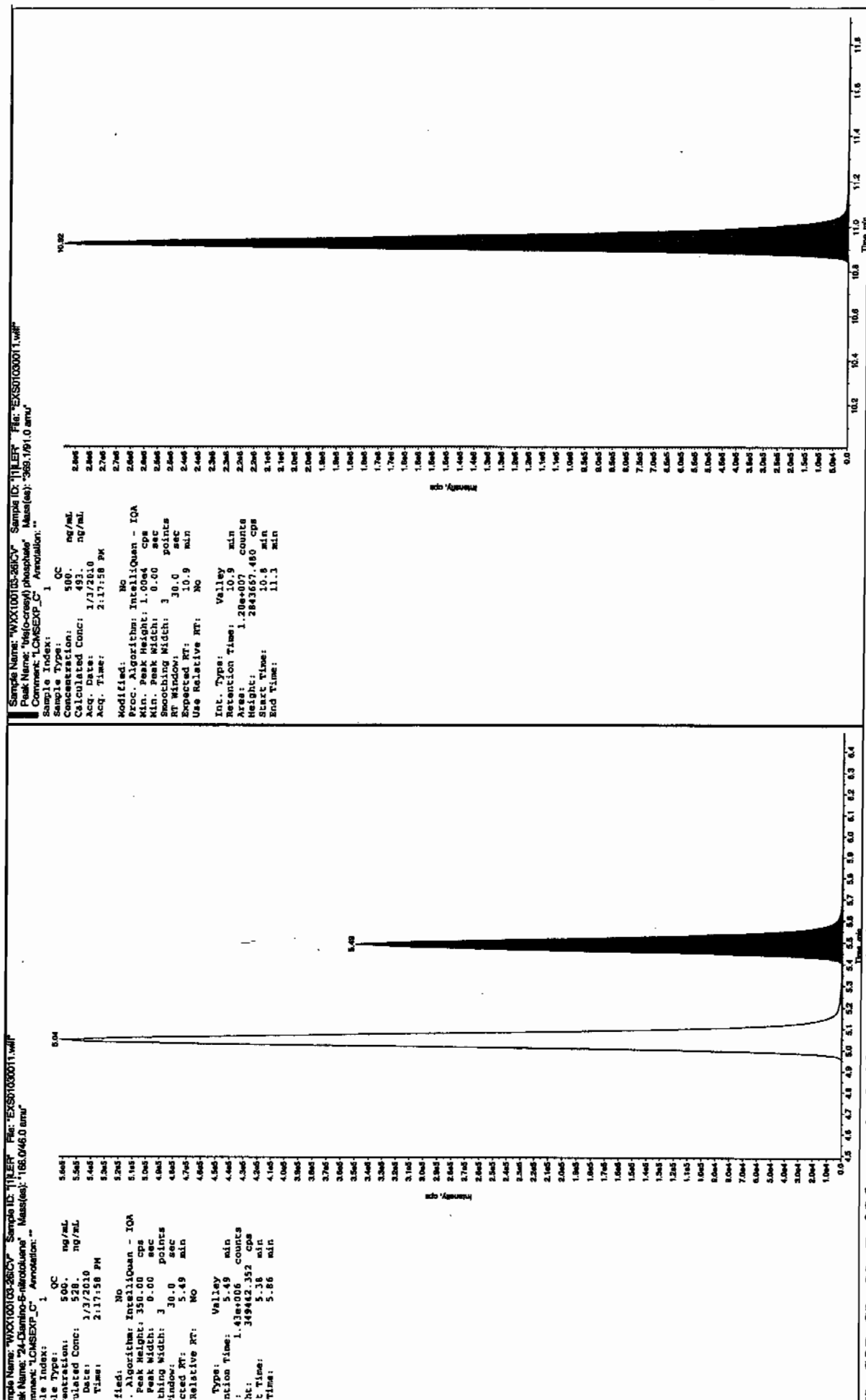
Sample Index: 1  
 Sample Type: QC  
 Concentration: 500. ng/mL  
 Calculated Conc: 505. ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 2:17:58 PM  
 Modified: Yes  
 RT Window: 15.0 sec  
 Expected RT: 8.22 min  
 Use Relative RT: No  
 Int. Type: Manual  
 Retention Time: 8.22 min  
 Peak Height: 1294368 counts  
 Peak Width: 30.0 points  
 Start Time: 8.13 min  
 End Time: 8.32 min



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

7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102012a

Analysis Date: 02-JAN-10 18:58

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	52.86	132	*
1,3-Dinitrobenzene-d4	500	507.751	102	
2,4,6-Trinitrotoluene	40	40.067	100	
2,4-Dinitrotoluene	40	33.577	84	
2,6-Dinitrotoluene	40	40.896	102	
2,6-Dinitrotoluene-d3	500	581.234	116	
2-Amino-4,6-dinitrotoluene	40	36.157	90	
3,4-Dinitrotoluene	20	17.353	87	
4-Amino-2,6-dinitrotoluene	40	28.823	72	
HMX	40	44.063	110	
Nitrobenzene	40	45.836	115	
PETN	40	48.044	120	
RDX	40	41.645	104	
Tetryl	40	29.408	74	
m-Dinitrobenzene	40	43.162	108	
m-Nitrotoluene	40	42.625	107	
o-Nitrotoluene	40	37.315	93	
p-Nitrotoluene	40	42.834	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

Quantify Sample Report  
 3EL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

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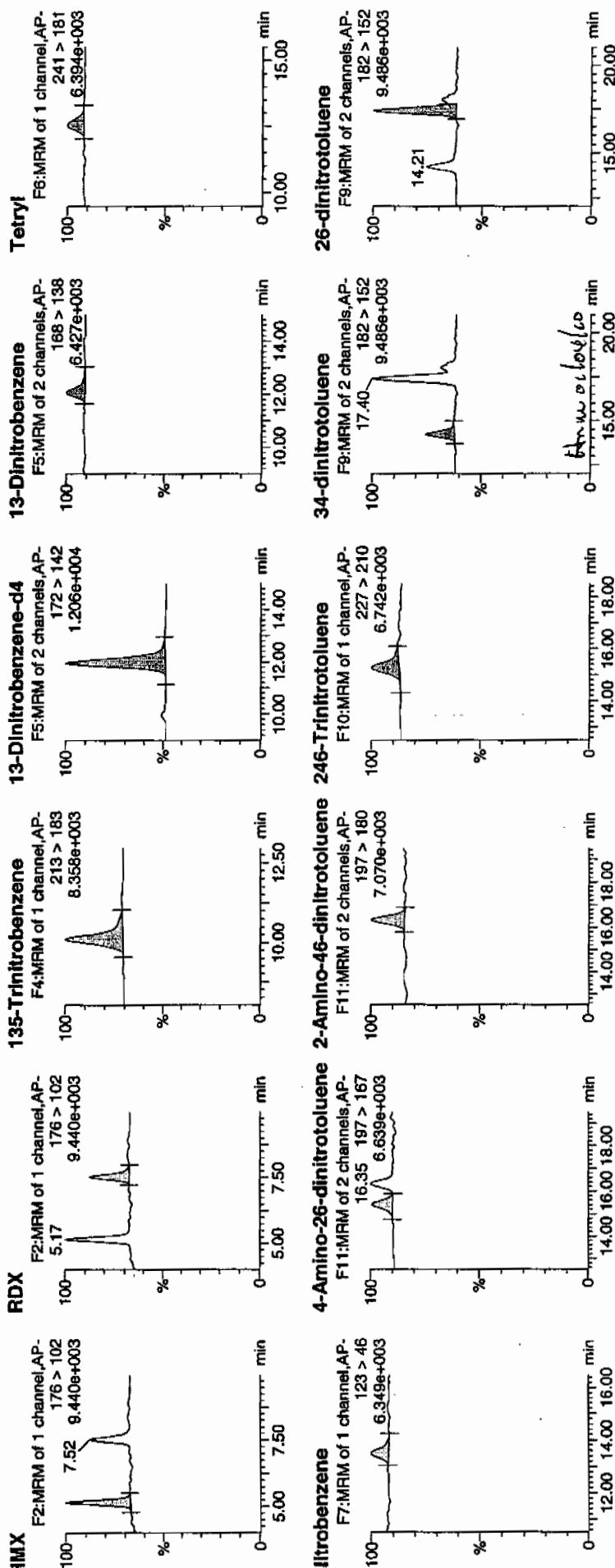
Date: 02-Jan-2010

Time: 18:58:28

D: WXX100102-08CRI

/lat: 1:1,C

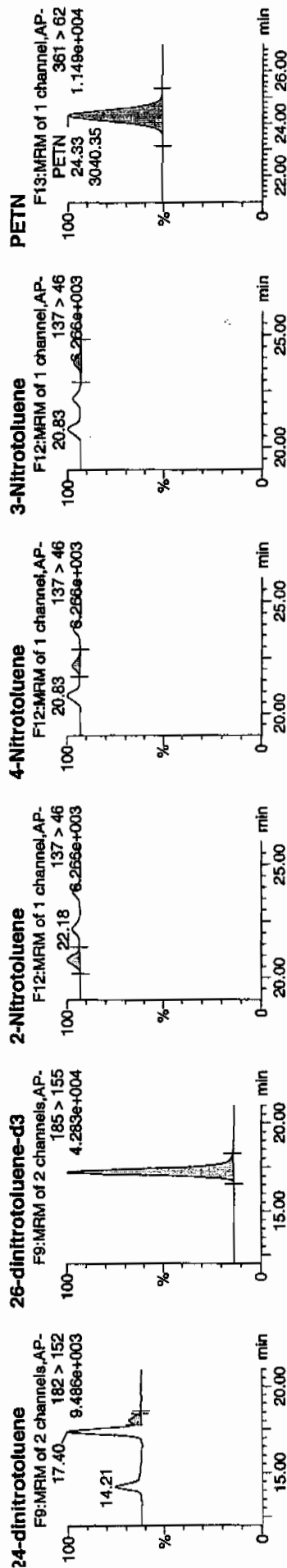
1/4/10  
 1/4/10



## Quantify Sample Report

**GEL Laboratories, LLC / Analyst : Michael A. Penny**

Dataset: C:\MASSLYN\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



Doc ID	Name	Trace	Area	IS Area	Abn Resp	Resist	Page	Mod Date	Mod Time	Total	Sec	Adv	ASN
WXX100102-08CRI	HMX	176 > 102	5.17	638.253	2411.811	638.253	132.318	bb		44.0629	110.2	10.2	53.0
WXX100102-08CRI	RDX	176 > 102	7.52	471.179	2411.811	471.179	97.682	bb		41.6452	104.1	4.1	32.8
WXX100102-08CRI	135-Trinitrobenzene	213 > 183	10.11	948.858	2411.811	948.858	196.711	bb		52.8595	132.1	32.1	64.6
WXX100102-08CRI	13-Dinitrobenzene-d4	172 > 142	11.95	2411.811		2411.811	2411.811	bb		507.7505	101.6	1.6	372.5
WXX100102-08CRI	13-Dinitrobenzene	168 > 138	12.07	243.513	2411.811	243.513	50.483	bb		43.1620	107.9	7.9	17.6
WXX100102-08CRI	Tetryl	241 > 181	12.54	252.417	2411.811	252.417	52.329	bb		29.4076	73.5	-26.5	22.0
WXX100102-08CRI	Nitrobenzene	123 > 46	13.50	216.568	2411.811	216.568	44.897	bb		45.8359	114.6	14.6	11.8
WXX100102-08CRI	4-Amino-26-dinitrotoluene	197 > 167	15.43	271.390	15980.059	271.390	8.492	bb		28.8227	72.1	-27.9	18.5
WXX100102-08CRI	2-Amino-46-dinitrotoluene	197 > 180	16.34	438.985	15980.059	438.985	13.735	bb		36.1569	90.4	-9.8	17.9
WXX100102-08CRI	246-Trinitrotoluene	227 > 210	15.28	413.155	15980.059	413.155	12.927	bb		40.0665	100.2	0.2	20.1
WXX100102-08CRI	34-dinitrotoluene	182 > 152	14.21	494.607	15980.059	494.607	15.476	bb		17.3527	86.8	-13.2	28.7
WXX100102-08CRI	26-dinitrotoluene	182 > 152	17.40	1399.283	15980.059	1399.283	43.782	MM	04-Jan-10 11:09:20	40.8958	102.2	2.2	82.6
WXX100102-08CRI	24-dinitrotoluene	182 > 152	18.03	278.400	15980.059	278.400	8.711	MM	04-Jan-10 11:27:51	33.5765	83.9	-16.1	14.5
WXX100102-08CRI	26-dinitrotoluene-d3	185 > 155	17.22	15980.059		15980.059	15980.059	bb		581.2343	116.2	16.2	961.0
WXX100102-08CRI	2-Nitrotoluene	137 > 46	20.83	203.624	15980.059	203.624	6.371	bb		37.3153	93.3	-6.7	62.6
WXX100102-08CRI	4-Nitrotoluene	137 > 46	22.18	116.814	15980.059	116.814	3.655	bb		42.8340	107.1	7.1	36.4
WXX100102-08CRI	3-Nitrotoluene	137 > 46	23.81	136.999	15980.059	136.999	4.287	bb		42.6248	106.6	6.6	35.6
WXX100102-08CRI	PETN	361 > 62	24.33	3040.349	15980.059	3040.349	95.129	bb		48.0441	120.1	20.1	1192.6

GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/02/10  
 Time of Injection 1858  
 Standard Number WXX100102-08CRI  
 Data File EXP0102012a

HMX	110.2
RDX	104.1
135-TNB	132.1
13-DNB	107.9
Tetryl	73.5
Nitrobenzene	114.6
4A-26-DNT	72.1
2A-46-DNT	90.5
246-TNT	100.2
34-DNT(surr)	86.8
26-DNT	102.2
24-DNT	83.9
2-NT	93.3
4-NT	107.1
3-NT	106.6
PETN	120.1

*MTT  
1/4/10*

Total 1605.2

Average 100.3

*MTT 01/04/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102021a

Analysis Date: 02-JAN-10 23:23

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	606.641	101	
1,3-Dinitrobenzene-d4	500	476.598	95	
2,4,6-Trinitrotoluene	600	696.444	116	
2,4-Dinitrotoluene	600	607.153	101	
2,6-Dinitrotoluene	600	625.071	104	
2,6-Dinitrotoluene-d3	500	470.571	94	
2-Amino-4,6-dinitrotoluene	600	661.139	110	
3,4-Dinitrotoluene	300	329.942	110	
4-Amino-2,6-dinitrotoluene	600	586.703	98	
HMX	600	709.225	118	
Nitrobenzene	600	633.417	106	
PETN	600	622.98	104	
RDX	600	706.774	118	
Tetryl	600	636.049	106	
m-Dinitrobenzene	600	622.779	104	
m-Nitrotoluene	600	622.88	104	
o-Nitrotoluene	600	649.667	108	
p-Nitrotoluene	600	649.407	108	

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

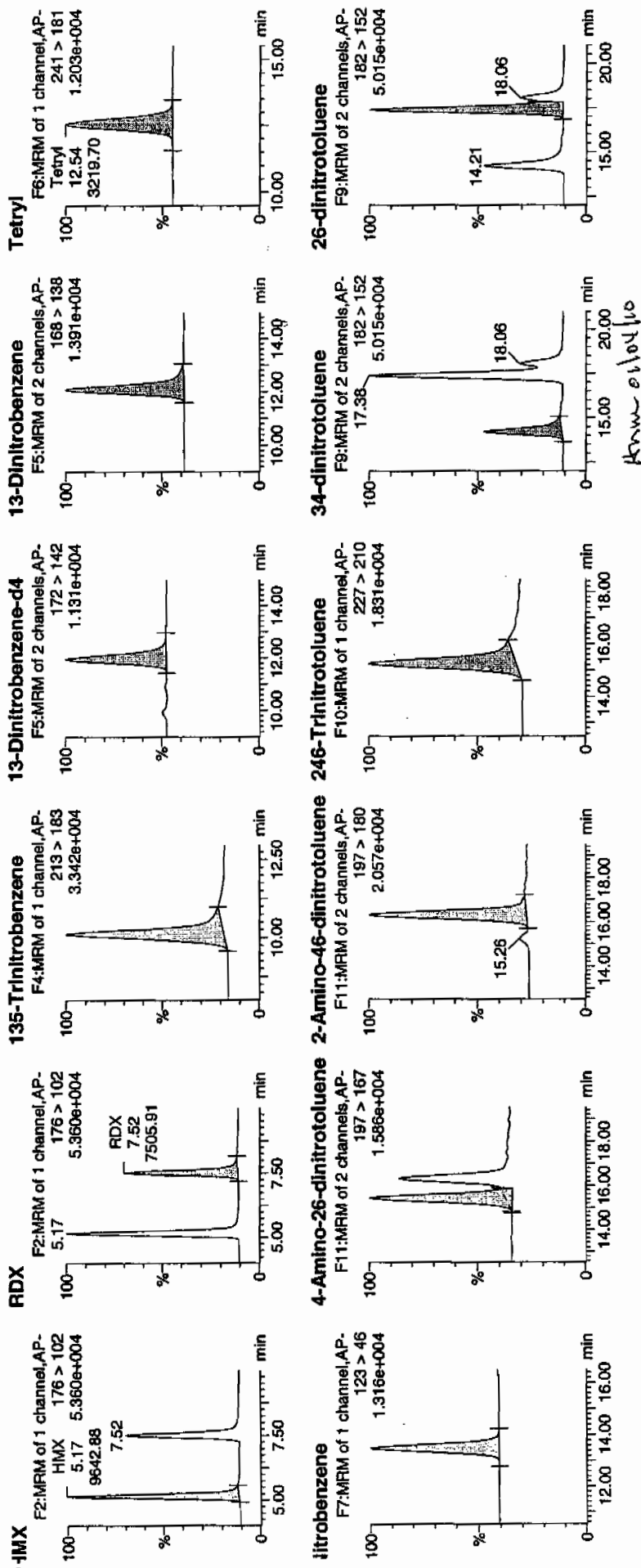
**Quantify Sample Report**  
3EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

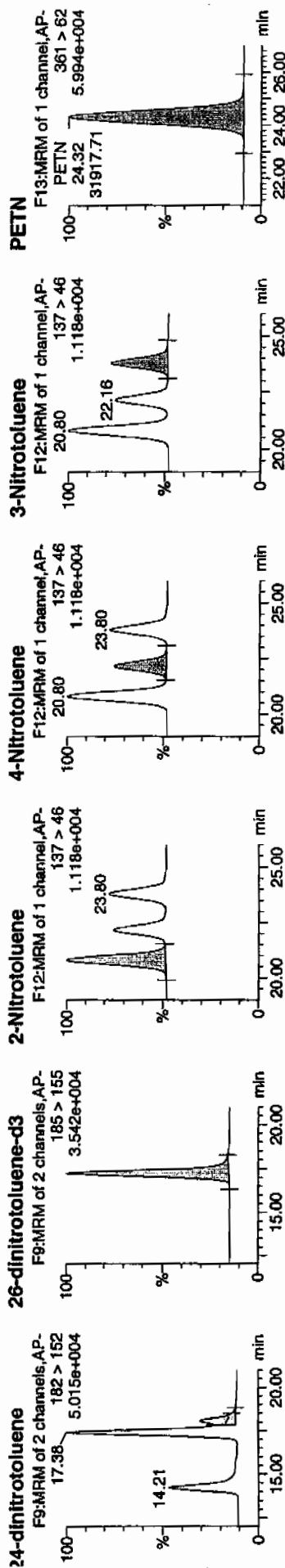
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Date: 02-Jan-2010  
Time: 23:23:51  
D: WXX100102-07CCV  
/lat: 1:1,B

14/10



Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



DTG	Name	Trace	Height	Area	IS Area	Assigned	Response	Mass	Molecular Weight	Retention	Area	Peak	Height
01/01/2010 10:56:56	HMX	176 > 102	5.17	9642.875	2263.838	9642.875	2129.763	bb	709.2253	118.2	18.2	1330.7	
	RDX	178 > 102	7.52	7505.913	2263.838	7505.913	1657.786	bb	706.7743	117.8	17.8	881.1	
	135-Trinitrobenzene	213 > 183	10.11	10221.441	2263.838	10221.441	2257.547	bb	606.6408	101.1	1.1	1356.8	
	13-Dinitrobenzene-d4	172 > 142	11.95	2263.838	2263.838	2263.838	2263.838	bb	476.5982	95.3	-4.7	519.6	
	13-Dinitrobenzene	168 > 138	12.07	3298.041	2263.838	3298.041	728.418	bb	622.7786	103.8	3.8	418.5	
	Tetryl	241 > 181	12.54	3219.696	2263.838	3219.696	711.114	bb	636.0492	106.0	6.0	778.0	
	Nitrobenzene	123 > 46	13.50	2809.184	2263.838	2809.184	620.447	bb	633.4169	105.6	5.6	286.8	
	4-Amino-26-dinitrotoluene	197 > 167	15.43	4472.521	12937.563	4472.521	172.850	MM	586.7035	97.8	-2.2	276.4	
	2-Amino-46-dinitrotoluene	197 > 180	16.32	6498.685	12937.563	6498.685	251.156	bb	661.1387	110.2	10.2	223.3	
	246-Trinitrotoluene	227 > 210	15.25	5814.228	12937.563	5814.228	224.703	bb	696.4438	116.1	16.1	554.3	
04-Jan-10 11:11:32	34-dinitrotoluene	182 > 152	14.21	7613.846	12937.563	7613.846	294.253	bb	329.9418	110.0	10.0	366.1	
	26-dinitrotoluene	182 > 152	17.38	17315.305	12937.563	17315.305	669.187	MM	625.0707	104.2	4.2	911.3	
	24-dinitrotoluene	182 > 152	18.06	4075.732	12937.563	4075.732	157.515	MM	607.1532	101.2	1.2	194.2	
	26-dinitrotoluene-d3	185 > 155	17.22	12937.563	12937.563	12937.563	470.5712	bb	470.5712	94.1	-5.9	1061.8	
	2-Nitrotoluene	137 > 46	20.80	2870.164	12937.563	2870.164	110.924	bb	649.6667	108.3	8.3	298.7	
	4-Nitrotoluene	137 > 46	22.16	1433.827	12937.563	1433.827	55.413	bb	649.4067	108.2	8.2	154.5	
	3-Nitrotoluene	137 > 46	23.80	1620.815	12937.563	1620.815	62.640	bb	622.8801	103.8	3.8	169.1	
	PETN	361 > 62	24.32	31917.707	12937.563	31917.707	1233.529	bb	622.9804	103.8	3.8	6744.3	

GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/02/10  
 Time of Injection: 2323  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102021a

HMX	118.2
RDX	117.8
135-TNB	101.1
13-DNB	103.8
Tetryl	106.0
Nitrobenzene	105.6
4A-26-DNT	97.8
2A-46-DNT	110.2
246-TNT	116.1
34-DNT(surr)	110.0
26-DNT	104.2
24-DNT	101.2
2-NT	108.3
4-NT	108.2
3-NT	103.8
PETN	103.8

*11/4/10*

Total 1716.1

*Handwritten: 01/04/10*

Average 107.3

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102023a

Analysis Date: 03-JAN-10 00:22

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
Nitrobenzene	40	41.329	103	
PETN	40	52.492	131	*
RDX	40	45.747	114	
Tetryl	40	52.106	130	*
m-Dinitrobenzene	40	41.323	103	
m-Nitrotoluene	40	37.206	93	
o-Nitrotoluene	40	34.096	85	
p-Nitrotoluene	40	39.058	98	
1,3,5-Trinitrobenzene	40	55.741	139	*
1,3-Dinitrobenzene-d4	500	541.297	108	
2,4,6-Trinitrotoluene	40	48.756	122	
2,4-Dinitrotoluene	40	30.904	77	
2,6-Dinitrotoluene	40	38.797	97	
2,6-Dinitrotoluene-d3	500	532.643	107	
2-Amino-4,6-dinitrotoluene	40	41.031	103	
3,4-Dinitrotoluene	20	20.541	103	
4-Amino-2,6-dinitrotoluene	40	43.055	108	
HMX	40	47.085	118	

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  
 JEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

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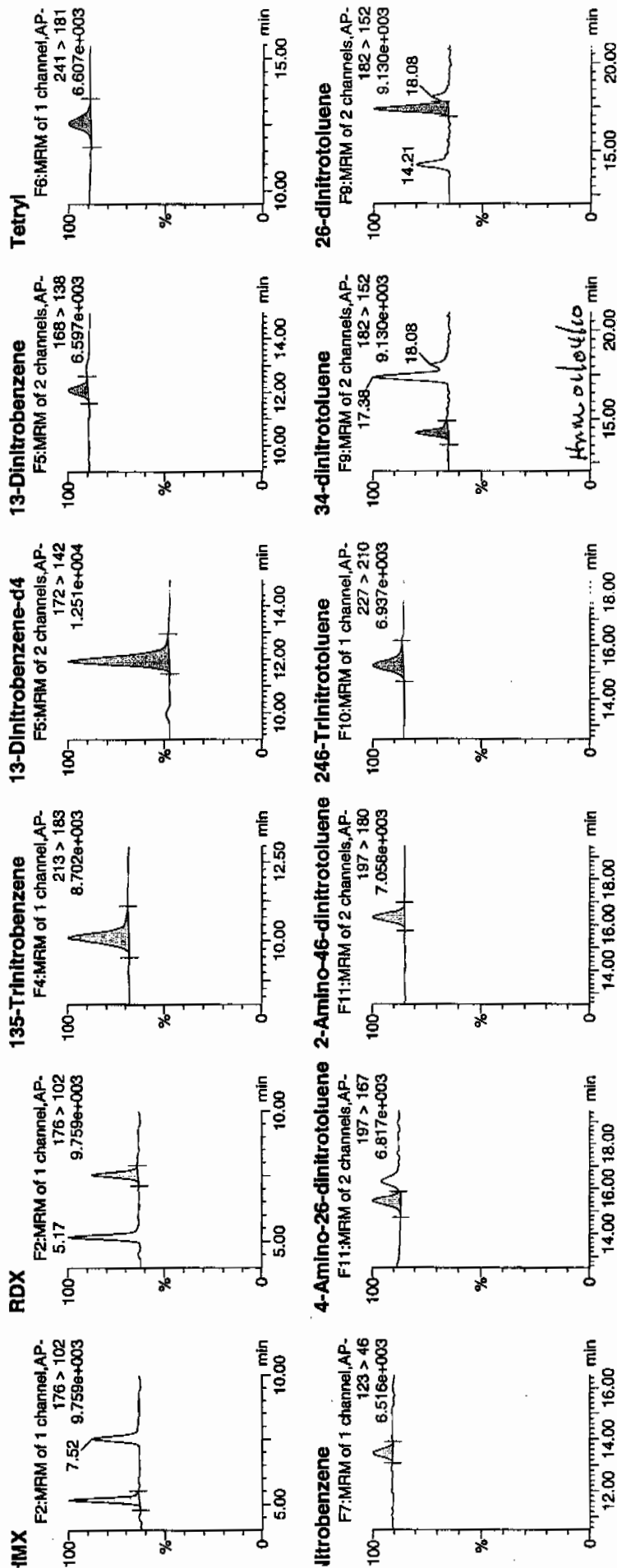
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Time: 00:22:48

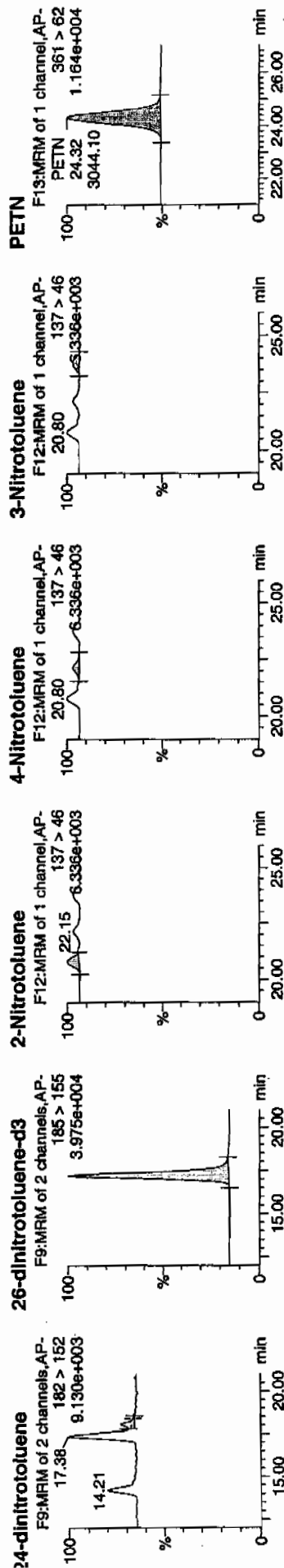
D: WXX100102-08CRI

File: 1:1,C

14/10



Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



Name	Trace	Time	Area	MS Area	Assigned	Response	Mass	Molecular	Monomer	Yield	Purity	S/N
HMX	176 > 102	5.17	727.090	2571.155	727.090	141.394	bb		47.0850	117.7	17.7	94.2
RDX	176 > 102	7.52	551.788	2571.155	551.788	107.304	bb		45.7474	114.4	14.4	61.6
135-Trinitrobenzene	213 > 183	10.13	1066.681	2571.155	1066.681	207.432	bb		55.7405	139.4	39.4	101.4
13-Dinitrobenzene-d4	172 > 142	11.95	2571.155		2571.155	2571.155	bb		541.2967	108.3	8.3	428.0
13-Dinitrobenzene	168 > 138	12.10	248.542	2571.155	248.542	48.333	bb		41.3233	103.3	3.3	11.1
Tetryl	241 > 181	12.53	407.427	2571.155	407.427	79.230	bb		52.1060	130.3	30.3	71.3
Nitrobenzene	123 > 46	13.45	208.176	2571.155	208.176	40.483	bb		41.3292	103.3	3.3	22.9
4-Amino-26-dinitrotoluene	197 > 167	15.46	371.506	14644.124	371.506	12.684	MM	04-Jan-10	10:57:07			28.1
2-Amino-46-dinitrotoluene	197 > 180	16.34	456.517	14644.124	456.517	15.587	bb		43.0548	107.6	7.6	55.5
246-Trinitrotoluene	227 > 210	15.28	460.724	14644.124	460.724	15.731	bb		41.0311	102.6	2.6	67.2
34-dinitrotoluene	182 > 152	14.21	536.536	14644.124	536.536	18.319	bb		48.7555	121.9	21.9	33.8
26-dinitrotoluene	182 > 152	17.38	1216.508	14644.124	1216.508	41.536	MM	04-Jan-10	11:11:37		-3.0	78.8
24-dinitrotoluene	182 > 152	18.08	234.816	14644.124	234.816	8.017	MM	04-Jan-10	11:29:57		-22.7	16.7
26-dinitrotoluene-d3	185 > 155	17.23	14644.124		14644.124	14644.124	bb		532.6430	106.5	6.5	728.5
2-Nitrotoluene	137 > 46	20.80	170.500	14644.124	170.500	5.821	bb		34.0955	85.2	-14.8	32.0
4-Nitrotoluene	137 > 46	22.15	97.611	14644.124	97.611	3.333	bb		39.0578	97.6	-2.4	16.4
3-Nitrotoluene	137 > 46	23.79	109.585	14644.124	109.585	3.742	bb		37.2059	93.0	-7.0	16.7
PETN	361 > 62	24.32	3044.100	14644.124	3044.100	103.936	bb		52.4917	131.2	31.2	623.5

GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/03/10  
 Time of Injection 0022  
 Standard Number WXX100102-08CRI  
 Data File EXP0102023a

HMX	117.7
RDX	114.4
135-TNB	139.4
13-DNB	103.3
Tetryl	130.3
Nitrobenzene	103.3
4A-26-DNT	107.6
2A-46-DNT	102.6
246-TNT	121.9
34-DNT(surr)	102.7
26-DNT	97.0
24-DNT	77.3
2-NT	85.2
4-NT	97.6
3-NT	93.0
PETN	131.2

*WXX  
1/4/10*

Total 1724.5

Average 107.8

*Handwritten: 01/04/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102034a

Analysis Date: 03-JAN-10 05:47

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
HMX	600	678.468	113	
Nitrobenzene	600	571.544	95	
PETN	600	516.307	86	
RDX	600	699.252	117	
Tetryl	600	574.755	96	
m-Dinitrobenzene	600	611.266	102	
m-Nitrotoluene	600	456.807	76	*
o-Nitrotoluene	600	544.882	91	
p-Nitrotoluene	600	499.282	83	
1,3,5-Trinitrobenzene	600	604.084	101	
1,3-Dinitrobenzene-d4	500	491.515	98	
2,4,6-Trinitrotoluene	600	700.254	117	
2,4-Dinitrotoluene	600	589.795	98	
2,6-Dinitrotoluene	600	606.761	101	
2,6-Dinitrotoluene-d3	500	584.159	117	
2-Amino-4,6-dinitrotoluene	600	626.242	104	
3,4-Dinitrotoluene	300	267.84	89	
4-Amino-2,6-dinitrotoluene	600	568.309	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

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

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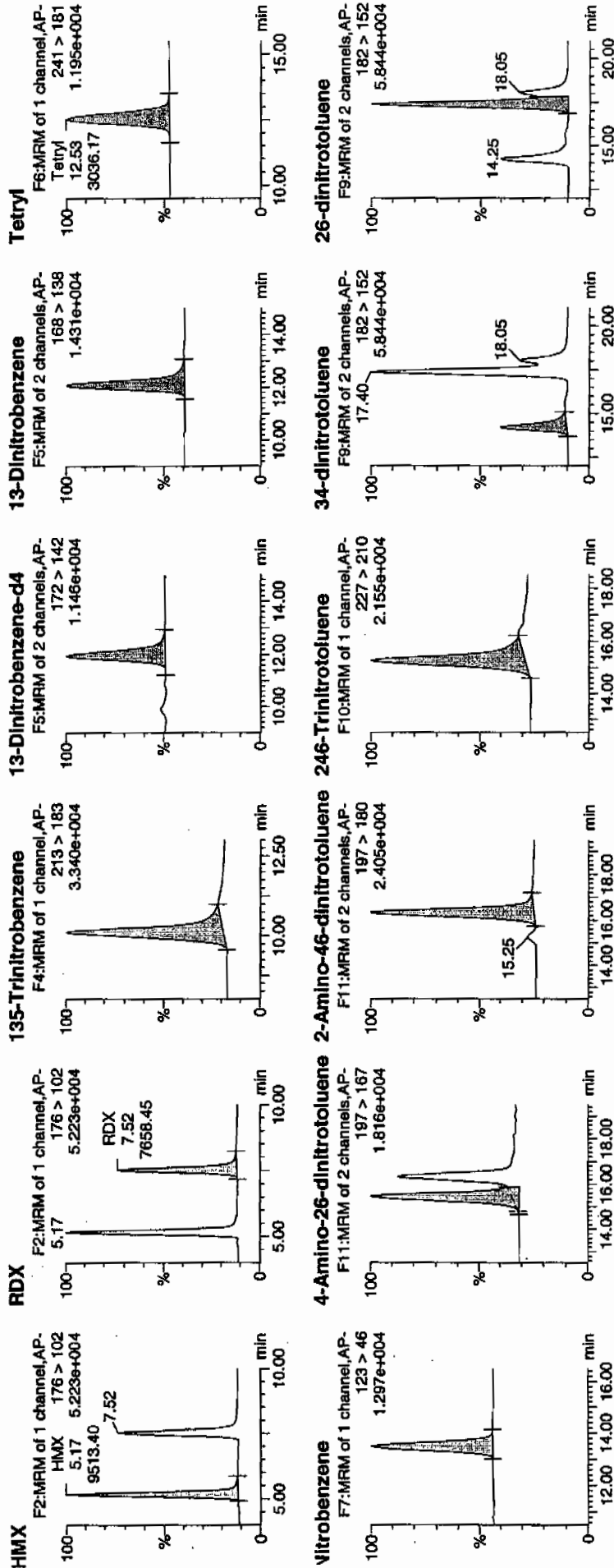
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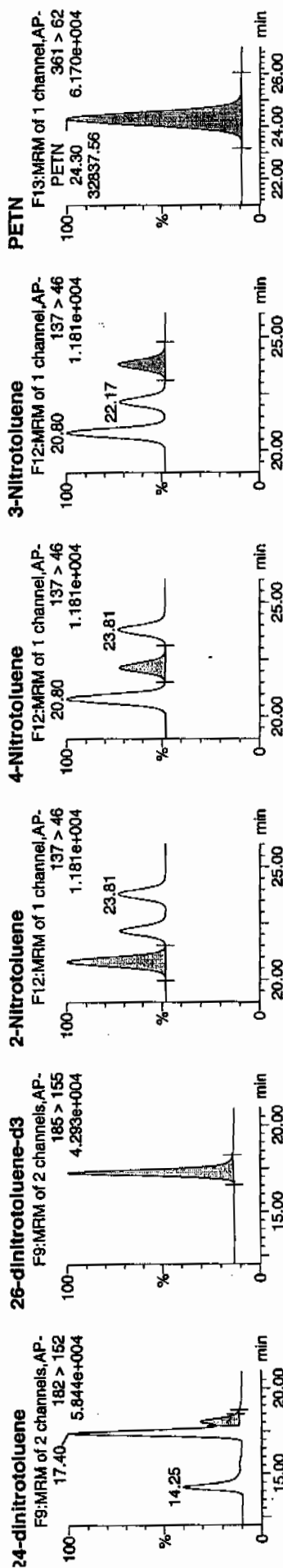
ID: WXX100102-07CCV

Vial: 1:1,B

1/4/10



Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



ID	Name	Trace	Area	Response	Flags	Mod	Mod Date
WXX100102-07CCV	HMX	176 > 102	5.17	9513.398	2334.691	9513.398	2037.400
WXX100102-07CCV	RDX	176 > 102	7.52	7658.448	2334.691	7658.448	1640.142
WXX100102-07CCV	135-Trinitrobenzene	213 > 183	10.13	10496.912	2334.691	10496.912	2248.030
WXX100102-07CCV	13-Dinitrobenzene-d4	172 > 142	11.95	2334.691	2334.691	2334.691	2334.691
WXX100102-07CCV	13-Dinitrobenzene	168 > 138	12.07	3338.387	2334.691	3338.387	714.953
WXX100102-07CCV	Tetryl	241 > 181	12.53	3036.174	2334.691	3036.174	650.230
WXX100102-07CCV	Nitrobenzene	123 > 46	13.49	2614.112	2334.691	2614.112	559.841
WXX100102-07CCV	4-Amino-26-dinitrotoluene	197 > 167	15.45	5378.037	16060.466	5378.037	167.431
WXX100102-07CCV	2-Amino-46-dinitrotoluene	197 > 180	16.34	7641.534	16060.466	7641.534	237.899
WXX100102-07CCV	246-Trinitrotoluene	227 > 210	15.27	7257.167	16060.466	7257.167	225.933
WXX100102-07CCV	34-dinitrotoluene	182 > 152	14.25	7672.681	16060.466	7672.681	238.869
WXX100102-07CCV	26-dinitrotoluene	182 > 152	17.40	20865.277	16060.466	20865.277	649.585
WXX100102-07CCV	24-dinitrotoluene	182 > 152	18.05	4914.897	16060.466	4914.897	153.012
WXX100102-07CCV	26-dinitrotoluene-d3	185 > 155	17.22	16060.466	16060.466	16060.466	16060.466
WXX100102-07CCV	2-Nitrotoluene	137 > 46	20.80	2988.300	16060.466	2988.300	93.033
WXX100102-07CCV	4-Nitrotoluene	137 > 46	22.17	1368.459	16060.466	1368.459	42.603
WXX100102-07CCV	3-Nitrotoluene	137 > 46	23.81	1475.597	16060.466	1475.597	45.939
WXX100102-07CCV	PETN	361 > 62	24.30	32837.559	16060.466	32837.559	1022.310

# GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/03/10  
 Time of Injection: 0547  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102034a

HMX	113.1
RDX	116.5
135-TNB	100.7
13-DNB	101.9
Tetryl	95.8
Nitrobenzene	95.3
4A-26-DNT	94.7
2A-46-DNT	104.4
246-TNT	116.7
34-DNT(surr)	89.3
26-DNT	101.1
24-DNT	98.3
2-NT	90.8
4-NT	83.2
3-NT	76.1
PETN	86.1

WPP  
11/4/10

Total 1564.0

Average 97.8

WPP 01/04/10

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102036a

Analysis Date: 03-JAN-10 06:46

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	52.65	132	*
1,3-Dinitrobenzene-d4	500	506.745	101	
2,4,6-Trinitrotoluene	40	42.308	106	
2,4-Dinitrotoluene	40	37.29	93	
2,6-Dinitrotoluene	40	39.158	98	
2,6-Dinitrotoluene-d3	500	556.299	111	
2-Amino-4,6-dinitrotoluene	40	41.09	103	
3,4-Dinitrotoluene	20	20.171	101	
4-Amino-2,6-dinitrotoluene	40	33.796	84	
HMX	40	50.298	126	
Nitrobenzene	40	46.587	116	
PETN	40	54.777	137	*
RDX	40	43.632	109	
Tetryl	40	27.743	69	*
m-Dinitrobenzene	40	45.239	113	
m-Nitrotoluene	40	37.552	94	
o-Nitrotoluene	40	41.767	104	
p-Nitrotoluene	40	41.131	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 04 12:59:32 2010, Page 71 of 175

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\10210expA.qld, Time: Mon Jan 04 12:58:29 2010

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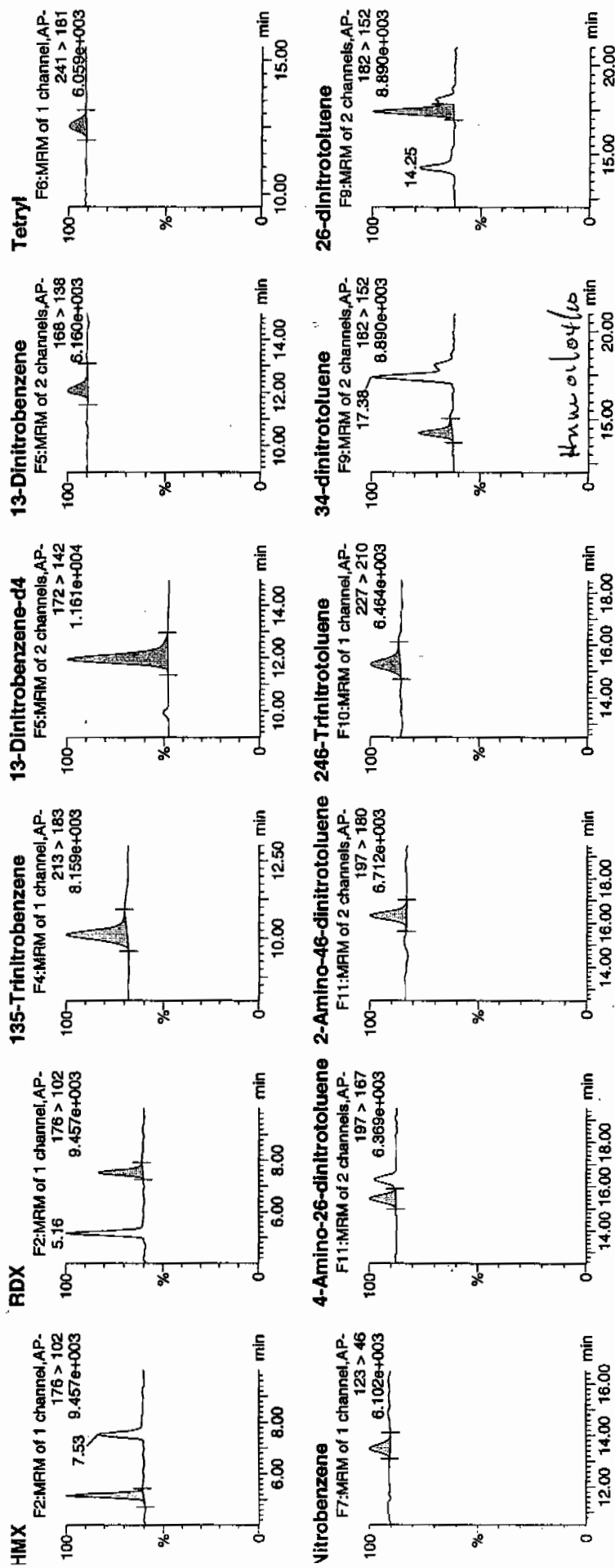
Date: 03-Jan-2010

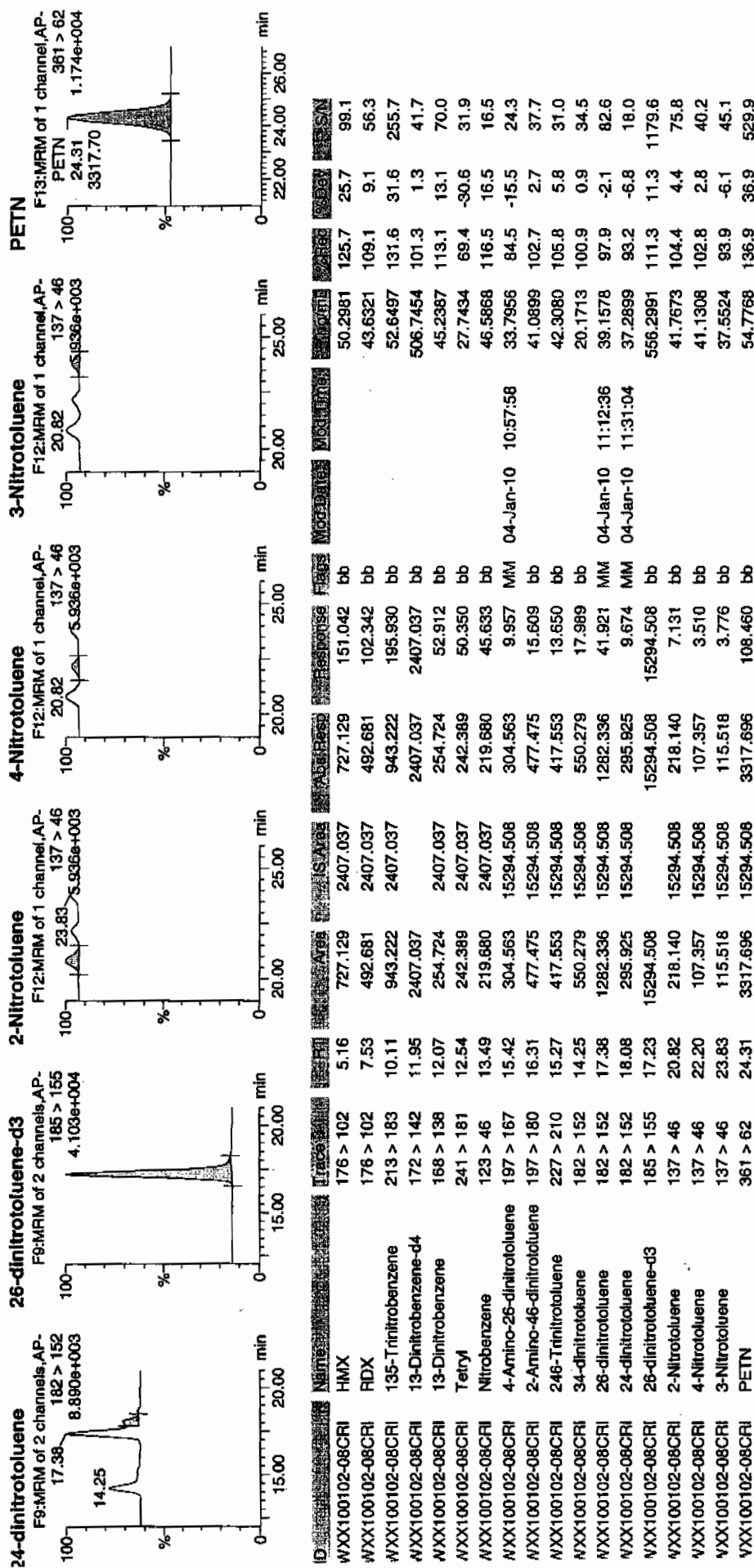
Time: 06:46:07

ID: WXX100102-08CRI

Vial: 1:1,C

11/4/10





GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/03/10  
 Time of Injection 0646  
 Standard Number WXX100102-08CRI  
 Data File EXP0102036a

HMX	125.7
RDX	109.1
135-TNB	131.6
13-DNB	113.1
Tetryl	69.4
Nitrobenzene	116.5
4A-26-DNT	84.5
2A-46-DNT	102.7
246-TNT	105.8
34-DNT(surr)	100.9
26-DNT	97.9
24-DNT	93.2
2-NT	104.4
4-NT	102.8
3-NT	93.9
PETN	136.9

*WTP  
1/4/10*

Total 1688.4

Average 105.5

*4mm 01/04/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102047a

Analysis Date: 03-JAN-10 12:10

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	563.784	94	
1,3-Dinitrobenzene-d4	500	511.429	102	
2,4,6-Trinitrotoluene	600	789.967	132	*
2,4-Dinitrotoluene	600	581.051	97	
2,6-Dinitrotoluene	600	609.173	102	
2,6-Dinitrotoluene-d3	500	524.072	105	
2-Amino-4,6-dinitrotoluene	600	584.452	97	
3,4-Dinitrotoluene	300	327.362	109	
4-Amino-2,6-dinitrotoluene	600	612.244	102	
HMX	600	770.989	128	*
Nitrobenzene	600	580.085	97	
PETN	600	562.527	94	
RDX	600	670.491	112	
Tetryl	600	575.016	96	
m-Dinitrobenzene	600	636.373	106	
m-Nitrotoluene	600	568.106	95	
o-Nitrotoluene	600	584.607	97	
p-Nitrotoluene	600	567.117	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

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102047a

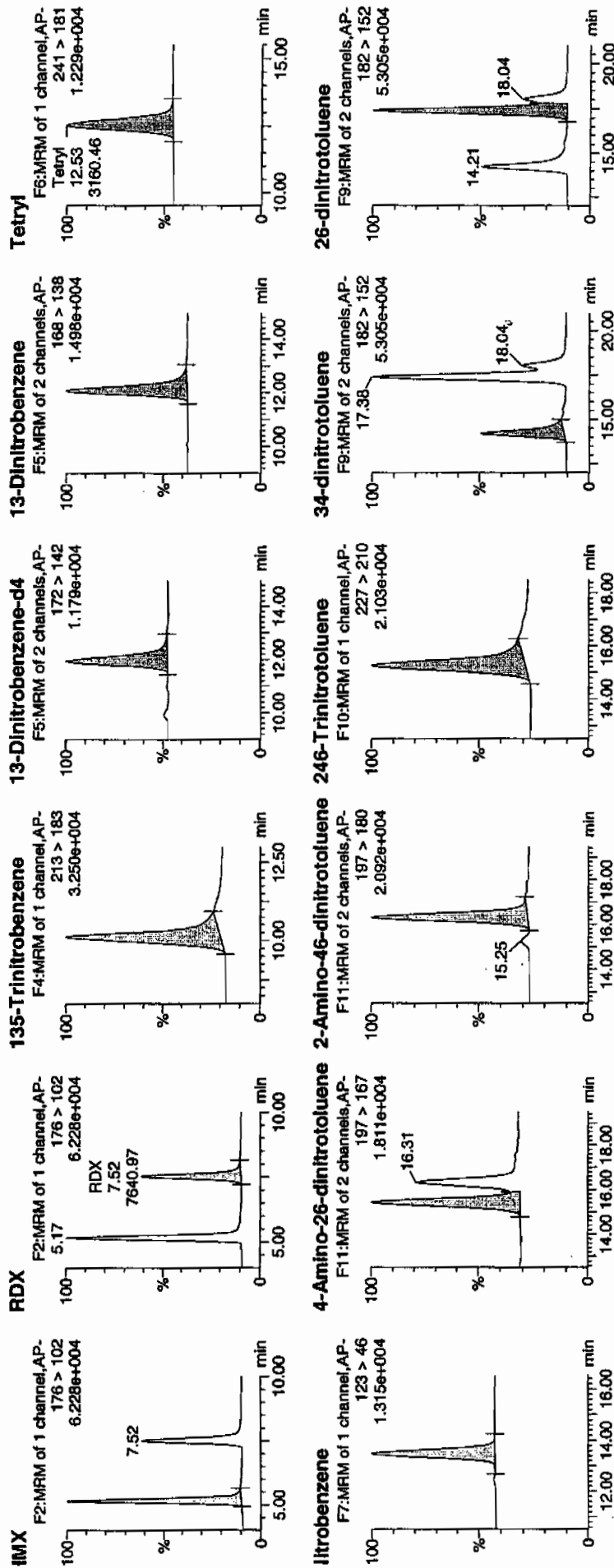
Date: 03-Jan-2010

Time: 12:10:48

D: WXX100102-07CCV

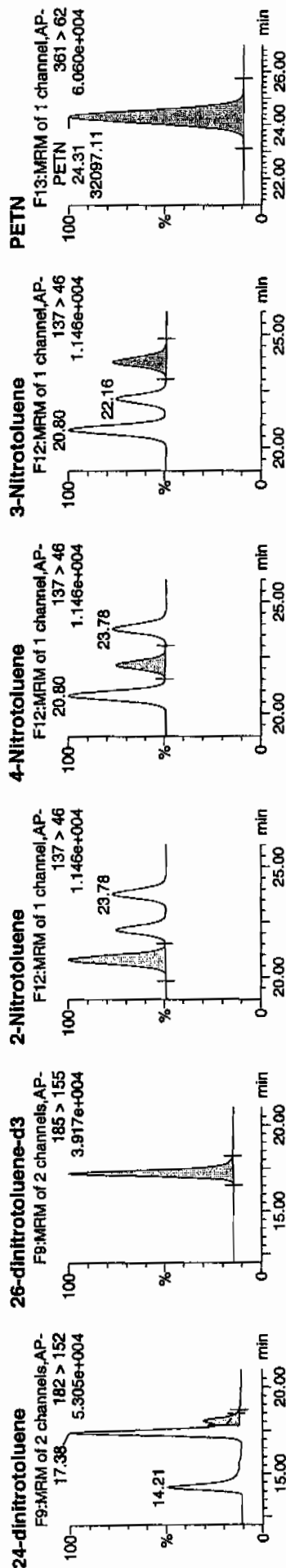
File: 1:1,B

10/17  
 11/10



10/17  
 11/10

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



Name	Trace	Area	IS Area	Area Ratio	Res	Peak	Mod Date	Mod Time	Area	Peak	SN
135-Trinitrobenzene	176 > 102	5.17	11248.720	2429.283	11248.720	2315.235	bb	770.9887	128.5	28.5	1399.5
13-Dinitrobenzene-d4	176 > 102	7.52	7640.973	2429.283	7640.973	1572.681	bb	670.4913	111.7	11.7	803.7
13-Dinitrobenzene	213 > 183	10.11	10193.561	2429.283	10193.561	2098.060	bb	563.7839	94.0	-6.0	1500.9
13-Dinitrobenzene	172 > 142	11.95	2429.283	2429.283	2429.283	2429.283	bb	511.4288	102.3	2.3	316.5
13-Dinitrobenzene	168 > 138	12.07	3616.321	2429.283	3616.321	744.319	bb	636.3731	106.1	6.1	422.7
Tetryl	241 > 181	12.53	3160.460	2429.283	3160.460	650.492	bb	575.0163	95.8	-4.2	213.6
Nitrobenzene	123 > 46	13.50	2760.675	2429.283	2760.675	568.208	bb	580.0854	96.7	-3.3	314.5
4-Amino-26-dinitrotoluene	197 > 167	15.43	5197.847	14408.473	5197.847	180.375	MM	612.2436	102.0	2.0	342.2
2-Amino-46-dinitrotoluene	197 > 180	16.31	6398.042	14408.473	6398.042	222.024	bb	584.4518	97.4	-2.6	257.9
248-Trinitrotoluene	227 > 210	15.28	7344.803	14408.473	7344.803	254.878	bb	789.9665	131.7	31.7	330.2
34-dinitrotoluene	182 > 152	14.21	8413.181	14408.473	8413.181	291.953	bb	327.3618	109.1	9.1	295.6
26-dinitrotoluene	182 > 152	17.38	18793.477	14408.473	18793.477	652.168	MM	609.1730	101.5	1.5	696.3
24-dinitrotoluene	182 > 152	18.04	4343.969	14408.473	4343.969	150.744	MM	581.0506	96.8	-3.2	148.7
26-dinitrotoluene-d3	185 > 155	17.23	14408.473	14408.473	14408.473	14408.473	bb	524.0718	104.8	4.8	1944.8
2-Nitrotoluene	137 > 46	20.80	2876.376	14408.473	2876.376	99.815	bb	584.6071	97.4	-2.6	165.9
4-Nitrotoluene	137 > 46	22.16	1394.500	14408.473	1394.500	48.392	bb	567.1175	94.5	-5.5	84.9
3-Nitrotoluene	137 > 46	23.78	1646.356	14408.473	1646.356	57.132	bb	568.1059	94.7	-5.3	92.4
PETN	361 > 62	24.31	32097.109	14408.473	32097.109	1113.828	bb	562.5267	93.8	-6.2	3929.2

GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/03/10  
 Time of Injection: 1210  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102047a

HMX	128.5
RDX	111.7
135-TNB	94.0
13-DNB	106.1
Tetryl	95.8
Nitrobenzene	96.7
4A-26-DNT	102.0
2A-46-DNT	97.4
246-TNT	131.7
34-DNT(surr)	109.1
26-DNT	101.5
24-DNT	96.8
2-NT	97.4
4-NT	94.5
3-NT	94.7
PETN	93.8

*WR  
1/4/10*

Total 1651.7

Average 103.2

*HWK 01/04/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102049a

Analysis Date: 03-JAN-10 13:09

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2,4-Dinitrotoluene	40	31.228	78	
2,6-Dinitrotoluene	40	38.104	95	
2,6-Dinitrotoluene-d3	500	556.672	111	
2-Amino-4,6-dinitrotoluene	40	40.889	102	
3,4-Dinitrotoluene	20	21.372	107	
4-Amino-2,6-dinitrotoluene	40	45.169	113	
HMX	40	48.827	122	
Nitrobenzene	40	34.856	87	
PETN	40	55.696	139	*
RDX	40	50.638	127	
Tetryl	40	27.468	69	*
m-Dinitrobenzene	40	40.661	102	
m-Nitrotoluene	40	35.234	88	
o-Nitrotoluene	40	40.147	100	
p-Nitrotoluene	40	38.622	97	
1,3,5-Trinitrobenzene	40	50.451	126	
1,3-Dinitrobenzene-d4	500	614.352	123	
2,4,6-Trinitrotoluene	40	39.34	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 50-150%

Other Target Analytes 70-130%

# 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\1010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102049a

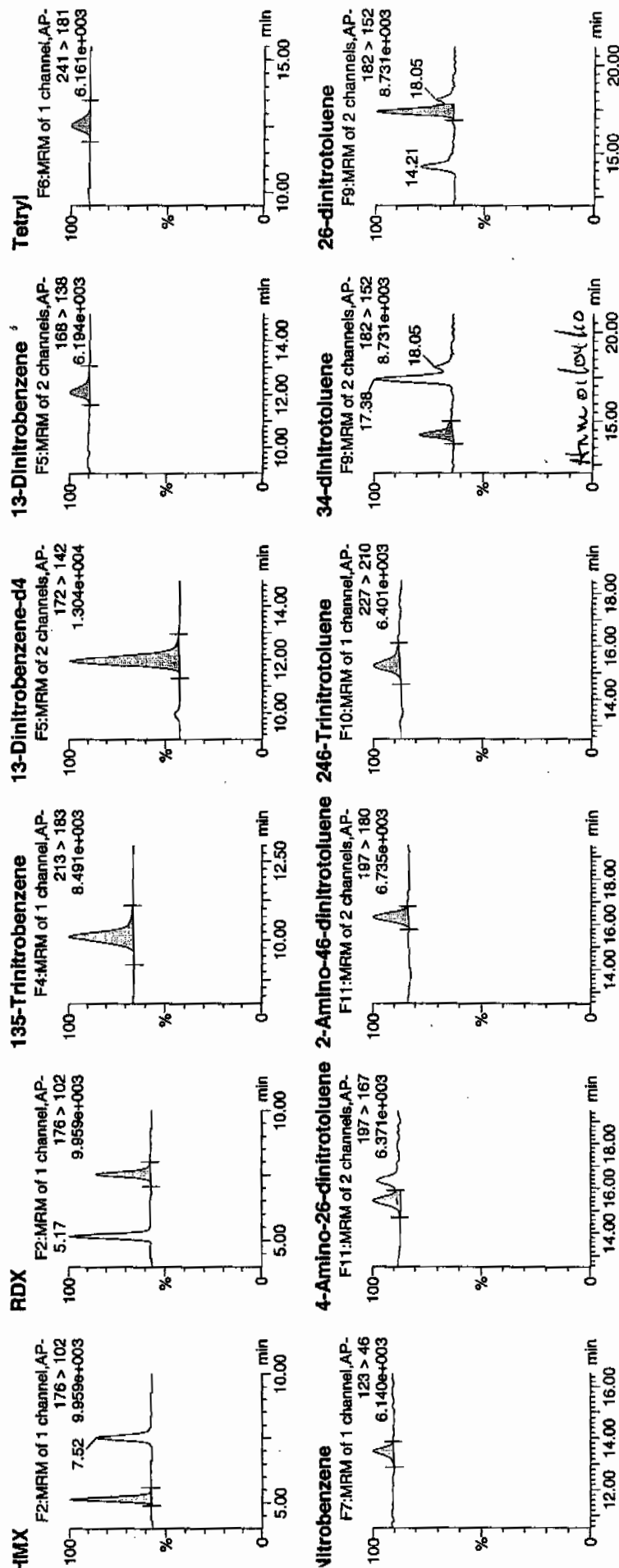
Date: 03-Jan-2010

Time: 13:09:52

ID: WXX100102-08CRI

Vial: 1:1,C

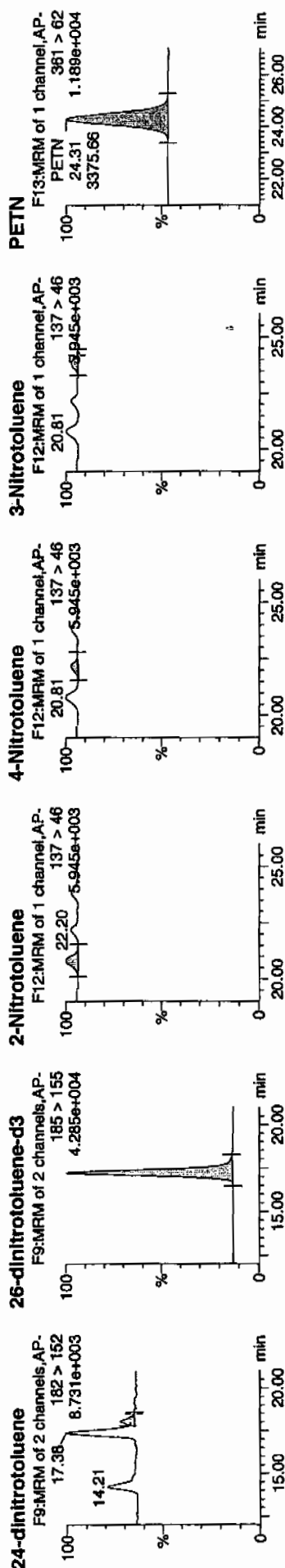
1/4/10



## Quantify Sample Report

**GEL Laboratories, LLC / Analyst : Michael A. Penny**

Dataset: C:\MASSLYN\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

[illegible]

GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/03/10  
 Time of Injection 1309  
 Standard Number WXX100102-08CRI  
 Data File EXP0102049a

HMX	122.1
RDX	126.6
135-TNB	126.1
13-DNB	101.7
Tetryl	68.7
Nitrobenzene	87.1
4A-26-DNT	112.9
2A-46-DNT	102.2
246-TNT	98.3
34-DNT(surr)	106.9
26-DNT	95.3
24-DNT	78.1
2-NT	100.4
4-NT	96.6
3-NT	88.1
PETN	139.2

*Handwritten:* 103.1  
1/4/10

Total 1650.3

Average 103.1

*Handwritten:* 01/04/10

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102060a

Analysis Date: 03-JAN-10 18:34

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3-Dinitrobenzene-d4	500	581.056	116	
2,4,6-Trinitrotoluene	600	702.126	117	
2,4-Dinitrotoluene	600	573.176	96	
2,6-Dinitrotoluene	600	605.415	101	
2,6-Dinitrotoluene-d3	500	517.275	103	
2-Amino-4,6-dinitrotoluene	600	648.81	108	
3,4-Dinitrotoluene	300	307.189	102	
4-Amino-2,6-dinitrotoluene	600	593.052	99	
HMX	600	614.684	102	
Nitrobenzene	600	526.599	88	
PETN	600	598.946	100	
RDX	600	623.171	104	
Tetryl	600	498.34	83	
m-Dinitrobenzene	600	614.428	102	
m-Nitrotoluene	600	525.204	88	
o-Nitrotoluene	600	542.432	90	
p-Nitrotoluene	600	558.083	93	
1,3,5-Trinitrobenzene	600	560.693	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  
iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102060a

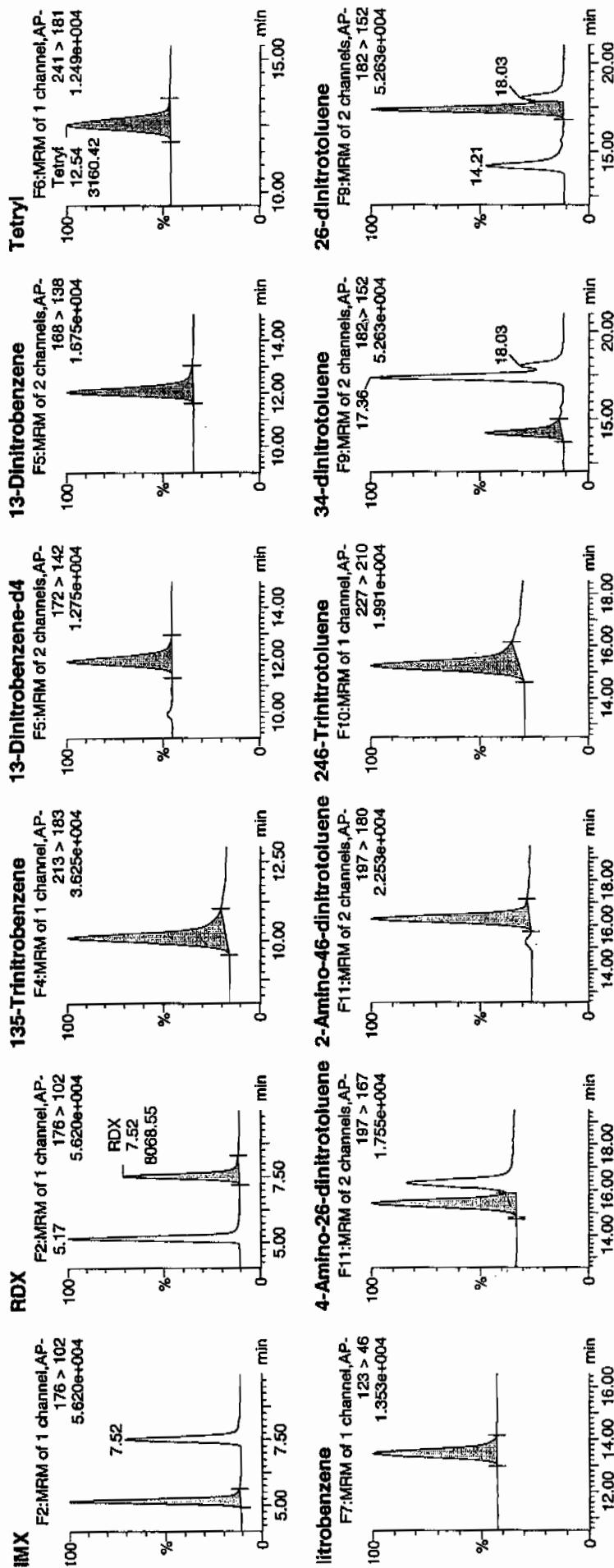
Date: 03-Jan-2010

Time: 18:34:37

Job: WXX100102-07CCV

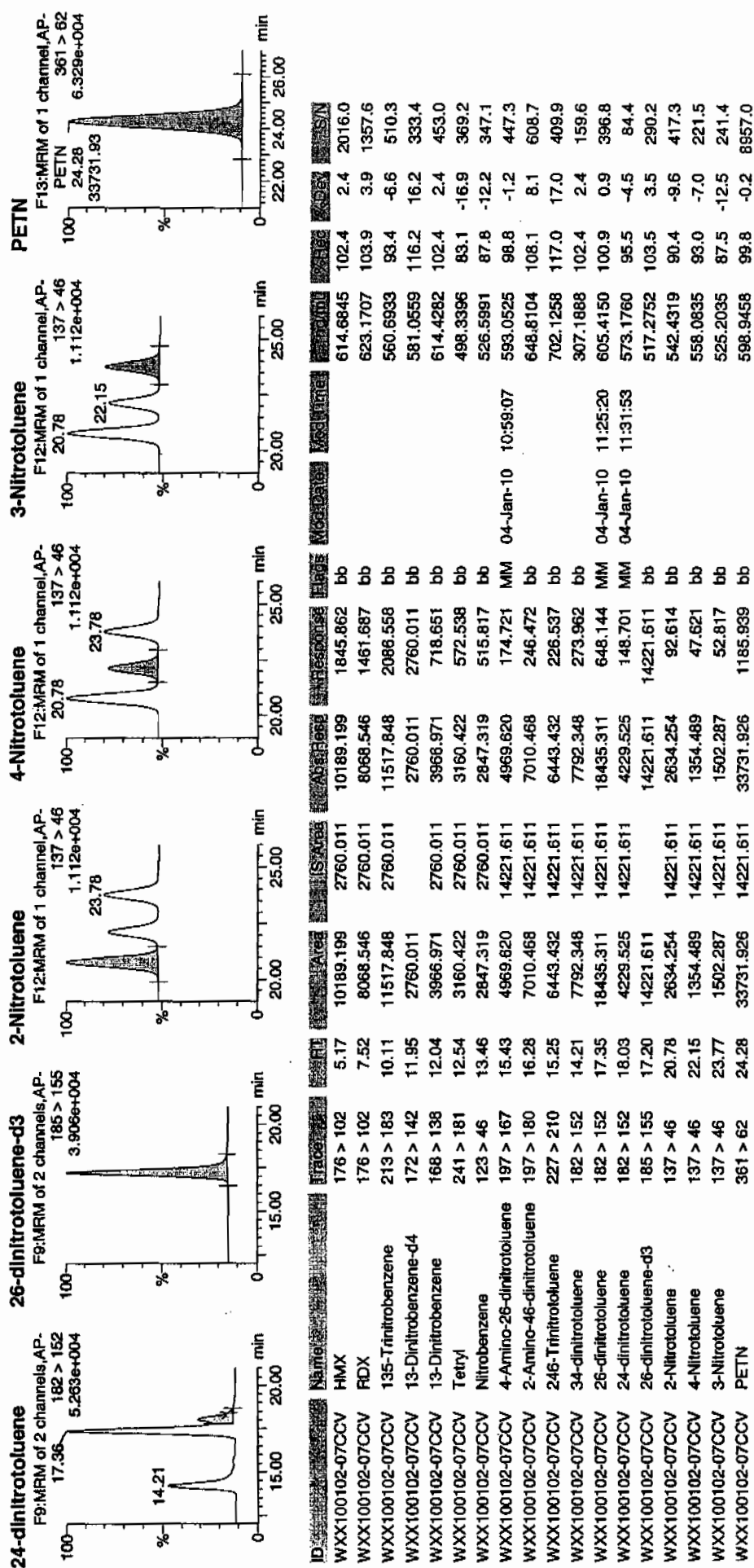
File: 1:1,B

14/10



14/10

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/03/10  
 Time of Injection: 1834  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102060a

HMX	102.4
RDX	103.9
135-TNB	93.4
13-DNB	102.4
Tetryl	83.1
Nitrobenzene	87.8
4A-26-DNT	98.8
2A-46-DNT	108.1
246-TNT	117.0
34-DNT(surr)	102.4
26-DNT	100.9
24-DNT	95.5
2-NT	90.4
4-NT	93.0
3-NT	87.5
PETN	99.8

*Handwritten:* 11/4/10

Total 1566.4

Average 97.9

*Handwritten:* 11/4/10

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102062a

Analysis Date: 03-JAN-10 19:33

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
m-Dinitrobenzene	40	46.839	117	
m-Nitrotoluene	40	37.069	93	
o-Nitrotoluene	40	36.041	90	
p-Nitrotoluene	40	40.836	102	
1,3,5-Trinitrobenzene	40	52.387	131	*
1,3-Dinitrobenzene-d4	500	504.453	101	
2,4,6-Trinitrotoluene	40	43.167	108	
2,4-Dinitrotoluene	40	37.627	94	
2,6-Dinitrotoluene	40	41.593	104	
2,6-Dinitrotoluene-d3	500	524.982	105	
2-Amino-4,6-dinitrotoluene	40	46.186	115	
3,4-Dinitrotoluene	20	18.445	92	
4-Amino-2,6-dinitrotoluene	40	39.412	99	
HMX	40	56.013	140	*
Nitrobenzene	40	49.829	125	
PETN	40	60.169	150	*
RDX	40	45.851	115	
Tetryl	40	38.577	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 50-150%

Other Target Analytes 70-130%

# 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\1010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP\_PRO\Data\EXP0102062a

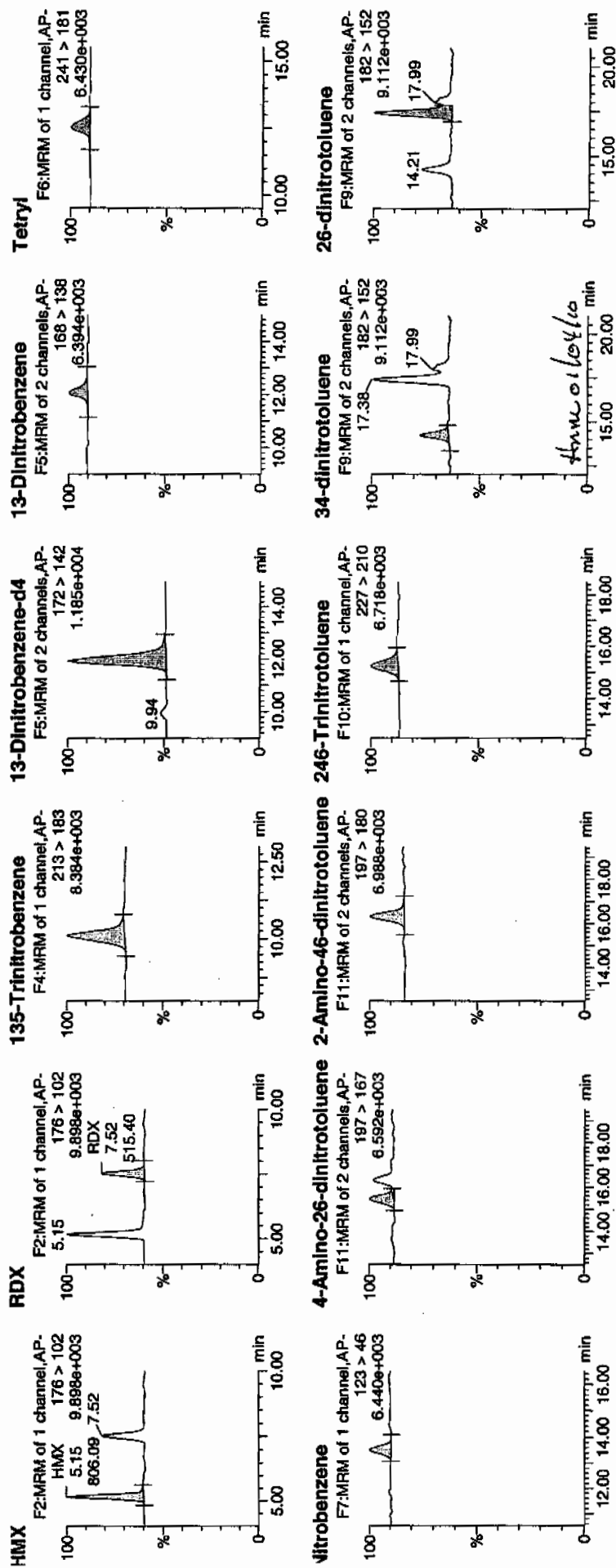
Date: 03-Jan-2010

Time: 19:33:40

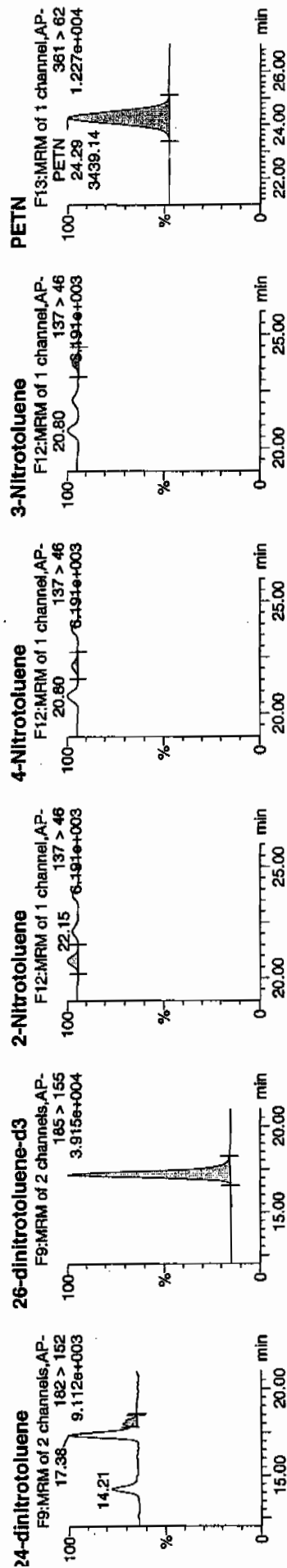
ID: WXX100102-08CRI

Vial: 1:1,C

WAT  
11/10



Dataset: C:\MASSLYNX\New Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



Name	ID	Trace	RT	Area	S Area	Abst Resp	Response	Volume	Time	Area	Area	Area	
HMx	WXX100102-08C1	176 > 102	5.15	806.089	2396.149	806.089	168.205	bb		56.0134	140.0	40.0	217.6
ROX	WXX100102-08C1	176 > 102	7.52	515.396	2396.149	515.396	107.547	bb		45.8511	114.6	14.6	118.9
135-Trinitrobenzene	WXX100102-08C1	213 > 183	10.11	934.271	2396.149	934.271	194.953	bb		52.3870	131.0	31.0	121.6
13-Dinitrobenzene-d4	WXX100102-08C1	172 > 142	11.95	2396.149		2396.149	2396.149	bb		504.4532	100.9	0.9	412.3
13-Dinitrobenzene	WXX100102-08C1	168 > 138	12.07	262.544	2396.149	262.544	54.785	bb		46.8394	117.1	17.1	22.4
Tetyl	WXX100102-08C1	241 > 181	12.53	302.956	2396.149	302.956	63.217	bb		38.5768	96.4	-3.6	39.3
Nitrobenzene	WXX100102-08C1	123 > 46	13.50	233.905	2396.149	233.905	48.809	bb		49.8288	124.6	24.6	23.5
4-Amino-26-dinitrotoluene	WXX100102-08C1	197 > 167	15.46	335.185	14433.497	335.185	11.611	MM	04-Jan-10 10:59:14	39.4123	98.5	-1.5	26.6
2-Amino-46-dinitrotoluene	WXX100102-08C1	197 > 180	16.32	506.476	14433.497	506.476	17.545	bb		46.1856	115.5	15.5	107.6
246-Trinitrotoluene	WXX100102-08C1	227 > 210	15.24	402.049	14433.497	402.049	13.928	bb		43.1672	107.9	7.9	38.4
4-dinitrotoluene	WXX100102-08C1	182 > 152	14.21	474.867	14433.497	474.867	16.450	bb		18.4453	92.2	-7.8	45.4
26-dinitrotoluene	WXX100102-08C1	182 > 152	17.38	1285.399	14433.497	1285.399	44.528	MM	04-Jan-10 11:25:29	41.5928	104.0	4.0	125.7
24-dinitrotoluene	WXX100102-08C1	182 > 152	17.99	281.788	14433.497	281.788	9.762	MM	04-Jan-10 11:32:07	37.6267	94.1	-5.9	26.0
26-dinitrotoluene-d3	WXX100102-08C1	185 > 155	17.20	14433.497		14433.497	14433.497	bb		524.9820	105.0	5.0	397.2
2-Nitrotoluene	WXX100102-08C1	137 > 46	20.80	177.636	14433.497	177.636	6.154	bb		36.0409	90.1	-9.9	29.3
4-Nitrotoluene	WXX100102-08C1	137 > 46	22.15	100.588	14433.497	100.588	3.485	bb		40.8364	102.1	2.1	16.1
3-Nitrotoluene	WXX100102-08C1	137 > 46	23.79	107.611	14433.497	107.611	3.728	bb		37.0688	92.7	-7.3	17.0
PETN	WXX100102-08C1	361 > 62	24.29	3439.136	14433.497	3439.136	119.137	bb		60.1690	150.4	50.4	1292.4

GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/03/10  
 Time of Injection 1933  
 Standard Number WXX100102-08CRI  
 Data File EXP0102062a

HMX	140.0
RDX	114.6
135-TNB	131.0
13-DNB	117.1
Tetryl	96.4
Nitrobenzene	124.6
4A-26-DNT	98.5
2A-46-DNT	115.5
246-TNT	107.9
34-DNT(surr)	92.2
26-DNT	104.0
24-DNT	94.1
2-NT	90.1
4-NT	102.1
3-NT	92.7
PETN	150.4

*MTT*  
*11/4/10*

Total 1771.2

Average 110.7

*Handwritten: 11/4/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102073a

Analysis Date: 04-JAN-10 00:58

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
PETN	600	611.581	102	
RDX	600	730.048	122	*
Tetryl	600	596.099	99	
m-Dinitrobenzene	600	607.869	101	
m-Nitrotoluene	600	552.647	92	
o-Nitrotoluene	600	562.449	94	
p-Nitrotoluene	600	577.483	96	
1,3,5-Trinitrobenzene	600	615.399	103	
1,3-Dinitrobenzene-d4	500	494.555	99	
2,4,6-Trinitrotoluene	600	703.857	117	
2,4-Dinitrotoluene	600	624.595	104	
2,6-Dinitrotoluene	600	616.529	103	
2,6-Dinitrotoluene-d3	500	495.578	99	
2-Amino-4,6-dinitrotoluene	600	711.279	119	
3,4-Dinitrotoluene	300	305.044	102	
4-Amino-2,6-dinitrotoluene	600	580.794	97	
HMX	600	736.915	123	*
Nitrobenzene	600	592.67	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

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

Dataset: C:\MASSLYNX\New\_Exp\_PRO\10210expA.qld, Time: Mon Jan 04 12:58:29 2010

James: C:\MASSLYNX\NEW\_EXP\_PRO\Data\EXP0102073a

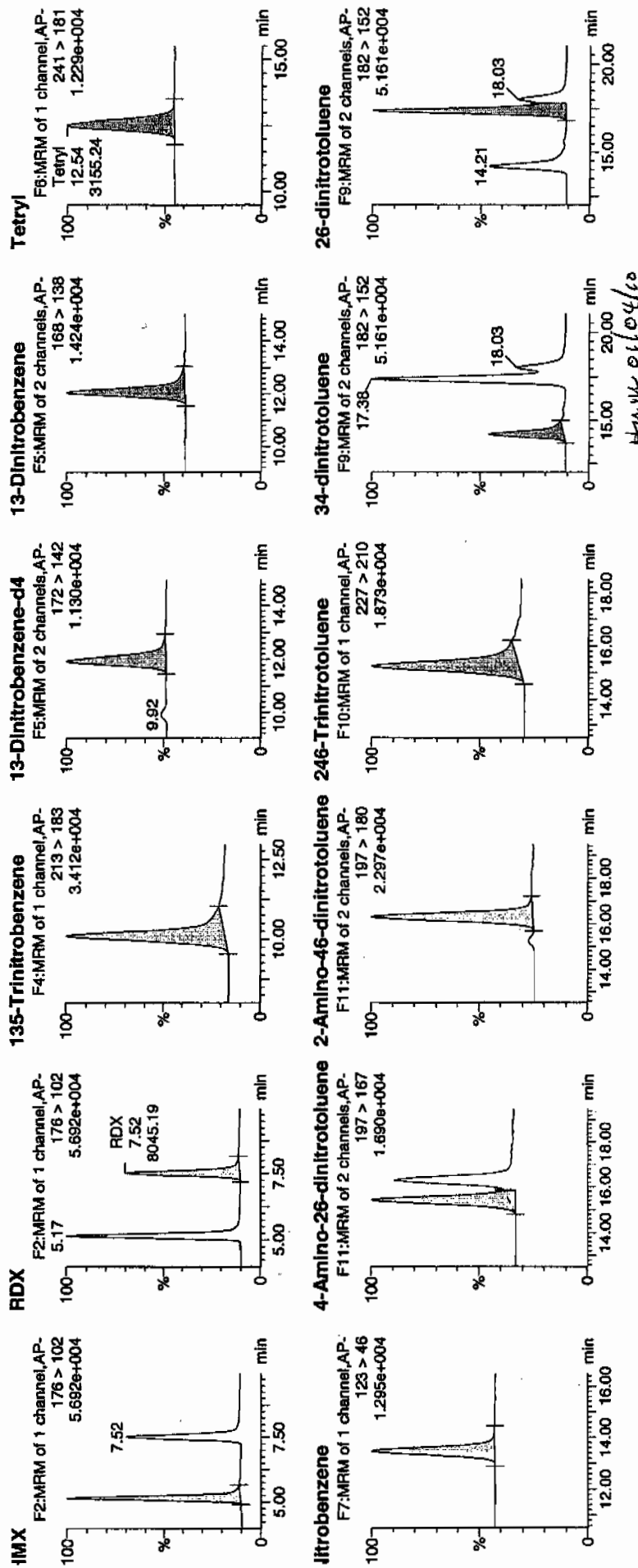
Date: 04-Jan-2010

Time: 00:58:36

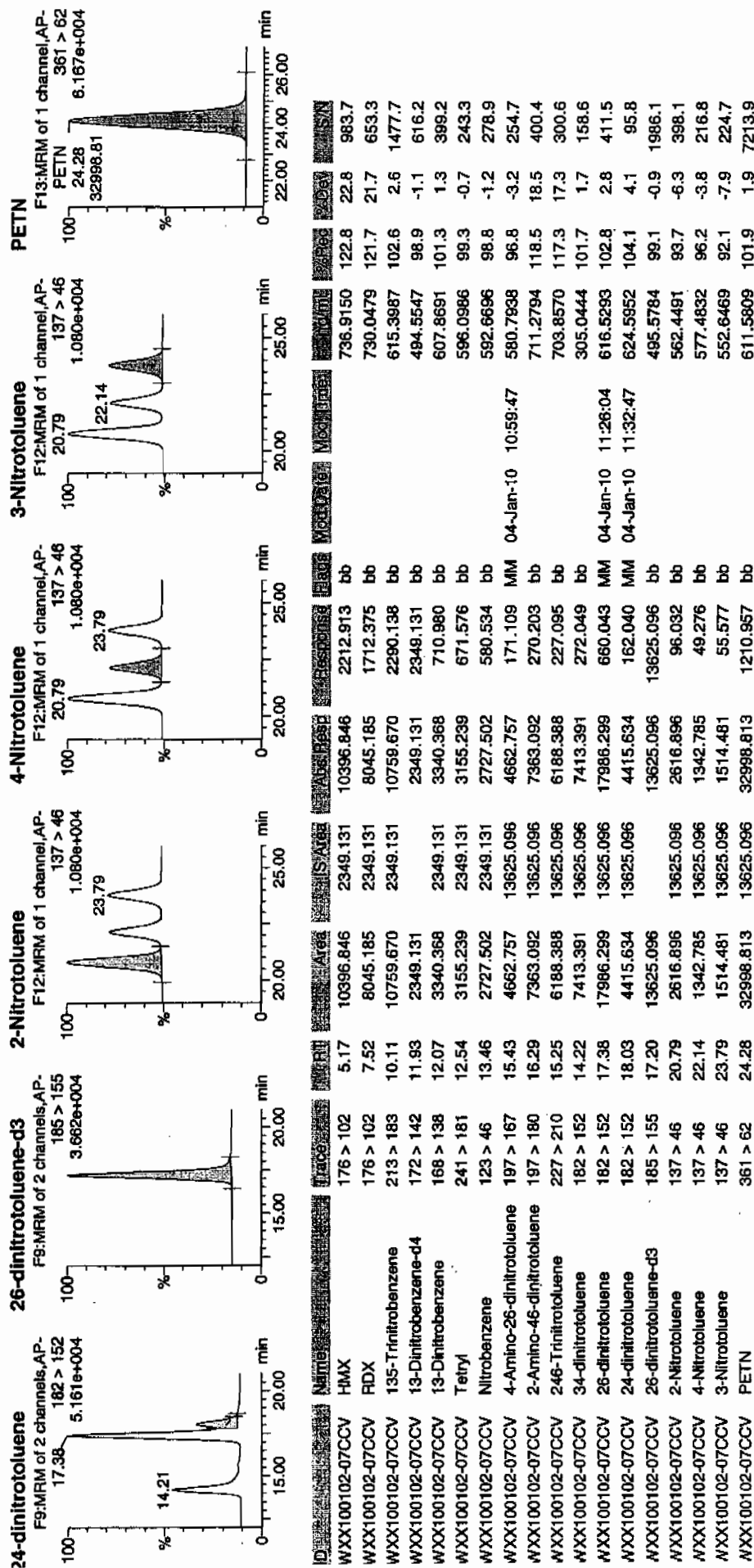
ID: WXX100102-07CCV

File: 1:1,B

14/10



Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/04/10  
 Time of Injection: 0058  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102073a

HMX	122.8
RDX	121.7
135-TNB	102.6
13-DNB	101.3
Tetryl	99.3
Nitrobenzene	98.8
4A-26-DNT	96.8
2A-46-DNT	118.5
246-TNT	117.3
34-DNT(surr)	101.7
26-DNT	102.8
24-DNT	104.1
2-NT	93.7
4-NT	96.2
3-NT	92.1
PETN	101.9

*WAT*  
*1/4/10*

Total 1671.6

*WAT 01/04/10*

Average 104.5

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102075a

Analysis Date: 04-JAN-10 01:57

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	50.8	127	
1,3-Dinitrobenzene-d4	500	571.98	114	
2,4,6-Trinitrotoluene	40	38.632	97	
2,4-Dinitrotoluene	40	41.485	104	
2,6-Dinitrotoluene	40	45.398	113	
2,6-Dinitrotoluene-d3	500	492.351	98	
2-Amino-4,6-dinitrotoluene	40	39.008	98	
3,4-Dinitrotoluene	20	19.905	100	
4-Amino-2,6-dinitrotoluene	40	40.139	100	
HMX	40	50.043	125	
Nitrobenzene	40	34.637	87	
PETN	40	62.624	157	*
RDX	40	41.395	103	
Tetryl	40	29.176	73	
m-Dinitrobenzene	40	38.951	97	
m-Nitrotoluene	40	48.141	120	
o-Nitrotoluene	40	44.127	110	
p-Nitrotoluene	40	34.935	87	

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\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102075a

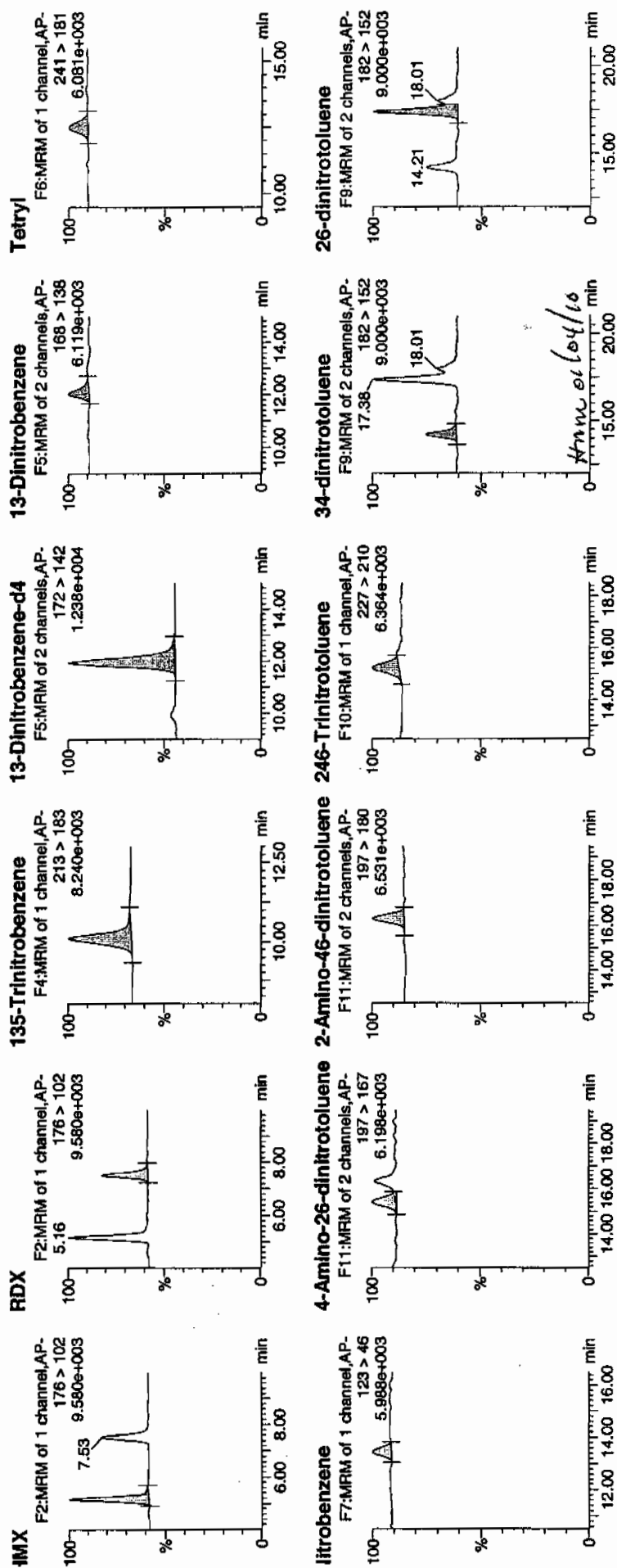
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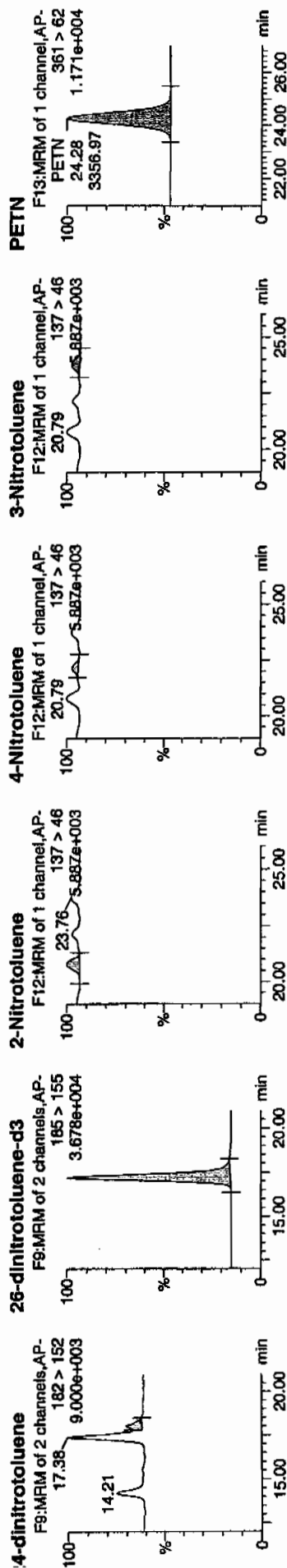
Time: 01:57:39

D: WXX100102-08CRI

Ratio: 1:1,C

1/4/10





D	Name	Traces	RT	Avg	IS Area	Abn. Pres	Response	Eng	Mod Date	Mod Time	TOI	CPAC	Rev	SN
NXX100102-08CRI	HMx	176 > 102	5.16	816.564	2716.899	816.564	150.275	bb			50.0426	125.1	25.1	96.2
NXX100102-08CRI	RDX	176 > 102	7.53	527.587	2716.899	527.587	97.094	bb			41.3945	103.5	3.5	54.9
NXX100102-08CRI	135-Trinitrobenzene	213 > 183	10.11	1027.234	2716.899	1027.234	189.045	bb			50.7997	127.0	27.0	83.1
NXX100102-08CRI	13-Dinitrobenzene-d4	172 > 142	11.95	2716.899	2716.899	2716.899	2716.899	bb			571.9797	114.4	14.4	118.4
NXX100102-08CRI	13-Dinitrobenzene	168 > 138	12.04	247.551	2716.899	247.551	45.558	bb			38.9506	97.4	-2.6	50.7
NXX100102-08CRI	Tenyl	241 > 181	12.49	282.849	2716.899	282.849	52.054	bb			29.1757	72.9	-27.1	36.8
NXX100102-08CRI	Nitrobenzene	123 > 46	13.45	184.354	2716.899	184.354	33.927	bb			34.6365	86.6	-13.4	18.0
NXX100102-08CRI	4-Amino-26-dinitrotoluene	197 > 167	15.42	320.149	13536.355	320.149	11.826	MM	04-Jan-10	10:59:57	40.1392	100.3	0.3	14.5
NXX100102-08CRI	2-Amino-46-dinitrotoluene	197 > 180	16.31	401.172	13536.355	401.172	14.818	bb			39.0075	97.5	-2.5	41.2
NXX100102-08CRI	246-Trinitrotoluene	227 > 210	15.24	337.446	13536.355	337.446	17.454	bb			38.6322	96.6	-3.4	40.9
NXX100102-08CRI	34-dinitrotoluene	182 > 152	14.21	480.589	13536.355	480.589	17.752	bb			19.9048	99.5	-0.5	11.8
NXX100102-08CRI	26-dinitrotoluene	182 > 152	17.38	1315.780	13536.355	1315.780	48.602	MM	04-Jan-10	11:26:12	45.3976	113.5	13.5	33.2
NXX100102-08CRI	24-dinitrotoluene	182 > 152	18.01	291.374	13536.355	291.374	10.763	MM	04-Jan-10	11:33:07	41.4853	103.7	3.7	7.3
NXX100102-08CRI	26-dinitrotoluene-d3	185 > 155	17.20	13536.355	13536.355	13536.355	13536.355	bb			492.3507	98.5	-1.5	894.8
NXX100102-08CRI	2-Nitrotoluene	137 > 46	20.79	203.971	13536.355	203.971	7.534	bb			44.1269	110.3	10.3	16.2
NXX100102-08CRI	4-Nitrotoluene	137 > 46	22.15	80.703	13536.355	80.703	2.981	bb			34.9350	87.3	-12.7	7.9
NXX100102-08CRI	3-Nitrotoluene	137 > 46	23.76	131.068	13536.355	131.068	4.841	bb			48.1414	120.4	20.4	9.8
NXX100102-08CRI	PETN	361 > 62	24.28	3356.970	13536.355	3356.970	123.998	bb			62.6240	156.6	56.6	203.8

GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/04/10  
 Time of Injection 0157  
 Standard Number WXX100102-08CRI  
 Data File EXP0102075a

HMX	125.1
RDX	103.5
135-TNB	127.0
13-DNB	97.4
Tetryl	72.9
Nitrobenzene	86.6
4A-26-DNT	100.3
2A-46-DNT	97.5
246-TNT	96.6
34-DNT(surr)	99.5
26-DNT	113.5
24-DNT	103.7
2-NT	110.3
4-NT	87.3
3-NT	120.4
PETN	156.6

*WAT  
1/4/10*

Total 1698.2

Average 106.1

*WAT 01/04/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102085a

Analysis Date: 04-JAN-10 06:52

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
m-Nitrotoluene	600	546.919	91	
o-Nitrotoluene	600	544.407	91	
p-Nitrotoluene	600	591.997	99	
1,3,5-Trinitrobenzene	600	665.652	111	
1,3-Dinitrobenzene-d4	500	527.685	106	
2,4,6-Trinitrotoluene	600	711.691	119	
2,4-Dinitrotoluene	600	551.319	92	
2,6-Dinitrotoluene	600	611.136	102	
2,6-Dinitrotoluene-d3	500	519.633	104	
2-Amino-4,6-dinitrotoluene	600	640.843	107	
3,4-Dinitrotoluene	300	325.457	108	
4-Amino-2,6-dinitrotoluene	600	567.919	95	
HMX	600	809.466	135	*
Nitrobenzene	600	606.221	101	
PETN	600	596.34	99	
RDX	600	799.165	133	*
Tetryl	600	580.309	97	
m-Dinitrobenzene	600	652.456	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 70-130%

Other Target Analytes 80-120%

# 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\1010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\data\EXP0102085a

Date: 04-Jan-2010

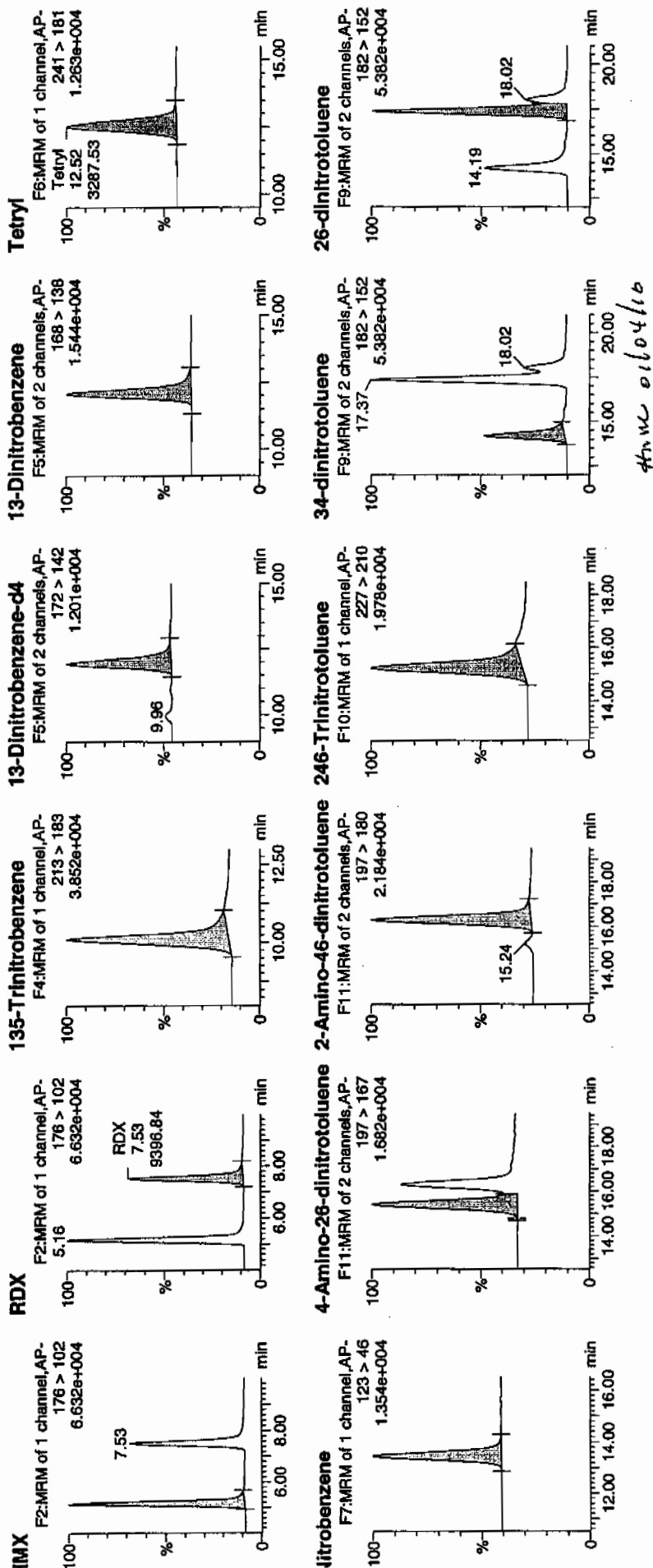
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D: WXX100102-07CCV

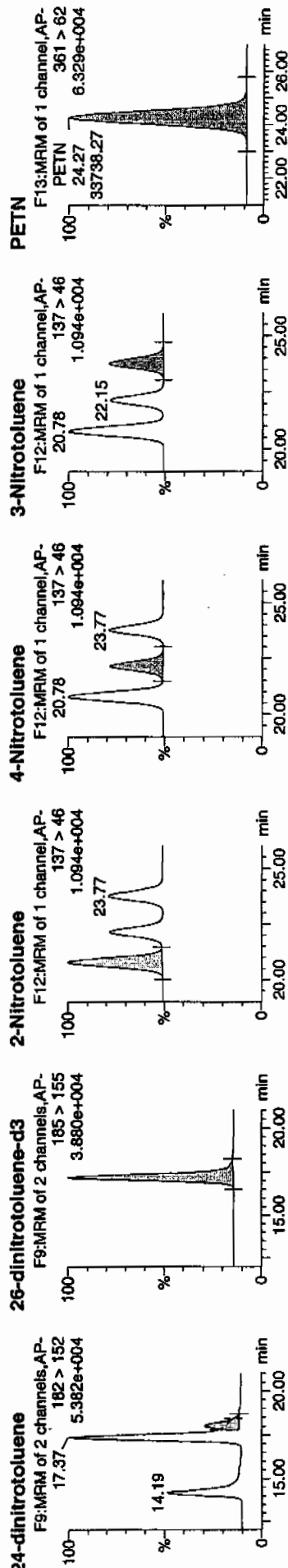
File: 1:1,B

1/4/10

Page 285 of 1340



Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010



ID	Name	Trace	PI	Area	IS Area	Abs Resp	Response	Phase	Mod Date	Mod Time	Mod	Dev	SN	
WXX100102-07CCV	HMX	176 > 102	5.16	12185.505	2506.501	12185.505	2430.780	bb			809.4861	134.9	34.9	1307.0
WXX100102-07CCV	RDX	176 > 102	7.53	9396.838	2506.501	9396.838	1874.493	bb			798.1650	133.2	33.2	852.3
WXX100102-07CCV	135-Trinitrobenzene	213 > 183	10.10	12417.952	2506.501	12417.952	2477.149	bb			665.6516	110.9	10.9	759.6
WXX100102-07CCV	13-Dinitrobenzene-d4	172 > 142	11.94	2506.501		2506.501	2506.501	bb			527.8853	105.5	5.5	85.2
WXX100102-07CCV	13-Dinitrobenzene	168 > 138	12.06	3825.569	2506.501	3825.569	763.129	bb			652.4558	108.7	8.7	510.9
WXX100102-07CCV	Tetryl	241 > 181	12.52	3287.526	2506.501	3287.526	655.800	bb			590.3093	96.7	-3.3	556.1
WXX100102-07CCV	Nitrobenzene	123 > 46	13.48	2976.761	2506.501	2976.761	593.808	bb			606.2209	101.0	1.0	196.8
WXX100102-07CCV	4-Amino-26-dinitrotoluene	197 > 167	15.41	4780.700	14286.441	4780.700	167.316	MM	04-Jan-10	11:00:09	567.9187	94.7	-5.3	284.0
WXX100102-07CCV	2-Amino-46-dinitrotoluene	197 > 180	16.30	6955.946	14286.441	6955.946	243.446	bb			640.8431	106.8	6.8	398.9
WXX100102-07CCV	246-Trinitrotoluene	227 > 210	15.23	6560.986	14286.441	6560.986	229.623	bb			711.6911	118.6	18.6	1107.7
WXX100102-07CCV	34-dinitrotoluene	182 > 152	14.19	8293.384	14286.441	8293.384	290.254	bb			325.4569	108.5	8.5	426.7
WXX100102-07CCV	26-dinitrotoluene	182 > 152	17.37	18694.363	14286.441	18694.363	654.269	MM	04-Jan-10	11:26:19	611.1363	101.9	1.9	1020.6
WXX100102-07CCV	24-dinitrotoluene	182 > 152	18.02	4086.786	14286.441	4086.786	143.030	MM	04-Jan-10	11:33:21	551.3191	91.9	-8.1	205.4
WXX100102-07CCV	26-dinitrotoluene-d3	185 > 155	17.19	14286.441	14286.441	14286.441	14286.441	bb			519.6332	103.9	3.9	1649.2
WXX100102-07CCV	2-Nitrotoluene	137 > 46	20.78	2655.897	14286.441	2655.897	92.952	bb			544.4068	90.7	-9.3	222.2
WXX100102-07CCV	4-Nitrotoluene	137 > 46	22.15	1443.349	14286.441	1443.349	50.515	bb			591.9974	98.7	-1.3	124.6
WXX100102-07CCV	3-Nitrotoluene	137 > 46	23.77	1571.534	14286.441	1571.534	55.001	bb			546.9193	91.2	-8.8	126.3
WXX100102-07CCV	PETN	361 > 62	24.27	33738.270	14286.441	33738.270	1180.779	bb			596.3400	99.4	-0.6	4465.3

GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/04/10  
 Time of Injection: 0652  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102085a

HMX	134.9
RDX	133.2
135-TNB	110.9
13-DNB	108.7
Tetryl	96.7
Nitrobenzene	101.0
4A-26-DNT	94.7
2A-46-DNT	106.8
246-TNT	118.6
34-DNT(surr)	108.5
26-DNT	101.9
24-DNT	91.9
2-NT	90.7
4-NT	98.7
3-NT	91.2
PETN	99.4

*WAT*  
*1/4/10*

Total 1687.8

Average 105.5

*ANAL 01/04/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102087a

Analysis Date: 04-JAN-10 07:51

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2-Amino-4,6-dinitrotoluene	40	42.354	106	
3,4-Dinitrotoluene	20	21.433	107	
4-Amino-2,6-dinitrotoluene	40	36.992	92	
HMX	40	50.523	126	
Nitrobenzene	40	33.287	83	
PETN	40	60.251	151	*
RDX	40	48.335	121	
Tetryl	40	32.507	81	
m-Dinitrobenzene	40	45.217	113	
m-Nitrotoluene	40	40.62	102	
o-Nitrotoluene	40	45.544	114	
p-Nitrotoluene	40	38.253	96	
1,3,5-Trinitrobenzene	40	52.11	130	*
1,3-Dinitrobenzene-d4	500	536.285	107	
2,4,6-Trinitrotoluene	40	46.16	115	
2,4-Dinitrotoluene	40	47.378	118	
2,6-Dinitrotoluene	40	43.542	109	
2,6-Dinitrotoluene-d3	500	517.484	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

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102087a

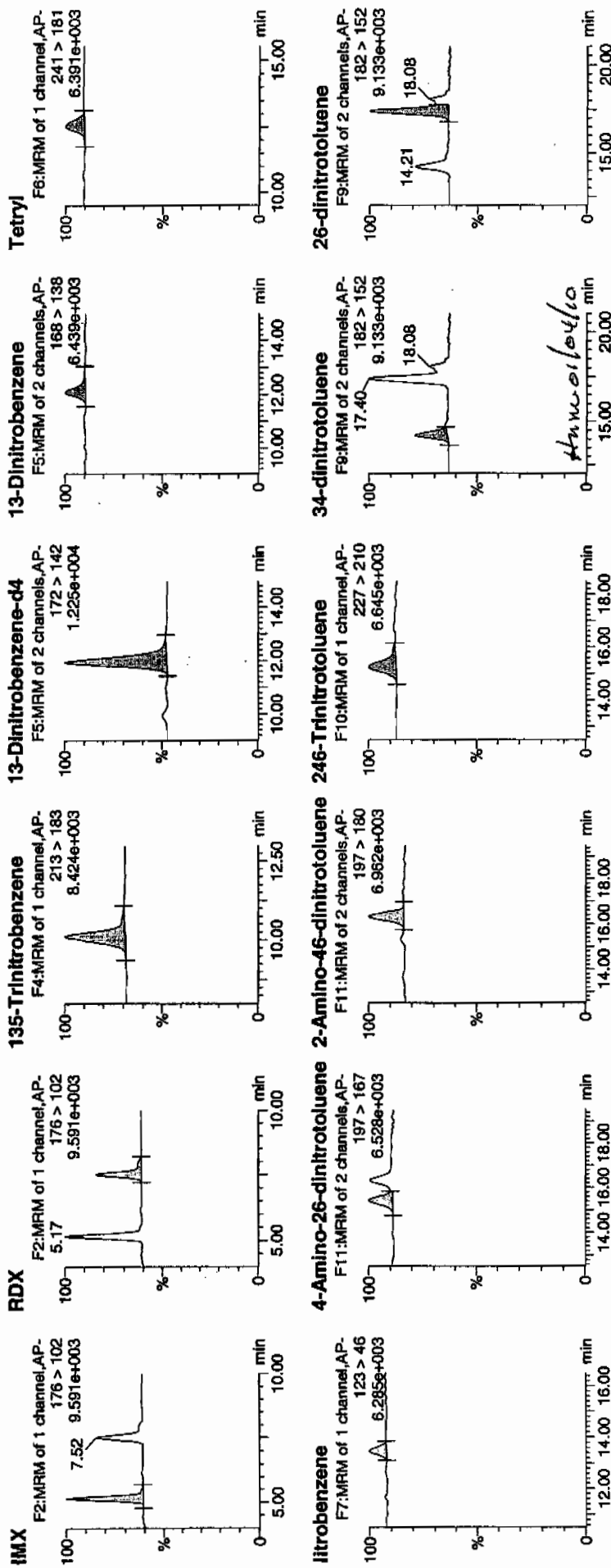
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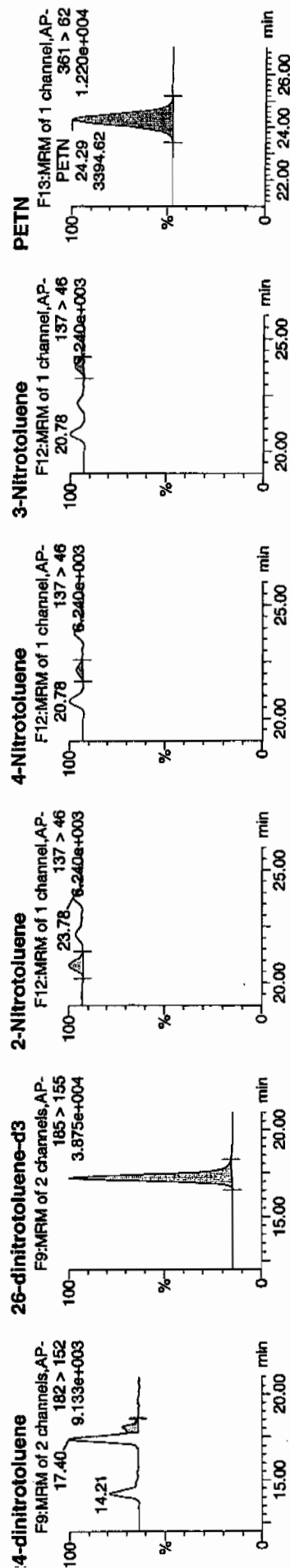
Time: 07:51:45

D: WXX100102-08CRI

Ratio: 1:1,C

1/4/10





Name	Trace	Fit	Area	IS Area	Abn.Hsp	Residuals	Flags	Mod.Date	Mod.Time	Y1.Dml	Y2.Pk	Y2.Dv	Y2.SN
HMx	176 > 102	5.17	772.954	2547.349	772.954	151.717	bb			50.5229	126.3	26.3	165.6
RDX	176 > 102	7.52	577.600	2547.349	577.600	113.373	bb			48.3350	120.8	20.8	98.3
135-Trinitrobenzene	213 > 183	10.13	987.962	2547.349	987.962	193.920	bb			52.1095	130.3	30.3	251.4
13-Dinitrobenzene-d4	172 > 142	11.95	2547.349		2547.349	2547.349	bb			536.2849	107.9	7.9	94.5
13-Dinitrobenzene	168 > 138	12.10	269.442	2547.349	269.442	52.887	bb			45.2168	113.0	13.0	21.4
Tetryl	241 > 181	12.53	285.369	2547.349	285.369	56.013	bb			32.5070	81.3	-18.7	37.8
Nitrobenzene	123 > 46	13.45	166.114	2547.349	166.114	32.605	bb			33.2868	83.2	-16.8	11.0
4-Amino-26-dinitrotoluene	197 > 167	15.42	310.105	14227.341	310.105	10.898	MM	04-Jan-10	11:00:18	36.9917	92.5	-7.5	24.2
2-Amino-46-dinitrotoluene	197 > 180	16.31	457.822	14227.341	457.822	16.090	bb			42.3538	105.9	5.9	30.8
246-Trinitrotoluene	227 > 210	15.24	423.781	14227.341	423.781	14.893	bb			46.1598	115.4	15.4	38.9
34-dinitrotoluene	182 > 152	14.21	543.901	14227.341	543.901	19.115	bb			21.4329	107.2	7.2	42.3
26-dinitrotoluene	182 > 152	17.40	1326.429	14227.341	1326.429	46.615	MM	04-Jan-10	11:26:25	43.5423	108.9	8.9	103.8
24-dinitrotoluene	182 > 152	18.08	349.748	14227.341	349.748	12.291	MM	04-Jan-10	11:33:37	47.3780	118.4	18.4	25.1
26-dinitrotoluene-d3	185 > 155	17.20	14227.341		14227.341	14227.341	bb			517.4836	103.5	3.5	1030.3
2-Nitrotoluene	137 > 46	20.78	221.269	14227.341	221.269	7.776	bb			45.5442	113.9	13.9	47.4
4-Nitrotoluene	137 > 46	22.16	92.878	14227.341	92.879	3.264	bb			38.2531	95.6	-4.4	20.4
3-Nitrotoluene	137 > 46	23.78	116.235	14227.341	116.235	4.085	bb			40.6197	101.5	1.5	28.5
PETN	361 > 62	24.29	3394.619	14227.341	3394.619	119.299	bb			60.2508	150.6	50.6	391.2

GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/04/10  
 Time of Injection 0751  
 Standard Number WXX100102-08CRI  
 Data File EXP0102087a

HMX	126.3
RDX	120.8
135-TNB	130.3
13-DNB	113.0
Tetryl	81.3
Nitrobenzene	83.2
4A-26-DNT	92.5
2A-46-DNT	105.9
246-TNT	115.4
34-DNT(surr)	107.2
26-DNT	108.9
24-DNT	118.4
2-NT	113.9
4-NT	95.6
3-NT	101.5
PETN	150.6

*MTT*  
*1/4/10*

Total 1764.8

Average 110.3

*done 01/04/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102098a

Analysis Date: 04-JAN-10 13:16

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	558.294	93	
1,3-Dinitrobenzene-d4	500	559.344	112	
2,4,6-Trinitrotoluene	600	724.952	121	*
2,4-Dinitrotoluene	600	627.022	105	
2,6-Dinitrotoluene	600	621.496	104	
2,6-Dinitrotoluene-d3	500	507.634	102	
2-Amino-4,6-dinitrotoluene	600	682.514	114	
3,4-Dinitrotoluene	300	338.072	113	
4-Amino-2,6-dinitrotoluene	600	622.379	104	
HMX	600	674.044	112	
Nitrobenzene	600	546.392	91	
PETN	600	583.674	97	
RDX	600	682.591	114	
Tetryl	600	474.522	79	*
m-Dinitrobenzene	600	590.138	98	
m-Nitrotoluene	600	580.168	97	
o-Nitrotoluene	600	580.874	97	
p-Nitrotoluene	600	608.591	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 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits

Printed: Tue Jan 05 09:04:48 2010, Page 21 of 85

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102098a

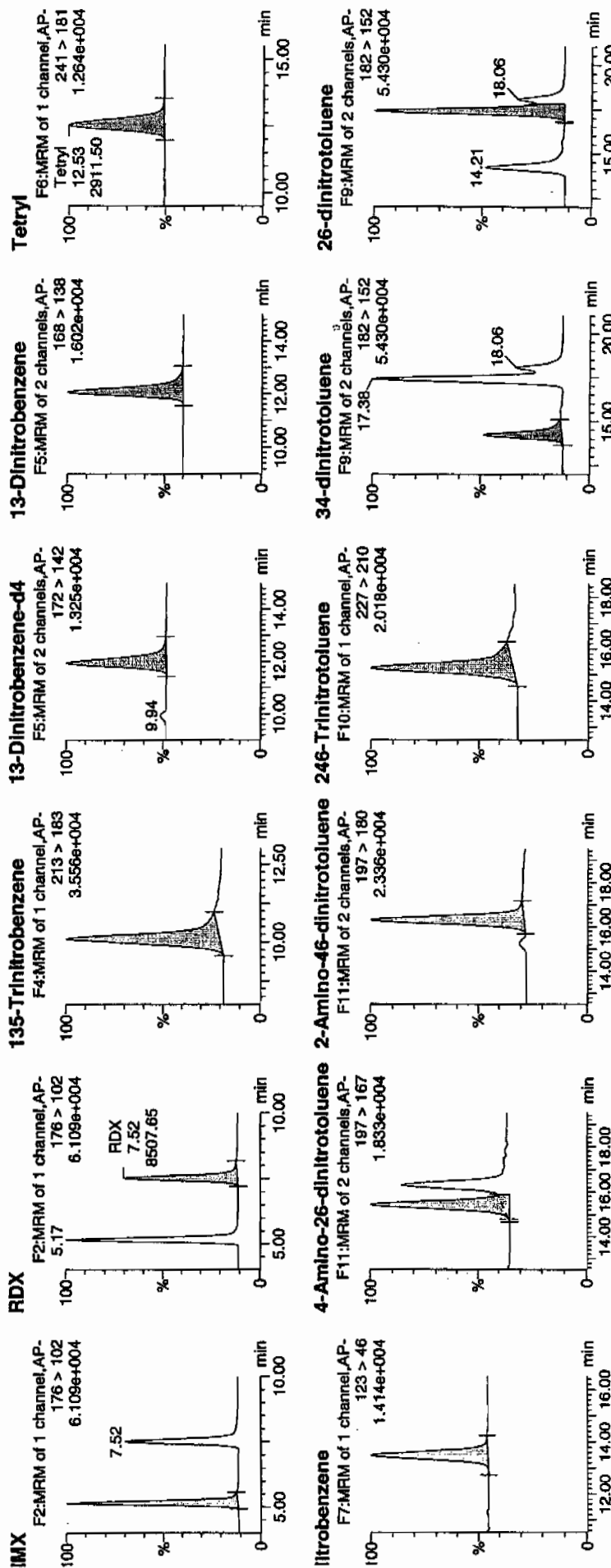
Date: 04-Jan-2010

Time: 13:16:28

Job: WXX100102-07CCV

Label: 1:1,B

15/10

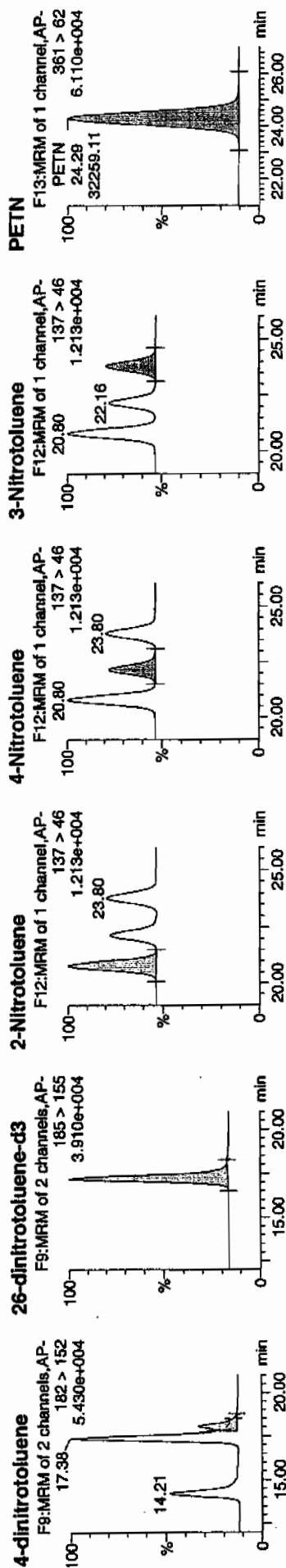


Am 01/05/10

## Quantify Sample Report

EL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New Exp.PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



DTG	Name	Trace	RT	Area	Area/Height	Response	Flags	Mod Date	Mod Time	10min	2hr	Rec	Doc	SN
D	XX100102-07CCV	HMx	176 > 102	5.17	10755.651	2656.878	10755.651	2024.11.5	bb	674.0438	112.3	12.3	827.1	
	XX100102-07CCV	RDX	176 > 102	7.52	8507.652	2656.878	8507.652	1601.062	bb	682.5912	113.8	13.8	548.9	
	XX100102-07CCV	135-Trinitrobenzene	213 > 183	10.11	11040.010	2656.878	11040.010	2077.628	bb	558.2937	93.0	-7.0	656.0	
	XX100102-07CCV	13-Dinitrobenzene-d4	172 > 142	11.95	2656.878		2656.878	2656.878	bb	559.3436	111.9	11.9	360.1	
	XX100102-07CCV	13-Dinitrobenzene	168 > 138	12.07	3667.774	2656.878	3667.774	690.241	bb	590.1385	98.4	-1.6	241.3	
	XX100102-07CCV	Tetryl	241 > 181	12.53	2911.497	2656.878	2911.497	547.917	bb	474.5221	79.1	-20.9	222.7	
	XX100102-07CCV	Nitrobenzene	123 > 46	13.50	2843.944	2656.878	2843.944	535.204	bb	546.3919	91.1	-8.9	197.4	
	XX100102-07CCV	4-Amino-26-dinitrotoluene	197 > 167	15.42	5118.155	13956.530	5118.155	183.361	MM	622.3787	103.7	3.7	228.1	
	XX100102-07CCV	2-Amino-46-dinitrotoluene	197 > 180	16.31	7237.182	13956.530	7237.182	259.276	bb	682.5141	113.8	13.8	344.3	
	XX100102-07CCV	246-Trinitrotoluene	227 > 210	15.28	6528.902	13956.530	6528.902	233.901	bb	724.9519	120.8	20.8	229.7	
D	XX100102-07CCV	34-dinitrotoluene	182 > 152	14.21	8415.905	13956.530	8415.905	301.504	bb	338.0720	112.7	12.7	166.0	
	XX100102-07CCV	26-dinitrotoluene	182 > 152	17.38	18572.238	13956.530	18572.238	665.360	MM	621.4959	103.6	3.6	404.4	
	XX100102-07CCV	24-dinitrotoluene	182 > 152	18.06	4540.617	13956.530	4540.617	162.670	MM	627.0217	104.5	4.5	92.7	
	XX100102-07CCV	26-dinitrotoluene-d3	185 > 155	17.20	13956.530		13956.530	13956.530	bb	507.6335	101.5	1.5	1035.4	
	XX100102-07CCV	2-Nitrotoluene	137 > 46	20.80	2768.365	13956.530	2768.365	198.178	bb	580.8744	96.8	-3.2	496.1	
	XX100102-07CCV	4-Nitrotoluene	137 > 46	22.16	1449.542	13956.530	1449.542	51.931	bb	608.5914	101.4	1.4	259.9	
	XX100102-07CCV	3-Nitrotoluene	137 > 46	23.80	1628.576	13956.530	1628.576	58.345	bb	580.1684	96.7	-3.3	278.0	
	XX100102-07CCV	PETN	361 > 62	24.29	32259.107	13956.530	32259.107	1155.699	bb	583.6736	97.3	-2.7	973.2	

GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/04/10  
 Time of Injection: 1316  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102098a

HMX	112.3
RDX	113.8
135-TNB	93.0
13-DNB	98.4
Tetryl	79.1
Nitrobenzene	91.1
4A-26-DNT	103.7
2A-46-DNT	113.8
246-TNT	120.8
34-DNT(surr)	112.7
26-DNT	103.6
24-DNT	104.5
2-NT	96.8
4-NT	101.4
3-NT	96.7
PETN	97.3

Total 1639.0

Average 102.4

*11/5/10*

*11/15/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102100a

Analysis Date: 04-JAN-10 14:15

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	50.626	127	
1,3-Dinitrobenzene-d4	500	575.624	115	
2,4,6-Trinitrotoluene	40	59.538	149	*
2,4-Dinitrotoluene	40	34.5	86	
2,6-Dinitrotoluene	40	41.26	103	
2,6-Dinitrotoluene-d3	500	552.754	111	
2-Amino-4,6-dinitrotoluene	40	43.874	110	
3,4-Dinitrotoluene	20	19.865	99	
4-Amino-2,6-dinitrotoluene	40	45.649	114	
HMX	40	53.621	134	*
Nitrobenzene	40	40.803	102	
PETN	40	54.497	136	*
RDX	40	40.271	101	
Tetryl	40	24.068	60	*
m-Dinitrobenzene	40	39.404	99	
m-Nitrotoluene	40	40.148	100	
o-Nitrotoluene	40	43.377	108	
p-Nitrotoluene	40	37.855	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

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

atset: C:\MASSLYNX\New\_Exp.PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010

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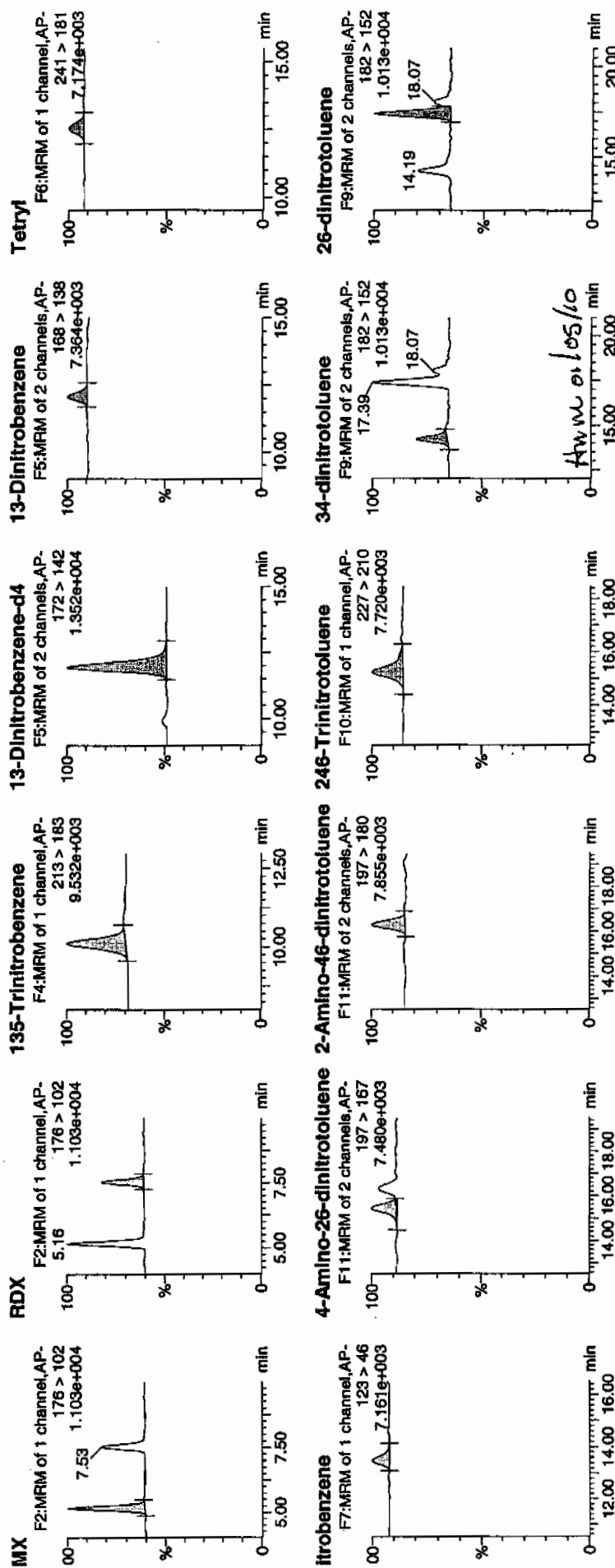
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>: WXX100102-08CRI

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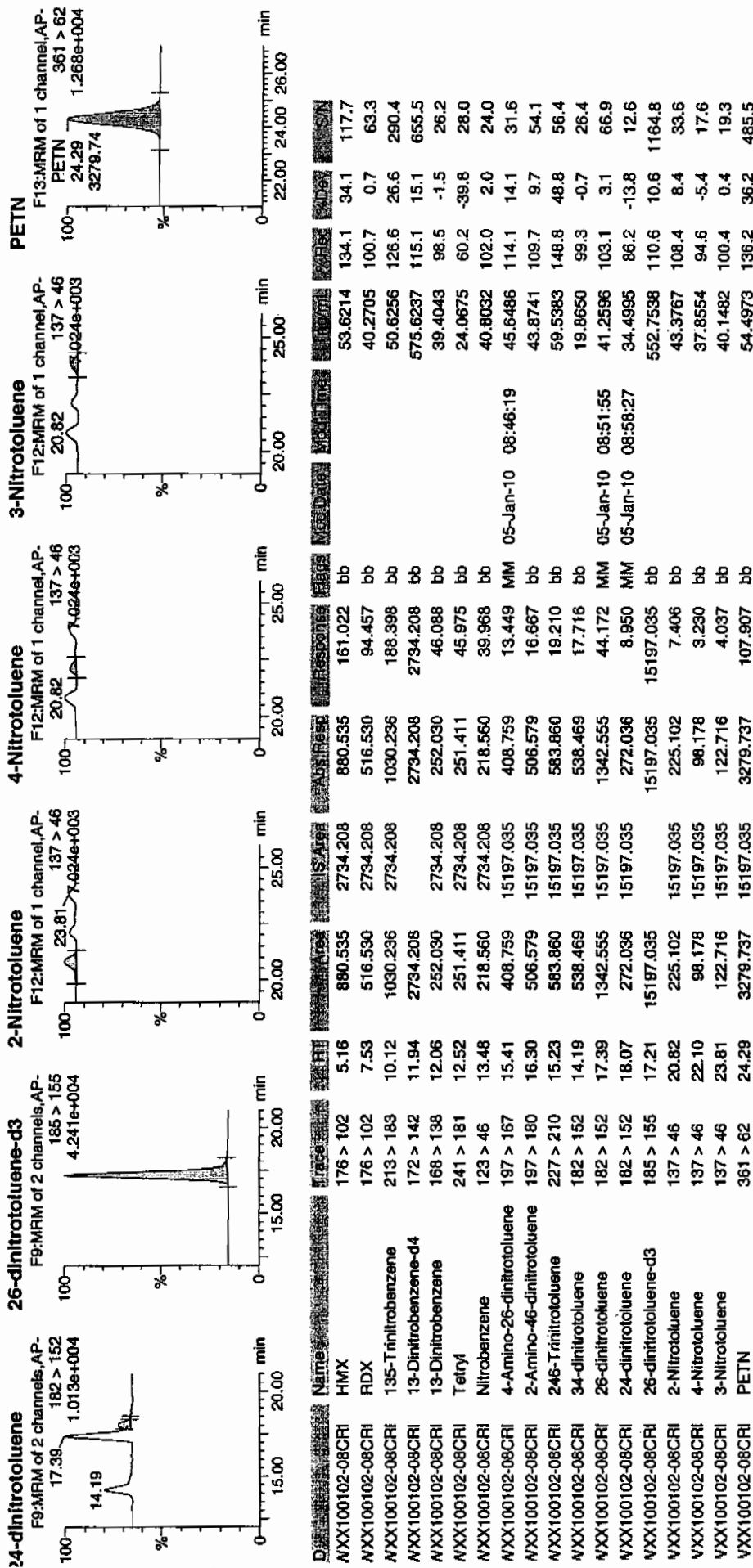
WXX  
1/5/10



Printed: Tue Jan 05 09:04:48 2010, Page 26 of 85

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

Dataset: C:\MASSLYNX\New\_Exp\PRO010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/04/10  
 Time of Injection 1415  
 Standard Number WXX100102-08CRI  
 Data File EXP0102100a

HMX	134.1
RDX	100.7
135-TNB	126.6
13-DNB	98.5
Tetryl	60.2
Nitrobenzene	102.0
4A-26-DNT	114.1
2A-46-DNT	109.7
246-TNT	148.8
34-DNT(surr)	99.3
26-DNT	103.1
24-DNT	86.2
2-NT	108.4
4-NT	94.6
3-NT	100.4
PETN	136.2

*mm  
1/5/10*

Total 1722.9

Average 107.7

*mm 01/05/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102109a

Analysis Date: 04-JAN-10 18:41

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
3,4-Dinitrotoluene	300	329.742	110	
4-Amino-2,6-dinitrotoluene	600	638.199	106	
HMX	600	734.288	122	*
Nitrobenzene	600	627.011	105	
PETN	600	564.55	94	
RDX	600	723.793	121	*
Tetryl	600	585.538	98	
m-Dinitrobenzene	600	622.054	104	
m-Nitrotoluene	600	547.379	91	
o-Nitrotoluene	600	586.067	98	
p-Nitrotoluene	600	607.061	101	
1,3,5-Trinitrobenzene	600	641.866	107	
1,3-Dinitrobenzene-d4	500	512.441	102	
2,4,6-Trinitrotoluene	600	702.421	117	
2,4-Dinitrotoluene	600	532.671	89	
2,6-Dinitrotoluene	600	637.051	106	
2,6-Dinitrotoluene-d3	500	562.692	113	
2-Amino-4,6-dinitrotoluene	600	727.345	121	*

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

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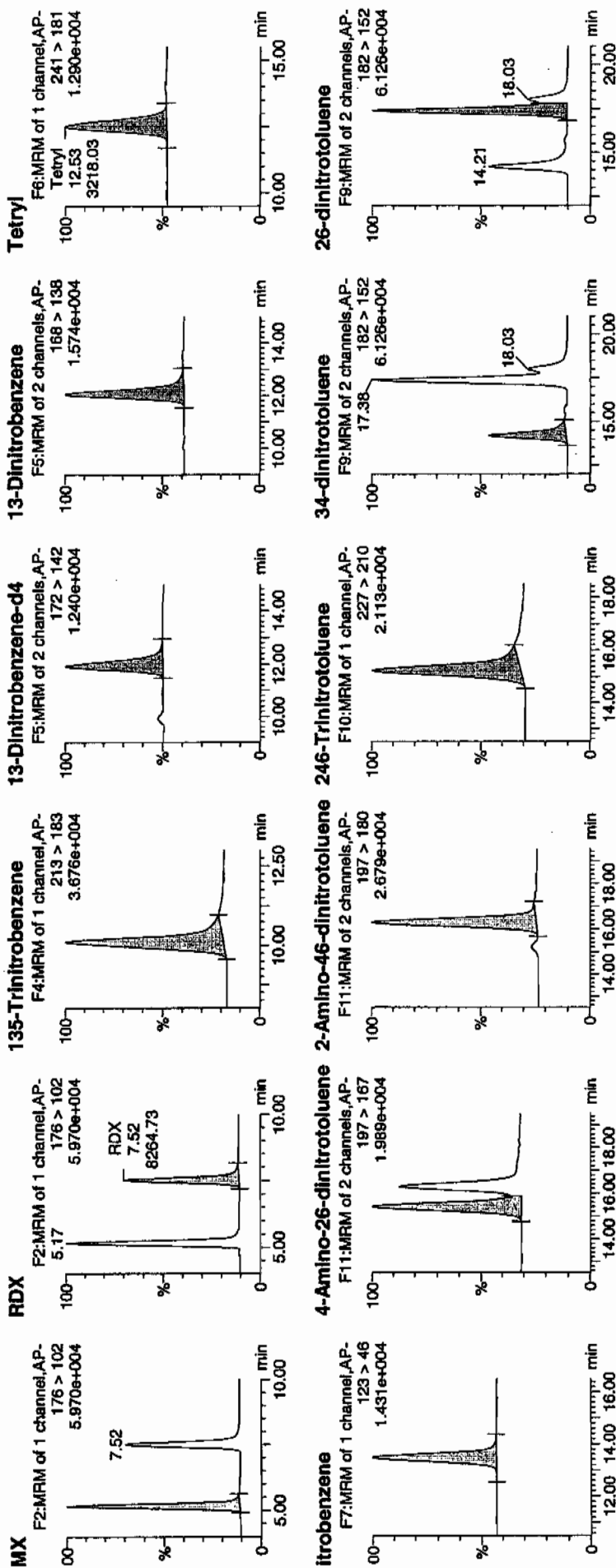
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): WXX100102-07CCV

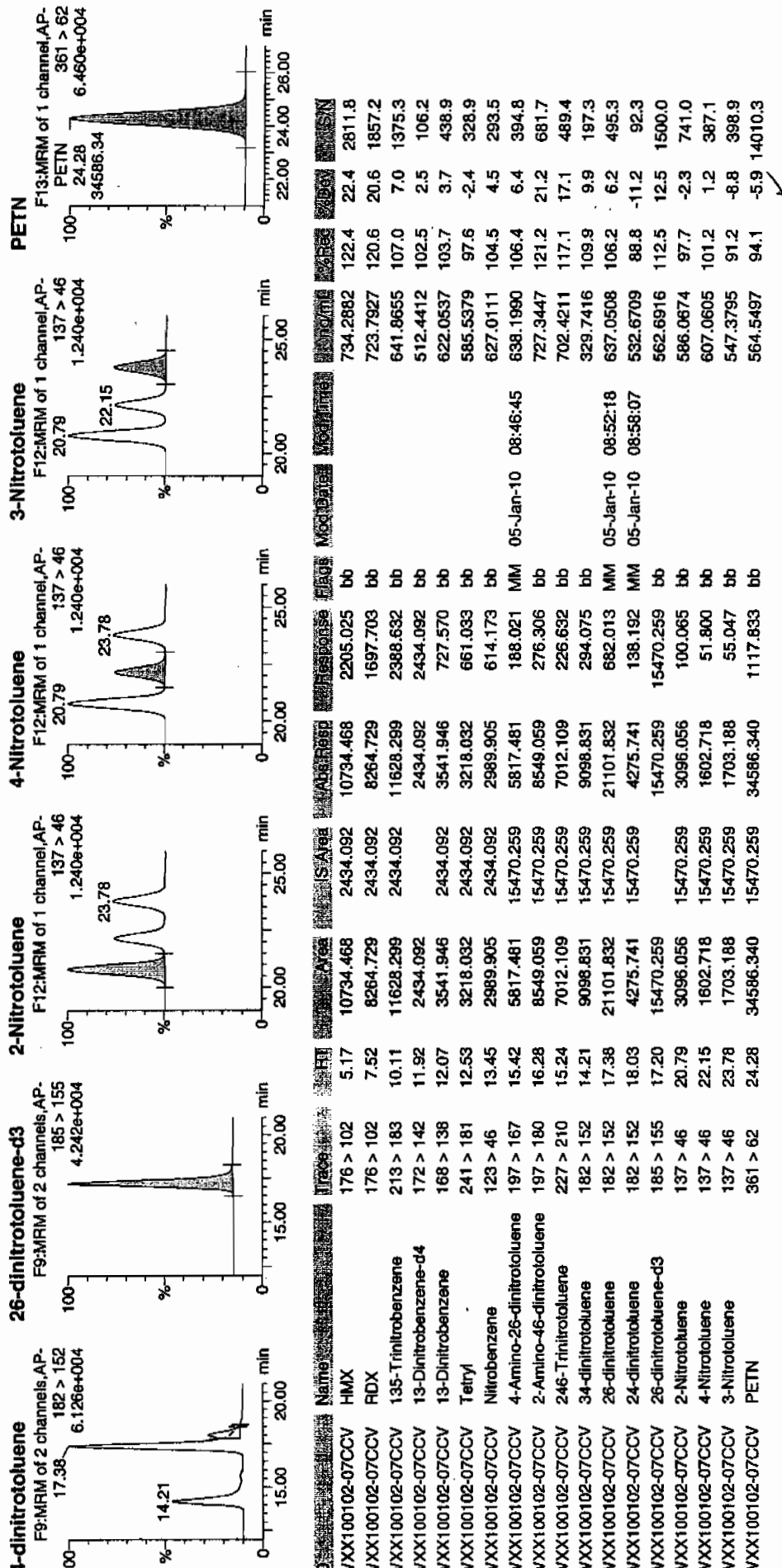
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Page 301 of 1340



44 MW 01/05/10

atset: C:\MASSLYNX\New\_Exp.PRO\1010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/04/10  
 Time of Injection: 1841  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102109a

HMX	122.4
RDX	120.6
135-TNB	107.0
13-DNB	103.7
Tetryl	97.6
Nitrobenzene	104.5
4A-26-DNT	106.4
2A-46-DNT	121.2
246-TNT	117.1
34-DNT(surr)	109.9
26-DNT	106.2
24-DNT	88.8
2-NT	97.7
4-NT	101.2
3-NT	91.2
PETN	94.1

*11/5/10*

Total 1689.6

Average 105.6

*Handwritten: 01/05/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102111a

Analysis Date: 04-JAN-10 19:40

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	54.931	137	*
1,3-Dinitrobenzene-d4	500	577.992	116	
2,4,6-Trinitrotoluene	40	46.8	117	
2,4-Dinitrotoluene	40	35.467	89	
2,6-Dinitrotoluene	40	39.141	98	
2,6-Dinitrotoluene-d3	500	534.675	107	
2-Amino-4,6-dinitrotoluene	40	46.218	116	
3,4-Dinitrotoluene	20	22.115	111	
4-Amino-2,6-dinitrotoluene	40	40.254	101	
HMX	40	51.909	130	
Nitrobenzene	40	37.08	93	
PETN	40	63.694	159	*
RDX	40	48.587	121	
Tetryl	40	29.612	74	
m-Dinitrobenzene	40	42.147	105	
m-Nitrotoluene	40	38.155	95	
o-Nitrotoluene	40	43.943	110	
p-Nitrotoluene	40	48.899	122	

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

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ame: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102111a

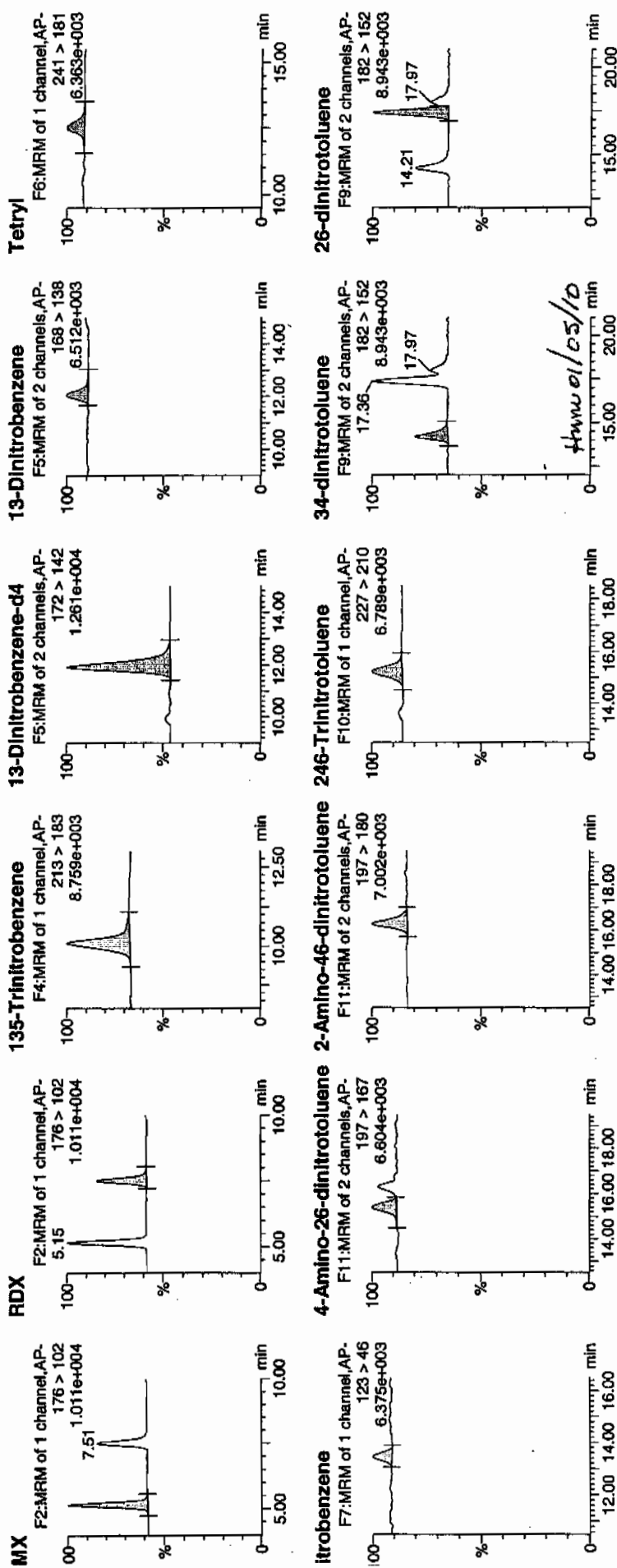
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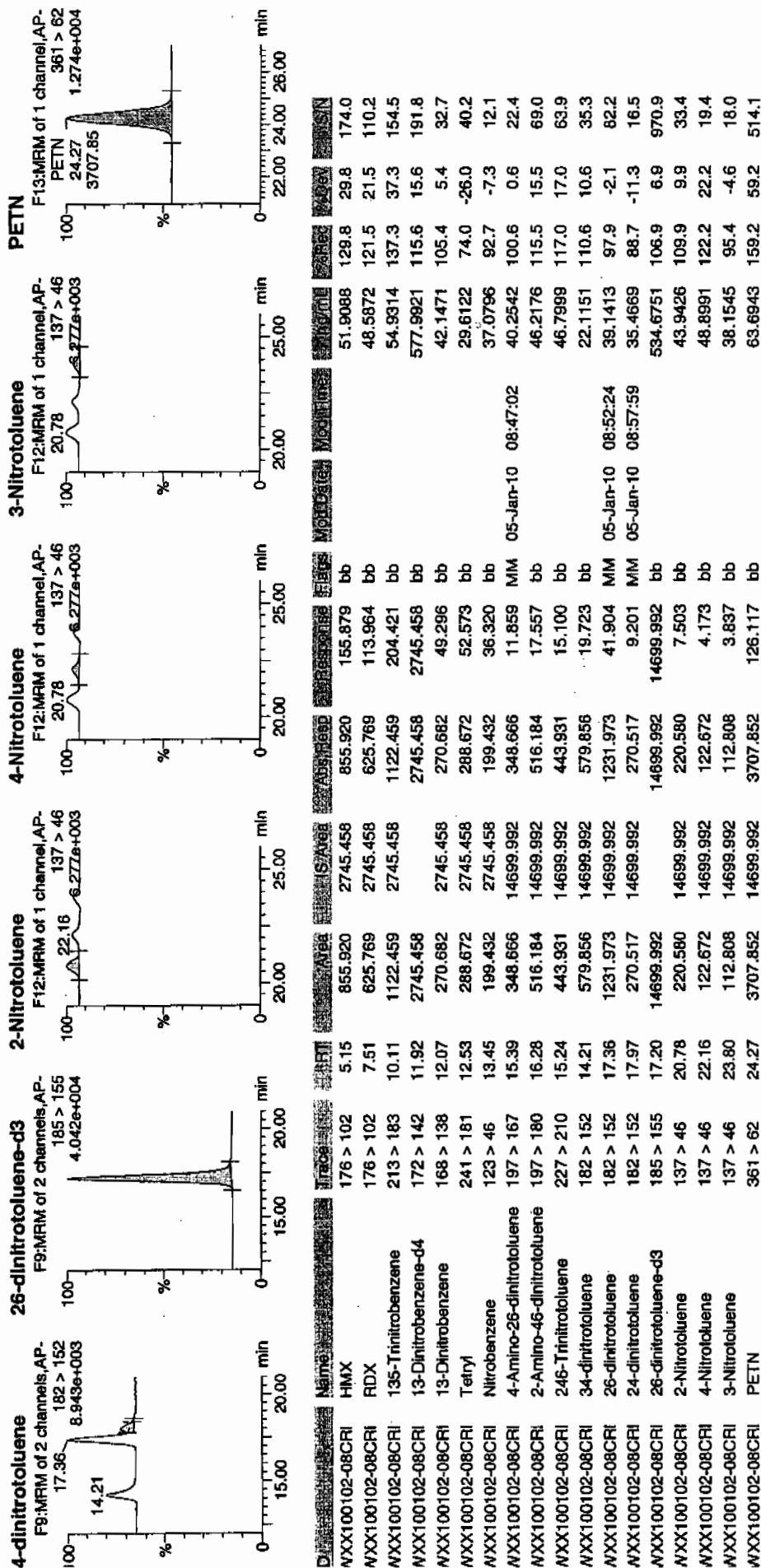
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15/10



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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/04/10  
 Time of Injection 1940  
 Standard Number WXX100102-08CRI  
 Data File EXP0102111a

HMX	129.8
RDX	121.5
135-TNB	137.3
13-DNB	105.4
Tetryl	74.0
Nitrobenzene	92.7
4A-26-DNT	100.6
2A-46-DNT	115.5
246-TNT	117.0
34-DNT(surr)	110.6
26-DNT	97.9
24-DNT	88.7
2-NT	109.9
4-NT	122.2
3-NT	95.4
PETN	159.2

*MTT  
1/5/10*

Total 1777.7

Average 111.1

*Time 01/05/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0102117a

Analysis Date: 04-JAN-10 22:37

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
p-Nitrotoluene	600	603.908	101	
1,3,5-Trinitrobenzene	600	695.886	116	
1,3-Dinitrobenzene-d4	500	556.769	111	
2,4,6-Trinitrotoluene	600	729.557	122	*
2,4-Dinitrotoluene	600	615.823	103	
2,6-Dinitrotoluene	600	625.153	104	
2,6-Dinitrotoluene-d3	500	518.3	104	
2-Amino-4,6-dinitrotoluene	600	689.609	115	
3,4-Dinitrotoluene	300	332.392	111	
4-Amino-2,6-dinitrotoluene	600	636.743	106	
HMX	600	700.952	117	
Nitrobenzene	600	556.062	93	
PETN	600	616.164	103	
RDX	600	711.906	119	
Tetryl	600	533.426	89	
m-Dinitrobenzene	600	581.157	97	
m-Nitrotoluene	600	558.673	93	
o-Nitrotoluene	600	589.627	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

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010

Sample Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102117a

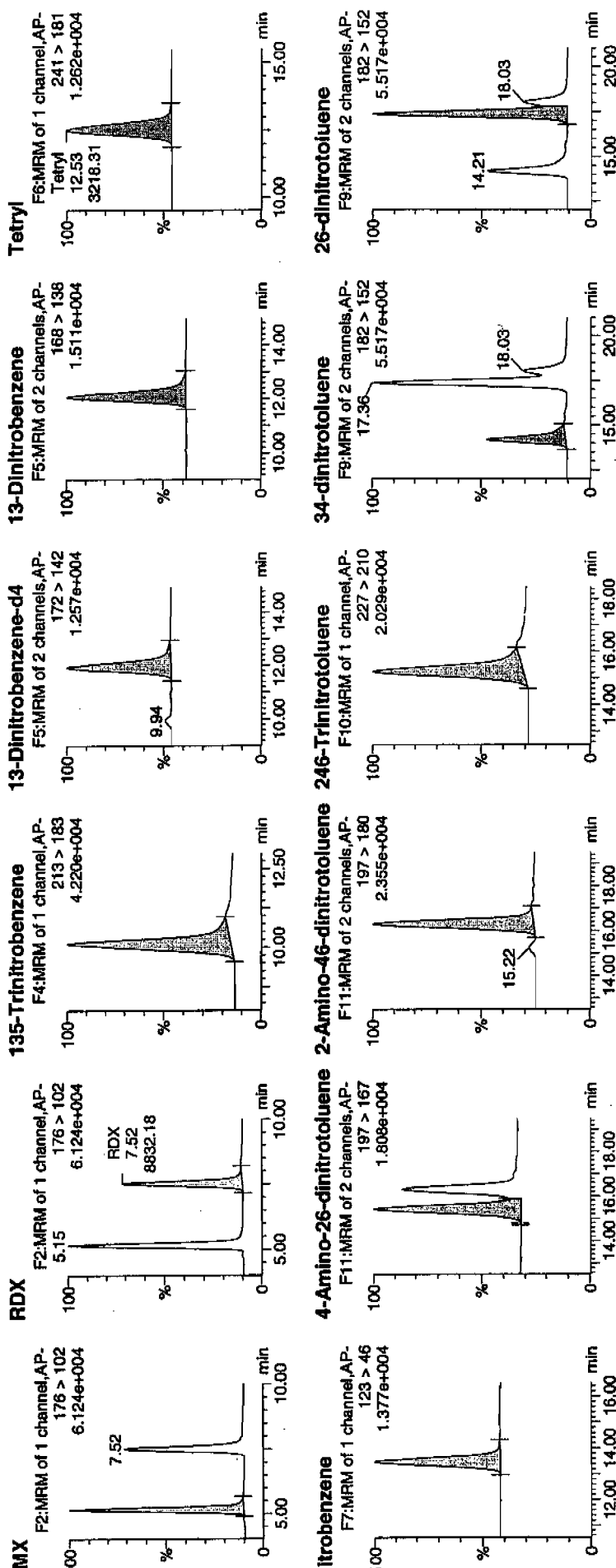
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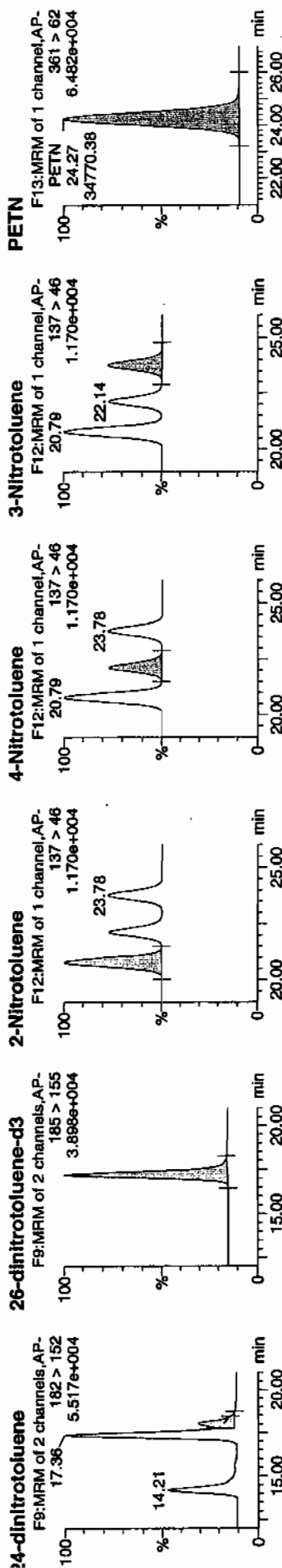
Ratio: 1:1,B

MR  
 1/5/10



MR  
 01/05/10

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



Name	Trace	RT	Area	IS Area	Abundance	Flags	Mod Date	Mod User	GC/MS	GC/MS	GC/MS	GC/MS
HMX	176 > 102	5.15	11133.533	2644.648	11133.533	2104.918	db		700.9518	116.8	16.8	958.9
RDX	176 > 102	7.52	8832.184	2644.648	8832.184	1689.822	bb		711.9062	118.7	18.7	652.7
135-Trinitrobenzene	213 > 183	10.11	13697.489	2644.648	13697.489	2589.662	bb		695.8857	116.0	16.0	2007.7
13-Dinitrobenzene-d4	172 > 142	11.92	2644.648		2644.648	2644.648	bb		556.7689	111.4	11.4	142.7
13-Dinitrobenzene	168 > 138	12.07	3595.324	2644.648	3595.324	679.736	bb		581.1565	96.9	-3.1	239.0
Tetryl	241 > 181	12.53	3218.308	2644.648	3218.308	608.457	bb		533.4259	88.9	-11.1	350.0
Nitrobenzene	123 > 46	13.45	2880.952	2644.648	2880.952	544.676	bb		556.0617	92.7	-7.3	238.5
4-Amino-26-dinitrotoluene	197 > 167	15.42	5346.310	14249.795	5346.310	187.593	MM	05-Jan-10 08:48:33	636.7431	106.1	6.1	455.5
2-Amino-46-dinitrotoluene	197 > 180	16.28	7466.065	14249.795	7466.065	261.971	bb		689.8087	114.9	14.9	250.6
246-Trinitrotoluene	227 > 210	15.24	6708.438	14249.795	6708.438	235.387	bb		729.5571	121.6	21.6	310.0
34-dinitrotoluene	182 > 152	14.21	8448.370	14249.795	8448.370	286.438	bb		332.3916	110.8	10.8	305.7
26-dinitrotoluene	182 > 152	17.36	19074.088	14249.795	19074.088	669.276	MM	05-Jan-10 08:53:31	625.1535	104.2	4.2	753.9
24-dinitrotoluene	182 > 152	18.03	4553.227	14249.795	4553.227	159.765	MM	05-Jan-10 08:57:14	615.8229	102.6	2.6	161.2
26-dinitrotoluene-d3	185 > 155	17.20	14249.795		14249.795	14249.795	bb		518.3003	103.7	3.7	1386.0
2-Nitrotoluene	137 > 46	20.79	2869.125	14249.795	2869.125	100.673	bb		589.6268	98.3	-1.7	682.9
4-Nitrotoluene	137 > 46	22.14	1468.611	14249.795	1468.611	51.531	bb		603.9078	100.7	0.7	361.2
3-Nitrotoluene	137 > 46	23.78	1601.190	14249.795	1601.190	56.183	bb		558.6731	93.1	-6.9	370.7
PETN	361 > 62	24.27	34770.383	14249.795	34770.383	1220.031	bb		616.1636	102.7	2.7	6014.6

GRAND MEAN AVERAGE

Vendor: Restek  
 Date of Analysis: 01/04/10  
 Time of Injection: 2237  
 Standard Number: WXX100102-07CCV  
 Data File: EXP0102117a

HMX	116.8
RDX	118.7
135-TNB	116.0
13-DNB	96.9
Tetryl	88.9
Nitrobenzene	92.7
4A-26-DNT	106.1
2A-46-DNT	114.9
246-TNT	121.6
34-DNT(surr)	110.8
26-DNT	104.2
24-DNT	102.6
2-NT	98.3
4-NT	100.7
3-NT	93.1
PETN	102.7

*WXX  
1/5/10*

Total 1685.0

Average 105.3

*Sum of 165/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0102119a

Analysis Date: 04-JAN-10 23:36

LCMSMS ID: 203

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
Nitrobenzene	40	39.977	100	
PETN	40	62.081	155	*
RDX	40	44.612	112	
Tetryl	40	29.341	73	
m-Dinitrobenzene	40	40.253	101	
m-Nitrotoluene	40	42.597	106	
o-Nitrotoluene	40	38.913	97	
p-Nitrotoluene	40	48.671	122	
1,3,5-Trinitrobenzene	40	52.948	132	*
1,3-Dinitrobenzene-d4	500	554.939	111	
2,4,6-Trinitrotoluene	40	49.002	123	
2,4-Dinitrotoluene	40	38.735	97	
2,6-Dinitrotoluene	40	41.606	104	
2,6-Dinitrotoluene-d3	500	554.179	111	
2-Amino-4,6-dinitrotoluene	40	44.63	112	
3,4-Dinitrotoluene	20	21.008	105	
4-Amino-2,6-dinitrotoluene	40	45.424	114	
HMX	40	52.247	131	*

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  
 JEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\PRO\010210expA1.qld, Time: Tue Jan 05 09:00:03 2010

Sample Name: C:\MASSLYNX\NEW\_EXP\PRO\Data\EXP0102119a

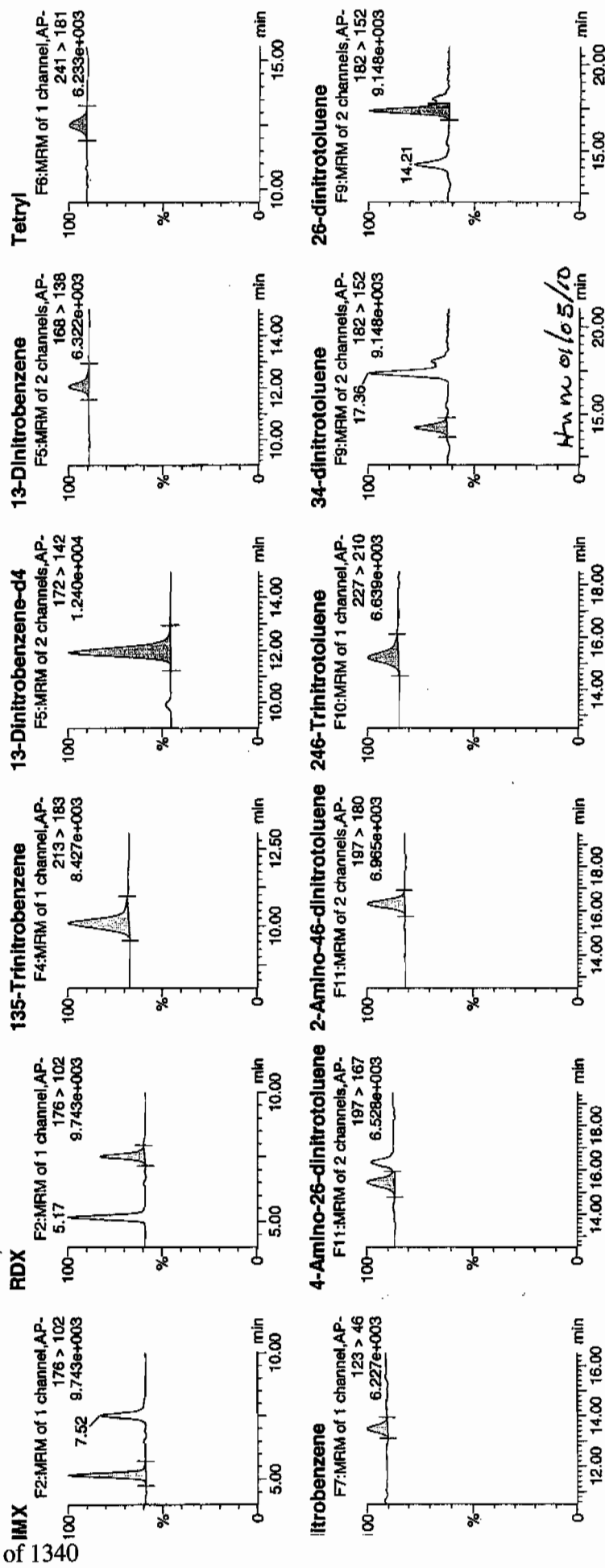
Date: 04-Jan-2010

Time: 23:36:32

D: WXX100102-08CRI

Ratio: 1:1,C

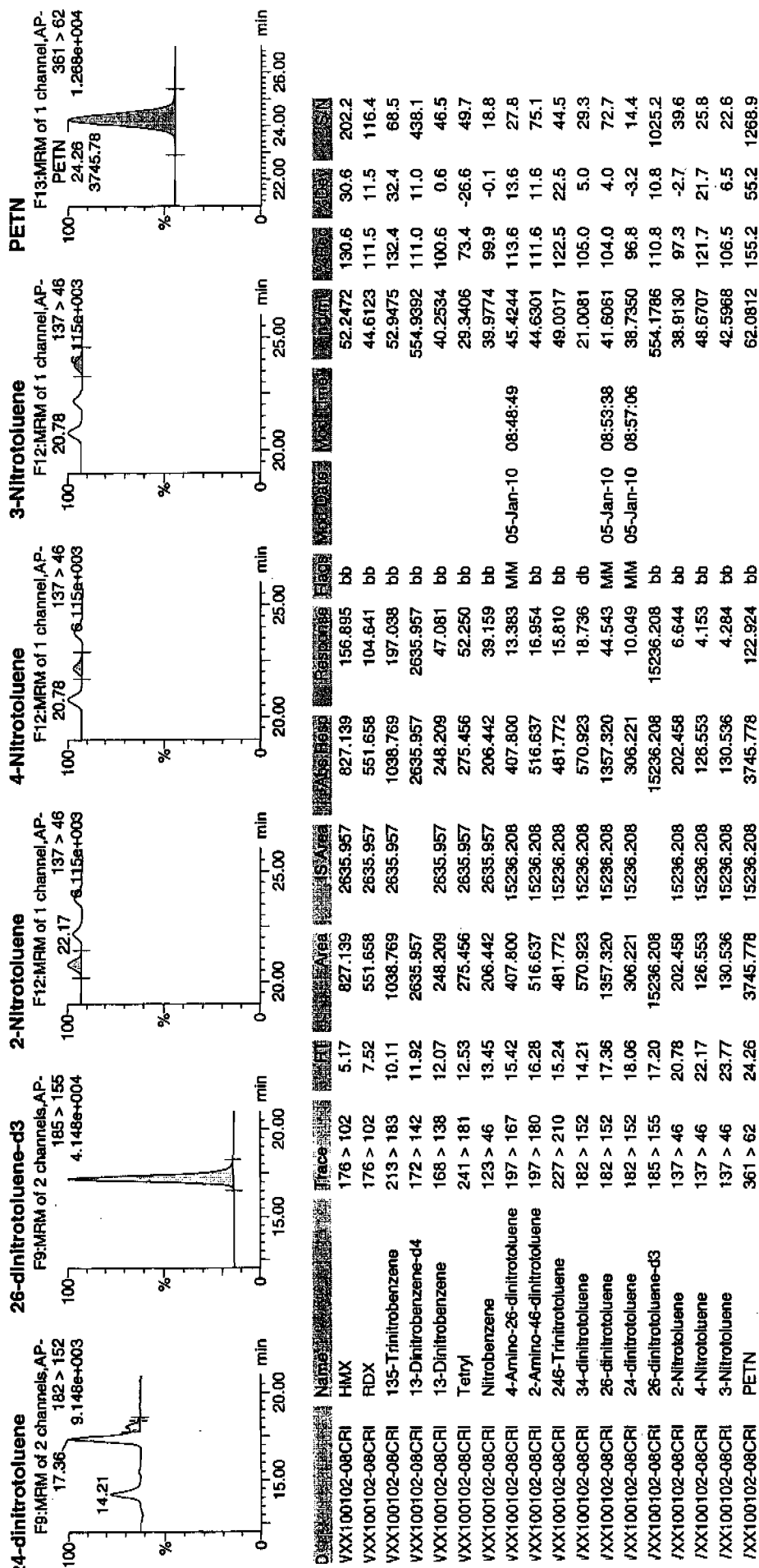
pur  
 1/5/10



Printed: Tue Jan 05 09:04:48 2010, Page 64 of 85

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

Dataset: C:\MASSLYNX\New\_Exp\PRO1010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



GRAND MEAN AVERAGE

Vendor: UltraScientific  
 Date of Analysis 01/04/10  
 Time of Injection 2336  
 Standard Number WXX100102-08CRI  
 Data File EXP0102119a

HMX	130.6
RDX	111.5
135-TNB	132.4
13-DNB	100.6
Tetryl	73.4
Nitrobenzene	99.9
4A-26-DNT	113.6
2A-46-DNT	111.6
246-TNT	122.5
34-DNT(surr)	105.0
26-DNT	104.0
24-DNT	96.8
2-NT	97.3
4-NT	121.7
3-NT	106.5
PETN	155.2

*WAF*  
*11/5/10*

Total 1782.6

Average 111.4

*dhmc 01/05/10*

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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01030013.wiff

Analysis Date: 03-JAN-10 14:49

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	97.9	98	
2,6-Diamino-4-nitrotoluene	100	83	83	
3,4-Dinitrotoluene	50	48.3	97	
3,5-Dinitroaniline	100	91.9	92	
TATB	100	105	105	
tris(o-cresyl) phosphate	100	95.1	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

11/15/10  
Dana  
Bayer

Sample Name: "WXX100103-270R" Sample ID: "111ER" File: "EXS01030013.wdf"

Peak Name: "TATB" Mass(es): "257.2204.9 amu"

Comment: "LCMSEXP\_C" Annotation: "

Sample Index: 1

Sample Type: QC

Concentration: 100. ng/mL

Calculated Conc: 105. ng/mL

Acq. Date: 1/3/2010

Acq. Time: 2:49:22 PM

Modified: No

Proc. Algorithm: IntelliQuan - IQA

Min. Peak Height: 2500.00 cps

Min. Peak Width: 0.00 sec

Smoothing Width: 3 points

RT Window: 30.0 sec

Expected RT: 6.97 min

Use Relative RT: No

Int. Type: Valley

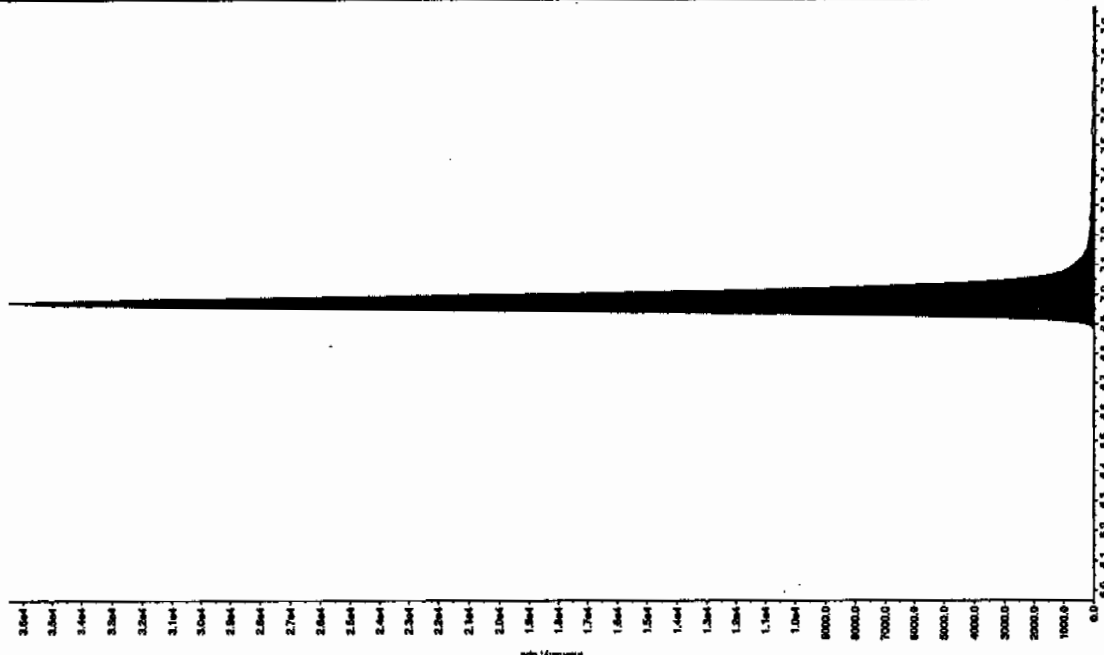
Retention Time: 6.98 min

Area: 1.53e+005 counts

Height: 36489.727 cps

Start Time: 6.82 min

End Time: 7.47 min



Sample Name: "WXX100103-270R" Sample ID: "111ER" File: "EXS01030013.wdf"

Peak Name: "3S-Dinitroaniline" Mass(es): "182.046.0 amu"

Comment: "LCMSEXP\_C" Annotation: "

Sample Index: 1

Sample Type: QC

Concentration: 100. ng/mL

Calculated Conc: 102. ng/mL

Acq. Date: 1/3/2010

Acq. Time: 2:49:22 PM

Modified: No

Proc. Algorithm: IntelliQuan - IQA

Min. Peak Height: 2000.00 cps

Min. Peak Width: 0.00 sec

Smoothing Width: 3 points

RT Window: 15.0 sec

Expected RT: 8.22 min

Use Relative RT: No

Int. Type: Valley

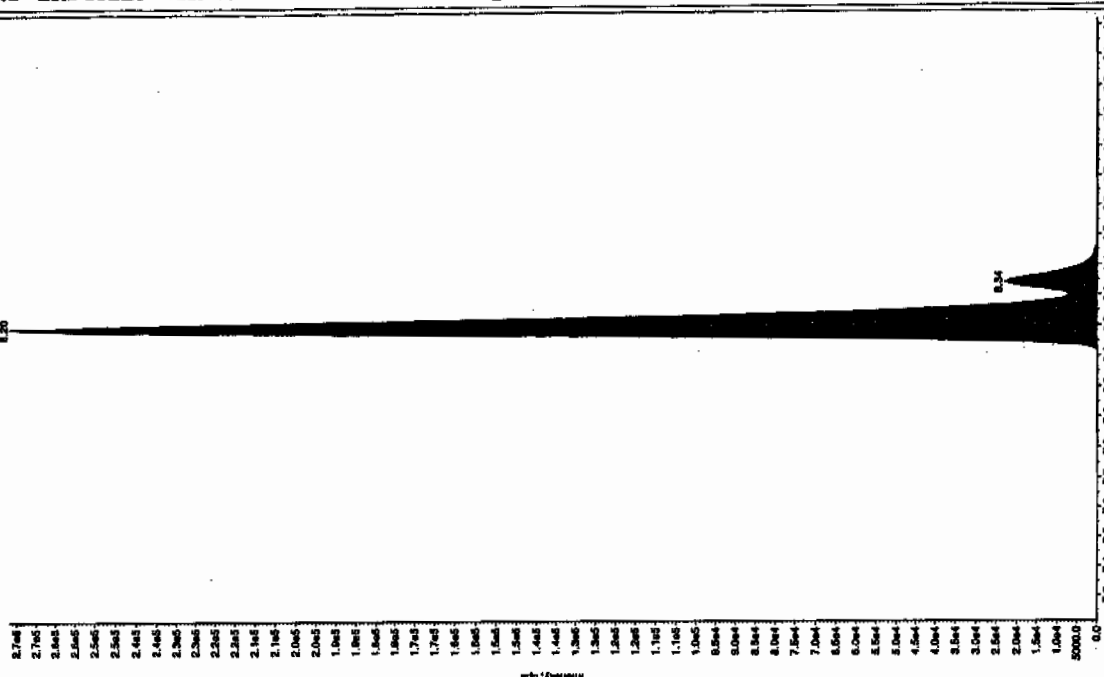
Retention Time: 8.20 min

Area: 1.16e+006 counts

Height: 271769.470 cps

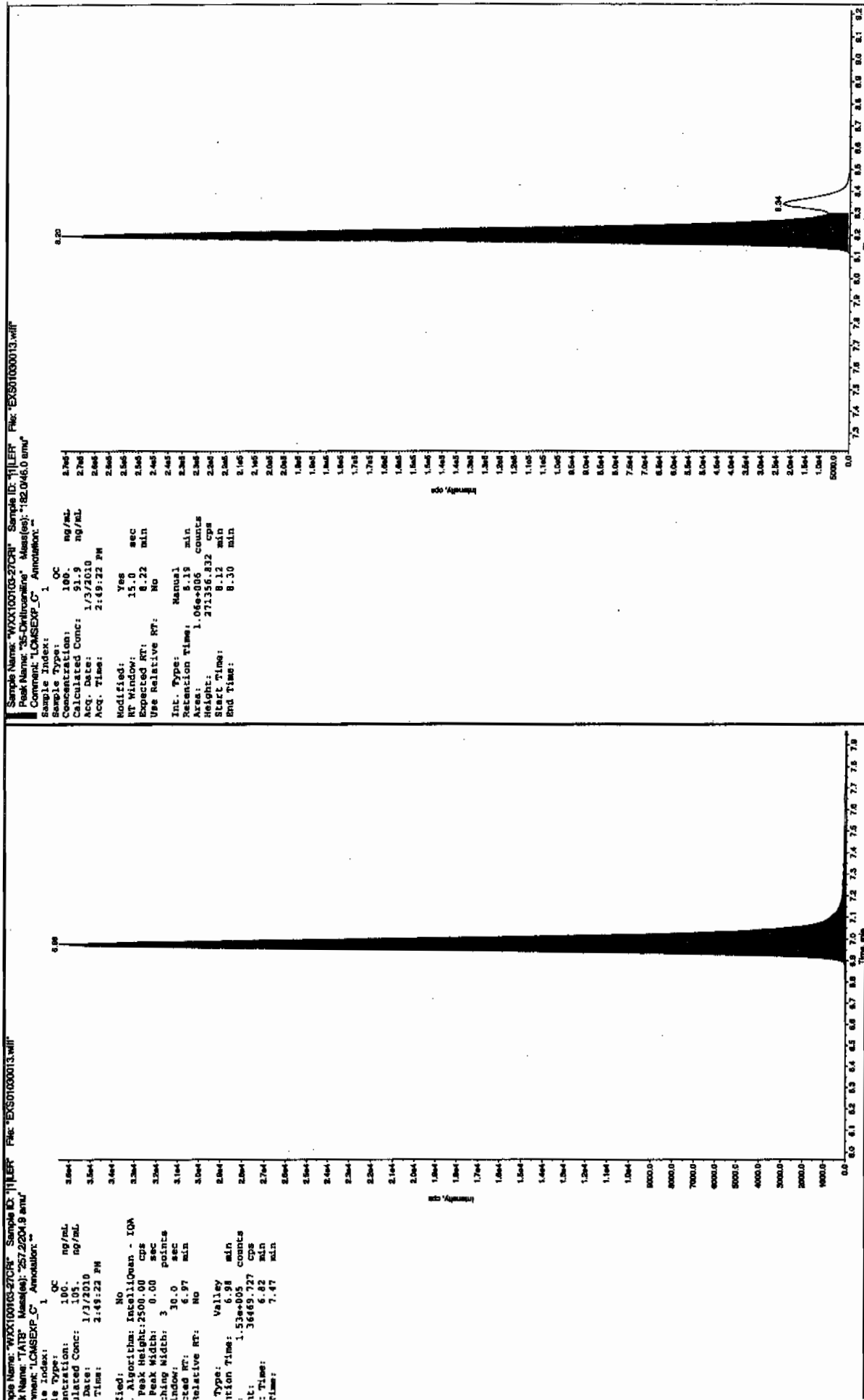
Start Time: 8.09 min

End Time: 8.63 min

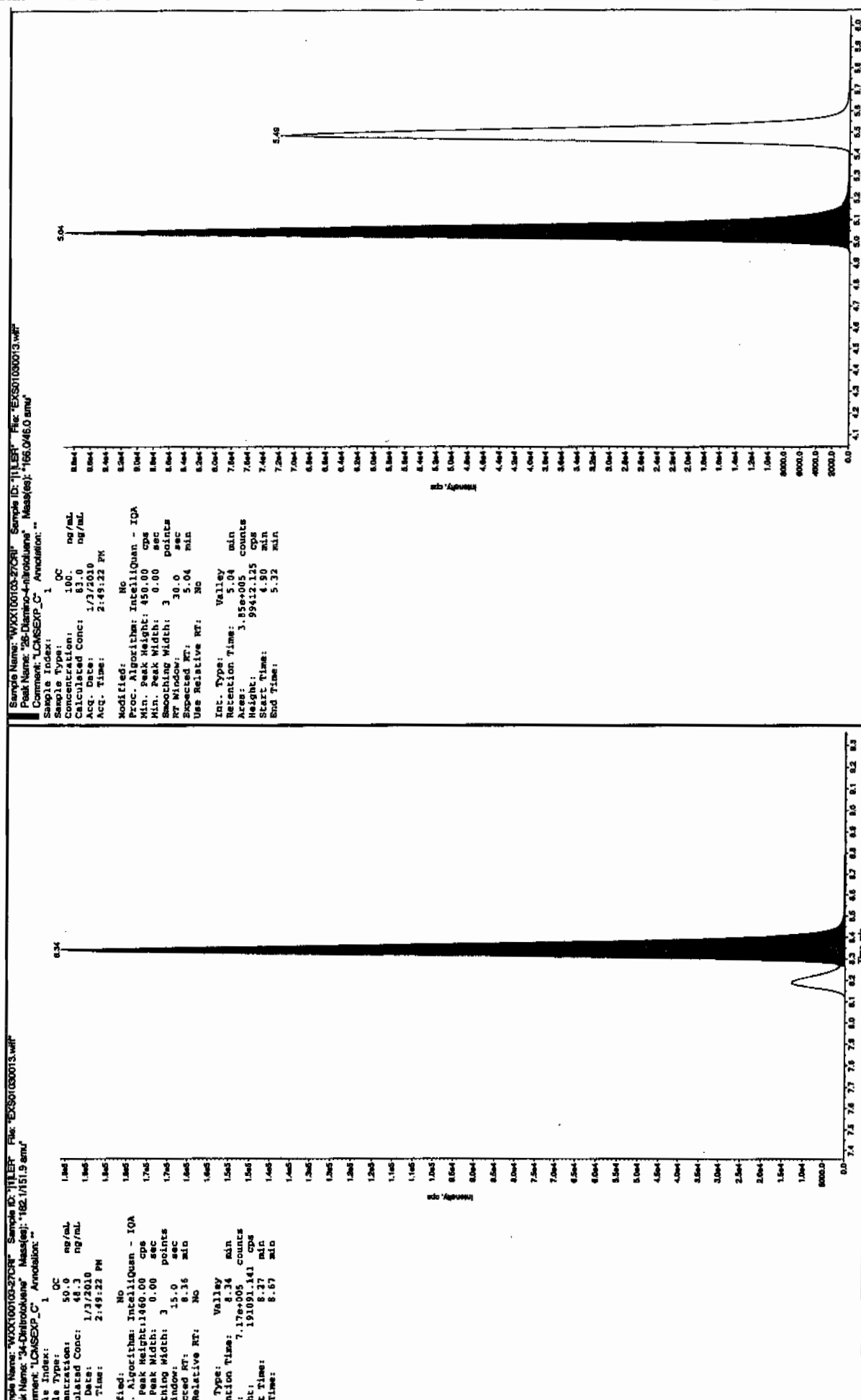


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01/17/10  
Jag 8  
Jag 10



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

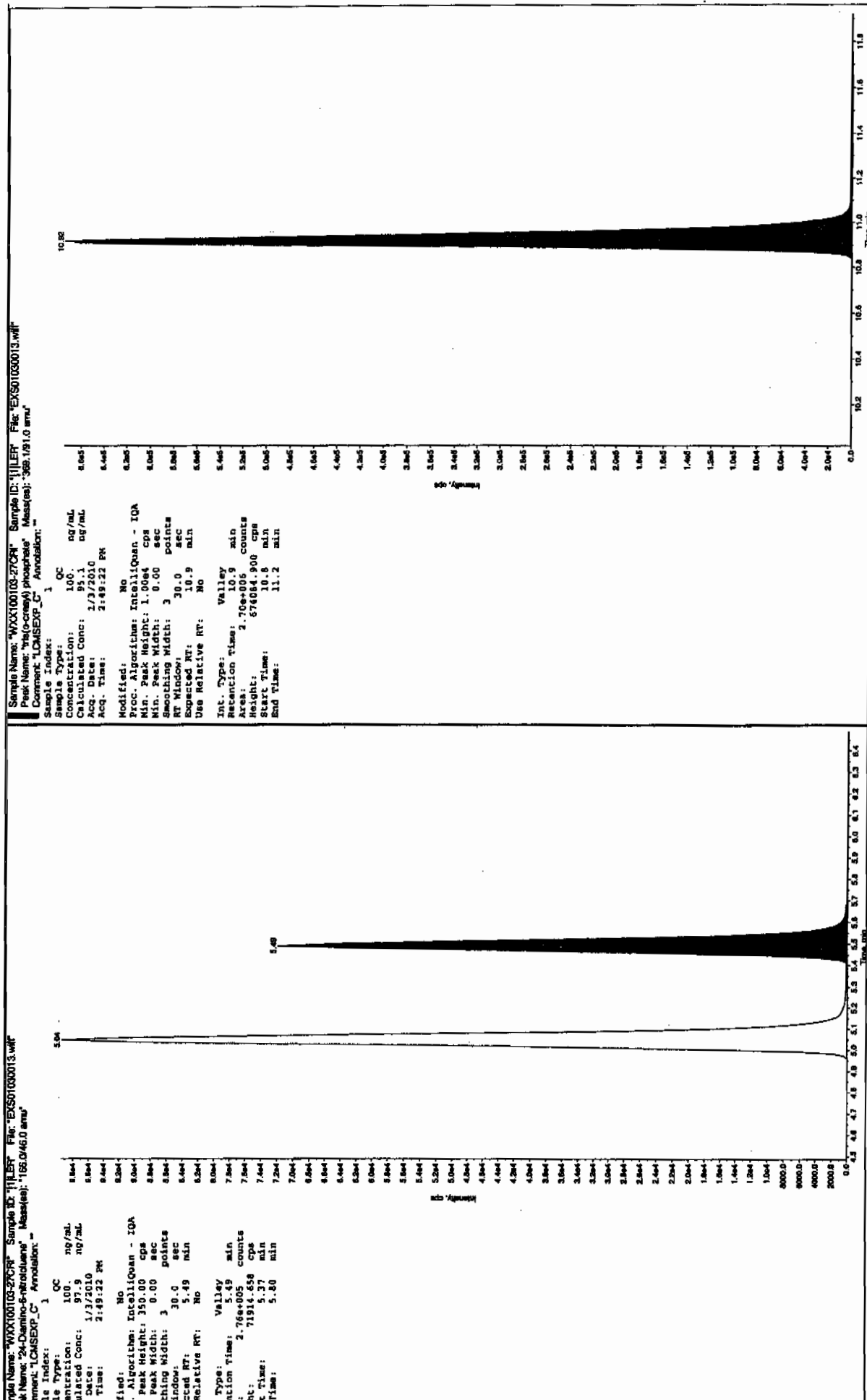


Sample Name: "WXX1001003-2703" Sample ID: "1155" File: "EX501030013.w"   
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1415.9 amu"   
 Comment: "LCMSEXP\_C" Annotation: ""

Sample Index: 1   
 Sample Type: QC   
 Concentration: 100. ng/mL   
 Calculated Conc: 83.0 ng/mL   
 Date: 1/3/2010   
 Acq. Time: 2:49:22 PM   
 Modified: No   
 Proc. Algorithm: IntelliQuan - IQA   
 Min. Peak Height: 450.00 cps   
 Min. Peak Width: 0.00 sec   
 Ret. Width: 330.0 points   
 RT Method: sec   
 Expected RT: 5.04 min   
 Use Relative RT: No   
 Int. Type: Valley   
 Retention Time: 5.04 min   
 Area: 3.85e+005 counts   
 Height: 99412.125 cps   
 Start Time: 4.90 min   
 End Time: 5.32 min

Sample Index: 1   
 Sample Type: QC   
 Concentration: 50.0 ng/mL   
 Calculated Conc: 48.3 ng/mL   
 Date: 1/3/2010   
 Acq. Time: 2:49:22 PM   
 Modified: No   
 Proc. Algorithm: IntelliQuan - IQA   
 Min. Peak Height: 450.00 cps   
 Min. Peak Width: 0.00 sec   
 Ret. Width: 330.0 points   
 RT Method: sec   
 Expected RT: 8.34 min   
 Use Relative RT: No   
 Int. Type: Valley   
 Retention Time: 8.34 min   
 Area: 7.17e+005 counts   
 Height: 191091.141 cps   
 Start Time: 8.27 min   
 End Time: 8.67 min

IL 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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01030024.wiff

Analysis Date: 03-JAN-10 17:42

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	522	104	
2,6-Diamino-4-nitrotoluene	500	491	98	
3,4-Dinitrotoluene	250	234	94	
3,5-Dinitroaniline	500	495	99	
TATB	500	505	101	
tris(o-cresyl) phosphate	500	511	102	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

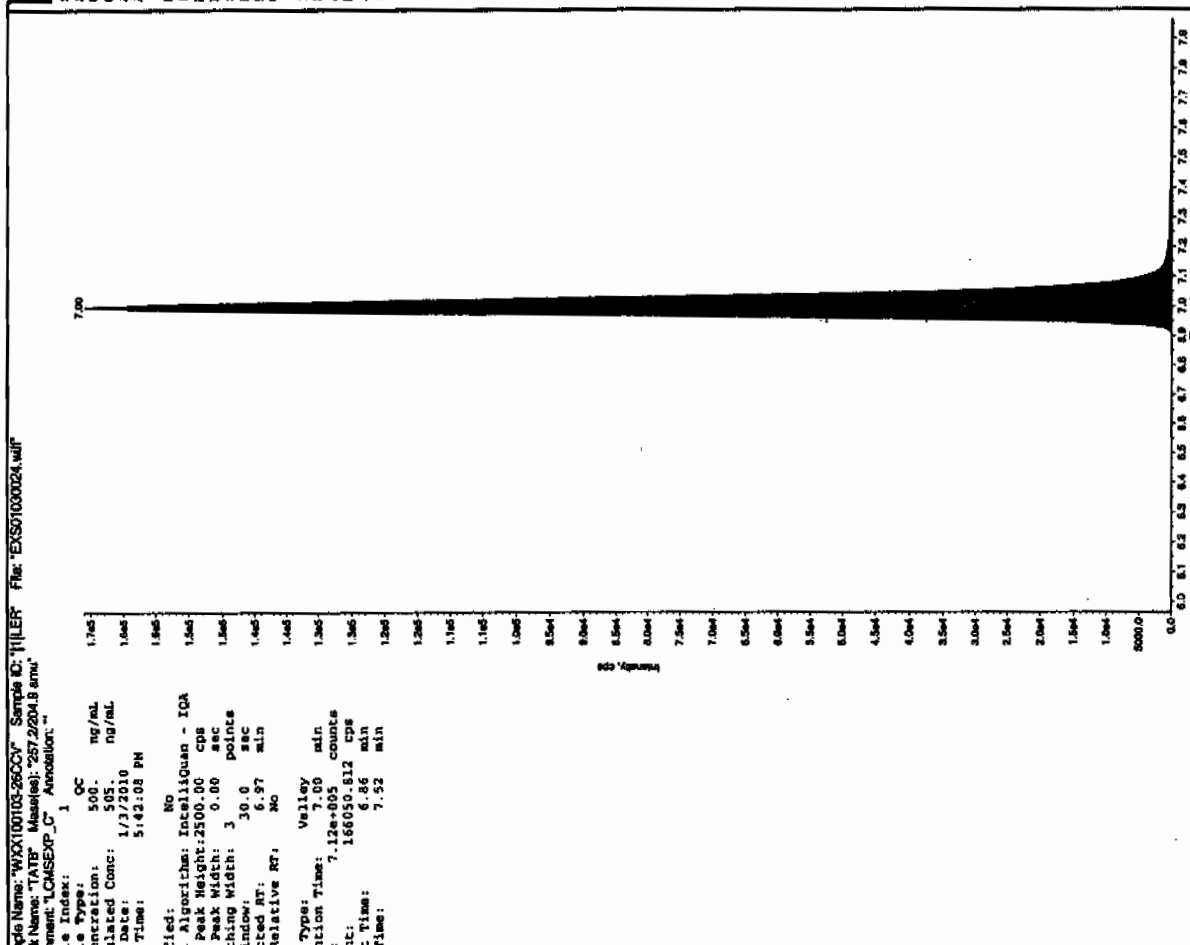
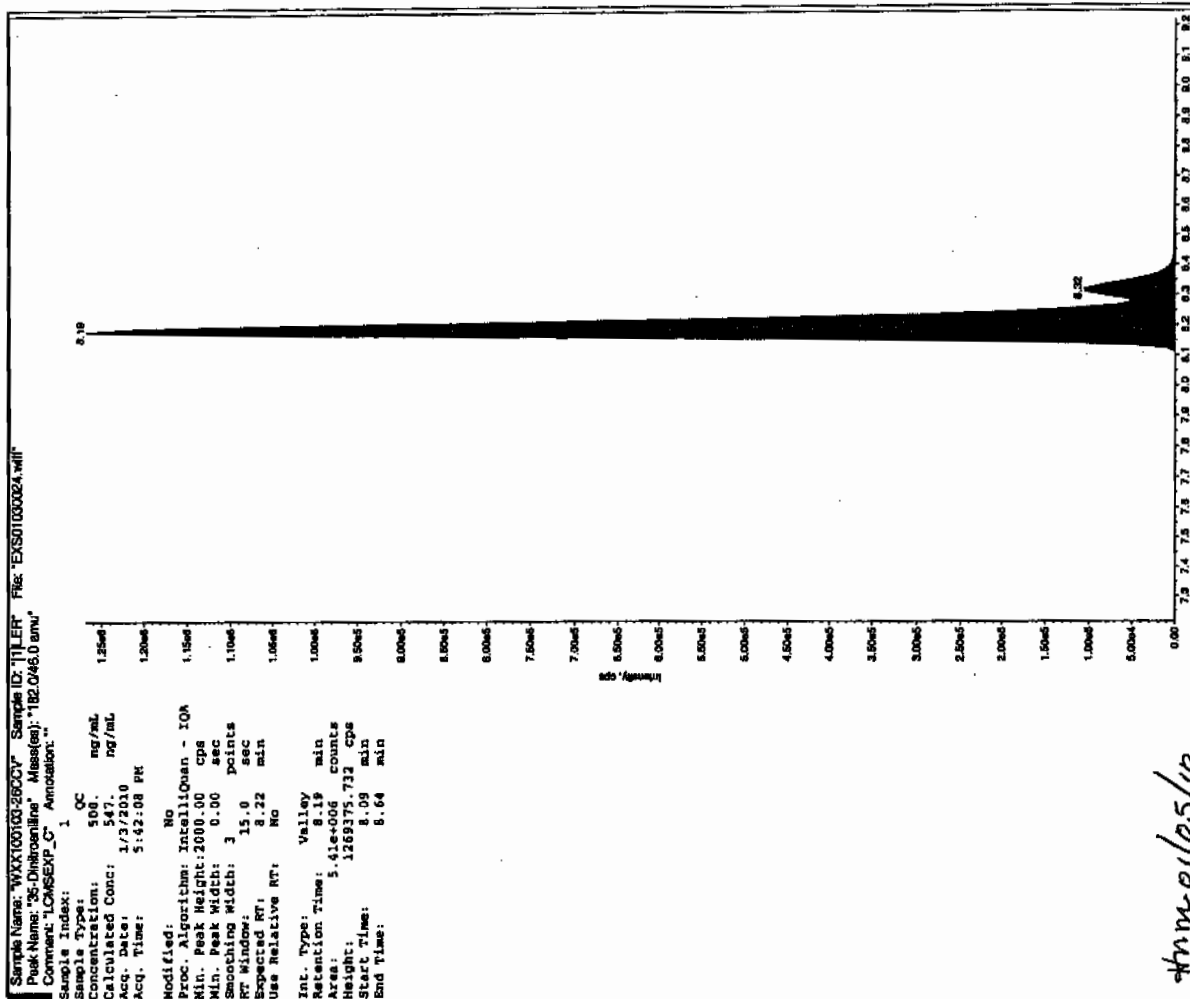
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

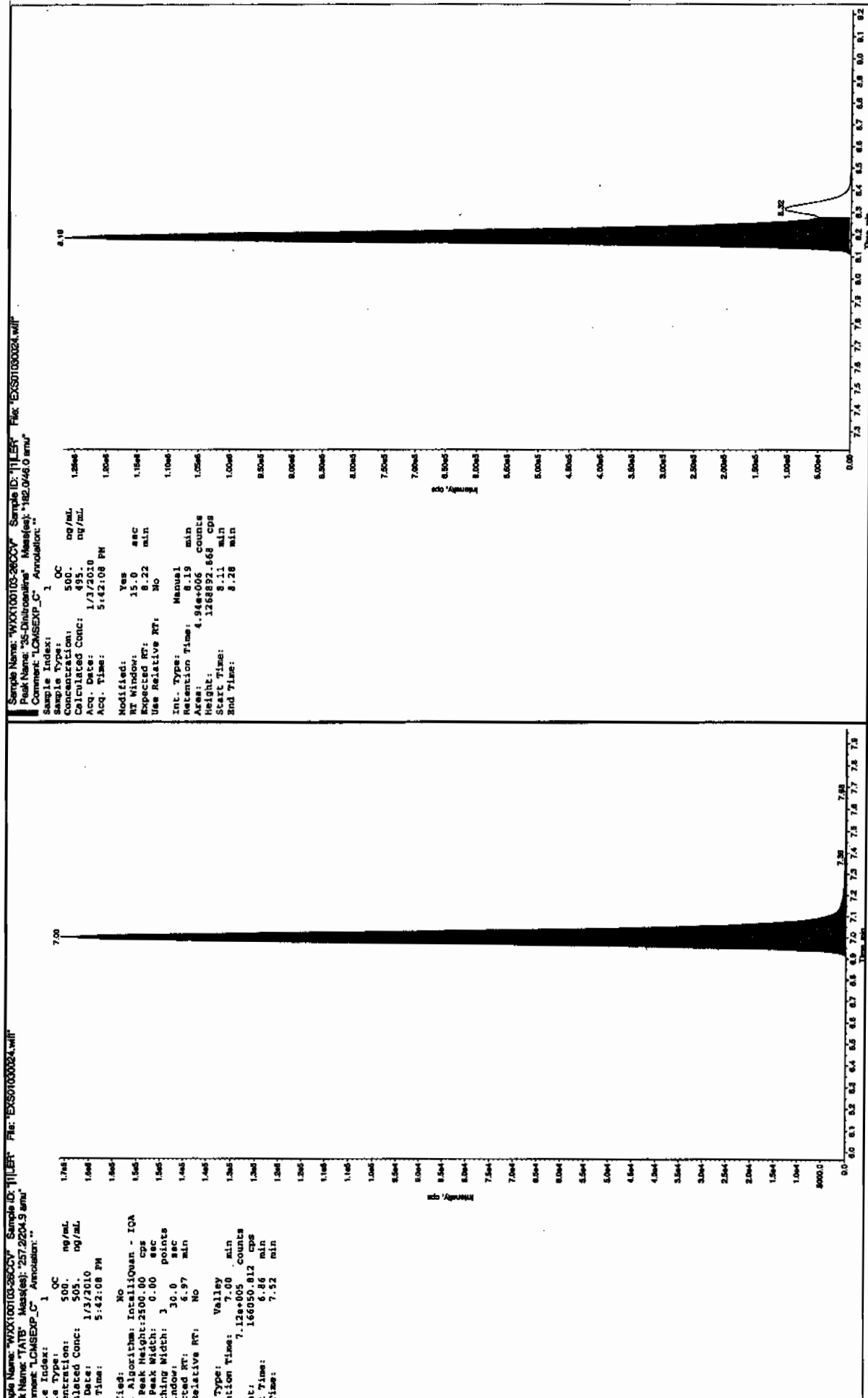
\* Value outside of Recovery Limits

After 11/15/10



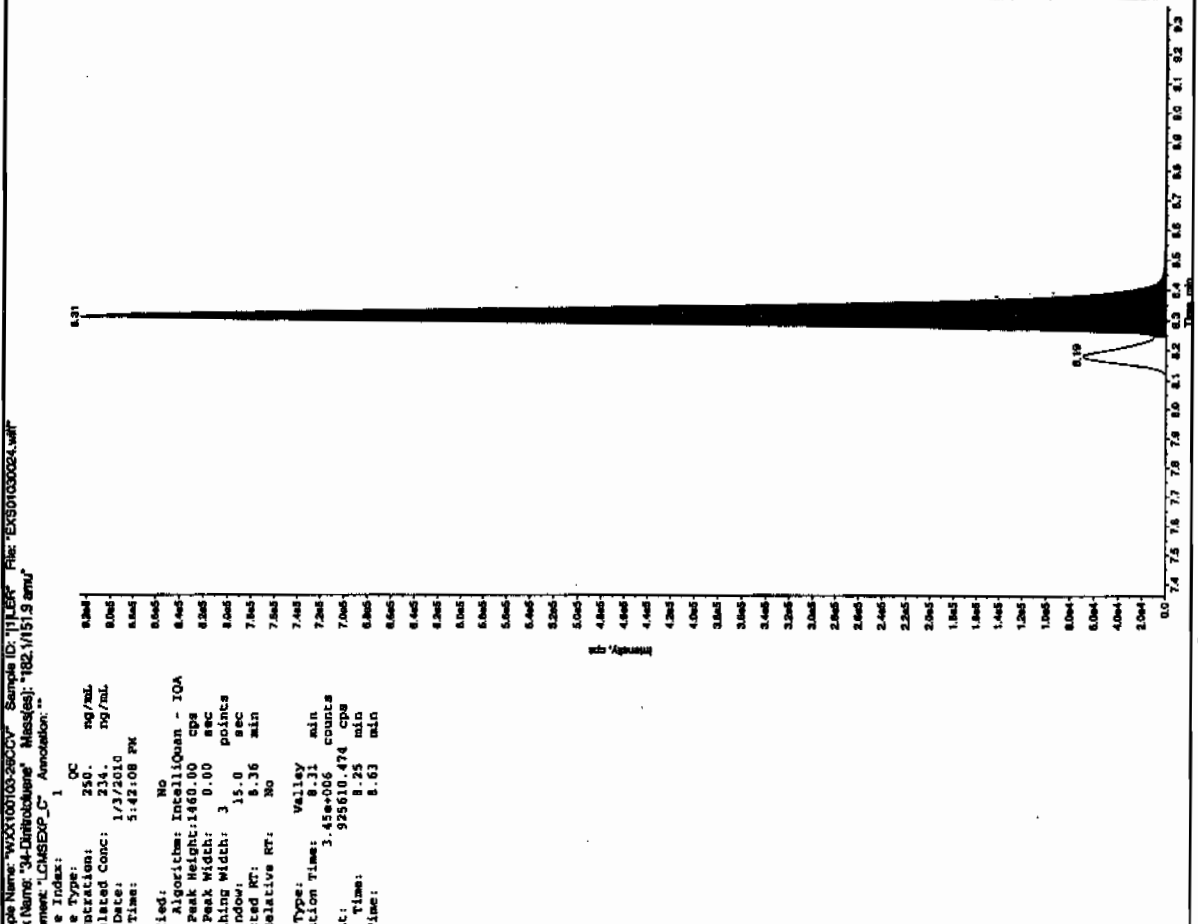
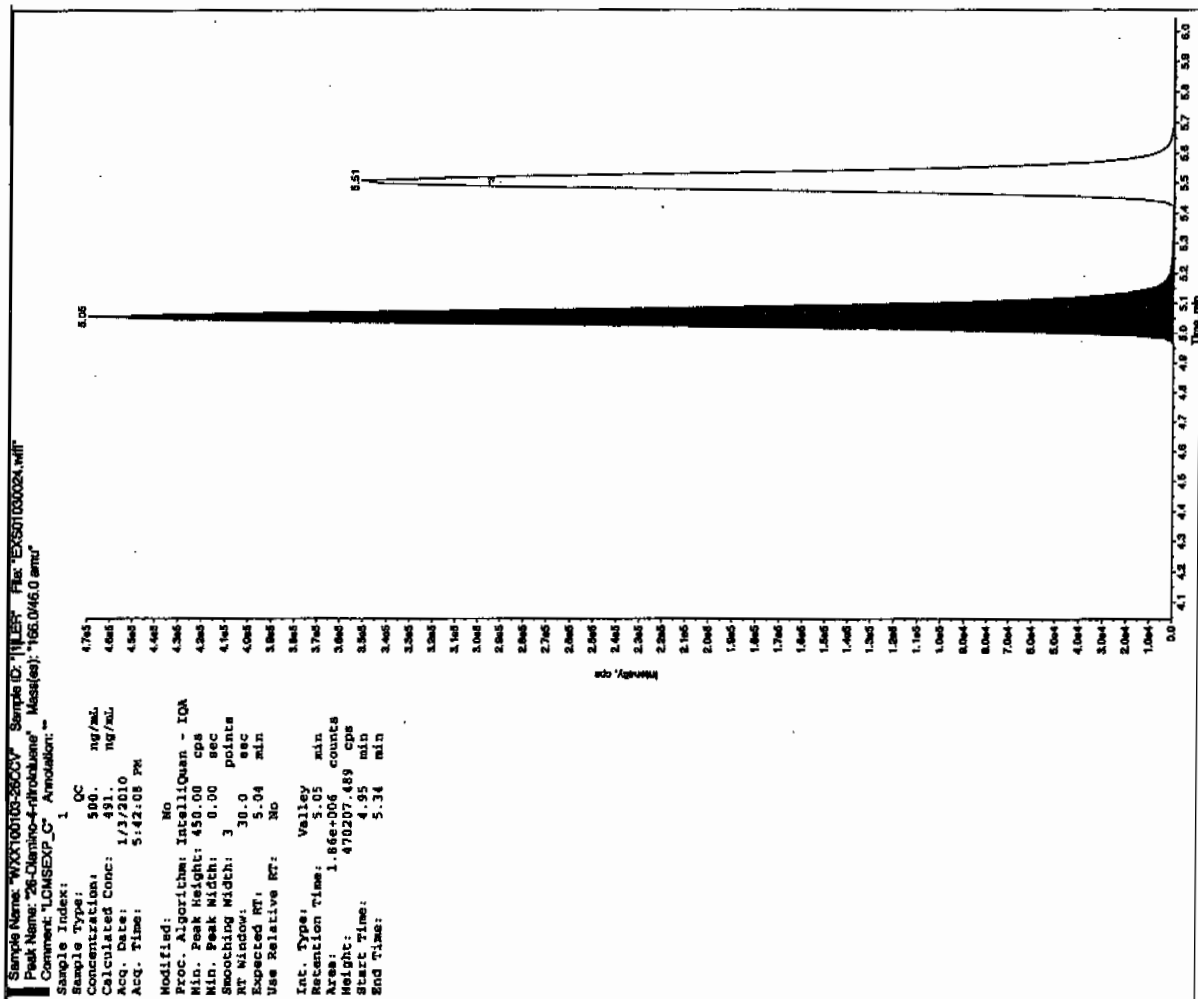
IL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

11/17/10  
of 2820

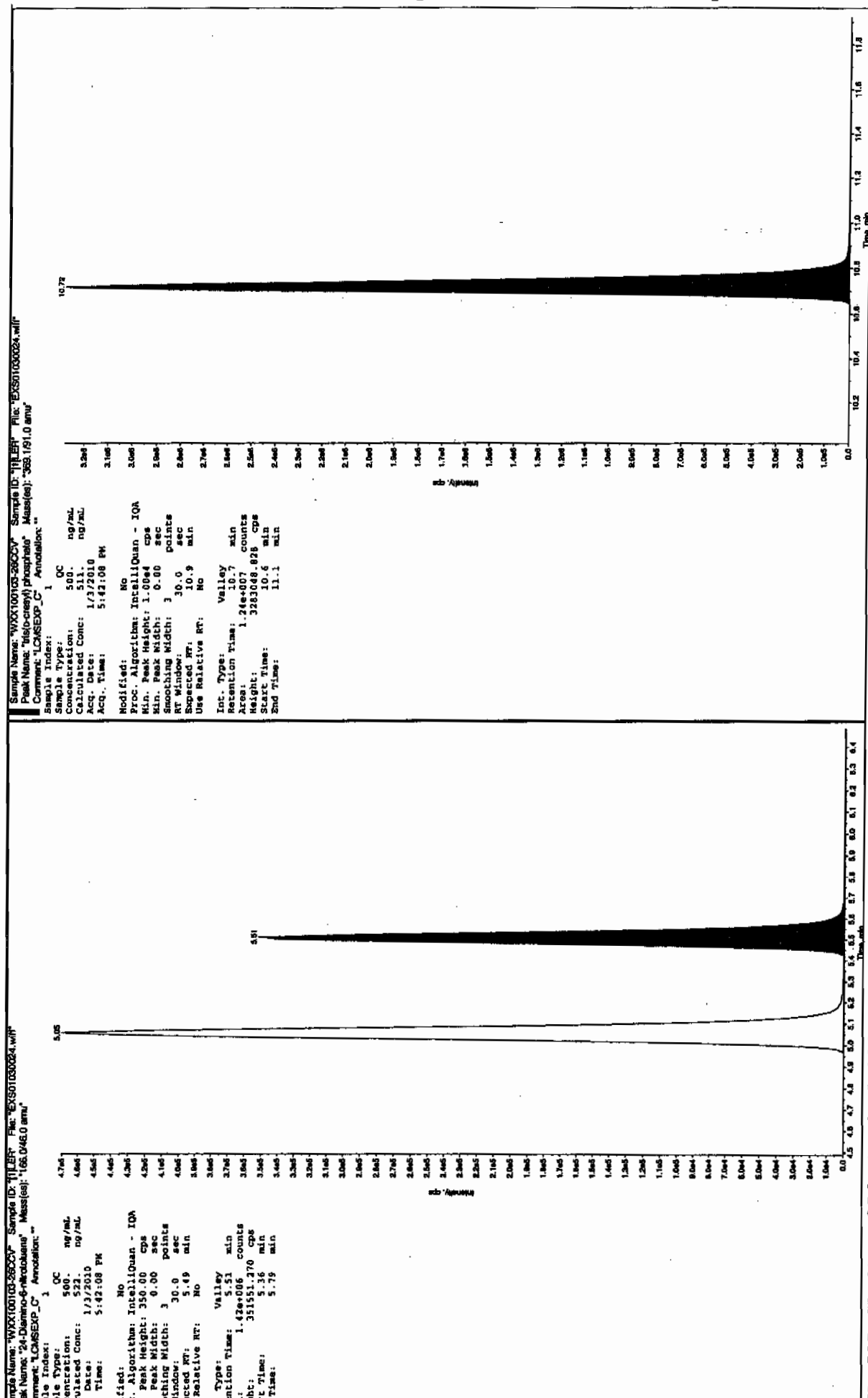


L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4





L 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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01030026.wiff

Analysis Date: 03-JAN-10 18:13

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	107	107	
2,6-Diamino-4-nitrotoluene	100	94.9	95	
3,4-Dinitrotoluene	50	47.3	95	
3,5-Dinitroaniline	100	91.3	91	
TATB	100	112	112	
tris(o-cresyl) phosphate	100	100	100	

Recovery Limits:

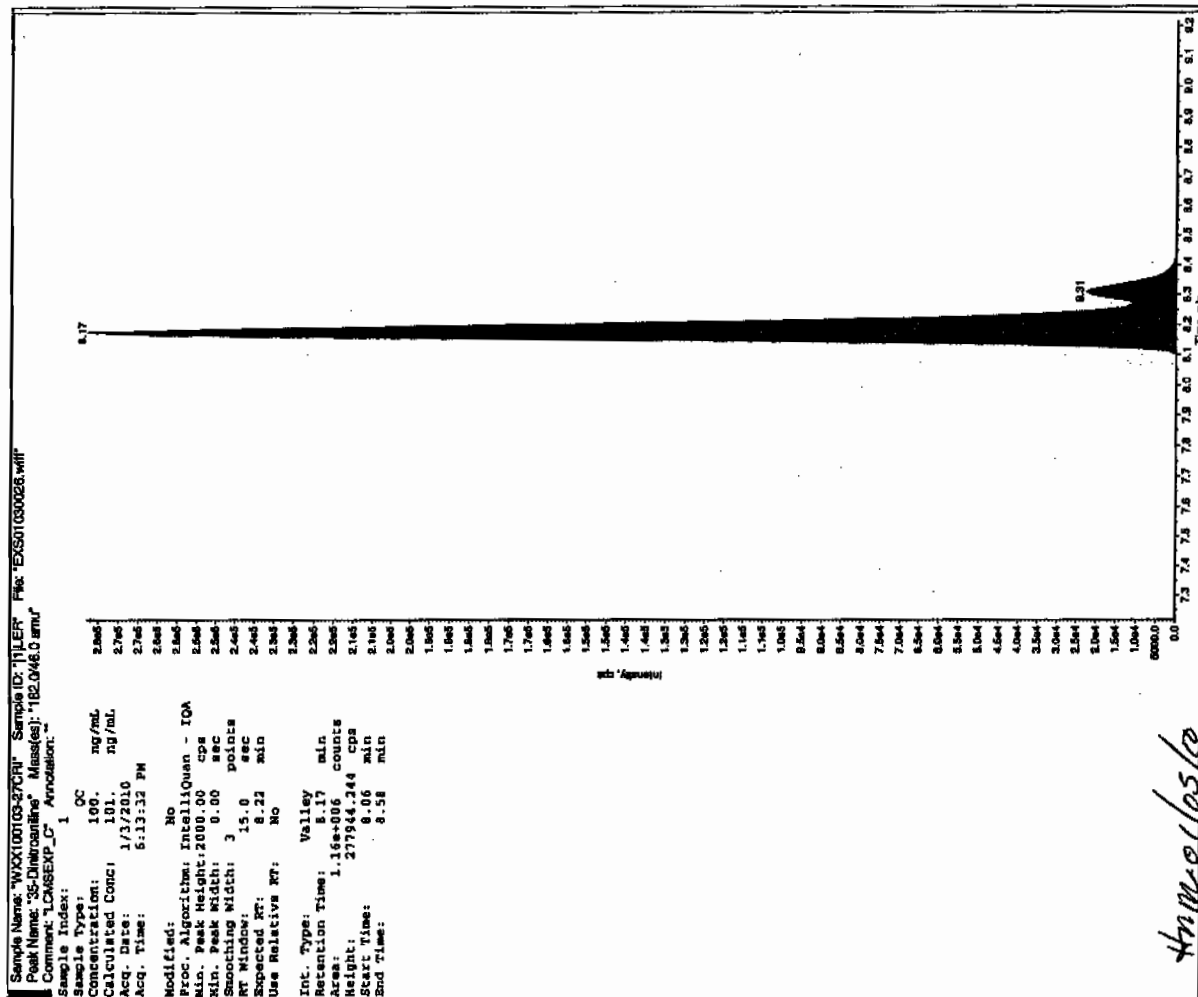
3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

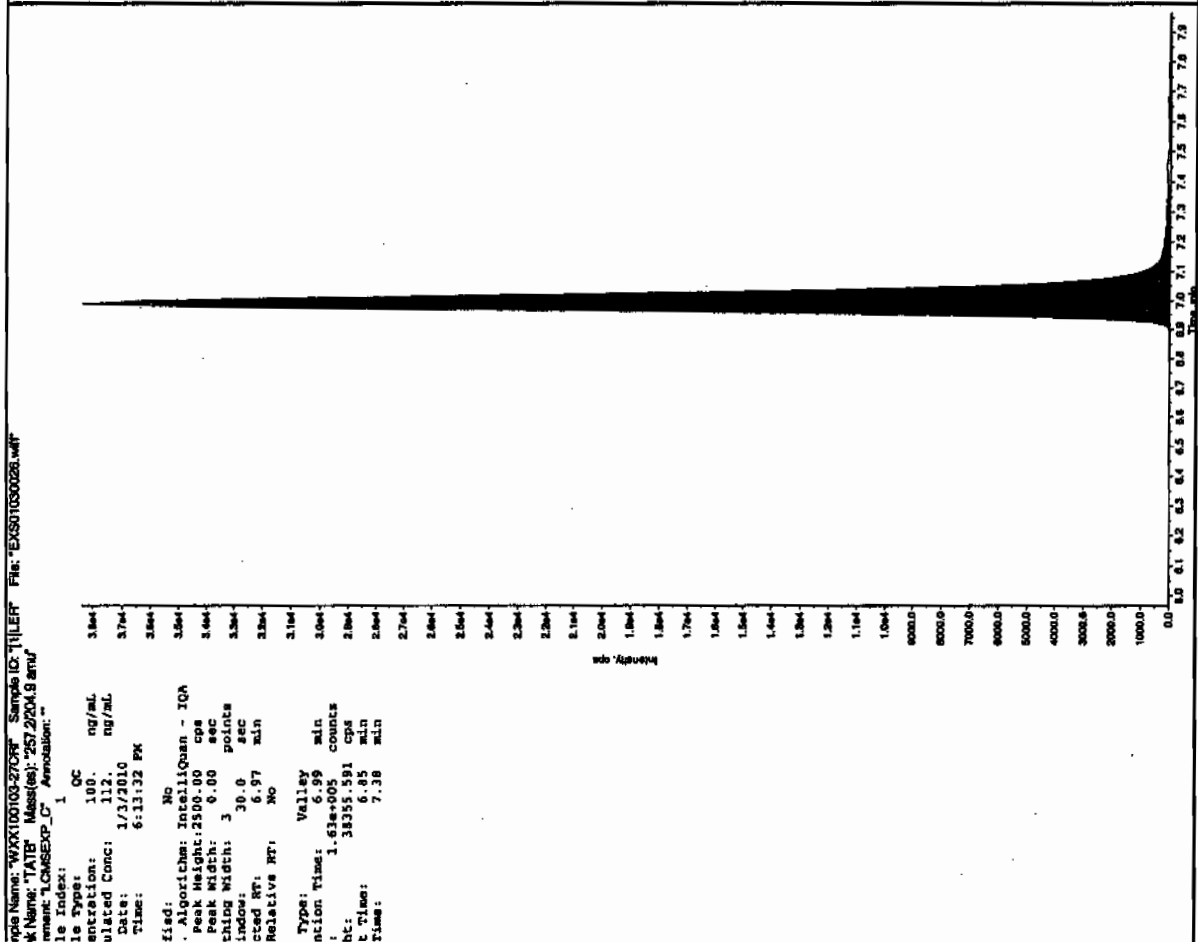
# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits

*Before*

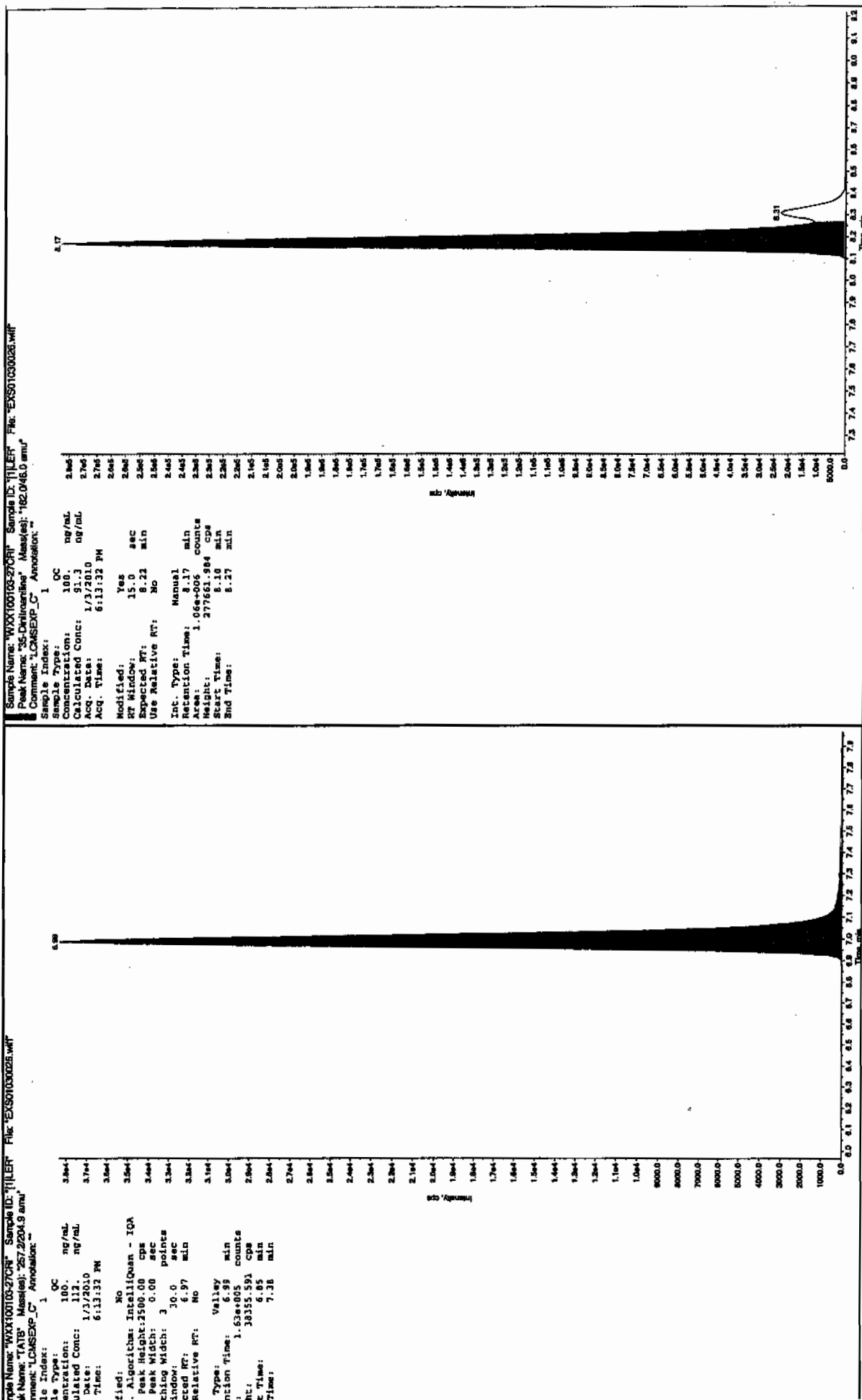


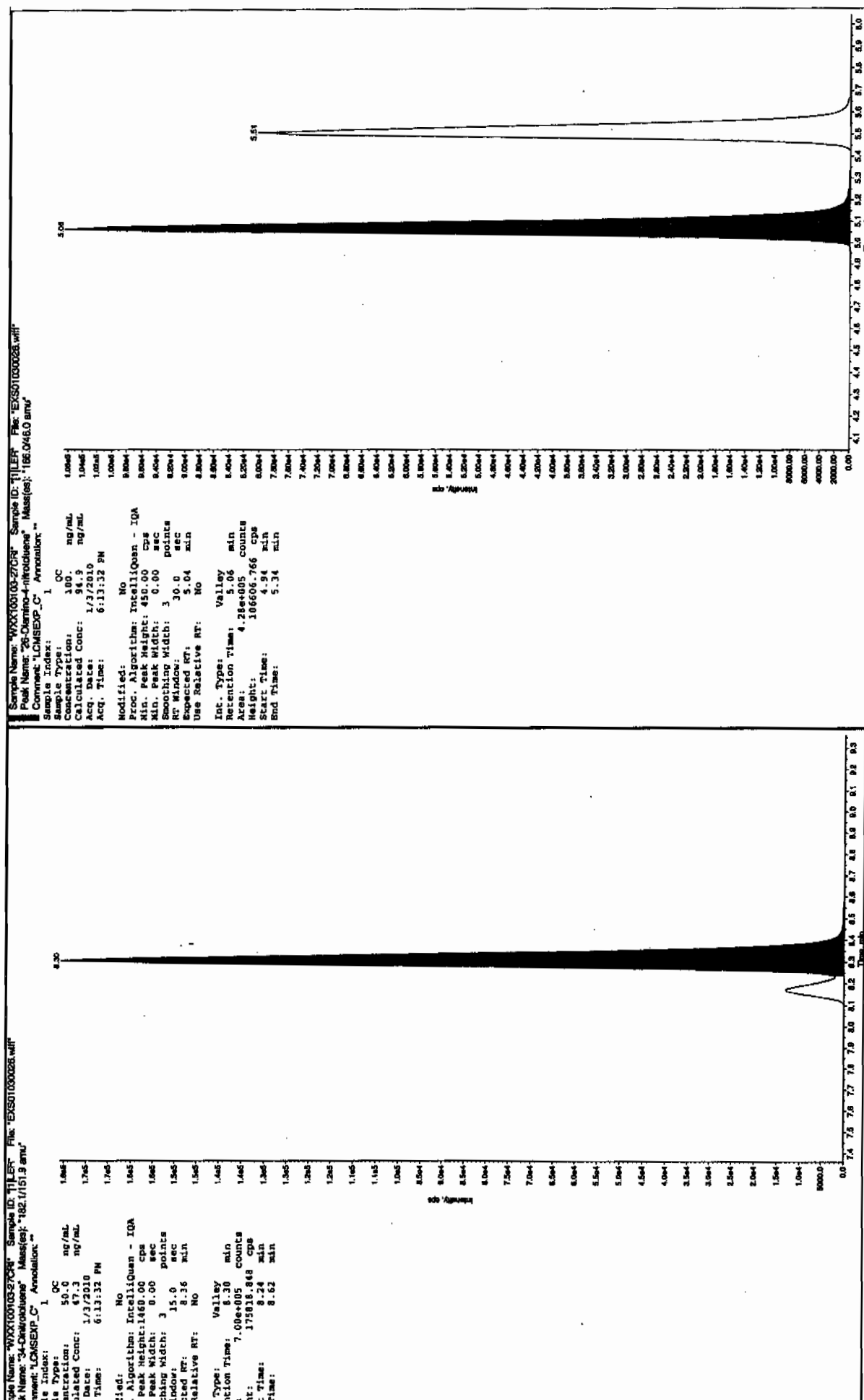
*Ammonia*



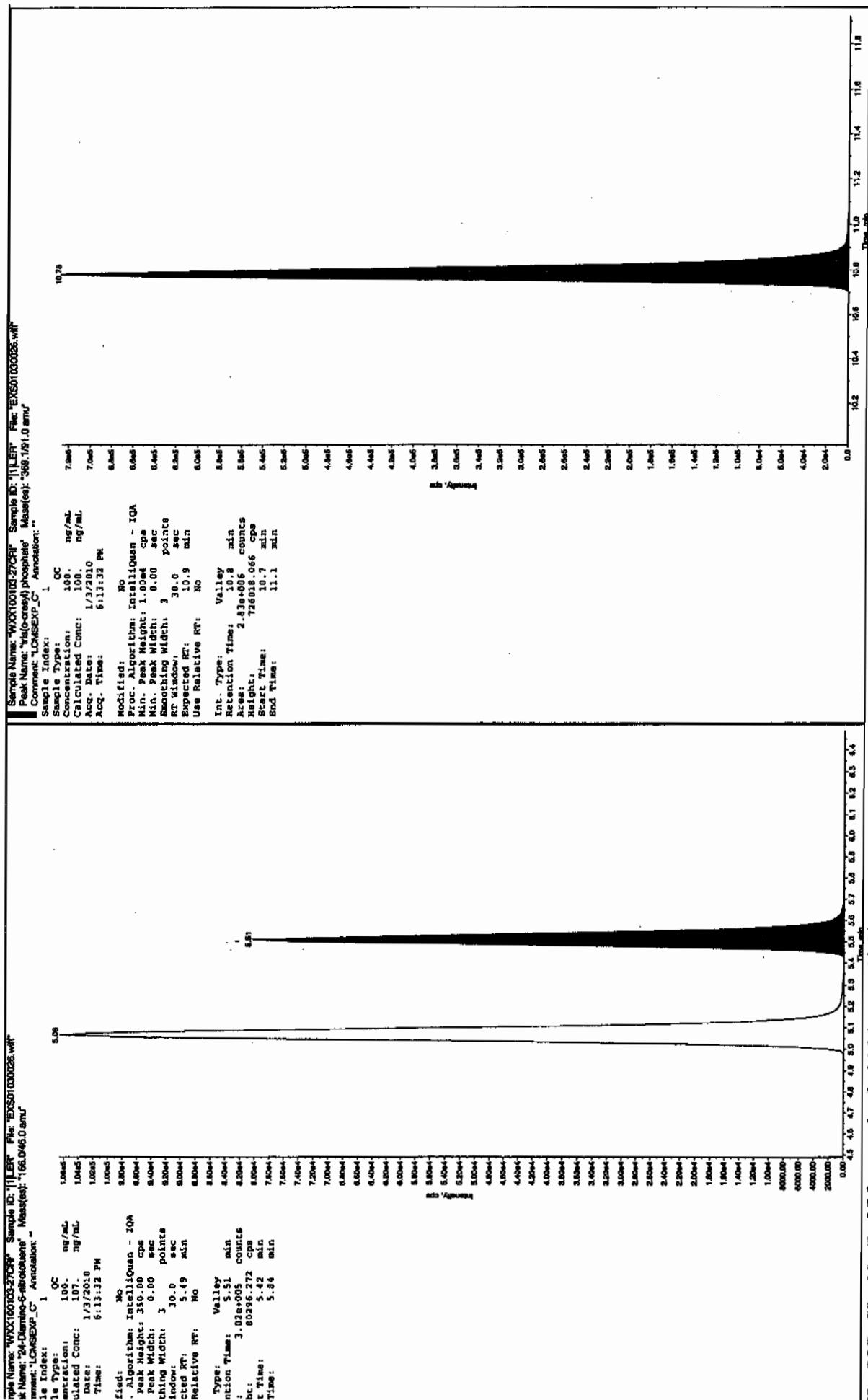
EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

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2008





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



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

**7A**  
**Explosives Continuing Calibration Verification**

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01030037.wiff

Analysis Date: 03-JAN-10 21:06

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	589	118	
2,6-Diamino-4-nitrotoluene	500	579	116	
3,4-Dinitrotoluene	250	226	91	
3,5-Dinitroaniline	500	461	92	
TATB	500	510	102	
tris(o-cresyl) phosphate	500	503	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 70-130%

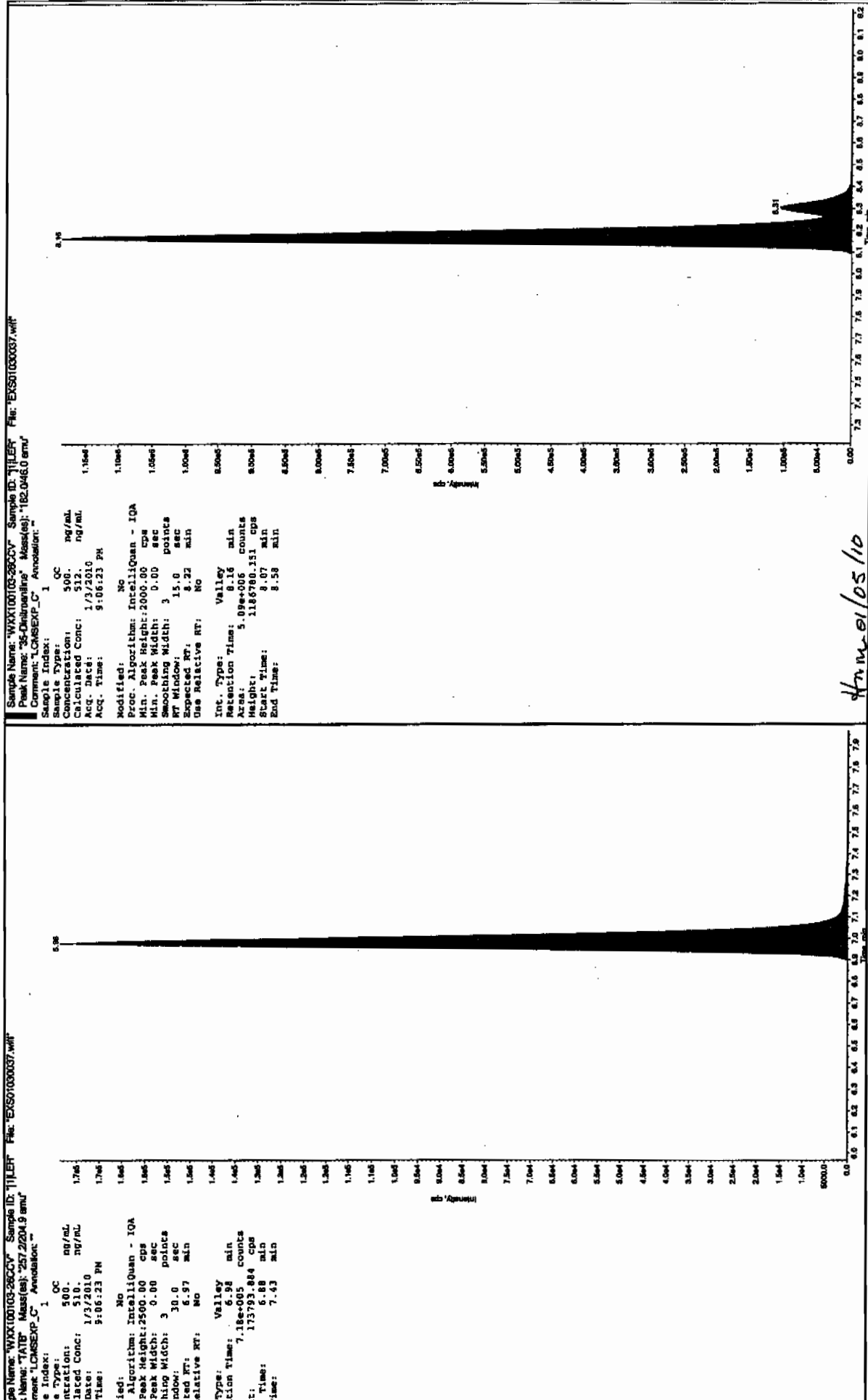
Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits



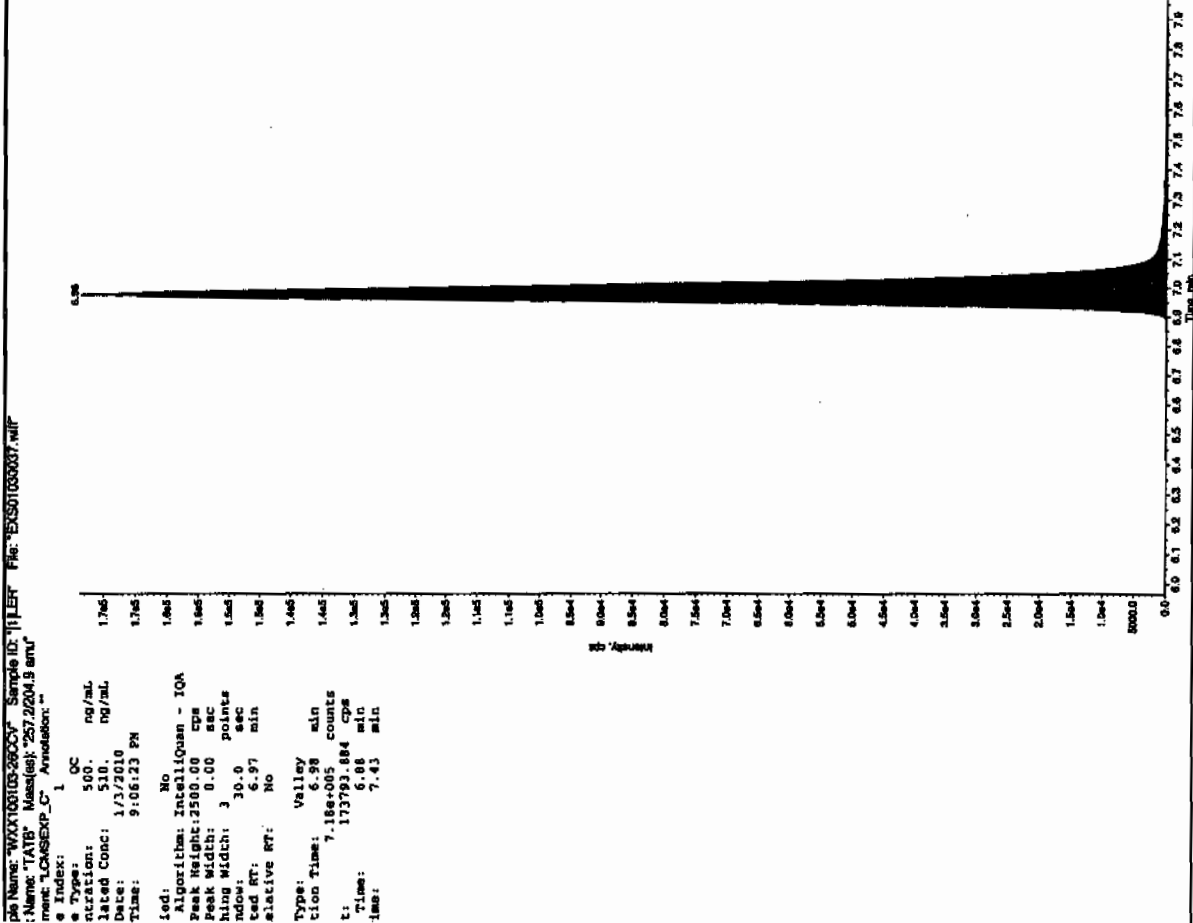
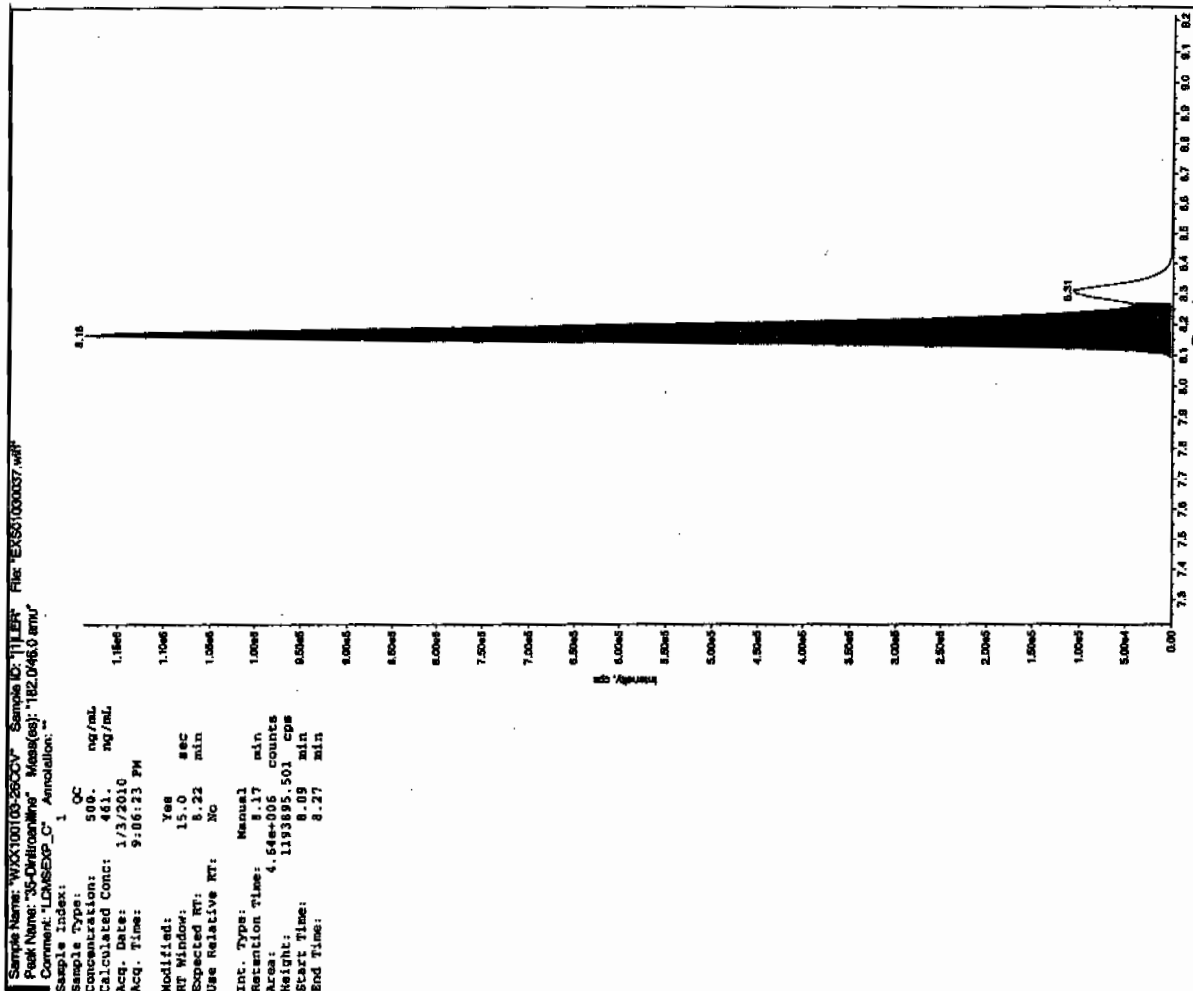
1/17/10  
Before



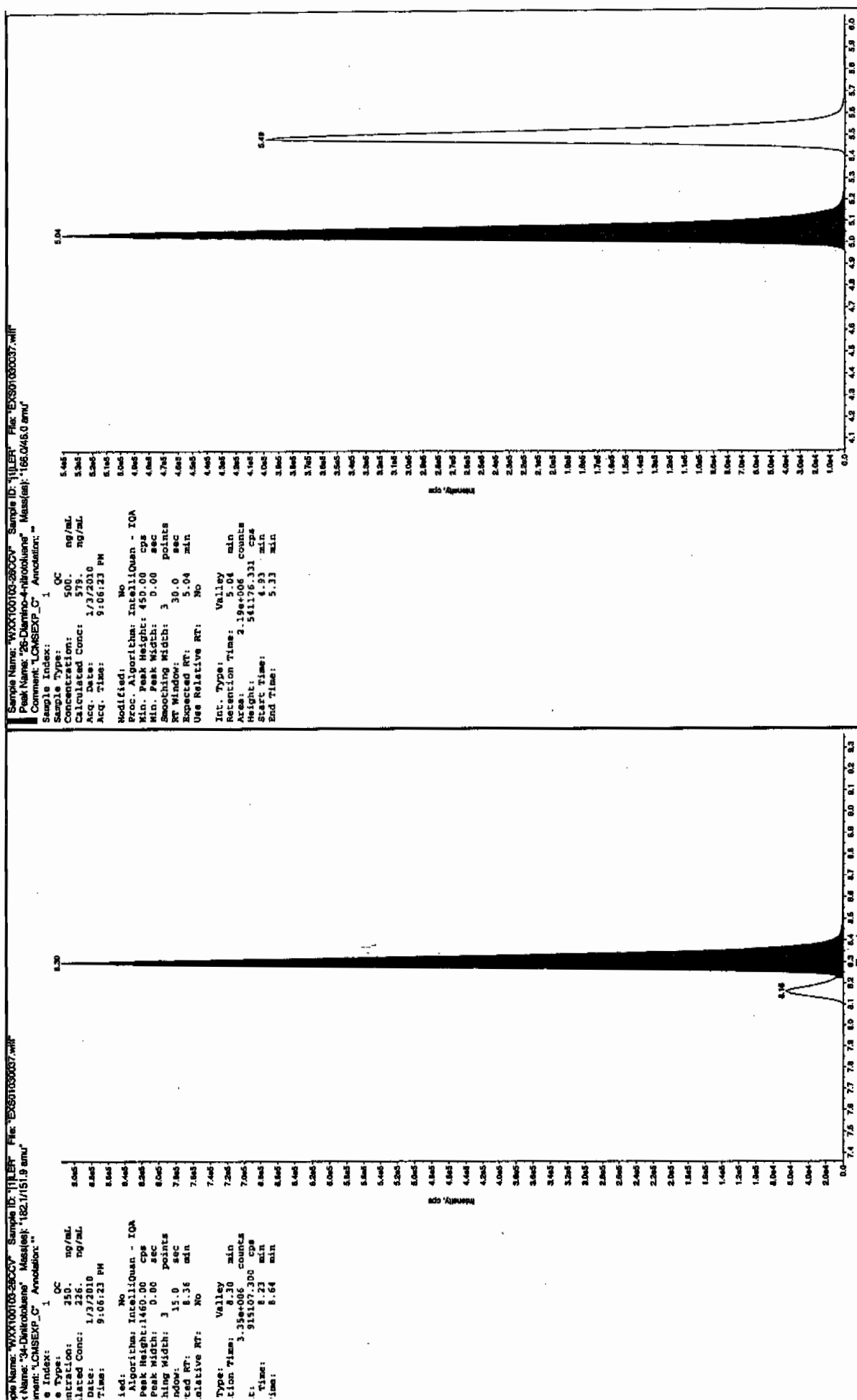
4mm-e1/05/10

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

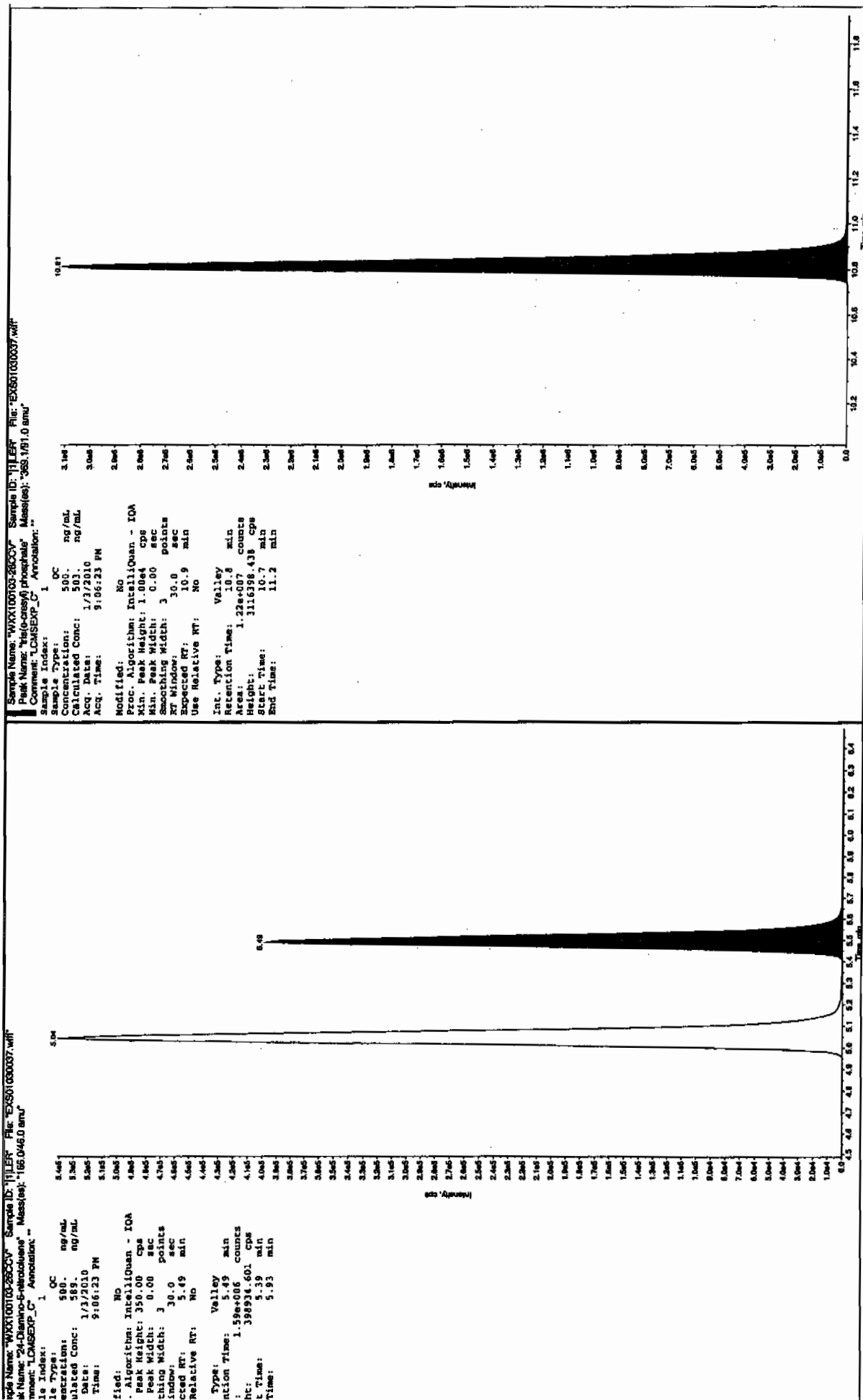
1/17/10  
8821



LCMSMS#4



L 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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01030039.wiff

Analysis Date: 03-JAN-10 21:37

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	108	108	
2,6-Diamino-4-nitrotoluene	100	90.5	91	
3,4-Dinitrotoluene	50	47.7	95	
3,5-Dinitroaniline	100	88.8	89	
TATB	100	96.3	96	
tris(o-cresyl) phosphate	100	97.8	98	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

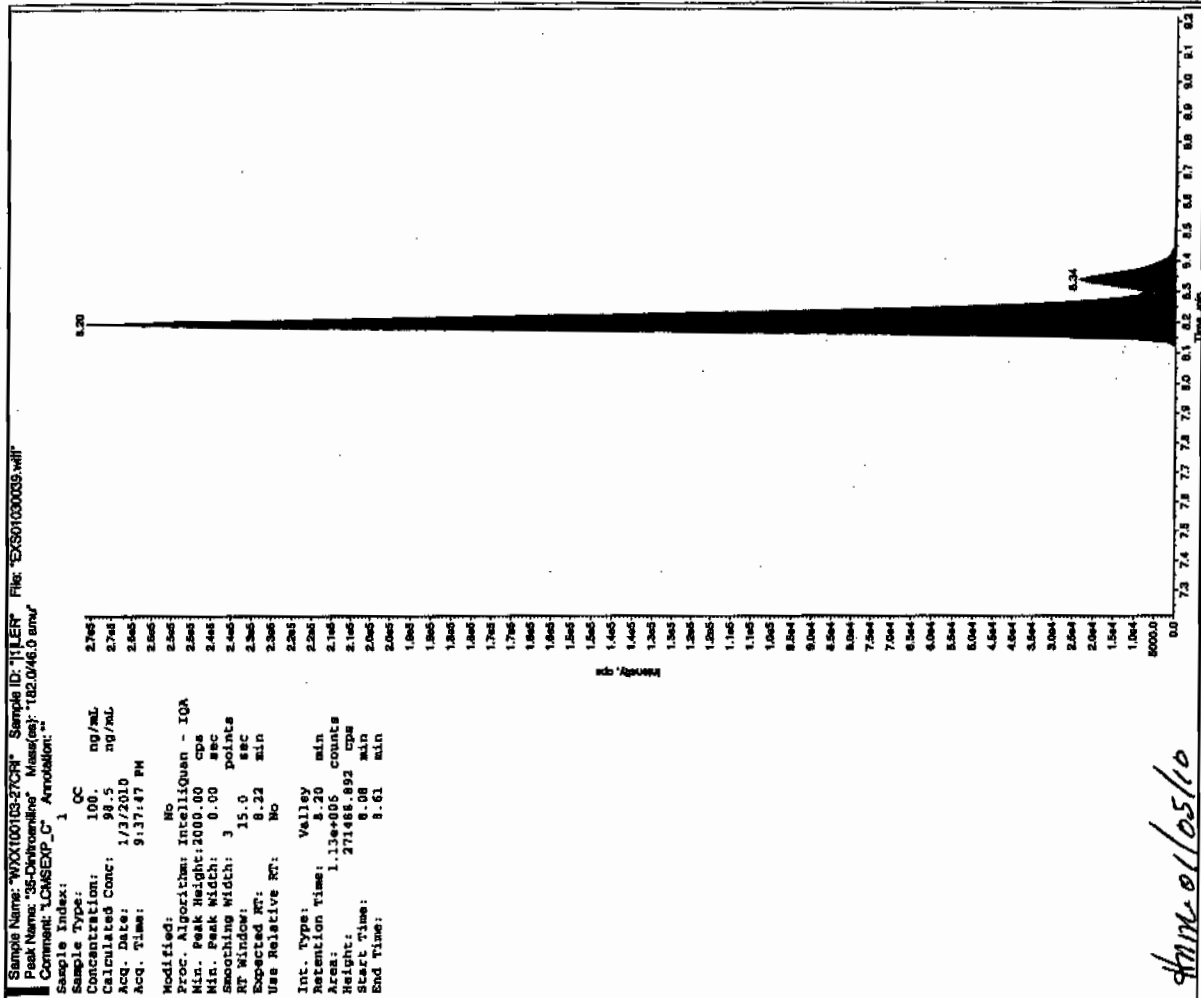
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

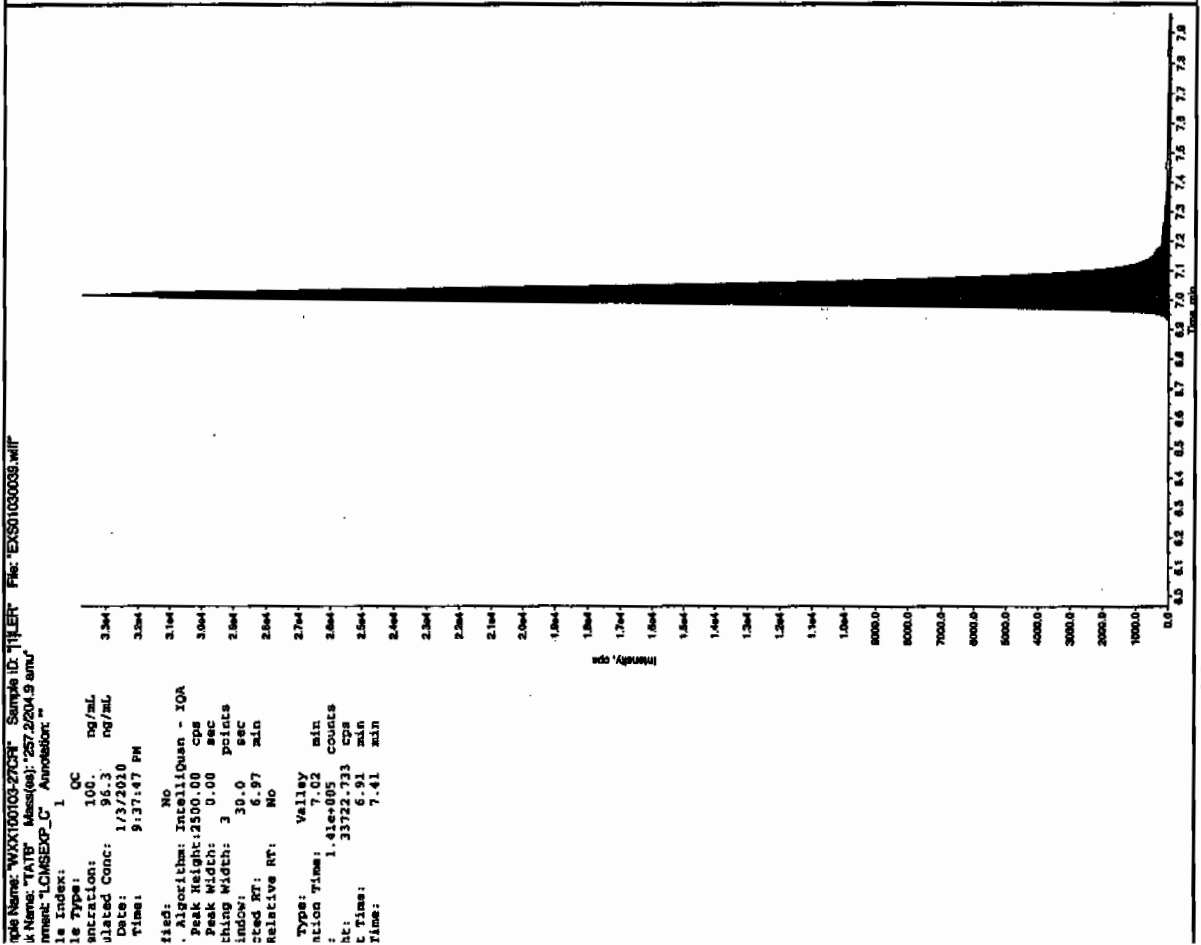
# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits

Before  
11/17/10

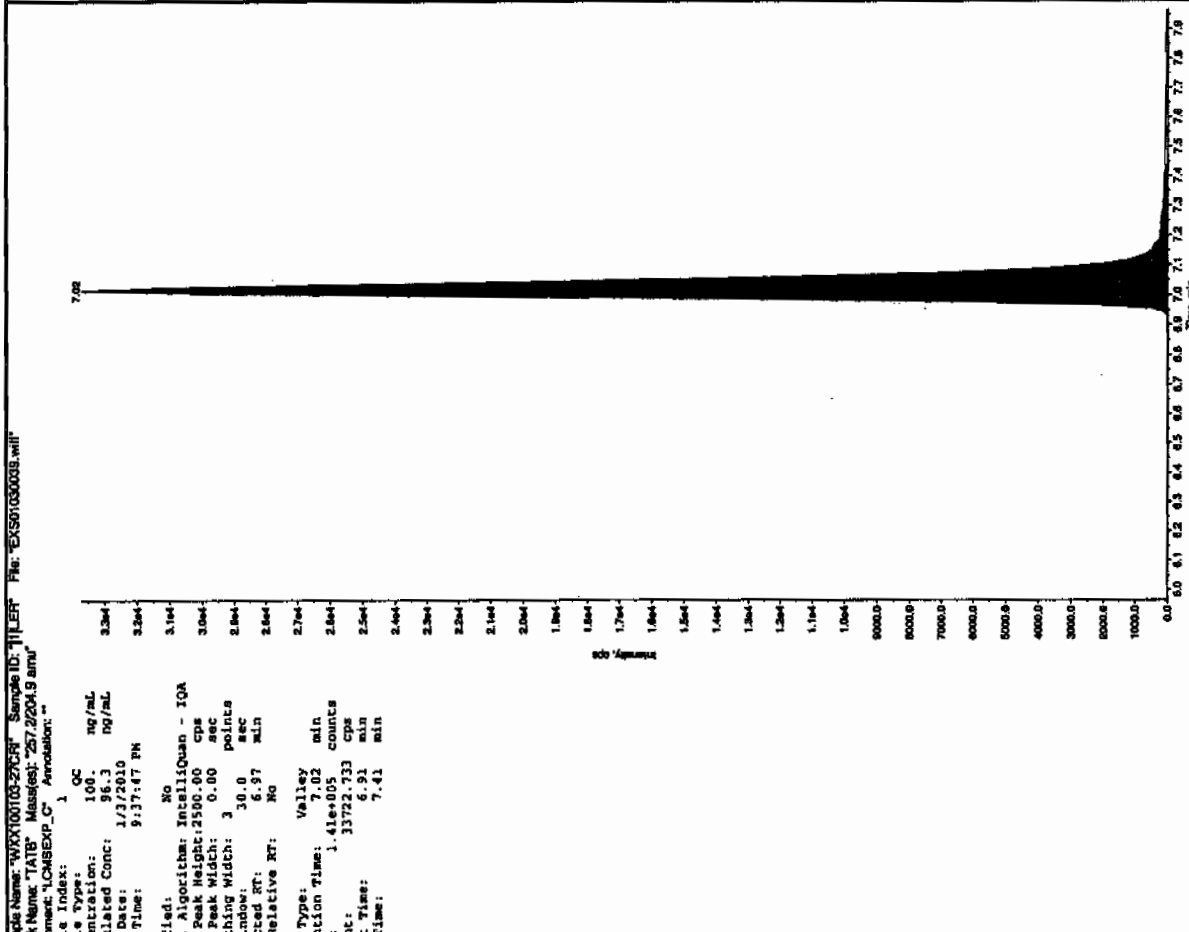
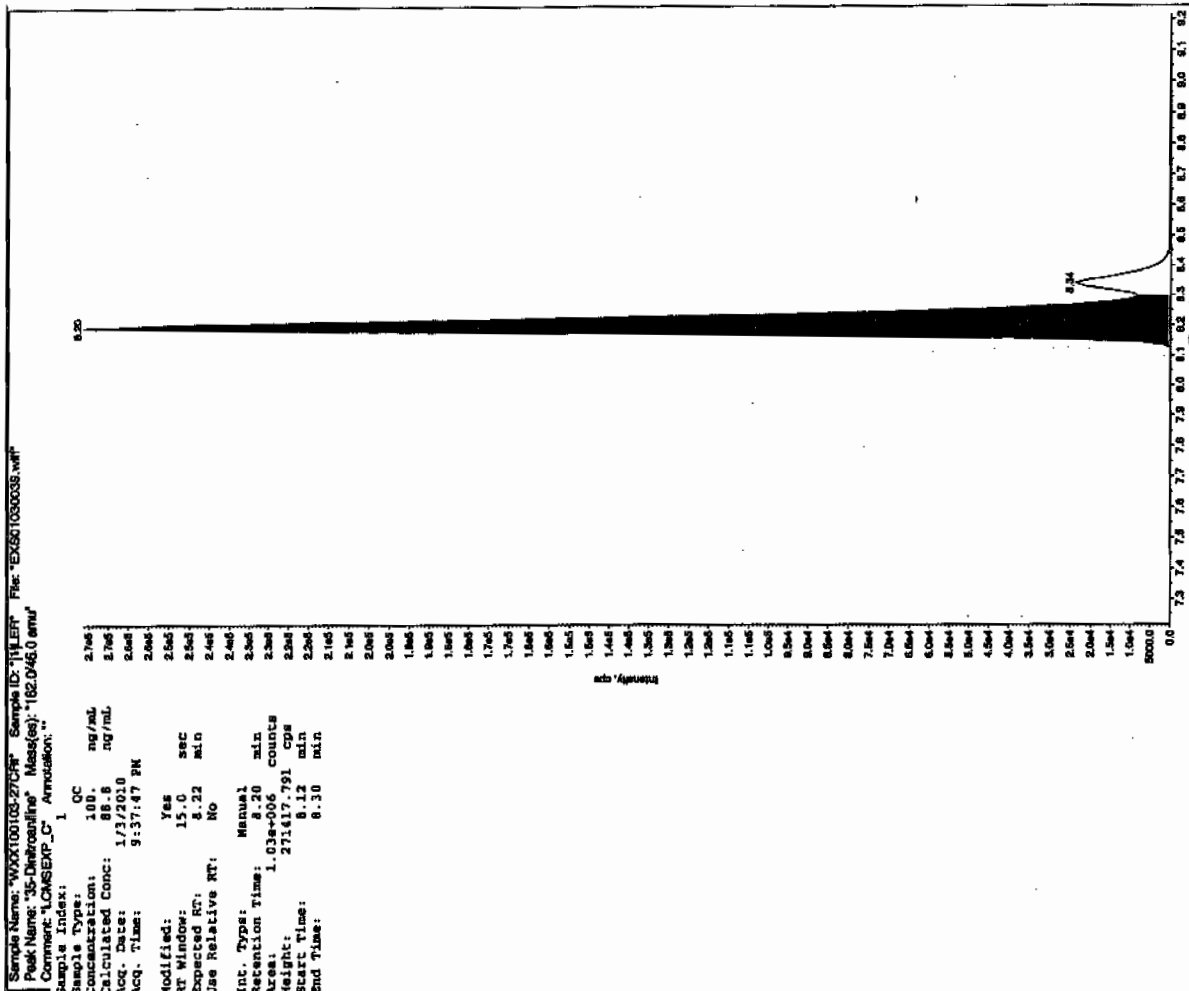


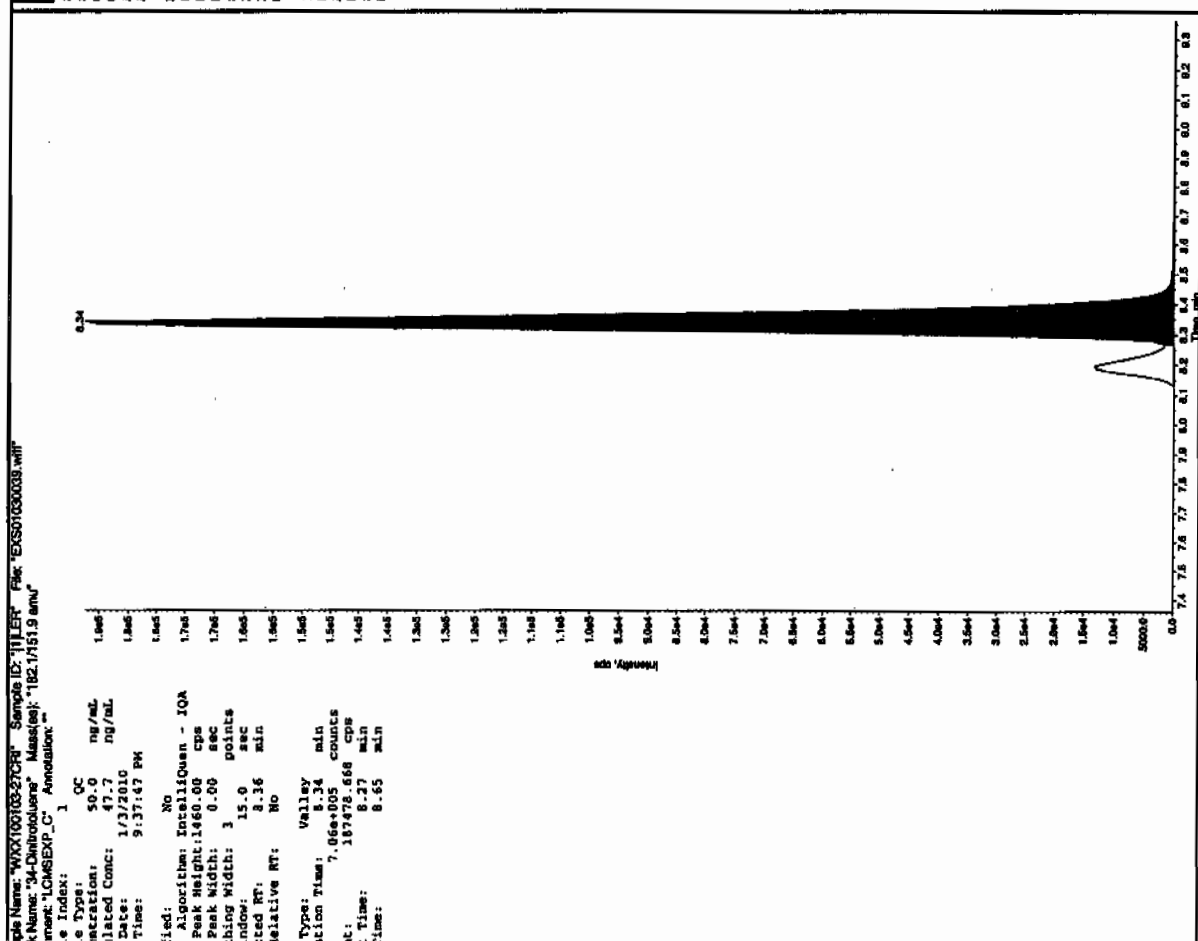
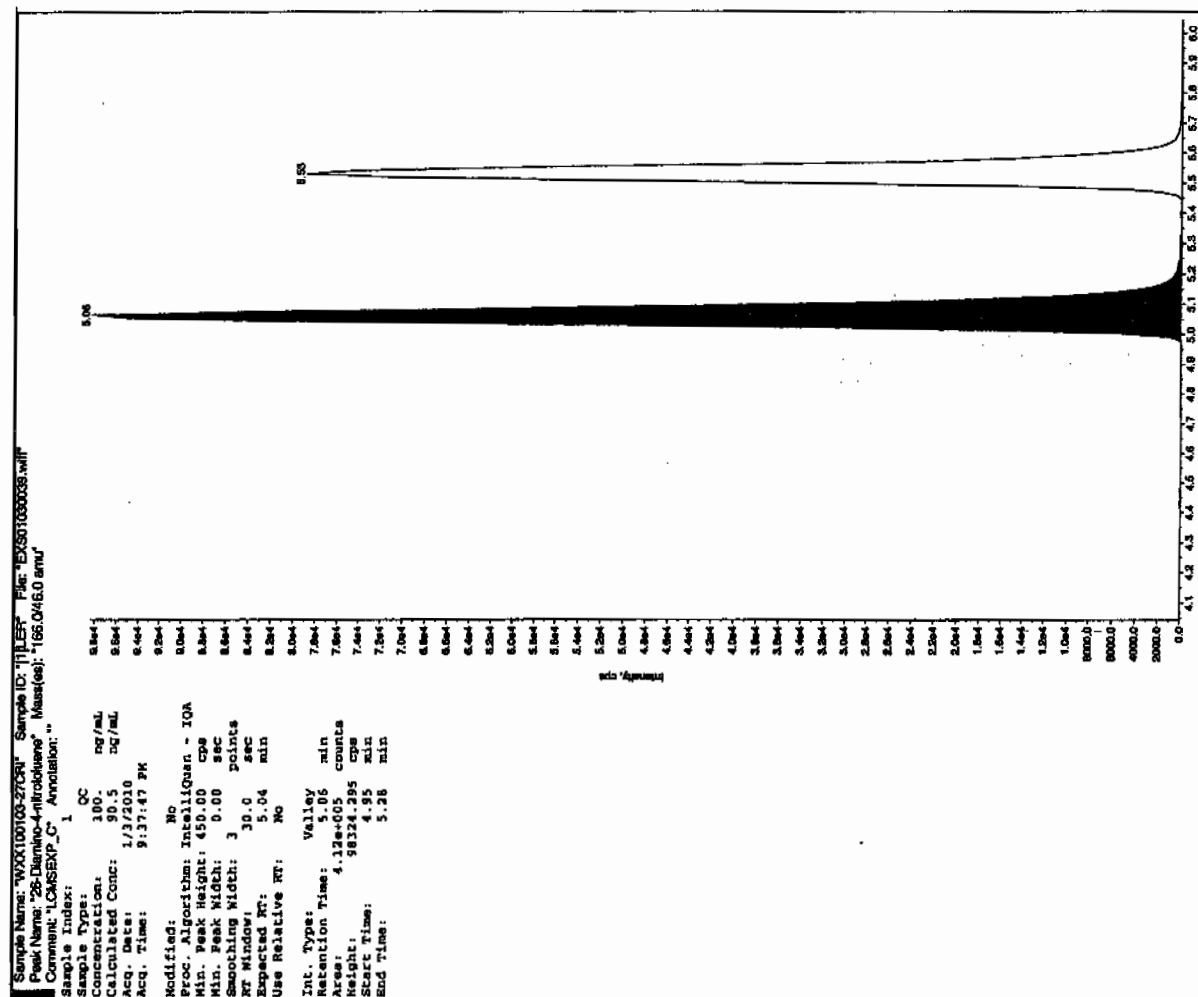
4/11/10 01/05/10



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

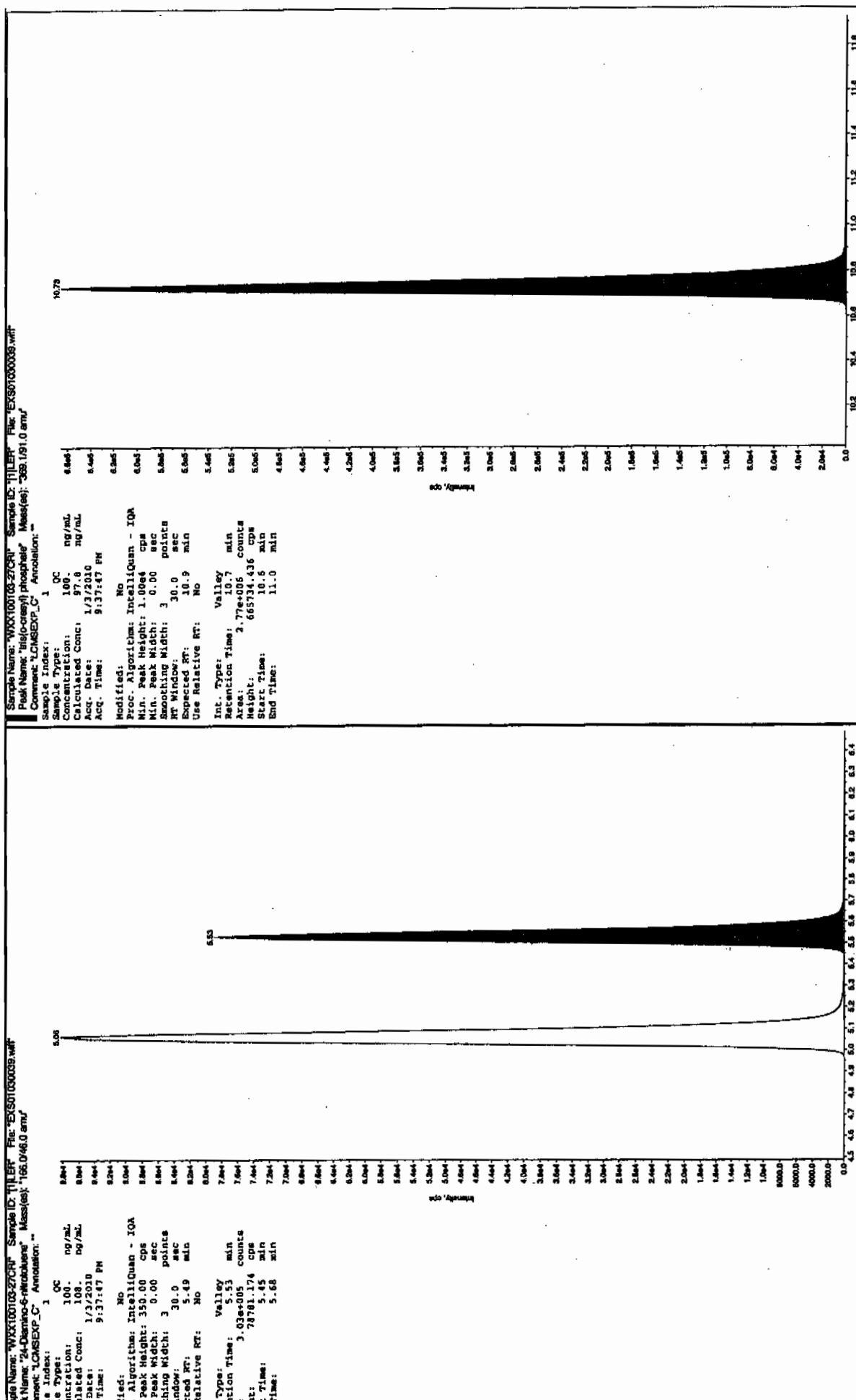
11/10/2010





L 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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01030050.wiff

Analysis Date: 04-JAN-10 00:30

LCMSMS ID: 1358

Column ID: Sphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	497	99	
2,6-Diamino-4-nitrotoluene	500	464	93	
3,4-Dinitrotoluene	250	219	88	
3,5-Dinitroaniline	500	464	93	
TATB	500	480	96	
tris(o-cresyl) phosphate	500	514	103	

Recovery Limits:

3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,

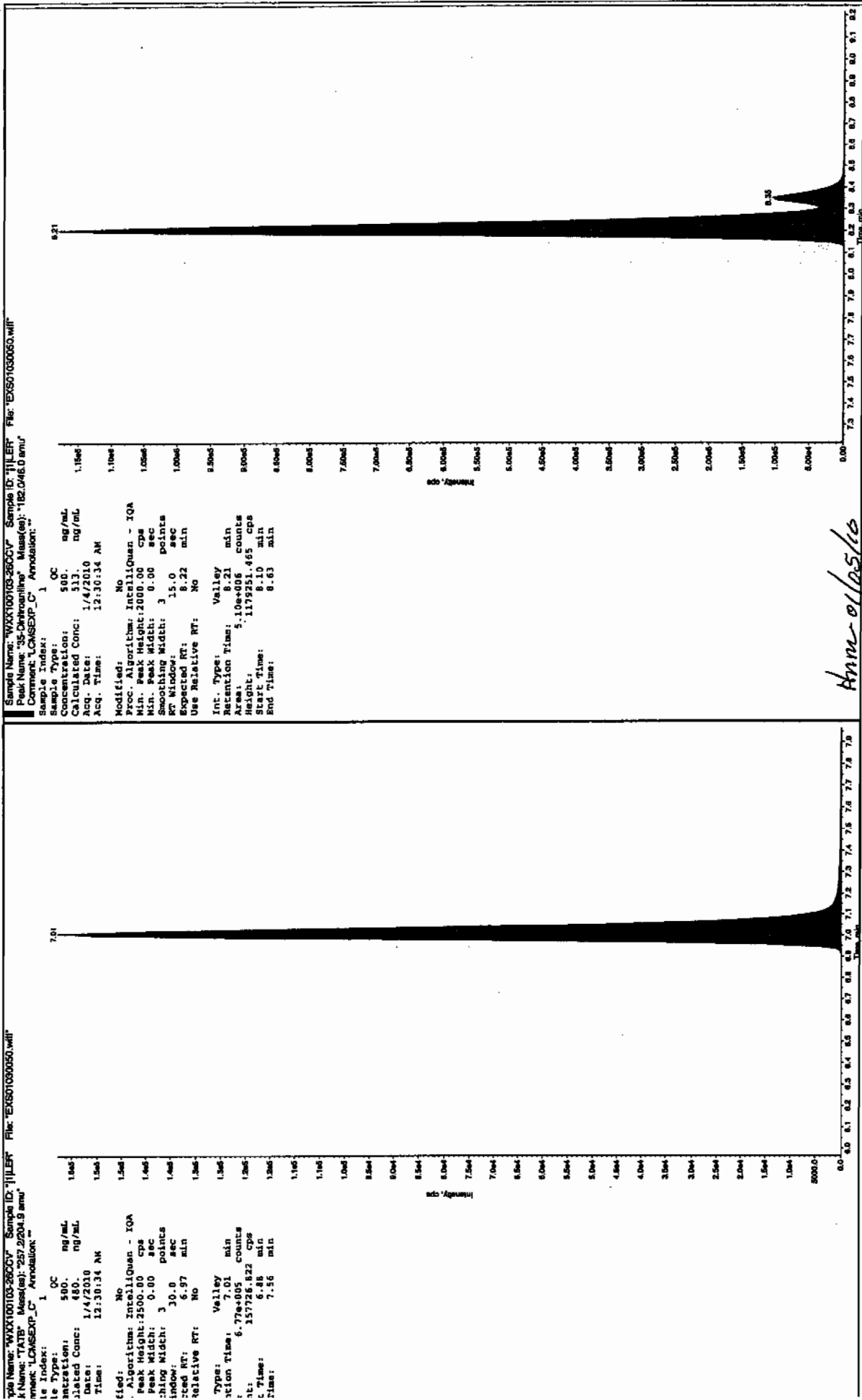
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

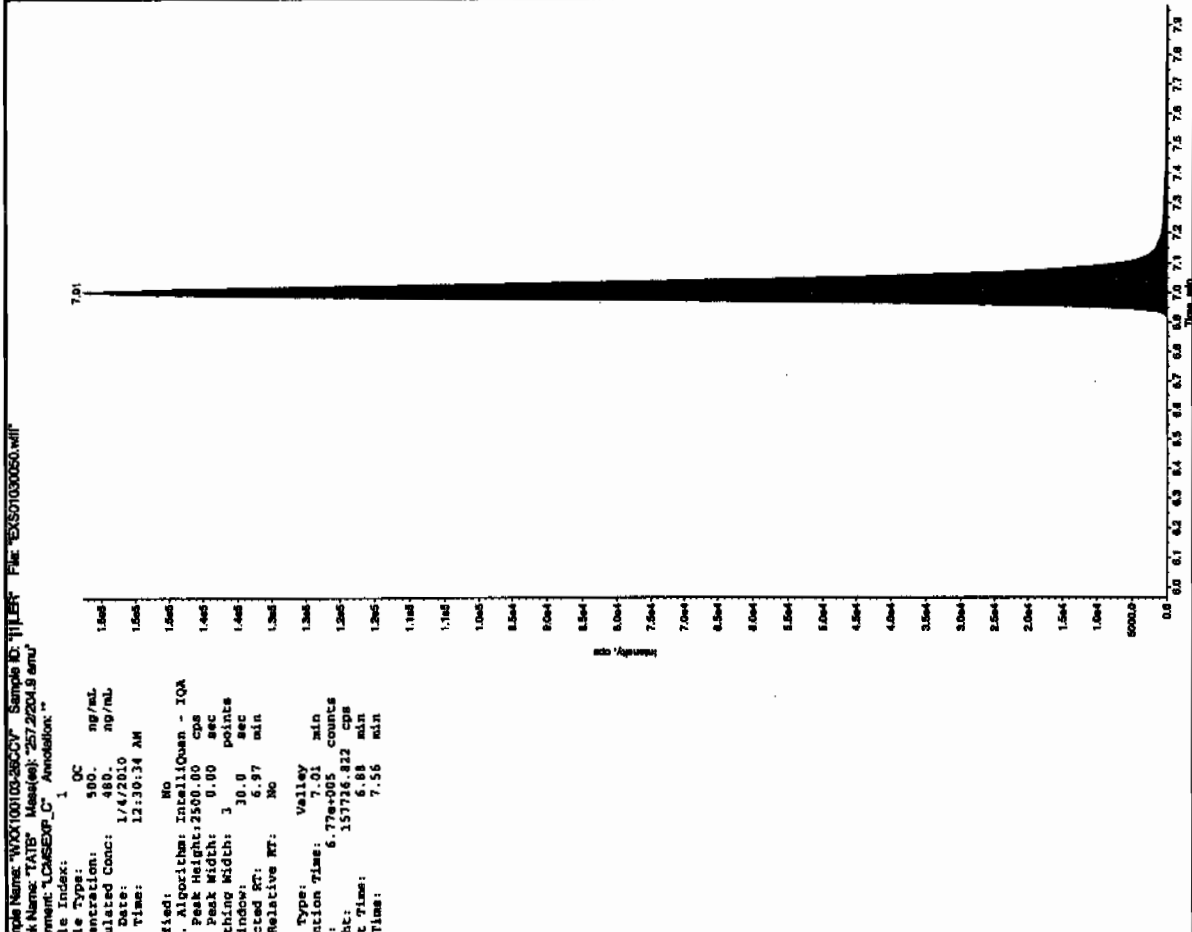
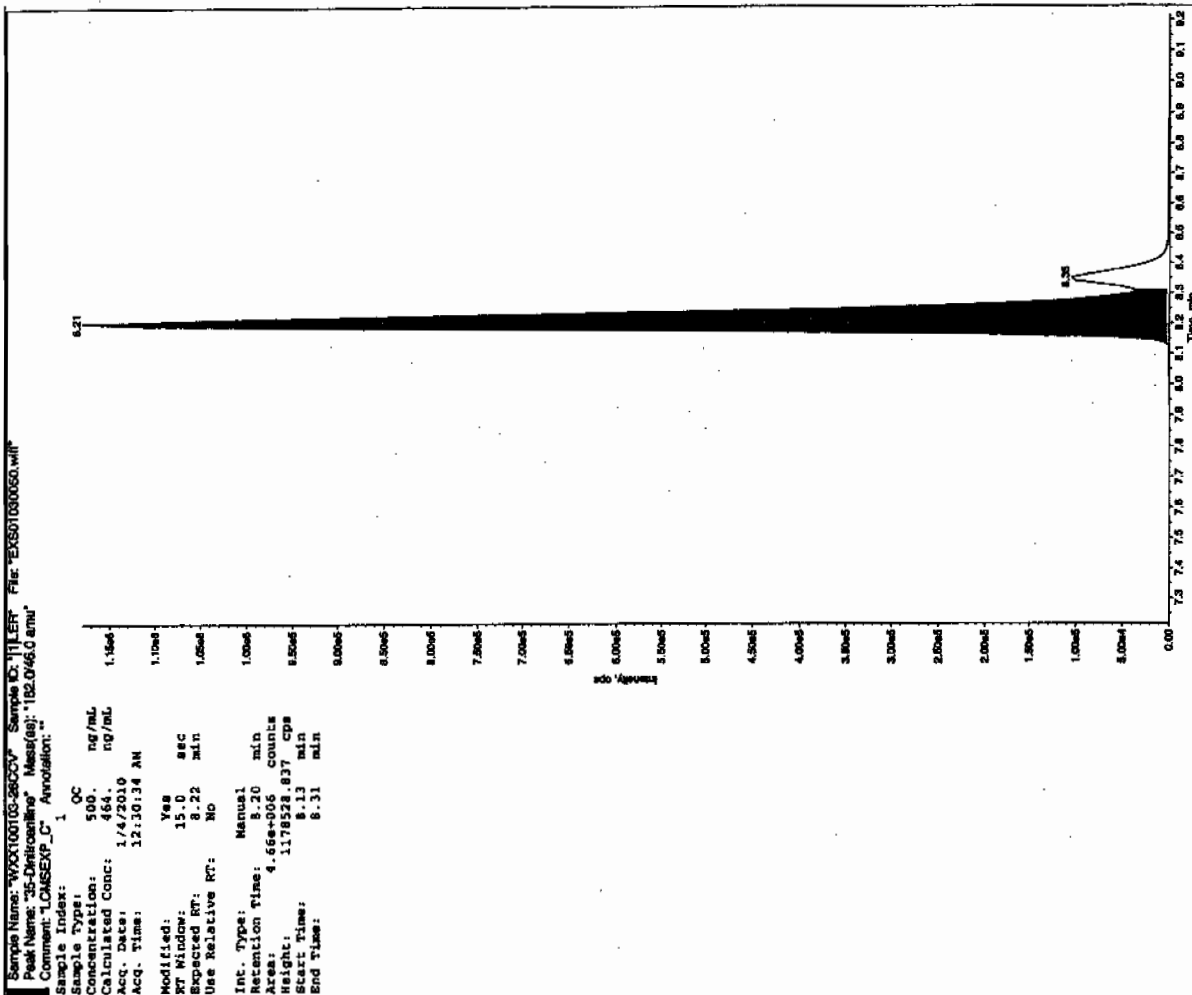
\* Value outside of Recovery Limits

11/17/10  
Bayer

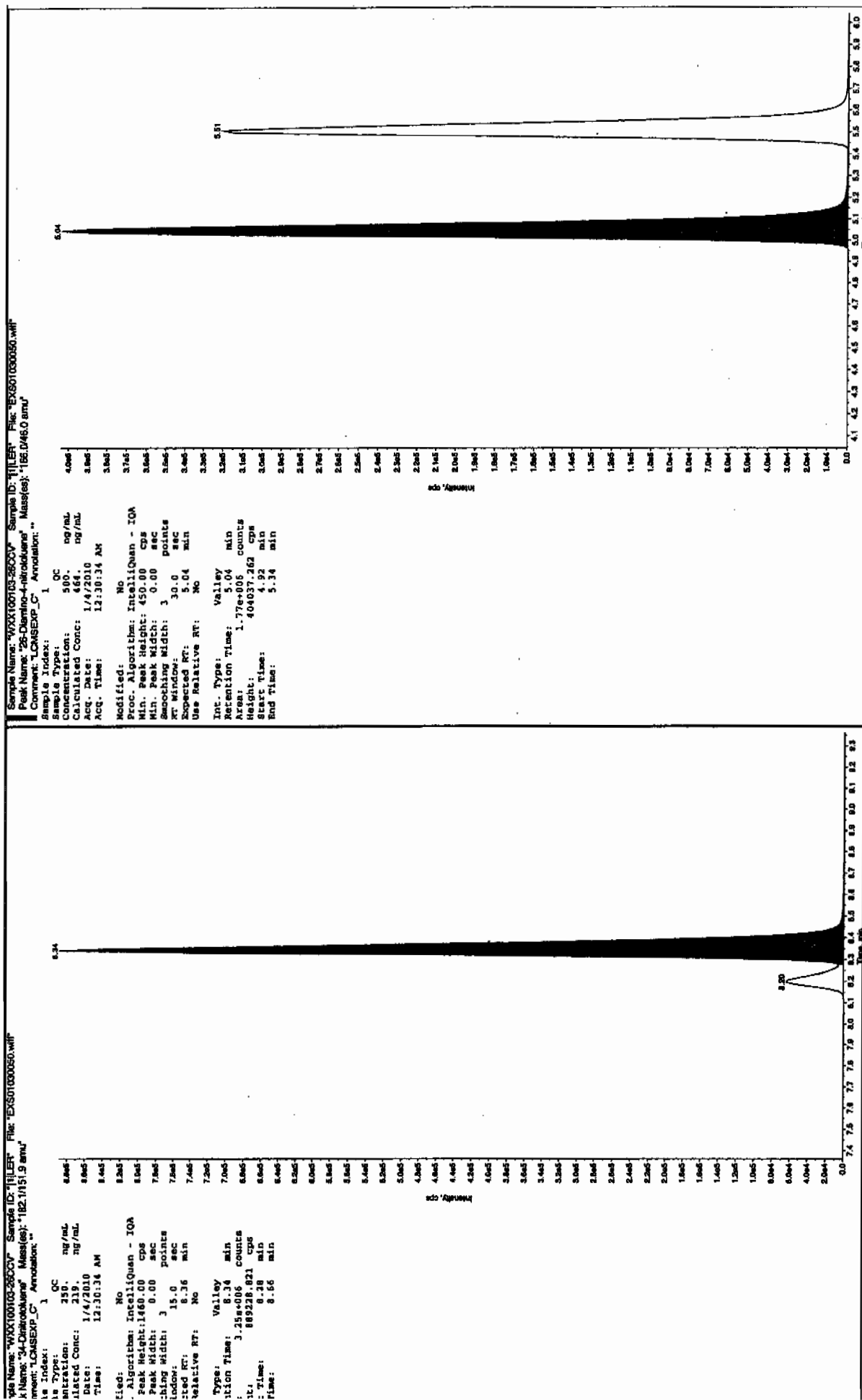


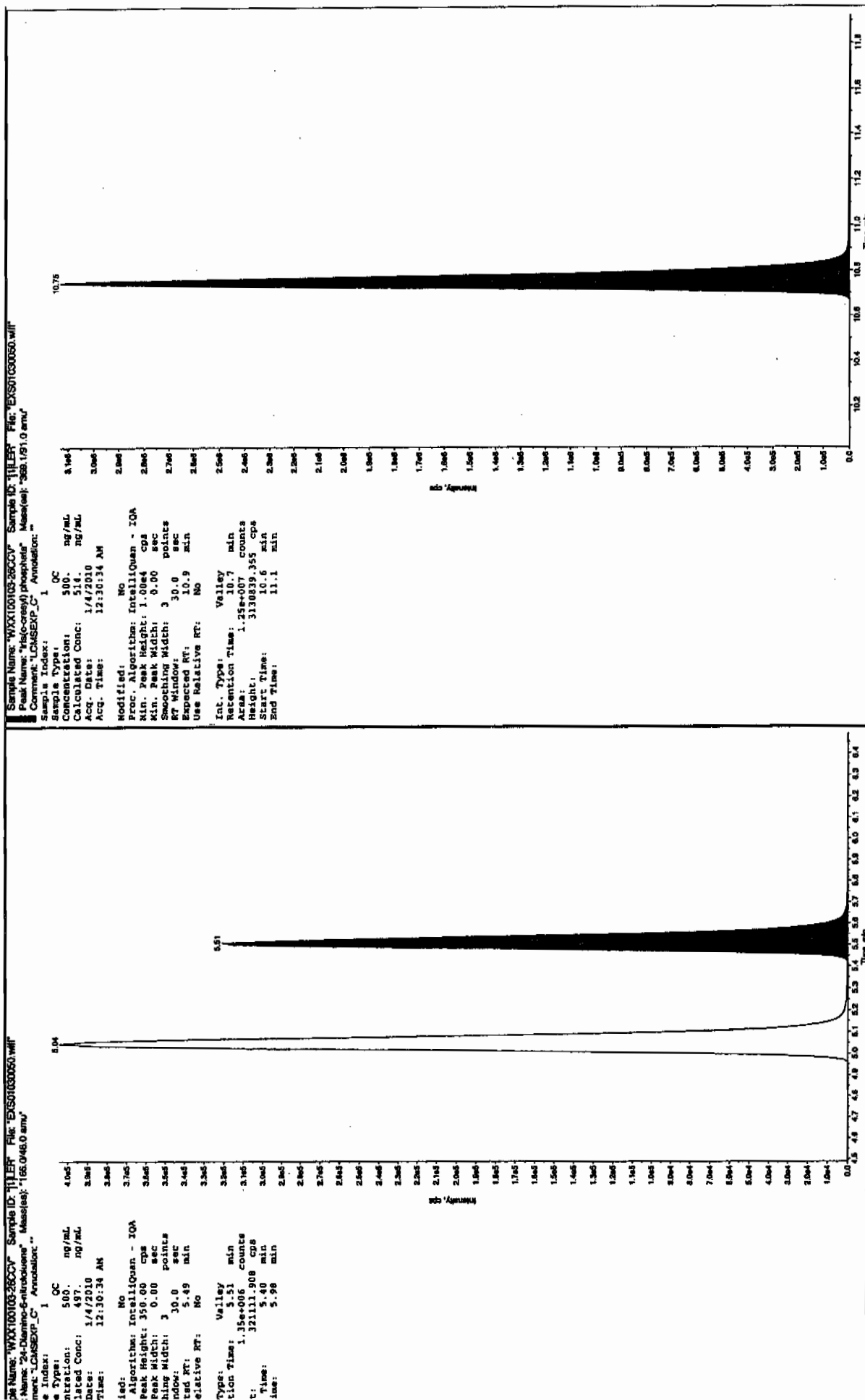
Ann-01/05/10

15710  
OK  
2/2/10



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





7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01030052.wiff

Analysis Date: 04-JAN-10 01:01

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	92.4	92	
2,6-Diamino-4-nitrotoluene	100	74.3	74	
3,4-Dinitrotoluene	50	43.5	87	
3,5-Dinitroaniline	100	81.6	82	
TATB	100	95.8	96	
tris(o-cresyl) phosphate	100	96.8	97	

Recovery Limits:

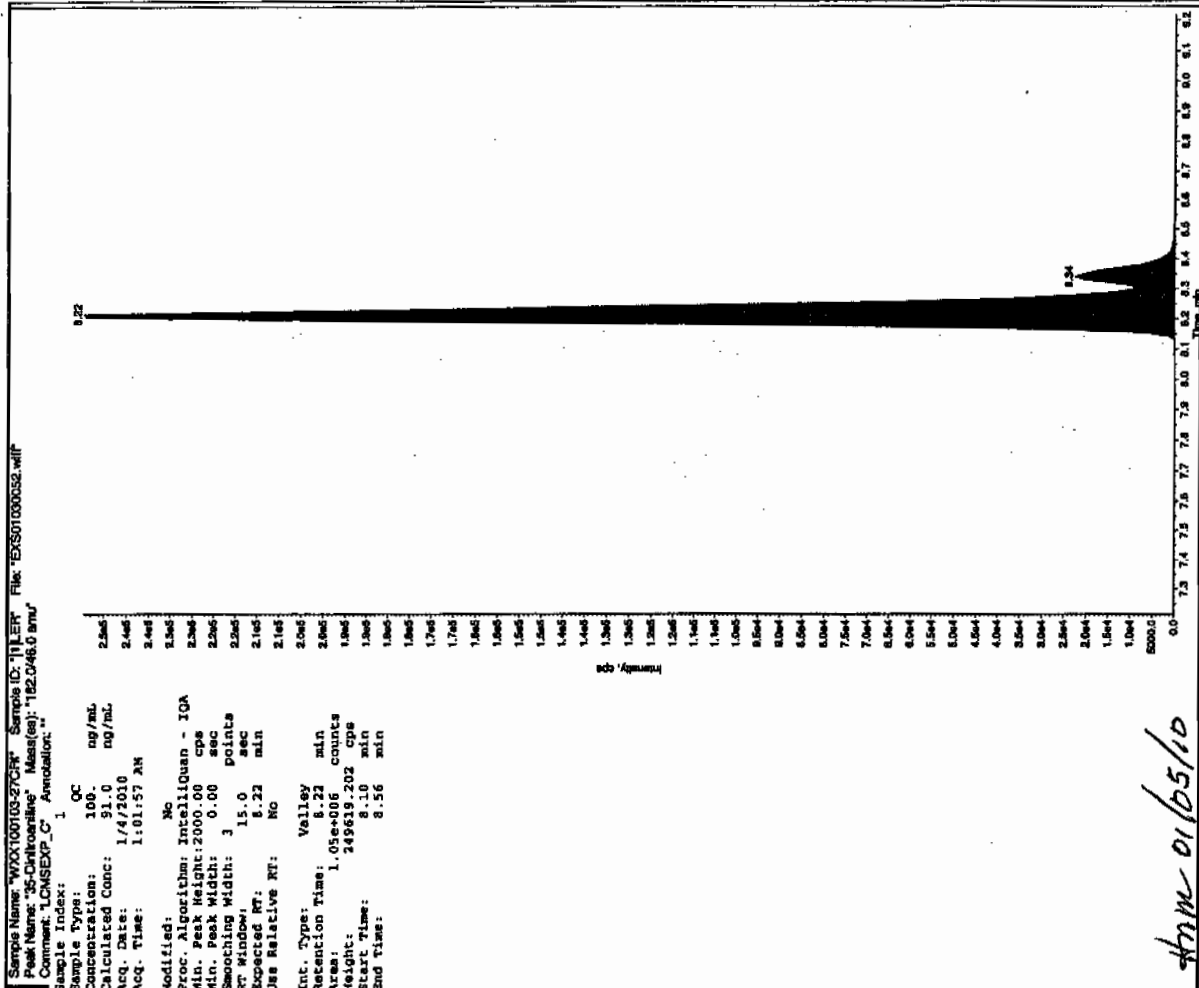
3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

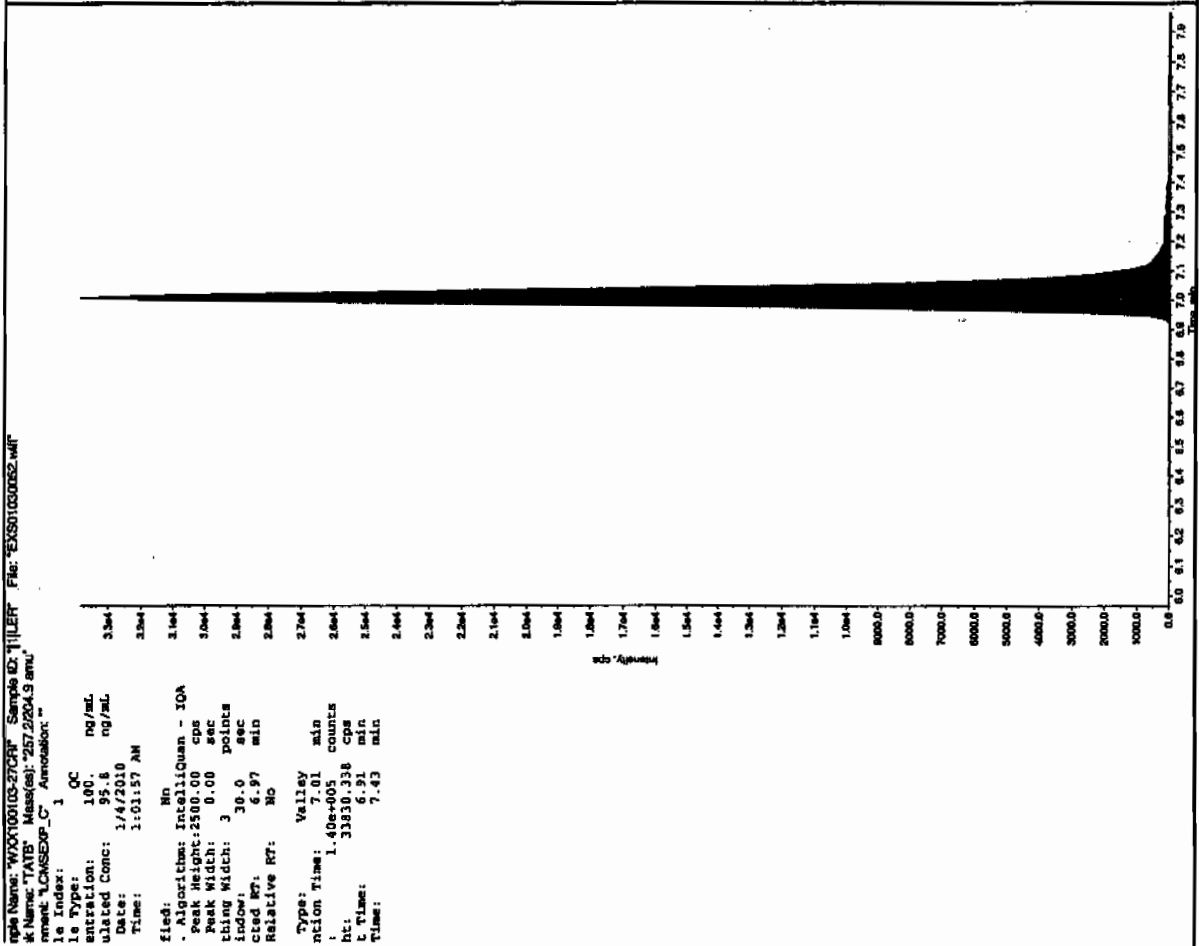
# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits

15710  
Before



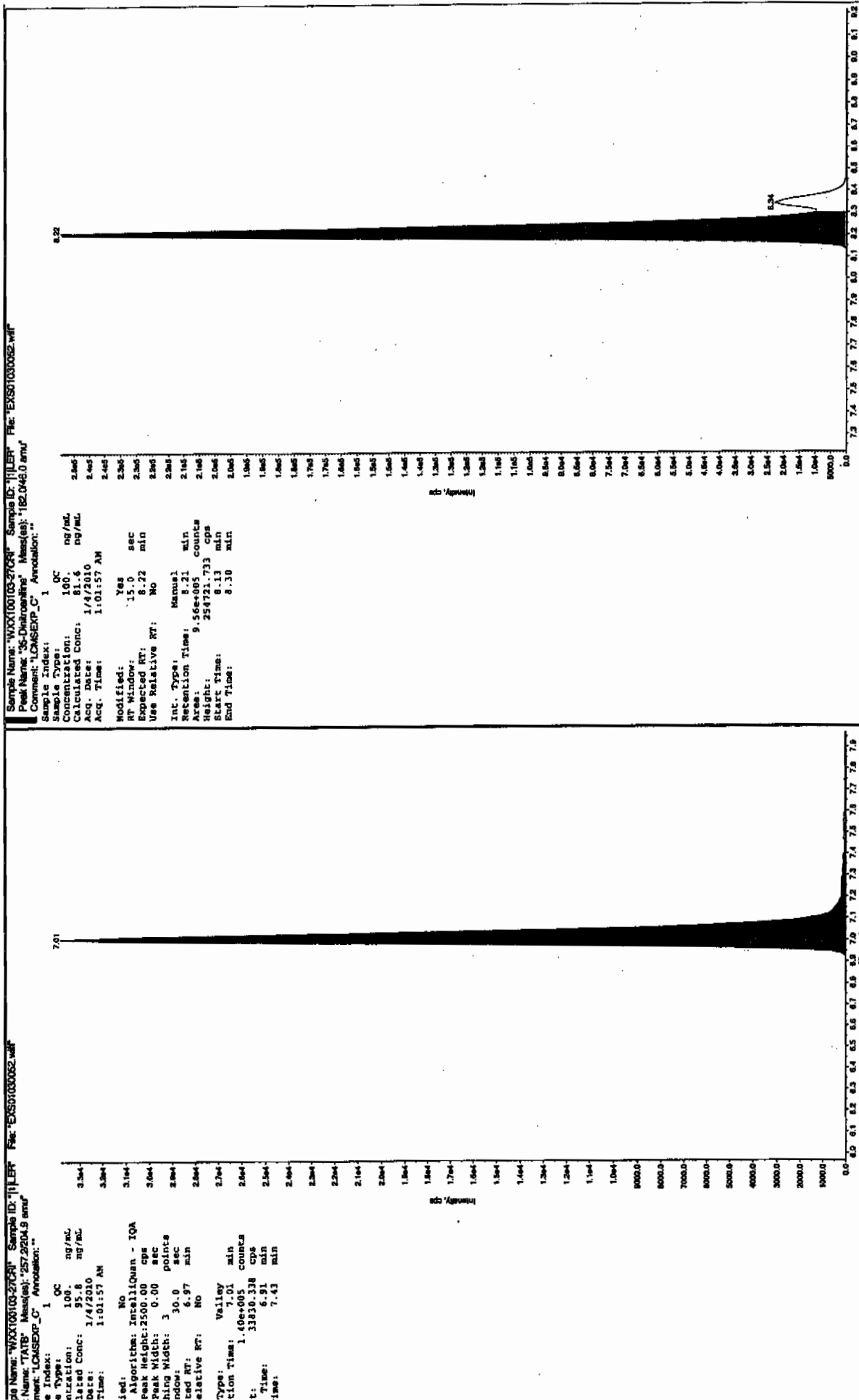
After 01/05/10

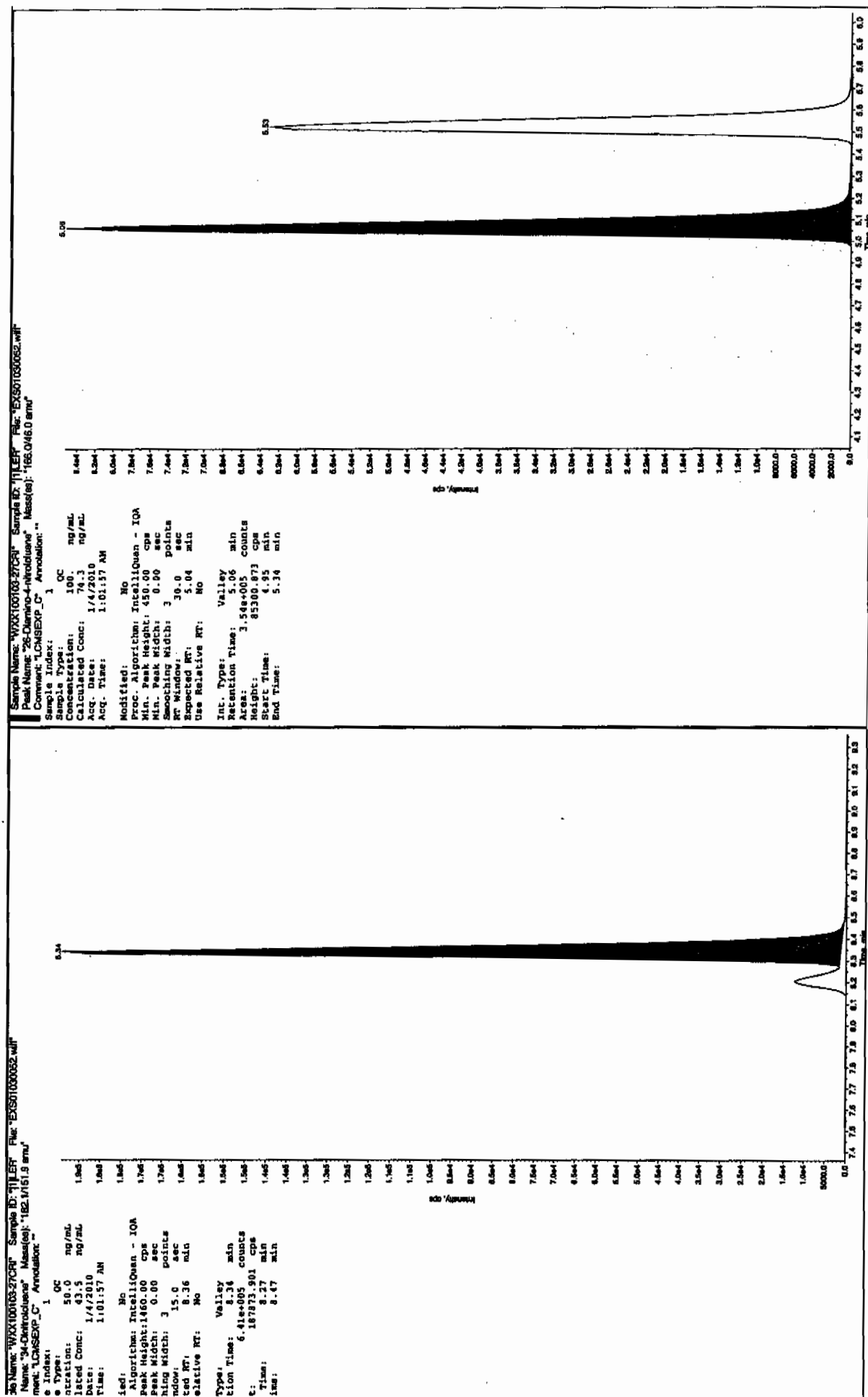


3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

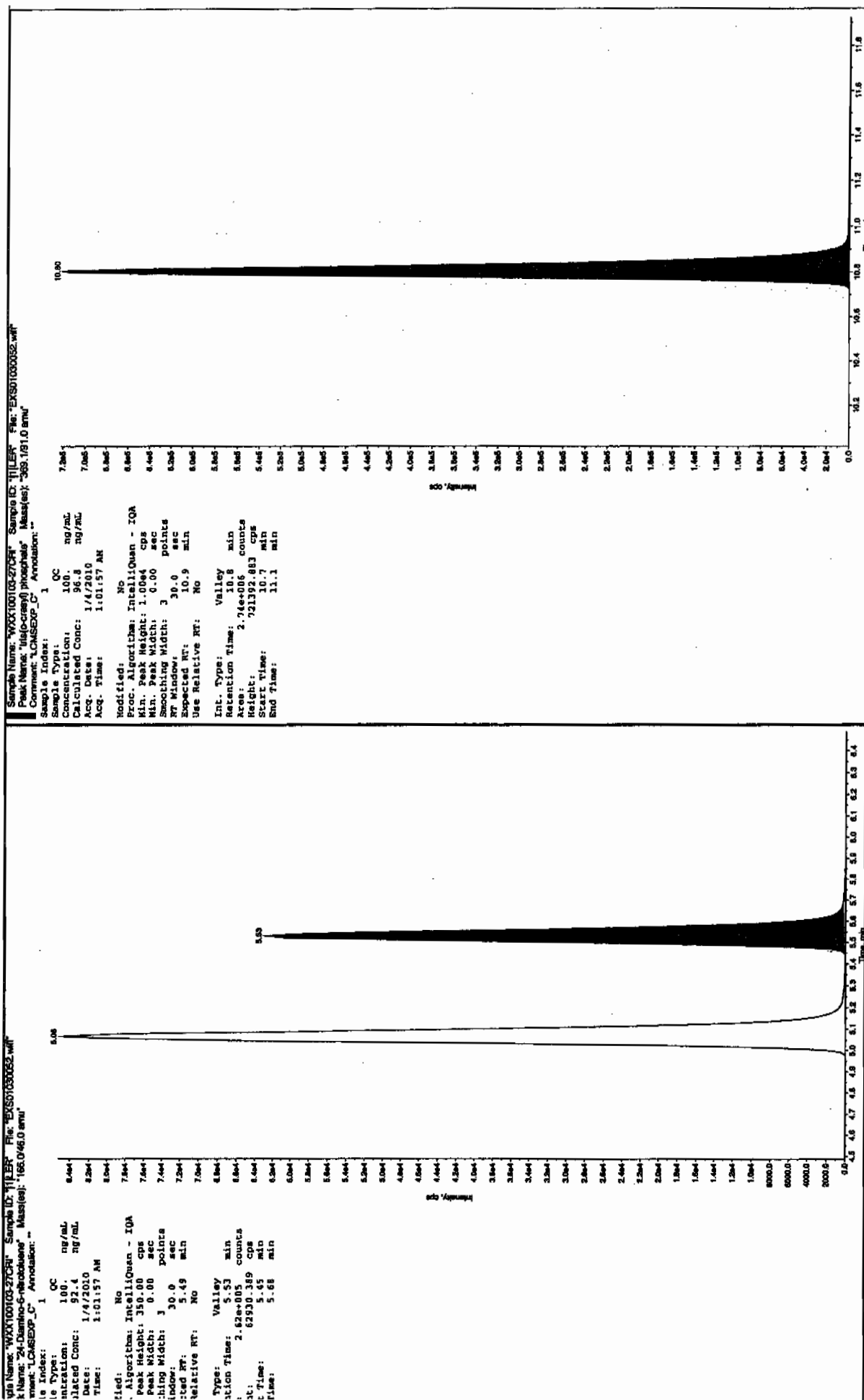


11/17/10  
J. L. S. O. P.





IL SOP GL-OA-E-056, Method 8321A-Modified LCMSEXP#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): 10-988

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01030063.wiff

Analysis Date: 04-JAN-10 03:54

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	470	94	
2,6-Diamino-4-nitrotoluene	500	452	90	
3,4-Dinitrotoluene	250	215	86	
3,5-Dinitroaniline	500	447	89	
TATB	500	510	102	
tris(o-cresyl) phosphate	500	495	99	

Recovery Limits:

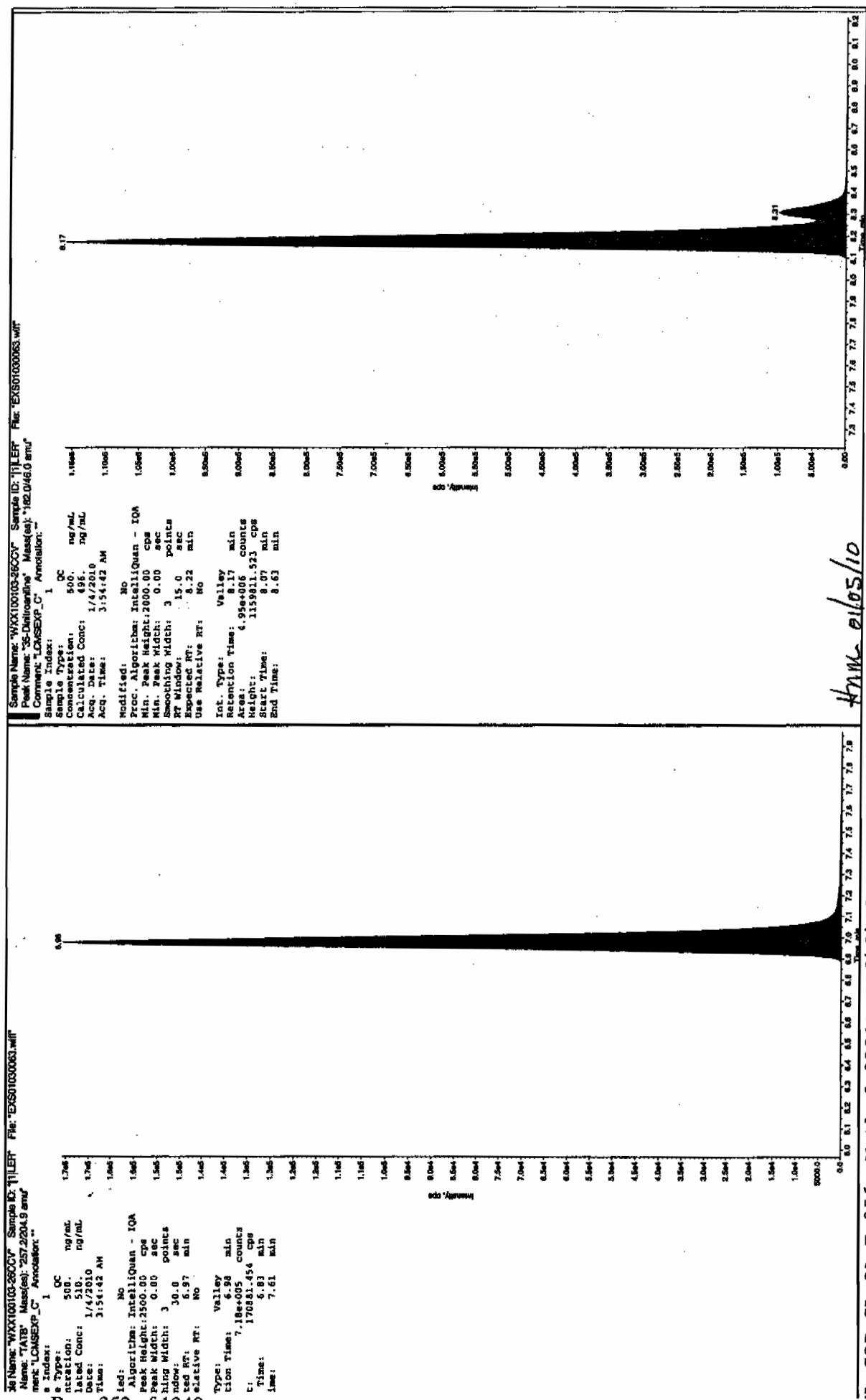
3,4-Dinitrotoluene (Surrogate), TATB, tris(o-cresyl)phosphate, 3,5-Dinitroaniline, 2,6-Diamino-4-nitrotoluene ,  
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits

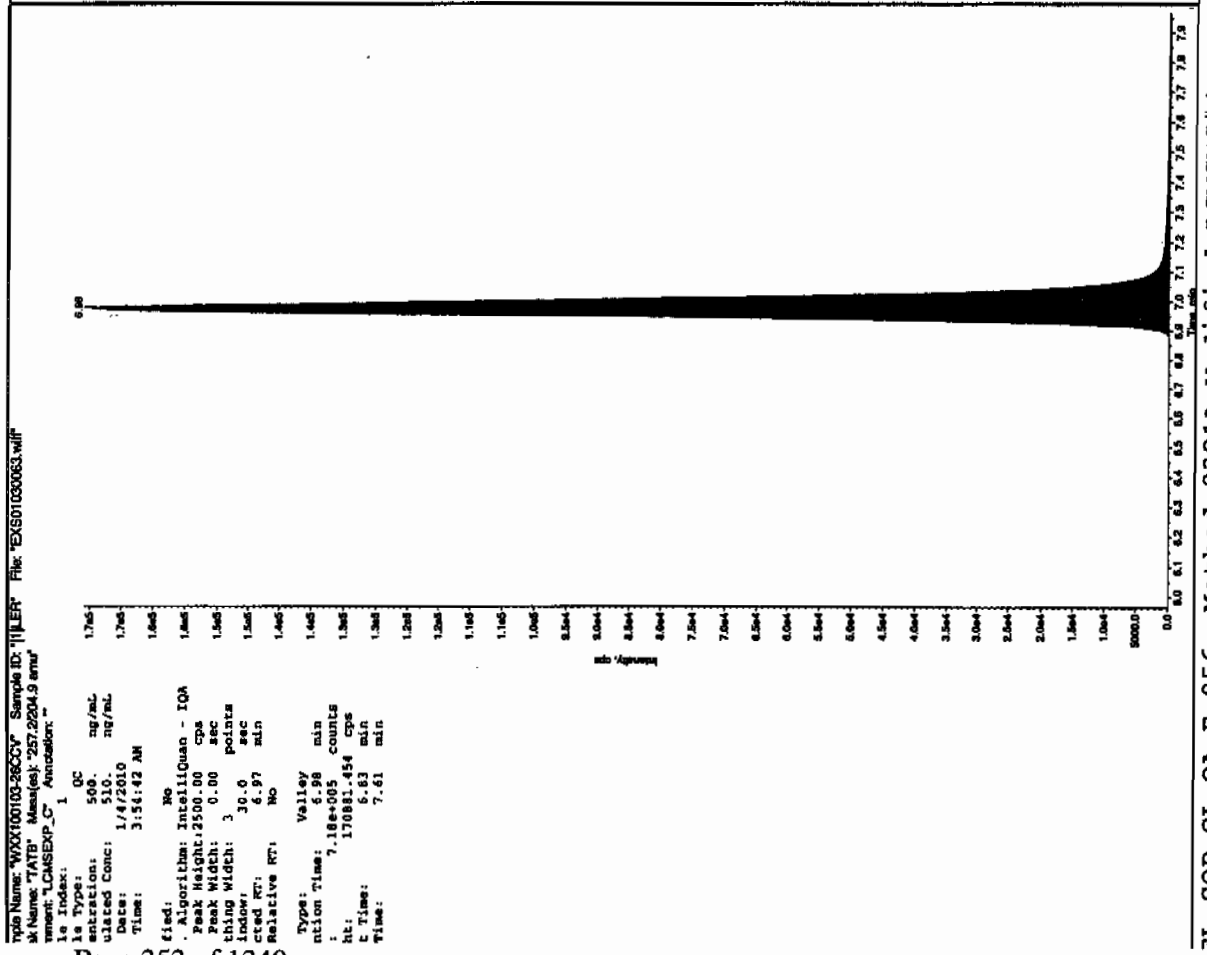
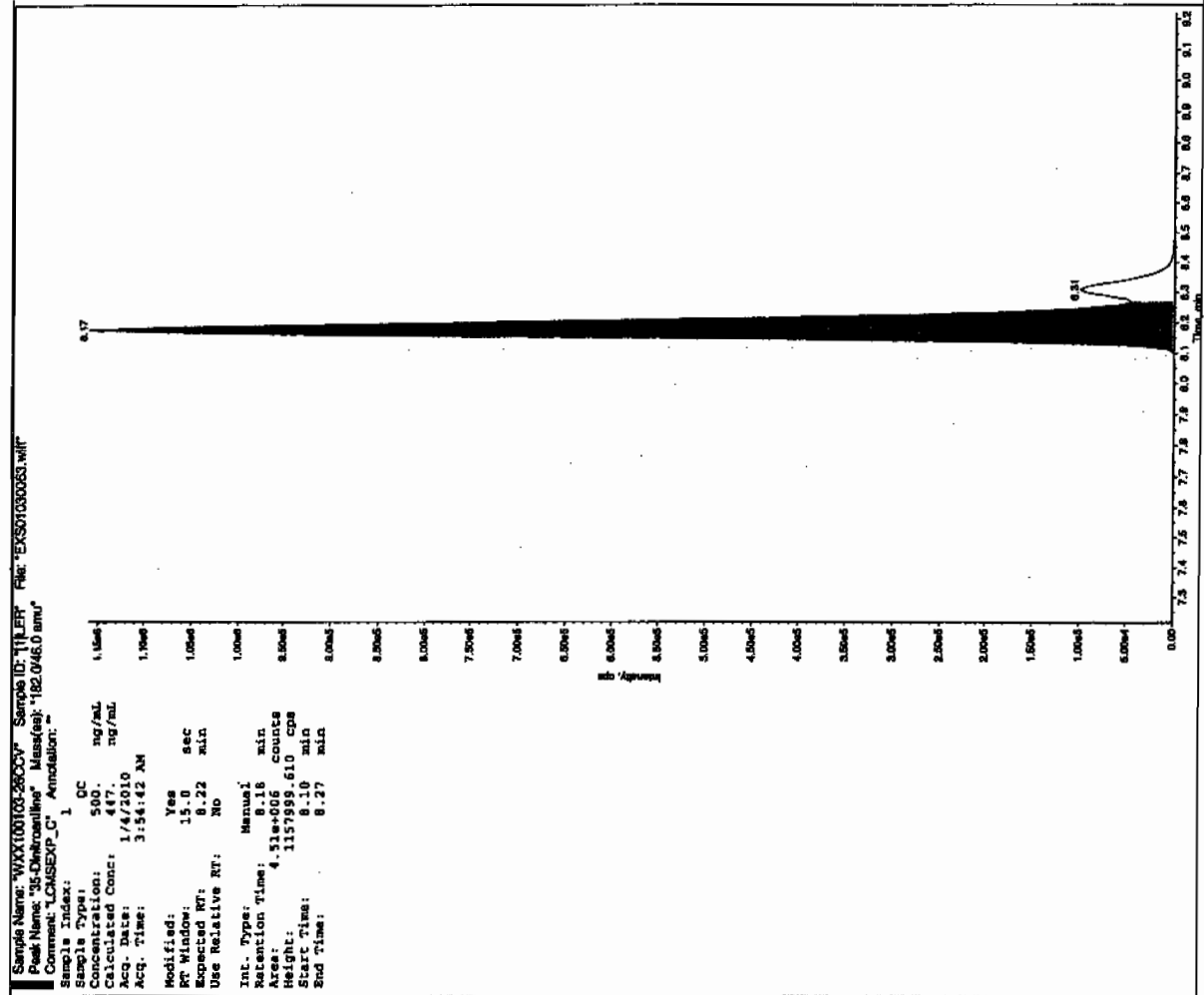
Before  
1/17/10



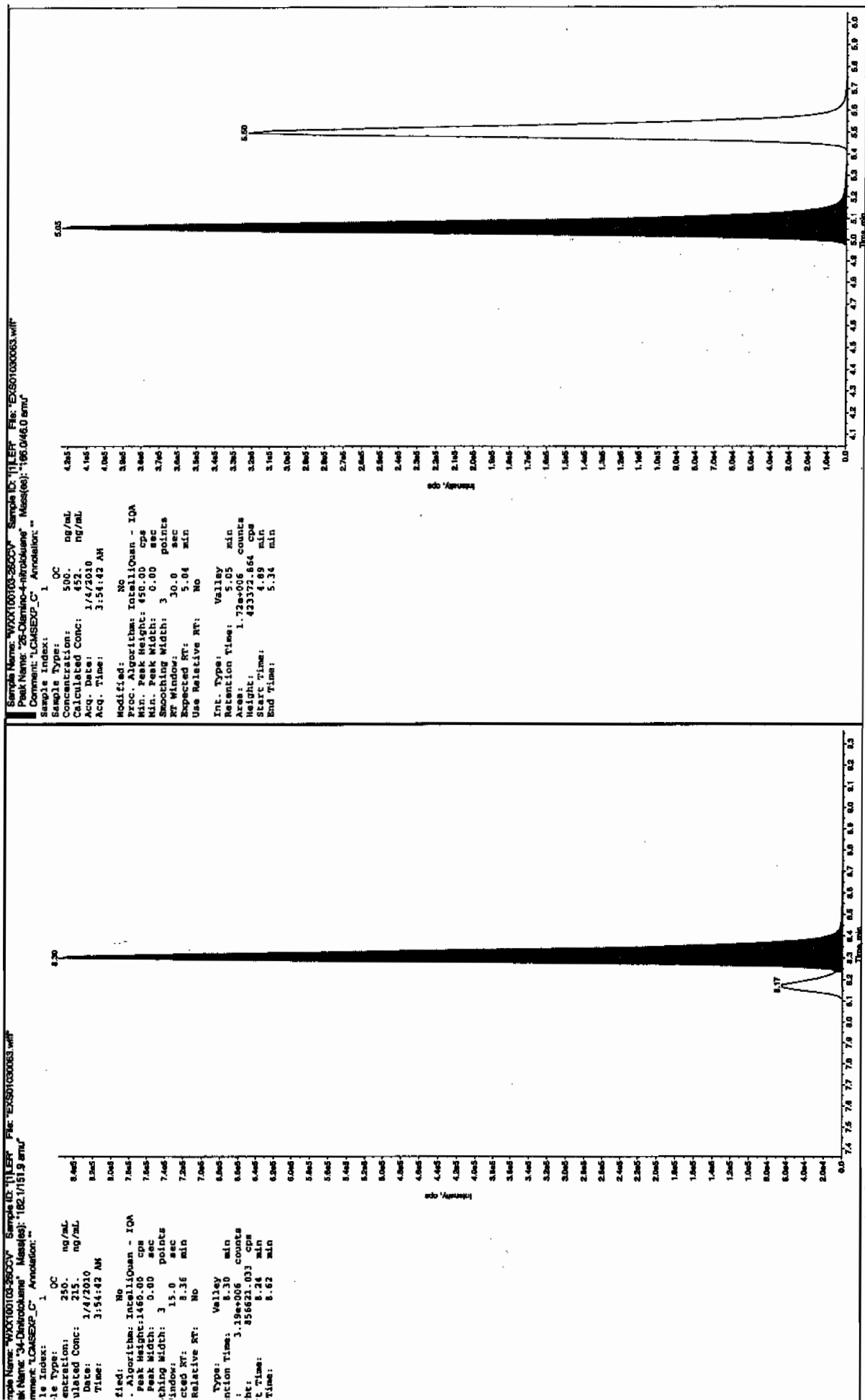
After 01/05/10

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

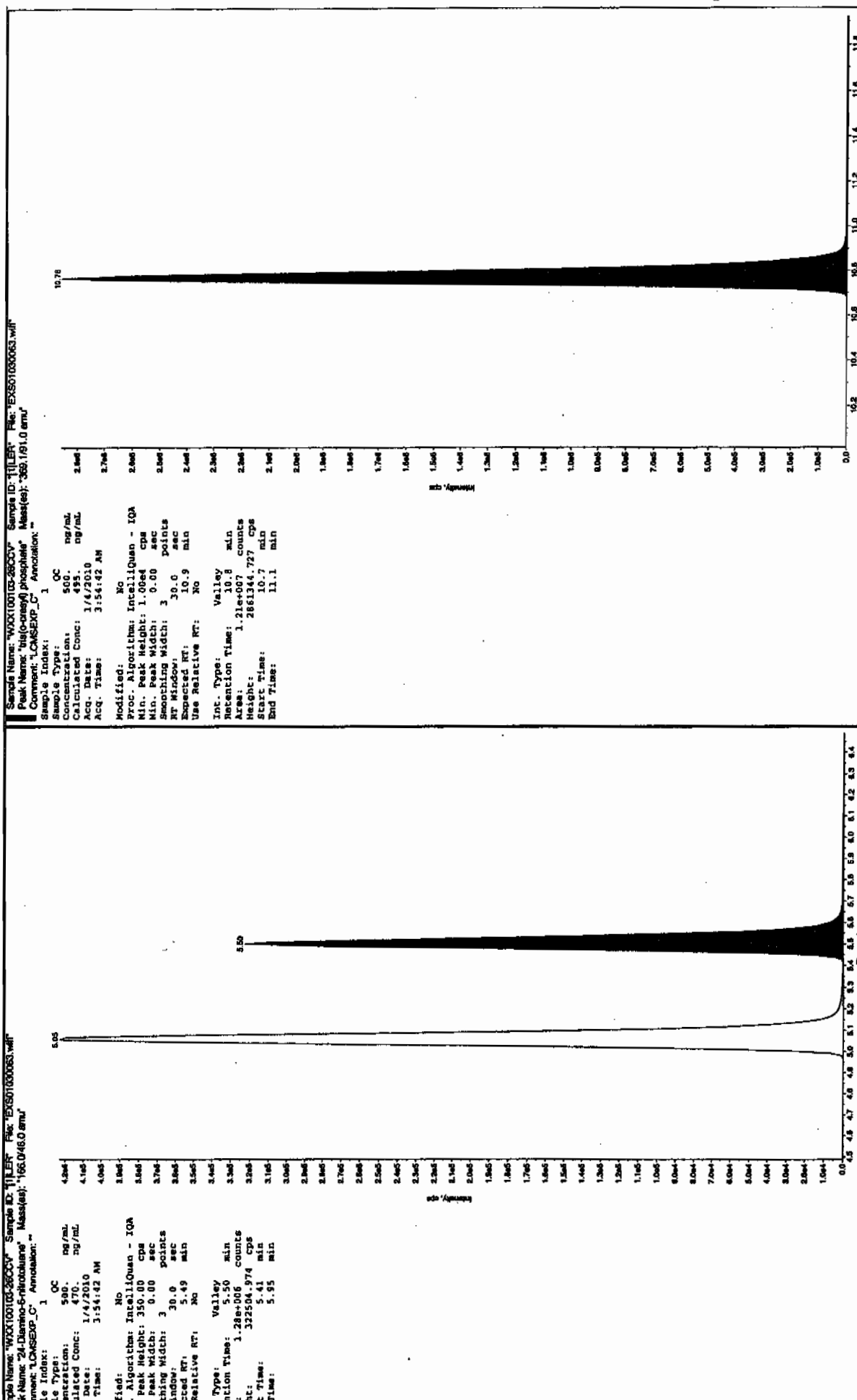
11/17/10  
002820



3L 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



7B  
Explosives CRI Standard

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-988

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01030065.wiff

Analysis Date: 04-JAN-10 04:26

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	90.4	90	
2,6-Diamino-4-nitrotoluene	100	74.9	75	
3,4-Dinitrotoluene	50	40.7	81	
3,5-Dinitroaniline	100	82.5	83	
TATB	100	100	100	
tris(o-cresyl) phosphate	100	94.7	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%

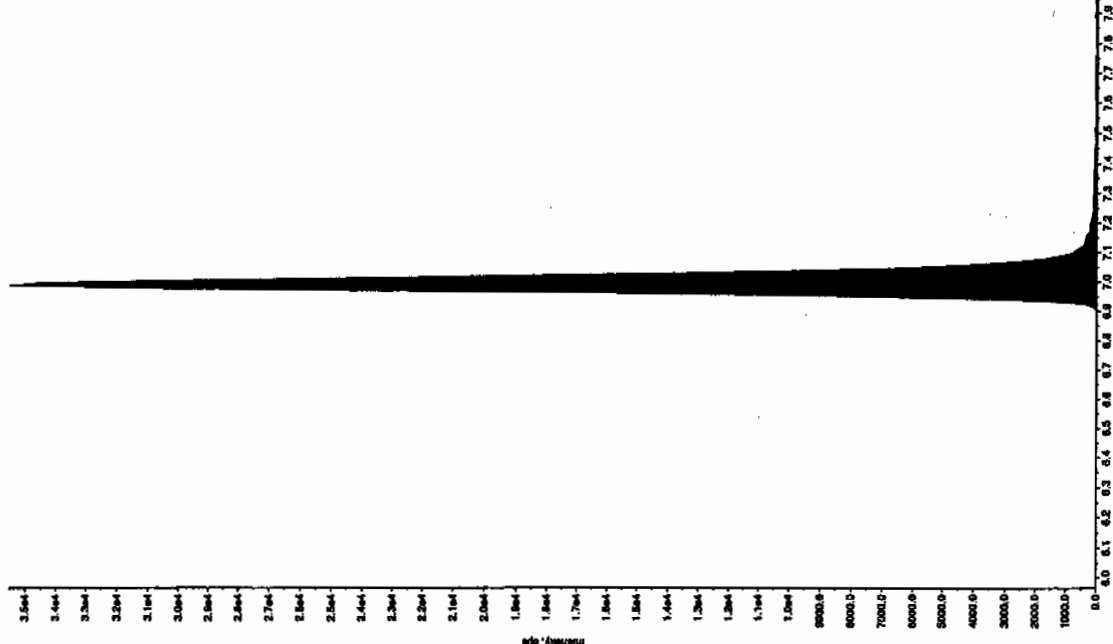
# Column used to flag Recovery outside of Limits

\* Value outside of Recovery Limits

11/17/10  
J. J. J.

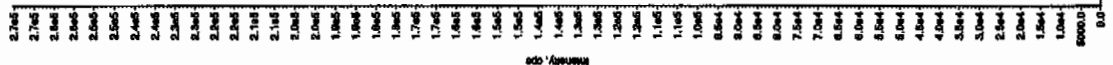
Sample Name: "WXX100103-2705F" Sample ID: "J11ER" File: "EXS01030065.wif"  
Peak Name: "TATB" Mass(es): "257.2204.9 amu"  
Comment: "LONSEXP\_C" Annotation: "

Sample Index: 1  
Sample Type: QC  
Concentration: 100 ng/mL  
Calculated Conc: 91.1 ng/mL  
Acq. Date: 1/4/2010  
Acq. Time: 4:26:06 AM  
Modified: No  
Proc. Algorithm: IntelliQuan - IOA  
Min. Peak Height: 2500.00 cps  
Min. Peak Width: 0.00 sec  
Smoothing Width: 3 points  
RT Window: 38.0 sec  
Expected RT: 8.97 min  
Use Relative RT: No  
Int. Type: Valley  
Retention Time: 8.99 min  
Area: 1.47e+005 counts  
Height: 35521.229 cps  
Start Time: 6.84 min  
End Time: 7.49 min



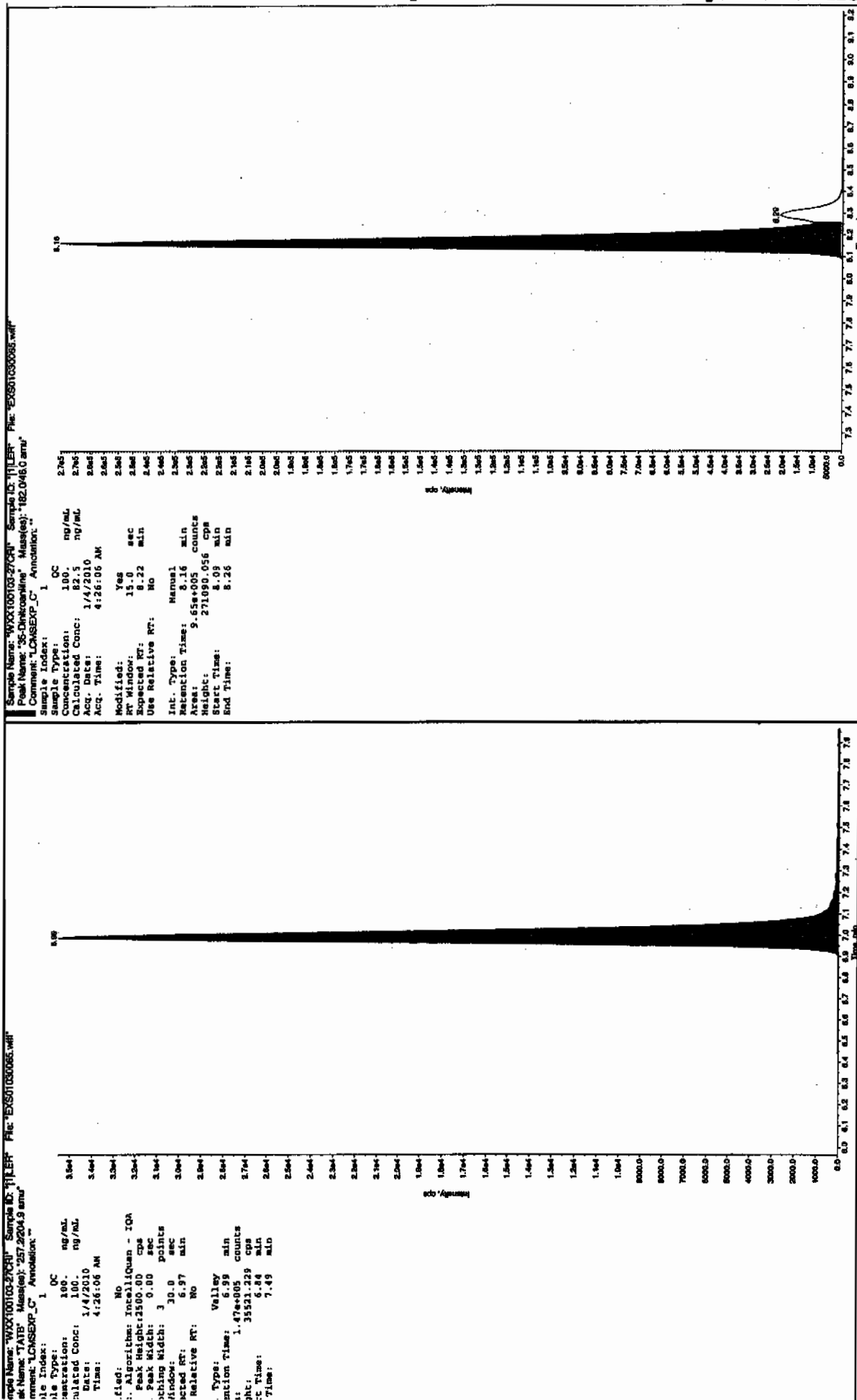
Sample Name: "WXX100103-2705F" Sample ID: "J11ER" File: "EXS01030065.wif"  
Peak Name: "TATB" Mass(es): "182.0460 amu"  
Comment: "LONSEXP\_C" Annotation: "

Sample Index: 1  
Sample Type: QC  
Concentration: 100 ng/mL  
Calculated Conc: 91.1 ng/mL  
Acq. Date: 1/4/2010  
Acq. Time: 4:26:06 AM  
Modified: No  
Proc. Algorithm: IntelliQuan - IOA  
Min. Peak Height: 2000.00 cps  
Min. Peak Width: 0.00 sec  
Smoothing Width: 3 points  
RT Window: 15.0 sec  
Expected RT: 8.22 min  
Use Relative RT: No  
Int. Type: Valley  
Retention Time: 8.16 min  
Area: 1.05e+006 counts  
Height: 270426.514 cps  
Start Time: 8.05 min  
End Time: 8.62 min

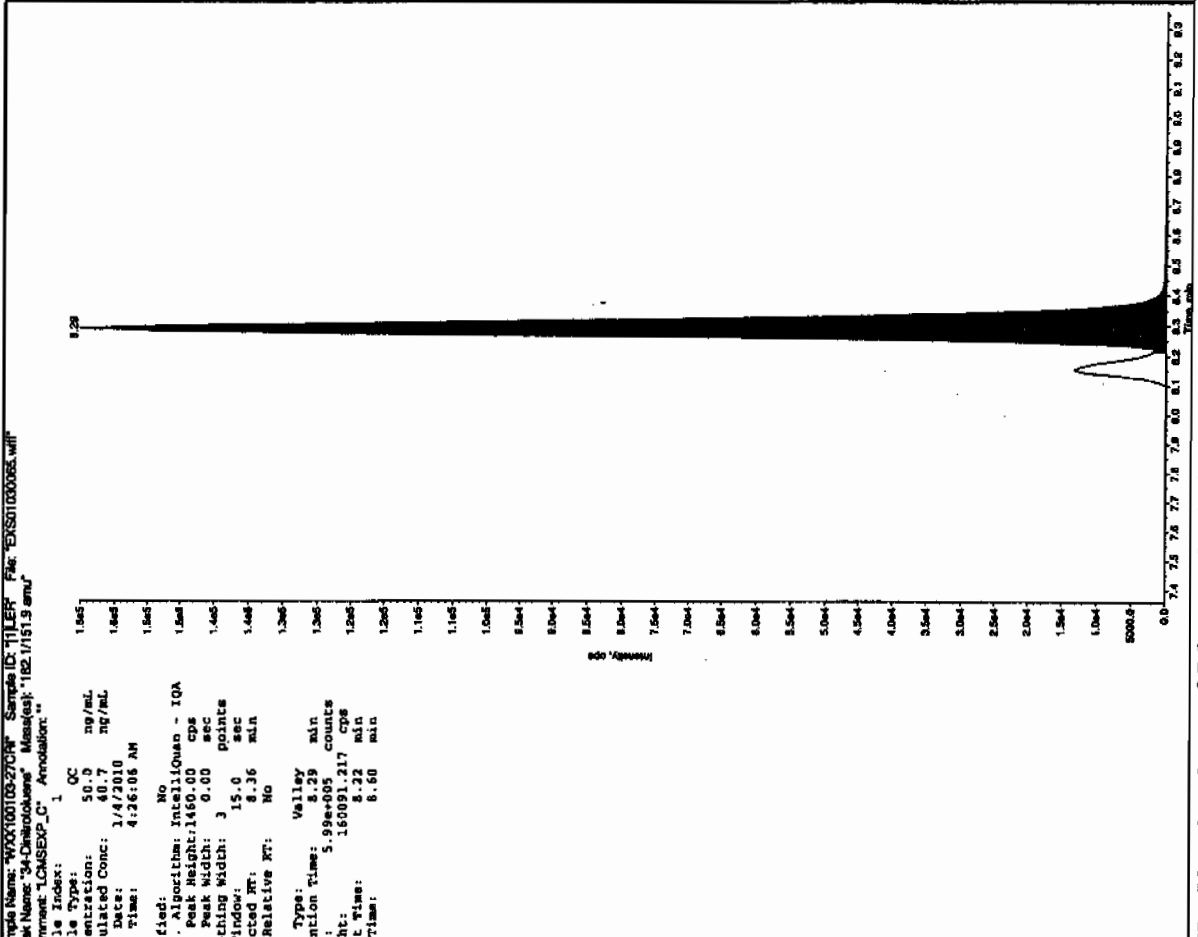
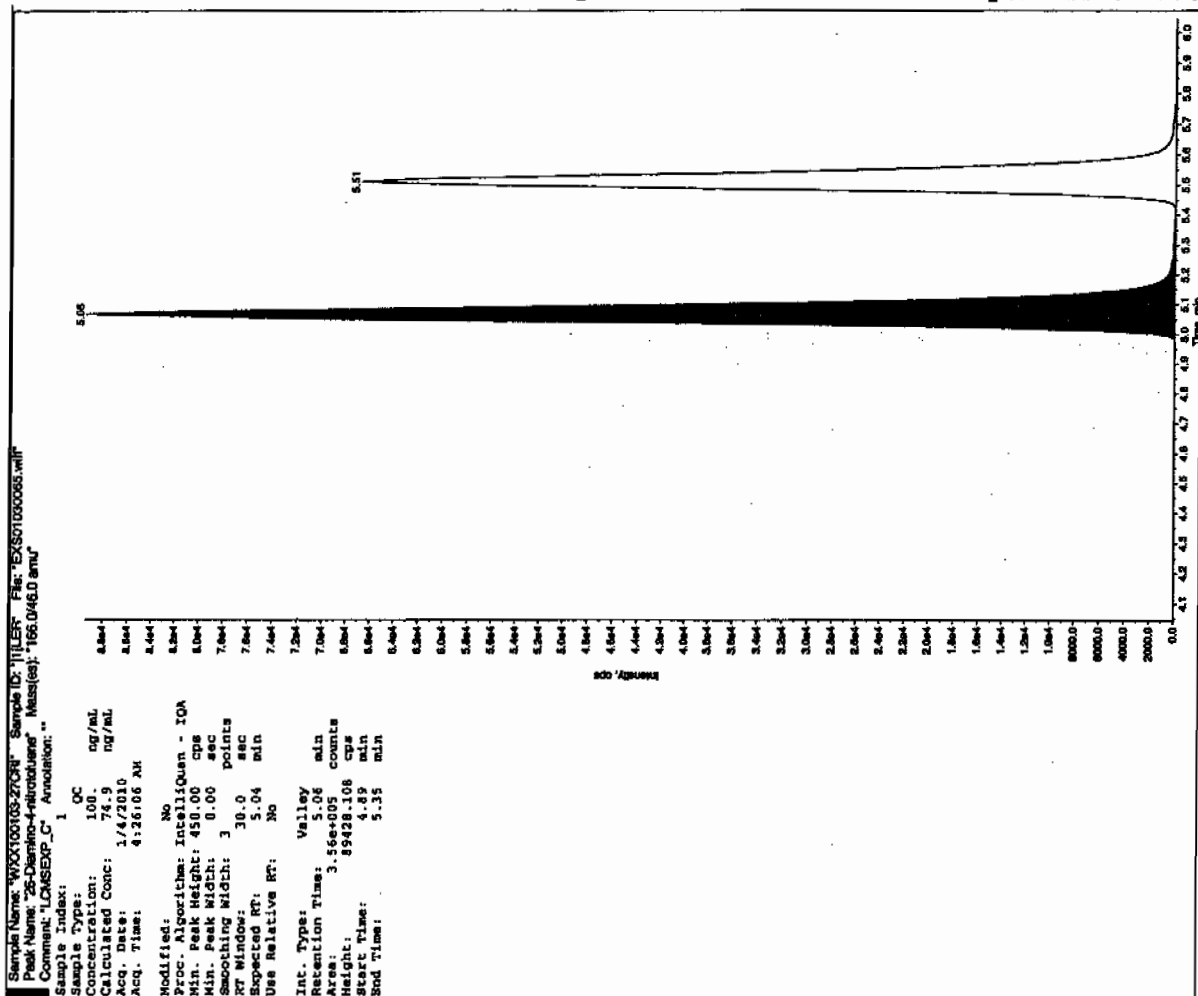


4/11/10  
J. J. J.

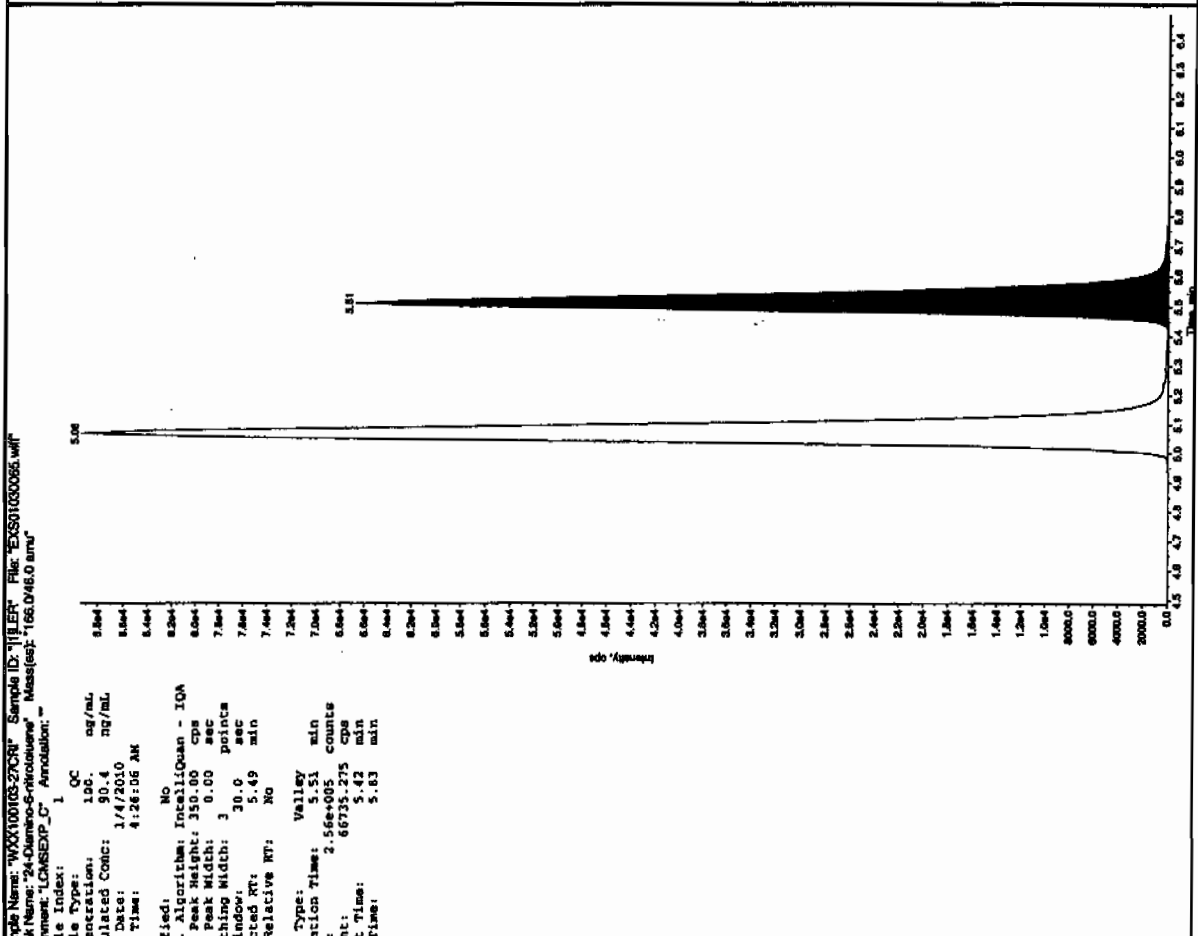
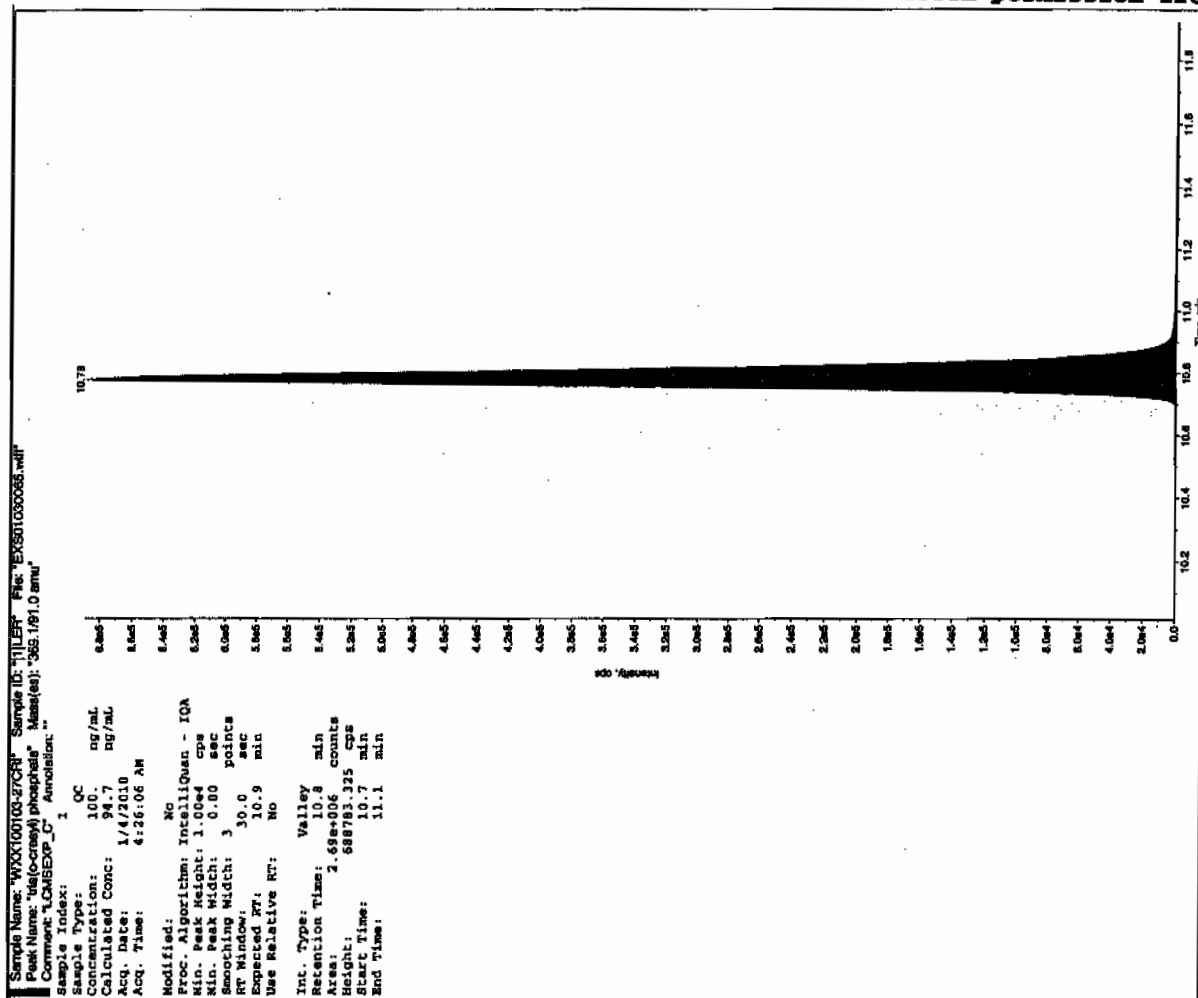
01/17/10  
J. J. J.



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

# QUALITY CONTROL DATA

1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 935247

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 1202001039

Sample Amount 2

Moisture:

Amount Units g

Date Received: 21-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0102054a

Date Analyzed: 03-JAN-10 15:37

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

GEL Laboratories, LLC / Analyst : Michael A. Penny

Printed: Mon Jan 04 12:59:32 2010, Page 107 of 175

Dataset: C:\MASSLYNX\New\_Exp\PRO10210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP\PRO10210expA.qld

Date: 03-Jan-2010

Time: 15:37:24

ID: 1202001039

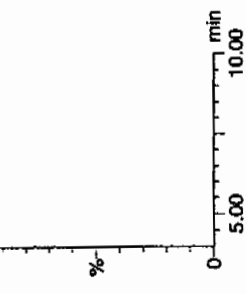
Vial: 2:5,A

147  
1/4/10

1935245 / 121

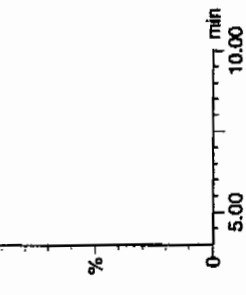
HMZ

F2:MRM of 1 channel,AP-  
176 > 102  
5.5896e+003



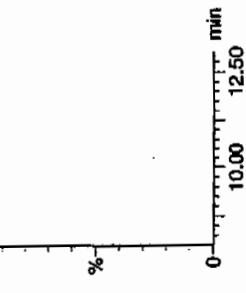
RDX

F2:MRM of 1 channel,AP-  
176 > 102  
5.5896e+003



135-Trinitrobenzene

F4:MRM of 1 channel,AP-  
213 > 183  
5.5026e+003



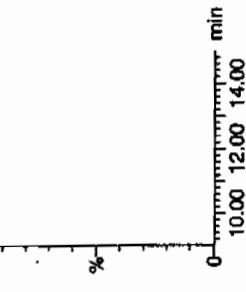
13-Dinitrobenzene-d4

F5:MRM of 2 channels,AP-  
172 > 142  
1.235e+004



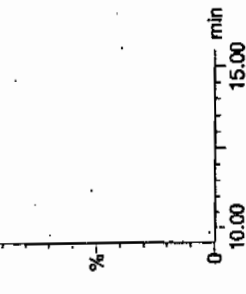
13-Dinitrobenzene

F5:MRM of 2 channels,AP-  
168 > 138  
5.4996e+003



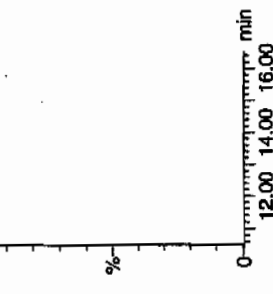
Tetryl

F6:MRM of 1 channel,AP-  
241 > 181  
5.4846e+003



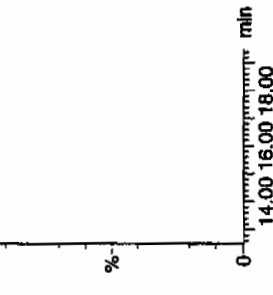
Nitrobenzene

F7:MRM of 1 channel,AP-  
123 > 46  
5.5156e+003



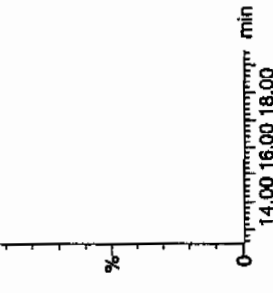
4-Amino-26-dinitrotoluene

F11:MRM of 2 channels,AP-  
197 > 187  
5.5156e+003



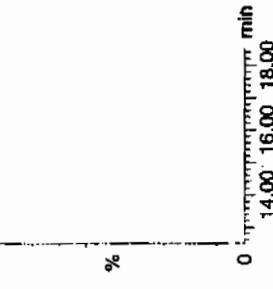
2-Amino-46-dinitrotoluene

F11:MRM of 2 channels,AP-  
197 > 180  
5.5516e+003



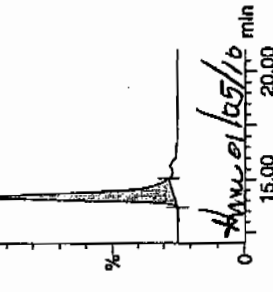
246-Trinitrotoluene

F10:MRM of 1 channel,AP-  
227 > 210  
5.5026e+003



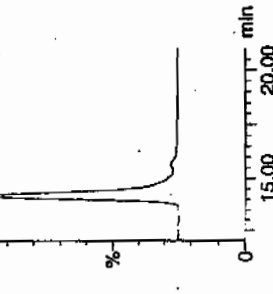
34-dinitrotoluene

F9:MRM of 2 channels,AP-  
182 > 152  
2.2126e+004



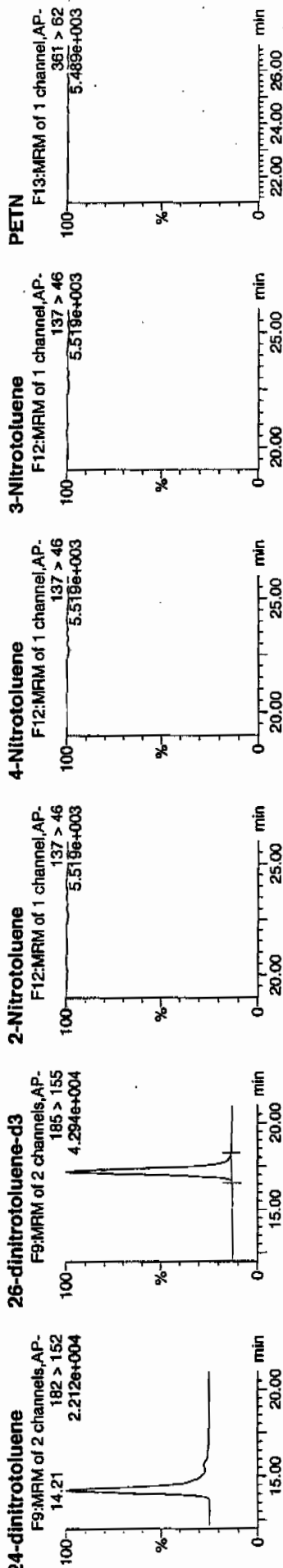
26-dinitrotoluene

F9:MRM of 2 channels,AP-  
182 > 152  
2.2126e+004





Dataset: C:\MASSLYNX\New\_Exp\PRO010210expA.qld, Time: Mon Jan 04 12:58:29 2010



ID	Name	RT	Area	Area %	Abs. Resp	Flags	Mod	Date	Mod	Time	%Rec	Dev	S/N
1202001039	HMX	176 > 102	2755.894										
1202001039	RDX	176 > 102	2755.894										
1202001039	135-Trinitrobenzene	213 > 183	2755.894										
1202001039	13-Dinitrobenzene-d4	172 > 142	2755.894										
1202001039	13-Dinitrobenzene	168 > 138	2755.894										
1202001039	Tetryl	241 > 181	2755.894										
1202001039	Nitrobenzene	123 > 46	2755.894										
1202001039	4-Amino-26-dinitrotoluene	197 > 167	16086.820										
1202001039	2-Amino-46-dinitrotoluene	197 > 180	16086.820										
1202001039	246-Trinitrotoluene	227 > 210	16086.820										
1202001039	34-dinitrotoluene	182 > 152	16086.820										
1202001039	26-dinitrotoluene	182 > 152	16086.820										
1202001039	24-dinitrotoluene	182 > 152	16086.820										
1202001039	26-dinitrotoluene-d3	185 > 155	16086.820										
1202001039	2-Nitrotoluene	137 > 46	16086.820										
1202001039	4-Nitrotoluene	137 > 46	16086.820										
1202001039	3-Nitrotoluene	137 > 46	16086.820										
1202001039	PETN	361 > 62	16086.820										

1

# High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 935247

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 1202001039

Sample Amount 2

Moisture:

Amount Units g

Date Received: 21-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01030046.wiff

Date Analyzed: 03-JAN-10 23:27

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

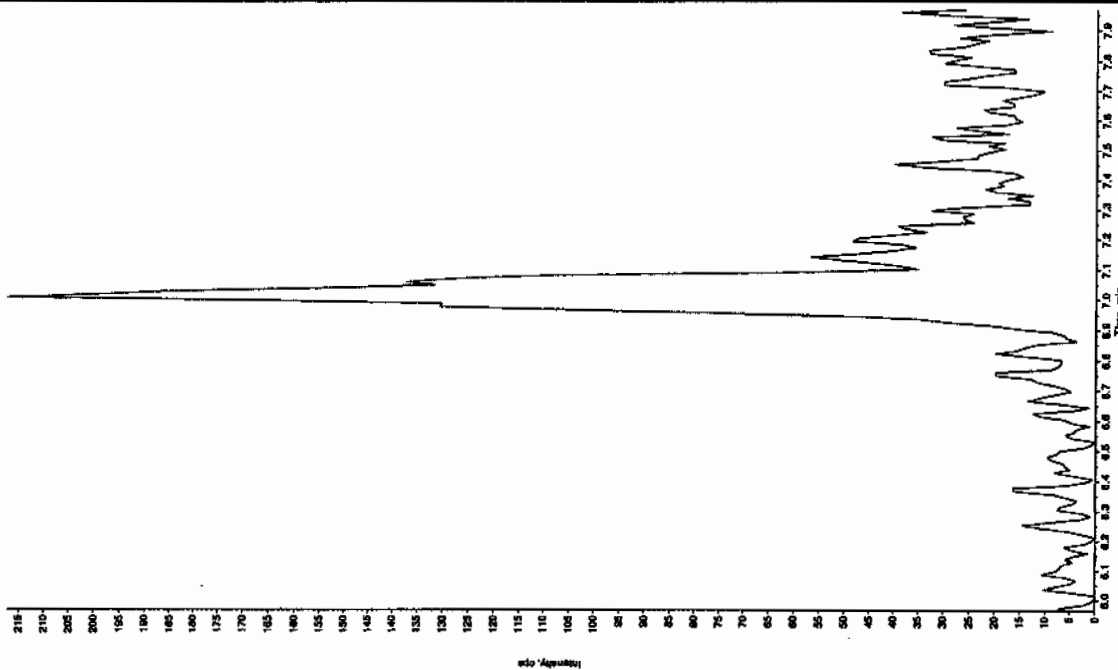
\*Concentration =

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

802 11/10

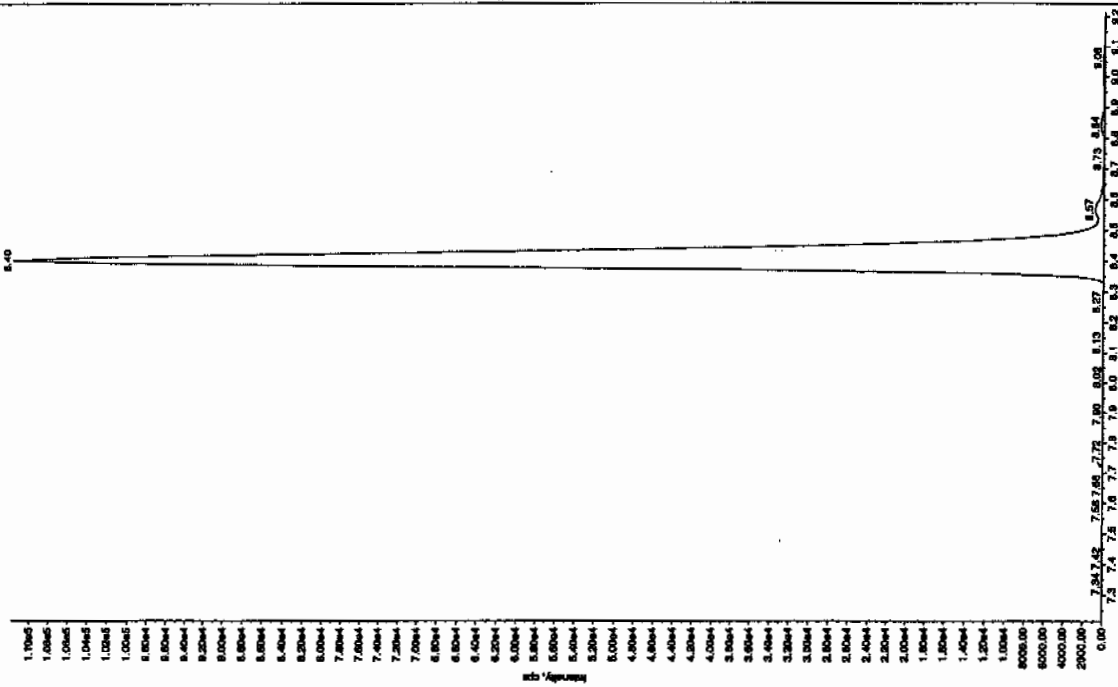
Sample Name: "1202001035" Sample ID: "933248241ER" File: "EX051030046.wif"  
 Peak Name: "TATB" Mass(es): "257.2204.9 amu"  
 Comment: "LCX632125" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 11:27:46 PM  
 Modified: No



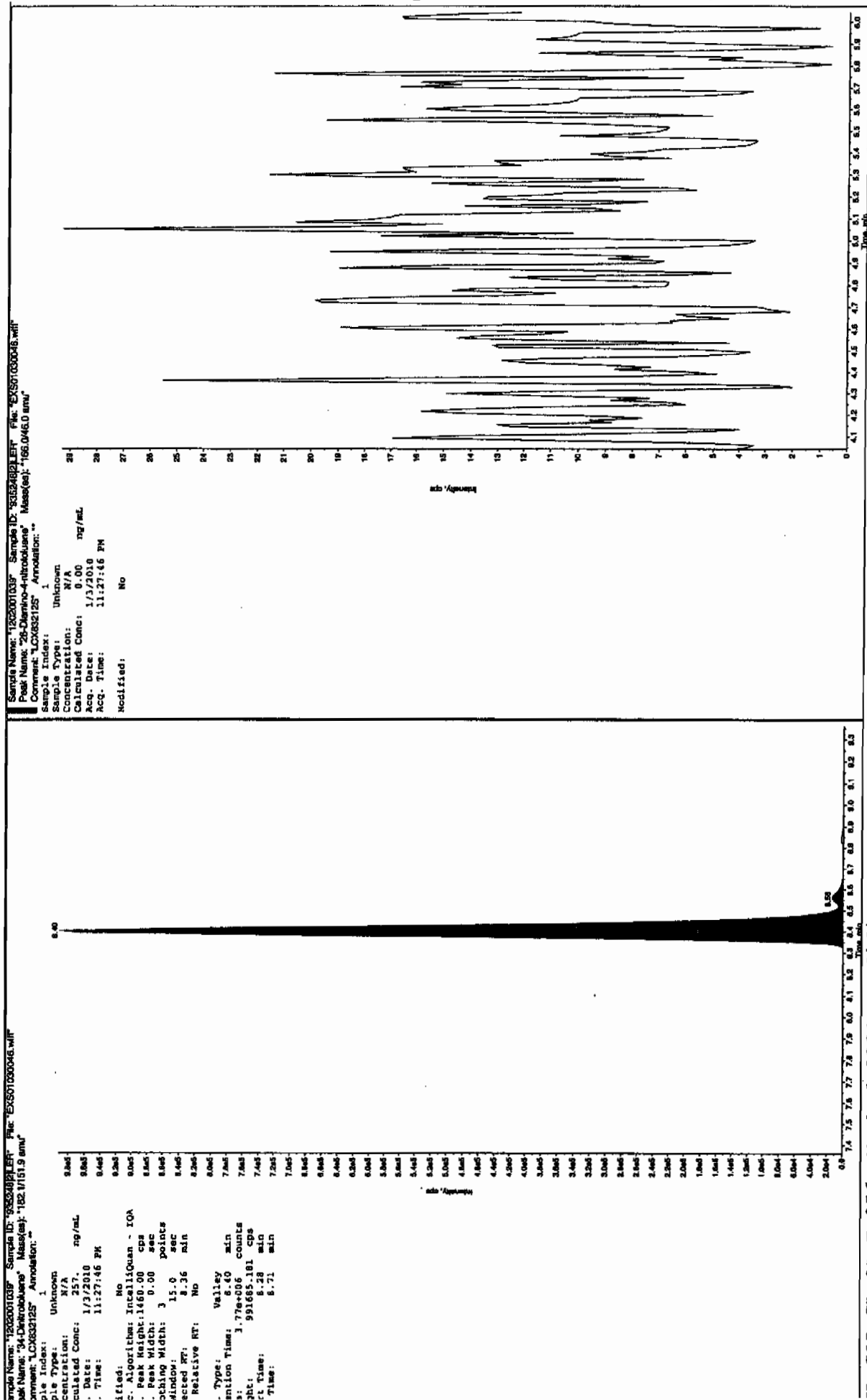
Sample Name: "1202001035" Sample ID: "933248241ER" File: "EX051030046.wif"  
 Peak Name: "35-Dinitroanisole" Mass(es): "182.046.0 amu"  
 Comment: "LCX632125" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 0.00 ng/mL  
 Acq. Date: 1/3/2010  
 Acq. Time: 11:27:46 PM  
 Modified: No

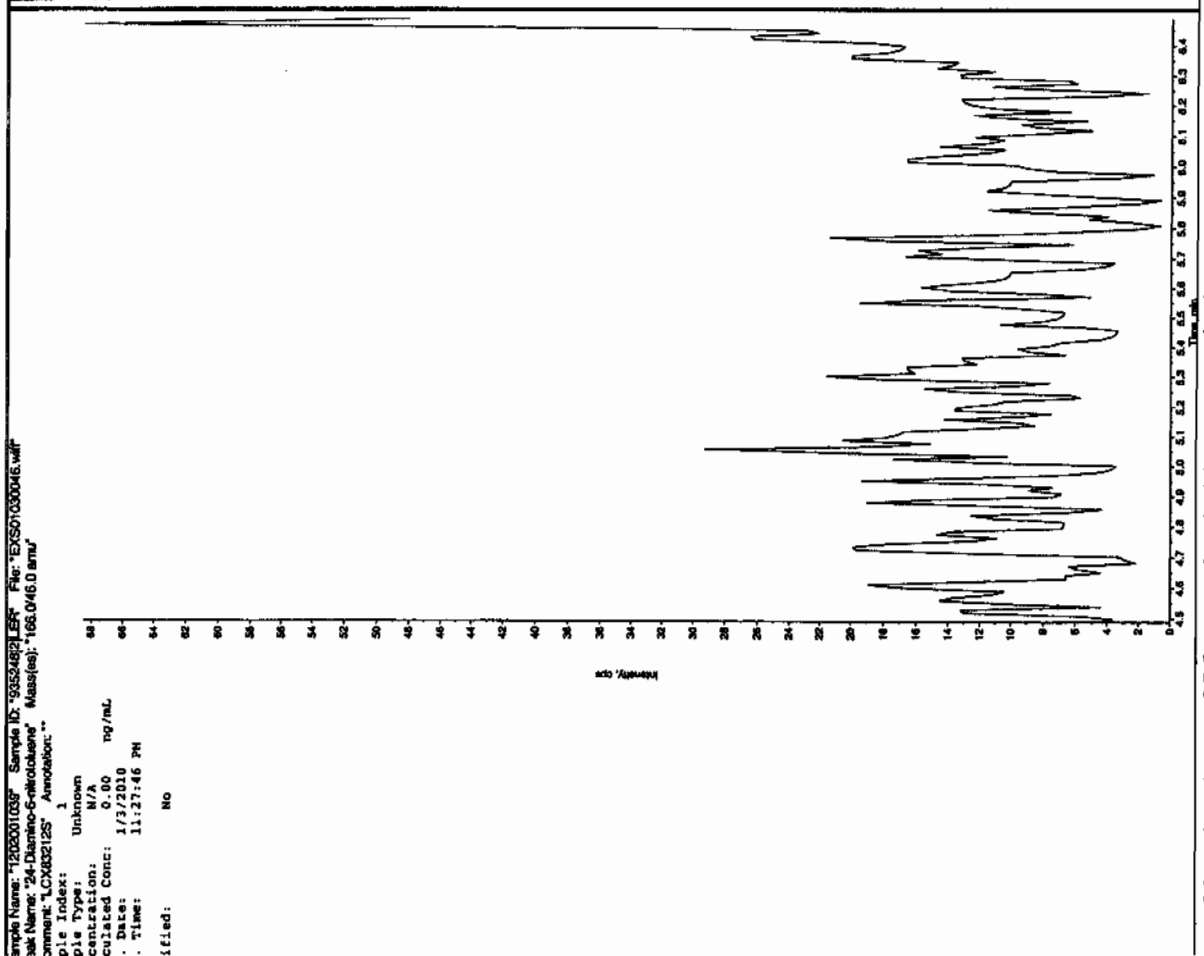
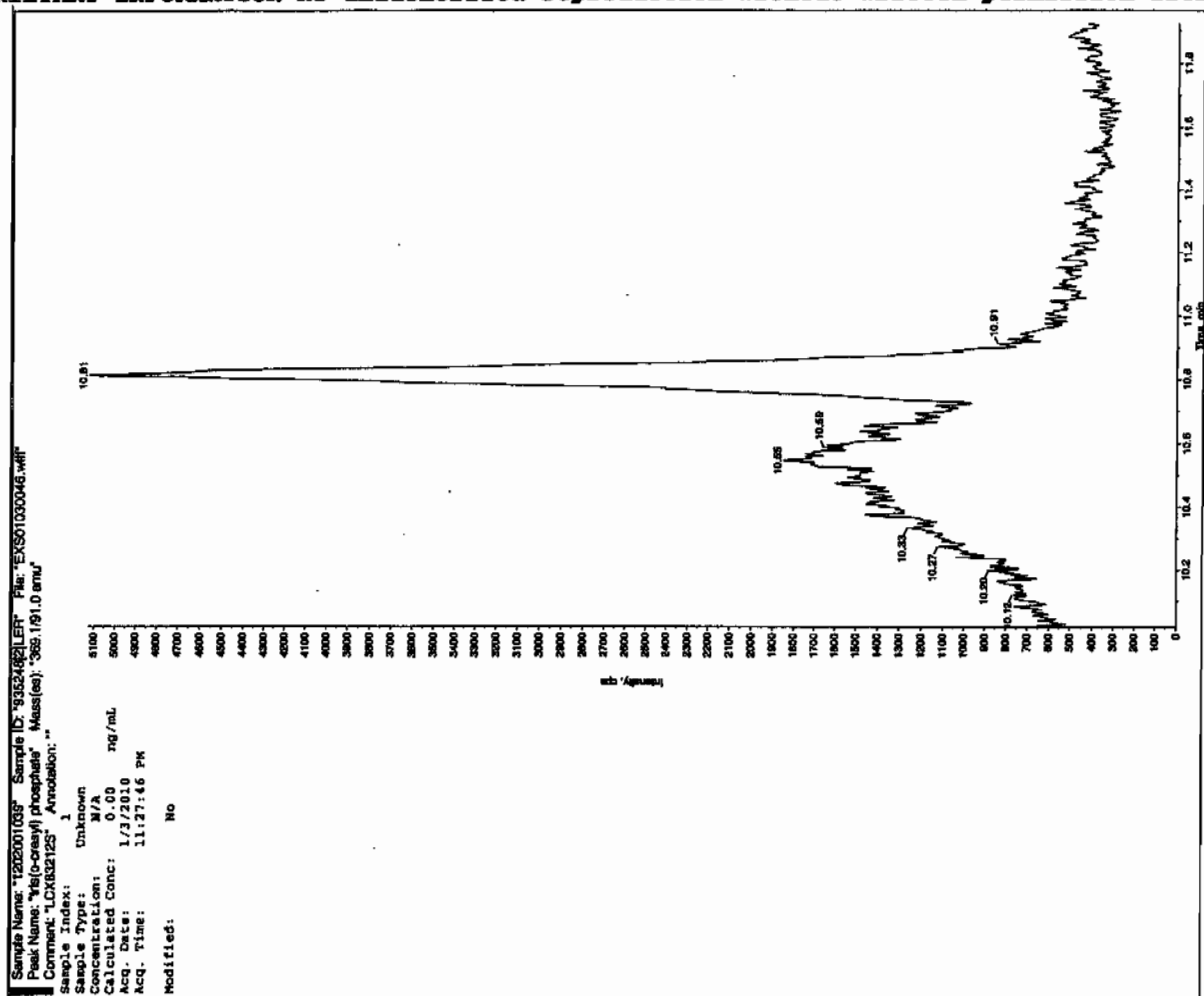


Ann 01/05/10

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

1

# High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 935247

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 1202001040

Sample Amount 2

Moisture:

Amount Units g

Date Received: 21-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0102115a

Date Analyzed: 04-JAN-10 21:38

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	5850	
121-14-2	2,4-Dinitrotoluene	4970	
121-82-4	RDX	5600	
19406-51-0	4-Amino-2,6-dinitrotoluene	5170	
2691-41-0	HMX	5730	
35572-78-2	2-Amino-4,6-dinitrotoluene	5890	
479-45-8	Tetryl	4070	
606-20-2	2,6-Dinitrotoluene	4870	
78-11-5	PETN	4510	
88-72-2	o-Nitrotoluene	4260	
98-95-3	Nitrobenzene	4700	
99-08-1	m-Nitrotoluene	4180	
99-35-4	1,3,5-Trinitrobenzene	5020	
99-65-0	m-Dinitrobenzene	5020	
99-99-0	p-Nitrotoluene	4480	

\*Concentration =

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

# Quantify Sample Report

GEL Laboratories, LLC / Analyst: Michael A. Penny

Printed: Tue Jan 05 09:04:48 2010, Page 55 of 85

Dataset: C:\MASSLYNX\New\_Exp.PRO\10210expA1.qld, Time: Tue Jan 05 09:00:03 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102115a

Date: 04-Jan-2010

Time: 21:38:21

ID: 1202001040

Vial: 2:5,B

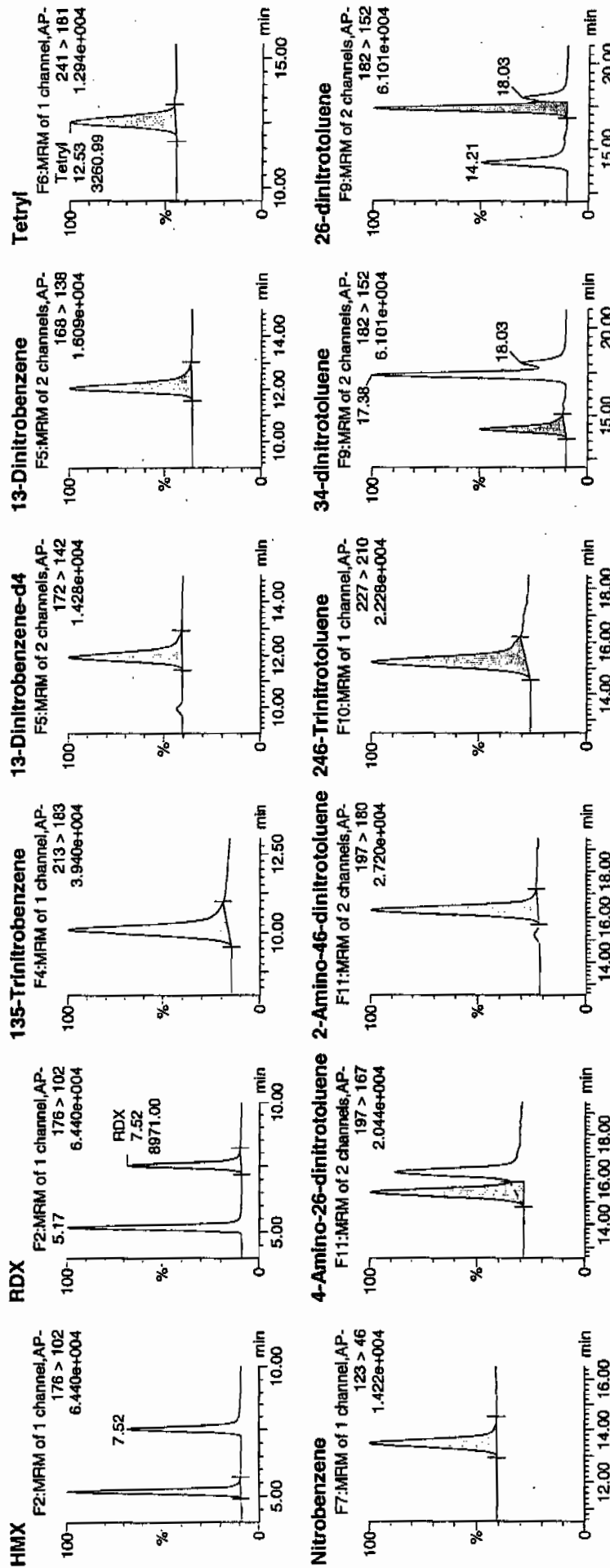
1477

11/10

128

Continued by EXP0102056

12/21/08



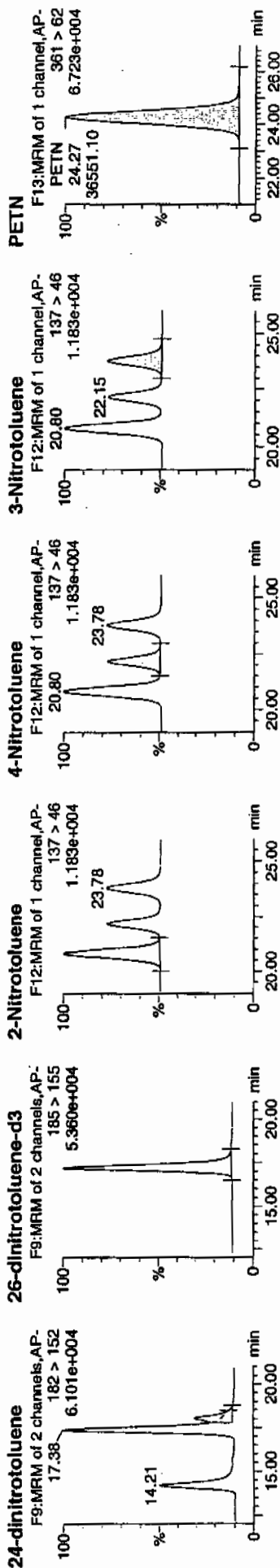
Annex 01/05/10

# Quantify Sample Report

GEL Laboratories, LLC / Analyst: Michael A. Penny

Printed: Tue Jan 05 09:04:48 2010, Page 56 of 85

Dataset: C:\MASSLYNX\New\_Exp\PROV010210expA1.qld, Time: Tue Jan 05 09:00:03 2010



ID	Name	Trace	RT	Area	IS Area	Abs.Resp	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Dev	SN
1202001040	HMX	176 > 102	5.17	11744.563	3414.069	11744.563	1720.024	db			572.7797	114.6	14.6	688.0
1202001040	RDX	176 > 102	7.52	8971.004	3414.069	8971.004	1313.829	bb			560.1332	112.0	12.0	446.7
1202001040	135-Trinitrobenzene	213 > 183	10.11	12760.750	3414.069	12760.750	1868.848	bb			502.1908	100.4	0.4	187.2
1202001040	13-Dinitrobenzene-d4	172 > 142	11.95	3414.069	3414.069	3414.069	3414.069	bb			718.7525	143.8	43.8	409.4
1202001040	13-Dinitrobenzene	188 > 138	12.07	4012.327	3414.069	4012.327	587.617	bb			502.3969	100.5	0.5	473.4
1202001040	Tetryl	241 > 181	12.53	3260.992	3414.069	3260.992	477.581	bb			407.4828	81.5	-18.5	309.9
1202001040	Nitrobenzene	123 > 46	13.50	3145.976	3414.069	3145.976	460.737	bb			470.3682	94.1	-5.9	221.1
1202001040	4-Amino-26-dinitrotoluene	197 > 167	15.42	6229.866	20452.643	6229.866	152.300	MM	05-Jan-10	08:47:43	516.9494	103.4	3.4	256.7
1202001040	2-Amino-46-dinitrotoluene	197 > 180	16.31	9155.411	20452.643	9155.411	223.820	bb			589.1800	117.8	17.8	645.9
1202001040	246-Trinitrotoluene	227 > 210	15.24	7718.149	20452.643	7718.149	188.683	bb			584.8038	117.0	17.0	846.6
1202001040	34-dinitrotoluene	182 > 152	14.21	10169.635	20452.643	10169.635	248.614	bb			278.7672	111.5	11.5	414.1
1202001040	26-dinitrotoluene	182 > 152	17.38	21306.834	20452.643	21306.834	520.882	MM	05-Jan-10	08:53:14	486.5427	97.3	-2.7	942.4
1202001040	24-dinitrotoluene	182 > 152	18.03	5275.961	20452.643	5275.961	128.980	MM	05-Jan-10	08:57:25	497.1613	99.4	-0.6	210.8
1202001040	26-dinitrotoluene-d3	185 > 155	17.20	20452.643	20452.643	20452.643	20452.643	bb			743.9132	148.8	48.8	2275.6
1202001040	2-Nitrotoluene	137 > 46	20.80	2973.751	20452.643	2973.751	72.698	bb			425.7861	85.2	-14.8	663.2
1202001040	4-Nitrotoluene	137 > 46	22.15	1563.709	20452.643	1563.709	38.228	bb			448.0010	89.6	-10.4	363.2
1202001040	3-Nitrotoluene	137 > 46	23.78	1717.769	20452.643	1717.769	41.994	bb			417.5792	83.5	-16.5	372.8
1202001040	PETN	361 > 62	24.27	36551.102	20452.643	36551.102	893.554	bb			451.2801	90.3	-9.7	14160.9



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 935247

Lab Code: GEL

GEL Job No (SDG) 10-988

Matrix: SOIL

GEL Sample ID: 1202001040

Sample Amount 2

Moisture:

Amount Units g

Date Received: 21-DEC-09

Extraction Type Sonication

Extraction Batch ID: 935247

Concentrated Extract Volume (mL) 10

Date Extracted: 29-DEC-09

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01030047.wiff

Date Analyzed: 03-JAN-10 23:43

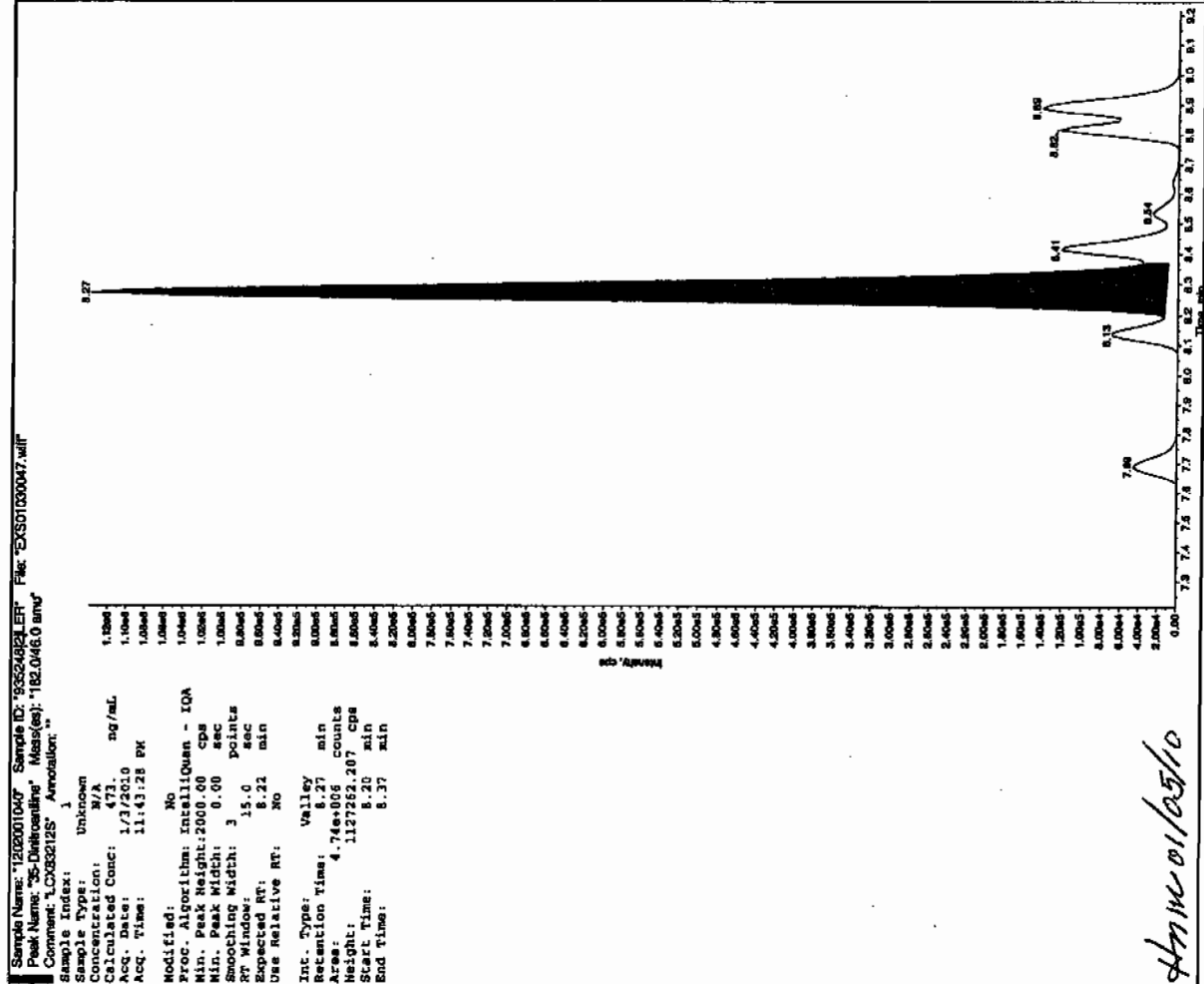
Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	12800	
59229-75-3	2,6-Diamino-4-nitrotoluene	4450	
618-87-1	3,5-Dinitroaniline	4830	
6629-29-4	2,4-Diamino-6-nitrotoluene	3710	
78-30-8	tris(o-cresyl) phosphate	5580	

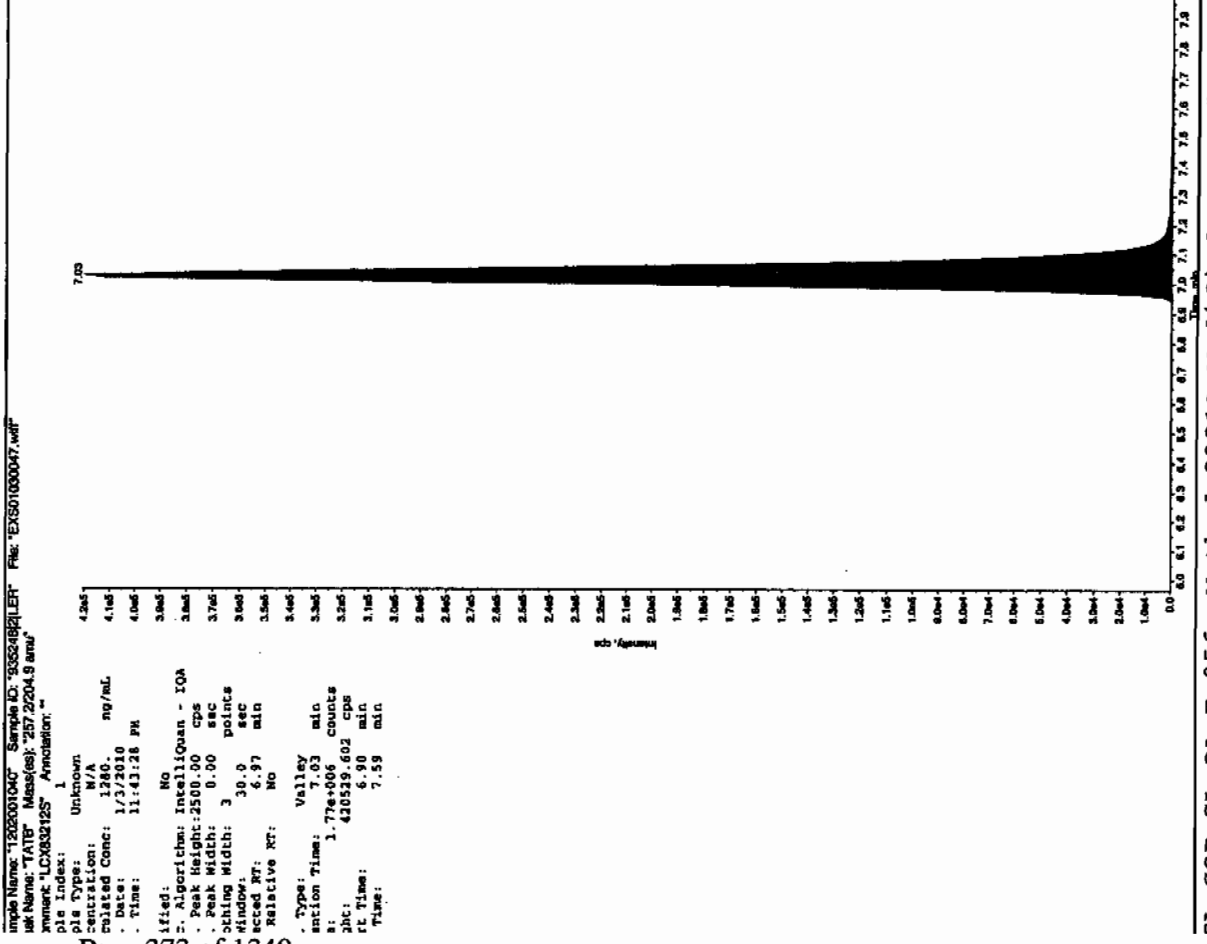
\*Concentration =

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

11/17/10  
Bayer



Amw 01/05/10



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

07/27/2010

Sample Name: "1202001040" Sample ID: "9352482125" File: "EX501030047.wif"

Peak Name: "1A1B" Mass(es): "257.2204.9 amu"

Comment: "LCX832125" Annotation: ""

Sample Index: 1

Sample Type: Unknown

Concentration: 1280. ng/mL

Acq. Date: 1/3/2010

Acq. Time: 11:43:28 PM

Modified: No

Ac. Algorithm: KernelQuant - 10A

n. Peak Height: 250.00 cps

Baseline Width: 8.00 points

Window: 30.0 sec

ected RT: 6.97 min

s Relative RT: No

t. Type: Valley

ention Time: 7.03 min

se: 1.77e+006 counts

ight: 420529.602 cps

rt Time: 6.90 min

f Time: 7.59 min

Sample Name: "1202001040" Sample ID: "9352482125" File: "EX501030047.wif"

Peak Name: "35-Dinitrobenzine" Mass(es): "182.0461.0 amu"

Comment: "LCX832125" Annotation: ""

Sample Index: 1

Sample Type: Unknown

Concentration: 483. ng/mL

Acq. Date: 1/3/2010

Acq. Time: 11:43:28 PM

Modified: Yes

RT Window: 15.0 sec

Expected RT: 8.22 min

Use Relative RT: No

Int. Type: Manual

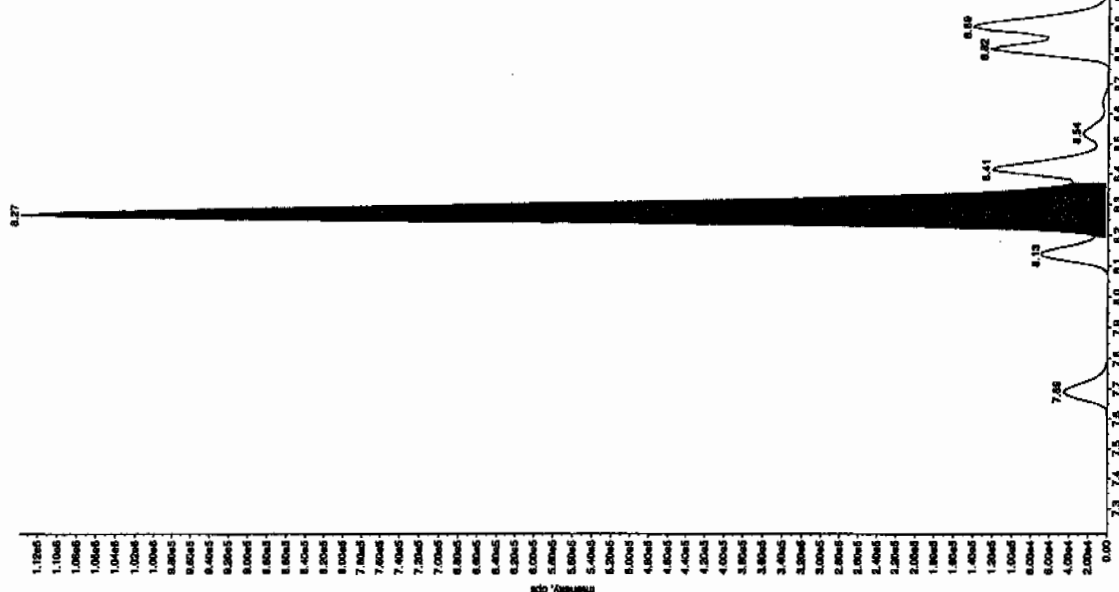
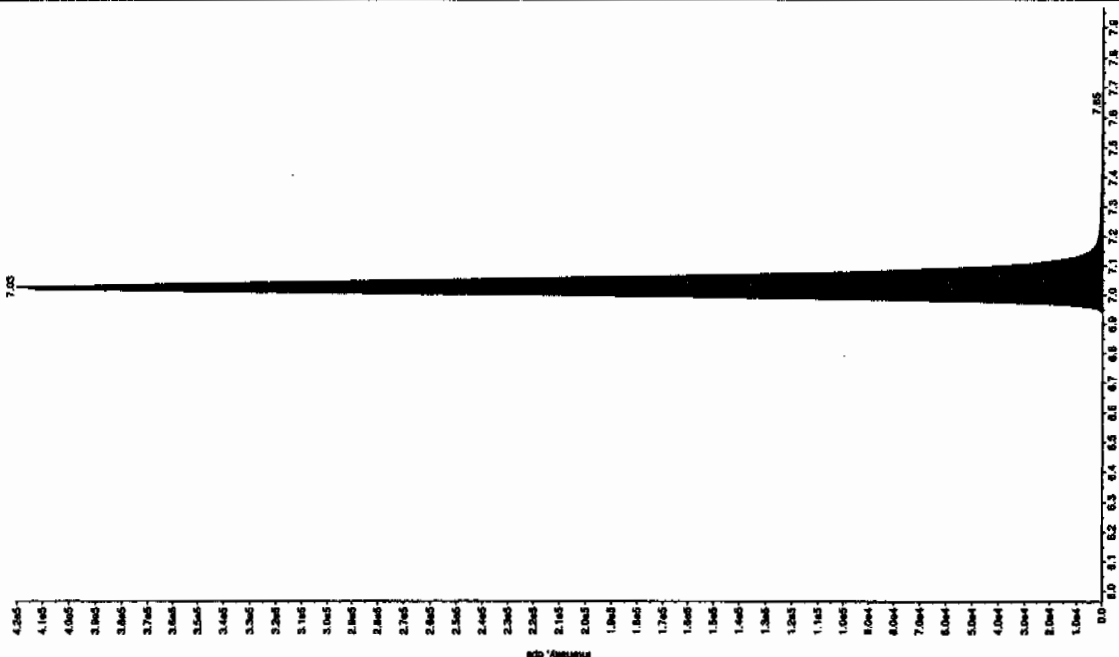
Retention Time: 8.27 min

Area: 4.83e+005 counts

Height: 113821.791 cps

Start Time: 8.20 min

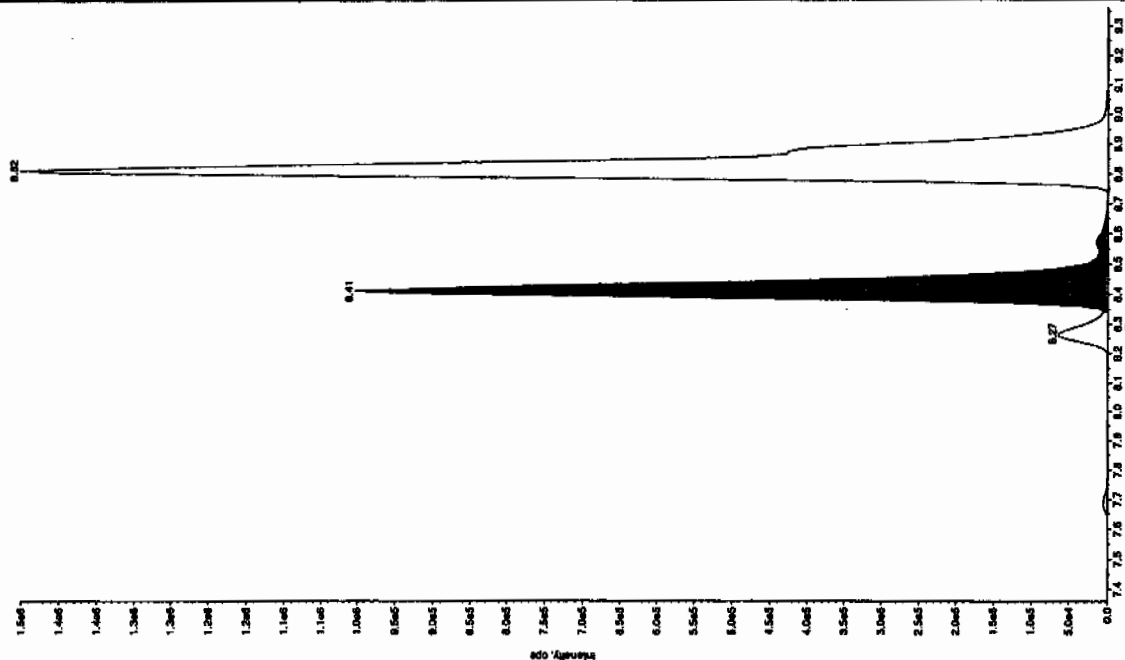
End Time: 8.37 min



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

Sample Name: "1202001040" Sample ID: "93524821.E" File: "EX501000047.wif"  
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1/151.9 amu"  
 Comment: "LCX832125" Annotation: ""

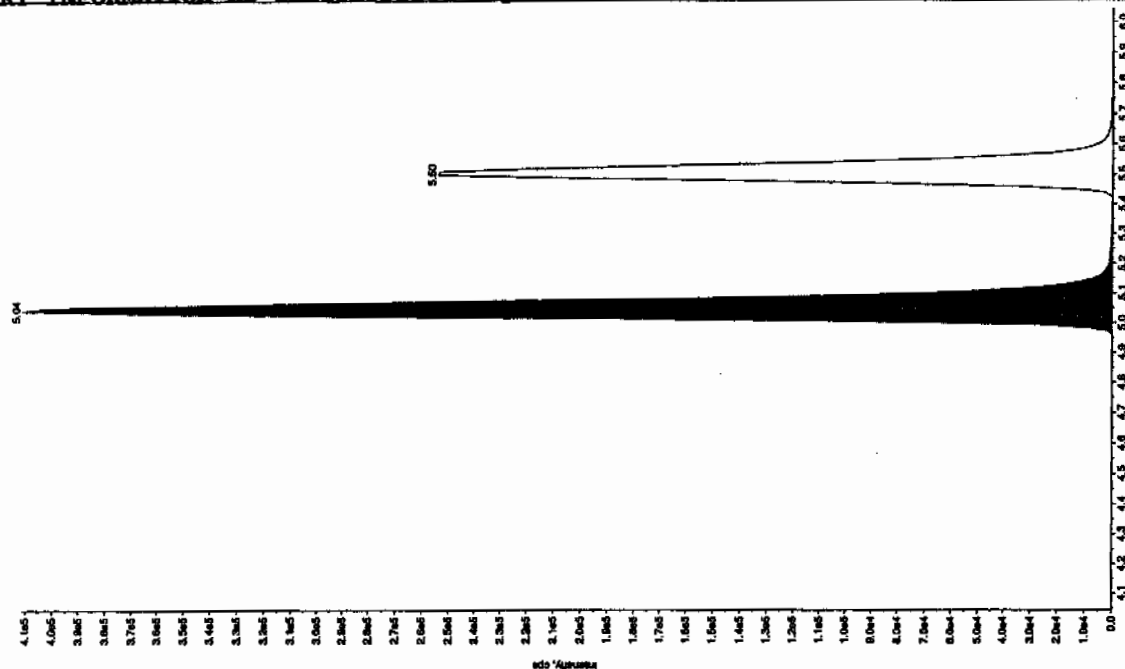
Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 255. ng/mL  
 Acq. Date: 1/7/2010  
 Acq. Time: 11:43:28 PM  
 Modified: No  
 Proc. Algorithm: IntelligQuan - IOA  
 Min. Peak Height: 1460.00 cps  
 Min. Peak Width: 0.00 sec  
 Smoothing Width: 3 points  
 Window: 15.0 sec  
 Expected RT: 8.36 min  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 8.41 min  
 Area: 3.75e+005 counts  
 Height: 1000273.743 cps  
 Start Time: 8.34 min  
 End Time: 8.66 min



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

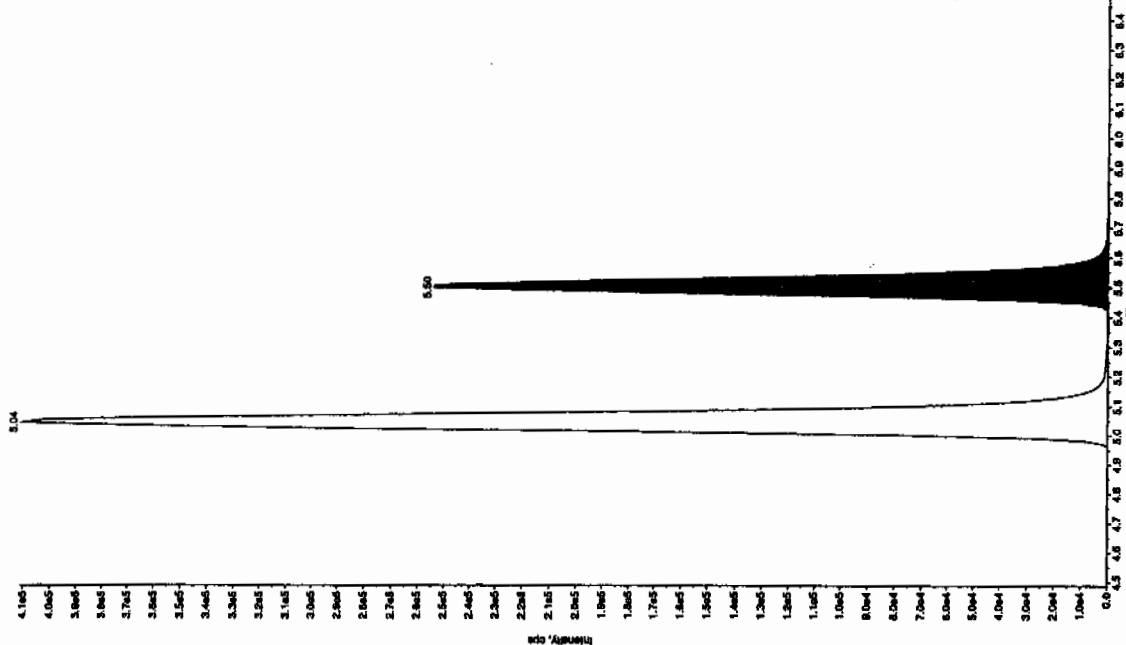
Sample Name: "1202001040" Sample ID: "93524821.E" File: "EX501000047.wif"  
 Peak Name: "28-Diamino-4-Nitrofluorene" Mass(es): "166.0/166.0 amu"  
 Comment: "LCX832125" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: N/A  
 Calculated Conc: 445. ng/mL  
 Acq. Date: 1/7/2010  
 Acq. Time: 11:43:28 PM  
 Modified: No  
 Proc. Algorithm: IntelligQuan - IOA  
 Min. Peak Height: 450.00 cps  
 Min. Peak Width: 0.00 sec  
 Smoothing Width: 3 points  
 Window: 30.0 sec  
 Expected RT: 5.04 min  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 5.04 min  
 Area: 1.70e+006 counts  
 Height: 411066.376 cps  
 Start Time: 4.94 min  
 End Time: 5.34 min



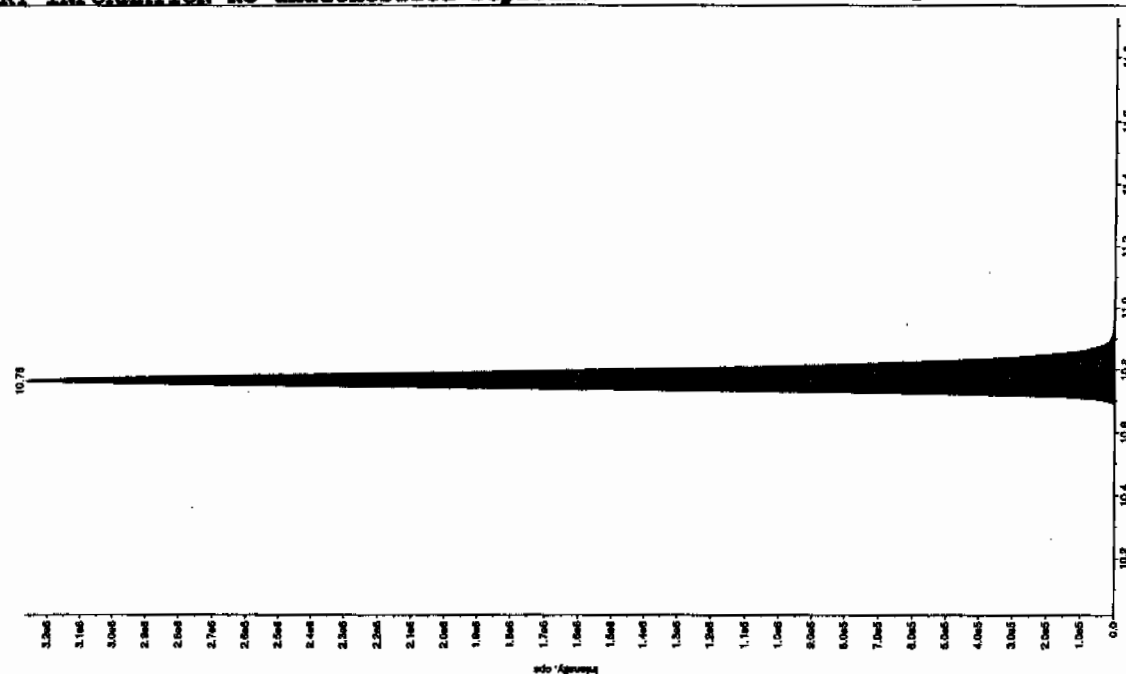
Sample Name: "1202001040" Sample ID: "93524821.E" File: "EX501030047.w"   
 Peak Name: "24-Dienino-6-nitrobenzene" Mass(es): "166.046.0 amu"   
 Comment: "LCX832125" Annotation: "

Sample Index: 1   
 Sample Type: Unknown   
 Concentration: 371. ng/mL   
 Acq. Date: 1/3/2010   
 Acq. Time: 11:43:28 PM   
 Method:   
 No. of Peaks: 350.00 cps   
 n. Peak Width: 0.00 sec   
 Smoothing Width: 3 points   
 RT Window: 30.0 sec   
 Expected RT: 5.45 min   
 Use Relative RT: No   
 Int. Type: Valley   
 Retention Time: 5.50 min   
 Area: 1.01e+006 counts   
 Height: 256051.315 cps   
 Start Time: 2.38 min   
 End Time: 8.04 min



Sample Name: "1202001040" Sample ID: "93524821.E" File: "EX501030047.w"   
 Peak Name: "tris(o-cresyl) phosphite" Mass(es): "388.181.0 amu"   
 Comment: "LCX832125" Annotation: "

Sample Index: 1   
 Sample Type: Unknown   
 Concentration: N/A   
 Acq. Date: 1/3/2010   
 Acq. Time: 11:43:28 PM   
 Method:   
 No. of Peaks: 350.00 cps   
 n. Peak Width: 0.00 sec   
 Smoothing Width: 3 points   
 RT Window: 30.0 sec   
 Expected RT: 10.9 min   
 Use Relative RT: No   
 Int. Type: Valley   
 Retention Time: 10.8 min   
 Area: 1.34e+007 counts   
 Height: 3265063.232 cps   
 Start Time: 10.7 min   
 End Time: 11.1 min



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: 935247      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)
1202001039 MB	29-DEC-2009 17:24:19	2	10	5
1202001040 LCS	29-DEC-2009 17:24:19	2	10	5
243249001	29-DEC-2009 17:24:19	2	10	5
243249002	29-DEC-2009 17:24:19	2	10	5
243249003	29-DEC-2009 17:24:19	2	10	5
243249004	29-DEC-2009 17:24:19	2	10	5
243249005	29-DEC-2009 17:24:19	2	10	5
243256001	29-DEC-2009 17:24:19	2	10	5
243256002	29-DEC-2009 17:24:19	2	10	5
243256003	29-DEC-2009 17:24:19	2	10	5
243273001	29-DEC-2009 17:24:19	2	10	5
243274001	29-DEC-2009 17:24:19	2	10	5
1202001041 MS (243274001)	29-DEC-2009 17:24:19	2	10	5
1202001042 MSD (243274001)	29-DEC-2009 17:24:19	2	10	5
243274002	29-DEC-2009 17:24:19	2	10	5
243274003	29-DEC-2009 17:24:19	2	10	5
243274004	29-DEC-2009 17:24:19	2	10	5
243274005	29-DEC-2009 17:24:19	2	10	5
243274006	29-DEC-2009 17:24:19	2	10	5
243274007	29-DEC-2009 17:24:19	2	10	5
243274008	29-DEC-2009 17:24:19	2	10	5
243274009	29-DEC-2009 17:24:19	2	10	5
243274010	29-DEC-2009 17:24:19	2	10	5

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1202001040	8321 Explosives LCS	DXK091127-03	.1	mL	Final Solvent: ACN
LCS	1202001040	8321 LANL Explosives Mix 10mg/L	UXK091117-03.1	1	mL	
MS	1202001041	8321 Explosives LCS	DXK091127-03	.1	mL	
MS	1202001041	8321 LANL Explosives Mix 10mg/L	UXK091117-03.1	1	mL	
MSD	1202001042	8321 Explosives LCS	DXK091127-03	.1	mL	
MSD	1202001042	8321 LANL Explosives Mix 10mg/L	UXK091117-03.1	1	mL	
SURR	Ali	3,4-Dinitrotoluene (8330 Sur.) 100ppm	DXP091223-02	.05	mL	

GEL ORGANIC RUN LOG

INSTRUMENT ID: LCMSMS #1

Date: 01/02/10  
 Extr. Injection Volume: 50uL  
 Sequence Number: 010210expA  
 Initial Calibration Date: 01/02/10  
 Method: SW846 8321A-Modified  
 Int. Std.: UXX091201-01.3  
 Mobile Phase Lot#: 1248119, 1236350  
 Standard-Samp Reagent Lot#: 1246693, 1233976  
 Reviewed BY: *Shim*  
 Date: *2/1/25/10*  
 SOP: GL-OA-E-056 Rev.12  
 Alt Check Std. ID: WXX100102-07

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC_Flag
EXP0102001a	XIBLK01	MAP	1/2/10 13:33			1		USE	B
EXP0102002a	XIBLK01	MAP	1/2/10 14:03			1		USE	B
EXP0102003a	WXXICAL-01	MAP	1/2/10 14:32			1		USE	I
EXP0102004a	WXXICAL-02	MAP	1/2/10 15:02			1		USE	I
EXP0102005a	WXXICAL-03	MAP	1/2/10 15:31			1		USE	I
EXP0102006a	WXXICAL-04	MAP	1/2/10 16:01			1		USE	I
EXP0102007a	WXXICAL-05	MAP	1/2/10 16:30			1		USE	I
EXP0102008a	WXXICAL-06	MAP	1/2/10 17:00			1		USE	I
EXP0102009a	XIBLK02	MAP	1/2/10 17:29			1		USE	I
EXP0102010a	WXXICV	MAP	1/2/10 17:59			1		USE	B
EXP0102011a	XIBLK03	MAP	1/2/10 18:28			1		USE	C
EXP0102012a	WXXCRI	MAP	1/2/10 18:58			1		USE	B
EXP0102013a	1202004190	MAP	1/2/10 19:27	936699	Various	2	LANL	USE	C
EXP0102014a	1202004191	MAP	1/2/10 19:57	936699	Various	2	LANL	USE	S
EXP0102015a	1202005145	MAP	1/2/10 20:26	936699	Various	2	LANL	USE	S
EXP0102016a	243458007	MAP	1/2/10 20:56	936699	10-1044	2	LANL	USE	S
EXP0102017a	243460004	MAP	1/2/10 21:25	936699	10-1049	2	LANL	USE	S
EXP0102018a	243469006	MAP	1/2/10 21:55	936699	10-1052	2	LANL	USE	S
EXP0102019a	1202004194	MAP	1/2/10 22:24	936699	10-1052	2	LANL	USE	S
EXP0102020a	1202004195	MAP	1/2/10 22:54	936699	10-1052	2	LANL	USE	S
EXP0102021a	WXXCCV	MAP	1/2/10 23:23			1		USE	C
EXP0102022a	XIBLK04	MAP	1/2/10 23:53			1		USE	B
EXP0102023a	WXXCRI	MAP	1/3/10 0:22			1		USE	C
EXP0102024a	1202001007	MAP	1/3/10 0:52	935240	10-966	2	LANL	USE	S
EXP0102025a	1202001008	MAP	1/3/10 1:21	935240	10-966	2	LANL	DUSE-RA	S
EXP0102026a	243240001	MAP	1/3/10 1:51	935240	10-966	2	LANL	USE	S
EXP0102027a	1202001009	MAP	1/3/10 2:20	935240	10-966	2	LANL	DUSE-RA	S
EXP0102028a	1202001010	MAP	1/3/10 2:50	935240	10-966	2	LANL	USE	S
EXP0102029a	243240002	MAP	1/3/10 3:19	935240	10-966	2	LANL	DUSE-RA	S



EXP0102030a	243240003	MAP	1/3/10 3:49	935240	10-966	2	LANL	USE	S
EXP0102031a	243240004	MAP	1/3/10 4:18	935240	10-966	2	LANL	USE	S
EXP0102032a	243240005	MAP	1/3/10 4:48	935240	10-966	2	LANL	USE	S
EXP0102033a	243240006	MAP	1/3/10 5:17	935240	10-966	2	LANL	USE	S
EXP0102034a	WXXCCV	MAP	1/3/10 5:47			1		USE	C
EXP0102035a	XIBLK05	MAP	1/3/10 6:16			1		USE	B
EXP0102036a	WXXCRI	MAP	1/3/10 6:46			1		USE	C
EXP0102037a	243240007	MAP	1/3/10 7:15	935240	10-966	2	LANL	USE	S
EXP0102038a	243240008	MAP	1/3/10 7:45	935240	10-966	2	LANL	USE	S
EXP0102039a	243240009	MAP	1/3/10 8:14	935240	10-966	2	LANL	USE	S
EXP0102040a	243240010	MAP	1/3/10 8:44	935240	10-966	2	LANL	USE	S
EXP0102041a	243240011	MAP	1/3/10 9:13	935240	10-966	2	LANL	USE	S
EXP0102042a	243240012	MAP	1/3/10 9:43	935240	10-966	2	LANL	USE	S
EXP0102043a	243240013	MAP	1/3/10 10:12	935240	10-966	2	LANL	USE	S
EXP0102044a	243240014	MAP	1/3/10 10:41	935240	10-966	2	LANL	USE	S
EXP0102045a	243240015	MAP	1/3/10 11:11	935240	10-966	2	LANL	USE	S
EXP0102046a	243240016	MAP	1/3/10 11:41	935240	10-966	2	LANL	USE	S
EXP0102047a	WXXCCV	MAP	1/3/10 12:10			1		USE	C
EXP0102048a	XIBLK06	MAP	1/3/10 12:40			1		USE	B
EXP0102049a	WXXCRI	MAP	1/3/10 13:09			1		USE	C
EXP0102050a	243240017	MAP	1/3/10 13:39	935240	10-966	2	LANL	USE	S
EXP0102051a	243240018	MAP	1/3/10 14:08	935240	10-966	2	LANL	USE	S
EXP0102052a	243240019	MAP	1/3/10 14:38	935240	10-966	2	LANL	USE	S
EXP0102053a	XIBLK07	MAP	1/3/10 15:07			1		USE	B
EXP0102054a	1202001039	MAP	1/3/10 15:37	935248	Various	2	LANL	USE	S
EXP0102055a	1202001040	MAP	1/3/10 16:07	935248	Various	2	LANL	DUSE-RA	S
EXP0102056a	243249001	MAP	1/3/10 16:36	935248	10-971	2	LANL	USE	S
EXP0102057a	243249002	MAP	1/3/10 17:06	935248	10-971	2	LANL	USE	S
EXP0102058a	243249003	MAP	1/3/10 17:35	935248	10-971	2	LANL	USE	S
EXP0102059a	243249004	MAP	1/3/10 18:05	935248	10-971	200	LANL	DUSE	S
EXP0102060a	WXXCCV	MAP	1/3/10 18:34			1		USE	C
EXP0102061a	XIBLK08	MAP	1/3/10 19:04			1		USE	B
EXP0102062a	WXXCRI	MAP	1/3/10 19:33			1		USE	C
EXP0102063a	243249004	MAP	1/3/10 20:03	935248	10-971	2	LANL	DUSE-RA	S
EXP0102064a	XIBLK09	MAP	1/3/10 20:32			1		USE	B
EXP0102065a	243249005	MAP	1/3/10 21:02	935248	10-971	2	LANL	USE	S
EXP0102066a	243256001	MAP	1/3/10 21:31	935248	10-970	2	LANL	USE	S

EXP0102067a	243256002	MAP	1/3/10 22:01	935248	10-970	2	LANL	USE	S
EXP0102068a	243256003	MAP	1/3/10 22:30	935248	10-970	2	LANL	USE	S
EXP0102069a	243273001	MAP	1/3/10 23:00	935248	10-988	2	LANL	USE	S
EXP0102070a	243274001	MAP	1/3/10 23:30	935248	10-989	2	LANL	USE	S
EXP0102071a	1202001041	MAP	1/3/10 23:59	935248	10-989	2	LANL	USE	S
EXP0102072a	1202001042	MAP	1/4/10 0:29	935248	10-989	2	LANL	USE	S
EXP0102073a	WXXCCV	MAP	1/4/10 0:58			1		USE	C
EXP0102074a	XIBLK10	MAP	1/4/10 1:28			1		USE	B
EXP0102075a	WXXCRI	MAP	1/4/10 1:57			1		USE	C
EXP0102076a	243274002	MAP	1/4/10 2:27	935248	10-989	2	LANL	USE	S
EXP0102077a	243274003	MAP	1/4/10 2:56	935248	10-989	2	LANL	USE	S
EXP0102078a	243274004	MAP	1/4/10 3:26	935248	10-989	2	LANL	USE	S
EXP0102079a	243274005	MAP	1/4/10 3:55	935248	10-989	2	LANL	USE	S
EXP0102080a	243274006	MAP	1/4/10 4:25	935248	10-989	2	LANL	USE	S
EXP0102081a	243274007	MAP	1/4/10 4:54	935248	10-989	2	LANL	USE	S
EXP0102082a	243274008	MAP	1/4/10 5:24	935248	10-989	2	LANL	USE	S
EXP0102083a	243274009	MAP	1/4/10 5:53	935248	10-989	2	LANL	USE	S
EXP0102084a	243274010	MAP	1/4/10 6:23	935248	10-989	2	LANL	USE	S
EXP0102085a	WXXCCV	MAP	1/4/10 6:52			1		USE	C
EXP0102086a	XIBLK11	MAP	1/4/10 7:22			1		USE	B
EXP0102087a	WXXCRI	MAP	1/4/10 7:51			1		USE	C
EXP0102088a	1202001043	MAP	1/4/10 8:21	935252	10-991	2	LANL	USE	S
EXP0102089a	1202001044	MAP	1/4/10 8:50	935252	10-991	2	LANL	USE	S
EXP0102090a	243269001	MAP	1/4/10 9:20	935252	10-991	2	LANL	USE	S
EXP0102091a	1202001045	MAP	1/4/10 9:49	935252	10-991	2	LANL	USE	S
EXP0102092a	1202001046	MAP	1/4/10 10:19	935252	10-991	2	LANL	USE	S
EXP0102093a	243269002	MAP	1/4/10 10:48	935252	10-991	2	LANL	USE	S
EXP0102094a	243269003	MAP	1/4/10 11:18	935252	10-991	2	LANL	USE	S
EXP0102095a	243269004	MAP	1/4/10 11:47	935252	10-991	2	LANL	USE	S
EXP0102096a	243269005	MAP	1/4/10 12:17	935252	10-991	2	LANL	USE	S
EXP0102097a	243269006	MAP	1/4/10 12:46	935252	10-991	2	LANL	USE	S
EXP0102098a	WXXCCV	MAP	1/4/10 13:16			1		USE	C
EXP0102099a	XIBLK12	MAP	1/4/10 13:46			1		USE	B
EXP0102100a	WXXCRI	MAP	1/4/10 14:15			1		USE	C
EXP0102101a	243269007	MAP	1/4/10 14:45	935252	10-991	2	LANL	USE	S
EXP0102102a	243269008	MAP	1/4/10 15:14	935252	10-991	2	LANL	USE	S
EXP0102103a	243269009	MAP	1/4/10 15:44	935252	10-991	2	LANL	USE	S

EXP0102104a	243269010	MAP	1/4/10 16:13	935252	10-991	2	LANL	USE	S
EXP0102105a	243269011	MAP	1/4/10 16:43	935252	10-991	2	LANL	USE	S
EXP0102106a	243269012	MAP	1/4/10 17:12	935252	10-991	2	LANL	USE	S
EXP0102107a	243269013	MAP	1/4/10 17:42	935252	10-991	2	LANL	USE	S
EXP0102108a	243269014	MAP	1/4/10 18:11	935252	10-991	2	LANL	USE	S
EXP0102109a	WXCCV	MAP	1/4/10 18:41			1		USE	C
EXP0102110a	XIBLK13	MAP	1/4/10 19:10			1		USE	B
EXP0102111a	WXCCRI	MAP	1/4/10 19:40			1		USE	C
EXP0102112a	1202001008	MAP	1/4/10 20:09	935240	10-966	2	LANL	USE	S
EXP0102113a	1202001009	MAP	1/4/10 20:39	935240	10-966	2	LANL	USE	S
EXP0102114a	243240002	MAP	1/4/10 21:08	935240	10-966	2	LANL	USE	S
EXP0102115a	1202001040	MAP	1/4/10 21:38	935248	Various	2	LANL	USE	S
EXP0102116a	243249004	MAP	1/4/10 22:07	935248	10-971	2	LANL	USE	S
EXP0102117a	WXCCV	MAP	1/4/10 22:37			1		USE	C
EXP0102118a	XIBLK14	MAP	1/4/10 23:07			1		USE	B
EXP0102119a	WXCCRI	MAP	1/4/10 23:36			1		USE	C
EXP0102120a	1201993746	MAP	1/5/10 0:06	932033	Various	2	LANL	DUSE-RA	S
EXP0102121a	1201993747	MAP	1/5/10 0:35	932033	Various	2	LANL	DUSE-RA	S
EXP0102122a	242652005	MAP	1/5/10 1:05	932033	10-850	2	LANL	DUSE-RA	S
EXP0102123a	242666005	MAP	1/5/10 1:34	932033	10-868	2	LANL	DUSE-RA	S
EXP0102124a	1201993748	MAP	1/5/10 2:04	932033	10-868	2	LANL	DUSE-RA	S
EXP0102125a	1201993749	MAP	1/5/10 2:33	932033	10-868	2	LANL	DUSE-RA	S
EXP0102126a	242671001	MAP	1/5/10 3:03	932033	10-875	2	LANL	DUSE-RA	S
EXP0102127a	WXCCV	MAP	1/5/10 3:32			1		USE	C
EXP0102128a	XIBLK15	MAP	1/5/10 4:02			1		USE	B
EXP0102129a	WXCCRI	MAP	1/5/10 4:31			1		USE	C

GEL ORGANIC RUN LOG

INSTRUMENT ID: LCMSMS4

Date: 01/03/10  
 Extr. Injection Volume: 10ul  
 Sequence Number: 010310exs  
 Initial Calibration Date: 010310  
 Method: 8321A-Modified  
 Int. Std.: N/A  
 Mobile Phase Lot#:1236350, 1246467  
 Standard-Samp Reagent Lot#:1233976, 1246693  
 Reviewed By: *thm*  
 Date: *01/05/10*  
 SOP: GL-OA-E-056 Rev.12  
 Alt Check Std. ID: WXX100103-26

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC Flag
EXS01030001.wiff	XIBLK01	LER	1/3/2010 11:40			1		USE	B
EXS01030002.wiff	XIBLK01	LER	1/3/2010 11:56			1		USE	B
EXS01030003.wiff	WXXICAL-19	LER	1/3/2010 12:12			1		USE	I
EXS01030004.wiff	WXXICAL-20	LER	1/3/2010 12:28			1		USE	I
EXS01030005.wiff	WXXICAL-21	LER	1/3/2010 12:43			1		USE	I
EXS01030006.wiff	WXXICAL-22	LER	1/3/2010 12:59			1		USE	I
EXS01030007.wiff	WXXICAL-23	LER	1/3/2010 13:15			1		USE	I
EXS01030008.wiff	WXXICAL-24	LER	1/3/2010 13:30			1		USE	I
EXS01030009.wiff	WXXICAL-25	LER	1/3/2010 13:46			1		USE	I
EXS01030010.wiff	XIBLK02	LER	1/3/2010 14:02			1		USE	B
EXS01030011.wiff	WXXICV	LER	1/3/2010 14:17			1		USE	C
EXS01030012.wiff	XIBLK03	LER	1/3/2010 14:33			1		USE	B
EXS01030013.wiff	WXXCRI	LER	1/3/2010 14:49			1		USE	C
EXS01030014.wiff	1202001007	LER	1/3/2010 15:05	935240	10-966	2	LANL	USE	S
EXS01030015.wiff	1202001008	LER	1/3/2010 15:20	935240	10-966	2	LANL	USE	S
EXS01030016.wiff	243240001	LER	1/3/2010 15:36	935240	10-966	2	LANL	USE	S
EXS01030017.wiff	1202001009	LER	1/3/2010 15:52	935240	10-966	2	LANL	USE	S
EXS01030018.wiff	1202001010	LER	1/3/2010 16:07	935240	10-966	2	LANL	USE	S
EXS01030019.wiff	243240002	LER	1/3/2010 16:23	935240	10-966	2	LANL	USE	S
EXS01030020.wiff	243240003	LER	1/3/2010 16:39	935240	10-966	2	LANL	USE	S
EXS01030021.wiff	243240004	LER	1/3/2010 16:55	935240	10-966	2	LANL	USE	S
EXS01030022.wiff	243240005	LER	1/3/2010 17:10	935240	10-966	2	LANL	USE	S
EXS01030023.wiff	243240006	LER	1/3/2010 17:26	935240	10-966	2	LANL	USE	S
EXS01030024.wiff	WXXCCV	LER	1/3/2010 17:42			1		USE	C
EXS01030025.wiff	XIBLK04	LER	1/3/2010 17:57			1		USE	B
EXS01030026.wiff	WXXCRI	LER	1/3/2010 18:13			1		USE	C
EXS01030027.wiff	243240007	LER	1/3/2010 18:29	935240	10-966	2	LANL	USE	S
EXS01030028.wiff	243240008	LER	1/3/2010 18:44	935240	10-966	2	LANL	USE	S
EXS01030029.wiff	243240009	LER	1/3/2010 19:00	935240	10-966	2	LANL	USE	S

EXS01030030.wiff	243240010	LER	1/3/2010 19:16	935240	10-966	2	LANL	USE	S
EXS01030031.wiff	243240011	LER	1/3/2010 19:32	935240	10-966	2	LANL	USE	S
EXS01030032.wiff	243240012	LER	1/3/2010 19:47	935240	10-966	2	LANL	USE	S
EXS01030033.wiff	243240013	LER	1/3/2010 20:03	935240	10-966	2	LANL	USE	S
EXS01030034.wiff	243240014	LER	1/3/2010 20:19	935240	10-966	2	LANL	USE	S
EXS01030035.wiff	243240015	LER	1/3/2010 20:34	935240	10-966	2	LANL	USE	S
EXS01030036.wiff	243240016	LER	1/3/2010 20:50	935240	10-966	2	LANL	USE	S
EXS01030037.wiff	WXXCCV	LER	1/3/2010 21:06			1		USE	C
EXS01030038.wiff	XIBLK05	LER	1/3/2010 21:22			1		USE	B
EXS01030039.wiff	WXXCRI	LER	1/3/2010 21:37			1		USE	C
EXS01030040.wiff	243240017	LER	1/3/2010 21:53	935240	10-966	2	LANL	USE	S
EXS01030041.wiff	243240018	LER	1/3/2010 22:09	935240	10-966	2	LANL	USE	S
EXS01030042.wiff	243240019	LER	1/3/2010 22:24	935240	10-966	2	LANL	USE	S
EXS01030043.wiff	XIBLK06	LER	1/3/2010 22:40			1		USE	B
LCS									
EXS01030044.wiff	UXX091117-03.1	LER	1/3/2010 22:56	SCREEN	SOLID	2	O2SI	DUSE-RA	S
EXS01030045.wiff	XIBLK07	LER	1/3/2010 23:12			1		USE	B
EXS01030046.wiff	1202001039	LER	1/3/2010 23:27	935248	VARIOUS	2	LANL	USE	S
EXS01030047.wiff	1202001040	LER	1/3/2010 23:43	935248	VARIOUS	2	LANL	USE	S
EXS01030048.wiff	243249001	LER	1/3/2010 23:59	935248	10-971	2	LANL	USE	S
EXS01030049.wiff	243249002	LER	1/4/2010 0:14	935248	10-971	2	LANL	USE	S
EXS01030050.wiff	WXXCCV	LER	1/4/2010 0:30			1		USE	C
EXS01030051.wiff	XIBLK08	LER	1/4/2010 0:46			1		USE	B
EXS01030052.wiff	WXXCRI	LER	1/4/2010 1:01			1		USE	C
EXS01030053.wiff	243249003	LER	1/4/2010 1:17	935248	10-971	2	LANL	USE	S
EXS01030054.wiff	243249004	LER	1/4/2010 1:33	935248	10-971	2	LANL	USE	S
EXS01030055.wiff	243249005	LER	1/4/2010 1:49	935248	10-971	2	LANL	USE	S
EXS01030056.wiff	243256001	LER	1/4/2010 2:04	935248	10-970	2	LANL	USE	S
EXS01030057.wiff	243256002	LER	1/4/2010 2:20	935248	10-970	2	LANL	USE	S
EXS01030058.wiff	243256003	LER	1/4/2010 2:36	935248	10-970	2	LANL	USE	S
EXS01030059.wiff	243273001	LER	1/4/2010 2:51	935248	10-988	2	LANL	USE	S
EXS01030060.wiff	243274001	LER	1/4/2010 3:07	935248	10-989	2	LANL	USE	S
EXS01030061.wiff	1202001041	LER	1/4/2010 3:23	935248	10-989	2	LANL	USE	S
EXS01030062.wiff	1202001042	LER	1/4/2010 3:39	935248	10-989	2	LANL	USE	S
EXS01030063.wiff	WXXCCV	LER	1/4/2010 3:54			1		USE	C
EXS01030064.wiff	XIBLK09	LER	1/4/2010 4:10			1		USE	B
EXS01030065.wiff	WXXCRI	LER	1/4/2010 4:26			1		USE	C

EXS01030066.wiff	243274002	LER	1/4/2010 4:41	935248	10-989	2	LANL	USE	S
EXS01030067.wiff	243274003	LER	1/4/2010 4:57	935248	10-989	2	LANL	USE	S
EXS01030068.wiff	243274004	LER	1/4/2010 5:13	935248	10-989	2	LANL	USE	S
EXS01030069.wiff	243274005	LER	1/4/2010 5:28	935248	10-989	2	LANL	USE	S
EXS01030070.wiff	243274006	LER	1/4/2010 5:44	935248	10-989	2	LANL	USE	S
EXS01030071.wiff	243274007	LER	1/4/2010 6:00	935248	10-989	2	LANL	USE	S
EXS01030072.wiff	243274008	LER	1/4/2010 6:16	935248	10-989	2	LANL	USE	S
EXS01030073.wiff	243274009	LER	1/4/2010 6:31	935248	10-989	2	LANL	USE	S
EXS01030074.wiff	243274010	LER	1/4/2010 6:47	935248	10-989	2	LANL	USE	S
EXS01030075.wiff	WXXCCV	LER	1/4/2010 7:03			1		USE	C
EXS01030076.wiff	XIBLK10	LER	1/4/2010 7:18			1		USE	B
EXS01030077.wiff	WXXCRI	LER	1/4/2010 7:34			1		USE	C
EXS01030078.wiff	1202003502	LER	1/4/2010 7:50	936357	VARIOUS	2	LANL	USE	S
EXS01030079.wiff	1202003503	LER	1/4/2010 8:05	936357	VARIOUS	2	LANL	USE	S
EXS01030080.wiff	243393002	LER	1/4/2010 8:21	936357	10-1005	2	LANL	USE	S
EXS01030081.wiff	243399001	LER	1/4/2010 8:37	936357	10-1009-1	2	LANL	USE	S
EXS01030082.wiff	243399002	LER	1/4/2010 8:53	936357	10-1009-1	2	LANL	USE	S
EXS01030083.wiff	243399003	LER	1/4/2010 9:08	936357	10-1009-1	2	LANL	USE	S
EXS01030084.wiff	243399004	LER	1/4/2010 9:24	936357	10-1009-1	2	LANL	USE	S
EXS01030085.wiff	243399005	LER	1/4/2010 9:40	936357	10-1009-1	2	LANL	USE	S
EXS01030086.wiff	WXXCCV	LER	1/4/2010 9:55			1		USE	C
EXS01030087.wiff	XIBLK11	LER	1/4/2010 10:11			1		USE	B
EXS01030088.wiff	WXXCRI	LER	1/4/2010 10:27			1		USE	C
EXS01030089.wiff	243406002	LER	1/4/2010 10:42	936357	10-1011	2	LANL	USE	S
EXS01030090.wiff	1202003504	LER	1/4/2010 10:58	936357	10-1011	2	LANL	USE	S
EXS01030091.wiff	1202003505	LER	1/4/2010 11:14	936357	10-1011	2	LANL	USE	S
EXS01030092.wiff	243406002	LER	1/4/2010 11:30	936357	10-1011	2	LANL	USE	S
EXS01030093.wiff	243406003	LER	1/4/2010 11:45	936357	10-1011	2	LANL	USE	S
EXS01030094.wiff	243406004	LER	1/4/2010 12:01	936357	10-1011	2	LANL	USE	S
EXS01030095.wiff	243406005	LER	1/4/2010 12:17	936357	10-1011	2	LANL	USE	S
EXS01030096.wiff	243406006	LER	1/4/2010 12:32	936357	10-1011	2	LANL	USE	S
EXS01030097.wiff	243406007	LER	1/4/2010 12:48	936357	10-1011	2	LANL	USE	S
EXS01030098.wiff	243406008	LER	1/4/2010 13:04	936357	10-1011	2	LANL	USE	S
EXS01030099.wiff	WXXCCV	LER	1/4/2010 13:20			1		USE	C
EXS01030100.wiff	XIBLK12	LER	1/4/2010 13:35			1		USE	B
EXS01030101.wiff	WXXCRI	LER	1/4/2010 13:51			1		USE	C
EXS01030102.wiff	243406009	LER	1/4/2010 14:07	936357	10-1011	2	LANL	USE	S

EXS01030103.wiff	XIBLK13	LER	1/4/2010 14:22	LCS	1	USE	B
EXS01030104.wiff	UXX091117-03.1	LER	1/4/2010 14:38	SCREEN	2	USE	S
EXS01030105.wiff	WXXCCV	LER	1/4/2010 14:54	SOLID	1	USE	C
EXS01030106.wiff	XIBLK14	LER	1/4/2010 15:10		1	USE	B
EXS01030107.wiff	WXXCRI	LER	1/4/2010 15:25		1	USE	C

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

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\data\EXP0102071a

Date: 03-Jan-2010

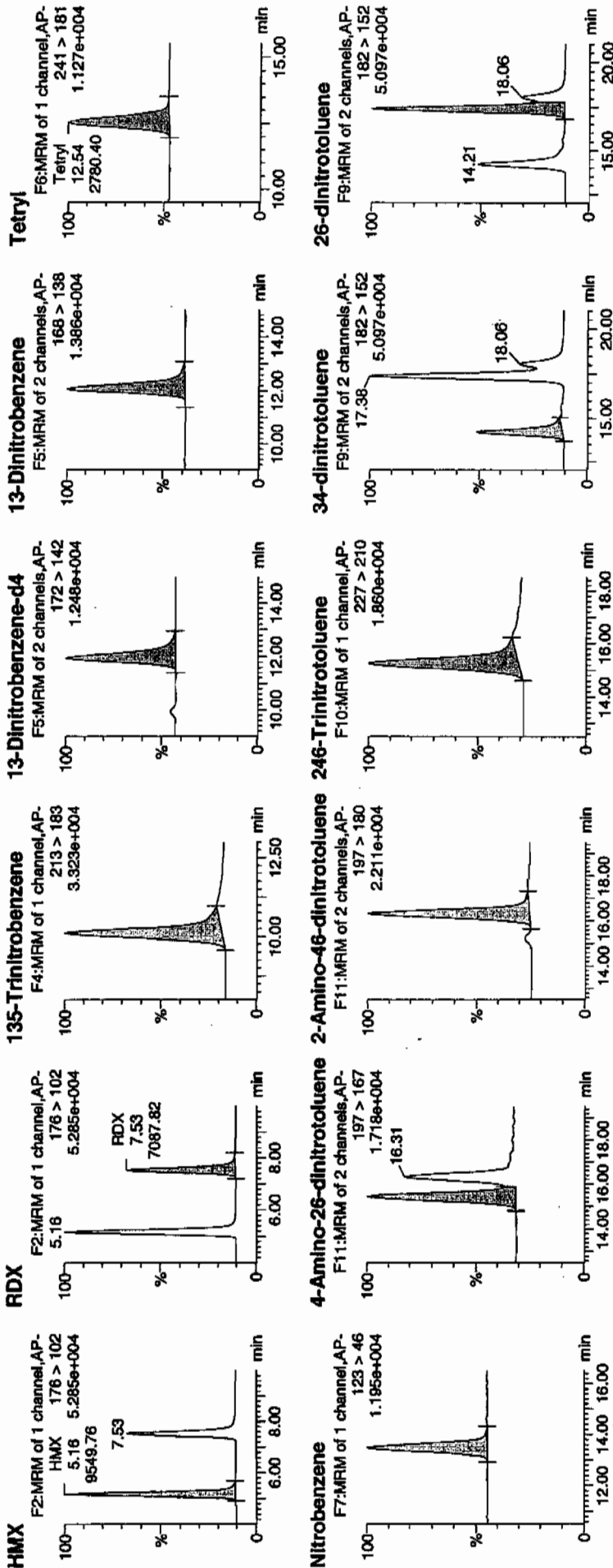
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Vial: 2:7,B

1/4/10

243274001 us / 21



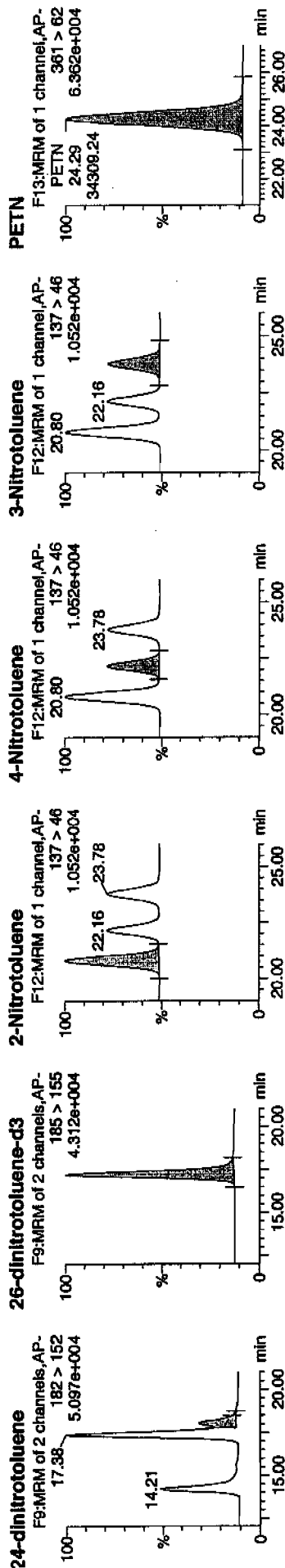
Amw  
01/05/10



## Quantify Sample Report

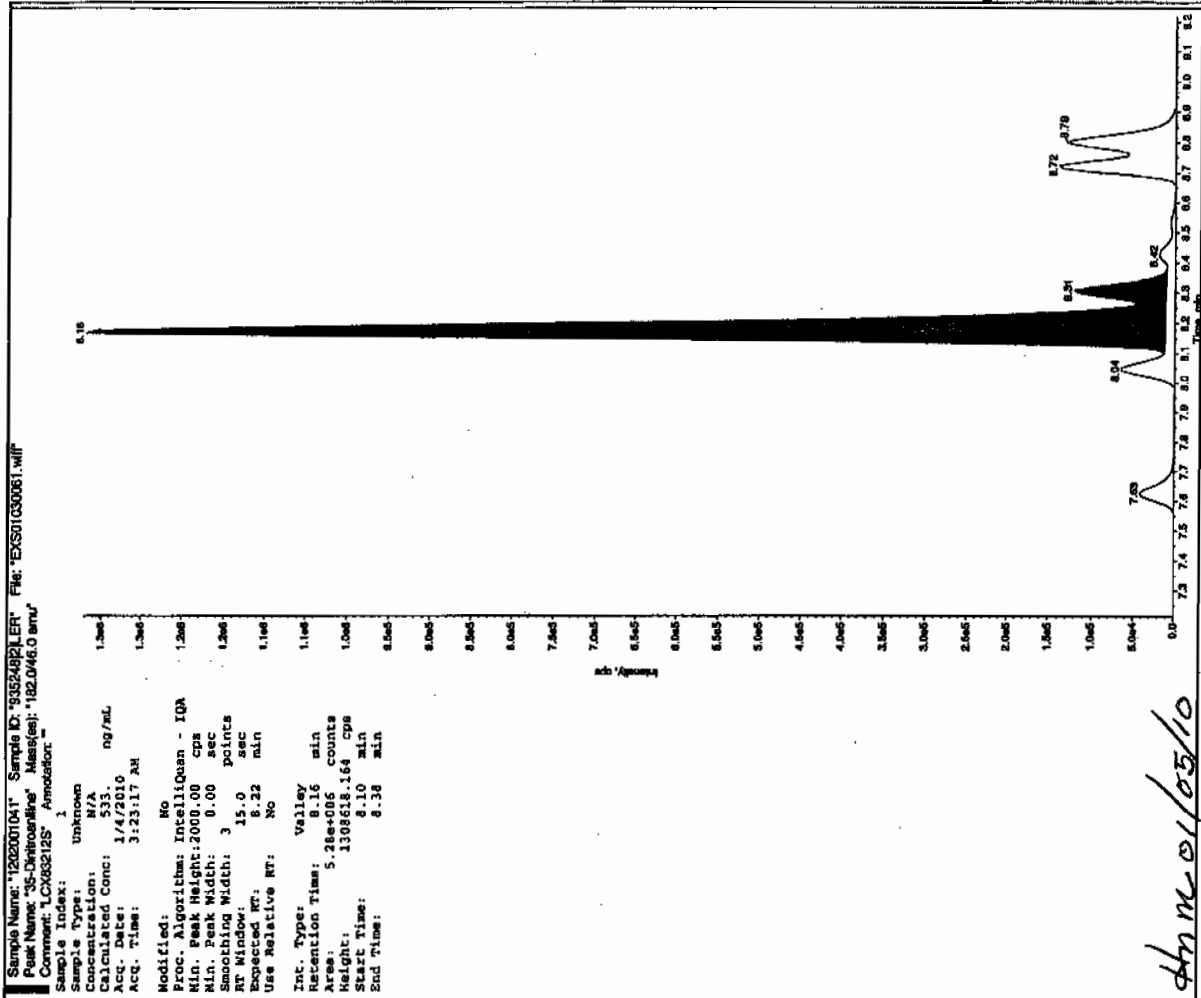
**GEL Laboratories, LLC / Analyst : Michael A. Penny**

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

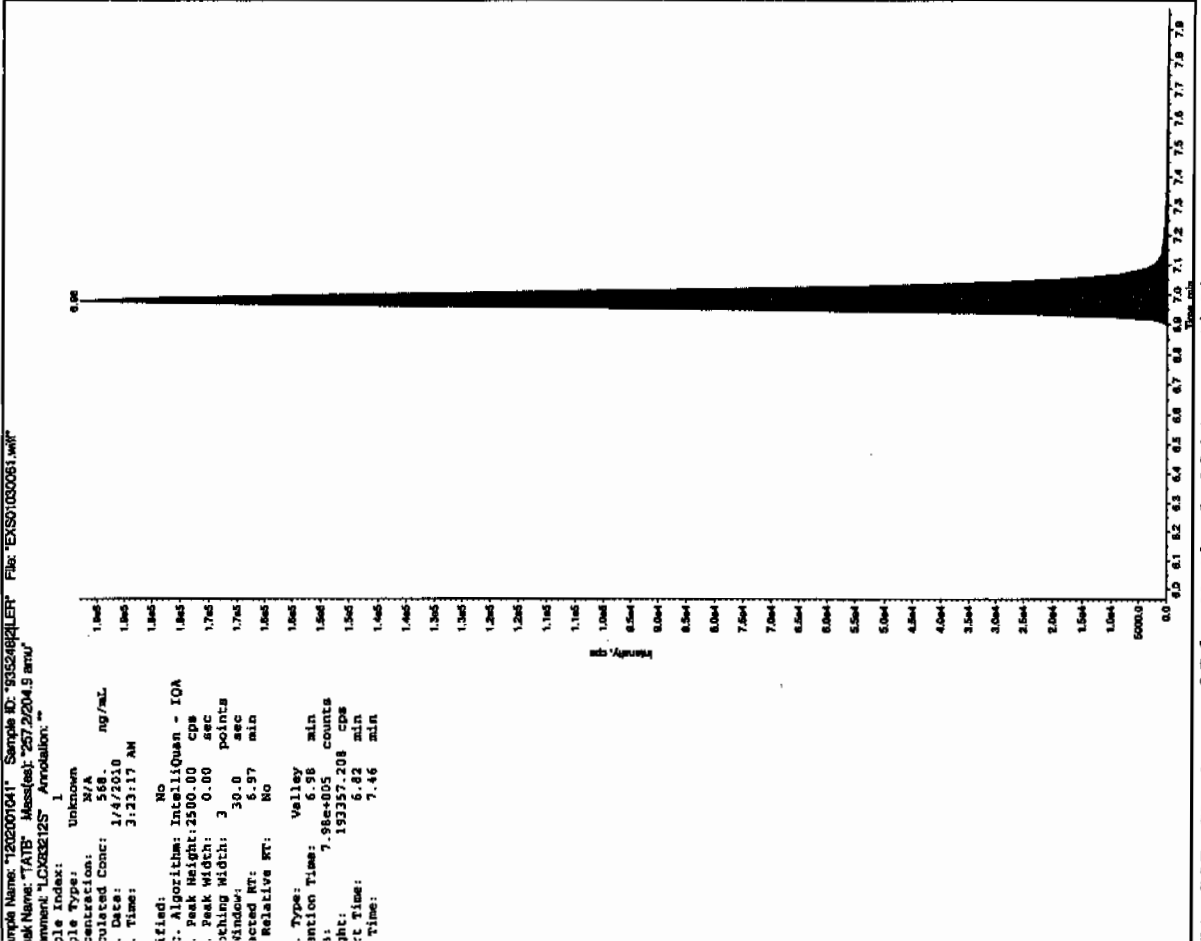


Name	Target	RT	Area	Area%	Abundance	Response	Date	Molecular Weight	Conc.
HMX	176 > 102	5.16	9549.764	2863.689	9549.764	1667.388	db	555.2516	111.1
RDX	176 > 102	7.53	7087.817	2863.689	7087.817	1237.533	bb	527.6054	5.5
135-Trinitrobenzene	213 > 183	10.11	10325.325	2863.689	10325.325	1802.801	bb	484.4431	-3.1
13-Dinitrobenzene-d4	172 > 142	11.95	2863.689		2863.689	2863.689	bb	602.8829	20.6
13-Dinitrobenzene	168 > 138	12.07	3288.184	2863.689	3288.184	574.117	bb	490.8550	-1.8
Tetryl	241 > 181	12.54	2780.397	2863.689	2780.397	485.457	bb	414.9177	83.0
Nitrobenzene	123 > 46	13.49	2482.450	2863.689	2482.450	433.436	bb	442.4961	88.5
4-Amino-26-dinitrotoluene	197 > 167	15.42	4961.862	16438.096	4961.862	150.926	MM	512.2853	102.5
2-Amino-46-dinitrotoluene	197 > 180	16.31	7135.015	16438.096	7135.015	217.027	bb	571.2983	114.3
246-Trinitrotoluene	227 > 210	15.27	6184.450	16438.096	6184.450	188.113	bb	583.0369	116.6
34-dinitrotoluene	182 > 152	14.20	8499.842	16438.096	8499.842	258.541	bb	289.8979	116.0
26-dinitrotoluene	182 > 152	17.38	17862.477	16438.096	17862.477	543.326	MM	507.5066	101.5
24-dinitrotoluene	182 > 152	18.06	4318.534	16438.096	4318.534	131.357	MM	506.3257	101.3
26-dinitrotoluene-d3	185 > 155	17.23	16438.096		16438.096	16438.096	bb	597.8942	119.6
2-Nitrotoluene	137 > 46	20.80	2518.419	16438.096	2518.419	76.603	bb	448.6553	89.7
4-Nitrotoluene	137 > 46	22.16	1318.289	16438.096	1318.289	40.099	bb	469.9283	94.0
3-Nitrotoluene	137 > 46	23.78	1467.863	16438.096	1467.863	44.648	bb	443.9740	88.8
PETN	361 > 62	24.29	34309.238	16438.096	34309.238	1043.589	bb	527.0536	105.4

11/16  
Jhu

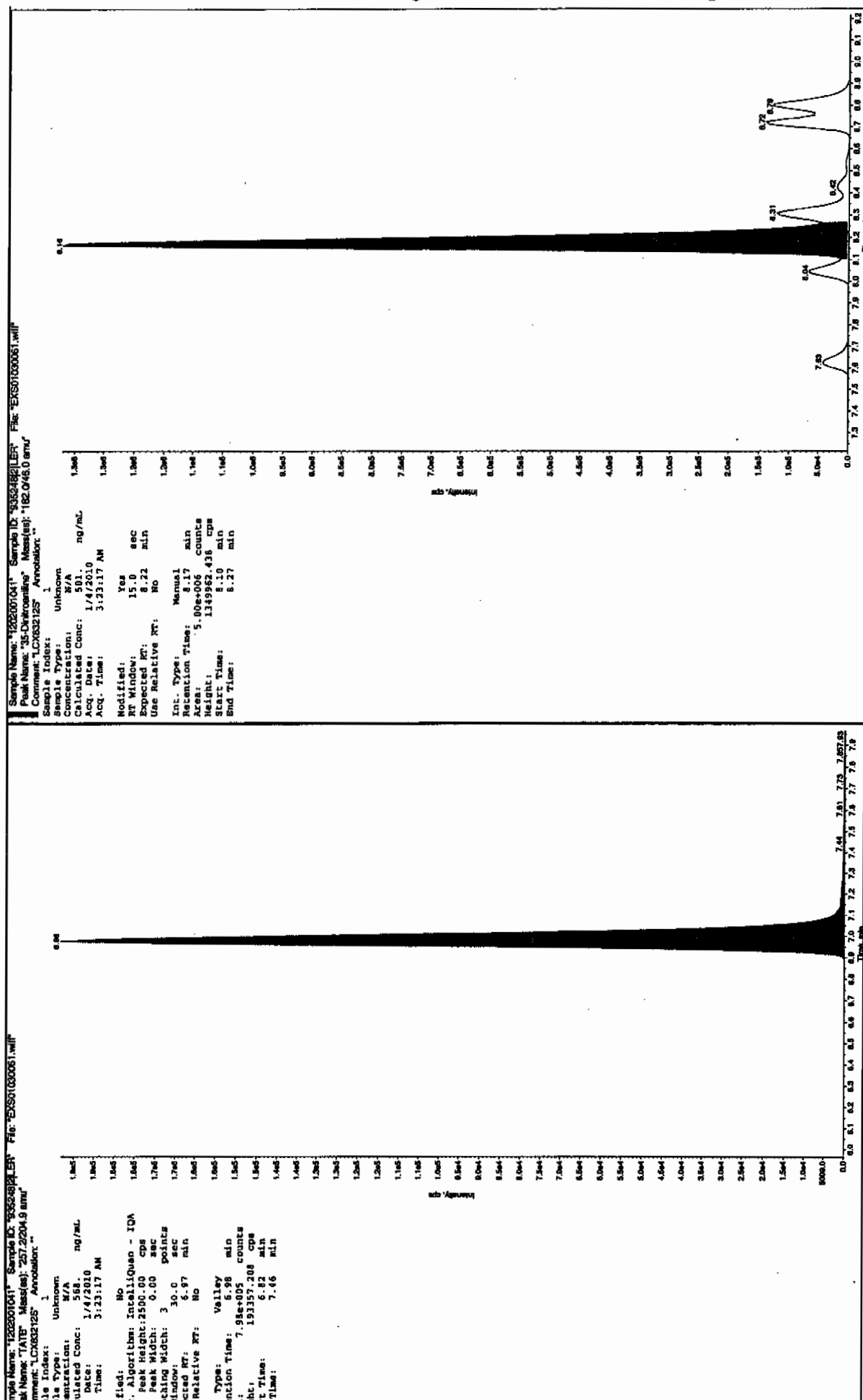


Jhu m 01/05/10

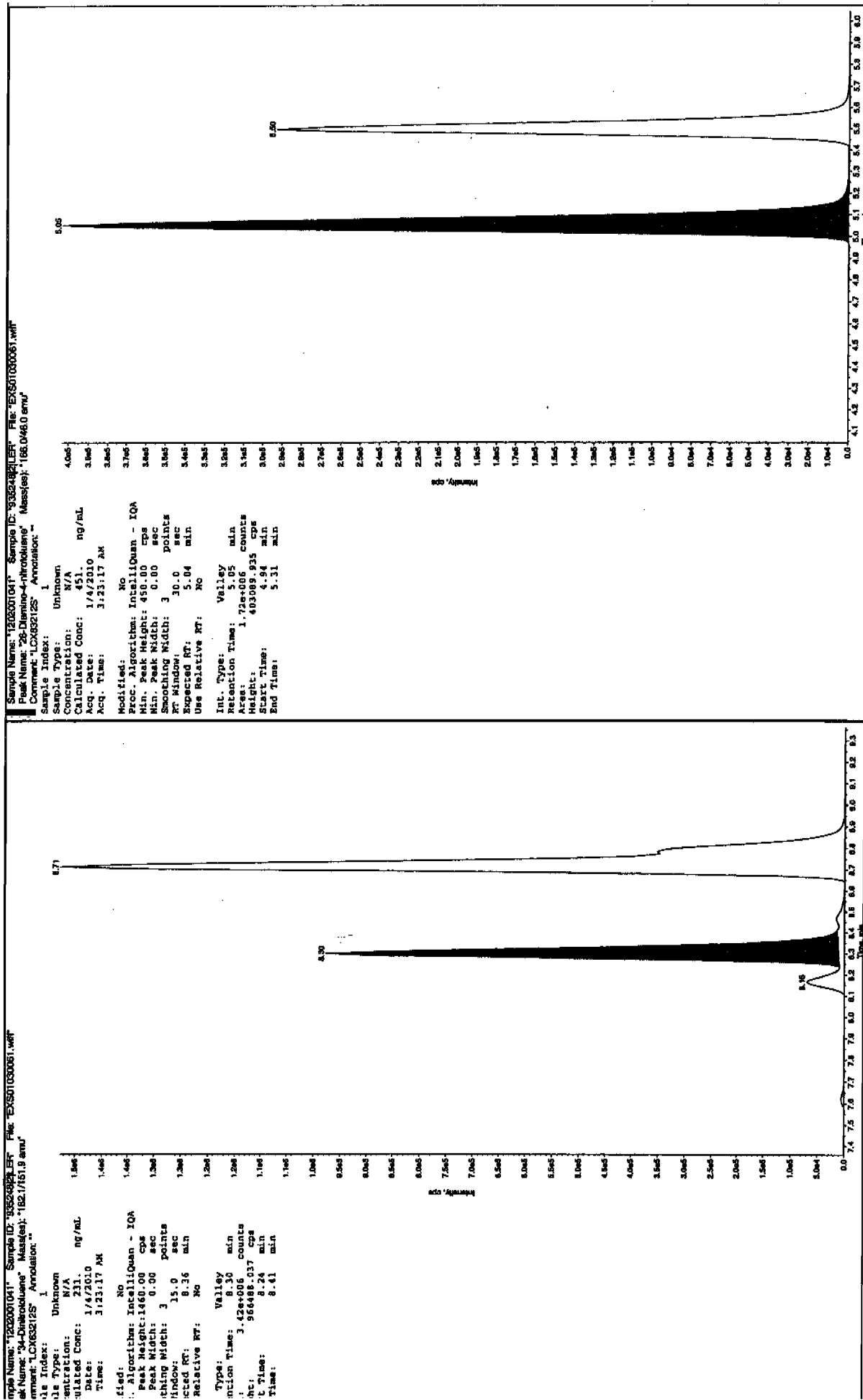


EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

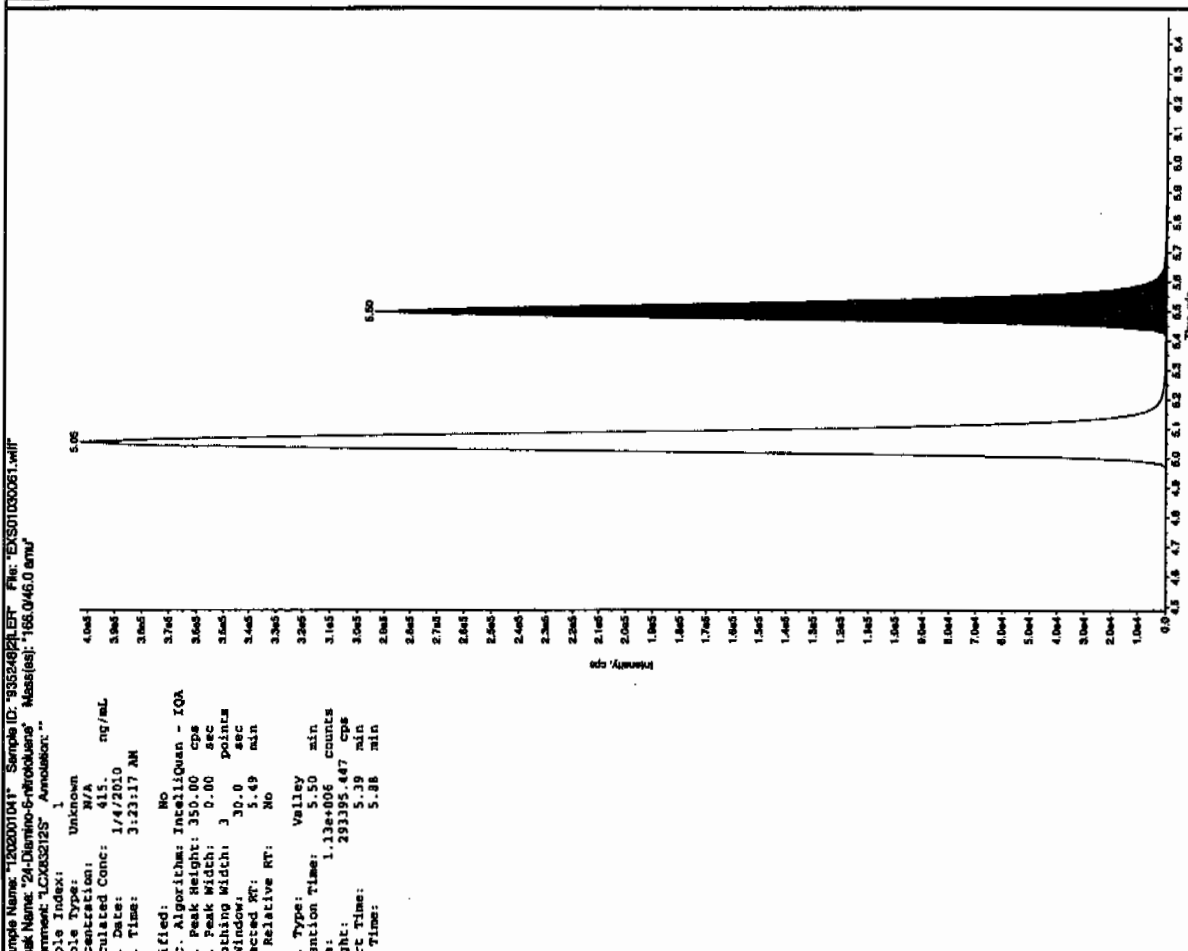
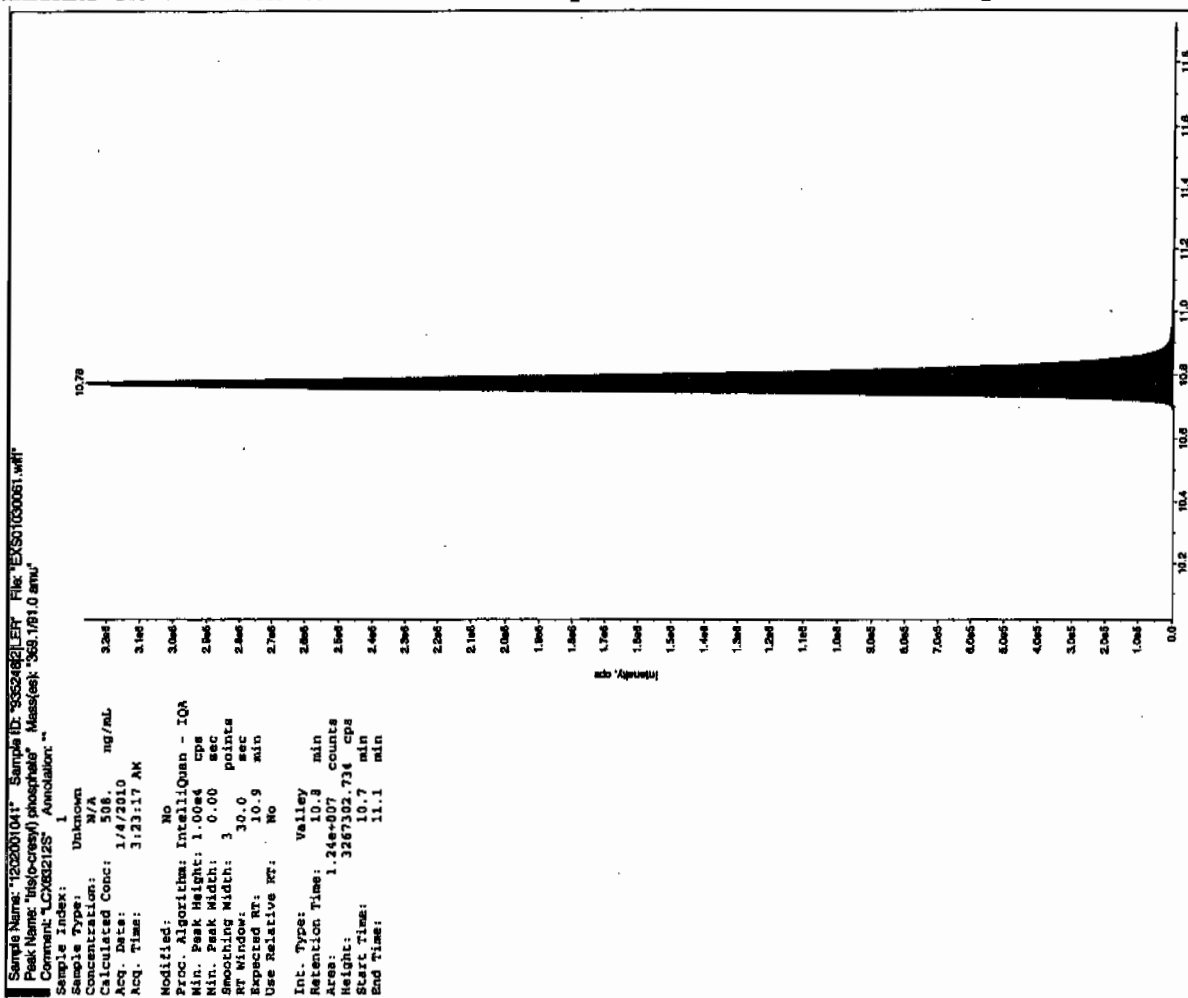
15/10  
2007-04-11



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



3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



3L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

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

Dataset: C:\MASSLYNX\New\_Exp\PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP\PRO\Data\EXP0102072a

Date: 04-Jan-2010

Time: 00:29:06

ID: 1202001042

Vial: 2:7,C

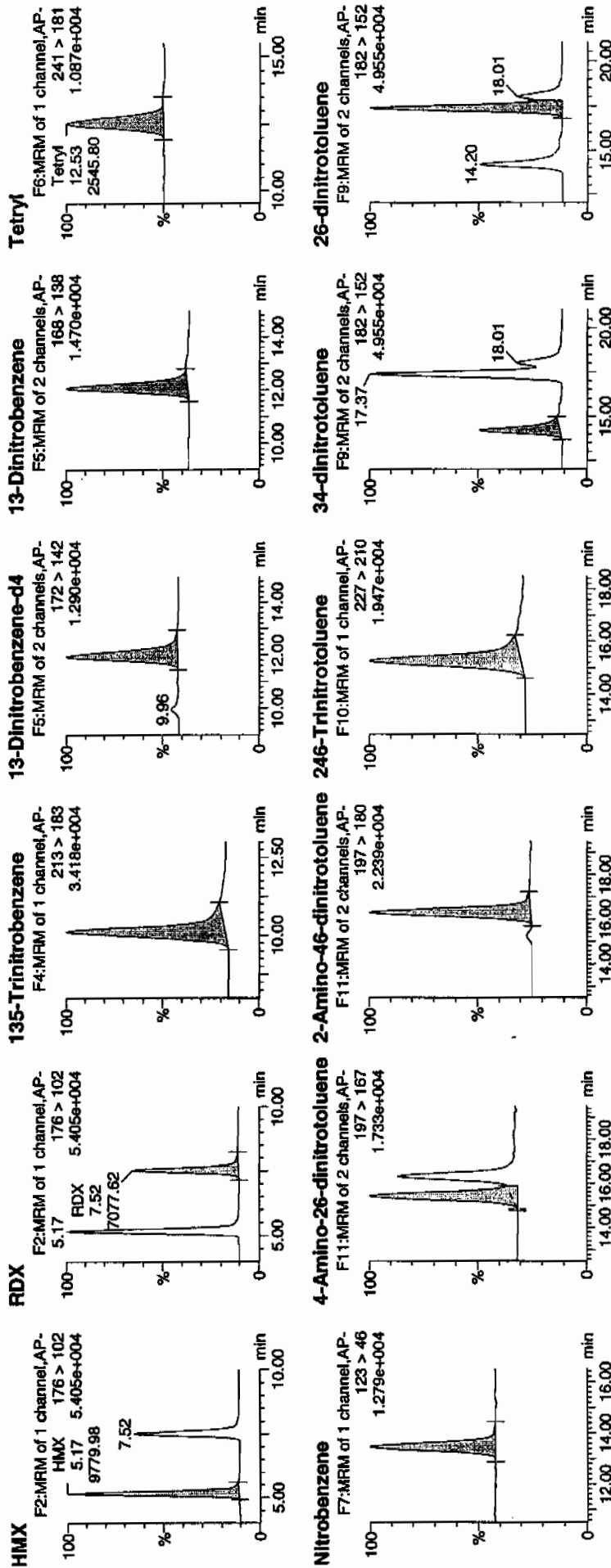
MRP  
1/4/10

21

243274001 M33

935243

Soaps

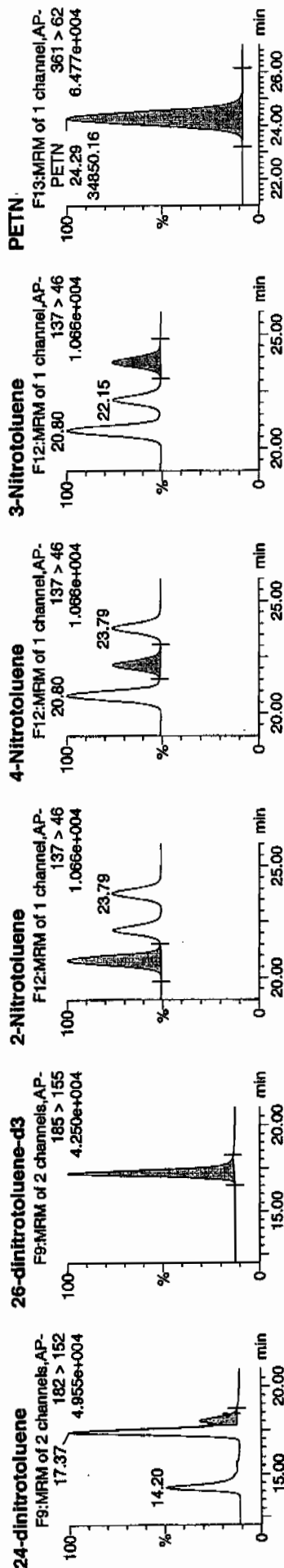


Ann 01/05/10

## Quantify Sample Report

**GEL Laboratories, LLC / Analyst : Michael A. Penny**

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

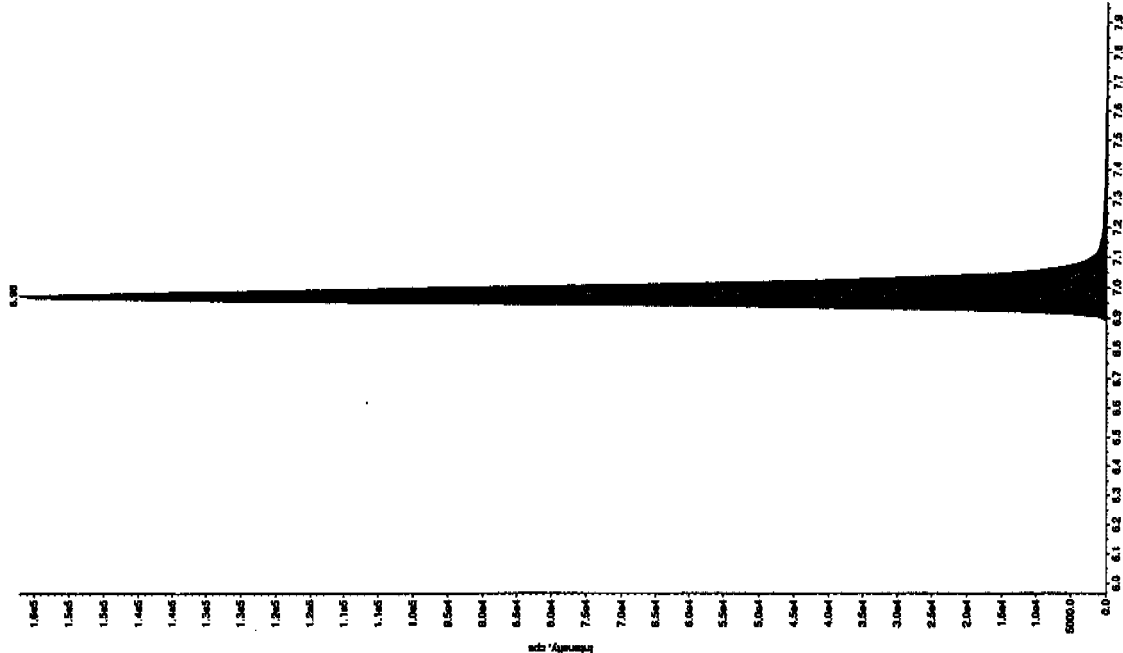


ID	Name	Weight	Boiling	Flash	Log P	Log S	Log B	Log E	Log V	Log A	Log F	Log G	Log H	Log I	Log J	Log K	Log L	Log M	Log N	Log O	Log P	Log Q	Log R	Log S	Log T	Log U	Log V	Log W	Log X	Log Y	Log Z
1202001042	HMX	176 > 102	5.17	9779.976	3006.333	9779.976	1628.562	bb	541.6562	108.3	8.3	966.9																			
1202001042	RDX	176 > 102	7.52	7077.621	3006.333	7077.621	1177.119	bb	501.8487	100.4	0.4	591.9																			
1202001042	135-Trinitrobenzene	213 > 183	10.13	11019.985	3006.333	11019.985	1832.795	bb	492.5029	98.5	-1.5	438.2																			
1202001042	13-Dinitrobenzene-d4	172 > 142	11.95	3006.333	3006.333	3006.333	3006.333	bb	632.9132	126.6	26.6	207.8																			
1202001042	13-Dinitrobenzene	168 > 138	12.07	3422.882	3006.333	3422.882	569.279	bb	486.7184	97.3	-2.7	374.4																			
1202001042	Tetryl	241 > 181	12.53	2545.802	3006.333	2545.802	423.407	bb	356.8124	71.4	-28.6	258.1																			
1202001042	Nitrobenzene	123 > 46	13.49	2767.928	3006.333	2767.928	460.350	bb	469.9726	94.0	-6.0	116.8																			
1202001042	4-Amino-26-dinitrotoluene	197 > 167	15.42	5077.266	15914.671	5077.266	159.515	MM	541.4408	108.3	8.3	217.7																			
1202001042	2-Amino-46-dinitrotoluene	197 > 180	16.31	7160.325	15914.671	7160.325	224.960	bb	592.1812	118.4	18.4	327.5																			
1202001042	246-Trinitrotoluene	227 > 210	15.27	6750.228	15914.671	6750.228	212.076	bb	657.3055	131.5	31.5	199.6																			
1202001042	34-dinitrotoluene	182 > 152	14.20	7778.516	15914.671	7778.516	244.382	bb	274.0216	109.6	9.6	277.2																			
1202001042	26-dinitrotoluene	182 > 152	17.38	17255.211	15914.671	17255.211	542.116	MM	506.3771	101.3	1.3	680.1																			
1202001042	24-dinitrotoluene	182 > 152	18.01	4060.410	15914.671	4060.410	127.568	MM	491.7195	98.3	-1.7	144.1																			
1202001042	26-dinitrotoluene-d3	185 > 155	17.20	15914.671	15914.671	15914.671	15914.671	bb	578.8560	115.8	15.8	1155.3																			
1202001042	2-Nitrotoluene	137 > 46	20.80	2637.794	15914.671	2637.794	82.873	bb	485.3774	97.1	-2.9	38.3																			
1202001042	4-Nitrotoluene	137 > 46	22.15	1269.576	15914.671	1269.576	39.887	bb	467.4482	93.5	-6.5	19.5																			
1202001042	3-Nitrotoluene	137 > 46	23.79	1385.884	15914.671	1385.884	43.541	bb	432.9849	86.6	-13.4	20.0																			
1202001042	PETN	361 > 62	24.29	34850.160	15914.671	34850.160	1094.907	bb	552.9709	110.6	10.6	9374.1																			

11/17/10  
B. J. J.

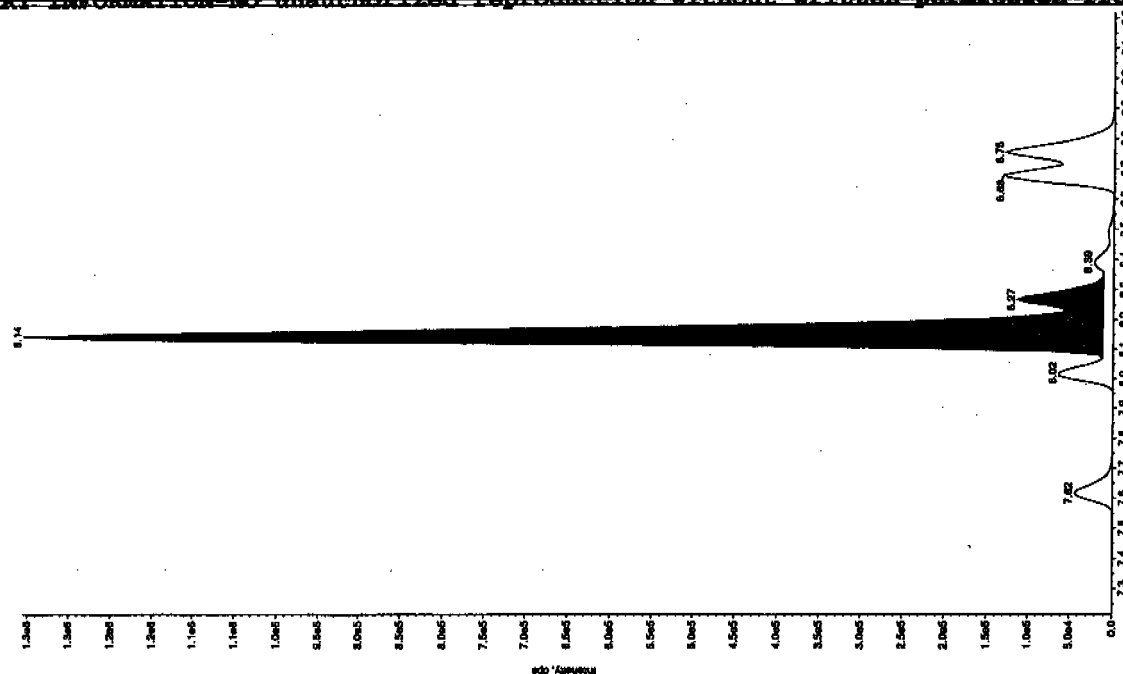
Sample Name: "1202001042" Sample ID: "93524821.ER" File: "EXS01030032.wif"  
Peak Name: "TATB" Mass(es): "257.2204.9 amu"  
Comment: "LCMS3212S" Annotation: "

Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A  
Calculated Conc: 479. ng/mL  
Acq. Date: 1/4/2010  
Acq. Time: 3:39:00 AM  
Modified: No  
Proc. Algorithm: IntelliQuan - IQA  
Min. Peak Height: 2500.00 cps  
Min. Peak Width: 0.00 sec  
Smoothing Width: 3 points  
Fit Window: 30.0 sec  
Expanded RT: 6.97 min  
Use Relative RT: No  
Int. Type: Valley  
Retention Time: 6.98 min  
Area: 6.75e+005 counts  
Height: 157246.780 cps  
Start Time: 6.87 min  
End Time: 7.41 min



Sample Name: "1202001042" Sample ID: "93524821.ER" File: "EXS01030032.wif"  
Peak Name: "TATB" Mass(es): "182.0480 amu"  
Comment: "LCMS3212S" Annotation: "

Sample Index: 1  
Sample Type: Unknown  
Concentration: N/A  
Calculated Conc: 522. ng/mL  
Acq. Date: 1/4/2010  
Acq. Time: 3:39:00 AM  
Modified: No  
Proc. Algorithm: IntelliQuan - IQA  
Min. Peak Height: 2000.00 cps  
Min. Peak Width: 0.00 sec  
Smoothing Width: 3 points  
Fit Window: 30.0 sec  
Expanded RT: 8.22 min  
Use Relative RT: No  
Int. Type: Valley  
Retention Time: 8.14 min  
Area: 5.19e+006 counts  
Height: 1293953.247 cps  
Start Time: 8.07 min  
End Time: 8.35 min



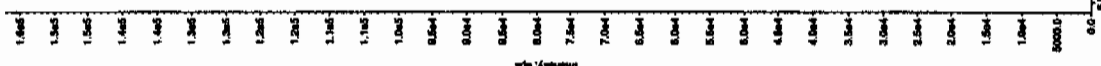
Annex 01/05/10



02/28/2011  
115710

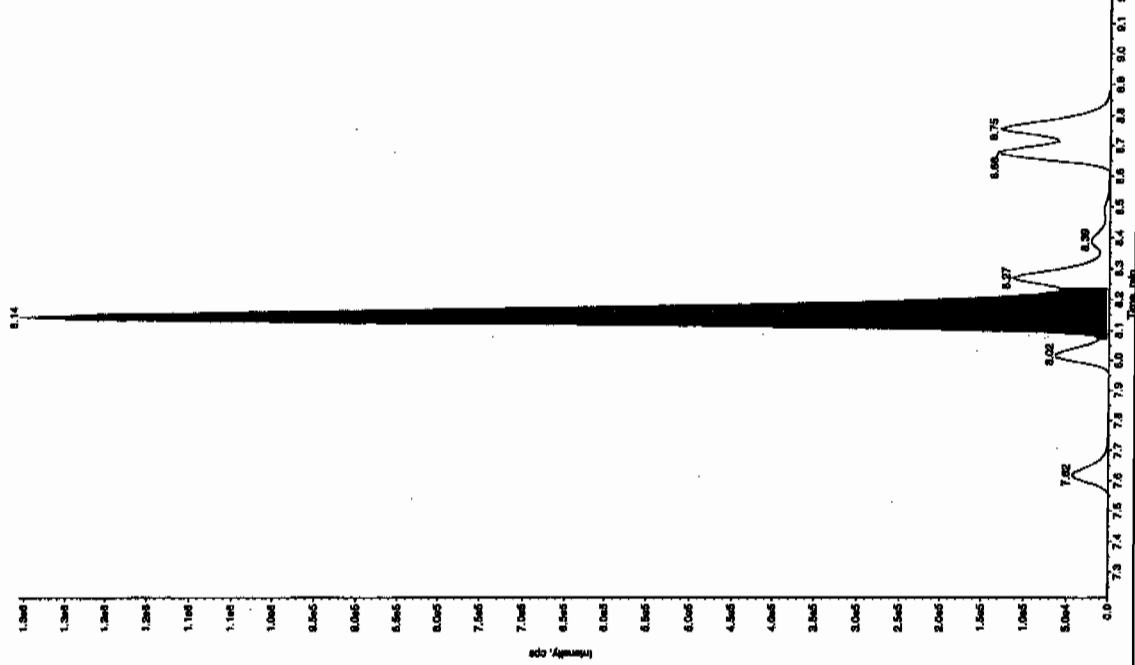
Sample Name: "1202001042" Sample ID: "93524821ER" File: "EXS01000062.wiff"  
Peak Name: "TAIB" Mass(es): "257.2204.9 amu"  
Comment: "LCX032125" Annotation: ""

Sample Index: 1  
Sample Type: Unknown  
Concentration: M/A  
Calculated Conc: 496. ng/mL  
Acq. Date: 1/4/2010  
Acq. Time: 3:39:00 AM  
Modified: No  
Proc. Algorithm: IntelliQuan - IQA  
In. Peak Height: 2500.00 cps  
In. Peak Width: 0.00 sec  
Smoother Width: 3 points  
X Window: 30.0 sec  
Expected RT: 6.97 min  
Use Relative RT: No  
Int. Type: Valley  
Retention Time: 6.98 min  
Area: 6.75e+005 counts  
Height: 157246780 cps  
Start Time: 6.97 min  
End Time: 7.41 min



Sample Name: "1202001042" Sample ID: "93524821ER" File: "EXS01000062.wiff"  
Peak Name: "35-Dihydroquinoline" Mass(es): "182.046.0 amu"  
Comment: "LCX032125" Annotation: ""

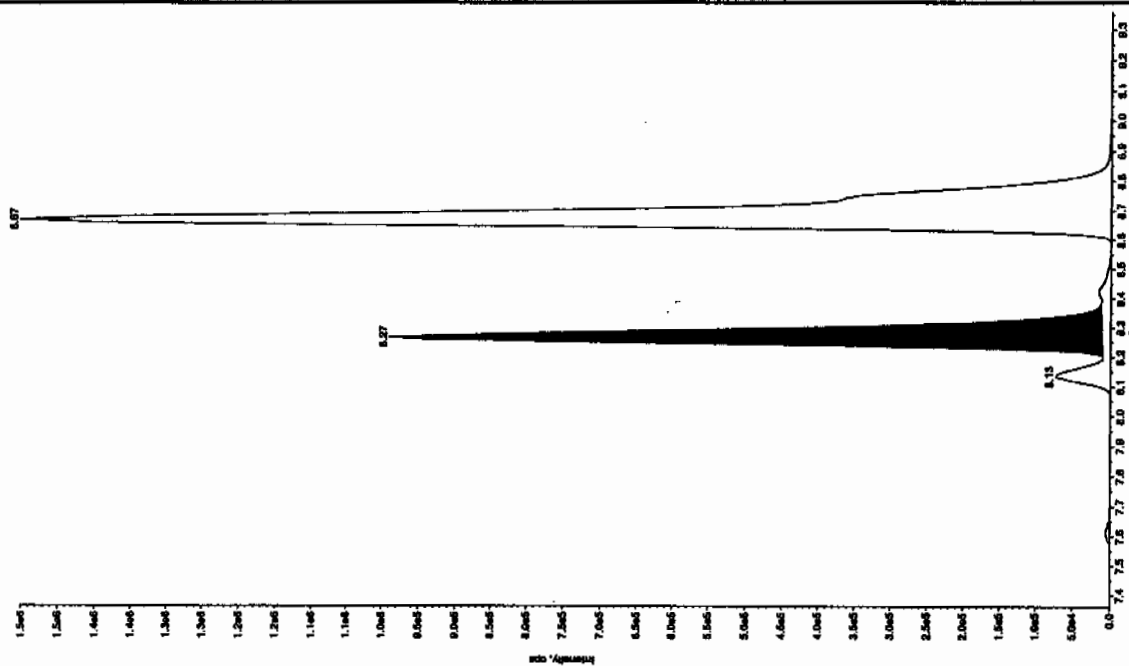
Sample Index: 1  
Sample Type: Unknown  
Concentration: M/A  
Calculated Conc: 496. ng/mL  
Acq. Date: 1/4/2010  
Acq. Time: 3:39:00 AM  
Modified: Yes  
RT Window: 15.0 sec  
Expected RT: 8.22 min  
Use Relative RT: No  
Int. Type: Manual  
Retention Time: 8.14 min  
Area: 4.94e+006 counts  
Height: 1302943.358 cps  
Start Time: 8.07 min  
End Time: 8.24 min



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

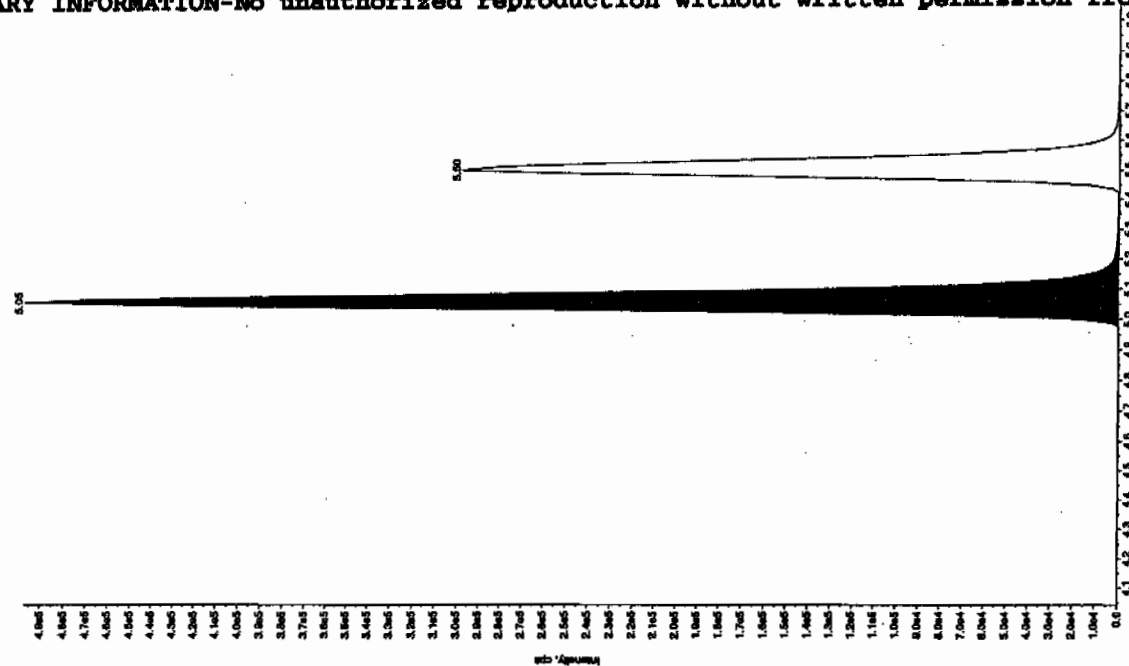
Sample Name: "1262001042" Sample ID: "93524821" File: "EX507000052.will"  
 Peak Name: "34-Dinitrofluorene" Mass(es): "162.1161.9 amu"  
 Comment: "LCX832125" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: M/A ng/mL  
 Calculated Conc: 236  
 Acq. Date: 1/4/2010  
 Acq. Time: 3:39:00 AM  
 Modified: No  
 Proc. Algorithm: IntelliQuan - IQA  
 Min. Peak Height: 1460.00 cps  
 Min. Peak Width: 0.00 sec  
 Smoothing Width: 3 points  
 RT Window: 15.0 sec  
 Expected RT: 8.36 min  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 8.27 min  
 Area: 3.49e+006 counts  
 Height: 577579.016 cps  
 Start Time: 8.25 min  
 End Time: 8.38 min



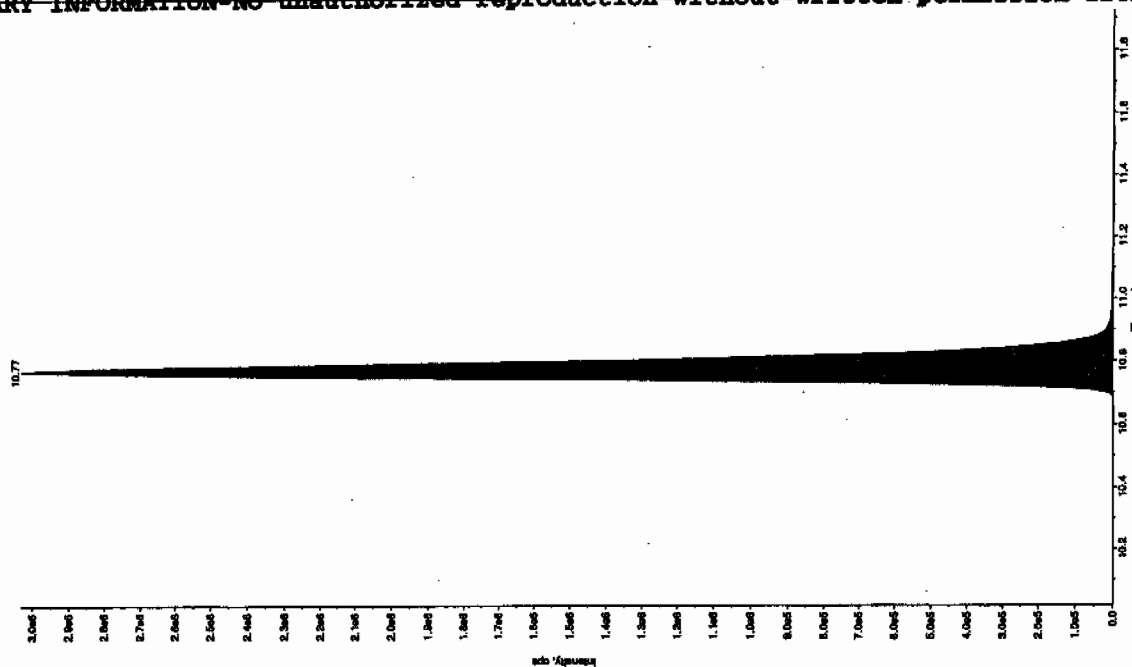
Sample Name: "1262001042" Sample ID: "93524821" File: "EX507000052.will"  
 Peak Name: "28-Dinitro-4-nitrofluorene" Mass(es): "166.046.0 amu"  
 Comment: "LCX832125" Annotation: ""

Sample Index: 1  
 Sample Type: Unknown  
 Concentration: M/A ng/mL  
 Calculated Conc: 510  
 Acq. Date: 1/4/2010  
 Acq. Time: 3:39:00 AM  
 Modified: No  
 Proc. Algorithm: IntelliQuan - IQA  
 Min. Peak Height: 450.00 cps  
 Min. Peak Width: 0.00 sec  
 Smoothing Width: 3 points  
 RT Window: 30.0 sec  
 Expected RT: 5.04 min  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 5.05 min  
 Area: 1.93e+006 counts  
 Height: 497303.619 cps  
 Start Time: 4.95 min  
 End Time: 5.22 min



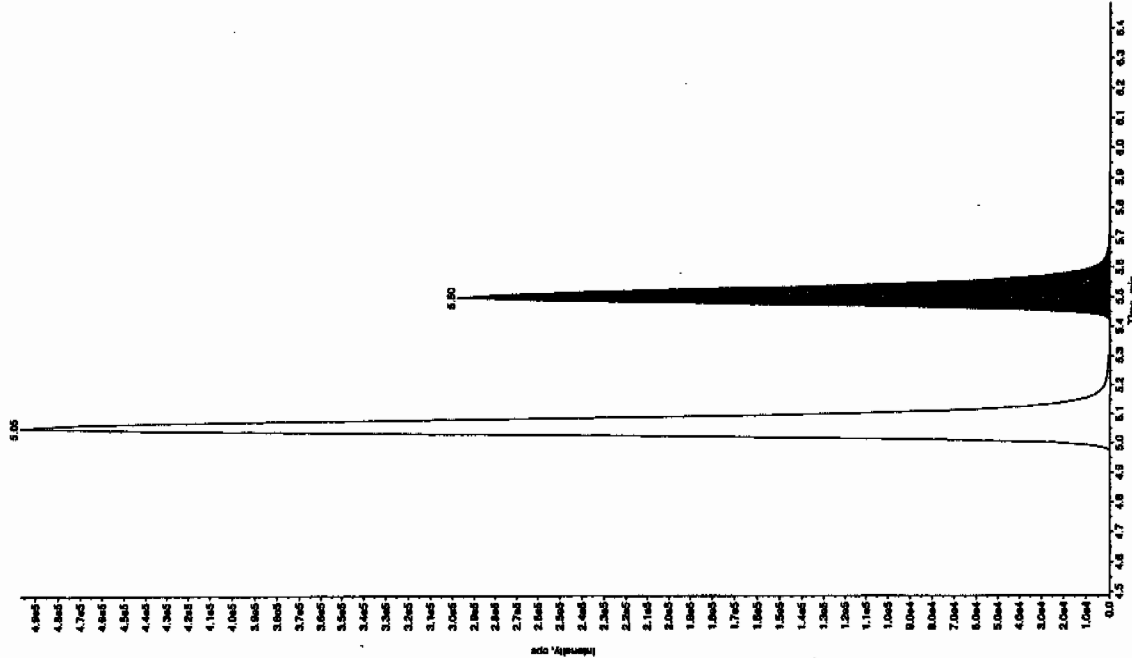
Sample Name: "120201042" Sample ID: "985242125" File: "EX501030002.wdf"  
 Peak Name: "16-O-methyl Phosphat" Mass(es): "368.191.0 amu"  
 Comment: "LCMS2125" Acquisition: "16-O-methyl Phosphat"

Sample Index: 1  
 Sample Name: Unknown  
 Concentration: 505. ng/mL  
 Acq. Date: 1/4/2010  
 Acq. Time: 3:39:00 AM  
 Modified: No  
 Proc. Algorithm: IntelliQuan - IQA  
 Min. Peak Height: 1.00e4 cps  
 Min. Peak Width: 0.00 sec  
 Smoothing Width: 3 points  
 RT Window: 30.0 sec  
 Expected RT: 10.9 min  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 10.8 min  
 Area: 1.23e+007 counts  
 Height: 303848.928 cps  
 Start Time: 10.7 min  
 End Time: 11.1 min



Sample Name: "120201042" Sample ID: "985242125" File: "EX501030002.wdf"  
 Peak Name: "24-O-methyl Phosphat" Mass(es): "160.046.0 amu"  
 Comment: "LCMS2125" Acquisition: "24-O-methyl Phosphat"

Sample Index: 1  
 Sample Name: Unknown  
 Concentration: 437. ng/mL  
 Acq. Date: 1/4/2010  
 Acq. Time: 3:39:00 AM  
 Modified: No  
 Proc. Algorithm: IntelliQuan - IQA  
 Min. Peak Height: 350.00 cps  
 Min. Peak Width: 0.00 sec  
 Smoothing Width: 3 points  
 RT Window: 30.0 sec  
 Expected RT: 5.49 min  
 Use Relative RT: No  
 Int. Type: Valley  
 Retention Time: 5.50 min  
 Area: 1.19e+006 counts  
 Height: 297631.012 cps  
 Start Time: 5.37 min  
 End Time: 5.63 min



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

# Quantify Sample Report

GEL Laboratories, LLC / Analyst: Michael A. Penny

Printed: Mon Jan 04 12:59:32 2010, Page 109 of 175

Dataset: C:\MASSLYNX\New\_Exp.PRO\010210expA.qld, Time: Mon Jan 04 12:58:29 2010

Name: C:\MASSLYNX\NEW\_EXP.PRO\Data\EXP0102055a

Date: 03-Jan-2010

Time: 16:07:13

ID: 1202001040

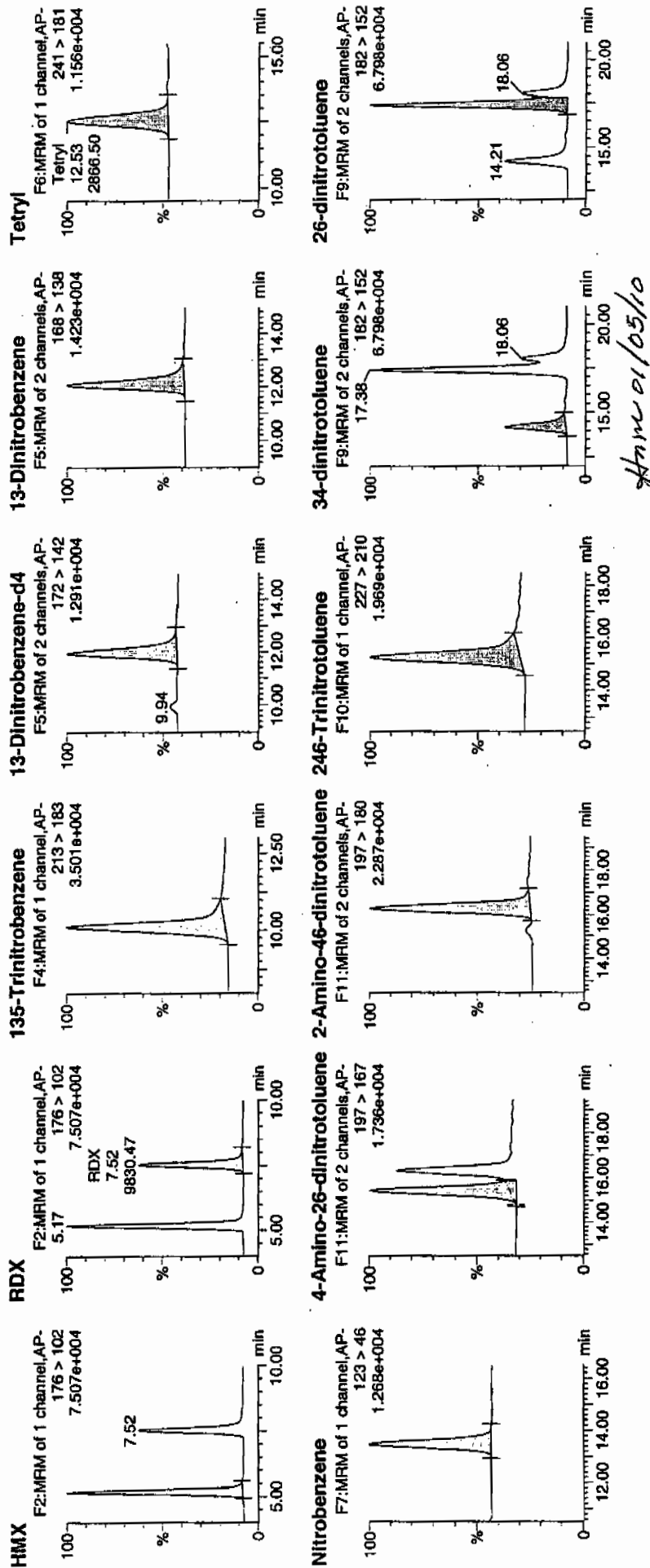
Vial: 2:5,B

base/at - 12842

COCAINE EXP0102115a

14/10

1935243 / 8000 / 100 / 21



Amw 01/05/10

# Quantify Sample Report

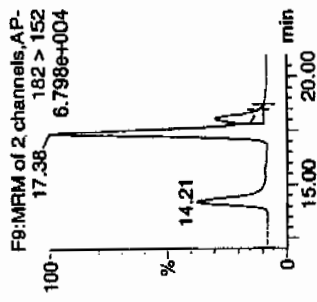
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New\_Exp\_PROV010210expA.qld, Time: Mon Jan 04 12:58:29 2010

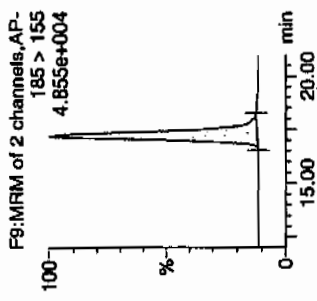
Printed: Mon Jan 04 12:59:32 2010, Page 110 of 175

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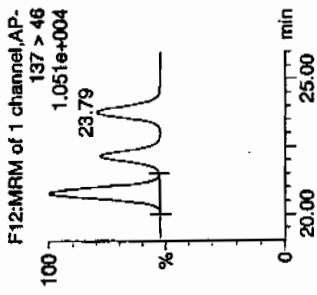
## 24-dinitrotoluene



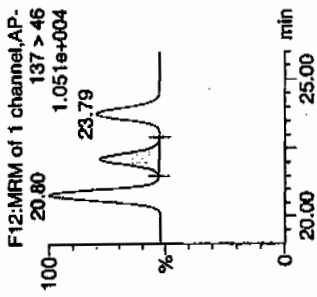
## 26-dinitrotoluene-d3



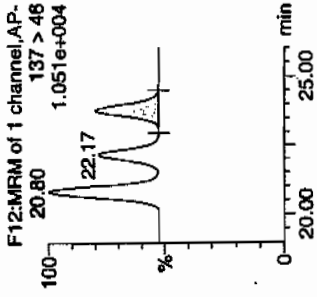
## 2-Nitrotoluene



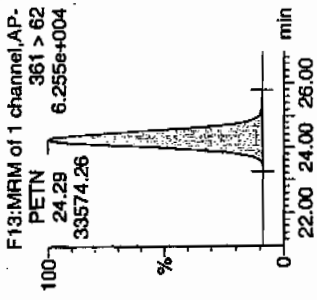
## 4-Nitrotoluene



## 3-Nitrotoluene



## PETN



ID	Name	Trace	RT	Area	IS Area	Abs. Resp	Response	Flags	Mod. Date	Mod. Time	ng/mL	%Rec	%Dev	SN
1202001040	HMZ	176 > 102	5.17	13883.678	2971.832	13883.678	2335.879	bb			777.8633	155.6	55.6	1906.3
1202001040	RDX	176 > 102	7.52	9830.472	2971.832	9830.472	1653.941	bb			705.1357	141.0	41.0	1130.1
1202001040	135-Trinitrobenzene	213 > 183	10.13	11439.285	2971.832	11439.285	1924.618	bb			517.1773	103.4	3.4	1208.6
1202001040	13-Dinitrobenzene-d4	172 > 142	11.95	2971.832	2971.832	2971.832	2971.832	bb			625.6499	125.1	25.1	394.3
1202001040	13-Dinitrobenzene	168 > 138	12.07	3340.883	2971.832	3340.883	562.091	bb			480.5737	96.1	-3.9	312.4
1202001040	Tetryl	241 > 181	12.53	2866.501	2971.832	2866.501	482.278	bb			411.9147	82.4	-17.6	305.5
1202001040	Nitrobenzene	123 > 46	13.45	2650.875	2971.832	2650.875	446.000	bb			455.3232	91.1	-8.9	302.6
1202001040	4-Amino-26-dinitrotoluene	197 > 167	15.43	5155.309	19465.619	5155.309	132.421	MM	04-Jan-10	10:58:59	449.4747	89.9	-10.1	177.2
1202001040	2-Amino-46-dinitrotoluene	197 > 180	16.31	7402.522	19465.619	7402.522	190.144	bb			500.5311	100.1	0.1	565.9
1202001040	246-Trinitrotoluene	227 > 210	15.24	6724.107	19465.619	6724.107	172.718	bb			535.3193	107.1	7.1	288.3
1202001040	34-dinitrotoluene	182 > 152	14.21	8060.137	19465.619	8060.137	207.035	bb			232.1453	92.9	-7.1	273.4
1202001040	26-dinitrotoluene	182 > 152	17.38	23100.287	19465.619	23100.287	593.361	MM	04-Jan-10	11:24:57	554.2435	110.8	10.8	869.7
1202001040	24-dinitrotoluene	182 > 152	18.06	5847.844	19465.619	5847.844	150.210	MM	04-Jan-10	11:31:33	578.9922	115.8	15.8	190.0
1202001040	26-dinitrotoluene-d3	185 > 155	17.25	19465.619	19465.619	19465.619	19465.619	bb			708.0127	141.6	41.6	2732.2
1202001040	2-Nitrotoluene	137 > 46	20.80	2474.627	19465.619	2474.627	63.564	bb			372.2870	74.5	-25.5	297.8
1202001040	4-Nitrotoluene	137 > 46	22.17	1338.624	19465.619	1338.624	34.384	bb			402.9609	80.6	-19.4	162.8
1202001040	3-Nitrotoluene	137 > 46	23.79	1476.087	19465.619	1476.087	37.915	bb			377.0225	75.4	-24.6	172.7
1202001040	PETN	361 > 62	24.29	33574.258	19465.619	33574.258	862.399	bb			435.5454	87.1	-12.9	10262.0

GEL Laboratories LLC  
Form GEL-NCR

NCR Report No.: 776908

Revision No.: 1

COMPANY - WIDE NONCONFORMANCE REPORT			
Mo. Day Yr. 05-JAN-10	Division: Federal	Quality Criteria: Specifications	Type: Process
Instrument Type: LC-MS/MS	Test / Method: SW846 8321A Modified	Matrix Type: Solid	Client Code: LANL
Batch ID: 935248	Sample Numbers: 1202001040		
Potentially affected work order(s)(SDG): 243249(10-971), 243256(10-970), 243273(10-988), 243274(10-989)			
Application Issues: Other Failed Recovery for LCS/LCSD			
Specification and Requirements Nonconformance Description:		NRQ Disposition:	
<p>1. The Laboratory Control Sample (1202001040) did not meet spike recovery limits for TATB at 256%. The recovery limits are 47-166%.</p> <p>2. The internal standard responses were outside of the acceptance criteria in the following sample: 1202001040(LCS). Please see the Form 8 in the data package for the exact recoveries.</p>		<p>1. The Matrix Spike and Matrix Spike Duplicate both met acceptance limits for TATB. Since TATB was not detected in the associated samples, the data are reported with the appropriate NCR. The discrepancy is noted in the case narrative.</p> <p>2. The sample was re-analyzed and similar recoveries were observed. The re-analysis data are reported with the appropriate NCR. The discrepancy is noted in the case narrative. The confirmation raw data are located in the Miscellaneous Section of the data package.</p>	

Originator's Name:

Michael Penny

05-JAN-10

Data Validator/Group Leader:

Herbert Maier

05-JAN-10

GC  
SEMIVOLATILE  
PCB  
ANALYSIS

**PCB Case Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-988**

**Method/Analysis Information**

**Procedure:** Analysis of Polychlorinated Biphenyls by ECD

Analytical Method: SW846 8082

Prep Method: SW846 3550B

Analytical Batch Number: 935393

Prep Batch Number: 935357

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in SW846 8082:

<b>Sample ID</b>	<b>Client ID</b>
243273001	RE12-10-7351
1202001507	Method Blank (MB)
1202001508	Laboratory Control Sample (LCS)
1202001509	243274001(RE12-10-7352) Matrix Spike (MS)
1202001510	243274001(RE12-10-7352) 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 (#10-989) 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 report (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 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>
ECD1A.I_1	HP Gas Chromatograph	HP6890 Series ECD	Rtx-CLP I	30m x 0.25mm, 0.25um (Rtx-CLPesticide)
ECD1A.I_2	HP Gas Chromatograph	HP6890 Series ECD	Rtx-CLP II	30m x 0.25mm, 0.20um (Rtx-CLPesticideII)

#### **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: Jimmy Cao

Date: 1/13/10

## Roadmap for LANL 10-988 PCB

This roadmap was analyzed by jen01212 on 12-23-2009, 12:58.

This roadmap was reviewed by hea01125 on 12-24-2009, 14:10.

This roadmap was packaged by yml on 01-13-2010, 08:58.

This roadmap was validated by jim01140 on 01-13-2010, 15:24.

Front Sample Column

exclude	manual	datafile	smid	sampletype	injdate	injtime	sublist	clientid	dilution	prebatchid	comment
<input type="checkbox"/>	N	/chem/ecdl1a.i/122209.b/039f3901.d	243273001	sample	22-DEC-2009	14:35	10-988.sub	RE12-10-7351	1.00000	935393	UPLOAD BOTH, USE HIGHER

Back Sample Column

exclude	manual	datafile	smid	sampletype	injdate	injtime	sublist	clientid	dilution	prebatchid	comment
<input type="checkbox"/>	N	/chem/ecdl1a.i/122209.b/039f3901.d	243273001	sample	22-DEC-2009	14:35	10-988.sub	RE12-10-7351	1.00000	935393	UPLOAD BOTH, USE HIGHER

Front QC Sample Column

exclude	manual	datafile	smid	sampletype	injdate	injtime	sublist	clientid	dilution	prebatchid	comment
<input type="checkbox"/>	N	/chem/ecdl1a.i/122209.b/024f2401-2.d	1202001507	mb	22-DEC-2009	11:57	10-988.sub	PBLK01	1.00000	935393	
<input type="checkbox"/>	N	/chem/ecdl1a.i/122209.b/025f2501-2.d	1202001508	lcs	22-DEC-2009	12:07	10-988.sub	PBLK01LCS	1.00000	935393	

Back QC Sample Column

exclude	manual	datafile	smid	sampletype	injdate	injtime	sublist	clientid	dilution	prebatchid	comment
<input type="checkbox"/>	N	/chem/ecdl1a.i/122209.b/024b2401-2.d	1202001507	mb	22-DEC-2009	11:57	10-988.sub	PBLK01	1.00000	935393	
<input type="checkbox"/>	N	/chem/ecdl1a.i/122209.b/025b2501-2.d	1202001508	lcs	22-DEC-2009	12:07	10-988.sub	PBLK01LCS	1.00000	935393	

# SAMPLE DATA SUMMARY

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

Page 1 of 1

SDG Number: 10-988  
 Lab Sample ID: 243273001

Date Collected: 12/15/2009 12:00  
 Date Received: 12/18/2009 09:25  
 Client: LANL010  
 Method: SW846 8082  
 Inst: ECD1A.J  
 Analyst: JAOC  
 Aliquot: 30.14 g  
 Column: 1 CLP1  
 2 CLP2

Matrix: R  
 %Moisture: 10.5  
 Project: LANL01004  
 SOP Ref: GL-OA-E-040  
 Dilution: 1  
 Inj. Vol: 1 uL  
 Final Volume: 1 mL  
 Level: LOW

Client ID: RE12-10-7351  
 Batch ID: 935393  
 Run Date: 12/22/2009 14:35  
 Prep Date: 12/21/2009 20:06  
 Data File: 039f3901.d  
 039b3901.d

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.71	ug/kg	1.24	3.71	1
11104-28-2	Aroclor-1221	U	3.71	ug/kg	1.24	3.71	1
11141-16-5	Aroclor-1232	U	3.71	ug/kg	1.24	3.71	1
53469-21-9	Aroclor-1242	U	3.71	ug/kg	1.24	3.71	1
12672-29-6	Aroclor-1248	U	3.71	ug/kg	1.24	3.71	1
11097-69-1	Aroclor-1254	U	3.71	ug/kg	1.24	3.71	1
11096-82-5	Aroclor-1260	U	3.71	ug/kg	1.24	3.71	1

# QUALITY CONTROL SUMMARY

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**PCB**  
**Surrogate Recovery Report**

---

Page 1 of 1

**SDG Number: 10-988****Matrix Type: SOLID****CAP Column (1) : CLP1****CAP Column (2) : CLP2**

---

Sample ID	Client ID	4CMX 1	4CMX 2	DCB 1	DCB 2
		%REC #	%REC #	%REC #	%REC #
1202001507	MB for batch 935357	63	60	74	73
1202001508	LCS for batch 935357	62	60	73	71
243273001	RE12-10-7351	54	52	58	54

---

**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: 10-988

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 935357

Matrix: SOIL

Lab Sample ID:1202001508

Instrument: ECD1A.I

Analysis Date: 12/22/2009 12:07

Dilution: 1

Analyst: JAOC

Prep Batch ID: 935357

Inj. Vol: 1 uL

Batch ID: 935393

CAS No	Parmname	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	21.9	66	41-110
11096-82-5	LCS Aroclor-1260	33.3	0.0	27.1	81	48-110

PCB

Page 1 of 2

Quality Control Summary  
Spike Recovery Report

SDG Number: 10-989

Client ID: RE12-10-7352MS

Lab Sample ID:1202001509

Instrument: ECD1A.I

Analyst: JAOC

Inj. Vol: 1 uL

Sample Type: Matrix Spike

Matrix: R

%Moisture: 9.8

Analysis Date: 12/22/2009 14:56

Dilution: 1

Prep Batch ID: 935357

Batch ID: 935393

CAS No	Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	MS Aroclor-1016	36.9	0.00 U	24.1	65	23-117
11096-82-5	MS Aroclor-1260	36.9	0.00 U	30.5	83	27-116

PCB

Page 2 of 2

**Quality Control Summary  
Spike Recovery Report**

SDG Number: 10-989

Sample Type: Matrix Spike Duplicate

Client ID: RE12-10-7352MSD

Matrix: R

Lab Sample ID:1202001510

%Moisture: 9.8

Instrument: ECD1A.I

Analysis Date: 12/22/2009 15:06

Dilution: 1

Analyst: JAOC

Prep Batch ID: 935357

Inj. Vol: 1 uL

Batch ID: 935393

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	36.9	0.00 U	24.9	67	23-117	3	0-30
11096-82-5	MSD Aroclor-1260	36.9	0.00 U	30.5	83	27-116	0	0-30

## Method Blank Summary

Page 1 of 1

SDG Number:	10-988	Client:	LANL010	Matrix:	SOIL
Client ID:	MB for batch 935357	Instrument ID:	ECD1A.I_2	Data File:	024b2401-1.d
Lab Sample ID:	1202001507		ECD1A.I_1		024f2401-1.d
Column:	CLP2	Prep Date:	12/21/2009 20:06	Analyzed:	12/22/09 11:57
	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 935357	1202001508	025f2501-1.d 025b2501-1.d	12/22/09	1207
02 RE12-10-7351	243273001	039f3901.d 039b3901.d	12/22/09	1435

# SAMPLE DATA

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

SDG Number: 10-988  
Lab Sample ID: 243273001

Date Collected: 12/15/2009 12:00  
Date Received: 12/18/2009 09:25  
Client: LANL010  
Method: SW846 8082  
Inst: ECD1A.I  
Analyst: JAOC  
Aliquot: 30.14 g  
Column: 1 CLP1  
2 CLP2

Matrix: R  
% Moisture: 10.5  
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	3.71	ug/kg	1.24	3.71	1
11104-28-2	Aroclor-1221	U	3.71	ug/kg	1.24	3.71	1
11141-16-5	Aroclor-1232	U	3.71	ug/kg	1.24	3.71	1
53469-21-9	Aroclor-1242	U	3.71	ug/kg	1.24	3.71	1
12672-29-6	Aroclor-1248	U	3.71	ug/kg	1.24	3.71	1
11097-69-1	Aroclor-1254	U	3.71	ug/kg	1.24	3.71	1
11096-82-5	Aroclor-1260	U	3.71	ug/kg	1.24	3.71	1

Data File: /chem/ecdla.i/122209.b/039f3901.d  
Report Date: 23-Dec-2009 11:53

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/039f3901.d  
Lab Smp Id: 243273001 Client Smp ID: RE12-10-7351  
Inj Date : 22-DEC-2009 14:35  
Operator : JAOC Inst ID: ecdla.i  
Smp Info : |243273001|1|  
Misc Info : |ECD82P\_1S|935393|SVA|LANL|SOIL|RE12-10-7351|||  
Comment :  
Method : /chem/ecdla.i/122209.b/ECD1-F-8082-121409.m  
Meth Date : 23-Dec-2009 06:42 jen01212 Quant Type: ESTD  
Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.d  
Als bottle: 39  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-988.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	30.14000	Weight of sample extracted (g)
M	10.54110	% Moisture

Cpnd Variable Local Compound Variable

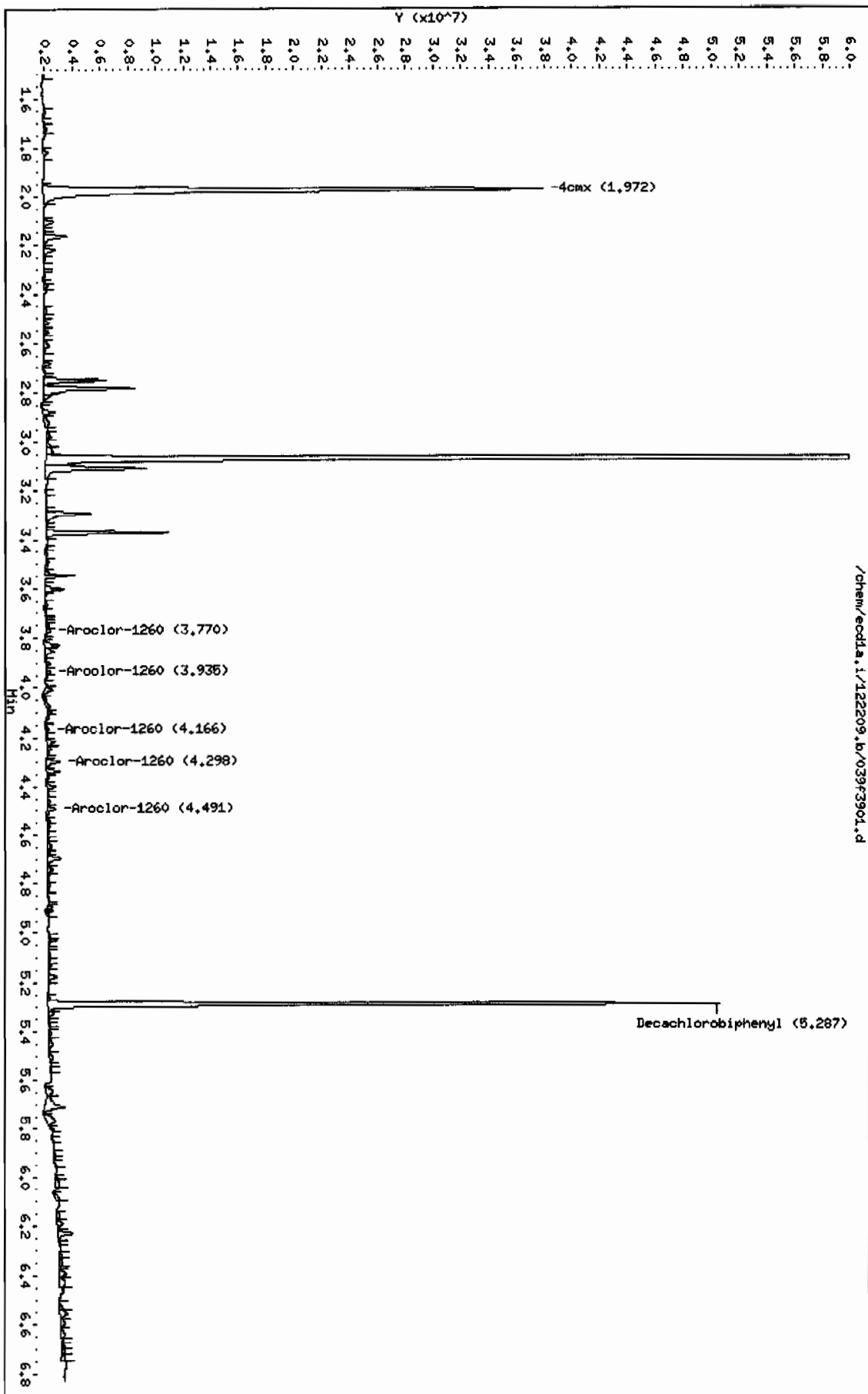
CONCENTRATIONS

ON-COL FINAL

RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
\$ 11 4cmx					CAS #: 877-09-8	
1.972	1.971	0.001	40548216	107.936	4.0 80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
5.287	5.286	0.001	36534436	115.054	4.3 80.00- 120.00	100.00

Data File: /chem/ecdda.i/122209.b/039f3901.d  
Date: 22-DEC-2009 14:35  
Client ID: RE12-10-7351  
Sample Info: 124327300111  
Volume Injected (uL): 1.0  
Column Phase: CLP1

Instrument: ecdda.i  
Operator: JHOC  
Column diameter: 0.25





GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/039b3901.d

Lab Smp Id: 243273001

Client Smp ID: RE12-10-7351

Inj Date : 22-DEC-2009 14:35

Operator : JAOC

Inst ID: ecdla.i

Smp Info : |243273001|1|

Misc Info : |ECD82P\_1S|935393|SVA|LANL|SOIL|RE12-10-7351|

Comment :

Method : /chem/ecdla.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 23-Dec-2009 06:44 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16

Cal File: 044b4401.d

Als bottle: 39

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: 10-988.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	10.54110	% Moisture

Cpnd Variable

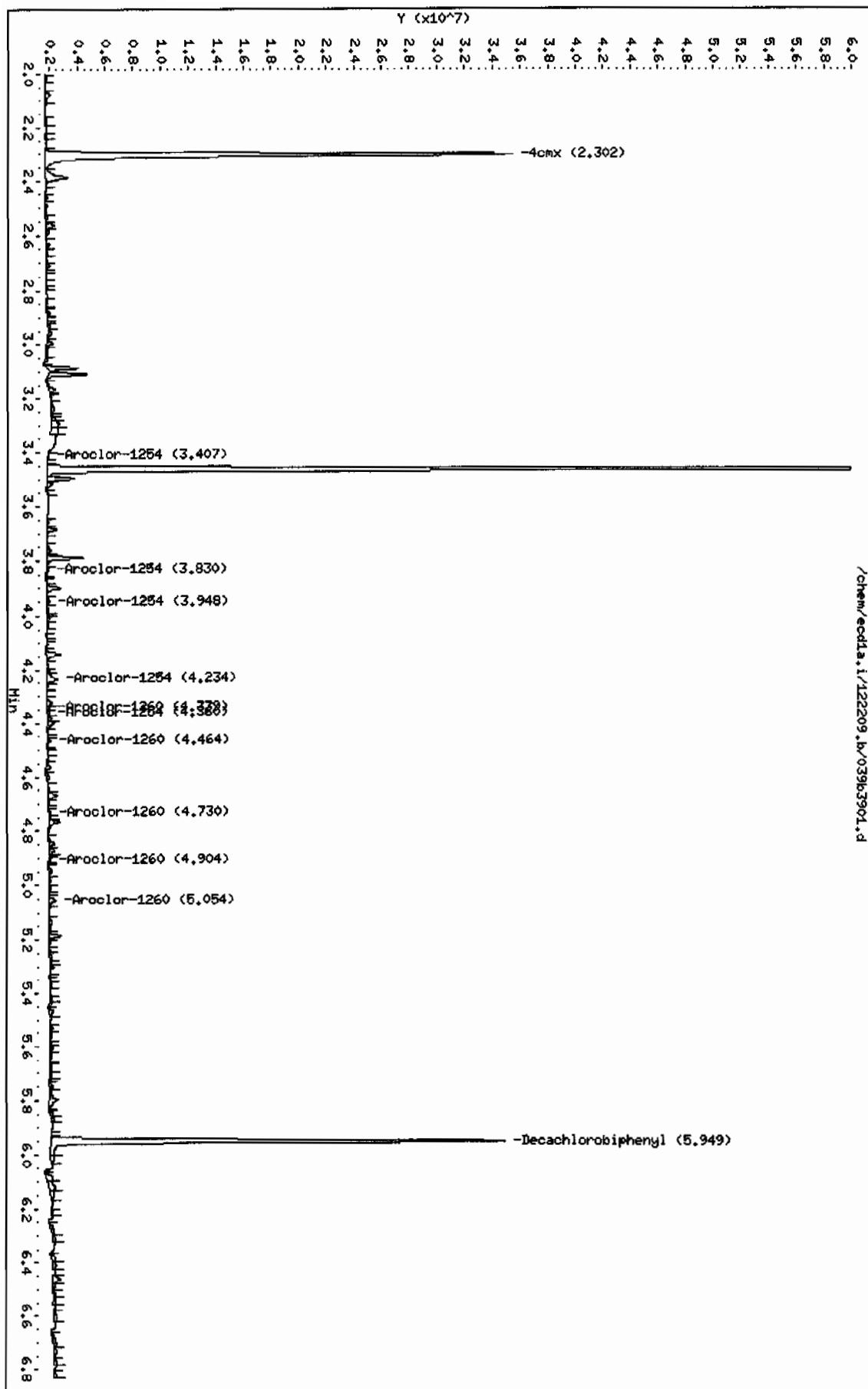
Local Compound Variable

CONCENTRATIONS

RT	EXP RT	DLT RT	ON-COL	FINAL	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
\$ 11 4cmx							CAS #: 877-09-8	
2.302	2.302	0.000	31423165	104.735	3.9	80.00- 120.00	100.00	
\$ 12 Decachlorobiphenyl							CAS #: 2051-24-3	
5.949	5.948	0.001	25338636	108.644	4.0	80.00- 120.00	100.00	

Data File: /chem/eod1a.i/122209.b/03963901.d  
Date : 22-DEC-2009 14:35  
Client ID: RE12-10-7361  
Sample Info: 124327300111  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: eod1a.i  
Operator: JHOC  
Column diameter: 0.25



# STANDARDS DATA

Report Date: 23-Dec-2009 12:05

### Calibration History

Method : /chem/ecd1a.i/122209.b/ECD1-F-8082-121409.m

Start Cal Date: 14-DEC-2009 05:36

End Cal Date : 14-DEC-2009 12:37

#### Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
14-DEC-2009 11:34	AR1268	/chem/ecd1a.i/121409.b/040f4001.d
14-DEC-2009 09:28	AR1248	/chem/ecd1a.i/121409.b/028f2801.d
14-DEC-2009 08:25	AR1242	/chem/ecd1a.i/121409.b/022f2201.d
14-DEC-2009 07:22	AR1254	/chem/ecd1a.i/121409.b/016f1601.d
14-DEC-2009 10:31	AR1660	/chem/ecd1a.i/121409.b/034f3401.d
Cal Level: 2 , Cal Amount: 200.00000		
14-DEC-2009 11:44	AR1268	/chem/ecd1a.i/121409.b/041f4101.d
14-DEC-2009 09:38	AR1248	/chem/ecd1a.i/121409.b/029f2901.d
14-DEC-2009 08:35	AR1242	/chem/ecd1a.i/121409.b/023f2301.d
14-DEC-2009 07:32	AR1254	/chem/ecd1a.i/121409.b/017f1701.d
14-DEC-2009 10:41	AR1660	/chem/ecd1a.i/121409.b/035f3501.d
Cal Level: 3 , Cal Amount: 500.00000		
14-DEC-2009 11:55	AR1268	/chem/ecd1a.i/121409.b/042f4201.d
14-DEC-2009 09:49	AR1248	/chem/ecd1a.i/121409.b/030f3001.d
14-DEC-2009 08:46	AR1242	/chem/ecd1a.i/121409.b/024f2401.d
14-DEC-2009 07:43	AR1254	/chem/ecd1a.i/121409.b/018f1801.d
14-DEC-2009 10:52	AR1660	/chem/ecd1a.i/121409.b/036f3601.d
Cal Level: 4 , Cal Amount: 1000.00000		
14-DEC-2009 12:37	DDTANALOGSTD	/chem/ecd1a.i/121409.b/046f4601.d
14-DEC-2009 09:59	AR1248	/chem/ecd1a.i/121409.b/031f3101.d
14-DEC-2009 08:56	AR1242	/chem/ecd1a.i/121409.b/025f2501.d
14-DEC-2009 07:53	AR1254	/chem/ecd1a.i/121409.b/019f1901.d
14-DEC-2009 11:02	AR1660	/chem/ecd1a.i/121409.b/037f3701.d
14-DEC-2009 12:06	AR1268	/chem/ecd1a.i/121409.b/043f4301.d
14-DEC-2009 05:58	AR1262	/chem/ecd1a.i/121409.b/008f0801.d
14-DEC-2009 05:47	AR1221	/chem/ecd1a.i/121409.b/007f0701.d
14-DEC-2009 05:36	AR1232	/chem/ecd1a.i/121409.b/006f0601.d
Cal Level: 5 , Cal Amount: 4000.00000		
14-DEC-2009 12:16	AR1268	/chem/ecd1a.i/121409.b/044f4401.d
14-DEC-2009 10:10	AR1248	/chem/ecd1a.i/121409.b/032f3201.d
14-DEC-2009 09:07	AR1242	/chem/ecd1a.i/121409.b/026f2601.d
14-DEC-2009 08:04	AR1254	/chem/ecd1a.i/121409.b/020f2001.d
14-DEC-2009 11:13	AR1660	/chem/ecd1a.i/121409.b/038f3801.d

Continuing Calibration  
Ccal Level Mode: GLOBAL LEVEL 4

Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 15:27	AR1660	/chem/ecdla.i/122209.b/044f4401.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 13:42	AR1660	/chem/ecdla.i/122209.b/034f3401.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 11:36	AR1660	/chem/ecdla.i/122209.b/022f2201.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 09:19	AR1268	/chem/ecdla.i/122209.b/009f0901.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 09:08	AR1262	/chem/ecdla.i/122209.b/008f0801.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 08:58	AR1221	/chem/ecdla.i/122209.b/007f0701.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 08:47	AR1232	/chem/ecdla.i/122209.b/006f0601.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 08:37	AR1248	/chem/ecdla.i/122209.b/005f0501.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 08:26	AR1242	/chem/ecdla.i/122209.b/004f0401.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 08:16	AR1254	/chem/ecdla.i/122209.b/003f0301.d
Ccal Level: 4 , Ccal Amount: 1000		
22-DEC-2009 08:05	AR1660	/chem/ecdla.i/122209.b/002f0201.d

Report Date: 23-Dec-2009 12:04

### Calibration History

Method : /chem/ecdla.i/122209.b/ECD1-B-8082-121409.m  
Start Cal Date: 11-DEC-2009 10:17  
End Cal Date : 14-DEC-2009 12:37

#### Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
14-DEC-2009 11:34	AR1268	/chem/ecdla.i/121409.b/040b4001.d
14-DEC-2009 09:28	AR1248	/chem/ecdla.i/121409.b/028b2801.d
14-DEC-2009 08:25	AR1242	/chem/ecdla.i/121409.b/022b2201.d
14-DEC-2009 07:22	AR1254	/chem/ecdla.i/121409.b/016b1601.d
14-DEC-2009 10:31	AR1660	/chem/ecdla.i/121409.b/034b3401.d

Cal Level: 2 , Cal Amount: 200.00000		
14-DEC-2009 11:44	AR1268	/chem/ecdla.i/121409.b/041b4101.d
14-DEC-2009 09:38	AR1248	/chem/ecdla.i/121409.b/029b2901.d
14-DEC-2009 08:35	AR1242	/chem/ecdla.i/121409.b/023b2301.d
14-DEC-2009 07:32	AR1254	/chem/ecdla.i/121409.b/017b1701.d
14-DEC-2009 10:41	AR1660	/chem/ecdla.i/121409.b/035b3501.d

Cal Level: 3 , Cal Amount: 500.00000		
14-DEC-2009 11:55	AR1268	/chem/ecdla.i/121409.b/042b4201.d
14-DEC-2009 09:49	AR1248	/chem/ecdla.i/121409.b/030b3001.d
14-DEC-2009 08:46	AR1242	/chem/ecdla.i/121409.b/024b2401.d
14-DEC-2009 07:43	AR1254	/chem/ecdla.i/121409.b/018b1801.d
14-DEC-2009 10:52	AR1660	/chem/ecdla.i/121409.b/036b3601.d

Cal Level: 4 , Cal Amount: 1000.00000		
14-DEC-2009 12:37	DDTANALOGSTD	/chem/ecdla.i/121409.b/046b4601.d
14-DEC-2009 12:06	AR1268	/chem/ecdla.i/121409.b/043b4301.d
14-DEC-2009 05:58	AR1262	/chem/ecdla.i/121409.b/008b0801.d
14-DEC-2009 05:47	AR1221	/chem/ecdla.i/121409.b/007b0701.d
14-DEC-2009 05:36	AR1232	/chem/ecdla.i/121409.b/006b0601.d
14-DEC-2009 09:59	AR1248	/chem/ecdla.i/121409.b/031b3101.d
14-DEC-2009 08:56	AR1242	/chem/ecdla.i/121409.b/025b2501.d
14-DEC-2009 07:53	AR1254	/chem/ecdla.i/121409.b/019b1901.d
14-DEC-2009 11:02	AR1660	/chem/ecdla.i/121409.b/037b3701.d

Cal Level: 5 , Cal Amount: 4000.00000		
14-DEC-2009 12:16	AR1268	/chem/ecdla.i/121409.b/044b4401.d
14-DEC-2009 10:10	AR1248	/chem/ecdla.i/121409.b/032b3201.d
14-DEC-2009 09:07	AR1242	/chem/ecdla.i/121409.b/026b2601.d
14-DEC-2009 08:04	AR1254	/chem/ecdla.i/121409.b/020b2001.d
14-DEC-2009 11:13	AR1660	/chem/ecdla.i/121409.b/038b3801.d

Continuing Calibration  
Ccal Level Mode: GLOBAL LEVEL 4

Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 15:27  AR1660	/chem/ecdla.i/122209.b/044b4401.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 13:42  AR1660	/chem/ecdla.i/122209.b/034b3401.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 11:36  AR1660	/chem/ecdla.i/122209.b/022b2201.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 09:19  AR1268	/chem/ecdla.i/122209.b/009b0901.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 09:08  AR1262	/chem/ecdla.i/122209.b/008b0801.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 08:58  AR1221	/chem/ecdla.i/122209.b/007b0701.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 08:47  AR1232	/chem/ecdla.i/122209.b/006b0601.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 08:37  AR1248	/chem/ecdla.i/122209.b/005b0501.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 08:26  AR1242	/chem/ecdla.i/122209.b/004b0401.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 08:16  AR1254	/chem/ecdla.i/122209.b/003b0301.d
Ccal Level: 4 , Ccal Amount: 1000	
22-DEC-2009 08:05  AR1660	/chem/ecdla.i/122209.b/002b0201.d

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m  
 Quant Method : ESTD Target Version : 3.50  
 Last Update : 23-Dec-2009 06:42 Number of Cpnds : 15  
 Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events Values

-----  
 Initial:Start Threshold 12031.000000  
 Initial:End Threshold 6015.500000  
 Initial:Area Threshold 15489.000000  
 Initial:P-P Resolution 1.000000  
 Initial:Bunch Factor 2.000000  
 Initial:Negative Peaks OFF  
 Initial:Tension 0.500000

Compound	RT	RT Window	RF
1 Aroclor-1016	2.427	2.397-2.457	1.387e+04
	2.705	2.675-2.735	1.010e+04
	2.796	2.766-2.826	1.176e+04
	2.835	2.805-2.865	6.599e+03
	3.046	3.016-3.076	8.673e+03
63 4,4-DDD	3.953	3.933-3.973	3.938e+05
64 4,4-DDE	3.603	3.583-3.623	4.795e+05
62 4,4-DDT	4.118	4.098-4.138	3.238e+05
2 Aroclor-1221	2.084	2.054-2.114	4.301e+03
	2.177	2.147-2.207	2.440e+03
	2.203	2.173-2.233	1.027e+04
3 Aroclor-1232	2.428	2.398-2.458	6.717e+03
	2.718	2.688-2.748	8.157e+03
	2.798	2.768-2.828	5.751e+03
	3.047	3.017-3.077	3.954e+03
	3.301	3.271-3.331	3.533e+03
4 Aroclor-1242	2.428	2.398-2.458	1.166e+04
	2.717	2.687-2.747	1.345e+04
	2.836	2.806-2.866	5.506e+03
	3.047	3.017-3.077	7.245e+03
	3.300	3.270-3.330	6.811e+03



## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m

Compound	RT	RT Window	RF
5 Aroclor-1248	3.098	3.068-3.128	7.848e+03
	3.249	3.219-3.279	6.870e+03
	3.300	3.271-3.330	1.331e+04
	3.432	3.402-3.462	1.101e+04
	3.666	3.636-3.696	7.455e+03
6 Aroclor-1254	3.275	3.245-3.305	1.249e+04
	3.430	3.400-3.460	1.672e+04
	3.664	3.634-3.694	2.071e+04
	3.827	3.797-3.857	1.569e+04
	3.936	3.906-3.966	1.517e+04
7 Aroclor-1260	3.771	3.741-3.801	1.675e+04
	3.934	3.904-3.964	2.474e+04
	4.165	4.135-4.195	1.469e+04
	4.307	4.277-4.337	1.518e+04
	4.486	4.456-4.516	3.435e+04
8 Aroclor-1262	3.774	3.744-3.804	1.402e+04
	3.936	3.906-3.966	1.841e+04
	4.167	4.137-4.197	2.251e+04
	4.309	4.279-4.339	2.033e+04
	4.489	4.459-4.519	4.317e+04
9 Aroclor-1268	4.674	4.644-4.704	5.438e+04
	4.697	4.667-4.727	5.419e+04
	4.809	4.779-4.839	4.052e+04
	5.013	4.983-5.043	1.833e+04
	5.179	5.149-5.209	1.233e+05
M 10 Aroclor-Total	1.000	0.980-1.020	
\$ 11 4cmx	1.971	1.941-2.001	3.757e+05
\$ 12 Decachlorobiphenyl	5.286	5.256-5.316	3.175e+05

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecdl1.i/122209.b/ECD1-B-8082-121409.m  
 Quant Method : ESTD Target Version : 3.50  
 Last Update : 23-Dec-2009 06:44 Number of Cpnds : 15  
 Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events	Values
Initial:Start Threshold	7222.000000
Initial:End Threshold	3611.000000
Initial:Area Threshold	6833.000000
Initial:P-P Resolution	0.000000
Initial:Bunch Factor	2.000000
Initial:Negative Peaks	OFF
Initial:Tension	0.500000

Compound	RT	RT Window	RF
1 Aroclor-1016	3.199	3.169-3.229	1.261e+04
	3.282	3.252-3.312	9.328e+03
	3.346	3.316-3.376	5.411e+03
	3.572	3.542-3.602	7.052e+03
	3.648	3.618-3.678	6.551e+03
62 4,4-DDT	4.670	4.650-4.690	2.436e+05
63 4,4-DDE	4.139	4.119-4.159	3.580e+05
64 4,4-DDD	4.483	4.463-4.503	2.893e+05
2 Aroclor-1221	2.499	2.469-2.529	3.640e+03
	2.594	2.564-2.624	2.329e+03
	2.635	2.604-2.664	8.119e+03
3 Aroclor-1232	2.635	2.605-2.665	6.156e+03
	3.201	3.171-3.231	6.302e+03
	3.283	3.253-3.313	4.701e+03
	3.574	3.544-3.604	3.243e+03
	3.807	3.777-3.837	3.151e+03
4 Aroclor-1242	3.200	3.170-3.230	1.059e+04
	3.283	3.253-3.313	8.054e+03
	3.574	3.544-3.604	5.962e+03
	3.807	3.777-3.837	6.057e+03
	3.835	3.805-3.865	6.701e+03

## GEL Laboratories LLC

## COMPOUND LISTING

Method file : /chem/ecdl1.i/122209.b/ECD1-B-8082-121409.m

Compound	RT	RT Window	RF
5 Aroclor-1248	3.409	3.379-3.439	8.054e+03
	3.574	3.544-3.604	9.874e+03
	3.808	3.778-3.838	1.122e+04
	3.836	3.805-3.865	1.248e+04
	3.972	3.942-4.002	1.210e+04
6 Aroclor-1254	3.407	3.377-3.437	6.435e+03
	3.830	3.800-3.860	1.156e+04
	3.947	3.917-3.977	1.243e+04
	4.223	4.193-4.253	1.688e+04
	4.359	4.329-4.389	1.244e+04
7 Aroclor-1260	4.338	4.308-4.368	1.368e+04
	4.463	4.433-4.493	1.603e+04
	4.729	4.699-4.759	1.256e+04
	4.903	4.873-4.933	1.281e+04
	5.050	5.020-5.080	2.790e+04
8 Aroclor-1262	4.464	4.434-4.494	1.292e+04
	4.731	4.701-4.761	1.831e+04
	4.904	4.874-4.934	1.658e+04
	5.051	5.021-5.081	3.329e+04
	5.264	5.234-5.294	2.297e+04
9 Aroclor-1268	5.263	5.233-5.293	4.358e+04
	5.290	5.260-5.320	4.039e+04
	5.440	5.410-5.470	3.144e+04
	5.605	5.575-5.635	1.427e+04
	5.798	5.768-5.828	8.886e+04
M 10 Aroclor-Total	1.000	0.980-1.020	
\$ 11 4cmx	2.302	2.272-2.332	3.000e+05
\$ 12 Decachlorobiphenyl	5.948	5.918-5.978	2.332e+05

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 14-DEC-2009 05:36  
 End Cal Date : 14-DEC-2009 12:37  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecdla.i/122209.b/ECD1-F-8082-121409.m  
 Cal Date : 23-Dec-2009 06:42 jen01212  
 Curve Type : Average

## Calibration File Names:

Level 1: /chem/ecdla.i/121409.b/040f4001.d  
 Level 2: /chem/ecdla.i/121409.b/041f4101.d  
 Level 3: /chem/ecdla.i/121409.b/042f4201.d  
 Level 4: /chem/ecdla.i/121409.b/046f4601.d  
 Level 5: /chem/ecdla.i/121409.b/044f4401.d

Compound	100.000	200.000	500.000	1000.000	4000.000	RRF	% RSD
Level 1	Level 2	Level 3	Level 4	Level 5			
1 Aroclor-1016(1)	15975	14641	13829	13236	11653	13867	11.596
(2)	10801	10349	9832	9922	9584	10098	4.757
(3)	13242	12280	11732	11291	10240	11757	9.507
(4)	7178	6867	6609	6421	5920	6599	7.183
(5)	9710	9021	8649	8224	7763	8673	8.604
63 4,4-DDD	++++	++++	++++	393799	++++	393799	0.000
64 4,4-DDE	++++	++++	++++	479509	++++	479509	0.000
62 4,4-DDT	++++	++++	++++	323817	++++	323817	0.000
2 Aroclor-1221(1)	++++	++++	++++	4301	++++	4301	0.000
(2)	++++	++++	++++	2440	++++	2440	0.000
(3)	++++	++++	++++	10272	++++	10272	0.000
3 Aroclor-1232(1)	++++	++++	++++	6717	++++	6717	0.000
(2)	++++	++++	++++	8157	++++	8157	0.000
(3)	++++	++++	++++	5751	++++	5751	0.000
(4)	++++	++++	++++	3954	++++	3954	0.000
(5)	++++	++++	++++	3533	++++	3533	0.000
4 Aroclor-1242(1)	13692	12467	11522	10819	9798	11660	12.846
(2)	14782	14429	13236	12555	12263	13453	8.301
(3)	6076	5890	5423	5191	4949	5506	8.563
(4)	8395	7578	7079	6747	6426	7245	10.645
(5)	7587	7189	6604	6378	6296	6811	8.178
5 Aroclor-1248(1)	9070	8103	7743	7247	7078	7848	10.119
(2)	7785	7181	6827	6444	6114	6870	9.456
(3)	15108	13267	13037	12915	12225	13310	8.094
(4)	12682	11331	10815	10392	9852	11015	9.799
(5)	8605	7806	7405	7124	6336	7455	11.244

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 14-DEC-2009 05:36  
 End Cal Date : 14-DEC-2009 12:37  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecdl1.i/122209.b/ECD1-F-8082-121409.m  
 Cal Date : 23-Dec-2009 06:42 jen01212  
 Curve Type : Average

Compound	100.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	4000.000 Level 5	RRF	% RSD
6 Aroclor-1254(1)	14281	12975	12313	11911	10947	12485	9.963
(2)	18803	17181	16666	15949	15010	16722	8.494
(3)	22492	20906	20786	20326	19059	20714	5.957
(4)	16753	15627	15809	15513	14770	15694	4.535
(5)	16595	15169	15433	15075	13591	15172	7.071
7 Aroclor-1260(1)	18145	17177	16842	16407	15189	16752	6.464
(2)	26410	24871	24973	24571	22887	24743	5.081
(3)	16099	14386	14855	14472	13625	14687	6.171
(4)	16517	14719	15311	15032	14343	15185	5.451
(5)	35425	33953	34899	34487	32987	34350	2.719
8 Aroclor-1262(1)	++++	++++	++++	14019	++++	14019	0.000
(2)	++++	++++	++++	18406	++++	18406	0.000
(3)	++++	++++	++++	22511	++++	22511	0.000
(4)	++++	++++	++++	20327	++++	20327	0.000
(5)	++++	++++	++++	43170	++++	43170	0.000
9 Aroclor-1268(1)	56914	55996	53872	52565	52528	54375	3.680
(2)	57500	55307	54092	52376	51697	54194	4.300
(3)	43006	41368	40020	38976	39247	40524	4.120
(4)	19620	18932	18085	17425	17569	18326	5.094
(5)	128350	126812	122798	118830	119599	123278	3.436
M 10 Aroclor-Total	++++	++++	++++	++++	++++	++++	++++
\$ 11 4cmx	367897	454677	359986	359846	335942	375669	12.182
\$ 12 Decachlorobiphenyl	316645	388263	307193	296602	278999	317541	13.206

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 11-DEC-2009 10:17  
 End Cal Date : 14-DEC-2009 12:37  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecdl.a.i/122209.b/ECD1-B-8082-121409.m  
 Cal Date : 23-Dec-2009 06:44 jen01212  
 Curve Type : Average

## Calibration File Names:

Level 1: /chem/ecdl.a.i/121409.b/040b4001.d  
 Level 2: /chem/ecdl.a.i/121409.b/041b4101.d  
 Level 3: /chem/ecdl.a.i/121409.b/042b4201.d  
 Level 4: /chem/ecdl.a.i/121409.b/046b4601.d  
 Level 5: /chem/ecdl.a.i/121409.b/044b4401.d

Compound	100.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	4000.000 Level 5	RRF	% RSD
1 Aroclor-1016(1)	14281	12734	12848	12156	11039	12612	9.333
(2)	10954	9913	9256	8806	7710	9328	13.003
(3)	6310	5679	5380	5089	4598	5411	11.852
(4)	8214	7430	6981	6696	5938	7052	12.003
(5)	7754	6843	6481	6115	5561	6551	12.561
62 4,4-DDT	++++	++++	++++	243613	++++	243613	0.000
63 4,4-DDE	++++	++++	++++	357996	++++	357996	0.000
64 4,4-DDD	++++	++++	++++	289343	++++	289343	0.000
2 Aroclor-1221(1)	++++	++++	++++	3640	++++	3640	0.000
(2)	++++	++++	++++	2329	++++	2329	0.000
(3)	++++	++++	++++	8119	++++	8119	0.000
3 Aroclor-1232(1)	++++	++++	++++	6156	++++	6156	0.000
(2)	++++	++++	++++	6302	++++	6302	0.000
(3)	++++	++++	++++	4701	++++	4701	0.000
(4)	++++	++++	++++	3243	++++	3243	0.000
(5)	++++	++++	++++	3151	++++	3151	0.000
4 Aroclor-1242(1)	12348	11309	9989	9755	9542	10589	11.338
(2)	9730	8628	7875	7358	6677	8054	14.627
(3)	7163	6326	5763	5452	5107	5962	13.534
(4)	7183	6468	5900	5548	5185	6057	12.997
(5)	7820	7123	6589	6229	5746	6701	11.977
5 Aroclor-1248(1)	9914	8542	7972	7289	6553	8054	15.880
(2)	11996	10356	9798	9046	8173	9874	14.605
(3)	13306	11756	11119	10365	9555	11220	12.723
(4)	14720	13121	12480	11577	10516	12483	12.732
(5)	14361	12633	11977	11210	10342	12104	12.596

GEL Laboratories LLC  
INITIAL CALIBRATION DATA

Start Cal Date : 11-DEC-2009 10:17  
 End Cal Date : 14-DEC-2009 12:37  
 Quant Method : ESTD  
 Origin : Disabled  
 Target Version : 3.50  
 Integrator : Falcon  
 Method file : /chem/ecdl1a.i/122209.b/ECD1-B-8082-121409.m  
 Cal Date : 23-Dec-2009 06:44 jen01212  
 Curve Type : Average

Compound	100.000 Level 1	200.000 Level 2	500.000 Level 3	1000.000 Level 4	4000.000 Level 5	RRF	% RSD
6 Aroclor-1254(1)	7857	6938	6317	5878	5185	6435	15.850
(2)	13759	12316	11389	10708	9625	11559	13.615
(3)	14674	13172	12243	11576	10492	12431	12.786
(4)	19102	17554	16808	16165	14771	16880	9.533
(5)	14276	12708	12612	11843	10739	12435	10.425
7 Aroclor-1260(1)	15678	14232	13583	13177	11731	13680	10.567
(2)	18142	16574	16035	15527	13867	16029	9.709
(3)	14298	13064	12524	12030	10903	12564	9.989
(4)	14593	13310	12766	12230	11150	12810	9.970
(5)	30553	28626	28257	27276	24777	27898	7.569
8 Aroclor-1262(1)	++++	++++	++++	12922	++++	12922	0.000
(2)	++++	++++	++++	18311	++++	18311	0.000
(3)	++++	++++	++++	16579	++++	16579	0.000
(4)	++++	++++	++++	33287	++++	33287	0.000
(5)	++++	++++	++++	22972	++++	22972	0.000
9 Aroclor-1268(1)	48327	45655	43354	41349	39206	43578	8.193
(2)	44968	41865	39872	38249	36983	40388	7.790
(3)	35350	32573	30975	29630	28674	31440	8.372
(4)	16410	14977	13894	13214	12876	14274	10.077
(5)	96769	92419	87897	84047	83161	88859	6.460
M 10 Aroclor-Total	++++	++++	++++	++++	++++	++++	++++
\$ 11 4cmx	307069	367145	286931	282899	256086	300026	13.893
\$ 12 Decachlorobiphenyl	248884	286011	224119	212175	194946	233227	15.194

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.: 10-988  
 Instrument ID: ECD1A Calibration Date: 12/22/09 Time: 0805  
 Lab File ID: 002F0201 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 1031 1113  
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	13866.870	11819.100	0.01	-14.8	15.0
(2)	10097.726	10041.405	0.01	-0.6	15.0
(3)	11757.020	10232.893	0.01	-13.0	15.0
(4)	6599.010	6218.851	0.01	-5.8	15.0
(5)	8673.402	7893.471	0.01	-9.0	15.0
Aroclor-1260	16752.150	15831.089	0.01	-5.5	15.0
(2)	24742.603	24387.503	0.01	-1.4	15.0
(3)	14687.346	14641.032	0.01	-0.3	15.0
(4)	15184.529	15291.566	0.01	0.7	15.0
(5)	34350.443	35549.448	0.01	3.5	15.0
4cmx	375669.41	339416.84	0.01	-9.6	15.0
Decachlorobiphenyl	317540.53	312855.09	0.01	-1.5	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.: 10-988  
 Instrument ID: ECD1A Calibration Date: 12/22/09 Time: 0805  
 Lab File ID: 002B0201 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 1031 1113  
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	12611.539	12307.559	0.01	-2.4	15.0
(2)	9327.875	7955.901	0.01	-14.7	15.0
(3)	5411.316	4945.153	0.01	-8.6	15.0
(4)	7051.879	6459.718	0.01	-8.4	15.0
(5)	6550.733	5874.937	0.01	-10.3	15.0
Aroclor-1260	13680.027	12456.008	0.01	-8.9	15.0
(2)	16029.019	15351.218	0.01	-4.2	15.0
(3)	12563.933	11813.735	0.01	-6.0	15.0
(4)	12810.076	12208.277	0.01	-4.7	15.0
(5)	27897.674	27912.067	0.01	0.0	15.0
4cmx	300025.77	266655.00	0.01	-11.1	15.0
Decachlorobiphenyl	233227.08	232646.98	0.01	-0.2	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.: 10-988  
 Instrument ID: ECD1A Calibration Date: 12/22/09 Time: 1136  
 Lab File ID: 022F2201 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 1031 1113  
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	13866.870	12195.989	0.01	-12.0	15.0
(2)	10097.726	10155.647	0.01	0.6	15.0
(3)	11757.020	10536.169	0.01	-10.4	15.0
(4)	6599.010	6316.222	0.01	-4.3	15.0
(5)	8673.402	8227.877	0.01	-5.1	15.0
Aroclor-1260	16752.150	16412.717	0.01	-2.0	15.0
(2)	24742.603	25383.228	0.01	2.6	15.0
(3)	14687.346	15136.737	0.01	3.0	15.0
(4)	15184.529	15881.438	0.01	4.6	15.0
(5)	34350.443	36861.795	0.01	7.3	15.0
4cmx	375669.41	353567.03	0.01	-5.9	15.0
Decachlorobiphenyl	317540.53	323120.44	0.01	1.8	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.: 10-988  
 Instrument ID: ECD1A Calibration Date: 12/22/09 Time: 1136  
 Lab File ID: 022B2201 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 1031 1113  
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	12611.539	12044.894	0.01	-4.5	15.0
(2)	9327.875	7971.400	0.01	-14.5	15.0
(3)	5411.316	5010.350	0.01	-7.4	15.0
(4)	7051.879	6461.988	0.01	-8.4	15.0
(5)	6550.733	5901.695	0.01	-9.9	15.0
Aroclor-1260	13680.027	12441.498	0.01	-9.0	15.0
(2)	16029.019	15419.548	0.01	-3.8	15.0
(3)	12563.933	11883.895	0.01	-5.4	15.0
(4)	12810.076	12259.583	0.01	-4.3	15.0
(5)	27897.674	28019.266	0.01	0.4	15.0
4cmx	300025.77	268297.90	0.01	-10.6	15.0
Decachlorobiphenyl	233227.08	234407.24	0.01	0.5	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.: 10-988  
 Instrument ID: ECD1A Calibration Date: 12/22/09 Time: 1342  
 Lab File ID: 034F3401 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 1031 1113  
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	13866.870	12307.109	0.01	-11.2	15.0
(2)	10097.726	9886.673	0.01	-2.1	15.0
(3)	11757.020	10619.709	0.01	-9.7	15.0
(4)	6599.010	6396.545	0.01	-3.1	15.0
(5)	8673.402	8146.353	0.01	-6.1	15.0
Aroclor-1260	16752.150	16477.385	0.01	-1.6	15.0
(2)	24742.603	25407.089	0.01	2.7	15.0
(3)	14687.346	15258.339	0.01	3.9	15.0
(4)	15184.529	15999.261	0.01	5.4	15.0
(5)	34350.443	36981.333	0.01	7.6	15.0
4cmx	375669.41	355020.73	0.01	-5.5	15.0
Decachlorobiphenyl	317540.53	320715.88	0.01	1.0	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.: 10-988  
 Instrument ID: ECD1A Calibration Date: 12/22/09 Time: 1342  
 Lab File ID: 034B3401 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 1031 1113  
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	12611.539	12230.495	0.01	-3.0	15.0
(2)	9327.875	8013.748	0.01	-14.1	15.0
(3)	5411.316	5019.210	0.01	-7.2	15.0
(4)	7051.879	6532.589	0.01	-7.4	15.0
(5)	6550.733	5980.984	0.01	-8.7	15.0
Aroclor-1260	13680.027	12671.837	0.01	-7.4	15.0
(2)	16029.019	15649.823	0.01	-2.4	15.0
(3)	12563.933	12040.790	0.01	-4.2	15.0
(4)	12810.076	12404.464	0.01	-3.2	15.0
(5)	27897.674	28369.150	0.01	1.7	15.0
4cmx	300025.77	271988.42	0.01	-9.3	15.0
Decachlorobiphenyl	233227.08	232000.37	0.01	-0.5	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.: 10-988  
 Instrument ID: ECD1A Calibration Date: 12/22/09 Time: 1527  
 Lab File ID: 044F4401 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 1031 1113  
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	13866.870	12576.066	0.01	-9.3	15.0
(2)	10097.726	10713.222	0.01	6.1	15.0
(3)	11757.020	10878.773	0.01	-7.5	15.0
(4)	6599.010	6544.137	0.01	-0.8	15.0
(5)	8673.402	8439.862	0.01	-2.7	15.0
Aroclor-1260	16752.150	16868.686	0.01	0.7	15.0
(2)	24742.603	26021.185	0.01	5.2	15.0
(3)	14687.346	15560.653	0.01	5.9	15.0
(4)	15184.529	16290.765	0.01	7.3	15.0
(5)	34350.443	37535.072	0.01	9.3	15.0
4cmx	375669.41	364858.12	0.01	-2.9	15.0
Decachlorobiphenyl	317540.53	323581.44	0.01	1.9	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.: 10-988  
 Instrument ID: ECD1A Calibration Date: 12/22/09 Time: 1527  
 Lab File ID: 044B4401 Init. Calib. Date(s): 12/14/09 12/14/09  
 Heated Purge: (Y/N) N Init. Calib. Times: 1031 1113  
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	12611.539	12223.105	0.01	-3.1	15.0
(2)	9327.875	8174.997	0.01	-12.4	15.0
(3)	5411.316	5090.328	0.01	-5.9	15.0
(4)	7051.879	6438.929	0.01	-8.7	15.0
(5)	6550.733	6113.381	0.01	-6.7	15.0
Aroclor-1260	13680.027	12596.367	0.01	-7.9	15.0
(2)	16029.019	14981.774	0.01	-6.5	15.0
(3)	12563.933	12122.093	0.01	-3.5	15.0
(4)	12810.076	12513.940	0.01	-2.3	15.0
(5)	27897.674	28363.537	0.01	1.7	15.0
4cmx	300025.77	278693.13	0.01	-7.1	15.0
Decachlorobiphenyl	233227.08	221832.89	0.01	-4.9	15.0

FORM VII PEST

Data File: /chem/ecdl1a.i/122209.b/002f0201.d  
 Report Date: 22-Dec-2009 10:45

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/002f0201.d

Lab Smp Id: WAR091211-60 01

Client Smp ID: AR166001

Inj Date : 22-DEC-2009 08:05

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091211-60 01

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m

Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.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			
1.971	1.971	0.000	33941684 100.000	90.3	80.00~ 120.00	100.00	
-----							
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3			
5.286	5.286	0.000	31285509 100.000	98.5	80.00~ 120.00	100.00	
-----							
1 Aroclor-1016				CAS #: 12674-11-2			
2.427	2.427	0.000	11819100 1000.00	852	80.00~ 120.00	100.00 (M)	
2.705	2.705	0.000	10041405 1000.00	994	64.96~ 104.96	84.96	
2.796	2.796	0.000	10232893 1000.00	870	66.58~ 106.58	86.58	
2.835	2.835	0.000	6218851 1000.00	942	32.62~ 72.62	52.62	
3.046	3.046	0.000	7893471 1000.00	910	46.79~ 86.79	66.79	
Average of Peak Amounts =				914			
-----							
7 Aroclor-1260				CAS #: 11096-82-5			
3.771	3.771	0.000	15831089 1000.00	945	80.00~ 120.00	100.00	
3.934	3.934	0.000	24387503 1000.00	986	134.05~ 174.05	154.05	
4.165	4.165	0.000	14641032 1000.00	997	72.48~ 112.48	92.48	
4.307	4.307	0.000	15291566 1000.00	1010	76.59~ 116.59	96.59	
4.486	4.486	0.000	35549448 1000.00	1030	204.55~ 244.55	224.55	
Average of Peak Amounts =				994			



QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecdl1.i/122209.b/002f0201.d

Date: 22-DEC-2009 08:05

Client ID: AR166001

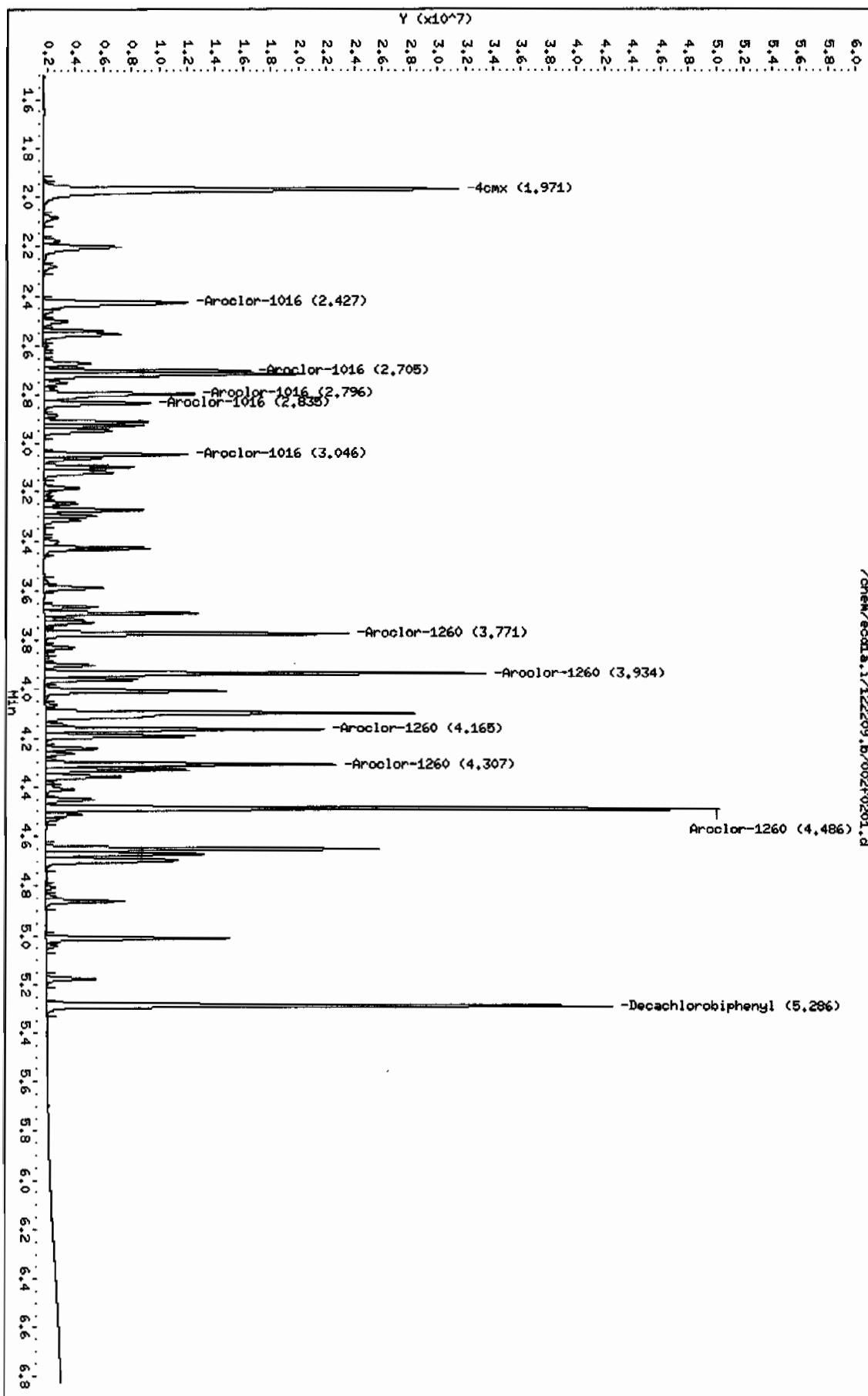
Sample Info: 1MR091211-60 01

Page 1

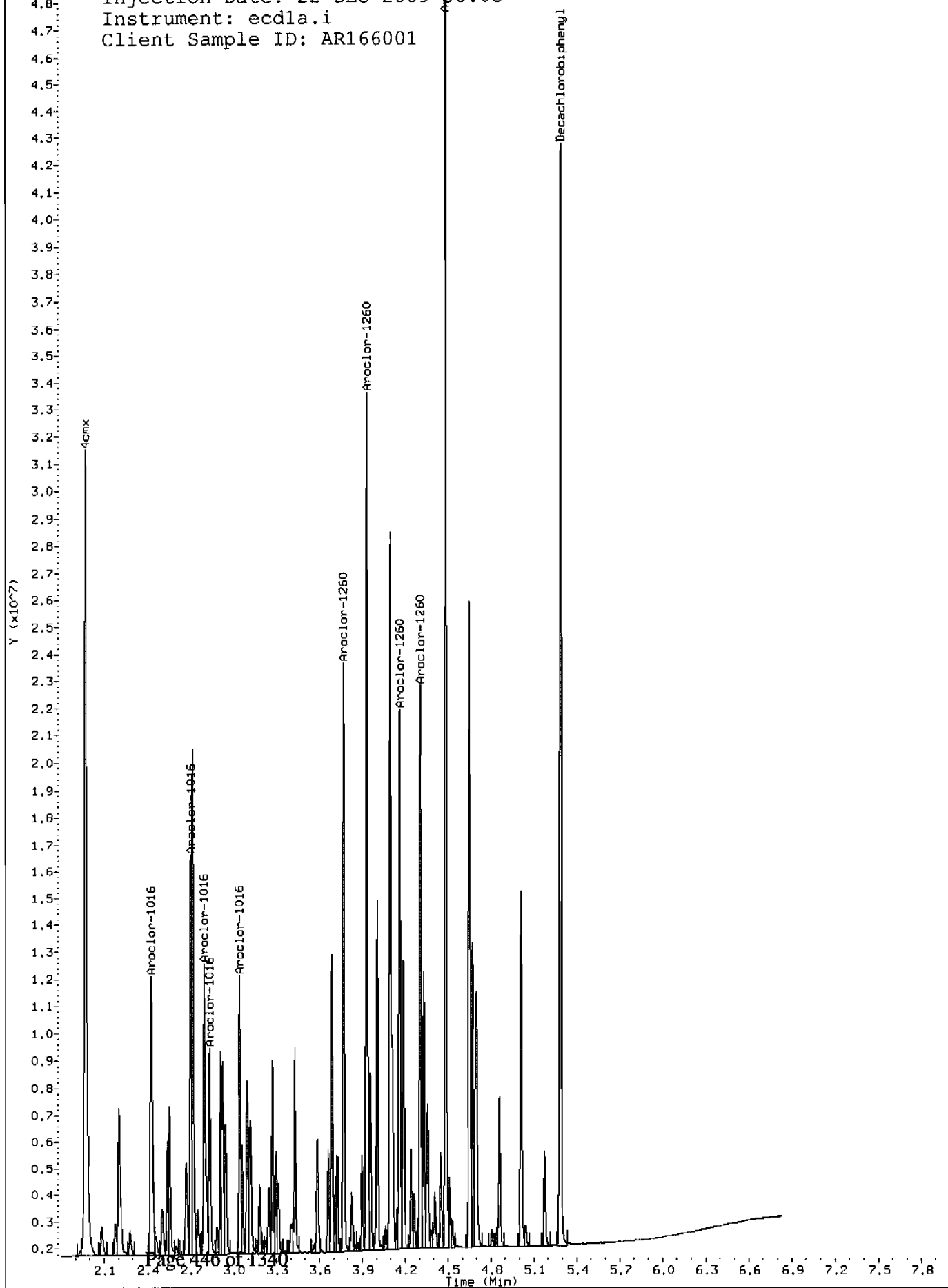
Instrument: ecdl1.i

Column phase: CLP1

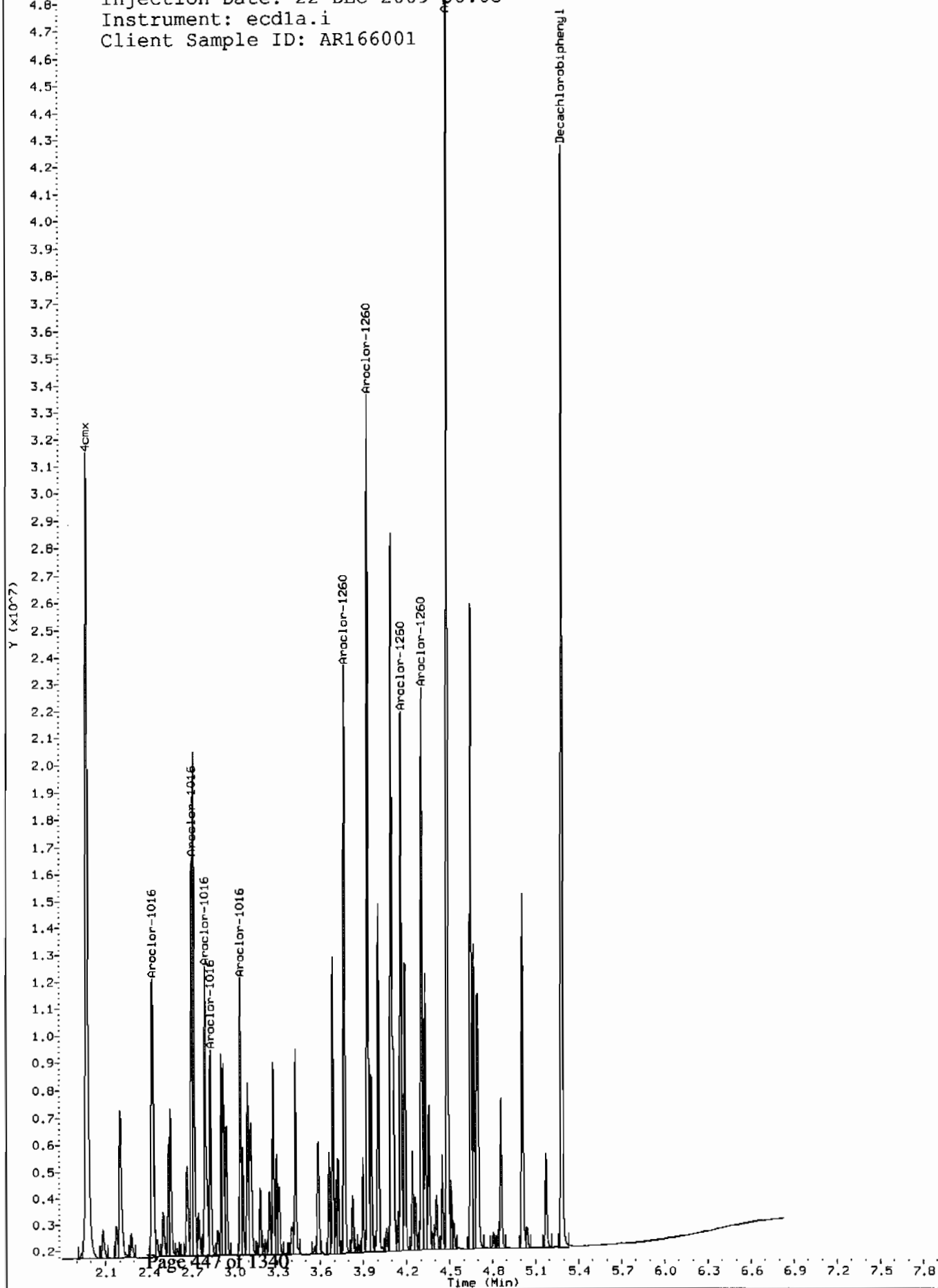
Operator: JMO  
Column diameter: 0.25



Comment: Manually Integrated  
Data File: /chem/ecdl1.i/122209.b/002f0201.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 08:05  
Instrument: ecd1a.i  
Client Sample ID: AR166001



Comment: Before manual integration  
Data File: /chem/ecdl.a.i/122209.b/orig-002f0201.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 08:05  
Instrument: ecdla.i  
Client Sample ID: AR166001



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1.i/122209.b/002b0201.d

Lab Smp Id: WAR091211-60 01

Client Smp ID: AR166001

Inj Date : 22-DEC-2009 08:05

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091211-60 01

Misc Info :

Comment :

Method : /chem/ecdl1.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16 Cal File: 044b4401.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					
2.302	2.302	0.000	26665500	100.000	88.9 80.00- 120.00	100.00
12	Decachlorobiphenyl					
5.948	5.948	0.000	23264698	100.000	99.8 80.00- 120.00	100.00
1	Aroclor-1016					
3.199	3.199	0.000	12307559	1000.00	976 80.00- 120.00	100.00 (M)
3.282	3.282	0.000	7955901	1000.00	853 44.64- 84.64	64.64
3.346	3.346	0.000	4945153	1000.00	914 20.18- 60.18	40.18
3.572	3.572	0.000	6459718	1000.00	916 32.49- 72.49	52.49
3.648	3.648	0.000	5874937	1000.00	897 27.73- 67.73	47.73
Average of Peak Amounts =			911			
7	Aroclor-1260					
4.338	4.338	0.000	12456008	1000.00	910 80.00- 120.00	100.00
4.463	4.463	0.000	15351218	1000.00	958 103.24- 143.24	123.24
4.729	4.729	0.000	11813735	1000.00	940 74.84- 114.84	94.84
4.903	4.903	0.000	12208277	1000.00	953 78.01- 118.01	98.01
5.050	5.050	0.000	27912067	1000.00	1000 204.09- 244.09	224.09
Average of Peak Amounts =			952			

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecdl1a.i/122209.b/002b0201.d

Date: 22-DEC-2009 08:05

Client ID: ARL6001

Sample Info: 11MR091211-60 01

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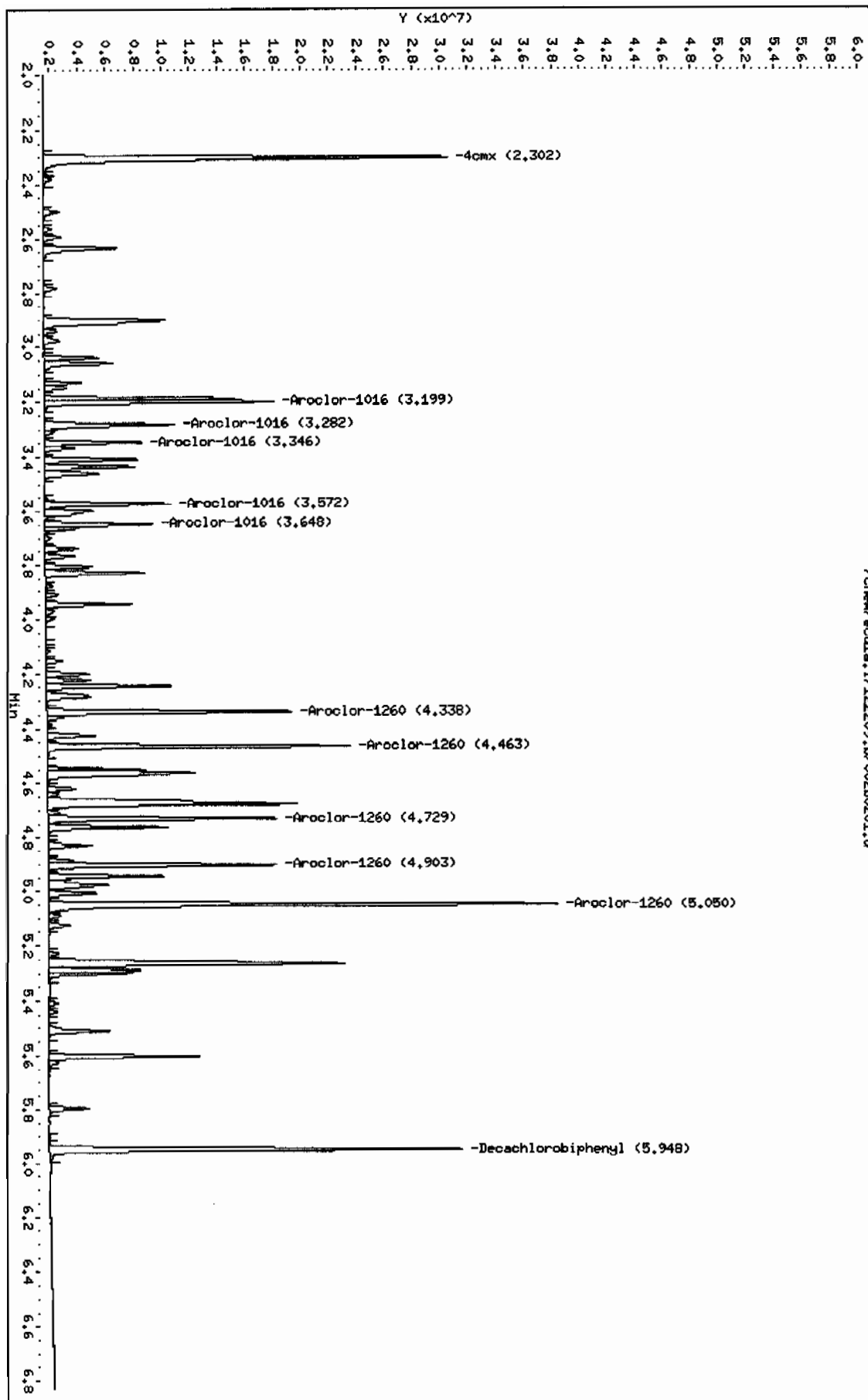
Instrument: ecdl1a.1

Operator: JAC

Column diameter: 0.25

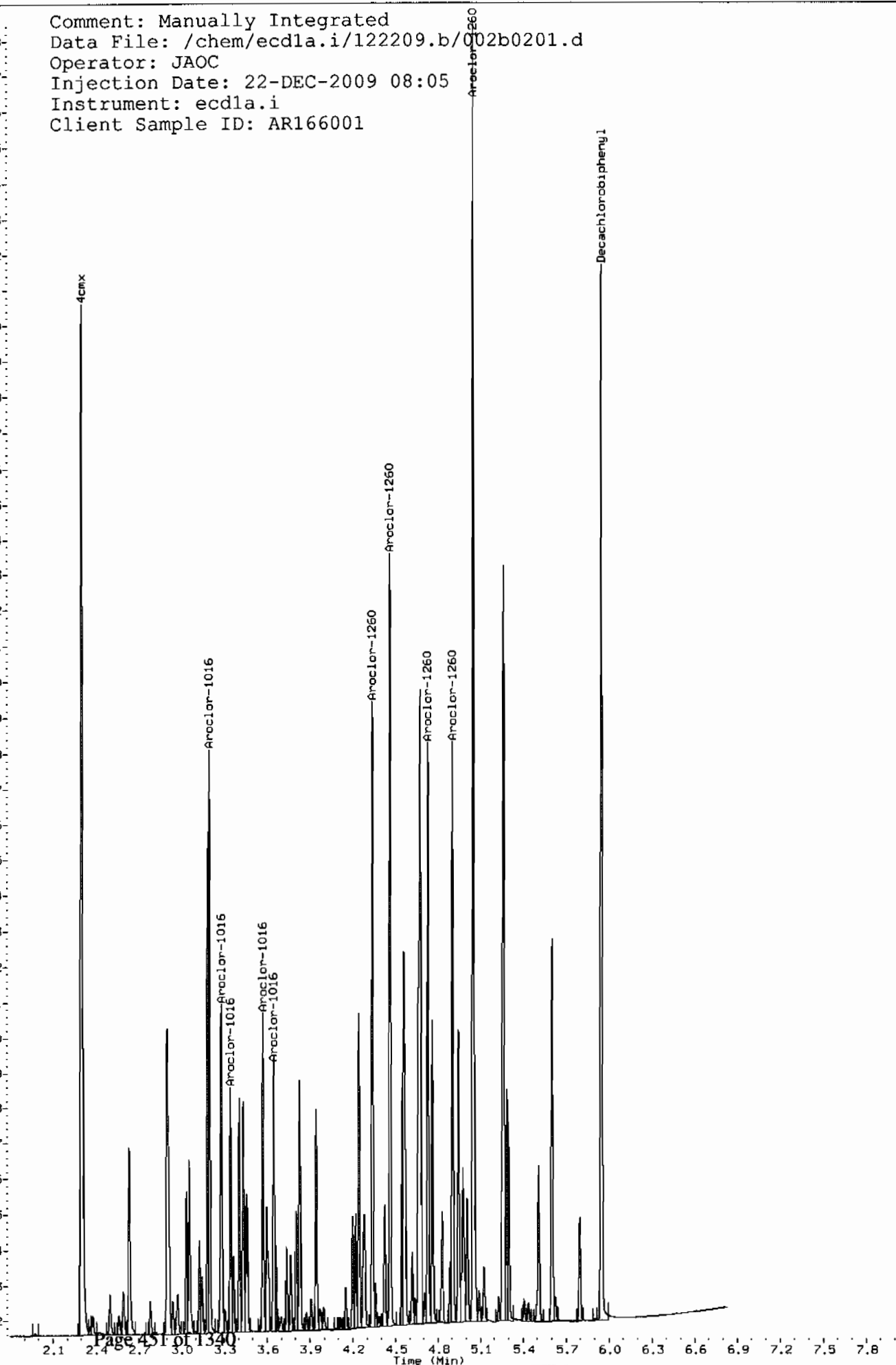
Column phase: CLP2

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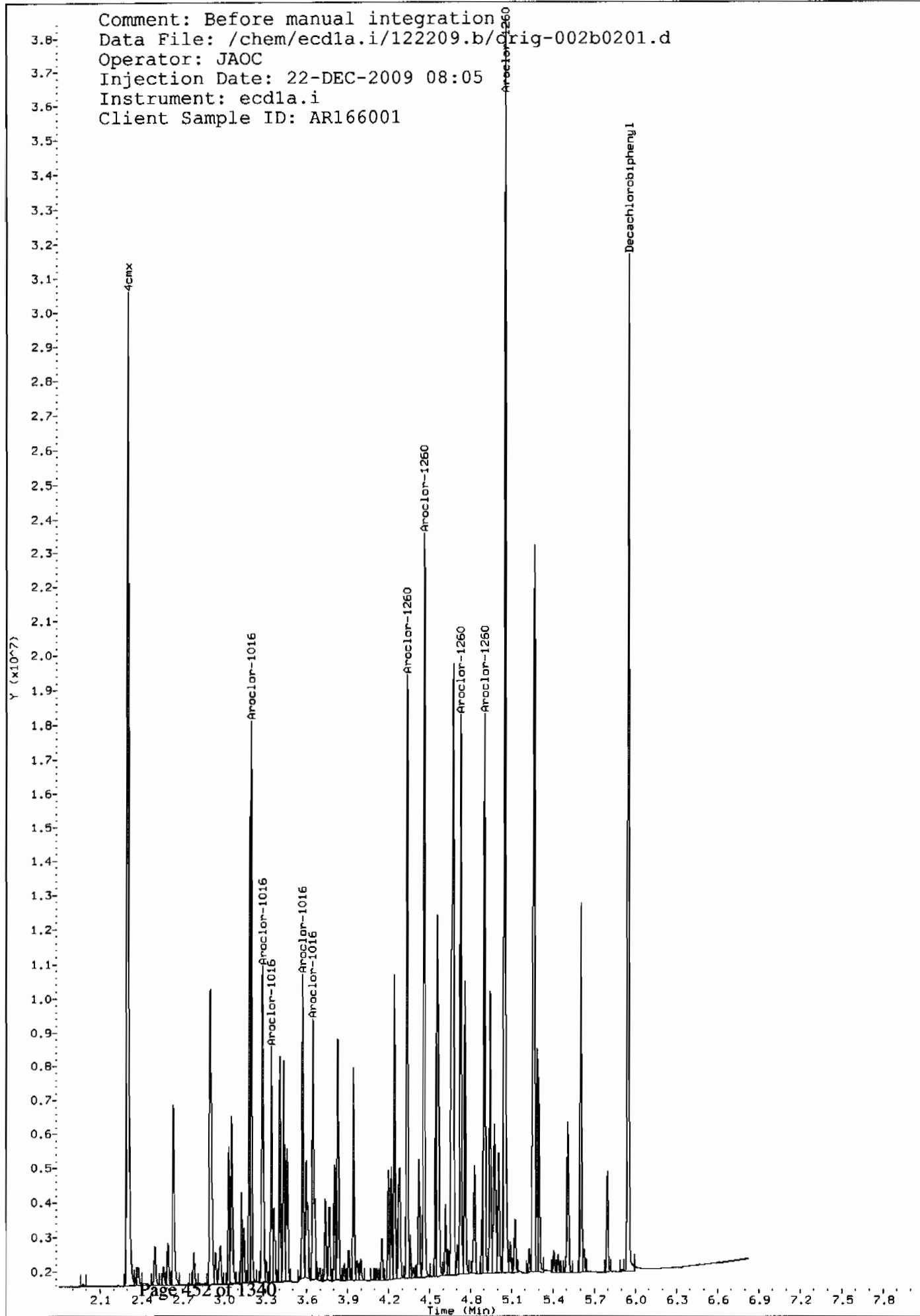
Comment: Manually Integrated  
Data File: /chem/ecdl1.i/122209.b/002b0201.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 08:05  
Instrument: ecd1a.i  
Client Sample ID: AR166001

Y (x10<sup>-7</sup>)





Comment: Before manual integration  
Data File: /chem/ecdl1.i/122209.b/orig-002b0201.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 08:05  
Instrument: ecd1a.i  
Client Sample ID: AR166001



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/003f0301.d  
 Lab Smp Id: WAR091216-54 Client Smp ID: AR125401  
 Inj Date : 22-DEC-2009 08:16  
 Operator : JAOC Inst ID: ecdla.i  
 Smp Info : |WAR091216-54  
 Misc Info :  
 Comment :  
 Method : /chem/ecdla.i/122209.b/ECD1-F-8082-121409.m  
 Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD  
 Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.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

			CAL-AMT		ON-COL			
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	( ug/L)	TARGET RANGE	RATIO	
==	=====	=====	=====	=====	=====	=====	=====	
\$ 11 4cmx					CAS #: 877-09-8			
1.972	1.971	0.001	36201001	100.000	96.4	80.00- 120.00	100.00	
-----								
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
5.287	5.286	0.001	33407343	100.000	105	80.00- 120.00	100.00	
-----								
6 Aroclor-1254					CAS #: 11097-69-1			
3.275	3.275	0.000	11604571	1000.00	929	80.00- 120.00	100.00	
3.430	3.430	0.000	15968395	1000.00	955	117.60- 157.60	137.60	
3.664	3.664	0.000	21043271	1000.00	1020	161.34- 201.34	181.34	
3.827	3.827	0.000	16237348	1000.00	1030	119.92- 159.92	139.92	
3.936	3.936	0.000	15345718	1000.00	1010	112.24- 152.24	132.24	
Average of Peak Amounts =					989			

Data File: /chem/ecdl1a.i/122209.b/003f0301.d

Date: 22-DEC-2009 08:16

Client ID: AR125401

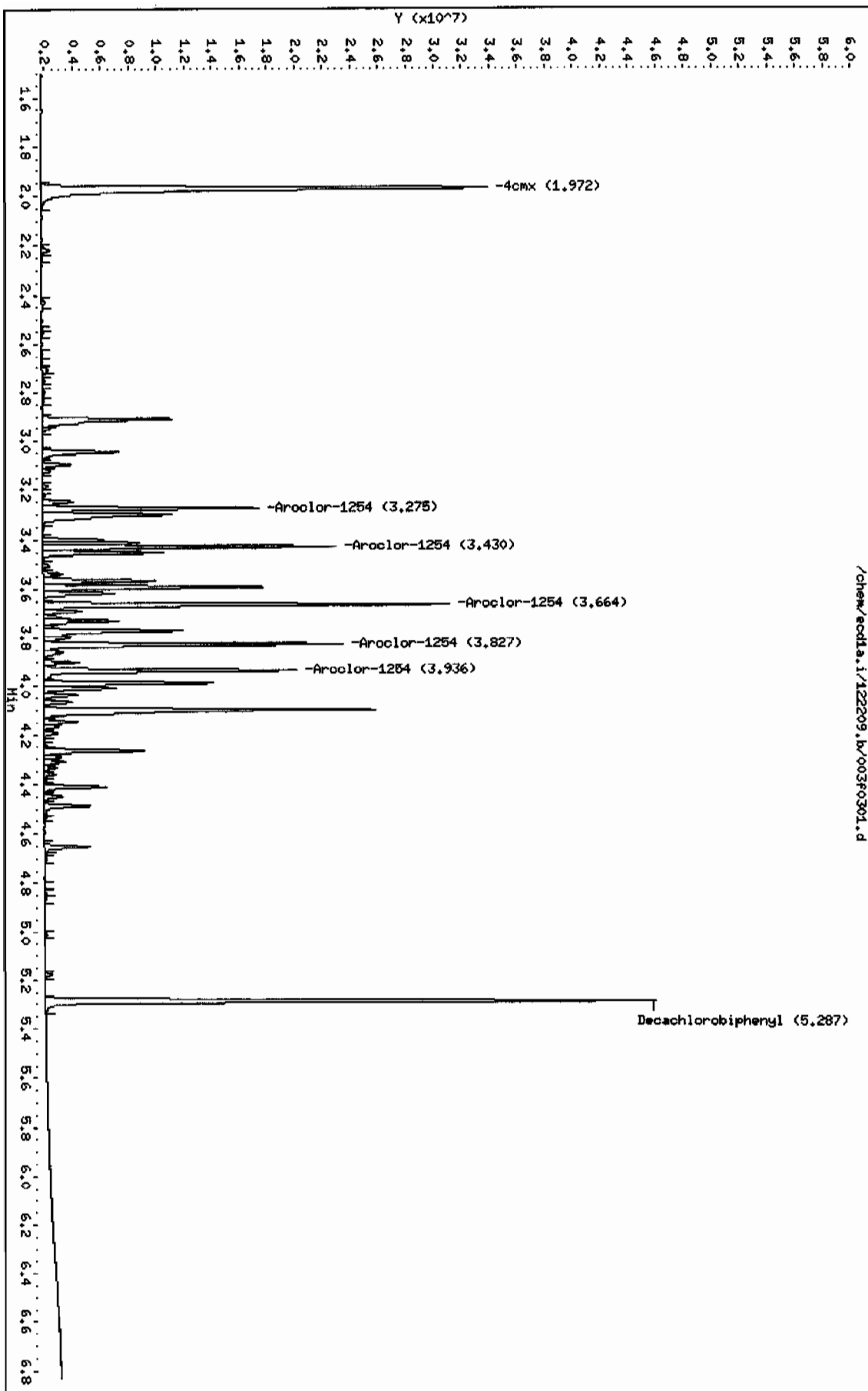
Sample Info: IAPR091216-B4

Column phase: CLP1

Instrument: ecdl1a.i

Operator: JADC

Column diameter: 0.25



Data File: /chem/ecdl1a.i/122209.b/003b0301.d  
Report Date: 22-Dec-2009 10:46

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/003b0301.d

Lab Smp Id: WAR091216-54

Client Smp ID: AR125401

Inj Date : 22-DEC-2009 08:16

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091216-54

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16

Cal File: 044b4401.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
<hr/>						
\$ 11 4cmx				CAS #: 877-09-8		
2.302	2.302	0.000	28633491 100.000	95.4	80.00- 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.949	5.948	0.001	24780473 100.000	106	80.00- 120.00	100.00
<hr/>						
6 Aroclor-1254				CAS #: 11097-69-1		
3.407	3.407	0.000	5816655 1000.00	904	80.00- 120.00	100.00
3.830	3.830	0.000	10553840 1000.00	913	161.44- 201.44	181.44
3.947	3.947	0.000	11728700 1000.00	943	181.64- 221.64	201.64
4.223	4.223	0.000	16524474 1000.00	979	264.09- 304.09	284.09
4.359	4.359	0.000	12248094 1000.00	985	190.57- 230.57	210.57
Average of Peak Amounts =				945		

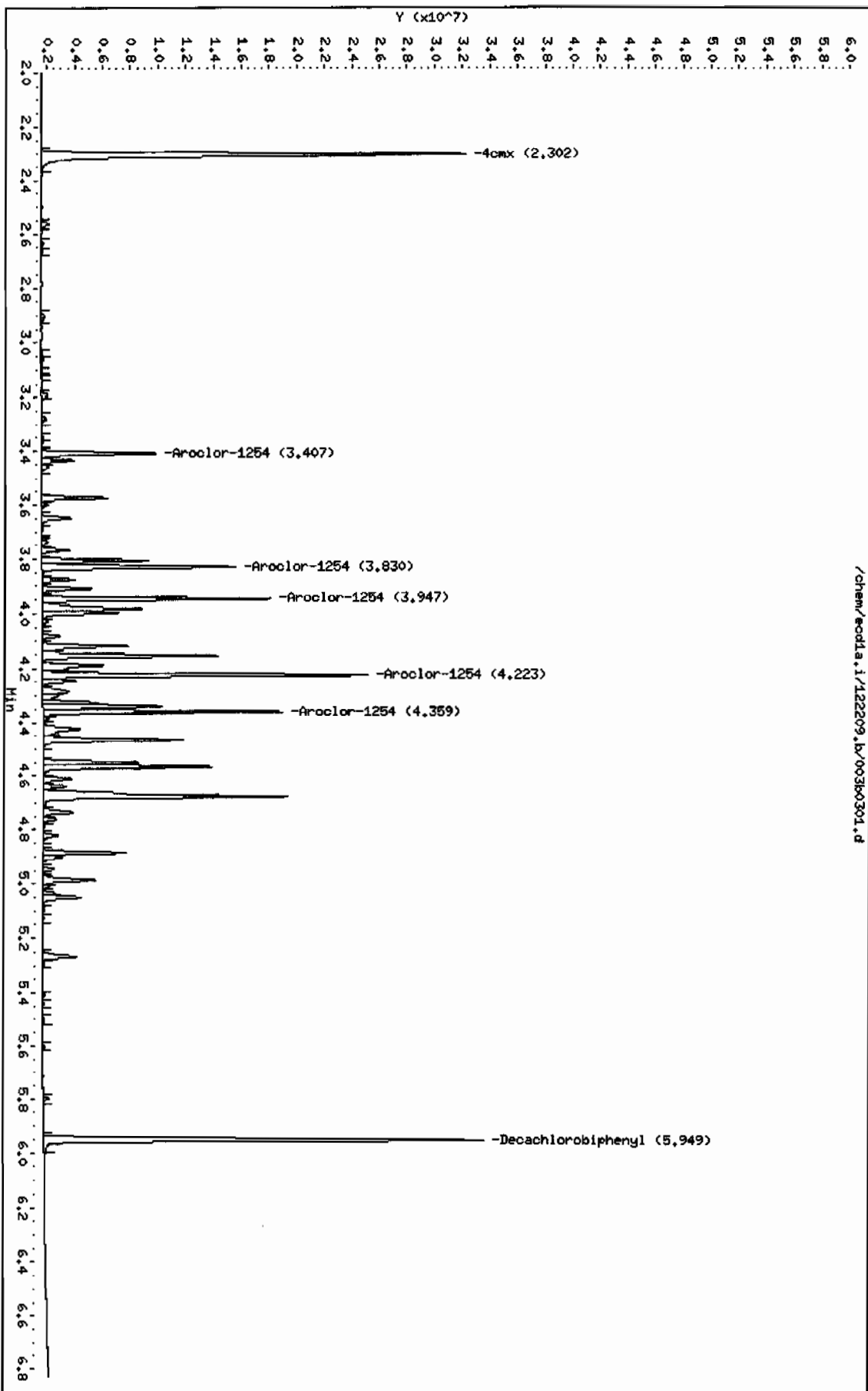
Data File: /chem/ecdl1a.i/122209.b/003b0301.d  
Date: 22-DEC-2009 08:16  
Client ID: PR125401  
Sample Info: 14MR091216-54

Instrument: ecdl1a.i

Page 1

Column Phase: CLP2

Operator: JMO  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/004f0401.d

Lab Smp Id: WAR091102-42

Client Smp ID: AR124201

Inj Date : 22-DEC-2009 08:26

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091102-42

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m

Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.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

CAL-AMT ON-COL

RT	EXP RT	DLT RT	RESPONSE ( ug/L)	( ug/L)	TARGET RANGE	RATIO
----	--------	--------	------------------	---------	--------------	-------

\$ 11 4cmx				CAS #: 877-09-8		
1.971	1.971	0.000	37237901 100.000	99.1	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.288	5.286	0.002	33757311 100.000	106	80.00- 120.00	100.00

4 Aroclor-1242				CAS #: 53469-21-9		
2.428	2.428	0.000	10444613 1000.00	896	80.00- 120.00	100.00
2.717	2.717	0.000	13312273 1000.00	990	107.46- 147.46	127.46
2.836	2.836	0.000	5271178 1000.00	957	30.47- 70.47	50.47
3.047	3.047	0.000	6995254 1000.00	966	46.97- 86.97	66.97
3.300	3.300	0.000	6938813 1000.00	1020	46.43- 86.43	66.43

Average of Peak Amounts = 965

Data File: /chem/eodla.i/122209.b/004f0401.d

Date: 22-MEC-2009 08:26

Client ID: AR124201

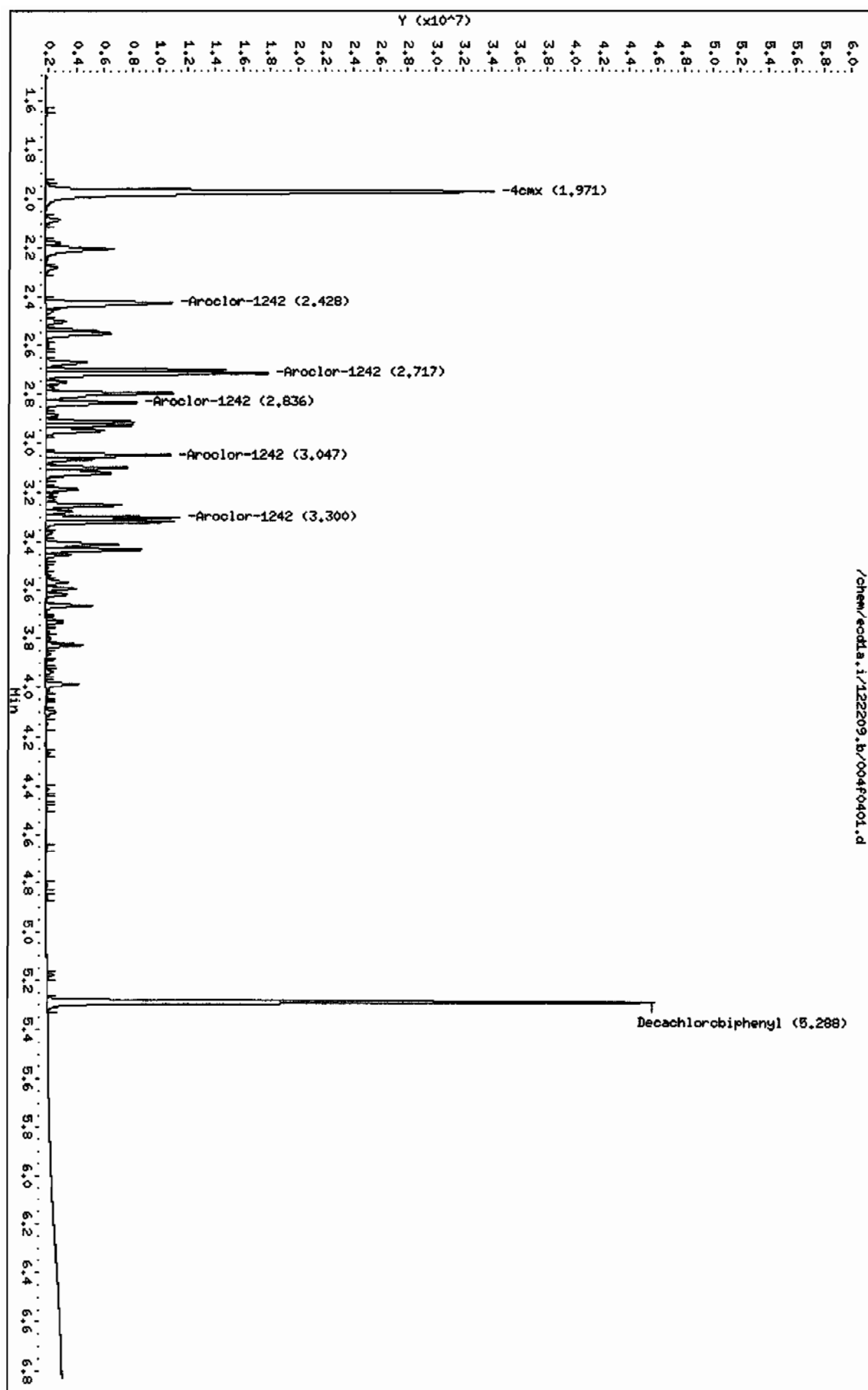
Sample Info: 1MAR091102-42

Column Phase: CLP1

Instrument: eodla.i

Operator: JADC

Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/004b0401.d

Lab Smp Id: WAR091102-42

Client Smp ID: AR124201

Inj Date : 22-DEC-2009 08:26

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091102-42

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16

Cal File: 044b4401.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

CAL-AMT ON-COL

RT	EXP RT	DLT RT	RESPONSE ( ug/L)	( ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
-----						
\$ 11 4cmx				CAS #: 877-09-8		
2.302	2.302	0.000	29061552	100.000	96.9 80.00~ 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.950	5.948	0.002	25130300	100.000	108 80.00~ 120.00	100.00
-----						
4 Aroclor-1242				CAS #: 53469-21-9		
3.200	3.200	0.000	10099566	1000.00	954 80.00~ 120.00	100.00
3.283	3.283	0.000	6910257	1000.00	858 48.42~ 88.42	68.42
3.574	3.574	0.000	5687190	1000.00	954 36.31~ 76.31	56.31
3.807	3.807	0.000	5862246	1000.00	968 38.04~ 78.04	58.04
3.835	3.835	0.000	6495896	1000.00	969 44.32~ 84.32	64.32
Average of Peak Amounts =				941		
-----						



Data File: /chem/ecdl1a.i/122209.b/004b0401.d

Date: 22-DEC-2009 08:26

Client ID: ARL24201

Sample Info: ILMR091102-42

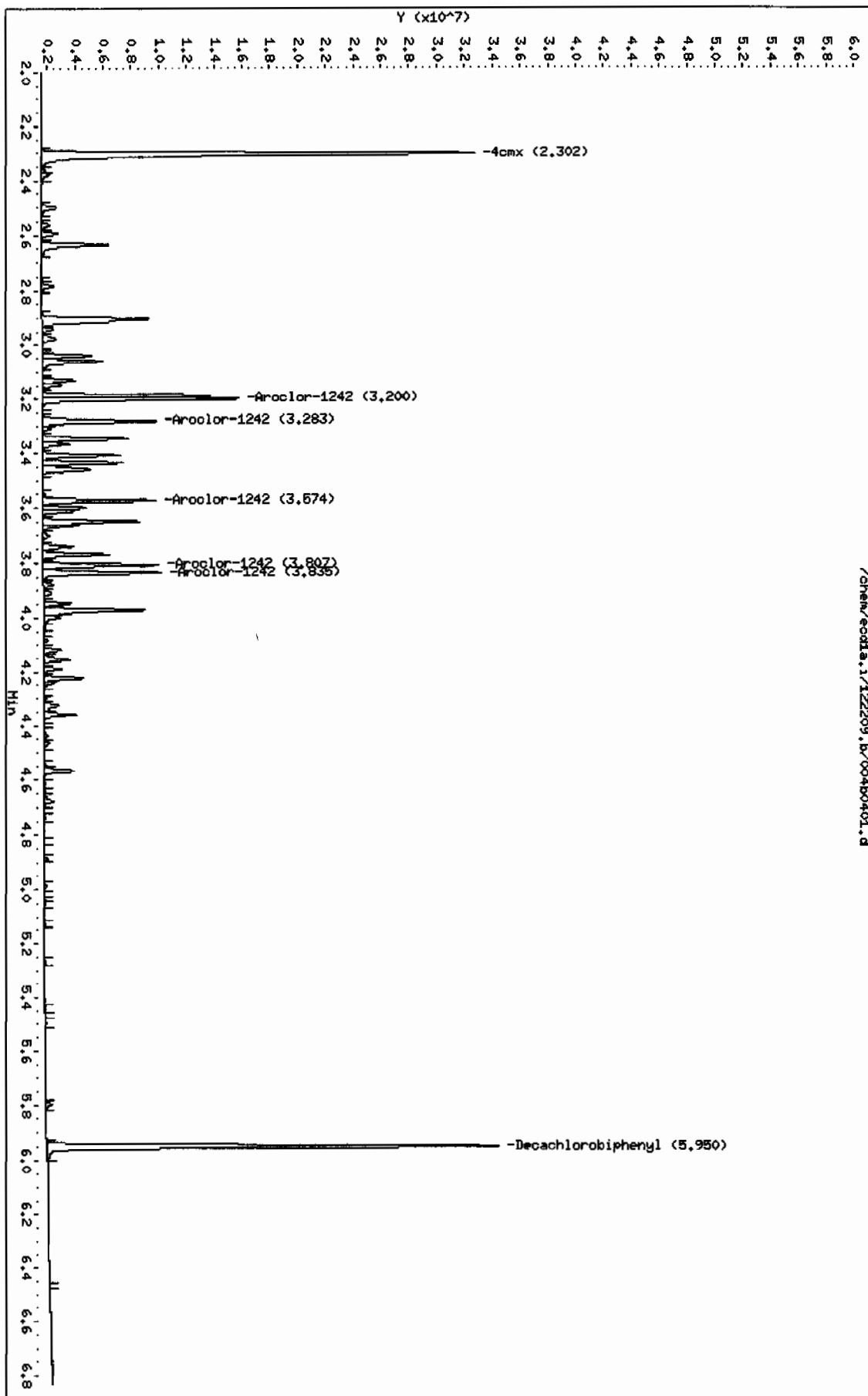
Column phase: CLP2

Instrument: ecdl1a.i

Operator: JADC

Column diameter: 0.25

Page 1



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/005f0501.d

Lab Smp Id: WAR091027-48

Client Smp ID: AR124801

Inj Date : 22-DEC-2009 08:37

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091027-48

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m

Meth Date : 22-Dec-2009 10:30 jen01212

Quant Type: ESTD

Cal Date : 14-DEC-2009 11:34

Cal File: 040f4001.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)		( ug/L)	TARGET RANGE		RATIO
==	=====	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8			
1.970	1.971	-0.001	39993494	100.000	106	80.00-	120.00	100.00
-----								
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
5.288	5.286	0.002	37162300	100.000	117	80.00-	120.00	100.00
-----								
5 Aroclor-1248					CAS #: 12672-29-6			
3.098	3.098	0.000	7931287	1000.00	1010	80.00-	120.00	100.00
3.249	3.249	0.000	7026159	1000.00	1020	68.59-	108.59	88.59
3.300	3.300	0.000	13762481	1000.00	1030	153.52-	193.52	173.52
3.432	3.432	0.000	11051789	1000.00	1000	119.34-	159.34	139.34
3.666	3.666	0.000	7023283	1000.00	942	68.55-	108.55	88.55
Average of Peak Amounts =					1e+03			

Data File: /chem/ecdl1a.i/122209.lb/005f0501.d

Date: 22-DEC-2009 08:37

Client ID: PR124801

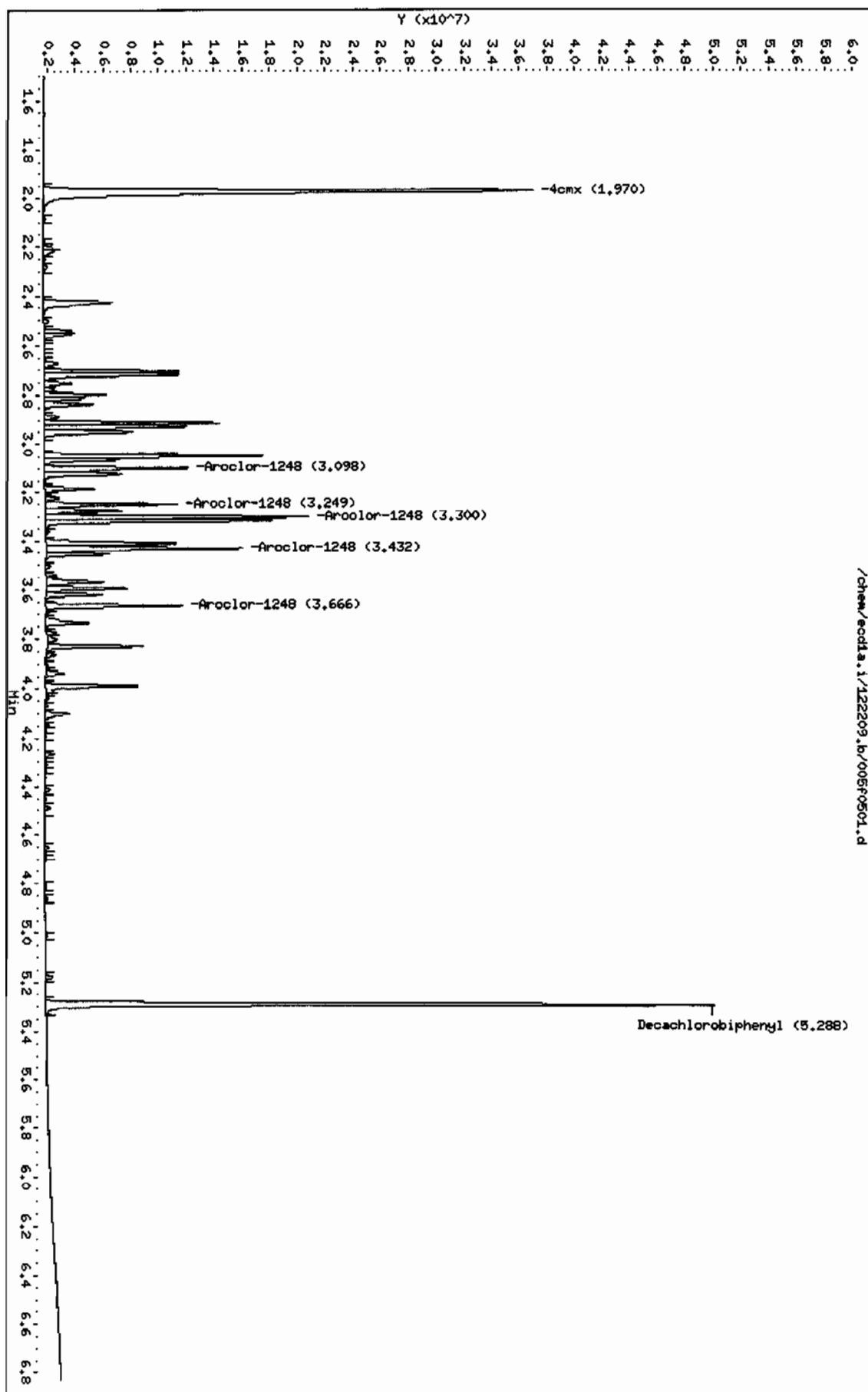
Sample Info: IHR091027-48

Column phase: CLP1

Instrument: ecdl1a.i

Operator: JAC

Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/005b0501.d  
Lab Smp Id: WAR091027-48 Client Smp ID: AR124801  
Inj Date : 22-DEC-2009 08:37  
Operator : JAOC Inst ID: ecdla.i  
Smp Info : |WAR091027-48  
Misc Info :  
Comment :  
Method : /chem/ecdla.i/122209.b/ECD1-B-8082-121409.m  
Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD  
Cal Date : 14-DEC-2009 12:16 Cal File: 044b4401.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

RT	EXP RT	DLT RT	CAL-AMT RESPONSE ( ug/L)	ON-COL ( ug/L)	TARGET RANGE	RATIO
<hr/>						
\$ 11 4cmx				CAS #: 877-09-8		
2.302	2.302	0.000	31311883 100.000	104	80.00- 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
5.950	5.948	0.002	27622840 100.000	118	80.00- 120.00	100.00
<hr/>						
5 Aroclor-1248				CAS #: 12672-29-6		
3.409	3.409	0.000	7605862 1000.00	944	80.00~ 120.00	100.00
3.574	3.574	0.000	9578982 1000.00	970	105.94~ 145.94	125.94
3.808	3.808	0.000	11087939 1000.00	988	125.78~ 165.78	145.78
3.836	3.836	0.000	12233448 1000.00	980	140.84~ 180.84	160.84
3.972	3.972	0.000	11853978 1000.00	979	135.85~ 175.85	155.85
Average of Peak Amounts =				972		

Data File: /chem/ecda.i/122209.b/005b0501.d

Date: 22-DEC-2009 08:37

Client ID: R0124801

Sample Info: 14AR091027-48

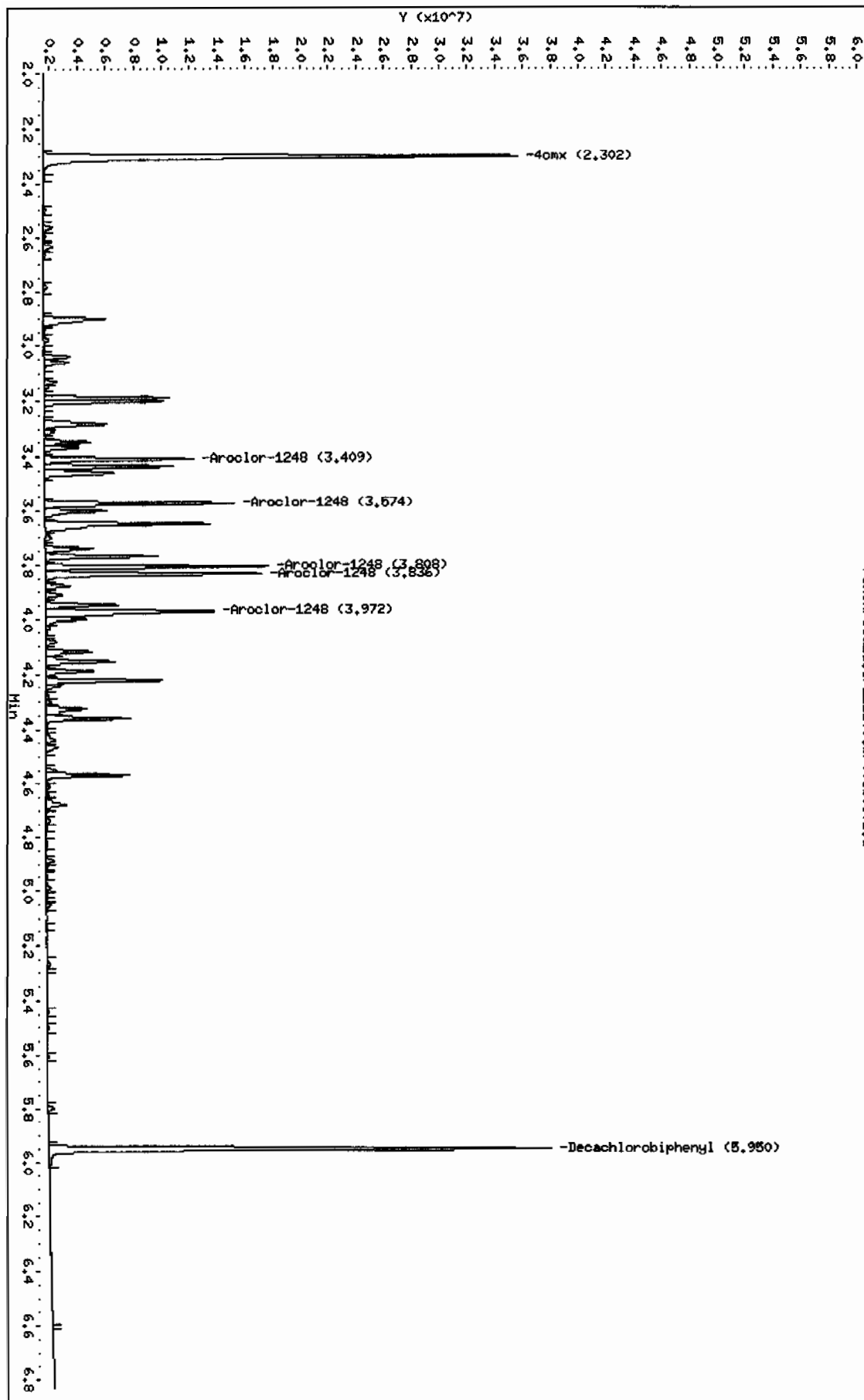
Column phase: CLP2

Instrument: ecda.i

Operator: JADC

Column diameter: 0.25

/chem/ecda.i/122209.b/005b0501.d



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/006f0601.d  
Lab Smp Id: WAR090930-32 Client Smp ID: AR123201  
Inj Date : 22-DEC-2009 08:47  
Operator : JAOC Inst ID: ecdla.i  
Smp Info : |WAR090930-32  
Misc Info :  
Comment :  
Method : /chem/ecdla.i/122209.b/ECD1-F-8082-121409.m  
Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD  
Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.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
<hr/>						
\$ 11 4cmx			CAS #: 877-09-8			
1.972	1.971	0.001	50735059 100.000	135	80.00~ 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
5.288	5.286	0.002	46259482 100.000	146	80.00~ 120.00	100.00
<hr/>						
3 Aroclor-1232			CAS #: 11141-16-5			
2.428	2.428	0.000	6887309 1000.00	1020	80.00~ 120.00	100.00
2.718	2.718	0.000	8815316 1000.00	1080	107.99~ 147.99	127.99
2.798	2.798	0.000	5909243 1000.00	1030	65.80~ 105.80	85.80
3.047	3.047	0.000	4340371 1000.00	1100	43.02~ 83.02	63.02
3.301	3.301	0.000	4103939 1000.00	1160	39.59~ 79.59	59.59
Average of Peak Amounts =			1.08e+03			

Data File: /chem/ecda.i/122209.b/006f0601.d

Date: 22-DEC-2009 08:47

Client ID: AR123204

Sample Info: 14K090930-32

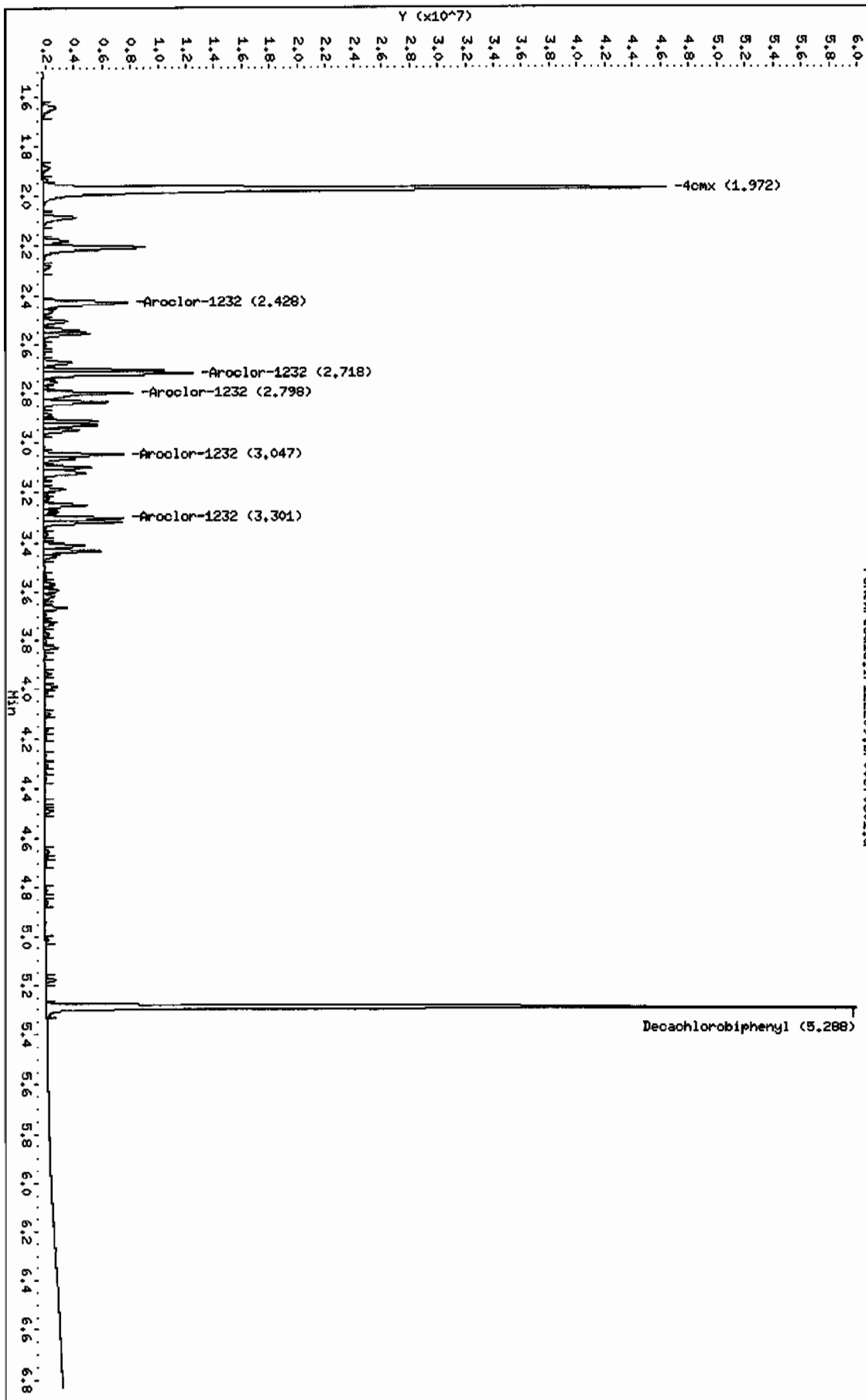
Column phase: CLP1

Instrument: ecda.i

Operator: JAO

Column diameter: 0.25

/chem/ecda.i/122209.b/006f0601.d



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/006b0601.d  
Lab Smp Id: WAR090930-32 Client Smp ID: AR123201  
Inj Date : 22-DEC-2009 08:47  
Operator : JAOC Inst ID: ecdla.i  
Smp Info : |WAR090930-32  
Misc Info :  
Comment :  
Method : /chem/ecdla.i/122209.b/ECD1-B-8082-121409.m  
Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD  
Cal Date : 14-DEC-2009 12:16 Cal File: 044b4401.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
<hr/>						
\$ 11 4cmx			CAS #: 877-09-8			
2.302	2.302	0.000	39340004 100.000	131	80.00- 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
5.950	5.948	0.002	34163690 100.000	146	80.00- 120.00	100.00
<hr/>						
3 Aroclor-1232			CAS #: 11141-16-5			
2.635	2.635	0.000	6174849 1000.00	1000	80.00- 120.00	100.00
3.201	3.201	0.000	6712340 1000.00	1060	88.70- 128.70	108.70
3.283	3.283	0.000	4682612 1000.00	996	55.83- 95.83	75.83
3.574	3.574	0.000	3474500 1000.00	1070	36.27- 76.27	56.27
3.807	3.807	0.000	3503346 1000.00	1110	36.74- 76.74	56.74
Average of Peak Amounts =			1.05e+03			



Data File: /chem/ecdda.i/122209.b/006b0601.d

Date: 22-DEC-2009 08:47

Client ID: R6123201

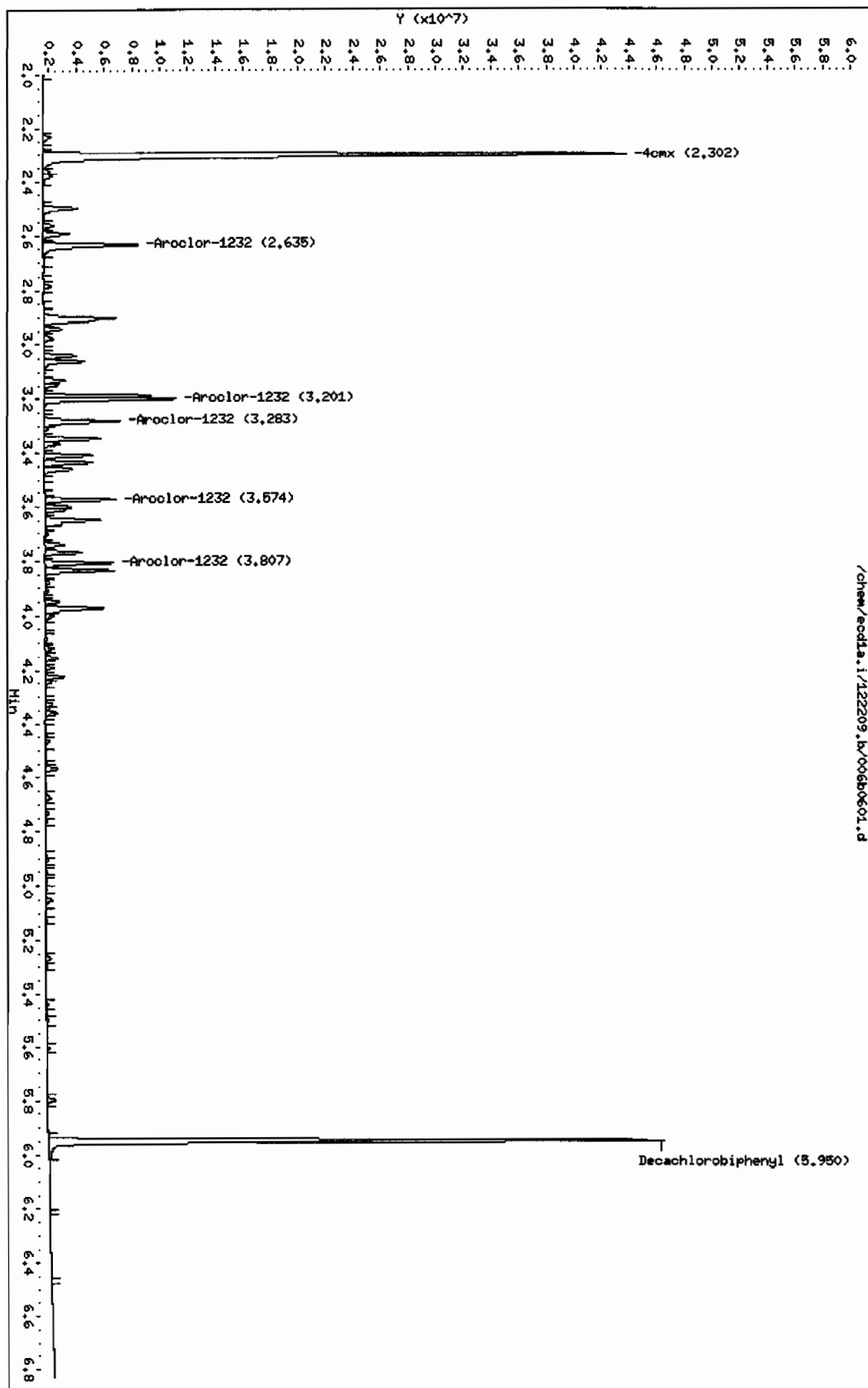
Sample Info: 144R090930-32

Column phase: CLP2

Instrument: ecdda.i

Operator: JHOC

Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/007f0701.d

Lab Smp Id: WAR090803-21

Client Smp ID: AR122101

Inj Date : 22-DEC-2009 08:58

Operator : JAOC

Inst ID: ecdla.i

Smp Info : |WAR090803-21

Misc Info :

Comment :

Method : /chem/ecdla.i/122209.b/ECD1-F-8082-121409.m

Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.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

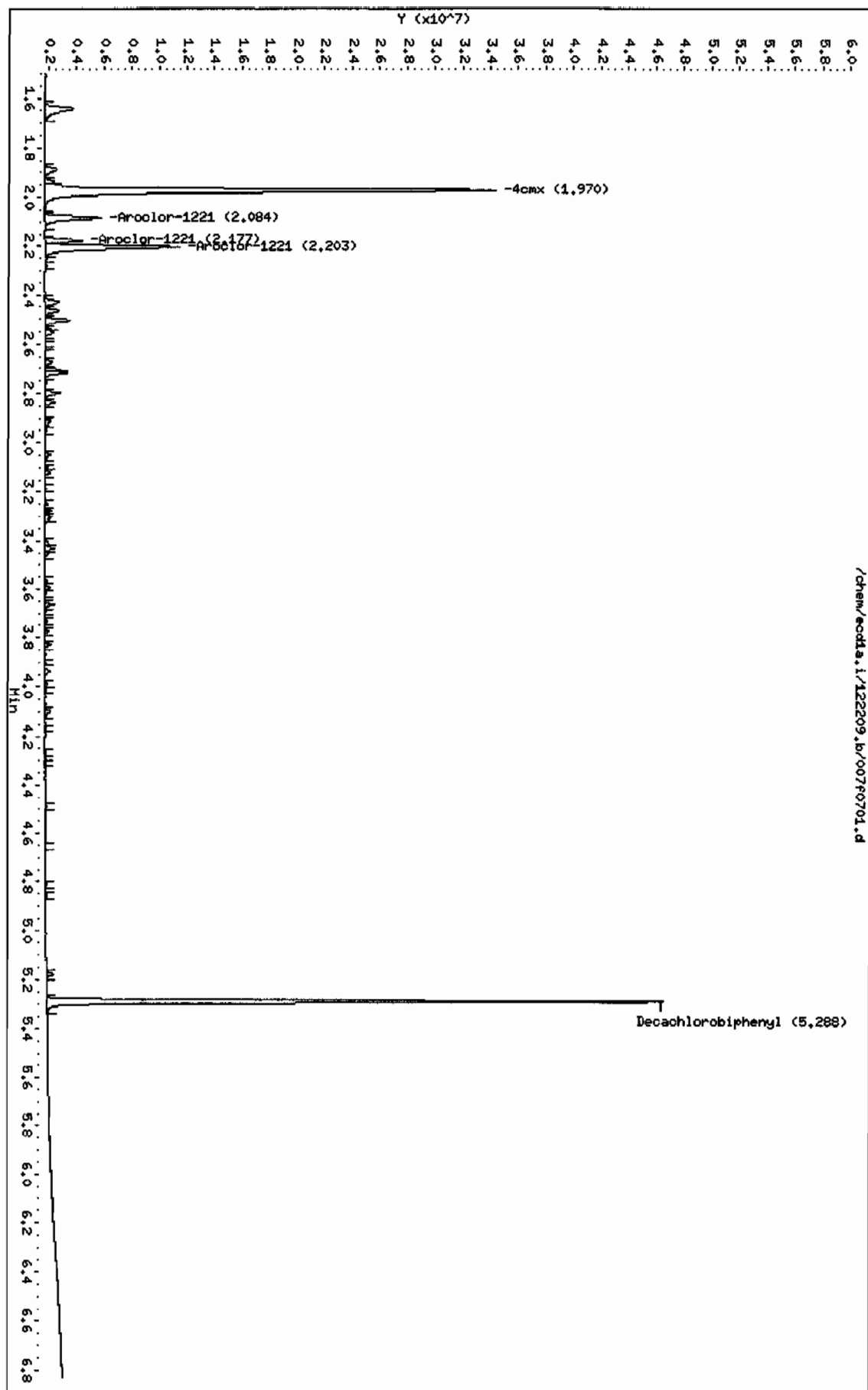
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	( ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8	
1.970	1.971	-0.001	37237905 100.000	99.1	80.00~ 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
5.288	5.286	0.002	34252960 100.000	108	80.00~ 120.00	100.00
-----						
2 Aroclor-1221					CAS #: 11104-28-2	
2.084	2.084	0.000	4275079 1000.00	994	80.00~ 120.00	100.00
2.177	2.177	0.000	2404255 1000.00	985	36.24~ 76.24	56.24
2.203	2.203	0.000	10269221 1000.00	1000	220.21~ 260.21	240.21
Average of Peak Amounts =				993		
-----						

Data File: /chem/ecdda.i/122209.b/0070701.d  
Date: 22-DEC-2009 08:38  
Client ID: AR122101  
Sample Info: 11MR090803-21

Column phase: CLP1

Instrument: ecdda.i  
Operator: JBOC  
Column diameter: 0.25

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/007b0701.d

Lab Smp Id: WAR090803-21

Client Smp ID: AR122101

Inj Date : 22-DEC-2009 08:58

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR090803-21

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 22-Dec-2009 10:30 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16

Cal File: 044b4401.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
==	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8		
2.301	2.302	-0.001	28811147	100.000	96.0	80.00- 120.00	100.00
-----							
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.950	5.948	0.002	25347070	100.000	109	80.00- 120.00	100.00
-----							
2 Aroclor-1221					CAS #: 11104-28-2		
2.499	2.499	0.000	3581860	1000.00	984	80.00- 120.00	100.00
2.594	2.594	0.000	2312559	1000.00	993	44.56- 84.56	64.56
2.635	2.635	0.000	8030890	1000.00	989	204.21- 244.21	224.21
Average of Peak Amounts =					989		

Data File: /chem/ecdl1.i/122209.b/007b0701.d

Date: 22-DEC-2009 08:58

Client ID: PR122101

Sample Info: IMR090803-21

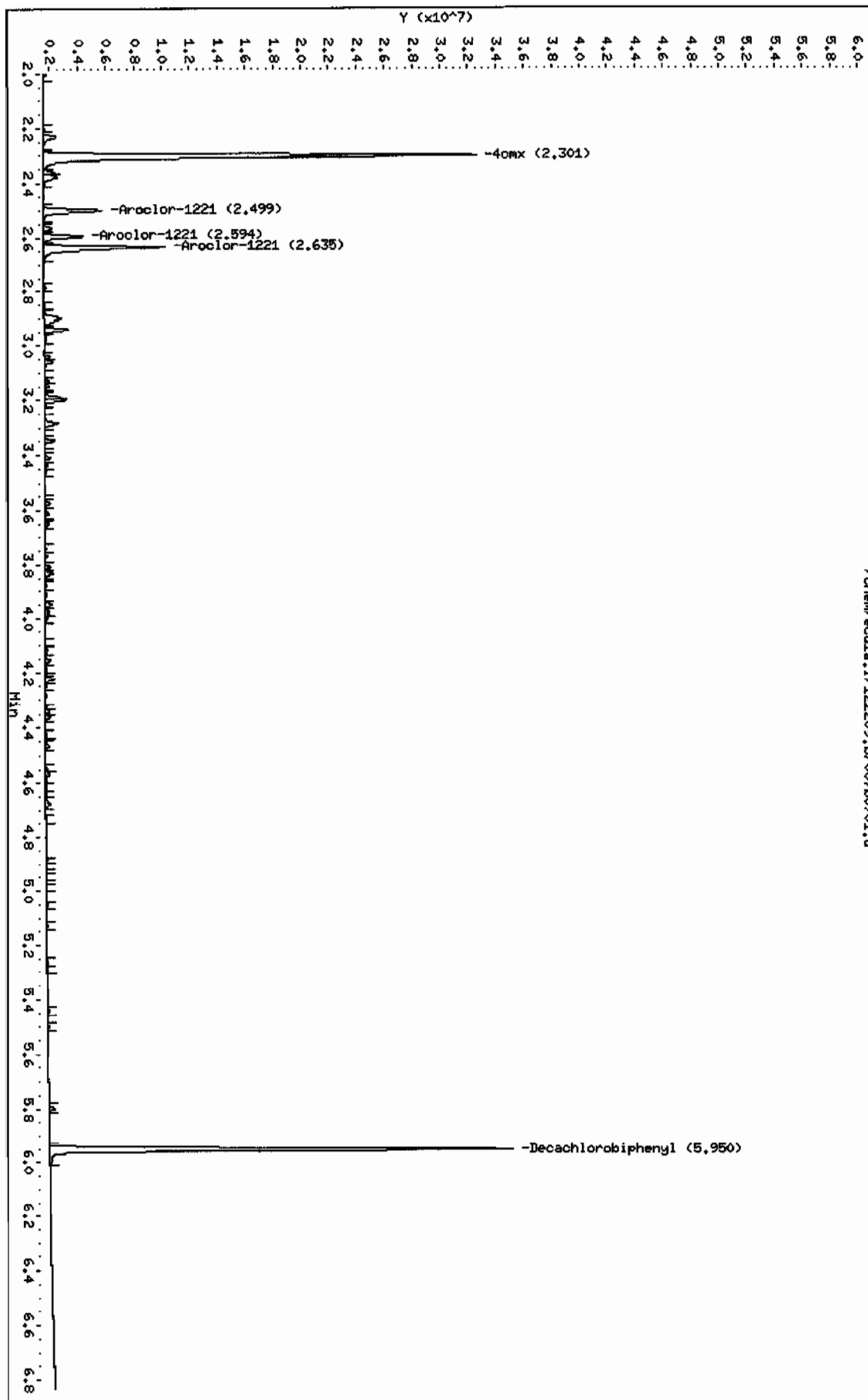
Column phase: CLP2

Instrument: ecdl1.i

Operator: JAC

Column diameter: 0.25

/chem/ecdl1.i/122209.b/007b0701.d



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1.i/122209.b/022f2201.d

Lab Smp Id: WAR091211-60 02

Client Smp ID: AR166002

Inj Date : 22-DEC-2009 11:36

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091211-60 02

Misc Info :

Comment :

Method : /chem/ecdl1.i/122209.b/ECD1-F-8082-121409.m

Meth Date : 22-Dec-2009 14:00 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 11:34

Cal File: 040f4001.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			
1.971	1.971	0.000	35356703	100.000	94.1	80.00~	120.00	100.00
-----								
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
5.287	5.286	0.001	32312044	100.000	102	80.00~	120.00	100.00
-----								
1 Aroclor-1016					CAS #: 12674-11-2			
2.427	2.427	0.000	12195989	1000.00	880	80.00~	120.00	100.00
2.705	2.705	0.000	10155647	1000.00	1000	60.33~	100.33	83.27
2.797	2.796	0.001	10536169	1000.00	896	66.29~	106.29	86.39
2.836	2.835	0.001	6316222	1000.00	957	31.97~	71.97	51.79
3.047	3.046	0.001	8227877	1000.00	949	46.19~	86.19	67.46
Average of Peak Amounts =					937			
-----								
7 Aroclor-1260					CAS #: 11096-82-5			
3.772	3.771	0.001	16412717	1000.00	980	80.00~	120.00	100.00
3.936	3.934	0.002	25383228	1000.00	1020	126.54~	166.54	154.66
4.166	4.165	0.001	15136737	1000.00	1030	71.39~	111.39	92.23
4.309	4.307	0.002	15881438	1000.00	1040	76.29~	116.29	96.76
4.488	4.486	0.002	36861795	1000.00	1070	204.73~	244.73	224.59
Average of Peak Amounts =					1.03e+03			

Data File: /chem/ecda.i/122209.b/022f2201.d

Date: 22-DEC-2009 11:36

Client ID: AR166002

Sample Info: IAP091211-60 02

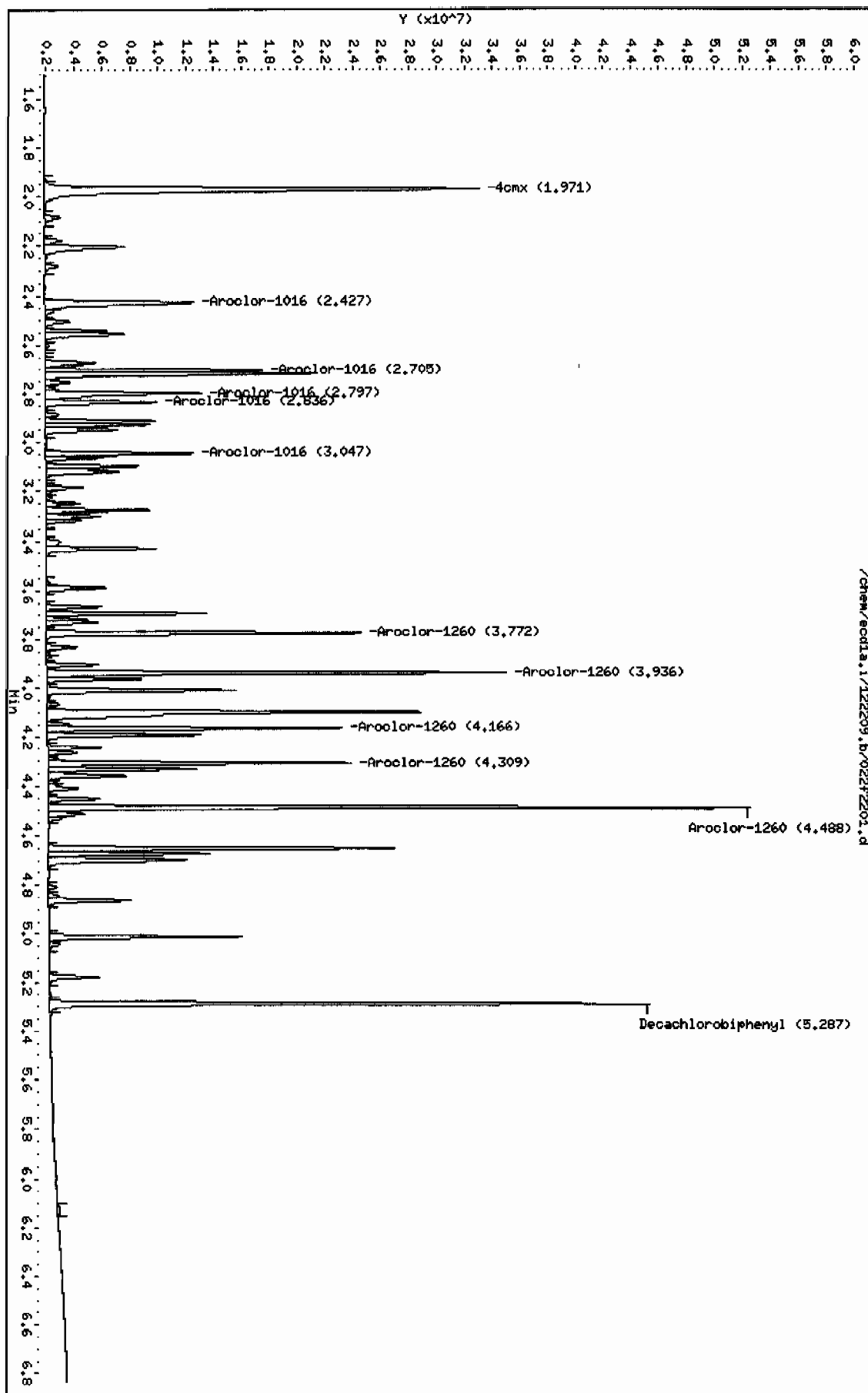
Column phase: CLP1

Instrument: ecda.i

Operator: JADC

Column diameter: 0.25

Page 1



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/022b2201.d

Lab Smp Id: WAR091211-60 02

Client Smp ID: AR166002

Inj Date : 22-DEC-2009 11:36

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091211-60 02

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 22-Dec-2009 13:59 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16 Cal File: 044b4401.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						
2.302	2.302	0.000	26829790	100.000	89.4 80.00- 120.00	100.00
-----						
12	Decachlorobiphenyl					
5.949	5.948	0.001	23440724	100.000	100 80.00- 120.00	100.00
-----						
1	Aroclor-1016					
3.199	3.199	0.000	12044893	1000.00	955 80.00- 120.00	100.00 (M)
3.282	3.282	0.000	7971400	1000.00	854 45.52- 85.52	66.18
3.347	3.346	0.001	5010349	1000.00	926 21.04- 61.04	41.60
3.573	3.572	0.001	6461987	1000.00	916 33.41- 73.41	53.65
3.649	3.648	0.001	5901694	1000.00	901 28.90- 68.90	60.03
Average of Peak Amounts =				911		
-----						
7	Aroclor-1260					
4.339	4.338	0.001	12441498	1000.00	909 80.00- 120.00	100.00
4.463	4.463	0.000	15419548	1000.00	962 103.50- 143.50	123.94
4.730	4.729	0.001	11883895	1000.00	946 75.02- 115.02	95.52
4.903	4.903	0.000	12259583	1000.00	957 77.89- 117.89	98.54
5.051	5.050	0.001	28019266	1000.00	1000 203.88- 243.88	225.21
Average of Peak Amounts =				956		



Data File: /chem/ecdl1a.i/122209.b/022b2201.d  
Report Date: 22-Dec-2009 14:54

Page 2

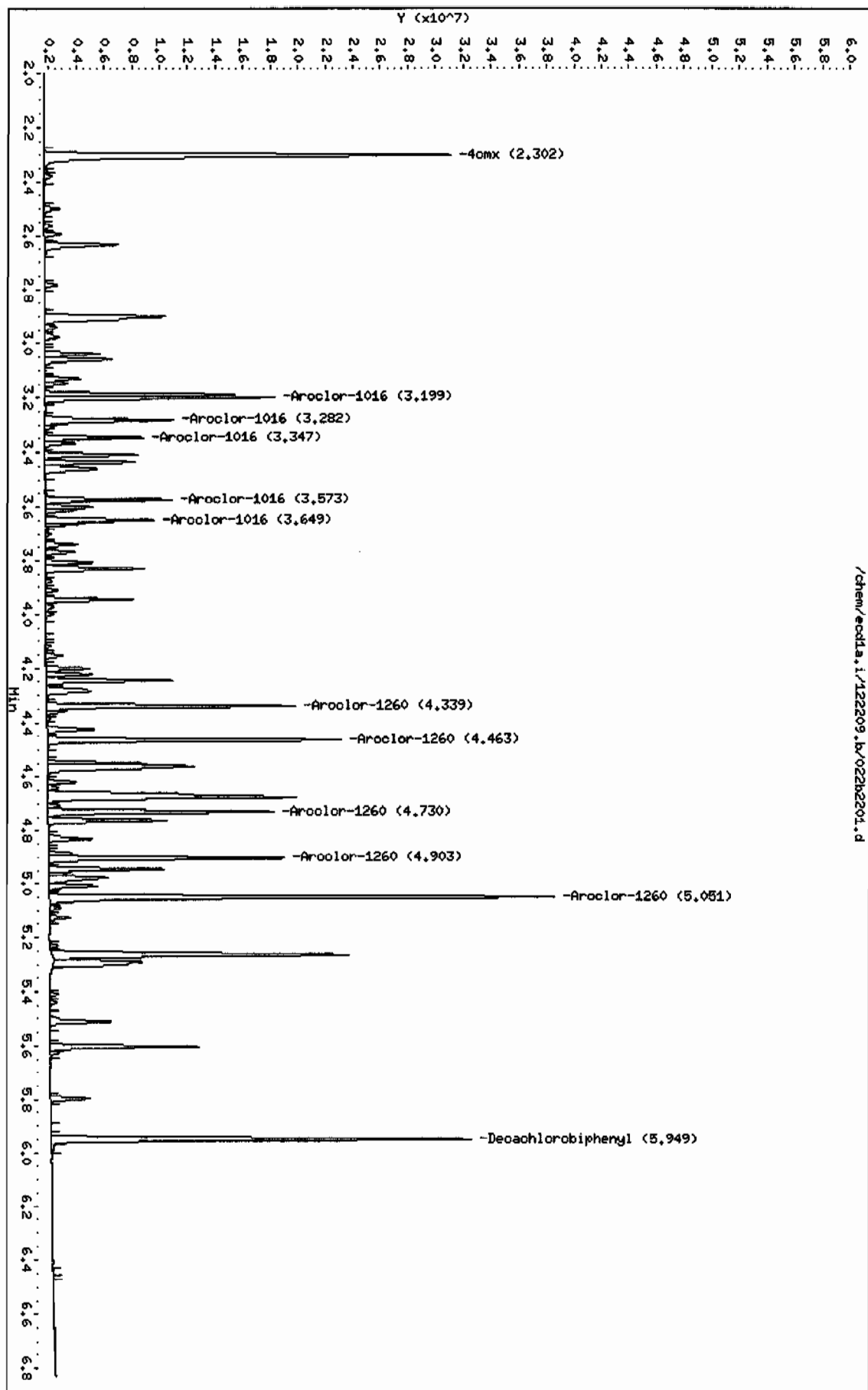
#### QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/eod1a.i/122209.b/02b2201.d  
Date: 22-DEC-2009 11:36  
Client ID: AR166002  
Sample Info: IMR091211-60 02

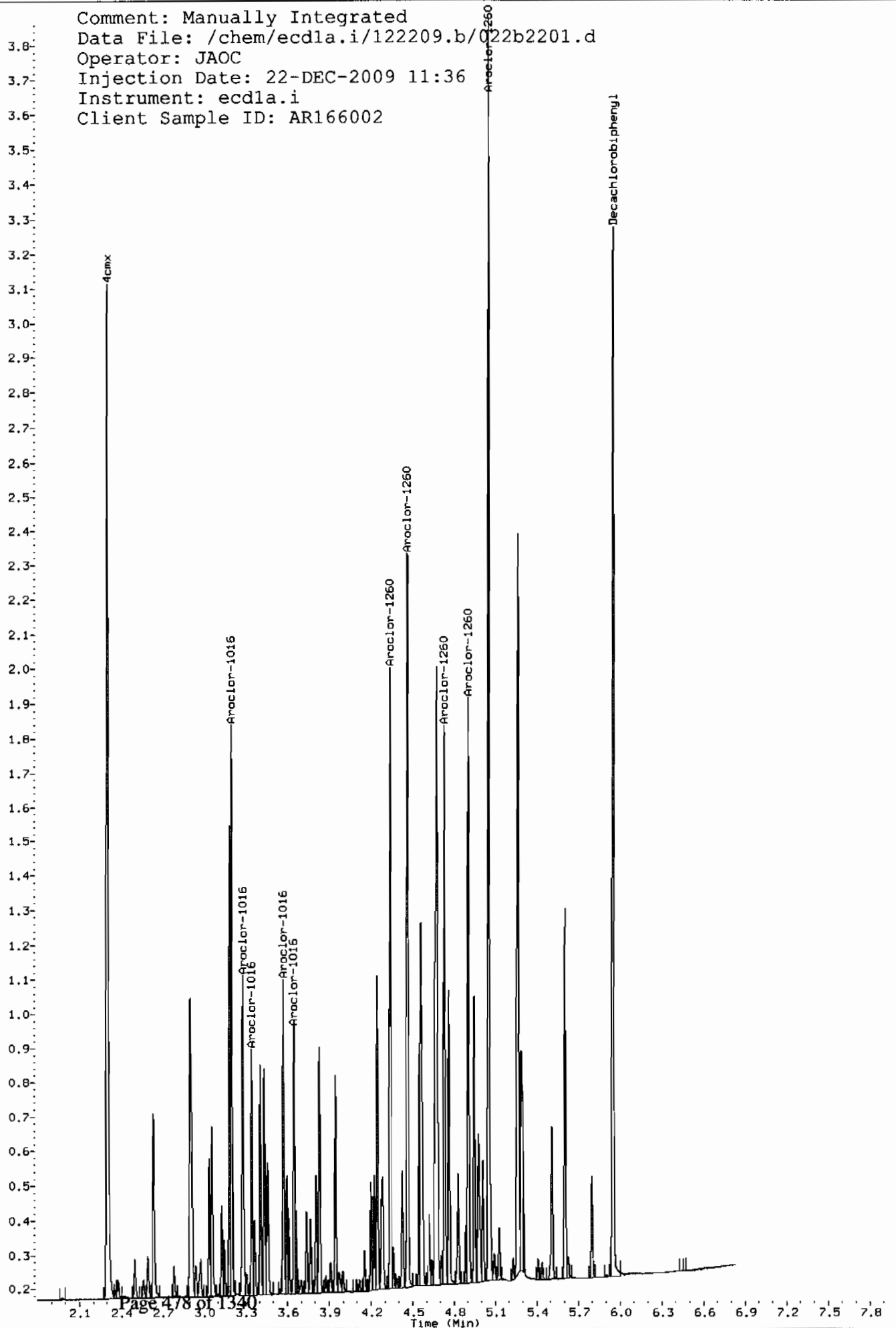
Column phase: CLP2

Instrument: eod1a.i  
Operator: JROC  
Column diameter: 0.25



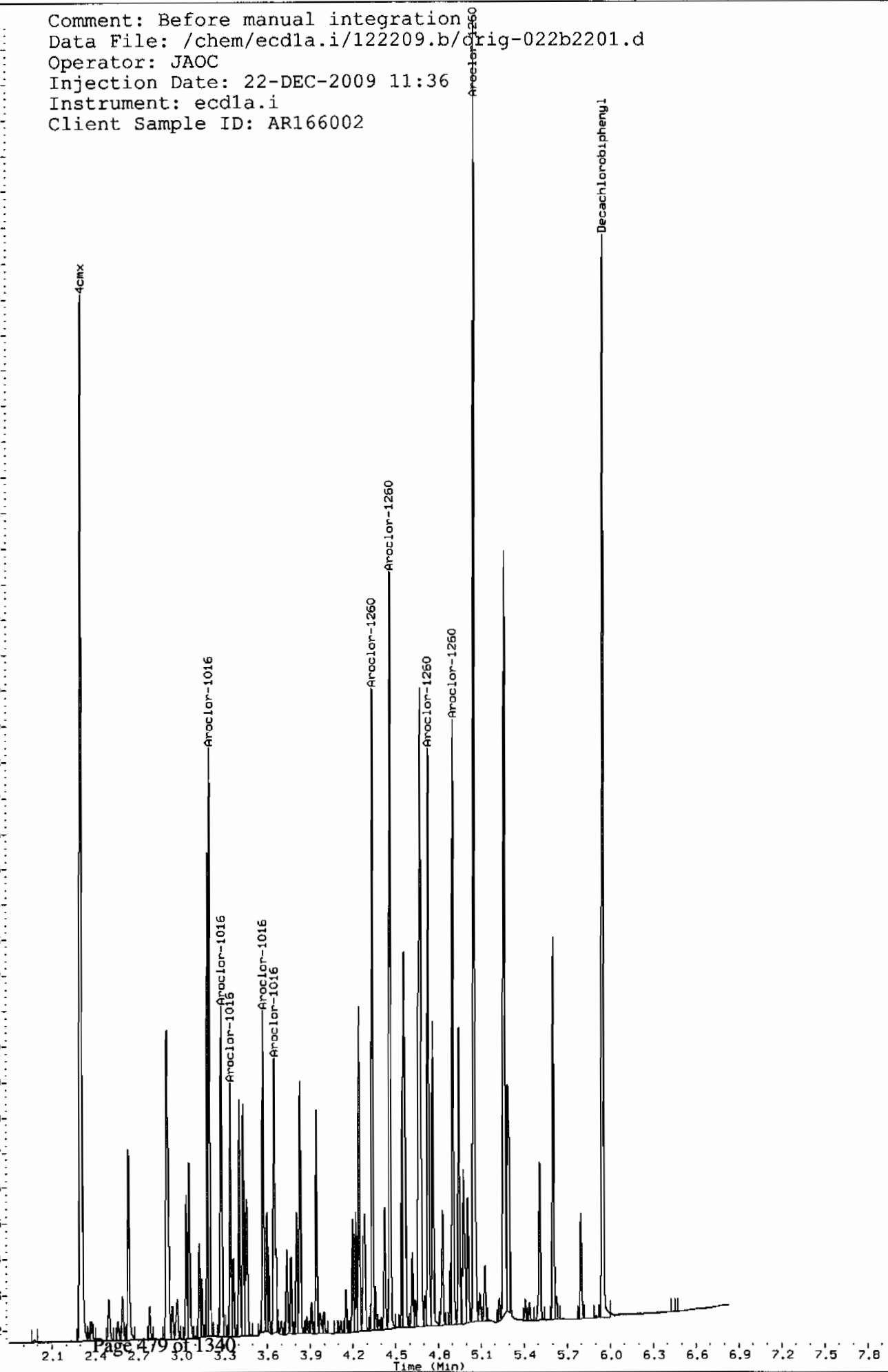
Comment: Manually Integrated  
Data File: /chem/ecdl1.i/122209.b/022b2201.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 11:36  
Instrument: ecd1a.i  
Client Sample ID: AR166002

Y (x10<sup>-7</sup>)



Comment: Before manual integration  
Data File: /chem/ecdl1.i/122209.b/orig-022b2201.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 11:36  
Instrument: ecd1a.i  
Client Sample ID: AR166002

Y (x10<sup>7</sup>)



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/034f3401.d

Lab Smp Id: WAR091211-60 03

Client Smp ID: AR166003

Inj Date : 22-DEC-2009 13:42

Operator : JAOC

Inst ID: ecdla.i

Smp Info : |WAR091211-60 03

Misc Info :

Comment :

Method : /chem/ecdla.i/122209.b/ECD1-F-8082-121409.m

Meth Date : 23-Dec-2009 06:42 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.d

Als bottle: 34 Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1660.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			
1.971	1.971	0.000	35502073 100.000	94.5	80.00~ 120.00	100.00
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
5.288	5.286	0.002	32071588 100.000	101	80.00~ 120.00	100.00
1 Aroclor-1016			CAS #: 12674-11-2			
2.428	2.427	0.001	12307109 1000.00	888	80.00~ 120.00	100.00
2.705	2.705	0.000	9886673 1000.00	979	65.19~ 105.19	80.33
2.798	2.796	0.002	10619709 1000.00	903	66.50~ 106.50	86.29
2.835	2.835	0.000	6396545 1000.00	969	32.04~ 72.04	51.97
3.046	3.046	0.000	8146353 1000.00	939	47.11~ 87.11	66.19
Average of Peak Amounts =			936			
7 Aroclor-1260			CAS #: 11096-82-5			
3.773	3.771	0.002	16477385 1000.00	984	80.00~ 120.00	100.00 (M)
3.936	3.934	0.002	25407089 1000.00	1030	134.26~ 174.26	154.19
4.166	4.165	0.001	15258339 1000.00	1040	72.25~ 112.25	92.60
4.310	4.307	0.003	15999261 1000.00	1050	76.57~ 116.57	97.10
4.489	4.486	0.003	36981333 1000.00	1080	202.51~ 242.51	224.44
Average of Peak Amounts =			1.04e+03			

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecda.i/122209.b/034f3401.d

Date: 22-DEC-2009 13:42

Client ID: AR166003

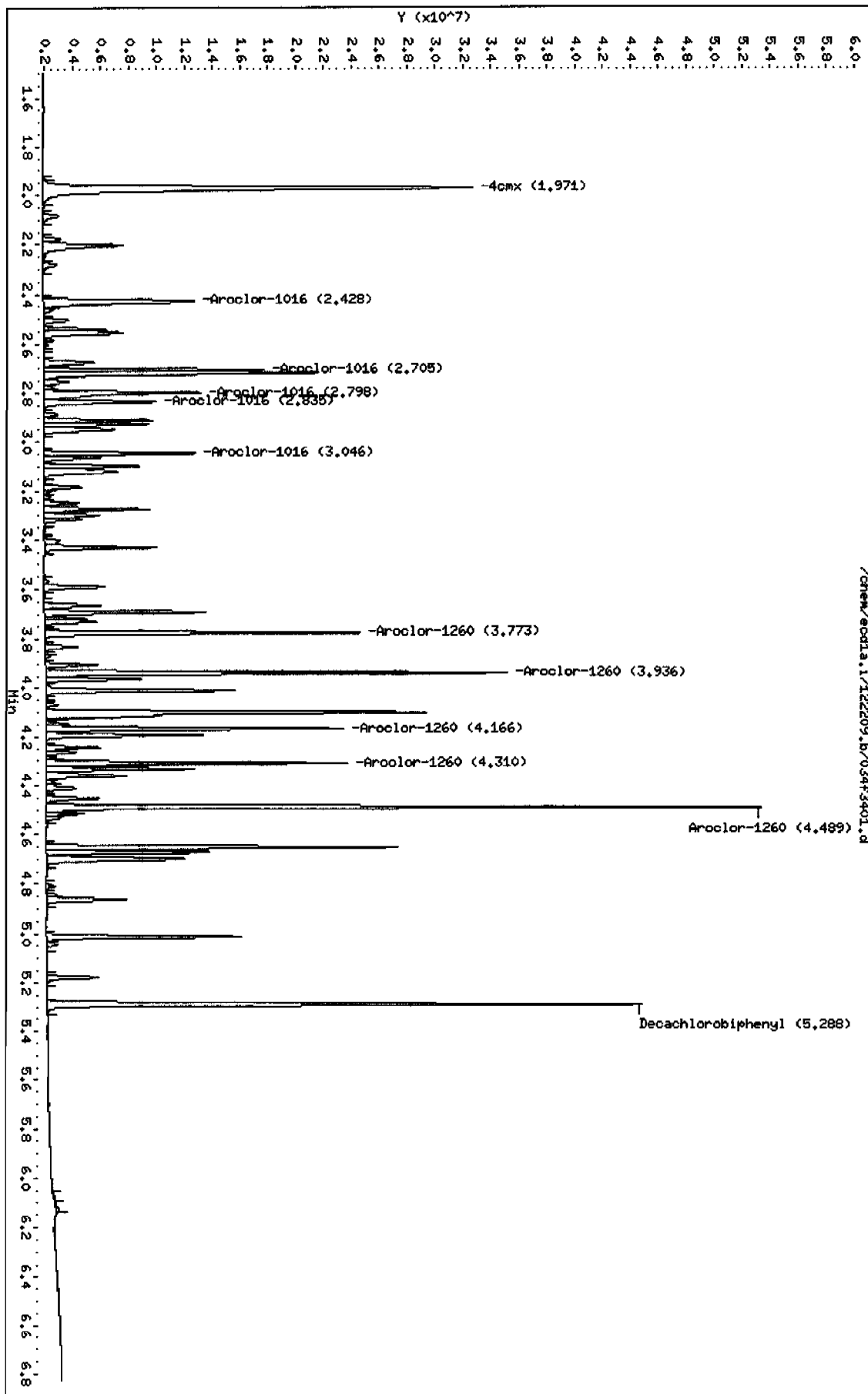
Sample Info: 14MR091211-60 03

Column phase: CLP1

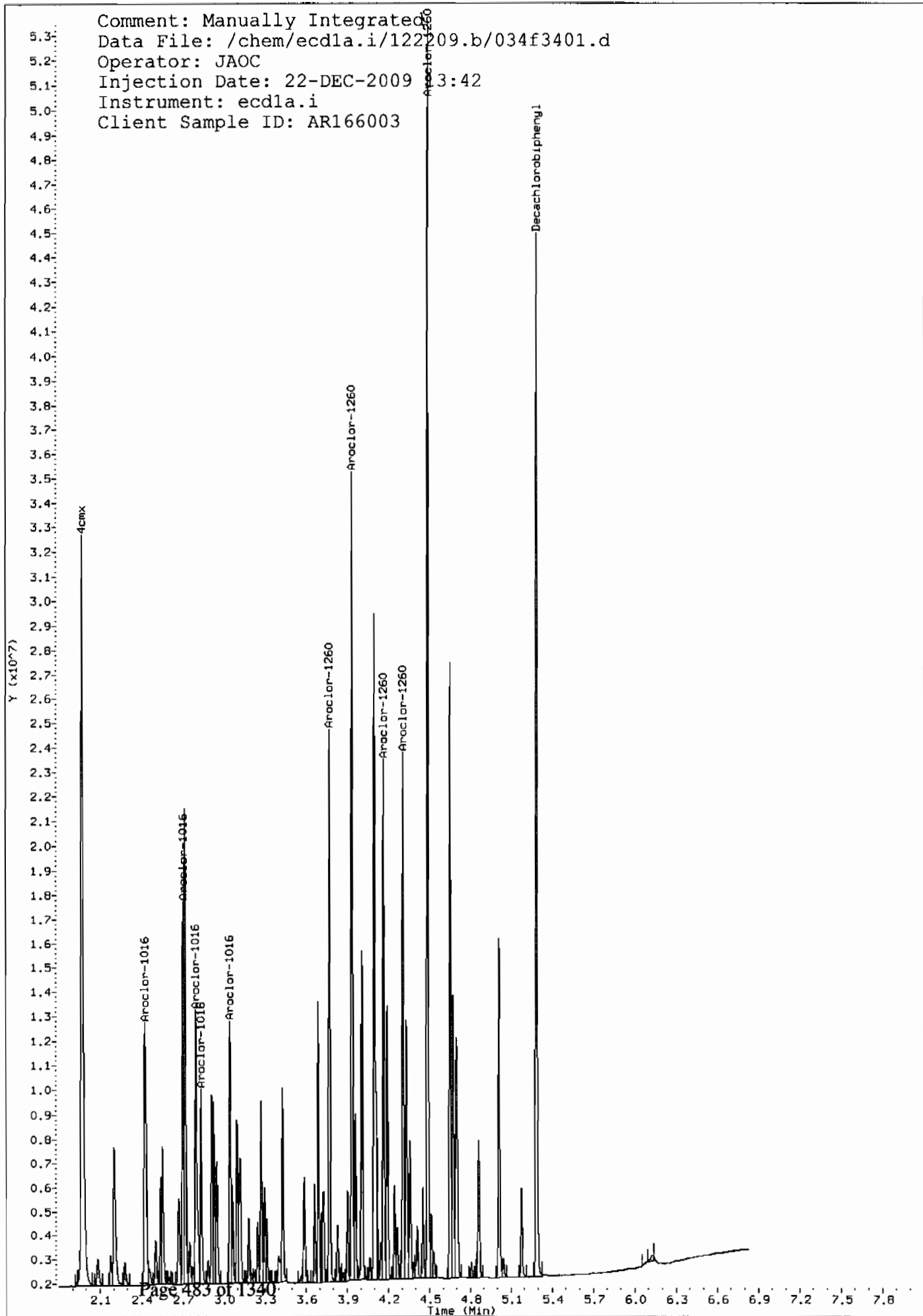
Instrument: ecda.i

Operator: JADC

Column diameter: 0.25

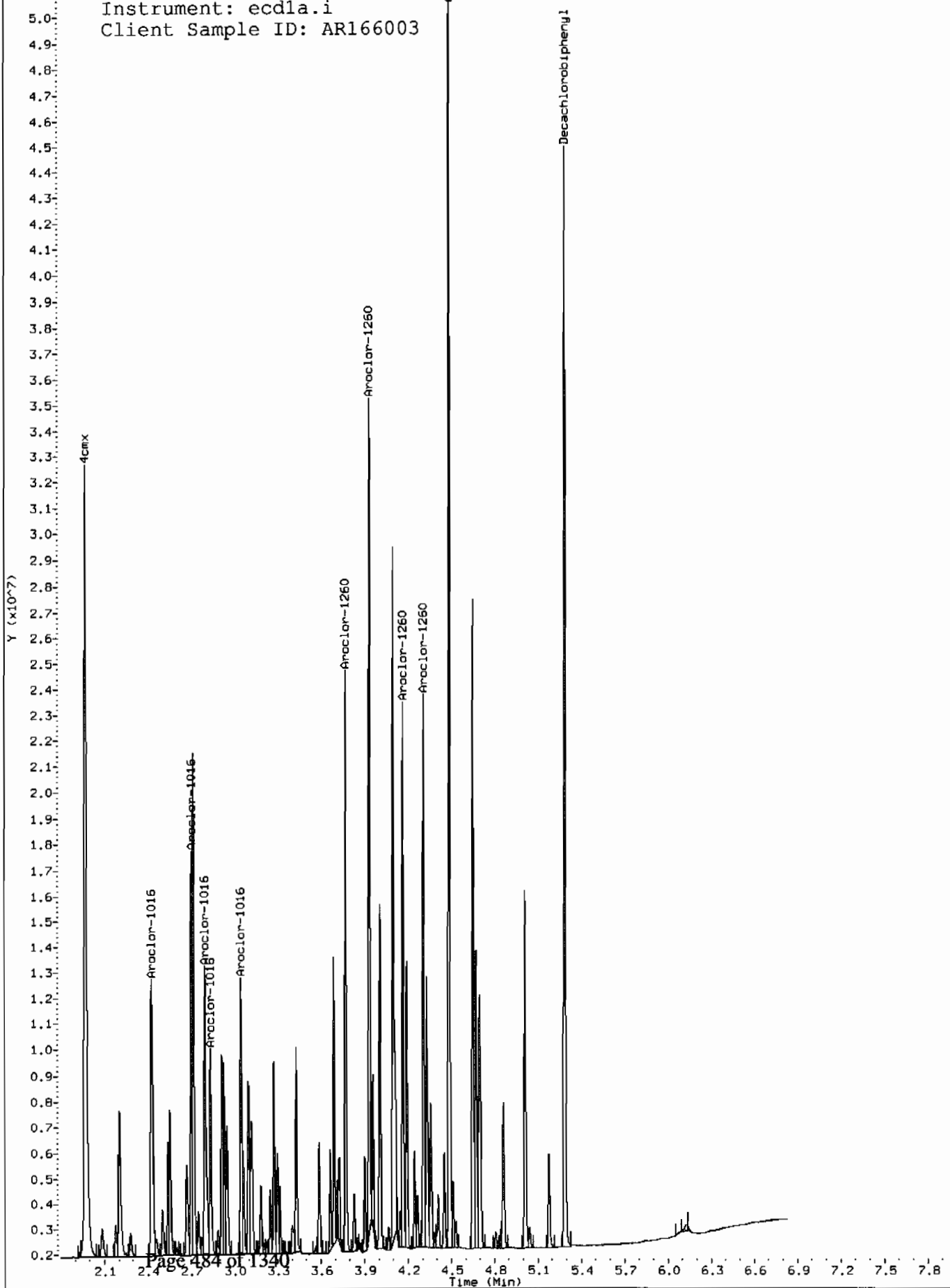


Comment: Manually Integrated  
Data File: /chem/ecdl1a.i/122209.b/034f3401.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 13:42  
Instrument: ecd1a.i  
Client Sample ID: AR166003





Comment: Before manual integration  
Data File: /chem/ecdl1.i/122209.b/orig-034f3401.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 13:42  
Instrument: ecd1a.i  
Client Sample ID: AR166003



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/034b3401.d

Lab Smp Id: WAR091211-60 03

Client Smp ID: AR166003

Inj Date : 22-DEC-2009 13:42

Operator : JAOC

Inst ID: ecdla.i

Smp Info : |WAR091211-60 03

Misc Info :

Comment :

Method : /chem/ecdla.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 22-Dec-2009 13:59 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16 Cal File: 044b4401.d

Als bottle: 34 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

2.302	2.302	0.000	27198842	100.000	90.6 80.00- 120.00	100.00
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\$ 12 Decachlorobiphenyl

CAS #: 2051-24-3

5.950	5.948	0.002	23200037	100.000	99.5 80.00- 120.00	100.00
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1 Aroclor-1016

CAS #: 12674-11-2

3.200	3.199	0.001	12230495	1000.00	970 80.00- 120.00	100.00
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3.283	3.282	0.001	8013748	1000.00	859 45.52- 85.52	65.52
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3.346	3.346	0.000	5019209	1000.00	928 21.04- 61.04	41.04
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3.573	3.572	0.001	6532588	1000.00	926 33.41- 73.41	53.41
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3.649	3.648	0.001	5980984	1000.00	913 28.90- 68.90	48.90
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Average of Peak Amounts =

919

7 Aroclor-1260

CAS #: 11096-82-5

4.340	4.338	0.002	12671837	1000.00	926 80.00- 120.00	100.00
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4.464	4.463	0.001	15649823	1000.00	976 103.50- 143.50	123.50
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4.730	4.729	0.001	12040790	1000.00	958 75.02- 115.02	95.02
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4.904	4.903	0.001	12404464	1000.00	968 77.89- 117.89	97.89
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5.050	5.050	0.000	28369149	1000.00	1020 203.88- 243.88	223.88
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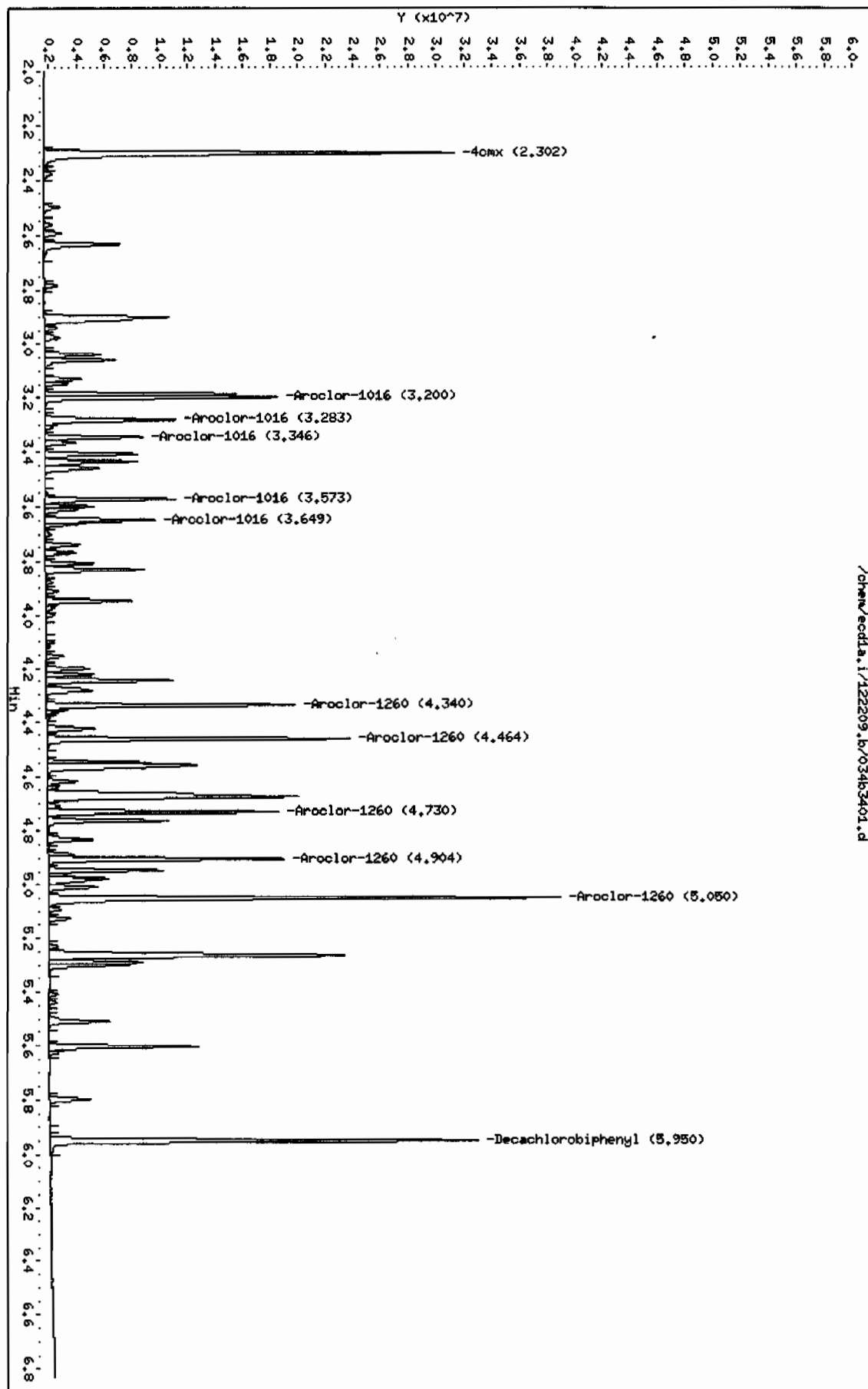
Average of Peak Amounts =

969

Data File: /chem/ecdl1a.i/122209.b/034b3401.d  
Date : 22-DEC-2009 13:42  
Client ID: AR166003  
Sample Info: ILMR091211-60 03

Column phase: CLP2

Instrument: ecdl1a.i  
Operator: JHOC  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/044f4401.d

Lab Smp Id: WAR091211-60 04

Client Smp ID: AR166004

Inj Date : 22-DEC-2009 15:27

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091211-60 04

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m

Meth Date : 23-Dec-2009 06:42 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.d

Als bottle: 44 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

1.972	1.971	0.001	36485812	100.000	97.1 80.00- 120.00	100.00
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\$ 12 Decachlorobiphenyl

CAS #: 2051-24-3

5.287	5.286	0.001	32358144	100.000	102 80.00- 120.00	100.00
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1 Aroclor-1016

CAS #: 12674-11-2

2.428	2.427	0.001	12576066	1000.00	907 80.00- 120.00	100.00
2.706	2.705	0.001	10713222	1000.00	1060 65.19- 105.19	85.19
2.798	2.796	0.002	10878772	1000.00	925 66.50- 106.50	86.50
2.836	2.835	0.001	6544136	1000.00	992 32.04- 72.04	52.04
3.047	3.046	0.001	8439862	1000.00	973 47.11- 87.11	67.11

Average of Peak Amounts = 972

7 Aroclor-1260

CAS #: 11096-82-5

3.772	3.771	0.001	16868685	1000.00	1010 80.00- 120.00	100.00
3.936	3.934	0.002	26021184	1000.00	1050 134.26- 174.26	154.26
4.166	4.165	0.001	15560652	1000.00	1060 72.25- 112.25	92.25
4.309	4.307	0.002	16290764	1000.00	1070 76.57- 116.57	96.57
4.487	4.486	0.001	37535072	1000.00	1090 202.51- 242.51	222.51

Average of Peak Amounts = 1.06e+03

Data File: /chem/ecdl1a.i/122209.b/044f4401.d

Date : 22-DEC-2009 15:27

Client ID: AR166004

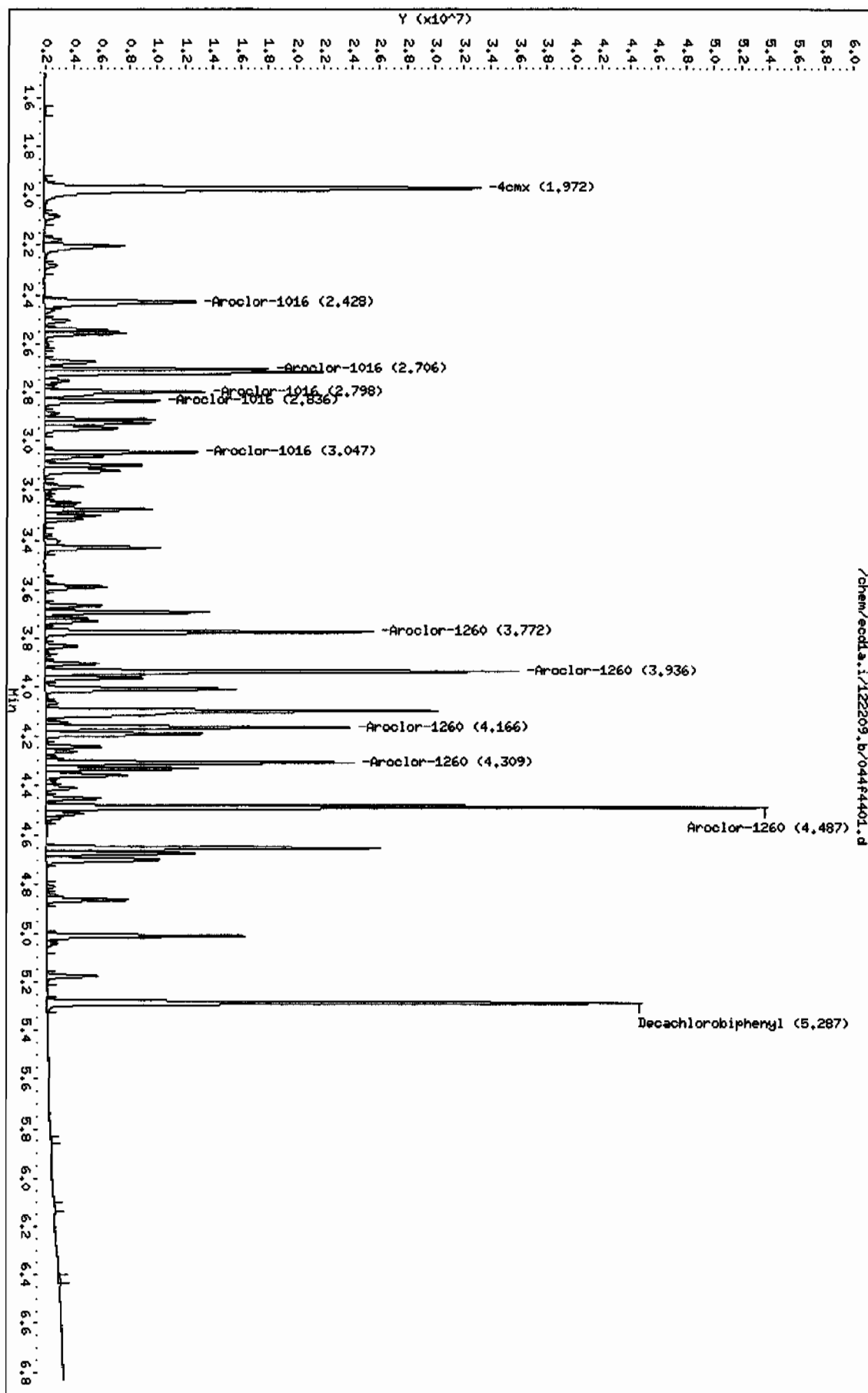
Sample Info: 14K091211-60 04

Column phase: CLP1

Instrument: ecdl1a.i

Operator: JMD

Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/044b4401.d

Lab Smp Id: WAR091211-60 04

Client Smp ID: AR166004

Inj Date : 22-DEC-2009 15:27

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |WAR091211-60 04

Misc Info :

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 23-Dec-2009 06:44 jen01212

Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16

Cal File: 044b4401.d

Als bottle: 44

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			
2.302	2.302	0.000	27869313	100.000	92.9	80.00- 120.00	100.00	
-----								
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
5.949	5.948	0.001	22183289	100.000	95.1	80.00- 120.00	100.00	
-----								
1 Aroclor-1016					CAS #: 12674-11-2			
3.200	3.199	0.001	12223105	1000.00	969	80.00- 120.00	100.00(M)	
3.282	3.282	0.000	8174997	1000.00	876	46.88- 86.88	66.88	
3.347	3.346	0.001	5090328	1000.00	941	21.65- 61.65	41.65	
3.573	3.572	0.001	6438929	1000.00	913	32.68- 72.68	52.68	
3.649	3.648	0.001	6113381	1000.00	933	30.01- 70.01	50.01	
Average of Peak Amounts =					927			
-----								
7 Aroclor-1260					CAS #: 11096-82-5			
4.339	4.338	0.001	12596367	1000.00	921	80.00- 120.00	100.00	
4.464	4.463	0.001	14981774	1000.00	935	98.94- 138.94	118.94	
4.729	4.729	0.000	12122093	1000.00	965	76.23- 116.23	96.23	
4.903	4.903	0.000	12513940	1000.00	977	79.35- 119.35	99.35	
5.050	5.050	0.000	28363537	1000.00	1020	205.17- 245.17	225.17	
Average of Peak Amounts =					963			

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecdl1.i/122209.b/044b4401.d

Date: 22-DEC-2009 15:27

Client ID: RR166004

Sample Info: 14AR091211-60 04

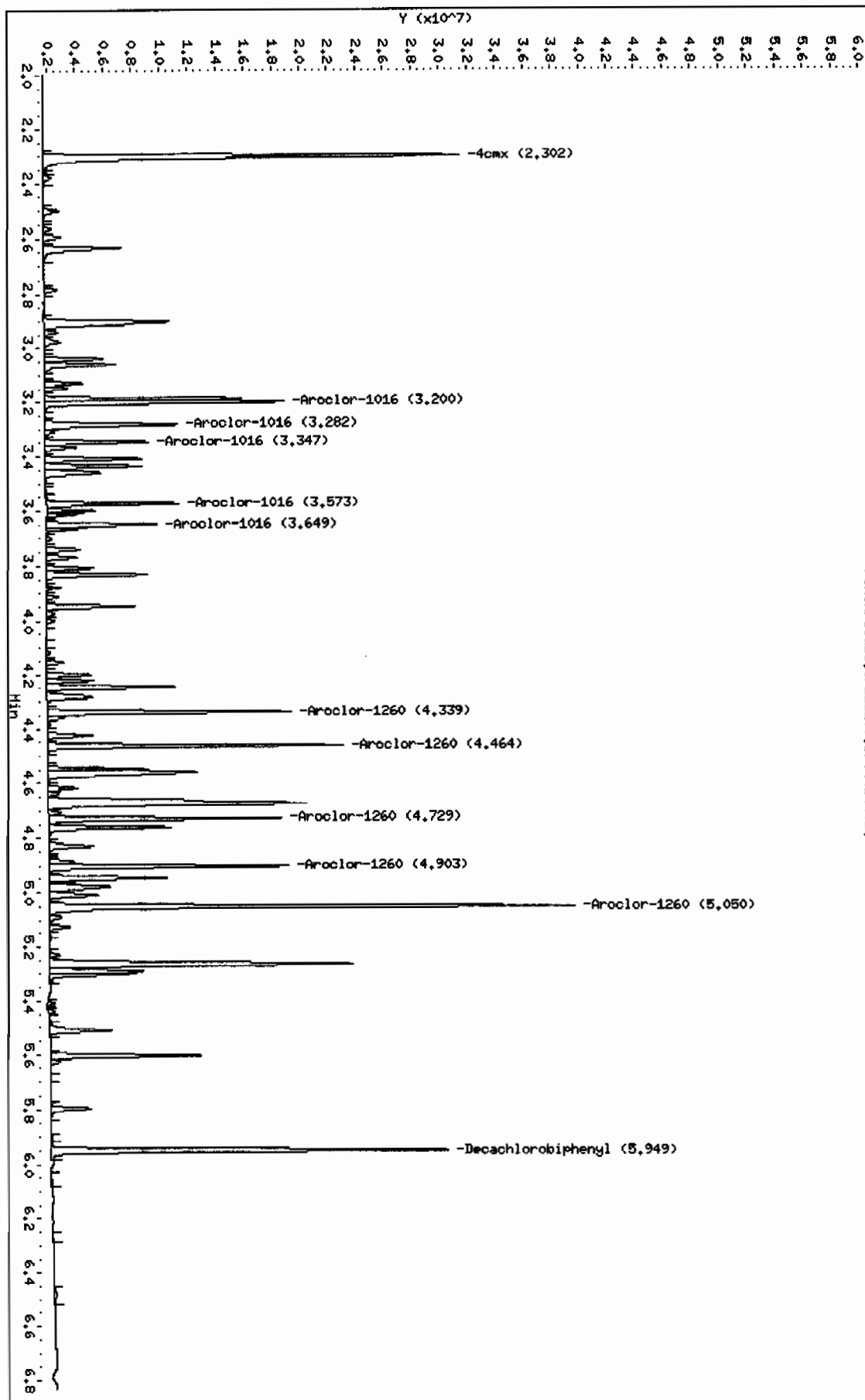
Column phase: CLP2

Instrument: ecdl1.i

Operator: JADG

Column diameter: 0.25

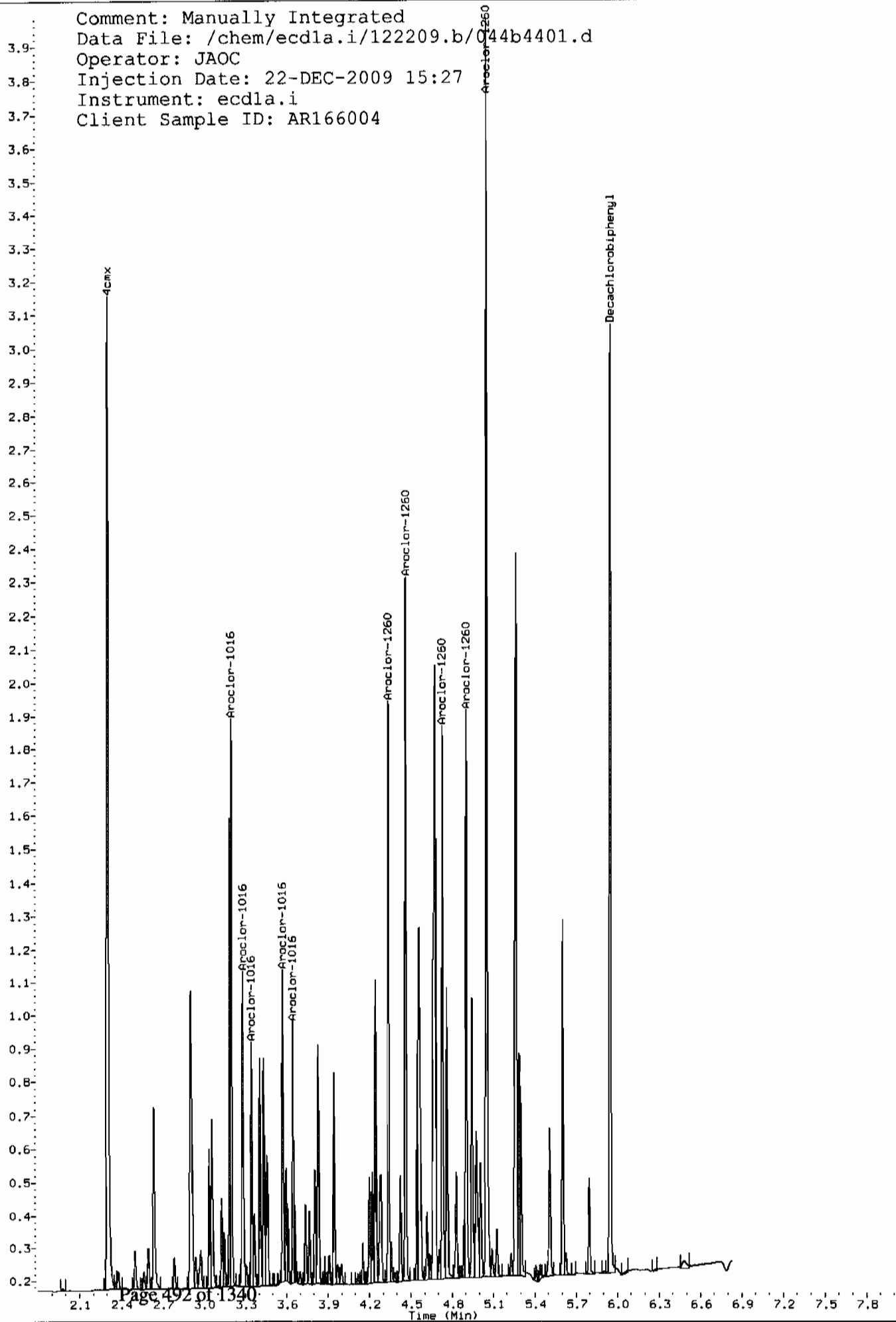
/chem/ecdl1.i/122209.b/044b4401.d



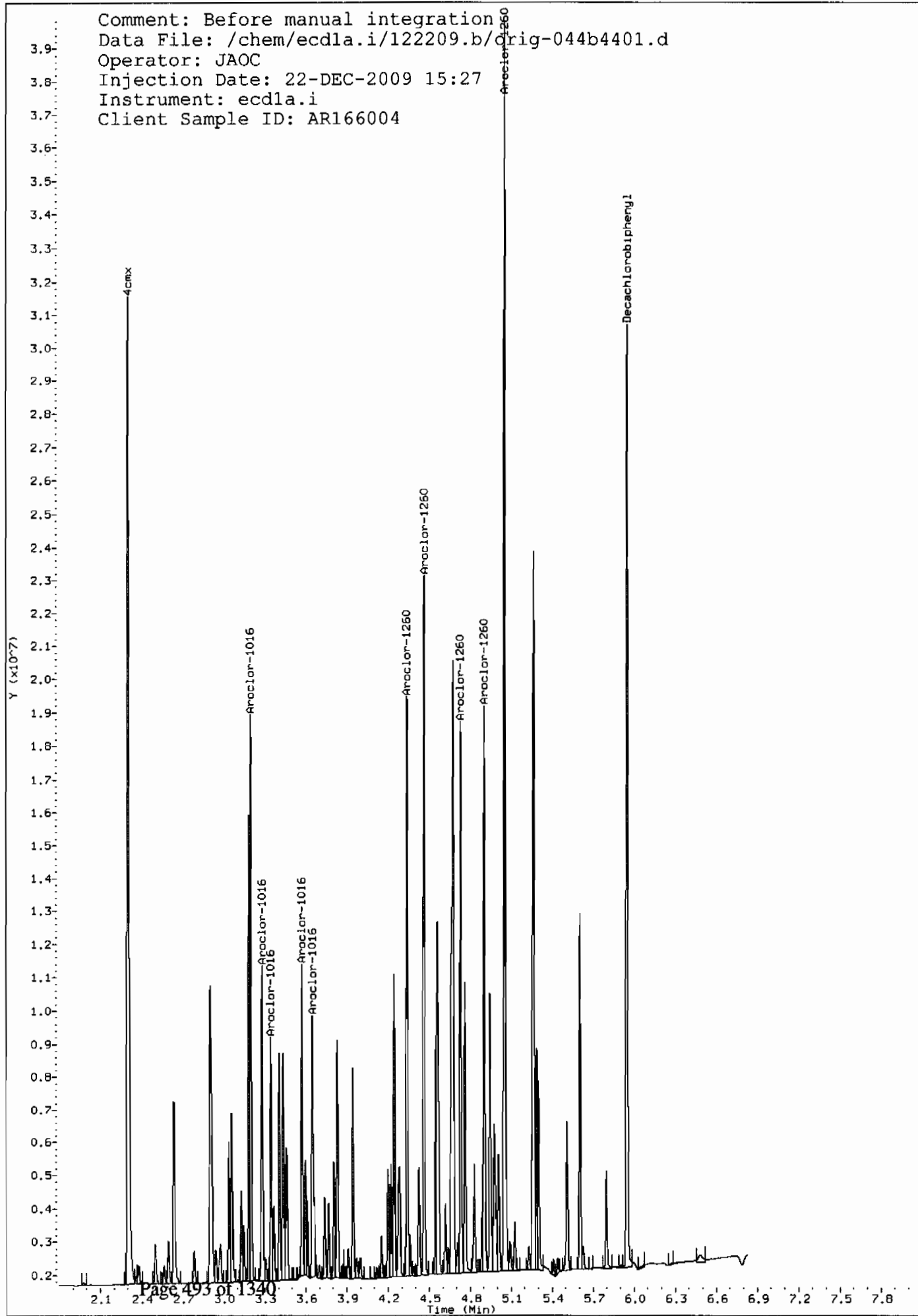


Comment: Manually Integrated  
Data File: /chem/ecdla.i/122209.b/044b4401.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 15:27  
Instrument: ecdla.i  
Client Sample ID: AR166004

Y (x10<sup>7</sup>)



Comment: Before manual integration  
Data File: /chem/ecdl.a.i/122209.b/orig-044b4401.d  
Operator: JAOC  
Injection Date: 22-DEC-2009 15:27  
Instrument: ecdla.i  
Client Sample ID: AR166004



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.: 10-988

GC Column: CLP1 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION					
S1 : 1.97			DCB: 5.29		
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	PIBLK01	WAR091130-99	12/14/09	0444	1.97 5.29
02	ZZZZZ	ZZZZZ	12/14/09	0454	1.97 5.29
03	ZZZZZ	ZZZZZ	12/14/09	0505	1.97 5.29
04	ZZZZZ	ZZZZZ	12/14/09	0515	1.97 5.29
05	ZZZZZ	ZZZZZ	12/14/09	0526	1.97 5.29
06	AR123201	WAR090930-32	12/14/09	0536	1.97 5.29
07	AR122101	WAR090803-21	12/14/09	0547	1.97 5.29
08	AR126201	WAR090803-62	12/14/09	0558	1.97 5.29
09	ZZZZZ	ZZZZZ	12/14/09	0608	1.97 5.29
10	ZZZZZ	ZZZZZ	12/14/09	0619	1.97 5.29
11	ZZZZZ	ZZZZZ	12/14/09	0629	1.97 5.29
12	ZZZZZ	ZZZZZ	12/14/09	0640	1.97 5.29
13	ZZZZZ	ZZZZZ	12/14/09	0650	1.97 5.29
14	ZZZZZ	ZZZZZ	12/14/09	0701	1.97 5.29
15	ZZZZZ	ZZZZZ	12/14/09	0711	1.97 5.29
16	AR125401	WAR091214-05	12/14/09	0722	1.97 5.29
17	AR125402	WAR091214-06	12/14/09	0732	1.97 5.29
18	AR125403	WAR091214-07	12/14/09	0743	1.97 5.29
19	AR125401	WAR091214-08	12/14/09	0753	1.97 5.29
20	AR125405	IAR091027-01	12/14/09	0804	1.97 5.29
21	AR125401	WAR091102-54	12/14/09	0814	1.97 5.29
22	AR124201	WAR091214-09	12/14/09	0825	1.97 5.29
23	AR124202	WAR091214-10	12/14/09	0835	1.97 5.29
24	AR124203	WAR091214-11	12/14/09	0846	1.97 5.29
25	AR124204	WAR091214-12	12/14/09	0856	1.97 5.29
26	AR124205	IAR0911111-0	12/14/09	0907	1.97 5.29
27	AR124201	WAR091102-42	12/14/09	0917	1.97 5.29
28	AR124801	WAR091214-13	12/14/09	0928	1.97 5.29
29	AR124802	WAR091214-14	12/14/09	0938	1.97 5.29
30	AR124803	WAR091214-15	12/14/09	0949	1.97 5.29
31	AR124804	WAR091214-16	12/14/09	0959	1.97 5.29
32	AR124805	IAR091027-02	12/14/09	1010	1.97 5.29

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.: 10-988  
 GC Column: CLP1 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09  
 Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
 SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION							
S1 : 1.97				DCB: 5.29			
	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #	
01	AR124801	WAR091027-48	12/14/09	1020	1.97	5.29	
02	AR166001	WAR091214-01	12/14/09	1031	1.97	5.29	
03	AR166002	WAR091214-02	12/14/09	1041	1.97	5.29	
04	AR166003	WAR091214-03	12/14/09	1052	1.97	5.29	
05	AR166004	WAR091214-04	12/14/09	1102	1.97	5.29	
06	AR166005	IAR091102-01	12/14/09	1113	1.97	5.29	
07	AR166001	WAR091211-60	12/14/09	1123	1.97	5.29	
08	AR126801	WAR091214-17	12/14/09	1134	1.97	5.29	
09	AR126802	WAR091214-18	12/14/09	1144	1.97	5.29	
10	AR126803	WAR091214-19	12/14/09	1155	1.97	5.29	
11	AR126804	WAR091214-20	12/14/09	1206	1.97	5.29	
12	AR126805	IAR090817-02	12/14/09	1216	1.97	5.29	
13	AR126801	WAR091106-68	12/14/09	1227	1.97	5.29	
14	DDTANALOGSTD	WAR091020-DD	12/14/09	1237			
15	PIBLK02	WAR091130-99	12/14/09	1248	1.97	5.29	
16	ZZZZZ	ZZZZZ	12/14/09	1258	1.97	5.29	
17	ZZZZZ	ZZZZZ	12/14/09	1309	1.97	5.29	
18	ZZZZZ	ZZZZZ	12/14/09	1319	1.97	5.29	
19	ZZZZZ	ZZZZZ	12/14/09	1330	1.97	5.29	
20	ZZZZZ	ZZZZZ	12/14/09	1340	1.97	5.29	
21	ZZZZZ	ZZZZZ	12/14/09	1351	1.97	5.29	
22	ZZZZZ	ZZZZZ	12/14/09	1403	1.97	5.29	
23	ZZZZZ	ZZZZZ	12/14/09	1416	1.97	5.29	
24	ZZZZZ	ZZZZZ	12/14/09	1429	1.97	5.29	
25	ZZZZZ	ZZZZZ	12/14/09	1441	1.97	5.29	
26	AR166002	WAR091211-60	12/14/09	1452	1.97	5.29	
27	PIBLK03	WAR091130-99	12/14/09	1502	1.97	5.29	
28	ZZZZZ	ZZZZZ	12/14/09	1513	1.97	5.29	
29	ZZZZZ	ZZZZZ	12/14/09	1525	1.97	5.29	
30	ZZZZZ	ZZZZZ	12/14/09	1538	1.97	5.29	
31	ZZZZZ	ZZZZZ	12/14/09	1551	1.97	5.29	
32	ZZZZZ	ZZZZZ	12/14/09	1603	1.97	5.27	

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.: 10-988  
 GC Column: CLP2 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09  
 Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
 SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION							
S1 : 2.30				DCB: 5.94			
EPA	LAB	DATE	TIME	S1	DCB		
SAMPLE NO.	SAMPLE ID	ANALYZED	ANALYZED	RT	RT	#	#
01	PIBLK01	WAR091130-99	12/14/09	0444	2.30		5.95
02	ZZZZZ	ZZZZZ	12/14/09	0454	2.30		5.94
03	ZZZZZ	ZZZZZ	12/14/09	0505	2.30		5.95
04	ZZZZZ	ZZZZZ	12/14/09	0515	2.30		5.95
05	ZZZZZ	ZZZZZ	12/14/09	0526	2.30		5.95
06	AR123201	WAR090930-32	12/14/09	0536	2.30		5.95
07	AR122101	WAR090803-21	12/14/09	0547	2.30		5.95
08	AR126201	WAR090803-62	12/14/09	0558	2.30		5.94
09	ZZZZZ	ZZZZZ	12/14/09	0608	2.30		5.94
10	ZZZZZ	ZZZZZ	12/14/09	0619	2.30		5.95
11	ZZZZZ	ZZZZZ	12/14/09	0629	2.30		5.94
12	ZZZZZ	ZZZZZ	12/14/09	0640	2.30		5.94
13	ZZZZZ	ZZZZZ	12/14/09	0650	2.30		5.95
14	ZZZZZ	ZZZZZ	12/14/09	0701	2.30		5.94
15	ZZZZZ	ZZZZZ	12/14/09	0711	2.30		5.95
16	AR125401	WAR091214-05	12/14/09	0722	2.30		5.94
17	AR125402	WAR091214-06	12/14/09	0732	2.30		5.94
18	AR125403	WAR091214-07	12/14/09	0743	2.30		5.94
19	AR125401	WAR091214-08	12/14/09	0753	2.30		5.94
20	AR125405	IAR091027-01	12/14/09	0804	2.30		5.95
21	AR125401	WAR091102-54	12/14/09	0814	2.30		5.94
22	AR124201	WAR091214-09	12/14/09	0825	2.30		5.94
23	AR124202	WAR091214-10	12/14/09	0835	2.30		5.94
24	AR124203	WAR091214-11	12/14/09	0846	2.30		5.94
25	AR124204	WAR091214-12	12/14/09	0856	2.30		5.94
26	AR124205	IAR0911111-0	12/14/09	0907	2.30		5.94
27	AR124201	WAR091102-42	12/14/09	0917	2.30		5.94
28	AR124801	WAR091214-13	12/14/09	0928	2.30		5.94
29	AR124802	WAR091214-14	12/14/09	0938	2.30		5.94
30	AR124803	WAR091214-15	12/14/09	0949	2.30		5.94
31	AR124804	WAR091214-16	12/14/09	0959	2.30		5.94
32	AR124805	IAR091027-02	12/14/09	1010	2.30		5.94

S1 = 4cmx  
 DCB = Decachlorobiphenyl

QC LIMITS  
 (+/- 0.03 MINUTES)  
 (+/- 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.: 10-988

GC Column: CLP2 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION							
S1 : 2.30				DCB: 5.94			
	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #	
01	AR124801	WAR091027-48	12/14/09	1020	2.30	5.95	
02	AR166001	WAR091214-01	12/14/09	1031	2.30	5.94	
03	AR166002	WAR091214-02	12/14/09	1041	2.30	5.94	
04	AR166003	WAR091214-03	12/14/09	1052	2.30	5.94	
05	AR166004	WAR091214-04	12/14/09	1102	2.30	5.94	
06	AR166005	IAR091102-01	12/14/09	1113	2.30	5.94	
07	AR166001	WAR091211-60	12/14/09	1123	2.30	5.94	
08	AR126801	WAR091214-17	12/14/09	1134	2.30	5.95	
09	AR126802	WAR091214-18	12/14/09	1144	2.30	5.94	
10	AR126803	WAR091214-19	12/14/09	1155	2.30	5.94	
11	AR126804	WAR091214-20	12/14/09	1206	2.30	5.94	
12	AR126805	IAR090817-02	12/14/09	1216	2.30	5.94	
13	AR126801	WAR091106-68	12/14/09	1227	2.30	5.94	
14	DDTANALOGSTD	WAR091020-DD	12/14/09	1237			
15	PIBLK02	WAR091130-99	12/14/09	1248	2.30	5.94	
16	ZZZZZ	ZZZZZ	12/14/09	1258	2.30	5.94	
17	ZZZZZ	ZZZZZ	12/14/09	1309	2.30	5.94	
18	ZZZZZ	ZZZZZ	12/14/09	1319	2.30	5.94	
19	ZZZZZ	ZZZZZ	12/14/09	1330	2.30	5.94	
20	ZZZZZ	ZZZZZ	12/14/09	1340	2.30	5.94	
21	ZZZZZ	ZZZZZ	12/14/09	1351	2.30	5.94	
22	ZZZZZ	ZZZZZ	12/14/09	1403	2.30	5.94	
23	ZZZZZ	ZZZZZ	12/14/09	1416	2.30	5.94	
24	ZZZZZ	ZZZZZ	12/14/09	1429	2.30	5.94	
25	ZZZZZ	ZZZZZ	12/14/09	1441	2.30	5.94	
26	AR166002	WAR091211-60	12/14/09	1452	2.30	5.94	
27	PIBLK03	WAR091130-99	12/14/09	1502	2.30	5.94	
28	ZZZZZ	ZZZZZ	12/14/09	1513	2.30	5.94	
29	ZZZZZ	ZZZZZ	12/14/09	1525	2.30	5.94	
30	ZZZZZ	ZZZZZ	12/14/09	1538	2.30	5.94	
31	ZZZZZ	ZZZZZ	12/14/09	1551	2.30	5.94	
32	ZZZZZ	ZZZZZ	12/14/09	1603	2.30	5.94	

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.

page 2 of 2

FORM VIII PEST

OLM03.0

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.: 10-988

GC Column: CLP1 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION							
S1 : 1.97				DCB: 5.29			
EPA	LAB	DATE	TIME	S1	DCB		
SAMPLE NO.	SAMPLE ID	ANALYZED	ANALYZED	RT	RT	#	#
01	PIBLK01	WAR091130-99	12/22/09	0755	1.97	5.28	
02	AR166001	WAR091211-60	12/22/09	0805	1.97	5.29	
03	AR125401	WAR091216-54	12/22/09	0816	1.97	5.29	
04	AR124201	WAR091102-42	12/22/09	0826	1.97	5.29	
05	AR124801	WAR091027-48	12/22/09	0837	1.97	5.29	
06	AR123201	WAR090930-32	12/22/09	0847	1.97	5.29	
07	AR122101	WAR090803-21	12/22/09	0858	1.97	5.29	
08	AR126201	WAR090803-62	12/22/09	0908	1.97	5.29	
09	AR126801	WAR091106-68	12/22/09	0919	1.97	5.29	
10	DDTANALOGSTD	WAR091219-DD	12/22/09	0929			
11	PIBLK02	WAR091130-99	12/22/09	0940	1.97	5.29	
12	ZZZZZ	ZZZZZ	12/22/09	0950	1.97	5.29	
13	ZZZZZ	ZZZZZ	12/22/09	1001	1.97	5.29	
14	ZZZZZ	ZZZZZ	12/22/09	1011	1.97	5.29	
15	ZZZZZ	ZZZZZ	12/22/09	1022	1.97	5.29	
16	ZZZZZ	ZZZZZ	12/22/09	1032	1.97	5.29	
17	ZZZZZ	ZZZZZ	12/22/09	1043	1.97	5.29	
18	ZZZZZ	ZZZZZ	12/22/09	1053	1.97	5.29	
19	ZZZZZ	ZZZZZ	12/22/09	1104	1.97	5.29	
20	ZZZZZ	ZZZZZ	12/22/09	1115	1.97	5.29	
21	ZZZZZ	ZZZZZ	12/22/09	1125	1.97	5.29	
22	AR166002	WAR091211-60	12/22/09	1136	1.97	5.29	
23	PIBLK03	WAR091130-99	12/22/09	1146	1.97	5.29	
24	PBLK01	1202001507	12/22/09	1157	1.97	5.29	
25	PBLK01LCS	1202001508	12/22/09	1207	1.97	5.29	
26	ZZZZZ	ZZZZZ	12/22/09	1218	1.97	5.29	
27	ZZZZZ	ZZZZZ	12/22/09	1228	1.97	5.29	
28	ZZZZZ	ZZZZZ	12/22/09	1239	1.97	5.29	
29	ZZZZZ	ZZZZZ	12/22/09	1249	1.97	5.29	
30	ZZZZZ	ZZZZZ	12/22/09	1300	1.97	5.29	
31	ZZZZZ	ZZZZZ	12/22/09	1310	1.97	5.29	
32	ZZZZZ	ZZZZZ	12/22/09	1321	1.97	5.29	

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.: 10-988

GC Column: CLP1 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION					
S1 : 1.97			DCB: 5.29		
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	12/22/09	1331	1.97	5.29
02	AR166003	12/22/09	1342	1.97	5.29
03	PIBLK04	12/22/09	1353	1.97	5.29
04	ZZZZZ	12/22/09	1403	1.97	5.29
05	ZZZZZ	12/22/09	1414	1.97	5.29
06	ZZZZZ	12/22/09	1424	1.97	5.29
07	RE12-10-7351	12/22/09	1435	1.97	5.29
08	ZZZZZ	12/22/09	1445	1.97	5.29
09	ZZZZZ	12/22/09	1456	1.97	5.29
10	ZZZZZ	12/22/09	1506	1.97	5.29
11	ZZZZZ	12/22/09	1517	1.97	5.29
12	AR166004	12/22/09	1527	1.97	5.29
13	PIBLK05	12/22/09	1538	1.97	5.29
14					
15					
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18					
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22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

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.: 10-988

GC Column: CLP2 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION						
S1 : 2.30			DCB: 5.95			
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	#	DCB RT
						#
01	PIBLK01	WAR091130-99	12/22/09	0755	2.30	5.95
02	AR166001	WAR091211-60	12/22/09	0805	2.30	5.95
03	AR125401	WAR091216-54	12/22/09	0816	2.30	5.95
04	AR124201	WAR091102-42	12/22/09	0826	2.30	5.95
05	AR124801	WAR091027-48	12/22/09	0837	2.30	5.95
06	AR123201	WAR090930-32	12/22/09	0847	2.30	5.95
07	AR122101	WAR090803-21	12/22/09	0858	2.30	5.95
08	AR126201	WAR090803-62	12/22/09	0908	2.30	5.95
09	AR126801	WAR091106-68	12/22/09	0919	2.30	5.95
10	DDTANALOGSTD	WAR091219-DD	12/22/09	0929		
11	PIBLK02	WAR091130-99	12/22/09	0940	2.30	5.95
12	ZZZZZ	ZZZZZ	12/22/09	0950	2.30	5.95
13	ZZZZZ	ZZZZZ	12/22/09	1001	2.30	5.95
14	ZZZZZ	ZZZZZ	12/22/09	1011	2.30	5.95
15	ZZZZZ	ZZZZZ	12/22/09	1022	2.30	5.95
16	ZZZZZ	ZZZZZ	12/22/09	1032	2.30	5.95
17	ZZZZZ	ZZZZZ	12/22/09	1043	2.30	5.95
18	ZZZZZ	ZZZZZ	12/22/09	1053	2.30	5.95
19	ZZZZZ	ZZZZZ	12/22/09	1104	2.30	5.95
20	ZZZZZ	ZZZZZ	12/22/09	1114	2.30	5.95
21	ZZZZZ	ZZZZZ	12/22/09	1125	2.30	5.95
22	AR166002	WAR091211-60	12/22/09	1136	2.30	5.95
23	PIBLK03	WAR091130-99	12/22/09	1146	2.30	5.95
24	PBLK01	1202001507	12/22/09	1157	2.30	5.95
25	PBLK01LCS	1202001508	12/22/09	1207	2.30	5.95
26	ZZZZZ	ZZZZZ	12/22/09	1218	2.30	5.95
27	ZZZZZ	ZZZZZ	12/22/09	1228	2.30	5.95
28	ZZZZZ	ZZZZZ	12/22/09	1239	2.30	5.95
29	ZZZZZ	ZZZZZ	12/22/09	1249	2.30	5.95
30	ZZZZZ	ZZZZZ	12/22/09	1300	2.30	5.95
31	ZZZZZ	ZZZZZ	12/22/09	1310	2.30	5.95
32	ZZZZZ	ZZZZZ	12/22/09	1321	2.30	5.95

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.: 10-988  
 GC Column: CLP2 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09  
 Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,  
 SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION					
S1 : 2.30			DCB: 5.95		
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	12/22/09	1331	2.30	5.95
02	AR166003	12/22/09	1342	2.30	5.95
03	PIBLK04	12/22/09	1353	2.30	5.95
04	ZZZZZ	12/22/09	1403	2.30	5.95
05	ZZZZZ	12/22/09	1414	2.30	5.95
06	ZZZZZ	12/22/09	1424	2.30	5.95
07	RE12-10-7351	12/22/09	1435	2.30	5.95
08	ZZZZZ	12/22/09	1445	2.30	5.95
09	ZZZZZ	12/22/09	1456	2.30	5.95
10	ZZZZZ	12/22/09	1506	2.30	5.95
11	ZZZZZ	12/22/09	1517	2.30	5.95
12	AR166004	12/22/09	1527	2.30	5.95
13	PIBLK05	12/22/09	1538	2.30	5.95
14					
15					
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29					
30					
31					
32					

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: 10-988

Client ID: LCS for batch 935357

Lab Sample ID: 1202001508

Data File: 025f2501.d

Data File: 025b2501.d

Inst: ECD1A.I\_1

Inst: ECD1A.I\_2

Column: CLP1

Column: CLP2

Analyzed: 22-DEC-09 12:07

Analyzed: 22-DEC-09 12:07

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
Aroclor-1016							.00975
Column 1	1	2.43	2.4 - 2.46	21.1		ug/kg	
	2	2.7	2.67 - 2.73	22.5		ug/kg	
	3	2.8	2.77 - 2.83	21.1		ug/kg	
	4	2.83	2.8 - 2.86	22.3		ug/kg	
	5	3.05	3.02 - 3.08	22.6		ug/kg	
					21.9		
Column 2	1	3.2	3.17 - 3.23	23.2		ug/kg	
	2	3.28	3.25 - 3.31	20.8		ug/kg	
	3	3.35	3.32 - 3.38	21.5		ug/kg	
	4	3.57	3.54 - 3.6	22.1		ug/kg	
	5	3.65	3.62 - 3.68	22.1		ug/kg	
					21.9		
Aroclor-1260							5.36
Column 1	1	3.77	3.74 - 3.8	25.3		ug/kg	
	2	3.94	3.9 - 3.96	26.8		ug/kg	
	3	4.17	4.13 - 4.19	27.3		ug/kg	
	4	4.31	4.28 - 4.34	27.3		ug/kg	
	5	4.49	4.46 - 4.52	29		ug/kg	
					27.2		
Column 2	1	4.34	4.31 - 4.37	24		ug/kg	
	2	4.46	4.43 - 4.49	25.6		ug/kg	
	3	4.73	4.7 - 4.76	25.5		ug/kg	
	4	4.9	4.87 - 4.93	26		ug/kg	
	5	5.05	5.02 - 5.08	27.6		ug/kg	
					25.7		

# QUALITY CONTROL DATA

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

Page 1 of 1

SDG Number: 10-988

Lab Sample ID: 1202001507

Client Sample: QC for batch 935357

Client ID: MB for batch 935357

Batch ID: 935393

Run Date: 12/22/2009 11:57

Prep Date: 12/21/2009 20:06

Data File: 024f2401-1.d

024b2401-1.d

Client: LANL010

Method: SW846 8082

Inst: ECD1A.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/ecd1a.i/122209.b/024f2401-2.d  
Lab Smp Id: 1202001507 Client Smp ID: PBLK01  
Inj Date : 22-DEC-2009 11:57  
Operator : JAOC Inst ID: ecd1a.i  
Smp Info : |1202001507|1|  
Misc Info : |ECD82P\_1S|935393|SVA|QC A|SOIL|MB|||  
Comment :  
Method : /chem/ecd1a.i/122209.b/ECD1-F-8082-121409.m  
Meth Date : 23-Dec-2009 06:42 jen01212 Quant Type: ESTD  
Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.d  
Als bottle: 24 QC Sample: BLANK  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-988.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		
1.972	1.971	0.001	47264058	125.813	4.2 80.00- 120.00	100.00	
-----							
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.287	5.286	0.001	46979061	147.947	4.9 80.00- 120.00	100.00	
-----							

Data File: /chem/eod1a.i/122209.b/024F2401-2.d

Date : 22-DEC-2009 11:57

Client ID: PRLK01

Sample Info: 1120200150711

Volume Injected (uL): 1.0

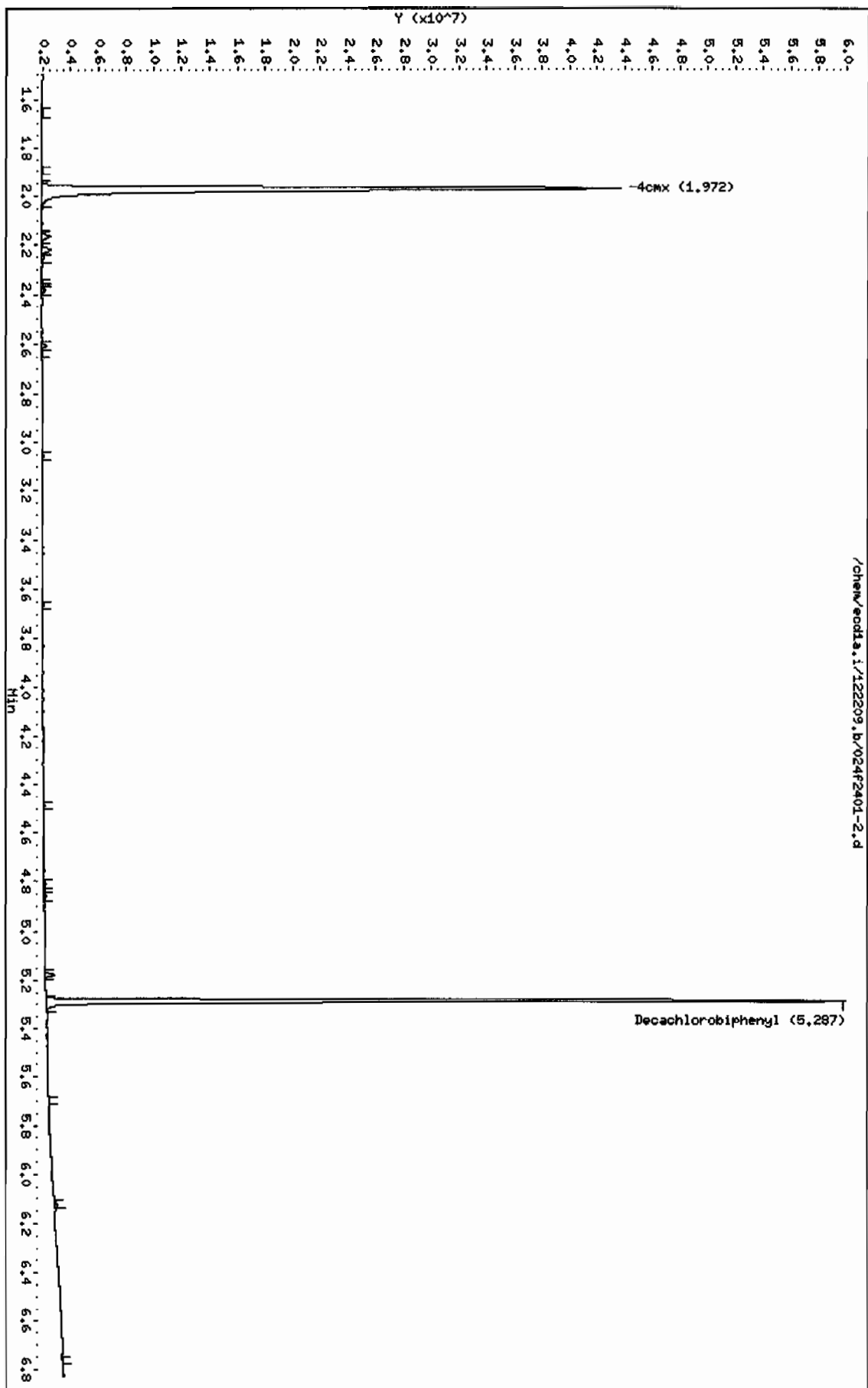
Column Phase: CLP1

Instrument: eod1a.i

Operator: JAO

Column diameter: 0.25

/chem/eod1a.i/122209.b/024F2401-2.d



Data File: /chem/ecdl1a.i/122209.b/024b2401-2.d  
 Report Date: 23-Dec-2009 11:57

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/024b2401-2.d  
 Lab Smp Id: 1202001507 Client Smp ID: PBLK01  
 Inj Date : 22-DEC-2009 11:57  
 Operator : JAOC Inst ID: ecd1a.i  
 Smp Info : |1202001507|1|  
 Misc Info : |ECD82P\_1S|935393|SVA|QC A|SOIL|MB|||  
 Comment :  
 Method : /chem/ecdl1a.i/122209.b/ECD1-B-8082-121409.m  
 Meth Date : 23-Dec-2009 06:44 jen01212 Quant Type: ESTD  
 Cal Date : 14-DEC-2009 12:16 Cal File: 044b4401.d  
 Als bottle: 24 QC Sample: BLANK  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-988.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

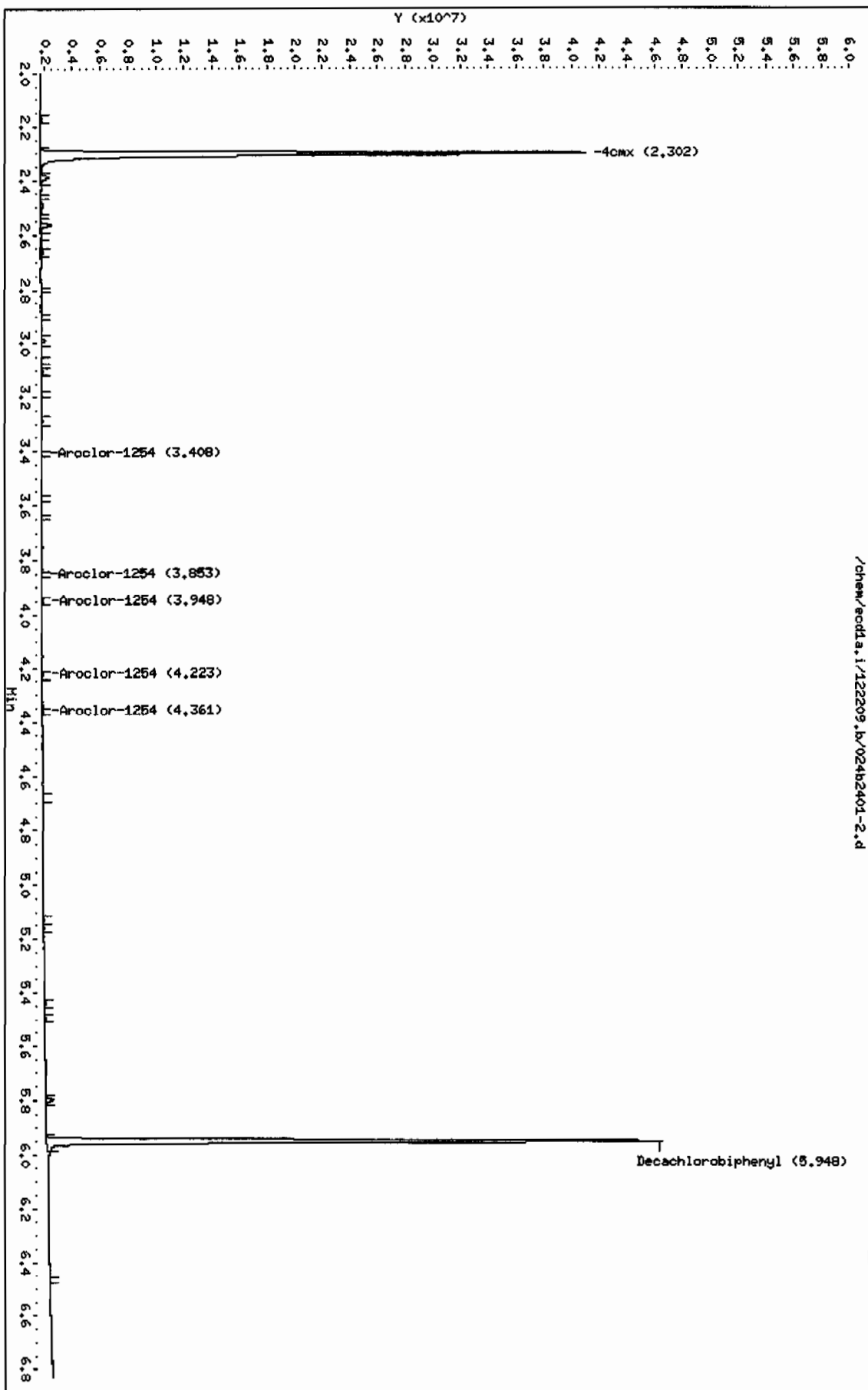
Cpnd Variable Local Compound Variable

CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
---	-----	-----	-----	-----	-----	-----
\$ 11 4cmx					CAS #: 877-09-8	
2.302	2.302	0.000	36277461	120.914	4.0 80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
5.948	5.948	0.000	33838380	145.088	4.8 80.00- 120.00	100.00
-----						



Data File: /chem/ecdt1a.i/122209.b/024b2401-2.d  
Date: 22-DEC-2009 11:57  
Client ID: PBLX01  
Sample Info: 1120200150711  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: ecdt1a.i  
Operator: JHOC  
Column diameter: 0.25



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

Page 1 of 1

SDG Number: 10-988

Lab Sample ID: 1202001508

Client Sample: QC for batch 935357

Client ID: LCS for batch 935357

Batch ID: 935393

Run Date: 12/22/2009 12:07

Prep Date: 12/21/2009 20:06

Data File: 025f2501-1.d

025b2501-1.d

Client: LANL010  
Method: SW846 8082  
Inst: ECD1A.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		21.9	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		27.1	ug/kg	1.11	3.33	1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/025f2501-2.d  
Lab Smp Id: 1202001508 Client Smp ID: PBLK01LCS  
Inj Date : 22-DEC-2009 12:07  
Operator : JAOC Inst ID: ecd1a.i  
Smp Info : |1202001508|1|  
Misc Info : |ECD82P\_1S|935393|SVA|QC A|SOIL|LCS|||  
Comment :  
Method : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m  
Meth Date : 23-Dec-2009 06:42 jen01212 Quant Type: ESTD  
Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.d  
Als bottle: 25 QC Sample: LCS  
Dil Factor: 1.00000  
Integrator: Falcon Compound Sublist: 10-988.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

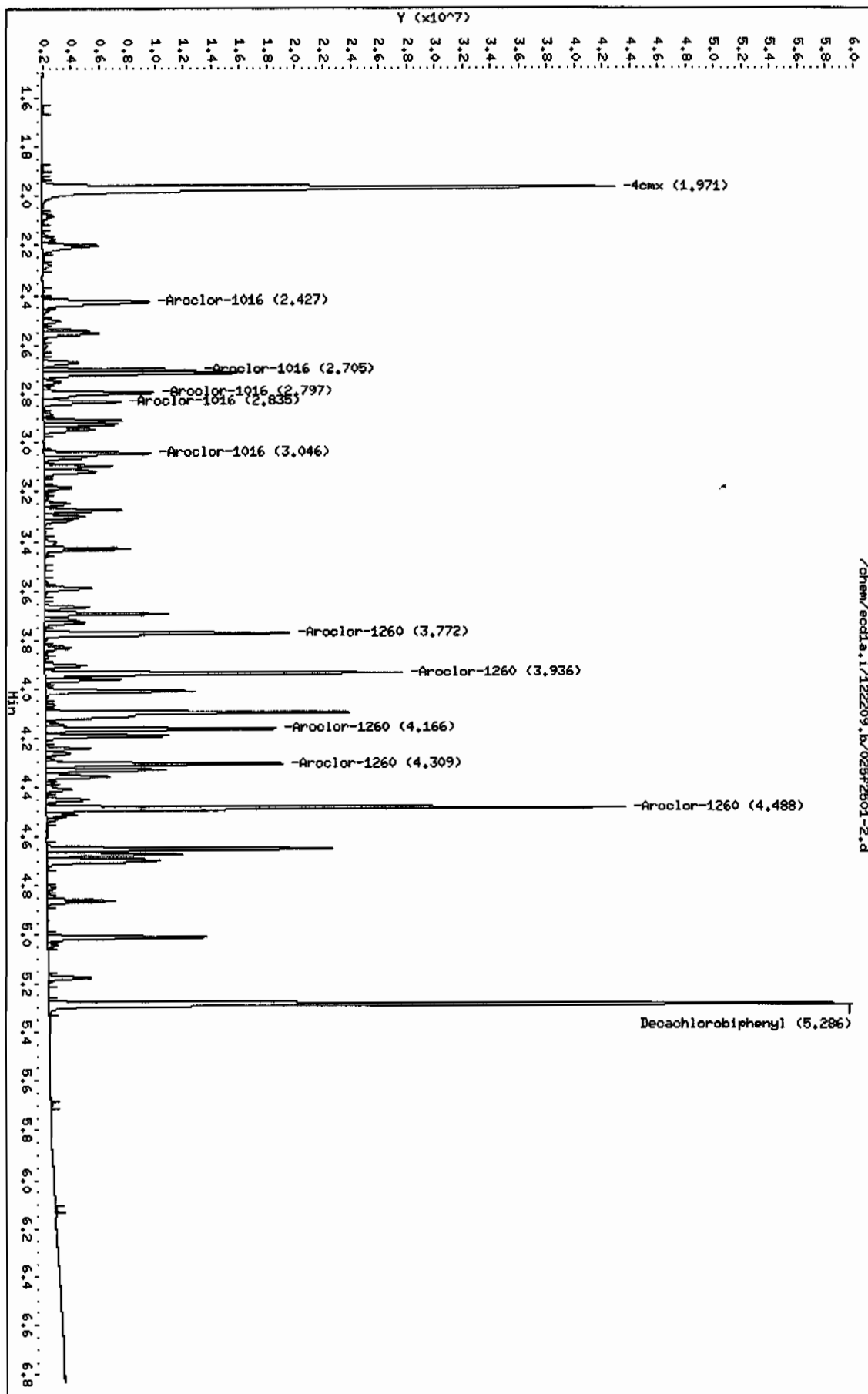
Cpnd Variable Local Compound Variable

CONCENTRATIONS							
			ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO	
==	=====	=====	=====	=====	=====	=====	
\$ 11 4cmx					CAS #: 877-09-8		
1.971	1.971	0.000	46943582	124.960	4.2 80.00- 120.00	100.00	
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.286	5.286	0.000	46455035	146.296	4.9 80.00- 120.00	100.00	
1 Aroclor-1016					CAS #: 12674-11-2		
2.427	2.427	0.000	8785579	633.566	21.1 80.00- 120.00	100.00	
2.705	2.705	0.000	6826997	676.092	22.5 65.19- 105.19	77.71	
2.797	2.796	0.001	7437715	632.619	21.1 66.50- 106.50	84.66	
2.835	2.835	0.000	4418736	669.606	22.3 32.04- 72.04	50.30	

CONCENTRATIONS								
			ON-COL		FINAL			
RT	EXP RT	DLT RT	RESPONSE ( ug/L)		(ug/Kg)	TARGET RANGE		RATIO
==	=====	=====	=====	=====	=====	=====	=====	=====
1 Aroclor-1016 (continued)								
3.046	3.046	0.000	5880773	678.024	22.6	47.11-	87.11	66.94
Average of Peak Concentrations =					21.9			
-----								
7 Aroclor-1260					CAS #: 11096-82-5			
3.772	3.771	0.001	12731136	759.970	25.3	80.00-	120.00	100.00
3.936	3.934	0.002	19869687	803.056	26.8	134.26-	174.26	156.07
4.166	4.165	0.001	12036575	819.520	27.3	72.25-	112.25	94.54
4.309	4.307	0.002	12447890	819.775	27.3	76.57-	116.57	97.78
4.488	4.486	0.002	29918254	870.971	29.0	202.51-	242.51	235.00
Average of Peak Concentrations =					27.1			

Data File: /chem/ecdl1.i/122209.b/025f2501-2.d  
Date: 22-DEC-2009 12:07  
Client ID: PMK01LCS  
Sample Info: 120200150811  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: ecdl1.i  
Operator: JAOC  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/025b2501-2.d

Lab Smp Id: 1202001508

Client Smp ID: PBLK01LCS

Inj Date : 22-DEC-2009 12:07

Operator : JAOC

Inst ID: ecdla.i

Smp Info : |1202001508|1|

Misc Info : |ECD82P\_1S|935393|SVA|QC A|SOIL|LCS|

Comment :

Method : /chem/ecdla.i/122209.b/ECD1-B-8082-121409.m

Meth Date : 23-Dec-2009 06:44 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 12:16

Cal File: 044b4401.d

Als bottle: 25

QC Sample: LCS

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: 10-988.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

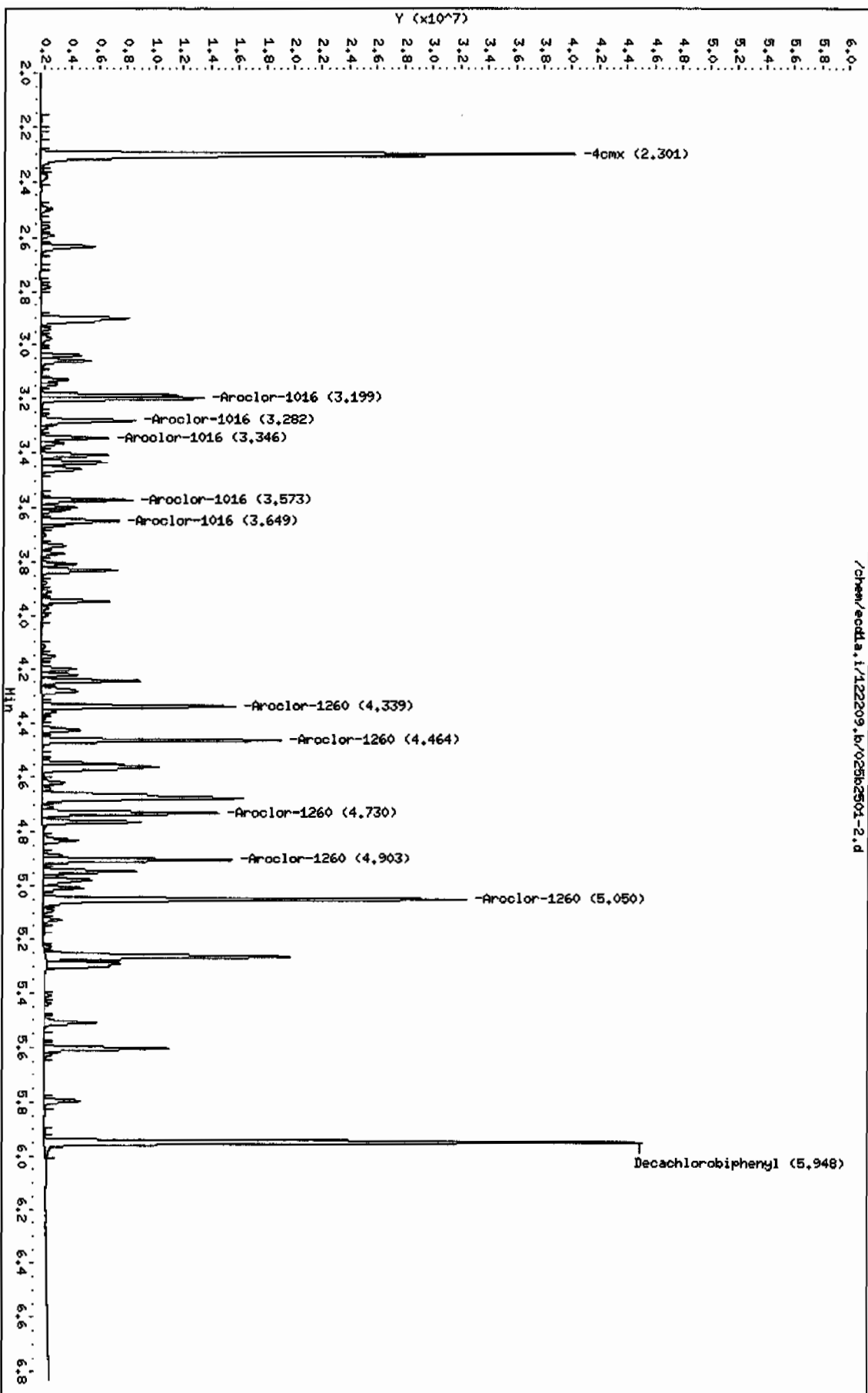
Local Compound Variable

CONCENTRATIONS								
			ON-COL		FINAL			
RT	EXP RT	DLT RT	RESPONSE ( ug/L)		(ug/Kg)	TARGET RANGE		RATIO
---	-----	-----	-----	-----	-----	-----	-----	-----
\$ 11 4cmx					CAS #: 877-09-8			
2.301	2.302	-0.001	35826232	119.411	4.0	80.00-	120.00	100.00
-----								
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
5.948	5.948	0.000	32997561	141.483	4.7	80.00-	120.00	100.00
-----								
1 Aroclor-1016					CAS #: 12674-11-2			
3.199	3.199	0.000	8761104	694.690	23.2	80.00-	120.00	100.00
3.282	3.282	0.000	5812365	623.118	20.8	46.88-	86.88	66.34
3.346	3.346	0.000	3493102	645.518	21.5	21.65-	61.65	39.87
3.573	3.572	0.001	4683367	664.130	22.1	32.68-	72.68	53.46

CONCENTRATIONS									
			ON-COL		FINAL				
RT	EXP RT	DLT RT	RESPONSE ( ug/L)		(ug/Kg)	TARGET RANGE		RATIO	
==	=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Aroclor-1016 (continued)									
3.649	3.648	0.001	4341646	662.773	22.1	30.01-	70.01	49.56	
Average of Peak Concentrations =					21.9				
-----									
7 Aroclor-1260					CAS #: 11096-82-5				
4.339	4.338	0.001	9842996	719.516	24.0	80.00-	120.00	100.00	
4.464	4.463	0.001	12323981	768.854	25.6	98.94-	138.94	125.21	
4.730	4.729	0.001	9604344	764.438	25.5	76.23-	116.23	97.58	
4.903	4.903	0.000	9990404	779.886	26.0	79.35-	119.35	101.50	
5.050	5.050	0.000	23095644	827.870	27.6	205.17-	245.17	234.64	
Average of Peak Concentrations =					25.7				

Data File: /chem/ecdtla.i/122209.b/025b2501-2.d  
Date : 22-DEC-2009 12:07  
Client ID: PRLK01LCS  
Sample Info: 1220200150811  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: ecdtla.i  
Operator: JHOC  
Column diameter: 0.25





# MISCELLANEOUS DATA

# GEL ORGANIC RUN LOG

INSTRUMENT ID: ECD1

DATE: 12/15/2009 METHOD: ECD1-F-8082-121409.m OPERATOR: YS1 REVIEWED BY: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD SUMMARY: No. 1 on pg. 1 DATE: \_\_\_\_\_  
 SOLVENT LOT DA385  
 ALUMINA LOT 1230997-A  
 COPPER LOT 236547-A

Calibration & QC Information  
 Initial Calibration Dates: See Calibration History and Standard Logbook.  
 Initial Calibration Std ID's: See Calibration History and Standard Logbook.  
 GEL SOP GL-OA-E-040 Polychlorinated Biphenyl: EPA 8082  
 Chromatogram Abbreviation Legend: AB-Assign Baseline, AP-Assign Peak,  
 DNC-Do Not Call, DMP-Doesn't Match Pattern, NC-Not Confirmed, RT-Retention Time,  
 BF-Before, AF-After.

Sequence Number: /chem/ecdla.i/121409.b Injection Volume: 0.5 ul

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
1001f0101.d	IWAR091130-99 01	YS1	14-DEC-2009 04:44		121409	1.0I		ICLEAN
1002f0201.d	IWAR091211-60 01	YS1	14-DEC-2009 04:54		121409	1.0I		IDUSE RE-ICAL
1003f0301.d	IWAR091102-54	YS1	14-DEC-2009 05:05		121409	1.0I		IDUSE RE-ICAL
1004f0401.d	IWAR091102-42	YS1	14-DEC-2009 05:15		121409	1.0I		IDUSE RE-ICAL
1005f0501.d	IWAR091027-48	YS1	14-DEC-2009 05:26		121409	1.0I		IDUSE RE-ICAL
1006f0601.d	IWAR090930-32	YS1	14-DEC-2009 05:36		121409	1.0I		IPATTERN ONLY
1007f0701.d	IWAR090803-21	YS1	14-DEC-2009 05:47		121409	1.0I		IPATTERN ONLY
1008f0801.d	IWAR090803-62	YS1	14-DEC-2009 05:58		121409	1.0I		IPATTERN ONLY
1009f0901.d	IWAR091106-68	YS1	14-DEC-2009 06:08		121409	1.0I		IDUSE RE-ICAL
1010f1001.d	I1660-1	YS1	14-DEC-2009 06:19		121409	1.0I		IDUSE
1011f1101.d	I1660-2	YS1	14-DEC-2009 06:29		121409	1.0I		IDUSE
1012f1201.d	I1660-3	YS1	14-DEC-2009 06:40		121409	1.0I		IDUSE
1013f1301.d	I1660-4	YS1	14-DEC-2009 06:50		121409	1.0I		IDUSE
1014f1401.d	IAR091102-01	YS1	14-DEC-2009 07:01		121409	1.0I		IDUSE
1015f1501.d	IWAR091211-60 01	YS1	14-DEC-2009 07:11		121409	1.0I		IDUSE

Instrument Batch: /chem/ecdla.i/121409.b

Page: 1

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
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016f1601.d	WAR091214-05 54	YS1	14-DEC-2009 07:22		121409		1.0	AR1254 I-CAL LEVEL 1
017f1701.d	WAR091214-06 54	YS1	14-DEC-2009 07:32		121409		1.0	AR1254 I-CAL LEVEL 2
018f1801.d	WAR091214-07 54	YS1	14-DEC-2009 07:43		121409		1.0	AR1254 I-CAL LEVEL 3
019f1901.d	WAR091214-08 54	YS1	14-DEC-2009 07:53		121409		1.0	AR1254 I-CAL LEVEL 4
020f2001.d	WAR091027-01	YS1	14-DEC-2009 08:04		121409		1.0	AR1254 I-CAL LEVEL 5
021f2101.d	WAR091102-54	YS1	14-DEC-2009 08:14		121409		1.0	PASSED ON BOTH COLUMNS
022f2201.d	WAR091214-09 42	YS1	14-DEC-2009 08:25		121409		1.0	AR1242 I-CAL LEVEL 1
023f2301.d	WAR091214-10 42	YS1	14-DEC-2009 08:35		121409		1.0	AR1242 I-CAL LEVEL 2
024f2401.d	WAR091214-11 42	YS1	14-DEC-2009 08:46		121409		1.0	AR1242 I-CAL LEVEL 3
025f2501.d	WAR091214-12 42	YS1	14-DEC-2009 08:56		121409		1.0	AR1242 I-CAL LEVEL 4
026f2601.d	AR091111-01	YS1	14-DEC-2009 09:07		121409		1.0	AR1242 I-CAL LEVEL 5
027f2701.d	WAR091102-42	YS1	14-DEC-2009 09:17		121409		1.0	PASSED ON BOTH COLUMNS
028f2801.d	WAR091214-13 48	YS1	14-DEC-2009 09:28		121409		1.0	AR1248 I-CAL LEVEL 1
029f2901.d	WAR091214-14 48	YS1	14-DEC-2009 09:38		121409		1.0	AR1248 I-CAL LEVEL 2
030f3001.d	WAR091214-15 48	YS1	14-DEC-2009 09:49		121409		1.0	AR1248 I-CAL LEVEL 3
031f3101.d	WAR091214-16 48	YS1	14-DEC-2009 09:59		121409		1.0	AR1248 I-CAL LEVEL 4
032f3201.d	AR091027-02	YS1	14-DEC-2009 10:10		121409		1.0	AR1248 I-CAL LEVEL 5
033f3301.d	WAR091027-48	YS1	14-DEC-2009 10:20		121409		1.0	PASSED ON BOTH COLUMNS
034f3401.d	WAR091214-01 60	YS1	14-DEC-2009 10:31		121409		1.0	AR1660 I-CAL LEVEL 1
035f3501.d	WAR091214-02 60	YS1	14-DEC-2009 10:41		121409		1.0	AR1660 I-CAL LEVEL 2
036f3601.d	WAR091214-03 60	YS1	14-DEC-2009 10:52		121409		1.0	AR1660 I-CAL LEVEL 3
037f3701.d	WAR091214-04 60	YS1	14-DEC-2009 11:02		121409		1.0	AR1660 I-CAL LEVEL 4
038f3801.d	AR091102-01	YS1	14-DEC-2009 11:13		121409		1.0	AR1660 I-CAL LEVEL 5
039f3901.d	WAR091211-60 01	YS1	14-DEC-2009 11:23		121409		1.0	PASSED ON BOTH COLUMNS
040f4001.d	WAR091214-17 68	YS1	14-DEC-2009 11:34		121409		1.0	AR1268 I-CAL LEVEL 1

Instrument Batch: /chem/ecd1a.i/121409.b

041f4101.d	WAR091214-18 68	YS1	14-DEC-2009 11:44		121409		1.0		AR1268 I-CAL LEVEL 2
042f4201.d	WAR091214-19 68	YS1	14-DEC-2009 11:55		121409		1.0		AR1268 I-CAL LEVEL 3
043f4301.d	WAR091214-20 68	YS1	14-DEC-2009 12:06		121409		1.0		AR1268 I-CAL LEVEL 4
044f4401.d	IAR090817-02	YS1	14-DEC-2009 12:16		121409		1.0		AR1268 I-CAL LEVEL 5
045f4501.d	WAR091106-68	YS1	14-DEC-2009 12:27		121409		1.0		PASSED ON BOTH COLUMNS
046f4601.d	WAR091020-DDT	YS1	14-DEC-2009 12:37		121409		1.0		DDT ANALOG STANDARD
047f4701.d	WAR091130-99 02	YS1	14-DEC-2009 12:48		121409		1.0		CLEAN
048f4801.d	1201991693	YS1	14-DEC-2009 12:58	931140	10-782		1.0 QC A		UPLOAD BOTH COLUMNS, USE HIGHER
049f4901.d	1201991694	YS1	14-DEC-2009 13:09	931140	10-782		1.0 QC A		UPLOAD BOTH COLUMNS, USE HIGHER
050f5001.d	242297001	YS1	14-DEC-2009 13:19	931140	10-782		1.0 LANL		UPLOAD BOTH COLUMNS, USE HIGHER
051f5101.d	242297002	YS1	14-DEC-2009 13:30	931140	10-782		10.0 LANL		UPLOAD BOTH COLUMNS, USE HIGHER
052f5201.d	242297003	YS1	14-DEC-2009 13:40	931140	10-782		1.0 LANL		UPLOAD BOTH COLUMNS, USE HIGHER
053f5301.d	242297004	YS1	14-DEC-2009 13:51	931140	10-782		5.0 LANL		UPLOAD BOTH COLUMNS, USE HIGHER
054f5401.d	242297005	YS1	14-DEC-2009 14:03	931140	10-782		5.0 LANL		UPLOAD BOTH COLUMNS, USE HIGHER
055f5501.d	242297006	YS1	14-DEC-2009 14:16	931140	10-782		10.0 LANL		UPLOAD BOTH COLUMNS, USE HIGHER

Instrument Batch: /chem/ecdl.a.i/121409.b

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Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
056f5601.d	242297007	YS1	14-DEC-2009 14:29	931140	10-782		5.0 LANL	UPLOAD BOTH COLUMNS, USE HIGHER
057f5701.d	242297008	YS1	14-DEC-2009 14:41	931140	10-782		25.0 LANL	UPLOAD BOTH COLUMNS, USE HIGHER
058f5801.d	WAR091211-60 02	YS1	14-DEC-2009 14:52		121409		1.0	PASSED ON BOTH COLUMNS
059f5901.d	WAR091130-99 03	YS1	14-DEC-2009 15:02		121409		1.0	CLEAN
060f6001.d	242297009	YS1	14-DEC-2009 15:13	931140	10-782		1.0 LANL	UPLOAD BOTH COLUMNS, USE HIGHER
061f6101.d	242297010	YS1	14-DEC-2009 15:25	931140	10-782		1.0 LANL	DCB LOW RE
062f6201.d	242297011	YS1	14-DEC-2009 15:38	931140	10-782		5.0 LANL	UPLOAD BOTH COLUMNS, USE HIGHER
063f6301.d	242297012	YS1	14-DEC-2009 15:51	931140	10-782		5.0 LANL	UPLOAD BOTH COLUMNS, USE HIGHER
064f6401.d	242297013	YS1	14-DEC-2009 16:03	931140	10-782		10.0 LANL	UPLOAD BOTH COLUMNS, USE HIGHER

1065f6501.d	1242305004	YS1	14-DEC-2009 16:16	931140	10-786	5.0	LANL	UPLOAD BOTH COLUMNS, USE HIGHER
1066f6601.d	1201991695	YS1	14-DEC-2009 16:28	931140	10-786	5.0	QC A	UPLOAD BOTH COLUMNS, USE HIGHER
1067f6701.d	1201991696	YS1	14-DEC-2009 16:41	931140	10-786	5.0	QC A	UPLOAD BOTH COLUMNS, USE HIGHER
1068f6801.d	1242305005	YS1	14-DEC-2009 16:53	931140	10-786	5.0	LANL	UPLOAD BOTH COLUMNS, USE HIGHER
1069f6901.d	1242305006	YS1	14-DEC-2009 17:06	931140	10-786	5.0	LANL	UPLOAD BOTH COLUMNS, USE HIGHER
1070f7001.d	WAR091211-60 03	YS1	14-DEC-2009 17:19		121409	1.0		PASSED ON BOTH COLUMNS
1071f7101.d	WAR091130-99 04	YS1	14-DEC-2009 17:31		121409	1.0		CLEAN
1072f7201.d	11201992645	YS1	14-DEC-2009 17:44	931553	1242521	1.0	QC A	UPLOAD BOTH COLUMNS, USE HIGHER
1073f7301.d	11201992646	YS1	14-DEC-2009 17:57	931553	1242521	1.0	QC A	UPLOAD BOTH COLUMNS, USE HIGHER
1074f7401.d	1242264001	YS1	14-DEC-2009 18:09	931553	1242264	5.0	ENRG	UPLOAD BOTH COLUMNS, USE HIGHER
1075f7501.d	1242521001	YS1	14-DEC-2009 18:22	931553	1242521	5.0	EMSC	UPLOAD BOTH COLUMNS, USE HIGHER

Instrument Batch: /chem/ecdla.i/121409.b

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1076f7601.d	11201992647	YS1	14-DEC-2009 18:35	931553	1242521	5.0	QC A	UPLOAD BOTH COLUMNS, USE HIGHER
1077f7701.d	11201992648	YS1	14-DEC-2009 18:47	931553	1242521	5.0	QC A	UPLOAD BOTH COLUMNS, USE HIGHER
1078f7801.d	1242521002	YS1	14-DEC-2009 19:00	931553	1242521	5.0	EMSC	UPLOAD BOTH COLUMNS, USE HIGHER
1079f7901.d	1242521003	YS1	14-DEC-2009 19:12	931553	1242521	5.0	EMSC	UPLOAD BOTH COLUMNS, USE HIGHER
1080f8001.d	1242521004	YS1	14-DEC-2009 19:25	931553	1242521	5.0	EMSC	UPLOAD BOTH COLUMNS, USE HIGHER
1081f8101.d	1242521005	YS1	14-DEC-2009 19:38	931553	1242521	5.0	EMSC	UPLOAD BOTH COLUMNS, USE HIGHER
1082f8201.d	WAR091211-60 04	YS1	14-DEC-2009 19:50		121409	1.0		PASSED ON BOTH COLUMNS
1083f8301.d	WAR091130-99 05	YS1	14-DEC-2009 20:03		121409	1.0		CLEAN
1084f8401.d	1242521006	YS1	14-DEC-2009 20:15	931553	1242521	5.0	EMSC	UPLOAD BOTH COLUMNS, USE HIGHER
1085f8501.d	1242521007	YS1	14-DEC-2009 20:28	931553	1242521	5.0	EMSC	UPLOAD BOTH COLUMNS, USE HIGHER
1086f8601.d	1242521008	YS1	14-DEC-2009 20:41	931553	1242521	5.0	EMSC	UPLOAD BOTH COLUMNS, USE HIGHER
1087f8701.d	WAR091211-60 05	YS1	14-DEC-2009 20:53		121409	1.0		PASSED ON BOTH COLUMNS
1088f8801.d	WAR091130-99 06	YS1	14-DEC-2009 21:06		121409	1.0		CLEAN
1089f8901.d	1242297010	YS1	14-DEC-2009 21:19	931140	10-782	1.0	LANL	

090f9001.d	WAR091211-60 06	Y51	14-DEC-2009 21:31	121409	1.01	PASSED ON BOTH COLUMNS
091f9101.d	WAR091130-99 07	Y51	14-DEC-2009 21:44	121409	1.01	CLEAN
092f9201.d	11660	Y51	14-DEC-2009 21:56	121409	1.01	screen
093f9301.d	11660	Y51	14-DEC-2009 22:09	121409	1.01	screen
094f9401.d	11660	Y51	14-DEC-2009 22:22	121409	1.01	screen

Instrument Batch: /chem/ecdl1a.i/121409.b

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## GEL ORGANIC RUN LOG

INSTRUMENT ID: ECD1

DATE: 12/23/2009 METHOD: ECD1-F-8082-121409.m OPERATOR: JAOC REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

HARDWARE CONFIGURATION & METHOD SUMMARY: No. 1 on pg. 1 SOLVENT LOT DA385  
ALUMINA LOT 1230997-A  
COPPER LOT 236547-A

Calibration & QC Information  
Initial Calibration Dates: See Calibration History and Standard Logbook.  
Initial Calibration Std ID's: See Calibration History and Standard Logbook.  
GEL SOP GL-OA-E-040 Polychlorinated Biphenyl: EPA 8082  
Chromatogram Abbreviation Legend: AB-Assign Baseline, AP-Assign Peak,  
DNC-Do Not Call, DMP-Doesn't Match Pattern, NC-Not Confirmed, RT-Retention Time,  
BF-Before, AF-After.

Sequence Number: /chem/ecd1a.i/122209.b Injection Volume: 0.5 ul

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
1001f0101.d	1001f0101.d	JAOC	122-DEC-2009 07:55	1	122209	1.0	1.0	CLEAN
1002f0201.d	1002f0201.d	JAOC	122-DEC-2009 08:05	1	122209	1.0	1.0	PASSES BOTH COLUMNS
1003f0301.d	1003f0301.d	JAOC	122-DEC-2009 08:16	1	122209	1.0	1.0	PASSES BOTH COLUMNS
1004f0401.d	1004f0401.d	JAOC	122-DEC-2009 08:26	1	122209	1.0	1.0	PASSES BOTH COLUMNS
1005f0501.d	1005f0501.d	JAOC	122-DEC-2009 08:37	1	122209	1.0	1.0	PASSES BOTH COLUMNS
1006f0601.d	1006f0601.d	JAOC	122-DEC-2009 08:47	1	122209	1.0	1.0	PATTERN ONLY
1007f0701.d	1007f0701.d	JAOC	122-DEC-2009 08:58	1	122209	1.0	1.0	PATTERN ONLY
1008f0801.d	1008f0801.d	JAOC	122-DEC-2009 09:08	1	122209	1.0	1.0	PATTERN ONLY
1009f0901.d	1009f0901.d	JAOC	122-DEC-2009 09:19	1	122209	1.0	1.0	PATTERN ONLY
1010f1001.d	1010f1001.d	JAOC	122-DEC-2009 09:29	1	122209	1.0	1.0	DDT
1011f1101.d	1011f1101.d	JAOC	122-DEC-2009 09:40	1	122209	1.0	1.0	CLEAN
1012f1201.d	1012f1201.d	JAOC	122-DEC-2009 09:50	1	934936	1.0	1.0	QC A   UPLOAD BOTH, USE HIGHER
1013f1301.d	1013f1301.d	JAOC	122-DEC-2009 10:01	1	934936	1.0	1.0	QC A   UPLOAD BOTH, USE HIGHER
1014f1401.d	1014f1401.d	JAOC	122-DEC-2009 10:11	1	934936	1.0	1.0	SCG   UPLOAD BOTH, USE HIGHER
1015f1501.d	1015f1501.d	JAOC	122-DEC-2009 10:22	1	934936	1.0	1.0	QC A   UPLOAD BOTH, USE HIGHER

Instrument Batch: /chem/ecd1a.i/122209.b

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Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
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016f1601.d	1202000308	JAOC	22-DEC-2009	10:32	934936	242826		1.0 QC A		UPLOAD BOTH, USE HIGHER	+
017f1701.d	242826002	JAOC	22-DEC-2009	10:43	934936	242826		1.0 SCEG		UPLOAD BOTH, USE HIGHER	+
018f1801.d	242826003	JAOC	22-DEC-2009	10:53	934936	242826		1.0 SCEG		UPLOAD BOTH, USE HIGHER	+
019f1901.d	242826004	JAOC	22-DEC-2009	11:04	934936	242826		1.0 SCEG		UPLOAD BOTH, USE HIGHER	+
020f2001.d	242826005	JAOC	22-DEC-2009	11:15	934936	242826		1.0 SCEG		UPLOAD BOTH, USE HIGHER	+
021f2101.d	242826006	JAOC	22-DEC-2009	11:25	934936	242826		1.0 SCEG		UPLOAD BOTH, USE HIGHER	+
022f2201.d	WAR091211--60 02	JAOC	22-DEC-2009	11:36		122209		1.0		PASSES BOTH COLUMNS	+
023f2301.d	WAR091130--99 03	JAOC	22-DEC-2009	11:46		122209		1.0		CLEAN	+
024f2401.d	1202001507	JAOC	22-DEC-2009	11:57	935393	10--939		1.0 QC A		UPLOAD BOTH, USE HIGHER	+
025f2501.d	1202001508	JAOC	22-DEC-2009	12:07	935393	10--939		1.0 QC A		UPLOAD BOTH, USE HIGHER	+
026f2601.d	242937001	JAOC	22-DEC-2009	12:18	935393	10--917		1.0 LANL		DUSE, NO HITS CONFIRMS ORIGINAL SAMPLE	+
027f2701.d	243007002	JAOC	22-DEC-2009	12:28	935393	10--939		1.0 LANL		UPLOAD BOTH, USE HIGHER	+
028f2801.d	243033001	JAOC	22-DEC-2009	12:39	935393	10--940		1.0 LANL		UPLOAD BOTH, USE HIGHER	+
029f2901.d	243033002	JAOC	22-DEC-2009	12:49	935393	10--940		1.0 LANL		UPLOAD BOTH, USE HIGHER	+
030f3001.d	243033003	JAOC	22-DEC-2009	13:00	935393	10--940		1.0 LANL		UPLOAD BOTH, USE HIGHER	+
031f3101.d	243033004	JAOC	22-DEC-2009	13:10	935393	10--940		1.0 LANL		UPLOAD BOTH, USE HIGHER	+
032f3201.d	243033005	JAOC	22-DEC-2009	13:21	935393	10--940		1.0 LANL		UPLOAD BOTH, USE HIGHER	+
033f3301.d	243033006	JAOC	22-DEC-2009	13:31	935393	10--940		1.0 LANL		UPLOAD BOTH, USE HIGHER	+
034f3401.d	WAR091211--60 03	JAOC	22-DEC-2009	13:42		122209		1.0		PASSES BOTH COLUMNS	+
035f3501.d	WAR091130--99 04	JAOC	22-DEC-2009	13:53		122209		1.0		CLEAN	+

Instrument Batch: /chem/ecdl.a.i/122209.b

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Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
036f3601.d	243033007	JAOC	22-DEC-2009	14:03	935393	10--940		1.0 LANL   UPLOAD BOTH, USE HIGHER
037f3701.d	243033008	JAOC	22-DEC-2009	14:14	935393	10--940		1.0 LANL   UPLOAD BOTH, USE HIGHER
038f3801.d	243033009	JAOC	22-DEC-2009	14:24	935393	10--940		1.0 LANL   UPLOAD BOTH, USE HIGHER
039f3901.d	243273001	JAOC	22-DEC-2009	14:35	935393	10--988		1.0 LANL   UPLOAD BOTH, USE HIGHER
040f4001.d	243274001	JAOC	22-DEC-2009	14:45	935393	10--989		1.0 LANL   UPLOAD BOTH, USE HIGHER



041f4101.d	1202001509	JAOC	22-DEC-2009 14:56	935393	10-989	1.0 QC A	UPLOAD BOTH, USE HIGHER
042f4201.d	1202001510	JAOC	22-DEC-2009 15:06	935393	10-989	1.0 QC A	UPLOAD BOTH, USE HIGHER
043f4301.d	243274010	JAOC	22-DEC-2009 15:17	935393	10-989	1.0 LANL	UPLOAD BOTH, USE HIGHER
044f4401.d	WAR091211-60 04	JAOC	22-DEC-2009 15:27		122209	1.0	PASSES BOTH COLUMNS
045f4501.d	WAR091130-99 05	JAOC	22-DEC-2009 15:38		122209	1.0	CLEAN

Data File: /chem/ecdl1a.i/122209.b/041b4101.d  
 Report Date: 23-Dec-2009 11:54

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/041b4101.d  
 Lab Smp Id: 1202001509 Client Smp ID: RE12-10-7352MS  
 Inj Date : 22-DEC-2009 14:56  
 Operator : JAOC Inst ID: ecd1a.i  
 Smp Info : |1202001509|1|  
 Misc Info : |ECD82P\_1S|935393|SVA|QC A|SOIL|MS|||  
 Comment :  
 Method : /chem/ecdl1a.i/122209.b/ECD1-B-8082-121409.m  
 Meth Date : 23-Dec-2009 06:44 jen01212 Quant Type: ESTD  
 Cal Date : 14-DEC-2009 12:16 Cal File: 044b4401.d  
 Als bottle: 41 QC Sample: MS  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-989.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	30.02000	Weight of sample extracted (g)
M	9.79470	% Moisture

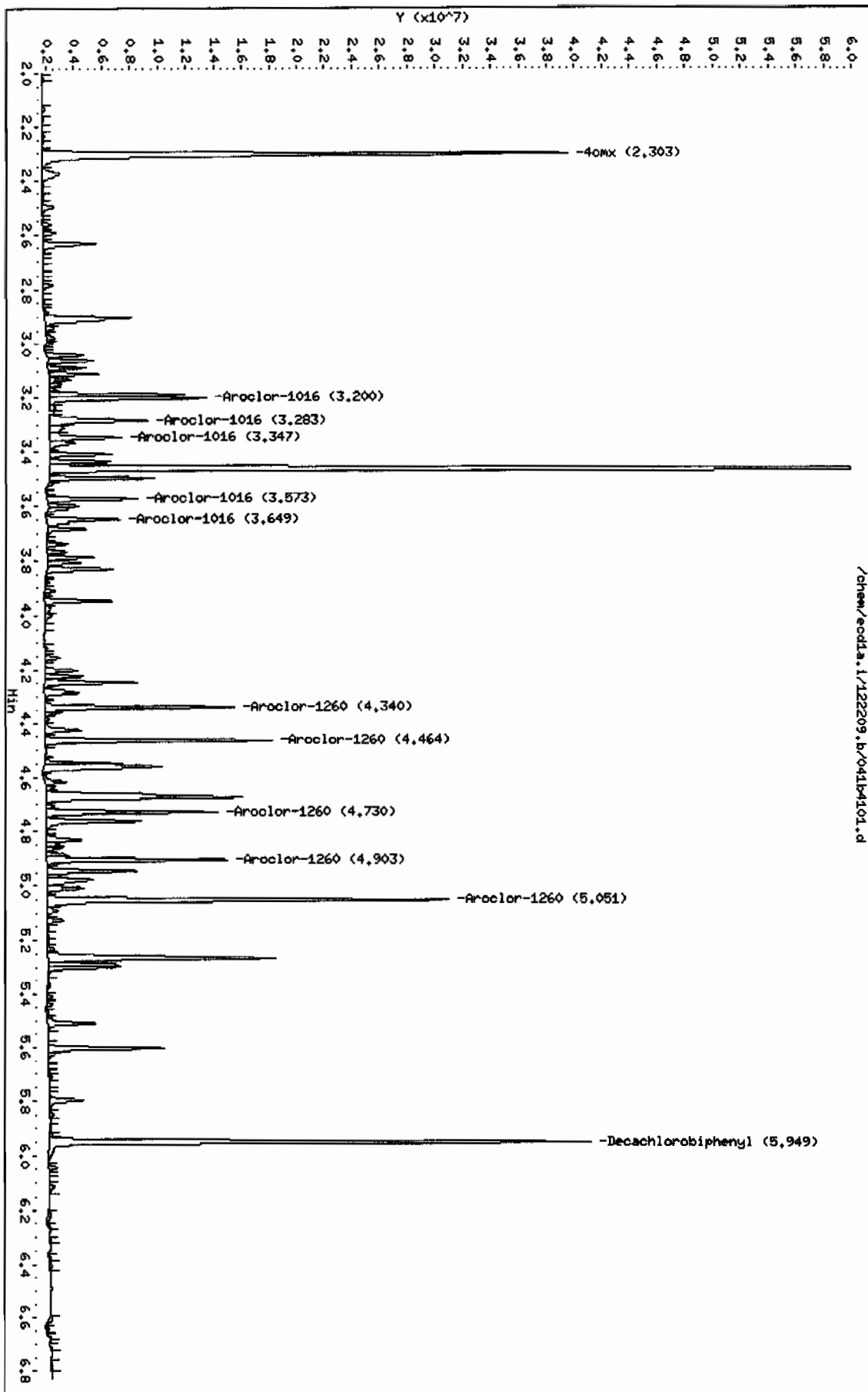
Cpnd Variable Local Compound Variable

CONCENTRATIONS							
			ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8		
2.303	2.302	0.001	34882093	116.264	4.3	80.00- 120.00	100.00
-----							
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.949	5.948	0.001	29723878	127.446	4.7	80.00- 120.00	100.00
-----							
1 Aroclor-1016					CAS #: 12674-11-2		
3.200	3.199	0.001	8140755	645.501	23.8	80.00- 120.00	100.00
3.283	3.282	0.001	6678679	715.992	26.4	46.88- 86.88	82.04
3.347	3.346	0.001	4233213	782.289	28.9	21.65- 61.65	52.00
3.573	3.572	0.001	4321988	612.885	22.6	32.68- 72.68	53.09
3.649	3.648	0.001	4701736	717.742	26.5	30.01- 70.01	57.76
Average of Peak Concentrations =					25.6		
-----							

			CONCENTRATIONS					
			ON-COL		FINAL			
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	(ug/Kg)	TARGET RANGE	RATIO	
==	=====	=====	=====	=====	=====	=====	=====	
7 Aroclor-1260					CAS #: 11096-82-5			
4.340	4.338	0.002	9489576	693.681	25.6	80.00- 120.00	100.00	
4.464	4.463	0.001	11540856	719.998	26.6	98.94- 138.94	121.62	
4.730	4.729	0.001	9056698	720.849	26.6	76.23- 116.23	95.44	
4.903	4.903	0.000	9546017	745.196	27.5	79.35- 119.35	100.59	
5.051	5.050	0.001	22016938	789.203	29.1	205.17- 245.17	232.01	
Average of Peak Concentrations =					27.1			

Data File: /chem/ecdl1a.i/122209.b/041b4101.d  
Date : 22-DEC-2009 14:56  
Client ID: RE12-10-7382MS  
Sample Info: 1202001509111  
Volume Injected (uL): 1.0  
Column phase: CLP2

Instrument: ecdl1a.i  
Operator: JHOC  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/041f4101.d

Lab Smp Id: 1202001509

Client Smp ID: RE12-10-7352MS

Inj Date : 22-DEC-2009 14:56

Operator : JAOC

Inst ID: ecd1a.i

Smp Info : |1202001509|1|

Misc Info : |ECD82P\_1S|935393|SVA|QC A|SOIL|MS|||

Comment :

Method : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m

Meth Date : 23-Dec-2009 06:42 jen01212 Quant Type: ESTD

Cal Date : 14-DEC-2009 11:34

Cal File: 040f4001.d

Als bottle: 41

QC Sample: MS

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: 10-989.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	30.02000	Weight of sample extracted (g)
M	9.79470	% Moisture

Cpnd Variable

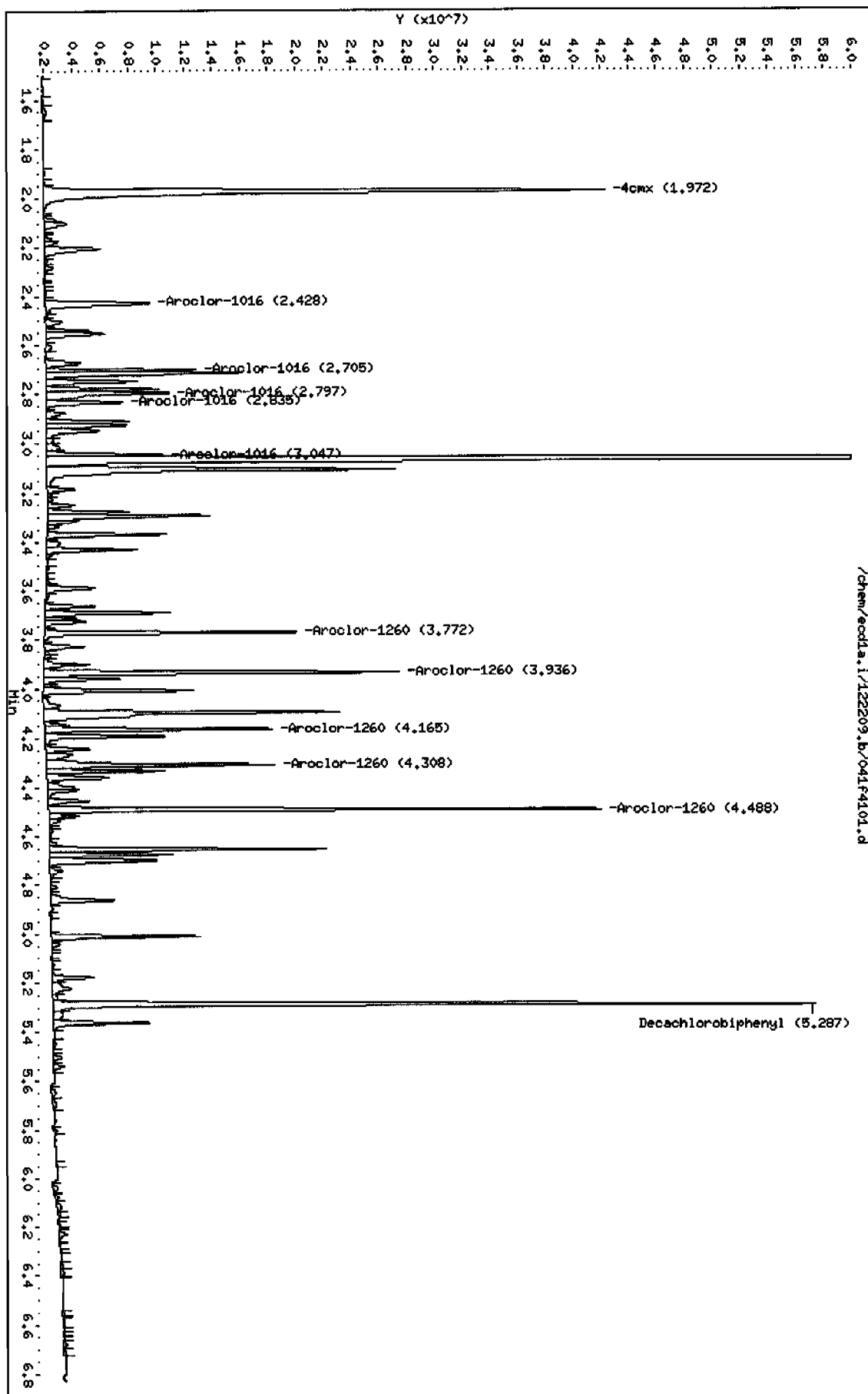
Local Compound Variable

CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	*****	*****	*****	=====
\$ 11 4cmx						
			CAS #: 877-09-8			
1.972	1.971	0.001	45548248	121.246	4.5 80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl						
			CAS #: 2051-24-3			
5.287	5.286	0.001	41757542	131.503	4.8 80.00- 120.00	100.00
1 Aroclor-1016						
			CAS #: 12674-11-2			
2.428	2.427	0.001	8917469	643.077	23.7 80.00- 120.00	100.00
2.705	2.705	0.000	6895523	682.879	25.2 65.19- 105.19	77.33
2.797	2.796	0.001	8433875	717.348	26.5 66.50- 106.50	94.58
2.835	2.835	0.000	4318050	654.348	24.2 32.04- 72.04	48.42
3.047	3.046	0.001	4874837	562.044	20.8 47.11- 87.11	54.67
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				
3.772	3.771	0.001	13189999	787.362	29.1	80.00- 120.00	100.00
3.936	3.934	0.002	19554769	790.328	29.2	134.26- 174.26	148.25
4.165	4.165	0.000	12102233	823.990	30.4	72.25- 112.25	91.75
4.308	4.307	0.001	13504795	889.379	32.8	76.57- 116.57	102.39
4.488	4.486	0.002	28658539	834.299	30.8	202.51- 242.51	217.27
Average of Peak Concentrations =			30.5				

Data File: /chem/eodla.i/122209.b/041f4101.d  
Date : 22-DEC-2009 14:56  
Client ID: RE12-10-7382MS  
Sample Info: 11202001509111  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: eodla.i  
Operator: JADC  
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdla.i/122209.b/042b4201.d  
 Lab Smp Id: 1202001510 Client Smp ID: RE12-10-7352MSD  
 Inj Date : 22-DEC-2009 15:06  
 Operator : JAOC Inst ID: ecdla.i  
 Smp Info : |1202001510|1|  
 Misc Info : |ECD82P\_1S|935393|SVA|QC A|SOIL|MSD|1|1|  
 Comment :  
 Method : /chem/ecdla.i/122209.b/ECD1-B-8082-121409.m  
 Meth Date : 23-Dec-2009 06:44 jen01212 Quant Type: ESTD  
 Cal Date : 14-DEC-2009 12:16 Cal File: 044b4401.d  
 Als bottle: 42 QC Sample: MSD  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-989.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	30.01000	Weight of sample extracted (g)
M	9.79470	% Moisture

Cpnd Variable Local Compound Variable

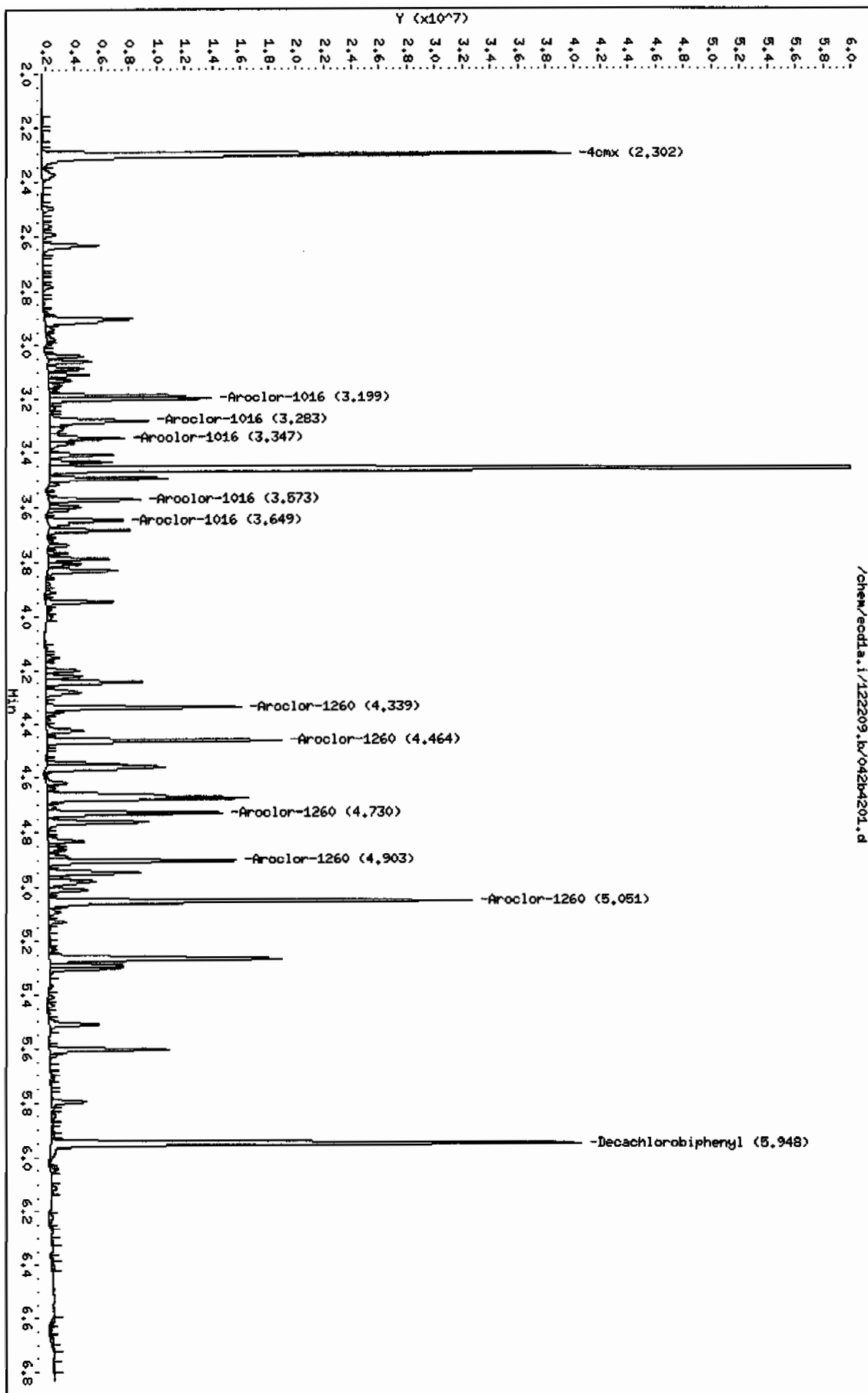
CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE ( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx CAS #: 877-09-8						
2.302	2.302	0.000	34824282 116.071	4.3	80.00- 120.00	100.00
-----						
\$ 12 Decachlorobiphenyl CAS #: 2051-24-3						
5.948	5.948	0.000	30260536 129.747	4.8	80.00- 120.00	100.00
-----						
1 Aroclor-1016 CAS #: 12674-11-2						
3.199	3.199	0.000	8173859 648.125	23.9	80.00- 120.00	100.00
3.283	3.282	0.001	6691403 717.356	26.5	46.88- 86.88	81.86
3.347	3.346	0.001	4263313 787.851	29.1	21.65- 61.65	52.16
3.573	3.572	0.001	4423157 627.231	23.2	32.68- 72.68	54.11
3.649	3.648	0.001	4840945 738.993	27.3	30.01- 70.01	59.22
Average of Peak Concentrations =				26.0		



CONCENTRATIONS									
			ON-COL		FINAL				
RT	EXP RT	DLT RT	RESPONSE ( ug/L)		(ug/Kg)	TARGET RANGE		RATIO	
==	=====	=====	=====	=====	=====	=====	=====	=====	=====
7 Aroclor-1260					CAS #: 11096-82-5				
4.339	4.338	0.001	9883833	722.501	26.7	80.00-	120.00	100.00	
4.464	4.463	0.001	12060963	752.446	27.8	98.94-	138.94	122.03	
4.730	4.729	0.001	9376541	746.306	27.6	76.23-	116.23	94.87	
4.903	4.903	0.000	9874401	770.831	28.5	79.35-	119.35	99.90	
5.051	5.050	0.001	22960048	823.009	30.4	205.17-	245.17	232.30	
Average of Peak Concentrations =					28.2				
-----									

Data File: /chem/ecdl.a.i/122209.b/042b4201.d  
 Date : 22-DEC-2009 15:06  
 Client ID: RE12-10-73824MSD  
 Sample Info: 1120200151011  
 Volume Injected (uL): 1.0  
 Column phase: CLP2

Instrument: ecdl.a.i  
 Operator: JAO  
 Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecdl1a.i/122209.b/042f4201.d  
 Lab Smp Id: 1202001510 Client Smp ID: RE12-10-7352MSD  
 Inj Date : 22-DEC-2009 15:06  
 Operator : JAOC Inst ID: ecd1a.i  
 Smp Info : |1202001510|1|  
 Misc Info : |ECD82P\_1S|935393|SVA|QC A|SOIL|MSD|  
 Comment :  
 Method : /chem/ecdl1a.i/122209.b/ECD1-F-8082-121409.m  
 Meth Date : 23-Dec-2009 06:42 jen01212 Quant Type: ESTD  
 Cal Date : 14-DEC-2009 11:34 Cal File: 040f4001.d  
 Als bottle: 42 QC Sample: MSD  
 Dil Factor: 1.00000  
 Integrator: Falcon Compound Sublist: 10-989.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	30.01000	Weight of sample extracted (g)
M	9.79470	% Moisture

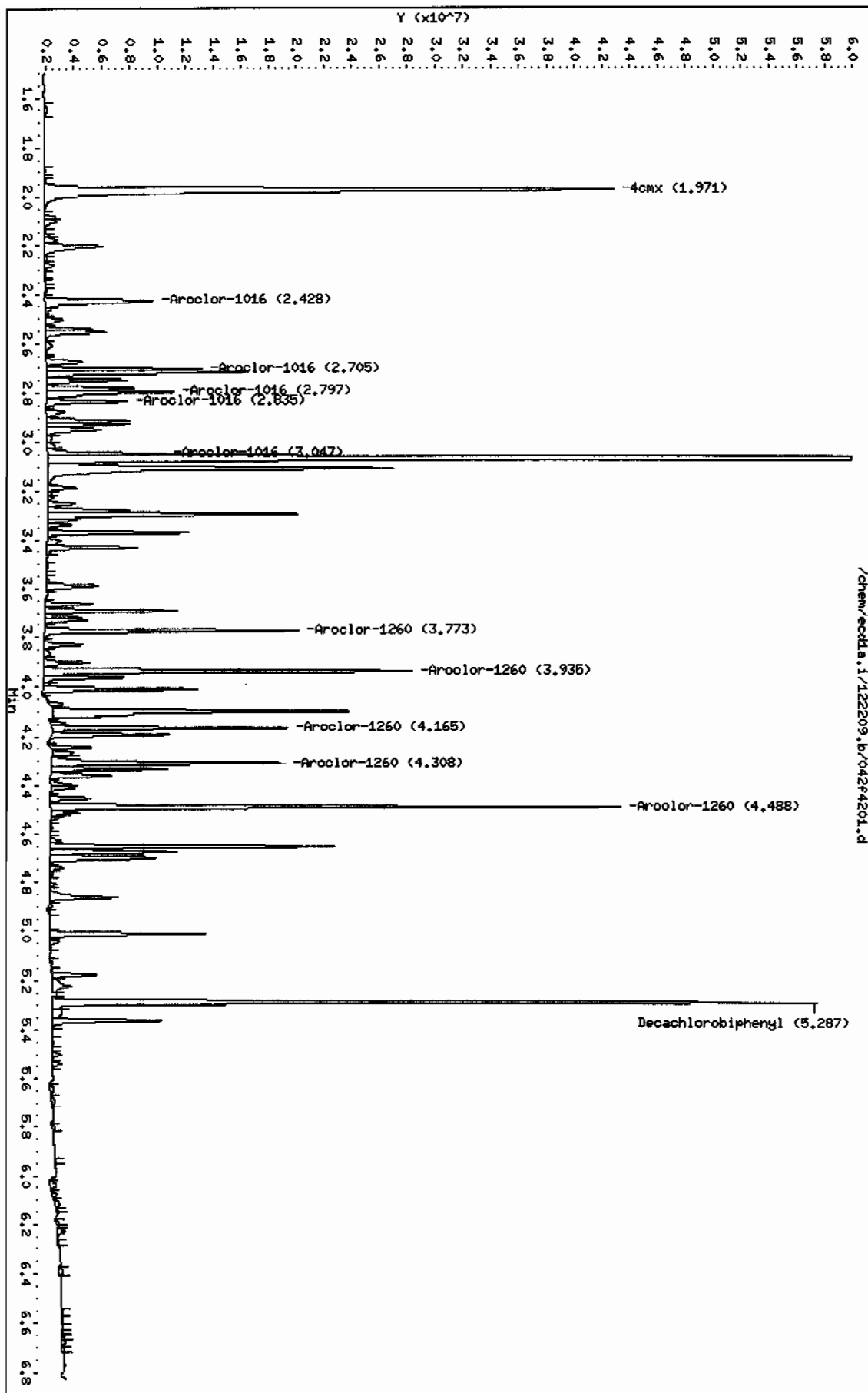
Cpnd Variable Local Compound Variable

CONCENTRATIONS							
RT	EXP RT	DLT RT	ON-COL	FINAL	TARGET RANGE	RATIO	
---	-----	-----	RESPONSE ( ug/L)	(ug/Kg)	-----	-----	-----
CAS #: 877-09-8							
1.971	1.971	0.000	45616082 121.426	4.5	80.00- 120.00	100.00	
CAS #: 2051-24-3							
5.287	5.286	0.001	41952079 132.116	4.9	80.00- 120.00	100.00	
CAS #: 12674-11-2							
2.428	2.427	0.001	8717913 628.686	23.2	80.00- 120.00	100.00	
2.705	2.705	0.000	7343052 727.199	26.9	65.19- 105.19	84.23	
2.797	2.796	0.001	8568068 728.762	26.9	66.50- 106.50	98.28	
2.835	2.835	0.000	4514084 684.055	25.3	32.04- 72.04	51.78	
3.047	3.046	0.001	5213832 601.129	22.2	47.11- 87.11	59.81	
Average of Peak Concentrations =				24.9			

CONCENTRATIONS							
		ON-COL		FINAL			
RT	EXP RT	DLT RT	RESPONSE	( ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
7 Aroclor-1260				CAS #: 11096-82-5			
3.773	3.771	0.002	13668321	815.914	30.1	80.00- 120.00	100.00
3.935	3.934	0.001	20415030	825.096	30.5	134.26- 174.26	149.36
4.165	4.165	0.000	11609553	790.446	29.2	72.25- 112.25	84.94
4.308	4.307	0.001	12914492	850.503	31.4	76.57- 116.57	94.48
4.488	4.486	0.002	29312497	853.337	31.5	202.51- 242.51	214.46
Average of Peak Concentrations =					30.5		

Data File: /chem/ecdl1a.i/122209.b/042f4201.d  
Date: 22-DEC-2009 15:06  
Client ID: RE12-10-7362MSD  
Sample Infor: 122000151011  
Volume Injected (uL): 1.0  
Column phase: CLP1

Instrument: ecdl1a.i  
Operator: JADC  
Column diameter: 0.25



# Prep Logbook

## Extraction of Semivolatile and Nonvolatile Organic Compounds from Soil, Sludge, and Other Miscellaneous Solid Samples

Batch ID: 935357 Verified by: \_\_\_\_\_  
Analyst: Andrew Schwenin  
Method: SW846 3550B  
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)
1202001507 MB	21-DEC-2009 20:06:26	30	H2SO4/KM12	2	9	1	0.03333	
1202001508 LCS	21-DEC-2009 20:06:26	30	H2SO4/KM12	2	9	1	0.03333	
242937001 - 2	21-DEC-2009 20:06:26	30.02	H2SO4/KM12	2	9	1	0.03331	
243007002	21-DEC-2009 20:06:26	30.05	H2SO4/KM12	2	9	1	0.03328	
243033001	21-DEC-2009 20:06:26	30.09	H2SO4/KM12	2	9	1	0.03323	
243033002	21-DEC-2009 20:06:26	30.01	H2SO4/KM12	2	9	1	0.03332	
243033003	21-DEC-2009 20:06:26	30.02	H2SO4/KM12	2	9	1	0.03331	
243033004	21-DEC-2009 20:06:26	30.03	H2SO4/KM12	2	9	1	0.0333	
243033005	21-DEC-2009 20:06:26	30.04	H2SO4/KM12	2	9	1	0.03329	
243033006	21-DEC-2009 20:06:26	30.18	H2SO4/KM12	2	9	1	0.03313	
243033007	21-DEC-2009 20:06:26	30.05	H2SO4/KM12	2	9	1	0.03328	
243033008	21-DEC-2009 20:06:26	30.02	H2SO4/KM12	2	9	1	0.03331	
243033009	21-DEC-2009 20:06:26	30.02	H2SO4/KM12	2	9	1	0.03331	
243273001	21-DEC-2009 20:06:26	30.14	H2SO4/KM12	2	9	1	0.03318	
243274001	21-DEC-2009 20:06:26	30.14	H2SO4/KM12	2	9	1	0.03318	
1202001509 MS (243274001)	21-DEC-2009 20:06:26	30.02	H2SO4/KM12	2	9	1	0.03331	
1202001510 MSD (243274001)	21-DEC-2009 20:06:26	30.01	H2SO4/KM12	2	9	1	0.03332	
243274010	21-DEC-2009 20:06:26	30.07	H2SO4/KM12	2	9	1	0.03326	

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1202001508	PCB Laboratory Control	WE091210-07	1	mL	Clean up Date: 12/21/09
MS	1202001509	PCB Laboratory Control	WE091210-07	1	mL	Clean up Initials: AJS
MSD	1202001510	PCB Laboratory Control	WE091210-07	1	mL	Verified By: AV
SURR	All	PEST LOW LEVEL SURROGATE 200 UGL	UE091130-15	1	mL	Final Solvent: Hexane
REGNT	All	1:1 sulfuric acid	1133264a	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 10-988**

**Sample Analysis**

<b>Sample ID</b>	<b>Client ID</b>
243273001	RE12-10-7351
1202001494	Method Blank (MB) ICP
1202001495	Laboratory Control Sample (LCS)
1202001498	243270001(RE12-10-7352L) Serial Dilution (SD)
1202001496	243270001(RE12-10-7352D) Sample Duplicate (DUP)
1202001497	243270001(RE12-10-7352S) Matrix Spike (MS)
1202001499	243270001(RE12-10-7352SD) Matrix Spike Duplicate (MSD)
1202001488	Method Blank (MB) ICP-MS
1202001489	Laboratory Control Sample (LCS)
1202001492	243270001(RE12-10-7352L) Serial Dilution (SD)
1202001490	243270001(RE12-10-7352D) Sample Duplicate (DUP)
1202001491	243270001(RE12-10-7352S) Matrix Spike (MS)
1202001493	243270001(RE12-10-7352SD) Matrix Spike Duplicate (MSD)
1202002063	Method Blank (MB) CVAA
1202002064	Laboratory Control Sample (LCS)
1202002067	243270001(RE12-10-7352L) Serial Dilution (SD)
1202002065	243270001(RE12-10-7352D) Sample Duplicate (DUP)
1202002066	243270001(RE12-10-7352S) Matrix Spike (MS)
1202002068	243270001(RE12-10-7352SD) Matrix Spike Duplicate (MSD)

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

**Method/Analysis Information**

<b>Analytical Batch:</b>	935381, 935378 and 935670
<b>Prep Batch :</b>	935380, 935377 and 935669
<b>Standard Operating Procedures:</b>	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 6100E 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 verification (CCV) bracketing this SDG met the established acceptance criteria for all analytes.

**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 spike recoveries met the acceptance limits.

**Quality Control (QC) Sample Statement**

The following sample was selected as the quality control (QC) sample for this SDG: 243270001 (RE12-10-7352)-ICP, ICP-MS and 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 antimony and barium 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 exception of antimony as indicated by the "N" qualifier.

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

The relative percent difference (RPD) obtained from the designated matrix spike duplicate (MSD) is evaluated based on acceptance criteria of 20%. The RPD between qualifying elements results in the MS and MSD were within the acceptance limits of 20% with the exception of manganese as indicated by the "\*" qualifier.

**Duplicate Relative Percent Difference (RPD) Statement**

The 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 RL, a control of +/-RL is used to evaluate the DUP results. All applicable analytes met these requirements.

**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).

### **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 778274. 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: 1.14.10

# Sample Data Summary

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

SDG No: 10-988

CONTRACT: LANL01004

METHOD TYPE: SW846

SAMPLE ID: 243273001

BASIS: Dry Weight

DATE COLLECTED 15-DEC-09

CLIENT ID: RE12-10-7351

LEVEL: Low

DATE RECEIVED 18-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	5470000	ug/Kg		6920	20400	20400	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-36-0	Antimony	1020	ug/Kg	U	336	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-38-2	Arsenic	0.593	mg/kg	J	0.215	1.07	1.07	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-39-3	Barium	260000	ug/Kg		102	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-41-7	Beryllium	0.303	mg/kg		0.0215	0.107	0.107	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-43-9	Cadmium	832	ug/Kg		102	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-70-2	Calcium	2660000	ug/Kg		8140	25500	25500	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-47-3	Chromium	16800	ug/Kg		153	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-48-4	Cobalt	4610	ug/Kg		153	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-50-8	Copper	28100	ug/Kg		305	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381
7439-89-6	Iron	9480000	ug/Kg		8140	25500	25500	1	P	HSC	01/06/10 12:53	010610A-2	935381
7439-92-1	Lead	8610	ug/Kg		255	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381
7439-95-4	Magnesium	1570000	ug/Kg		8650	30500	30500	1	P	HSC	01/05/10 18:38	010510-1	935381
7439-96-5	Manganese	322000	ug/Kg		204	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381
7439-97-6	Mercury	5.51	ug/kg	J	4.22	12.4	12.4	1	AV	JXL1	01/08/10 10:48	010810S1-5	935670
7440-02-0	Nickel	7.3	mg/kg		0.107	0.429	0.429	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-09-7	Potassium	997000	ug/Kg		6520	25500	25500	1	P	HSC	01/06/10 12:53	010610A-2	935381
7782-49-2	Selenium	1.07	mg/kg	U	0.536	1.07	1.07	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-22-4	Silver	2560	ug/Kg		102	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-23-5	Sodium	237000	ug/Kg		7130	25500	25500	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-28-0	Thallium	0.0886	mg/kg	J	0.0644	0.215	0.215	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-61-1	Uranium	3.86	mg/kg		0.0142	0.0429	0.0429	2	MS	SKJ	01/06/10 20:08	100106-3	935378
7440-62-2	Vanadium	20500	ug/Kg		102	509	509	1	P	HSC	01/05/10 18:38	010510-1	935381
7440-66-6	Zinc	38200	ug/Kg		336	1020	1020	1	P	HSC	01/05/10 18:38	010510-1	935381

**Prep Information:**

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
935378	935377	SW846 3050B	0.521	g	50	mL	12/21/09	BXA1
935381	935380	SW846 3050B	0.549	g	50	mL	12/21/09	BXA1
935670	935669	SW846 7471A Prep	0.54	g	30	mL	01/07/10	AXG2

# **Quality Control Summary**



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,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										
	Aluminum	5050	ug/L	5000	ug/L	100.9	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Antimony	513	ug/L	500	ug/L	102.7	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Barium	521	ug/L	500	ug/L	104.2	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Cadmium	510	ug/L	500	ug/L	102.1	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Calcium	5010	ug/L	5000	ug/L	100.2	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Chromium	499	ug/L	500	ug/L	99.7	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Cobalt	509	ug/L	500	ug/L	101.7	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Copper	517	ug/L	500	ug/L	103.4	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Iron	5080	ug/L	5000	ug/L	101.5	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Lead	514	ug/L	500	ug/L	102.7	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Magnesium	5240	ug/L	5000	ug/L	104.8	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Manganese	525	ug/L	500	ug/L	105.1	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Potassium	2450	ug/L	2500	ug/L	98.2	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Silver	265	ug/L	250	ug/L	106	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Sodium	2500	ug/L	2500	ug/L	100	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Vanadium	526	ug/L	500	ug/L	105.1	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Zinc	519	ug/L	500	ug/L	103.8	90.0 – 110.0	P	05-JAN-10 08:41	010510-1
	Iron	5140	ug/L	5000	ug/L	102.9	90.0 – 110.0	P	06-JAN-10 10:37	010610A-2
	Potassium	2480	ug/L	2500	ug/L	99.2	90.0 – 110.0	P	06-JAN-10 10:37	010610A-2
	Arsenic	48.7	ug/L	50	ug/L	97.4	90.0 – 110.0	MS	06-JAN-10 17:01	100106-3
	Beryllium	52.2	ug/L	50	ug/L	104.5	90.0 – 110.0	MS	06-JAN-10 17:01	100106-3
	Nickel	51.7	ug/L	50	ug/L	103.5	90.0 – 110.0	MS	06-JAN-10 17:01	100106-3
	Selenium	51.8	ug/L	50	ug/L	103.7	90.0 – 110.0	MS	06-JAN-10 17:01	100106-3
	Thallium	48.4	ug/L	50	ug/L	96.8	90.0 – 110.0	MS	06-JAN-10 17:01	100106-3
	Uranium	52.3	ug/L	50	ug/L	104.5	90.0 – 110.0	MS	06-JAN-10 17:01	100106-3
	Beryllium	52.3	ug/L	50	ug/L	104.6	90.0 – 110.0	MS	07-JAN-10 11:25	100107-4
	Nickel	51.8	ug/L	50	ug/L	103.6	90.0 – 110.0	MS	07-JAN-10 11:25	100107-4
	Mercury	5.03	ug/L	5	ug/L	100.6	90.0 – 110.0	AV	08-JAN-10 10:02	010810S1-5
CCV01										
	Aluminum	5240	ug/L	5000	ug/L	104.7	90.0 – 110.0	P	05-JAN-10 09:44	010510-1

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,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>
	Antimony	512	ug/L	500	ug/L	102.4	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Barium	498	ug/L	500	ug/L	99.7	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Cadmium	499	ug/L	500	ug/L	99.8	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Calcium	5230	ug/L	5000	ug/L	104.5	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Chromium	497	ug/L	500	ug/L	99.4	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Cobalt	496	ug/L	500	ug/L	99.1	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Copper	494	ug/L	500	ug/L	98.8	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Iron	5300	ug/L	5000	ug/L	106	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Lead	509	ug/L	500	ug/L	101.9	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Magnesium	5340	ug/L	5000	ug/L	106.8	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Manganese	500	ug/L	500	ug/L	99.9	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Potassium	5400	ug/L	5000	ug/L	108.1	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Silver	498	ug/L	500	ug/L	99.6	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Sodium	11000	ug/L	10000	ug/L	109.6	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Vanadium	502	ug/L	500	ug/L	100.3	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Zinc	494	ug/L	500	ug/L	98.8	90.0 – 110.0	P	05-JAN-10 09:44	010510-1
	Iron	4940	ug/L	5000	ug/L	98.7	90.0 – 110.0	P	06-JAN-10 11:40	010610A-2
	Potassium	5060	ug/L	5000	ug/L	101.3	90.0 – 110.0	P	06-JAN-10 11:40	010610A-2
	Arsenic	46.8	ug/L	50	ug/L	93.7	90.0 – 110.0	MS	06-JAN-10 17:32	100106-3
	Beryllium	52.1	ug/L	50	ug/L	104.2	90.0 – 110.0	MS	06-JAN-10 17:32	100106-3
	Nickel	52.3	ug/L	50	ug/L	104.5	90.0 – 110.0	MS	06-JAN-10 17:32	100106-3
	Selenium	50.5	ug/L	50	ug/L	101	90.0 – 110.0	MS	06-JAN-10 17:32	100106-3
	Thallium	48.3	ug/L	50	ug/L	96.7	90.0 – 110.0	MS	06-JAN-10 17:32	100106-3
	Uranium	51.8	ug/L	50	ug/L	103.5	90.0 – 110.0	MS	06-JAN-10 17:32	100106-3
	Beryllium	51.7	ug/L	50	ug/L	103.4	90.0 – 110.0	MS	07-JAN-10 11:43	100107-4
	Nickel	51.5	ug/L	50	ug/L	102.9	90.0 – 110.0	MS	07-JAN-10 11:43	100107-4
	Mercury	5	ug/L	5	ug/L	99.9	80.0 – 120.0	AV	08-JAN-10 10:08	010810S1-5
CCV02										
	Aluminum	4950	ug/L	5000	ug/L	99.1	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Antimony	508	ug/L	500	ug/L	101.6	90.0 – 110.0	P	05-JAN-10 10:05	010510-1

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,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	502	ug/L	500	ug/L	100.4	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Cadmium	502	ug/L	500	ug/L	100.4	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Calcium	5020	ug/L	5000	ug/L	100.4	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Chromium	500	ug/L	500	ug/L	99.9	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Cobalt	497	ug/L	500	ug/L	99.3	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Copper	497	ug/L	500	ug/L	99.4	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Iron	5110	ug/L	5000	ug/L	102.1	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Lead	509	ug/L	500	ug/L	101.7	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Magnesium	5110	ug/L	5000	ug/L	102.2	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Manganese	502	ug/L	500	ug/L	100.5	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Potassium	5040	ug/L	5000	ug/L	100.8	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Silver	501	ug/L	500	ug/L	100.1	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Sodium	10500	ug/L	10000	ug/L	104.7	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Vanadium	504	ug/L	500	ug/L	100.8	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Zinc	497	ug/L	500	ug/L	99.3	90.0 – 110.0	P	05-JAN-10 10:05	010510-1
	Iron	4840	ug/L	5000	ug/L	96.8	90.0 – 110.0	P	06-JAN-10 13:00	010610A-2
	Potassium	4810	ug/L	5000	ug/L	96.2	90.0 – 110.0	P	06-JAN-10 13:00	010610A-2
	Arsenic	49.6	ug/L	50	ug/L	99.2	90.0 – 110.0	MS	06-JAN-10 17:51	100106-3
	Beryllium	51.6	ug/L	50	ug/L	103.1	90.0 – 110.0	MS	06-JAN-10 17:51	100106-3
	Nickel	53.1	ug/L	50	ug/L	106.3	90.0 – 110.0	MS	06-JAN-10 17:51	100106-3
	Selenium	51.4	ug/L	50	ug/L	102.8	90.0 – 110.0	MS	06-JAN-10 17:51	100106-3
	Thallium	49.6	ug/L	50	ug/L	99.1	90.0 – 110.0	MS	06-JAN-10 17:51	100106-3
	Uranium	53.8	ug/L	50	ug/L	107.6	90.0 – 110.0	MS	06-JAN-10 17:51	100106-3
	Beryllium	52.8	ug/L	50	ug/L	105.7	90.0 – 110.0	MS	07-JAN-10 12:20	100107-4
	Nickel	50.4	ug/L	50	ug/L	100.7	90.0 – 110.0	MS	07-JAN-10 12:20	100107-4
	Mercury	5.16	ug/L	5	ug/L	103.2	80.0 – 120.0	AV	08-JAN-10 10:32	010810S1-5
CCV03										
	Aluminum	5040	ug/L	5000	ug/L	100.7	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Antimony	513	ug/L	500	ug/L	102.6	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Barium	510	ug/L	500	ug/L	102	90.0 – 110.0	P	05-JAN-10 11:12	010510-1

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,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>
	Cadmium	511	ug/L	500	ug/L	102.1	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Calcium	5050	ug/L	5000	ug/L	100.9	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Chromium	508	ug/L	500	ug/L	101.6	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Cobalt	502	ug/L	500	ug/L	100.5	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Copper	507	ug/L	500	ug/L	101.4	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Iron	5100	ug/L	5000	ug/L	101.9	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Lead	515	ug/L	500	ug/L	102.9	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Magnesium	5070	ug/L	5000	ug/L	101.3	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Manganese	512	ug/L	500	ug/L	102.4	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Potassium	5200	ug/L	5000	ug/L	104.1	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Silver	509	ug/L	500	ug/L	101.8	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Sodium	10500	ug/L	10000	ug/L	104.6	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Vanadium	512	ug/L	500	ug/L	102.5	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Zinc	505	ug/L	500	ug/L	101	90.0 – 110.0	P	05-JAN-10 11:12	010510-1
	Arsenic	47.2	ug/L	50	ug/L	94.4	90.0 – 110.0	MS	06-JAN-10 18:41	100106-3
	Beryllium	50.2	ug/L	50	ug/L	100.5	90.0 – 110.0	MS	06-JAN-10 18:41	100106-3
	Nickel	51.1	ug/L	50	ug/L	102.2	90.0 – 110.0	MS	06-JAN-10 18:41	100106-3
	Selenium	51.2	ug/L	50	ug/L	102.3	90.0 – 110.0	MS	06-JAN-10 18:41	100106-3
	Thallium	49	ug/L	50	ug/L	98	90.0 – 110.0	MS	06-JAN-10 18:41	100106-3
	Uranium	52.1	ug/L	50	ug/L	104.1	90.0 – 110.0	MS	06-JAN-10 18:41	100106-3
	Mercury	5.35	ug/L	5	ug/L	106.9	80.0 – 120.0	AV	08-JAN-10 10:56	010810S1-5
CCV04	Aluminum	4980	ug/L	5000	ug/L	99.6	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Antimony	508	ug/L	500	ug/L	101.7	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Barium	510	ug/L	500	ug/L	102	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Cadmium	509	ug/L	500	ug/L	101.9	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Calcium	5050	ug/L	5000	ug/L	100.9	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Chromium	507	ug/L	500	ug/L	101.3	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Cobalt	501	ug/L	500	ug/L	100.2	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Copper	506	ug/L	500	ug/L	101.3	90.0 – 110.0	P	05-JAN-10 12:21	010510-1

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,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	5160	ug/L	5000	ug/L	103.1	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Lead	512	ug/L	500	ug/L	102.3	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Magnesium	5150	ug/L	5000	ug/L	102.9	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Manganese	511	ug/L	500	ug/L	102.2	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Potassium	5210	ug/L	5000	ug/L	104.1	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Silver	509	ug/L	500	ug/L	101.8	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Sodium	10500	ug/L	10000	ug/L	104.6	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Vanadium	512	ug/L	500	ug/L	102.4	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Zinc	504	ug/L	500	ug/L	100.8	90.0 – 110.0	P	05-JAN-10 12:21	010510-1
	Arsenic	47.9	ug/L	50	ug/L	95.8	90.0 – 110.0	MS	06-JAN-10 19:30	100106-3
	Beryllium	51	ug/L	50	ug/L	102	90.0 – 110.0	MS	06-JAN-10 19:30	100106-3
	Nickel	52.4	ug/L	50	ug/L	104.8	90.0 – 110.0	MS	06-JAN-10 19:30	100106-3
	Selenium	49.8	ug/L	50	ug/L	99.7	90.0 – 110.0	MS	06-JAN-10 19:30	100106-3
	Thallium	48.7	ug/L	50	ug/L	97.3	90.0 – 110.0	MS	06-JAN-10 19:30	100106-3
	Uranium	52.1	ug/L	50	ug/L	104.1	90.0 – 110.0	MS	06-JAN-10 19:30	100106-3
CCV05	Aluminum	4980	ug/L	5000	ug/L	99.6	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Antimony	516	ug/L	500	ug/L	103.2	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Barium	512	ug/L	500	ug/L	102.4	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Cadmium	509	ug/L	500	ug/L	101.8	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Calcium	5080	ug/L	5000	ug/L	101.5	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Chromium	509	ug/L	500	ug/L	101.8	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Cobalt	506	ug/L	500	ug/L	101.3	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Copper	509	ug/L	500	ug/L	101.8	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Iron	5250	ug/L	5000	ug/L	105	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Lead	515	ug/L	500	ug/L	103.1	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Magnesium	5180	ug/L	5000	ug/L	103.7	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Manganese	513	ug/L	500	ug/L	102.7	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Potassium	5270	ug/L	5000	ug/L	105.5	90.0 – 110.0	P	05-JAN-10 13:25	010510-1
	Silver	512	ug/L	500	ug/L	102.4	90.0 – 110.0	P	05-JAN-10 13:25	010510-1

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,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>
	Sodium	10900	ug/L	10000	ug/L	109	90.0 - 110.0	P	05-JAN-10 13:25	010510-1
	Vanadium	514	ug/L	500	ug/L	102.8	90.0 - 110.0	P	05-JAN-10 13:25	010510-1
	Zinc	504	ug/L	500	ug/L	100.9	90.0 - 110.0	P	05-JAN-10 13:25	010510-1
	Arsenic	47.6	ug/L	50	ug/L	95.2	90.0 - 110.0	MS	06-JAN-10 20:14	100106-3
	Beryllium	52.1	ug/L	50	ug/L	104.2	90.0 - 110.0	MS	06-JAN-10 20:14	100106-3
	Nickel	52.8	ug/L	50	ug/L	105.7	90.0 - 110.0	MS	06-JAN-10 20:14	100106-3
	Selenium	51.3	ug/L	50	ug/L	102.7	90.0 - 110.0	MS	06-JAN-10 20:14	100106-3
	Thallium	49.7	ug/L	50	ug/L	99.4	90.0 - 110.0	MS	06-JAN-10 20:14	100106-3
	Uranium	54	ug/L	50	ug/L	107.9	90.0 - 110.0	MS	06-JAN-10 20:14	100106-3
CCV06	Aluminum	4990	ug/L	5000	ug/L	99.9	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Antimony	504	ug/L	500	ug/L	100.8	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Barium	510	ug/L	500	ug/L	102	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Cadmium	507	ug/L	500	ug/L	101.5	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Calcium	5090	ug/L	5000	ug/L	101.8	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Chromium	506	ug/L	500	ug/L	101.1	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Cobalt	497	ug/L	500	ug/L	99.5	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Copper	508	ug/L	500	ug/L	101.5	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Iron	5230	ug/L	5000	ug/L	104.6	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Lead	506	ug/L	500	ug/L	101.2	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Magnesium	5200	ug/L	5000	ug/L	104	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Manganese	511	ug/L	500	ug/L	102.3	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Potassium	5340	ug/L	5000	ug/L	106.9	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Silver	509	ug/L	500	ug/L	101.9	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Sodium	10400	ug/L	10000	ug/L	104.3	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Vanadium	511	ug/L	500	ug/L	102.3	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
	Zinc	503	ug/L	500	ug/L	100.5	90.0 - 110.0	P	05-JAN-10 14:27	010510-1
CCV07	Aluminum	4930	ug/L	5000	ug/L	98.6	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Antimony	506	ug/L	500	ug/L	101.1	90.0 - 110.0	P	05-JAN-10 14:58	010510-1

## METALS

-2a-

## Initial and Continuing Calibration Verification

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,MER536,OPTIMA3

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	M	Analysis Date/Time	Run Number
CCV08	Barium	503	ug/L	500	ug/L	100.5	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Cadmium	501	ug/L	500	ug/L	100.2	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Calcium	5010	ug/L	5000	ug/L	100.2	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Chromium	499	ug/L	500	ug/L	99.9	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Cobalt	496	ug/L	500	ug/L	99.3	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Copper	498	ug/L	500	ug/L	99.7	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Iron	5190	ug/L	5000	ug/L	103.8	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Lead	505	ug/L	500	ug/L	101	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Magnesium	5040	ug/L	5000	ug/L	100.7	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Manganese	504	ug/L	500	ug/L	100.8	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Potassium	5260	ug/L	5000	ug/L	105.1	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Silver	502	ug/L	500	ug/L	100.4	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Sodium	10500	ug/L	10000	ug/L	105.1	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Vanadium	504	ug/L	500	ug/L	100.9	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
	Zinc	495	ug/L	500	ug/L	99.1	90.0 - 110.0	P	05-JAN-10 14:58	010510-1
CCV08	Aluminum	5000	ug/L	5000	ug/L	100	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Antimony	509	ug/L	500	ug/L	101.8	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Barium	503	ug/L	500	ug/L	100.6	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Cadmium	502	ug/L	500	ug/L	100.4	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Calcium	5130	ug/L	5000	ug/L	102.6	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Chromium	500	ug/L	500	ug/L	99.9	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Cobalt	497	ug/L	500	ug/L	99.4	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Copper	500	ug/L	500	ug/L	99.9	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Iron	5350	ug/L	5000	ug/L	106.9	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Lead	506	ug/L	500	ug/L	101.3	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Magnesium	5270	ug/L	5000	ug/L	105.4	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Manganese	505	ug/L	500	ug/L	101	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Potassium	5410	ug/L	5000	ug/L	108.3	90.0 - 110.0	P	05-JAN-10 16:20	010510-1
	Silver	502	ug/L	500	ug/L	100.4	90.0 - 110.0	P	05-JAN-10 16:20	010510-1

**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,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>
	Sodium	11000	ug/L	10000	ug/L	110.3	90.0 – 110.0	P	05-JAN-10 16:20	010510-1
	Vanadium	504	ug/L	500	ug/L	100.8	90.0 – 110.0	P	05-JAN-10 16:20	010510-1
	Zinc	498	ug/L	500	ug/L	99.6	90.0 – 110.0	P	05-JAN-10 16:20	010510-1
CCV09	Aluminum	4800	ug/L	5000	ug/L	95.9	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Antimony	506	ug/L	500	ug/L	101.2	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Barium	505	ug/L	500	ug/L	100.9	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Cadmium	503	ug/L	500	ug/L	100.5	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Calcium	4940	ug/L	5000	ug/L	98.8	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Chromium	500	ug/L	500	ug/L	99.9	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Cobalt	501	ug/L	500	ug/L	100.1	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Copper	500	ug/L	500	ug/L	100.1	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Iron	5240	ug/L	5000	ug/L	104.9	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Lead	508	ug/L	500	ug/L	101.6	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Magnesium	5100	ug/L	5000	ug/L	102	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Manganese	506	ug/L	500	ug/L	101.2	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Potassium	5240	ug/L	5000	ug/L	104.9	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Silver	503	ug/L	500	ug/L	100.7	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Sodium	10800	ug/L	10000	ug/L	108.5	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Vanadium	505	ug/L	500	ug/L	100.9	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
	Zinc	499	ug/L	500	ug/L	99.8	90.0 – 110.0	P	05-JAN-10 17:27	010510-1
CCV10	Aluminum	5160	ug/L	5000	ug/L	103.1	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Antimony	506	ug/L	500	ug/L	101.2	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Barium	510	ug/L	500	ug/L	102.1	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Cadmium	509	ug/L	500	ug/L	101.8	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Calcium	5360	ug/L	5000	ug/L	107.2	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Chromium	507	ug/L	500	ug/L	101.3	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Cobalt	501	ug/L	500	ug/L	100.2	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Copper	507	ug/L	500	ug/L	101.4	90.0 – 110.0	P	05-JAN-10 18:45	010510-1



**METALS**  
**-2a-**  
**Initial and Continuing Calibration Verification**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

Initial Calibration Source: Solutions Plus

Continuing Calibration Source: O2Si

Instrument ID: ICPMS4,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	5570	ug/L	5000	ug/L	111.4	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Lead	510	ug/L	500	ug/L	102.1	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Magnesium	5490	ug/L	5000	ug/L	109.8	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Manganese	512	ug/L	500	ug/L	102.4	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Potassium	5590	ug/L	5000	ug/L	111.7	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Silver	509	ug/L	500	ug/L	101.9	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Sodium	10700	ug/L	10000	ug/L	107.4	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Vanadium	512	ug/L	500	ug/L	102.3	90.0 – 110.0	P	05-JAN-10 18:45	010510-1
	Zinc	506	ug/L	500	ug/L	101.1	90.0 – 110.0	P	05-JAN-10 18:45	010510-1

**METALS**  
**-2b-**  
**CRDL Standard for AA & ICP**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

AA CRDL Standard Source: SPEX

ICP CRDL Standard Source Solutions Plus

Instrument ID: ICPMS4,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										
	Nickel	2.25	ug/L	2	ug/L	112.3	70.0 – 130.0	MS	06-JAN-10 17:14	100106-3
	Thallium	1.07	ug/L	1	ug/L	106.6	70.0 – 130.0	MS	06-JAN-10 17:14	100106-3
	Arsenic	4.36	ug/L	5	ug/L	87.2	70.0 – 130.0	MS	06-JAN-10 17:14	100106-3
	Beryllium	.546	ug/L	.5	ug/L	109.2	70.0 – 130.0	MS	06-JAN-10 17:14	100106-3
	Uranium	.226	ug/L	.2	ug/L	113	70.0 – 130.0	MS	06-JAN-10 17:14	100106-3
	Selenium	5.88	ug/L	5	ug/L	117.6	70.0 – 130.0	MS	06-JAN-10 17:14	100106-3
	Nickel	2.25	ug/L	2	ug/L	112.4	70.0 – 130.0	MS	07-JAN-10 11:32	100107-4
	Beryllium	.499	ug/L	.5	ug/L	99.8	70.0 – 130.0	MS	07-JAN-10 11:32	100107-4
	Mercury	.183	ug/L	.2	ug/L	91.4	70.0 – 130.0	AV	08-JAN-10 10:06	010810S1-5
PQL01										
	Aluminum	203	ug/L	200	ug/L	101.4	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Iron	94.5	ug/L	100	ug/L	94.5	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Lead	11.5	ug/L	10	ug/L	114.5	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Magnesium	325	ug/L	300	ug/L	108.5	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Manganese	10.3	ug/L	10	ug/L	103.3	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Potassium	175	ug/L	150	ug/L	116.4	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Silver	4.67	ug/L	5	ug/L	93.3	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Sodium	297	ug/L	300	ug/L	99.1	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Antimony	10.9	ug/L	10	ug/L	109.4	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Barium	5.04	ug/L	5	ug/L	100.9	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Cadmium	4.97	ug/L	5	ug/L	99.4	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Chromium	5.21	ug/L	5	ug/L	104.3	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Cobalt	4.79	ug/L	5	ug/L	95.8	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Copper	10.1	ug/L	10	ug/L	100.5	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Vanadium	5.43	ug/L	5	ug/L	108.7	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Zinc	9.84	ug/L	10	ug/L	98.4	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Calcium	207	ug/L	200	ug/L	103.4	70.0 – 130.0	P	05-JAN-10 08:54	010510-1
	Iron	104	ug/L	100	ug/L	103.8	70.0 – 130.0	P	06-JAN-10 10:51	010610A-2
	Potassium	147	ug/L	150	ug/L	98.2	70.0 – 130.0	P	06-JAN-10 10:51	010610A-2

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result ug/L</u>	<u>Acceptance</u>	<u>Conc Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run</u>
<b>ICB01</b>										
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 08:47	010510-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 08:47	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 08:47	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 08:47	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 08:47	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 08:47	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 08:47	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 08:47	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 08:47	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 08:47	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 08:47	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 08:47	010510-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 08:47	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 08:47	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 08:47	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 08:47	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 08:47	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	06-JAN-10 10:44	010610A-2
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	06-JAN-10 10:44	010610A-2
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	06-JAN-10 17:08	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	06-JAN-10 17:08	100106-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	06-JAN-10 17:08	100106-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	06-JAN-10 17:08	100106-3
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	06-JAN-10 17:08	100106-3
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	06-JAN-10 17:08	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	07-JAN-10 11:28	100107-4
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	07-JAN-10 11:28	100107-4
	Mercury	0.068	+/-2	U	0.068	0.2	SOL	AV	08-JAN-10 10:04	010810S1-5
<b>CCB01</b>										
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 09:51	010510-1
	Antimony	6.24	+/-10	J	3.3	10.0	SOL	P	05-JAN-10 09:51	010510-1

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-988

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>
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 09:51	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 09:51	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 09:51	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 09:51	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 09:51	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 09:51	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 09:51	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 09:51	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 09:51	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 09:51	010510-1
	Potassium	89.69	+/-250	J	64.0	250	SOL	P	05-JAN-10 09:51	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 09:51	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 09:51	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 09:51	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 09:51	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	06-JAN-10 11:47	010610A-2
	Potassium	88.07	+/-250	J	64.0	250	SOL	P	06-JAN-10 11:47	010610A-2
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	06-JAN-10 17:39	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	06-JAN-10 17:39	100106-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	06-JAN-10 17:39	100106-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	06-JAN-10 17:39	100106-3
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	06-JAN-10 17:39	100106-3
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	06-JAN-10 17:39	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	07-JAN-10 11:47	100107-4
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	07-JAN-10 11:47	100107-4
	Mercury	0.068	+/-2	U	0.068	0.2	SOL	AV	08-JAN-10 10:10	010810S1-5
<b>CCB02</b>	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 10:12	010510-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 10:12	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 10:12	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 10:12	010510-1

**Metals**  
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**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-988

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>
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 10:12	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 10:12	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 10:12	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 10:12	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 10:12	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 10:12	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 10:12	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 10:12	010510-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 10:12	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 10:12	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 10:12	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 10:12	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 10:12	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	06-JAN-10 13:06	010610A-2
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	06-JAN-10 13:06	010610A-2
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	06-JAN-10 17:57	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	06-JAN-10 17:57	100106-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	06-JAN-10 17:57	100106-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	06-JAN-10 17:57	100106-3
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	06-JAN-10 17:57	100106-3
	Uranium	0.11	+/-2	J	0.066	0.2	SOL	MS	06-JAN-10 17:57	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	07-JAN-10 12:24	100107-4
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	07-JAN-10 12:24	100107-4
	Mercury	-0.084	+/-2	J	0.068	0.2	SOL	AV	08-JAN-10 10:34	010810S1-5
<b>CCB03</b>	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 11:19	010510-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 11:19	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 11:19	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 11:19	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 11:19	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 11:19	010510-1

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-988

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	05-JAN-10 11:19	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 11:19	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 11:19	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 11:19	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 11:19	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 11:19	010510-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 11:19	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 11:19	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 11:19	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 11:19	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 11:19	010510-1
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	06-JAN-10 18:47	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	06-JAN-10 18:47	100106-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	06-JAN-10 18:47	100106-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	06-JAN-10 18:47	100106-3
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	06-JAN-10 18:47	100106-3
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	06-JAN-10 18:47	100106-3
	Mercury	0.068	+/-2	U	0.068	0.2	SOL	AV	08-JAN-10 10:58	010810S1-5
<b>CCB04</b>	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 12:28	010510-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 12:28	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 12:28	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 12:28	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 12:28	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 12:28	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 12:28	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 12:28	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 12:28	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 12:28	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 12:28	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 12:28	010510-1

Metals  
-3a-  
Initial and Continuing Calibration Blank Summary

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M	Analysis Date/Time	Run
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 12:28	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 12:28	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 12:28	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 12:28	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 12:28	010510-1
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	06-JAN-10 19:36	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	06-JAN-10 19:36	100106-3
	Nickel	0.5	+/-2	U	0.5	2.0	SOL	MS	06-JAN-10 19:36	100106-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	06-JAN-10 19:36	100106-3
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	06-JAN-10 19:36	100106-3
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	06-JAN-10 19:36	100106-3
CCB05	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 13:31	010510-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 13:31	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 13:31	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 13:31	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 13:31	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 13:31	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 13:31	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 13:31	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 13:31	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 13:31	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 13:31	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 13:31	010510-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 13:31	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 13:31	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 13:31	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 13:31	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 13:31	010510-1
	Arsenic	1.0	+/-5	U	1.0	5.0	SOL	MS	06-JAN-10 20:20	100106-3
	Beryllium	0.1	+/-5	U	0.1	0.5	SOL	MS	06-JAN-10 20:20	100106-3

**Metals**  
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**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-988

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	06-JAN-10 20:20	100106-3
	Selenium	2.5	+/-5	U	2.5	5.0	SOL	MS	06-JAN-10 20:20	100106-3
	Thallium	0.3	+/-1	U	0.3	1.0	SOL	MS	06-JAN-10 20:20	100106-3
	Uranium	0.066	+/-2	U	0.066	0.2	SOL	MS	06-JAN-10 20:20	100106-3
<b>CCB06</b>	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 14:34	010510-1
	Antimony	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 14:34	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 14:34	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 14:34	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 14:34	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 14:34	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 14:34	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 14:34	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 14:34	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 14:34	010510-1
	Magnesium	-92.21	+/-300	J	85.0	300	SOL	P	05-JAN-10 14:34	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 14:34	010510-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 14:34	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 14:34	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 14:34	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 14:34	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 14:34	010510-1
<b>CCB07</b>	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 15:05	010510-1
	Antimony	3.71	+/-10	J	3.3	10.0	SOL	P	05-JAN-10 15:05	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 15:05	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 15:05	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 15:05	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 15:05	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 15:05	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 15:05	010510-1



**Metals**  
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**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result ng/L</u>	<u>Acceptance</u>	<u>Conc Qual</u>	<u>MDL</u>	<u>RDL</u>	<u>Matrix</u>	<u>M</u>	<u>Analysis Date/Time</u>	<u>Run</u>
CCB08	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 15:05	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 15:05	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 15:05	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 15:05	010510-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 15:05	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 15:05	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 15:05	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 15:05	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 15:05	010510-1
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 16:27	010510-1
	Antimony	5.89	+/-10	J	3.3	10.0	SOL	P	05-JAN-10 16:27	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 16:27	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 16:27	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 16:27	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 16:27	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 16:27	010510-1
CCB09	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 16:27	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 16:27	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 16:27	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 16:27	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 16:27	010510-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 16:27	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 16:27	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 16:27	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 16:27	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 16:27	010510-1
	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 17:34	010510-1
	Antimony	4.22	+/-10	J	3.3	10.0	SOL	P	05-JAN-10 17:34	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 17:34	010510-1

**Metals**  
**-3a-**  
**Initial and Continuing Calibration Blank Summary**

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ng/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	05-JAN-10 17:34	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 17:34	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 17:34	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 17:34	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 17:34	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 17:34	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 17:34	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 17:34	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 17:34	010510-1
	Potassium	76.9	+/-250	J	64.0	250	SOL	P	05-JAN-10 17:34	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 17:34	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 17:34	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 17:34	010510-1
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 17:34	010510-1
<b>CCB10</b>	Aluminum	68.0	+/-200	U	68.0	200	SOL	P	05-JAN-10 18:51	010510-1
	Antimony	3.77	+/-10	J	3.3	10.0	SOL	P	05-JAN-10 18:51	010510-1
	Barium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 18:51	010510-1
	Cadmium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 18:51	010510-1
	Calcium	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 18:51	010510-1
	Chromium	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 18:51	010510-1
	Cobalt	1.5	+/-5	U	1.5	5.0	SOL	P	05-JAN-10 18:51	010510-1
	Copper	3.0	+/-10	U	3.0	10.0	SOL	P	05-JAN-10 18:51	010510-1
	Iron	80.0	+/-250	U	80.0	250	SOL	P	05-JAN-10 18:51	010510-1
	Lead	2.5	+/-10	U	2.5	10.0	SOL	P	05-JAN-10 18:51	010510-1
	Magnesium	85.0	+/-300	U	85.0	300	SOL	P	05-JAN-10 18:51	010510-1
	Manganese	2.0	+/-10	U	2.0	10.0	SOL	P	05-JAN-10 18:51	010510-1
	Potassium	64.0	+/-250	U	64.0	250	SOL	P	05-JAN-10 18:51	010510-1
	Silver	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 18:51	010510-1
	Sodium	70.0	+/-250	U	70.0	250	SOL	P	05-JAN-10 18:51	010510-1
	Vanadium	1.0	+/-5	U	1.0	5.0	SOL	P	05-JAN-10 18:51	010510-1

Metals  
-3a-  
Initial and Continuing Calibration Blank Summary

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

<u>Sample ID</u>	<u>Analyte</u>	<u>Result</u> <u>ng/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>
	Zinc	3.3	+/-10	U	3.3	10.0	SOL	P	05-JAN-10 18:51	010510-1

**METALS**  
**-3b-**  
**PREPARATION BLANK SUMMARY**

**SDG NO.** 10-988  
**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>
1202001488	Arsenic	0.195	mg/kg	+/-0.977	U	MS	0.195	0.977
	Beryllium	0.0195	mg/kg	+/-0.0977	U	MS	0.0195	0.0977
	Nickel	0.0977	mg/kg	+/-0.391	U	MS	0.0977	0.391
	Selenium	0.488	mg/kg	+/-0.977	U	MS	0.488	0.977
	Thallium	0.0586	mg/kg	+/-0.195	U	MS	0.0586	0.195
	Uranium	0.0129	mg/kg	+/-0.0391	U	MS	0.0129	0.0391
1202001494	Aluminum	6530	ug/Kg	+/-19200	U	P	6530	19200
	Antimony	520	ug/Kg	+/-960	J	P	317	960
	Barium	96	ug/Kg	+/-480	U	P	96	480
	Cadmium	96	ug/Kg	+/-480	U	P	96	480
	Calcium	7680	ug/Kg	+/-24000	U	P	7680	24000
	Chromium	144	ug/Kg	+/-480	U	P	144	480
	Cobalt	144	ug/Kg	+/-480	U	P	144	480
	Copper	288	ug/Kg	+/-960	U	P	288	960
	Iron	7680	ug/Kg	+/-24000	U	P	7680	24000
	Lead	240	ug/Kg	+/-960	U	P	240	960
	Magnesium	8160	ug/Kg	+/-28800	U	P	8160	28800
	Manganese	192	ug/Kg	+/-960	U	P	192	960
	Potassium	6140	ug/Kg	+/-24000	U	P	6140	24000
	Silver	96	ug/Kg	+/-480	U	P	96	480
	Sodium	6720	ug/Kg	+/-24000	U	P	6720	24000
	Vanadium	96	ug/Kg	+/-480	U	P	96	480
	Zinc	317	ug/Kg	+/-960	U	P	317	960
1202002063	Mercury	4.08	ug/kg	+/-12	U	AV	4.08	12

## METALS

-4-

## Interference Check Sample

SDG No: 10-988

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	506000	ug/L	500000	ug/L	101	80.0 – 120.0	05-JAN-10 09:01	010510-1
	Antimony	0.299	ug/L					05-JAN-10 09:01	010510-1
	Barium	-0.846	ug/L					05-JAN-10 09:01	010510-1
	Cadmium	-2.94	ug/L					05-JAN-10 09:01	010510-1
	Calcium	482000	ug/L	500000	ug/L	96.4	80.0 – 120.0	05-JAN-10 09:01	010510-1
	Chromium	1.44	ug/L					05-JAN-10 09:01	010510-1
	Cobalt	-1.49	ug/L					05-JAN-10 09:01	010510-1
	Copper	0.45	ug/L					05-JAN-10 09:01	010510-1
	Iron	191000	ug/L	200000	ug/L	95.7	80.0 – 120.0	05-JAN-10 09:01	010510-1
	Lead	-11.0	ug/L					05-JAN-10 09:01	010510-1
	Magnesium	487000	ug/L	500000	ug/L	97.4	80.0 – 120.0	05-JAN-10 09:01	010510-1
	Manganese	8.83	ug/L					05-JAN-10 09:01	010510-1
	Potassium	3.7	ug/L					05-JAN-10 09:01	010510-1
	Silver	3.29	ug/L					05-JAN-10 09:01	010510-1
	Sodium	11.9	ug/L					05-JAN-10 09:01	010510-1
	Vanadium	-2.87	ug/L					05-JAN-10 09:01	010510-1
	Zinc	-1.24	ug/L					05-JAN-10 09:01	010510-1
<b>ICSAB01</b>									
	Aluminum	517000	ug/L	500000	ug/L	103	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Antimony	532	ug/L	500	ug/L	106	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Barium	508	ug/L	500	ug/L	102	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Cadmium	479	ug/L	500	ug/L	95.8	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Calcium	486000	ug/L	500000	ug/L	97.1	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Chromium	486	ug/L	500	ug/L	97.2	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Cobalt	472	ug/L	500	ug/L	94.4	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Copper	571	ug/L	500	ug/L	114	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Iron	190000	ug/L	200000	ug/L	94.9	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Lead	470	ug/L	500	ug/L	94	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Magnesium	488000	ug/L	500000	ug/L	97.6	80.0 – 120.0	05-JAN-10 09:08	010510-1

**METALS**  
**—4—**  
**Interference Check Sample**

SDG No: 10-988

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>
	Manganese	508	ug/L	500	ug/L	102	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Potassium	5430	ug/L	5000	ug/L	109	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Silver	277	ug/L	250	ug/L	111	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Sodium	5600	ug/L	5000	ug/L	112	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Vanadium	514	ug/L	500	ug/L	103	80.0 – 120.0	05-JAN-10 09:08	010510-1
	Zinc	500	ug/L	500	ug/L	99.9	80.0 – 120.0	05-JAN-10 09:08	010510-1

## METALS

-4-

## Interference Check Sample

SDG No: 10-988

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	Iron	191000	ug/L	200000	ug/L	95.6	80.0 - 120.0	06-JAN-10 10:58	010610A-2
	Potassium	-8.89	ug/L					06-JAN-10 10:58	010610A-2
ICSAB01	Iron	186000	ug/L	200000	ug/L	92.9	80.0 - 120.0	06-JAN-10 11:04	010610A-2
	Potassium	5350	ug/L	5000	ug/L	107	80.0 - 120.0	06-JAN-10 11:04	010610A-2

**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

ICS: O2Si

Instrument: ICPMS4

<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>									
	Arsenic	-0.2	ug/L					06-JAN-10 17:20	100106-3
	Beryllium	0.028	ug/L					06-JAN-10 17:20	100106-3
	Nickel	2.91	ug/L					06-JAN-10 17:20	100106-3
	Selenium	0.03	ug/L					06-JAN-10 17:20	100106-3
	Thallium	0.029	ug/L					06-JAN-10 17:20	100106-3
	Uranium	-0.006	ug/L					06-JAN-10 17:20	100106-3
<b>ICSAB01</b>									
	Arsenic	20.2	ug/L	20	ug/L	101	80.0 - 120.0	06-JAN-10 17:26	100106-3
	Beryllium	20.5	ug/L	20	ug/L	102	80.0 - 120.0	06-JAN-10 17:26	100106-3
	Nickel	22.6	ug/L	22.7	ug/L	99.6	80.0 - 120.0	06-JAN-10 17:26	100106-3
	Selenium	20.9	ug/L	20	ug/L	104	80.0 - 120.0	06-JAN-10 17:26	100106-3
	Thallium	18.2	ug/L	20	ug/L	90.8	80.0 - 120.0	06-JAN-10 17:26	100106-3
	Uranium	20.2	ug/L	20	ug/L	101	80.0 - 120.0	06-JAN-10 17:26	100106-3



**METALS**  
**-4-**  
**Interference Check Sample**

SDG No: 10-988

Contract: LANL01004

Lab Code: GEL

ICS: O2Si

Instrument: ICPMS4

<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	0.044	ug/L					07-JAN-10 11:36	100107-4
	Nickel	3.31	ug/L					07-JAN-10 11:36	100107-4
ICSAB01	Beryllium	19.9	ug/L	20	ug/L	99.3	80.0 - 120.0	07-JAN-10 11:39	100107-4
	Nickel	21.8	ug/L	22.7	ug/L	96.1	80.0 - 120.0	07-JAN-10 11:39	100107-4

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 10-988

Client ID RE12-10-7352S

Contract: LANL01004

Level: Low

Matrix: SOIL

% Solids: 90.2

Sample ID: 243270001

Spike ID: 1202001491

<b>Analyte</b>	<b>Units</b>	<b>Acceptance Limit</b>	<b>Spiked Result</b>	<b>C</b>	<b>Sample Result</b>	<b>C</b>	<b>Spike Added</b>	<b>% Recovery</b>	<b>Qual</b>	<b>M</b>
Nickel	mg/kg	75-125	12.3		8.15		5.02	83.6		MS
Selenium	mg/kg	75-125	1.62		0.554	U	2.01	80.6		MS
Thallium	mg/kg	75-125	9.66		0.225		10	93.9		MS
Uranium	mg/kg	75-125	5.87		0.596		5.02	105		MS
Beryllium	mg/kg	75-125	5.84		1.09		5.02	94.5		MS
Arsenic	mg/kg	75-125	10.3		2.07		8.03	102		MS

## METALS

-5a-

## Matrix Spike Duplicate Summary

SDG NO. 10-988 Client ID RE12-10-7352SD

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 90.2

Sample ID: 243270001 Spike ID: 1202001493

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Arsenic	mg/kg	75-125	10.6		2.07		8.34	102		MS
Beryllium	mg/kg	75-125	5.95		1.09		5.21	93.4		MS
Nickel	mg/kg	75-125	13.3		8.15		5.21	98.2		MS
Selenium	mg/kg	75-125	1.74		0.554	U	2.08	83.4		MS
Thallium	mg/kg	75-125	9.85		0.225		10.4	92.4		MS
Uranium	mg/kg	75-125	5.98		0.596		5.21	103		MS

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 10-988 Client ID RE12-10-7352S

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 90.2

Sample ID: 243270001 Spike ID: 1202001497

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/Kg		17900000		12500000		492000	1110	N/A	P
Antimony	ug/Kg	75-125	34800		361	U	49200	70.2	N	P
Barium	ug/Kg	75-125	186000		166000		49200	41.3	N	P
Cadmium	ug/Kg	75-125	46500		110	U	49200	94.5		P
Calcium	ug/Kg		2530000		2200000		492000	66.6	N/A	P
Chromium	ug/Kg	75-125	63400		11800		49200	105		P
Cobalt	ug/Kg	75-125	51600		4920		49200	94.9		P
Copper	ug/Kg	75-125	58700		7690		49200	104		P
Iron	ug/Kg		15900000		15100000		492000	168	N/A	P
Lead	ug/Kg	75-125	57300		11100		49200	94		P
Magnesium	ug/Kg		3320000		2610000		492000	144	N/A	P
Manganese	ug/Kg		269000		222000		49200	95.6	N/A	P
Potassium	ug/Kg		3130000		2490000		492000	131	N/A	P
Silver	ug/Kg	75-125	49000		557		49200	98.4		P
Sodium	ug/Kg	75-125	767000		283000		492000	98.3		P
Vanadium	ug/Kg	75-125	73200		25000		49200	98		P
Zinc	ug/Kg	75-125	77600		28800		49200	99		P

## METALS

-5a-

## Matrix Spike Duplicate Summary

SDG NO. 10-988 Client ID: RE12-10-7352SD

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 90.2

Sample ID: 243270001 Spike ID: 1202001499

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Aluminum	ug/Kg		17100000		12500000		534000	868	N/A	P
Antimony	ug/Kg	75-125	39700		361	U	53400	73.9	N	P
Barium	ug/Kg	75-125	216000		166000		53400	94.2		P
Cadmium	ug/Kg	75-125	50500		110	U	53400	94.6		P
Calcium	ug/Kg		2440000		2200000		534000	44.7	N/A	P
Chromium	ug/Kg	75-125	66200		11800		53400	102		P
Cobalt	ug/Kg	75-125	60000		4920		53400	103		P
Copper	ug/Kg	75-125	64000		7690		53400	105		P
Iron	ug/Kg		17100000		15100000		534000	374	N/A	P
Lead	ug/Kg	75-125	64700		11100		53400	100		P
Magnesium	ug/Kg		3480000		2610000		534000	162	N/A	P
Manganese	ug/Kg		848000		222000		53400	1170	N/A	P
Potassium	ug/Kg		3250000		2490000		534000	142	N/A	P
Silver	ug/Kg	75-125	53700		557		53400	99.5		P
Sodium	ug/Kg	75-125	847000		283000		534000	105		P
Vanadium	ug/Kg	75-125	80200		25000		53400	104		P
Zinc	ug/Kg	75-125	87000		28800		53400	109		P

## METALS

-5a-

## Matrix Spike Summary

SDG NO. 10-988

Client ID RE12-10-7352S

Contract: LANL01004

Level: Low

Matrix: SOIL

% Solids: 90.2

Sample ID: 243270001

Spike ID: 1202002066

<u>Analyte</u>	<u>Units</u>	<u>Acceptance Limit</u>	<u>Spiked Result</u>	<u>C</u>	<u>Sample Result</u>	<u>C</u>	<u>Spike Added</u>	<u>% Recovery</u>	<u>Qual</u>	<u>M</u>
Mercury	ug/kg	75-125	146		19.7		113	113		AV

## METALS

-5a-

## Matrix Spike Duplicate Summary

SDG NO. 10-988 Client ID RE12-10-7352SD

Contract: LANL01004 Level: Low

Matrix: SOIL % Solids: 90.2

Sample ID: 243270001 Spike ID: 1202002068

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Mercury	ug/kg	75-125	153		19.7		129	104		AV

## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: RE12-10-7352D

Sample ID: 243270001

Duplicate ID: 1202001490

Percent Solids for Dup: 90.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	mg/kg	+/-1.08	2.07		2.3		10.8		MS
Beryllium	mg/kg	+/-20%	1.09		1.06		2.77		MS
Nickel	mg/kg	+/-20%	8.15		8.01		1.66		MS
Selenium	mg/kg		0.554 U		0.538 U				MS
Thallium	mg/kg	+/-215	0.225		0.201 J		11.5		MS
Uranium	mg/kg	+/-20%	0.596		0.642		7.39		MS



**Metals**  
**-6-**  
**Duplicate Sample Summary**

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: RE12-10-7352SD

Sample ID: 1202001491

Duplicate ID: 1202001493

Percent Solids for Dup: 90.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Arsenic	mg/kg	+/-20	10.3		10.6		2.79		MS
Beryllium	mg/kg	+/-20	5.84		5.95		2.01		MS
Nickel	mg/kg	+/-20	12.3		13.3		7.18		MS
Selenium	mg/kg	+/-20	1.62		1.74		7.11		MS
Thallium	mg/kg	+/-20	9.66		9.85		1.96		MS
Uranium	mg/kg	+/-20	5.87		5.98		1.94		MS

## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: RE12-10-7352D

Sample ID: 243270001

Duplicate ID: 1202001496

Percent Solids for Dup: 90.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/Kg	+/-20%	12500000		12200000		2.52		P
Antimony	ug/Kg		361 U		332 U				P
Barium	ug/Kg	+/-20%	166000		148000		11.1		P
Cadmium	ug/Kg		110 U		101 U				P
Calcium	ug/Kg	+/-20%	2200000		2340000		6.24		P
Chromium	ug/Kg	+/-20%	11800		11400		3.46		P
Cobalt	ug/Kg	+/-20%	4920		4240		14.8		P
Copper	ug/Kg	+/-20%	7690		7340		4.74		P
Iron	ug/Kg	+/-20%	15100000		14200000		6.05		P
Lead	ug/Kg	+/-20%	11100		10400		6.62		P
Magnesium	ug/Kg	+/-20%	2610000		2460000		5.91		P
Manganese	ug/Kg	+/-20%	222000		231000		4.04		P
Potassium	ug/Kg	+/-20%	2490000		2330000		6.71		P
Silver	ug/Kg	+/-503	557		582		4.48		P
Sodium	ug/Kg	+/-20%	283000		288000		1.48		P
Vanadium	ug/Kg	+/-20%	25000		22900		8.9		P
Zinc	ug/Kg	+/-20%	28800		27100		6.02		P

**Metals**  
**-6-**  
**Duplicate Sample Summary**

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: RE12-10-7352SD

Sample ID: 1202001497

Duplicate ID: 1202001499

Percent Solids for Dup: 90.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Aluminum	ug/Kg	+/-20	17900000		17100000		4.62		P
Antimony	ug/Kg	+/-20	34800		39700		13.3		P
Barium	ug/Kg	+/-20	186000		216000		14.9		P
Cadmium	ug/Kg	+/-20	46500		50500		8.27		P
Calcium	ug/Kg	+/-20	2530000		2440000		3.58		P
Chromium	ug/Kg	+/-20	63400		66200		4.33		P
Cobalt	ug/Kg	+/-20	51600		60000		15.1		P
Copper	ug/Kg	+/-20	58700		64000		8.57		P
Iron	ug/Kg	+/-20	15900000		17100000		7.07		P
Lead	ug/Kg	+/-20	57300		64700		12.1		P
Magnesium	ug/Kg	+/-20	3320000		3480000		4.69		P
Manganese	ug/Kg	+/-20	269000		848000		104	*	P
Potassium	ug/Kg	+/-20	3130000		3250000		3.55		P
Silver	ug/Kg	+/-20	49000		53700		9.21		P
Sodium	ug/Kg	+/-20	767000		847000		9.82		P
Vanadium	ug/Kg	+/-20	73200		80200		9.15		P
Zinc	ug/Kg	+/-20	77600		87000		11.5		P

## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: RE12-10-7352D

Sample ID: 243270001

Duplicate ID: 1202002065

Percent Solids for Dup: 90.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	ug/kg	+/-13	19.7		18.4		6.57		AV

## Metals

-6-

## Duplicate Sample Summary

SDG No.: 10-988

Contract: LANL01004

Lab Code: GEL

Matrix: SOLID

Level: Low

Client ID: RE12-10-7352SD

Sample ID: 1202002066

Duplicate ID: 1202002068

Percent Solids for Dup: 90.2

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Mercury	ug/kg	+/-20	146		153		4.53		AV

## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 10-988

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>
1202001489								
	Arsenic	mg/kg	104	109		104	83-120	MS
	Beryllium	mg/kg	77.6	83.7		108	81.2-126.8	MS
	Nickel	mg/kg	134	146		109	83.3-121.4	MS
	Selenium	mg/kg	286	301		105	80.2-125.9	MS
	Thallium	mg/kg	121	127		105	78-123.2	MS
	Uranium	mg/kg	2.13	2		93.9	61.9-130.7	MS

## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 10-988

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>
1202001495								
	Aluminum	ug/Kg	10500000	8660000		82.4	56-144	P
	Antimony	ug/Kg	173000	138000		79.8	71-130	P
	Barium	ug/Kg	198000	195000		98.3	80-120	P
	Cadmium	ug/Kg	60700	54900		90.5	81-120	P
	Calcium	ug/Kg	9870000	9570000		97	83-117	P
	Chromium	ug/Kg	236000	228000		96.5	80-120	P
	Cobalt	ug/Kg	91200	87500		96	81-120	P
	Copper	ug/Kg	174000	187000		108	81-118	P
	Iron	ug/Kg	18000000	18700000		104	51-149	P
	Lead	ug/Kg	86000	76100		88.5	79-121	P
	Magnesium	ug/Kg	4000000	3690000		92.2	79-122	P
	Manganese	ug/Kg	558000	512000		91.7	81-119	P
	Potassium	ug/Kg	4300000	4150000		96.6	74-127	P
	Silver	ug/Kg	30100	29700		98.7	66-134	P
	Sodium	ug/Kg	1020000	1010000		98.6	74-127	P
	Vanadium	ug/Kg	115000	116000		101	79-121	P
	Zinc	ug/Kg	594000	558000		93.9	80-121	P

## METALS

-7-

## Laboratory Control Sample Summary

SDG NO. 10-988

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>
1202002064	Mercury	ug/kg	5150	4980		96.6	71.6-128.3	AV



## METALS

-9-

## Serial Dilution Sample Summary

SDG NO. 10-988 Client ID RE12-10-7352L

Contract: LANL01004

Matrix: SOLID Level: Low

Sample ID: 243270001 Serial Dilution ID: 1202001492

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M
Arsenic	9.33		9.95	J	6.65			MS
Beryllium	4.91		6.45		31.4			MS
Nickel	36.7		44.4		20.8			MS
Selenium	2.5	U	12.5	U				MS
Thallium	1.02		1.5	U	100			MS
Uranium	2.69		2.85		5.95			MS

## METALS

-9-

## Serial Dilution Sample Summary

SDG NO. 10-988 Client ID RE12-10-7352L

Contract: LANL01004

Matrix: SOLID Level: Low

Sample ID: 243270001 Serial Dilution ID: 1202001498

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M
Aluminum	114000		116000		1.32		10	P
Antimony	3.3	U	16.5	U				P
Barium	1510		1630		7.95		10	P
Cadmium	1	U	5	U				P
Calcium	20100		20700		2.74		10	P
Chromium	108		115		6.02		10	P
Cobalt	44.9		47.6		5.9			P
Copper	70.2		77		9.69			P
Iron	138000		144000		4.35		10	P
Lead	101		113		11.4			P
Magnesium	23800		24700		3.78		10	P
Manganese	2030		2210		8.87		10	P
Potassium	22700		23200		1.98		10	P
Silver	5.08		5	U	100			P
Sodium	2590		2750		5.98			P
Vanadium	228		241		5.7		10	P
Zinc	263		281		6.65		10	P

## METALS

-9-

## Serial Dilution Sample Summary

SDG NO. 10-988

Client ID: RE12-10-7352L

Contract: LANL01004

Matrix: SOLID

Level: Low

Sample ID: 243270001

Serial Dilution ID: 1202002067

<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>
Mercury	.311		.34	U	100			AV

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**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

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SDG No: 10-988

Method Type: P

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>
<b>Batch Number 935380</b>							
1202001494	MB for batch 935380	MB	S	21-DEC-09	.521g	50mL	
1202001495	LCS for batch 935380	LCS	S	21-DEC-09	.525g	50mL	
1202001497	RE12-10-7352S	MS	S	21-DEC-09	.563g	50mL	
1202001499	RE12-10-7352SD	MSD	S	21-DEC-09	.519g	50mL	
1202001496	RE12-10-7352D	DUP	S	21-DEC-09	.551g	50mL	
243273001	RE12-10-7351	SAMPLE	S	21-DEC-09	.549g	50mL	

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SW846

METALS  
-13-  
SAMPLE PREPARATION SUMMARY

SDG No: 10-988

Method Type: MS

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 935377							
1202001488	MB for batch 935377	MB	S	21-DEC-09	.512g	50mL	
1202001489	LCS for batch 935377	LCS	S	21-DEC-09	.519g	50mL	
1202001491	RE12-10-7352S	MS	S	21-DEC-09	.552g	50mL	
1202001493	RE12-10-7352SD	MSD	S	21-DEC-09	.532g	50mL	
1202001490	RE12-10-7352D	DUP	S	21-DEC-09	.515g	50mL	
243273001	RE12-10-7351	SAMPLE	S	21-DEC-09	.521g	50mL	

SW846

**METALS**  
**-13-**  
**SAMPLE PREPARATION SUMMARY**

SDG No: 10-988

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	935669						
1202002063	MB for batch 935669	MB	S	07--JAN-10	.5g	30mL	
1202002064	LCS for batch 935669	LCS	S	07-JAN-10	.206g	30mL	
1202002066	RE12-10-7352S	MS	S	07-JAN-10	.591g	30mL	
1202002068	RE12-10-7352SD	MSD	S	07-JAN-10	.517g	30mL	
1202002065	RE12-10-7352D	DUP	S	07-JAN-10	.513g	30mL	
243273001	RE12-10-7351	SAMPLE	S	07-JAN-10	.54g	30mL	

SW846

**Metals**  
**-14-**  
**Analysis Run Log**

Contract: LANL01004

Lab Code: GEL

Inst Name: OPTIMA3

Start Date: 05-JAN-10

End Date: 05-JAN-10

Client Sdg: 10-988

Method P

Data File: 010510-1

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	08:08	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
S0.1	1	08:15		X		X		X		X	X	X		X		X			X		X				X	X
S0.5	1	08:21	X	X		X		X	X	X	X	X		X	X	X			X		X				X	X
SCAL	1	08:28	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
S10	1	08:35	X					X				X		X								X				
ICV01	1	08:41	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ICB01	1	08:47	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
PQL01	1	08:54	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ICSA01	1	09:01	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ICSAB01	1	09:08	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
LR01	1	09:13	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
LR02	1	09:19	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	09:26																								
ZZZZZZ	1	09:33																								
CCV01	1	09:44	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB01	1	09:51	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
LR03	1	09:58	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCV02	1	10:05	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB02	1	10:12	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	10:23																								
ZZZZZZ	1	10:30																								
ZZZZZZ	1	10:36																								
ZZZZZZ	1	10:43																								
ZZZZZZ	1	10:50																								
ZZZZZZ	1	10:58																								
ZZZZZZ	5	11:05																								
CCV03	1	11:12	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB03	1	11:19	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	11:26																								
ZZZZZZ	1	11:33																								
ZZZZZZ	1	11:40																								
ZZZZZZ	1	11:47																								
ZZZZZZ	1	11:53																								
ZZZZZZ	1	12:00																								
ZZZZZZ	1	12:08																								
ZZZZZZ	1	12:14																								
CCV04	1	12:21	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB04	1	12:28	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
ZZZZZZ	1	12:36																								
ZZZZZZ	1	12:43																								

[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
//////	1	17:41																								
//////	1	17:48																								
//////	1	17:55																								
//////	1	18:02																								
//////	1	18:09																								
//////	1	18:16																								
//////	1	18:23																								
//////	1	18:30																								
243273001	1	18:38	X	X		X		X	X	X	X	X		X	X	X					X	X			X	X
CCV10	1	18:45	X	X		X		X	X	X	X	X	X	X	X	X			X		X	X			X	X
CCB10	1	18:51	X	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: 06-JAN-10

End Date: 06-JAN-10

Client Sdg: 10-988

Method P

Data File: 010610A-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	10:05											X						X							
S0.1	1	10:12																	X							
S0.5	1	10:18																	X							
SCAL	1	10:25											X						X							
S10	1	10:32											X													
ICV01	1	10:37											X						X							
ICB01	1	10:44											X						X							
PQL01	1	10:51											X						X							
ICSA01	1	10:58											X						X							
ICSAB01	1	11:04											X						X							
LR01	1	11:09											X						X							
LR02	1	11:15											X						X							
ZZZZZZ	1	11:22																								
ZZZZZZ	1	11:29																								
CCV01	1	11:40											X						X							
CCB01	1	11:47											X						X							
ZZZZZZ	1	11:56																								
ZZZZZZ	1	12:03																								
ZZZZZZ	1	12:11																								
ZZZZZZ	1	12:18																								
ZZZZZZ	1	12:25																								
ZZZZZZ	1	12:32																								
ZZZZZZ	1	12:39																								
ZZZZZZ	1	12:46																								
243273001	1	12:53											X						X							
CCV02	1	13:00											X						X							
CCB02	1	13:06											X						X							

**Metals**  
**-14-**  
**Analysis Run Log**

Contract: LANL01004

Lab Code: GEL

Inst Name: MER536

Start Date: 08-JAN-10

End Date: 08-JAN-10

Client Sdg: 10-988

Method AV

Data File: 010810S1-5

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	09:51															X									
S0.2	1	09:52															X									
S0.5	1	09:54															X									
S2.0	1	09:56															X									
S5.0	1	09:58															X									
S10	1	10:00															X									
ICV01	1	10:02															X									
ICB01	1	10:04															X									
CRDL01	1	10:06															X									
CCV01	1	10:08															X									
CCB01	1	10:10															X									
1202002063	1	10:12															X									
1202002064	10	10:14															X									
ZZZZZZ	1	10:16																								
1202002065	1	10:18															X									
1202002066	1	10:21															X									
1202002068	1	10:23															X									
1202002067	5	10:24															X									
ZZZZZZ	1	10:26																								
ZZZZZZ	1	10:28																								
ZZZZZZ	1	10:30																								
CCV02	1	10:32															X									
CCB02	1	10:34															X									
ZZZZZZ	1	10:36																								
ZZZZZZ	1	10:38																								
ZZZZZZ	1	10:40																								
ZZZZZZ	1	10:42																								
ZZZZZZ	1	10:44																								
ZZZZZZ	1	10:46																								
243273001	1	10:48															X									
ZZZZZZ	1	10:50																								
ZZZZZZ	10	10:52																								
ZZZZZZ	1	10:54																								
CCV03	1	10:56															X									
CCB03	1	10:58															X									

**Metals**  
**-14-**  
**Analysis Run Log**

Contract: LANL01004

Lab Code: GEL

Inst Name: ICPMS4

Start Date: 06-JAN-10

End Date: 06-JAN-10

Client Sdg: 10-988

Method MS

Data File: 100106-3

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	Tl	U	V	Zn
S0.0	1	16:43			X		X											X		X			X	X		
S10	1	16:49			X		X											X		X			X	X		
S100	1	16:55			X		X											X		X			X	X		
ICV01	1	17:01			X		X											X		X			X	X		
ICB01	1	17:08			X		X											X		X			X	X		
CRDL01	1	17:14			X		X											X		X			X	X		
ICSA01	1	17:20			X		X											X		X			X	X		
ICSAB01	1	17:26			X		X											X		X			X	X		
CCV01	1	17:32			X		X											X		X			X	X		
CCB01	1	17:39			X		X											X		X			X	X		
LR01	1	17:45			X		X											X		X			X	X		
CCV02	1	17:51			X		X											X		X			X	X		
CCB02	1	17:57			X		X											X		X			X	X		
1202001488	2	18:03			X															X			X	X		
1202001489	40	18:09			X															X			X	X		
ZZZZZZ	2	18:16																								
1202001490	2	18:22			X															X			X	X		
1202001491	2	18:28			X															X			X	X		
1202001493	2	18:34			X															X			X	X		
CCV03	1	18:41			X		X											X		X			X	X		
CCB03	1	18:47			X		X											X		X			X	X		
1202001492	10	18:53			X															X			X	X		
ZZZZZZ	2	18:59																								
ZZZZZZ	2	19:05																								
ZZZZZZ	2	19:12																								
ZZZZZZ	2	19:18																								
ZZZZZZ	2	19:24																								
CCV04	1	19:30			X		X											X		X			X	X		
CCB04	1	19:36			X		X											X		X			X	X		
ZZZZZZ	2	19:43																								
ZZZZZZ	2	19:49																								
ZZZZZZ	2	19:55																								
ZZZZZZ	2	20:01																								
243273001	2	20:08			X		X											X		X			X	X		
CCV05	1	20:14			X		X											X		X			X	X		
CCB05	1	20:20			X		X											X		X			X	X		

**Metals**  
**-14-**  
**Analysis Run Log**

Contract: LANL01004

Lab Code: GEL

Inst Name: ICPMS4

Start Date: 07-JAN-10

End Date: 07-JAN-10

Client Sdg: 10-988

Method MS

Data File: 100107-4

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	11:14					X											X								
S10	1	11:18					X											X								
S100	1	11:21					X											X								
ICV01	1	11:25					X											X								
ICB01	1	11:28					X											X								
CRDL01	1	11:32					X											X								
ICSA01	1	11:36					X											X								
ICSAB01	1	11:39					X											X								
CCV01	1	11:43					X											X								
CCB01	1	11:47					X											X								
1202001488	2	11:50					X											X								
1202001489	40	11:54					X											X								
ZZZZZ	2	11:58																								
1202001490	2	12:01					X											X								
1202001491	2	12:05					X											X								
1202001493	2	12:09					X											X								
1202001492	10	12:12					X											X								
ZZZZZZ	2	12:16																								
CCV02	1	12:20					X											X								
CCB02	1	12:24					X											X								

# Standards

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**METALS**  
**-10-**  
**Instrument Detection Limits**

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**SDG NO.** 10-988

**Contract:** LANL01004

**Lab Code:** GEL

**MDL Effective Date:** 01-JUL-09

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ICP/MS	<u>Analyte</u>	<u>Wavelength (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.** 10-988

**Contract:** LANL01004

**Lab Code:** GEL

**MDL Effective Date:** 15-JUN-09

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		<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. 10-988

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: GELGEL Job No: **10-988**

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: GELGEL Job No: **10-988**

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: GELGEL Job No: **10-988**

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: GEL

GEL Job No: 10-988

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: GELGEL Job No: **10-988**

Contract: LANL01004

Instrument: OPTIMA3

Effective Dates: **01-NOV-09**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

		Silver	Strontium	Sulfur	Thallium	Tin
Parmname	Wavelength					
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: 10-988

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. 10-988

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



**METALS**  
**-12-**  
**Linear Ranges**

SDG NO. 10-988

Contract: LANL01004

Lab Code: GEL

Instrument ID ICPMS4

<u>Analyte</u>	<u>Integration Time (msec)</u>	<u>LDR</u>	<u>Units</u>	<u>Effective Date</u>
Aluminum	1	50000	ug/L	01-NOV-09
Antimony	1000	250	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
Uranium	1000	5000	ug/L	01-NOV-09
Vanadium	1000	100	ug/L	01-NOV-09
Zinc	1000	2500	ug/L	01-NOV-09
Arsenic	1000	1000	ug/L	01-NOV-09

# Raw Data

1/5/2010 08:07:38 Hg ReAlign... Actual peak offset (nm): -0.009  
Drift (nm): 0.000 Slit adjustment: -2

## Analysis Begun

Start Time: 1/5/2010 08:08:22 Plasma On Time: 1/4/2010 06:33:21  
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\010510.sif

Batch ID:

Results Data Set: 010510

Results Library: C:\pe\Optima3\Results\Results.mdb

## Method Loaded

Method Name: General Eng.2AX

IEC File: 101209.iec

Method Description:

Method Last Saved: 1/4/2010 09:42:53

MSF File:

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	Radial	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

Sample ID: S0

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/5/2010 08:08:23

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: S0

Net

Corrected

Calib.

Analysis

Repl#	Analyte	Intensity	Intensity	Conc. Units	Time
1	Sc Radial	5065.4	5065.4	99.6 %	08:10:16
1	Y RADIAL	5321.7	5321.7	99.26 %	08:10:16
1	Al 396.153Radial†	-8.3	-8.3	[0.00] ug/L	08:10:16
1	Ca 317.933Radial†	17.2	17.3	[0.00] ug/L	08:10:36
1	Fe 238.204 Radial†	16.7	16.8	[0.00] ug/L	08:10:36
1	K 766.490 Radial†	3266.8	3279.5	[0.00] ug/L	08:10:16
1	Mg 279.077 IEC†	2.7	2.7	[0.00] ug/L	08:10:36
1	Na 589.592 Radial†	-1702.0	-1708.6	[0.00] ug/L	08:10:16
1	Sr 421.552†	-7.0	-7.0	[0.00] ug/L	08:10:16
1	Sc 361.383	912226.0	912226.0	99.699 %	08:11:32
1	Y 371.029	779992.5	779992.5	99.794 %	08:11:32
1	Ag 328.068†	495.9	497.4	[0.00] ug/L	08:11:37
1	As 188.979†	-34.1	-34.2	[0.00] ug/L	08:11:58
1	B 249.677†	-715.4	-717.5	[0.00] ug/L	08:11:37
1	Ba 233.527†	10.9	10.9	[0.00] ug/L	08:11:58
1	Be 313.107†	-4442.3	-4455.7	[0.00] ug/L	08:11:37
1	Cd 226.502†	-249.3	-250.1	[0.00] ug/L	08:11:58
1	Co 228.616†	-88.0	-88.3	[0.00] ug/L	08:11:58
1	Cr 267.716†	96.9	97.2	[0.00] ug/L	08:11:37
1	Cu 324.752†	8158.4	8183.0	[0.00] ug/L	08:11:37
1	Mn 257.610†	728.4	730.6	[0.00] ug/L	08:11:37
1	Mo 202.031†	25.8	25.9	[0.00] ug/L	08:11:58
1	Ni 231.604†	121.7	122.1	[0.00] ug/L	08:11:58
1	P 214.914†	245.6	246.4	[0.00] ug/L	08:11:58
1	Pb 220.353†	-94.0	-94.3	[0.00] ug/L	08:11:58
1	S 181.975 Axial†	64.4	64.6	[0.00] ug/L	08:11:58
1	Sb 206.836†	46.6	46.8	[0.00] ug/L	08:11:58
1	Se 196.026†	-32.5	-32.6	[0.00] ug/L	08:11:58
1	Si 251.611†	669.8	671.9	[0.00] ug/L	08:11:58
1	Sn 189.927†	-4.0	-4.0	[0.00] ug/L	08:11:58
1	Ti 334.940†	-1783.6	-1789.0	[0.00] ug/L	08:11:37
1	Tl 190.801†	-48.0	-48.2	[0.00] ug/L	08:11:58
1	U 409.014†	-2596.2	-2604.1	[0.00] ug/L	08:11:32
1	V 292.402†	-1831.2	-1836.7	[0.00] ug/L	08:11:37
1	Zn 213.857†	864.5	867.1	[0.00] ug/L	08:11:58
1	SiO2†	717.1	719.3	[0.00] ug/L	08:13:04
2	Sc Radial	5130.8	5130.8	101 %	08:10:41
2	Y RADIAL	5395.1	5395.1	100.6 %	08:10:41
2	Al 396.153Radial†	-50.9	-50.5	[0.00] ug/L	08:10:41
2	Ca 317.933Radial†	20.1	19.9	[0.00] ug/L	08:11:01
2	Fe 238.204 Radial†	14.2	14.1	[0.00] ug/L	08:11:01
2	K 766.490 Radial†	3426.8	3396.3	[0.00] ug/L	08:10:41
2	Mg 279.077 IEC†	7.6	7.6	[0.00] ug/L	08:11:01
2	Na 589.592 Radial†	-1778.7	-1762.9	[0.00] ug/L	08:10:41
2	Sr 421.552†	12.4	12.3	[0.00] ug/L	08:10:41
2	Sc 361.383	917086.8	917086.8	100.23 %	08:12:03
2	Y 371.029	782613.1	782613.1	100.13 %	08:12:03
2	Ag 328.068†	549.3	548.0	[0.00] ug/L	08:12:08
2	As 188.979†	-29.7	-29.7	[0.00] ug/L	08:12:28
2	B 249.677†	-684.6	-683.0	[0.00] ug/L	08:12:08
2	Ba 233.527†	10.0	9.9	[0.00] ug/L	08:12:28
2	Be 313.107†	-4326.1	-4316.2	[0.00] ug/L	08:12:08
2	Cd 226.502†	-255.6	-255.0	[0.00] ug/L	08:12:28
2	Co 228.616†	-83.4	-83.2	[0.00] ug/L	08:12:28
2	Cr 267.716†	114.3	114.1	[0.00] ug/L	08:12:08
2	Cu 324.752†	8095.0	8076.4	[0.00] ug/L	08:12:08
2	Mn 257.610†	653.7	652.2	[0.00] ug/L	08:12:08
2	Mo 202.031†	13.4	13.3	[0.00] ug/L	08:12:28
2	Ni 231.604†	121.5	121.2	[0.00] ug/L	08:12:28
2	P 214.914†	267.5	266.8	[0.00] ug/L	08:12:28
2	Pb 220.353†	-108.8	-108.6	[0.00] ug/L	08:12:28
2	S 181.975 Axial†	61.1	61.0	[0.00] ug/L	08:12:28
2	Sb 206.836†	32.8	32.7	[0.00] ug/L	08:12:28
2	Se 196.026†	-39.8	-39.7	[0.00] ug/L	08:12:28
2	Si 251.611†	665.2	663.7	[0.00] ug/L	08:12:28
2	Sn 189.927†	-2.4	-2.4	[0.00] ug/L	08:12:28
2	Ti 334.940†	-1778.9	-1774.8	[0.00] ug/L	08:12:08
2	Tl 190.801†	-49.1	-49.0	[0.00] ug/L	08:12:28
2	U 409.014†	-2605.3	-2599.3	[0.00] ug/L	08:12:03
2	V 292.402†	-1774.6	-1770.5	[0.00] ug/L	08:12:08

2	Zn 213.857†	857.6	855.6	[0.00]	ug/L	08:12:28
2	SiO2†	662.8	661.3	[0.00]	ug/L	08:13:09
3	Sc Radial	5059.2	5059.2	99.5	%	08:11:06
3	Y RADIAL	5366.8	5366.8	100.1	%	08:11:06
3	Al 396.153Radial†	0.2	0.2	[0.00]	ug/L	08:11:06
3	Ca 317.933Radial†	17.5	17.6	[0.00]	ug/L	08:11:26
3	Fe 238.204 Radial†	13.1	13.1	[0.00]	ug/L	08:11:26
3	K 766.490 Radial†	3301.2	3318.1	[0.00]	ug/L	08:11:06
3	Mg 279.077 IEC†	1.4	1.4	[0.00]	ug/L	08:11:26
3	Na 589.592 Radial†	-1733.0	-1741.9	[0.00]	ug/L	08:11:06
3	Sr 421.552†	17.0	17.1	[0.00]	ug/L	08:11:06
3	Sc 361.383	915623.0	915623.0	100.07	%	08:12:33
3	Y 371.029	782209.1	782209.1	100.08	%	08:12:33
3	Ag 328.068†	493.3	492.9	[0.00]	ug/L	08:12:38
3	As 188.979†	-29.8	-29.8	[0.00]	ug/L	08:12:58
3	B 249.677†	-740.1	-739.5	[0.00]	ug/L	08:12:38
3	Ba 233.527†	4.8	4.8	[0.00]	ug/L	08:12:58
3	Be 313.107†	-4357.4	-4354.3	[0.00]	ug/L	08:12:38
3	Cd 226.502†	-246.8	-246.6	[0.00]	ug/L	08:12:58
3	Co 228.616†	-95.6	-95.5	[0.00]	ug/L	08:12:58
3	Cr 267.716†	137.4	137.3	[0.00]	ug/L	08:12:38
3	Cu 324.752†	8040.9	8035.3	[0.00]	ug/L	08:12:38
3	Mn 257.610†	621.8	621.3	[0.00]	ug/L	08:12:38
3	Mo 202.031†	30.6	30.6	[0.00]	ug/L	08:12:58
3	Ni 231.604†	108.9	108.8	[0.00]	ug/L	08:12:58
3	P 214.914†	244.7	244.5	[0.00]	ug/L	08:12:58
3	Pb 220.353†	-99.4	-99.4	[0.00]	ug/L	08:12:58
3	S 181.975 Axial†	61.5	61.5	[0.00]	ug/L	08:12:58
3	Sb 206.836†	42.7	42.7	[0.00]	ug/L	08:12:58
3	Se 196.026†	-33.5	-33.5	[0.00]	ug/L	08:12:58
3	Si 251.611†	650.0	649.6	[0.00]	ug/L	08:12:58
3	Sn 189.927†	18.8	18.8	[0.00]	ug/L	08:12:58
3	Ti 334.940†	-1816.5	-1815.3	[0.00]	ug/L	08:12:38
3	Tl 190.801†	-40.7	-40.7	[0.00]	ug/L	08:12:58
3	U 409.014†	-2677.2	-2675.3	[0.00]	ug/L	08:12:33
3	V 292.402†	-1794.7	-1793.5	[0.00]	ug/L	08:12:38
3	Zn 213.857†	852.5	851.9	[0.00]	ug/L	08:12:58
3	SiO2†	671.8	671.3	[0.00]	ug/L	08:13:14

## Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Sc 361.383	914978.6	2493.61	0.27%	100.00	%
Sc Radial	5085.1	39.65	0.78%	100.0	%
Y 371.029	781604.9	1410.92	0.18%	100.00	%
Y RADIAL	5361.2	36.99	0.69%	100.0	%
Ag 328.068†	512.8	30.59	5.97%	[0.00]	ug/L
Al 396.153Radial†	-19.5	27.13	138.85%	[0.00]	ug/L
As 188.979†	-31.2	2.60	8.31%	[0.00]	ug/L
B 249.677†	-713.4	28.48	3.99%	[0.00]	ug/L
Ba 233.527†	8.6	3.29	38.50%	[0.00]	ug/L
Be 313.107†	-4375.4	72.09	1.65%	[0.00]	ug/L
Ca 317.933Radial†	18.3	1.42	7.76%	[0.00]	ug/L
Cd 226.502†	-250.6	4.23	1.69%	[0.00]	ug/L
Co 228.616†	-89.0	6.20	6.97%	[0.00]	ug/L
Cr 267.716†	116.2	20.11	17.31%	[0.00]	ug/L
Cu 324.752†	8098.3	76.26	0.94%	[0.00]	ug/L
Fe 238.204 Radial†	14.7	1.91	13.00%	[0.00]	ug/L
K 766.490 Radial†	3331.3	59.50	1.79%	[0.00]	ug/L
Mg 279.077 IEC†	3.9	3.24	83.40%	[0.00]	ug/L
Mn 257.610†	668.1	56.33	8.43%	[0.00]	ug/L
Mo 202.031†	23.3	8.92	38.34%	[0.00]	ug/L
Na 589.592 Radial†	-1737.8	27.36	1.57%	[0.00]	ug/L
Ni 231.604†	117.3	7.41	6.32%	[0.00]	ug/L
P 214.914†	252.6	12.38	4.90%	[0.00]	ug/L
Pb 220.353†	-100.7	7.25	7.20%	[0.00]	ug/L
S 181.975 Axial†	62.4	1.98	3.17%	[0.00]	ug/L
Sb 206.836†	40.7	7.23	17.77%	[0.00]	ug/L
Se 196.026†	-35.3	3.85	10.91%	[0.00]	ug/L
Si 251.611†	661.7	11.28	1.70%	[0.00]	ug/L

Sn 189.927†	4.1	12.72	306.85%	[0.00]	ug/L
Sr 421.552†	7.4	12.76	171.47%	[0.00]	ug/L
Ti 334.940†	-1793.0	20.54	1.15%	[0.00]	ug/L
Tl 190.801†	-46.0	4.55	9.90%	[0.00]	ug/L
U 409.014†	-2626.2	42.56	1.62%	[0.00]	ug/L
V 292.402†	-1800.2	33.59	1.87%	[0.00]	ug/L
Zn 213.857†	858.2	7.89	0.92%	[0.00]	ug/L
SiO2†	684.0	31.01	4.53%	[0.00]	ug/L

Sequence No.: 2  
 Sample ID: S0.1  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 2  
 Date Collected: 1/5/2010 08:15:24  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: S0.1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Calib.	Analysis Time
1	Sc Radial	5002.2	5002.2	98.4 %		08:17:22
1	Y RADIAL	5272.5	5272.5	98.35 %		08:17:22
1	K 766.490 Radial†	8207.8	5012.5	[1000] ug/L		08:17:17
1	Sr 421.552†	14644.1	14879.4	[100] ug/L		08:17:22
1	Sc 361.383	896053.2	896053.2	97.932 %		08:17:49
1	Y 371.029	767141.8	767141.8	98.150 %		08:17:49
1	Ag 328.068†	23122.3	23097.8	[100] ug/L		08:17:49
1	As 188.979†	261.4	298.1	[100] ug/L		08:18:09
1	B 249.677†	3783.4	4576.7	[100] ug/L		08:17:49
1	Ba 233.527†	13404.9	13679.5	[100] ug/L		08:17:49
1	Be 313.107†	281793.6	292120.8	[100] ug/L		08:17:49
1	Cd 226.502†	10143.8	10608.7	[100] ug/L		08:18:09
1	Co 228.616†	5220.4	5419.6	[100] ug/L		08:18:09
1	Cr 267.716†	9871.9	9964.2	[100] ug/L		08:17:49
1	Cu 324.752†	40532.1	33289.9	[100] ug/L		08:17:49
1	Mn 257.610†	94567.7	95897.0	[100] ug/L		08:17:49
1	Mo 202.031†	1602.2	1612.8	[100] ug/L		08:18:09
1	Ni 231.604†	4680.7	4662.2	[100] ug/L		08:18:09
1	P 214.914†	1269.4	1043.6	[500] ug/L		08:18:09
1	Pb 220.353†	899.5	1019.3	[100] ug/L		08:18:09
1	S 181.975 Axial†	222.7	165.0	[200] ug/L		08:18:09
1	Sb 206.836†	377.9	345.2	[100] ug/L		08:18:09
1	Se 196.026†	155.2	193.8	[100] ug/L		08:18:09
1	Si 251.611†	17401.3	17107.1	[500] ug/L		08:17:49
1	Sn 189.927†	664.1	674.0	[100] ug/L		08:18:09
1	Ti 334.940†	59759.7	62814.9	[100] ug/L		08:17:49
1	Tl 190.801†	330.1	383.0	[100] ug/L		08:18:09
1	U 409.014†	373.4	3007.5	[100] ug/L		08:17:49
1	V 292.402†	13541.0	15627.3	[100] ug/L		08:17:49
1	Zn 213.857†	12658.4	12067.6	[100] ug/L		08:17:49
1	SiO2†	17678.8	17368.2	[1069.5] ug/L		08:19:05
2	Sc Radial	5176.0	5176.0	102 %		08:17:32
2	Y RADIAL	5467.6	5467.6	102.0 %		08:17:32
2	K 766.490 Radial†	8387.8	4909.2	[1000] ug/L		08:17:27
2	Sr 421.552†	14669.4	14404.4	[100] ug/L		08:17:32
2	Sc 361.383	874183.4	874183.4	95.541 %		08:18:14
2	Y 371.029	747163.9	747163.9	95.594 %		08:18:14
2	Ag 328.068†	23001.1	23561.7	[100] ug/L		08:18:14
2	As 188.979†	243.2	285.8	[100] ug/L		08:18:34
2	B 249.677†	3870.5	4764.5	[100] ug/L		08:18:14
2	Ba 233.527†	13496.3	14117.6	[100] ug/L		08:18:14
2	Be 313.107†	283145.8	300734.6	[100] ug/L		08:18:14
2	Cd 226.502†	9886.7	10598.6	[100] ug/L		08:18:34
2	Co 228.616†	5090.0	5416.5	[100] ug/L		08:18:34
2	Cr 267.716†	9912.4	10258.8	[100] ug/L		08:18:14
2	Cu 324.752†	40513.0	34305.3	[100] ug/L		08:18:14
2	Mn 257.610†	95116.3	98886.9	[100] ug/L		08:18:14
2	Mo 202.031†	1563.3	1613.0	[100] ug/L		08:18:34
2	Ni 231.604†	4570.4	4666.3	[100] ug/L		08:18:34
2	P 214.914†	1241.9	1047.3	[500] ug/L		08:18:34
2	Pb 220.353†	850.8	991.3	[100] ug/L		08:18:34
2	S 181.975 Axial†	228.0	176.2	[200] ug/L		08:18:34
2	Sb 206.836†	362.4	338.6	[100] ug/L		08:18:34
2	Se 196.026†	145.4	187.5	[100] ug/L		08:18:34
2	Si 251.611†	17488.9	17643.3	[500] ug/L		08:18:14
2	Sn 189.927†	662.5	689.3	[100] ug/L		08:18:34
2	Ti 334.940†	59916.5	64505.6	[100] ug/L		08:18:14
2	Tl 190.801†	316.7	377.5	[100] ug/L		08:18:34
2	U 409.014†	388.9	3033.2	[100] ug/L		08:18:14

2	V 292.402†	13614.4	16050.0	[100]	ug/L	08:18:14
2	Zn 213.857†	12788.3	12526.9	[100]	ug/L	08:18:14
2	SiO2†	17601.7	17739.2	[1069.5]	ug/L	08:19:10
3	Sc Radial	4848.9	4848.9	95.4	%	08:17:42
3	Y RADIAL	5104.6	5104.6	95.21	%	08:17:42
3	K 766.490 Radial†	8316.0	5389.8	[1000]	ug/L	08:17:37
3	Sr 421.552†	14766.1	15477.9	[100]	ug/L	08:17:42
3	Sc 361.383	903648.7	903648.7	98.762	%	08:18:40
3	Y 371.029	772738.2	772738.2	98.866	%	08:18:40
3	Ag 328.068†	23631.2	23414.7	[100]	ug/L	08:18:40
3	As 188.979†	251.7	286.1	[100]	ug/L	08:19:00
3	B 249.677†	3988.5	4751.8	[100]	ug/L	08:18:40
3	Ba 233.527†	13810.9	13975.6	[100]	ug/L	08:18:40
3	Be 313.107†	288891.7	296889.2	[100]	ug/L	08:18:40
3	Cd 226.502†	9994.3	10370.2	[100]	ug/L	08:19:00
3	Co 228.616†	5144.5	5298.0	[100]	ug/L	08:19:00
3	Cr 267.716†	10036.3	10046.0	[100]	ug/L	08:18:40
3	Cu 324.752†	41444.0	33865.4	[100]	ug/L	08:18:40
3	Mn 257.610†	97073.4	97622.5	[100]	ug/L	08:18:40
3	Mo 202.031†	1582.0	1578.6	[100]	ug/L	08:19:00
3	Ni 231.604†	4594.9	4535.2	[100]	ug/L	08:19:00
3	P 214.914†	1244.0	1007.0	[500]	ug/L	08:19:00
3	Pb 220.353†	880.2	992.0	[100]	ug/L	08:19:00
3	S 181.975 Axial†	232.6	173.1	[200]	ug/L	08:19:00
3	Sb 206.836†	377.0	341.0	[100]	ug/L	08:19:00
3	Se 196.026†	150.3	187.5	[100]	ug/L	08:19:00
3	Si 251.611†	17770.7	17331.7	[500]	ug/L	08:18:40
3	Sn 189.927†	658.8	662.9	[100]	ug/L	08:19:00
3	Ti 334.940†	61415.1	63978.1	[100]	ug/L	08:18:40
3	Tl 190.801†	316.7	366.7	[100]	ug/L	08:19:00
3	U 409.014†	657.2	3291.7	[100]	ug/L	08:18:40
3	V 292.402†	13958.3	15933.6	[100]	ug/L	08:18:40
3	Zn 213.857†	12960.4	12264.7	[100]	ug/L	08:18:40
3	SiO2†	17392.8	16926.9	[1069.5]	ug/L	08:19:15

## Mean Data: S0.1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Sc 361.383	891295.1	15298.04	1.72%	97.412	%
Sc Radial	5009.0	163.63	3.27%	98.5	%
Y 371.029	762348.0	13444.25	1.76%	97.536	%
Y RADIAL	5281.5	181.67	3.44%	98.51	%
Ag 328.068†	23358.1	237.07	1.01%	[100]	ug/L
As 188.979†	290.0	7.03	2.42%	[100]	ug/L
B 249.677†	4697.7	104.97	2.23%	[100]	ug/L
Ba 233.527†	13924.2	223.50	1.61%	[100]	ug/L
Be 313.107†	296581.5	4315.16	1.45%	[100]	ug/L
Cd 226.502†	10525.8	134.89	1.28%	[100]	ug/L
Co 228.616†	5378.0	69.36	1.29%	[100]	ug/L
Cr 267.716†	10089.7	152.07	1.51%	[100]	ug/L
Cu 324.752†	33820.2	509.22	1.51%	[100]	ug/L
K 766.490 Radial†	5103.9	252.96	4.96%	[1000]	ug/L
Mn 257.610†	97468.8	1500.91	1.54%	[100]	ug/L
Mo 202.031†	1601.4	19.79	1.24%	[100]	ug/L
Ni 231.604†	4621.2	74.54	1.61%	[100]	ug/L
P 214.914†	1032.6	22.29	2.16%	[500]	ug/L
Pb 220.353†	1000.8	15.95	1.59%	[100]	ug/L
S 181.975 Axial†	171.4	5.77	3.37%	[200]	ug/L
Sb 206.836†	341.6	3.31	0.97%	[100]	ug/L
Se 196.026†	189.6	3.64	1.92%	[100]	ug/L
Si 251.611†	17360.7	269.27	1.55%	[500]	ug/L
Sn 189.927†	675.4	13.22	1.96%	[100]	ug/L
Sr 421.552†	14920.6	537.91	3.61%	[100]	ug/L
Ti 334.940†	63766.2	865.04	1.36%	[100]	ug/L
Tl 190.801†	375.7	8.33	2.22%	[100]	ug/L
U 409.014†	3110.8	157.16	5.05%	[100]	ug/L
V 292.402†	15870.3	218.36	1.38%	[100]	ug/L
Zn 213.857†	12286.4	230.44	1.88%	[100]	ug/L
SiO2†	17344.8	406.65	2.34%	[1069.5]	ug/L



Sequence No.: 3  
 Sample ID: S0.5  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 3  
 Date Collected: 1/5/2010 08:21:26  
 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	4895.3	4895.3	96.3	%	08:23:19
1	Y RADIAL	5152.9	5152.9	96.12	%	08:23:19
1	Al 396.153Radial†	5804.3	6048.9	[5000]	ug/L	08:23:19
1	Ca 317.933Radial†	3101.2	3203.2	[5000]	ug/L	08:23:39
1	K 766.490 Radial†	27563.4	25300.8	[5000]	ug/L	08:23:19
1	Mg 279.077 IEC†	166.9	169.5	[5000]	ug/L	08:23:39
1	Sr 421.552†	70559.9	73288.3	[500]	ug/L	08:23:19
1	Sc 361.383	893361.5	893361.5	97.637	%	08:24:38
1	Y 371.029	755737.9	755737.9	96.691	%	08:24:38
1	Ag 328.068†	114979.0	117248.4	[500]	ug/L	08:24:38
1	As 188.979†	1364.4	1428.7	[500]	ug/L	08:24:58
1	B 249.677†	23087.3	24359.4	[500]	ug/L	08:24:38
1	Ba 233.527†	67971.3	69607.5	[500]	ug/L	08:24:38
1	Be 313.107†	1465219.8	1505049.8	[500]	ug/L	08:24:38
1	Cd 226.502†	52578.4	54101.2	[500]	ug/L	08:24:38
1	Co 228.616†	25926.7	26643.1	[500]	ug/L	08:24:58
1	Cr 267.716†	49365.0	50443.3	[500]	ug/L	08:24:38
1	Cu 324.752†	174422.8	170545.1	[500]	ug/L	08:24:38
1	Mn 257.610†	474093.4	484897.2	[500]	ug/L	08:24:38
1	Mo 202.031†	7890.5	8058.2	[500]	ug/L	08:24:58
1	Ni 231.604†	22436.5	22862.0	[500]	ug/L	08:24:58
1	P 214.914†	5275.0	5150.1	[2500]	ug/L	08:24:58
1	Pb 220.353†	4685.5	4899.6	[500]	ug/L	08:24:58
1	S 181.975 Axial†	924.2	884.2	[1000]	ug/L	08:24:58
1	Sb 206.836†	1700.4	1700.9	[500]	ug/L	08:24:58
1	Se 196.026†	933.2	991.1	[500]	ug/L	08:24:58
1	Si 251.611†	86132.8	87555.3	[2500]	ug/L	08:24:38
1	Sn 189.927†	3311.1	3387.0	[500]	ug/L	08:24:58
1	Ti 334.940†	314124.1	323518.1	[500]	ug/L	08:24:38
1	Tl 190.801†	1748.4	1836.7	[500]	ug/L	08:24:58
1	U 409.014†	13435.4	16386.7	[500]	ug/L	08:24:38
1	V 292.402†	76477.6	80128.4	[500]	ug/L	08:24:38
1	Zn 213.857†	61187.3	61809.7	[500]	ug/L	08:24:38
1	SiO2†	86063.7	87462.2	[5347.5]	ug/L	08:25:58
2	Sc Radial	5034.4	5034.4	99.0	%	08:23:44
2	Y RADIAL	5268.1	5268.1	98.26	%	08:23:44
2	Al 396.153Radial†	5957.5	6037.1	[5000]	ug/L	08:23:44
2	Ca 317.933Radial†	3089.6	3102.4	[5000]	ug/L	08:24:04
2	K 766.490 Radial†	28112.3	25064.0	[5000]	ug/L	08:23:44
2	Mg 279.077 IEC†	163.1	160.9	[5000]	ug/L	08:24:04
2	Sr 421.552†	72423.9	73145.5	[500]	ug/L	08:23:44
2	Sc 361.383	905226.6	905226.6	98.934	%	08:25:05
2	Y 371.029	766408.4	766408.4	98.056	%	08:25:05
2	Ag 328.068†	114437.6	115157.6	[500]	ug/L	08:25:05
2	As 188.979†	1382.3	1428.4	[500]	ug/L	08:25:25
2	B 249.677†	22998.5	23959.6	[500]	ug/L	08:25:05
2	Ba 233.527†	67571.3	68290.7	[500]	ug/L	08:25:05
2	Be 313.107†	1458269.0	1478354.3	[500]	ug/L	08:25:05
2	Cd 226.502†	52224.0	53037.2	[500]	ug/L	08:25:05
2	Co 228.616†	26161.4	26532.2	[500]	ug/L	08:25:25
2	Cr 267.716†	49160.8	49574.2	[500]	ug/L	08:25:05
2	Cu 324.752†	173416.4	167186.3	[500]	ug/L	08:25:05
2	Mn 257.610†	471408.0	475818.4	[500]	ug/L	08:25:05
2	Mo 202.031†	7943.2	8005.5	[500]	ug/L	08:25:25
2	Ni 231.604†	22585.8	22711.7	[500]	ug/L	08:25:25
2	P 214.914†	5328.3	5133.1	[2500]	ug/L	08:25:25
2	Pb 220.353†	4719.9	4871.5	[500]	ug/L	08:25:25
2	S 181.975 Axial†	925.2	872.8	[1000]	ug/L	08:25:25
2	Sb 206.836†	1700.8	1678.4	[500]	ug/L	08:25:25

2	Se 196.026†	952.2	997.8	[500]	ug/L	08:25:25
2	Si 251.611†	85829.4	86092.3	[2500]	ug/L	08:25:05
2	Sn 189.927†	3363.0	3395.1	[500]	ug/L	08:25:25
2	Ti 334.940†	312146.4	317302.2	[500]	ug/L	08:25:05
2	Tl 190.801†	1770.4	1835.4	[500]	ug/L	08:25:25
2	U 409.014†	13018.4	15784.9	[500]	ug/L	08:25:05
2	V 292.402†	76070.9	78690.6	[500]	ug/L	08:25:05
2	Zn 213.857†	60797.5	60594.3	[500]	ug/L	08:25:05
2	SiO2†	86350.9	86597.2	[5347.5]	ug/L	08:26:03
3	Sc Radial	5063.9	5063.9	99.6	%	08:24:09
3	Y RADIAL	5326.8	5326.8	99.36	%	08:24:09
3	Al 396.153Radial†	6030.9	6075.7	[5000]	ug/L	08:24:09
3	Ca 317.933Radial†	3091.4	3086.1	[5000]	ug/L	08:24:29
3	K 766.490 Radial†	28542.7	25331.1	[5000]	ug/L	08:24:09
3	Mg 279.077 IEC†	162.6	159.4	[5000]	ug/L	08:24:29
3	Sr 421.552†	73364.9	73665.2	[500]	ug/L	08:24:09
3	Sc 361.383	912797.6	912797.6	99.762	%	08:25:33
3	Y 371.029	772410.6	772410.6	98.824	%	08:25:33
3	Ag 328.068†	115054.4	114816.5	[500]	ug/L	08:25:33
3	As 188.979†	1372.7	1407.2	[500]	ug/L	08:25:53
3	B 249.677†	23259.5	24028.5	[500]	ug/L	08:25:33
3	Ba 233.527†	68080.5	68234.6	[500]	ug/L	08:25:33
3	Be 313.107†	1467808.2	1475690.7	[500]	ug/L	08:25:33
3	Cd 226.502†	52462.7	52838.6	[500]	ug/L	08:25:33
3	Co 228.616†	26131.5	26283.0	[500]	ug/L	08:25:53
3	Cr 267.716†	49351.1	49352.9	[500]	ug/L	08:25:33
3	Cu 324.752†	174628.8	166947.8	[500]	ug/L	08:25:33
3	Mn 257.610†	474694.0	475160.1	[500]	ug/L	08:25:33
3	Mo 202.031†	7963.6	7959.3	[500]	ug/L	08:25:53
3	Ni 231.604†	22564.1	22500.7	[500]	ug/L	08:25:53
3	P 214.914†	5329.6	5089.8	[2500]	ug/L	08:25:53
3	Pb 220.353†	4733.8	4845.8	[500]	ug/L	08:25:53
3	S 181.975 Axial†	929.4	869.2	[1000]	ug/L	08:25:53
3	Sb 206.836†	1708.8	1672.1	[500]	ug/L	08:25:53
3	Se 196.026†	930.6	968.1	[500]	ug/L	08:25:53
3	Si 251.611†	86250.8	85795.2	[2500]	ug/L	08:25:33
3	Sn 189.927†	3342.6	3346.5	[500]	ug/L	08:25:53
3	Ti 334.940†	314428.5	316972.8	[500]	ug/L	08:25:33
3	Tl 190.801†	1753.6	1803.7	[500]	ug/L	08:25:53
3	U 409.014†	13324.2	15982.3	[500]	ug/L	08:25:33
3	V 292.402†	76598.7	78581.9	[500]	ug/L	08:25:33
3	Zn 213.857†	61215.9	60504.0	[500]	ug/L	08:25:33
3	SiO2†	85190.0	84709.6	[5347.5]	ug/L	08:26:08

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Mean Data: S0.5

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	903795.2	9796.77	1.08%	98.778 %
Sc Radial	4997.9	90.04	1.80%	98.3 %
Y 371.029	764852.3	8444.54	1.10%	97.857 %
Y RADIAL	5249.3	88.43	1.68%	97.91 %
Ag 328.068†	115740.9	1316.69	1.14%	[500] ug/L
Al 396.153Radial†	6053.9	19.82	0.33%	[5000] ug/L
As 188.979†	1421.5	12.31	0.87%	[500] ug/L
B 249.677†	24115.8	213.72	0.89%	[500] ug/L
Ba 233.527†	68710.9	776.93	1.13%	[500] ug/L
Be 313.107†	1486364.9	16236.26	1.09%	[500] ug/L
Ca 317.933Radial†	3130.6	63.38	2.02%	[5000] ug/L
Cd 226.502†	53325.7	678.94	1.27%	[500] ug/L
Co 228.616†	26486.1	184.43	0.70%	[500] ug/L
Cr 267.716†	49790.1	576.41	1.16%	[500] ug/L
Cu 324.752†	168226.4	2011.60	1.20%	[500] ug/L
K 766.490 Radial†	25232.0	146.22	0.58%	[5000] ug/L
Mg 279.077 IEC†	163.3	5.43	3.33%	[5000] ug/L
Mn 257.610†	478625.2	5441.62	1.14%	[500] ug/L
Mo 202.031†	8007.7	49.46	0.62%	[500] ug/L
Ni 231.604†	22691.5	181.53	0.80%	[500] ug/L
P 214.914†	5124.3	31.08	0.61%	[2500] ug/L
Pb 220.353†	4872.3	26.90	0.55%	[500] ug/L
S 181.975 Axial†	875.4	7.82	0.89%	[1000] ug/L

Sb 206.836†	1683.8	15.11	0.90%	[500] ug/L
Se 196.026†	985.7	15.57	1.58%	[500] ug/L
Si 251.611†	86480.9	942.23	1.09%	[2500] ug/L
Sn 189.927†	3376.2	26.06	0.77%	[500] ug/L
Sr 421.552†	73366.3	268.46	0.37%	[500] ug/L
Ti 334.940†	319264.4	3687.55	1.16%	[500] ug/L
Tl 190.801†	1825.3	18.68	1.02%	[500] ug/L
U 409.014†	16051.3	306.76	1.91%	[500] ug/L
V 292.402†	79133.6	863.17	1.09%	[500] ug/L
Zn 213.857†	60969.3	729.17	1.20%	[500] ug/L
SiO2†	86256.3	1407.64	1.63%	[5347.5] ug/L

Sequence No.: 4

Sample ID: SCAL

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 4

Date Collected: 1/5/2010 08:28:19

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	4882.3	4882.3	96.0 %		08:30:32
1	Y RADIAL	5092.7	5092.7	94.99 %		08:30:32
1	Al 396.153Radial†	11957.0	12473.3	[10000] ug/L		08:30:12
1	Ca 317.933Radial†	6171.1	6409.3	[10000] ug/L		08:30:32
1	Fe 238.204 Radial†	1131.5	1163.8	[10000] ug/L		08:30:32
1	K 766.490 Radial†	53266.3	52147.9	[10000] ug/L		08:30:12
1	Mg 279.077 IEC†	320.4	329.8	[10000] ug/L		08:30:32
1	Na 589.592 Radial†	32806.6	35907.3	[10000] ug/L		08:30:12
1	Sr 421.552†	145495.4	151532.5	[1000] ug/L		08:30:12
1	Sc 361.383	895459.7	895459.7	97.867 %		08:31:31
1	Y 371.029	748986.4	748986.4	95.827 %		08:31:36
1	Ag 328.068†	230307.6	234814.9	[1000] ug/L		08:31:36
1	As 188.979†	2764.6	2856.1	[1000] ug/L		08:31:56
1	B 249.677†	47632.1	49383.8	[1000] ug/L		08:31:36
1	Ba 233.527†	135452.7	138396.7	[1000] ug/L		08:31:36
1	Be 313.107†	2892361.6	2959783.5	[1000] ug/L		08:31:31
1	Cd 226.502†	104639.9	107171.4	[1000] ug/L		08:31:36
1	Co 228.616†	52902.2	54144.3	[1000] ug/L		08:31:36
1	Cr 267.716†	98679.5	100714.2	[1000] ug/L		08:31:36
1	Cu 324.752†	342074.1	341432.3	[1000] ug/L		08:31:36
1	Mn 257.610†	931057.0	950683.7	[1000] ug/L		08:31:31
1	Mo 202.031†	15682.3	16000.9	[1000] ug/L		08:31:56
1	Ni 231.604†	45340.4	46211.4	[1000] ug/L		08:31:36
1	P 214.914†	10269.9	10241.1	[5000] ug/L		08:31:56
1	Pb 220.353†	9404.1	9709.8	[1000] ug/L		08:31:56
1	S 181.975 Axial†	1782.9	1759.4	[2000] ug/L		08:31:56
1	Sb 206.836†	3347.5	3379.8	[1000] ug/L		08:31:56
1	Se 196.026†	1877.8	1954.0	[1000] ug/L		08:31:56
1	Si 251.611†	172962.2	176070.6	[5000] ug/L		08:31:36
1	Sn 189.927†	6661.6	6802.6	[1000] ug/L		08:31:56
1	Ti 334.940†	622702.3	638068.7	[1000] ug/L		08:31:31
1	Tl 190.801†	3546.3	3669.5	[1000] ug/L		08:31:56
1	U 409.014†	31015.3	34317.6	[1000] ug/L		08:31:36
1	V 292.402†	155654.4	160847.6	[1000] ug/L		08:31:36
1	Zn 213.857†	121103.6	122885.2	[1000] ug/L		08:31:36
1	SiO2†	170784.6	173823.3	[10695] ug/L		08:33:06
2	Sc Radial	4833.8	4833.8	95.1 %		08:30:58
2	Y RADIAL	5042.6	5042.6	94.06 %		08:30:58
2	Al 396.153Radial†	12019.8	12664.3	[10000] ug/L		08:30:38
2	Ca 317.933Radial†	6101.7	6400.7	[10000] ug/L		08:30:58
2	Fe 238.204 Radial†	1129.6	1173.7	[10000] ug/L		08:30:58
2	K 766.490 Radial†	53476.6	52925.8	[10000] ug/L		08:30:38
2	Mg 279.077 IEC†	322.2	335.1	[10000] ug/L		08:30:58
2	Na 589.592 Radial†	32786.7	36229.2	[10000] ug/L		08:30:38
2	Sr 421.552†	146014.9	153599.4	[1000] ug/L		08:30:38
2	Sc 361.383	896013.1	896013.1	97.927 %		08:32:03
2	Y 371.029	744345.7	744345.7	95.233 %		08:32:08
2	Ag 328.068†	229068.2	233404.0	[1000] ug/L		08:32:08
2	As 188.979†	2743.5	2832.8	[1000] ug/L		08:32:28
2	B 249.677†	47337.9	49053.3	[1000] ug/L		08:32:08
2	Ba 233.527†	134463.6	137301.2	[1000] ug/L		08:32:08
2	Be 313.107†	2898070.8	2963788.4	[1000] ug/L		08:32:03
2	Cd 226.502†	103951.0	106401.9	[1000] ug/L		08:32:08
2	Co 228.616†	52522.8	53723.5	[1000] ug/L		08:32:08
2	Cr 267.716†	98108.1	100068.5	[1000] ug/L		08:32:08
2	Cu 324.752†	339731.5	338824.2	[1000] ug/L		08:32:08
2	Mn 257.610†	933270.2	952356.2	[1000] ug/L		08:32:03
2	Mo 202.031†	15609.3	15916.4	[1000] ug/L		08:32:28
2	Ni 231.604†	44962.5	45796.9	[1000] ug/L		08:32:08

2	P 214.914†	10225.2	10189.0	[5000]	ug/L	08:32:28
2	Pb 220.353†	9300.2	9597.8	[1000]	ug/L	08:32:28
2	S 181.975 Axial†	1777.1	1752.3	[2000]	ug/L	08:32:28
2	Sb 206.836†	3356.2	3386.5	[1000]	ug/L	08:32:28
2	Se 196.026†	1877.8	1952.8	[1000]	ug/L	08:32:28
2	Si 251.611†	171605.8	174576.3	[5000]	ug/L	08:32:08
2	Sn 189.927†	6585.3	6720.6	[1000]	ug/L	08:32:28
2	Ti 334.940†	623617.1	638609.9	[1000]	ug/L	08:32:03
2	Tl 190.801†	3536.5	3657.3	[1000]	ug/L	08:32:28
2	U 409.014†	30978.1	34260.1	[1000]	ug/L	08:32:08
2	V 292.402†	154645.5	159719.0	[1000]	ug/L	08:32:08
2	Zn 213.857†	120102.1	121786.0	[1000]	ug/L	08:32:08
2	SiO2†	172455.0	175421.3	[10695]	ug/L	08:33:11
3	Sc Radial	4933.7	4933.7	97.0	%	08:31:23
3	Y RADIAL	5126.5	5126.5	95.62	%	08:31:23
3	Al 396.153Radial†	11950.7	12337.0	[10000]	ug/L	08:31:03
3	Ca 317.933Radial†	6222.4	6395.1	[10000]	ug/L	08:31:23
3	Fe 238.204 Radial†	1151.8	1172.5	[10000]	ug/L	08:31:23
3	K 766.490 Radial†	53437.7	51746.1	[10000]	ug/L	08:31:03
3	Mg 279.077 IEC†	326.2	332.3	[10000]	ug/L	08:31:23
3	Na 589.592 Radial†	32934.7	35683.0	[10000]	ug/L	08:31:03
3	Sr 421.552†	145857.4	150325.5	[1000]	ug/L	08:31:03
3	Sc 361.383	907123.5	907123.5	99.142	%	08:32:35
3	Y 371.029	745164.1	745164.1	95.338	%	08:32:40
3	Ag 328.068†	229272.3	230744.9	[1000]	ug/L	08:32:40
3	As 188.979†	2768.4	2823.6	[1000]	ug/L	08:33:00
3	B 249.677†	47411.2	48535.1	[1000]	ug/L	08:32:40
3	Ba 233.527†	134583.4	135740.2	[1000]	ug/L	08:32:40
3	Be 313.107†	2930417.9	2960168.8	[1000]	ug/L	08:32:35
3	Cd 226.502†	104011.6	105162.9	[1000]	ug/L	08:32:40
3	Co 228.616†	52462.8	53006.1	[1000]	ug/L	08:32:40
3	Cr 267.716†	98200.9	98935.1	[1000]	ug/L	08:32:40
3	Cu 324.752†	339833.0	334677.5	[1000]	ug/L	08:32:40
3	Mn 257.610†	944183.9	951691.9	[1000]	ug/L	08:32:35
3	Mo 202.031†	15727.0	15839.9	[1000]	ug/L	08:33:00
3	Ni 231.604†	45031.8	45304.4	[1000]	ug/L	08:32:40
3	P 214.914†	10292.1	10128.6	[5000]	ug/L	08:33:00
3	Pb 220.353†	9411.9	9594.1	[1000]	ug/L	08:33:00
3	S 181.975 Axial†	1788.8	1741.9	[2000]	ug/L	08:33:00
3	Sb 206.836†	3373.6	3362.1	[1000]	ug/L	08:33:00
3	Se 196.026†	1893.8	1945.5	[1000]	ug/L	08:33:00
3	Si 251.611†	171824.6	172650.8	[5000]	ug/L	08:32:40
3	Sn 189.927†	6655.3	6708.8	[1000]	ug/L	08:33:00
3	Ti 334.940†	630922.1	638178.5	[1000]	ug/L	08:32:35
3	Tl 190.801†	3546.5	3623.1	[1000]	ug/L	08:33:00
3	U 409.014†	31081.8	33977.2	[1000]	ug/L	08:32:40
3	V 292.402†	154799.4	157940.1	[1000]	ug/L	08:32:40
3	Zn 213.857†	120132.6	120314.7	[1000]	ug/L	08:32:40
3	SiO2†	168331.7	169105.4	[10695]	ug/L	08:33:16

## Mean Data: SCAL

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Sc 361.383	899532.1	6580.17	0.73%	98.312	%
Sc Radial	4883.3	49.98	1.02%	96.0	%
Y 371.029	746165.4	2477.10	0.33%	95.466	%
Y RADIAL	5087.2	42.20	0.83%	94.89	%
Ag 328.068†	232987.9	2066.66	0.89%	[1000]	ug/L
Al 396.153Radial†	12491.5	164.45	1.32%	[10000]	ug/L
As 188.979†	2837.5	16.73	0.59%	[1000]	ug/L
B 249.677†	48990.7	427.78	0.87%	[1000]	ug/L
Ba 233.527†	137146.0	1335.02	0.97%	[1000]	ug/L
Be 313.107†	2961246.9	2209.44	0.07%	[1000]	ug/L
Ca 317.933Radial†	6401.7	7.13	0.11%	[10000]	ug/L
Cd 226.502†	106245.4	1013.37	0.95%	[1000]	ug/L
Co 228.616†	53624.6	575.52	1.07%	[1000]	ug/L
Cr 267.716†	99906.0	900.64	0.90%	[1000]	ug/L
Cu 324.752†	338311.3	3406.45	1.01%	[1000]	ug/L
Fe 238.204 Radial†	1170.0	5.41	0.46%	[10000]	ug/L
K 766.490 Radial†	52273.3	599.71	1.15%	[10000]	ug/L

Mg 279.077 IEC†	332.4	2.63	0.79%	[10000]	ug/L
Mn 257.610†	951577.3	842.11	0.09%	[1000]	ug/L
Mo 202.031†	15919.1	80.52	0.51%	[1000]	ug/L
Na 589.592 Radial†	35939.8	274.55	0.76%	[10000]	ug/L
Ni 231.604†	45770.9	454.04	0.99%	[1000]	ug/L
P 214.914†	10186.3	56.32	0.55%	[5000]	ug/L
Pb 220.353†	9633.9	65.75	0.68%	[1000]	ug/L
S 181.975 Axial†	1751.2	8.80	0.50%	[2000]	ug/L
Sb 206.836†	3376.1	12.57	0.37%	[1000]	ug/L
Se 196.026†	1950.8	4.61	0.24%	[1000]	ug/L
Si 251.611†	174432.6	1714.44	0.98%	[5000]	ug/L
Sn 189.927†	6744.0	51.11	0.76%	[1000]	ug/L
Sr 421.552†	151819.1	1655.63	1.09%	[1000]	ug/L
Ti 334.940†	638285.7	286.09	0.04%	[1000]	ug/L
Tl 190.801†	3650.0	24.04	0.66%	[1000]	ug/L
U 409.014†	34185.0	182.21	0.53%	[1000]	ug/L
V 292.402†	159502.2	1465.81	0.92%	[1000]	ug/L
Zn 213.857†	121662.0	1289.73	1.06%	[1000]	ug/L
SiO2†	172783.3	3283.90	1.90%	[10695]	ug/L

Sequence No.: 5  
 Sample ID: S10  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 5  
 Date Collected: 1/5/2010 08:35:27  
 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	4963.1	4963.1	97.6 %	08:37:41
1	Y RADIAL	5205.4	5205.4	97.09 %	08:37:41
1	Al 396.153Radial†	58774.8	60239.2	[50000] ug/L	08:37:21
1	Ca 317.933Radial†	30345.8	31073.5	[50000] ug/L	08:37:41
1	Fe 238.204 Radial†	2231.9	2272.1	[20000] ug/L	08:37:41
1	Mg 279.077 IEC†	1564.8	1599.4	[50000] ug/L	08:37:41
1	Na 589.592 Radial†	65157.3	68496.8	[20000] ug/L	08:37:21
1	Sc 361.383	879919.5	879919.5	96.168 %	08:38:38
1	Y 371.029	742823.2	742823.2	95.038 %	08:38:38
2	Sc Radial	4790.6	4790.6	94.2 %	08:38:06
2	Y RADIAL	5038.5	5038.5	93.98 %	08:38:06
2	Al 396.153Radial†	58380.5	61988.7	[50000] ug/L	08:37:46
2	Ca 317.933Radial†	29767.1	31578.6	[50000] ug/L	08:38:06
2	Fe 238.204 Radial†	2186.4	2306.1	[20000] ug/L	08:38:06
2	Mg 279.077 IEC†	1523.3	1613.0	[50000] ug/L	08:38:06
2	Na 589.592 Radial†	64696.4	70411.0	[20000] ug/L	08:37:46
2	Sc 361.383	887371.4	887371.4	96.983 %	08:38:44
2	Y 371.029	748897.5	748897.5	95.815 %	08:38:44
3	Sc Radial	4752.9	4752.9	93.5 %	08:38:31
3	Y RADIAL	4997.7	4997.7	93.22 %	08:38:31
3	Al 396.153Radial†	58284.3	62378.0	[50000] ug/L	08:38:11
3	Ca 317.933Radial†	29746.5	31807.5	[50000] ug/L	08:38:31
3	Fe 238.204 Radial†	2188.9	2327.2	[20000] ug/L	08:38:31
3	Mg 279.077 IEC†	1528.9	1631.9	[50000] ug/L	08:38:31
3	Na 589.592 Radial†	64449.0	70691.8	[20000] ug/L	08:38:11
3	Sc 361.383	878703.7	878703.7	96.035 %	08:38:49
3	Y 371.029	741616.7	741616.7	94.884 %	08:38:49

## Mean Data: S10

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	881998.2	4692.89	0.53%	96.395 %
Sc Radial	4835.6	112.08	2.32%	95.1 %
Y 371.029	744445.8	3902.23	0.52%	95.246 %
Y RADIAL	5080.5	110.05	2.17%	94.77 %
Al 396.153Radial†	61535.3	1139.20	1.85%	[50000] ug/L
Ca 317.933Radial†	31486.5	375.54	1.19%	[50000] ug/L
Fe 238.204 Radial†	2301.8	27.82	1.21%	[20000] ug/L
Mg 279.077 IEC†	1614.8	16.32	1.01%	[50000] ug/L
Na 589.592 Radial†	69866.6	1194.49	1.71%	[20000] ug/L

## Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	3	Lin Thru 0	0.0	232.7	0.00000	0.999997	
Al 396.153Radial	3	Lin Thru 0	0.0	1.231	0.00000	0.999995	
As 188.979	3	Lin Thru 0	0.0	2.839	0.00000	0.999998	
B 249.677	3	Lin Thru 0	0.0	48.82	0.00000	0.999975	
Ba 233.527	3	Lin Thru 0	0.0	137.2	0.00000	0.999999	
Be 313.107	3	Lin Thru 0	0.0	2964	0.00000	0.999999	
Ca 317.933Radial	3	Lin Thru 0	0.0	0.6301	0.00000	0.999995	
Cd 226.502	3	Lin Thru 0	0.0	106.3	0.00000	0.999998	
Co 228.616	3	Lin Thru 0	0.0	53.50	0.00000	0.999988	
Cr 267.716	3	Lin Thru 0	0.0	99.85	0.00000	0.999999	
Cu 324.752	3	Lin Thru 0	0.0	337.9	0.00000	0.999998	
Fe 238.204 Radia	2	Lin Thru 0	0.0	0.1155	0.00000	0.999978	
K 766.490 Radial	3	Lin Thru 0	0.0	5.190	0.00000	0.999902	

Mg	279.077	IEC	3	Lin Thru 0	0.0	0.0323	0.00000	0.999984
Mn	257.610		3	Lin Thru 0	0.0	952.9	0.00000	0.999995
Mo	202.031		3	Lin Thru 0	0.0	15.94	0.00000	0.999997
Na	589.592	Radia	2	Lin Thru 0	0.0	3.513	0.00000	0.999934
Ni	231.604		3	Lin Thru 0	0.0	45.70	0.00000	0.999994
P	214.914		3	Lin Thru 0	0.0	2.040	0.00000	0.999996
Pb	220.353		3	Lin Thru 0	0.0	9.659	0.00000	0.999984
S	181.975	Axial	3	Lin Thru 0	0.0	0.8754	0.00000	0.999998
Sb	206.836		3	Lin Thru 0	0.0	3.375	0.00000	0.999999
Se	196.026		3	Lin Thru 0	0.0	1.954	0.00000	0.999988
Si	251.611		3	Lin Thru 0	0.0	34.83	0.00000	0.999994
Sn	189.927		3	Lin Thru 0	0.0	6.746	0.00000	1.000000
Sr	421.552		3	Lin Thru 0	0.0	150.8	0.00000	0.999909
Ti	334.940		3	Lin Thru 0	0.0	638.3	0.00000	1.000000
Tl	190.801		3	Lin Thru 0	0.0	3.651	0.00000	0.999997
U	409.014		3	Lin Thru 0	0.0	33.75	0.00000	0.999674
V	292.402		3	Lin Thru 0	0.0	159.3	0.00000	0.999995
Zn	213.857		3	Lin Thru 0	0.0	121.7	0.00000	0.999999
SiO2			3	Lin Thru 0	0.0	16.15	0.00000	1.000000



Sequence No.: 6

Sample ID: ICV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 9

Date Collected: 1/5/2010 08:41:01

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	4979.9	4979.9	97.9 %		08:42:54
1	Y RADIAL	5228.0	5228.0	97.52 %		08:42:54
1	Al 396.153Radial†	6067.3	6215.0	5024.4 ug/L	5024.4 ppb	08:42:54
1	Ca 317.933Radial†	3122.4	3170.2	5031.2 ug/L	5031.2 ppb	08:43:14
1	Fe 238.204 Radial†	591.5	589.3	5119.4 ug/L	5119.4 ppb	08:43:14
1	K 766.490 Radial†	15850.8	12854.5	2471.1 ug/L	2471.1 ppb	08:42:54
1	Mg 279.077 IEC†	169.2	168.9	5228.9 ug/L	5228.9 ppb	08:43:14
1	Na 589.592 Radial†	6838.8	8721.1	2482.2 ug/L	2482.2 ppb	08:42:54
1	Sr 421.552†	76870.0	78486.9	520.46 ug/L	520.46 ppb	08:42:54
1	Sc 361.383	903412.5	903412.5	98.736 %		08:44:12
1	Y 371.029	767729.8	767729.8	98.225 %		08:44:12
1	Ag 328.068†	60680.6	60944.7	265.15 ug/L	265.15 ppb	08:44:12
1	As 188.979†	1334.8	1383.1	491.51 ug/L	491.51 ppb	08:44:32
1	B 249.677†	24726.7	25756.7	525.57 ug/L	525.57 ppb	08:44:12
1	Ba 233.527†	70420.8	71313.8	521.01 ug/L	521.01 ppb	08:44:12
1	Be 313.107†	773370.0	787646.6	266.77 ug/L	266.77 ppb	08:44:12
1	Cd 226.502†	53373.4	54307.4	510.62 ug/L	510.62 ppb	08:44:12
1	Co 228.616†	26819.4	27251.8	509.75 ug/L	509.75 ppb	08:44:32
1	Cr 267.716†	49246.5	49760.8	499.20 ug/L	499.20 ppb	08:44:12
1	Cu 324.752†	180551.4	174764.7	517.40 ug/L	517.40 ppb	08:44:12
1	Mn 257.610†	495037.0	500706.8	525.87 ug/L	525.87 ppb	08:44:12
1	Mo 202.031†	8655.0	8742.5	548.99 ug/L	548.99 ppb	08:44:32
1	Ni 231.604†	22989.5	23166.4	506.63 ug/L	506.63 ppb	08:44:32
1	P 214.914†	5430.3	5247.3	2494.4 ug/L	2494.4 ppb	08:44:32
1	Pb 220.353†	4786.7	4948.7	514.00 ug/L	514.00 ppb	08:44:32
1	S 181.975 Axial†	2241.7	2208.0	2521.2 ug/L	2521.2 ppb	08:44:32
1	Sb 206.836†	1719.0	1700.3	512.99 ug/L	512.99 ppb	08:44:32
1	Se 196.026†	5040.3	5140.1	2647.1 ug/L	2647.1 ppb	08:44:32
1	Si 251.611†	170100.3	171616.3	4915.6 ug/L	4915.6 ppb	08:44:12
1	Sn 189.927†	3625.0	3667.3	544.24 ug/L	544.24 ppb	08:44:32
1	Ti 334.940†	317233.2	323087.7	506.01 ug/L	506.01 ppb	08:44:12
1	Tl 190.801†	1891.2	1961.3	540.51 ug/L	540.51 ppb	08:44:32
1	U 409.014†	14346.4	17156.3	506.77 ug/L	506.77 ppb	08:44:12
1	V 292.402†	79777.3	82598.9	526.09 ug/L	526.09 ppb	08:44:12
1	Zn 213.857†	63725.4	63683.1	518.87 ug/L	518.87 ppb	08:44:12
1	SiO2†	166801.7	168253.3	10391 ug/L	10391 ppb	08:45:29
2	Sc Radial	5000.1	5000.1	98.3 %		08:43:19
2	Y RADIAL	5223.0	5223.0	97.42 %		08:43:19
2	Al 396.153Radial†	6147.3	6271.4	5070.3 ug/L	5070.3 ppb	08:43:19
2	Ca 317.933Radial†	3135.2	3170.2	5031.4 ug/L	5031.4 ppb	08:43:39
2	Fe 238.204 Radial†	590.3	585.7	5088.2 ug/L	5088.2 ppb	08:43:39
2	K 766.490 Radial†	15740.4	12676.6	2436.9 ug/L	2436.9 ppb	08:43:19
2	Mg 279.077 IEC†	169.9	168.9	5231.3 ug/L	5231.3 ppb	08:43:39
2	Na 589.592 Radial†	6963.5	8819.6	2510.2 ug/L	2510.2 ppb	08:43:19
2	Sr 421.552†	77469.2	78778.8	522.40 ug/L	522.40 ppb	08:43:19
2	Sc 361.383	907952.9	907952.9	99.232 %		08:44:38
2	Y 371.029	771018.2	771018.2	98.646 %		08:44:38
2	Ag 328.068†	60894.8	60853.2	264.74 ug/L	264.74 ppb	08:44:38
2	As 188.979†	1325.9	1367.4	485.97 ug/L	485.97 ppb	08:44:58
2	B 249.677†	24957.7	25864.2	527.78 ug/L	527.78 ppb	08:44:38
2	Ba 233.527†	70791.1	71330.3	521.13 ug/L	521.13 ppb	08:44:38
2	Be 313.107†	777405.3	787796.2	266.82 ug/L	266.82 ppb	08:44:38
2	Cd 226.502†	53688.0	54354.0	511.06 ug/L	511.06 ppb	08:44:38
2	Co 228.616†	26745.2	27041.1	505.81 ug/L	505.81 ppb	08:44:58
2	Cr 267.716†	49355.9	49621.7	497.81 ug/L	497.81 ppb	08:44:38
2	Cu 324.752†	181329.1	174634.0	517.02 ug/L	517.02 ppb	08:44:38
2	Mn 257.610†	497285.4	500465.3	525.62 ug/L	525.62 ppb	08:44:38
2	Mo 202.031†	8632.8	8676.3	544.84 ug/L	544.84 ppb	08:44:58
2	Ni 231.604†	22956.0	23016.3	503.35 ug/L	503.35 ppb	08:44:58

2	P 214.914†	5434.4	5223.9	2483.0 ug/L	2483.0 ppb	08:44:58
2	Pb 220.353†	4801.1	4939.0	513.00 ug/L	513.00 ppb	08:44:58
2	S 181.975 Axial†	2257.5	2212.5	2526.4 ug/L	2526.4 ppb	08:44:58
2	Sb 206.836†	1730.8	1703.5	513.84 ug/L	513.84 ppb	08:44:58
2	Se 196.026†	5029.3	5103.5	2628.3 ug/L	2628.3 ppb	08:44:58
2	Si 251.611†	170941.4	171602.5	4915.3 ug/L	4915.3 ppb	08:44:38
2	Sn 189.927†	3624.3	3648.2	541.41 ug/L	541.41 ppb	08:44:58
2	Ti 334.940†	318806.4	323066.4	505.98 ug/L	505.98 ppb	08:44:38
2	Tl 190.801†	1885.9	1946.5	536.47 ug/L	536.47 ppb	08:44:58
2	U 409.014†	14488.4	17226.7	508.86 ug/L	508.86 ppb	08:44:38
2	V 292.402†	80065.9	82485.7	525.33 ug/L	525.33 ppb	08:44:38
2	Zn 213.857†	64066.0	63703.5	519.06 ug/L	519.06 ppb	08:44:38
2	SiO2†	168931.3	169554.5	10472 ug/L	10472 ppb	08:45:35
3	Sc Radial	5027.7	5027.7	98.9 %		08:43:44
3	Y RADIAL	5274.6	5274.6	98.39 %		08:43:44
3	Al 396.153Radial†	6152.1	6242.0	5046.3 ug/L	5046.3 ppb	08:43:44
3	Ca 317.933Radial†	3115.8	3133.1	4972.5 ug/L	4972.5 ppb	08:44:04
3	Fe 238.204 Radial†	586.2	578.2	5023.5 ug/L	5023.5 ppb	08:44:04
3	K 766.490 Radial†	15913.7	12764.2	2453.8 ug/L	2453.8 ppb	08:43:44
3	Mg 279.077 IEC†	171.9	170.0	5263.2 ug/L	5263.2 ppb	08:44:04
3	Na 589.592 Radial†	6982.4	8799.9	2504.6 ug/L	2504.6 ppb	08:43:44
3	Sr 421.552†	78034.2	78918.2	523.32 ug/L	523.32 ppb	08:43:44
3	Sc 361.383	902098.3	902098.3	98.592 %		08:45:04
3	Y 371.029	766505.3	766505.3	98.068 %		08:45:04
3	Ag 328.068†	60543.3	60895.0	264.90 ug/L	264.90 ppb	08:45:04
3	As 188.979†	1322.2	1372.3	487.71 ug/L	487.71 ppb	08:45:24
3	B 249.677†	24711.4	25777.6	526.01 ug/L	526.01 ppb	08:45:04
3	Ba 233.527†	70208.3	71202.2	520.19 ug/L	520.19 ppb	08:45:04
3	Be 313.107†	770704.9	786084.5	266.24 ug/L	266.24 ppb	08:45:04
3	Cd 226.502†	53181.5	54191.4	509.53 ug/L	509.53 ppb	08:45:04
3	Co 228.616†	26800.1	27271.7	510.13 ug/L	510.13 ppb	08:45:24
3	Cr 267.716†	49125.4	49710.7	498.70 ug/L	498.70 ppb	08:45:04
3	Cu 324.752†	180003.1	174475.0	516.54 ug/L	516.54 ppb	08:45:04
3	Mn 257.610†	493107.0	499479.6	524.58 ug/L	524.58 ppb	08:45:04
3	Mo 202.031†	8635.3	8735.3	548.53 ug/L	548.53 ppb	08:45:24
3	Ni 231.604†	22909.5	23119.3	505.60 ug/L	505.60 ppb	08:45:24
3	P 214.914†	5406.2	5230.8	2486.6 ug/L	2486.6 ppb	08:45:24
3	Pb 220.353†	4774.7	4943.6	513.48 ug/L	513.48 ppb	08:45:24
3	S 181.975 Axial†	2271.4	2241.4	2559.4 ug/L	2559.4 ppb	08:45:24
3	Sb 206.836†	1716.0	1699.8	512.85 ug/L	512.85 ppb	08:45:24
3	Se 196.026†	5050.9	5158.3	2656.1 ug/L	2656.1 ppb	08:45:24
3	Si 251.611†	169422.5	171179.8	4903.1 ug/L	4903.1 ppb	08:45:04
3	Sn 189.927†	3617.9	3665.4	543.95 ug/L	543.95 ppb	08:45:24
3	Ti 334.940†	316248.0	322556.5	505.17 ug/L	505.17 ppb	08:45:04
3	Tl 190.801†	1884.9	1957.8	539.52 ug/L	539.52 ppb	08:45:24
3	U 409.014†	14255.2	17085.0	504.67 ug/L	504.67 ppb	08:45:04
3	V 292.402†	79504.8	82440.2	525.10 ug/L	525.10 ppb	08:45:04
3	Zn 213.857†	63616.0	63666.1	518.74 ug/L	518.74 ppb	08:45:04
3	SiO2†	168011.1	169726.0	10482 ug/L	10482 ppb	08:45:40

## Mean Data: ICV

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	904487.9	98.853 %		0.3357			0.34%
Sc Radial	5002.6	98.4 %		0.47			0.48%
Y 371.029	768417.8	98.313 %		0.2986			0.30%
Y RADIAL	5241.9	97.77 %		0.531			0.54%
Ag 328.068†	60897.6	264.93 ug/L		0.206	264.93 ppb	0.206	0.08%
QC value within limits for Ag 328.068 Recovery = 105.97%							
Al 396.153Radial†	6242.8	5047.0 ug/L		22.98	5047.0 ppb	22.98	0.46%
QC value within limits for Al 396.153Radial Recovery = 100.94%							
As 188.979†	1374.3	488.40 ug/L		2.836	488.40 ppb	2.836	0.58%
QC value within limits for As 188.979 Recovery = 97.68%							
B 249.677†	25799.5	526.45 ug/L		1.173	526.45 ppb	1.173	0.22%
QC value within limits for B 249.677 Recovery = 105.29%							
Ba 233.527†	71282.1	520.78 ug/L		0.510	520.78 ppb	0.510	0.10%
QC value within limits for Ba 233.527 Recovery = 104.16%							
Be 313.107†	787175.8	266.61 ug/L		0.321	266.61 ppb	0.321	0.12%
QC value within limits for Be 313.107 Recovery = 106.64%							
Ca 317.933Radial†	3157.8	5011.7 ug/L		33.97	5011.7 ppb	33.97	0.68%

QC value within limits for Ca 317.933 Radial Recovery = 100.23%							
Cd	226.502†	54284.2	510.40 ug/L	0.783	510.40 ppb	0.783	0.15%
QC value within limits for Cd 226.502 Recovery = 102.08%							
Co	228.616†	27188.2	508.56 ug/L	2.395	508.56 ppb	2.395	0.47%
QC value within limits for Co 228.616 Recovery = 101.71%							
Cr	267.716†	49697.7	498.57 ug/L	0.707	498.57 ppb	0.707	0.14%
QC value within limits for Cr 267.716 Recovery = 99.71%							
Cu	324.752†	174624.6	516.99 ug/L	0.432	516.99 ppb	0.432	0.08%
QC value within limits for Cu 324.752 Recovery = 103.40%							
Fe	238.204 Radial†	584.4	5077.0 ug/L	48.90	5077.0 ppb	48.90	0.96%
QC value within limits for Fe 238.204 Radial Recovery = 101.54%							
K	766.490 Radial†	12765.1	2453.9 ug/L	17.14	2453.9 ppb	17.14	0.70%
QC value within limits for K 766.490 Radial Recovery = 98.16%							
Mg	279.077 IEC†	169.3	5241.1 ug/L	19.11	5241.1 ppb	19.11	0.36%
QC value within limits for Mg 279.077 IEC Recovery = 104.82%							
Mn	257.610†	500217.2	525.36 ug/L	0.687	525.36 ppb	0.687	0.13%
QC value within limits for Mn 257.610 Recovery = 105.07%							
Mo	202.031†	8718.0	547.45 ug/L	2.277	547.45 ppb	2.277	0.42%
QC value within limits for Mo 202.031 Recovery = 109.49%							
Na	589.592 Radial†	8780.2	2499.0 ug/L	14.83	2499.0 ppb	14.83	0.59%
QC value within limits for Na 589.592 Radial Recovery = 99.96%							
Ni	231.604†	23100.7	505.19 ug/L	1.678	505.19 ppb	1.678	0.33%
QC value within limits for Ni 231.604 Recovery = 101.04%							
P	214.914†	5234.0	2488.0 ug/L	5.83	2488.0 ppb	5.83	0.23%
QC value within limits for P 214.914 Recovery = 99.52%							
Pb	220.353†	4943.8	513.50 ug/L	0.499	513.50 ppb	0.499	0.10%
QC value within limits for Pb 220.353 Recovery = 102.70%							
S	181.975 Axial†	2220.7	2535.7 ug/L	20.72	2535.7 ppb	20.72	0.82%
QC value within limits for S 181.975 Axial Recovery = 101.43%							
Sb	206.836†	1701.2	513.23 ug/L	0.533	513.23 ppb	0.533	0.10%
QC value within limits for Sb 206.836 Recovery = 102.65%							
Se	196.026†	5134.0	2643.8 ug/L	14.21	2643.8 ppb	14.21	0.54%
QC value within limits for Se 196.026 Recovery = 105.75%							
Si	251.611†	171466.2	4911.3 ug/L	7.14	4911.3 ppb	7.14	0.15%
QC value within limits for Si 251.611 Recovery = 98.23%							
Sn	189.927†	3660.3	543.20 ug/L	1.556	543.20 ppb	1.556	0.29%
QC value within limits for Sn 189.927 Recovery = 108.64%							
Sr	421.552†	78728.0	522.06 ug/L	1.460	522.06 ppb	1.460	0.28%
QC value within limits for Sr 421.552 Recovery = 104.41%							
Ti	334.940†	322903.5	505.72 ug/L	0.472	505.72 ppb	0.472	0.09%
QC value within limits for Ti 334.940 Recovery = 101.14%							
Tl	190.801†	1955.2	538.83 ug/L	2.109	538.83 ppb	2.109	0.39%
QC value within limits for Tl 190.801 Recovery = 107.77%							
U	409.014†	17156.0	506.77 ug/L	2.096	506.77 ppb	2.096	0.41%
QC value within limits for U 409.014 Recovery = 101.35%							
V	292.402†	82508.3	525.50 ug/L	0.518	525.50 ppb	0.518	0.10%
QC value within limits for V 292.402 Recovery = 105.10%							
Zn	213.857†	63684.2	518.89 ug/L	0.161	518.89 ppb	0.161	0.03%
QC value within limits for Zn 213.857 Recovery = 103.78%							
SiO2†		169177.9	10449 ug/L	49.9	10449 ppb	49.9	0.48%
QC value within limits for SiO2 Recovery = 97.70%							
All analyte(s) passed QC.							

Sequence No.: 7

Sample ID: ICB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 10

Date Collected: 1/5/2010 08:47:50

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	5293.4	5293.4	104 %		08:49:43
1	Y RADIAL	5619.9	5619.9	104.8 %		08:49:43
1	Al 396.153Radial†	-28.0	-7.3	-5.9511 ug/L	-5.9511 ppb	08:49:43
1	Ca 317.933Radial†	21.7	2.6	4.1221 ug/L	4.1221 ppb	08:50:03
1	Fe 238.204 Radial†	15.5	0.2	1.9790 ug/L	1.9790 ppb	08:50:03
1	K 766.490 Radial†	3410.6	-54.9	-10.570 ug/L	-10.570 ppb	08:49:43
1	Mg 279.077 IEC†	3.8	-0.2	-6.0303 ug/L	-6.0303 ppb	08:50:03
1	Na 589.592 Radial†	-1791.5	16.8	4.7833 ug/L	4.7833 ppb	08:49:43
1	Sr 421.552†	10.8	3.0	0.0196 ug/L	0.0196 ppb	08:49:43
1	Sc 361.383	906750.7	906750.7	99.101 %		08:51:00
1	Y 371.029	775288.8	775288.8	99.192 %		08:51:00
1	Ag 328.068†	524.0	15.9	0.0702 ug/L	0.0702 ppb	08:51:05
1	As 188.979†	-33.2	-2.3	-0.8060 ug/L	-0.8060 ppb	08:51:25
1	B 249.677†	-485.5	223.5	4.5780 ug/L	4.5780 ppb	08:51:05
1	Ba 233.527†	10.6	2.1	0.0142 ug/L	0.0142 ppb	08:51:25
1	Be 313.107†	-4305.3	31.0	0.0104 ug/L	0.0104 ppb	08:51:05
1	Cd 226.502†	-243.2	5.2	0.0488 ug/L	0.0488 ppb	08:51:25
1	Co 228.616†	-99.3	-11.3	-0.2097 ug/L	-0.2097 ppb	08:51:25
1	Cr 267.716†	103.8	-11.4	-0.1143 ug/L	-0.1143 ppb	08:51:05
1	Cu 324.752†	8047.8	22.5	0.0668 ug/L	0.0668 ppb	08:51:05
1	Mn 257.610†	633.2	-29.1	-0.0302 ug/L	-0.0302 ppb	08:51:05
1	Mo 202.031†	27.5	4.5	0.2795 ug/L	0.2795 ppb	08:51:25
1	Ni 231.604†	131.1	15.0	0.3280 ug/L	0.3280 ppb	08:51:25
1	P 214.914†	260.3	10.1	4.9086 ug/L	4.9086 ppb	08:51:25
1	Pb 220.353†	-72.7	27.4	2.8364 ug/L	2.8364 ppb	08:51:25
1	S 181.975 Axial†	62.8	1.0	1.1669 ug/L	1.1669 ppb	08:51:25
1	Sb 206.836†	42.3	1.9	0.5754 ug/L	0.5754 ppb	08:51:25
1	Se 196.026†	-29.4	5.7	2.9019 ug/L	2.9019 ppb	08:51:25
1	Si 251.611†	695.7	40.3	1.1575 ug/L	1.1575 ppb	08:51:25
1	Sn 189.927†	0.3	-3.9	-0.5728 ug/L	-0.5728 ppb	08:51:25
1	Ti 334.940†	-1784.8	-8.0	-0.0103 ug/L	-0.0103 ppb	08:51:05
1	Tl 190.801†	-38.6	7.0	1.9234 ug/L	1.9234 ppb	08:51:25
1	U 409.014†	-2751.3	-150.1	-4.4468 ug/L	-4.4468 ppb	08:51:00
1	V 292.402†	-1891.2	-108.1	-0.6839 ug/L	-0.6839 ppb	08:51:05
1	Zn 213.857†	937.2	87.5	0.7171 ug/L	0.7171 ppb	08:51:25
1	SiO2†	681.5	3.7	0.2287 ug/L	0.2287 ppb	08:52:31
2	Sc Radial	4979.5	4979.5	97.9 %		08:50:08
2	Y RADIAL	5270.2	5270.2	98.30 %		08:50:08
2	Al 396.153Radial†	0.1	19.7	15.965 ug/L	15.965 ppb	08:50:08
2	Ca 317.933Radial†	16.2	-1.7	-2.6775 ug/L	-2.6775 ppb	08:50:28
2	Fe 238.204 Radial†	15.1	0.7	6.3744 ug/L	6.3744 ppb	08:50:28
2	K 766.490 Radial†	3565.0	309.3	59.599 ug/L	59.599 ppb	08:50:08
2	Mg 279.077 IEC†	3.6	-0.2	-5.0696 ug/L	-5.0696 ppb	08:50:28
2	Na 589.592 Radial†	-1723.1	-21.9	-6.2432 ug/L	-6.2432 ppb	08:50:08
2	Sr 421.552†	9.1	1.8	0.0120 ug/L	0.0120 ppb	08:50:08
2	Sc 361.383	961209.9	961209.9	105.05 %		08:51:30
2	Y 371.029	821420.3	821420.3	105.09 %		08:51:30
2	Ag 328.068†	532.7	-5.7	-0.0201 ug/L	-0.0201 ppb	08:51:35
2	As 188.979†	-33.3	-0.4	-0.1590 ug/L	-0.1590 ppb	08:51:55
2	B 249.677†	-470.9	265.2	5.4296 ug/L	5.4296 ppb	08:51:35
2	Ba 233.527†	17.8	8.4	0.0624 ug/L	0.0624 ppb	08:51:55
2	Be 313.107†	-4324.7	258.7	0.0875 ug/L	0.0875 ppb	08:51:35
2	Cd 226.502†	-224.6	36.7	0.3448 ug/L	0.3448 ppb	08:51:55
2	Co 228.616†	-84.1	8.9	0.1666 ug/L	0.1666 ppb	08:51:55
2	Cr 267.716†	161.7	37.7	0.3790 ug/L	0.3790 ppb	08:51:35
2	Cu 324.752†	8113.0	-375.5	-1.1108 ug/L	-1.1108 ppb	08:51:35
2	Mn 257.610†	655.9	-43.7	-0.0451 ug/L	-0.0451 ppb	08:51:35
2	Mo 202.031†	24.4	-0.0	-0.0003 ug/L	-0.0003 ppb	08:51:55
2	Ni 231.604†	111.4	-11.3	-0.2474 ug/L	-0.2474 ppb	08:51:55

2	P 214.914†	252.2	-12.5	-5.9491 ug/L	-5.9491 ppb	08:51:55
2	Pb 220.353†	-88.5	16.5	1.7139 ug/L	1.7139 ppb	08:51:55
2	S 181.975 Axial†	67.3	1.7	1.9123 ug/L	1.9123 ppb	08:51:55
2	Sb 206.836†	46.3	3.4	0.9736 ug/L	0.9736 ppb	08:51:55
2	Se 196.026†	-38.2	-1.1	-0.5240 ug/L	-0.5240 ppb	08:51:55
2	Si 251.611†	672.9	-21.2	-0.6262 ug/L	-0.6262 ppb	08:51:55
2	Sn 189.927†	-0.9	-5.0	-0.7399 ug/L	-0.7399 ppb	08:51:55
2	Ti 334.940†	-1826.6	54.3	0.0850 ug/L	0.0850 ppb	08:51:35
2	Tl 190.801†	-50.8	-2.4	-0.6621 ug/L	-0.6621 ppb	08:51:55
2	U 409.014†	-2776.1	-16.4	-0.4865 ug/L	-0.4865 ppb	08:51:30
2	V 292.402†	-1819.2	68.5	0.4279 ug/L	0.4279 ppb	08:51:35
2	Zn 213.857†	923.6	21.0	0.1752 ug/L	0.1752 ppb	08:51:55
2	SiO2†	688.3	-28.8	-1.8236 ug/L	-1.8236 ppb	08:52:36
3	Sc Radial	5055.6	5055.6	99.4 %		08:50:33
3	Y RADIAL	5317.9	5317.9	99.19 %		08:50:33
3	Al 396.153Radial†	-16.9	2.5	2.0152 ug/L	2.0152 ppb	08:50:33
3	Ca 317.933Radial†	30.7	12.6	20.059 ug/L	20.059 ppb	08:50:53
3	Fe 238.204 Radial†	13.2	-1.4	-12.142 ug/L	-12.142 ppb	08:50:53
3	K 766.490 Radial†	3622.7	312.6	60.221 ug/L	60.221 ppb	08:50:33
3	Mg 279.077 IEC†	2.5	-1.3	-41.094 ug/L	-41.094 ppb	08:50:53
3	Na 589.592 Radial†	-1706.9	20.9	5.9488 ug/L	5.9488 ppb	08:50:33
3	Sr 421.552†	-10.5	-18.0	-0.1196 ug/L	-0.1196 ppb	08:50:33
3	Sc 361.383	906282.4	906282.4	99.050 %		08:52:01
3	Y 371.029	775521.4	775521.4	99.222 %		08:52:01
3	Ag 328.068†	437.2	-71.4	-0.3102 ug/L	-0.3102 ppb	08:52:06
3	As 188.979†	-38.7	-7.8	-2.7580 ug/L	-2.7580 ppb	08:52:26
3	B 249.677†	-500.9	207.7	4.2558 ug/L	4.2558 ppb	08:52:06
3	Ba 233.527†	33.3	25.1	0.1831 ug/L	0.1831 ppb	08:52:26
3	Be 313.107†	-4387.8	-54.5	-0.0183 ug/L	-0.0183 ppb	08:52:06
3	Cd 226.502†	-240.7	7.5	0.0721 ug/L	0.0721 ppb	08:52:26
3	Co 228.616†	-88.8	-0.6	-0.0112 ug/L	-0.0112 ppb	08:52:26
3	Cr 267.716†	71.6	-43.9	-0.4395 ug/L	-0.4395 ppb	08:52:06
3	Cu 324.752†	8170.4	150.6	0.4450 ug/L	0.4450 ppb	08:52:06
3	Mn 257.610†	678.3	16.8	0.0172 ug/L	0.0172 ppb	08:52:06
3	Mo 202.031†	26.9	3.9	0.2451 ug/L	0.2451 ppb	08:52:26
3	Ni 231.604†	115.4	-0.8	-0.0179 ug/L	-0.0179 ppb	08:52:26
3	P 214.914†	266.9	16.8	8.1879 ug/L	8.1879 ppb	08:52:26
3	Pb 220.353†	-94.6	5.2	0.5421 ug/L	0.5421 ppb	08:52:26
3	S 181.975 Axial†	60.9	-0.9	-1.0050 ug/L	-1.0050 ppb	08:52:26
3	Sb 206.836†	47.4	7.2	2.1286 ug/L	2.1286 ppb	08:52:26
3	Se 196.026†	-40.3	-5.4	-2.7816 ug/L	-2.7816 ppb	08:52:26
3	Si 251.611†	684.3	29.1	0.8132 ug/L	0.8132 ppb	08:52:26
3	Sn 189.927†	0.1	-4.0	-0.5960 ug/L	-0.5960 ppb	08:52:26
3	Ti 334.940†	-1742.5	33.8	0.0539 ug/L	0.0539 ppb	08:52:06
3	Tl 190.801†	-41.2	4.3	1.1873 ug/L	1.1873 ppb	08:52:26
3	U 409.014†	-2589.6	11.8	0.3530 ug/L	0.3530 ppb	08:52:01
3	V 292.402†	-1727.8	55.8	0.3557 ug/L	0.3557 ppb	08:52:06
3	Zn 213.857†	917.8	68.4	0.5635 ug/L	0.5635 ppb	08:52:26
3	SiO2†	716.5	39.3	2.3864 ug/L	2.3864 ppb	08:52:41

## Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	924747.6	101.07 %	3.451			3.41%
Sc Radial	5109.5	100 %	3.2			3.20%
Y 371.029	790743.5	101.17 %	3.399			3.36%
Y RADIAL	5402.7	100.8 %	3.54			3.51%
Ag 328.068†	-20.4	-0.0867 ug/L	0.19876	-0.0867 ppb	0.19876	229.28%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	4.9	4.0097 ug/L	11.09344	4.0097 ppb	11.09344	276.66%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-3.5	-1.2410 ug/L	1.35304	-1.2410 ppb	1.35304	109.03%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	232.1	4.7545 ug/L	0.60646	4.7545 ppb	0.60646	12.76%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	11.9	0.0866 ug/L	0.08704	0.0866 ppb	0.08704	100.55%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	78.4	0.0265 ug/L	0.05468	0.0265 ppb	0.05468	206.03%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	4.5	7.1678 ug/L	11.67022	7.1678 ppb	11.67022	162.81%

QC value within limits for Ca 317.933 Radial Recovery = Not calculated						
Cd 226.502†	16.5	0.1552 ug/L	0.16457	0.1552 ppb	0.16457	106.02%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-1.0	-0.0181 ug/L	0.18824	-0.0181 ppb	0.18824	>999.9%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	-5.9	-0.0582 ug/L	0.41213	-0.0582 ppb	0.41213	707.65%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	-67.5	-0.1997 ug/L	0.81140	-0.1997 ppb	0.81140	406.31%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	-0.1	-1.2628 ug/L	9.67448	-1.2628 ppb	9.67448	766.09%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	189.0	36.417 ug/L	40.6931	36.417 ppb	40.6931	111.74%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	-0.6	-17.398 ug/L	20.5268	-17.398 ppb	20.5268	117.98%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	-18.7	-0.0194 ug/L	0.03253	-0.0194 ppb	0.03253	167.57%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	2.8	0.1747 ug/L	0.15257	0.1747 ppb	0.15257	87.32%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	5.3	1.4963 ug/L	6.72790	1.4963 ppb	6.72790	449.64%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	1.0	0.0209 ug/L	0.28969	0.0209 ppb	0.28969	>999.9%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	4.8	2.3825 ug/L	7.39931	2.3825 ppb	7.39931	310.57%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	16.4	1.6975 ug/L	1.14724	1.6975 ppb	1.14724	67.58%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	0.6	0.6914 ug/L	1.51566	0.6914 ppb	1.51566	219.23%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	4.2	1.2259 ug/L	0.80672	1.2259 ppb	0.80672	65.81%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-0.3	-0.1346 ug/L	2.86169	-0.1346 ppb	2.86169	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	16.1	0.4481 ug/L	0.94622	0.4481 ppb	0.94622	211.14%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	-4.3	-0.6362 ug/L	0.09050	-0.6362 ppb	0.09050	14.22%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	-4.4	-0.0293 ug/L	0.07825	-0.0293 ppb	0.07825	266.88%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	26.7	0.0429 ug/L	0.04858	0.0429 ppb	0.04858	113.31%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	3.0	0.8162 ug/L	1.33206	0.8162 ppb	1.33206	163.20%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-51.5	-1.5268 ug/L	2.56340	-1.5268 ppb	2.56340	167.89%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	5.4	0.0332 ug/L	0.62208	0.0332 ppb	0.62208	>999.9%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	59.0	0.4853 ug/L	0.27927	0.4853 ppb	0.27927	57.55%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	4.7	0.2638 ug/L	2.10523	0.2638 ppb	2.10523	798.02%
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: 1/5/2010 08:54:53

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	5057.5	5057.5	99.5 %		08:56:46
1	Y RADIAL	5327.2	5327.2	99.37 %		08:56:46
1	Al 396.153Radial†	234.4	255.2	206.87 ug/L	206.87 ppb	08:56:46
1	Ca 317.933Radial†	145.6	128.1	203.36 ug/L	203.36 ppb	08:57:06
1	Fe 238.204 Radial†	25.8	11.2	97.320 ug/L	97.320 ppb	08:57:06
1	K 766.490 Radial†	4076.9	767.8	147.72 ug/L	147.72 ppb	08:56:46
1	Mg 279.077 IEC†	13.6	9.8	303.65 ug/L	303.65 ppb	08:57:06
1	Na 589.592 Radial†	-717.6	1016.3	289.25 ug/L	289.25 ppb	08:56:46
1	Sr 421.552†	766.4	763.1	5.0587 ug/L	5.0587 ppb	08:56:46
1	Sc 361.383	915237.9	915237.9	100.03 %		08:58:03
1	Y 371.029	781517.7	781517.7	99.989 %		08:58:03
1	Ag 328.068†	1622.3	1109.1	4.7728 ug/L	4.7728 ppb	08:58:08
1	As 188.979†	53.9	85.1	29.992 ug/L	29.992 ppb	08:58:28
1	B 249.677†	1725.9	2438.8	49.925 ug/L	49.925 ppb	08:58:08
1	Ba 233.527†	697.0	688.2	5.0291 ug/L	5.0291 ppb	08:58:28
1	Be 313.107†	10435.9	14808.3	5.0066 ug/L	5.0066 ppb	08:58:08
1	Cd 226.502†	281.5	532.0	4.9973 ug/L	4.9973 ppb	08:58:28
1	Co 228.616†	155.8	244.7	4.5897 ug/L	4.5897 ppb	08:58:28
1	Cr 267.716†	663.9	547.5	5.4777 ug/L	5.4777 ppb	08:58:08
1	Cu 324.752†	11497.5	3396.0	10.054 ug/L	10.054 ppb	08:58:08
1	Mn 257.610†	10487.3	9816.3	10.306 ug/L	10.306 ppb	08:58:08
1	Mo 202.031†	188.9	165.6	10.397 ug/L	10.397 ppb	08:58:28
1	Ni 231.604†	339.5	222.1	4.8566 ug/L	4.8566 ppb	08:58:28
1	P 214.914†	553.4	300.7	145.91 ug/L	145.91 ppb	08:58:28
1	Pb 220.353†	5.6	106.3	11.060 ug/L	11.060 ppb	08:58:28
1	S 181.975 Axial†	150.2	87.8	100.27 ug/L	100.27 ppb	08:58:28
1	Sb 206.836†	68.6	27.9	8.5218 ug/L	8.5218 ppb	08:58:28
1	Se 196.026†	32.1	67.4	34.809 ug/L	34.809 ppb	08:58:28
1	Si 251.611†	4160.4	3497.5	100.17 ug/L	100.17 ppb	08:58:08
1	Sn 189.927†	67.5	63.3	9.4102 ug/L	9.4102 ppb	08:58:28
1	Ti 334.940†	1386.8	3179.4	4.9675 ug/L	4.9675 ppb	08:58:08
1	Tl 190.801†	28.7	74.6	20.514 ug/L	20.514 ppb	08:58:28
1	U 409.014†	-943.9	1682.6	49.835 ug/L	49.835 ppb	08:58:03
1	V 292.402†	-1007.8	792.7	5.2076 ug/L	5.2076 ppb	08:58:08
1	Zn 213.857†	2060.7	1201.9	9.8156 ug/L	9.8156 ppb	08:58:28
1	SiO2†	4202.9	3517.8	217.24 ug/L	217.24 ppb	08:59:34
2	Sc Radial	5023.0	5023.0	98.8 %		08:57:11
2	Y RADIAL	5299.1	5299.1	98.84 %		08:57:11
2	Al 396.153Radial†	216.4	238.6	193.37 ug/L	193.37 ppb	08:57:11
2	Ca 317.933Radial†	146.2	129.8	205.99 ug/L	205.99 ppb	08:57:31
2	Fe 238.204 Radial†	26.7	12.4	107.29 ug/L	107.29 ppb	08:57:31
2	K 766.490 Radial†	4274.7	996.3	191.73 ug/L	191.73 ppb	08:57:11
2	Mg 279.077 IEC†	16.8	13.2	407.44 ug/L	407.44 ppb	08:57:31
2	Na 589.592 Radial†	-683.1	1046.2	297.78 ug/L	297.78 ppb	08:57:11
2	Sr 421.552†	754.2	756.1	5.0121 ug/L	5.0121 ppb	08:57:11
2	Sc 361.383	907827.6	907827.6	99.218 %		08:58:33
2	Y 371.029	776531.7	776531.7	99.351 %		08:58:33
2	Ag 328.068†	1505.5	1004.5	4.3281 ug/L	4.3281 ppb	08:58:38
2	As 188.979†	54.9	86.6	30.509 ug/L	30.509 ppb	08:58:59
2	B 249.677†	1744.7	2471.8	50.600 ug/L	50.600 ppb	08:58:38
2	Ba 233.527†	704.8	701.8	5.1292 ug/L	5.1292 ppb	08:58:59
2	Be 313.107†	10481.7	14939.7	5.0510 ug/L	5.0510 ppb	08:58:38
2	Cd 226.502†	275.9	528.6	4.9651 ug/L	4.9651 ppb	08:58:59
2	Co 228.616†	174.7	265.1	4.9708 ug/L	4.9708 ppb	08:58:59
2	Cr 267.716†	627.9	516.7	5.1698 ug/L	5.1698 ppb	08:58:38
2	Cu 324.752†	11448.5	3440.4	10.186 ug/L	10.186 ppb	08:58:38
2	Mn 257.610†	10496.5	9911.1	10.404 ug/L	10.404 ppb	08:58:38
2	Mo 202.031†	187.0	165.2	10.377 ug/L	10.377 ppb	08:58:59
2	Ni 231.604†	370.1	255.6	5.5911 ug/L	5.5911 ppb	08:58:59

2	P 214.914†	543.3	295.0	143.11 ug/L	143.11 ppb	08:58:59
2	Pb 220.353†	10.1	111.0	11.540 ug/L	11.540 ppb	08:58:59
2	S 181.975 Axial†	143.5	82.3	93.978 ug/L	93.978 ppb	08:58:59
2	Sb 206.836†	74.4	34.2	10.414 ug/L	10.414 ppb	08:58:59
2	Se 196.026†	27.9	63.4	32.792 ug/L	32.792 ppb	08:58:59
2	Si 251.611†	4190.4	3561.7	101.99 ug/L	101.99 ppb	08:58:38
2	Sn 189.927†	70.4	66.8	9.9267 ug/L	9.9267 ppb	08:58:59
2	Ti 334.940†	1402.7	3206.7	5.0108 ug/L	5.0108 ppb	08:58:38
2	Tl 190.801†	36.5	82.8	22.743 ug/L	22.743 ppb	08:58:59
2	U 409.014†	-955.3	1663.4	49.267 ug/L	49.267 ppb	08:58:33
2	V 292.402†	-966.1	826.5	5.4194 ug/L	5.4194 ppb	08:58:38
2	Zn 213.857†	2069.6	1227.7	10.019 ug/L	10.019 ppb	08:58:59
2	SiO2†	4128.3	3476.8	214.67 ug/L	214.67 ppb	08:59:39
3	Sc Radial	4964.9	4964.9	97.6 %		08:57:36
3	Y RADIAL	5253.6	5253.6	97.99 %		08:57:36
3	Al 396.153Radial†	231.4	256.6	207.95 ug/L	207.95 ppb	08:57:36
3	Ca 317.933Radial†	147.5	132.8	210.83 ug/L	210.83 ppb	08:57:56
3	Fe 238.204 Radial†	23.2	9.1	78.846 ug/L	78.846 ppb	08:57:56
3	K 766.490 Radial†	4188.5	958.6	184.47 ug/L	184.47 ppb	08:57:36
3	Mg 279.077 IEC†	12.2	8.6	265.30 ug/L	265.30 ppb	08:57:56
3	Na 589.592 Radial†	-652.5	1069.5	304.41 ug/L	304.41 ppb	08:57:36
3	Sr 421.552†	751.0	761.8	5.0500 ug/L	5.0500 ppb	08:57:36
3	Sc 361.383	918143.8	918143.8	100.35 %		08:59:04
3	Y 371.029	785430.7	785430.7	100.49 %		08:59:04
3	Ag 328.068†	1659.2	1140.7	4.8974 ug/L	4.8974 ppb	08:59:09
3	As 188.979†	41.0	72.1	25.413 ug/L	25.413 ppb	08:59:29
3	B 249.677†	1823.7	2530.8	51.813 ug/L	51.813 ppb	08:59:09
3	Ba 233.527†	690.9	679.9	4.9692 ug/L	4.9692 ppb	08:59:29
3	Be 313.107†	10518.8	14858.0	5.0233 ug/L	5.0233 ppb	08:59:09
3	Cd 226.502†	276.5	526.2	4.9442 ug/L	4.9442 ppb	08:59:29
3	Co 228.616†	168.3	256.7	4.8160 ug/L	4.8160 ppb	08:59:29
3	Cr 267.716†	617.6	499.3	4.9931 ug/L	4.9931 ppb	08:59:09
3	Cu 324.752†	11482.3	3344.5	9.9006 ug/L	9.9006 ppb	08:59:09
3	Mn 257.610†	10491.8	9787.6	10.274 ug/L	10.274 ppb	08:59:09
3	Mo 202.031†	193.2	169.2	10.625 ug/L	10.625 ppb	08:59:29
3	Ni 231.604†	337.8	219.2	4.7946 ug/L	4.7946 ppb	08:59:29
3	P 214.914†	556.9	302.4	146.81 ug/L	146.81 ppb	08:59:29
3	Pb 220.353†	12.3	113.0	11.760 ug/L	11.760 ppb	08:59:29
3	S 181.975 Axial†	145.6	82.7	94.480 ug/L	94.480 ppb	08:59:29
3	Sb 206.836†	86.9	45.9	13.884 ug/L	13.884 ppb	08:59:29
3	Se 196.026†	23.9	59.1	30.537 ug/L	30.537 ppb	08:59:29
3	Si 251.611†	4204.2	3528.0	101.02 ug/L	101.02 ppb	08:59:09
3	Sn 189.927†	71.6	67.2	9.9852 ug/L	9.9852 ppb	08:59:29
3	Ti 334.940†	1388.1	3176.4	4.9599 ug/L	4.9599 ppb	08:59:09
3	Tl 190.801†	26.1	72.0	19.784 ug/L	19.784 ppb	08:59:29
3	U 409.014†	-688.8	1939.8	57.460 ug/L	57.460 ppb	08:59:04
3	V 292.402†	-939.6	863.9	5.6748 ug/L	5.6748 ppb	08:59:09
3	Zn 213.857†	2049.4	1184.1	9.6721 ug/L	9.6721 ppb	08:59:29
3	SiO2†	4168.4	3470.1	214.25 ug/L	214.25 ppb	08:59:44

## Mean Data: PQL

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	913736.4	99.864 %		0.5814			0.58%
Sc Radial	5015.1	98.6 %		0.92			0.93%
Y 371.029	781160.0	99.943 %		0.5707			0.57%
Y RADIAL	5293.3	98.73 %		0.692			0.70%
Ag 328.068†	1084.8	4.6661 ug/L		0.29928	4.6661 ppb	0.29928	6.41%
QC value within limits for Ag 328.068 Recovery = 93.32%							
Al 396.153Radial†	250.2	202.73 ug/L		8.122	202.73 ppb	8.122	4.01%
QC value within limits for Al 396.153Radial Recovery = 101.36%							
As 188.979†	81.3	28.638 ug/L		2.8049	28.638 ppb	2.8049	9.79%
QC value within limits for As 188.979 Recovery = 95.46%							
B 249.677†	2480.5	50.779 ug/L		0.9566	50.779 ppb	0.9566	1.88%
QC value within limits for B 249.677 Recovery = 101.56%							
Ba 233.527†	690.0	5.0425 ug/L		0.08083	5.0425 ppb	0.08083	1.60%
QC value within limits for Ba 233.527 Recovery = 100.85%							
Be 313.107†	14868.7	5.0270 ug/L		0.02243	5.0270 ppb	0.02243	0.45%
QC value within limits for Be 313.107 Recovery = 100.54%							
Ca 317.933Radial†	130.3	206.73 ug/L		3.790	206.73 ppb	3.790	1.83%



QC value within limits for Ca 317.933 Radial Recovery = 103.36%							
Cd 226.502†	528.9	4.9689 ug/L	0.02673	4.9689 ppb	0.02673	0.54%	
QC value within limits for Cd 226.502 Recovery = 99.38%							
Co 228.616†	255.5	4.7922 ug/L	0.19163	4.7922 ppb	0.19163	4.00%	
QC value within limits for Co 228.616 Recovery = 95.84%							
Cr 267.716†	521.2	5.2135 ug/L	0.24526	5.2135 ppb	0.24526	4.70%	
QC value within limits for Cr 267.716 Recovery = 104.27%							
Cu 324.752†	3393.6	10.047 ug/L	0.1428	10.047 ppb	0.1428	1.42%	
QC value within limits for Cu 324.752 Recovery = 100.47%							
Fe 238.204 Radial†	10.9	94.485 ug/L	14.4327	94.485 ppb	14.4327	15.28%	
QC value within limits for Fe 238.204 Radial Recovery = 94.49%							
K 766.490 Radial†	907.6	174.64 ug/L	23.594	174.64 ppb	23.594	13.51%	
QC value within limits for K 766.490 Radial Recovery = 116.43%							
Mg 279.077 IEC†	10.5	325.46 ug/L	73.537	325.46 ppb	73.537	22.59%	
QC value within limits for Mg 279.077 IEC Recovery = 108.49%							
Mn 257.610†	9838.4	10.328 ug/L	0.0678	10.328 ppb	0.0678	0.66%	
QC value within limits for Mn 257.610 Recovery = 103.28%							
Mo 202.031†	166.7	10.466 ug/L	0.1373	10.466 ppb	0.1373	1.31%	
QC value within limits for Mo 202.031 Recovery = 104.66%							
Na 589.592 Radial†	1044.0	297.14 ug/L	7.600	297.14 ppb	7.600	2.56%	
QC value within limits for Na 589.592 Radial Recovery = 99.05%							
Ni 231.604†	232.3	5.0808 ug/L	0.44303	5.0808 ppb	0.44303	8.72%	
QC value within limits for Ni 231.604 Recovery = 101.62%							
P 214.914†	299.4	145.28 ug/L	1.933	145.28 ppb	1.933	1.33%	
QC value within limits for P 214.914 Recovery = 96.85%							
Pb 220.353†	110.1	11.453 ug/L	0.3576	11.453 ppb	0.3576	3.12%	
QC value within limits for Pb 220.353 Recovery = 114.53%							
S 181.975 Axial†	84.3	96.243 ug/L	3.4968	96.243 ppb	3.4968	3.63%	
QC value within limits for S 181.975 Axial Recovery = 96.24%							
Sb 206.836†	36.0	10.940 ug/L	2.7194	10.940 ppb	2.7194	24.86%	
QC value within limits for Sb 206.836 Recovery = 109.40%							
Se 196.026†	63.3	32.712 ug/L	2.1371	32.712 ppb	2.1371	6.53%	
QC value within limits for Se 196.026 Recovery = 109.04%							
Si 251.611†	3529.1	101.06 ug/L	0.915	101.06 ppb	0.915	0.91%	
QC value within limits for Si 251.611 Recovery = 101.06%							
Sn 189.927†	65.8	9.7740 ug/L	0.31645	9.7740 ppb	0.31645	3.24%	
QC value within limits for Sn 189.927 Recovery = 97.74%							
Sr 421.552†	760.3	5.0403 ug/L	0.02477	5.0403 ppb	0.02477	0.49%	
QC value within limits for Sr 421.552 Recovery = 100.81%							
Ti 334.940†	3187.5	4.9794 ug/L	0.02744	4.9794 ppb	0.02744	0.55%	
QC value within limits for Ti 334.940 Recovery = 99.59%							
Tl 190.801†	76.5	21.013 ug/L	1.5414	21.013 ppb	1.5414	7.34%	
QC value within limits for Tl 190.801 Recovery = 105.07%							
U 409.014†	1761.9	52.188 ug/L	4.5752	52.188 ppb	4.5752	8.77%	
QC value within limits for U 409.014 Recovery = 104.38%							
V 292.402†	827.7	5.4339 ug/L	0.23395	5.4339 ppb	0.23395	4.31%	
QC value within limits for V 292.402 Recovery = 108.68%							
Zn 213.857†	1204.6	9.8354 ug/L	0.17410	9.8354 ppb	0.17410	1.77%	
QC value within limits for Zn 213.857 Recovery = 98.35%							
SiO2†	3488.2	215.39 ug/L	1.620	215.39 ppb	1.620	0.75%	
QC value within limits for SiO2 Recovery = 101.12%							
All analyte(s) passed QC.							

Sequence No.: 9  
 Sample ID: ICSEA  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 13  
 Date Collected: 1/5/2010 09:01:56  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: ICSEA

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4540.6	4540.6	89.3 %		09:03:54
1	Y RADIAL	4796.0	4796.0	89.46 %		09:03:54
1	Al 396.153Radial†	569006.8	637262.8	517590 ug/L	517590 ppb	09:03:49
1	Ca 317.933Radial†	276969.4	310165.9	492250 ug/L	492250 ppb	09:03:49
1	Fe 238.204 Radial†	19734.0	22085.9	191270 ug/L	191270 ppb	09:03:54
1	K 766.490 Radial†	2956.9	-19.8	10.986 ug/L	10.986 ppb	09:03:49
1	Mg 279.077 IEC†	14096.2	15782.7	487930 ug/L	487930 ppb	09:03:54
1	Na 589.592 Radial†	-1568.8	-19.2	-5.4527 ug/L	-5.4527 ppb	09:03:54
1	Sr 421.552†	531.8	588.1	-0.6626 ug/L	-0.6626 ppb	09:03:54
1	Sc 361.383	802482.7	802482.7	87.705 %		09:04:22
1	Y 371.029	673466.6	673466.6	86.165 %		09:04:22
1	Ag 328.068†	-10551.7	-12543.7	2.8417 ug/L	2.8417 ppb	09:04:22
1	As 188.979†	-109.2	-93.2	-3.4606 ug/L	-3.4606 ppb	09:04:42
1	B 249.677†	56.0	777.3	-9.4564 ug/L	-9.4564 ppb	09:04:22
1	Ba 233.527†	-657.3	-758.0	-0.6690 ug/L	-0.6690 ppb	09:04:42
1	Be 313.107†	-4258.0	-479.5	-0.2038 ug/L	-0.2038 ppb	09:04:22
1	Cd 226.502†	1279.2	1709.2	-3.0439 ug/L	-3.0439 ppb	09:04:42
1	Co 228.616†	-21.7	64.2	-1.5301 ug/L	-1.5301 ppb	09:04:42
1	Cr 267.716†	-83.4	-211.3	1.3210 ug/L	1.3210 ppb	09:04:42
1	Cu 324.752†	4326.8	-3164.9	0.3915 ug/L	0.3915 ppb	09:04:22
1	Mn 257.610†	-385.4	-1107.5	8.8242 ug/L	8.8242 ppb	09:04:22
1	Mo 202.031†	-232.7	-288.6	0.2289 ug/L	0.2289 ppb	09:04:42
1	Ni 231.604†	239.6	155.9	3.4102 ug/L	3.4102 ppb	09:04:42
1	P 214.914†	254.3	37.4	40.061 ug/L	40.061 ppb	09:04:42
1	Pb 220.353†	-1007.8	-1048.4	-8.1278 ug/L	-8.1278 ppb	09:04:42
1	S 181.975 Axial†	91.7	42.2	-53.608 ug/L	-53.608 ppb	09:04:42
1	Sb 206.836†	76.4	46.4	1.2701 ug/L	1.2701 ppb	09:04:42
1	Se 196.026†	-1102.5	-1221.8	-16.457 ug/L	-16.457 ppb	09:04:42
1	Si 251.611†	586.6	7.1	0.7300 ug/L	0.7300 ppb	09:04:42
1	Sn 189.927†	-396.7	-456.4	-13.717 ug/L	-13.717 ppb	09:04:42
1	Ti 334.940†	-13529.4	-13633.1	4.3070 ug/L	4.3070 ppb	09:04:22
1	Tl 190.801†	-101.6	-69.9	-5.1904 ug/L	-5.1904 ppb	09:04:42
1	U 409.014†	-1415.2	1012.6	5.9469 ug/L	5.9469 ppb	09:04:22
1	V 292.402†	524.7	2398.5	-3.1997 ug/L	-3.1997 ppb	09:04:42
1	Zn 213.857†	3417.8	3038.7	-1.6660 ug/L	-1.6660 ppb	09:04:42
1	SiO2†	514.3	-97.6	-4.8959 ug/L	-4.8959 ppb	09:05:39
2	Sc Radial	4561.8	4561.8	89.7 %		09:04:04
2	Y RADIAL	4846.9	4846.9	90.41 %		09:04:04
2	Al 396.153Radial†	556425.5	620277.0	503790 ug/L	503790 ppb	09:03:59
2	Ca 317.933Radial†	271286.1	302389.2	479910 ug/L	479910 ppb	09:03:59
2	Fe 238.204 Radial†	19833.6	22094.2	191340 ug/L	191340 ppb	09:04:04
2	K 766.490 Radial†	2879.7	-121.3	-9.1362 ug/L	-9.1362 ppb	09:03:59
2	Mg 279.077 IEC†	14140.4	15758.7	487190 ug/L	487190 ppb	09:04:04
2	Na 589.592 Radial†	-1461.1	109.0	31.033 ug/L	31.033 ppb	09:04:04
2	Sr 421.552†	541.4	596.0	-0.4954 ug/L	-0.4954 ppb	09:04:04
2	Sc 361.383	791734.4	791734.4	86.530 %		09:04:47
2	Y 371.029	664944.4	664944.4	85.074 %		09:04:47
2	Ag 328.068†	-10319.0	-12438.1	3.5001 ug/L	3.5001 ppb	09:04:47
2	As 188.979†	-102.1	-86.8	-1.1794 ug/L	-1.1794 ppb	09:05:08
2	B 249.677†	114.3	845.4	-8.0704 ug/L	-8.0704 ppb	09:04:47
2	Ba 233.527†	-688.3	-804.0	-1.0011 ug/L	-1.0011 ppb	09:05:08
2	Be 313.107†	-4086.0	-346.6	-0.1584 ug/L	-0.1584 ppb	09:04:47
2	Cd 226.502†	1264.3	1711.7	-3.0271 ug/L	-3.0271 ppb	09:05:08
2	Co 228.616†	-10.0	77.5	-1.2876 ug/L	-1.2876 ppb	09:05:08
2	Cr 267.716†	-68.5	-195.3	1.4823 ug/L	1.4823 ppb	09:05:08
2	Cu 324.752†	4191.9	-3253.8	0.1322 ug/L	0.1322 ppb	09:04:47
2	Mn 257.610†	-332.8	-1052.7	8.9027 ug/L	8.9027 ppb	09:04:47
2	Mo 202.031†	-249.7	-311.9	-1.2256 ug/L	-1.2256 ppb	09:05:08
2	Ni 231.604†	247.0	168.2	3.6787 ug/L	3.6787 ppb	09:05:08

2	P 214.914†	224.1	6.4	20.167 ug/L	20.167 ppb	09:05:08
2	Pb 220.353†	-987.4	-1040.4	-10.401 ug/L	-10.401 ppb	09:05:08
2	S 181.975 Axial†	111.5	66.5	-23.107 ug/L	-23.107 ppb	09:05:08
2	Sb 206.836†	70.8	41.1	0.0612 ug/L	0.0612 ppb	09:05:08
2	Se 196.026†	-1105.6	-1242.4	-28.142 ug/L	-28.142 ppb	09:05:08
2	Si 251.611†	560.9	-13.5	0.1668 ug/L	0.1668 ppb	09:05:08
2	Sn 189.927†	-384.0	-447.9	-13.740 ug/L	-13.740 ppb	09:05:08
2	Ti 334.940†	-13196.8	-13458.0	3.9356 ug/L	3.9356 ppb	09:04:47
2	Tl 190.801†	-99.2	-68.7	-5.2281 ug/L	-5.2281 ppb	09:05:08
2	U 409.014†	-1276.9	1150.6	10.025 ug/L	10.025 ppb	09:04:47
2	V 292.402†	625.3	2522.9	-2.4597 ug/L	-2.4597 ppb	09:05:08
2	Zn 213.857†	3440.6	3118.0	-0.9943 ug/L	-0.9943 ppb	09:05:08
2	SiO2†	624.5	37.7	3.5426 ug/L	3.5426 ppb	09:05:44
3	Sc Radial	4638.9	4638.9	91.2 %		09:04:15
3	Y RADIAL	4907.0	4907.0	91.53 %		09:04:15
3	Al 396.153Radial†	558373.0	612104.1	497150 ug/L	497150 ppb	09:04:10
3	Ca 317.933Radial†	271973.7	298117.4	473130 ug/L	473130 ppb	09:04:10
3	Fe 238.204 Radial†	20162.1	22086.9	191280 ug/L	191280 ppb	09:04:15
3	K 766.490 Radial†	3016.1	-25.0	9.2594 ug/L	9.2594 ppb	09:04:10
3	Mg 279.077 IEC†	14354.5	15731.4	486340 ug/L	486340 ppb	09:04:15
3	Na 589.592 Radial†	-1552.7	35.7	10.152 ug/L	10.152 ppb	09:04:15
3	Sr 421.552†	521.8	564.5	-0.6417 ug/L	-0.6417 ppb	09:04:15
3	Sc 361.383	797081.7	797081.7	87.115 %		09:05:13
3	Y 371.029	668879.3	668879.3	85.578 %		09:05:13
3	Ag 328.068†	-10401.5	-12452.8	3.5132 ug/L	3.5132 ppb	09:05:13
3	As 188.979†	-103.8	-87.9	-1.5793 ug/L	-1.5793 ppb	09:05:33
3	B 249.677†	-40.9	666.5	-11.726 ug/L	-11.726 ppb	09:05:13
3	Ba 233.527†	-676.9	-785.5	-0.8688 ug/L	-0.8688 ppb	09:05:33
3	Be 313.107†	-4078.8	-306.7	-0.1449 ug/L	-0.1449 ppb	09:05:13
3	Cd 226.502†	1298.5	1741.1	-2.7437 ug/L	-2.7437 ppb	09:05:33
3	Co 228.616†	-26.8	58.2	-1.6450 ug/L	-1.6450 ppb	09:05:33
3	Cr 267.716†	-65.3	-191.1	1.5228 ug/L	1.5228 ppb	09:05:33
3	Cu 324.752†	4425.9	-3017.8	0.8274 ug/L	0.8274 ppb	09:05:13
3	Mn 257.610†	-463.9	-1200.5	8.7569 ug/L	8.7569 ppb	09:05:13
3	Mo 202.031†	-238.3	-296.8	-0.2847 ug/L	-0.2847 ppb	09:05:33
3	Ni 231.604†	250.0	169.6	3.7110 ug/L	3.7110 ppb	09:05:33
3	P 214.914†	232.3	14.1	21.633 ug/L	21.633 ppb	09:05:33
3	Pb 220.353†	-1014.6	-1064.0	-14.329 ug/L	-14.329 ppb	09:05:33
3	S 181.975 Axial†	83.2	33.1	-59.969 ug/L	-59.969 ppb	09:05:33
3	Sb 206.836†	69.3	38.9	-0.4339 ug/L	-0.4339 ppb	09:05:33
3	Se 196.026†	-1117.4	-1247.4	-31.539 ug/L	-31.539 ppb	09:05:33
3	Si 251.611†	575.9	-0.7	0.5185 ug/L	0.5185 ppb	09:05:33
3	Sn 189.927†	-397.6	-460.5	-16.321 ug/L	-16.321 ppb	09:05:33
3	Ti 334.940†	-13268.2	-13437.7	3.6139 ug/L	3.6139 ppb	09:05:13
3	Tl 190.801†	-101.9	-71.0	-6.0342 ug/L	-6.0342 ppb	09:05:33
3	U 409.014†	-1296.8	1137.6	9.6495 ug/L	9.6495 ppb	09:05:13
3	V 292.402†	561.0	2444.2	-2.9508 ug/L	-2.9508 ppb	09:05:33
3	Zn 213.857†	3455.0	3107.8	-1.0470 ug/L	-1.0470 ppb	09:05:33
3	SiO2†	518.5	-88.8	-4.3255 ug/L	-4.3255 ppb	09:05:49

## Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	797099.6	87.117 %	0.5874			0.67%
Sc Radial	4580.4	90.1 %	1.02			1.13%
Y 371.029	669096.8	85.606 %	0.5457			0.64%
Y RADIAL	4849.9	90.46 %	1.037			1.15%
Ag 328.068†	-12478.2	3.2850 ug/L	0.38396	3.2850 ppb	0.38396	11.69%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	623214.6	506180 ug/L	10423.8	506180 ppb	10423.8	2.06%
QC value within limits for Al 396.153Radial Recovery = 101.24%						
As 188.979†	-89.3	-2.0731 ug/L	1.21811	-2.0731 ppb	1.21811	58.76%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	763.1	-9.7510 ug/L	1.84562	-9.7510 ppb	1.84562	18.93%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-782.5	-0.8463 ug/L	0.16716	-0.8463 ppb	0.16716	19.75%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-377.6	-0.1690 ug/L	0.03086	-0.1690 ppb	0.03086	18.26%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	303557.5	481770 ug/L	9694.7	481770 ppb	9694.7	2.01%

QC value within limits for Ca 317.933 Radial Recovery = 96.35%							
Cd	226.502†	1720.7	-2.9383 ug/L	0.16867	-2.9383 ppb	0.16867	5.74%
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co	228.616†	66.6	-1.4876 ug/L	0.18245	-1.4876 ppb	0.18245	12.27%
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr	267.716†	-199.2	1.4421 ug/L	0.10674	1.4421 ppb	0.10674	7.40%
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu	324.752†	-3145.5	0.4504 ug/L	0.35133	0.4504 ppb	0.35133	78.01%
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe	238.204 Radial†	22089.0	191290 ug/L	39.6	191290 ppb	39.6	0.02%
QC value within limits for Fe 238.204 Radial Recovery = 95.65%							
K	766.490 Radial†	-55.4	3.7030 ug/L	11.15258	3.7030 ppb	11.15258	301.18%
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg	279.077 IEC†	15757.6	487150 ug/L	794.2	487150 ppb	794.2	0.16%
QC value within limits for Mg 279.077 IEC Recovery = 97.43%							
Mn	257.610†	-1120.3	8.8279 ug/L	0.07296	8.8279 ppb	0.07296	0.83%
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo	202.031†	-299.1	-0.4271 ug/L	0.73763	-0.4271 ppb	0.73763	172.69%
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na	589.592 Radial†	41.8	11.911 ug/L	18.3065	11.911 ppb	18.3065	153.70%
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni	231.604†	164.5	3.6000 ug/L	0.16514	3.6000 ppb	0.16514	4.59%
QC value within limits for Ni 231.604 Recovery = Not calculated							
P	214.914†	19.3	27.287 ug/L	11.0867	27.287 ppb	11.0867	40.63%
QC value within limits for P 214.914 Recovery = Not calculated							
Pb	220.353†	-1050.9	-10.953 ug/L	3.1372	-10.953 ppb	3.1372	28.64%
QC value within limits for Pb 220.353 Recovery = Not calculated							
S	181.975 Axial†	47.3	-45.562 ug/L	19.7046	-45.562 ppb	19.7046	43.25%
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb	206.836†	42.1	0.2992 ug/L	0.87653	0.2992 ppb	0.87653	293.00%
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se	196.026†	-1237.2	-25.379 ug/L	7.9115	-25.379 ppb	7.9115	31.17%
QC value within limits for Se 196.026 Recovery = Not calculated							
Si	251.611†	-2.4	0.4718 ug/L	0.28448	0.4718 ppb	0.28448	60.30%
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn	189.927†	-455.0	-14.593 ug/L	1.4965	-14.593 ppb	1.4965	10.26%
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr	421.552†	582.9	-0.5999 ug/L	0.09107	-0.5999 ppb	0.09107	15.18%
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti	334.940†	-13509.6	3.9522 ug/L	0.34683	3.9522 ppb	0.34683	8.78%
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl	190.801†	-69.9	-5.4842 ug/L	0.47668	-5.4842 ppb	0.47668	8.69%
QC value within limits for Tl 190.801 Recovery = Not calculated							
U	409.014†	1100.3	8.5403 ug/L	2.25375	8.5403 ppb	2.25375	26.39%
QC value within limits for U 409.014 Recovery = Not calculated							
V	292.402†	2455.2	-2.8701 ug/L	0.37654	-2.8701 ppb	0.37654	13.12%
QC value within limits for V 292.402 Recovery = Not calculated							
Zn	213.857†	3088.2	-1.2358 ug/L	0.37351	-1.2358 ppb	0.37351	30.23%
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†		-49.5	-1.8930 ug/L	4.71592	-1.8930 ppb	4.71592	249.13%
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: 1/5/2010 09:08:00

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	4517.3	4517.3	88.8 %		09:09:57
1	Y RADIAL	4789.2	4789.2	89.33 %		09:09:57
1	Al 396.153Radial†	563619.5	634489.8	515310 ug/L	515310 ppb	09:09:52
1	Ca 317.933Radial†	270732.4	304747.0	483650 ug/L	483650 ppb	09:09:52
1	Fe 238.204 Radial†	19462.4	21894.3	189620 ug/L	189620 ppb	09:09:57
1	K 766.490 Radial†	27871.9	28044.3	5411.5 ug/L	5411.5 ppb	09:09:52
1	Mg 279.077 IEC†	14019.9	15778.4	487810 ug/L	487810 ppb	09:09:57
1	Na 589.592 Radial†	15935.4	19676.4	5600.3 ug/L	5600.3 ppb	09:09:57
1	Sr 421.552†	67509.6	75988.5	499.46 ug/L	499.46 ppb	09:09:52
1	Sc 361.383	789134.3	789134.3	86.246 %		09:10:25
1	Y 371.029	662442.4	662442.4	84.754 %		09:10:25
1	Ag 328.068†	44452.9	51029.0	277.19 ug/L	277.19 ppb	09:10:25
1	As 188.979†	1186.8	1407.3	528.54 ug/L	528.54 ppb	09:10:30
1	B 249.677†	22096.6	26333.8	513.00 ug/L	513.00 ppb	09:10:25
1	Ba 233.527†	59420.0	68887.3	507.99 ug/L	507.99 ppb	09:10:25
1	Be 313.107†	632233.5	737432.0	249.81 ug/L	249.81 ppb	09:10:25
1	Cd 226.502†	45525.4	53036.0	480.19 ug/L	480.19 ppb	09:10:30
1	Co 228.616†	21877.6	25455.4	473.38 ug/L	473.38 ppb	09:10:30
1	Cr 267.716†	41748.3	48289.8	487.77 ug/L	487.77 ppb	09:10:30
1	Cu 324.752†	170637.0	189750.5	571.16 ug/L	571.16 ppb	09:10:25
1	Mn 257.610†	410310.0	475074.7	508.39 ug/L	508.39 ppb	09:10:25
1	Mo 202.031†	6630.9	7665.1	499.08 ug/L	499.08 ppb	09:10:30
1	Ni 231.604†	18776.3	21653.3	473.54 ug/L	473.54 ppb	09:10:30
1	P 214.914†	4898.5	5427.1	2598.2 ug/L	2598.2 ppb	09:10:30
1	Pb 220.353†	3024.6	3607.7	474.33 ug/L	474.33 ppb	09:10:30
1	S 181.975 Axial†	2143.1	2422.5	2665.9 ug/L	2665.9 ppb	09:10:30
1	Sb 206.836†	1585.8	1798.0	528.12 ug/L	528.12 ppb	09:10:30
1	Se 196.026†	3337.3	3904.8	2603.1 ug/L	2603.1 ppb	09:10:30
1	Si 251.611†	160735.1	185706.1	5320.7 ug/L	5320.7 ppb	09:10:25
1	Sn 189.927†	2566.9	2972.1	493.62 ug/L	493.62 ppb	09:10:30
1	Ti 334.940†	272011.9	317183.0	521.72 ug/L	521.72 ppb	09:10:25
1	Tl 190.801†	1458.2	1736.7	492.89 ug/L	492.89 ppb	09:10:30
1	U 409.014†	13327.6	18079.2	510.93 ug/L	510.93 ppb	09:10:25
1	V 292.402†	70670.3	83740.5	515.18 ug/L	515.18 ppb	09:10:25
1	Zn 213.857†	56464.0	64610.1	500.56 ug/L	500.56 ppb	09:10:30
1	SiO2†	160466.2	185371.9	11452 ug/L	11452 ppb	09:10:58
2	Sc Radial	4536.1	4536.1	89.2 %		09:10:08
2	Y RADIAL	4830.3	4830.3	90.10 %		09:10:08
2	Al 396.153Radial†	563032.6	631195.1	512640 ug/L	512640 ppb	09:10:03
2	Ca 317.933Radial†	270471.7	303188.2	481180 ug/L	481180 ppb	09:10:03
2	Fe 238.204 Radial†	19652.0	22015.8	190680 ug/L	190680 ppb	09:10:08
2	K 766.490 Radial†	27843.5	27882.1	5380.2 ug/L	5380.2 ppb	09:10:03
2	Mg 279.077 IEC†	14131.7	15838.1	489660 ug/L	489660 ppb	09:10:08
2	Na 589.592 Radial†	16032.0	19710.1	5609.9 ug/L	5609.9 ppb	09:10:08
2	Sr 421.552†	67608.7	75783.8	498.12 ug/L	498.12 ppb	09:10:03
2	Sc 361.383	788313.9	788313.9	86.157 %		09:10:36
2	Y 371.029	661765.0	661765.0	84.667 %		09:10:36
2	Ag 328.068†	44368.0	50984.2	277.39 ug/L	277.39 ppb	09:10:36
2	As 188.979†	1174.8	1394.8	524.29 ug/L	524.29 ppb	09:10:41
2	B 249.677†	21978.0	26222.8	510.59 ug/L	510.59 ppb	09:10:36
2	Ba 233.527†	59292.1	68810.5	507.46 ug/L	507.46 ppb	09:10:36
2	Be 313.107†	631707.6	737584.6	249.86 ug/L	249.86 ppb	09:10:36
2	Cd 226.502†	45485.6	53044.8	480.17 ug/L	480.17 ppb	09:10:41
2	Co 228.616†	21832.5	25429.5	472.88 ug/L	472.88 ppb	09:10:41
2	Cr 267.716†	41642.4	48217.2	487.06 ug/L	487.06 ppb	09:10:41
2	Cu 324.752†	170246.8	189503.5	570.48 ug/L	570.48 ppb	09:10:36
2	Mn 257.610†	409849.9	475035.7	508.42 ug/L	508.42 ppb	09:10:36
2	Mo 202.031†	6602.0	7639.5	497.58 ug/L	497.58 ppb	09:10:41
2	Ni 231.604†	18787.3	21688.7	474.31 ug/L	474.31 ppb	09:10:41

2	P 214.914†	4863.5	5392.4	2579.5 ug/L	2579.5 ppb	09:10:41
2	Pb 220.353†	2989.6	3570.7	469.81 ug/L	469.81 ppb	09:10:41
2	S 181.975 Axial†	2152.2	2435.6	2681.4 ug/L	2681.4 ppb	09:10:41
2	Sb 206.836†	1586.3	1800.5	528.90 ug/L	528.90 ppb	09:10:41
2	Se 196.026†	3321.4	3890.4	2598.6 ug/L	2598.6 ppb	09:10:41
2	Si 251.611†	160441.5	185559.2	5316.5 ug/L	5316.5 ppb	09:10:36
2	Sn 189.927†	2560.4	2967.7	492.72 ug/L	492.72 ppb	09:10:41
2	Ti 334.940†	271333.5	316723.9	520.87 ug/L	520.87 ppb	09:10:36
2	Tl 190.801†	1450.6	1729.6	490.87 ug/L	490.87 ppb	09:10:41
2	U 409.014†	13118.1	17852.2	504.07 ug/L	504.07 ppb	09:10:36
2	V 292.402†	70448.7	83568.5	513.95 ug/L	513.95 ppb	09:10:36
2	Zn 213.857†	56388.5	64590.7	500.27 ug/L	500.27 ppb	09:10:41
2	SiO2†	160963.5	186142.8	11500 ug/L	11500 ppb	09:11:03
3	Sc Radial	4508.4	4508.4	88.7 %		09:10:18
3	Y RADIAL	4758.0	4758.0	88.75 %		09:10:18
3	Al 396.153Radial†	572042.1	645231.4	524040 ug/L	524040 ppb	09:10:13
3	Ca 317.933Radial†	274854.2	309992.5	491980 ug/L	491980 ppb	09:10:13
3	Fe 238.204 Radial†	19387.4	21852.6	189260 ug/L	189260 ppb	09:10:18
3	K 766.490 Radial†	28151.7	28421.2	5484.5 ug/L	5484.5 ppb	09:10:13
3	Mg 279.077 IEC†	13962.4	15744.5	486760 ug/L	486760 ppb	09:10:18
3	Na 589.592 Radial†	15861.3	19627.9	5586.5 ug/L	5586.5 ppb	09:10:18
3	Sr 421.552†	68749.4	77535.7	509.64 ug/L	509.64 ppb	09:10:13
3	Sc 361.383	791610.2	791610.2	86.517 %		09:10:47
3	Y 371.029	665455.2	665455.2	85.140 %		09:10:47
3	Ag 328.068†	44451.8	50866.6	276.25 ug/L	276.25 ppb	09:10:47
3	As 188.979†	1209.2	1428.8	536.05 ug/L	536.05 ppb	09:10:52
3	B 249.677†	22063.5	26215.4	510.63 ug/L	510.63 ppb	09:10:47
3	Ba 233.527†	59498.9	68763.0	507.07 ug/L	507.07 ppb	09:10:47
3	Be 313.107†	632228.0	735132.9	249.03 ug/L	249.03 ppb	09:10:47
3	Cd 226.502†	45339.6	52656.1	476.65 ug/L	476.65 ppb	09:10:52
3	Co 228.616†	21788.4	25273.0	469.98 ug/L	469.98 ppb	09:10:52
3	Cr 267.716†	41481.8	47830.3	483.16 ug/L	483.16 ppb	09:10:52
3	Cu 324.752†	170844.8	189371.9	570.02 ug/L	570.02 ppb	09:10:47
3	Mn 257.610†	410558.4	473873.8	507.11 ug/L	507.11 ppb	09:10:47
3	Mo 202.031†	6624.5	7633.6	497.07 ug/L	497.07 ppb	09:10:52
3	Ni 231.604†	18637.9	21425.2	468.55 ug/L	468.55 ppb	09:10:52
3	P 214.914†	4852.7	5356.4	2566.8 ug/L	2566.8 ppb	09:10:52
3	Pb 220.353†	2946.3	3506.2	465.81 ug/L	465.81 ppb	09:10:52
3	S 181.975 Axial†	2167.3	2442.7	2687.2 ug/L	2687.2 ppb	09:10:52
3	Sb 206.836†	1622.3	1834.4	538.54 ug/L	538.54 ppb	09:10:52
3	Se 196.026†	3322.2	3875.2	2587.8 ug/L	2587.8 ppb	09:10:52
3	Si 251.611†	160950.4	185372.0	5311.2 ug/L	5311.2 ppb	09:10:47
3	Sn 189.927†	2511.6	2898.9	483.64 ug/L	483.64 ppb	09:10:52
3	Ti 334.940†	272015.1	316200.3	520.62 ug/L	520.62 ppb	09:10:47
3	Tl 190.801†	1446.5	1717.9	487.99 ug/L	487.99 ppb	09:10:52
3	U 409.014†	13078.9	17743.4	501.04 ug/L	501.04 ppb	09:10:47
3	V 292.402†	70563.9	83361.2	512.79 ug/L	512.79 ppb	09:10:47
3	Zn 213.857†	56327.0	64247.1	497.66 ug/L	497.66 ppb	09:10:52
3	SiO2†	159791.2	184009.8	11368 ug/L	11368 ppb	09:11:08

## Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	789686.1	86.307 %	0.1876			0.22%
Sc Radial	4520.6	88.9 %	0.28			0.31%
Y 371.029	663220.9	84.854 %	0.2513			0.30%
Y RADIAL	4792.5	89.39 %	0.676			0.76%
Ag 328.068†	50960.0	276.94 ug/L	0.608	276.94 ppb	0.608	0.22%
QC value within limits for Ag 328.068 Recovery = 110.78%						
Al 396.153Radial†	636972.1	517330 ug/L	5961.6	517330 ppb	5961.6	1.15%
QC value within limits for Al 396.153Radial Recovery = 103.47%						
As 188.979†	1410.3	529.63 ug/L	5.959	529.63 ppb	5.959	1.13%
QC value within limits for As 188.979 Recovery = 105.93%						
B 249.677†	26257.3	511.40 ug/L	1.380	511.40 ppb	1.380	0.27%
QC value within limits for B 249.677 Recovery = 102.28%						
Ba 233.527†	68820.2	507.51 ug/L	0.462	507.51 ppb	0.462	0.09%
QC value within limits for Ba 233.527 Recovery = 101.50%						
Be 313.107†	736716.5	249.57 ug/L	0.465	249.57 ppb	0.465	0.19%
QC value within limits for Be 313.107 Recovery = 99.83%						
Ca 317.933Radial†	305975.9	485600 ug/L	5657.5	485600 ppb	5657.5	1.17%

QC value within limits for Ca 317.933 Radial Recovery = 97.12%							
Cd 226.502†	52912.3	479.00 ug/L	2.037	479.00 ppb	2.037	0.43%	
QC value within limits for Cd 226.502 Recovery = 95.80%							
Co 228.616†	25386.0	472.08 ug/L	1.839	472.08 ppb	1.839	0.39%	
QC value within limits for Co 228.616 Recovery = 94.42%							
Cr 267.716†	48112.4	486.00 ug/L	2.482	486.00 ppb	2.482	0.51%	
QC value within limits for Cr 267.716 Recovery = 97.20%							
Cu 324.752†	189542.0	570.56 ug/L	0.573	570.56 ppb	0.573	0.10%	
QC value within limits for Cu 324.752 Recovery = 114.11%							
Fe 238.204 Radial†	21920.9	189850 ug/L	734.4	189850 ppb	734.4	0.39%	
QC value within limits for Fe 238.204 Radial Recovery = 94.93%							
K 766.490 Radial†	28115.9	5425.4 ug/L	53.51	5425.4 ppb	53.51	0.99%	
QC value within limits for K 766.490 Radial Recovery = 108.51%							
Mg 279.077 IEC†	15787.0	488070 ug/L	1466.1	488070 ppb	1466.1	0.30%	
QC value within limits for Mg 279.077 IEC Recovery = 97.61%							
Mn 257.610†	474661.4	507.97 ug/L	0.746	507.97 ppb	0.746	0.15%	
QC value within limits for Mn 257.610 Recovery = 101.59%							
Mo 202.031†	7646.1	497.91 ug/L	1.043	497.91 ppb	1.043	0.21%	
QC value within limits for Mo 202.031 Recovery = 99.58%							
Na 589.592 Radial†	19671.5	5598.9 ug/L	11.76	5598.9 ppb	11.76	0.21%	
QC value within limits for Na 589.592 Radial Recovery = 111.98%							
Ni 231.604†	21589.1	472.13 ug/L	3.129	472.13 ppb	3.129	0.66%	
QC value within limits for Ni 231.604 Recovery = 94.43%							
P 214.914†	5392.0	2581.5 ug/L	15.78	2581.5 ppb	15.78	0.61%	
QC value within limits for P 214.914 Recovery = 103.26%							
Pb 220.353†	3561.5	469.98 ug/L	4.264	469.98 ppb	4.264	0.91%	
QC value within limits for Pb 220.353 Recovery = 94.00%							
S 181.975 Axial†	2433.6	2678.2 ug/L	11.01	2678.2 ppb	11.01	0.41%	
QC value within limits for S 181.975 Axial Recovery = 107.13%							
Sb 206.836†	1811.0	531.85 ug/L	5.803	531.85 ppb	5.803	1.09%	
QC value within limits for Sb 206.836 Recovery = 106.37%							
Se 196.026†	3890.1	2596.5 ug/L	7.88	2596.5 ppb	7.88	0.30%	
QC value within limits for Se 196.026 Recovery = 103.86%							
Si 251.611†	185545.8	5316.1 ug/L	4.79	5316.1 ppb	4.79	0.09%	
QC value within limits for Si 251.611 Recovery = 106.32%							
Sn 189.927†	2946.2	489.99 ug/L	5.522	489.99 ppb	5.522	1.13%	
QC value within limits for Sn 189.927 Recovery = 98.00%							
Sr 421.552†	76436.0	502.41 ug/L	6.300	502.41 ppb	6.300	1.25%	
QC value within limits for Sr 421.552 Recovery = 100.48%							
Ti 334.940†	316702.4	521.07 ug/L	0.576	521.07 ppb	0.576	0.11%	
QC value within limits for Ti 334.940 Recovery = 104.21%							
Tl 190.801†	1728.1	490.59 ug/L	2.462	490.59 ppb	2.462	0.50%	
QC value within limits for Tl 190.801 Recovery = 98.12%							
U 409.014†	17891.6	505.35 ug/L	5.070	505.35 ppb	5.070	1.00%	
QC value within limits for U 409.014 Recovery = 101.07%							
V 292.402†	83556.7	513.97 ug/L	1.197	513.97 ppb	1.197	0.23%	
QC value within limits for V 292.402 Recovery = 102.79%							
Zn 213.857†	64482.7	499.50 ug/L	1.596	499.50 ppb	1.596	0.32%	
QC value within limits for Zn 213.857 Recovery = 99.90%							
SiO2†	185174.9	11440 ug/L	66.9	11440 ppb	66.9	0.58%	
QC value within limits for SiO2 Recovery = 106.97%							
All analyte(s) passed QC.							

Sequence No.: 11

Sample ID: LRI

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 15

Date Collected: 1/5/2010 09:13:17

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: LRI

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4505.6	4505.6	88.6 %		09:15:15
1	Y RADIAL	4756.0	4756.0	88.71 %		09:15:15
1	Al 396.153Radial†	544707.3	614784.9	499330 ug/L	499330 ppb	09:15:10
1	Ca 317.933Radial†	263837.2	297752.7	472550 ug/L	472550 ppb	09:15:10
1	Fe 238.204 Radial†	45246.7	51051.5	442110 ug/L	442110 ppb	09:15:15
1	K 766.490 Radial†	4089.2	1283.9	42.490 ug/L	42.490 ppb	09:15:10
1	Mg 279.077 IEC†	13587.4	15331.0	473750 ug/L	473750 ppb	09:15:15
1	Na 589.592 Radial†	1609025.4	1817709.7	517360 ug/L	517360 ppb	09:15:10
1	Sr 421.552†	728.5	814.7	1.0229 ug/L	1.0229 ppb	09:15:15
1	Sc 361.383	744362.4	744362.4	81.353 %		09:15:43
1	Y 371.029	626793.1	626793.1	80.193 %		09:15:43
1	Ag 328.068†	-24939.2	-31168.3	-6.3608 ug/L	-6.3608 ppb	09:15:43
1	As 188.979†	-217.5	-236.1	-15.024 ug/L	-15.024 ppb	09:16:04
1	B 249.677†	907.3	1828.6	-21.211 ug/L	-21.211 ppb	09:15:43
1	Ba 233.527†	-1912.9	-2359.9	-5.9955 ug/L	-5.9955 ppb	09:16:04
1	Be 313.107†	-11092.2	-9259.2	-3.1692 ug/L	-3.1692 ppb	09:15:43
1	Cd 226.502†	3384.9	4411.4	-2.7051 ug/L	-2.7051 ppb	09:16:04
1	Co 228.616†	184.7	316.0	-0.4642 ug/L	-0.4642 ppb	09:16:04
1	Cr 267.716†	112.3	21.8	3.1340 ug/L	3.1340 ppb	09:16:04
1	Cu 324.752†	742.4	-7185.7	1.2897 ug/L	1.2897 ppb	09:15:43
1	Mn 257.610†	-26746.8	-33545.5	0.0576 ug/L	0.0576 ppb	09:15:43
1	Mo 202.031†	-523.4	-666.7	0.5502 ug/L	0.5502 ppb	09:15:43
1	Ni 231.604†	285.2	233.2	5.1003 ug/L	5.1003 ppb	09:16:04
1	P 214.914†	657.6	555.8	87.457 ug/L	87.457 ppb	09:16:04
1	Pb 220.353†	-726.4	-792.2	-6.3349 ug/L	-6.3349 ppb	09:16:04
1	S 181.975 Axial†	121.2	86.6	0.7138 ug/L	0.7138 ppb	09:16:04
1	Sb 206.836†	56.9	29.3	0.0256 ug/L	0.0256 ppb	09:16:04
1	Se 196.026†	-2650.9	-3223.2	-310.81 ug/L	-310.81 ppb	09:16:04
1	Si 251.611†	-410.2	-1165.9	-32.580 ug/L	-32.580 ppb	09:16:04
1	Sn 189.927†	-438.4	-543.0	-25.253 ug/L	-25.253 ppb	09:16:04
1	Ti 334.940†	-13311.1	-14569.2	-5.0844 ug/L	-5.0844 ppb	09:15:43
1	Tl 190.801†	-143.0	-129.9	-22.361 ug/L	-22.361 ppb	09:16:04
1	U 409.014†	427589.7	528224.3	15597 ug/L	15597 ppb	09:15:43
1	V 292.402†	1942.7	4188.2	-0.4354 ug/L	-0.4354 ppb	09:15:43
1	Zn 213.857†	6320.7	6911.3	17.632 ug/L	17.632 ppb	09:16:04
1	SiO2†	-424.0	-1205.2	-72.680 ug/L	-72.680 ppb	09:17:00
2	Sc Radial	4430.2	4430.2	87.1 %		09:15:26
2	Y RADIAL	4696.4	4696.4	87.60 %		09:15:26
2	Al 396.153Radial†	544999.2	625585.1	508100 ug/L	508100 ppb	09:15:21
2	Ca 317.933Radial†	262592.2	301392.6	478330 ug/L	478330 ppb	09:15:21
2	Fe 238.204 Radial†	44669.2	51257.9	443900 ug/L	443900 ppb	09:15:26
2	K 766.490 Radial†	4127.1	1405.9	64.185 ug/L	64.185 ppb	09:15:21
2	Mg 279.077 IEC†	13412.3	15391.1	475600 ug/L	475600 ppb	09:15:26
2	Na 589.592 Radial†	1598721.9	1836796.0	522790 ug/L	522790 ppb	09:15:21
2	Sr 421.552†	740.2	842.2	1.1518 ug/L	1.1518 ppb	09:15:26
2	Sc 361.383	760932.7	760932.7	83.164 %		09:16:09
2	Y 371.029	640309.8	640309.8	81.922 %		09:16:09
2	Ag 328.068†	-24214.1	-29628.9	1.4560 ug/L	1.4560 ppb	09:16:09
2	As 188.979†	-210.3	-221.6	-9.6442 ug/L	-9.6442 ppb	09:16:29
2	B 249.677†	875.5	1766.1	-22.729 ug/L	-22.729 ppb	09:16:09
2	Ba 233.527†	-1917.0	-2313.7	-5.6156 ug/L	-5.6156 ppb	09:16:29
2	Be 313.107†	-10782.8	-8590.3	-2.9404 ug/L	-2.9404 ppb	09:16:09
2	Cd 226.502†	3392.1	4329.5	-3.6546 ug/L	-3.6546 ppb	09:16:29
2	Co 228.616†	189.5	316.9	-0.4696 ug/L	-0.4696 ppb	09:16:29
2	Cr 267.716†	31.7	-78.1	2.4248 ug/L	2.4248 ppb	09:16:29
2	Cu 324.752†	821.5	-7110.5	1.6037 ug/L	1.6037 ppb	09:16:09
2	Mn 257.610†	-25726.4	-31602.6	2.2403 ug/L	2.2403 ppb	09:16:09
2	Mo 202.031†	-501.3	-626.0	3.2734 ug/L	3.2734 ppb	09:16:09
2	Ni 231.604†	272.9	210.8	4.6097 ug/L	4.6097 ppb	09:16:29



2	P 214.914†	628.2	502.7	62.992 ug/L	62.992 ppb	09:16:29
2	Pb 220.353†	-731.6	-779.0	-3.1490 ug/L	-3.1490 ppb	09:16:29
2	S 181.975 Axial†	133.2	97.8	11.738 ug/L	11.738 ppb	09:16:29
2	Sb 206.836†	51.5	21.3	-2.4380 ug/L	-2.4380 ppb	09:16:29
2	Se 196.026†	-2607.9	-3100.6	-241.97 ug/L	-241.97 ppb	09:16:29
2	Si 251.611†	-328.4	-1056.6	-29.502 ug/L	-29.502 ppb	09:16:29
2	Sn 189.927†	-431.6	-523.1	-21.669 ug/L	-21.669 ppb	09:16:29
2	Ti 334.940†	-12766.1	-13557.5	-2.8395 ug/L	-2.8395 ppb	09:16:09
2	Tl 190.801†	-135.7	-117.2	-18.621 ug/L	-18.621 ppb	09:16:29
2	U 409.014†	414330.1	500834.8	14785 ug/L	14785 ppb	09:16:09
2	V 292.402†	1836.8	4008.9	-3.3326 ug/L	-3.3326 ppb	09:16:09
2	Zn 213.857†	6282.1	6695.7	15.707 ug/L	15.707 ppb	09:16:29
2	SiO2†	-501.6	-1287.1	-77.882 ug/L	-77.882 ppb	09:17:06
3	Sc Radial	4310.4	4310.4	84.8 %		09:15:36
3	Y RADIAL	4579.6	4579.6	85.42 %		09:15:36
3	Al 396.153Radial†	534083.2	630094.4	511770 ug/L	511770 ppb	09:15:31
3	Ca 317.933Radial†	258174.7	304558.6	483350 ug/L	483350 ppb	09:15:31
3	Fe 238.204 Radial†	44485.4	52466.1	454360 ug/L	454360 ppb	09:15:36
3	K 766.490 Radial†	4061.1	1459.7	72.916 ug/L	72.916 ppb	09:15:31
3	Mg 279.077 IEC†	13349.4	15744.9	486530 ug/L	486530 ppb	09:15:36
3	Na 589.592 Radial†	1567100.1	1850495.5	526690 ug/L	526690 ppb	09:15:31
3	Sr 421.552†	675.5	789.4	0.7550 ug/L	0.7550 ppb	09:15:36
3	Sc 361.383	770565.3	770565.3	84.217 %		09:16:35
3	Y 371.029	648167.4	648167.4	82.928 %		09:16:35
3	Ag 328.068†	-24879.2	-30054.6	2.9464 ug/L	2.9464 ppb	09:16:35
3	As 188.979†	-234.7	-247.5	-17.132 ug/L	-17.132 ppb	09:16:55
3	B 249.677†	787.2	1648.1	-26.536 ug/L	-26.536 ppb	09:16:35
3	Ba 233.527†	-1922.2	-2290.9	-5.1859 ug/L	-5.1859 ppb	09:16:55
3	Be 313.107†	-11107.3	-8813.5	-3.0172 ug/L	-3.0172 ppb	09:16:35
3	Cd 226.502†	3405.8	4294.7	-5.0266 ug/L	-5.0266 ppb	09:16:55
3	Co 228.616†	225.7	357.0	0.1188 ug/L	0.1188 ppb	09:16:55
3	Cr 267.716†	49.1	-57.9	2.7747 ug/L	2.7747 ppb	09:16:55
3	Cu 324.752†	693.5	-7274.8	1.6510 ug/L	1.6510 ppb	09:16:35
3	Mn 257.610†	-26381.5	-31993.7	2.6696 ug/L	2.6696 ppb	09:16:35
3	Mo 202.031†	-577.8	-709.4	-0.9521 ug/L	-0.9521 ppb	09:16:35
3	Ni 231.604†	346.7	294.3	6.4369 ug/L	6.4369 ppb	09:16:55
3	P 214.914†	684.8	560.6	84.228 ug/L	84.228 ppb	09:16:55
3	Pb 220.353†	-707.8	-739.7	0.8696 ug/L	0.8696 ppb	09:16:55
3	S 181.975 Axial†	121.4	81.8	-7.2699 ug/L	-7.2699 ppb	09:16:55
3	Sb 206.836†	59.1	29.5	-0.0504 ug/L	-0.0504 ppb	09:16:55
3	Se 196.026†	-2651.3	-3112.9	-217.41 ug/L	-217.41 ppb	09:16:55
3	Si 251.611†	-456.6	-1203.9	-33.645 ug/L	-33.645 ppb	09:16:55
3	Sn 189.927†	-434.2	-519.8	-20.514 ug/L	-20.514 ppb	09:16:55
3	Ti 334.940†	-13331.7	-14037.2	-3.3831 ug/L	-3.3831 ppb	09:16:35
3	Tl 190.801†	-126.4	-104.2	-14.973 ug/L	-14.973 ppb	09:16:55
3	U 409.014†	423055.3	504967.2	14906 ug/L	14906 ppb	09:16:35
3	V 292.402†	1890.1	4044.5	-4.2897 ug/L	-4.2897 ppb	09:16:35
3	Zn 213.857†	6308.4	6632.4	14.260 ug/L	14.260 ppb	09:16:55
3	SiO2†	-476.0	-1249.2	-75.350 ug/L	-75.350 ppb	09:17:11

## Mean Data: LR1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	758620.1	82.911 %	1.4485			1.75%
Sc Radial	4415.4	86.8 %	1.94			2.23%
Y 371.029	638423.4	81.681 %	1.3832			1.69%
Y RADIAL	4677.3	87.24 %	1.673			1.92%
Ag 328.068†	-30283.9	-0.6528 ug/L	4.99912	-0.6528 ppb	4.99912	765.82%
Al 396.153Radial†	623488.1	506400 ug/L	6389.8	506400 ppb	6389.8	1.26%
QC value within limits for Al 396.153Radial Recovery = 101.28%						
As 188.979†	-235.1	-13.933 ug/L	3.8612	-13.933 ppb	3.8612	27.71%
B 249.677†	1747.6	-23.492 ug/L	2.7430	-23.492 ppb	2.7430	11.68%
Ba 233.527†	-2321.5	-5.5990 ug/L	0.40508	-5.5990 ppb	0.40508	7.23%
Be 313.107†	-8887.7	-3.0423 ug/L	0.11645	-3.0423 ppb	0.11645	3.83%
Ca 317.933Radial†	301234.6	478080 ug/L	5405.1	478080 ppb	5405.1	1.13%
QC value within limits for Ca 317.933Radial Recovery = 95.62%						
Cd 226.502†	4345.2	-3.7954 ug/L	1.16712	-3.7954 ppb	1.16712	30.75%
Co 228.616†	330.0	-0.2717 ug/L	0.33816	-0.2717 ppb	0.33816	124.49%
Cr 267.716†	-38.0	2.7778 ug/L	0.35462	2.7778 ppb	0.35462	12.77%
Cu 324.752†	-7190.3	1.5148 ug/L	0.19637	1.5148 ppb	0.19637	12.96%

Fe 238.204 Radial†	51591.8	446790 ug/L	6617.8	446790 ppb	6617.8	1.48%
QC value less than the lower limit for Fe 238.204 Radial Recovery = 89.36%						
K 766.490 Radial†	1383.1	59.864 ug/L	15.6667	59.864 ppb	15.6667	26.17%
Mg 279.077 IEC†	15489.0	478630 ug/L	6909.2	478630 ppb	6909.2	1.44%
QC value within limits for Mg 279.077 IEC Recovery = 95.73%						
Mn 257.610†	-32380.6	1.6558 ug/L	1.40068	1.6558 ppb	1.40068	84.59%
Mo 202.031†	-667.4	0.9572 ug/L	2.14198	0.9572 ppb	2.14198	223.78%
Na 589.592 Radial†	1835000.4	522280 ug/L	4686.7	522280 ppb	4686.7	0.90%
QC value within limits for Na 589.592 Radial Recovery = 104.46%						
Ni 231.604†	246.1	5.3823 ug/L	0.94564	5.3823 ppb	0.94564	17.57%
P 214.914†	539.7	78.226 ug/L	13.2914	78.226 ppb	13.2914	16.99%
Pb 220.353†	-770.3	-2.8714 ug/L	3.61027	-2.8714 ppb	3.61027	125.73%
S 181.975 Axial†	88.7	1.7271 ug/L	9.54416	1.7271 ppb	9.54416	552.61%
Sb 206.836†	26.7	-0.8209 ug/L	1.40095	-0.8209 ppb	1.40095	170.65%
Se 196.026†	-3145.5	-256.73 ug/L	48.421	-256.73 ppb	48.421	18.86%
Si 251.611†	-1142.1	-31.909 ug/L	2.1515	-31.909 ppb	2.1515	6.74%
Sn 189.927†	-528.6	-22.479 ug/L	2.4712	-22.479 ppb	2.4712	10.99%
Sr 421.552†	815.4	0.9766 ug/L	0.20243	0.9766 ppb	0.20243	20.73%
Ti 334.940†	-14054.6	-3.7690 ug/L	1.17115	-3.7690 ppb	1.17115	31.07%
Tl 190.801†	-117.1	-18.652 ug/L	3.6944	-18.652 ppb	3.6944	19.81%
U 409.014†	511342.1	15096 ug/L	437.9	15096 ppb	437.9	2.90%
QC value within limits for U 409.014 Recovery = 100.64%						
V 292.402†	4080.6	-2.6859 ug/L	2.00690	-2.6859 ppb	2.00690	74.72%
Zn 213.857†	6746.5	15.866 ug/L	1.6917	15.866 ppb	1.6917	10.66%
SiO2†	-1247.2	-75.304 ug/L	2.6015	-75.304 ppb	2.6015	3.45%

QC Failed. Continue with analysis.

Sequence No.: 12

Sample ID: LR2

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 16

Date Collected: 1/5/2010 09:19:20

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	4807.8	4807.8	94.5 %		09:21:18
1	Y RADIAL	4996.5	4996.5	93.20 %		09:21:18
1	Al 396.153Radial†	563.5	615.6	75.558 ug/L	75.558 ppb	09:21:18
1	Ca 317.933Radial†	28.8	12.2	19.357 ug/L	19.357 ppb	09:21:38
1	Fe 238.204 Radial†	-19.7	-35.5	-4.6924 ug/L	-4.6924 ppb	09:21:38
1	K 766.490 Radial†	1438956.5	1518621.3	292500 ug/L	292500 ppb	09:21:13
1	Mg 279.077 IEC†	-6.3	-10.5	-124.67 ug/L	-124.67 ppb	09:21:38
1	Na 589.592 Radial†	-912.5	772.6	219.90 ug/L	219.90 ppb	09:21:18
1	Sr 421.552†	1379940.7	1459525.5	9679.2 ug/L	9679.2 ppb	09:21:13
1	Sc 361.383	866597.9	866597.9	94.712 %		09:22:55
1	Y 371.029	726277.9	726277.9	92.921 %		09:22:55
1	Ag 328.068†	-7699.3	-8641.9	2.5599 ug/L	2.5599 ppb	09:23:00
1	As 188.979†	28019.0	29614.4	10514 ug/L	10514 ppb	09:23:00
1	B 249.677†	234120.5	247904.5	5053.2 ug/L	5053.2 ppb	09:22:55
1	Ba 233.527†	1893492.4	1999194.3	14592 ug/L	14592 ppb	09:22:55
1	Be 313.107†	8198170.6	8660236.0	2941.7 ug/L	2941.7 ppb	09:22:49
1	Cd 226.502†	991214.4	1046802.8	9852.4 ug/L	9852.4 ppb	09:22:55
1	Co 228.616†	486164.1	513394.8	9599.0 ug/L	9599.0 ppb	09:23:00
1	Cr 267.716†	2302566.4	2430998.6	24365 ug/L	24365 ppb	09:22:55
1	Cu 324.752†	6542959.9	6900144.0	20418 ug/L	20418 ppb	09:22:49
1	Mn 257.610†	8685760.2	9170003.4	9623.4 ug/L	9623.4 ppb	09:22:49
1	Mo 202.031†	149675.1	158008.0	9913.3 ug/L	9913.3 ppb	09:23:00
1	Ni 231.604†	432469.0	456495.6	9983.4 ug/L	9983.4 ppb	09:22:55
1	P 214.914†	35178.1	36889.5	14955 ug/L	14955 ppb	09:23:00
1	Pb 220.353†	226740.6	239499.9	24804 ug/L	24804 ppb	09:23:00
1	S 181.975 Axial†	43724.0	46102.6	52664 ug/L	52664 ppb	09:23:00
1	Sb 206.836†	33485.4	35314.1	10267 ug/L	10267 ppb	09:23:00
1	Se 196.026†	19520.9	20646.0	10594 ug/L	10594 ppb	09:23:00
1	Si 251.611†	1623156.9	1713113.3	48887 ug/L	48887 ppb	09:22:55
1	Sn 189.927†	67415.9	71175.5	10551 ug/L	10551 ppb	09:23:00
1	Ti 334.940†	5986897.7	6322929.1	9896.9 ug/L	9896.9 ppb	09:22:49
1	Tl 190.801†	34534.2	36508.1	10060 ug/L	10060 ppb	09:23:00
1	U 409.014†	-1829.7	694.3	-26.415 ug/L	-26.415 ppb	09:22:55
1	V 292.402†	1527091.9	1614147.1	10257 ug/L	10257 ppb	09:22:55
1	Zn 213.857†	1655856.6	1747442.1	14267 ug/L	14267 ppb	09:22:55
1	SiO2†	1610259.0	1699473.0	104560 ug/L	104560 ppb	09:23:48
2	Sc Radial	4829.9	4829.9	95.0 %		09:21:48
2	Y RADIAL	5075.7	5075.7	94.68 %		09:21:48
2	Al 396.153Radial†	546.1	594.5	65.724 ug/L	65.724 ppb	09:21:48
2	Ca 317.933Radial†	23.9	6.9	10.927 ug/L	10.927 ppb	09:22:08
2	Fe 238.204 Radial†	-17.5	-33.1	11.885 ug/L	11.885 ppb	09:22:08
2	K 766.490 Radial†	1441317.4	1514140.6	291630 ug/L	291630 ppb	09:21:43
2	Mg 279.077 IEC†	-1.8	-5.8	18.116 ug/L	18.116 ppb	09:22:08
2	Na 589.592 Radial†	-904.5	785.5	223.57 ug/L	223.57 ppb	09:21:48
2	Sr 421.552†	1380760.9	1453708.4	9640.7 ug/L	9640.7 ppb	09:21:43
2	Sc 361.383	872883.9	872883.9	95.399 %		09:23:15
2	Y 371.029	731763.1	731763.1	93.623 %		09:23:15
2	Ag 328.068†	-7675.9	-8558.8	2.2977 ug/L	2.2977 ppb	09:23:20
2	As 188.979†	27810.6	29183.0	10362 ug/L	10362 ppb	09:23:20
2	B 249.677†	232154.9	244063.9	4974.9 ug/L	4974.9 ppb	09:23:15
2	Ba 233.527†	1877696.6	1968239.8	14366 ug/L	14366 ppb	09:23:15
2	Be 313.107†	8178002.7	8576761.6	2913.4 ug/L	2913.4 ppb	09:23:09
2	Cd 226.502†	980884.0	1028437.6	9679.5 ug/L	9679.5 ppb	09:23:15
2	Co 228.616†	482458.2	505813.7	9457.1 ug/L	9457.1 ppb	09:23:20
2	Cr 267.716†	2281295.2	2391194.2	23966 ug/L	23966 ppb	09:23:15
2	Cu 324.752†	6530636.9	6837478.0	20233 ug/L	20233 ppb	09:23:09
2	Mn 257.610†	8666319.9	9083584.4	9532.7 ug/L	9532.7 ppb	09:23:09
2	Mo 202.031†	148183.3	155306.2	9743.8 ug/L	9743.8 ppb	09:23:20
2	Ni 231.604†	427779.6	448291.9	9804.0 ug/L	9804.0 ppb	09:23:15

2	P 214.914†	34960.2	36393.5	14739 ug/L	14739 ppb	09:23:20
2	Pb 220.353†	224831.1	235774.3	24418 ug/L	24418 ppb	09:23:20
2	S 181.975 Axial†	43371.3	45400.5	51862 ug/L	51862 ppb	09:23:20
2	Sb 206.836†	33177.0	34736.3	10098 ug/L	10098 ppb	09:23:20
2	Se 196.026†	19371.0	20340.5	10438 ug/L	10438 ppb	09:23:20
2	Si 251.611†	1610579.6	1687588.0	48157 ug/L	48157 ppb	09:23:15
2	Sn 189.927†	66827.6	70046.2	10384 ug/L	10384 ppb	09:23:20
2	Ti 334.940†	5973884.6	6263767.7	9804.3 ug/L	9804.3 ppb	09:23:09
2	Tl 190.801†	34238.8	35935.9	9902.8 ug/L	9902.8 ppb	09:23:20
2	U 409.014†	-2091.4	434.0	-33.361 ug/L	-33.361 ppb	09:23:15
2	V 292.402†	1513693.2	1588491.1	10094 ug/L	10094 ppb	09:23:15
2	Zn 213.857†	1639915.5	1718142.1	14028 ug/L	14028 ppb	09:23:15
2	SiO2†	1625587.4	1703297.2	104810 ug/L	104810 ppb	09:23:55
3	Sc Radial	4788.8	4788.8	94.2 %		09:22:19
3	Y RADIAL	4983.5	4983.5	92.95 %		09:22:19
3	Al 396.153Radial†	527.8	580.0	60.336 ug/L	60.336 ppb	09:22:19
3	Ca 317.933Radial†	23.8	7.0	11.081 ug/L	11.081 ppb	09:22:39
3	Fe 238.204 Radial†	-17.2	-32.9	7.9542 ug/L	7.9542 ppb	09:22:39
3	K 766.490 Radial†	1429639.0	1514784.0	291760 ug/L	291760 ppb	09:22:14
3	Mg 279.077 IEC†	2.1	-1.7	143.27 ug/L	143.27 ppb	09:22:39
3	Na 589.592 Radial†	-959.5	718.9	204.60 ug/L	204.60 ppb	09:22:19
3	Sr 421.552†	1368969.9	1453684.1	9640.5 ug/L	9640.5 ppb	09:22:14
3	Sc 361.383	880913.4	880913.4	96.277 %		09:23:35
3	Y 371.029	738663.6	738663.6	94.506 %		09:23:35
3	Ag 328.068†	-7551.6	-8356.4	2.9087 ug/L	2.9087 ppb	09:23:40
3	As 188.979†	27541.8	28638.0	10169 ug/L	10169 ppb	09:23:40
3	B 249.677†	233155.9	242885.6	4951.1 ug/L	4951.1 ppb	09:23:35
3	Ba 233.527†	1880022.4	1952715.0	14253 ug/L	14253 ppb	09:23:35
3	Be 313.107†	8173482.6	8493929.6	2885.2 ug/L	2885.2 ppb	09:23:28
3	Cd 226.502†	982489.1	1020732.9	9607.0 ug/L	9607.0 ppb	09:23:35
3	Co 228.616†	478678.5	497278.2	9297.3 ug/L	9297.3 ppb	09:23:40
3	Cr 267.716†	2286049.4	2374335.6	23797 ug/L	23797 ppb	09:23:35
3	Cu 324.752†	6536635.9	6781311.7	20066 ug/L	20066 ppb	09:23:28
3	Mn 257.610†	8669795.2	9004391.2	9449.6 ug/L	9449.6 ppb	09:23:28
3	Mo 202.031†	147237.4	152907.8	9593.3 ug/L	9593.3 ppb	09:23:40
3	Ni 231.604†	428646.6	445105.2	9734.3 ug/L	9734.3 ppb	09:23:35
3	P 214.914†	34575.1	35659.6	14404 ug/L	14404 ppb	09:23:40
3	Pb 220.353†	223102.7	231830.9	24010 ug/L	24010 ppb	09:23:40
3	S 181.975 Axial†	42909.6	44506.6	50841 ug/L	50841 ppb	09:23:40
3	Sb 206.836†	32863.2	34093.4	9906.0 ug/L	9906.0 ppb	09:23:40
3	Se 196.026†	19205.7	19983.7	10255 ug/L	10255 ppb	09:23:40
3	Si 251.611†	1614102.3	1675858.5	47824 ug/L	47824 ppb	09:23:35
3	Sn 189.927†	66382.6	68945.5	10221 ug/L	10221 ppb	09:23:40
3	Ti 334.940†	5977823.4	6210781.0	9721.4 ug/L	9721.4 ppb	09:23:28
3	Tl 190.801†	33966.4	35325.9	9735.6 ug/L	9735.6 ppb	09:23:40
3	U 409.014†	-1916.0	636.1	-27.047 ug/L	-27.047 ppb	09:23:35
3	V 292.402†	1517697.8	1578188.0	10027 ug/L	10027 ppb	09:23:35
3	Zn 213.857†	1642991.9	1705668.8	13926 ug/L	13926 ppb	09:23:35
3	SiO2†	1619995.3	1681957.1	103490 ug/L	103490 ppb	09:24:02

## Mean Data: LR2

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	873465.0	95.463 %		0.7842			0.82%
Sc Radial	4808.8	94.6 %		0.41			0.43%
Y 371.029	732234.8	93.684 %		0.7940			0.85%
Y RADIAL	5018.6	93.61 %		0.931			0.99%
Ag 328.068†	-8519.0	2.5888 ug/L		0.30655	2.5888 ppb	0.30655	11.84%
Al 396.153Radial†	596.7	67.206 ug/L		7.7186	67.206 ppb	7.7186	11.48%
As 188.979†	29145.2	10348 ug/L		173.0	10348 ppb	173.0	1.67%
QC value within limits for As 188.979 Recovery = 103.48%							
B 249.677†	244951.3	4993.0 ug/L		53.39	4993.0 ppb	53.39	1.07%
QC value within limits for B 249.677 Recovery = 99.86%							
Ba 233.527†	1973383.0	14404 ug/L		172.7	14404 ppb	172.7	1.20%
QC value within limits for Ba 233.527 Recovery = 96.03%							
Be 313.107†	8576975.7	2913.4 ug/L		28.23	2913.4 ppb	28.23	0.97%
QC value within limits for Be 313.107 Recovery = 97.11%							
Ca 317.933Radial†	8.7	13.788 ug/L		4.8231	13.788 ppb	4.8231	34.98%
Cd 226.502†	1031991.1	9713.0 ug/L		126.06	9713.0 ppb	126.06	1.30%
QC value within limits for Cd 226.502 Recovery = 97.13%							

Co 228.616†	505495.6	9451.2 ug/L	150.92	9451.2 ppb	150.92	1.60%
QC value within limits for Co 228.616 Recovery = 94.51%						
Cr 267.716†	2398842.8	24042 ug/L	291.6	24042 ppb	291.6	1.21%
QC value within limits for Cr 267.716 Recovery = 96.17%						
Cu 324.752†	6839644.6	20239 ug/L	175.9	20239 ppb	175.9	0.87%
QC value within limits for Cu 324.752 Recovery = 101.20%						
Fe 238.204 Radial†	-33.8	5.0488 ug/L	8.66196	5.0488 ppb	8.66196	171.57%
K 766.490 Radial†	1515848.6	291960 ug/L	466.3	291960 ppb	466.3	0.16%
QC value within limits for K 766.490 Radial Recovery = 97.32%						
Mg 279.077 IEC†	-6.0	12.239 ug/L	134.0707	12.239 ppb	134.0707	>999.9%
Mn 257.610†	9085993.0	9535.2 ug/L	86.93	9535.2 ppb	86.93	0.91%
QC value within limits for Mn 257.610 Recovery = 95.35%						
Mo 202.031†	155407.3	9750.2 ug/L	160.08	9750.2 ppb	160.08	1.64%
QC value within limits for Mo 202.031 Recovery = 97.50%						
Na 589.592 Radial†	759.0	216.02 ug/L	10.060	216.02 ppb	10.060	4.66%
Ni 231.604†	449964.2	9840.6 ug/L	128.50	9840.6 ppb	128.50	1.31%
QC value within limits for Ni 231.604 Recovery = 98.41%						
P 214.914†	36314.2	14699 ug/L	277.7	14699 ppb	277.7	1.89%
QC value within limits for P 214.914 Recovery = 98.00%						
Pb 220.353†	235701.7	24411 ug/L	397.3	24411 ppb	397.3	1.63%
QC value within limits for Pb 220.353 Recovery = 97.64%						
S 181.975 Axial†	45336.6	51789 ug/L	913.8	51789 ppb	913.8	1.76%
QC value within limits for S 181.975 Axial Recovery = 103.58%						
Sb 206.836†	34714.6	10090 ug/L	180.5	10090 ppb	180.5	1.79%
QC value within limits for Sb 206.836 Recovery = 100.90%						
Se 196.026†	20323.4	10429 ug/L	170.1	10429 ppb	170.1	1.63%
QC value within limits for Se 196.026 Recovery = 104.29%						
Si 251.611†	1692186.6	48289 ug/L	543.6	48289 ppb	543.6	1.13%
QC value within limits for Si 251.611 Recovery = 96.58%						
Sn 189.927†	70055.7	10385 ug/L	165.3	10385 ppb	165.3	1.59%
QC value within limits for Sn 189.927 Recovery = 103.85%						
Sr 421.552†	1455639.3	9653.5 ug/L	22.32	9653.5 ppb	22.32	0.23%
QC value within limits for Sr 421.552 Recovery = 96.53%						
Ti 334.940†	6265825.9	9807.5 ug/L	87.79	9807.5 ppb	87.79	0.90%
QC value within limits for Ti 334.940 Recovery = 98.08%						
Tl 190.801†	35923.3	9899.4 ug/L	162.09	9899.4 ppb	162.09	1.64%
QC value within limits for Tl 190.801 Recovery = 98.99%						
U 409.014†	588.2	-28.941 ug/L	3.8410	-28.941 ppb	3.8410	13.27%
V 292.402†	1593608.7	10126 ug/L	118.3	10126 ppb	118.3	1.17%
QC value within limits for V 292.402 Recovery = 101.26%						
Zn 213.857†	1723751.0	14074 ug/L	175.1	14074 ppb	175.1	1.24%
QC value within limits for Zn 213.857 Recovery = 93.83%						
SiO2†	1694909.1	104290 ug/L	699.1	104290 ppb	699.1	0.67%
QC value within limits for SiO2 Recovery = 97.46%						
All analyte(s) passed QC.						

## =====

Analysis Begun

Start Time: 1/5/2010 09:44:47

Plasma On Time: 1/4/2010 06:33:21

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\010510.sif

Batch ID:

Results Data Set: 010510

Results Library: C:\pe\Optima3\Results\Results.mdb

## =====

Method Loaded

Method Name: General Eng.2AX

Method Last Saved: 1/5/2010 08:13:15

IEC File: 101209.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: 1/5/2010 09:44:48

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	4231.3	4231.3	83.2 %		09:46:40
1	Y RADIAL	4406.6	4406.6	82.19 %		09:46:40
1	Al 396.153Radial†	5961.4	7183.9	5813.2 ug/L	5813.2 ppb	09:46:40

1	Ca 317.933Radial†	3018.4	3609.2	5728.0 ug/L	5728.0 ppb	09:47:00
1	Fe 238.204 Radial†	571.2	671.7	5833.0 ug/L	5833.0 ppb	09:47:00
1	K 766.490 Radial†	28778.2	31253.8	6012.0 ug/L	6012.0 ppb	09:46:40
1	Mg 279.077 IEC†	158.5	186.6	5775.8 ug/L	5775.8 ppb	09:47:00
1	Na 589.592 Radial†	33889.6	42465.5	12087 ug/L	12087 ppb	09:46:40
1	Sr 421.552†	73197.6	87959.8	583.28 ug/L	583.28 ppb	09:46:40
1	Sc 361.383	901641.8	901641.8	98.542 %		09:47:59
1	Y 371.029	764055.4	764055.4	97.755 %		09:47:59
1	Ag 328.068†	112485.3	113636.3	491.74 ug/L	491.74 ppb	09:47:59
1	As 188.979†	1412.8	1464.9	520.38 ug/L	520.38 ppb	09:48:19
1	B 249.677†	22995.3	24048.8	490.53 ug/L	490.53 ppb	09:47:59
1	Ba 233.527†	66250.0	67221.4	491.14 ug/L	491.14 ppb	09:47:59
1	Be 313.107†	1430781.4	1456320.5	492.37 ug/L	492.37 ppb	09:47:59
1	Cd 226.502†	51184.5	52192.2	490.64 ug/L	490.64 ppb	09:47:59
1	Co 228.616†	26059.9	26534.4	496.24 ug/L	496.24 ppb	09:48:19
1	Cr 267.716†	48272.8	48870.6	490.26 ug/L	490.26 ppb	09:47:59
1	Cu 324.752†	170150.7	164569.2	487.27 ug/L	487.27 ppb	09:47:59
1	Mn 257.610†	462606.3	468781.0	492.43 ug/L	492.43 ppb	09:47:59
1	Mo 202.031†	7928.3	8022.3	503.87 ug/L	503.87 ppb	09:48:19
1	Ni 231.604†	22562.5	22778.9	498.16 ug/L	498.16 ppb	09:48:19
1	P 214.914†	5317.9	5143.9	2447.7 ug/L	2447.7 ppb	09:48:19
1	Pb 220.353†	4728.8	4899.5	508.94 ug/L	508.94 ppb	09:48:19
1	S 181.975 Axial†	932.0	883.4	1007.9 ug/L	1007.9 ppb	09:48:19
1	Sb 206.836†	1720.1	1704.8	512.79 ug/L	512.79 ppb	09:48:19
1	Se 196.026†	932.3	981.4	521.28 ug/L	521.28 ppb	09:48:19
1	Si 251.611†	84212.1	84796.0	2422.5 ug/L	2422.5 ppb	09:47:59
1	Sn 189.927†	3342.3	3387.6	502.85 ug/L	502.85 ppb	09:48:19
1	Ti 334.940†	306491.6	312818.2	489.98 ug/L	489.98 ppb	09:47:59
1	Tl 190.801†	1762.8	1834.8	505.70 ug/L	505.70 ppb	09:48:19
1	U 409.014†	12824.5	15640.5	461.78 ug/L	461.78 ppb	09:47:59
1	V 292.402†	74906.8	77815.1	495.24 ug/L	495.24 ppb	09:47:59
1	Zn 213.857†	59643.9	59667.9	485.92 ug/L	485.92 ppb	09:47:59
1	SiO2†	84500.4	85066.3	5240.1 ug/L	5240.1 ppb	09:49:19
2	Sc Radial	4904.7	4904.7	96.5 %		09:47:05
2	Y RADIAL	5127.7	5127.7	95.64 %		09:47:05
2	Al 396.153Radial†	5811.6	6045.0	4888.3 ug/L	4888.3 ppb	09:47:05
2	Ca 317.933Radial†	3011.4	3104.0	4926.2 ug/L	4926.2 ppb	09:47:25
2	Fe 238.204 Radial†	568.4	574.6	4991.7 ug/L	4991.7 ppb	09:47:25
2	K 766.490 Radial†	28356.6	26068.6	5013.7 ug/L	5013.7 ppb	09:47:05
2	Mg 279.077 IEC†	164.3	166.4	5152.3 ug/L	5152.3 ppb	09:47:25
2	Na 589.592 Radial†	33068.1	36022.5	10253 ug/L	10253 ppb	09:47:05
2	Sr 421.552†	71334.1	73951.1	490.38 ug/L	490.38 ppb	09:47:05
2	Sc 361.383	896246.8	896246.8	97.953 %		09:48:26
2	Y 371.029	758798.3	758798.3	97.082 %		09:48:26
2	Ag 328.068†	114127.0	115999.5	501.65 ug/L	501.65 ppb	09:48:26
2	As 188.979†	1385.7	1445.9	513.65 ug/L	513.65 ppb	09:48:46
2	B 249.677†	23450.3	24653.8	503.04 ug/L	503.04 ppb	09:48:26
2	Ba 233.527†	67371.2	68770.7	502.43 ug/L	502.43 ppb	09:48:26
2	Be 313.107†	1453702.3	1488460.5	503.24 ug/L	503.24 ppb	09:48:26
2	Cd 226.502†	52123.6	53463.6	502.68 ug/L	502.68 ppb	09:48:26
2	Co 228.616†	25716.1	26342.6	492.64 ug/L	492.64 ppb	09:48:46
2	Cr 267.716†	48964.1	49871.3	500.28 ug/L	500.28 ppb	09:48:26
2	Cu 324.752†	172759.2	168271.7	498.18 ug/L	498.18 ppb	09:48:26
2	Mn 257.610†	470258.1	479418.6	503.52 ug/L	503.52 ppb	09:48:26
2	Mo 202.031†	7854.8	7995.7	502.12 ug/L	502.12 ppb	09:48:46
2	Ni 231.604†	22258.4	22606.3	494.38 ug/L	494.38 ppb	09:48:46
2	P 214.914†	5244.8	5101.8	2425.7 ug/L	2425.7 ppb	09:48:46
2	Pb 220.353†	4674.2	4872.6	506.00 ug/L	506.00 ppb	09:48:46
2	S 181.975 Axial†	907.6	864.2	986.18 ug/L	986.18 ppb	09:48:46
2	Sb 206.836†	1706.3	1701.3	511.42 ug/L	511.42 ppb	09:48:46
2	Se 196.026†	916.3	970.8	513.30 ug/L	513.30 ppb	09:48:46
2	Si 251.611†	85676.3	86805.2	2480.5 ug/L	2480.5 ppb	09:48:26
2	Sn 189.927†	3300.8	3365.6	499.50 ug/L	499.50 ppb	09:48:46
2	Ti 334.940†	311185.6	319482.5	500.37 ug/L	500.37 ppb	09:48:26
2	Tl 190.801†	1742.4	1824.8	503.06 ug/L	503.06 ppb	09:48:46
2	U 409.014†	13133.4	16034.1	473.53 ug/L	473.53 ppb	09:48:26
2	V 292.402†	75981.2	79369.5	505.10 ug/L	505.10 ppb	09:48:26
2	Zn 213.857†	60776.4	61188.5	498.48 ug/L	498.48 ppb	09:48:26
2	SiO2†	84327.7	85406.2	5261.9 ug/L	5261.9 ppb	09:49:24
3	Sc Radial	4862.4	4862.4	95.6 %		09:47:30
3	Y RADIAL	5108.3	5108.3	95.28 %		09:47:30

3	Al 396.153Radial†	5900.2	6190.1	5005.9 ug/L	5005.9 ppb	09:47:30
3	Ca 317.933Radial†	3043.4	3164.6	5022.4 ug/L	5022.4 ppb	09:47:50
3	Fe 238.204 Radial†	573.1	584.6	5078.7 ug/L	5078.7 ppb	09:47:50
3	K 766.490 Radial†	28972.9	26968.9	5187.0 ug/L	5187.0 ppb	09:47:30
3	Mg 279.077 IEC†	160.9	164.4	5089.5 ug/L	5089.5 ppb	09:47:50
3	Na 589.592 Radial†	33701.5	36983.2	10526 ug/L	10526 ppb	09:47:30
3	Sr 421.552†	72675.2	75997.1	503.95 ug/L	503.95 ppb	09:47:30
3	Sc 361.383	894970.6	894970.6	97.813 %		09:48:54
3	Y 371.029	758126.0	758126.0	96.996 %		09:48:54
3	Ag 328.068†	113680.2	115708.9	500.43 ug/L	500.43 ppb	09:48:54
3	As 188.979†	1393.6	1455.9	517.18 ug/L	517.18 ppb	09:49:14
3	B 249.677†	23403.0	24639.6	502.72 ug/L	502.72 ppb	09:48:54
3	Ba 233.527†	67203.0	68696.8	501.89 ug/L	501.89 ppb	09:48:54
3	Be 313.107†	1449867.6	1486656.3	502.63 ug/L	502.63 ppb	09:48:54
3	Cd 226.502†	52069.7	53484.3	502.87 ug/L	502.87 ppb	09:48:54
3	Co 228.616†	25956.5	26625.8	497.94 ug/L	497.94 ppb	09:49:14
3	Cr 267.716†	48968.9	49947.4	501.04 ug/L	501.04 ppb	09:48:54
3	Cu 324.752†	172154.2	167904.7	497.10 ug/L	497.10 ppb	09:48:54
3	Mn 257.610†	468838.6	478651.9	502.73 ug/L	502.73 ppb	09:48:54
3	Mo 202.031†	7910.4	8064.0	506.42 ug/L	506.42 ppb	09:49:14
3	Ni 231.604†	22451.4	22836.0	499.40 ug/L	499.40 ppb	09:49:14
3	P 214.914†	5278.4	5143.8	2446.5 ug/L	2446.5 ppb	09:49:14
3	Pb 220.353†	4732.2	4938.7	512.88 ug/L	512.88 ppb	09:49:14
3	S 181.975 Axial†	915.9	874.0	997.39 ug/L	997.39 ppb	09:49:14
3	Sb 206.836†	1705.7	1703.2	512.16 ug/L	512.16 ppb	09:49:14
3	Se 196.026†	939.5	995.8	526.37 ug/L	526.37 ppb	09:49:14
3	Si 251.611†	85373.8	86620.7	2475.1 ug/L	2475.1 ppb	09:48:54
3	Sn 189.927†	3337.8	3408.3	505.84 ug/L	505.84 ppb	09:49:14
3	Ti 334.940†	310279.0	319008.6	499.63 ug/L	499.63 ppb	09:48:54
3	Tl 190.801†	1756.9	1842.1	507.79 ug/L	507.79 ppb	09:49:14
3	U 409.014†	13175.2	16096.0	475.35 ug/L	475.35 ppb	09:48:54
3	V 292.402†	75821.8	79317.1	504.82 ug/L	504.82 ppb	09:48:54
3	Zn 213.857†	60593.0	61089.4	497.64 ug/L	497.64 ppb	09:48:54
3	SiO2†	85217.3	86438.5	5325.5 ug/L	5325.5 ppb	09:49:29

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	897619.7	98.103 %	0.3870			0.39%
Sc Radial	4666.1	91.8 %	7.42			8.08%
Y 371.029	760326.6	97.278 %	0.4154			0.43%
Y RADIAL	4880.9	91.04 %	7.664			8.42%
Ag 328.068†	115114.9	497.94 ug/L	5.406	497.94 ppb	5.406	1.09%
QC value within limits for Ag 328.068 Recovery = 99.59%						
Al 396.153Radial†	6473.0	5235.8 ug/L	503.49	5235.8 ppb	503.49	9.62%
QC value within limits for Al 396.153Radial Recovery = 104.72%						
As 188.979†	1455.6	517.07 ug/L	3.369	517.07 ppb	3.369	0.65%
QC value within limits for As 188.979 Recovery = 103.41%						
B 249.677†	24447.4	498.76 ug/L	7.134	498.76 ppb	7.134	1.43%
QC value within limits for B 249.677 Recovery = 99.75%						
Ba 233.527†	68229.7	498.48 ug/L	6.370	498.48 ppb	6.370	1.28%
QC value within limits for Ba 233.527 Recovery = 99.70%						
Be 313.107†	1477145.8	499.41 ug/L	6.105	499.41 ppb	6.105	1.22%
QC value within limits for Be 313.107 Recovery = 99.88%						
Ca 317.933Radial†	3292.6	5225.5 ug/L	437.78	5225.5 ppb	437.78	8.38%
QC value within limits for Ca 317.933Radial Recovery = 104.51%						
Cd 226.502†	53046.7	498.73 ug/L	7.007	498.73 ppb	7.007	1.40%
QC value within limits for Cd 226.502 Recovery = 99.75%						
Co 228.616†	26500.9	495.61 ug/L	2.708	495.61 ppb	2.708	0.55%
QC value within limits for Co 228.616 Recovery = 99.12%						
Cr 267.716†	49563.1	497.19 ug/L	6.017	497.19 ppb	6.017	1.21%
QC value within limits for Cr 267.716 Recovery = 99.44%						
Cu 324.752†	166915.2	494.19 ug/L	6.013	494.19 ppb	6.013	1.22%
QC value within limits for Cu 324.752 Recovery = 98.84%						
Fe 238.204 Radial†	610.3	5301.2 ug/L	462.67	5301.2 ppb	462.67	8.73%
QC value within limits for Fe 238.204 Radial Recovery = 106.02%						
K 766.490 Radial†	28097.1	5404.2 ug/L	533.46	5404.2 ppb	533.46	9.87%
QC value within limits for K 766.490 Radial Recovery = 108.08%						
Mg 279.077 IEC†	172.5	5339.2 ug/L	379.37	5339.2 ppb	379.37	7.11%
QC value within limits for Mg 279.077 IEC Recovery = 106.78%						



Mn 257.610†	475617.2	499.56 ug/L	6.187	499.56 ppb	6.187	1.24%
QC value within limits for Mn 257.610 Recovery = 99.91%						
Mo 202.031†	8027.3	504.14 ug/L	2.160	504.14 ppb	2.160	0.43%
QC value within limits for Mo 202.031 Recovery = 100.83%						
Na 589.592 Radial†	38490.4	10955 ug/L	989.3	10955 ppb	989.3	9.03%
QC value within limits for Na 589.592 Radial Recovery = 109.55%						
Ni 231.604†	22740.4	497.31 ug/L	2.615	497.31 ppb	2.615	0.53%
QC value within limits for Ni 231.604 Recovery = 99.46%						
P 214.914†	5129.9	2440.0 ug/L	12.40	2440.0 ppb	12.40	0.51%
QC value within limits for P 214.914 Recovery = 97.60%						
Pb 220.353†	4903.6	509.27 ug/L	3.452	509.27 ppb	3.452	0.68%
QC value within limits for Pb 220.353 Recovery = 101.85%						
S 181.975 Axial†	873.8	997.18 ug/L	10.884	997.18 ppb	10.884	1.09%
QC value within limits for S 181.975 Axial Recovery = 99.72%						
Sb 206.836†	1703.1	512.13 ug/L	0.685	512.13 ppb	0.685	0.13%
QC value within limits for Sb 206.836 Recovery = 102.43%						
Se 196.026†	982.7	520.32 ug/L	6.588	520.32 ppb	6.588	1.27%
QC value within limits for Se 196.026 Recovery = 104.06%						
Si 251.611†	86074.0	2459.3 ug/L	32.07	2459.3 ppb	32.07	1.30%
QC value within limits for Si 251.611 Recovery = 98.37%						
Sn 189.927†	3387.1	502.73 ug/L	3.170	502.73 ppb	3.170	0.63%
QC value within limits for Sn 189.927 Recovery = 100.55%						
Sr 421.552†	79302.7	525.87 ug/L	50.177	525.87 ppb	50.177	9.54%
QC value within limits for Sr 421.552 Recovery = 105.17%						
Ti 334.940†	317103.1	496.66 ug/L	5.797	496.66 ppb	5.797	1.17%
QC value within limits for Ti 334.940 Recovery = 99.33%						
Tl 190.801†	1833.9	505.52 ug/L	2.367	505.52 ppb	2.367	0.47%
QC value within limits for Tl 190.801 Recovery = 101.10%						
U 409.014†	15923.5	470.22 ug/L	7.367	470.22 ppb	7.367	1.57%
QC value within limits for U 409.014 Recovery = 94.04%						
V 292.402†	78833.9	501.72 ug/L	5.613	501.72 ppb	5.613	1.12%
QC value within limits for V 292.402 Recovery = 100.34%						
Zn 213.857†	60648.6	494.01 ug/L	7.024	494.01 ppb	7.024	1.42%
QC value within limits for Zn 213.857 Recovery = 98.80%						
SiO2†	85637.0	5275.8 ug/L	44.39	5275.8 ppb	44.39	0.84%
QC value within limits for SiO2 Recovery = 98.66%						

All analyte(s) passed QC.

Sequence No.: 2  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 8  
 Date Collected: 1/5/2010 09:51:39  
 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	4904.1	4904.1	96.4 %		09:53:32
1	Y RADIAL	5183.9	5183.9	96.69 %		09:53:32
1	Al 396.153Radial†	-12.4	6.7	5.4066 ug/L	5.4066 ppb	09:53:32
1	Ca 317.933Radial†	18.5	0.9	1.4683 ug/L	1.4683 ppb	09:53:52
1	Fe 238.204 Radial†	13.4	-0.8	-6.7363 ug/L	-6.7363 ppb	09:53:52
1	K 766.490 Radial†	3587.4	388.5	74.857 ug/L	74.857 ppb	09:53:32
1	Mg 279.077 IEC†	2.0	-1.8	-54.482 ug/L	-54.482 ppb	09:53:52
1	Na 589.592 Radial†	-1622.5	55.3	15.753 ug/L	15.753 ppb	09:53:32
1	Sr 421.552†	-7.4	-15.1	-0.1001 ug/L	-0.1001 ppb	09:53:32
1	Sc 361.383	877616.1	877616.1	95.917 %		09:54:49
1	Y 371.029	751602.7	751602.7	96.161 %		09:54:49
1	Ag 328.068†	387.8	-108.4	-0.4531 ug/L	-0.4531 ppb	09:54:49
1	As 188.979†	-10.5	20.3	7.1521 ug/L	7.1521 ppb	09:55:09
1	B 249.677†	-268.0	434.0	8.8900 ug/L	8.8900 ppb	09:54:49
1	Ba 233.527†	-6.0	-14.8	-0.1063 ug/L	-0.1063 ppb	09:55:09
1	Be 313.107†	-4359.3	-169.4	-0.0570 ug/L	-0.0570 ppb	09:54:49
1	Cd 226.502†	-216.7	24.6	0.2327 ug/L	0.2327 ppb	09:55:09
1	Co 228.616†	-95.8	-10.9	-0.2012 ug/L	-0.2012 ppb	09:55:09
1	Cr 267.716†	94.4	-17.8	-0.1725 ug/L	-0.1725 ppb	09:54:49
1	Cu 324.752†	7964.0	204.8	0.6055 ug/L	0.6055 ppb	09:54:49
1	Mn 257.610†	562.3	-81.8	-0.0855 ug/L	-0.0855 ppb	09:54:49
1	Mo 202.031†	33.7	11.9	0.7464 ug/L	0.7464 ppb	09:55:09
1	Ni 231.604†	138.2	26.8	0.5863 ug/L	0.5863 ppb	09:55:09
1	P 214.914†	256.9	15.3	7.3998 ug/L	7.3998 ppb	09:55:09
1	Pb 220.353†	-107.3	-11.2	-1.1546 ug/L	-1.1546 ppb	09:55:09
1	S 181.975 Axial†	69.2	9.8	11.180 ug/L	11.180 ppb	09:55:09
1	Sb 206.836†	62.4	24.3	7.2456 ug/L	7.2456 ppb	09:55:09
1	Se 196.026†	-32.0	1.9	0.9422 ug/L	0.9422 ppb	09:55:09
1	Si 251.611†	719.9	88.8	2.5094 ug/L	2.5094 ppb	09:55:09
1	Sn 189.927†	8.0	4.2	0.6247 ug/L	0.6247 ppb	09:55:09
1	Ti 334.940†	-1654.6	68.0	0.1130 ug/L	0.1130 ppb	09:54:49
1	Tl 190.801†	-50.3	-6.5	-1.7729 ug/L	-1.7729 ppb	09:55:09
1	U 409.014†	-2980.4	-481.1	-14.254 ug/L	-14.254 ppb	09:54:49
1	V 292.402†	-1613.0	118.6	0.7273 ug/L	0.7273 ppb	09:54:49
1	Zn 213.857†	903.8	84.1	0.6888 ug/L	0.6888 ppb	09:55:09
1	SiO2†	734.2	81.4	4.9535 ug/L	4.9535 ppb	09:56:06
2	Sc Radial	4864.2	4864.2	95.7 %		09:53:57
2	Y RADIAL	5129.3	5129.3	95.68 %		09:53:57
2	Al 396.153Radial†	-4.9	14.5	11.707 ug/L	11.707 ppb	09:53:57
2	Ca 317.933Radial†	15.6	-2.0	-3.1307 ug/L	-3.1307 ppb	09:54:17
2	Fe 238.204 Radial†	13.8	-0.2	-1.7397 ug/L	-1.7397 ppb	09:54:17
2	K 766.490 Radial†	3674.2	509.8	98.215 ug/L	98.215 ppb	09:53:57
2	Mg 279.077 IEC†	3.7	-0.1	-1.6716 ug/L	-1.6716 ppb	09:54:17
2	Na 589.592 Radial†	-1596.7	68.5	19.508 ug/L	19.508 ppb	09:53:57
2	Sr 421.552†	27.4	21.2	0.1409 ug/L	0.1409 ppb	09:53:57
2	Sc 361.383	875186.9	875186.9	95.651 %		09:55:15
2	Y 371.029	750060.7	750060.7	95.964 %		09:55:15
2	Ag 328.068†	593.6	107.8	0.4790 ug/L	0.4790 ppb	09:55:15
2	As 188.979†	-6.0	25.0	8.7916 ug/L	8.7916 ppb	09:55:35
2	B 249.677†	-197.2	507.2	10.389 ug/L	10.389 ppb	09:55:15
2	Ba 233.527†	10.0	1.9	0.0147 ug/L	0.0147 ppb	09:55:35
2	Be 313.107†	-4277.0	-96.0	-0.0325 ug/L	-0.0325 ppb	09:55:15
2	Cd 226.502†	-232.2	7.9	0.0744 ug/L	0.0744 ppb	09:55:35
2	Co 228.616†	-86.1	-1.0	-0.0160 ug/L	-0.0160 ppb	09:55:35
2	Cr 267.716†	104.1	-7.4	-0.0677 ug/L	-0.0677 ppb	09:55:15
2	Cu 324.752†	8009.8	275.7	0.8157 ug/L	0.8157 ppb	09:55:15
2	Mn 257.610†	565.9	-76.4	-0.0803 ug/L	-0.0803 ppb	09:55:15
2	Mo 202.031†	37.3	15.7	0.9836 ug/L	0.9836 ppb	09:55:35
2	Ni 231.604†	134.1	22.8	0.4991 ug/L	0.4991 ppb	09:55:35

2	P 214.914†	248.6	7.3	3.4812 ug/L	3.4812 ppb	09:55:35
2	Pb 220.353†	-83.4	13.5	1.4028 ug/L	1.4028 ppb	09:55:35
2	S 181.975 Axial†	69.3	10.1	11.532 ug/L	11.532 ppb	09:55:35
2	Sb 206.836†	62.5	24.7	7.3468 ug/L	7.3468 ppb	09:55:35
2	Se 196.026†	-40.0	-6.5	-3.3168 ug/L	-3.3168 ppb	09:55:35
2	Si 251.611†	711.1	81.7	2.2929 ug/L	2.2929 ppb	09:55:35
2	Sn 189.927†	9.2	5.5	0.8150 ug/L	0.8150 ppb	09:55:35
2	Ti 334.940†	-1751.3	-37.9	-0.0519 ug/L	-0.0519 ppb	09:55:15
2	Tl 190.801†	-45.5	-1.6	-0.4398 ug/L	-0.4398 ppb	09:55:35
2	U 409.014†	-3064.2	-577.3	-17.107 ug/L	-17.107 ppb	09:55:15
2	V 292.402†	-1663.3	61.3	0.3660 ug/L	0.3660 ppb	09:55:15
2	Zn 213.857†	900.4	83.1	0.6789 ug/L	0.6789 ppb	09:55:35
2	SiO2†	751.9	102.1	6.2070 ug/L	6.2070 ppb	09:56:11
3	Sc Radial	4929.8	4929.8	96.9 %		09:54:22
3	Y RADIAL	5223.7	5223.7	97.44 %		09:54:22
3	Al 396.153Radial†	-18.9	0.0	-0.0076 ug/L	-0.0076 ppb	09:54:22
3	Ca 317.933Radial†	14.7	-3.1	-4.8776 ug/L	-4.8776 ppb	09:54:43
3	Fe 238.204 Radial†	11.2	-3.2	-27.391 ug/L	-27.391 ppb	09:54:43
3	K 766.490 Radial†	3712.7	498.4	96.007 ug/L	96.007 ppb	09:54:22
3	Mg 279.077 IEC†	4.8	1.1	34.207 ug/L	34.207 ppb	09:54:43
3	Na 589.592 Radial†	-1591.0	96.7	27.514 ug/L	27.514 ppb	09:54:22
3	Sr 421.552†	6.7	-0.5	-0.0035 ug/L	-0.0035 ppb	09:54:22
3	Sc 361.383	877636.6	877636.6	95.919 %		09:55:40
3	Y 371.029	752390.5	752390.5	96.262 %		09:55:40
3	Ag 328.068†	468.3	-24.6	-0.1054 ug/L	-0.1054 ppb	09:55:40
3	As 188.979†	-7.5	23.4	8.2209 ug/L	8.2209 ppb	09:56:00
3	B 249.677†	-198.1	506.9	10.387 ug/L	10.387 ppb	09:55:40
3	Ba 233.527†	7.4	-0.9	-0.0079 ug/L	-0.0079 ppb	09:56:00
3	Be 313.107†	-4340.2	-149.5	-0.0508 ug/L	-0.0508 ppb	09:55:40
3	Cd 226.502†	-221.5	19.6	0.1873 ug/L	0.1873 ppb	09:56:00
3	Co 228.616†	-100.7	-16.0	-0.2969 ug/L	-0.2969 ppb	09:56:00
3	Cr 267.716†	86.5	-26.0	-0.2576 ug/L	-0.2576 ppb	09:55:40
3	Cu 324.752†	7992.8	234.6	0.6928 ug/L	0.6928 ppb	09:55:40
3	Mn 257.610†	569.8	-74.1	-0.0811 ug/L	-0.0811 ppb	09:55:40
3	Mo 202.031†	25.7	3.5	0.2196 ug/L	0.2196 ppb	09:56:00
3	Ni 231.604†	117.2	4.8	0.1054 ug/L	0.1054 ppb	09:56:00
3	P 214.914†	244.6	2.4	1.1253 ug/L	1.1253 ppb	09:56:00
3	Pb 220.353†	-89.3	7.6	0.7918 ug/L	0.7918 ppb	09:56:00
3	S 181.975 Axial†	58.0	-1.9	-2.1540 ug/L	-2.1540 ppb	09:56:00
3	Sb 206.836†	52.2	13.8	4.1208 ug/L	4.1208 ppb	09:56:00
3	Se 196.026†	-30.0	4.0	1.9836 ug/L	1.9836 ppb	09:56:00
3	Si 251.611†	717.9	86.7	2.4481 ug/L	2.4481 ppb	09:56:00
3	Sn 189.927†	15.7	12.2	1.8124 ug/L	1.8124 ppb	09:56:00
3	Ti 334.940†	-1819.5	-104.0	-0.1574 ug/L	-0.1574 ppb	09:55:40
3	Tl 190.801†	-44.9	-0.8	-0.2304 ug/L	-0.2304 ppb	09:56:00
3	U 409.014†	-2933.1	-431.7	-12.788 ug/L	-12.788 ppb	09:55:40
3	V 292.402†	-1783.7	-59.3	-0.3891 ug/L	-0.3891 ppb	09:55:40
3	Zn 213.857†	901.7	81.9	0.6715 ug/L	0.6715 ppb	09:56:00
3	SiO2†	737.5	84.9	5.1646 ug/L	5.1646 ppb	09:56:16

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	876813.2	95.829 %	0.1539			0.16%
Sc Radial	4899.3	96.3 %	0.65			0.67%
Y 371.029	751351.3	96.129 %	0.1516			0.16%
Y RADIAL	5179.0	96.60 %	0.884			0.91%
Ag 328.068†	-8.4	-0.0265 ug/L	0.47104	-0.0265 ppb	0.47104	>999.9%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	7.1	5.7020 ug/L	5.86284	5.7020 ppb	5.86284	102.82%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	22.9	8.0549 ug/L	0.83224	8.0549 ppb	0.83224	10.33%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	482.7	9.8886 ug/L	0.86483	9.8886 ppb	0.86483	8.75%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-4.6	-0.0332 ug/L	0.06434	-0.0332 ppb	0.06434	193.91%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-138.3	-0.0467 ug/L	0.01270	-0.0467 ppb	0.01270	27.17%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-1.4	-2.1800 ug/L	3.27805	-2.1800 ppb	3.27805	150.37%

QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	17.4	0.1648 ug/L	0.08148	0.1648 ppb	0.08148	49.44%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-9.3	-0.1714 ug/L	0.14284	-0.1714 ppb	0.14284	83.35%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-17.1	-0.1659 ug/L	0.09513	-0.1659 ppb	0.09513	57.34%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	238.3	0.7047 ug/L	0.10557	0.7047 ppb	0.10557	14.98%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	-1.4	-11.956 ug/L	13.5988	-11.956 ppb	13.5988	113.74%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	465.6	89.693 ug/L	12.8961	89.693 ppb	12.8961	14.38%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	-0.2	-7.3156 ug/L	44.61309	-7.3156 ppb	44.61309	609.84%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-77.4	-0.0823 ug/L	0.00281	-0.0823 ppb	0.00281	3.41%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	10.4	0.6499 ug/L	0.39101	0.6499 ppb	0.39101	60.17%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	73.5	20.925 ug/L	6.0070	20.925 ppb	6.0070	28.71%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	18.1	0.3969 ug/L	0.25619	0.3969 ppb	0.25619	64.54%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	8.3	4.0021 ug/L	3.16953	4.0021 ppb	3.16953	79.20%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	3.3	0.3467 ug/L	1.33553	0.3467 ppb	1.33553	385.23%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	6.0	6.8527 ug/L	7.80209	6.8527 ppb	7.80209	113.85%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	20.9	6.2377 ug/L	1.83404	6.2377 ppb	1.83404	29.40%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	-0.2	-0.1303 ug/L	2.80825	-0.1303 ppb	2.80825	>999.9%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	85.7	2.4168 ug/L	0.11159	2.4168 ppb	0.11159	4.62%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	7.3	1.0841 ug/L	0.63791	1.0841 ppb	0.63791	58.84%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	1.9	0.0124 ug/L	0.12130	0.0124 ppb	0.12130	975.53%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	-24.6	-0.0321 ug/L	0.13626	-0.0321 ppb	0.13626	424.35%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	-3.0	-0.8144 ug/L	0.83674	-0.8144 ppb	0.83674	102.75%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	-496.7	-14.716 ug/L	2.1963	-14.716 ppb	2.1963	14.92%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	40.2	0.2348 ug/L	0.56964	0.2348 ppb	0.56964	242.65%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	83.0	0.6797 ug/L	0.00867	0.6797 ppb	0.00867	1.28%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	89.5	5.4417 ug/L	0.67114	5.4417 ppb	0.67114	12.33%	
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: 1/5/2010 09:58:26

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	4837.2	4837.2	95.1 %		10:00:20
1	Y RADIAL	5158.1	5158.1	96.21 %		10:00:20
1	Al 396.153Radial†	-50.0	-33.0	-25.600 ug/L	-25.600 ppb	10:00:20
1	Ca 317.933Radial†	9.3	-8.4	-13.399 ug/L	-13.399 ppb	10:00:40
1	Fe 238.204 Radial†	43423.7	45634.3	395200 ug/L	395200 ppb	10:00:20
1	K 766.490 Radial†	3281.8	118.7	35.849 ug/L	35.849 ppb	10:00:20
1	Mg 279.077 IEC†	9.7	6.3	-144.90 ug/L	-144.90 ppb	10:00:40
1	Na 589.592 Radial†	-1571.0	86.3	24.565 ug/L	24.565 ppb	10:00:20
1	Sr 421.552†	43.1	37.9	0.2514 ug/L	0.2514 ppb	10:00:20
1	Sc 361.383	883558.1	883558.1	96.566 %		10:01:37
1	Y 371.029	752948.0	752948.0	96.334 %		10:01:37
1	Ag 328.068†	-28348.0	-29868.9	3.8833 ug/L	3.8833 ppb	10:01:37
1	As 188.979†	-241.6	-219.0	-16.079 ug/L	-16.079 ppb	10:01:57
1	B 249.677†	1415.5	2179.2	-7.8062 ug/L	-7.8062 ppb	10:01:37
1	Ba 233.527†	-2054.8	-2136.4	-5.4856 ug/L	-5.4856 ppb	10:01:57
1	Be 313.107†	-4198.5	27.6	0.0092 ug/L	0.0092 ppb	10:01:37
1	Cd 226.502†	3359.4	3729.4	-4.4314 ug/L	-4.4314 ppb	10:01:57
1	Co 228.616†	195.4	291.4	-0.2664 ug/L	-0.2664 ppb	10:01:57
1	Cr 267.716†	-598.5	-736.0	-0.2285 ug/L	-0.2285 ppb	10:01:57
1	Cu 324.752†	-994.6	-9128.3	-6.8515 ug/L	-6.8515 ppb	10:01:37
1	Mn 257.610†	-39777.9	-41860.5	-4.5231 ug/L	-4.5231 ppb	10:01:37
1	Mo 202.031†	-418.5	-456.6	9.2330 ug/L	9.2330 ppb	10:01:57
1	Ni 231.604†	174.6	63.4	1.3845 ug/L	1.3845 ppb	10:01:57
1	P 214.914†	788.1	563.6	-38.182 ug/L	-38.182 ppb	10:01:57
1	Pb 220.353†	216.9	325.3	1.1854 ug/L	1.1854 ppb	10:01:57
1	S 181.975 Axial†	74.3	14.5	16.608 ug/L	16.608 ppb	10:01:57
1	Sb 206.836†	25.3	-14.6	1.6885 ug/L	1.6885 ppb	10:01:57
1	Se 196.026†	-2280.1	-2325.9	-37.652 ug/L	-37.652 ppb	10:01:57
1	Si 251.611†	-644.2	-1328.8	-37.638 ug/L	-37.638 ppb	10:01:57
1	Sn 189.927†	-45.6	-51.4	-2.3319 ug/L	-2.3319 ppb	10:01:57
1	Ti 334.940†	-1749.7	-18.9	-0.0560 ug/L	-0.0560 ppb	10:01:57
1	Tl 190.801†	-65.4	-21.8	-6.3660 ug/L	-6.3660 ppb	10:01:57
1	U 409.014†	-445.5	2164.8	14.442 ug/L	14.442 ppb	10:01:37
1	V 292.402†	6628.0	8663.9	-5.9878 ug/L	-5.9878 ppb	10:01:57
1	Zn 213.857†	4969.3	4287.8	14.765 ug/L	14.765 ppb	10:01:57
1	SiO2†	-707.1	-1416.2	-86.568 ug/L	-86.568 ppb	10:02:54
2	Sc Radial	4810.2	4810.2	94.6 %		10:00:45
2	Y RADIAL	5078.4	5078.4	94.73 %		10:00:45
2	Al 396.153Radial†	-80.5	-65.6	-52.000 ug/L	-52.000 ppb	10:00:45
2	Ca 317.933Radial†	10.4	-7.3	-11.599 ug/L	-11.599 ppb	10:01:05
2	Fe 238.204 Radial†	43077.0	45524.3	394250 ug/L	394250 ppb	10:00:45
2	K 766.490 Radial†	3180.6	31.1	18.935 ug/L	18.935 ppb	10:00:45
2	Mg 279.077 IEC†	12.4	9.2	-52.720 ug/L	-52.720 ppb	10:01:05
2	Na 589.592 Radial†	-1555.5	93.4	26.585 ug/L	26.585 ppb	10:00:45
2	Sr 421.552†	57.9	53.7	0.3563 ug/L	0.3563 ppb	10:00:45
2	Sc 361.383	873661.3	873661.3	95.484 %		10:02:03
2	Y 371.029	745655.8	745655.8	95.401 %		10:02:03
2	Ag 328.068†	-27973.8	-29809.5	3.8207 ug/L	3.8207 ppb	10:02:03
2	As 188.979†	-223.4	-202.7	-10.494 ug/L	-10.494 ppb	10:02:23
2	B 249.677†	1521.4	2306.8	-5.0658 ug/L	-5.0658 ppb	10:02:03
2	Ba 233.527†	-1999.4	-2102.5	-5.2634 ug/L	-5.2634 ppb	10:02:23
2	Be 313.107†	-4274.2	-101.0	-0.0342 ug/L	-0.0342 ppb	10:02:03
2	Cd 226.502†	3342.4	3751.1	-4.1320 ug/L	-4.1320 ppb	10:02:23
2	Co 228.616†	165.0	261.7	-0.8074 ug/L	-0.8074 ppb	10:02:23
2	Cr 267.716†	-601.2	-745.9	-0.3444 ug/L	-0.3444 ppb	10:02:23
2	Cu 324.752†	-963.3	-9107.1	-6.8375 ug/L	-6.8375 ppb	10:02:03
2	Mn 257.610†	-39382.9	-41913.4	-4.6754 ug/L	-4.6754 ppb	10:02:03
2	Mo 202.031†	-421.1	-464.2	8.6634 ug/L	8.6634 ppb	10:02:23
2	Ni 231.604†	203.3	95.5	2.0875 ug/L	2.0875 ppb	10:02:23

2	P 214.914†	774.5	558.6	-39.855 ug/L	-39.855 ppb	10:02:23
2	Pb 220.353†	221.3	332.5	2.0025 ug/L	2.0025 ppb	10:02:23
2	S 181.975 Axial†	77.5	18.8	21.460 ug/L	21.460 ppb	10:02:23
2	Sb 206.836†	19.3	-20.5	-0.0551 ug/L	-0.0551 ppb	10:02:23
2	Se 196.026†	-2254.4	-2325.8	-40.338 ug/L	-40.338 ppb	10:02:23
2	Si 251.611†	-587.4	-1276.9	-36.139 ug/L	-36.139 ppb	10:02:23
2	Sn 189.927†	-34.5	-40.3	-0.7003 ug/L	-0.7003 ppb	10:02:23
2	Ti 334.940†	-1744.5	-34.0	-0.0785 ug/L	-0.0785 ppb	10:02:23
2	Tl 190.801†	-55.8	-12.5	-3.8240 ug/L	-3.8240 ppb	10:02:23
2	U 409.014†	-516.7	2085.1	12.199 ug/L	12.199 ppb	10:02:03
2	V 292.402†	6500.7	8608.3	-6.2012 ug/L	-6.2012 ppb	10:02:23
2	Zn 213.857†	4947.4	4323.1	15.096 ug/L	15.096 ppb	10:02:23
2	SiO2†	-728.1	-1446.5	-88.427 ug/L	-88.427 ppb	10:02:59
3	Sc Radial	4769.9	4769.9	93.8 %		10:01:10
3	Y RADIAL	5093.2	5093.2	95.00 %		10:01:10
3	Al 396.153Radial†	-32.4	-15.0	-10.885 ug/L	-10.885 ppb	10:01:10
3	Ca 317.933Radial†	12.2	-5.3	-8.4002 ug/L	-8.4002 ppb	10:01:30
3	Fe 238.204 Radial†	42898.2	45718.9	395930 ug/L	395930 ppb	10:01:10
3	K 766.490 Radial†	3323.3	211.6	53.779 ug/L	53.779 ppb	10:01:10
3	Mg 279.077 IEC†	14.2	11.2	8.0259 ug/L	8.0259 ppb	10:01:30
3	Na 589.592 Radial†	-1566.7	67.5	19.211 ug/L	19.211 ppb	10:01:10
3	Sr 421.552†	44.3	39.8	0.2638 ug/L	0.2638 ppb	10:01:10
3	Sc 361.383	879435.1	879435.1	96.115 %		10:02:28
3	Y 371.029	749776.4	749776.4	95.928 %		10:02:28
3	Ag 328.068†	-28274.5	-29930.0	3.8713 ug/L	3.8713 ppb	10:02:28
3	As 188.979†	-230.0	-208.1	-12.117 ug/L	-12.117 ppb	10:02:48
3	B 249.677†	1530.0	2305.2	-5.3228 ug/L	-5.3228 ppb	10:02:28
3	Ba 233.527†	-2052.3	-2143.8	-5.5197 ug/L	-5.5197 ppb	10:02:48
3	Be 313.107†	-4228.5	-24.0	-0.0082 ug/L	-0.0082 ppb	10:02:28
3	Cd 226.502†	3378.0	3765.1	-4.1687 ug/L	-4.1687 ppb	10:02:48
3	Co 228.616†	198.8	295.8	-0.1959 ug/L	-0.1959 ppb	10:02:48
3	Cr 267.716†	-622.1	-763.4	-0.4876 ug/L	-0.4876 ppb	10:02:48
3	Cu 324.752†	-976.3	-9114.0	-6.7720 ug/L	-6.7720 ppb	10:02:28
3	Mn 257.610†	-39849.0	-42127.6	-4.7333 ug/L	-4.7333 ppb	10:02:28
3	Mo 202.031†	-430.0	-470.7	8.4203 ug/L	8.4203 ppb	10:02:48
3	Ni 231.604†	209.3	100.4	2.1940 ug/L	2.1940 ppb	10:02:48
3	P 214.914†	794.8	574.3	-33.490 ug/L	-33.490 ppb	10:02:48
3	Pb 220.353†	224.9	334.7	2.1005 ug/L	2.1005 ppb	10:02:48
3	S 181.975 Axial†	68.1	8.4	9.6521 ug/L	9.6521 ppb	10:02:48
3	Sb 206.836†	26.8	-12.8	2.2184 ug/L	2.2184 ppb	10:02:48
3	Se 196.026†	-2303.0	-2360.8	-53.365 ug/L	-53.365 ppb	10:02:48
3	Si 251.611†	-650.5	-1338.5	-37.908 ug/L	-37.908 ppb	10:02:48
3	Sn 189.927†	-43.6	-49.5	-2.0421 ug/L	-2.0421 ppb	10:02:48
3	Ti 334.940†	-1746.4	-24.0	-0.0619 ug/L	-0.0619 ppb	10:02:48
3	Tl 190.801†	-54.7	-11.0	-3.4130 ug/L	-3.4130 ppb	10:02:48
3	U 409.014†	-574.9	2028.1	10.299 ug/L	10.299 ppb	10:02:28
3	V 292.402†	6685.5	8755.9	-5.5383 ug/L	-5.5383 ppb	10:02:48
3	Zn 213.857†	4991.5	4335.0	15.104 ug/L	15.104 ppb	10:02:48
3	SiO2†	-876.9	-1596.3	-97.701 ug/L	-97.701 ppb	10:03:04

## Mean Data: LR1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Conc. Units	Sample Std.Dev.	RSD
Sc 361.383	878884.8	96.055 %		0.5433			0.57%
Sc Radial	4805.8	94.5 %		0.67			0.71%
Y 371.029	749460.1	95.887 %		0.4678			0.49%
Y RADIAL	5109.9	95.31 %		0.791			0.83%
Ag 328.068†	-29869.5	3.8584 ug/L		0.03323	3.8584 ppb	0.03323	0.86%
Al 396.153Radial†	-37.8	-29.495 ug/L		20.8324	-29.495 ppb	20.8324	70.63%
As 188.979†	-209.9	-12.897 ug/L		2.8734	-12.897 ppb	2.8734	22.28%
B 249.677†	2263.7	-6.0649 ug/L		1.51347	-6.0649 ppb	1.51347	24.95%
Ba 233.527†	-2127.6	-5.4229 ug/L		0.13916	-5.4229 ppb	0.13916	2.57%
Be 313.107†	-32.5	-0.0110 ug/L		0.02185	-0.0110 ppb	0.02185	198.07%
Ca 317.933Radial†	-7.0	-11.133 ug/L		2.5320	-11.133 ppb	2.5320	22.74%
Cd 226.502†	3748.5	-4.2440 ug/L		0.16331	-4.2440 ppb	0.16331	3.85%
Co 228.616†	283.0	-0.4232 ug/L		0.33455	-0.4232 ppb	0.33455	79.04%
Cr 267.716†	-748.4	-0.3535 ug/L		0.12978	-0.3535 ppb	0.12978	36.72%
Cu 324.752†	-9116.5	-6.8203 ug/L		0.04246	-6.8203 ppb	0.04246	0.62%
Fe 238.204 Radial†	45625.8	395130 ug/L		845.0	395130 ppb	845.0	0.21%
K 766.490 Radial†	120.5	36.188 ug/L		17.4245	36.188 ppb	17.4245	48.15%

Mg 279.077 IEC†	8.9	-63.197 ug/L	76.9978	-63.197 ppb	76.9978	121.84%
Mn 257.610†	-41967.2	-4.6439 ug/L	0.10853	-4.6439 ppb	0.10853	2.34%
Mo 202.031†	-463.9	8.7722 ug/L	0.41714	8.7722 ppb	0.41714	4.76%
Na 589.592 Radial†	82.4	23.454 ug/L	3.8103	23.454 ppb	3.8103	16.25%
Ni 231.604†	86.5	1.8887 ug/L	0.43987	1.8887 ppb	0.43987	23.29%
P 214.914†	565.5	-37.175 ug/L	3.2998	-37.175 ppb	3.2998	8.88%
Pb 220.353†	330.9	1.7628 ug/L	0.50246	1.7628 ppb	0.50246	28.50%
S 181.975 Axial†	13.9	15.907 ug/L	5.9353	15.907 ppb	5.9353	37.31%
Sb 206.836†	-15.9	1.2840 ug/L	1.18951	1.2840 ppb	1.18951	92.64%
Se 196.026†	-2337.5	-43.785 ug/L	8.4043	-43.785 ppb	8.4043	19.19%
Si 251.611†	-1314.7	-37.228 ug/L	0.9532	-37.228 ppb	0.9532	2.56%
Sn 189.927†	-47.0	-1.6914 ug/L	0.87052	-1.6914 ppb	0.87052	51.47%
Sr 421.552†	43.8	0.2905 ug/L	0.05732	0.2905 ppb	0.05732	19.73%
Ti 334.940†	-25.6	-0.0655 ug/L	0.01169	-0.0655 ppb	0.01169	17.85%
Tl 190.801†	-15.1	-4.5344 ug/L	1.59952	-4.5344 ppb	1.59952	35.28%
U 409.014†	2092.7	12.313 ug/L	2.0736	12.313 ppb	2.0736	16.84%
V 292.402†	8676.1	-5.9091 ug/L	0.33841	-5.9091 ppb	0.33841	5.73%
Zn 213.857†	4315.3	14.988 ug/L	0.1939	14.988 ppb	0.1939	1.29%
SiO2†	-1486.3	-90.899 ug/L	5.9641	-90.899 ppb	5.9641	6.56%

Sequence No.: 4

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/5/2010 10:05:15

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	4880.7	4880.7	96.0 %		10:07:07
1	Y RADIAL	5143.1	5143.1	95.93 %		10:07:07
1	Al 396.153Radial†	5891.5	6157.8	4979.7 ug/L	4979.7 ppb	10:07:07
1	Ca 317.933Radial†	3016.5	3124.6	4959.0 ug/L	4959.0 ppb	10:07:27
1	Fe 238.204 Radial†	571.3	580.5	5042.9 ug/L	5042.9 ppb	10:07:27
1	K 766.490 Radial†	28308.3	26162.6	5031.7 ug/L	5031.7 ppb	10:07:07
1	Mg 279.077 IEC†	159.9	162.7	5036.4 ug/L	5036.4 ppb	10:07:27
1	Na 589.592 Radial†	33603.1	36748.2	10459 ug/L	10459 ppb	10:07:07
1	Sr 421.552†	72112.1	75124.9	498.17 ug/L	498.17 ppb	10:07:07
1	Sc 361.383	893820.7	893820.7	97.688 %		10:08:26
1	Y 371.029	756875.4	756875.4	96.836 %		10:08:26
1	Ag 328.068†	113550.6	115725.7	500.49 ug/L	500.49 ppb	10:08:26
1	As 188.979†	1387.9	1452.0	515.80 ug/L	515.80 ppb	10:08:46
1	B 249.677†	23090.0	24350.0	496.80 ug/L	496.80 ppb	10:08:26
1	Ba 233.527†	67138.1	68718.8	502.05 ug/L	502.05 ppb	10:08:26
1	Be 313.107†	1447403.3	1486040.6	502.42 ug/L	502.42 ppb	10:08:26
1	Cd 226.502†	51954.9	53435.3	502.42 ug/L	502.42 ppb	10:08:26
1	Co 228.616†	25905.3	26607.5	497.60 ug/L	497.60 ppb	10:08:46
1	Cr 267.716†	48743.0	49780.7	499.37 ug/L	499.37 ppb	10:08:26
1	Cu 324.752†	171793.7	167762.0	496.68 ug/L	496.68 ppb	10:08:26
1	Mn 257.610†	468064.7	478476.3	502.54 ug/L	502.54 ppb	10:08:26
1	Mo 202.031†	7911.8	8075.8	507.15 ug/L	507.15 ppb	10:08:46
1	Ni 231.604†	22423.3	22836.7	499.42 ug/L	499.42 ppb	10:08:46
1	P 214.914†	5284.7	5157.2	2453.1 ug/L	2453.1 ppb	10:08:46
1	Pb 220.353†	4687.4	4899.1	508.77 ug/L	508.77 ppb	10:08:46
1	S 181.975 Axial†	920.6	880.0	1004.3 ug/L	1004.3 ppb	10:08:46
1	Sb 206.836†	1680.3	1679.4	505.15 ug/L	505.15 ppb	10:08:46
1	Se 196.026†	933.4	990.7	523.69 ug/L	523.69 ppb	10:08:46
1	Si 251.611†	85187.2	86542.0	2472.8 ug/L	2472.8 ppb	10:08:26
1	Sn 189.927†	3326.2	3400.8	504.72 ug/L	504.72 ppb	10:08:46
1	Ti 334.940†	309970.8	319101.2	499.78 ug/L	499.78 ppb	10:08:26
1	Tl 190.801†	1758.5	1846.1	508.87 ug/L	508.87 ppb	10:08:46
1	U 409.014†	13024.5	15959.1	471.30 ug/L	471.30 ppb	10:08:26
1	V 292.402†	75663.1	79254.4	504.43 ug/L	504.43 ppb	10:08:26
1	Zn 213.857†	60441.3	61013.8	497.02 ug/L	497.02 ppb	10:08:26
1	SiO2†	85393.8	86731.2	5343.7 ug/L	5343.7 ppb	10:09:47
2	Sc Radial	4930.0	4930.0	96.9 %		10:07:32
2	Y RADIAL	5169.8	5169.8	96.43 %		10:07:32
2	Al 396.153Radial†	5910.3	6115.8	4945.7 ug/L	4945.7 ppb	10:07:32
2	Ca 317.933Radial†	3063.4	3141.5	4985.8 ug/L	4985.8 ppb	10:07:52
2	Fe 238.204 Radial†	581.0	584.6	5078.3 ug/L	5078.3 ppb	10:07:52
2	K 766.490 Radial†	28524.8	26091.0	5017.9 ug/L	5017.9 ppb	10:07:32
2	Mg 279.077 IEC†	162.9	164.1	5081.6 ug/L	5081.6 ppb	10:07:52
2	Na 589.592 Radial†	34018.4	36826.5	10482 ug/L	10482 ppb	10:07:32
2	Sr 421.552†	72956.8	75244.9	498.96 ug/L	498.96 ppb	10:07:32
2	Sc 361.383	892241.1	892241.1	97.515 %		10:08:54
2	Y 371.029	755937.1	755937.1	96.716 %		10:08:54
2	Ag 328.068†	113356.0	115732.0	500.52 ug/L	500.52 ppb	10:08:54
2	As 188.979†	1365.8	1431.9	508.71 ug/L	508.71 ppb	10:09:14
2	B 249.677†	22980.2	24279.2	495.35 ug/L	495.35 ppb	10:08:54
2	Ba 233.527†	66942.6	68640.0	501.47 ug/L	501.47 ppb	10:08:54
2	Be 313.107†	1443164.1	1484316.6	501.84 ug/L	501.84 ppb	10:08:54
2	Cd 226.502†	51733.7	53302.7	501.17 ug/L	501.17 ppb	10:08:54
2	Co 228.616†	25773.1	26518.9	495.94 ug/L	495.94 ppb	10:09:14
2	Cr 267.716†	48639.5	49762.8	499.19 ug/L	499.19 ppb	10:08:54
2	Cu 324.752†	171478.8	167750.4	496.65 ug/L	496.65 ppb	10:08:54
2	Mn 257.610†	466971.3	478203.4	502.26 ug/L	502.26 ppb	10:08:54
2	Mo 202.031†	7861.3	8038.3	504.81 ug/L	504.81 ppb	10:09:14
2	Ni 231.604†	22345.1	22797.2	498.56 ug/L	498.56 ppb	10:09:14



2	P 214.914†	5255.6	5136.9	2443.2 ug/L	2443.2 ppb	10:09:14
2	Pb 220.353†	4676.8	4896.8	508.52 ug/L	508.52 ppb	10:09:14
2	S 181.975 Axial†	915.8	876.8	1000.6 ug/L	1000.6 ppb	10:09:14
2	Sb 206.836†	1684.1	1686.3	507.19 ug/L	507.19 ppb	10:09:14
2	Se 196.026†	919.5	978.2	517.37 ug/L	517.37 ppb	10:09:14
2	Si 251.611†	84822.9	86322.7	2466.6 ug/L	2466.6 ppb	10:08:54
2	Sn 189.927†	3330.7	3411.5	506.31 ug/L	506.31 ppb	10:09:14
2	Ti 334.940†	309163.1	318834.7	499.36 ug/L	499.36 ppb	10:08:54
2	Tl 190.801†	1737.9	1828.1	503.96 ug/L	503.96 ppb	10:09:14
2	U 409.014†	13065.3	16024.5	473.24 ug/L	473.24 ppb	10:08:54
2	V 292.402†	75419.1	79141.3	503.69 ug/L	503.69 ppb	10:08:54
2	Zn 213.857†	60236.4	60913.3	496.20 ug/L	496.20 ppb	10:08:54
2	SiO2†	85833.9	87337.2	5381.3 ug/L	5381.3 ppb	10:09:52
3	Sc Radial	4754.2	4754.2	93.5 %		10:07:57
3	Y RADIAL	4977.6	4977.6	92.84 %		10:07:57
3	Al 396.153Radial†	5692.3	6108.0	4939.4 ug/L	4939.4 ppb	10:07:57
3	Ca 317.933Radial†	3029.8	3222.4	5114.1 ug/L	5114.1 ppb	10:08:17
3	Fe 238.204 Radial†	573.3	598.5	5198.6 ug/L	5198.6 ppb	10:08:17
3	K 766.490 Radial†	27733.2	26332.1	5064.4 ug/L	5064.4 ppb	10:07:57
3	Mg 279.077 IEC†	161.1	168.4	5213.2 ug/L	5213.2 ppb	10:08:17
3	Na 589.592 Radial†	32769.8	36788.4	10471 ug/L	10471 ppb	10:07:57
3	Sr 421.552†	70383.5	75274.8	499.16 ug/L	499.16 ppb	10:07:57
3	Sc 361.383	902090.8	902090.8	98.591 %		10:09:21
3	Y 371.029	763993.0	763993.0	97.747 %		10:09:21
3	Ag 328.068†	114589.2	115713.5	500.49 ug/L	500.49 ppb	10:09:21
3	As 188.979†	1381.7	1432.7	509.01 ug/L	509.01 ppb	10:09:41
3	B 249.677†	23405.8	24453.6	498.90 ug/L	498.90 ppb	10:09:21
3	Ba 233.527†	67749.7	68709.0	501.98 ug/L	501.98 ppb	10:09:21
3	Be 313.107†	1461046.8	1486295.5	502.51 ug/L	502.51 ppb	10:09:21
3	Cd 226.502†	52376.5	53375.4	501.84 ug/L	501.84 ppb	10:09:21
3	Co 228.616†	26058.4	26519.7	495.95 ug/L	495.95 ppb	10:09:41
3	Cr 267.716†	49277.3	49865.1	500.22 ug/L	500.22 ppb	10:09:21
3	Cu 324.752†	173515.5	167896.2	497.08 ug/L	497.08 ppb	10:09:21
3	Mn 257.610†	472006.2	478081.5	502.14 ug/L	502.14 ppb	10:09:21
3	Mo 202.031†	7941.1	8031.2	504.37 ug/L	504.37 ppb	10:09:41
3	Ni 231.604†	22519.7	22724.1	496.96 ug/L	496.96 ppb	10:09:41
3	P 214.914†	5315.5	5138.8	2443.9 ug/L	2443.9 ppb	10:09:41
3	Pb 220.353†	4729.2	4897.5	508.58 ug/L	508.58 ppb	10:09:41
3	S 181.975 Axial†	928.7	879.6	1003.8 ug/L	1003.8 ppb	10:09:41
3	Sb 206.836†	1718.0	1701.8	511.69 ug/L	511.69 ppb	10:09:41
3	Se 196.026†	935.8	984.5	520.93 ug/L	520.93 ppb	10:09:41
3	Si 251.611†	85884.3	86449.6	2470.2 ug/L	2470.2 ppb	10:09:21
3	Sn 189.927†	3342.3	3385.9	502.53 ug/L	502.53 ppb	10:09:41
3	Ti 334.940†	312653.0	318912.7	499.49 ug/L	499.49 ppb	10:09:21
3	Tl 190.801†	1766.6	1837.8	506.61 ug/L	506.61 ppb	10:09:41
3	U 409.014†	13108.1	15921.6	470.17 ug/L	470.17 ppb	10:09:21
3	V 292.402†	76305.7	79196.1	504.00 ug/L	504.00 ppb	10:09:21
3	Zn 213.857†	60937.9	60950.3	496.50 ug/L	496.50 ppb	10:09:21
3	SiO2†	85448.7	85985.5	5297.7 ug/L	5297.7 ppb	10:09:57

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Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	896050.9	97.931 %	0.5782			0.59%
Sc Radial	4855.0	95.5 %	1.78			1.87%
Y 371.029	758935.2	97.100 %	0.5636			0.58%
Y RADIAL	5096.8	95.07 %	1.942			2.04%
Ag 328.068†	115723.8	500.50 ug/L	0.021	500.50 ppb	0.021	0.00%
QC value within limits for Ag 328.068 Recovery = 100.10%						
Al 396.153Radial†	6127.2	4954.9 ug/L	21.68	4954.9 ppb	21.68	0.44%
QC value within limits for Al 396.153Radial Recovery = 99.10%						
As 188.979†	1438.9	511.17 ug/L	4.008	511.17 ppb	4.008	0.78%
QC value within limits for As 188.979 Recovery = 102.23%						
B 249.677†	24360.9	497.02 ug/L	1.788	497.02 ppb	1.788	0.36%
QC value within limits for B 249.677 Recovery = 99.40%						
Ba 233.527†	68689.3	501.83 ug/L	0.314	501.83 ppb	0.314	0.06%
QC value within limits for Ba 233.527 Recovery = 100.37%						
Be 313.107†	1485550.9	502.25 ug/L	0.364	502.25 ppb	0.364	0.07%
QC value within limits for Be 313.107 Recovery = 100.45%						
Ca 317.933Radial†	3162.9	5019.7 ug/L	82.91	5019.7 ppb	82.91	1.65%

QC value within limits for Ca 317.933 Radial Recovery = 100.39%							
Cd 226.502†	53371.1	501.81 ug/L	0.627	501.81 ppb	0.627	0.12%	
QC value within limits for Cd 226.502 Recovery = 100.36%							
Co 228.616†	26548.7	496.50 ug/L	0.956	496.50 ppb	0.956	0.19%	
QC value within limits for Co 228.616 Recovery = 99.30%							
Cr 267.716†	49802.8	499.60 ug/L	0.549	499.60 ppb	0.549	0.11%	
QC value within limits for Cr 267.716 Recovery = 99.92%							
Cu 324.752†	167802.9	496.80 ug/L	0.244	496.80 ppb	0.244	0.05%	
QC value within limits for Cu 324.752 Recovery = 99.36%							
Fe 238.204 Radial†	587.9	5106.6 ug/L	81.58	5106.6 ppb	81.58	1.60%	
QC value within limits for Fe 238.204 Radial Recovery = 102.13%							
K 766.490 Radial†	26195.2	5038.0 ug/L	23.85	5038.0 ppb	23.85	0.47%	
QC value within limits for K 766.490 Radial Recovery = 100.76%							
Mg 279.077 IEC†	165.1	5110.4 ug/L	91.83	5110.4 ppb	91.83	1.80%	
QC value within limits for Mg 279.077 IEC Recovery = 102.21%							
Mn 257.610†	478253.7	502.31 ug/L	0.207	502.31 ppb	0.207	0.04%	
QC value within limits for Mn 257.610 Recovery = 100.46%							
Mo 202.031†	8048.4	505.44 ug/L	1.495	505.44 ppb	1.495	0.30%	
QC value within limits for Mo 202.031 Recovery = 101.09%							
Na 589.592 Radial†	36787.7	10471 ug/L	11.1	10471 ppb	11.1	0.11%	
QC value within limits for Na 589.592 Radial Recovery = 104.71%							
Ni 231.604†	22786.0	498.31 ug/L	1.250	498.31 ppb	1.250	0.25%	
QC value within limits for Ni 231.604 Recovery = 99.66%							
P 214.914†	5144.3	2446.7 ug/L	5.55	2446.7 ppb	5.55	0.23%	
QC value within limits for P 214.914 Recovery = 97.87%							
Pb 220.353†	4897.8	508.62 ug/L	0.132	508.62 ppb	0.132	0.03%	
QC value within limits for Pb 220.353 Recovery = 101.72%							
S 181.975 Axial†	878.8	1002.9 ug/L	2.00	1002.9 ppb	2.00	0.20%	
QC value within limits for S 181.975 Axial Recovery = 100.29%							
Sb 206.836†	1689.2	508.01 ug/L	3.342	508.01 ppb	3.342	0.66%	
QC value within limits for Sb 206.836 Recovery = 101.60%							
Se 196.026†	984.5	520.66 ug/L	3.168	520.66 ppb	3.168	0.61%	
QC value within limits for Se 196.026 Recovery = 104.13%							
Si 251.611†	86438.1	2469.9 ug/L	3.14	2469.9 ppb	3.14	0.13%	
QC value within limits for Si 251.611 Recovery = 98.80%							
Sn 189.927†	3399.4	504.52 ug/L	1.895	504.52 ppb	1.895	0.38%	
QC value within limits for Sn 189.927 Recovery = 100.90%							
Sr 421.552†	75214.9	498.76 ug/L	0.526	498.76 ppb	0.526	0.11%	
QC value within limits for Sr 421.552 Recovery = 99.75%							
Ti 334.940†	318949.5	499.54 ug/L	0.213	499.54 ppb	0.213	0.04%	
QC value within limits for Ti 334.940 Recovery = 99.91%							
Tl 190.801†	1837.3	506.48 ug/L	2.454	506.48 ppb	2.454	0.48%	
QC value within limits for Tl 190.801 Recovery = 101.30%							
U 409.014†	15968.4	471.57 ug/L	1.550	471.57 ppb	1.550	0.33%	
QC value within limits for U 409.014 Recovery = 94.31%							
V 292.402†	79197.3	504.04 ug/L	0.373	504.04 ppb	0.373	0.07%	
QC value within limits for V 292.402 Recovery = 100.81%							
Zn 213.857†	60959.1	496.57 ug/L	0.417	496.57 ppb	0.417	0.08%	
QC value within limits for Zn 213.857 Recovery = 99.31%							
SiO2†	86684.6	5340.9 ug/L	41.91	5340.9 ppb	41.91	0.78%	
QC value within limits for SiO2 Recovery = 99.88%							
All analyte(s) passed QC.							

Sequence No.: 5

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/5/2010 10:12:06

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	4772.3	4772.3	93.8 %		10:13:59
1	Y RADIAL	5039.4	5039.4	94.00 %		10:13:59
1	Al 396.153Radial†	-28.9	-11.2	-9.1403 ug/L	-9.1403 ppb	10:13:59
1	Ca 317.933Radial†	21.3	4.4	7.0372 ug/L	7.0372 ppb	10:14:19
1	Fe 238.204 Radial†	14.8	1.1	9.4222 ug/L	9.4222 ppb	10:14:19
1	K 766.490 Radial†	3323.0	209.6	40.390 ug/L	40.390 ppb	10:13:59
1	Mg 279.077 IEC†	4.5	0.9	28.046 ug/L	28.046 ppb	10:14:19
1	Na 589.592 Radial†	-1742.0	-118.4	-33.706 ug/L	-33.706 ppb	10:13:59
1	Sr 421.552†	-5.8	-13.6	-0.0904 ug/L	-0.0904 ppb	10:13:59
1	Sc 361.383	890499.9	890499.9	97.325 %		10:15:16
1	Y 371.029	763494.5	763494.5	97.683 %		10:15:16
1	Ag 328.068†	422.2	-79.0	-0.3241 ug/L	-0.3241 ppb	10:15:16
1	As 188.979†	-32.6	-2.3	-0.8008 ug/L	-0.8008 ppb	10:15:36
1	B 249.677†	-260.4	445.8	9.1291 ug/L	9.1291 ppb	10:15:16
1	Ba 233.527†	3.7	-4.7	-0.0338 ug/L	-0.0338 ppb	10:15:36
1	Be 313.107†	-4350.3	-94.5	-0.0319 ug/L	-0.0319 ppb	10:15:16
1	Cd 226.502†	-229.1	15.2	0.1423 ug/L	0.1423 ppb	10:15:36
1	Co 228.616†	-74.3	12.6	0.2373 ug/L	0.2373 ppb	10:15:36
1	Cr 267.716†	109.7	-3.5	-0.0300 ug/L	-0.0300 ppb	10:15:16
1	Cu 324.752†	8102.6	227.1	0.6725 ug/L	0.6725 ppb	10:15:16
1	Mn 257.610†	592.3	-59.5	-0.0620 ug/L	-0.0620 ppb	10:15:16
1	Mo 202.031†	32.3	9.9	0.6234 ug/L	0.6234 ppb	10:15:36
1	Ni 231.604†	131.2	17.5	0.3823 ug/L	0.3823 ppb	10:15:36
1	P 214.914†	266.2	20.9	10.155 ug/L	10.155 ppb	10:15:36
1	Pb 220.353†	-79.4	19.2	1.9840 ug/L	1.9840 ppb	10:15:36
1	S 181.975 Axial†	63.9	3.3	3.7363 ug/L	3.7363 ppb	10:15:36
1	Sb 206.836†	55.7	16.6	4.9295 ug/L	4.9295 ppb	10:15:36
1	Se 196.026†	-35.7	-1.4	-0.6704 ug/L	-0.6704 ppb	10:15:36
1	Si 251.611†	685.1	42.2	1.1872 ug/L	1.1872 ppb	10:15:36
1	Sn 189.927†	6.9	3.0	0.4439 ug/L	0.4439 ppb	10:15:36
1	Ti 334.940†	-1745.1	-0.1	0.0063 ug/L	0.0063 ppb	10:15:16
1	Tl 190.801†	-46.2	-1.5	-0.4163 ug/L	-0.4163 ppb	10:15:36
1	U 409.014†	-3005.0	-461.4	-13.673 ug/L	-13.673 ppb	10:15:16
1	V 292.402†	-1731.6	21.0	0.1135 ug/L	0.1135 ppb	10:15:16
1	Zn 213.857†	882.7	48.7	0.3957 ug/L	0.3957 ppb	10:15:36
1	SiO2†	722.3	58.2	3.5483 ug/L	3.5483 ppb	10:16:32
2	Sc Radial	5056.8	5056.8	99.4 %		10:14:24
2	Y RADIAL	5354.5	5354.5	99.87 %		10:14:24
2	Al 396.153Radial†	-19.0	0.4	0.2677 ug/L	0.2677 ppb	10:14:24
2	Ca 317.933Radial†	20.0	1.8	2.8692 ug/L	2.8692 ppb	10:14:44
2	Fe 238.204 Radial†	15.1	0.5	4.1344 ug/L	4.1344 ppb	10:14:44
2	K 766.490 Radial†	3406.6	94.4	18.203 ug/L	18.203 ppb	10:14:24
2	Mg 279.077 IEC†	1.1	-2.8	-86.966 ug/L	-86.966 ppb	10:14:44
2	Na 589.592 Radial†	-1790.3	-62.6	-17.816 ug/L	-17.816 ppb	10:14:24
2	Sr 421.552†	32.3	25.0	0.1660 ug/L	0.1660 ppb	10:14:24
2	Sc 361.383	883712.2	883712.2	96.583 %		10:15:41
2	Y 371.029	757869.2	757869.2	96.963 %		10:15:41
2	Ag 328.068†	405.3	-93.1	-0.3889 ug/L	-0.3889 ppb	10:15:41
2	As 188.979†	-20.2	10.3	3.6152 ug/L	3.6152 ppb	10:16:01
2	B 249.677†	-386.0	313.7	6.4254 ug/L	6.4254 ppb	10:15:41
2	Ba 233.527†	-0.3	-8.9	-0.0661 ug/L	-0.0661 ppb	10:16:01
2	Be 313.107†	-4321.3	-98.8	-0.0335 ug/L	-0.0335 ppb	10:15:41
2	Cd 226.502†	-221.1	21.7	0.2038 ug/L	0.2038 ppb	10:16:01
2	Co 228.616†	-98.3	-12.8	-0.2357 ug/L	-0.2357 ppb	10:16:01
2	Cr 267.716†	104.4	-8.1	-0.0777 ug/L	-0.0777 ppb	10:15:41
2	Cu 324.752†	8028.3	214.1	0.6338 ug/L	0.6338 ppb	10:15:41
2	Mn 257.610†	587.1	-60.2	-0.0612 ug/L	-0.0612 ppb	10:15:41
2	Mo 202.031†	44.8	23.1	1.4493 ug/L	1.4493 ppb	10:16:01
2	Ni 231.604†	133.7	21.1	0.4620 ug/L	0.4620 ppb	10:16:01

2	P 214.914†	254.2	10.6	5.1313 ug/L	5.1313 ppb	10:16:01
2	Pb 220.353†	-101.6	-4.5	-0.4644 ug/L	-0.4644 ppb	10:16:01
2	S 181.975 Axial†	56.9	-3.4	-3.9145 ug/L	-3.9145 ppb	10:16:01
2	Sb 206.836†	41.5	2.2	0.7232 ug/L	0.7232 ppb	10:16:01
2	Se 196.026†	-29.7	4.5	2.3312 ug/L	2.3312 ppb	10:16:01
2	Si 251.611†	677.7	40.0	1.1117 ug/L	1.1117 ppb	10:16:01
2	Sn 189.927†	15.6	12.0	1.7776 ug/L	1.7776 ppb	10:16:01
2	Ti 334.940†	-1772.5	-42.2	-0.0593 ug/L	-0.0593 ppb	10:15:41
2	Tl 190.801†	-39.7	4.8	1.3175 ug/L	1.3175 ppb	10:16:01
2	U 409.014†	-3027.9	-508.8	-15.078 ug/L	-15.078 ppb	10:15:41
2	V 292.402†	-1851.0	-116.3	-0.7411 ug/L	-0.7411 ppb	10:15:41
2	Zn 213.857†	904.5	78.3	0.6420 ug/L	0.6420 ppb	10:16:01
2	SiO2†	704.7	45.6	2.7432 ug/L	2.7432 ppb	10:16:37
3	Sc Radial	5041.7	5041.7	99.1 %		10:14:49
3	Y RADIAL	5302.4	5302.4	98.90 %		10:14:49
3	Al 396.153Radial†	-25.6	-6.3	-5.1578 ug/L	-5.1578 ppb	10:14:49
3	Ca 317.933Radial†	19.8	1.7	2.6553 ug/L	2.6553 ppb	10:15:09
3	Fe 238.204 Radial†	15.3	0.8	6.5408 ug/L	6.5408 ppb	10:15:09
3	K 766.490 Radial†	3510.8	209.7	40.405 ug/L	40.405 ppb	10:14:49
3	Mg 279.077 IEC†	4.6	0.7	21.998 ug/L	21.998 ppb	10:15:09
3	Na 589.592 Radial†	-1694.0	29.2	8.3199 ug/L	8.3199 ppb	10:14:49
3	Sr 421.552†	30.1	22.9	0.1521 ug/L	0.1521 ppb	10:14:49
3	Sc 361.383	883764.2	883764.2	96.589 %		10:16:07
3	Y 371.029	757317.8	757317.8	96.893 %		10:16:07
3	Ag 328.068†	497.0	1.7	0.0155 ug/L	0.0155 ppb	10:16:07
3	As 188.979†	-21.9	8.6	3.0146 ug/L	3.0146 ppb	10:16:27
3	B 249.677†	-350.0	351.0	7.1893 ug/L	7.1893 ppb	10:16:07
3	Ba 233.527†	-7.5	-16.3	-0.1191 ug/L	-0.1191 ppb	10:16:27
3	Be 313.107†	-4369.7	-148.6	-0.0504 ug/L	-0.0504 ppb	10:16:07
3	Cd 226.502†	-220.5	22.3	0.2093 ug/L	0.2093 ppb	10:16:27
3	Co 228.616†	-105.1	-19.8	-0.3678 ug/L	-0.3678 ppb	10:16:27
3	Cr 267.716†	95.6	-17.2	-0.1702 ug/L	-0.1702 ppb	10:16:07
3	Cu 324.752†	7922.7	104.3	0.3090 ug/L	0.3090 ppb	10:16:07
3	Mn 257.610†	505.7	-144.5	-0.1514 ug/L	-0.1514 ppb	10:16:07
3	Mo 202.031†	35.3	13.3	0.8323 ug/L	0.8323 ppb	10:16:27
3	Ni 231.604†	124.6	11.6	0.2544 ug/L	0.2544 ppb	10:16:27
3	P 214.914†	261.8	18.4	8.9700 ug/L	8.9700 ppb	10:16:27
3	Pb 220.353†	-85.3	12.4	1.2888 ug/L	1.2888 ppb	10:16:27
3	S 181.975 Axial†	67.6	7.6	8.6526 ug/L	8.6526 ppb	10:16:27
3	Sb 206.836†	40.9	1.6	0.5014 ug/L	0.5014 ppb	10:16:27
3	Se 196.026†	-31.8	2.3	1.2120 ug/L	1.2120 ppb	10:16:27
3	Si 251.611†	701.9	65.0	1.8397 ug/L	1.8397 ppb	10:16:27
3	Sn 189.927†	1.4	-2.7	-0.3937 ug/L	-0.3937 ppb	10:16:27
3	Ti 334.940†	-1803.0	-73.7	-0.1118 ug/L	-0.1118 ppb	10:16:07
3	Tl 190.801†	-38.0	6.6	1.8154 ug/L	1.8154 ppb	10:16:27
3	U 409.014†	-2794.0	-266.4	-7.8952 ug/L	-7.8952 ppb	10:16:07
3	V 292.402†	-1773.7	-36.1	-0.2305 ug/L	-0.2305 ppb	10:16:07
3	Zn 213.857†	885.7	58.7	0.4795 ug/L	0.4795 ppb	10:16:27
3	SiO2†	725.5	67.2	4.1001 ug/L	4.1001 ppb	10:16:42

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Conc. Units	Sample	Std.Dev.	RSD
Sc 361.383	885992.1	96.832 %		0.4267				0.44%
Sc Radial	4956.9	97.5 %		3.15				3.23%
Y 371.029	759560.5	97.180 %		0.4373				0.45%
Y RADIAL	5232.1	97.59 %		3.150				3.23%
Ag 328.068†	-56.8	-0.2325 ug/L		0.21717	-0.2325 ppb		0.21717	93.41%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153Radial†	-5.7	-4.6768 ug/L		4.72239	-4.6768 ppb		4.72239	100.97%
QC value within limits for Al 396.153Radial Recovery = Not calculated								
As 188.979†	5.5	1.9430 ug/L		2.39509	1.9430 ppb		2.39509	123.27%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	370.2	7.5812 ug/L		1.39381	7.5812 ppb		1.39381	18.39%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-10.0	-0.0730 ug/L		0.04308	-0.0730 ppb		0.04308	59.00%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-114.0	-0.0386 ug/L		0.01025	-0.0386 ppb		0.01025	26.56%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 317.933Radial†	2.6	4.1872 ug/L		2.47048	4.1872 ppb		2.47048	59.00%

QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	19.7	0.1852 ug/L	0.03721	0.1852 ppb	0.03721	20.10%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	-6.7	-0.1221 ug/L	0.31813	-0.1221 ppb	0.31813	260.59%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-9.6	-0.0926 ug/L	0.07125	-0.0926 ppb	0.07125	76.91%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	181.8	0.5384 ug/L	0.19964	0.5384 ppb	0.19964	37.08%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	0.8	6.6991 ug/L	2.64745	6.6991 ppb	2.64745	39.52%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	171.2	33.000 ug/L	12.8142	33.000 ppb	12.8142	38.83%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	-0.4	-12.307 ug/L	64.7267	-12.307 ppb	64.7267	525.92%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-88.1	-0.0915 ug/L	0.05183	-0.0915 ppb	0.05183	56.64%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	15.4	0.9683 ug/L	0.42940	0.9683 ppb	0.42940	44.34%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	-50.6	-14.401 ug/L	21.2201	-14.401 ppb	21.2201	147.35%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	16.7	0.3662 ug/L	0.10474	0.3662 ppb	0.10474	28.60%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	16.7	8.0854 ug/L	2.62598	8.0854 ppb	2.62598	32.48%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	9.0	0.9361 ug/L	1.26171	0.9361 ppb	1.26171	134.78%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	2.5	2.8248 ug/L	6.33297	2.8248 ppb	6.33297	224.19%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	6.8	2.0513 ug/L	2.49501	2.0513 ppb	2.49501	121.63%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	1.8	0.9576 ug/L	1.51688	0.9576 ppb	1.51688	158.40%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	49.1	1.3795 ug/L	0.40033	1.3795 ppb	0.40033	29.02%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	4.1	0.6093 ug/L	1.09506	0.6093 ppb	1.09506	179.73%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	11.4	0.0759 ug/L	0.14419	0.0759 ppb	0.14419	190.03%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	-38.7	-0.0549 ug/L	0.05916	-0.0549 ppb	0.05916	107.74%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	3.3	0.9055 ug/L	1.17148	0.9055 ppb	1.17148	129.37%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	-412.2	-12.215 ug/L	3.8069	-12.215 ppb	3.8069	31.16%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	-43.8	-0.2860 ug/L	0.43002	-0.2860 ppb	0.43002	150.35%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	61.9	0.5058 ug/L	0.12523	0.5058 ppb	0.12523	24.76%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	57.0	3.4639 ug/L	0.68239	3.4639 ppb	0.68239	19.70%	
QC value within limits for SiO2 Recovery = Not calculated							
All analyte(s) passed QC.							

Sequence No.: 8  
 Sample ID: CCV  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 7  
 Date Collected: 1/5/2010 11:12:09  
 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	4827.3	4827.3	94.9 %		11:14:02
1	Y RADIAL	5065.6	5065.6	94.49 %		11:14:02
1	Al 396.153Radial†	5893.1	6227.4	5036.1 ug/L	5036.1 ppb	11:14:02
1	Ca 317.933Radial†	3037.4	3181.4	5049.0 ug/L	5049.0 ppb	11:14:22
1	Fe 238.204 Radial†	569.6	585.4	5085.2 ug/L	5085.2 ppb	11:14:22
1	K 766.490 Radial†	28849.0	27058.6	5204.2 ug/L	5204.2 ppb	11:14:02
1	Mg 279.077 IEC†	159.4	164.1	5080.1 ug/L	5080.1 ppb	11:14:22
1	Na 589.592 Radial†	33271.8	36786.8	10470 ug/L	10470 ppb	11:14:02
1	Sr 421.552†	71960.2	75796.4	502.62 ug/L	502.62 ppb	11:14:02
1	Sc 361.383	894898.7	894898.7	97.805 %		11:15:21
1	Y 371.029	757060.4	757060.4	96.860 %		11:15:21
1	Ag 328.068†	115615.8	117697.2	509.00 ug/L	509.00 ppb	11:15:21
1	As 188.979†	1381.4	1443.6	512.94 ug/L	512.94 ppb	11:15:41
1	B 249.677†	23630.7	24874.3	507.52 ug/L	507.52 ppb	11:15:21
1	Ba 233.527†	68291.5	69815.3	510.06 ug/L	510.06 ppb	11:15:21
1	Be 313.107†	1475366.0	1512845.9	511.48 ug/L	511.48 ppb	11:15:21
1	Cd 226.502†	52896.8	54334.3	510.87 ug/L	510.87 ppb	11:15:21
1	Co 228.616†	26105.4	26780.1	500.82 ug/L	500.82 ppb	11:15:41
1	Cr 267.716†	49726.0	50725.6	508.85 ug/L	508.85 ppb	11:15:21
1	Cu 324.752†	175555.0	171395.9	507.43 ug/L	507.43 ppb	11:15:21
1	Mn 257.610†	477527.9	487574.7	512.09 ug/L	512.09 ppb	11:15:21
1	Mo 202.031†	7950.5	8105.6	509.03 ug/L	509.03 ppb	11:15:41
1	Ni 231.604†	22564.9	22953.9	501.98 ug/L	501.98 ppb	11:15:41
1	P 214.914†	5329.8	5196.8	2470.8 ug/L	2470.8 ppb	11:15:41
1	Pb 220.353†	4726.4	4933.2	512.31 ug/L	512.31 ppb	11:15:41
1	S 181.975 Axial†	918.2	876.4	1000.2 ug/L	1000.2 ppb	11:15:41
1	Sb 206.836†	1701.6	1699.1	510.82 ug/L	510.82 ppb	11:15:41
1	Se 196.026†	942.9	999.4	528.23 ug/L	528.23 ppb	11:15:41
1	Si 251.611†	87155.9	88449.8	2527.5 ug/L	2527.5 ppb	11:15:21
1	Sn 189.927†	3336.2	3406.9	505.64 ug/L	505.64 ppb	11:15:41
1	Ti 334.940†	316452.0	325345.6	509.56 ug/L	509.56 ppb	11:15:21
1	Tl 190.801†	1763.1	1848.6	509.66 ug/L	509.66 ppb	11:15:41
1	U 409.014†	13250.3	16173.8	477.64 ug/L	477.64 ppb	11:15:21
1	V 292.402†	77128.6	80659.4	513.27 ug/L	513.27 ppb	11:15:21
1	Zn 213.857†	61534.6	62057.1	505.56 ug/L	505.56 ppb	11:15:21
1	SiO2†	86236.8	87487.8	5390.4 ug/L	5390.4 ppb	11:16:41
2	Sc Radial	4919.5	4919.5	96.7 %		11:14:27
2	Y RADIAL	5127.6	5127.6	95.64 %		11:14:27
2	Al 396.153Radial†	5966.1	6186.5	5002.9 ug/L	5002.9 ppb	11:14:27
2	Ca 317.933Radial†	3025.6	3109.2	4934.6 ug/L	4934.6 ppb	11:14:47
2	Fe 238.204 Radial†	571.7	576.2	5006.1 ug/L	5006.1 ppb	11:14:47
2	K 766.490 Radial†	29179.3	26830.4	5160.3 ug/L	5160.3 ppb	11:14:27
2	Mg 279.077 IEC†	157.1	158.5	4907.2 ug/L	4907.2 ppb	11:14:47
2	Na 589.592 Radial†	33714.8	36587.7	10414 ug/L	10414 ppb	11:14:27
2	Sr 421.552†	73197.6	75654.5	501.68 ug/L	501.68 ppb	11:14:27
2	Sc 361.383	896357.5	896357.5	97.965 %		11:15:48
2	Y 371.029	757998.8	757998.8	96.980 %		11:15:48
2	Ag 328.068†	115681.1	117571.5	508.43 ug/L	508.43 ppb	11:15:48
2	As 188.979†	1386.3	1446.3	513.86 ug/L	513.86 ppb	11:16:08
2	B 249.677†	23617.1	24821.2	506.44 ug/L	506.44 ppb	11:15:48
2	Ba 233.527†	68338.6	69749.7	509.58 ug/L	509.58 ppb	11:15:48
2	Be 313.107†	1472805.2	1507776.9	509.77 ug/L	509.77 ppb	11:15:48
2	Cd 226.502†	52797.9	54145.3	509.10 ug/L	509.10 ppb	11:15:48
2	Co 228.616†	26194.7	26827.9	501.71 ug/L	501.71 ppb	11:16:08
2	Cr 267.716†	49634.3	50549.2	507.08 ug/L	507.08 ppb	11:15:48
2	Cu 324.752†	175675.8	171227.1	506.93 ug/L	506.93 ppb	11:15:48
2	Mn 257.610†	477452.2	486702.8	511.17 ug/L	511.17 ppb	11:15:48
2	Mo 202.031†	7986.5	8129.1	510.50 ug/L	510.50 ppb	11:16:08
2	Ni 231.604†	22601.5	22953.7	501.98 ug/L	501.98 ppb	11:16:08

2	P 214.914†	5363.8	5222.6	2483.6 ug/L	2483.6 ppb	11:16:08
2	Pb 220.353†	4763.9	4963.6	515.46 ug/L	515.46 ppb	11:16:08
2	S 181.975 Axial†	929.0	885.9	1011.0 ug/L	1011.0 ppb	11:16:08
2	Sb 206.836†	1719.2	1714.2	515.41 ug/L	515.41 ppb	11:16:08
2	Se 196.026†	929.7	984.3	520.31 ug/L	520.31 ppb	11:16:08
2	Si 251.611†	87280.8	88432.3	2527.0 ug/L	2527.0 ppb	11:15:48
2	Sn 189.927†	3363.9	3429.7	509.00 ug/L	509.00 ppb	11:16:08
2	Ti 334.940†	317057.3	325436.9	509.69 ug/L	509.69 ppb	11:15:48
2	Tl 190.801†	1768.5	1851.2	510.36 ug/L	510.36 ppb	11:16:08
2	U 409.014†	13508.5	16415.4	484.81 ug/L	484.81 ppb	11:15:48
2	V 292.402†	76996.5	80396.3	511.67 ug/L	511.67 ppb	11:15:48
2	Zn 213.857†	61459.8	61878.4	504.10 ug/L	504.10 ppb	11:15:48
2	SiO2†	86952.4	88074.8	5426.7 ug/L	5426.7 ppb	11:16:46
3	Sc Radial	4753.3	4753.3	93.5 %		11:14:52
3	Y RADIAL	5028.9	5028.9	93.80 %		11:14:52
3	Al 396.153Radial†	5838.4	6265.5	5066.9 ug/L	5066.9 ppb	11:14:52
3	Ca 317.933Radial†	3051.8	3246.6	5152.5 ug/L	5152.5 ppb	11:15:12
3	Fe 238.204 Radial†	572.6	597.9	5194.0 ug/L	5194.0 ppb	11:15:12
3	K 766.490 Radial†	28615.2	27281.5	5247.2 ug/L	5247.2 ppb	11:14:52
3	Mg 279.077 IEC†	161.0	168.3	5211.4 ug/L	5211.4 ppb	11:15:12
3	Na 589.592 Radial†	32842.5	36873.0	10495 ug/L	10495 ppb	11:14:52
3	Sr 421.552†	71418.6	76396.8	506.60 ug/L	506.60 ppb	11:14:52
3	Sc 361.383	890026.9	890026.9	97.273 %		11:16:16
3	Y 371.029	752420.0	752420.0	96.266 %		11:16:16
3	Ag 328.068†	114952.9	117662.8	508.88 ug/L	508.88 ppb	11:16:16
3	As 188.979†	1379.6	1449.5	515.02 ug/L	515.02 ppb	11:16:36
3	B 249.677†	23430.4	24800.6	505.99 ug/L	505.99 ppb	11:16:16
3	Ba 233.527†	67931.1	69827.0	510.15 ug/L	510.15 ppb	11:16:16
3	Be 313.107†	1463696.8	1509106.6	510.22 ug/L	510.22 ppb	11:16:16
3	Cd 226.502†	52698.7	54426.6	511.73 ug/L	511.73 ppb	11:16:16
3	Co 228.616†	26160.8	26983.2	504.62 ug/L	504.62 ppb	11:16:36
3	Cr 267.716†	49348.1	50615.4	507.75 ug/L	507.75 ppb	11:16:16
3	Cu 324.752†	174069.1	170850.8	505.83 ug/L	505.83 ppb	11:16:16
3	Mn 257.610†	474769.2	487411.2	511.93 ug/L	511.93 ppb	11:16:16
3	Mo 202.031†	7963.9	8163.9	512.69 ug/L	512.69 ppb	11:16:36
3	Ni 231.604†	22585.0	23100.8	505.19 ug/L	505.19 ppb	11:16:36
3	P 214.914†	5351.2	5248.6	2496.5 ug/L	2496.5 ppb	11:16:36
3	Pb 220.353†	4734.7	4968.2	515.94 ug/L	515.94 ppb	11:16:36
3	S 181.975 Axial†	932.2	896.0	1022.5 ug/L	1022.5 ppb	11:16:36
3	Sb 206.836†	1699.0	1706.0	513.09 ug/L	513.09 ppb	11:16:36
3	Se 196.026†	947.5	1009.3	533.67 ug/L	533.67 ppb	11:16:36
3	Si 251.611†	86699.4	88468.3	2528.0 ug/L	2528.0 ppb	11:16:16
3	Sn 189.927†	3369.2	3459.5	513.45 ug/L	513.45 ppb	11:16:36
3	Ti 334.940†	314132.9	324732.6	508.60 ug/L	508.60 ppb	11:16:16
3	Tl 190.801†	1772.7	1868.4	515.05 ug/L	515.05 ppb	11:16:36
3	U 409.014†	13321.0	16320.7	481.98 ug/L	481.98 ppb	11:16:16
3	V 292.402†	76534.4	80480.2	512.20 ug/L	512.20 ppb	11:16:16
3	Zn 213.857†	61197.7	62055.2	505.51 ug/L	505.51 ppb	11:16:16
3	SiO2†	87910.3	89690.9	5526.5 ug/L	5526.5 ppb	11:16:51

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	893761.0	97.681 %	0.3623			0.37%
Sc Radial	4833.4	95.0 %	1.64			1.72%
Y 371.029	755826.4	96.702 %	0.3822			0.40%
Y RADIAL	5074.0	94.64 %	0.930			0.98%
Ag 328.068†	117643.9	508.77 ug/L	0.305	508.77 ppb	0.305	0.06%
QC value within limits for Ag 328.068 Recovery = 101.75%						
Al 396.153Radial†	6226.5	5035.3 ug/L	32.03	5035.3 ppb	32.03	0.64%
QC value within limits for Al 396.153Radial Recovery = 100.71%						
As 188.979†	1446.5	513.94 ug/L	1.044	513.94 ppb	1.044	0.20%
QC value within limits for As 188.979 Recovery = 102.79%						
B 249.677†	24832.0	506.65 ug/L	0.787	506.65 ppb	0.787	0.16%
QC value within limits for B 249.677 Recovery = 101.33%						
Ba 233.527†	69797.3	509.93 ug/L	0.307	509.93 ppb	0.307	0.06%
QC value within limits for Ba 233.527 Recovery = 101.99%						
Be 313.107†	1509909.8	510.49 ug/L	0.887	510.49 ppb	0.887	0.17%
QC value within limits for Be 313.107 Recovery = 102.10%						
Ca 317.933Radial†	3179.1	5045.4 ug/L	109.02	5045.4 ppb	109.02	2.16%

QC value within limits for Ca 317.933 Radial Recovery = 100.91%							
Cd 226.502†	54302.1	510.57 ug/L	1.341	510.57 ppb	1.341	0.26%	
QC value within limits for Cd 226.502 Recovery = 102.11%							
Co 228.616†	26863.8	502.38 ug/L	1.990	502.38 ppb	1.990	0.40%	
QC value within limits for Co 228.616 Recovery = 100.48%							
Cr 267.716†	50630.1	507.89 ug/L	0.895	507.89 ppb	0.895	0.18%	
QC value within limits for Cr 267.716 Recovery = 101.58%							
Cu 324.752†	171157.9	506.73 ug/L	0.822	506.73 ppb	0.822	0.16%	
QC value within limits for Cu 324.752 Recovery = 101.35%							
Fe 238.204 Radial†	586.5	5095.1 ug/L	94.34	5095.1 ppb	94.34	1.85%	
QC value within limits for Fe 238.204 Radial Recovery = 101.90%							
K 766.490 Radial†	27056.8	5203.9 ug/L	43.43	5203.9 ppb	43.43	0.83%	
QC value within limits for K 766.490 Radial Recovery = 104.08%							
Mg 279.077 IEC†	163.6	5066.3 ug/L	152.58	5066.3 ppb	152.58	3.01%	
QC value within limits for Mg 279.077 IEC Recovery = 101.33%							
Mn 257.610†	487229.6	511.73 ug/L	0.491	511.73 ppb	0.491	0.10%	
QC value within limits for Mn 257.610 Recovery = 102.35%							
Mo 202.031†	8132.9	510.74 ug/L	1.844	510.74 ppb	1.844	0.36%	
QC value within limits for Mo 202.031 Recovery = 102.15%							
Na 589.592 Radial†	36749.1	10460 ug/L	41.7	10460 ppb	41.7	0.40%	
QC value within limits for Na 589.592 Radial Recovery = 104.60%							
Ni 231.604†	23002.8	503.05 ug/L	1.856	503.05 ppb	1.856	0.37%	
QC value within limits for Ni 231.604 Recovery = 100.61%							
P 214.914†	5222.7	2483.6 ug/L	12.84	2483.6 ppb	12.84	0.52%	
QC value within limits for P 214.914 Recovery = 99.35%							
Pb 220.353†	4955.0	514.57 ug/L	1.970	514.57 ppb	1.970	0.38%	
QC value within limits for Pb 220.353 Recovery = 102.91%							
S 181.975 Axial†	886.1	1011.2 ug/L	11.17	1011.2 ppb	11.17	1.10%	
QC value within limits for S 181.975 Axial Recovery = 101.12%							
Sb 206.836†	1706.4	513.11 ug/L	2.300	513.11 ppb	2.300	0.45%	
QC value within limits for Sb 206.836 Recovery = 102.62%							
Se 196.026†	997.7	527.40 ug/L	6.716	527.40 ppb	6.716	1.27%	
QC value within limits for Se 196.026 Recovery = 105.48%							
Si 251.611†	88450.1	2527.5 ug/L	0.48	2527.5 ppb	0.48	0.02%	
QC value within limits for Si 251.611 Recovery = 101.10%							
Sn 189.927†	3432.0	509.36 ug/L	3.916	509.36 ppb	3.916	0.77%	
QC value within limits for Sn 189.927 Recovery = 101.87%							
Sr 421.552†	75949.2	503.63 ug/L	2.612	503.63 ppb	2.612	0.52%	
QC value within limits for Sr 421.552 Recovery = 100.73%							
Ti 334.940†	325171.7	509.28 ug/L	0.595	509.28 ppb	0.595	0.12%	
QC value within limits for Ti 334.940 Recovery = 101.86%							
Tl 190.801†	1856.1	511.69 ug/L	2.929	511.69 ppb	2.929	0.57%	
QC value within limits for Tl 190.801 Recovery = 102.34%							
U 409.014†	16303.3	481.48 ug/L	3.612	481.48 ppb	3.612	0.75%	
QC value within limits for U 409.014 Recovery = 96.30%							
V 292.402†	80512.0	512.38 ug/L	0.820	512.38 ppb	0.820	0.16%	
QC value within limits for V 292.402 Recovery = 102.48%							
Zn 213.857†	61996.9	505.06 ug/L	0.829	505.06 ppb	0.829	0.16%	
QC value within limits for Zn 213.857 Recovery = 101.01%							
SiO2†	88417.8	5447.9 ug/L	70.52	5447.9 ppb	70.52	1.29%	
QC value within limits for SiO2 Recovery = 101.88%							
All analyte(s) passed QC.							



Sequence No.: 9  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 8  
 Date Collected: 1/5/2010 11:19:01  
 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	4921.9	4921.9	96.8 %		11:20:54
1	Y RADIAL	5205.9	5205.9	97.10 %		11:20:54
1	Al 396.153Radial†	-26.7	-8.0	-6.5322 ug/L	-6.5322 ppb	11:20:54
1	Ca 317.933Radial†	19.7	2.1	3.3587 ug/L	3.3587 ppb	11:21:14
1	Fe 238.204 Radial†	13.4	-0.8	-7.0929 ug/L	-7.0929 ppb	11:21:14
1	K 766.490 Radial†	3410.2	192.0	36.992 ug/L	36.992 ppb	11:20:54
1	Mg 279.077 IEC†	3.5	-0.3	-9.3333 ug/L	-9.3333 ppb	11:21:14
1	Na 589.592 Radial†	-1684.9	-3.0	-0.8486 ug/L	-0.8486 ppb	11:20:54
1	Sr 421.552†	7.4	0.2	0.0014 ug/L	0.0014 ppb	11:20:54
1	Sc 361.383	894061.6	894061.6	97.714 %		11:22:11
1	Y 371.029	764731.7	764731.7	97.841 %		11:22:11
1	Ag 328.068†	504.7	3.8	0.0222 ug/L	0.0222 ppb	11:22:16
1	As 188.979†	-25.2	5.4	1.9103 ug/L	1.9103 ppb	11:22:36
1	B 249.677†	-308.9	397.3	8.1383 ug/L	8.1383 ppb	11:22:16
1	Ba 233.527†	7.3	-1.0	-0.0077 ug/L	-0.0077 ppb	11:22:36
1	Be 313.107†	-4495.7	-225.5	-0.0762 ug/L	-0.0762 ppb	11:22:16
1	Cd 226.502†	-231.0	14.1	0.1339 ug/L	0.1339 ppb	11:22:36
1	Co 228.616†	-106.1	-19.6	-0.3662 ug/L	-0.3662 ppb	11:22:36
1	Cr 267.716†	120.4	7.1	0.0738 ug/L	0.0738 ppb	11:22:16
1	Cu 324.752†	8058.5	148.8	0.4400 ug/L	0.4400 ppb	11:22:16
1	Mn 257.610†	576.6	-78.0	-0.0824 ug/L	-0.0824 ppb	11:22:16
1	Mo 202.031†	22.6	-0.2	-0.0103 ug/L	-0.0103 ppb	11:22:36
1	Ni 231.604†	126.5	12.1	0.2660 ug/L	0.2660 ppb	11:22:36
1	P 214.914†	263.8	17.4	8.4491 ug/L	8.4491 ppb	11:22:36
1	Pb 220.353†	-91.9	6.7	0.6923 ug/L	0.6923 ppb	11:22:36
1	S 181.975 Axial†	56.3	-4.8	-5.4639 ug/L	-5.4639 ppb	11:22:36
1	Sb 206.836†	42.1	2.4	0.7131 ug/L	0.7131 ppb	11:22:36
1	Se 196.026†	-37.4	-2.9	-1.5258 ug/L	-1.5258 ppb	11:22:36
1	Si 251.611†	926.9	286.9	8.2251 ug/L	8.2251 ppb	11:22:36
1	Sn 189.927†	5.6	1.5	0.2298 ug/L	0.2298 ppb	11:22:36
1	Ti 334.940†	-1801.1	-50.3	-0.0743 ug/L	-0.0743 ppb	11:22:16
1	Tl 190.801†	-46.0	-1.2	-0.3148 ug/L	-0.3148 ppb	11:22:36
1	U 409.014†	-2887.4	-328.7	-9.7395 ug/L	-9.7395 ppb	11:22:11
1	V 292.402†	-1751.1	8.1	0.0329 ug/L	0.0329 ppb	11:22:16
1	Zn 213.857†	898.0	60.8	0.4980 ug/L	0.4980 ppb	11:22:36
1	SiO2†	977.3	316.2	19.546 ug/L	19.546 ppb	11:23:42
2	Sc Radial	4827.6	4827.6	94.9 %		11:21:19
2	Y RADIAL	5078.7	5078.7	94.73 %		11:21:19
2	Al 396.153Radial†	-17.4	1.2	0.9665 ug/L	0.9665 ppb	11:21:19
2	Ca 317.933Radial†	21.2	4.1	6.5370 ug/L	6.5370 ppb	11:21:39
2	Fe 238.204 Radial†	12.1	-2.0	-17.056 ug/L	-17.056 ppb	11:21:39
2	K 766.490 Radial†	3334.8	181.4	34.948 ug/L	34.948 ppb	11:21:19
2	Mg 279.077 IEC†	4.1	0.4	11.971 ug/L	11.971 ppb	11:21:39
2	Na 589.592 Radial†	-1675.3	-26.9	-7.6503 ug/L	-7.6503 ppb	11:21:19
2	Sr 421.552†	-0.8	-8.3	-0.0552 ug/L	-0.0552 ppb	11:21:19
2	Sc 361.383	905030.1	905030.1	98.913 %		11:22:41
2	Y 371.029	772747.8	772747.8	98.867 %		11:22:41
2	Ag 328.068†	646.5	140.9	0.5969 ug/L	0.5969 ppb	11:22:46
2	As 188.979†	-30.8	0.1	0.0148 ug/L	0.0148 ppb	11:23:06
2	B 249.677†	-372.7	336.6	6.8951 ug/L	6.8951 ppb	11:22:46
2	Ba 233.527†	18.0	9.6	0.0692 ug/L	0.0692 ppb	11:23:06
2	Be 313.107†	-4458.7	-132.3	-0.0446 ug/L	-0.0446 ppb	11:22:46
2	Cd 226.502†	-245.9	2.0	0.0201 ug/L	0.0201 ppb	11:23:06
2	Co 228.616†	-82.4	5.6	0.1046 ug/L	0.1046 ppb	11:23:06
2	Cr 267.716†	167.1	52.8	0.5274 ug/L	0.5274 ppb	11:22:46
2	Cu 324.752†	8083.4	74.0	0.2181 ug/L	0.2181 ppb	11:22:46
2	Mn 257.610†	565.2	-96.7	-0.1034 ug/L	-0.1034 ppb	11:22:46
2	Mo 202.031†	18.5	-4.6	-0.2896 ug/L	-0.2896 ppb	11:23:06
2	Ni 231.604†	111.6	-4.5	-0.0988 ug/L	-0.0988 ppb	11:23:06

2	P 214.914†	255.8	6.1	2.9598 ug/L	2.9598 ppb	11:23:06
2	Pb 220.353†	-88.3	11.5	1.1898 ug/L	1.1898 ppb	11:23:06
2	S 181.975 Axial†	61.7	0.0	0.0411 ug/L	0.0411 ppb	11:23:06
2	Sb 206.836†	57.2	17.1	5.0625 ug/L	5.0625 ppb	11:23:06
2	Se 196.026†	-38.5	-3.7	-1.9236 ug/L	-1.9236 ppb	11:23:06
2	Si 251.611†	919.7	268.1	7.6887 ug/L	7.6887 ppb	11:23:06
2	Sn 189.927†	8.0	4.0	0.5909 ug/L	0.5909 ppb	11:23:06
2	Ti 334.940†	-1768.1	5.4	0.0077 ug/L	0.0077 ppb	11:22:46
2	Tl 190.801†	-45.6	-0.2	-0.0469 ug/L	-0.0469 ppb	11:23:06
2	U 409.014†	-2524.9	73.6	2.1822 ug/L	2.1822 ppb	11:22:41
2	V 292.402†	-1813.0	-32.7	-0.2026 ug/L	-0.2026 ppb	11:22:46
2	Zn 213.857†	880.0	31.5	0.2598 ug/L	0.2598 ppb	11:23:06
2	SiO2†	985.5	312.4	19.323 ug/L	19.323 ppb	11:23:47
3	Sc Radial	4879.1	4879.1	95.9 %		11:21:44
3	Y RADIAL	5168.0	5168.0	96.40 %		11:21:44
3	Al 396.153Radial†	-10.6	8.5	6.8487 ug/L	6.8487 ppb	11:21:44
3	Ca 317.933Radial†	22.0	4.7	7.4621 ug/L	7.4621 ppb	11:22:04
3	Fe 238.204 Radial†	14.8	0.8	6.7586 ug/L	6.7586 ppb	11:22:04
3	K 766.490 Radial†	3406.6	219.1	42.229 ug/L	42.229 ppb	11:21:44
3	Mg 279.077 IEC†	7.7	4.2	129.29 ug/L	129.29 ppb	11:22:04
3	Na 589.592 Radial†	-1715.5	-50.2	-14.281 ug/L	-14.281 ppb	11:21:44
3	Sr 421.552†	-8.3	-16.1	-0.1071 ug/L	-0.1071 ppb	11:21:44
3	Sc 361.383	897280.7	897280.7	98.066 %		11:23:11
3	Y 371.029	767356.9	767356.9	98.177 %		11:23:11
3	Ag 328.068†	579.8	78.5	0.3435 ug/L	0.3435 ppb	11:23:16
3	As 188.979†	-21.5	9.3	3.2895 ug/L	3.2895 ppb	11:23:36
3	B 249.677†	-438.7	266.0	5.4466 ug/L	5.4466 ppb	11:23:16
3	Ba 233.527†	7.7	-0.7	-0.0045 ug/L	-0.0045 ppb	11:23:36
3	Be 313.107†	-4418.8	-130.6	-0.0441 ug/L	-0.0441 ppb	11:23:16
3	Cd 226.502†	-226.4	19.8	0.1851 ug/L	0.1851 ppb	11:23:36
3	Co 228.616†	-77.6	9.9	0.1858 ug/L	0.1858 ppb	11:23:36
3	Cr 267.716†	123.3	9.6	0.0975 ug/L	0.0975 ppb	11:23:16
3	Cu 324.752†	8057.9	118.6	0.3513 ug/L	0.3513 ppb	11:23:16
3	Mn 257.610†	576.8	-79.8	-0.0855 ug/L	-0.0855 ppb	11:23:16
3	Mo 202.031†	30.9	8.2	0.5171 ug/L	0.5171 ppb	11:23:36
3	Ni 231.604†	110.2	-4.9	-0.1084 ug/L	-0.1084 ppb	11:23:36
3	P 214.914†	248.8	1.1	0.4668 ug/L	0.4668 ppb	11:23:36
3	Pb 220.353†	-96.7	2.2	0.2268 ug/L	0.2268 ppb	11:23:36
3	S 181.975 Axial†	58.6	-2.7	-3.0487 ug/L	-3.0487 ppb	11:23:36
3	Sb 206.836†	46.6	6.8	2.0185 ug/L	2.0185 ppb	11:23:36
3	Se 196.026†	-41.6	-7.2	-3.6433 ug/L	-3.6433 ppb	11:23:36
3	Si 251.611†	893.8	249.7	7.1450 ug/L	7.1450 ppb	11:23:36
3	Sn 189.927†	5.2	1.2	0.1744 ug/L	0.1744 ppb	11:23:36
3	Ti 334.940†	-1779.1	-21.1	-0.0313 ug/L	-0.0313 ppb	11:23:16
3	Tl 190.801†	-40.2	4.9	1.3486 ug/L	1.3486 ppb	11:23:36
3	U 409.014†	-2682.8	-109.5	-3.2459 ug/L	-3.2459 ppb	11:23:11
3	V 292.402†	-1712.4	54.1	0.3426 ug/L	0.3426 ppb	11:23:16
3	Zn 213.857†	875.9	35.0	0.2832 ug/L	0.2832 ppb	11:23:36
3	SiO2†	929.5	263.9	16.288 ug/L	16.288 ppb	11:23:52

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	898790.8	98.231 %		0.6162			0.63%
Sc Radial	4876.2	95.9 %		0.93			0.97%
Y 371.029	768278.8	98.295 %		0.5229			0.53%
Y RADIAL	5150.9	96.08 %		1.218			1.27%
Ag 328.068†	74.4	0.3209 ug/L		0.28799	0.3209 ppb	0.28799	89.75%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	0.5	0.4276 ug/L		6.70673	0.4276 ppb	6.70673	>999.9%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	4.9	1.7382 ug/L		1.64410	1.7382 ppb	1.64410	94.59%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	333.3	6.8267 ug/L		1.34714	6.8267 ppb	1.34714	19.73%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	2.6	0.0190 ug/L		0.04351	0.0190 ppb	0.04351	228.81%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	-162.8	-0.0550 ug/L		0.01840	-0.0550 ppb	0.01840	33.46%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	3.6	5.7859 ug/L		2.15231	5.7859 ppb	2.15231	37.20%

QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd	226.502†	12.0	0.1130 ug/L	0.08444	0.1130 ppb	0.08444	74.69%
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co	228.616†	-1.4	-0.0253 ug/L	0.29804	-0.0253 ppb	0.29804	>999.9%
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr	267.716†	23.1	0.2329 ug/L	0.25533	0.2329 ppb	0.25533	109.62%
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu	324.752†	113.8	0.3365 ug/L	0.11169	0.3365 ppb	0.11169	33.19%
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe	238.204 Radial†	-0.7	-5.7969 ug/L	11.96034	-5.7969 ppb	11.96034	206.32%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K	766.490 Radial†	197.5	38.056 ug/L	3.7552	38.056 ppb	3.7552	9.87%
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg	279.077 IEC†	1.4	43.974 ug/L	74.6452	43.974 ppb	74.6452	169.75%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn	257.610†	-84.8	-0.0904 ug/L	0.01132	-0.0904 ppb	0.01132	12.52%
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo	202.031†	1.2	0.0724 ug/L	0.40968	0.0724 ppb	0.40968	565.92%
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na	589.592 Radial†	-26.7	-7.5932 ug/L	6.71622	-7.5932 ppb	6.71622	88.45%
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni	231.604†	0.9	0.0196 ug/L	0.21345	0.0196 ppb	0.21345	>999.9%
QC value within limits for Ni 231.604 Recovery = Not calculated							
P	214.914†	8.2	3.9585 ug/L	4.08379	3.9585 ppb	4.08379	103.16%
QC value within limits for P 214.914 Recovery = Not calculated							
Pb	220.353†	6.8	0.7030 ug/L	0.48160	0.7030 ppb	0.48160	68.51%
QC value within limits for Pb 220.353 Recovery = Not calculated							
S	181.975 Axial†	-2.5	-2.8239 ug/L	2.75936	-2.8239 ppb	2.75936	97.72%
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb	206.836†	8.8	2.5980 ug/L	2.23186	2.5980 ppb	2.23186	85.91%
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se	196.026†	-4.6	-2.3642 ug/L	1.12542	-2.3642 ppb	1.12542	47.60%
QC value within limits for Se 196.026 Recovery = Not calculated							
Si	251.611†	268.2	7.6863 ug/L	0.54002	7.6863 ppb	0.54002	7.03%
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn	189.927†	2.2	0.3317 ug/L	0.22617	0.3317 ppb	0.22617	68.18%
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr	421.552†	-8.1	-0.0536 ug/L	0.05426	-0.0536 ppb	0.05426	101.19%
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti	334.940†	-22.0	-0.0326 ug/L	0.04103	-0.0326 ppb	0.04103	125.72%
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl	190.801†	1.2	0.3290 ug/L	0.89317	0.3290 ppb	0.89317	271.51%
QC value within limits for Tl 190.801 Recovery = Not calculated							
U	409.014†	-121.5	-3.6011 ug/L	5.96877	-3.6011 ppb	5.96877	165.75%
QC value within limits for U 409.014 Recovery = Not calculated							
V	292.402†	9.8	0.0576 ug/L	0.27340	0.0576 ppb	0.27340	474.35%
QC value within limits for V 292.402 Recovery = Not calculated							
Zn	213.857†	42.5	0.3470 ug/L	0.13127	0.3470 ppb	0.13127	37.83%
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	297.5	18.386	ug/L	1.8203	18.386 ppb	1.8203	9.90%
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: 1/5/2010 12:21:47

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	4829.1	4829.1	95.0 %		12:23:40
1	Y RADIAL	5057.9	5057.9	94.34 %		12:23:40
1	Al 396.153Radial†	5804.1	6131.4	4958.3 ug/L	4958.3 ppb	12:23:40
1	Ca 317.933Radial†	3002.6	3143.6	4989.1 ug/L	4989.1 ppb	12:24:00
1	Fe 238.204 Radial†	573.7	589.5	5120.8 ug/L	5120.8 ppb	12:24:00
1	K 766.490 Radial†	28822.3	27019.1	5196.6 ug/L	5196.6 ppb	12:23:40
1	Mg 279.077 IEC†	162.7	167.4	5184.3 ug/L	5184.3 ppb	12:24:00
1	Na 589.592 Radial†	33350.5	36856.5	10490 ug/L	10490 ppb	12:23:40
1	Sr 421.552†	71623.5	75413.6	500.08 ug/L	500.08 ppb	12:23:40
1	Sc 361.383	900930.0	900930.0	98.465 %		12:24:59
1	Y 371.029	762133.5	762133.5	97.509 %		12:24:59
1	Ag 328.068†	116338.4	117639.7	508.76 ug/L	508.76 ppb	12:24:59
1	As 188.979†	1381.4	1434.1	509.59 ug/L	509.59 ppb	12:25:19
1	B 249.677†	23464.8	24544.1	500.76 ug/L	500.76 ppb	12:24:59
1	Ba 233.527†	68639.4	69701.2	509.23 ug/L	509.23 ppb	12:24:59
1	Be 313.107†	1477202.6	1504612.6	508.70 ug/L	508.70 ppb	12:24:59
1	Cd 226.502†	53036.2	54113.8	508.79 ug/L	508.79 ppb	12:24:59
1	Co 228.616†	26161.7	26658.6	498.54 ug/L	498.54 ppb	12:25:19
1	Cr 267.716†	49791.8	50452.0	506.11 ug/L	506.11 ppb	12:24:59
1	Cu 324.752†	176401.5	171053.9	506.42 ug/L	506.42 ppb	12:24:59
1	Mn 257.610†	479061.9	485864.1	510.30 ug/L	510.30 ppb	12:24:59
1	Mo 202.031†	7940.5	8041.0	504.98 ug/L	504.98 ppb	12:25:19
1	Ni 231.604†	22567.5	22802.1	498.66 ug/L	498.66 ppb	12:25:19
1	P 214.914†	5340.5	5171.2	2458.4 ug/L	2458.4 ppb	12:25:19
1	Pb 220.353†	4727.5	4902.0	509.05 ug/L	509.05 ppb	12:25:19
1	S 181.975 Axial†	929.0	881.1	1005.5 ug/L	1005.5 ppb	12:25:19
1	Sb 206.836†	1681.6	1667.1	501.32 ug/L	501.32 ppb	12:25:19
1	Se 196.026†	936.3	986.2	521.60 ug/L	521.60 ppb	12:25:19
1	Si 251.611†	87339.0	88039.2	2515.8 ug/L	2515.8 ppb	12:24:59
1	Sn 189.927†	3362.3	3410.6	506.18 ug/L	506.18 ppb	12:25:19
1	Ti 334.940†	317629.9	324375.9	508.03 ug/L	508.03 ppb	12:24:59
1	Tl 190.801†	1731.8	1804.8	497.64 ug/L	497.64 ppb	12:25:19
1	U 409.014†	13517.9	16354.9	483.01 ug/L	483.01 ppb	12:24:59
1	V 292.402†	77368.7	80375.4	511.44 ug/L	511.44 ppb	12:24:59
1	Zn 213.857†	61669.8	61773.2	503.24 ug/L	503.24 ppb	12:24:59
1	SiO2†	86841.8	87511.9	5392.0 ug/L	5392.0 ppb	12:26:19
2	Sc Radial	4768.6	4768.6	93.8 %		12:24:05
2	Y RADIAL	4986.1	4986.1	93.00 %		12:24:05
2	Al 396.153Radial†	5777.7	6180.7	4998.2 ug/L	4998.2 ppb	12:24:05
2	Ca 317.933Radial†	3024.4	3206.8	5089.5 ug/L	5089.5 ppb	12:24:25
2	Fe 238.204 Radial†	571.9	595.1	5169.9 ug/L	5169.9 ppb	12:24:25
2	K 766.490 Radial†	28695.5	27268.6	5244.7 ug/L	5244.7 ppb	12:24:05
2	Mg 279.077 IEC†	160.7	167.4	5184.0 ug/L	5184.0 ppb	12:24:25
2	Na 589.592 Radial†	32920.1	36842.6	10486 ug/L	10486 ppb	12:24:05
2	Sr 421.552†	71172.0	75887.9	503.22 ug/L	503.22 ppb	12:24:05
2	Sc 361.383	897031.6	897031.6	98.039 %		12:25:26
2	Y 371.029	758782.5	758782.5	97.080 %		12:25:26
2	Ag 328.068†	116025.3	117833.8	509.60 ug/L	509.60 ppb	12:25:26
2	As 188.979†	1381.5	1440.4	511.80 ug/L	511.80 ppb	12:25:46
2	B 249.677†	23264.0	24442.8	498.67 ug/L	498.67 ppb	12:25:26
2	Ba 233.527†	68433.8	69794.4	509.91 ug/L	509.91 ppb	12:25:26
2	Be 313.107†	1473411.7	1507265.8	509.60 ug/L	509.60 ppb	12:25:26
2	Cd 226.502†	52868.3	54176.6	509.38 ug/L	509.38 ppb	12:25:26
2	Co 228.616†	26295.4	26910.5	503.25 ug/L	503.25 ppb	12:25:46
2	Cr 267.716†	49637.0	50513.9	506.73 ug/L	506.73 ppb	12:25:26
2	Cu 324.752†	175487.0	170899.8	505.97 ug/L	505.97 ppb	12:25:26
2	Mn 257.610†	477637.9	486526.0	511.00 ug/L	511.00 ppb	12:25:26
2	Mo 202.031†	7977.0	8113.3	509.52 ug/L	509.52 ppb	12:25:46
2	Ni 231.604†	22682.1	23018.6	503.40 ug/L	503.40 ppb	12:25:46

2	P 214.914†	5343.6	5197.9	2471.6 ug/L	2471.6 ppb	12:25:46
2	Pb 220.353†	4767.7	4963.8	515.47 ug/L	515.47 ppb	12:25:46
2	S 181.975 Axial†	936.9	893.2	1019.4 ug/L	1019.4 ppb	12:25:46
2	Sb 206.836†	1715.6	1709.3	513.98 ug/L	513.98 ppb	12:25:46
2	Se 196.026†	932.6	986.5	521.90 ug/L	521.90 ppb	12:25:46
2	Si 251.611†	87042.3	88122.0	2518.1 ug/L	2518.1 ppb	12:25:26
2	Sn 189.927†	3379.7	3443.1	511.02 ug/L	511.02 ppb	12:25:46
2	Ti 334.940†	316876.0	325008.8	509.03 ug/L	509.03 ppb	12:25:26
2	Tl 190.801†	1778.2	1859.7	512.68 ug/L	512.68 ppb	12:25:46
2	U 409.014†	13719.9	16620.6	490.88 ug/L	490.88 ppb	12:25:26
2	V 292.402†	77075.1	80417.4	511.78 ug/L	511.78 ppb	12:25:26
2	Zn 213.857†	61530.2	61903.1	504.28 ug/L	504.28 ppb	12:25:26
2	SiO2†	88029.1	89106.4	5490.5 ug/L	5490.5 ppb	12:26:24
3	Sc Radial	4772.3	4772.3	93.8 %		12:24:30
3	Y RADIAL	4982.6	4982.6	92.94 %		12:24:30
3	Al 396.153Radial†	5769.7	6167.5	4987.5 ug/L	4987.5 ppb	12:24:30
3	Ca 317.933Radial†	3009.9	3189.0	5061.2 ug/L	5061.2 ppb	12:24:50
3	Fe 238.204 Radial†	573.4	596.3	5180.0 ug/L	5180.0 ppb	12:24:50
3	K 766.490 Radial†	28385.4	26915.1	5176.6 ug/L	5176.6 ppb	12:24:30
3	Mg 279.077 IEC†	157.4	163.9	5073.3 ug/L	5073.3 ppb	12:24:50
3	Na 589.592 Radial†	32667.7	36547.2	10402 ug/L	10402 ppb	12:24:30
3	Sr 421.552†	70504.7	75119.6	498.13 ug/L	498.13 ppb	12:24:30
3	Sc 361.383	899448.4	899448.4	98.303 %		12:25:54
3	Y 371.029	760042.0	760042.0	97.241 %		12:25:54
3	Ag 328.068†	116092.1	117583.8	508.54 ug/L	508.54 ppb	12:25:54
3	As 188.979†	1386.0	1441.2	512.09 ug/L	512.09 ppb	12:26:14
3	B 249.677†	23326.0	24442.2	498.66 ug/L	498.66 ppb	12:25:54
3	Ba 233.527†	68770.3	69949.2	511.04 ug/L	511.04 ppb	12:25:54
3	Be 313.107†	1475480.9	1505332.4	508.95 ug/L	508.95 ppb	12:25:54
3	Cd 226.502†	53027.5	54193.7	509.54 ug/L	509.54 ppb	12:25:54
3	Co 228.616†	26249.9	26792.1	501.04 ug/L	501.04 ppb	12:26:14
3	Cr 267.716†	49769.8	50512.9	506.72 ug/L	506.72 ppb	12:25:54
3	Cu 324.752†	176280.0	171225.4	506.93 ug/L	506.93 ppb	12:25:54
3	Mn 257.610†	479629.6	487243.0	511.75 ug/L	511.75 ppb	12:25:54
3	Mo 202.031†	7962.1	8076.3	507.20 ug/L	507.20 ppb	12:26:14
3	Ni 231.604†	22615.5	22888.6	500.55 ug/L	500.55 ppb	12:26:14
3	P 214.914†	5352.3	5192.1	2468.5 ug/L	2468.5 ppb	12:26:14
3	Pb 220.353†	4729.1	4911.4	510.04 ug/L	510.04 ppb	12:26:14
3	S 181.975 Axial†	931.7	885.4	1010.4 ug/L	1010.4 ppb	12:26:14
3	Sb 206.836†	1705.9	1694.7	509.52 ug/L	509.52 ppb	12:26:14
3	Se 196.026†	942.9	994.4	525.97 ug/L	525.97 ppb	12:26:14
3	Si 251.611†	87451.3	88299.5	2523.3 ug/L	2523.3 ppb	12:25:54
3	Sn 189.927†	3353.6	3407.4	505.71 ug/L	505.71 ppb	12:26:14
3	Ti 334.940†	317869.6	325151.1	509.25 ug/L	509.25 ppb	12:25:54
3	Tl 190.801†	1764.8	1841.2	507.64 ug/L	507.64 ppb	12:26:14
3	U 409.014†	13694.8	16557.5	489.00 ug/L	489.00 ppb	12:25:54
3	V 292.402†	77447.0	80584.5	512.79 ug/L	512.79 ppb	12:25:54
3	Zn 213.857†	61678.1	61884.9	504.15 ug/L	504.15 ppb	12:25:54
3	SiO2†	86448.6	87257.3	5376.2 ug/L	5376.2 ppb	12:26:29

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	899136.7	98.269 %	0.2151			0.22%
Sc Radial	4790.0	94.2 %	0.67			0.71%
Y 371.029	760319.3	97.277 %	0.2166			0.22%
Y RADIAL	5008.9	93.43 %	0.793			0.85%
Ag 328.068†	117685.8	508.97 ug/L	0.562	508.97 ppb	0.562	0.11%
QC value within limits for Ag 328.068 Recovery = 101.79%						
Al 396.153Radial†	6159.8	4981.4 ug/L	20.66	4981.4 ppb	20.66	0.41%
QC value within limits for Al 396.153Radial Recovery = 99.63%						
As 188.979†	1438.6	511.16 ug/L	1.368	511.16 ppb	1.368	0.27%
QC value within limits for As 188.979 Recovery = 102.23%						
B 249.677†	24476.3	499.36 ug/L	1.211	499.36 ppb	1.211	0.24%
QC value within limits for B 249.677 Recovery = 99.87%						
Ba 233.527†	69814.9	510.06 ug/L	0.915	510.06 ppb	0.915	0.18%
QC value within limits for Ba 233.527 Recovery = 102.01%						
Be 313.107†	1505736.9	509.08 ug/L	0.464	509.08 ppb	0.464	0.09%
QC value within limits for Be 313.107 Recovery = 101.82%						
Ca 317.933Radial†	3179.8	5046.6 ug/L	51.76	5046.6 ppb	51.76	1.03%

QC value within limits for Ca 317.933 Radial Recovery = 100.93%							
Cd 226.502†	54161.4	509.24 ug/L	0.393	509.24 ppb	0.393	0.08%	
QC value within limits for Cd 226.502 Recovery = 101.85%							
Co 228.616†	26787.1	500.94 ug/L	2.360	500.94 ppb	2.360	0.47%	
QC value within limits for Co 228.616 Recovery = 100.19%							
Cr 267.716†	50492.9	506.52 ug/L	0.355	506.52 ppb	0.355	0.07%	
QC value within limits for Cr 267.716 Recovery = 101.30%							
Cu 324.752†	171059.7	506.44 ug/L	0.482	506.44 ppb	0.482	0.10%	
QC value within limits for Cu 324.752 Recovery = 101.29%							
Fe 238.204 Radial†	593.6	5156.9 ug/L	31.68	5156.9 ppb	31.68	0.61%	
QC value within limits for Fe 238.204 Radial Recovery = 103.14%							
K 766.490 Radial†	27067.6	5206.0 ug/L	34.99	5206.0 ppb	34.99	0.67%	
QC value within limits for K 766.490 Radial Recovery = 104.12%							
Mg 279.077 IEC†	166.2	5147.2 ug/L	64.01	5147.2 ppb	64.01	1.24%	
QC value within limits for Mg 279.077 IEC Recovery = 102.94%							
Mn 257.610†	486544.4	511.02 ug/L	0.728	511.02 ppb	0.728	0.14%	
QC value within limits for Mn 257.610 Recovery = 102.20%							
Mo 202.031†	8076.9	507.23 ug/L	2.271	507.23 ppb	2.271	0.45%	
QC value within limits for Mo 202.031 Recovery = 101.45%							
Na 589.592 Radial†	36748.8	10459 ug/L	49.7	10459 ppb	49.7	0.48%	
QC value within limits for Na 589.592 Radial Recovery = 104.59%							
Ni 231.604†	22903.1	500.87 ug/L	2.383	500.87 ppb	2.383	0.48%	
QC value within limits for Ni 231.604 Recovery = 100.17%							
P 214.914†	5187.1	2466.1 ug/L	6.92	2466.1 ppb	6.92	0.28%	
QC value within limits for P 214.914 Recovery = 98.65%							
Pb 220.353†	4925.8	511.52 ug/L	3.458	511.52 ppb	3.458	0.68%	
QC value within limits for Pb 220.353 Recovery = 102.30%							
S 181.975 Axial†	886.6	1011.8 ug/L	7.01	1011.8 ppb	7.01	0.69%	
QC value within limits for S 181.975 Axial Recovery = 101.18%							
Sb 206.836†	1690.3	508.27 ug/L	6.424	508.27 ppb	6.424	1.26%	
QC value within limits for Sb 206.836 Recovery = 101.65%							
Se 196.026†	989.1	523.16 ug/L	2.442	523.16 ppb	2.442	0.47%	
QC value within limits for Se 196.026 Recovery = 104.63%							
Si 251.611†	88153.6	2519.1 ug/L	3.82	2519.1 ppb	3.82	0.15%	
QC value within limits for Si 251.611 Recovery = 100.76%							
Sn 189.927†	3420.4	507.64 ug/L	2.936	507.64 ppb	2.936	0.58%	
QC value within limits for Sn 189.927 Recovery = 101.53%							
Sr 421.552†	75473.7	500.48 ug/L	2.571	500.48 ppb	2.571	0.51%	
QC value within limits for Sr 421.552 Recovery = 100.10%							
Ti 334.940†	324845.3	508.77 ug/L	0.647	508.77 ppb	0.647	0.13%	
QC value within limits for Ti 334.940 Recovery = 101.75%							
Tl 190.801†	1835.2	505.98 ug/L	7.653	505.98 ppb	7.653	1.51%	
QC value within limits for Tl 190.801 Recovery = 101.20%							
U 409.014†	16511.0	487.63 ug/L	4.109	487.63 ppb	4.109	0.84%	
QC value within limits for U 409.014 Recovery = 97.53%							
V 292.402†	80459.1	512.00 ug/L	0.699	512.00 ppb	0.699	0.14%	
QC value within limits for V 292.402 Recovery = 102.40%							
Zn 213.857†	61853.7	503.89 ug/L	0.564	503.89 ppb	0.564	0.11%	
QC value within limits for Zn 213.857 Recovery = 100.78%							
SiO2†	87958.5	5419.6 ug/L	61.94	5419.6 ppb	61.94	1.14%	
QC value within limits for SiO2 Recovery = 101.35%							
All analyte(s) passed QC.							

Sequence No.: 19

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/5/2010 12:28:40

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	5257.3	5257.3	103 %		12:30:33
1	Y RADIAL	5565.7	5565.7	103.8 %		12:30:33
1	Al 396.153Radial†	-8.3	11.5	9.3041 ug/L	9.3041 ppb	12:30:33
1	Ca 317.933Radial†	21.0	2.1	3.2791 ug/L	3.2791 ppb	12:30:53
1	Fe 238.204 Radial†	11.1	-3.9	-34.182 ug/L	-34.182 ppb	12:30:53
1	K 766.490 Radial†	3230.8	-206.3	-39.764 ug/L	-39.764 ppb	12:30:33
1	Mg 279.077 IEC†	2.7	-1.3	-39.355 ug/L	-39.355 ppb	12:30:53
1	Na 589.592 Radial†	-1599.9	190.3	54.160 ug/L	54.160 ppb	12:30:33
1	Sr 421.552†	34.0	25.4	0.1684 ug/L	0.1684 ppb	12:30:33
1	Sc 361.383	895572.5	895572.5	97.879 %		12:31:49
1	Y 371.029	765576.4	765576.4	97.949 %		12:31:49
1	Ag 328.068†	580.6	80.4	0.3365 ug/L	0.3365 ppb	12:31:54
1	As 188.979†	-31.2	-0.7	-0.2461 ug/L	-0.2461 ppb	12:32:15
1	B 249.677†	-615.0	85.0	1.7460 ug/L	1.7460 ppb	12:31:54
1	Ba 233.527†	15.8	7.6	0.0558 ug/L	0.0558 ppb	12:32:15
1	Be 313.107†	-4408.9	-129.1	-0.0436 ug/L	-0.0436 ppb	12:31:54
1	Cd 226.502†	-245.2	0.1	0.0046 ug/L	0.0046 ppb	12:32:15
1	Co 228.616†	-87.8	-0.7	-0.0126 ug/L	-0.0126 ppb	12:32:15
1	Cr 267.716†	92.3	-21.9	-0.2193 ug/L	-0.2193 ppb	12:31:54
1	Cu 324.752†	8089.6	166.7	0.4914 ug/L	0.4914 ppb	12:31:54
1	Mn 257.610†	542.0	-114.3	-0.1227 ug/L	-0.1227 ppb	12:31:54
1	Mo 202.031†	27.2	4.5	0.2807 ug/L	0.2807 ppb	12:32:15
1	Ni 231.604†	133.9	19.5	0.4265 ug/L	0.4265 ppb	12:32:15
1	P 214.914†	266.2	19.3	9.4282 ug/L	9.4282 ppb	12:32:15
1	Pb 220.353†	-92.7	6.0	0.6292 ug/L	0.6292 ppb	12:32:15
1	S 181.975 Axial†	66.4	5.4	6.2158 ug/L	6.2158 ppb	12:32:15
1	Sb 206.836†	37.2	-2.7	-0.7839 ug/L	-0.7839 ppb	12:32:15
1	Se 196.026†	-41.8	-7.4	-3.8717 ug/L	-3.8717 ppb	12:32:15
1	Si 251.611†	735.2	89.4	2.5769 ug/L	2.5769 ppb	12:32:15
1	Sn 189.927†	1.7	-2.4	-0.3518 ug/L	-0.3518 ppb	12:32:15
1	Ti 334.940†	-1765.2	-10.5	-0.0159 ug/L	-0.0159 ppb	12:31:54
1	Tl 190.801†	-44.0	1.0	0.2840 ug/L	0.2840 ppb	12:32:15
1	U 409.014†	-2589.7	-19.6	-0.5759 ug/L	-0.5759 ppb	12:31:49
1	V 292.402†	-1691.1	72.5	0.4628 ug/L	0.4628 ppb	12:31:54
1	Zn 213.857†	892.7	53.8	0.4419 ug/L	0.4419 ppb	12:32:15
1	SiO2†	718.2	49.8	3.1057 ug/L	3.1057 ppb	12:33:21
2	Sc Radial	4690.1	4690.1	92.2 %		12:30:58
2	Y RADIAL	4932.8	4932.8	92.01 %		12:30:58
2	Al 396.153Radial†	-25.8	-8.5	-6.9069 ug/L	-6.9069 ppb	12:30:58
2	Ca 317.933Radial†	15.7	-1.2	-1.8785 ug/L	-1.8785 ppb	12:31:18
2	Fe 238.204 Radial†	11.6	-2.1	-18.230 ug/L	-18.230 ppb	12:31:18
2	K 766.490 Radial†	3412.6	368.7	71.035 ug/L	71.035 ppb	12:30:58
2	Mg 279.077 IEC†	2.8	-0.9	-27.217 ug/L	-27.217 ppb	12:31:18
2	Na 589.592 Radial†	-1577.9	27.0	7.6736 ug/L	7.6736 ppb	12:30:58
2	Sr 421.552†	10.4	3.9	0.0256 ug/L	0.0256 ppb	12:30:58
2	Sc 361.383	883584.8	883584.8	96.569 %		12:32:20
2	Y 371.029	754796.3	754796.3	96.570 %		12:32:20
2	Ag 328.068†	469.4	-26.7	-0.1187 ug/L	-0.1187 ppb	12:32:25
2	As 188.979†	-35.6	-5.7	-1.9979 ug/L	-1.9979 ppb	12:32:45
2	B 249.677†	-632.6	58.3	1.1956 ug/L	1.1956 ppb	12:32:25
2	Ba 233.527†	5.7	-2.6	-0.0194 ug/L	-0.0194 ppb	12:32:45
2	Be 313.107†	-4409.4	-190.7	-0.0645 ug/L	-0.0645 ppb	12:32:25
2	Cd 226.502†	-244.2	-2.2	-0.0191 ug/L	-0.0191 ppb	12:32:45
2	Co 228.616†	-80.8	5.3	0.1010 ug/L	0.1010 ppb	12:32:45
2	Cr 267.716†	109.8	-2.5	-0.0246 ug/L	-0.0246 ppb	12:32:25
2	Cu 324.752†	7975.2	160.3	0.4735 ug/L	0.4735 ppb	12:32:25
2	Mn 257.610†	549.2	-99.4	-0.1056 ug/L	-0.1056 ppb	12:32:25
2	Mo 202.031†	27.5	5.2	0.3217 ug/L	0.3217 ppb	12:32:45
2	Ni 231.604†	126.9	14.1	0.3088 ug/L	0.3088 ppb	12:32:45



2	P 214.914†	277.4	34.7	16.949 ug/L	16.949 ppb	12:32:45
2	Pb 220.353†	-90.3	7.2	0.7469 ug/L	0.7469 ppb	12:32:45
2	S 181.975 Axial†	58.4	-1.9	-2.2249 ug/L	-2.2249 ppb	12:32:45
2	Sb 206.836†	44.6	5.4	1.6477 ug/L	1.6477 ppb	12:32:45
2	Se 196.026†	-35.7	-1.7	-0.9249 ug/L	-0.9249 ppb	12:32:45
2	Si 251.611†	761.3	126.6	3.6012 ug/L	3.6012 ppb	12:32:45
2	Sn 189.927†	14.6	11.0	1.6257 ug/L	1.6257 ppb	12:32:45
2	Ti 334.940†	-1781.6	-51.8	-0.0803 ug/L	-0.0803 ppb	12:32:25
2	Tl 190.801†	-44.5	-0.1	-0.0331 ug/L	-0.0331 ppb	12:32:45
2	U 409.014†	-2613.1	-79.7	-2.3594 ug/L	-2.3594 ppb	12:32:20
2	V 292.402†	-1739.5	-1.0	-0.0041 ug/L	-0.0041 ppb	12:32:25
2	Zn 213.857†	891.6	65.1	0.5341 ug/L	0.5341 ppb	12:32:45
2	SiO2†	794.8	139.0	8.5318 ug/L	8.5318 ppb	12:33:26
3	Sc Radial	4757.7	4757.7	93.6 %		12:31:23
3	Y RADIAL	5015.1	5015.1	93.54 %		12:31:23
3	Al 396.153Radial†	-4.8	14.4	11.670 ug/L	11.670 ppb	12:31:23
3	Ca 317.933Radial†	20.4	3.6	5.7065 ug/L	5.7065 ppb	12:31:43
3	Fe 238.204 Radial†	16.4	2.9	24.929 ug/L	24.929 ppb	12:31:43
3	K 766.490 Radial†	3304.6	200.7	38.666 ug/L	38.666 ppb	12:31:23
3	Mg 279.077 IEC†	2.5	-1.2	-37.477 ug/L	-37.477 ppb	12:31:43
3	Na 589.592 Radial†	-1597.7	30.1	8.5750 ug/L	8.5750 ppb	12:31:23
3	Sr 421.552†	48.8	44.7	0.2964 ug/L	0.2964 ppb	12:31:23
3	Sc 361.383	896015.3	896015.3	97.927 %		12:32:50
3	Y 371.029	765286.8	765286.8	97.912 %		12:32:50
3	Ag 328.068†	551.1	50.0	0.2246 ug/L	0.2246 ppb	12:32:55
3	As 188.979†	-30.1	0.5	0.1901 ug/L	0.1901 ppb	12:33:15
3	B 249.677†	-558.0	143.6	2.9388 ug/L	2.9388 ppb	12:32:55
3	Ba 233.527†	4.4	-4.0	-0.0290 ug/L	-0.0290 ppb	12:33:15
3	Be 313.107†	-4310.8	-26.6	-0.0091 ug/L	-0.0091 ppb	12:32:55
3	Cd 226.502†	-242.0	3.4	0.0297 ug/L	0.0297 ppb	12:33:15
3	Co 228.616†	-108.9	-22.2	-0.4157 ug/L	-0.4157 ppb	12:33:15
3	Cr 267.716†	111.1	-2.7	-0.0259 ug/L	-0.0259 ppb	12:32:55
3	Cu 324.752†	8125.0	198.7	0.5893 ug/L	0.5893 ppb	12:32:55
3	Mn 257.610†	567.8	-88.2	-0.0894 ug/L	-0.0894 ppb	12:32:55
3	Mo 202.031†	23.3	0.5	0.0325 ug/L	0.0325 ppb	12:33:15
3	Ni 231.604†	120.2	5.4	0.1175 ug/L	0.1175 ppb	12:33:15
3	P 214.914†	255.3	8.1	3.8857 ug/L	3.8857 ppb	12:33:15
3	Pb 220.353†	-74.8	24.4	2.5221 ug/L	2.5221 ppb	12:33:15
3	S 181.975 Axial†	67.2	6.2	7.1350 ug/L	7.1350 ppb	12:33:15
3	Sb 206.836†	39.6	-0.3	-0.0716 ug/L	-0.0716 ppb	12:33:15
3	Se 196.026†	-31.4	3.2	1.7027 ug/L	1.7027 ppb	12:33:15
3	Si 251.611†	719.3	72.8	2.0739 ug/L	2.0739 ppb	12:33:15
3	Sn 189.927†	10.0	6.1	0.9064 ug/L	0.9064 ppb	12:33:15
3	Ti 334.940†	-1799.0	-44.1	-0.0676 ug/L	-0.0676 ppb	12:32:55
3	Tl 190.801†	-45.1	-0.1	-0.0294 ug/L	-0.0294 ppb	12:33:15
3	U 409.014†	-2663.6	-93.7	-2.7798 ug/L	-2.7798 ppb	12:32:50
3	V 292.402†	-1791.2	-28.8	-0.1906 ug/L	-0.1906 ppb	12:32:55
3	Zn 213.857†	885.5	46.0	0.3765 ug/L	0.3765 ppb	12:33:15
3	SiO2†	764.8	97.0	5.9726 ug/L	5.9726 ppb	12:33:31

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	891724.2	97.458 %		0.7708			0.79%
Sc Radial	4901.7	96.4 %		6.09			6.32%
Y 371.029	761886.5	97.477 %		0.7858			0.81%
Y RADIAL	5171.2	96.46 %		6.419			6.65%
Ag 328.068†	34.6	0.1475 ug/L		0.23724	0.1475 ppb	0.23724	160.88%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	5.8	4.6891 ug/L		10.11187	4.6891 ppb	10.11187	215.64%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-1.9	-0.6846 ug/L		1.15809	-0.6846 ppb	1.15809	169.16%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	95.6	1.9601 ug/L		0.89108	1.9601 ppb	0.89108	45.46%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	0.3	0.0024 ug/L		0.04646	0.0024 ppb	0.04646	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	-115.4	-0.0391 ug/L		0.02797	-0.0391 ppb	0.02797	71.59%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	1.5	2.3690 ug/L		3.87355	2.3690 ppb	3.87355	163.51%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated						
Cd 226.502†	0.4	0.0051 ug/L	0.02440	0.0051 ppb	0.02440	482.76%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-5.9	-0.1091 ug/L	0.27152	-0.1091 ppb	0.27152	248.88%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	-9.0	-0.0899 ug/L	0.11200	-0.0899 ppb	0.11200	124.54%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	175.2	0.5181 ug/L	0.06236	0.5181 ppb	0.06236	12.04%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	-1.1	-9.1612 ug/L	30.58146	-9.1612 ppb	30.58146	333.82%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	121.0	23.312 ug/L	56.9730	23.312 ppb	56.9730	244.39%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	-1.1	-34.683 ug/L	6.5337	-34.683 ppb	6.5337	18.84%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	-100.6	-0.1059 ug/L	0.01666	-0.1059 ppb	0.01666	15.73%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	3.4	0.2116 ug/L	0.15652	0.2116 ppb	0.15652	73.96%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	82.5	23.470 ug/L	26.5826	23.470 ppb	26.5826	113.26%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	13.0	0.2842 ug/L	0.15596	0.2842 ppb	0.15596	54.87%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	20.7	10.088 ug/L	6.5564	10.088 ppb	6.5564	65.00%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	12.5	1.2994 ug/L	1.06055	1.2994 ppb	1.06055	81.62%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	3.2	3.7087 ug/L	5.15908	3.7087 ppb	5.15908	139.11%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	0.8	0.2641 ug/L	1.25010	0.2641 ppb	1.25010	473.39%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-2.0	-1.0313 ug/L	2.78869	-1.0313 ppb	2.78869	270.40%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	96.3	2.7507 ug/L	0.77836	2.7507 ppb	0.77836	28.30%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	4.9	0.7267 ug/L	1.00091	0.7267 ppb	1.00091	137.73%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	24.6	0.1634 ug/L	0.13547	0.1634 ppb	0.13547	82.89%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	-35.5	-0.0546 ug/L	0.03410	-0.0546 ppb	0.03410	62.48%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	0.3	0.0738 ug/L	0.18200	0.0738 ppb	0.18200	246.55%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-64.3	-1.9050 ug/L	1.17010	-1.9050 ppb	1.17010	61.42%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	14.2	0.0894 ug/L	0.33657	0.0894 ppb	0.33657	376.64%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	55.0	0.4508 ug/L	0.07916	0.4508 ppb	0.07916	17.56%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	95.3	5.8700 ug/L	2.71450	5.8700 ppb	2.71450	46.24%
QC value within limits for SiO2 Recovery = Not calculated						

All analyte(s) passed QC.

Sequence No.: 8

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/5/2010 13:25:00

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	4740.1	4740.1	93.2 %		13:26:53
1	Y RADIAL	4932.1	4932.1	92.00 %		13:26:53
1	Al 396.153Radial†	5675.1	6107.7	4938.8 ug/L	4938.8 ppb	13:26:53
1	Ca 317.933Radial†	2987.7	3186.9	5057.8 ug/L	5057.8 ppb	13:27:13
1	Fe 238.204 Radial†	575.2	602.4	5232.4 ug/L	5232.4 ppb	13:27:13
1	K 766.490 Radial†	28577.6	27326.2	5255.6 ug/L	5255.6 ppb	13:26:53
1	Mg 279.077 IEC†	158.1	165.7	5131.0 ug/L	5131.0 ppb	13:27:13
1	Na 589.592 Radial†	33891.4	38095.9	10843 ug/L	10843 ppb	13:26:53
1	Sr 421.552†	71314.8	76497.8	507.27 ug/L	507.27 ppb	13:26:53
1	Sc 361.383	884474.8	884474.8	96.666 %		13:28:12
1	Y 371.029	748251.1	748251.1	95.733 %		13:28:12
1	Ag 328.068†	114820.6	118267.7	511.50 ug/L	511.50 ppb	13:28:12
1	As 188.979†	1355.6	1433.6	509.45 ug/L	509.45 ppb	13:28:32
1	B 249.677†	22828.5	24329.2	496.33 ug/L	496.33 ppb	13:28:12
1	Ba 233.527†	67720.3	70047.3	511.76 ug/L	511.76 ppb	13:28:12
1	Be 313.107†	1455066.0	1509623.8	510.40 ug/L	510.40 ppb	13:28:12
1	Cd 226.502†	52088.4	54135.4	508.99 ug/L	508.99 ppb	13:28:12
1	Co 228.616†	26014.1	27000.2	504.93 ug/L	504.93 ppb	13:28:32
1	Cr 267.716†	49096.2	50673.3	508.33 ug/L	508.33 ppb	13:28:12
1	Cu 324.752†	174025.8	171929.4	509.02 ug/L	509.02 ppb	13:28:12
1	Mn 257.610†	473464.2	489125.0	513.73 ug/L	513.73 ppb	13:28:12
1	Mo 202.031†	7890.5	8139.3	511.16 ug/L	511.16 ppb	13:28:32
1	Ni 231.604†	22400.3	23055.5	504.20 ug/L	504.20 ppb	13:28:32
1	P 214.914†	5279.8	5209.3	2476.5 ug/L	2476.5 ppb	13:28:32
1	Pb 220.353†	4698.2	4960.9	515.15 ug/L	515.15 ppb	13:28:32
1	S 181.975 Axial†	904.0	872.8	996.06 ug/L	996.06 ppb	13:28:32
1	Sb 206.836†	1690.3	1707.8	513.51 ug/L	513.51 ppb	13:28:32
1	Se 196.026†	924.1	991.3	524.51 ug/L	524.51 ppb	13:28:32
1	Si 251.611†	86346.6	88662.8	2533.6 ug/L	2533.6 ppb	13:28:12
1	Sn 189.927†	3315.2	3425.4	508.38 ug/L	508.38 ppb	13:28:32
1	Ti 334.940†	314680.6	327326.3	512.66 ug/L	512.66 ppb	13:28:12
1	Tl 190.801†	1747.7	1853.9	511.12 ug/L	511.12 ppb	13:28:32
1	U 409.014†	13438.9	16528.7	488.14 ug/L	488.14 ppb	13:28:12
1	V 292.402†	76312.4	80744.5	513.83 ug/L	513.83 ppb	13:28:12
1	Zn 213.857†	60649.9	61883.4	504.10 ug/L	504.10 ppb	13:28:12
1	SiO2†	85290.3	87547.8	5393.9 ug/L	5393.9 ppb	13:29:32
2	Sc Radial	4772.8	4772.8	93.9 %		13:27:18
2	Y RADIAL	5014.2	5014.2	93.53 %		13:27:18
2	Al 396.153Radial†	5802.7	6201.9	5015.1 ug/L	5015.1 ppb	13:27:18
2	Ca 317.933Radial†	3013.7	3192.6	5066.9 ug/L	5066.9 ppb	13:27:38
2	Fe 238.204 Radial†	582.1	605.5	5259.9 ug/L	5259.9 ppb	13:27:38
2	K 766.490 Radial†	28993.3	27559.0	5300.4 ug/L	5300.4 ppb	13:27:18
2	Mg 279.077 IEC†	164.4	171.3	5304.1 ug/L	5304.1 ppb	13:27:38
2	Na 589.592 Radial†	34421.8	38411.8	10933 ug/L	10933 ppb	13:27:18
2	Sr 421.552†	72662.7	77409.6	513.32 ug/L	513.32 ppb	13:27:18
2	Sc 361.383	878448.7	878448.7	96.008 %		13:28:39
2	Y 371.029	743550.3	743550.3	95.131 %		13:28:39
2	Ag 328.068†	114333.6	118575.3	512.83 ug/L	512.83 ppb	13:28:39
2	As 188.979†	1372.7	1461.0	519.12 ug/L	519.12 ppb	13:28:59
2	B 249.677†	22906.6	24572.5	501.30 ug/L	501.30 ppb	13:28:39
2	Ba 233.527†	67445.9	70242.1	513.18 ug/L	513.18 ppb	13:28:39
2	Be 313.107†	1443723.1	1508135.1	509.90 ug/L	509.90 ppb	13:28:39
2	Cd 226.502†	51832.4	54238.4	509.95 ug/L	509.95 ppb	13:28:39
2	Co 228.616†	26041.5	27213.4	508.92 ug/L	508.92 ppb	13:28:59
2	Cr 267.716†	48969.0	50889.2	510.49 ug/L	510.49 ppb	13:28:39
2	Cu 324.752†	172995.6	172091.3	509.50 ug/L	509.50 ppb	13:28:39
2	Mn 257.610†	470633.8	489536.8	514.17 ug/L	514.17 ppb	13:28:39
2	Mo 202.031†	7914.3	8220.1	516.23 ug/L	516.23 ppb	13:28:59
2	Ni 231.604†	22441.5	23257.4	508.62 ug/L	508.62 ppb	13:28:59

2	P 214.914†	5290.7	5258.1	2500.4 ug/L	2500.4 ppb	13:28:59
2	Pb 220.353†	4686.9	4982.6	517.42 ug/L	517.42 ppb	13:28:59
2	S 181.975 Axial†	920.0	895.9	1022.4 ug/L	1022.4 ppb	13:28:59
2	Sb 206.836†	1699.6	1729.6	520.05 ug/L	520.05 ppb	13:28:59
2	Se 196.026†	923.4	997.0	527.58 ug/L	527.58 ppb	13:28:59
2	Si 251.611†	85803.0	88709.3	2534.8 ug/L	2534.8 ppb	13:28:39
2	Sn 189.927†	3304.8	3438.1	510.26 ug/L	510.26 ppb	13:28:59
2	Ti 334.940†	312722.6	327520.1	512.96 ug/L	512.96 ppb	13:28:39
2	Tl 190.801†	1748.1	1866.7	514.61 ug/L	514.61 ppb	13:28:59
2	U 409.014†	13329.6	16510.2	487.58 ug/L	487.58 ppb	13:28:39
2	V 292.402†	76013.2	80974.4	515.35 ug/L	515.35 ppb	13:28:39
2	Zn 213.857†	60488.8	62146.0	506.23 ug/L	506.23 ppb	13:28:39
2	SiO2†	86643.3	89562.3	5518.4 ug/L	5518.4 ppb	13:29:37
3	Sc Radial	4759.6	4759.6	93.6 %		13:27:43
3	Y RADIAL	4984.4	4984.4	92.97 %		13:27:43
3	Al 396.153Radial†	5757.5	6170.8	4990.1 ug/L	4990.1 ppb	13:27:43
3	Ca 317.933Radial†	3025.9	3214.6	5101.8 ug/L	5101.8 ppb	13:28:03
3	Fe 238.204 Radial†	579.8	604.7	5253.0 ug/L	5253.0 ppb	13:28:03
3	K 766.490 Radial†	28747.5	27382.3	5266.4 ug/L	5266.4 ppb	13:27:43
3	Mg 279.077 IEC†	158.2	165.2	5113.5 ug/L	5113.5 ppb	13:28:03
3	Na 589.592 Radial†	34255.0	38335.5	10911 ug/L	10911 ppb	13:27:43
3	Sr 421.552†	72104.9	77028.8	510.79 ug/L	510.79 ppb	13:27:43
3	Sc 361.383	884847.8	884847.8	96.707 %		13:29:07
3	Y 371.029	748547.3	748547.3	95.771 %		13:29:07
3	Ag 328.068†	114799.5	118195.9	511.19 ug/L	511.19 ppb	13:29:07
3	As 188.979†	1350.1	1427.3	507.22 ug/L	507.22 ppb	13:29:27
3	B 249.677†	23006.5	24503.2	499.89 ug/L	499.89 ppb	13:29:07
3	Ba 233.527†	67711.5	70008.6	511.47 ug/L	511.47 ppb	13:29:07
3	Be 313.107†	1451188.4	1504979.6	508.84 ug/L	508.84 ppb	13:29:07
3	Cd 226.502†	52052.2	54075.2	508.42 ug/L	508.42 ppb	13:29:07
3	Co 228.616†	26030.5	27005.9	505.04 ug/L	505.04 ppb	13:29:27
3	Cr 267.716†	49054.7	50608.9	507.68 ug/L	507.68 ppb	13:29:07
3	Cu 324.752†	174034.1	171862.0	508.82 ug/L	508.82 ppb	13:29:07
3	Mn 257.610†	472572.0	487996.0	512.55 ug/L	512.55 ppb	13:29:07
3	Mo 202.031†	7904.8	8150.7	511.87 ug/L	511.87 ppb	13:29:27
3	Ni 231.604†	22399.9	23045.3	503.98 ug/L	503.98 ppb	13:29:27
3	P 214.914†	5305.0	5233.0	2488.2 ug/L	2488.2 ppb	13:29:27
3	Pb 220.353†	4682.2	4942.4	513.24 ug/L	513.24 ppb	13:29:27
3	S 181.975 Axial†	922.4	891.4	1017.3 ug/L	1017.3 ppb	13:29:27
3	Sb 206.836†	1691.8	1708.7	513.78 ug/L	513.78 ppb	13:29:27
3	Se 196.026†	928.5	995.4	526.69 ug/L	526.69 ppb	13:29:27
3	Si 251.611†	86087.6	88357.3	2524.8 ug/L	2524.8 ppb	13:29:07
3	Sn 189.927†	3311.8	3420.5	507.66 ug/L	507.66 ppb	13:29:27
3	Ti 334.940†	314595.5	327101.1	512.30 ug/L	512.30 ppb	13:29:07
3	Tl 190.801†	1732.3	1837.2	506.54 ug/L	506.54 ppb	13:29:27
3	U 409.014†	13592.1	16681.1	492.66 ug/L	492.66 ppb	13:29:07
3	V 292.402†	76177.6	80571.9	512.77 ug/L	512.77 ppb	13:29:07
3	Zn 213.857†	60561.6	61765.6	503.14 ug/L	503.14 ppb	13:29:07
3	SiO2†	86445.6	88705.3	5465.6 ug/L	5465.6 ppb	13:29:43

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	882590.4	96.460 %		0.3925			0.41%
Sc Radial	4757.5	93.6 %		0.32			0.35%
Y 371.029	746782.9	95.545 %		0.3587			0.38%
Y RADIAL	4976.9	92.83 %		0.775			0.83%
Ag 328.068†	118346.3	511.84 ug/L		0.875	511.84 ppb	0.875	0.17%
QC value within limits for Ag 328.068 Recovery = 102.37%							
Al 396.153Radial†	6160.1	4981.3 ug/L		38.89	4981.3 ppb	38.89	0.78%
QC value within limits for Al 396.153Radial Recovery = 99.63%							
As 188.979†	1440.6	511.93 ug/L		6.324	511.93 ppb	6.324	1.24%
QC value within limits for As 188.979 Recovery = 102.39%							
B 249.677†	24468.3	499.17 ug/L		2.561	499.17 ppb	2.561	0.51%
QC value within limits for B 249.677 Recovery = 99.83%							
Ba 233.527†	70099.3	512.14 ug/L		0.915	512.14 ppb	0.915	0.18%
QC value within limits for Ba 233.527 Recovery = 102.43%							
Be 313.107†	1507579.5	509.71 ug/L		0.801	509.71 ppb	0.801	0.16%
QC value within limits for Be 313.107 Recovery = 101.94%							
Ca 317.933Radial†	3198.0	5075.5 ug/L		23.25	5075.5 ppb	23.25	0.46%

QC value within limits for Ca 317.933 Radial Recovery = 101.51%							
Cd 226.502†	54149.7	509.12 ug/L	0.777	509.12 ppb	0.777	0.15%	
QC value within limits for Cd 226.502 Recovery = 101.82%							
Co 228.616†	27073.2	506.30 ug/L	2.277	506.30 ppb	2.277	0.45%	
QC value within limits for Co 228.616 Recovery = 101.26%							
Cr 267.716†	50723.8	508.83 ug/L	1.473	508.83 ppb	1.473	0.29%	
QC value within limits for Cr 267.716 Recovery = 101.77%							
Cu 324.752†	171960.9	509.11 ug/L	0.349	509.11 ppb	0.349	0.07%	
QC value within limits for Cu 324.752 Recovery = 101.82%							
Fe 238.204 Radial†	604.2	5248.5 ug/L	14.30	5248.5 ppb	14.30	0.27%	
QC value within limits for Fe 238.204 Radial Recovery = 104.97%							
K 766.490 Radial†	27422.5	5274.1 ug/L	23.40	5274.1 ppb	23.40	0.44%	
QC value within limits for K 766.490 Radial Recovery = 105.48%							
Mg 279.077 IEC†	167.4	5182.8 ug/L	105.36	5182.8 ppb	105.36	2.03%	
QC value within limits for Mg 279.077 IEC Recovery = 103.66%							
Mn 257.610†	488885.9	513.48 ug/L	0.836	513.48 ppb	0.836	0.16%	
QC value within limits for Mn 257.610 Recovery = 102.70%							
Mo 202.031†	8170.0	513.09 ug/L	2.746	513.09 ppb	2.746	0.54%	
QC value within limits for Mo 202.031 Recovery = 102.62%							
Na 589.592 Radial†	38281.1	10896 ug/L	46.9	10896 ppb	46.9	0.43%	
QC value within limits for Na 589.592 Radial Recovery = 108.96%							
Ni 231.604†	23119.4	505.60 ug/L	2.616	505.60 ppb	2.616	0.52%	
QC value within limits for Ni 231.604 Recovery = 101.12%							
P 214.914†	5233.5	2488.4 ug/L	11.95	2488.4 ppb	11.95	0.48%	
QC value within limits for P 214.914 Recovery = 99.54%							
Pb 220.353†	4962.0	515.27 ug/L	2.090	515.27 ppb	2.090	0.41%	
QC value within limits for Pb 220.353 Recovery = 103.05%							
S 181.975 Axial†	886.7	1011.9 ug/L	13.98	1011.9 ppb	13.98	1.38%	
QC value within limits for S 181.975 Axial Recovery = 101.19%							
Sb 206.836†	1715.4	515.78 ug/L	3.698	515.78 ppb	3.698	0.72%	
QC value within limits for Sb 206.836 Recovery = 103.16%							
Se 196.026†	994.6	526.26 ug/L	1.579	526.26 ppb	1.579	0.30%	
QC value within limits for Se 196.026 Recovery = 105.25%							
Si 251.611†	88576.5	2531.1 ug/L	5.46	2531.1 ppb	5.46	0.22%	
QC value within limits for Si 251.611 Recovery = 101.24%							
Sn 189.927†	3428.0	508.77 ug/L	1.345	508.77 ppb	1.345	0.26%	
QC value within limits for Sn 189.927 Recovery = 101.75%							
Sr 421.552†	76978.7	510.46 ug/L	3.037	510.46 ppb	3.037	0.59%	
QC value within limits for Sr 421.552 Recovery = 102.09%							
Ti 334.940†	327315.8	512.64 ug/L	0.328	512.64 ppb	0.328	0.06%	
QC value within limits for Ti 334.940 Recovery = 102.53%							
Tl 190.801†	1852.6	510.75 ug/L	4.046	510.75 ppb	4.046	0.79%	
QC value within limits for Tl 190.801 Recovery = 102.15%							
U 409.014†	16573.3	489.46 ug/L	2.782	489.46 ppb	2.782	0.57%	
QC value within limits for U 409.014 Recovery = 97.89%							
V 292.402†	80763.6	513.98 ug/L	1.297	513.98 ppb	1.297	0.25%	
QC value within limits for V 292.402 Recovery = 102.80%							
Zn 213.857†	61931.7	504.49 ug/L	1.579	504.49 ppb	1.579	0.31%	
QC value within limits for Zn 213.857 Recovery = 100.90%							
SiO2†	88605.2	5459.3 ug/L	62.48	5459.3 ppb	62.48	1.14%	
QC value within limits for SiO2 Recovery = 102.09%							
All analyte(s) passed QC.							

Sequence No.: 9

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/5/2010 13:31:53

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	5121.6	5121.6	101 %		13:33:45
1	Y RADIAL	5384.7	5384.7	100.4 %		13:33:45
1	Al 396.153Radial†	-9.7	9.9	8.0346 ug/L	8.0346 ppb	13:33:45
1	Ca 317.933Radial†	19.4	1.0	1.5960 ug/L	1.5960 ppb	13:34:05
1	Fe 238.204 Radial†	14.0	-0.7	-6.4552 ug/L	-6.4552 ppb	13:34:05
1	K 766.490 Radial†	3374.1	18.8	3.5967 ug/L	3.5967 ppb	13:33:45
1	Mg 279.077 IEC†	2.9	-1.0	-29.624 ug/L	-29.624 ppb	13:34:05
1	Na 589.592 Radial†	-1560.1	188.8	53.737 ug/L	53.737 ppb	13:33:45
1	Sr 421.552†	-36.0	-43.2	-0.2863 ug/L	-0.2863 ppb	13:33:45
1	Sc 361.383	881755.8	881755.8	96.369 %		13:35:02
1	Y 371.029	754127.4	754127.4	96.484 %		13:35:02
1	Ag 328.068†	437.9	-58.4	-0.2454 ug/L	-0.2454 ppb	13:35:02
1	As 188.979†	-29.1	1.1	0.3837 ug/L	0.3837 ppb	13:35:22
1	B 249.677†	-647.5	41.5	0.8521 ug/L	0.8521 ppb	13:35:02
1	Ba 233.527†	20.5	12.8	0.0936 ug/L	0.0936 ppb	13:35:22
1	Be 313.107†	-4227.2	-11.1	-0.0037 ug/L	-0.0037 ppb	13:35:02
1	Cd 226.502†	-223.5	18.7	0.1762 ug/L	0.1762 ppb	13:35:22
1	Co 228.616†	-97.9	-12.6	-0.2342 ug/L	-0.2342 ppb	13:35:22
1	Cr 267.716†	135.2	24.1	0.2440 ug/L	0.2440 ppb	13:35:02
1	Cu 324.752†	7998.3	201.4	0.5957 ug/L	0.5957 ppb	13:35:02
1	Mn 257.610†	572.3	-74.1	-0.0779 ug/L	-0.0779 ppb	13:35:02
1	Mo 202.031†	26.8	4.5	0.2846 ug/L	0.2846 ppb	13:35:22
1	Ni 231.604†	121.1	8.3	0.1816 ug/L	0.1816 ppb	13:35:22
1	P 214.914†	269.5	27.0	13.160 ug/L	13.160 ppb	13:35:22
1	Pb 220.353†	-77.2	20.6	2.1387 ug/L	2.1387 ppb	13:35:22
1	S 181.975 Axial†	62.1	2.1	2.4000 ug/L	2.4000 ppb	13:35:22
1	Sb 206.836†	47.1	8.1	2.4066 ug/L	2.4066 ppb	13:35:22
1	Se 196.026†	-35.8	-1.9	-0.9717 ug/L	-0.9717 ppb	13:35:22
1	Si 251.611†	744.4	110.7	3.1748 ug/L	3.1748 ppb	13:35:22
1	Sn 189.927†	0.8	-3.3	-0.4919 ug/L	-0.4919 ppb	13:35:22
1	Ti 334.940†	-1706.1	22.6	0.0387 ug/L	0.0387 ppb	13:35:02
1	Tl 190.801†	-37.5	7.0	1.9298 ug/L	1.9298 ppb	13:35:22
1	U 409.014†	-2771.0	-249.2	-7.3833 ug/L	-7.3833 ppb	13:35:02
1	V 292.402†	-1683.7	53.1	0.3235 ug/L	0.3235 ppb	13:35:02
1	Zn 213.857†	895.8	71.4	0.5857 ug/L	0.5857 ppb	13:35:22
1	SiO2†	786.2	131.8	8.1511 ug/L	8.1511 ppb	13:36:18
2	Sc Radial	4963.7	4963.7	97.6 %		13:34:10
2	Y RADIAL	5220.7	5220.7	97.38 %		13:34:10
2	Al 396.153Radial†	-44.0	-25.5	-20.727 ug/L	-20.727 ppb	13:34:10
2	Ca 317.933Radial†	20.4	2.7	4.2709 ug/L	4.2709 ppb	13:34:30
2	Fe 238.204 Radial†	12.5	-1.8	-15.850 ug/L	-15.850 ppb	13:34:30
2	K 766.490 Radial†	3361.7	112.7	21.686 ug/L	21.686 ppb	13:34:10
2	Mg 279.077 IEC†	3.7	-0.1	-2.4344 ug/L	-2.4344 ppb	13:34:30
2	Na 589.592 Radial†	-1560.4	139.2	39.623 ug/L	39.623 ppb	13:34:10
2	Sr 421.552†	-19.4	-27.3	-0.1812 ug/L	-0.1812 ppb	13:34:10
2	Sc 361.383	894068.2	894068.2	97.715 %		13:35:27
2	Y 371.029	764836.8	764836.8	97.855 %		13:35:27
2	Ag 328.068†	444.1	-58.3	-0.2481 ug/L	-0.2481 ppb	13:35:27
2	As 188.979†	-34.4	-3.9	-1.3878 ug/L	-1.3878 ppb	13:35:48
2	B 249.677†	-587.3	112.3	2.3029 ug/L	2.3029 ppb	13:35:27
2	Ba 233.527†	-4.1	-12.7	-0.0933 ug/L	-0.0933 ppb	13:35:48
2	Be 313.107†	-4377.4	-104.3	-0.0352 ug/L	-0.0352 ppb	13:35:27
2	Cd 226.502†	-245.3	-0.4	-0.0023 ug/L	-0.0023 ppb	13:35:48
2	Co 228.616†	-90.3	-3.5	-0.0641 ug/L	-0.0641 ppb	13:35:48
2	Cr 267.716†	81.4	-32.8	-0.3262 ug/L	-0.3262 ppb	13:35:27
2	Cu 324.752†	8038.2	127.9	0.3778 ug/L	0.3778 ppb	13:35:27
2	Mn 257.610†	562.0	-92.9	-0.0991 ug/L	-0.0991 ppb	13:35:27
2	Mo 202.031†	25.8	3.1	0.1919 ug/L	0.1919 ppb	13:35:48
2	Ni 231.604†	115.9	1.3	0.0278 ug/L	0.0278 ppb	13:35:48

2	P 214.914†	251.7	5.0	2.4411 ug/L	2.4411 ppb	13:35:48
2	Pb 220.353†	-94.1	4.4	0.4516 ug/L	0.4516 ppb	13:35:48
2	S 181.975 Axial†	52.6	-8.5	-9.7327 ug/L	-9.7327 ppb	13:35:48
2	Sb 206.836†	38.1	-1.8	-0.4791 ug/L	-0.4791 ppb	13:35:48
2	Se 196.026†	-40.1	-5.7	-2.9866 ug/L	-2.9866 ppb	13:35:48
2	Si 251.611†	740.7	96.3	2.7486 ug/L	2.7486 ppb	13:35:48
2	Sn 189.927†	14.3	10.5	1.5608 ug/L	1.5608 ppb	13:35:48
2	Ti 334.940†	-1736.4	16.0	0.0296 ug/L	0.0296 ppb	13:35:27
2	Tl 190.801†	-40.5	4.5	1.2308 ug/L	1.2308 ppb	13:35:48
2	U 409.014†	-2875.6	-316.6	-9.3796 ug/L	-9.3796 ppb	13:35:27
2	V 292.402†	-1762.3	-3.3	-0.0335 ug/L	-0.0335 ppb	13:35:27
2	Zn 213.857†	874.7	36.9	0.3037 ug/L	0.3037 ppb	13:35:48
2	SiO2†	743.9	77.3	4.7551 ug/L	4.7551 ppb	13:36:23
3	Sc Radial	4901.8	4901.8	96.4 %		13:34:35
3	Y RADIAL	5115.9	5115.9	95.42 %		13:34:35
3	Al 396.153Radial†	-8.0	11.2	9.0852 ug/L	9.0852 ppb	13:34:35
3	Ca 317.933Radial†	19.0	1.5	2.3755 ug/L	2.3755 ppb	13:34:55
3	Fe 238.204 Radial†	8.8	-5.5	-47.727 ug/L	-47.727 ppb	13:34:55
3	K 766.490 Radial†	3238.0	27.8	5.3469 ug/L	5.3469 ppb	13:34:35
3	Mg 279.077 IEC†	4.8	1.1	34.584 ug/L	34.584 ppb	13:34:55
3	Na 589.592 Radial†	-1545.4	134.6	38.309 ug/L	38.309 ppb	13:34:35
3	Sr 421.552†	15.0	8.1	0.0537 ug/L	0.0537 ppb	13:34:35
3	Sc 361.383	886132.7	886132.7	96.847 %		13:35:53
3	Y 371.029	758567.1	758567.1	97.053 %		13:35:53
3	Ag 328.068†	443.3	-55.1	-0.2413 ug/L	-0.2413 ppb	13:35:53
3	As 188.979†	-25.6	4.8	1.6923 ug/L	1.6923 ppb	13:36:13
3	B 249.677†	-601.5	92.3	1.8975 ug/L	1.8975 ppb	13:35:53
3	Ba 233.527†	-7.4	-16.2	-0.1186 ug/L	-0.1186 ppb	13:36:13
3	Be 313.107†	-4321.1	-86.4	-0.0287 ug/L	-0.0287 ppb	13:35:53
3	Cd 226.502†	-241.0	1.8	0.0213 ug/L	0.0213 ppb	13:36:13
3	Co 228.616†	-85.2	1.0	0.0212 ug/L	0.0212 ppb	13:36:13
3	Cr 267.716†	86.2	-27.2	-0.2688 ug/L	-0.2688 ppb	13:35:53
3	Cu 324.752†	7874.9	33.0	0.0951 ug/L	0.0951 ppb	13:35:53
3	Mn 257.610†	520.2	-130.9	-0.1428 ug/L	-0.1428 ppb	13:35:53
3	Mo 202.031†	38.0	15.9	0.9945 ug/L	0.9945 ppb	13:36:13
3	Ni 231.604†	114.6	1.0	0.0212 ug/L	0.0212 ppb	13:36:13
3	P 214.914†	272.0	28.3	13.915 ug/L	13.915 ppb	13:36:13
3	Pb 220.353†	-82.1	16.0	1.6641 ug/L	1.6641 ppb	13:36:13
3	S 181.975 Axial†	63.3	3.0	3.4675 ug/L	3.4675 ppb	13:36:13
3	Sb 206.836†	45.1	5.8	1.7692 ug/L	1.7692 ppb	13:36:13
3	Se 196.026†	-27.8	6.6	3.2481 ug/L	3.2481 ppb	13:36:13
3	Si 251.611†	743.6	106.1	3.0258 ug/L	3.0258 ppb	13:36:13
3	Sn 189.927†	8.0	4.1	0.6067 ug/L	0.6067 ppb	13:36:13
3	Ti 334.940†	-1606.3	134.4	0.2164 ug/L	0.2164 ppb	13:35:53
3	Tl 190.801†	-50.4	-6.1	-1.6791 ug/L	-1.6791 ppb	13:36:13
3	U 409.014†	-2960.0	-430.1	-12.740 ug/L	-12.740 ppb	13:35:53
3	V 292.402†	-1723.6	20.6	0.1265 ug/L	0.1265 ppb	13:35:53
3	Zn 213.857†	904.2	75.5	0.6209 ug/L	0.6209 ppb	13:36:13
3	SiO2†	759.4	100.1	6.1531 ug/L	6.1531 ppb	13:36:28

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	887318.9	96.977 %	0.6821			0.70%
Sc Radial	4995.7	98.2 %	2.23			2.27%
Y 371.029	759177.1	97.131 %	0.6884			0.71%
Y RADIAL	5240.4	97.75 %	2.527			2.59%
Ag 328.068†	-57.3	-0.2449 ug/L	0.00344	-0.2449 ppb	0.00344	1.41%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	-1.5	-1.2024 ug/L	16.91699	-1.2024 ppb	16.91699	>999.9%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	0.7	0.2294 ug/L	1.54582	0.2294 ppb	1.54582	673.96%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	82.1	1.6842 ug/L	0.74858	1.6842 ppb	0.74858	44.45%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-5.4	-0.0394 ug/L	0.11589	-0.0394 ppb	0.11589	293.87%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-67.3	-0.0225 ug/L	0.01664	-0.0225 ppb	0.01664	73.89%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	1.7	2.7475 ug/L	1.37569	2.7475 ppb	1.37569	50.07%

QC value within limits for Ca 317.933 Radial Recovery = Not calculated						
Cd 226.502†	6.7	0.0651 ug/L	0.09698	0.0651 ppb	0.09698	149.09%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-5.0	-0.0924 ug/L	0.13005	-0.0924 ppb	0.13005	140.78%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	-12.0	-0.1170 ug/L	0.31393	-0.1170 ppb	0.31393	268.34%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	120.8	0.3562 ug/L	0.25096	0.3562 ppb	0.25096	70.46%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	-2.7	-23.344 ug/L	21.6326	-23.344 ppb	21.6326	92.67%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	53.1	10.210 ug/L	9.9768	10.210 ppb	9.9768	97.72%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	0.0	0.8420 ug/L	32.22923	0.8420 ppb	32.22923	>999.9%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	-99.3	-0.1066 ug/L	0.03308	-0.1066 ppb	0.03308	31.03%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	7.9	0.4904 ug/L	0.43904	0.4904 ppb	0.43904	89.54%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	154.2	43.889 ug/L	8.5535	43.889 ppb	8.5535	19.49%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	3.5	0.0769 ug/L	0.09076	0.0769 ppb	0.09076	118.02%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	20.1	9.8389 ug/L	6.41773	9.8389 ppb	6.41773	65.23%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	13.7	1.4181 ug/L	0.87004	1.4181 ppb	0.87004	61.35%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	-1.1	-1.2884 ug/L	7.33242	-1.2884 ppb	7.33242	569.10%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	4.1	1.2322 ug/L	1.51592	1.2322 ppb	1.51592	123.02%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-0.3	-0.2367 ug/L	3.18168	-0.2367 ppb	3.18168	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	104.4	2.9831 ug/L	0.21627	2.9831 ppb	0.21627	7.25%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	3.8	0.5585 ug/L	1.02715	0.5585 ppb	1.02715	183.91%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	-20.8	-0.1380 ug/L	0.17407	-0.1380 ppb	0.17407	126.18%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	57.7	0.0949 ug/L	0.10533	0.0949 ppb	0.10533	111.01%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	1.8	0.4938 ug/L	1.91400	0.4938 ppb	1.91400	387.60%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-332.0	-9.8341 ug/L	2.70690	-9.8341 ppb	2.70690	27.53%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	23.5	0.1388 ug/L	0.17883	0.1388 ppb	0.17883	128.80%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	61.3	0.5035 ug/L	0.17386	0.5035 ppb	0.17386	34.53%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	103.1	6.3531 ug/L	1.70683	6.3531 ppb	1.70683	26.87%
QC value within limits for SiO2 Recovery = Not calculated						
All analyte(s) passed QC.						

Sequence No.: 17

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/5/2010 14:27:24

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	4728.1	4728.1	93.0 %		14:29:16
1	Y RADIAL	4923.3	4923.3	91.83 %		14:29:16
1	Al 396.153Radial†	5709.7	6160.3	4981.9 ug/L	4981.9 ppb	14:29:16
1	Ca 317.933Radial†	2984.6	3191.7	5065.5 ug/L	5065.5 ppb	14:29:36
1	Fe 238.204 Radial†	571.0	599.5	5207.0 ug/L	5207.0 ppb	14:29:36
1	K 766.490 Radial†	28796.0	27638.8	5316.0 ug/L	5316.0 ppb	14:29:16
1	Mg 279.077 IEC†	158.5	166.6	5157.5 ug/L	5157.5 ppb	14:29:36
1	Na 589.592 Radial†	32445.2	36632.6	10426 ug/L	10426 ppb	14:29:16
1	Sr 421.552†	69778.1	75039.1	497.60 ug/L	497.60 ppb	14:29:16
1	Sc 361.383	899137.3	899137.3	98.269 %		14:30:35
1	Y 371.029	759850.7	759850.7	97.217 %		14:30:35
1	Ag 328.068†	116204.2	117738.8	509.20 ug/L	509.20 ppb	14:30:35
1	As 188.979†	1343.0	1397.9	496.87 ug/L	496.87 ppb	14:30:55
1	B 249.677†	23264.6	24387.9	497.56 ug/L	497.56 ppb	14:30:35
1	Ba 233.527†	68613.8	69814.1	510.05 ug/L	510.05 ppb	14:30:35
1	Be 313.107†	1470146.0	1500422.8	507.29 ug/L	507.29 ppb	14:30:35
1	Cd 226.502†	52805.7	53986.6	507.58 ug/L	507.58 ppb	14:30:35
1	Co 228.616†	25970.4	26516.9	495.88 ug/L	495.88 ppb	14:30:55
1	Cr 267.716†	49676.1	50435.1	505.94 ug/L	505.94 ppb	14:30:35
1	Cu 324.752†	176372.2	171381.3	507.40 ug/L	507.40 ppb	14:30:35
1	Mn 257.610†	479081.6	486854.1	511.35 ug/L	511.35 ppb	14:30:35
1	Mo 202.031†	7903.7	8019.7	503.65 ug/L	503.65 ppb	14:30:55
1	Ni 231.604†	22359.3	22635.9	495.03 ug/L	495.03 ppb	14:30:55
1	P 214.914†	5266.2	5106.4	2426.3 ug/L	2426.3 ppb	14:30:55
1	Pb 220.353†	4668.6	4851.6	503.83 ug/L	503.83 ppb	14:30:55
1	S 181.975 Axial†	925.3	879.2	1003.3 ug/L	1003.3 ppb	14:30:55
1	Sb 206.836†	1682.7	1671.6	502.50 ug/L	502.50 ppb	14:30:55
1	Se 196.026†	936.5	988.3	522.92 ug/L	522.92 ppb	14:30:55
1	Si 251.611†	87312.6	88189.2	2520.1 ug/L	2520.1 ppb	14:30:35
1	Sn 189.927†	3307.0	3361.1	498.86 ug/L	498.86 ppb	14:30:55
1	Ti 334.940†	318600.0	326006.2	510.59 ug/L	510.59 ppb	14:30:35
1	Tl 190.801†	1747.9	1824.6	503.12 ug/L	503.12 ppb	14:30:55
1	U 409.014†	13711.4	16579.2	489.65 ug/L	489.65 ppb	14:30:35
1	V 292.402†	77166.9	80326.7	511.11 ug/L	511.11 ppb	14:30:35
1	Zn 213.857†	61341.0	61563.5	501.54 ug/L	501.54 ppb	14:30:35
1	SiO2†	86000.3	86831.5	5349.9 ug/L	5349.9 ppb	14:31:56
2	Sc Radial	4764.0	4764.0	93.7 %		14:29:41
2	Y RADIAL	4979.2	4979.2	92.87 %		14:29:41
2	Al 396.153Radial†	5760.7	6168.5	4988.4 ug/L	4988.4 ppb	14:29:41
2	Ca 317.933Radial†	2947.8	3128.2	4964.7 ug/L	4964.7 ppb	14:30:01
2	Fe 238.204 Radial†	565.4	588.8	5115.3 ug/L	5115.3 ppb	14:30:01
2	K 766.490 Radial†	29007.2	27630.9	5314.5 ug/L	5314.5 ppb	14:29:41
2	Mg 279.077 IEC†	158.2	165.0	5109.2 ug/L	5109.2 ppb	14:30:01
2	Na 589.592 Radial†	32604.2	36539.4	10400 ug/L	10400 ppb	14:29:41
2	Sr 421.552†	70264.9	74993.0	497.29 ug/L	497.29 ppb	14:29:41
2	Sc 361.383	893716.5	893716.5	97.676 %		14:31:03
2	Y 371.029	755863.3	755863.3	96.707 %		14:31:03
2	Ag 328.068†	115500.6	117735.7	509.16 ug/L	509.16 ppb	14:31:03
2	As 188.979†	1369.0	1432.8	509.13 ug/L	509.13 ppb	14:31:23
2	B 249.677†	23166.7	24431.2	498.45 ug/L	498.45 ppb	14:31:03
2	Ba 233.527†	68122.5	69734.6	509.47 ug/L	509.47 ppb	14:31:03
2	Be 313.107†	1461394.4	1500537.4	507.33 ug/L	507.33 ppb	14:31:03
2	Cd 226.502†	52455.7	53954.2	507.29 ug/L	507.29 ppb	14:31:03
2	Co 228.616†	26029.6	26737.8	500.02 ug/L	500.02 ppb	14:31:23
2	Cr 267.716†	49362.6	50420.7	505.79 ug/L	505.79 ppb	14:31:03
2	Cu 324.752†	175135.7	171204.1	506.87 ug/L	506.87 ppb	14:31:03
2	Mn 257.610†	475930.4	486585.1	511.06 ug/L	511.06 ppb	14:31:03
2	Mo 202.031†	7896.9	8061.5	506.26 ug/L	506.26 ppb	14:31:23
2	Ni 231.604†	22368.7	22783.5	498.25 ug/L	498.25 ppb	14:31:23



2	P 214.914†	5271.0	5143.9	2444.9 ug/L	2444.9 ppb	14:31:23
2	Pb 220.353†	4697.4	4909.9	509.88 ug/L	509.88 ppb	14:31:23
2	S 181.975 Axial†	911.3	870.6	993.56 ug/L	993.56 ppb	14:31:23
2	Sb 206.836†	1694.6	1694.2	509.35 ug/L	509.35 ppb	14:31:23
2	Se 196.026†	925.8	983.1	520.00 ug/L	520.00 ppb	14:31:23
2	Si 251.611†	86737.9	88139.8	2518.6 ug/L	2518.6 ppb	14:31:03
2	Sn 189.927†	3320.6	3395.4	503.93 ug/L	503.93 ppb	14:31:23
2	Ti 334.940†	316611.1	325936.5	510.47 ug/L	510.47 ppb	14:31:03
2	Tl 190.801†	1764.8	1852.7	510.80 ug/L	510.80 ppb	14:31:23
2	U 409.014†	13587.5	16537.0	488.41 ug/L	488.41 ppb	14:31:03
2	V 292.402†	76707.6	80332.8	511.20 ug/L	511.20 ppb	14:31:03
2	Zn 213.857†	61130.6	61726.8	502.87 ug/L	502.87 ppb	14:31:03
2	SiO2†	86556.7	87932.0	5417.9 ug/L	5417.9 ppb	14:32:01
3	Sc Radial	4609.9	4609.9	90.7 %		14:30:06
3	Y RADIAL	4831.2	4831.2	90.11 %		14:30:06
3	Al 396.153Radial†	5596.4	6192.8	5008.4 ug/L	5008.4 ppb	14:30:06
3	Ca 317.933Radial†	3009.6	3301.5	5239.8 ug/L	5239.8 ppb	14:30:26
3	Fe 238.204 Radial†	574.0	618.5	5372.3 ug/L	5372.3 ppb	14:30:26
3	K 766.490 Radial†	28469.4	28072.6	5399.6 ug/L	5399.6 ppb	14:30:06
3	Mg 279.077 IEC†	159.9	172.5	5339.0 ug/L	5339.0 ppb	14:30:26
3	Na 589.592 Radial†	31703.1	36708.7	10448 ug/L	10448 ppb	14:30:06
3	Sr 421.552†	68221.5	75246.1	498.97 ug/L	498.97 ppb	14:30:06
3	Sc 361.383	896415.2	896415.2	97.971 %		14:31:30
3	Y 371.029	757733.6	757733.6	96.946 %		14:31:30
3	Ag 328.068†	115979.5	117868.5	509.82 ug/L	509.82 ppb	14:31:30
3	As 188.979†	1323.7	1382.3	491.41 ug/L	491.41 ppb	14:31:50
3	B 249.677†	23341.3	24538.0	500.61 ug/L	500.61 ppb	14:31:30
3	Ba 233.527†	68497.8	69907.8	510.74 ug/L	510.74 ppb	14:31:30
3	Be 313.107†	1468316.1	1503098.2	508.20 ug/L	508.20 ppb	14:31:30
3	Cd 226.502†	52640.5	53981.1	507.52 ug/L	507.52 ppb	14:31:30
3	Co 228.616†	25909.9	26535.5	496.22 ug/L	496.22 ppb	14:31:50
3	Cr 267.716†	49457.8	50365.8	505.25 ug/L	505.25 ppb	14:31:30
3	Cu 324.752†	176236.2	171787.6	508.61 ug/L	508.61 ppb	14:31:30
3	Mn 257.610†	478030.1	487261.3	511.79 ug/L	511.79 ppb	14:31:30
3	Mo 202.031†	7861.9	8001.4	502.52 ug/L	502.52 ppb	14:31:50
3	Ni 231.604†	22338.7	22683.9	496.08 ug/L	496.08 ppb	14:31:50
3	P 214.914†	5266.3	5122.8	2434.0 ug/L	2434.0 ppb	14:31:50
3	Pb 220.353†	4662.5	4859.8	504.67 ug/L	504.67 ppb	14:31:50
3	S 181.975 Axial†	917.6	874.2	997.61 ug/L	997.61 ppb	14:31:50
3	Sb 206.836†	1670.2	1664.0	500.23 ug/L	500.23 ppb	14:31:50
3	Se 196.026†	924.9	979.4	518.81 ug/L	518.81 ppb	14:31:50
3	Si 251.611†	87084.6	88226.3	2521.2 ug/L	2521.2 ppb	14:31:30
3	Sn 189.927†	3291.8	3355.8	498.08 ug/L	498.08 ppb	14:31:50
3	Ti 334.940†	317925.7	326302.5	511.06 ug/L	511.06 ppb	14:31:30
3	Tl 190.801†	1725.6	1807.3	498.37 ug/L	498.37 ppb	14:31:50
3	U 409.014†	13732.7	16643.3	491.52 ug/L	491.52 ppb	14:31:30
3	V 292.402†	77043.8	80439.5	511.79 ug/L	511.79 ppb	14:31:30
3	Zn 213.857†	61422.3	61836.1	503.75 ug/L	503.75 ppb	14:31:30
3	SiO2†	86663.0	87773.6	5408.2 ug/L	5408.2 ppb	14:32:06

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	896423.0	97.972 %	0.2962			0.30%
Sc Radial	4700.7	92.4 %	1.59			1.72%
Y 371.029	757815.9	96.956 %	0.2552			0.26%
Y RADIAL	4911.2	91.61 %	1.394			1.52%
Ag 328.068†	117781.0	509.39 ug/L	0.365	509.39 ppb	0.365	0.07%
QC value within limits for Ag 328.068 Recovery = 101.88%						
Al 396.153Radial†	6173.9	4992.9 ug/L	13.79	4992.9 ppb	13.79	0.28%
QC value within limits for Al 396.153Radial Recovery = 99.86%						
As 188.979†	1404.3	499.14 ug/L	9.074	499.14 ppb	9.074	1.82%
QC value within limits for As 188.979 Recovery = 99.83%						
B 249.677†	24452.4	498.87 ug/L	1.570	498.87 ppb	1.570	0.31%
QC value within limits for B 249.677 Recovery = 99.77%						
Ba 233.527†	69818.8	510.09 ug/L	0.636	510.09 ppb	0.636	0.12%
QC value within limits for Ba 233.527 Recovery = 102.02%						
Be 313.107†	1501352.8	507.61 ug/L	0.511	507.61 ppb	0.511	0.10%
QC value within limits for Be 313.107 Recovery = 101.52%						
Ca 317.933Radial†	3207.2	5090.0 ug/L	139.14	5090.0 ppb	139.14	2.73%

QC value within limits for Ca 317.933 Radial Recovery = 101.80%							
Cd	226.502†	53974.0	507.46 ug/L	0.154	507.46 ppb	0.154	0.03%
QC value within limits for Cd 226.502 Recovery = 101.49%							
Co	228.616†	26596.7	497.37 ug/L	2.297	497.37 ppb	2.297	0.46%
QC value within limits for Co 228.616 Recovery = 99.47%							
Cr	267.716†	50407.2	505.66 ug/L	0.364	505.66 ppb	0.364	0.07%
QC value within limits for Cr 267.716 Recovery = 101.13%							
Cu	324.752†	171457.6	507.62 ug/L	0.892	507.62 ppb	0.892	0.18%
QC value within limits for Cu 324.752 Recovery = 101.52%							
Fe	238.204 Radial†	602.3	5231.5 ug/L	130.27	5231.5 ppb	130.27	2.49%
QC value within limits for Fe 238.204 Radial Recovery = 104.63%							
K	766.490 Radial†	27780.8	5343.4 ug/L	48.67	5343.4 ppb	48.67	0.91%
QC value within limits for K 766.490 Radial Recovery = 106.87%							
Mg	279.077 IEC†	168.0	5201.9 ug/L	121.12	5201.9 ppb	121.12	2.33%
QC value within limits for Mg 279.077 IEC Recovery = 104.04%							
Mn	257.610†	486900.2	511.40 ug/L	0.368	511.40 ppb	0.368	0.07%
QC value within limits for Mn 257.610 Recovery = 102.28%							
Mo	202.031†	8027.5	504.14 ug/L	1.921	504.14 ppb	1.921	0.38%
QC value within limits for Mo 202.031 Recovery = 100.83%							
Na	589.592 Radial†	36626.9	10425 ug/L	24.1	10425 ppb	24.1	0.23%
QC value within limits for Na 589.592 Radial Recovery = 104.25%							
Ni	231.604†	22701.1	496.45 ug/L	1.646	496.45 ppb	1.646	0.33%
QC value within limits for Ni 231.604 Recovery = 99.29%							
P	214.914†	5124.4	2435.0 ug/L	9.34	2435.0 ppb	9.34	0.38%
QC value within limits for P 214.914 Recovery = 97.40%							
Pb	220.353†	4873.8	506.12 ug/L	3.278	506.12 ppb	3.278	0.65%
QC value within limits for Pb 220.353 Recovery = 101.22%							
S	181.975 Axial†	874.7	998.17 ug/L	4.913	998.17 ppb	4.913	0.49%
QC value within limits for S 181.975 Axial Recovery = 99.82%							
Sb	206.836†	1676.6	504.03 ug/L	4.749	504.03 ppb	4.749	0.94%
QC value within limits for Sb 206.836 Recovery = 100.81%							
Se	196.026†	983.6	520.58 ug/L	2.111	520.58 ppb	2.111	0.41%
QC value within limits for Se 196.026 Recovery = 104.12%							
Si	251.611†	88185.1	2520.0 ug/L	1.28	2520.0 ppb	1.28	0.05%
QC value within limits for Si 251.611 Recovery = 100.80%							
Sn	189.927†	3370.8	500.29 ug/L	3.176	500.29 ppb	3.176	0.63%
QC value within limits for Sn 189.927 Recovery = 100.06%							
Sr	421.552†	75092.7	497.95 ug/L	0.893	497.95 ppb	0.893	0.18%
QC value within limits for Sr 421.552 Recovery = 99.59%							
Ti	334.940†	326081.7	510.71 ug/L	0.311	510.71 ppb	0.311	0.06%
QC value within limits for Ti 334.940 Recovery = 102.14%							
Tl	190.801†	1828.2	504.10 ug/L	6.271	504.10 ppb	6.271	1.24%
QC value within limits for Tl 190.801 Recovery = 100.82%							
U	409.014†	16586.5	489.86 ug/L	1.569	489.86 ppb	1.569	0.32%
QC value within limits for U 409.014 Recovery = 97.97%							
V	292.402†	80366.3	511.37 ug/L	0.367	511.37 ppb	0.367	0.07%
QC value within limits for V 292.402 Recovery = 102.27%							
Zn	213.857†	61708.8	502.72 ug/L	1.116	502.72 ppb	1.116	0.22%
QC value within limits for Zn 213.857 Recovery = 100.54%							
SiO2†		87512.4	5392.0 ug/L	36.79	5392.0 ppb	36.79	0.68%
QC value within limits for SiO2 Recovery = 100.83%							
All analyte(s) passed QC.							

Sequence No.: 18

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/5/2010 14:34:15

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	4736.5	4736.5	93.1 %		14:36:08
1	Y RADIAL	4999.3	4999.3	93.25 %		14:36:08
1	Al 396.153Radial†	-31.4	-14.1	-11.511 ug/L	-11.511 ppb	14:36:08
1	Ca 317.933Radial†	20.3	3.6	5.6407 ug/L	5.6407 ppb	14:36:28
1	Fe 238.204 Radial†	14.1	0.4	3.7532 ug/L	3.7532 ppb	14:36:28
1	K 766.490 Radial†	3474.9	399.4	76.935 ug/L	76.935 ppb	14:36:08
1	Mg 279.077 IEC†	3.7	0.0	1.3325 ug/L	1.3325 ppb	14:36:28
1	Na 589.592 Radial†	-1559.4	63.6	18.101 ug/L	18.101 ppb	14:36:08
1	Sr 421.552†	9.4	2.7	0.0175 ug/L	0.0175 ppb	14:36:08
1	Sc 361.383	884954.0	884954.0	96.719 %		14:37:25
1	Y 371.029	756875.2	756875.2	96.836 %		14:37:25
1	Ag 328.068†	301.9	-200.7	-0.8537 ug/L	-0.8537 ppb	14:37:25
1	As 188.979†	-32.1	-2.0	-0.7019 ug/L	-0.7019 ppb	14:37:45
1	B 249.677†	-574.5	119.4	2.4458 ug/L	2.4458 ppb	14:37:25
1	Ba 233.527†	19.2	11.3	0.0818 ug/L	0.0818 ppb	14:37:45
1	Be 313.107†	-4334.4	-106.1	-0.0357 ug/L	-0.0357 ppb	14:37:25
1	Cd 226.502†	-234.6	8.1	0.0752 ug/L	0.0752 ppb	14:37:45
1	Co 228.616†	-93.4	-7.6	-0.1410 ug/L	-0.1410 ppb	14:37:45
1	Cr 267.716†	102.2	-10.5	-0.1028 ug/L	-0.1028 ppb	14:37:25
1	Cu 324.752†	8089.2	265.4	0.7856 ug/L	0.7856 ppb	14:37:25
1	Mn 257.610†	511.6	-139.1	-0.1456 ug/L	-0.1456 ppb	14:37:25
1	Mo 202.031†	30.6	8.4	0.5274 ug/L	0.5274 ppb	14:37:45
1	Ni 231.604†	99.3	-14.7	-0.3212 ug/L	-0.3212 ppb	14:37:45
1	P 214.914†	269.6	26.2	12.706 ug/L	12.706 ppb	14:37:45
1	Pb 220.353†	-78.9	19.1	1.9770 ug/L	1.9770 ppb	14:37:45
1	S 181.975 Axial†	58.3	-2.1	-2.4325 ug/L	-2.4325 ppb	14:37:45
1	Sb 206.836†	57.7	19.0	5.6330 ug/L	5.6330 ppb	14:37:45
1	Se 196.026†	-31.2	3.1	1.5823 ug/L	1.5823 ppb	14:37:45
1	Si 251.611†	699.9	62.0	1.7440 ug/L	1.7440 ppb	14:37:45
1	Sn 189.927†	4.6	0.6	0.0875 ug/L	0.0875 ppb	14:37:45
1	Ti 334.940†	-1719.5	15.2	0.0288 ug/L	0.0288 ppb	14:37:25
1	Tl 190.801†	-40.2	4.4	1.2132 ug/L	1.2132 ppb	14:37:45
1	U 409.014†	-2890.1	-361.9	-10.724 ug/L	-10.724 ppb	14:37:25
1	V 292.402†	-1804.9	-65.9	-0.4274 ug/L	-0.4274 ppb	14:37:25
1	Zn 213.857†	869.1	40.4	0.3325 ug/L	0.3325 ppb	14:37:45
1	SiO2†	707.8	47.9	2.8860 ug/L	2.8860 ppb	14:38:41
2	Sc Radial	4798.6	4798.6	94.4 %		14:36:33
2	Y RADIAL	5031.6	5031.6	93.85 %		14:36:33
2	Al 396.153Radial†	-32.4	-14.8	-12.012 ug/L	-12.012 ppb	14:36:33
2	Ca 317.933Radial†	23.2	6.4	10.118 ug/L	10.118 ppb	14:36:53
2	Fe 238.204 Radial†	16.8	3.2	27.343 ug/L	27.343 ppb	14:36:53
2	K 766.490 Radial†	3475.7	352.0	67.799 ug/L	67.799 ppb	14:36:33
2	Mg 279.077 IEC†	0.2	-3.6	-112.28 ug/L	-112.28 ppb	14:36:53
2	Na 589.592 Radial†	-1564.6	79.7	22.689 ug/L	22.689 ppb	14:36:33
2	Sr 421.552†	-4.6	-12.3	-0.0818 ug/L	-0.0818 ppb	14:36:33
2	Sc 361.383	892849.2	892849.2	97.581 %		14:37:50
2	Y 371.029	763615.2	763615.2	97.698 %		14:37:50
2	Ag 328.068†	536.9	37.4	0.1710 ug/L	0.1710 ppb	14:37:50
2	As 188.979†	-36.1	-5.8	-2.0251 ug/L	-2.0251 ppb	14:38:10
2	B 249.677†	-625.2	72.7	1.4856 ug/L	1.4856 ppb	14:37:50
2	Ba 233.527†	4.9	-3.5	-0.0254 ug/L	-0.0254 ppb	14:38:10
2	Be 313.107†	-4376.4	-109.5	-0.0370 ug/L	-0.0370 ppb	14:37:50
2	Cd 226.502†	-224.9	20.1	0.1862 ug/L	0.1862 ppb	14:38:10
2	Co 228.616†	-105.5	-19.2	-0.3589 ug/L	-0.3589 ppb	14:38:10
2	Cr 267.716†	111.1	-2.3	-0.0222 ug/L	-0.0222 ppb	14:37:50
2	Cu 324.752†	8066.4	168.1	0.4987 ug/L	0.4987 ppb	14:37:50
2	Mn 257.610†	538.4	-116.3	-0.1172 ug/L	-0.1172 ppb	14:37:50
2	Mo 202.031†	20.6	-2.2	-0.1328 ug/L	-0.1328 ppb	14:38:10
2	Ni 231.604†	122.5	8.2	0.1786 ug/L	0.1786 ppb	14:38:10

2	P 214.914†	258.6	12.4	5.9705 ug/L	5.9705 ppb	14:38:10
2	Pb 220.353†	-99.0	-0.7	-0.0776 ug/L	-0.0776 ppb	14:38:10
2	S 181.975 Axial†	59.3	-1.6	-1.8624 ug/L	-1.8624 ppb	14:38:10
2	Sb 206.836†	46.9	7.3	2.1836 ug/L	2.1836 ppb	14:38:10
2	Se 196.026†	-38.2	-3.8	-1.8863 ug/L	-1.8863 ppb	14:38:10
2	Si 251.611†	730.1	86.5	2.4608 ug/L	2.4608 ppb	14:38:10
2	Sn 189.927†	9.0	5.1	0.7608 ug/L	0.7608 ppb	14:38:10
2	Ti 334.940†	-1765.1	-15.8	-0.0232 ug/L	-0.0232 ppb	14:37:50
2	Tl 190.801†	-48.8	-4.1	-1.1232 ug/L	-1.1232 ppb	14:38:10
2	U 409.014†	-2639.4	-78.6	-2.3320 ug/L	-2.3320 ppb	14:37:50
2	V 292.402†	-1793.3	-37.5	-0.2489 ug/L	-0.2489 ppb	14:37:50
2	Zn 213.857†	882.8	46.5	0.3829 ug/L	0.3829 ppb	14:38:10
2	SiO2†	764.0	99.0	6.0792 ug/L	6.0792 ppb	14:38:46
3	Sc Radial	4791.2	4791.2	94.2 %		14:36:58
3	Y RADIAL	5039.6	5039.6	94.00 %		14:36:58
3	Al 396.153Radial†	-0.9	18.6	15.047 ug/L	15.047 ppb	14:36:58
3	Ca 317.933Radial†	16.8	-0.4	-0.7026 ug/L	-0.7026 ppb	14:37:18
3	Fe 238.204 Radial†	12.3	-1.6	-14.154 ug/L	-14.154 ppb	14:37:18
3	K 766.490 Radial†	3359.3	234.1	45.094 ug/L	45.094 ppb	14:36:58
3	Mg 279.077 IEC†	-1.4	-5.4	-165.69 ug/L	-165.69 ppb	14:37:18
3	Na 589.592 Radial†	-1557.1	85.1	24.234 ug/L	24.234 ppb	14:36:58
3	Sr 421.552†	65.4	61.9	0.4108 ug/L	0.4108 ppb	14:36:58
3	Sc 361.383	879023.5	879023.5	96.070 %		14:38:16
3	Y 371.029	751922.8	751922.8	96.202 %		14:38:16
3	Ag 328.068†	515.1	23.4	0.0995 ug/L	0.0995 ppb	14:38:16
3	As 188.979†	-30.7	-0.7	-0.2425 ug/L	-0.2425 ppb	14:38:36
3	B 249.677†	-640.0	47.2	0.9698 ug/L	0.9698 ppb	14:38:16
3	Ba 233.527†	-2.4	-11.0	-0.0819 ug/L	-0.0819 ppb	14:38:36
3	Be 313.107†	-4425.2	-230.8	-0.0776 ug/L	-0.0776 ppb	14:38:16
3	Cd 226.502†	-246.7	-6.2	-0.0572 ug/L	-0.0572 ppb	14:38:36
3	Co 228.616†	-102.6	-17.8	-0.3322 ug/L	-0.3322 ppb	14:38:36
3	Cr 267.716†	101.9	-10.1	-0.1004 ug/L	-0.1004 ppb	14:38:16
3	Cu 324.752†	8011.0	240.4	0.7107 ug/L	0.7107 ppb	14:38:16
3	Mn 257.610†	545.8	-99.9	-0.1032 ug/L	-0.1032 ppb	14:38:16
3	Mo 202.031†	29.2	7.1	0.4469 ug/L	0.4469 ppb	14:38:36
3	Ni 231.604†	114.7	2.0	0.0450 ug/L	0.0450 ppb	14:38:36
3	P 214.914†	273.6	32.2	15.702 ug/L	15.702 ppb	14:38:36
3	Pb 220.353†	-95.1	1.7	0.1823 ug/L	0.1823 ppb	14:38:36
3	S 181.975 Axial†	68.8	9.2	10.519 ug/L	10.519 ppb	14:38:36
3	Sb 206.836†	39.8	0.7	0.2116 ug/L	0.2116 ppb	14:38:36
3	Se 196.026†	-27.5	6.6	3.3550 ug/L	3.3550 ppb	14:38:36
3	Si 251.611†	720.8	88.6	2.5226 ug/L	2.5226 ppb	14:38:36
3	Sn 189.927†	0.0	-4.1	-0.6114 ug/L	-0.6114 ppb	14:38:36
3	Ti 334.940†	-1641.2	84.7	0.1356 ug/L	0.1356 ppb	14:38:16
3	Tl 190.801†	-53.3	-9.6	-2.6169 ug/L	-2.6169 ppb	14:38:36
3	U 409.014†	-2737.2	-222.9	-6.6036 ug/L	-6.6036 ppb	14:38:16
3	V 292.402†	-1799.7	-73.1	-0.4671 ug/L	-0.4671 ppb	14:38:16
3	Zn 213.857†	870.1	47.5	0.3954 ug/L	0.3954 ppb	14:38:36
3	SiO2†	756.3	103.3	6.3496 ug/L	6.3496 ppb	14:38:51

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	885608.9	96.790 %		0.7581			0.78%
Sc Radial	4775.5	93.9 %		0.67			0.71%
Y 371.029	757471.1	96.912 %		0.7509			0.77%
Y RADIAL	5023.5	93.70 %		0.397			0.42%
Ag 328.068†	-46.6	-0.1944 ug/L		0.57207	-0.1944 ppb	0.57207	294.24%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	-3.5	-2.8254 ug/L		15.48039	-2.8254 ppb	15.48039	547.89%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	-2.8	-0.9898 ug/L		0.92549	-0.9898 ppb	0.92549	93.50%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	79.8	1.6337 ug/L		0.74907	1.6337 ppb	0.74907	45.85%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	-1.1	-0.0085 ug/L		0.08315	-0.0085 ppb	0.08315	978.14%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	-148.8	-0.0501 ug/L		0.02382	-0.0501 ppb	0.02382	47.52%
QC value within limits for Be 313.107 Recovery = Not calculated							
Ca 317.933Radial†	3.2	5.0188 ug/L		5.43713	5.0188 ppb	5.43713	108.34%

QC value within limits for Ca 317.933 Radial Recovery = Not calculated						
Cd 226.502†	7.3	0.0680 ug/L	0.12189	0.0680 ppb	0.12189	179.13%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-14.9	-0.2774 ug/L	0.11883	-0.2774 ppb	0.11883	42.84%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	-7.7	-0.0751 ug/L	0.04585	-0.0751 ppb	0.04585	61.06%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	224.6	0.6650 ug/L	0.14881	0.6650 ppb	0.14881	22.38%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	0.7	5.6473 ug/L	20.81311	5.6473 ppb	20.81311	368.55%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	328.5	63.276 ug/L	16.3954	63.276 ppb	16.3954	25.91%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	-3.0	-92.210 ug/L	85.2981	-92.210 ppb	85.2981	92.50%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	-118.4	-0.1220 ug/L	0.02162	-0.1220 ppb	0.02162	17.72%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	4.5	0.2805 ug/L	0.36019	0.2805 ppb	0.36019	128.42%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	76.2	21.675 ug/L	3.1898	21.675 ppb	3.1898	14.72%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	-1.5	-0.0325 ug/L	0.25877	-0.0325 ppb	0.25877	795.18%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	23.6	11.459 ug/L	4.9840	11.459 ppb	4.9840	43.49%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	6.7	0.6939 ug/L	1.11880	0.6939 ppb	1.11880	161.24%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	1.8	2.0747 ug/L	7.31845	2.0747 ppb	7.31845	352.75%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	9.0	2.6761 ug/L	2.74404	2.6761 ppb	2.74404	102.54%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	2.0	1.0170 ug/L	2.66595	1.0170 ppb	2.66595	262.14%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	79.0	2.2424 ug/L	0.43277	2.2424 ppb	0.43277	19.30%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	0.5	0.0789 ug/L	0.68615	0.0789 ppb	0.68615	869.22%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	17.4	0.1155 ug/L	0.26050	0.1155 ppb	0.26050	225.46%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	28.0	0.0471 ug/L	0.08095	0.0471 ppb	0.08095	171.95%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	-3.1	-0.8423 ug/L	1.93044	-0.8423 ppb	1.93044	229.18%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-221.1	-6.5532 ug/L	4.19632	-6.5532 ppb	4.19632	64.03%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	-58.8	-0.3811 ug/L	0.11625	-0.3811 ppb	0.11625	30.50%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	44.8	0.3703 ug/L	0.03333	0.3703 ppb	0.03333	9.00%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	83.4	5.1049 ug/L	1.92640	5.1049 ppb	1.92640	37.74%
QC value within limits for SiO2 Recovery = Not calculated						
All analyte(s) passed QC.						

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Analysis Begun

Start Time: 1/5/2010 14:58:28

Plasma On Time: 1/4/2010 06:33:21

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\010510A.sif

Batch ID:

Results Data Set: 010510

Results Library: C:\pe\Optima3\Results\Results.mdb  
=====

Sequence No.: 1

Autosampler Location: 7

Sample ID: CCV

Date Collected: 1/5/2010 14:58:29

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	4611.9	4611.9	90.7 %		15:00:22
1	Y RADIAL	4831.3	4831.3	90.12 %		15:00:22
1	Al 396.153Radial†	5768.9	6380.3	5161.1 ug/L	5161.1 ppb	15:00:22
1	Ca 317.933Radial†	2985.5	3273.6	5195.4 ug/L	5195.4 ppb	15:00:42
1	Fe 238.204 Radial†	582.0	627.0	5445.2 ug/L	5445.2 ppb	15:00:42
1	K 766.490 Radial†	29195.0	28859.4	5551.1 ug/L	5551.1 ppb	15:00:22
1	Mg 279.077 IEC†	156.8	169.0	5232.3 ug/L	5232.3 ppb	15:00:42
1	Na 589.592 Radial†	33656.2	38847.5	11057 ug/L	11057 ppb	15:00:22
1	Sr 421.552†	71562.5	78898.1	523.19 ug/L	523.19 ppb	15:00:22
1	Sc 361.383	918968.6	918968.6	100.44 %		15:01:41
1	Y 371.029	776692.4	776692.4	99.371 %		15:01:41
1	Ag 328.068†	115008.4	113996.3	493.15 ug/L	493.15 ppb	15:01:41
1	As 188.979†	1361.2	1386.5	492.77 ug/L	492.77 ppb	15:02:01
1	B 249.677†	22919.6	23533.5	480.05 ug/L	480.05 ppb	15:01:41
1	Ba 233.527†	67826.5	67523.5	493.33 ug/L	493.33 ppb	15:01:41
1	Be 313.107†	1454582.0	1452641.9	491.14 ug/L	491.14 ppb	15:01:41
1	Cd 226.502†	52162.2	52186.3	490.62 ug/L	490.62 ppb	15:01:41
1	Co 228.616†	26058.2	26034.1	486.85 ug/L	486.85 ppb	15:02:01
1	Cr 267.716†	49167.5	48837.8	489.92 ug/L	489.92 ppb	15:01:41
1	Cu 324.752†	174170.7	165316.3	489.46 ug/L	489.46 ppb	15:01:41
1	Mn 257.610†	473950.0	471224.1	494.97 ug/L	494.97 ppb	15:01:41
1	Mo 202.031†	7899.9	7842.3	492.54 ug/L	492.54 ppb	15:02:01
1	Ni 231.604†	22418.7	22204.0	485.58 ug/L	485.58 ppb	15:02:01
1	P 214.914†	5294.1	5018.6	2385.8 ug/L	2385.8 ppb	15:02:01
1	Pb 220.353†	4702.1	4782.5	496.68 ug/L	496.68 ppb	15:02:01
1	S 181.975 Axial†	921.6	855.2	975.91 ug/L	975.91 ppb	15:02:01
1	Sb 206.836†	1692.2	1644.1	494.35 ug/L	494.35 ppb	15:02:01
1	Se 196.026†	925.0	956.3	507.22 ug/L	507.22 ppb	15:02:01
1	Si 251.611†	86235.3	85199.2	2434.4 ug/L	2434.4 ppb	15:01:41
1	Sn 189.927†	3321.3	3302.8	490.22 ug/L	490.22 ppb	15:02:01
1	Ti 334.940†	314880.0	315305.9	493.84 ug/L	493.84 ppb	15:01:41
1	Tl 190.801†	1742.6	1781.0	491.04 ug/L	491.04 ppb	15:02:01
1	U 409.014†	13527.2	16094.7	475.29 ug/L	475.29 ppb	15:01:41
1	V 292.402†	76365.9	77834.6	495.27 ug/L	495.27 ppb	15:01:41
1	Zn 213.857†	60743.2	59621.2	485.65 ug/L	485.65 ppb	15:01:41
1	SiO2†	86004.7	84947.3	5233.5 ug/L	5233.5 ppb	15:03:01
2	Sc Radial	4909.4	4909.4	96.5 %		15:00:47
2	Y RADIAL	5124.1	5124.1	95.58 %		15:00:47
2	Al 396.153Radial†	5633.0	5854.1	4733.0 ug/L	4733.0 ppb	15:00:47
2	Ca 317.933Radial†	2925.3	3011.8	4779.9 ug/L	4779.9 ppb	15:01:07
2	Fe 238.204 Radial†	562.0	567.5	4930.2 ug/L	4930.2 ppb	15:01:07
2	K 766.490 Radial†	28511.0	26200.3	5039.0 ug/L	5039.0 ppb	15:00:47
2	Mg 279.077 IEC†	152.6	154.1	4772.6 ug/L	4772.6 ppb	15:01:07
2	Na 589.592 Radial†	32625.5	35531.1	10113 ug/L	10113 ppb	15:00:47
2	Sr 421.552†	69694.7	72182.1	478.65 ug/L	478.65 ppb	15:00:47
2	Sc 361.383	890286.3	890286.3	97.301 %		15:02:08
2	Y 371.029	753345.5	753345.5	96.384 %		15:02:08

2	Ag 328.068†	114702.6	117371.1	507.53 ug/L	507.53 ppb	15:02:08
2	As 188.979†	1360.1	1429.0	507.76 ug/L	507.76 ppb	15:02:28
2	B 249.677†	22977.3	24328.0	496.35 ug/L	496.35 ppb	15:02:08
2	Ba 233.527†	67696.6	69565.6	508.23 ug/L	508.23 ppb	15:02:08
2	Be 313.107†	1450749.3	1495361.6	505.58 ug/L	505.58 ppb	15:02:08
2	Cd 226.502†	52214.5	53913.3	506.92 ug/L	506.92 ppb	15:02:08
2	Co 228.616†	26079.9	26892.2	502.92 ug/L	502.92 ppb	15:02:28
2	Cr 267.716†	49087.9	50333.2	504.91 ug/L	504.91 ppb	15:02:08
2	Cu 324.752†	173542.9	170257.9	504.06 ug/L	504.06 ppb	15:02:08
2	Mn 257.610†	472807.0	485252.3	509.65 ug/L	509.65 ppb	15:02:08
2	Mo 202.031†	7909.0	8105.1	508.98 ug/L	508.98 ppb	15:02:28
2	Ni 231.604†	22393.2	22897.0	500.74 ug/L	500.74 ppb	15:02:28
2	P 214.914†	5280.5	5174.4	2460.3 ug/L	2460.3 ppb	15:02:28
2	Pb 220.353†	4682.8	4913.4	510.21 ug/L	510.21 ppb	15:02:28
2	S 181.975 Axial†	912.0	874.9	998.49 ug/L	998.49 ppb	15:02:28
2	Sb 206.836†	1707.1	1713.8	515.19 ug/L	515.19 ppb	15:02:28
2	Se 196.026†	932.2	993.4	524.68 ug/L	524.68 ppb	15:02:28
2	Si 251.611†	85995.9	87719.3	2506.6 ug/L	2506.6 ppb	15:02:08
2	Sn 189.927†	3293.0	3380.1	501.64 ug/L	501.64 ppb	15:02:28
2	Ti 334.940†	314125.5	324630.8	508.42 ug/L	508.42 ppb	15:02:08
2	Tl 190.801†	1744.3	1838.6	506.89 ug/L	506.89 ppb	15:02:28
2	U 409.014†	13532.2	16533.8	488.34 ug/L	488.34 ppb	15:02:08
2	V 292.402†	76213.4	80127.5	509.97 ug/L	509.97 ppb	15:02:08
2	Zn 213.857†	60633.2	61456.7	500.66 ug/L	500.66 ppb	15:02:08
2	SiO2†	87012.7	88742.0	5468.2 ug/L	5468.2 ppb	15:03:06
3	Sc Radial	4725.7	4725.7	92.9 %		15:01:12
3	Y RADIAL	4936.5	4936.5	92.08 %		15:01:12
3	Al 396.153Radial†	5611.6	6058.0	4898.7 ug/L	4898.7 ppb	15:01:12
3	Ca 317.933Radial†	2978.4	3186.7	5057.5 ug/L	5057.5 ppb	15:01:32
3	Fe 238.204 Radial†	569.6	598.2	5196.3 ug/L	5196.3 ppb	15:01:32
3	K 766.490 Radial†	28113.0	26920.1	5177.6 ug/L	5177.6 ppb	15:01:12
3	Mg 279.077 IEC†	156.9	164.9	5106.5 ug/L	5106.5 ppb	15:01:32
3	Na 589.592 Radial†	32211.4	36399.3	10360 ug/L	10360 ppb	15:01:12
3	Sr 421.552†	68734.6	73955.4	490.41 ug/L	490.41 ppb	15:01:12
3	Sc 361.383	898670.2	898670.2	98.218 %		15:02:36
3	Y 371.029	759523.8	759523.8	97.175 %		15:02:36
3	Ag 328.068†	115080.1	116655.7	504.54 ug/L	504.54 ppb	15:02:36
3	As 188.979†	1358.5	1414.4	502.62 ug/L	502.62 ppb	15:02:56
3	B 249.677†	23002.1	24132.9	492.33 ug/L	492.33 ppb	15:02:36
3	Ba 233.527†	68088.4	69315.5	506.41 ug/L	506.41 ppb	15:02:36
3	Be 313.107†	1458690.7	1489537.2	503.61 ug/L	503.61 ppb	15:02:36
3	Cd 226.502†	52485.9	53688.9	504.79 ug/L	504.79 ppb	15:02:36
3	Co 228.616†	26136.9	26700.2	499.32 ug/L	499.32 ppb	15:02:56
3	Cr 267.716†	49418.7	50199.3	503.57 ug/L	503.57 ppb	15:02:36
3	Cu 324.752†	174315.9	169381.0	501.48 ug/L	501.48 ppb	15:02:36
3	Mn 257.610†	475455.7	483415.8	507.74 ug/L	507.74 ppb	15:02:36
3	Mo 202.031†	7933.3	8054.0	505.80 ug/L	505.80 ppb	15:02:56
3	Ni 231.604†	22444.4	22734.4	497.18 ug/L	497.18 ppb	15:02:56
3	P 214.914†	5299.9	5143.5	2445.5 ug/L	2445.5 ppb	15:02:56
3	Pb 220.353†	4705.6	4891.7	507.97 ug/L	507.97 ppb	15:02:56
3	S 181.975 Axial†	928.7	883.2	1007.9 ug/L	1007.9 ppb	15:02:56
3	Sb 206.836†	1696.6	1686.6	507.17 ug/L	507.17 ppb	15:02:56
3	Se 196.026†	921.9	973.9	515.51 ug/L	515.51 ppb	15:02:56
3	Si 251.611†	86401.4	87307.6	2494.8 ug/L	2494.8 ppb	15:02:36
3	Sn 189.927†	3345.0	3401.6	504.85 ug/L	504.85 ppb	15:02:56
3	Ti 334.940†	315619.7	323140.3	506.10 ug/L	506.10 ppb	15:02:36
3	Tl 190.801†	1755.2	1833.0	505.34 ug/L	505.34 ppb	15:02:56
3	U 409.014†	13390.4	16259.7	480.18 ug/L	480.18 ppb	15:02:36
3	V 292.402†	76580.6	79770.6	507.64 ug/L	507.64 ppb	15:02:36
3	Zn 213.857†	61074.7	61324.8	499.57 ug/L	499.57 ppb	15:02:36
3	SiO2†	85643.4	86513.6	5330.2 ug/L	5330.2 ppb	15:03:11

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	902641.7	98.652 %	1.6118			1.63%
Sc Radial	4749.0	93.4 %	2.95			3.16%
Y 371.029	763187.2	97.644 %	1.5477			1.59%
Y RADIAL	4964.0	92.59 %	2.767			2.99%
Ag 328.068†	116007.7	501.74 ug/L	7.589	501.74 ppb	7.589	1.51%

QC value within limits for Ag 328.068 Recovery = 100.35%							
Al 396.153Radial†	6097.5	4930.9 ug/L	215.85	4930.9 ppb	215.85	4.38%	
QC value within limits for Al 396.153Radial Recovery = 98.62%							
As 188.979†	1410.0	501.05 ug/L	7.622	501.05 ppb	7.622	1.52%	
QC value within limits for As 188.979 Recovery = 100.21%							
B 249.677†	23998.1	489.57 ug/L	8.492	489.57 ppb	8.492	1.73%	
QC value within limits for B 249.677 Recovery = 97.91%							
Ba 233.527†	68801.5	502.65 ug/L	8.129	502.65 ppb	8.129	1.62%	
QC value within limits for Ba 233.527 Recovery = 100.53%							
Be 313.107†	1479180.2	500.11 ug/L	7.833	500.11 ppb	7.833	1.57%	
QC value within limits for Be 313.107 Recovery = 100.02%							
Ca 317.933Radial†	3157.4	5010.9 ug/L	211.65	5010.9 ppb	211.65	4.22%	
QC value within limits for Ca 317.933Radial Recovery = 100.22%							
Cd 226.502†	53262.8	500.78 ug/L	8.861	500.78 ppb	8.861	1.77%	
QC value within limits for Cd 226.502 Recovery = 100.16%							
Co 228.616†	26542.2	496.36 ug/L	8.429	496.36 ppb	8.429	1.70%	
QC value within limits for Co 228.616 Recovery = 99.27%							
Cr 267.716†	49790.1	499.47 ug/L	8.295	499.47 ppb	8.295	1.66%	
QC value within limits for Cr 267.716 Recovery = 99.89%							
Cu 324.752†	168318.4	498.33 ug/L	7.790	498.33 ppb	7.790	1.56%	
QC value within limits for Cu 324.752 Recovery = 99.67%							
Fe 238.204 Radial†	597.6	5190.6 ug/L	257.59	5190.6 ppb	257.59	4.96%	
QC value within limits for Fe 238.204 Radial Recovery = 103.81%							
K 766.490 Radial†	27326.6	5255.9 ug/L	264.85	5255.9 ppb	264.85	5.04%	
QC value within limits for K 766.490 Radial Recovery = 105.12%							
Mg 279.077 IEC†	162.7	5037.1 ug/L	237.57	5037.1 ppb	237.57	4.72%	
QC value within limits for Mg 279.077 IEC Recovery = 100.74%							
Mn 257.610†	479964.1	504.12 ug/L	7.982	504.12 ppb	7.982	1.58%	
QC value within limits for Mn 257.610 Recovery = 100.82%							
Mo 202.031†	8000.5	502.44 ug/L	8.719	502.44 ppb	8.719	1.74%	
QC value within limits for Mo 202.031 Recovery = 100.49%							
Na 589.592 Radial†	36926.0	10510 ug/L	489.5	10510 ppb	489.5	4.66%	
QC value within limits for Na 589.592 Radial Recovery = 105.10%							
Ni 231.604†	22611.8	494.50 ug/L	7.924	494.50 ppb	7.924	1.60%	
QC value within limits for Ni 231.604 Recovery = 98.90%							
P 214.914†	5112.1	2430.5 ug/L	39.41	2430.5 ppb	39.41	1.62%	
QC value within limits for P 214.914 Recovery = 97.22%							
Pb 220.353†	4862.5	504.95 ug/L	7.254	504.95 ppb	7.254	1.44%	
QC value within limits for Pb 220.353 Recovery = 100.99%							
S 181.975 Axial†	871.1	994.11 ug/L	16.449	994.11 ppb	16.449	1.65%	
QC value within limits for S 181.975 Axial Recovery = 99.41%							
Sb 206.836†	1681.5	505.57 ug/L	10.509	505.57 ppb	10.509	2.08%	
QC value within limits for Sb 206.836 Recovery = 101.11%							
Se 196.026†	974.5	515.80 ug/L	8.733	515.80 ppb	8.733	1.69%	
QC value within limits for Se 196.026 Recovery = 103.16%							
Si 251.611†	86742.0	2478.6 ug/L	38.73	2478.6 ppb	38.73	1.56%	
QC value within limits for Si 251.611 Recovery = 99.14%							
Sn 189.927†	3361.5	498.90 ug/L	7.687	498.90 ppb	7.687	1.54%	
QC value within limits for Sn 189.927 Recovery = 99.78%							
Sr 421.552†	75011.8	497.42 ug/L	23.080	497.42 ppb	23.080	4.64%	
QC value within limits for Sr 421.552 Recovery = 99.48%							
Ti 334.940†	321025.7	502.79 ug/L	7.833	502.79 ppb	7.833	1.56%	
QC value within limits for Ti 334.940 Recovery = 100.56%							
Tl 190.801†	1817.5	501.09 ug/L	8.738	501.09 ppb	8.738	1.74%	
QC value within limits for Tl 190.801 Recovery = 100.22%							
U 409.014†	16296.0	481.27 ug/L	6.591	481.27 ppb	6.591	1.37%	
QC value within limits for U 409.014 Recovery = 96.25%							
V 292.402†	79244.2	504.29 ug/L	7.903	504.29 ppb	7.903	1.57%	
QC value within limits for V 292.402 Recovery = 100.86%							
Zn 213.857†	60800.9	495.29 ug/L	8.369	495.29 ppb	8.369	1.69%	
QC value within limits for Zn 213.857 Recovery = 99.06%							
SiO2†	86734.3	5344.0 ug/L	117.92	5344.0 ppb	117.92	2.21%	
QC value within limits for SiO2 Recovery = 99.93%							
All analyte(s) passed QC.							



Sequence No.: 2  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 8  
 Date Collected: 1/5/2010 15:05:22  
 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	4632.0	4632.0	91.1 %		15:07:14
1	Y RADIAL	4869.5	4869.5	90.83 %		15:07:14
1	Al 396.153Radial†	-16.1	1.9	1.5230 ug/L	1.5230 ppb	15:07:14
1	Ca 317.933Radial†	19.6	3.3	5.1918 ug/L	5.1918 ppb	15:07:34
1	Fe 238.204 Radial†	13.2	-0.1	-1.1618 ug/L	-1.1618 ppb	15:07:34
1	K 766.490 Radial†	3194.7	175.9	33.880 ug/L	33.880 ppb	15:07:14
1	Mg 279.077 IEC†	4.5	1.0	31.173 ug/L	31.173 ppb	15:07:34
1	Na 589.592 Radial†	-1578.1	5.4	1.5250 ug/L	1.5250 ppb	15:07:14
1	Sr 421.552†	9.8	3.3	0.0219 ug/L	0.0219 ppb	15:07:14
1	Sc 361.383	880001.1	880001.1	96.177 %		15:08:31
1	Y 371.029	752388.3	752388.3	96.262 %		15:08:31
1	Ag 328.068†	499.8	6.9	0.0359 ug/L	0.0359 ppb	15:08:31
1	As 188.979†	-36.0	-6.2	-2.1804 ug/L	-2.1804 ppb	15:08:51
1	B 249.677†	-564.1	126.9	2.5993 ug/L	2.5993 ppb	15:08:31
1	Ba 233.527†	-4.6	-13.4	-0.0966 ug/L	-0.0966 ppb	15:08:51
1	Be 313.107†	-4325.6	-122.2	-0.0414 ug/L	-0.0414 ppb	15:08:31
1	Cd 226.502†	-246.8	-6.0	-0.0561 ug/L	-0.0561 ppb	15:08:51
1	Co 228.616†	-97.5	-12.3	-0.2312 ug/L	-0.2312 ppb	15:08:51
1	Cr 267.716†	142.5	32.0	0.3229 ug/L	0.3229 ppb	15:08:31
1	Cu 324.752†	7946.0	163.6	0.4840 ug/L	0.4840 ppb	15:08:31
1	Mn 257.610†	590.0	-54.6	-0.0580 ug/L	-0.0580 ppb	15:08:31
1	Mo 202.031†	19.1	-3.4	-0.2164 ug/L	-0.2164 ppb	15:08:51
1	Ni 231.604†	120.3	7.7	0.1686 ug/L	0.1686 ppb	15:08:51
1	P 214.914†	266.7	24.7	12.054 ug/L	12.054 ppb	15:08:51
1	Pb 220.353†	-74.1	23.7	2.4485 ug/L	2.4485 ppb	15:08:51
1	S 181.975 Axial†	59.4	-0.6	-0.7407 ug/L	-0.7407 ppb	15:08:51
1	Sb 206.836†	50.1	11.4	3.3948 ug/L	3.3948 ppb	15:08:51
1	Se 196.026†	-44.5	-11.0	-5.6213 ug/L	-5.6213 ppb	15:08:51
1	Si 251.611†	674.2	39.3	1.1177 ug/L	1.1177 ppb	15:08:51
1	Sn 189.927†	10.5	6.7	1.0006 ug/L	1.0006 ppb	15:08:51
1	Ti 334.940†	-1775.3	-52.8	-0.0800 ug/L	-0.0800 ppb	15:08:31
1	Tl 190.801†	-49.0	-5.0	-1.3749 ug/L	-1.3749 ppb	15:08:51
1	U 409.014†	-2718.5	-200.3	-5.9354 ug/L	-5.9354 ppb	15:08:31
1	V 292.402†	-1673.8	59.9	0.3625 ug/L	0.3625 ppb	15:08:31
1	Zn 213.857†	895.4	72.8	0.5950 ug/L	0.5950 ppb	15:08:51
1	SiO2†	690.4	33.9	2.0739 ug/L	2.0739 ppb	15:09:48
2	Sc Radial	4768.4	4768.4	93.8 %		15:07:39
2	Y RADIAL	4978.6	4978.6	92.86 %		15:07:39
2	Al 396.153Radial†	-7.8	11.2	9.0645 ug/L	9.0645 ppb	15:07:39
2	Ca 317.933Radial†	24.3	7.6	12.128 ug/L	12.128 ppb	15:07:59
2	Fe 238.204 Radial†	12.4	-1.4	-12.412 ug/L	-12.412 ppb	15:07:59
2	K 766.490 Radial†	3164.9	43.8	8.4361 ug/L	8.4361 ppb	15:07:39
2	Mg 279.077 IEC†	2.3	-1.4	-43.790 ug/L	-43.790 ppb	15:07:59
2	Na 589.592 Radial†	-1517.4	119.6	34.034 ug/L	34.034 ppb	15:07:39
2	Sr 421.552†	-3.2	-10.8	-0.0719 ug/L	-0.0719 ppb	15:07:39
2	Sc 361.383	881705.1	881705.1	96.363 %		15:08:57
2	Y 371.029	753660.8	753660.8	96.425 %		15:08:57
2	Ag 328.068†	424.1	-72.7	-0.3127 ug/L	-0.3127 ppb	15:08:57
2	As 188.979†	-22.5	7.9	2.7633 ug/L	2.7633 ppb	15:09:17
2	B 249.677†	-653.2	35.6	0.7309 ug/L	0.7309 ppb	15:08:57
2	Ba 233.527†	4.6	-3.8	-0.0282 ug/L	-0.0282 ppb	15:09:17
2	Be 313.107†	-4371.1	-160.7	-0.0541 ug/L	-0.0541 ppb	15:08:57
2	Cd 226.502†	-226.0	16.0	0.1515 ug/L	0.1515 ppb	15:09:17
2	Co 228.616†	-103.0	-17.9	-0.3295 ug/L	-0.3295 ppb	15:09:17
2	Cr 267.716†	120.0	8.3	0.0843 ug/L	0.0843 ppb	15:08:57
2	Cu 324.752†	7993.9	197.3	0.5831 ug/L	0.5831 ppb	15:08:57
2	Mn 257.610†	558.2	-88.8	-0.0936 ug/L	-0.0936 ppb	15:08:57
2	Mo 202.031†	47.6	26.1	1.6373 ug/L	1.6373 ppb	15:09:17
2	Ni 231.604†	87.9	-26.1	-0.5715 ug/L	-0.5715 ppb	15:09:17

2	P 214.914†	251.8	8.8	4.2262 ug/L	4.2262 ppb	15:09:17
2	Pb 220.353†	-110.6	-14.1	-1.4498 ug/L	-1.4498 ppb	15:09:17
2	S 181.975 Axial†	57.2	-3.0	-3.4488 ug/L	-3.4488 ppb	15:09:17
2	Sb 206.836†	46.5	7.6	2.2939 ug/L	2.2939 ppb	15:09:17
2	Se 196.026†	-36.1	-2.1	-1.1217 ug/L	-1.1217 ppb	15:09:17
2	Si 251.611†	707.7	72.7	2.0520 ug/L	2.0520 ppb	15:09:17
2	Sn 189.927†	10.8	7.1	1.0489 ug/L	1.0489 ppb	15:09:17
2	Ti 334.940†	-1686.8	42.5	0.0698 ug/L	0.0698 ppb	15:08:57
2	Tl 190.801†	-38.8	5.7	1.5735 ug/L	1.5735 ppb	15:09:17
2	U 409.014†	-2722.3	-198.8	-5.8902 ug/L	-5.8902 ppb	15:08:57
2	V 292.402†	-1774.1	-40.9	-0.2438 ug/L	-0.2438 ppb	15:08:57
2	Zn 213.857†	890.2	65.6	0.5443 ug/L	0.5443 ppb	15:09:17
2	SiO2†	792.0	137.9	8.4622 ug/L	8.4622 ppb	15:09:53
3	Sc Radial	4665.0	4665.0	91.7 %		15:08:04
3	Y RADIAL	4934.3	4934.3	92.04 %		15:08:04
3	Al 396.153Radial†	-0.8	18.6	15.092 ug/L	15.092 ppb	15:08:04
3	Ca 317.933Radial†	14.1	-2.8	-4.5133 ug/L	-4.5133 ppb	15:08:24
3	Fe 238.204 Radial†	14.5	1.1	9.5821 ug/L	9.5821 ppb	15:08:24
3	K 766.490 Radial†	3289.1	254.1	48.965 ug/L	48.965 ppb	15:08:04
3	Mg 279.077 IEC†	0.0	-3.9	-119.16 ug/L	-119.16 ppb	15:08:24
3	Na 589.592 Radial†	-1632.9	-42.2	-12.003 ug/L	-12.003 ppb	15:08:04
3	Sr 421.552†	24.8	19.6	0.1302 ug/L	0.1302 ppb	15:08:04
3	Sc 361.383	872960.3	872960.3	95.408 %		15:09:22
3	Y 371.029	746856.7	746856.7	95.554 %		15:09:22
3	Ag 328.068†	534.9	47.9	0.2134 ug/L	0.2134 ppb	15:09:22
3	As 188.979†	-33.6	-3.9	-1.3854 ug/L	-1.3854 ppb	15:09:42
3	B 249.677†	-666.1	15.2	0.3111 ug/L	0.3111 ppb	15:09:22
3	Ba 233.527†	14.3	6.4	0.0461 ug/L	0.0461 ppb	15:09:42
3	Be 313.107†	-4293.6	-124.9	-0.0424 ug/L	-0.0424 ppb	15:09:22
3	Cd 226.502†	-238.1	1.0	0.0088 ug/L	0.0088 ppb	15:09:42
3	Co 228.616†	-87.6	-2.8	-0.0496 ug/L	-0.0496 ppb	15:09:42
3	Cr 267.716†	115.7	5.1	0.0529 ug/L	0.0529 ppb	15:09:22
3	Cu 324.752†	7892.4	174.1	0.5156 ug/L	0.5156 ppb	15:09:22
3	Mn 257.610†	561.8	-79.2	-0.0799 ug/L	-0.0799 ppb	15:09:22
3	Mo 202.031†	35.9	14.4	0.9035 ug/L	0.9035 ppb	15:09:42
3	Ni 231.604†	119.4	7.8	0.1699 ug/L	0.1699 ppb	15:09:42
3	P 214.914†	253.4	13.0	6.3019 ug/L	6.3019 ppb	15:09:42
3	Pb 220.353†	-88.6	7.8	0.8148 ug/L	0.8148 ppb	15:09:42
3	S 181.975 Axial†	55.6	-4.1	-4.6833 ug/L	-4.6833 ppb	15:09:42
3	Sb 206.836†	56.2	18.2	5.4272 ug/L	5.4272 ppb	15:09:42
3	Se 196.026†	-34.7	-1.1	-0.5155 ug/L	-0.5155 ppb	15:09:42
3	Si 251.611†	662.5	32.7	0.9040 ug/L	0.9040 ppb	15:09:42
3	Sn 189.927†	7.4	3.6	0.5319 ug/L	0.5319 ppb	15:09:42
3	Ti 334.940†	-1780.6	-73.3	-0.1120 ug/L	-0.1120 ppb	15:09:22
3	Tl 190.801†	-48.9	-5.3	-1.4580 ug/L	-1.4580 ppb	15:09:42
3	U 409.014†	-2721.8	-226.6	-6.7149 ug/L	-6.7149 ppb	15:09:22
3	V 292.402†	-1775.5	-60.7	-0.3852 ug/L	-0.3852 ppb	15:09:22
3	Zn 213.857†	880.0	64.2	0.5292 ug/L	0.5292 ppb	15:09:42
3	SiO2†	729.8	81.0	4.9409 ug/L	4.9409 ppb	15:09:58

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	878222.1	95.983 %	0.5067			0.53%
Sc Radial	4688.5	92.2 %	1.40			1.52%
Y 371.029	750968.6	96.080 %	0.4628			0.48%
Y RADIAL	4927.5	91.91 %	1.024			1.11%
Ag 328.068†	-6.0	-0.0211 ug/L	0.26763	-0.0211 ppb	0.26763	>999.9%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	10.6	8.5597 ug/L	6.79839	8.5597 ppb	6.79839	79.42%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-0.8	-0.2675 ug/L	2.65466	-0.2675 ppb	2.65466	992.36%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	59.2	1.2138 ug/L	1.21810	1.2138 ppb	1.21810	100.36%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-3.6	-0.0262 ug/L	0.07134	-0.0262 ppb	0.07134	271.90%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-135.9	-0.0459 ug/L	0.00707	-0.0459 ppb	0.00707	15.38%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	2.7	4.2688 ug/L	8.35882	4.2688 ppb	8.35882	195.81%

QC value within limits for Ca 317.933Radial Recovery = Not calculated						
Cd 226.502†	3.7	0.0348 ug/L	0.10620	0.0348 ppb	0.10620	305.59%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-11.0	-0.2034 ug/L	0.14204	-0.2034 ppb	0.14204	69.83%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	15.1	0.1534 ug/L	0.14770	0.1534 ppb	0.14770	96.32%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	178.3	0.5276 ug/L	0.05063	0.5276 ppb	0.05063	9.60%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	-0.2	-1.3306 ug/L	10.99813	-1.3306 ppb	10.99813	826.55%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	157.9	30.427 ug/L	20.4837	30.427 ppb	20.4837	67.32%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	-1.4	-43.927 ug/L	75.1684	-43.927 ppb	75.1684	171.12%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	-74.2	-0.0772 ug/L	0.01796	-0.0772 ppb	0.01796	23.26%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	12.4	0.7748 ug/L	0.93354	0.7748 ppb	0.93354	120.48%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	27.6	7.8518 ug/L	23.66180	7.8518 ppb	23.66180	301.36%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	-3.6	-0.0777 ug/L	0.42769	-0.0777 ppb	0.42769	550.63%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	15.5	7.5275 ug/L	4.05545	7.5275 ppb	4.05545	53.88%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	5.8	0.6045 ug/L	1.95763	0.6045 ppb	1.95763	323.84%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	-2.6	-2.9576 ug/L	2.01665	-2.9576 ppb	2.01665	68.19%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	12.4	3.7053 ug/L	1.58960	3.7053 ppb	1.58960	42.90%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-4.7	-2.4195 ug/L	2.78937	-2.4195 ppb	2.78937	115.29%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	48.2	1.3579 ug/L	0.61054	1.3579 ppb	0.61054	44.96%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	5.8	0.8604 ug/L	0.28557	0.8604 ppb	0.28557	33.19%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	4.0	0.0267 ug/L	0.10114	0.0267 ppb	0.10114	378.95%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	-27.8	-0.0407 ug/L	0.09708	-0.0407 ppb	0.09708	238.40%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	-1.5	-0.4198 ug/L	1.72672	-0.4198 ppb	1.72672	411.32%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-208.6	-6.1802 ug/L	0.46367	-6.1802 ppb	0.46367	7.50%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	-13.9	-0.0889 ug/L	0.39721	-0.0889 ppb	0.39721	446.95%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	67.5	0.5562 ug/L	0.03447	0.5562 ppb	0.03447	6.20%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	84.3	5.1590 ug/L	3.19974	5.1590 ppb	3.19974	62.02%
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: 1/5/2010 16:20:16

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	4768.4	4768.4	93.8 %		16:22:08
1	Y RADIAL	4969.7	4969.7	92.70 %		16:22:08
1	Al 396.153Radial†	5689.5	6087.0	4922.5 ug/L	4922.5 ppb	16:22:08
1	Ca 317.933Radial†	2961.6	3140.1	4983.5 ug/L	4983.5 ppb	16:22:28
1	Fe 238.204 Radial†	571.8	595.1	5169.6 ug/L	5169.6 ppb	16:22:28
1	K 766.490 Radial†	29030.3	27627.5	5313.7 ug/L	5313.7 ppb	16:22:08
1	Mg 279.077 IEC†	158.1	164.7	5098.2 ug/L	5098.2 ppb	16:22:28
1	Na 589.592 Radial†	34529.0	38560.5	10975 ug/L	10975 ppb	16:22:08
1	Sr 421.552†	71604.4	76353.6	506.31 ug/L	506.31 ppb	16:22:08
1	Sc 361.383	892716.8	892716.8	97.567 %		16:23:27
1	Y 371.029	754279.6	754279.6	96.504 %		16:23:27
1	Ag 328.068†	113680.8	116002.9	501.71 ug/L	501.71 ppb	16:23:27
1	As 188.979†	1345.7	1410.5	501.23 ug/L	501.23 ppb	16:23:47
1	B 249.677†	22567.7	23843.8	486.42 ug/L	486.42 ppb	16:23:27
1	Ba 233.527†	66967.7	68629.2	501.39 ug/L	501.39 ppb	16:23:27
1	Be 313.107†	1440369.0	1480663.1	500.61 ug/L	500.61 ppb	16:23:27
1	Cd 226.502†	51809.8	53352.4	501.62 ug/L	501.62 ppb	16:23:27
1	Co 228.616†	25719.6	26450.0	494.63 ug/L	494.63 ppb	16:23:47
1	Cr 267.716†	48664.9	49762.3	499.19 ug/L	499.19 ppb	16:23:27
1	Cu 324.752†	172182.0	168377.5	498.51 ug/L	498.51 ppb	16:23:27
1	Mn 257.610†	468446.4	479460.1	503.59 ug/L	503.59 ppb	16:23:27
1	Mo 202.031†	7788.2	7959.2	499.85 ug/L	499.85 ppb	16:23:47
1	Ni 231.604†	22165.2	22600.6	494.26 ug/L	494.26 ppb	16:23:47
1	P 214.914†	5237.9	5116.0	2432.4 ug/L	2432.4 ppb	16:23:47
1	Pb 220.353†	4636.3	4852.7	503.93 ug/L	503.93 ppb	16:23:47
1	S 181.975 Axial†	924.2	884.9	1009.9 ug/L	1009.9 ppb	16:23:47
1	Sb 206.836†	1683.3	1684.6	506.47 ug/L	506.47 ppb	16:23:47
1	Se 196.026†	913.6	971.7	514.27 ug/L	514.27 ppb	16:23:47
1	Si 251.611†	85598.7	87071.5	2488.1 ug/L	2488.1 ppb	16:23:27
1	Sn 189.927†	3295.2	3373.2	500.64 ug/L	500.64 ppb	16:23:47
1	Ti 334.940†	310787.0	320330.1	501.70 ug/L	501.70 ppb	16:23:27
1	Tl 190.801†	1723.6	1812.5	499.72 ug/L	499.72 ppb	16:23:47
1	U 409.014†	13161.0	16115.4	475.92 ug/L	475.92 ppb	16:23:27
1	V 292.402†	75303.5	78981.6	502.60 ug/L	502.60 ppb	16:23:27
1	Zn 213.857†	60408.8	61057.0	497.40 ug/L	497.40 ppb	16:23:27
1	SiO2†	86087.7	87550.5	5394.6 ug/L	5394.6 ppb	16:24:47
2	Sc Radial	4766.0	4766.0	93.7 %		16:22:33
2	Y RADIAL	4983.8	4983.8	92.96 %		16:22:33
2	Al 396.153Radial†	5555.1	5946.6	4808.1 ug/L	4808.1 ppb	16:22:33
2	Ca 317.933Radial†	2957.3	3137.1	4978.7 ug/L	4978.7 ppb	16:22:53
2	Fe 238.204 Radial†	573.6	597.3	5188.8 ug/L	5188.8 ppb	16:22:53
2	K 766.490 Radial†	28525.6	27104.0	5213.0 ug/L	5213.0 ppb	16:22:33
2	Mg 279.077 IEC†	159.0	165.7	5130.9 ug/L	5130.9 ppb	16:22:53
2	Na 589.592 Radial†	33427.9	37403.6	10646 ug/L	10646 ppb	16:22:33
2	Sr 421.552†	69593.6	74245.2	492.33 ug/L	492.33 ppb	16:22:33
2	Sc 361.383	883117.5	883117.5	96.518 %		16:23:54
2	Y 371.029	746374.7	746374.7	95.493 %		16:23:54
2	Ag 328.068†	112592.4	116141.7	502.33 ug/L	502.33 ppb	16:23:54
2	As 188.979†	1365.6	1446.1	513.75 ug/L	513.75 ppb	16:24:14
2	B 249.677†	22370.2	23890.7	487.36 ug/L	487.36 ppb	16:23:54
2	Ba 233.527†	66507.3	68898.2	503.36 ug/L	503.36 ppb	16:23:54
2	Be 313.107†	1428183.0	1484084.5	501.77 ug/L	501.77 ppb	16:23:54
2	Cd 226.502†	51231.2	53330.1	501.41 ug/L	501.41 ppb	16:23:54
2	Co 228.616†	25838.3	26859.5	502.31 ug/L	502.31 ppb	16:24:14
2	Cr 267.716†	48166.0	49787.5	499.44 ug/L	499.44 ppb	16:23:54
2	Cu 324.752†	170859.5	168925.6	500.13 ug/L	500.13 ppb	16:23:54
2	Mn 257.610†	464874.7	480978.4	505.18 ug/L	505.18 ppb	16:23:54
2	Mo 202.031†	7834.3	8093.7	508.29 ug/L	508.29 ppb	16:24:14
2	Ni 231.604†	22240.5	22925.6	501.36 ug/L	501.36 ppb	16:24:14

2	P 214.914†	5253.0	5189.9	2468.4 ug/L	2468.4 ppb	16:24:14
2	Pb 220.353†	4654.6	4923.3	511.23 ug/L	511.23 ppb	16:24:14
2	S 181.975 Axial†	916.1	886.8	1012.1 ug/L	1012.1 ppb	16:24:14
2	Sb 206.836†	1693.5	1713.8	515.43 ug/L	515.43 ppb	16:24:14
2	Se 196.026†	919.5	988.0	522.68 ug/L	522.68 ppb	16:24:14
2	Si 251.611†	85043.1	87449.6	2498.8 ug/L	2498.8 ppb	16:23:54
2	Sn 189.927†	3302.8	3417.8	507.24 ug/L	507.24 ppb	16:24:14
2	Ti 334.940†	307900.3	320801.7	502.44 ug/L	502.44 ppb	16:23:54
2	Tl 190.801†	1728.3	1836.6	506.28 ug/L	506.28 ppb	16:24:14
2	U 409.014†	12983.2	16077.8	474.80 ug/L	474.80 ppb	16:23:54
2	V 292.402†	74861.8	79362.9	505.11 ug/L	505.11 ppb	16:23:54
2	Zn 213.857†	59892.6	61195.2	498.48 ug/L	498.48 ppb	16:23:54
2	SiO2†	86450.8	88885.8	5476.9 ug/L	5476.9 ppb	16:24:52
3	Sc Radial	4372.5	4372.5	86.0 %		16:22:58
3	Y RADIAL	4572.7	4572.7	85.29 %		16:22:58
3	Al 396.153Radial†	5576.7	6505.2	5262.2 ug/L	5262.2 ppb	16:22:58
3	Ca 317.933Radial†	2959.6	3423.7	5433.7 ug/L	5433.7 ppb	16:23:18
3	Fe 238.204 Radial†	575.1	654.2	5681.0 ug/L	5681.0 ppb	16:23:18
3	K 766.490 Radial†	28390.8	29686.5	5710.1 ug/L	5710.1 ppb	16:22:58
3	Mg 279.077 IEC†	158.4	180.4	5582.8 ug/L	5582.8 ppb	16:23:18
3	Na 589.592 Radial†	33149.4	40289.8	11467 ug/L	11467 ppb	16:22:58
3	Sr 421.552†	69560.1	80889.5	536.39 ug/L	536.39 ppb	16:22:58
3	Sc 361.383	891690.8	891690.8	97.455 %		16:24:22
3	Y 371.029	753515.8	753515.8	96.406 %		16:24:22
3	Ag 328.068†	113649.2	116104.6	502.31 ug/L	502.31 ppb	16:24:22
3	As 188.979†	1339.8	1406.0	499.74 ug/L	499.74 ppb	16:24:42
3	B 249.677†	22691.8	23997.8	489.51 ug/L	489.51 ppb	16:24:22
3	Ba 233.527†	67194.9	68941.3	503.69 ug/L	503.69 ppb	16:24:22
3	Be 313.107†	1442567.9	1484618.0	501.95 ug/L	501.95 ppb	16:24:22
3	Cd 226.502†	51812.9	53416.7	502.17 ug/L	502.17 ppb	16:24:22
3	Co 228.616†	25649.7	26408.5	493.85 ug/L	493.85 ppb	16:24:42
3	Cr 267.716†	48728.0	49884.4	500.42 ug/L	500.42 ppb	16:24:22
3	Cu 324.752†	172614.8	169024.7	500.45 ug/L	500.45 ppb	16:24:22
3	Mn 257.610†	469588.4	481184.4	505.44 ug/L	505.44 ppb	16:24:22
3	Mo 202.031†	7753.6	7932.8	498.25 ug/L	498.25 ppb	16:24:42
3	Ni 231.604†	22080.8	22540.2	492.93 ug/L	492.93 ppb	16:24:42
3	P 214.914†	5214.8	5098.4	2423.2 ug/L	2423.2 ppb	16:24:42
3	Pb 220.353†	4627.3	4848.9	503.56 ug/L	503.56 ppb	16:24:42
3	S 181.975 Axial†	903.0	864.3	986.21 ug/L	986.21 ppb	16:24:42
3	Sb 206.836†	1678.9	1682.1	505.59 ug/L	505.59 ppb	16:24:42
3	Se 196.026†	914.0	973.2	516.55 ug/L	516.55 ppb	16:24:42
3	Si 251.611†	85796.5	87375.4	2496.7 ug/L	2496.7 ppb	16:24:22
3	Sn 189.927†	3268.5	3349.7	497.21 ug/L	497.21 ppb	16:24:42
3	Ti 334.940†	311110.6	321028.7	502.81 ug/L	502.81 ppb	16:24:22
3	Tl 190.801†	1717.9	1808.7	498.71 ug/L	498.71 ppb	16:24:42
3	U 409.014†	13379.2	16354.9	482.95 ug/L	482.95 ppb	16:24:22
3	V 292.402†	75502.3	79274.4	504.36 ug/L	504.36 ppb	16:24:22
3	Zn 213.857†	60407.2	61126.6	497.93 ug/L	497.93 ppb	16:24:22
3	SiO2†	85295.3	86838.9	5350.3 ug/L	5350.3 ppb	16:24:58

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	889175.0	97.180 %	0.5761			0.59%
Sc Radial	4635.6	91.2 %	4.48			4.92%
Y 371.029	751390.0	96.134 %	0.5579			0.58%
Y RADIAL	4842.1	90.32 %	4.353			4.82%
Ag 328.068†	116083.1	502.12 ug/L	0.351	502.12 ppb	0.351	0.07%
QC value within limits for Ag 328.068 Recovery = 100.42%						
Al 396.153Radial†	6179.6	4997.6 ug/L	236.18	4997.6 ppb	236.18	4.73%
QC value within limits for Al 396.153Radial Recovery = 99.95%						
As 188.979†	1420.9	504.91 ug/L	7.696	504.91 ppb	7.696	1.52%
QC value within limits for As 188.979 Recovery = 100.98%						
B 249.677†	23910.8	487.76 ug/L	1.583	487.76 ppb	1.583	0.32%
QC value within limits for B 249.677 Recovery = 97.55%						
Ba 233.527†	68822.9	502.81 ug/L	1.240	502.81 ppb	1.240	0.25%
QC value within limits for Ba 233.527 Recovery = 100.56%						
Be 313.107†	1483121.9	501.44 ug/L	0.725	501.44 ppb	0.725	0.14%
QC value within limits for Be 313.107 Recovery = 100.29%						
Ca 317.933Radial†	3233.6	5132.0 ug/L	261.32	5132.0 ppb	261.32	5.09%

QC value within limits for Ca 317.933 Radial Recovery = 102.64%							
Cd 226.502†	53366.4	501.74 ug/L	0.393	501.74 ppb	0.393	0.08%	
QC value within limits for Cd 226.502 Recovery = 100.35%							
Co 228.616†	26572.7	496.93 ug/L	4.676	496.93 ppb	4.676	0.94%	
QC value within limits for Co 228.616 Recovery = 99.39%							
Cr 267.716†	49811.4	499.68 ug/L	0.650	499.68 ppb	0.650	0.13%	
QC value within limits for Cr 267.716 Recovery = 99.94%							
Cu 324.752†	168775.9	499.70 ug/L	1.041	499.70 ppb	1.041	0.21%	
QC value within limits for Cu 324.752 Recovery = 99.94%							
Fe 238.204 Radial†	615.6	5346.5 ug/L	289.84	5346.5 ppb	289.84	5.42%	
QC value within limits for Fe 238.204 Radial Recovery = 106.93%							
K 766.490 Radial†	28139.3	5412.3 ug/L	262.84	5412.3 ppb	262.84	4.86%	
QC value within limits for K 766.490 Radial Recovery = 108.25%							
Mg 279.077 IEC†	170.2	5270.6 ug/L	270.83	5270.6 ppb	270.83	5.14%	
QC value within limits for Mg 279.077 IEC Recovery = 105.41%							
Mn 257.610†	480540.9	504.73 ug/L	1.003	504.73 ppb	1.003	0.20%	
QC value within limits for Mn 257.610 Recovery = 100.95%							
Mo 202.031†	7995.2	502.13 ug/L	5.395	502.13 ppb	5.395	1.07%	
QC value within limits for Mo 202.031 Recovery = 100.43%							
Na 589.592 Radial†	38751.3	11029 ug/L	413.4	11029 ppb	413.4	3.75%	
QC value greater than the upper limit for Na 589.592 Radial Recovery = 110.29%							
Ni 231.604†	22688.8	496.18 ug/L	4.533	496.18 ppb	4.533	0.91%	
QC value within limits for Ni 231.604 Recovery = 99.24%							
P 214.914†	5134.8	2441.3 ug/L	23.92	2441.3 ppb	23.92	0.98%	
QC value within limits for P 214.914 Recovery = 97.65%							
Pb 220.353†	4875.0	506.24 ug/L	4.324	506.24 ppb	4.324	0.85%	
QC value within limits for Pb 220.353 Recovery = 101.25%							
S 181.975 Axial†	878.7	1002.7 ug/L	14.33	1002.7 ppb	14.33	1.43%	
QC value within limits for S 181.975 Axial Recovery = 100.27%							
Sb 206.836†	1693.5	509.16 ug/L	5.447	509.16 ppb	5.447	1.07%	
QC value within limits for Sb 206.836 Recovery = 101.83%							
Se 196.026†	977.6	517.83 ug/L	4.345	517.83 ppb	4.345	0.84%	
QC value within limits for Se 196.026 Recovery = 103.57%							
Si 251.611†	87298.8	2494.5 ug/L	5.68	2494.5 ppb	5.68	0.23%	
QC value within limits for Si 251.611 Recovery = 99.78%							
Sn 189.927†	3380.2	501.70 ug/L	5.101	501.70 ppb	5.101	1.02%	
QC value within limits for Sn 189.927 Recovery = 100.34%							
Sr 421.552†	77162.8	511.68 ug/L	22.514	511.68 ppb	22.514	4.40%	
QC value within limits for Sr 421.552 Recovery = 102.34%							
Ti 334.940†	320720.2	502.32 ug/L	0.567	502.32 ppb	0.567	0.11%	
QC value within limits for Ti 334.940 Recovery = 100.46%							
Tl 190.801†	1819.3	501.57 ug/L	4.111	501.57 ppb	4.111	0.82%	
QC value within limits for Tl 190.801 Recovery = 100.31%							
U 409.014†	16182.7	477.89 ug/L	4.416	477.89 ppb	4.416	0.92%	
QC value within limits for U 409.014 Recovery = 95.58%							
V 292.402†	79206.3	504.03 ug/L	1.288	504.03 ppb	1.288	0.26%	
QC value within limits for V 292.402 Recovery = 100.81%							
Zn 213.857†	61126.3	497.94 ug/L	0.543	497.94 ppb	0.543	0.11%	
QC value within limits for Zn 213.857 Recovery = 99.59%							
SiO2†	87758.4	5407.3 ug/L	64.28	5407.3 ppb	64.28	1.19%	
QC value within limits for SiO2 Recovery = 101.12%							
QC Failed. Continue with analysis.							

Sequence No.: 14  
 Sample ID: CCB  
 Analyst:  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 8  
 Date Collected: 1/5/2010 16:27:07  
 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	4865.3	4865.3	95.7 %		16:29:00
1	Y RADIAL	5073.8	5073.8	94.64 %		16:29:00
1	Al 396.153Radial†	-25.8	-7.4	-6.0285 ug/L	-6.0285 ppb	16:29:00
1	Ca 317.933Radial†	19.0	1.6	2.5890 ug/L	2.5890 ppb	16:29:20
1	Fe 238.204 Radial†	12.0	-2.1	-18.040 ug/L	-18.040 ppb	16:29:20
1	K 766.490 Radial†	3466.9	292.3	56.289 ug/L	56.289 ppb	16:29:00
1	Mg 279.077 IEC†	3.0	-0.7	-21.989 ug/L	-21.989 ppb	16:29:20
1	Na 589.592 Radial†	-1493.1	177.2	50.428 ug/L	50.428 ppb	16:29:00
1	Sr 421.552†	29.8	23.7	0.1573 ug/L	0.1573 ppb	16:29:00
1	Sc 361.383	871081.0	871081.0	95.202 %		16:30:17
1	Y 371.029	757757.2	757757.2	96.949 %		16:30:17
1	Ag 328.068†	457.8	-31.9	-0.1398 ug/L	-0.1398 ppb	16:30:17
1	As 188.979†	-27.8	2.1	0.7246 ug/L	0.7246 ppb	16:30:37
1	B 249.677†	-726.0	-49.2	-1.0048 ug/L	-1.0048 ppb	16:30:17
1	Ba 233.527†	16.6	8.9	0.0632 ug/L	0.0632 ppb	16:30:37
1	Be 313.107†	-4348.6	-192.3	-0.0651 ug/L	-0.0651 ppb	16:30:17
1	Cd 226.502†	-224.1	15.2	0.1444 ug/L	0.1444 ppb	16:30:37
1	Co 228.616†	-99.5	-15.5	-0.2871 ug/L	-0.2871 ppb	16:30:37
1	Cr 267.716†	133.7	24.3	0.2441 ug/L	0.2441 ppb	16:30:17
1	Cu 324.752†	7993.1	297.6	0.8798 ug/L	0.8798 ppb	16:30:17
1	Mn 257.610†	671.7	37.5	0.0380 ug/L	0.0380 ppb	16:30:17
1	Mo 202.031†	33.1	11.5	0.7191 ug/L	0.7191 ppb	16:30:37
1	Ni 231.604†	111.2	-0.5	-0.0114 ug/L	-0.0114 ppb	16:30:37
1	P 214.914†	262.3	22.9	11.116 ug/L	11.116 ppb	16:30:37
1	Pb 220.353†	-88.0	8.3	0.8602 ug/L	0.8602 ppb	16:30:37
1	S 181.975 Axial†	64.9	5.8	6.5714 ug/L	6.5714 ppb	16:30:37
1	Sb 206.836†	53.1	15.1	4.4656 ug/L	4.4656 ppb	16:30:37
1	Se 196.026†	-36.5	-3.0	-1.6023 ug/L	-1.6023 ppb	16:30:37
1	Si 251.611†	716.1	90.5	2.5681 ug/L	2.5681 ppb	16:30:37
1	Sn 189.927†	1.9	-2.2	-0.3246 ug/L	-0.3246 ppb	16:30:37
1	Ti 334.940†	-1773.9	-70.3	-0.1073 ug/L	-0.1073 ppb	16:30:17
1	Tl 190.801†	-52.4	-9.1	-2.4959 ug/L	-2.4959 ppb	16:30:37
1	U 409.014†	-2703.0	-213.0	-6.3084 ug/L	-6.3084 ppb	16:30:17
1	V 292.402†	-1799.8	-90.3	-0.5665 ug/L	-0.5665 ppb	16:30:17
1	Zn 213.857†	905.3	92.7	0.7626 ug/L	0.7626 ppb	16:30:37
1	SiO2†	735.0	88.1	5.3876 ug/L	5.3876 ppb	16:31:33
2	Sc Radial	4790.8	4790.8	94.2 %		16:29:25
2	Y RADIAL	4991.4	4991.4	93.10 %		16:29:25
2	Al 396.153Radial†	-17.9	0.6	0.4355 ug/L	0.4355 ppb	16:29:25
2	Ca 317.933Radial†	22.4	5.5	8.7511 ug/L	8.7511 ppb	16:29:45
2	Fe 238.204 Radial†	14.5	0.7	6.4272 ug/L	6.4272 ppb	16:29:45
2	K 766.490 Radial†	3510.3	394.6	76.027 ug/L	76.027 ppb	16:29:25
2	Mg 279.077 IEC†	3.1	-0.6	-17.430 ug/L	-17.430 ppb	16:29:45
2	Na 589.592 Radial†	-1582.9	57.7	16.422 ug/L	16.422 ppb	16:29:25
2	Sr 421.552†	28.5	22.8	0.1511 ug/L	0.1511 ppb	16:29:25
2	Sc 361.383	861117.6	861117.6	94.113 %		16:30:42
2	Y 371.029	748507.6	748507.6	95.765 %		16:30:42
2	Ag 328.068†	440.8	-44.4	-0.1819 ug/L	-0.1819 ppb	16:30:42
2	As 188.979†	-40.2	-11.5	-4.0455 ug/L	-4.0455 ppb	16:31:02
2	B 249.677†	-733.4	-65.9	-1.3499 ug/L	-1.3499 ppb	16:30:42
2	Ba 233.527†	20.9	13.6	0.0988 ug/L	0.0988 ppb	16:31:02
2	Be 313.107†	-4351.1	-247.8	-0.0837 ug/L	-0.0837 ppb	16:30:42
2	Cd 226.502†	-226.5	9.9	0.0924 ug/L	0.0924 ppb	16:31:02
2	Co 228.616†	-91.4	-8.1	-0.1498 ug/L	-0.1498 ppb	16:31:02
2	Cr 267.716†	117.5	8.6	0.0890 ug/L	0.0890 ppb	16:30:42
2	Cu 324.752†	7946.0	344.7	1.0204 ug/L	1.0204 ppb	16:30:42
2	Mn 257.610†	604.4	-25.8	-0.0261 ug/L	-0.0261 ppb	16:30:42
2	Mo 202.031†	35.8	14.8	0.9288 ug/L	0.9288 ppb	16:31:02
2	Ni 231.604†	110.0	-0.4	-0.0095 ug/L	-0.0095 ppb	16:31:02

2	P 214.914†	247.1	9.9	4.6996 ug/L	4.6996 ppb	16:31:02
2	Pb 220.353†	-91.6	3.4	0.3484 ug/L	0.3484 ppb	16:31:02
2	S 181.975 Axial†	61.9	3.4	3.9193 ug/L	3.9193 ppb	16:31:02
2	Sb 206.836†	62.4	25.6	7.6277 ug/L	7.6277 ppb	16:31:02
2	Se 196.026†	-35.5	-2.4	-1.2002 ug/L	-1.2002 ppb	16:31:02
2	Si 251.611†	718.6	101.8	2.8796 ug/L	2.8796 ppb	16:31:02
2	Sn 189.927†	7.3	3.6	0.5318 ug/L	0.5318 ppb	16:31:02
2	Ti 334.940†	-1701.5	-14.9	-0.0188 ug/L	-0.0188 ppb	16:30:42
2	Tl 190.801†	-48.3	-5.4	-1.4705 ug/L	-1.4705 ppb	16:31:02
2	U 409.014†	-2773.5	-320.7	-9.5042 ug/L	-9.5042 ppb	16:30:42
2	V 292.402†	-1736.6	-45.0	-0.2889 ug/L	-0.2889 ppb	16:30:42
2	Zn 213.857†	924.6	124.2	1.0196 ug/L	1.0196 ppb	16:31:02
2	SiO2†	749.7	112.6	6.8756 ug/L	6.8756 ppb	16:31:38
3	Sc Radial	4839.9	4839.9	95.2 %		16:29:50
3	Y RADIAL	5043.6	5043.6	94.08 %		16:29:50
3	Al 396.153Radial†	-3.6	15.7	12.769 ug/L	12.769 ppb	16:29:50
3	Ca 317.933Radial†	24.2	7.2	11.437 ug/L	11.437 ppb	16:30:10
3	Fe 238.204 Radial†	11.8	-2.2	-19.295 ug/L	-19.295 ppb	16:30:10
3	K 766.490 Radial†	3404.7	245.9	47.352 ug/L	47.352 ppb	16:29:50
3	Mg 279.077 IEC†	2.0	-1.8	-55.957 ug/L	-55.957 ppb	16:30:10
3	Na 589.592 Radial†	-1528.0	132.3	37.663 ug/L	37.663 ppb	16:29:50
3	Sr 421.552†	-1.3	-8.9	-0.0588 ug/L	-0.0588 ppb	16:29:50
3	Sc 361.383	869541.8	869541.8	95.034 %		16:31:08
3	Y 371.029	758228.3	758228.3	97.009 %		16:31:08
3	Ag 328.068†	386.0	-106.7	-0.4632 ug/L	-0.4632 ppb	16:31:08
3	As 188.979†	-36.0	-6.7	-2.3598 ug/L	-2.3598 ppb	16:31:28
3	B 249.677†	-679.8	-2.0	-0.0362 ug/L	-0.0362 ppb	16:31:08
3	Ba 233.527†	12.8	4.9	0.0333 ug/L	0.0333 ppb	16:31:28
3	Be 313.107†	-4383.2	-236.9	-0.0801 ug/L	-0.0801 ppb	16:31:08
3	Cd 226.502†	-239.2	-1.2	-0.0087 ug/L	-0.0087 ppb	16:31:28
3	Co 228.616†	-111.1	-27.9	-0.5206 ug/L	-0.5206 ppb	16:31:28
3	Cr 267.716†	115.6	5.5	0.0552 ug/L	0.0552 ppb	16:31:08
3	Cu 324.752†	8032.8	354.3	1.0474 ug/L	1.0474 ppb	16:31:08
3	Mn 257.610†	720.4	90.0	0.0936 ug/L	0.0936 ppb	16:31:08
3	Mo 202.031†	29.1	7.4	0.4609 ug/L	0.4609 ppb	16:31:28
3	Ni 231.604†	126.5	15.8	0.3461 ug/L	0.3461 ppb	16:31:28
3	P 214.914†	264.9	26.1	12.664 ug/L	12.664 ppb	16:31:28
3	Pb 220.353†	-93.4	2.5	0.2630 ug/L	0.2630 ppb	16:31:28
3	S 181.975 Axial†	54.8	-4.8	-5.4343 ug/L	-5.4343 ppb	16:31:28
3	Sb 206.836†	56.6	18.8	5.5900 ug/L	5.5900 ppb	16:31:28
3	Se 196.026†	-40.2	-7.0	-3.6277 ug/L	-3.6277 ppb	16:31:28
3	Si 251.611†	709.3	84.6	2.4055 ug/L	2.4055 ppb	16:31:28
3	Sn 189.927†	4.1	0.2	0.0246 ug/L	0.0246 ppb	16:31:28
3	Ti 334.940†	-1761.4	-60.5	-0.0916 ug/L	-0.0916 ppb	16:31:08
3	Tl 190.801†	-50.0	-6.6	-1.8167 ug/L	-1.8167 ppb	16:31:28
3	U 409.014†	-2684.8	-198.8	-5.8899 ug/L	-5.8899 ppb	16:31:08
3	V 292.402†	-1834.3	-129.9	-0.8188 ug/L	-0.8188 ppb	16:31:08
3	Zn 213.857†	920.3	110.2	0.9045 ug/L	0.9045 ppb	16:31:28
3	SiO2†	772.8	129.2	7.9446 ug/L	7.9446 ppb	16:31:43

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	867246.8	94.783 %	0.5862			0.62%
Sc Radial	4832.0	95.0 %	0.74			0.78%
Y 371.029	754831.0	96.575 %	0.7013			0.73%
Y RADIAL	5036.3	93.94 %	0.777			0.83%
Ag 328.068†	-61.0	-0.2616 ug/L	0.17578	-0.2616 ppb	0.17578	67.19%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	3.0	2.3920 ug/L	9.55025	2.3920 ppb	9.55025	399.26%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-5.4	-1.8935 ug/L	2.41900	-1.8935 ppb	2.41900	127.75%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	-39.0	-0.7970 ug/L	0.68108	-0.7970 ppb	0.68108	85.46%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	9.1	0.0651 ug/L	0.03281	0.0651 ppb	0.03281	50.39%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-225.7	-0.0763 ug/L	0.00985	-0.0763 ppb	0.00985	12.91%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	4.8	7.5923 ug/L	4.53625	7.5923 ppb	4.53625	59.75%



QC value within limits for Ca 317.933 Radial Recovery = Not calculated						
Cd 226.502†	8.0	0.0760 ug/L	0.07787	0.0760 ppb	0.07787	102.40%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-17.2	-0.3192 ug/L	0.18749	-0.3192 ppb	0.18749	58.74%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	12.8	0.1294 ug/L	0.10071	0.1294 ppb	0.10071	77.82%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	332.2	0.9825 ug/L	0.09000	0.9825 ppb	0.09000	9.16%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	-1.2	-10.302 ug/L	14.5017	-10.302 ppb	14.5017	140.76%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	310.9	59.889 ug/L	14.6728	59.889 ppb	14.6728	24.50%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	-1.0	-31.792 ug/L	21.0516	-31.792 ppb	21.0516	66.22%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	33.9	0.0351 ug/L	0.05989	0.0351 ppb	0.05989	170.44%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	11.2	0.7029 ug/L	0.23434	0.7029 ppb	0.23434	33.34%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	122.4	34.838 ug/L	17.1778	34.838 ppb	17.1778	49.31%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	4.9	0.1084 ug/L	0.20587	0.1084 ppb	0.20587	189.89%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	19.7	9.4933 ug/L	4.22303	9.4933 ppb	4.22303	44.48%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	4.7	0.4906 ug/L	0.32300	0.4906 ppb	0.32300	65.84%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	1.5	1.6855 ug/L	6.30689	1.6855 ppb	6.30689	374.19%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	19.9	5.8945 ug/L	1.60290	5.8945 ppb	1.60290	27.19%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-4.1	-2.1434 ug/L	1.30107	-2.1434 ppb	1.30107	60.70%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	92.3	2.6178 ug/L	0.24092	2.6178 ppb	0.24092	9.20%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	0.5	0.0773 ug/L	0.43060	0.0773 ppb	0.43060	557.37%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	12.6	0.0832 ug/L	0.12301	0.0832 ppb	0.12301	147.87%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	-48.6	-0.0725 ug/L	0.04721	-0.0725 ppb	0.04721	65.08%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	-7.0	-1.9277 ug/L	0.52163	-1.9277 ppb	0.52163	27.06%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-244.2	-7.2342 ug/L	1.97703	-7.2342 ppb	1.97703	27.33%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	-88.4	-0.5580 ug/L	0.26506	-0.5580 ppb	0.26506	47.50%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	109.0	0.8956 ug/L	0.12871	0.8956 ppb	0.12871	14.37%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	109.9	6.7359 ug/L	1.28422	6.7359 ppb	1.28422	19.07%
QC value within limits for SiO2 Recovery = Not calculated						
All analyte(s) passed QC.						

Sequence No.: 15

Sample ID: 1202001494|935381|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 38

Date Collected: 1/5/2010 16:33:54

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202001494|935381|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4786.9	4786.9	94.1 %		16:35:46
1	Y RADIAL	5051.9	5051.9	94.23 %		16:35:46
1	Al 396.153Radial†	-5.0	14.2	11.533 ug/L	11.533 ppb	16:35:46
1	Ca 317.933Radial†	20.8	3.9	6.1756 ug/L	6.1756 ppb	16:36:06
1	Fe 238.204 Radial†	22.6	9.3	80.961 ug/L	80.961 ppb	16:36:06
1	K 766.490 Radial†	3372.3	251.0	48.331 ug/L	48.331 ppb	16:35:46
1	Mg 279.077 IEC†	3.6	-0.0	-0.5583 ug/L	-0.5583 ppb	16:36:06
1	Na 589.592 Radial†	-1451.7	195.6	55.681 ug/L	55.681 ppb	16:35:46
1	Sr 421.552†	50.5	46.2	0.3064 ug/L	0.3064 ppb	16:35:46
1	Sc 361.383	871293.7	871293.7	95.226 %		16:37:03
1	Y 371.029	745969.4	745969.4	95.441 %		16:37:03
1	Ag 328.068†	518.3	31.5	0.1711 ug/L	0.1711 ppb	16:37:03
1	As 188.979†	-33.4	-3.9	-1.3523 ug/L	-1.3523 ppb	16:37:23
1	B 249.677†	-657.1	23.3	0.4664 ug/L	0.4664 ppb	16:37:03
1	Ba 233.527†	12.5	4.6	0.0361 ug/L	0.0361 ppb	16:37:23
1	Be 313.107†	-4270.4	-109.1	-0.0363 ug/L	-0.0363 ppb	16:37:03
1	Cd 226.502†	-233.6	5.3	0.0415 ug/L	0.0415 ppb	16:37:23
1	Co 228.616†	-90.4	-6.0	-0.1121 ug/L	-0.1121 ppb	16:37:23
1	Cr 267.716†	128.9	19.1	0.1963 ug/L	0.1963 ppb	16:37:03
1	Cu 324.752†	7894.8	192.4	0.5734 ug/L	0.5734 ppb	16:37:03
1	Mn 257.610†	1159.2	549.3	0.5845 ug/L	0.5845 ppb	16:37:03
1	Mo 202.031†	27.5	5.6	0.3591 ug/L	0.3591 ppb	16:37:23
1	Ni 231.604†	117.6	6.1	0.1342 ug/L	0.1342 ppb	16:37:23
1	P 214.914†	265.5	26.2	12.710 ug/L	12.710 ppb	16:37:23
1	Pb 220.353†	-87.0	9.4	0.9653 ug/L	0.9653 ppb	16:37:23
1	S 181.975 Axial†	62.7	3.5	3.9755 ug/L	3.9755 ppb	16:37:23
1	Sb 206.836†	59.4	21.6	6.4303 ug/L	6.4303 ppb	16:37:23
1	Se 196.026†	-31.7	2.0	1.2421 ug/L	1.2421 ppb	16:37:23
1	Si 251.611†	1085.0	477.7	13.691 ug/L	13.691 ppb	16:37:23
1	Sn 189.927†	10.5	6.9	1.0293 ug/L	1.0293 ppb	16:37:23
1	Ti 334.940†	-1548.3	167.1	0.2660 ug/L	0.2660 ppb	16:37:03
1	Tl 190.801†	-49.0	-5.5	-1.4902 ug/L	-1.4902 ppb	16:37:23
1	U 409.014†	-2786.7	-300.2	-8.9069 ug/L	-8.9069 ppb	16:37:03
1	V 292.402†	-1670.4	46.1	0.2646 ug/L	0.2646 ppb	16:37:03
1	Zn 213.857†	1023.5	216.6	1.7739 ug/L	1.7739 ppb	16:37:23
1	SiO2†	1166.5	541.0	33.438 ug/L	33.438 ppb	16:38:20
2	Sc Radial	4782.9	4782.9	94.1 %		16:36:11
2	Y RADIAL	4990.2	4990.2	93.08 %		16:36:11
2	Al 396.153Radial†	7.3	27.3	22.099 ug/L	22.099 ppb	16:36:11
2	Ca 317.933Radial†	19.4	2.4	3.8100 ug/L	3.8100 ppb	16:36:31
2	Fe 238.204 Radial†	20.6	7.2	62.757 ug/L	62.757 ppb	16:36:31
2	K 766.490 Radial†	3378.5	260.6	50.193 ug/L	50.193 ppb	16:36:11
2	Mg 279.077 IEC†	2.9	-0.8	-23.632 ug/L	-23.632 ppb	16:36:31
2	Na 589.592 Radial†	-1450.2	196.0	55.788 ug/L	55.788 ppb	16:36:11
2	Sr 421.552†	22.8	16.8	0.1117 ug/L	0.1117 ppb	16:36:11
2	Sc 361.383	871537.6	871537.6	95.252 %		16:37:29
2	Y 371.029	745185.2	745185.2	95.340 %		16:37:29
2	Ag 328.068†	354.3	-140.8	-0.5769 ug/L	-0.5769 ppb	16:37:29
2	As 188.979†	-36.6	-7.1	-2.5047 ug/L	-2.5047 ppb	16:37:49
2	B 249.677†	-798.3	-124.7	-2.5616 ug/L	-2.5616 ppb	16:37:29
2	Ba 233.527†	21.9	14.5	0.1062 ug/L	0.1062 ppb	16:37:49
2	Be 313.107†	-4241.0	-77.0	-0.0254 ug/L	-0.0254 ppb	16:37:29
2	Cd 226.502†	-220.0	19.6	0.1786 ug/L	0.1786 ppb	16:37:49
2	Co 228.616†	-96.9	-12.7	-0.2357 ug/L	-0.2357 ppb	16:37:49
2	Cr 267.716†	111.1	0.5	0.0086 ug/L	0.0086 ppb	16:37:29
2	Cu 324.752†	7870.0	164.0	0.4886 ug/L	0.4886 ppb	16:37:29
2	Mn 257.610†	1111.5	498.8	0.5302 ug/L	0.5302 ppb	16:37:29
2	Mo 202.031†	41.9	20.7	1.3024 ug/L	1.3024 ppb	16:37:49
2	Ni 231.604†	121.4	10.2	0.2223 ug/L	0.2223 ppb	16:37:49

2	P 214.914†	278.0	39.3	19.165 ug/L	19.165 ppb	16:37:49
2	Pb 220.353†	-87.4	9.0	0.9366 ug/L	0.9366 ppb	16:37:49
2	S 181.975 Axial†	67.2	8.1	9.2821 ug/L	9.2821 ppb	16:37:49
2	Sb 206.836†	64.3	26.8	7.9978 ug/L	7.9978 ppb	16:37:49
2	Se 196.026†	-29.9	3.9	2.2066 ug/L	2.2066 ppb	16:37:49
2	Si 251.611†	1077.7	469.7	13.441 ug/L	13.441 ppb	16:37:49
2	Sn 189.927†	17.9	14.6	2.1661 ug/L	2.1661 ppb	16:37:49
2	Ti 334.940†	-1517.3	200.0	0.3183 ug/L	0.3183 ppb	16:37:29
2	Tl 190.801†	-50.6	-7.2	-1.9612 ug/L	-1.9612 ppb	16:37:49
2	U 409.014†	-2843.8	-359.3	-10.655 ug/L	-10.655 ppb	16:37:29
2	V 292.402†	-1779.3	-67.7	-0.4378 ug/L	-0.4378 ppb	16:37:29
2	Zn 213.857†	1012.0	204.3	1.6737 ug/L	1.6737 ppb	16:37:49
2	SiO2†	1145.9	519.1	32.039 ug/L	32.039 ppb	16:38:25
3	Sc Radial	4717.4	4717.4	92.8 %		16:36:37
3	Y RADIAL	4949.9	4949.9	92.33 %		16:36:37
3	Al 396.153Radial†	-8.5	10.4	8.4388 ug/L	8.4388 ppb	16:36:37
3	Ca 317.933Radial†	24.7	8.4	13.289 ug/L	13.289 ppb	16:36:57
3	Fe 238.204 Radial†	18.3	5.0	43.451 ug/L	43.451 ppb	16:36:57
3	K 766.490 Radial†	3389.9	322.8	62.171 ug/L	62.171 ppb	16:36:37
3	Mg 279.077 IEC†	2.2	-1.5	-46.537 ug/L	-46.537 ppb	16:36:57
3	Na 589.592 Radial†	-1471.9	151.2	43.037 ug/L	43.037 ppb	16:36:37
3	Sr 421.552†	14.2	7.9	0.0522 ug/L	0.0522 ppb	16:36:37
3	Sc 361.383	875206.0	875206.0	95.653 %		16:37:54
3	Y 371.029	748194.0	748194.0	95.725 %		16:37:54
3	Ag 328.068†	330.1	-167.7	-0.7009 ug/L	-0.7009 ppb	16:37:54
3	As 188.979†	-32.9	-3.2	-1.1135 ug/L	-1.1135 ppb	16:38:14
3	B 249.677†	-741.4	-61.7	-1.2698 ug/L	-1.2698 ppb	16:37:54
3	Ba 233.527†	23.2	15.7	0.1151 ug/L	0.1151 ppb	16:38:14
3	Be 313.107†	-4235.5	-52.6	-0.0174 ug/L	-0.0174 ppb	16:37:54
3	Cd 226.502†	-246.6	-7.2	-0.0722 ug/L	-0.0722 ppb	16:38:14
3	Co 228.616†	-85.8	-0.7	-0.0130 ug/L	-0.0130 ppb	16:38:14
3	Cr 267.716†	142.1	32.3	0.3267 ug/L	0.3267 ppb	16:37:54
3	Cu 324.752†	7842.6	100.8	0.3004 ug/L	0.3004 ppb	16:37:54
3	Mn 257.610†	1123.6	506.6	0.5368 ug/L	0.5368 ppb	16:37:54
3	Mo 202.031†	28.0	6.0	0.3775 ug/L	0.3775 ppb	16:38:14
3	Ni 231.604†	119.3	7.3	0.1607 ug/L	0.1607 ppb	16:38:14
3	P 214.914†	263.5	22.9	11.154 ug/L	11.154 ppb	16:38:14
3	Pb 220.353†	-92.4	4.1	0.4236 ug/L	0.4236 ppb	16:38:14
3	S 181.975 Axial†	61.6	2.1	2.3514 ug/L	2.3514 ppb	16:38:14
3	Sb 206.836†	44.8	6.1	1.8414 ug/L	1.8414 ppb	16:38:14
3	Se 196.026†	-38.8	-5.2	-2.5483 ug/L	-2.5483 ppb	16:38:14
3	Si 251.611†	1077.9	465.2	13.326 ug/L	13.326 ppb	16:38:14
3	Sn 189.927†	11.0	7.3	1.0892 ug/L	1.0892 ppb	16:38:14
3	Ti 334.940†	-1616.7	102.8	0.1645 ug/L	0.1645 ppb	16:37:54
3	Tl 190.801†	-59.3	-16.0	-4.3898 ug/L	-4.3898 ppb	16:38:14
3	U 409.014†	-2716.3	-213.5	-6.3320 ug/L	-6.3320 ppb	16:37:54
3	V 292.402†	-1726.8	-5.0	-0.0466 ug/L	-0.0466 ppb	16:37:54
3	Zn 213.857†	1014.1	202.0	1.6570 ug/L	1.6570 ppb	16:38:14
3	SiO2†	1184.9	554.8	34.284 ug/L	34.284 ppb	16:38:30

Mean Data: 1202001494|935381|1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	872679.1	95.377 %	%	0.2395			0.25%
Sc Radial	4762.4	93.7 %	%	0.77			0.82%
Y 371.029	746449.5	95.502 %	%	0.1997			0.21%
Y RADIAL	4997.3	93.21 %	%	0.959			1.03%
Ag 328.068†	-92.3	-0.3689 ug/L	ug/L	0.47173	-0.3689 ppb	0.47173	127.88%
Al 396.153Radial†	17.3	14.024 ug/L	ug/L	7.1624	14.024 ppb	7.1624	51.07%
As 188.979†	-4.7	-1.6568 ug/L	ug/L	0.74393	-1.6568 ppb	0.74393	44.90%
B 249.677†	-54.4	-1.1217 ug/L	ug/L	1.51945	-1.1217 ppb	1.51945	135.46%
Ba 233.527†	11.6	0.0858 ug/L	ug/L	0.04330	0.0858 ppb	0.04330	50.47%
Be 313.107†	-79.6	-0.0264 ug/L	ug/L	0.00948	-0.0264 ppb	0.00948	35.94%
Ca 317.933Radial†	4.9	7.7582 ug/L	ug/L	4.93373	7.7582 ppb	4.93373	63.59%
Cd 226.502†	5.9	0.0493 ug/L	ug/L	0.12558	0.0493 ppb	0.12558	254.69%
Co 228.616†	-6.5	-0.1203 ug/L	ug/L	0.11158	-0.1203 ppb	0.11158	92.76%
Cr 267.716†	17.3	0.1772 ug/L	ug/L	0.15994	0.1772 ppb	0.15994	90.25%
Cu 324.752†	152.4	0.4541 ug/L	ug/L	0.13974	0.4541 ppb	0.13974	30.77%
Fe 238.204 Radial†	7.2	62.390 ug/L	ug/L	18.7580	62.390 ppb	18.7580	30.07%
K 766.490 Radial†	278.1	53.565 ug/L	ug/L	7.5111	53.565 ppb	7.5111	14.02%

Mg 279.077 IEC†	-0.8	-23.576 ug/L	22.9896	-23.576 ppb	22.9896	97.51%
Mn 257.610†	518.2	0.5505 ug/L	0.02964	0.5505 ppb	0.02964	5.38%
Mo 202.031†	10.7	0.6797 ug/L	0.53942	0.6797 ppb	0.53942	79.37%
Na 589.592 Radial†	181.0	51.502 ug/L	7.3315	51.502 ppb	7.3315	14.24%
Ni 231.604†	7.9	0.1724 ug/L	0.04520	0.1724 ppb	0.04520	26.22%
P 214.914†	29.5	14.343 ug/L	4.2479	14.343 ppb	4.2479	29.62%
Pb 220.353†	7.5	0.7752 ug/L	0.30480	0.7752 ppb	0.30480	39.32%
S 181.975 Axial†	4.6	5.2030 ug/L	3.62477	5.2030 ppb	3.62477	69.67%
Sb 206.836†	18.2	5.4232 ug/L	3.19937	5.4232 ppb	3.19937	58.99%
Se 196.026†	0.2	0.3001 ug/L	2.51353	0.3001 ppb	2.51353	837.49%
Si 251.611†	470.9	13.486 ug/L	0.1867	13.486 ppb	0.1867	1.38%
Sn 189.927†	9.6	1.4282 ug/L	0.63978	1.4282 ppb	0.63978	44.80%
Sr 421.552†	23.7	0.1568 ug/L	0.13297	0.1568 ppb	0.13297	84.82%
Ti 334.940†	156.7	0.2496 ug/L	0.07821	0.2496 ppb	0.07821	31.34%
Tl 190.801†	-9.6	-2.6137 ug/L	1.55607	-2.6137 ppb	1.55607	59.53%
U 409.014†	-291.0	-8.6314 ug/L	2.17472	-8.6314 ppb	2.17472	25.20%
V 292.402†	-8.9	-0.0732 ug/L	0.35197	-0.0732 ppb	0.35197	480.56%
Zn 213.857†	207.6	1.7015 ug/L	0.06322	1.7015 ppb	0.06322	3.72%
SiO2†	538.3	33.253 ug/L	1.1341	33.253 ppb	1.1341	3.41%

Sequence No.: 16

Sample ID: 1202001495|935381|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 39

Date Collected: 1/5/2010 16:40:40

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202001495|935381|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4964.9	4964.9	97.6 %		16:42:53
1	Y RADIAL	5629.6	5629.6	105.0 %		16:42:53
1	Al 396.153Radial†	107823.0	110453.3	89689 ug/L	89689 ppb	16:42:33
1	Ca 317.933Radial†	61211.1	62674.9	99469 ug/L	99469 ppb	16:42:33
1	Fe 238.204 Radial†	21935.2	22451.6	194460 ug/L	194460 ppb	16:42:33
1	K 766.490 Radial†	221744.3	223782.1	43052 ug/L	43052 ppb	16:42:33
1	Mg 279.077 IEC†	1232.7	1258.7	38769 ug/L	38769 ppb	16:42:53
1	Na 589.592 Radial†	34308.1	36876.6	10496 ug/L	10496 ppb	16:42:33
1	Sr 421.552†	328895.8	336852.0	2233.0 ug/L	2233.0 ppb	16:42:33
1	Sc 361.383	918975.7	918975.7	100.44 %		16:43:55
1	Y 371.029	843963.2	843963.2	107.98 %		16:43:55
1	Ag 328.068†	57211.8	56450.2	311.20 ug/L	311.20 ppb	16:43:55
1	As 188.979†	2837.6	2856.5	1086.8 ug/L	1086.8 ppb	16:44:00
1	B 249.677†	74924.2	75311.7	1514.3 ug/L	1514.3 ppb	16:43:55
1	Ba 233.527†	280529.1	279300.4	2043.2 ug/L	2043.2 ppb	16:43:55
1	Be 313.107†	2319086.6	2313375.0	792.44 ug/L	792.44 ppb	16:43:55
1	Cd 226.502†	63860.3	63833.2	581.82 ug/L	581.82 ppb	16:44:00
1	Co 228.616†	50407.5	50277.3	925.58 ug/L	925.58 ppb	16:44:00
1	Cr 267.716†	239543.3	238385.2	2393.2 ug/L	2393.2 ppb	16:43:55
1	Cu 324.752†	672075.0	661053.5	1966.0 ug/L	1966.0 ppb	16:43:55
1	Mn 257.610†	5125712.8	5102750.3	5373.7 ug/L	5373.7 ppb	16:43:55
1	Mo 202.031†	8138.1	8079.4	525.53 ug/L	525.53 ppb	16:44:00
1	Ni 231.604†	61553.9	61168.9	1338.0 ug/L	1338.0 ppb	16:44:00
1	P 214.914†	16385.9	16062.0	7447.6 ug/L	7447.6 ppb	16:44:00
1	Pb 220.353†	7689.7	7757.0	806.98 ug/L	806.98 ppb	16:44:00
1	S 181.975 Axial†	3541.3	3463.5	3938.8 ug/L	3938.8 ppb	16:44:00
1	Sb 206.836†	5148.8	5085.7	1464.4 ug/L	1464.4 ppb	16:44:00
1	Se 196.026†	4874.3	4888.3	3078.7 ug/L	3078.7 ppb	16:44:00
1	Si 251.611†	1215125.6	1209178.6	34693 ug/L	34693 ppb	16:43:55
1	Sn 189.927†	6851.5	6817.5	1023.6 ug/L	1023.6 ppb	16:44:00
1	Ti 334.940†	3858743.5	3843752.8	6026.0 ug/L	6026.0 ppb	16:43:55
1	Tl 190.801†	4208.6	4236.3	1232.7 ug/L	1232.7 ppb	16:44:00
1	U 409.014†	-9086.4	-6420.6	-219.33 ug/L	-219.33 ppb	16:43:55
1	V 292.402†	198427.6	199364.7	1222.5 ug/L	1222.5 ppb	16:43:55
1	Zn 213.857†	720561.6	716569.3	5864.4 ug/L	5864.4 ppb	16:43:55
1	SiO2†	1217965.2	1211983.6	74983 ug/L	74983 ppb	16:44:34
2	Sc Radial	4997.0	4997.0	98.3 %		16:43:18
2	Y RADIAL	5694.5	5694.5	106.2 %		16:43:18
2	Al 396.153Radial†	110747.2	112720.3	91530 ug/L	91530 ppb	16:42:58
2	Ca 317.933Radial†	62678.5	63765.9	101200 ug/L	101200 ppb	16:42:58
2	Fe 238.204 Radial†	22449.3	22830.6	197750 ug/L	197750 ppb	16:42:58
2	K 766.490 Radial†	227929.5	228618.8	43984 ug/L	43984 ppb	16:42:58
2	Mg 279.077 IEC†	1242.3	1260.3	38817 ug/L	38817 ppb	16:43:18
2	Na 589.592 Radial†	35045.3	37401.3	10645 ug/L	10645 ppb	16:42:58
2	Sr 421.552†	337734.0	343684.0	2278.3 ug/L	2278.3 ppb	16:42:58
2	Sc 361.383	922051.4	922051.4	100.77 %		16:44:09
2	Y 371.029	845416.1	845416.1	108.16 %		16:44:09
2	Ag 328.068†	57334.1	56381.5	311.97 ug/L	311.97 ppb	16:44:09
2	As 188.979†	2803.4	2813.1	1072.0 ug/L	1072.0 ppb	16:44:14
2	B 249.677†	75449.2	75583.9	1519.5 ug/L	1519.5 ppb	16:44:09
2	Ba 233.527†	281722.2	279552.6	2045.1 ug/L	2045.1 ppb	16:44:09
2	Be 313.107†	2324074.0	2310622.1	791.52 ug/L	791.52 ppb	16:44:09
2	Cd 226.502†	63326.6	63091.4	574.50 ug/L	574.50 ppb	16:44:14
2	Co 228.616†	50118.3	49822.8	917.01 ug/L	917.01 ppb	16:44:14
2	Cr 267.716†	240015.0	238057.7	2390.0 ug/L	2390.0 ppb	16:44:09
2	Cu 324.752†	675008.9	661732.9	1968.2 ug/L	1968.2 ppb	16:44:09
2	Mn 257.610†	5143449.5	5103327.6	5374.6 ug/L	5374.6 ppb	16:44:09
2	Mo 202.031†	8068.1	7983.0	519.80 ug/L	519.80 ppb	16:44:14
2	Ni 231.604†	61048.7	60463.1	1322.5 ug/L	1322.5 ppb	16:44:14

2	P 214.914†	16282.2	15904.7	7368.1 ug/L	7368.1 ppb	16:44:14
2	Pb 220.353†	7637.9	7680.1	799.15 ug/L	799.15 ppb	16:44:14
2	S 181.975 Axial†	3519.4	3430.0	3900.2 ug/L	3900.2 ppb	16:44:14
2	Sb 206.836†	5065.0	4985.5	1434.6 ug/L	1434.6 ppb	16:44:14
2	Se 196.026†	4835.9	4834.1	3060.6 ug/L	3060.6 ppb	16:44:14
2	Si 251.611†	1219132.4	1209119.0	34692 ug/L	34692 ppb	16:44:09
2	Sn 189.927†	6849.3	6792.6	1020.1 ug/L	1020.1 ppb	16:44:14
2	Ti 334.940†	3874753.9	3846824.8	6030.9 ug/L	6030.9 ppb	16:44:09
2	Tl 190.801†	4143.6	4157.8	1211.4 ug/L	1211.4 ppb	16:44:14
2	U 409.014†	-8929.9	-6235.2	-214.24 ug/L	-214.24 ppb	16:44:09
2	V 292.402†	198798.5	199073.8	1220.1 ug/L	1220.1 ppb	16:44:09
2	Zn 213.857†	722342.2	715943.1	5859.2 ug/L	5859.2 ppb	16:44:09
2	SiO2†	1226688.9	1216595.3	75268 ug/L	75268 ppb	16:44:40
3	Sc Radial	5015.3	5015.3	98.6 %		16:43:44
3	Y RADIAL	5685.9	5685.9	106.1 %		16:43:44
3	Al 396.153Radial†	111056.5	112621.0	91450 ug/L	91450 ppb	16:43:24
3	Ca 317.933Radial†	62681.4	63535.2	100830 ug/L	100830 ppb	16:43:24
3	Fe 238.204 Radial†	22474.7	22772.7	197240 ug/L	197240 ppb	16:43:24
3	K 766.490 Radial†	227773.8	227611.2	43790 ug/L	43790 ppb	16:43:24
3	Mg 279.077 IEC†	1239.5	1252.8	38587 ug/L	38587 ppb	16:43:44
3	Na 589.592 Radial†	34860.8	37083.6	10555 ug/L	10555 ppb	16:43:24
3	Sr 421.552†	337167.7	341850.9	2266.1 ug/L	2266.1 ppb	16:43:24
3	Sc 361.383	924588.5	924588.5	101.05 %		16:44:23
3	Y 371.029	848294.7	848294.7	108.53 %		16:44:23
3	Ag 328.068†	57627.8	56516.0	312.38 ug/L	312.38 ppb	16:44:23
3	As 188.979†	2813.8	2815.8	1072.9 ug/L	1072.9 ppb	16:44:28
3	B 249.677†	75565.1	75493.0	1517.7 ug/L	1517.7 ppb	16:44:23
3	Ba 233.527†	281810.5	278872.9	2040.1 ug/L	2040.1 ppb	16:44:23
3	Be 313.107†	2329615.1	2309777.1	791.23 ug/L	791.23 ppb	16:44:23
3	Cd 226.502†	63406.8	62998.3	573.68 ug/L	573.68 ppb	16:44:28
3	Co 228.616†	50125.2	49693.2	914.60 ug/L	914.60 ppb	16:44:28
3	Cr 267.716†	240678.3	238060.6	2390.0 ug/L	2390.0 ppb	16:44:23
3	Cu 324.752†	677472.7	662333.0	1970.0 ug/L	1970.0 ppb	16:44:23
3	Mn 257.610†	5148863.9	5094680.0	5365.5 ug/L	5365.5 ppb	16:44:23
3	Mo 202.031†	8061.7	7954.6	517.97 ug/L	517.97 ppb	16:44:28
3	Ni 231.604†	61180.6	60427.3	1321.7 ug/L	1321.7 ppb	16:44:28
3	P 214.914†	16221.8	15800.6	7317.0 ug/L	7317.0 ppb	16:44:28
3	Pb 220.353†	7587.4	7609.3	791.84 ug/L	791.84 ppb	16:44:28
3	S 181.975 Axial†	3503.4	3404.6	3871.2 ug/L	3871.2 ppb	16:44:28
3	Sb 206.836†	5133.6	5039.5	1450.3 ug/L	1450.3 ppb	16:44:28
3	Se 196.026†	4857.6	4842.4	3063.4 ug/L	3063.4 ppb	16:44:28
3	Si 251.611†	1221504.4	1208146.7	34664 ug/L	34664 ppb	16:44:23
3	Sn 189.927†	6780.1	6705.4	1007.2 ug/L	1007.2 ppb	16:44:28
3	Ti 334.940†	3882477.9	3843917.5	6026.3 ug/L	6026.3 ppb	16:44:23
3	Tl 190.801†	4175.0	4177.6	1216.7 ug/L	1216.7 ppb	16:44:28
3	U 409.014†	-8787.4	-6069.8	-209.28 ug/L	-209.28 ppb	16:44:23
3	V 292.402†	199529.7	199256.0	1221.3 ug/L	1221.3 ppb	16:44:23
3	Zn 213.857†	723391.9	715015.0	5851.6 ug/L	5851.6 ppb	16:44:23
3	SiO2†	1231079.6	1217600.1	75330 ug/L	75330 ppb	16:44:46

Mean Data: 1202001495|935381|1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	921871.9	100.75 %	0.307			0.30%
Sc Radial	4992.4	98.2 %	0.50			0.51%
Y 371.029	845891.3	108.22 %	0.282			0.26%
Y RADIAL	5670.0	105.8 %	0.66			0.62%
Ag 328.068†	56449.2	311.85 ug/L	0.599	311.85 ppb	0.599	0.19%
Al 396.153Radial†	111931.5	90890 ug/L	1040.7	90890 ppb	1040.7	1.15%
As 188.979†	2828.5	1077.2 ug/L	8.28	1077.2 ppb	8.28	0.77%
B 249.677†	75462.9	1517.2 ug/L	2.62	1517.2 ppb	2.62	0.17%
Ba 233.527†	279242.0	2042.8 ug/L	2.50	2042.8 ppb	2.50	0.12%
Be 313.107†	2311258.1	791.73 ug/L	0.633	791.73 ppb	0.633	0.08%
Ca 317.933Radial†	63325.3	100500 ug/L	912.5	100500 ppb	912.5	0.91%
Cd 226.502†	63307.6	576.67 ug/L	4.481	576.67 ppb	4.481	0.78%
Co 228.616†	49931.1	919.06 ug/L	5.770	919.06 ppb	5.770	0.63%
Cr 267.716†	238167.8	2391.1 ug/L	1.86	2391.1 ppb	1.86	0.08%
Cu 324.752†	661706.4	1968.1 ug/L	1.97	1968.1 ppb	1.97	0.10%
Fe 238.204 Radial†	22685.0	196480 ug/L	1767.7	196480 ppb	1767.7	0.90%
K 766.490 Radial†	226670.7	43608 ug/L	491.7	43608 ppb	491.7	1.13%

Mg 279.077 IEC†	1257.3	38724 ug/L	121.5	38724 ppb	121.5	0.31%
Mn 257.610†	5100252.6	5371.3 ug/L	5.02	5371.3 ppb	5.02	0.09%
Mo 202.031†	8005.6	521.10 ug/L	3.946	521.10 ppb	3.946	0.76%
Na 589.592 Radial†	37120.5	10565 ug/L	75.2	10565 ppb	75.2	0.71%
Ni 231.604†	60686.4	1327.4 ug/L	9.15	1327.4 ppb	9.15	0.69%
P 214.914†	15922.5	7377.6 ug/L	65.82	7377.6 ppb	65.82	0.89%
Pb 220.353†	7682.1	799.32 ug/L	7.574	799.32 ppb	7.574	0.95%
S 181.975 Axial†	3432.7	3903.4 ug/L	33.93	3903.4 ppb	33.93	0.87%
Sb 206.836†	5036.9	1449.7 ug/L	14.92	1449.7 ppb	14.92	1.03%
Se 196.026†	4854.9	3067.6 ug/L	9.71	3067.6 ppb	9.71	0.32%
Si 251.611†	1208814.8	34683 ug/L	16.6	34683 ppb	16.6	0.05%
Sn 189.927†	6771.9	1017.0 ug/L	8.66	1017.0 ppb	8.66	0.85%
Sr 421.552†	340795.6	2259.1 ug/L	23.44	2259.1 ppb	23.44	1.04%
Ti 334.940†	3844831.7	6027.8 ug/L	2.74	6027.8 ppb	2.74	0.05%
Tl 190.801†	4190.6	1220.3 ug/L	11.12	1220.3 ppb	11.12	0.91%
U 409.014†	-6241.9	-214.28 ug/L	5.026	-214.28 ppb	5.026	2.35%
V 292.402†	199231.5	1221.3 ug/L	1.20	1221.3 ppb	1.20	0.10%
Zn 213.857†	715842.5	5858.4 ug/L	6.44	5858.4 ppb	6.44	0.11%
SiO2†	1215393.0	75194 ug/L	185.3	75194 ppb	185.3	0.25%

Sequence No.: 18

Sample ID: 1202001496|935381|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 41

Date Collected: 1/5/2010 16:53:51

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202001496|935381|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4955.9	4955.9	97.5 %		16:56:03
1	Y RADIAL	5690.8	5690.8	106.1 %		16:56:03
1	Al 396.153Radial†	146491.2	150329.0	122100 ug/L	122100 ppb	16:55:43
1	Ca 317.933Radial†	14469.9	14828.8	23534 ug/L	23534 ppb	16:55:43
1	Fe 238.204 Radial†	16076.3	16480.6	142730 ug/L	142730 ppb	16:55:43
1	K 766.490 Radial†	121722.6	121564.0	23409 ug/L	23409 ppb	16:55:43
1	Mg 279.077 IEC†	776.9	793.3	24411 ug/L	24411 ppb	16:56:03
1	Na 589.592 Radial†	8234.7	10187.2	2899.5 ug/L	2899.5 ppb	16:55:43
1	Sr 421.552†	47341.7	48568.2	321.88 ug/L	321.88 ppb	16:55:43
1	Sc 361.383	934760.7	934760.7	102.16 %		16:57:02
1	Y 371.029	871719.3	871719.3	111.53 %		16:57:02
1	Ag 328.068†	-9486.6	-9798.6	6.4442 ug/L	6.4442 ppb	16:57:02
1	As 188.979†	-58.5	-26.1	45.947 ug/L	45.947 ppb	16:57:22
1	B 249.677†	1563.9	2244.2	26.900 ug/L	26.900 ppb	16:57:02
1	Ba 233.527†	206028.7	201660.0	1473.8 ug/L	1473.8 ppb	16:57:02
1	Be 313.107†	598.5	4961.2	9.4161 ug/L	9.4161 ppb	16:57:02
1	Cd 226.502†	1088.0	1315.6	-1.8402 ug/L	-1.8402 ppb	16:57:22
1	Co 228.616†	2734.3	2765.4	41.888 ug/L	41.888 ppb	16:57:22
1	Cr 267.716†	11334.6	10978.6	113.03 ug/L	113.03 ppb	16:57:22
1	Cu 324.752†	30959.6	22206.2	72.991 ug/L	72.991 ppb	16:57:02
1	Mn 257.610†	2227168.8	2179367.8	2300.9 ug/L	2300.9 ppb	16:57:02
1	Mo 202.031†	-63.1	-85.0	8.3480 ug/L	8.3480 ppb	16:57:22
1	Ni 231.604†	4117.8	3913.3	85.601 ug/L	85.601 ppb	16:57:22
1	P 214.914†	1614.7	1327.9	566.48 ug/L	566.48 ppb	16:57:22
1	Pb 220.353†	752.9	837.7	102.35 ug/L	102.35 ppb	16:57:22
1	S 181.975 Axial†	646.1	570.1	627.17 ug/L	627.17 ppb	16:57:22
1	Sb 206.836†	112.3	69.2	6.2224 ug/L	6.2224 ppb	16:57:22
1	Se 196.026†	-782.7	-730.8	54.292 ug/L	54.292 ppb	16:57:22
1	Si 251.611†	1192347.5	1166452.5	33485 ug/L	33485 ppb	16:57:02
1	Sn 189.927†	-113.1	-114.9	-12.610 ug/L	-12.610 ppb	16:57:22
1	Ti 334.940†	2566806.2	2514278.6	3940.1 ug/L	3940.1 ppb	16:57:02
1	Tl 190.801†	-233.5	-182.6	-3.8598 ug/L	-3.8598 ppb	16:57:22
1	U 409.014†	-10777.0	-7922.7	-252.93 ug/L	-252.93 ppb	16:57:02
1	V 292.402†	39410.7	40376.9	227.47 ug/L	227.47 ppb	16:57:02
1	Zn 213.857†	35491.7	33882.4	269.49 ug/L	269.49 ppb	16:57:02
1	SiO2†	1191331.4	1165435.6	72142 ug/L	72142 ppb	16:58:23
2	Sc Radial	5031.7	5031.7	98.9 %		16:56:29
2	Y RADIAL	5769.6	5769.6	107.6 %		16:56:29
2	Al 396.153Radial†	144270.7	145822.8	118440 ug/L	118440 ppb	16:56:09
2	Ca 317.933Radial†	14233.9	14366.9	22801 ug/L	22801 ppb	16:56:09
2	Fe 238.204 Radial†	15817.3	15970.6	138310 ug/L	138310 ppb	16:56:09
2	K 766.490 Radial†	119332.7	117269.1	22581 ug/L	22581 ppb	16:56:09
2	Mg 279.077 IEC†	790.4	795.0	24466 ug/L	24466 ppb	16:56:29
2	Na 589.592 Radial†	8004.4	9827.2	2797.0 ug/L	2797.0 ppb	16:56:09
2	Sr 421.552†	46609.5	47097.1	312.13 ug/L	312.13 ppb	16:56:09
2	Sc 361.383	929055.5	929055.5	101.54 %		16:57:29
2	Y 371.029	866093.5	866093.5	110.81 %		16:57:29
2	Ag 328.068†	-9448.2	-9817.8	4.8933 ug/L	4.8933 ppb	16:57:29
2	As 188.979†	-51.8	-19.8	47.445 ug/L	47.445 ppb	16:57:49
2	B 249.677†	1488.7	2179.5	26.159 ug/L	26.159 ppb	16:57:29
2	Ba 233.527†	204589.6	201481.2	1472.4 ug/L	1472.4 ppb	16:57:29
2	Be 313.107†	513.6	4881.3	9.3836 ug/L	9.3836 ppb	16:57:29
2	Cd 226.502†	1131.8	1365.3	-0.9307 ug/L	-0.9307 ppb	16:57:49
2	Co 228.616†	2738.8	2786.3	42.340 ug/L	42.340 ppb	16:57:49
2	Cr 267.716†	11446.3	11156.6	114.73 ug/L	114.73 ppb	16:57:49
2	Cu 324.752†	30760.9	22196.6	72.737 ug/L	72.737 ppb	16:57:29
2	Mn 257.610†	2210967.9	2176799.6	2297.8 ug/L	2297.8 ppb	16:57:29
2	Mo 202.031†	-100.2	-122.0	5.6030 ug/L	5.6030 ppb	16:57:49
2	Ni 231.604†	4117.1	3937.4	86.128 ug/L	86.128 ppb	16:57:49



2	P 214.914†	1605.1	1328.2	568.90 ug/L	568.90 ppb	16:57:49
2	Pb 220.353†	754.7	843.9	102.53 ug/L	102.53 ppb	16:57:49
2	S 181.975 Axial†	650.5	578.3	637.26 ug/L	637.26 ppb	16:57:49
2	Sb 206.836†	89.5	47.5	-0.3011 ug/L	-0.3011 ppb	16:57:49
2	Se 196.026†	-789.8	-742.6	35.056 ug/L	35.056 ppb	16:57:49
2	Si 251.611†	1184207.9	1165603.2	33461 ug/L	33461 ppb	16:57:29
2	Sn 189.927†	-117.5	-119.9	-13.490 ug/L	-13.490 ppb	16:57:49
2	Ti 334.940†	2549329.5	2512495.4	3937.3 ug/L	3937.3 ppb	16:57:29
2	Tl 190.801†	-234.4	-184.9	-4.6455 ug/L	-4.6455 ppb	16:57:49
2	U 409.014†	-10791.5	-8001.7	-254.72 ug/L	-254.72 ppb	16:57:29
2	V 292.402†	38969.2	40179.0	226.87 ug/L	226.87 ppb	16:57:29
2	Zn 213.857†	35269.0	33876.4	269.66 ug/L	269.66 ppb	16:57:29
2	SiO2†	1181203.8	1162622.3	71968 ug/L	71968 ppb	16:58:29
3	Sc Radial	4945.8	4945.8	97.3 %		16:56:54
3	Y RADIAL	5675.1	5675.1	105.9 %		16:56:54
3	Al 396.153Radial†	146593.4	150741.7	122430 ug/L	122430 ppb	16:56:34
3	Ca 317.933Radial†	14437.3	14825.7	23529 ug/L	23529 ppb	16:56:34
3	Fe 238.204 Radial†	16104.7	16543.6	143270 ug/L	143270 ppb	16:56:34
3	K 766.490 Radial†	121239.7	121323.0	23363 ug/L	23363 ppb	16:56:34
3	Mg 279.077 IEC†	777.0	795.0	24464 ug/L	24464 ppb	16:56:54
3	Na 589.592 Radial†	8154.5	10122.0	2880.9 ug/L	2880.9 ppb	16:56:34
3	Sr 421.552†	47259.8	48583.4	321.98 ug/L	321.98 ppb	16:56:34
3	Sc 361.383	934533.0	934533.0	102.14 %		16:57:56
3	Y 371.029	871784.3	871784.3	111.54 %		16:57:56
3	Ag 328.068†	-9626.5	-9937.9	6.0263 ug/L	6.0263 ppb	16:57:56
3	As 188.979†	-62.2	-29.7	44.760 ug/L	44.760 ppb	16:58:16
3	B 249.677†	1529.5	2210.9	26.144 ug/L	26.144 ppb	16:57:56
3	Ba 233.527†	205900.4	201583.5	1473.3 ug/L	1473.3 ppb	16:57:56
3	Be 313.107†	636.8	4998.8	9.4291 ug/L	9.4291 ppb	16:57:56
3	Cd 226.502†	1093.0	1320.7	-1.8472 ug/L	-1.8472 ppb	16:58:16
3	Co 228.616†	2751.5	2782.9	42.205 ug/L	42.205 ppb	16:58:16
3	Cr 267.716†	11343.7	10990.2	113.15 ug/L	113.15 ppb	16:58:16
3	Cu 324.752†	30970.8	22224.5	73.073 ug/L	73.073 ppb	16:57:56
3	Mn 257.610†	2227163.8	2179893.9	2301.5 ug/L	2301.5 ppb	16:57:56
3	Mo 202.031†	-72.5	-94.2	7.8203 ug/L	7.8203 ppb	16:58:16
3	Ni 231.604†	4065.0	3862.6	84.492 ug/L	84.492 ppb	16:58:16
3	P 214.914†	1631.1	1344.4	574.21 ug/L	574.21 ppb	16:58:16
3	Pb 220.353†	767.4	852.1	103.87 ug/L	103.87 ppb	16:58:16
3	S 181.975 Axial†	648.0	572.1	629.40 ug/L	629.40 ppb	16:58:16
3	Sb 206.836†	80.9	38.5	-2.9096 ug/L	-2.9096 ppb	16:58:16
3	Se 196.026†	-784.5	-732.8	54.940 ug/L	54.940 ppb	16:58:16
3	Si 251.611†	1192325.7	1166715.4	33493 ug/L	33493 ppb	16:57:56
3	Sn 189.927†	-117.8	-119.4	-13.277 ug/L	-13.277 ppb	16:58:16
3	Ti 334.940†	2566283.6	2514379.0	3940.3 ug/L	3940.3 ppb	16:57:56
3	Tl 190.801†	-231.6	-180.8	-3.3664 ug/L	-3.3664 ppb	16:58:16
3	U 409.014†	-10738.1	-7887.1	-251.95 ug/L	-251.95 ppb	16:57:56
3	V 292.402†	39357.8	40334.5	227.12 ug/L	227.12 ppb	16:57:56
3	Zn 213.857†	35535.8	33934.0	269.89 ug/L	269.89 ppb	16:57:56
3	SiO2†	1192476.6	1166841.0	72229 ug/L	72229 ppb	16:58:34

Mean Data: 1202001496|935381|1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Conc. Units	Sample	Std.Dev.	RSD
Sc 361.383	932783.1	101.95 %		0.353				0.35%
Sc Radial	4977.8	97.9 %		0.92				0.94%
Y 371.029	869865.7	111.29 %		0.418				0.38%
Y RADIAL	5711.8	106.5 %		0.94				0.89%
Ag 328.068†	-9851.5	5.7879 ug/L		0.80245	5.7879 ppb		0.80245	13.86%
Al 396.153Radial†	148964.5	120990 ug/L		2216.1	120990 ppb		2216.1	1.83%
As 188.979†	-25.2	46.051 ug/L		1.3455	46.051 ppb		1.3455	2.92%
B 249.677†	2211.5	26.401 ug/L		0.4319	26.401 ppb		0.4319	1.64%
Ba 233.527†	201574.9	1473.2 ug/L		0.71	1473.2 ppb		0.71	0.05%
Be 313.107†	4947.1	9.4096 ug/L		0.02342	9.4096 ppb		0.02342	0.25%
Ca 317.933Radial†	14673.8	23288 ug/L		421.9	23288 ppb		421.9	1.81%
Cd 226.502†	1333.8	-1.5394 ug/L		0.52711	-1.5394 ppb		0.52711	34.24%
Co 228.616†	2778.2	42.144 ug/L		0.2316	42.144 ppb		0.2316	0.55%
Cr 267.716†	11041.8	113.64 ug/L		0.949	113.64 ppb		0.949	0.84%
Cu 324.752†	22209.1	72.934 ug/L		0.1752	72.934 ppb		0.1752	0.24%
Fe 238.204 Radial†	16331.6	141440 ug/L		2721.2	141440 ppb		2721.2	1.92%
K 766.490 Radial†	120052.0	23118 ug/L		465.2	23118 ppb		465.2	2.01%

Mg 279.077 IEC†	794.4	24447 ug/L	31.2	24447 ppb	31.2	0.13%
Mn 257.610†	2178687.1	2300.1 ug/L	2.01	2300.1 ppb	2.01	0.09%
Mo 202.031†	-100.4	7.2571 ug/L	1.45661	7.2571 ppb	1.45661	20.07%
Na 589.592 Radial†	10045.4	2859.1 ug/L	54.59	2859.1 ppb	54.59	1.91%
Ni 231.604†	3904.4	85.407 ug/L	0.8353	85.407 ppb	0.8353	0.98%
P 214.914†	1333.5	569.86 ug/L	3.952	569.86 ppb	3.952	0.69%
Pb 220.353†	844.6	102.92 ug/L	0.829	102.92 ppb	0.829	0.81%
S 181.975 Axial†	573.5	631.28 ug/L	5.301	631.28 ppb	5.301	0.84%
Sb 206.836†	51.7	1.0039 ug/L	4.70380	1.0039 ppb	4.70380	468.55%
Se 196.026†	-735.4	48.096 ug/L	11.2977	48.096 ppb	11.2977	23.49%
Si 251.611†	1166257.0	33480 ug/L	16.5	33480 ppb	16.5	0.05%
Sn 189.927†	-118.1	-13.126 ug/L	0.4590	-13.126 ppb	0.4590	3.50%
Sr 421.552†	48082.9	318.66 ug/L	5.658	318.66 ppb	5.658	1.78%
Ti 334.940†	2513717.7	3939.2 ug/L	1.68	3939.2 ppb	1.68	0.04%
Tl 190.801†	-182.8	-3.9572 ug/L	0.64510	-3.9572 ppb	0.64510	16.30%
U 409.014†	-7937.2	-253.20 ug/L	1.406	-253.20 ppb	1.406	0.56%
V 292.402†	40296.8	227.15 ug/L	0.304	227.15 ppb	0.304	0.13%
Zn 213.857†	33897.6	269.68 ug/L	0.201	269.68 ppb	0.201	0.07%
SiO2†	1164966.3	72113 ug/L	132.6	72113 ppb	132.6	0.18%

Sequence No.: 19

Sample ID: 1202001497|935381|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 42

Date Collected: 1/5/2010 17:00:45

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202001497|935381|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4955.9	4955.9	97.5 %		17:02:58
1	Y RADIAL	5597.8	5597.8	104.4 %		17:02:58
1	Al 396.153Radial†	220263.3	226028.0	183560 ug/L	183560 ppb	17:02:38
1	Ca 317.933Radial†	15953.6	16351.5	25951 ug/L	25951 ppb	17:02:38
1	Fe 238.204 Radial†	18406.3	18871.7	163450 ug/L	163450 ppb	17:02:38
1	K 766.490 Radial†	165811.0	166804.6	32128 ug/L	32128 ppb	17:02:38
1	Mg 279.077 IEC†	1073.9	1098.1	33828 ug/L	33828 ppb	17:02:58
1	Na 589.592 Radial†	25264.1	27660.8	7872.8 ug/L	7872.8 ppb	17:02:38
1	Sr 421.552†	113910.7	116874.4	774.84 ug/L	774.84 ppb	17:02:38
1	Sc 361.383	910515.0	910515.0	99.512 %		17:03:59
1	Y 371.029	827166.2	827166.2	105.83 %		17:03:59
1	Ag 328.068†	102638.3	102628.7	498.08 ug/L	498.08 ppb	17:03:59
1	As 188.979†	1306.7	1344.3	542.18 ug/L	542.18 ppb	17:04:04
1	B 249.677†	24350.5	25183.3	492.74 ug/L	492.74 ppb	17:03:59
1	Ba 233.527†	257203.7	258456.0	1889.4 ug/L	1889.4 ppb	17:03:59
1	Be 313.107†	1460779.9	1472316.4	507.09 ug/L	507.09 ppb	17:03:59
1	Cd 226.502†	51577.1	52080.6	473.90 ug/L	473.90 ppb	17:04:04
1	Co 228.616†	28633.1	28862.5	527.87 ug/L	527.87 ppb	17:04:04
1	Cr 267.716†	63688.6	63884.6	644.00 ug/L	644.00 ppb	17:03:59
1	Cu 324.752†	205678.1	198588.2	595.98 ug/L	595.98 ppb	17:03:59
1	Mn 257.610†	2581050.9	2593035.7	2736.9 ug/L	2736.9 ppb	17:03:59
1	Mo 202.031†	7280.5	7292.9	473.22 ug/L	473.22 ppb	17:04:04
1	Ni 231.604†	26901.5	26916.1	588.66 ug/L	588.66 ppb	17:04:04
1	P 214.914†	2804.6	2565.7	1100.6 ug/L	1100.6 ppb	17:04:04
1	Pb 220.353†	5261.9	5388.4	586.31 ug/L	586.31 ppb	17:04:04
1	S 181.975 Axial†	5024.3	4986.5	5660.1 ug/L	5660.1 ppb	17:04:04
1	Sb 206.836†	1236.3	1201.7	344.10 ug/L	344.10 ppb	17:04:04
1	Se 196.026†	39.2	74.6	534.34 ug/L	534.34 ppb	17:04:04
1	Si 251.611†	1173709.4	1178801.5	33827 ug/L	33827 ppb	17:03:59
1	Sn 189.927†	3257.4	3269.2	489.62 ug/L	489.62 ppb	17:04:04
1	Ti 334.940†	3322480.7	3340561.3	5234.3 ug/L	5234.3 ppb	17:03:59
1	Tl 190.801†	1526.3	1579.7	489.33 ug/L	489.33 ppb	17:04:04
1	U 409.014†	6227.3	8884.1	241.46 ug/L	241.46 ppb	17:03:59
1	V 292.402†	119724.7	122111.9	743.73 ug/L	743.73 ppb	17:03:59
1	Zn 213.857†	98046.8	97669.3	788.27 ug/L	788.27 ppb	17:03:59
1	SiO2†	1179052.1	1184148.1	73273 ug/L	73273 ppb	17:04:39
2	Sc Radial	4999.0	4999.0	98.3 %		17:03:23
2	Y RADIAL	5632.0	5632.0	105.1 %		17:03:23
2	Al 396.153Radial†	220020.7	223830.5	181780 ug/L	181780 ppb	17:03:03
2	Ca 317.933Radial†	15885.4	16140.8	25616 ug/L	25616 ppb	17:03:03
2	Fe 238.204 Radial†	18355.2	18656.8	161590 ug/L	161590 ppb	17:03:03
2	K 766.490 Radial†	165577.1	165098.3	31799 ug/L	31799 ppb	17:03:03
2	Mg 279.077 IEC†	1077.2	1091.9	33638 ug/L	33638 ppb	17:03:23
2	Na 589.592 Radial†	25165.5	27336.8	7780.6 ug/L	7780.6 ppb	17:03:03
2	Sr 421.552†	113949.9	115905.5	768.42 ug/L	768.42 ppb	17:03:03
2	Sc 361.383	913394.2	913394.2	99.827 %		17:04:13
2	Y 371.029	830673.4	830673.4	106.28 %		17:04:13
2	Ag 328.068†	102995.4	102661.3	497.60 ug/L	497.60 ppb	17:04:13
2	As 188.979†	1300.1	1333.6	538.11 ug/L	538.11 ppb	17:04:18
2	B 249.677†	24540.0	25296.0	495.31 ug/L	495.31 ppb	17:04:13
2	Ba 233.527†	257937.8	258376.7	1888.8 ug/L	1888.8 ppb	17:04:13
2	Be 313.107†	1465609.6	1472527.2	507.17 ug/L	507.17 ppb	17:04:13
2	Cd 226.502†	51733.8	52074.1	474.02 ug/L	474.02 ppb	17:04:18
2	Co 228.616†	28575.6	28714.1	525.12 ug/L	525.12 ppb	17:04:18
2	Cr 267.716†	63874.9	63869.5	643.81 ug/L	643.81 ppb	17:04:13
2	Cu 324.752†	206634.4	198894.6	596.79 ug/L	596.79 ppb	17:04:13
2	Mn 257.610†	2586797.9	2590617.0	2734.2 ug/L	2734.2 ppb	17:04:13
2	Mo 202.031†	7285.8	7275.2	471.93 ug/L	471.93 ppb	17:04:18
2	Ni 231.604†	27035.2	26964.8	589.73 ug/L	589.73 ppb	17:04:18

2	P 214.914†	2729.4	2481.5	1060.0 ug/L	1060.0 ppb	17:04:18
2	Pb 220.353†	5243.7	5353.5	582.45 ug/L	582.45 ppb	17:04:18
2	S 181.975 Axial†	5034.0	4980.3	5653.4 ug/L	5653.4 ppb	17:04:18
2	Sb 206.836†	1285.7	1247.2	357.50 ug/L	357.50 ppb	17:04:18
2	Se 196.026†	47.1	82.4	532.72 ug/L	532.72 ppb	17:04:18
2	Si 251.611†	1176091.3	1177469.7	33789 ug/L	33789 ppb	17:04:13
2	Sn 189.927†	3237.1	3238.6	485.01 ug/L	485.01 ppb	17:04:18
2	Ti 334.940†	3333798.5	3341374.4	5235.6 ug/L	5235.6 ppb	17:04:13
2	Tl 190.801†	1502.1	1550.7	481.33 ug/L	481.33 ppb	17:04:18
2	U 409.014†	6367.8	9005.1	245.28 ug/L	245.28 ppb	17:04:13
2	V 292.402†	120116.9	122125.5	744.08 ug/L	744.08 ppb	17:04:13
2	Zn 213.857†	98246.9	97559.1	787.46 ug/L	787.46 ppb	17:04:13
2	SiO2†	1194742.2	1196130.6	74015 ug/L	74015 ppb	17:04:44
3	Sc Radial	4964.6	4964.6	97.6 %		17:03:48
3	Y RADIAL	5605.6	5605.6	104.6 %		17:03:48
3	Al 396.153Radial†	217518.8	222818.5	180950 ug/L	180950 ppb	17:03:28
3	Ca 317.933Radial†	15693.6	16056.3	25482 ug/L	25482 ppb	17:03:28
3	Fe 238.204 Radial†	18138.5	18564.1	160780 ug/L	160780 ppb	17:03:28
3	K 766.490 Radial†	163308.8	163941.7	31576 ug/L	31576 ppb	17:03:28
3	Mg 279.077 IEC†	1067.6	1089.7	33570 ug/L	33570 ppb	17:03:48
3	Na 589.592 Radial†	24811.3	27151.4	7727.8 ug/L	7727.8 ppb	17:03:28
3	Sr 421.552†	112464.6	115187.1	763.66 ug/L	763.66 ppb	17:03:28
3	Sc 361.383	919802.1	919802.1	100.53 %		17:04:27
3	Y 371.029	835535.6	835535.6	106.90 %		17:04:27
3	Ag 328.068†	103627.0	102570.8	496.94 ug/L	496.94 ppb	17:04:27
3	As 188.979†	1300.5	1324.9	534.91 ug/L	534.91 ppb	17:04:32
3	B 249.677†	24615.3	25199.6	493.45 ug/L	493.45 ppb	17:04:27
3	Ba 233.527†	259636.1	258266.0	1887.9 ug/L	1887.9 ppb	17:04:27
3	Be 313.107†	1475412.8	1472051.1	507.00 ug/L	507.00 ppb	17:04:27
3	Cd 226.502†	51596.2	51576.2	469.41 ug/L	469.41 ppb	17:04:32
3	Co 228.616†	28507.5	28446.9	520.13 ug/L	520.13 ppb	17:04:32
3	Cr 267.716†	64348.1	63894.1	644.05 ug/L	644.05 ppb	17:04:27
3	Cu 324.752†	207772.9	198585.1	595.83 ug/L	595.83 ppb	17:04:27
3	Mn 257.610†	2605464.9	2591133.8	2734.7 ug/L	2734.7 ppb	17:04:27
3	Mo 202.031†	7265.0	7203.6	467.36 ug/L	467.36 ppb	17:04:32
3	Ni 231.604†	26842.5	26584.4	581.41 ug/L	581.41 ppb	17:04:32
3	P 214.914†	2766.0	2498.9	1069.0 ug/L	1069.0 ppb	17:04:32
3	Pb 220.353†	5243.9	5317.2	578.56 ug/L	578.56 ppb	17:04:32
3	S 181.975 Axial†	4977.9	4889.4	5549.7 ug/L	5549.7 ppb	17:04:32
3	Sb 206.836†	1297.4	1249.8	358.06 ug/L	358.06 ppb	17:04:32
3	Se 196.026†	24.9	60.1	518.85 ug/L	518.85 ppb	17:04:32
3	Si 251.611†	1184559.2	1177685.6	33796 ug/L	33796 ppb	17:04:27
3	Sn 189.927†	3205.6	3184.6	476.99 ug/L	476.99 ppb	17:04:32
3	Ti 334.940†	3354912.0	3339111.8	5232.0 ug/L	5232.0 ppb	17:04:27
3	Tl 190.801†	1537.7	1575.6	488.14 ug/L	488.14 ppb	17:04:32
3	U 409.014†	6338.1	8931.1	243.18 ug/L	243.18 ppb	17:04:27
3	V 292.402†	120870.6	122037.0	743.58 ug/L	743.58 ppb	17:04:27
3	Zn 213.857†	98980.3	97603.0	787.92 ug/L	787.92 ppb	17:04:27
3	SiO2†	1197201.2	1190239.0	73651 ug/L	73651 ppb	17:04:50

Mean Data: 1202001497|935381|1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	914570.4	99.955 %		0.5196			0.52%
Sc Radial	4973.2	97.8 %		0.45			0.46%
Y 371.029	831125.0	106.34 %		0.538			0.51%
Y RADIAL	5611.8	104.7 %		0.33			0.32%
Ag 328.068†	102620.2	497.54 ug/L		0.570	497.54 ppb	0.570	0.11%
Al 396.153Radial†	224225.7	182100 ug/L		1332.6	182100 ppb	1332.6	0.73%
As 188.979†	1334.3	538.40 ug/L		3.644	538.40 ppb	3.644	0.68%
B 249.677†	25226.3	493.83 ug/L		1.323	493.83 ppb	1.323	0.27%
Ba 233.527†	258366.2	1888.7 ug/L		0.73	1888.7 ppb	0.73	0.04%
Be 313.107†	1472298.3	507.09 ug/L		0.084	507.09 ppb	0.084	0.02%
Ca 317.933Radial†	16182.9	25683 ug/L		241.3	25683 ppb	241.3	0.94%
Cd 226.502†	51910.3	472.44 ug/L		2.625	472.44 ppb	2.625	0.56%
Co 228.616†	28674.5	524.37 ug/L		3.924	524.37 ppb	3.924	0.75%
Cr 267.716†	63882.8	643.96 ug/L		0.124	643.96 ppb	0.124	0.02%
Cu 324.752†	198689.3	596.20 ug/L		0.516	596.20 ppb	0.516	0.09%
Fe 238.204 Radial†	18697.5	161940 ug/L		1366.8	161940 ppb	1366.8	0.84%
K 766.490 Radial†	165281.5	31834 ug/L		277.6	31834 ppb	277.6	0.87%

Mg 279.077 IEC†	1093.2	33679 ug/L	133.4	33679 ppb	133.4	0.40%
Mn 257.610†	2591595.5	2735.3 ug/L	1.46	2735.3 ppb	1.46	0.05%
Mo 202.031†	7257.2	470.84 ug/L	3.076	470.84 ppb	3.076	0.65%
Na 589.592 Radial†	27383.0	7793.7 ug/L	73.39	7793.7 ppb	73.39	0.94%
Ni 231.604†	26821.7	586.60 ug/L	4.528	586.60 ppb	4.528	0.77%
P 214.914†	2515.4	1076.6 ug/L	21.33	1076.6 ppb	21.33	1.98%
Pb 220.353†	5353.0	582.44 ug/L	3.876	582.44 ppb	3.876	0.67%
S 181.975 Axial†	4952.1	5621.1 ug/L	61.88	5621.1 ppb	61.88	1.10%
Sb 206.836†	1232.9	353.22 ug/L	7.904	353.22 ppb	7.904	2.24%
Se 196.026†	72.4	528.64 ug/L	8.511	528.64 ppb	8.511	1.61%
Si 251.611†	1177985.6	33804 ug/L	20.4	33804 ppb	20.4	0.06%
Sn 189.927†	3230.8	483.87 ug/L	6.391	483.87 ppb	6.391	1.32%
Sr 421.552†	115989.0	768.98 ug/L	5.613	768.98 ppb	5.613	0.73%
Ti 334.940†	3340349.1	5234.0 ug/L	1.80	5234.0 ppb	1.80	0.03%
Tl 190.801†	1568.7	486.27 ug/L	4.313	486.27 ppb	4.313	0.89%
U 409.014†	8940.1	243.30 ug/L	1.913	243.30 ppb	1.913	0.79%
V 292.402†	122091.4	743.80 ug/L	0.257	743.80 ppb	0.257	0.03%
Zn 213.857†	97610.5	787.88 ug/L	0.406	787.88 ppb	0.406	0.05%
SiO2†	1190172.6	73646 ug/L	371.1	73646 ppb	371.1	0.50%

Sequence No.: 20

Sample ID: 1202001499|935381|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 43

Date Collected: 1/5/2010 17:07:01

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 1202001499|935381|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4943.5	4943.5	97.2 %		17:09:14
1	Y RADIAL	5546.1	5546.1	103.4 %		17:09:14
1	Al 396.153Radial†	191217.3	196716.8	159750 ug/L	159750 ppb	17:08:54
1	Ca 317.933Radial†	14055.1	14439.7	22917 ug/L	22917 ppb	17:09:14
1	Fe 238.204 Radial†	17976.7	18477.2	160030 ug/L	160030 ppb	17:08:54
1	K 766.490 Radial†	156726.3	157886.5	30342 ug/L	30342 ppb	17:08:54
1	Mg 279.077 IEC†	1032.7	1058.4	32604 ug/L	32604 ppb	17:09:14
1	Na 589.592 Radial†	25382.6	27847.8	7926.0 ug/L	7926.0 ppb	17:08:54
1	Sr 421.552†	112797.3	116022.4	769.22 ug/L	769.22 ppb	17:08:54
1	Sc 361.383	918786.5	918786.5	100.42 %		17:10:20
1	Y 371.029	832994.1	832994.1	106.57 %		17:10:20
1	Ag 328.068†	104996.7	104048.7	503.14 ug/L	503.14 ppb	17:10:20
1	As 188.979†	1300.2	1326.1	536.31 ug/L	536.31 ppb	17:10:40
1	B 249.677†	24886.6	25496.9	499.53 ug/L	499.53 ppb	17:10:20
1	Ba 233.527†	277706.3	276546.8	2021.2 ug/L	2021.2 ppb	17:10:20
1	Be 313.107†	1475609.0	1473868.8	507.87 ug/L	507.87 ppb	17:10:20
1	Cd 226.502†	51883.1	51918.7	472.71 ug/L	472.71 ppb	17:10:20
1	Co 228.616†	30820.8	30782.1	563.58 ug/L	563.58 ppb	17:10:40
1	Cr 267.716†	61902.1	61529.4	620.38 ug/L	620.38 ppb	17:10:20
1	Cu 324.752†	208438.3	199476.2	598.43 ug/L	598.43 ppb	17:10:20
1	Mn 257.610†	7621339.7	7589085.4	7979.7 ug/L	7979.7 ppb	17:10:13
1	Mo 202.031†	7290.1	7236.6	469.36 ug/L	469.36 ppb	17:10:40
1	Ni 231.604†	26890.5	26661.8	583.07 ug/L	583.07 ppb	17:10:40
1	P 214.914†	2767.2	2503.2	1064.0 ug/L	1064.0 ppb	17:10:40
1	Pb 220.353†	5570.4	5648.1	608.13 ug/L	608.13 ppb	17:10:40
1	S 181.975 Axial†	4901.9	4819.2	5473.7 ug/L	5473.7 ppb	17:10:40
1	Sb 206.836†	1331.3	1285.1	369.33 ug/L	369.33 ppb	17:10:40
1	Se 196.026†	78.5	113.4	541.87 ug/L	541.87 ppb	17:10:40
1	Si 251.611†	1223516.0	1217783.4	34947 ug/L	34947 ppb	17:10:20
1	Sn 189.927†	3195.4	3178.1	475.73 ug/L	475.73 ppb	17:10:40
1	Ti 334.940†	3436725.7	3424275.4	5365.3 ug/L	5365.3 ppb	17:10:13
1	Tl 190.801†	1396.5	1436.6	481.00 ug/L	481.00 ppb	17:10:40
1	U 409.014†	5163.3	7768.2	208.86 ug/L	208.86 ppb	17:10:20
1	V 292.402†	122011.2	123305.7	751.47 ug/L	751.47 ppb	17:10:20
1	Zn 213.857†	102228.1	100946.2	815.44 ug/L	815.44 ppb	17:10:20
1	SiO2†	1228289.0	1222514.5	75650 ug/L	75650 ppb	17:11:54
2	Sc Radial	4957.9	4957.9	97.5 %		17:09:39
2	Y RADIAL	5568.3	5568.3	103.9 %		17:09:39
2	Al 396.153Radial†	192916.7	197887.5	160710 ug/L	160710 ppb	17:09:19
2	Ca 317.933Radial†	14020.7	14362.3	22794 ug/L	22794 ppb	17:09:39
2	Fe 238.204 Radial†	18108.6	18558.7	160740 ug/L	160740 ppb	17:09:19
2	K 766.490 Radial†	157767.2	158485.1	30458 ug/L	30458 ppb	17:09:19
2	Mg 279.077 IEC†	1029.3	1051.9	32401 ug/L	32401 ppb	17:09:39
2	Na 589.592 Radial†	25501.1	27893.3	7939.0 ug/L	7939.0 ppb	17:09:19
2	Sr 421.552†	113714.6	116625.7	773.22 ug/L	773.22 ppb	17:09:19
2	Sc 361.383	923597.5	923597.5	100.94 %		17:10:54
2	Y 371.029	836392.9	836392.9	107.01 %		17:10:54
2	Ag 328.068†	105617.1	104118.7	503.68 ug/L	503.68 ppb	17:10:54
2	As 188.979†	1290.6	1309.8	530.26 ug/L	530.26 ppb	17:11:14
2	B 249.677†	24939.4	25420.0	497.87 ug/L	497.87 ppb	17:10:54
2	Ba 233.527†	279656.7	277038.5	2024.8 ug/L	2024.8 ppb	17:10:54
2	Be 313.107†	1484967.7	1475485.7	508.32 ug/L	508.32 ppb	17:10:54
2	Cd 226.502†	52315.0	52077.4	474.13 ug/L	474.13 ppb	17:10:54
2	Co 228.616†	30869.6	30670.5	561.59 ug/L	561.59 ppb	17:11:14
2	Cr 267.716†	62182.1	61485.7	619.95 ug/L	619.95 ppb	17:10:54
2	Cu 324.752†	209925.2	199867.9	599.63 ug/L	599.63 ppb	17:10:54
2	Mn 257.610†	7591269.6	7519761.0	7907.0 ug/L	7907.0 ppb	17:10:47
2	Mo 202.031†	7309.0	7217.5	468.23 ug/L	468.23 ppb	17:11:14
2	Ni 231.604†	26941.5	26572.8	581.13 ug/L	581.13 ppb	17:11:14

2	P 214.914†	2736.3	2458.2	1041.6 ug/L	1041.6 ppb	17:11:14
2	Pb 220.353†	5556.9	5605.7	603.89 ug/L	603.89 ppb	17:11:14
2	S 181.975 Axial†	4919.2	4810.9	5464.0 ug/L	5464.0 ppb	17:11:14
2	Sb 206.836†	1355.3	1301.9	374.46 ug/L	374.46 ppb	17:11:14
2	Se 196.026†	70.0	104.6	539.51 ug/L	539.51 ppb	17:11:14
2	Si 251.611†	1232062.9	1219903.8	35008 ug/L	35008 ppb	17:10:54
2	Sn 189.927†	3221.3	3187.1	477.07 ug/L	477.07 ppb	17:11:14
2	Ti 334.940†	3423335.5	3393182.5	5316.6 ug/L	5316.6 ppb	17:10:47
2	Tl 190.801†	1398.9	1431.8	478.92 ug/L	478.92 ppb	17:11:14
2	U 409.014†	5381.5	7957.5	214.39 ug/L	214.39 ppb	17:10:54
2	V 292.402†	122833.0	123487.0	752.54 ug/L	752.54 ppb	17:10:54
2	Zn 213.857†	102771.0	100953.7	815.49 ug/L	815.49 ppb	17:10:54
2	SiO2†	1222620.6	1210527.3	74908 ug/L	74908 ppb	17:12:00
3	Sc Radial	4965.1	4965.1	97.6 %		17:10:04
3	Y RADIAL	5567.2	5567.2	103.8 %		17:10:04
3	Al 396.153Radial†	192817.4	197496.2	160390 ug/L	160390 ppb	17:09:44
3	Ca 317.933Radial†	14057.6	14379.1	22821 ug/L	22821 ppb	17:10:04
3	Fe 238.204 Radial†	18040.0	18461.3	159900 ug/L	159900 ppb	17:09:44
3	K 766.490 Radial†	157816.8	158299.0	30422 ug/L	30422 ppb	17:09:44
3	Mg 279.077 IEC†	1037.4	1058.6	32609 ug/L	32609 ppb	17:10:04
3	Na 589.592 Radial†	25451.3	27804.1	7913.6 ug/L	7913.6 ppb	17:09:44
3	Sr 421.552†	113449.1	116183.1	770.29 ug/L	770.29 ppb	17:09:44
3	Sc 361.383	924853.2	924853.2	101.08 %		17:11:28
3	Y 371.029	837148.0	837148.0	107.11 %		17:11:28
3	Ag 328.068†	105439.5	103800.9	502.02 ug/L	502.02 ppb	17:11:28
3	As 188.979†	1290.3	1307.8	529.51 ug/L	529.51 ppb	17:11:48
3	B 249.677†	25039.2	25485.3	499.32 ug/L	499.32 ppb	17:11:28
3	Ba 233.527†	279304.0	276313.4	2019.5 ug/L	2019.5 ppb	17:11:28
3	Be 313.107†	1483717.3	1472251.1	507.25 ug/L	507.25 ppb	17:11:28
3	Cd 226.502†	52198.9	51892.2	472.47 ug/L	472.47 ppb	17:11:28
3	Co 228.616†	30882.5	30641.8	561.04 ug/L	561.04 ppb	17:11:48
3	Cr 267.716†	62208.3	61428.0	619.35 ug/L	619.35 ppb	17:11:28
3	Cu 324.752†	209788.5	199450.3	598.35 ug/L	598.35 ppb	17:11:28
3	Mn 257.610†	7621515.4	7539472.9	7927.6 ug/L	7927.6 ppb	17:11:21
3	Mo 202.031†	7328.8	7227.3	468.76 ug/L	468.76 ppb	17:11:48
3	Ni 231.604†	27007.2	26601.5	581.76 ug/L	581.76 ppb	17:11:48
3	P 214.914†	2764.3	2482.2	1054.1 ug/L	1054.1 ppb	17:11:48
3	Pb 220.353†	5584.5	5625.6	605.96 ug/L	605.96 ppb	17:11:48
3	S 181.975 Axial†	4904.2	4789.5	5439.6 ug/L	5439.6 ppb	17:11:48
3	Sb 206.836†	1348.1	1293.0	371.82 ug/L	371.82 ppb	17:11:48
3	Se 196.026†	69.5	104.1	536.74 ug/L	536.74 ppb	17:11:48
3	Si 251.611†	1230575.7	1216775.2	34918 ug/L	34918 ppb	17:11:28
3	Sn 189.927†	3238.1	3199.4	478.88 ug/L	478.88 ppb	17:11:48
3	Ti 334.940†	3434539.2	3399661.9	5326.7 ug/L	5326.7 ppb	17:11:21
3	Tl 190.801†	1418.2	1449.0	483.82 ug/L	483.82 ppb	17:11:48
3	U 409.014†	5335.3	7904.5	212.92 ug/L	212.92 ppb	17:11:28
3	V 292.402†	122597.9	123089.2	750.17 ug/L	750.17 ppb	17:11:28
3	Zn 213.857†	102726.6	100771.6	814.02 ug/L	814.02 ppb	17:11:28
3	SiO2†	1220747.9	1207030.0	74691 ug/L	74691 ppb	17:12:06

Mean Data: 1202001499|935381|1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	922412.4	100.81 %		0.350			0.35%
Sc Radial	4955.5	97.5 %		0.22			0.22%
Y 371.029	835511.6	106.90 %		0.283			0.26%
Y RADIAL	5560.5	103.7 %		0.23			0.23%
Ag 328.068†	103989.5	502.95 ug/L		0.845	502.95 ppb	0.845	0.17%
Al 396.153Radial†	197366.8	160280 ug/L		484.1	160280 ppb	484.1	0.30%
As 188.979†	1314.5	532.02 ug/L		3.727	532.02 ppb	3.727	0.70%
B 249.677†	25467.4	498.90 ug/L		0.905	498.90 ppb	0.905	0.18%
Ba 233.527†	276632.9	2021.8 ug/L		2.71	2021.8 ppb	2.71	0.13%
Be 313.107†	1473868.5	507.82 ug/L		0.538	507.82 ppb	0.538	0.11%
Ca 317.933Radial†	14393.7	22844 ug/L		64.6	22844 ppb	64.6	0.28%
Cd 226.502†	51962.7	473.11 ug/L		0.897	473.11 ppb	0.897	0.19%
Co 228.616†	30698.1	562.07 ug/L		1.337	562.07 ppb	1.337	0.24%
Cr 267.716†	61481.0	619.89 ug/L		0.513	619.89 ppb	0.513	0.08%
Cu 324.752†	199598.1	598.80 ug/L		0.715	598.80 ppb	0.715	0.12%
Fe 238.204 Radial†	18499.0	160220 ug/L		452.5	160220 ppb	452.5	0.28%
K 766.490 Radial†	158223.5	30407 ug/L		59.6	30407 ppb	59.6	0.20%

Mg 279.077 IEC†	1056.3	32538 ug/L	118.6	32538 ppb	118.6	0.36%
Mn 257.610†	7549439.8	7938.1 ug/L	37.46	7938.1 ppb	37.46	0.47%
Mo 202.031†	7227.1	468.78 ug/L	0.567	468.78 ppb	0.567	0.12%
Na 589.592 Radial†	27848.4	7926.2 ug/L	12.71	7926.2 ppb	12.71	0.16%
Ni 231.604†	26612.0	581.99 ug/L	0.993	581.99 ppb	0.993	0.17%
P 214.914†	2481.2	1053.2 ug/L	11.27	1053.2 ppb	11.27	1.07%
Pb 220.353†	5626.5	605.99 ug/L	2.117	605.99 ppb	2.117	0.35%
S 181.975 Axial†	4806.5	5459.1 ug/L	17.56	5459.1 ppb	17.56	0.32%
Sb 206.836†	1293.3	371.87 ug/L	2.563	371.87 ppb	2.563	0.69%
Se 196.026†	107.4	539.37 ug/L	2.568	539.37 ppb	2.568	0.48%
Si 251.611†	1218154.1	34958 ug/L	45.9	34958 ppb	45.9	0.13%
Sn 189.927†	3188.2	477.23 ug/L	1.581	477.23 ppb	1.581	0.33%
Sr 421.552†	116277.1	770.91 ug/L	2.073	770.91 ppb	2.073	0.27%
Ti 334.940†	3405706.6	5336.2 ug/L	25.70	5336.2 ppb	25.70	0.48%
Tl 190.801†	1439.1	481.25 ug/L	2.457	481.25 ppb	2.457	0.51%
U 409.014†	7876.8	212.06 ug/L	2.861	212.06 ppb	2.861	1.35%
V 292.402†	123294.0	751.40 ug/L	1.187	751.40 ppb	1.187	0.16%
Zn 213.857†	100890.5	814.99 ug/L	0.832	814.99 ppb	0.832	0.10%
SiO2†	1213357.3	75083 ug/L	502.8	75083 ppb	502.8	0.67%



Sequence No.: 21  
 Sample ID: 1202001498|935381|5  
 Analyst: HSC  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 44  
 Date Collected: 1/5/2010 17:14:16  
 Data Type: Original  
 Initial Sample Vol:  
 Sample Prep Vol:

Replicate Data: 1202001498|935381|5

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4754.1	4754.1	93.5 %		17:16:09
1	Y RADIAL	5017.6	5017.6	93.59 %		17:16:09
1	Al 396.153Radial†	26525.9	28392.2	23060 ug/L	23060 ppb	17:16:09
1	Ca 317.933Radial†	2462.3	2615.5	4150.9 ug/L	4150.9 ppb	17:16:29
1	Fe 238.204 Radial†	3146.8	3351.2	29022 ug/L	29022 ppb	17:16:29
1	K 766.490 Radial†	25654.4	24109.1	4642.7 ug/L	4642.7 ppb	17:16:09
1	Mg 279.077 IEC†	155.3	162.2	4992.8 ug/L	4992.8 ppb	17:16:29
1	Na 589.592 Radial†	189.3	1940.3	552.23 ug/L	552.23 ppb	17:16:09
1	Sr 421.552†	8160.9	8721.7	57.802 ug/L	57.802 ppb	17:16:09
1	Sc 361.383	871807.7	871807.7	95.282 %		17:17:26
1	Y 371.029	768141.8	768141.8	98.278 %		17:17:26
1	Ag 328.068†	-1482.7	-2068.9	1.0065 ug/L	1.0065 ppb	17:17:26
1	As 188.979†	-45.6	-16.6	5.6099 ug/L	5.6099 ppb	17:17:46
1	B 249.677†	-101.1	607.3	8.5590 ug/L	8.5590 ppb	17:17:26
1	Ba 233.527†	42632.3	44734.9	326.87 ug/L	326.87 ppb	17:17:26
1	Be 313.107†	-3683.6	509.4	1.8032 ug/L	1.8032 ppb	17:17:26
1	Cd 226.502†	18.3	269.7	-0.3534 ug/L	-0.3534 ppb	17:17:46
1	Co 228.616†	505.0	618.9	9.5268 ug/L	9.5268 ppb	17:17:46
1	Cr 267.716†	2229.1	2223.3	22.898 ug/L	22.898 ppb	17:17:46
1	Cu 324.752†	12275.5	4785.2	15.640 ug/L	15.640 ppb	17:17:26
1	Mn 257.610†	399631.3	418752.5	442.26 ug/L	442.26 ppb	17:17:26
1	Mo 202.031†	7.4	-15.6	1.8058 ug/L	1.8058 ppb	17:17:46
1	Ni 231.604†	851.6	776.5	16.984 ug/L	16.984 ppb	17:17:46
1	P 214.914†	514.1	287.0	122.72 ug/L	122.72 ppb	17:17:46
1	Pb 220.353†	79.8	184.4	21.874 ug/L	21.874 ppb	17:17:46
1	S 181.975 Axial†	171.8	118.0	130.20 ug/L	130.20 ppb	17:17:46
1	Sb 206.836†	51.9	13.8	1.1015 ug/L	1.1015 ppb	17:17:46
1	Se 196.026†	-177.2	-150.6	9.8301 ug/L	9.8301 ppb	17:17:46
1	Si 251.611†	235909.4	246929.6	7088.7 ug/L	7088.7 ppb	17:17:26
1	Sn 189.927†	-38.1	-44.1	-5.7050 ug/L	-5.7050 ppb	17:17:46
1	Ti 334.940†	503067.6	529771.9	830.17 ug/L	830.17 ppb	17:17:26
1	Tl 190.801†	-74.0	-31.7	0.7094 ug/L	0.7094 ppb	17:17:46
1	U 409.014†	-4275.9	-1861.4	-58.851 ug/L	-58.851 ppb	17:17:26
1	V 292.402†	6452.1	8571.8	48.480 ug/L	48.480 ppb	17:17:26
1	Zn 213.857†	7516.2	7030.2	55.953 ug/L	55.953 ppb	17:17:46
1	SiO2†	234064.5	244971.1	15164 ug/L	15164 ppb	17:18:42
2	Sc Radial	4735.3	4735.3	93.1 %		17:16:34
2	Y RADIAL	5008.0	5008.0	93.41 %		17:16:34
2	Al 396.153Radial†	26570.3	28552.8	23191 ug/L	23191 ppb	17:16:34
2	Ca 317.933Radial†	2456.6	2619.8	4157.8 ug/L	4157.8 ppb	17:16:54
2	Fe 238.204 Radial†	3128.1	3344.5	28965 ug/L	28965 ppb	17:16:54
2	K 766.490 Radial†	25605.2	24165.6	4653.6 ug/L	4653.6 ppb	17:16:34
2	Mg 279.077 IEC†	152.5	159.9	4919.8 ug/L	4919.8 ppb	17:16:54
2	Na 589.592 Radial†	156.8	1906.2	542.54 ug/L	542.54 ppb	17:16:34
2	Sr 421.552†	8240.8	8842.2	58.601 ug/L	58.601 ppb	17:16:34
2	Sc 361.383	869185.4	869185.4	94.995 %		17:17:51
2	Y 371.029	765613.5	765613.5	97.954 %		17:17:51
2	Ag 328.068†	-1593.7	-2190.4	0.4638 ug/L	0.4638 ppb	17:17:51
2	As 188.979†	-34.7	-5.3	9.5548 ug/L	9.5548 ppb	17:18:11
2	B 249.677†	-135.7	570.5	7.8131 ug/L	7.8131 ppb	17:17:51
2	Ba 233.527†	42301.0	44521.1	325.31 ug/L	325.31 ppb	17:17:51
2	Be 313.107†	-3628.3	556.0	1.8149 ug/L	1.8149 ppb	17:17:51
2	Cd 226.502†	23.5	275.3	-0.2948 ug/L	-0.2948 ppb	17:18:11
2	Co 228.616†	501.5	616.9	9.4936 ug/L	9.4936 ppb	17:18:11
2	Cr 267.716†	2231.4	2232.8	22.992 ug/L	22.992 ppb	17:18:11
2	Cu 324.752†	12101.9	4641.2	15.211 ug/L	15.211 ppb	17:17:51
2	Mn 257.610†	397640.0	417921.7	441.38 ug/L	441.38 ppb	17:17:51
2	Mo 202.031†	10.8	-11.9	2.0281 ug/L	2.0281 ppb	17:18:11
2	Ni 231.604†	862.2	790.3	17.286 ug/L	17.286 ppb	17:18:11

2	P 214.914†	499.1	272.8	115.96 ug/L	115.96 ppb	17:18:11
2	Pb 220.353†	85.2	190.4	22.529 ug/L	22.529 ppb	17:18:11
2	S 181.975 Axial†	163.3	109.5	120.52 ug/L	120.52 ppb	17:18:11
2	Sb 206.836†	42.7	4.3	-1.7021 ug/L	-1.7021 ppb	17:18:11
2	Se 196.026†	-185.6	-160.1	4.8495 ug/L	4.8495 ppb	17:18:11
2	Si 251.611†	234859.8	246571.7	7078.4 ug/L	7078.4 ppb	17:17:51
2	Sn 189.927†	-33.5	-39.4	-5.0108 ug/L	-5.0108 ppb	17:18:11
2	Ti 334.940†	500332.2	528485.3	828.15 ug/L	828.15 ppb	17:17:51
2	Tl 190.801†	-81.7	-40.1	-1.5930 ug/L	-1.5930 ppb	17:18:11
2	U 409.014†	-4355.2	-1958.4	-61.720 ug/L	-61.720 ppb	17:17:51
2	V 292.402†	6294.9	8426.8	47.577 ug/L	47.577 ppb	17:17:51
2	Zn 213.857†	7547.2	7086.7	56.421 ug/L	56.421 ppb	17:18:11
2	SiO2†	235974.8	247723.2	15335 ug/L	15335 ppb	17:18:48
3	Sc Radial	4828.4	4828.4	95.0 %		17:16:59
3	Y RADIAL	5117.4	5117.4	95.45 %		17:16:59
3	Al 396.153Radial†	26967.2	28420.4	23083 ug/L	23083 ppb	17:16:59
3	Ca 317.933Radial†	2455.0	2567.2	4074.4 ug/L	4074.4 ppb	17:17:19
3	Fe 238.204 Radial†	3119.3	3270.4	28323 ug/L	28323 ppb	17:17:19
3	K 766.490 Radial†	25806.8	23847.5	4592.3 ug/L	4592.3 ppb	17:16:59
3	Mg 279.077 IEC†	154.8	159.1	4895.9 ug/L	4895.9 ppb	17:17:19
3	Na 589.592 Radial†	195.2	1943.3	553.10 ug/L	553.10 ppb	17:16:59
3	Sr 421.552†	8295.5	8729.1	57.851 ug/L	57.851 ppb	17:16:59
3	Sc 361.383	869855.9	869855.9	95.068 %		17:18:17
3	Y 371.029	765584.3	765584.3	97.950 %		17:18:17
3	Ag 328.068†	-1546.4	-2139.4	0.4717 ug/L	0.4717 ppb	17:18:17
3	As 188.979†	-44.0	-15.0	6.0417 ug/L	6.0417 ppb	17:18:37
3	B 249.677†	-216.1	486.1	6.1700 ug/L	6.1700 ppb	17:18:17
3	Ba 233.527†	42420.8	44612.8	325.96 ug/L	325.96 ppb	17:18:17
3	Be 313.107†	-3667.8	517.4	1.8032 ug/L	1.8032 ppb	17:18:17
3	Cd 226.502†	20.0	271.6	-0.2662 ug/L	-0.2662 ppb	17:18:37
3	Co 228.616†	502.4	617.5	9.5108 ug/L	9.5108 ppb	17:18:37
3	Cr 267.716†	2219.6	2218.5	22.838 ug/L	22.838 ppb	17:18:37
3	Cu 324.752†	12197.9	4732.4	15.448 ug/L	15.448 ppb	17:18:17
3	Mn 257.610†	398492.9	418496.2	441.92 ug/L	441.92 ppb	17:18:17
3	Mo 202.031†	4.3	-18.8	1.5365 ug/L	1.5365 ppb	17:18:37
3	Ni 231.604†	833.1	758.9	16.601 ug/L	16.601 ppb	17:18:37
3	P 214.914†	519.8	294.2	126.88 ug/L	126.88 ppb	17:18:37
3	Pb 220.353†	91.4	196.8	23.222 ug/L	23.222 ppb	17:18:37
3	S 181.975 Axial†	163.0	109.1	120.03 ug/L	120.03 ppb	17:18:37
3	Sb 206.836†	51.9	13.9	1.1168 ug/L	1.1168 ppb	17:18:37
3	Se 196.026†	-177.2	-151.1	7.5742 ug/L	7.5742 ppb	17:18:37
3	Si 251.611†	235295.9	246839.9	7086.1 ug/L	7086.1 ppb	17:18:17
3	Sn 189.927†	-38.2	-44.3	-5.7512 ug/L	-5.7512 ppb	17:18:37
3	Ti 334.940†	501104.2	528891.4	828.79 ug/L	828.79 ppb	17:18:17
3	Tl 190.801†	-76.1	-34.1	0.0425 ug/L	0.0425 ppb	17:18:37
3	U 409.014†	-4315.7	-1913.3	-60.302 ug/L	-60.302 ppb	17:18:17
3	V 292.402†	6421.6	8554.9	48.475 ug/L	48.475 ppb	17:18:17
3	Zn 213.857†	7479.9	7009.7	55.827 ug/L	55.827 ppb	17:18:37
3	SiO2†	239279.0	251007.3	15538 ug/L	15538 ppb	17:18:53

Mean Data: 1202001498|935381|5

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	870283.0	95.115 %		0.1489			0.16%
Sc Radial	4772.6	93.9 %		0.97			1.03%
Y 371.029	766446.5	98.061 %		0.1879			0.19%
Y RADIAL	5047.7	94.15 %		1.130			1.20%
Ag 328.068†	-2132.9	0.6473 ug/L		0.31108	0.6473 ppb	0.31108	48.05%
Al 396.153Radial†	28455.1	23111 ug/L		69.7	23111 ppb	69.7	0.30%
As 188.979†	-12.3	7.0688 ug/L		2.16376	7.0688 ppb	2.16376	30.61%
B 249.677†	554.6	7.5140 ug/L		1.22227	7.5140 ppb	1.22227	16.27%
Ba 233.527†	44622.9	326.04 ug/L		0.784	326.04 ppb	0.784	0.24%
Be 313.107†	527.6	1.8071 ug/L		0.00679	1.8071 ppb	0.00679	0.38%
Ca 317.933Radial†	2600.8	4127.7 ug/L		46.31	4127.7 ppb	46.31	1.12%
Cd 226.502†	272.2	-0.3048 ug/L		0.04444	-0.3048 ppb	0.04444	14.58%
Co 228.616†	617.8	9.5104 ug/L		0.01662	9.5104 ppb	0.01662	0.17%
Cr 267.716†	2224.9	22.909 ug/L		0.0773	22.909 ppb	0.0773	0.34%
Cu 324.752†	4719.6	15.433 ug/L		0.2148	15.433 ppb	0.2148	1.39%
Fe 238.204 Radial†	3322.0	28770 ug/L		388.3	28770 ppb	388.3	1.35%
K 766.490 Radial†	24040.7	4629.6 ug/L		32.72	4629.6 ppb	32.72	0.71%

Mg 279.077 IEC†	160.4	4936.2 ug/L	50.47	4936.2 ppb	50.47	1.02%
Mn 257.610†	418390.1	441.85 ug/L	0.442	441.85 ppb	0.442	0.10%
Mo 202.031†	-15.4	1.7901 ug/L	0.24617	1.7901 ppb	0.24617	13.75%
Na 589.592 Radial†	1929.9	549.29 ug/L	5.866	549.29 ppb	5.866	1.07%
Ni 231.604†	775.2	16.957 ug/L	0.3436	16.957 ppb	0.3436	2.03%
P 214.914†	284.7	121.85 ug/L	5.507	121.85 ppb	5.507	4.52%
Pb 220.353†	190.6	22.541 ug/L	0.6739	22.541 ppb	0.6739	2.99%
S 181.975 Axial†	112.2	123.58 ug/L	5.738	123.58 ppb	5.738	4.64%
Sb 206.836†	10.6	0.1721 ug/L	1.62305	0.1721 ppb	1.62305	943.35%
Se 196.026†	-153.9	7.4179 ug/L	2.49397	7.4179 ppb	2.49397	33.62%
Si 251.611†	246780.4	7084.4 ug/L	5.36	7084.4 ppb	5.36	0.08%
Sn 189.927†	-42.6	-5.4890 ug/L	0.41478	-5.4890 ppb	0.41478	7.56%
Sr 421.552†	8764.3	58.085 ug/L	0.4479	58.085 ppb	0.4479	0.77%
Ti 334.940†	529049.5	829.04 ug/L	1.030	829.04 ppb	1.030	0.12%
Tl 190.801†	-35.3	-0.2804 ug/L	1.18468	-0.2804 ppb	1.18468	422.56%
U 409.014†	-1911.1	-60.291 ug/L	1.4344	-60.291 ppb	1.4344	2.38%
V 292.402†	8517.8	48.177 ug/L	0.5201	48.177 ppb	0.5201	1.08%
Zn 213.857†	7042.2	56.067 ug/L	0.3131	56.067 ppb	0.3131	0.56%
SiO2†	247900.5	15346 ug/L	187.1	15346 ppb	187.1	1.22%

Sequence No.: 23

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/5/2010 17:27:58

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	4955.4	4955.4	97.4 %		17:29:49
1	Y RADIAL	5111.3	5111.3	95.34 %		17:29:49
1	Al 396.153Radial†	5714.8	5883.9	4757.2 ug/L	4757.2 ppb	17:29:49
1	Ca 317.933Radial†	2993.7	3053.8	4846.6 ug/L	4846.6 ppb	17:30:09
1	Fe 238.204 Radial†	592.0	592.8	5149.4 ug/L	5149.4 ppb	17:30:09
1	K 766.490 Radial†	29609.2	27052.8	5203.0 ug/L	5203.0 ppb	17:29:49
1	Mg 279.077 IEC†	158.8	159.1	4925.4 ug/L	4925.4 ppb	17:30:09
1	Na 589.592 Radial†	35287.3	37948.5	10801 ug/L	10801 ppb	17:29:49
1	Sr 421.552†	72764.3	74661.0	495.09 ug/L	495.09 ppb	17:29:49
1	Sc 361.383	894014.4	894014.4	97.709 %		17:31:08
1	Y 371.029	755072.3	755072.3	96.605 %		17:31:08
1	Ag 328.068†	114290.9	116458.2	503.66 ug/L	503.66 ppb	17:31:08
1	As 188.979†	1373.6	1437.0	510.56 ug/L	510.56 ppb	17:31:29
1	B 249.677†	22911.9	24162.6	492.94 ug/L	492.94 ppb	17:31:08
1	Ba 233.527†	67484.2	69058.1	504.52 ug/L	504.52 ppb	17:31:08
1	Be 313.107†	1446716.0	1485016.2	502.08 ug/L	502.08 ppb	17:31:08
1	Cd 226.502†	52116.1	53588.8	503.85 ug/L	503.85 ppb	17:31:08
1	Co 228.616†	26132.0	26833.7	501.83 ug/L	501.83 ppb	17:31:29
1	Cr 267.716†	48876.2	49906.1	500.63 ug/L	500.63 ppb	17:31:08
1	Cu 324.752†	172993.5	168951.8	500.21 ug/L	500.21 ppb	17:31:08
1	Mn 257.610†	471029.6	481407.0	505.63 ug/L	505.63 ppb	17:31:08
1	Mo 202.031†	7916.9	8079.2	507.38 ug/L	507.38 ppb	17:31:29
1	Ni 231.604†	22475.3	22885.0	500.47 ug/L	500.47 ppb	17:31:29
1	P 214.914†	5324.7	5197.0	2471.9 ug/L	2471.9 ppb	17:31:29
1	Pb 220.353†	4683.9	4894.5	508.23 ug/L	508.23 ppb	17:31:29
1	S 181.975 Axial†	935.5	895.0	1021.5 ug/L	1021.5 ppb	17:31:29
1	Sb 206.836†	1693.6	1692.7	509.02 ug/L	509.02 ppb	17:31:29
1	Se 196.026†	941.2	998.5	527.96 ug/L	527.96 ppb	17:31:29
1	Si 251.611†	86328.6	87691.2	2505.8 ug/L	2505.8 ppb	17:31:08
1	Sn 189.927†	3314.4	3388.0	502.81 ug/L	502.81 ppb	17:31:29
1	Ti 334.940†	312331.8	321448.9	503.44 ug/L	503.44 ppb	17:31:08
1	Tl 190.801†	1761.6	1848.9	509.66 ug/L	509.66 ppb	17:31:29
1	U 409.014†	13505.1	16448.0	485.77 ug/L	485.77 ppb	17:31:08
1	V 292.402†	75683.3	79258.3	504.46 ug/L	504.46 ppb	17:31:08
1	Zn 213.857†	60698.4	61263.5	499.06 ug/L	499.06 ppb	17:31:08
1	SiO2†	87325.4	88689.2	5464.8 ug/L	5464.8 ppb	17:32:29
2	Sc Radial	4874.7	4874.7	95.9 %		17:30:14
2	Y RADIAL	5015.1	5015.1	93.55 %		17:30:14
2	Al 396.153Radial†	5637.9	5900.8	4771.2 ug/L	4771.2 ppb	17:30:14
2	Ca 317.933Radial†	3007.2	3118.8	4949.7 ug/L	4949.7 ppb	17:30:35
2	Fe 238.204 Radial†	597.7	608.8	5288.2 ug/L	5288.2 ppb	17:30:35
2	K 766.490 Radial†	29220.5	27150.4	5221.8 ug/L	5221.8 ppb	17:30:14
2	Mg 279.077 IEC†	160.7	163.7	5069.1 ug/L	5069.1 ppb	17:30:35
2	Na 589.592 Radial†	34914.1	38158.9	10861 ug/L	10861 ppb	17:30:14
2	Sr 421.552†	71906.4	75002.6	497.35 ug/L	497.35 ppb	17:30:14
2	Sc 361.383	898187.2	898187.2	98.165 %		17:31:36
2	Y 371.029	758152.4	758152.4	96.999 %		17:31:36
2	Ag 328.068†	114808.0	116441.6	503.64 ug/L	503.64 ppb	17:31:36
2	As 188.979†	1356.7	1413.3	502.24 ug/L	502.24 ppb	17:31:56
2	B 249.677†	23162.8	24309.2	495.93 ug/L	495.93 ppb	17:31:36
2	Ba 233.527†	67895.6	69156.4	505.25 ug/L	505.25 ppb	17:31:36
2	Be 313.107†	1453884.7	1485440.0	502.23 ug/L	502.23 ppb	17:31:36
2	Cd 226.502†	52176.1	53402.1	502.08 ug/L	502.08 ppb	17:31:36
2	Co 228.616†	26029.0	26604.6	497.52 ug/L	497.52 ppb	17:31:56
2	Cr 267.716†	48988.1	49787.7	499.45 ug/L	499.45 ppb	17:31:36
2	Cu 324.752†	174091.8	169248.2	501.09 ug/L	501.09 ppb	17:31:36
2	Mn 257.610†	474004.8	482198.2	506.47 ug/L	506.47 ppb	17:31:36
2	Mo 202.031†	7856.4	7980.0	501.17 ug/L	501.17 ppb	17:31:56
2	Ni 231.604†	22390.2	22691.4	496.24 ug/L	496.24 ppb	17:31:56

2	P 214.914†	5284.5	5130.7	2439.0 ug/L	2439.0 ppb	17:31:56
2	Pb 220.353†	4676.8	4865.0	505.16 ug/L	505.16 ppb	17:31:56
2	S 181.975 Axial†	920.7	875.6	999.22 ug/L	999.22 ppb	17:31:56
2	Sb 206.836†	1670.3	1660.8	499.40 ug/L	499.40 ppb	17:31:56
2	Se 196.026†	942.6	995.6	526.82 ug/L	526.82 ppb	17:31:56
2	Si 251.611†	86825.3	87786.8	2508.6 ug/L	2508.6 ppb	17:31:36
2	Sn 189.927†	3296.7	3354.2	497.81 ug/L	497.81 ppb	17:31:56
2	Ti 334.940†	314153.3	321819.3	504.03 ug/L	504.03 ppb	17:31:36
2	Tl 190.801†	1737.3	1815.7	500.60 ug/L	500.60 ppb	17:31:56
2	U 409.014†	13514.1	16392.9	484.13 ug/L	484.13 ppb	17:31:36
2	V 292.402†	76203.2	79428.1	505.42 ug/L	505.42 ppb	17:31:36
2	Zn 213.857†	61008.2	61290.5	499.29 ug/L	499.29 ppb	17:31:36
2	SiO2†	86482.8	87415.6	5386.2 ug/L	5386.2 ppb	17:32:34
3	Sc Radial	4778.2	4778.2	94.0 %		17:30:40
3	Y RADIAL	4999.1	4999.1	93.25 %		17:30:40
3	Al 396.153Radial†	5629.0	6010.1	4859.7 ug/L	4859.7 ppb	17:30:40
3	Ca 317.933Radial†	2987.8	3161.5	5017.5 ug/L	5017.5 ppb	17:31:00
3	Fe 238.204 Radial†	586.8	609.8	5296.9 ug/L	5296.9 ppb	17:31:00
3	K 766.490 Radial†	29055.5	27590.3	5306.5 ug/L	5306.5 ppb	17:30:40
3	Mg 279.077 IEC†	164.4	171.1	5297.9 ug/L	5297.9 ppb	17:31:00
3	Na 589.592 Radial†	34277.7	38216.9	10877 ug/L	10877 ppb	17:30:40
3	Sr 421.552†	70946.9	75496.0	500.63 ug/L	500.63 ppb	17:30:40
3	Sc 361.383	895081.4	895081.4	97.825 %		17:32:03
3	Y 371.029	755948.1	755948.1	96.717 %		17:32:03
3	Ag 328.068†	114302.1	116330.2	503.16 ug/L	503.16 ppb	17:32:03
3	As 188.979†	1368.8	1430.5	508.29 ug/L	508.29 ppb	17:32:23
3	B 249.677†	23051.9	24277.8	495.27 ug/L	495.27 ppb	17:32:03
3	Ba 233.527†	67488.9	68980.6	503.96 ug/L	503.96 ppb	17:32:03
3	Be 313.107†	1447474.8	1484026.9	501.75 ug/L	501.75 ppb	17:32:03
3	Cd 226.502†	51956.6	53362.2	501.70 ug/L	501.70 ppb	17:32:03
3	Co 228.616†	26184.4	26855.5	502.23 ug/L	502.23 ppb	17:32:23
3	Cr 267.716†	48768.9	49736.9	498.94 ug/L	498.94 ppb	17:32:03
3	Cu 324.752†	173178.1	168929.6	500.15 ug/L	500.15 ppb	17:32:03
3	Mn 257.610†	471419.9	481231.3	505.45 ug/L	505.45 ppb	17:32:03
3	Mo 202.031†	7934.2	8087.3	507.90 ug/L	507.90 ppb	17:32:23
3	Ni 231.604†	22494.1	22876.8	500.29 ug/L	500.29 ppb	17:32:23
3	P 214.914†	5304.2	5169.6	2458.4 ug/L	2458.4 ppb	17:32:23
3	Pb 220.353†	4715.6	4921.2	511.01 ug/L	511.01 ppb	17:32:23
3	S 181.975 Axial†	928.8	887.1	1012.4 ug/L	1012.4 ppb	17:32:23
3	Sb 206.836†	1697.1	1694.1	509.57 ug/L	509.57 ppb	17:32:23
3	Se 196.026†	950.3	1006.7	532.58 ug/L	532.58 ppb	17:32:23
3	Si 251.611†	86341.6	87599.2	2503.1 ug/L	2503.1 ppb	17:32:03
3	Sn 189.927†	3338.8	3408.9	505.94 ug/L	505.94 ppb	17:32:23
3	Ti 334.940†	312713.0	321457.4	503.47 ug/L	503.47 ppb	17:32:03
3	Tl 190.801†	1749.3	1834.1	505.61 ug/L	505.61 ppb	17:32:23
3	U 409.014†	13237.1	16157.6	477.15 ug/L	477.15 ppb	17:32:03
3	V 292.402†	75659.7	79141.8	503.71 ug/L	503.71 ppb	17:32:03
3	Zn 213.857†	60647.2	61137.2	498.00 ug/L	498.00 ppb	17:32:03
3	SiO2†	85796.0	87019.2	5361.3 ug/L	5361.3 ppb	17:32:39

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	895761.0	97.900 %	0.2369			0.24%
Sc Radial	4869.5	95.8 %	1.74			1.82%
Y 371.029	756391.0	96.774 %	0.2031			0.21%
Y RADIAL	5041.8	94.04 %	1.132			1.20%
Ag 328.068†	116410.0	503.49 ug/L	0.282	503.49 ppb	0.282	0.06%
QC value within limits for Ag 328.068 Recovery = 100.70%						
Al 396.153Radial†	5931.6	4796.0 ug/L	55.57	4796.0 ppb	55.57	1.16%
QC value within limits for Al 396.153Radial Recovery = 95.92%						
As 188.979†	1426.9	507.03 ug/L	4.304	507.03 ppb	4.304	0.85%
QC value within limits for As 188.979 Recovery = 101.41%						
B 249.677†	24249.9	494.71 ug/L	1.575	494.71 ppb	1.575	0.32%
QC value within limits for B 249.677 Recovery = 98.94%						
Ba 233.527†	69065.0	504.58 ug/L	0.644	504.58 ppb	0.644	0.13%
QC value within limits for Ba 233.527 Recovery = 100.92%						
Be 313.107†	1484827.7	502.02 ug/L	0.245	502.02 ppb	0.245	0.05%
QC value within limits for Be 313.107 Recovery = 100.40%						
Ca 317.933Radial†	3111.3	4937.9 ug/L	86.05	4937.9 ppb	86.05	1.74%

QC value within limits for Ca 317.933 Radial Recovery = 98.76%

Cd 226.502†	53451.0	502.54 ug/L	1.147	502.54 ppb	1.147	0.23%
QC value within limits for Cd 226.502 Recovery = 100.51%						
Co 228.616†	26764.6	500.53 ug/L	2.609	500.53 ppb	2.609	0.52%
QC value within limits for Co 228.616 Recovery = 100.11%						
Cr 267.716†	49810.2	499.67 ug/L	0.867	499.67 ppb	0.867	0.17%
QC value within limits for Cr 267.716 Recovery = 99.93%						
Cu 324.752†	169043.2	500.48 ug/L	0.528	500.48 ppb	0.528	0.11%
QC value within limits for Cu 324.752 Recovery = 100.10%						
Fe 238.204 Radial†	603.8	5244.8 ug/L	82.80	5244.8 ppb	82.80	1.58%
QC value within limits for Fe 238.204 Radial Recovery = 104.90%						
K 766.490 Radial†	27264.5	5243.8 ug/L	55.16	5243.8 ppb	55.16	1.05%
QC value within limits for K 766.490 Radial Recovery = 104.88%						
Mg 279.077 IEC†	164.6	5097.5 ug/L	187.86	5097.5 ppb	187.86	3.69%
QC value within limits for Mg 279.077 IEC Recovery = 101.95%						
Mn 257.610†	481612.2	505.85 ug/L	0.544	505.85 ppb	0.544	0.11%
QC value within limits for Mn 257.610 Recovery = 101.17%						
Mo 202.031†	8048.8	505.48 ug/L	3.746	505.48 ppb	3.746	0.74%
QC value within limits for Mo 202.031 Recovery = 101.10%						
Na 589.592 Radial†	38108.1	10846 ug/L	40.2	10846 ppb	40.2	0.37%
QC value within limits for Na 589.592 Radial Recovery = 108.46%						
Ni 231.604†	22817.7	499.00 ug/L	2.394	499.00 ppb	2.394	0.48%
QC value within limits for Ni 231.604 Recovery = 99.80%						
P 214.914†	5165.7	2456.4 ug/L	16.49	2456.4 ppb	16.49	0.67%
QC value within limits for P 214.914 Recovery = 98.26%						
Pb 220.353†	4893.5	508.13 ug/L	2.928	508.13 ppb	2.928	0.58%
QC value within limits for Pb 220.353 Recovery = 101.63%						
S 181.975 Axial†	885.9	1011.0 ug/L	11.18	1011.0 ppb	11.18	1.11%
QC value within limits for S 181.975 Axial Recovery = 101.10%						
Sb 206.836†	1682.5	506.00 ug/L	5.718	506.00 ppb	5.718	1.13%
QC value within limits for Sb 206.836 Recovery = 101.20%						
Se 196.026†	1000.3	529.12 ug/L	3.048	529.12 ppb	3.048	0.58%
QC value within limits for Se 196.026 Recovery = 105.82%						
Si 251.611†	87692.4	2505.8 ug/L	2.78	2505.8 ppb	2.78	0.11%
QC value within limits for Si 251.611 Recovery = 100.23%						
Sn 189.927†	3383.7	502.19 ug/L	4.097	502.19 ppb	4.097	0.82%
QC value within limits for Sn 189.927 Recovery = 100.44%						
Sr 421.552†	75053.2	497.69 ug/L	2.783	497.69 ppb	2.783	0.56%
QC value within limits for Sr 421.552 Recovery = 99.54%						
Ti 334.940†	321575.2	503.65 ug/L	0.331	503.65 ppb	0.331	0.07%
QC value within limits for Ti 334.940 Recovery = 100.73%						
Tl 190.801†	1832.9	505.29 ug/L	4.539	505.29 ppb	4.539	0.90%
QC value within limits for Tl 190.801 Recovery = 101.06%						
U 409.014†	16332.8	482.35 ug/L	4.576	482.35 ppb	4.576	0.95%
QC value within limits for U 409.014 Recovery = 96.47%						
V 292.402†	79276.1	504.53 ug/L	0.857	504.53 ppb	0.857	0.17%
QC value within limits for V 292.402 Recovery = 100.91%						
Zn 213.857†	61230.4	498.78 ug/L	0.688	498.78 ppb	0.688	0.14%
QC value within limits for Zn 213.857 Recovery = 99.76%						
SiO2†	87708.0	5404.1 ug/L	54.03	5404.1 ppb	54.03	1.00%
QC value within limits for SiO2 Recovery = 101.06%						

All analyte(s) passed QC.

Sequence No.: 24

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 6

Date Collected: 1/5/2010 17:34:49

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	4715.9	4715.9	92.7 %		17:36:40
1	Y RADIAL	4940.3	4940.3	92.15 %		17:36:40
1	Al 396.153Radial†	-13.2	5.3	4.2801 ug/L	4.2801 ppb	17:36:40
1	Ca 317.933Radial†	17.8	0.9	1.4523 ug/L	1.4523 ppb	17:37:00
1	Fe 238.204 Radial†	12.9	-0.8	-6.5758 ug/L	-6.5758 ppb	17:37:00
1	K 766.490 Radial†	3568.9	517.0	99.612 ug/L	99.612 ppb	17:36:40
1	Mg 279.077 IEC†	1.9	-1.9	-57.835 ug/L	-57.835 ppb	17:37:00
1	Na 589.592 Radial†	-1581.9	32.0	9.1066 ug/L	9.1066 ppb	17:36:40
1	Sr 421.552†	33.5	28.7	0.1904 ug/L	0.1904 ppb	17:36:40
1	Sc 361.383	865495.9	865495.9	94.592 %		17:37:57
1	Y 371.029	753269.8	753269.8	96.375 %		17:37:57
1	Ag 328.068†	465.1	-21.1	-0.0859 ug/L	-0.0859 ppb	17:37:57
1	As 188.979†	-32.0	-2.6	-0.9136 ug/L	-0.9136 ppb	17:38:17
1	B 249.677†	-539.8	142.7	2.9247 ug/L	2.9247 ppb	17:37:57
1	Ba 233.527†	13.0	5.2	0.0370 ug/L	0.0370 ppb	17:38:17
1	Be 313.107†	-4425.6	-303.2	-0.1026 ug/L	-0.1026 ppb	17:37:57
1	Cd 226.502†	-237.7	-0.7	-0.0059 ug/L	-0.0059 ppb	17:38:17
1	Co 228.616†	-102.4	-19.3	-0.3590 ug/L	-0.3590 ppb	17:38:17
1	Cr 267.716†	140.1	31.9	0.3217 ug/L	0.3217 ppb	17:37:57
1	Cu 324.752†	7979.5	337.5	0.9983 ug/L	0.9983 ppb	17:37:57
1	Mn 257.610†	590.6	-43.7	-0.0454 ug/L	-0.0454 ppb	17:37:57
1	Mo 202.031†	32.6	11.2	0.6996 ug/L	0.6996 ppb	17:38:17
1	Ni 231.604†	112.9	2.0	0.0436 ug/L	0.0436 ppb	17:38:17
1	P 214.914†	275.3	38.4	18.680 ug/L	18.680 ppb	17:38:17
1	Pb 220.353†	-81.0	15.1	1.5627 ug/L	1.5627 ppb	17:38:17
1	S 181.975 Axial†	67.1	8.6	9.8162 ug/L	9.8162 ppb	17:38:17
1	Sb 206.836†	54.4	16.8	4.9864 ug/L	4.9864 ppb	17:38:17
1	Se 196.026†	-34.1	-0.7	-0.3812 ug/L	-0.3812 ppb	17:38:17
1	Si 251.611†	685.1	62.5	1.7476 ug/L	1.7476 ppb	17:38:17
1	Sn 189.927†	7.5	3.8	0.5576 ug/L	0.5576 ppb	17:38:17
1	Ti 334.940†	-1770.0	-78.2	-0.1183 ug/L	-0.1183 ppb	17:37:57
1	Tl 190.801†	-47.6	-4.4	-1.1901 ug/L	-1.1901 ppb	17:38:17
1	U 409.014†	-2793.8	-327.3	-9.6982 ug/L	-9.6982 ppb	17:37:57
1	V 292.402†	-1749.7	-49.5	-0.3198 ug/L	-0.3198 ppb	17:37:57
1	Zn 213.857†	867.6	59.0	0.4856 ug/L	0.4856 ppb	17:38:17
1	SiO2†	700.6	56.7	3.4061 ug/L	3.4061 ppb	17:39:13
2	Sc Radial	4997.4	4997.4	98.3 %		17:37:05
2	Y RADIAL	5243.9	5243.9	97.81 %		17:37:05
2	Al 396.153Radial†	-24.3	-5.2	-4.2412 ug/L	-4.2412 ppb	17:37:05
2	Ca 317.933Radial†	16.5	-1.4	-2.2724 ug/L	-2.2724 ppb	17:37:25
2	Fe 238.204 Radial†	13.0	-1.5	-12.893 ug/L	-12.893 ppb	17:37:25
2	K 766.490 Radial†	3469.2	198.8	38.290 ug/L	38.290 ppb	17:37:05
2	Mg 279.077 IEC†	-1.5	-5.4	-166.90 ug/L	-166.90 ppb	17:37:25
2	Na 589.592 Radial†	-1575.8	134.3	38.221 ug/L	38.221 ppb	17:37:05
2	Sr 421.552†	21.3	14.2	0.0943 ug/L	0.0943 ppb	17:37:05
2	Sc 361.383	866973.9	866973.9	94.753 %		17:38:23
2	Y 371.029	755356.7	755356.7	96.642 %		17:38:23
2	Ag 328.068†	352.3	-141.0	-0.6028 ug/L	-0.6028 ppb	17:38:23
2	As 188.979†	-35.5	-6.2	-2.1945 ug/L	-2.1945 ppb	17:38:43
2	B 249.677†	-562.4	119.8	2.4556 ug/L	2.4556 ppb	17:38:23
2	Ba 233.527†	4.0	-4.3	-0.0318 ug/L	-0.0318 ppb	17:38:43
2	Be 313.107†	-4438.8	-309.2	-0.1042 ug/L	-0.1042 ppb	17:38:23
2	Cd 226.502†	-251.0	-14.3	-0.1332 ug/L	-0.1332 ppb	17:38:43
2	Co 228.616†	-85.6	-1.4	-0.0258 ug/L	-0.0258 ppb	17:38:43
2	Cr 267.716†	75.7	-36.3	-0.3605 ug/L	-0.3605 ppb	17:38:23
2	Cu 324.752†	7987.4	331.4	0.9800 ug/L	0.9800 ppb	17:38:23
2	Mn 257.610†	635.9	3.1	0.0050 ug/L	0.0050 ppb	17:38:23
2	Mo 202.031†	19.2	-3.0	-0.1913 ug/L	-0.1913 ppb	17:38:43
2	Ni 231.604†	121.2	10.6	0.2319 ug/L	0.2319 ppb	17:38:43

2	P 214.914†	249.7	10.9	5.2291 ug/L	5.2291 ppb	17:38:43
2	Pb 220.353†	-69.4	27.5	2.8440 ug/L	2.8440 ppb	17:38:43
2	S 181.975 Axial†	63.1	4.2	4.7798 ug/L	4.7798 ppb	17:38:43
2	Sb 206.836†	51.4	13.5	4.0231 ug/L	4.0231 ppb	17:38:43
2	Se 196.026†	-43.3	-10.4	-5.3440 ug/L	-5.3440 ppb	17:38:43
2	Si 251.611†	693.1	69.8	1.9924 ug/L	1.9924 ppb	17:38:43
2	Sn 189.927†	8.5	4.8	0.7152 ug/L	0.7152 ppb	17:38:43
2	Ti 334.940†	-1658.5	42.7	0.0710 ug/L	0.0710 ppb	17:38:23
2	Tl 190.801†	-47.2	-3.8	-1.0492 ug/L	-1.0492 ppb	17:38:43
2	U 409.014†	-2780.0	-307.6	-9.1139 ug/L	-9.1139 ppb	17:38:23
2	V 292.402†	-1716.1	-10.9	-0.0905 ug/L	-0.0905 ppb	17:38:23
2	Zn 213.857†	873.9	64.1	0.5304 ug/L	0.5304 ppb	17:38:43
2	SiO2†	705.6	60.7	3.7292 ug/L	3.7292 ppb	17:39:18
3	Sc Radial	4744.2	4744.2	93.3 %		17:37:30
3	Y RADIAL	4984.5	4984.5	92.97 %		17:37:30
3	Al 396.153Radial†	-31.8	-14.6	-11.862 ug/L	-11.862 ppb	17:37:30
3	Ca 317.933Radial†	19.5	2.6	4.1385 ug/L	4.1385 ppb	17:37:50
3	Fe 238.204 Radial†	9.8	-4.2	-36.512 ug/L	-36.512 ppb	17:37:50
3	K 766.490 Radial†	3557.4	481.7	92.791 ug/L	92.791 ppb	17:37:30
3	Mg 279.077 IEC†	4.4	0.8	25.232 ug/L	25.232 ppb	17:37:50
3	Na 589.592 Radial†	-1575.7	48.9	13.905 ug/L	13.905 ppb	17:37:30
3	Sr 421.552†	-8.4	-16.5	-0.1093 ug/L	-0.1093 ppb	17:37:30
3	Sc 361.383	864320.0	864320.0	94.463 %		17:38:48
3	Y 371.029	752164.1	752164.1	96.233 %		17:38:48
3	Ag 328.068†	386.0	-104.1	-0.4522 ug/L	-0.4522 ppb	17:38:48
3	As 188.979†	-37.9	-8.8	-3.1232 ug/L	-3.1232 ppb	17:39:08
3	B 249.677†	-504.4	179.4	3.6795 ug/L	3.6795 ppb	17:38:48
3	Ba 233.527†	9.1	1.1	0.0064 ug/L	0.0064 ppb	17:39:08
3	Be 313.107†	-4383.2	-264.7	-0.0896 ug/L	-0.0896 ppb	17:38:48
3	Cd 226.502†	-218.4	19.3	0.1857 ug/L	0.1857 ppb	17:39:08
3	Co 228.616†	-87.8	-4.0	-0.0728 ug/L	-0.0728 ppb	17:39:08
3	Cr 267.716†	53.0	-60.0	-0.5992 ug/L	-0.5992 ppb	17:38:48
3	Cu 324.752†	8058.2	432.3	1.2773 ug/L	1.2773 ppb	17:38:48
3	Mn 257.610†	687.7	60.0	0.0588 ug/L	0.0588 ppb	17:38:48
3	Mo 202.031†	24.7	2.8	0.1750 ug/L	0.1750 ppb	17:39:08
3	Ni 231.604†	125.4	15.4	0.3364 ug/L	0.3364 ppb	17:39:08
3	P 214.914†	262.6	25.4	12.272 ug/L	12.272 ppb	17:39:08
3	Pb 220.353†	-72.9	23.6	2.4421 ug/L	2.4421 ppb	17:39:08
3	S 181.975 Axial†	56.0	-3.0	-3.4816 ug/L	-3.4816 ppb	17:39:08
3	Sb 206.836†	50.0	12.2	3.6358 ug/L	3.6358 ppb	17:39:08
3	Se 196.026†	-36.2	-3.0	-1.6546 ug/L	-1.6546 ppb	17:39:08
3	Si 251.611†	730.8	111.9	3.1782 ug/L	3.1782 ppb	17:39:08
3	Sn 189.927†	7.2	3.5	0.5157 ug/L	0.5157 ppb	17:39:08
3	Ti 334.940†	-1780.2	-91.5	-0.1382 ug/L	-0.1382 ppb	17:38:48
3	Tl 190.801†	-42.2	1.3	0.3639 ug/L	0.3639 ppb	17:39:08
3	U 409.014†	-2824.5	-363.8	-10.776 ug/L	-10.776 ppb	17:38:48
3	V 292.402†	-1763.0	-66.0	-0.4266 ug/L	-0.4266 ppb	17:38:48
3	Zn 213.857†	865.5	58.0	0.4739 ug/L	0.4739 ppb	17:39:08
3	SiO2†	714.8	72.7	4.4230 ug/L	4.4230 ppb	17:39:23

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	865596.6	94.603 %	0.1453			0.15%
Sc Radial	4819.2	94.8 %	3.05			3.22%
Y 371.029	753596.9	96.417 %	0.2074			0.22%
Y RADIAL	5056.2	94.31 %	3.059			3.24%
Ag 328.068†	-88.8	-0.3803 ug/L	0.26581	-0.3803 ppb	0.26581	69.90%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	-4.8	-3.9411 ug/L	8.07528	-3.9411 ppb	8.07528	204.90%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-5.9	-2.0771 ug/L	1.10947	-2.0771 ppb	1.10947	53.41%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	147.3	3.0199 ug/L	0.61750	3.0199 ppb	0.61750	20.45%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	0.7	0.0039 ug/L	0.03450	0.0039 ppb	0.03450	892.51%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-292.4	-0.0988 ug/L	0.00800	-0.0988 ppb	0.00800	8.09%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	0.7	1.1061 ug/L	3.21945	1.1061 ppb	3.21945	291.06%



QC value within limits for Ca 317.933 Radial	Recovery = Not calculated		
Cd 226.502†	1.4 0.0155 ug/L	0.16056 0.0155 ppb	0.16056 >999.9%
QC value within limits for Cd 226.502	Recovery = Not calculated		
Co 228.616†	-8.2 -0.1525 ug/L	0.18034 -0.1525 ppb	0.18034 118.23%
QC value within limits for Co 228.616	Recovery = Not calculated		
Cr 267.716†	-21.5 -0.2127 ug/L	0.47791 -0.2127 ppb	0.47791 224.70%
QC value within limits for Cr 267.716	Recovery = Not calculated		
Cu 324.752†	367.1 1.0852 ug/L	0.16666 1.0852 ppb	0.16666 15.36%
QC value within limits for Cu 324.752	Recovery = Not calculated		
Fe 238.204 Radial†	-2.2 -18.660 ug/L	15.7794 -18.660 ppb	15.7794 84.56%
QC value within limits for Fe 238.204 Radial	Recovery = Not calculated		
K 766.490 Radial†	399.2 76.898 ug/L	33.6087 76.898 ppb	33.6087 43.71%
QC value within limits for K 766.490 Radial	Recovery = Not calculated		
Mg 279.077 IEC†	-2.2 -66.502 ug/L	96.3605 -66.502 ppb	96.3605 144.90%
QC value within limits for Mg 279.077 IEC	Recovery = Not calculated		
Mn 257.610†	6.5 0.0062 ug/L	0.05214 0.0062 ppb	0.05214 847.31%
QC value within limits for Mn 257.610	Recovery = Not calculated		
Mo 202.031†	3.7 0.2277 ug/L	0.44780 0.2277 ppb	0.44780 196.63%
QC value within limits for Mo 202.031	Recovery = Not calculated		
Na 589.592 Radial†	71.7 20.411 ug/L	15.6093 20.411 ppb	15.6093 76.48%
QC value within limits for Na 589.592 Radial	Recovery = Not calculated		
Ni 231.604†	9.3 0.2039 ug/L	0.14840 0.2039 ppb	0.14840 72.77%
QC value within limits for Ni 231.604	Recovery = Not calculated		
P 214.914†	24.9 12.060 ug/L	6.7279 12.060 ppb	6.7279 55.78%
QC value within limits for P 214.914	Recovery = Not calculated		
Pb 220.353†	22.0 2.2830 ug/L	0.65531 2.2830 ppb	0.65531 28.70%
QC value within limits for Pb 220.353	Recovery = Not calculated		
S 181.975 Axial†	3.2 3.7048 ug/L	6.71378 3.7048 ppb	6.71378 181.22%
QC value within limits for S 181.975 Axial	Recovery = Not calculated		
Sb 206.836†	14.2 4.2151 ug/L	0.69550 4.2151 ppb	0.69550 16.50%
QC value within limits for Sb 206.836	Recovery = Not calculated		
Se 196.026†	-4.7 -2.4599 ug/L	2.57752 -2.4599 ppb	2.57752 104.78%
QC value within limits for Se 196.026	Recovery = Not calculated		
Si 251.611†	81.4 2.3061 ug/L	0.76513 2.3061 ppb	0.76513 33.18%
QC value within limits for Si 251.611	Recovery = Not calculated		
Sn 189.927†	4.0 0.5962 ug/L	0.10517 0.5962 ppb	0.10517 17.64%
QC value within limits for Sn 189.927	Recovery = Not calculated		
Sr 421.552†	8.8 0.0585 ug/L	0.15302 0.0585 ppb	0.15302 261.69%
QC value within limits for Sr 421.552	Recovery = Not calculated		
Ti 334.940†	-42.3 -0.0618 ug/L	0.11545 -0.0618 ppb	0.11545 186.66%
QC value within limits for Ti 334.940	Recovery = Not calculated		
Tl 190.801†	-2.3 -0.6251 ug/L	0.85944 -0.6251 ppb	0.85944 137.48%
QC value within limits for Tl 190.801	Recovery = Not calculated		
U 409.014†	-332.9 -9.8626 ug/L	0.84300 -9.8626 ppb	0.84300 8.55%
QC value within limits for U 409.014	Recovery = Not calculated		
V 292.402†	-42.1 -0.2790 ug/L	0.17173 -0.2790 ppb	0.17173 61.55%
QC value within limits for V 292.402	Recovery = Not calculated		
Zn 213.857†	60.4 0.4966 ug/L	0.02980 0.4966 ppb	0.02980 6.00%
QC value within limits for Zn 213.857	Recovery = Not calculated		
SiO2†	63.4 3.8528 ug/L	0.51961 3.8528 ppb	0.51961 13.49%
QC value within limits for SiO2	Recovery = Not calculated		

All analyte(s) passed QC.

Sequence No.: 33

Sample ID: 243273001|935381|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 54

Date Collected: 1/5/2010 18:38:07

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 243273001|935381|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4885.8	4885.8	96.1 %		18:40:20
1	Y RADIAL	5412.0	5412.0	100.9 %		18:40:20
1	Al 396.153Radial†	63812.3	66434.8	53959 ug/L	53959 ppb	18:40:00
1	Ca 317.933Radial†	15962.7	16595.6	26338 ug/L	26338 ppb	18:40:00
1	Fe 238.204 Radial†	11403.0	11853.5	102650 ug/L	102650 ppb	18:40:00
1	K 766.490 Radial†	55195.4	54115.6	10393 ug/L	10393 ppb	18:40:00
1	Mg 279.077 IEC†	487.4	503.4	15480 ug/L	15480 ppb	18:40:20
1	Na 589.592 Radial†	6219.7	8211.2	2337.1 ug/L	2337.1 ppb	18:40:00
1	Sr 421.552†	36654.0	38141.8	252.70 ug/L	252.70 ppb	18:40:00
1	Sc 361.383	922032.3	922032.3	100.77 %		18:41:18
1	Y 371.029	832007.4	832007.4	106.45 %		18:41:18
1	Ag 328.068†	-1704.6	-2204.4	25.397 ug/L	25.397 ppb	18:41:18
1	As 188.979†	-110.2	-78.2	21.505 ug/L	21.505 ppb	18:41:39
1	B 249.677†	303.5	1014.6	7.0234 ug/L	7.0234 ppb	18:41:18
1	Ba 233.527†	352082.0	349380.0	2549.3 ug/L	2549.3 ppb	18:41:18
1	Be 313.107†	-21630.1	-17089.2	1.9878 ug/L	1.9878 ppb	18:41:18
1	Cd 226.502†	1723.2	1960.6	8.2693 ug/L	8.2693 ppb	18:41:39
1	Co 228.616†	2857.3	2924.4	45.884 ug/L	45.884 ppb	18:41:39
1	Cr 267.716†	16552.0	16309.2	165.59 ug/L	165.59 ppb	18:41:39
1	Cu 324.752†	100546.4	91679.0	276.52 ug/L	276.52 ppb	18:41:18
1	Mn 257.610†	3023102.4	2999307.2	3157.5 ug/L	3157.5 ppb	18:41:18
1	Mo 202.031†	-48.1	-71.0	5.3867 ug/L	5.3867 ppb	18:41:39
1	Ni 231.604†	6647.3	6479.1	141.75 ug/L	141.75 ppb	18:41:39
1	P 214.914†	7396.0	7086.8	3365.7 ug/L	3365.7 ppb	18:41:39
1	Pb 220.353†	708.9	804.2	86.725 ug/L	86.725 ppb	18:41:39
1	S 181.975 Axial†	610.3	543.3	609.97 ug/L	609.97 ppb	18:41:39
1	Sb 206.836†	85.1	43.8	-1.6245 ug/L	-1.6245 ppb	18:41:39
1	Se 196.026†	-564.6	-525.0	36.035 ug/L	36.035 ppb	18:41:39
1	Si 251.611†	1116041.8	1106842.2	31778 ug/L	31778 ppb	18:41:18
1	Sn 189.927†	-162.0	-165.0	-20.316 ug/L	-20.316 ppb	18:41:39
1	Ti 334.940†	2535875.2	2518268.3	3946.5 ug/L	3946.5 ppb	18:41:18
1	Tl 190.801†	-236.6	-188.8	-2.2897 ug/L	-2.2897 ppb	18:41:39
1	U 409.014†	-5708.9	-3038.9	-103.28 ug/L	-103.28 ppb	18:41:18
1	V 292.402†	33742.6	35284.7	201.66 ug/L	201.66 ppb	18:41:18
1	Zn 213.857†	47796.3	46572.5	375.52 ug/L	375.52 ppb	18:41:18
1	SiO2†	1117897.7	1108661.6	68636 ug/L	68636 ppb	18:42:39
2	Sc Radial	4849.3	4849.3	95.4 %		18:40:45
2	Y RADIAL	5365.2	5365.2	100.1 %		18:40:45
2	Al 396.153Radial†	63523.2	66632.3	54119 ug/L	54119 ppb	18:40:25
2	Ca 317.933Radial†	15859.4	16612.5	26365 ug/L	26365 ppb	18:40:25
2	Fe 238.204 Radial†	11350.4	11887.8	102950 ug/L	102950 ppb	18:40:25
2	K 766.490 Radial†	55115.2	54464.6	10461 ug/L	10461 ppb	18:40:25
2	Mg 279.077 IEC†	484.9	504.6	15516 ug/L	15516 ppb	18:40:45
2	Na 589.592 Radial†	6160.0	8197.3	2333.1 ug/L	2333.1 ppb	18:40:25
2	Sr 421.552†	36435.2	38199.8	253.09 ug/L	253.09 ppb	18:40:25
2	Sc 361.383	927823.4	927823.4	101.40 %		18:41:46
2	Y 371.029	837212.0	837212.0	107.11 %		18:41:46
2	Ag 328.068†	-1706.2	-2195.4	25.545 ug/L	25.545 ppb	18:41:46
2	As 188.979†	-110.1	-77.4	21.830 ug/L	21.830 ppb	18:42:06
2	B 249.677†	325.1	1034.0	7.3849 ug/L	7.3849 ppb	18:41:46
2	Ba 233.527†	354121.8	349210.7	2548.0 ug/L	2548.0 ppb	18:41:46
2	Be 313.107†	-21744.7	-17068.3	1.9936 ug/L	1.9936 ppb	18:41:46
2	Cd 226.502†	1698.8	1925.9	7.9120 ug/L	7.9120 ppb	18:42:06
2	Co 228.616†	2828.1	2877.9	45.009 ug/L	45.009 ppb	18:42:06
2	Cr 267.716†	16476.3	16132.0	163.83 ug/L	163.83 ppb	18:42:06
2	Cu 324.752†	101014.5	91517.8	276.06 ug/L	276.06 ppb	18:41:46
2	Mn 257.610†	3042770.0	2999977.7	3158.3 ug/L	3158.3 ppb	18:41:46
2	Mo 202.031†	-64.0	-86.3	4.4506 ug/L	4.4506 ppb	18:42:06
2	Ni 231.604†	6606.1	6397.3	139.96 ug/L	139.96 ppb	18:42:06

2	P 214.914†	7329.6	6975.6	3311.0 ug/L	3311.0 ppb	18:42:06
2	Pb 220.353†	668.8	760.3	82.186 ug/L	82.186 ppb	18:42:06
2	S 181.975 Axial†	599.6	528.9	593.54 ug/L	593.54 ppb	18:42:06
2	Sb 206.836†	101.4	59.3	2.9869 ug/L	2.9869 ppb	18:42:06
2	Se 196.026†	-575.5	-532.3	33.195 ug/L	33.195 ppb	18:42:06
2	Si 251.611†	1121860.0	1105667.2	31744 ug/L	31744 ppb	18:41:46
2	Sn 189.927†	-170.0	-171.8	-21.326 ug/L	-21.326 ppb	18:42:06
2	Ti 334.940†	2551371.2	2517842.9	3945.8 ug/L	3945.8 ppb	18:41:46
2	Tl 190.801†	-228.5	-179.4	0.3036 ug/L	0.3036 ppb	18:42:06
2	U 409.014†	-6179.6	-3467.8	-116.02 ug/L	-116.02 ppb	18:41:46
2	V 292.402†	33948.1	35278.3	201.53 ug/L	201.53 ppb	18:41:46
2	Zn 213.857†	47931.9	46410.1	374.18 ug/L	374.18 ppb	18:41:46
2	SiO2†	1116848.0	1100702.4	68143 ug/L	68143 ppb	18:42:45
3	Sc Radial	4905.5	4905.5	96.5 %		18:41:10
3	Y RADIAL	5409.2	5409.2	100.9 %		18:41:10
3	Al 396.153Radial†	62930.5	65254.5	53000 ug/L	53000 ppb	18:40:50
3	Ca 317.933Radial†	15635.2	16189.5	25694 ug/L	25694 ppb	18:40:50
3	Fe 238.204 Radial†	11218.3	11614.4	100580 ug/L	100580 ppb	18:40:50
3	K 766.490 Radial†	54349.4	53008.3	10180 ug/L	10180 ppb	18:40:50
3	Mg 279.077 IEC†	485.7	499.6	15365 ug/L	15365 ppb	18:41:10
3	Na 589.592 Radial†	6115.8	8077.6	2299.0 ug/L	2299.0 ppb	18:40:50
3	Sr 421.552†	36043.3	37355.7	247.50 ug/L	247.50 ppb	18:40:50
3	Sc 361.383	923636.1	923636.1	100.95 %		18:42:13
3	Y 371.029	833385.5	833385.5	106.62 %		18:42:13
3	Ag 328.068†	-1730.6	-2227.1	24.618 ug/L	24.618 ppb	18:42:13
3	As 188.979†	-100.2	-68.0	24.772 ug/L	24.772 ppb	18:42:33
3	B 249.677†	349.6	1059.7	8.2251 ug/L	8.2251 ppb	18:42:13
3	Ba 233.527†	352849.2	349533.3	2550.3 ug/L	2550.3 ppb	18:42:13
3	Be 313.107†	-21614.6	-17036.6	2.0072 ug/L	2.0072 ppb	18:42:13
3	Cd 226.502†	1712.5	1947.1	8.3480 ug/L	8.3480 ppb	18:42:33
3	Co 228.616†	2810.9	2873.6	44.961 ug/L	44.961 ppb	18:42:33
3	Cr 267.716†	16461.0	16190.6	164.37 ug/L	164.37 ppb	18:42:33
3	Cu 324.752†	100579.0	91538.0	276.00 ug/L	276.00 ppb	18:42:13
3	Mn 257.610†	3032043.9	3002955.8	3161.2 ug/L	3161.2 ppb	18:42:13
3	Mo 202.031†	-49.0	-71.8	5.1375 ug/L	5.1375 ppb	18:42:33
3	Ni 231.604†	6588.9	6409.8	140.23 ug/L	140.23 ppb	18:42:33
3	P 214.914†	7332.4	7011.1	3329.9 ug/L	3329.9 ppb	18:42:33
3	Pb 220.353†	692.6	786.8	84.873 ug/L	84.873 ppb	18:42:33
3	S 181.975 Axial†	627.4	559.1	628.25 ug/L	628.25 ppb	18:42:33
3	Sb 206.836†	90.1	48.6	-0.1901 ug/L	-0.1901 ppb	18:42:33
3	Se 196.026†	-579.0	-538.3	23.098 ug/L	23.098 ppb	18:42:33
3	Si 251.611†	1118391.9	1107247.2	31790 ug/L	31790 ppb	18:42:13
3	Sn 189.927†	-164.4	-167.0	-20.716 ug/L	-20.716 ppb	18:42:33
3	Ti 334.940†	2540836.7	2518813.9	3947.3 ug/L	3947.3 ppb	18:42:13
3	Tl 190.801†	-220.6	-172.6	2.1729 ug/L	2.1729 ppb	18:42:33
3	U 409.014†	-5911.9	-3230.2	-108.69 ug/L	-108.69 ppb	18:42:13
3	V 292.402†	33663.4	35148.1	201.10 ug/L	201.10 ppb	18:42:13
3	Zn 213.857†	47790.6	46484.4	374.92 ug/L	374.92 ppb	18:42:13
3	SiO2†	1115990.6	1104846.2	68400 ug/L	68400 ppb	18:42:51

Mean Data: 243273001|935381|1

Analyte	Mean Corrected Intensity	Conc. Units	Calib.	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	924497.3	101.04 %		0.327			0.32%
Sc Radial	4880.2	96.0 %		0.56			0.58%
Y 371.029	834201.6	106.73 %		0.345			0.32%
Y RADIAL	5395.5	100.6 %		0.49			0.49%
Ag 328.068†	-2209.0	25.187 ug/L		0.4980	25.187 ppb	0.4980	1.98%
Al 396.153Radial†	66107.2	53693 ug/L		605.1	53693 ppb	605.1	1.13%
As 188.979†	-74.5	22.702 ug/L		1.7996	22.702 ppb	1.7996	7.93%
B 249.677†	1036.1	7.5444 ug/L		0.61652	7.5444 ppb	0.61652	8.17%
Ba 233.527†	349374.7	2549.2 ug/L		1.15	2549.2 ppb	1.15	0.04%
Be 313.107†	-17064.7	1.9962 ug/L		0.00997	1.9962 ppb	0.00997	0.50%
Ca 317.933Radial†	16465.9	26132 ug/L		380.1	26132 ppb	380.1	1.45%
Cd 226.502†	1944.5	8.1764 ug/L		0.23237	8.1764 ppb	0.23237	2.84%
Co 228.616†	2892.0	45.285 ug/L		0.5191	45.285 ppb	0.5191	1.15%
Cr 267.716†	16210.6	164.60 ug/L		0.905	164.60 ppb	0.905	0.55%
Cu 324.752†	91578.3	276.19 ug/L		0.286	276.19 ppb	0.286	0.10%
Fe 238.204 Radial†	11785.2	102060 ug/L		1289.5	102060 ppb	1289.5	1.26%
K 766.490 Radial†	53862.8	10345 ug/L		146.6	10345 ppb	146.6	1.42%

Mg 279.077 IEC†	502.5	15453 ug/L	78.8	15453 ppb	78.8	0.51%
Mn 257.610†	3000746.9	3159.0 ug/L	1.92	3159.0 ppb	1.92	0.06%
Mo 202.031†	-76.4	4.9916 ug/L	0.48481	4.9916 ppb	0.48481	9.71%
Na 589.592 Radial†	8162.1	2323.1 ug/L	20.92	2323.1 ppb	20.92	0.90%
Ni 231.604†	6428.8	140.65 ug/L	0.964	140.65 ppb	0.964	0.69%
P 214.914†	7024.5	3335.6 ug/L	27.76	3335.6 ppb	27.76	0.83%
Pb 220.353†	783.8	84.595 ug/L	2.2825	84.595 ppb	2.2825	2.70%
S 181.975 Axial†	543.8	610.59 ug/L	17.363	610.59 ppb	17.363	2.84%
Sb 206.836†	50.6	0.3908 ug/L	2.35996	0.3908 ppb	2.35996	603.95%
Se 196.026†	-531.9	30.776 ug/L	6.7993	30.776 ppb	6.7993	22.09%
Si 251.611†	1106585.5	31771 ug/L	23.6	31771 ppb	23.6	0.07%
Sn 189.927†	-167.9	-20.786 ug/L	0.5087	-20.786 ppb	0.5087	2.45%
Sr 421.552†	37899.1	251.10 ug/L	3.123	251.10 ppb	3.123	1.24%
Ti 334.940†	2518308.4	3946.5 ug/L	0.74	3946.5 ppb	0.74	0.02%
Tl 190.801†	-180.2	0.0623 ug/L	2.24105	0.0623 ppb	2.24105	>999.9%
U 409.014†	-3245.7	-109.33 ug/L	6.395	-109.33 ppb	6.395	5.85%
V 292.402†	35237.0	201.43 ug/L	0.293	201.43 ppb	0.293	0.15%
Zn 213.857†	46489.0	374.87 ug/L	0.670	374.87 ppb	0.670	0.18%
SiO2†	1104736.7	68393 ug/L	246.5	68393 ppb	246.5	0.36%

Sequence No.: 34

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 1

Date Collected: 1/5/2010 18:45:01

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	4192.3	4192.3	82.4 %		18:46:53
1	Y RADIAL	4388.0	4388.0	81.85 %		18:46:53
1	Al 396.153Radial†	5760.5	7006.8	5669.2 ug/L	5669.2 ppb	18:46:53
1	Ca 317.933Radial†	3010.6	3633.5	5766.5 ug/L	5766.5 ppb	18:47:13
1	Fe 238.204 Radial†	583.6	693.2	6019.1 ug/L	6019.1 ppb	18:47:13
1	K 766.490 Radial†	29164.5	32043.9	6164.2 ug/L	6164.2 ppb	18:46:53
1	Mg 279.077 IEC†	160.5	190.8	5905.2 ug/L	5905.2 ppb	18:47:13
1	Na 589.592 Radial†	32752.7	41465.3	11802 ug/L	11802 ppb	18:46:53
1	Sr 421.552†	70130.9	85058.1	564.03 ug/L	564.03 ppb	18:46:53
1	Sc 361.383	903741.2	903741.2	98.772 %		18:48:12
1	Y 371.029	763398.0	763398.0	97.671 %		18:48:12
1	Ag 328.068†	116387.7	117322.1	507.67 ug/L	507.67 ppb	18:48:12
1	As 188.979†	1395.2	1443.8	513.11 ug/L	513.11 ppb	18:48:32
1	B 249.677†	23153.1	24154.4	492.65 ug/L	492.65 ppb	18:48:12
1	Ba 233.527†	68650.3	69495.4	507.74 ug/L	507.74 ppb	18:48:12
1	Be 313.107†	1481785.9	1504586.3	508.69 ug/L	508.69 ppb	18:48:12
1	Cd 226.502†	53079.4	53990.0	507.54 ug/L	507.54 ppb	18:48:12
1	Co 228.616†	26431.0	26848.6	502.09 ug/L	502.09 ppb	18:48:32
1	Cr 267.716†	49857.8	50361.5	505.21 ug/L	505.21 ppb	18:48:12
1	Cu 324.752†	176556.1	170653.2	505.28 ug/L	505.28 ppb	18:48:12
1	Mn 257.610†	479832.1	485130.4	509.61 ug/L	509.61 ppb	18:48:12
1	Mo 202.031†	8023.7	8100.2	508.78 ug/L	508.78 ppb	18:48:32
1	Ni 231.604†	22754.3	22919.9	501.24 ug/L	501.24 ppb	18:48:32
1	P 214.914†	5393.5	5208.0	2476.1 ug/L	2476.1 ppb	18:48:32
1	Pb 220.353†	4777.1	4937.2	512.80 ug/L	512.80 ppb	18:48:32
1	S 181.975 Axial†	944.9	894.3	1020.5 ug/L	1020.5 ppb	18:48:32
1	Sb 206.836†	1702.5	1683.0	506.11 ug/L	506.11 ppb	18:48:32
1	Se 196.026†	956.1	1003.3	533.03 ug/L	533.03 ppb	18:48:32
1	Si 251.611†	87832.7	88263.1	2521.9 ug/L	2521.9 ppb	18:48:12
1	Sn 189.927†	3368.9	3406.7	505.69 ug/L	505.69 ppb	18:48:32
1	Ti 334.940†	318047.2	323794.9	507.16 ug/L	507.16 ppb	18:48:12
1	Tl 190.801†	1759.6	1827.4	503.85 ug/L	503.85 ppb	18:48:32
1	U 409.014†	13608.6	16404.1	484.35 ug/L	484.35 ppb	18:48:12
1	V 292.402†	77249.0	80009.8	509.08 ug/L	509.08 ppb	18:48:12
1	Zn 213.857†	61875.0	61786.2	503.26 ug/L	503.26 ppb	18:48:12
1	SiO2†	88192.1	88604.7	5458.8 ug/L	5458.8 ppb	18:49:32
2	Sc Radial	4733.5	4733.5	93.1 %		18:47:18
2	Y RADIAL	4949.4	4949.4	92.32 %		18:47:18
2	Al 396.153Radial†	5628.7	6066.3	4905.1 ug/L	4905.1 ppb	18:47:18
2	Ca 317.933Radial†	3048.2	3256.4	5168.1 ug/L	5168.1 ppb	18:47:38
2	Fe 238.204 Radial†	586.1	615.0	5341.9 ug/L	5341.9 ppb	18:47:38
2	K 766.490 Radial†	28806.0	27614.3	5311.4 ug/L	5311.4 ppb	18:47:18
2	Mg 279.077 IEC†	163.9	172.2	5332.0 ug/L	5332.0 ppb	18:47:38
2	Na 589.592 Radial†	31781.7	35880.1	10212 ug/L	10212 ppb	18:47:18
2	Sr 421.552†	68282.3	73346.5	486.37 ug/L	486.37 ppb	18:47:18
2	Sc 361.383	890245.3	890245.3	97.297 %		18:48:39
2	Y 371.029	752928.9	752928.9	96.331 %		18:48:39
2	Ag 328.068†	115265.1	117954.7	510.19 ug/L	510.19 ppb	18:48:39
2	As 188.979†	1383.2	1452.9	516.22 ug/L	516.22 ppb	18:48:59
2	B 249.677†	23039.1	24392.6	497.61 ug/L	497.61 ppb	18:48:39
2	Ba 233.527†	68126.5	70010.7	511.49 ug/L	511.49 ppb	18:48:39
2	Be 313.107†	1468730.4	1513910.9	511.84 ug/L	511.84 ppb	18:48:39
2	Cd 226.502†	52475.0	54183.5	509.43 ug/L	509.43 ppb	18:48:39
2	Co 228.616†	26162.8	26978.7	504.53 ug/L	504.53 ppb	18:48:59
2	Cr 267.716†	49333.9	50588.3	507.48 ug/L	507.48 ppb	18:48:39
2	Cu 324.752†	174688.6	171443.7	507.59 ug/L	507.59 ppb	18:48:39
2	Mn 257.610†	475415.1	487955.3	512.51 ug/L	512.51 ppb	18:48:39
2	Mo 202.031†	7959.2	8157.1	512.28 ug/L	512.28 ppb	18:48:59
2	Ni 231.604†	22591.6	23102.0	505.22 ug/L	505.22 ppb	18:48:59

2	P 214.914†	5318.3	5213.5	2478.7 ug/L	2478.7 ppb	18:48:59
2	Pb 220.353†	4719.3	4951.1	514.13 ug/L	514.13 ppb	18:48:59
2	S 181.975 Axial†	917.7	880.9	1005.3 ug/L	1005.3 ppb	18:48:59
2	Sb 206.836†	1687.9	1694.1	509.43 ug/L	509.43 ppb	18:48:59
2	Se 196.026†	957.9	1019.8	539.42 ug/L	539.42 ppb	18:48:59
2	Si 251.611†	86960.7	88714.9	2535.1 ug/L	2535.1 ppb	18:48:39
2	Sn 189.927†	3318.4	3406.4	505.58 ug/L	505.58 ppb	18:48:59
2	Ti 334.940†	315021.7	325566.8	509.91 ug/L	509.91 ppb	18:48:39
2	Tl 190.801†	1757.0	1851.8	510.52 ug/L	510.52 ppb	18:48:59
2	U 409.014†	13236.2	16230.2	479.28 ug/L	479.28 ppb	18:48:39
2	V 292.402†	76592.3	80520.5	512.42 ug/L	512.42 ppb	18:48:39
2	Zn 213.857†	61321.3	62166.7	506.41 ug/L	506.41 ppb	18:48:39
2	SiO2†	87919.9	89678.5	5525.8 ug/L	5525.8 ppb	18:49:37
3	Sc Radial	4766.1	4766.1	93.7 %		18:47:43
3	Y RADIAL	4945.0	4945.0	92.24 %		18:47:43
3	Al 396.153Radial†	5655.2	6053.3	4895.0 ug/L	4895.0 ppb	18:47:43
3	Ca 317.933Radial†	3055.0	3241.2	5144.1 ug/L	5144.1 ppb	18:48:03
3	Fe 238.204 Radial†	590.6	615.5	5345.8 ug/L	5345.8 ppb	18:48:03
3	K 766.490 Radial†	28861.9	27462.5	5282.1 ug/L	5282.1 ppb	18:47:43
3	Mg 279.077 IEC†	161.9	168.9	5227.7 ug/L	5227.7 ppb	18:48:03
3	Na 589.592 Radial†	32019.3	35900.4	10218 ug/L	10218 ppb	18:47:43
3	Sr 421.552†	68575.6	73158.4	485.12 ug/L	485.12 ppb	18:47:43
3	Sc 361.383	901999.0	901999.0	98.581 %		18:49:07
3	Y 371.029	762180.6	762180.6	97.515 %		18:49:07
3	Ag 328.068†	116883.1	118052.2	510.61 ug/L	510.61 ppb	18:49:07
3	As 188.979†	1377.4	1428.5	507.65 ug/L	507.65 ppb	18:49:27
3	B 249.677†	23383.8	24433.6	498.47 ug/L	498.47 ppb	18:49:07
3	Ba 233.527†	69059.3	70044.5	511.74 ug/L	511.74 ppb	18:49:07
3	Be 313.107†	1490190.9	1516009.8	512.55 ug/L	512.55 ppb	18:49:07
3	Cd 226.502†	53291.2	54308.6	510.60 ug/L	510.60 ppb	18:49:07
3	Co 228.616†	26071.4	26535.5	496.22 ug/L	496.22 ppb	18:49:27
3	Cr 267.716†	49975.2	50578.2	507.38 ug/L	507.38 ppb	18:49:07
3	Cu 324.752†	177183.7	171635.1	508.16 ug/L	508.16 ppb	18:49:07
3	Mn 257.610†	482485.6	488760.4	513.36 ug/L	513.36 ppb	18:49:07
3	Mo 202.031†	7918.4	8009.1	502.99 ug/L	502.99 ppb	18:49:27
3	Ni 231.604†	22496.1	22702.4	496.48 ug/L	496.48 ppb	18:49:27
3	P 214.914†	5307.2	5131.0	2438.1 ug/L	2438.1 ppb	18:49:27
3	Pb 220.353†	4683.7	4851.8	503.82 ug/L	503.82 ppb	18:49:27
3	S 181.975 Axial†	931.0	882.0	1006.6 ug/L	1006.6 ppb	18:49:27
3	Sb 206.836†	1687.1	1670.6	502.18 ug/L	502.18 ppb	18:49:27
3	Se 196.026†	946.2	995.1	526.78 ug/L	526.78 ppb	18:49:27
3	Si 251.611†	88249.4	88857.6	2539.3 ug/L	2539.3 ppb	18:49:07
3	Sn 189.927†	3324.9	3368.6	499.98 ug/L	499.98 ppb	18:49:27
3	Ti 334.940†	319735.8	326129.7	510.79 ug/L	510.79 ppb	18:49:07
3	Tl 190.801†	1754.0	1825.2	503.29 ug/L	503.29 ppb	18:49:27
3	U 409.014†	13619.3	16441.5	485.54 ug/L	485.54 ppb	18:49:07
3	V 292.402†	77730.6	80649.4	513.10 ug/L	513.10 ppb	18:49:07
3	Zn 213.857†	62184.5	62221.1	506.92 ug/L	506.92 ppb	18:49:07
3	SiO2†	86313.5	86871.6	5352.4 ug/L	5352.4 ppb	18:49:42

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	898661.8	98.217 %	0.8023			0.82%
Sc Radial	4564.0	89.8 %	6.34			7.06%
Y 371.029	759502.5	97.172 %	0.7325			0.75%
Y RADIAL	4760.8	88.80 %	6.022			6.78%
Ag 328.068†	117776.3	509.49 ug/L	1.589	509.49 ppb	1.589	0.31%
QC value within limits for Ag 328.068 Recovery = 101.90%						
Al 396.153Radial†	6375.4	5156.4 ug/L	444.09	5156.4 ppb	444.09	8.61%
QC value within limits for Al 396.153Radial Recovery = 103.13%						
As 188.979†	1441.7	512.33 ug/L	4.337	512.33 ppb	4.337	0.85%
QC value within limits for As 188.979 Recovery = 102.47%						
B 249.677†	24326.9	496.25 ug/L	3.143	496.25 ppb	3.143	0.63%
QC value within limits for B 249.677 Recovery = 99.25%						
Ba 233.527†	69850.2	510.32 ug/L	2.237	510.32 ppb	2.237	0.44%
QC value within limits for Ba 233.527 Recovery = 102.06%						
Be 313.107†	1511502.3	511.03 ug/L	2.056	511.03 ppb	2.056	0.40%
QC value within limits for Be 313.107 Recovery = 102.21%						
Ca 317.933Radial†	3377.0	5359.6 ug/L	352.65	5359.6 ppb	352.65	6.58%

QC value within limits for Ca 317.933 Radial Recovery = 107.19%							
Cd 226.502†	54160.7	509.19 ug/L	1.544	509.19 ppb	1.544	0.30%	
QC value within limits for Cd 226.502 Recovery = 101.84%							
Co 228.616†	26787.6	500.95 ug/L	4.271	500.95 ppb	4.271	0.85%	
QC value within limits for Co 228.616 Recovery = 100.19%							
Cr 267.716†	50509.3	506.69 ug/L	1.280	506.69 ppb	1.280	0.25%	
QC value within limits for Cr 267.716 Recovery = 101.34%							
Cu 324.752†	171244.0	507.01 ug/L	1.521	507.01 ppb	1.521	0.30%	
QC value within limits for Cu 324.752 Recovery = 101.40%							
Fe 238.204 Radial†	641.2	5568.9 ug/L	389.86	5568.9 ppb	389.86	7.00%	
QC value greater than the upper limit for Fe 238.204 Radial Recovery = 111.38%							
K 766.490 Radial†	29040.2	5585.9 ug/L	501.03	5585.9 ppb	501.03	8.97%	
QC value greater than the upper limit for K 766.490 Radial Recovery = 111.72%							
Mg 279.077 IEC†	177.3	5488.3 ug/L	364.79	5488.3 ppb	364.79	6.65%	
QC value within limits for Mg 279.077 IEC Recovery = 109.77%							
Mn 257.610†	487282.0	511.83 ug/L	1.969	511.83 ppb	1.969	0.38%	
QC value within limits for Mn 257.610 Recovery = 102.37%							
Mo 202.031†	8088.8	508.02 ug/L	4.690	508.02 ppb	4.690	0.92%	
QC value within limits for Mo 202.031 Recovery = 101.60%							
Na 589.592 Radial†	37748.6	10744 ug/L	916.1	10744 ppb	916.1	8.53%	
QC value within limits for Na 589.592 Radial Recovery = 107.44%							
Ni 231.604†	22908.1	500.98 ug/L	4.375	500.98 ppb	4.375	0.87%	
QC value within limits for Ni 231.604 Recovery = 100.20%							
P 214.914†	5184.2	2464.3 ug/L	22.75	2464.3 ppb	22.75	0.92%	
QC value within limits for P 214.914 Recovery = 98.57%							
Pb 220.353†	4913.4	510.25 ug/L	5.608	510.25 ppb	5.608	1.10%	
QC value within limits for Pb 220.353 Recovery = 102.05%							
S 181.975 Axial†	885.7	1010.8 ug/L	8.43	1010.8 ppb	8.43	0.83%	
QC value within limits for S 181.975 Axial Recovery = 101.08%							
Sb 206.836†	1682.6	505.91 ug/L	3.629	505.91 ppb	3.629	0.72%	
QC value within limits for Sb 206.836 Recovery = 101.18%							
Se 196.026†	1006.1	533.08 ug/L	6.320	533.08 ppb	6.320	1.19%	
QC value within limits for Se 196.026 Recovery = 106.62%							
Si 251.611†	88611.9	2532.1 ug/L	9.11	2532.1 ppb	9.11	0.36%	
QC value within limits for Si 251.611 Recovery = 101.28%							
Sn 189.927†	3393.9	503.75 ug/L	3.267	503.75 ppb	3.267	0.65%	
QC value within limits for Sn 189.927 Recovery = 100.75%							
Sr 421.552†	77187.7	511.84 ug/L	45.203	511.84 ppb	45.203	8.83%	
QC value within limits for Sr 421.552 Recovery = 102.37%							
Ti 334.940†	325163.8	509.29 ug/L	1.891	509.29 ppb	1.891	0.37%	
QC value within limits for Ti 334.940 Recovery = 101.86%							
Tl 190.801†	1834.8	505.88 ug/L	4.022	505.88 ppb	4.022	0.80%	
QC value within limits for Tl 190.801 Recovery = 101.18%							
U 409.014†	16358.6	483.06 ug/L	3.325	483.06 ppb	3.325	0.69%	
QC value within limits for U 409.014 Recovery = 96.61%							
V 292.402†	80393.2	511.53 ug/L	2.150	511.53 ppb	2.150	0.42%	
QC value within limits for V 292.402 Recovery = 102.31%							
Zn 213.857†	62058.0	505.53 ug/L	1.982	505.53 ppb	1.982	0.39%	
QC value within limits for Zn 213.857 Recovery = 101.11%							
SiO2†	88384.9	5445.7 ug/L	87.44	5445.7 ppb	87.44	1.61%	
QC value within limits for SiO2 Recovery = 101.84%							
QC Failed. Continue with analysis.							

Sequence No.: 35

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 6

Date Collected: 1/5/2010 18:51:52

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	4773.9	4773.9	93.9 %		18:53:44
1	Y RADIAL	5013.0	5013.0	93.51 %		18:53:44
1	Al 396.153Radial†	-9.1	9.8	7.9719 ug/L	7.9719 ppb	18:53:44
1	Ca 317.933Radial†	16.8	-0.3	-0.5231 ug/L	-0.5231 ppb	18:54:04
1	Fe 238.204 Radial†	11.5	-2.4	-20.605 ug/L	-20.605 ppb	18:54:04
1	K 766.490 Radial†	3416.2	307.6	59.254 ug/L	59.254 ppb	18:53:44
1	Mg 279.077 IEC†	3.3	-0.3	-9.9047 ug/L	-9.9047 ppb	18:54:04
1	Na 589.592 Radial†	-1610.7	22.1	6.2952 ug/L	6.2952 ppb	18:53:44
1	Sr 421.552†	31.5	26.1	0.1732 ug/L	0.1732 ppb	18:53:44
1	Sc 361.383	913463.3	913463.3	99.834 %		18:55:01
1	Y 371.029	779972.2	779972.2	99.791 %		18:55:01
1	Ag 328.068†	568.6	56.8	0.2371 ug/L	0.2371 ppb	18:55:06
1	As 188.979†	-29.2	2.0	0.6874 ug/L	0.6874 ppb	18:55:26
1	B 249.677†	-656.8	55.5	1.1393 ug/L	1.1393 ppb	18:55:06
1	Ba 233.527†	16.7	8.2	0.0599 ug/L	0.0599 ppb	18:55:26
1	Be 313.107†	-4258.1	110.2	0.0371 ug/L	0.0371 ppb	18:55:06
1	Cd 226.502†	-237.8	12.4	0.1189 ug/L	0.1189 ppb	18:55:26
1	Co 228.616†	-87.3	1.5	0.0280 ug/L	0.0280 ppb	18:55:26
1	Cr 267.716†	108.7	-7.3	-0.0738 ug/L	-0.0738 ppb	18:55:06
1	Cu 324.752†	7962.4	-122.6	-0.3639 ug/L	-0.3639 ppb	18:55:06
1	Mn 257.610†	609.9	-57.1	-0.0618 ug/L	-0.0618 ppb	18:55:06
1	Mo 202.031†	17.2	-6.0	-0.3804 ug/L	-0.3804 ppb	18:55:26
1	Ni 231.604†	132.4	15.3	0.3343 ug/L	0.3343 ppb	18:55:26
1	P 214.914†	254.6	2.4	1.2474 ug/L	1.2474 ppb	18:55:26
1	Pb 220.353†	-94.1	6.5	0.6731 ug/L	0.6731 ppb	18:55:26
1	S 181.975 Axial†	59.0	-3.3	-3.7726 ug/L	-3.7726 ppb	18:55:26
1	Sb 206.836†	53.5	12.9	3.8107 ug/L	3.8107 ppb	18:55:26
1	Se 196.026†	-43.8	-8.6	-4.4725 ug/L	-4.4725 ppb	18:55:26
1	Si 251.611†	676.4	15.8	0.4402 ug/L	0.4402 ppb	18:55:26
1	Sn 189.927†	2.2	-2.0	-0.2943 ug/L	-0.2943 ppb	18:55:26
1	Ti 334.940†	-1822.0	-32.0	-0.0509 ug/L	-0.0509 ppb	18:55:06
1	Tl 190.801†	-53.3	-7.5	-2.0488 ug/L	-2.0488 ppb	18:55:26
1	U 409.014†	-2567.7	54.3	1.6120 ug/L	1.6120 ppb	18:55:01
1	V 292.402†	-1745.9	51.5	0.3240 ug/L	0.3240 ppb	18:55:06
1	Zn 213.857†	883.4	26.6	0.2184 ug/L	0.2184 ppb	18:55:26
1	SiO2†	712.8	30.0	1.8318 ug/L	1.8318 ppb	18:56:32
2	Sc Radial	4724.5	4724.5	92.9 %		18:54:09
2	Y RADIAL	4960.8	4960.8	92.53 %		18:54:09
2	Al 396.153Radial†	-19.6	-1.5	-1.2186 ug/L	-1.2186 ppb	18:54:09
2	Ca 317.933Radial†	12.3	-5.0	-7.9790 ug/L	-7.9790 ppb	18:54:29
2	Fe 238.204 Radial†	13.1	-0.5	-4.6141 ug/L	-4.6141 ppb	18:54:29
2	K 766.490 Radial†	3325.8	248.4	47.846 ug/L	47.846 ppb	18:54:09
2	Mg 279.077 IEC†	6.3	2.8	87.851 ug/L	87.851 ppb	18:54:29
2	Na 589.592 Radial†	-1575.9	41.6	11.848 ug/L	11.848 ppb	18:54:09
2	Sr 421.552†	45.1	41.1	0.2728 ug/L	0.2728 ppb	18:54:09
2	Sc 361.383	905008.8	905008.8	98.910 %		18:55:31
2	Y 371.029	773193.9	773193.9	98.924 %		18:55:31
2	Ag 328.068†	416.4	-91.8	-0.3941 ug/L	-0.3941 ppb	18:55:36
2	As 188.979†	-40.3	-9.5	-3.3396 ug/L	-3.3396 ppb	18:55:56
2	B 249.677†	-664.6	41.5	0.8506 ug/L	0.8506 ppb	18:55:36
2	Ba 233.527†	29.4	21.2	0.1539 ug/L	0.1539 ppb	18:55:56
2	Be 313.107†	-4342.3	-14.7	-0.0046 ug/L	-0.0046 ppb	18:55:36
2	Cd 226.502†	-227.5	20.6	0.1941 ug/L	0.1941 ppb	18:55:56
2	Co 228.616†	-90.2	-2.2	-0.0422 ug/L	-0.0422 ppb	18:55:56
2	Cr 267.716†	109.6	-5.4	-0.0539 ug/L	-0.0539 ppb	18:55:36
2	Cu 324.752†	8028.5	18.7	0.0551 ug/L	0.0551 ppb	18:55:36
2	Mn 257.610†	602.9	-58.5	-0.0635 ug/L	-0.0635 ppb	18:55:36
2	Mo 202.031†	13.9	-9.2	-0.5763 ug/L	-0.5763 ppb	18:55:56
2	Ni 231.604†	132.0	16.1	0.3524 ug/L	0.3524 ppb	18:55:56



2	P 214.914†	241.4	-8.5	-4.1753 ug/L	-4.1753 ppb	18:55:56
2	Pb 220.353†	-91.7	8.0	0.8240 ug/L	0.8240 ppb	18:55:56
2	S 181.975 Axial†	62.2	0.5	0.6137 ug/L	0.6137 ppb	18:55:56
2	Sb 206.836†	49.9	9.8	2.9029 ug/L	2.9029 ppb	18:55:56
2	Se 196.026†	-38.8	-4.0	-2.0519 ug/L	-2.0519 ppb	18:55:56
2	Si 251.611†	673.2	18.9	0.5343 ug/L	0.5343 ppb	18:55:56
2	Sn 189.927†	10.4	6.4	0.9498 ug/L	0.9498 ppb	18:55:56
2	Ti 334.940†	-1665.1	109.5	0.1722 ug/L	0.1722 ppb	18:55:36
2	Tl 190.801†	-47.5	-2.0	-0.5587 ug/L	-0.5587 ppb	18:55:56
2	U 409.014†	-2676.1	-79.3	-2.3498 ug/L	-2.3498 ppb	18:55:31
2	V 292.402†	-1794.1	-13.7	-0.0961 ug/L	-0.0961 ppb	18:55:36
2	Zn 213.857†	876.2	27.7	0.2224 ug/L	0.2224 ppb	18:55:56
2	SiO2†	693.9	17.6	1.0698 ug/L	1.0698 ppb	18:56:37
3	Sc Radial	4756.6	4756.6	93.5 %		18:54:34
3	Y RADIAL	4976.8	4976.8	92.83 %		18:54:34
3	Al 396.153Radial†	-10.0	8.9	7.2285 ug/L	7.2285 ppb	18:54:34
3	Ca 317.933Radial†	15.2	-2.0	-3.1040 ug/L	-3.1040 ppb	18:54:54
3	Fe 238.204 Radial†	12.6	-1.2	-10.476 ug/L	-10.476 ppb	18:54:54
3	K 766.490 Radial†	3458.0	365.5	70.411 ug/L	70.411 ppb	18:54:34
3	Mg 279.077 IEC†	2.4	-1.3	-40.141 ug/L	-40.141 ppb	18:54:54
3	Na 589.592 Radial†	-1596.7	30.8	8.7690 ug/L	8.7690 ppb	18:54:34
3	Sr 421.552†	21.2	15.2	0.1008 ug/L	0.1008 ppb	18:54:34
3	Sc 361.383	906444.9	906444.9	99.067 %		18:56:01
3	Y 371.029	773884.4	773884.4	99.012 %		18:56:01
3	Ag 328.068†	365.6	-143.7	-0.6225 ug/L	-0.6225 ppb	18:56:06
3	As 188.979†	-35.1	-4.1	-1.4612 ug/L	-1.4612 ppb	18:56:27
3	B 249.677†	-635.8	71.6	1.4665 ug/L	1.4665 ppb	18:56:06
3	Ba 233.527†	12.8	4.4	0.0315 ug/L	0.0315 ppb	18:56:27
3	Be 313.107†	-4272.6	62.6	0.0214 ug/L	0.0214 ppb	18:56:06
3	Cd 226.502†	-246.4	1.9	0.0189 ug/L	0.0189 ppb	18:56:27
3	Co 228.616†	-72.7	15.6	0.2910 ug/L	0.2910 ppb	18:56:27
3	Cr 267.716†	101.0	-14.3	-0.1436 ug/L	-0.1436 ppb	18:56:06
3	Cu 324.752†	8159.1	137.7	0.4069 ug/L	0.4069 ppb	18:56:06
3	Mn 257.610†	618.3	-44.0	-0.0464 ug/L	-0.0464 ppb	18:56:06
3	Mo 202.031†	22.1	-1.0	-0.0637 ug/L	-0.0637 ppb	18:56:27
3	Ni 231.604†	116.8	0.6	0.0131 ug/L	0.0131 ppb	18:56:27
3	P 214.914†	270.2	20.2	9.8340 ug/L	9.8340 ppb	18:56:27
3	Pb 220.353†	-91.4	8.5	0.8811 ug/L	0.8811 ppb	18:56:27
3	S 181.975 Axial†	61.9	0.2	0.1786 ug/L	0.1786 ppb	18:56:27
3	Sb 206.836†	55.6	15.4	4.5858 ug/L	4.5858 ppb	18:56:27
3	Se 196.026†	-35.9	-0.9	-0.5029 ug/L	-0.5029 ppb	18:56:27
3	Si 251.611†	670.2	14.8	0.4002 ug/L	0.4002 ppb	18:56:27
3	Sn 189.927†	7.6	3.6	0.5286 ug/L	0.5286 ppb	18:56:27
3	Ti 334.940†	-1696.1	80.9	0.1259 ug/L	0.1259 ppb	18:56:06
3	Tl 190.801†	-50.3	-4.8	-1.3205 ug/L	-1.3205 ppb	18:56:27
3	U 409.014†	-2543.8	58.4	1.7333 ug/L	1.7333 ppb	18:56:01
3	V 292.402†	-1787.8	-4.4	-0.0247 ug/L	-0.0247 ppb	18:56:06
3	Zn 213.857†	871.3	21.3	0.1763 ug/L	0.1763 ppb	18:56:27
3	SiO2†	696.3	18.9	1.1153 ug/L	1.1153 ppb	18:56:42

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	908305.7	99.271 %	0.4944			0.50%
Sc Radial	4751.7	93.4 %	0.49			0.53%
Y 371.029	775683.5	99.242 %	0.4772			0.48%
Y RADIAL	4983.5	92.96 %	0.500			0.54%
Ag 328.068†	-59.5	-0.2598 ug/L	0.44529	-0.2598 ppb	0.44529	171.38%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	5.7	4.6606 ug/L	5.10505	4.6606 ppb	5.10505	109.54%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-3.9	-1.3711 ug/L	2.01503	-1.3711 ppb	2.01503	146.96%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	56.2	1.1522 ug/L	0.30816	1.1522 ppb	0.30816	26.75%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	11.2	0.0818 ug/L	0.06404	0.0818 ppb	0.06404	78.33%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	52.7	0.0179 ug/L	0.02107	0.0179 ppb	0.02107	117.47%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	-2.4	-3.8687 ug/L	3.78633	-3.8687 ppb	3.78633	97.87%

QC value within limits for Ca 317.933 Radial Recovery = Not calculated							
Cd 226.502†	11.6	0.1106 ug/L	0.08793	0.1106 ppb	0.08793	79.48%	
QC value within limits for Cd 226.502 Recovery = Not calculated							
Co 228.616†	5.0	0.0922 ug/L	0.17563	0.0922 ppb	0.17563	190.42%	
QC value within limits for Co 228.616 Recovery = Not calculated							
Cr 267.716†	-9.0	-0.0904 ug/L	0.04713	-0.0904 ppb	0.04713	52.12%	
QC value within limits for Cr 267.716 Recovery = Not calculated							
Cu 324.752†	11.3	0.0327 ug/L	0.38591	0.0327 ppb	0.38591	>999.9%	
QC value within limits for Cu 324.752 Recovery = Not calculated							
Fe 238.204 Radial†	-1.4	-11.898 ug/L	8.0897	-11.898 ppb	8.0897	67.99%	
QC value within limits for Fe 238.204 Radial Recovery = Not calculated							
K 766.490 Radial†	307.1	59.170 ug/L	11.2829	59.170 ppb	11.2829	19.07%	
QC value within limits for K 766.490 Radial Recovery = Not calculated							
Mg 279.077 IEC†	0.4	12.602 ug/L	66.8982	12.602 ppb	66.8982	530.87%	
QC value within limits for Mg 279.077 IEC Recovery = Not calculated							
Mn 257.610†	-53.2	-0.0573 ug/L	0.00940	-0.0573 ppb	0.00940	16.42%	
QC value within limits for Mn 257.610 Recovery = Not calculated							
Mo 202.031†	-5.4	-0.3401 ug/L	0.25866	-0.3401 ppb	0.25866	76.05%	
QC value within limits for Mo 202.031 Recovery = Not calculated							
Na 589.592 Radial†	31.5	8.9706 ug/L	2.78166	8.9706 ppb	2.78166	31.01%	
QC value within limits for Na 589.592 Radial Recovery = Not calculated							
Ni 231.604†	10.7	0.2333 ug/L	0.19092	0.2333 ppb	0.19092	81.85%	
QC value within limits for Ni 231.604 Recovery = Not calculated							
P 214.914†	4.7	2.3020 ug/L	7.06392	2.3020 ppb	7.06392	306.86%	
QC value within limits for P 214.914 Recovery = Not calculated							
Pb 220.353†	7.6	0.7927 ug/L	0.10745	0.7927 ppb	0.10745	13.55%	
QC value within limits for Pb 220.353 Recovery = Not calculated							
S 181.975 Axial†	-0.9	-0.9934 ug/L	2.41667	-0.9934 ppb	2.41667	243.26%	
QC value within limits for S 181.975 Axial Recovery = Not calculated							
Sb 206.836†	12.7	3.7665 ug/L	0.84230	3.7665 ppb	0.84230	22.36%	
QC value within limits for Sb 206.836 Recovery = Not calculated							
Se 196.026†	-4.5	-2.3424 ug/L	2.00068	-2.3424 ppb	2.00068	85.41%	
QC value within limits for Se 196.026 Recovery = Not calculated							
Si 251.611†	16.5	0.4582 ug/L	0.06881	0.4582 ppb	0.06881	15.02%	
QC value within limits for Si 251.611 Recovery = Not calculated							
Sn 189.927†	2.7	0.3947 ug/L	0.63273	0.3947 ppb	0.63273	160.31%	
QC value within limits for Sn 189.927 Recovery = Not calculated							
Sr 421.552†	27.5	0.1823 ug/L	0.08632	0.1823 ppb	0.08632	47.36%	
QC value within limits for Sr 421.552 Recovery = Not calculated							
Ti 334.940†	52.8	0.0824 ug/L	0.11775	0.0824 ppb	0.11775	142.88%	
QC value within limits for Ti 334.940 Recovery = Not calculated							
Tl 190.801†	-4.8	-1.3093 ug/L	0.74513	-1.3093 ppb	0.74513	56.91%	
QC value within limits for Tl 190.801 Recovery = Not calculated							
U 409.014†	11.1	0.3318 ug/L	2.32318	0.3318 ppb	2.32318	700.13%	
QC value within limits for U 409.014 Recovery = Not calculated							
V 292.402†	11.1	0.0677 ug/L	0.22479	0.0677 ppb	0.22479	331.87%	
QC value within limits for V 292.402 Recovery = Not calculated							
Zn 213.857†	25.2	0.2057 ug/L	0.02555	0.2057 ppb	0.02555	12.42%	
QC value within limits for Zn 213.857 Recovery = Not calculated							
SiO2†	22.2	1.3390 ug/L	0.42744	1.3390 ppb	0.42744	31.92%	
QC value within limits for SiO2 Recovery = Not calculated							
All analyte(s) passed QC.							

## =====

Reprocessing Begun

Logged In Analyst: Optima3

Technique: ICP Continuous

Results Data Set (original): 010610

Results Library (original): C:\pe\Optima3\Results\Results.mdb

Results Data Set (reprocessed): 010610A

Results Library (reprocessed): C:\pe\Optima3\Results\Results.mdb

## =====

Method Loaded

Method Name: General Eng.2AX

Method Last Saved: 1/6/2010 11:54:05

IEC File: 101209.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: 1/6/2010 10:05:16

Analyst:

Data Type: Reprocessed on 1/6/2010 11:55:25

Logged In Analyst (Original) : Optima3

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 361.383	884204.5	884204.5	99.729 %	10:08:26
1	Sc Radial	4647.0	4647.0	99.6 %	10:07:09
1	Y 371.029	760145.0	760145.0	99.788 %	10:08:26
1	Y RADIAL	4888.3	4888.3	99.10 %	10:07:09
1	Ag 328.068†	383.7	384.7	[0.00] ug/L	10:08:31

1	Al 396.153Radial†	-35.8	-36.0	[0.00]	ug/L	10:07:09
1	As 188.979†	-40.4	-40.5	[0.00]	ug/L	10:08:51
1	B 249.677†	-622.0	-623.7	[0.00]	ug/L	10:08:31
1	Ba 233.527†	18.5	18.5	[0.00]	ug/L	10:08:51
1	Be 313.107†	-4379.0	-4390.9	[0.00]	ug/L	10:08:31
1	Ca 317.933Radial†	10.1	10.2	[0.00]	ug/L	10:07:29
1	Cd 226.502†	-233.2	-233.9	[0.00]	ug/L	10:08:51
1	Co 228.616†	-82.3	-82.5	[0.00]	ug/L	10:08:51
1	Cr 267.716†	129.2	129.6	[0.00]	ug/L	10:08:31
1	Cu 324.752†	8059.5	8081.4	[0.00]	ug/L	10:08:31
1	Fe 238.204 Radial†	13.7	13.7	[0.00]	ug/L	10:07:29
1	K 766.490 Radial†	3438.5	3453.7	[0.00]	ug/L	10:07:09
1	Mg 279.077 IEC†	2.0	2.0	[0.00]	ug/L	10:07:29
1	Mn 257.610†	555.5	557.0	[0.00]	ug/L	10:08:31
1	Mo 202.031†	22.3	22.3	[0.00]	ug/L	10:08:51
1	Na 589.592 Radial†	-1748.6	-1756.4	[0.00]	ug/L	10:07:09
1	Ni 231.604†	114.8	115.1	[0.00]	ug/L	10:08:51
1	P 214.914†	248.4	249.1	[0.00]	ug/L	10:08:51
1	Pb 220.353†	-93.7	-94.0	[0.00]	ug/L	10:08:51
1	S 181.975 Axial†	53.6	53.8	[0.00]	ug/L	10:08:51
1	Sb 206.836†	40.2	40.3	[0.00]	ug/L	10:08:51
1	Se 196.026†	-36.2	-36.3	[0.00]	ug/L	10:08:51
1	Si 251.611†	623.9	625.6	[0.00]	ug/L	10:08:51
1	Sn 189.927†	3.5	3.5	[0.00]	ug/L	10:08:51
1	Sr 421.552†	33.7	33.8	[0.00]	ug/L	10:07:09
1	Ti 334.940†	-1810.6	-1815.5	[0.00]	ug/L	10:08:31
1	Tl 190.801†	-47.9	-48.0	[0.00]	ug/L	10:08:51
1	U 409.014†	-2556.5	-2563.4	[0.00]	ug/L	10:08:26
1	V 292.402†	-1786.0	-1790.8	[0.00]	ug/L	10:08:31
1	Zn 213.857†	844.0	846.3	[0.00]	ug/L	10:08:51
1	SiO2†	616.3	618.0	[0.00]	ug/L	10:09:57
2	Sc 361.383	888077.5	888077.5	100.17	%	10:08:56
2	Sc Radial	4701.9	4701.9	101	%	10:07:34
2	Y 371.029	762915.3	762915.3	100.15	%	10:08:56
2	Y RADIAL	4987.9	4987.9	101.1	%	10:07:34
2	Ag 328.068†	601.4	600.4	[0.00]	ug/L	10:09:01
2	Al 396.153Radial†	-6.8	-6.8	[0.00]	ug/L	10:07:34
2	As 188.979†	-32.7	-32.6	[0.00]	ug/L	10:09:21
2	B 249.677†	-682.2	-681.0	[0.00]	ug/L	10:09:01
2	Ba 233.527†	-2.0	-1.9	[0.00]	ug/L	10:09:21
2	Be 313.107†	-4308.2	-4301.1	[0.00]	ug/L	10:09:01
2	Ca 317.933Radial†	14.5	14.4	[0.00]	ug/L	10:07:54
2	Cd 226.502†	-234.7	-234.3	[0.00]	ug/L	10:09:21
2	Co 228.616†	-75.6	-75.4	[0.00]	ug/L	10:09:21
2	Cr 267.716†	138.6	138.4	[0.00]	ug/L	10:09:01
2	Cu 324.752†	7960.6	7947.4	[0.00]	ug/L	10:09:01
2	Fe 238.204 Radial†	12.8	12.7	[0.00]	ug/L	10:07:54
2	K 766.490 Radial†	3279.2	3255.3	[0.00]	ug/L	10:07:34
2	Mg 279.077 IEC†	2.5	2.5	[0.00]	ug/L	10:07:54
2	Mn 257.610†	504.7	503.9	[0.00]	ug/L	10:09:01
2	Mo 202.031†	7.4	7.4	[0.00]	ug/L	10:09:21
2	Na 589.592 Radial†	-1789.0	-1775.9	[0.00]	ug/L	10:07:34
2	Ni 231.604†	139.5	139.3	[0.00]	ug/L	10:09:21
2	P 214.914†	244.1	243.7	[0.00]	ug/L	10:09:21
2	Pb 220.353†	-73.5	-73.4	[0.00]	ug/L	10:09:21
2	S 181.975 Axial†	64.8	64.7	[0.00]	ug/L	10:09:21
2	Sb 206.836†	33.6	33.5	[0.00]	ug/L	10:09:21
2	Se 196.026†	-33.5	-33.5	[0.00]	ug/L	10:09:21
2	Si 251.611†	597.2	596.2	[0.00]	ug/L	10:09:21
2	Sn 189.927†	6.0	6.0	[0.00]	ug/L	10:09:21
2	Sr 421.552†	25.1	24.9	[0.00]	ug/L	10:07:34
2	Ti 334.940†	-1812.8	-1809.8	[0.00]	ug/L	10:09:01
2	Tl 190.801†	-65.1	-65.0	[0.00]	ug/L	10:09:21
2	U 409.014†	-2701.8	-2697.3	[0.00]	ug/L	10:08:56
2	V 292.402†	-1773.9	-1771.0	[0.00]	ug/L	10:09:01
2	Zn 213.857†	830.2	828.8	[0.00]	ug/L	10:09:21
2	SiO2†	650.9	649.9	[0.00]	ug/L	10:10:02
3	Sc 361.383	887546.5	887546.5	100.11	%	10:09:27
3	Sc Radial	4653.8	4653.8	99.7	%	10:07:59
3	Y 371.029	762209.6	762209.6	100.06	%	10:09:27
3	Y RADIAL	4922.5	4922.5	99.79	%	10:07:59

3	Ag 328.068†	552.4	551.9	[0.00]	ug/L	10:09:32
3	Al 396.153Radial†	-37.3	-37.4	[0.00]	ug/L	10:07:59
3	As 188.979†	-27.2	-27.2	[0.00]	ug/L	10:09:52
3	B 249.677†	-693.6	-692.8	[0.00]	ug/L	10:09:32
3	Ba 233.527†	6.0	6.0	[0.00]	ug/L	10:09:52
3	Be 313.107†	-4367.1	-4362.5	[0.00]	ug/L	10:09:32
3	Ca 317.933Radial†	13.0	13.1	[0.00]	ug/L	10:08:19
3	Cd 226.502†	-247.2	-247.0	[0.00]	ug/L	10:09:52
3	Co 228.616†	-94.0	-93.9	[0.00]	ug/L	10:09:52
3	Cr 267.716†	44.2	44.1	[0.00]	ug/L	10:09:32
3	Cu 324.752†	7976.6	7968.2	[0.00]	ug/L	10:09:32
3	Fe 238.204 Radial†	15.1	15.2	[0.00]	ug/L	10:08:19
3	K 766.490 Radial†	3291.4	3301.2	[0.00]	ug/L	10:07:59
3	Mg 279.077 IEC†	0.4	0.4	[0.00]	ug/L	10:08:19
3	Mn 257.610†	488.9	488.4	[0.00]	ug/L	10:09:32
3	Mo 202.031†	30.1	30.1	[0.00]	ug/L	10:09:52
3	Na 589.592 Radial†	-1712.9	-1718.0	[0.00]	ug/L	10:07:59
3	Ni 231.604†	121.0	120.8	[0.00]	ug/L	10:09:52
3	P 214.914†	253.1	252.8	[0.00]	ug/L	10:09:52
3	Pb 220.353†	-66.0	-65.9	[0.00]	ug/L	10:09:52
3	S 181.975 Axial†	61.3	61.2	[0.00]	ug/L	10:09:52
3	Sb 206.836†	37.5	37.5	[0.00]	ug/L	10:09:52
3	Se 196.026†	-30.1	-30.0	[0.00]	ug/L	10:09:52
3	Si 251.611†	628.5	627.8	[0.00]	ug/L	10:09:52
3	Sn 189.927†	0.7	0.7	[0.00]	ug/L	10:09:52
3	Sr 421.552†	-10.8	-10.8	[0.00]	ug/L	10:07:59
3	Ti 334.940†	-1828.6	-1826.7	[0.00]	ug/L	10:09:32
3	Tl 190.801†	-47.3	-47.2	[0.00]	ug/L	10:09:52
3	U 409.014†	-2748.3	-2745.4	[0.00]	ug/L	10:09:27
3	V 292.402†	-1845.7	-1843.7	[0.00]	ug/L	10:09:32
3	Zn 213.857†	820.8	820.0	[0.00]	ug/L	10:09:52
3	SiO2†	640.9	640.3	[0.00]	ug/L	10:10:07

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Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	886609.5	2099.64	0.24%	100.00 %
Sc Radial	4667.6	29.96	0.64%	100 %
Y 371.029	761756.6	1439.64	0.19%	100.00 %
Y RADIAL	4932.9	50.59	1.03%	100.0 %
Ag 328.068†	512.3	113.13	22.08%	[0.00] ug/L
Al 396.153Radial†	-26.7	17.27	64.64%	[0.00] ug/L
As 188.979†	-33.4	6.69	20.02%	[0.00] ug/L
B 249.677†	-665.8	37.00	5.56%	[0.00] ug/L
Ba 233.527†	7.5	10.31	137.44%	[0.00] ug/L
Be 313.107†	-4351.5	45.91	1.06%	[0.00] ug/L
Ca 317.933Radial†	12.6	2.15	17.15%	[0.00] ug/L
Cd 226.502†	-238.4	7.44	3.12%	[0.00] ug/L
Co 228.616†	-84.0	9.33	11.12%	[0.00] ug/L
Cr 267.716†	104.0	52.08	50.06%	[0.00] ug/L
Cu 324.752†	7999.0	72.12	0.90%	[0.00] ug/L
Fe 238.204 Radial†	13.9	1.22	8.80%	[0.00] ug/L
K 766.490 Radial†	3336.7	103.88	3.11%	[0.00] ug/L
Mg 279.077 IEC†	1.6	1.09	66.14%	[0.00] ug/L
Mn 257.610†	516.4	35.95	6.96%	[0.00] ug/L
Mo 202.031†	19.9	11.55	57.98%	[0.00] ug/L
Na 589.592 Radial†	-1750.1	29.46	1.68%	[0.00] ug/L
Ni 231.604†	125.1	12.63	10.10%	[0.00] ug/L
P 214.914†	248.6	4.57	1.84%	[0.00] ug/L
Pb 220.353†	-77.8	14.53	18.68%	[0.00] ug/L
S 181.975 Axial†	59.9	5.58	9.32%	[0.00] ug/L
Sb 206.836†	37.1	3.40	9.17%	[0.00] ug/L
Se 196.026†	-33.3	3.12	9.39%	[0.00] ug/L
Si 251.611†	616.6	17.63	2.86%	[0.00] ug/L
Sn 189.927†	3.4	2.63	77.27%	[0.00] ug/L
Sr 421.552†	16.0	23.64	147.88%	[0.00] ug/L
Ti 334.940†	-1817.4	8.59	0.47%	[0.00] ug/L
Tl 190.801†	-53.4	10.02	18.78%	[0.00] ug/L
U 409.014†	-2668.7	94.31	3.53%	[0.00] ug/L
V 292.402†	-1801.8	37.61	2.09%	[0.00] ug/L

Zn 213.857†	831.7	13.39	1.61%	[0.00] ug/L
SiO2†	636.0	16.37	2.57%	[0.00] ug/L

Sequence No.: 2  
 Sample ID: S0.1  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 2  
 Date Collected: 1/6/2010 10:12:18  
 Data Type: Reprocessed on 1/6/2010 11:55:26  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: S0.1

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Analysis Time
1	Sc 361.383	858980.9	858980.9	96.884 %	10:14:42
1	Sc Radial	4680.0	4680.0	100 %	10:14:15
1	Y 371.029	737496.5	737496.5	96.815 %	10:14:42
1	Y RADIAL	4959.7	4959.7	100.5 %	10:14:15
1	Ag 328.068†	23297.9	23534.9	[100] ug/L	10:14:42
1	As 188.979†	245.5	286.8	[100] ug/L	10:15:02
1	B 249.677†	3857.1	4647.0	[100] ug/L	10:14:42
1	Ba 233.527†	13535.2	13963.1	[100] ug/L	10:14:42
1	Be 313.107†	285272.4	298799.6	[100] ug/L	10:14:42
1	Cd 226.502†	9981.9	10541.4	[100] ug/L	10:15:02
1	Co 228.616†	5125.3	5374.1	[100] ug/L	10:15:02
1	Cr 267.716†	9927.5	10142.7	[100] ug/L	10:14:42
1	Cu 324.752†	40691.6	34001.4	[100] ug/L	10:14:42
1	K 766.490 Radial†	8407.9	5048.9	[1000] ug/L	10:14:10
1	Mn 257.610†	95334.8	97884.8	[100] ug/L	10:14:42
1	Mo 202.031†	1605.3	1637.0	[100] ug/L	10:15:02
1	Ni 231.604†	4633.5	4657.5	[100] ug/L	10:15:02
1	P 214.914†	1254.4	1046.2	[500] ug/L	10:15:02
1	Pb 220.353†	853.5	958.8	[100] ug/L	10:15:02
1	S 181.975 Axial†	233.2	180.8	[200] ug/L	10:15:02
1	Sb 206.836†	367.3	342.0	[100] ug/L	10:15:02
1	Se 196.026†	151.8	190.0	[100] ug/L	10:15:02
1	Si 251.611†	17526.4	17473.5	[500] ug/L	10:14:42
1	Sn 189.927†	662.1	680.0	[100] ug/L	10:15:02
1	Sr 421.552†	13727.0	13674.7	[100] ug/L	10:14:15
1	Ti 334.940†	60372.6	64131.8	[100] ug/L	10:14:42
1	Tl 190.801†	306.6	369.9	[100] ug/L	10:15:02
1	U 409.014†	488.3	3172.7	[100] ug/L	10:14:42
1	V 292.402†	13700.9	15943.5	[100] ug/L	10:14:42
1	Zn 213.857†	12421.0	11988.8	[100] ug/L	10:15:02
1	SiO2†	17631.3	17562.4	[1069.5] ug/L	10:15:58
2	Sc 361.383	855417.8	855417.8	96.482 %	10:15:07
2	Sc Radial	4654.0	4654.0	99.7 %	10:14:25
2	Y 371.029	735371.7	735371.7	96.536 %	10:15:07
2	Y RADIAL	4912.1	4912.1	99.58 %	10:14:25
2	Ag 328.068†	22993.6	23319.8	[100] ug/L	10:15:07
2	As 188.979†	244.4	286.7	[100] ug/L	10:15:27
2	B 249.677†	3820.7	4625.8	[100] ug/L	10:15:07
2	Ba 233.527†	13432.1	13914.4	[100] ug/L	10:15:07
2	Be 313.107†	283600.2	298292.9	[100] ug/L	10:15:07
2	Cd 226.502†	9983.4	10585.8	[100] ug/L	10:15:27
2	Co 228.616†	5125.5	5396.4	[100] ug/L	10:15:27
2	Cr 267.716†	9891.3	10148.0	[100] ug/L	10:15:07
2	Cu 324.752†	40378.4	33851.7	[100] ug/L	10:15:07
2	K 766.490 Radial†	8231.9	4919.2	[1000] ug/L	10:14:20
2	Mn 257.610†	94787.7	97727.6	[100] ug/L	10:15:07
2	Mo 202.031†	1588.4	1626.4	[100] ug/L	10:15:27
2	Ni 231.604†	4613.6	4656.7	[100] ug/L	10:15:27
2	P 214.914†	1234.6	1031.1	[500] ug/L	10:15:27
2	Pb 220.353†	854.4	963.3	[100] ug/L	10:15:27
2	S 181.975 Axial†	222.7	170.9	[200] ug/L	10:15:27
2	Sb 206.836†	368.9	345.2	[100] ug/L	10:15:27
2	Se 196.026†	149.3	188.0	[100] ug/L	10:15:27
2	Si 251.611†	17335.2	17350.7	[500] ug/L	10:15:07
2	Sn 189.927†	671.0	692.0	[100] ug/L	10:15:27
2	Sr 421.552†	13682.9	13706.8	[100] ug/L	10:14:25
2	Ti 334.940†	60014.8	64020.5	[100] ug/L	10:15:07
2	Tl 190.801†	307.2	371.8	[100] ug/L	10:15:27

2	U 409.014†	295.8	2975.3	[100]	ug/L	10:15:07
2	V 292.402†	13528.2	15823.3	[100]	ug/L	10:15:07
2	Zn 213.857†	12466.1	12089.0	[100]	ug/L	10:15:27
2	SiO2†	17384.6	17382.5	[1069.5]	ug/L	10:16:03
3	Sc 361.383	859958.1	859958.1	96.994	%	10:15:33
3	Sc Radial	4766.0	4766.0	102	%	10:14:35
3	Y 371.029	739304.7	739304.7	97.053	%	10:15:33
3	Y RADIAL	5003.2	5003.2	101.4	%	10:14:35
3	Ag 328.068†	23212.3	23419.4	[100]	ug/L	10:15:33
3	As 188.979†	253.6	294.9	[100]	ug/L	10:15:53
3	B 249.677†	3961.8	4750.4	[100]	ug/L	10:15:33
3	Ba 233.527†	13535.7	13947.7	[100]	ug/L	10:15:33
3	Be 313.107†	285383.3	298579.3	[100]	ug/L	10:15:33
3	Cd 226.502†	9988.9	10536.8	[100]	ug/L	10:15:53
3	Co 228.616†	5127.3	5370.2	[100]	ug/L	10:15:53
3	Cr 267.716†	9938.8	10142.8	[100]	ug/L	10:15:33
3	Cu 324.752†	40815.8	34081.7	[100]	ug/L	10:15:33
3	K 766.490 Radial†	8372.8	4863.1	[1000]	ug/L	10:14:30
3	Mn 257.610†	95438.6	97880.0	[100]	ug/L	10:15:33
3	Mo 202.031†	1597.4	1627.0	[100]	ug/L	10:15:53
3	Ni 231.604†	4590.6	4607.8	[100]	ug/L	10:15:53
3	P 214.914†	1236.1	1025.8	[500]	ug/L	10:15:53
3	Pb 220.353†	853.0	957.2	[100]	ug/L	10:15:53
3	S 181.975 Axial†	215.4	162.1	[200]	ug/L	10:15:53
3	Sb 206.836†	363.9	338.1	[100]	ug/L	10:15:53
3	Se 196.026†	147.6	185.4	[100]	ug/L	10:15:53
3	Si 251.611†	17460.2	17384.8	[500]	ug/L	10:15:33
3	Sn 189.927†	668.8	686.1	[100]	ug/L	10:15:53
3	Sr 421.552†	13921.0	13617.4	[100]	ug/L	10:14:35
3	Ti 334.940†	60486.7	64178.6	[100]	ug/L	10:15:33
3	Tl 190.801†	311.4	374.4	[100]	ug/L	10:15:53
3	U 409.014†	310.2	2988.5	[100]	ug/L	10:15:33
3	V 292.402†	13652.1	15877.1	[100]	ug/L	10:15:33
3	Zn 213.857†	12472.9	12027.8	[100]	ug/L	10:15:53
3	SiO2†	17487.2	17393.2	[1069.5]	ug/L	10:16:08

## Mean Data: S0.1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Sc 361.383	858118.9	2389.74	0.28%	96.787	%
Sc Radial	4700.0	58.64	1.25%	101	%
Y 371.029	737391.0	1968.61	0.27%	96.801	%
Y RADIAL	4958.3	45.59	0.92%	100.5	%
Ag 328.068†	23424.7	107.68	0.46%	[100]	ug/L
As 188.979†	289.5	4.67	1.61%	[100]	ug/L
B 249.677†	4674.4	66.66	1.43%	[100]	ug/L
Ba 233.527†	13941.7	24.90	0.18%	[100]	ug/L
Be 313.107†	298557.2	254.08	0.09%	[100]	ug/L
Cd 226.502†	10554.7	27.08	0.26%	[100]	ug/L
Co 228.616†	5380.2	14.13	0.26%	[100]	ug/L
Cr 267.716†	10144.5	2.99	0.03%	[100]	ug/L
Cu 324.752†	33978.3	116.72	0.34%	[100]	ug/L
K 766.490 Radial†	4943.7	95.30	1.93%	[1000]	ug/L
Mn 257.610†	97830.8	89.39	0.09%	[100]	ug/L
Mo 202.031†	1630.1	5.97	0.37%	[100]	ug/L
Ni 231.604†	4640.7	28.47	0.61%	[100]	ug/L
P 214.914†	1034.4	10.58	1.02%	[500]	ug/L
Pb 220.353†	959.8	3.20	0.33%	[100]	ug/L
S 181.975 Axial†	171.3	9.35	5.46%	[200]	ug/L
Sb 206.836†	341.8	3.59	1.05%	[100]	ug/L
Se 196.026†	187.8	2.27	1.21%	[100]	ug/L
Si 251.611†	17403.0	63.40	0.36%	[500]	ug/L
Sn 189.927†	686.0	6.02	0.88%	[100]	ug/L
Sr 421.552†	13666.3	45.28	0.33%	[100]	ug/L
Ti 334.940†	64110.3	81.19	0.13%	[100]	ug/L
Tl 190.801†	372.0	2.28	0.61%	[100]	ug/L
U 409.014†	3045.5	110.39	3.62%	[100]	ug/L
V 292.402†	15881.3	60.18	0.38%	[100]	ug/L
Zn 213.857†	12035.2	50.50	0.42%	[100]	ug/L
SiO2†	17446.0	100.94	0.58%	[1069.5]	ug/L



Sequence No.: 3  
 Sample ID: S0.5  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 3  
 Date Collected: 1/6/2010 10:18:19  
 Data Type: Reprocessed on 1/6/2010 11:55:28  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: S0.5

Repl#	Analyte	Net Intensity	Corrected Intensity	Conc. Units	Analysis Time
1	Sc 361.383	883512.7	883512.7	99.651 %	10:21:31
1	Sc Radial	4601.8	4601.8	98.6 %	10:20:12
1	Y 371.029	752079.9	752079.9	98.730 %	10:21:31
1	Y RADIAL	4817.5	4817.5	97.66 %	10:20:12
1	Ag 328.068†	114385.8	114274.4	[500] ug/L	10:21:31
1	Al 396.153Radial†	5563.1	5669.3	[5000] ug/L	10:20:12
1	As 188.979†	1380.3	1418.6	[500] ug/L	10:21:51
1	B 249.677†	22915.8	23661.9	[500] ug/L	10:21:31
1	Ba 233.527†	67394.6	67623.3	[500] ug/L	10:21:31
1	Be 313.107†	1463962.1	1473445.0	[500] ug/L	10:21:31
1	Ca 317.933Radial†	3026.4	3057.1	[5000] ug/L	10:20:32
1	Cd 226.502†	52091.1	52512.1	[500] ug/L	10:21:31
1	Co 228.616†	25883.0	26057.7	[500] ug/L	10:21:51
1	Cr 267.716†	49100.1	49168.1	[500] ug/L	10:21:31
1	Cu 324.752†	173485.5	166094.6	[500] ug/L	10:21:31
1	K 766.490 Radial†	28039.4	25103.4	[5000] ug/L	10:20:12
1	Mg 279.077 IEC†	160.2	160.9	[5000] ug/L	10:20:32
1	Mn 257.610†	471058.4	472193.1	[500] ug/L	10:21:31
1	Mo 202.031†	7928.7	7936.5	[500] ug/L	10:21:51
1	Ni 231.604†	22462.4	22416.0	[500] ug/L	10:21:51
1	P 214.914†	5312.3	5082.3	[2500] ug/L	10:21:51
1	Pb 220.353†	4719.2	4813.5	[500] ug/L	10:21:51
1	S 181.975 Axial†	934.0	877.4	[1000] ug/L	10:21:51
1	Sb 206.836†	1674.2	1643.0	[500] ug/L	10:21:51
1	Se 196.026†	933.0	969.5	[500] ug/L	10:21:51
1	Si 251.611†	86137.1	85822.4	[2500] ug/L	10:21:31
1	Sn 189.927†	3339.3	3347.7	[500] ug/L	10:21:51
1	Sr 421.552†	68394.0	69355.4	[500] ug/L	10:20:12
1	Ti 334.940†	312108.2	315019.5	[500] ug/L	10:21:31
1	Tl 190.801†	1747.5	1807.0	[500] ug/L	10:21:51
1	U 409.014†	13304.8	16020.2	[500] ug/L	10:21:31
1	V 292.402†	76303.3	78372.6	[500] ug/L	10:21:31
1	Zn 213.857†	60967.6	60349.6	[500] ug/L	10:21:31
1	SiO2†	86414.0	86080.9	[5347.5] ug/L	10:22:51
2	Sc 361.383	887225.8	887225.8	100.07 %	10:21:58
2	Sc Radial	4740.4	4740.4	102 %	10:20:37
2	Y 371.029	754809.6	754809.6	99.088 %	10:21:58
2	Y RADIAL	4960.4	4960.4	100.6 %	10:20:37
2	Ag 328.068†	115157.8	114565.5	[500] ug/L	10:21:58
2	Al 396.153Radial†	5682.9	5622.3	[5000] ug/L	10:20:37
2	As 188.979†	1369.6	1402.0	[500] ug/L	10:22:18
2	B 249.677†	23171.9	23821.6	[500] ug/L	10:21:58
2	Ba 233.527†	67955.3	67900.6	[500] ug/L	10:21:58
2	Be 313.107†	1474743.7	1478070.7	[500] ug/L	10:21:58
2	Ca 317.933Radial†	3029.9	2970.9	[5000] ug/L	10:20:57
2	Cd 226.502†	52500.4	52702.3	[500] ug/L	10:21:58
2	Co 228.616†	25759.0	25825.1	[500] ug/L	10:22:18
2	Cr 267.716†	49400.6	49262.3	[500] ug/L	10:21:58
2	Cu 324.752†	174589.1	166468.8	[500] ug/L	10:21:58
2	K 766.490 Radial†	28831.9	25052.4	[5000] ug/L	10:20:37
2	Mg 279.077 IEC†	165.0	160.9	[5000] ug/L	10:20:57
2	Mn 257.610†	474451.9	473605.9	[500] ug/L	10:21:58
2	Mo 202.031†	7868.6	7843.2	[500] ug/L	10:22:18
2	Ni 231.604†	22362.2	22221.6	[500] ug/L	10:22:18
2	P 214.914†	5271.4	5019.2	[2500] ug/L	10:22:18
2	Pb 220.353†	4679.9	4754.4	[500] ug/L	10:22:18
2	S 181.975 Axial†	927.7	867.1	[1000] ug/L	10:22:18
2	Sb 206.836†	1664.7	1626.5	[500] ug/L	10:22:18

2	Se 196.026†	938.7	971.3	[500]	ug/L	10:22:18
2	Si 251.611†	86879.3	86202.4	[2500]	ug/L	10:21:58
2	Sn 189.927†	3327.1	3321.4	[500]	ug/L	10:22:18
2	Sr 421.552†	70252.9	69158.0	[500]	ug/L	10:20:37
2	Ti 334.940†	313954.4	315553.7	[500]	ug/L	10:21:58
2	Tl 190.801†	1748.5	1800.6	[500]	ug/L	10:22:18
2	U 409.014†	13260.1	15919.6	[500]	ug/L	10:21:58
2	V 292.402†	76752.0	78500.6	[500]	ug/L	10:21:58
2	Zn 213.857†	61417.5	60543.2	[500]	ug/L	10:21:58
2	SiO2†	85934.5	85238.8	[5347.5]	ug/L	10:22:56
3	Sc 361.383	884330.4	884330.4	99.743	%	10:22:26
3	Sc Radial	4562.7	4562.7	97.8	%	10:21:02
3	Y 371.029	752217.8	752217.8	98.748	%	10:22:26
3	Y RADIAL	4788.6	4788.6	97.07	%	10:21:02
3	Ag 328.068†	114779.6	114563.1	[500]	ug/L	10:22:26
3	Al 396.153Radial†	5525.6	5679.3	[5000]	ug/L	10:21:02
3	As 188.979†	1366.0	1403.0	[500]	ug/L	10:22:46
3	B 249.677†	22910.0	23634.9	[500]	ug/L	10:22:26
3	Ba 233.527†	67647.5	67814.4	[500]	ug/L	10:22:26
3	Be 313.107†	1467958.9	1476093.6	[500]	ug/L	10:22:26
3	Ca 317.933Radial†	3015.8	3072.5	[5000]	ug/L	10:21:22
3	Cd 226.502†	52364.8	52738.1	[500]	ug/L	10:22:26
3	Co 228.616†	25760.2	25910.5	[500]	ug/L	10:22:46
3	Cr 267.716†	49276.5	49299.5	[500]	ug/L	10:22:26
3	Cu 324.752†	173800.1	166249.0	[500]	ug/L	10:22:26
3	K 766.490 Radial†	28001.8	25308.7	[5000]	ug/L	10:21:02
3	Mg 279.077 IEC†	162.2	164.3	[5000]	ug/L	10:21:22
3	Mn 257.610†	472600.3	473301.9	[500]	ug/L	10:22:26
3	Mo 202.031†	7885.0	7885.4	[500]	ug/L	10:22:46
3	Ni 231.604†	22342.5	22275.0	[500]	ug/L	10:22:46
3	P 214.914†	5269.3	5034.3	[2500]	ug/L	10:22:46
3	Pb 220.353†	4660.7	4750.4	[500]	ug/L	10:22:46
3	S 181.975 Axial†	923.8	866.3	[1000]	ug/L	10:22:46
3	Sb 206.836†	1679.2	1646.4	[500]	ug/L	10:22:46
3	Se 196.026†	930.9	966.5	[500]	ug/L	10:22:46
3	Si 251.611†	86364.9	85970.9	[2500]	ug/L	10:22:26
3	Sn 189.927†	3331.4	3336.5	[500]	ug/L	10:22:46
3	Sr 421.552†	68237.4	69789.8	[500]	ug/L	10:21:02
3	Ti 334.940†	312680.8	315304.0	[500]	ug/L	10:22:26
3	Tl 190.801†	1748.9	1806.8	[500]	ug/L	10:22:46
3	U 409.014†	13013.2	15715.4	[500]	ug/L	10:22:26
3	V 292.402†	76468.7	78467.6	[500]	ug/L	10:22:26
3	Zn 213.857†	61087.2	60413.0	[500]	ug/L	10:22:26
3	SiO2†	86458.6	86045.4	[5347.5]	ug/L	10:23:02

## Mean Data: S0.5

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Units
Sc 361.383	885023.0	1951.07	0.22%	99.821	%
Sc Radial	4635.0	93.36	2.01%	99.3	%
Y 371.029	753035.8	1537.71	0.20%	98.855	%
Y RADIAL	4855.5	92.01	1.89%	98.43	%
Ag 328.068†	114467.6	167.37	0.15%	[500]	ug/L
Al 396.153Radial†	5657.0	30.41	0.54%	[5000]	ug/L
As 188.979†	1407.9	9.28	0.66%	[500]	ug/L
B 249.677†	23706.2	100.93	0.43%	[500]	ug/L
Ba 233.527†	67779.4	141.90	0.21%	[500]	ug/L
Be 313.107†	1475869.8	2320.96	0.16%	[500]	ug/L
Ca 317.933Radial†	3033.5	54.79	1.81%	[5000]	ug/L
Cd 226.502†	52650.8	121.47	0.23%	[500]	ug/L
Co 228.616†	25931.1	117.66	0.45%	[500]	ug/L
Cr 267.716†	49243.3	67.70	0.14%	[500]	ug/L
Cu 324.752†	166270.8	188.05	0.11%	[500]	ug/L
K 766.490 Radial†	25154.8	135.66	0.54%	[5000]	ug/L
Mg 279.077 IEC†	162.0	1.99	1.23%	[5000]	ug/L
Mn 257.610†	473033.6	743.59	0.16%	[500]	ug/L
Mo 202.031†	7888.4	46.74	0.59%	[500]	ug/L
Ni 231.604†	22304.2	100.46	0.45%	[500]	ug/L
P 214.914†	5045.3	32.96	0.65%	[2500]	ug/L
Pb 220.353†	4772.8	35.35	0.74%	[500]	ug/L

S 181.975 Axial†	870.3	6.18	0.71%	[1000]	ug/L
Sb 206.836†	1638.6	10.67	0.65%	[500]	ug/L
Se 196.026†	969.1	2.40	0.25%	[500]	ug/L
Si 251.611†	85998.6	191.49	0.22%	[2500]	ug/L
Sn 189.927†	3335.2	13.17	0.39%	[500]	ug/L
Sr 421.552†	69434.4	323.18	0.47%	[500]	ug/L
Ti 334.940†	315292.4	267.26	0.08%	[500]	ug/L
Tl 190.801†	1804.8	3.61	0.20%	[500]	ug/L
U 409.014†	15885.1	155.29	0.98%	[500]	ug/L
V 292.402†	78446.9	66.45	0.08%	[500]	ug/L
Zn 213.857†	60435.3	98.69	0.16%	[500]	ug/L
SiO2†	85788.4	476.26	0.56%	[5347.5]	ug/L

Sequence No.: 4  
 Sample ID: SCAL  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 4  
 Date Collected: 1/6/2010 10:25:12  
 Data Type: Reprocessed on 1/6/2010 11:55:29  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: SCAL

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Analysis Time
1	Sc 361.383	854575.1	854575.1	96.387 %	10:28:28
1	Sc Radial	4579.0	4579.0	98.1 %	10:27:25
1	Y 371.029	728537.8	728537.8	95.639 %	10:28:28
1	Y RADIAL	4758.3	4758.3	96.46 %	10:27:25
1	Ag 328.068†	225908.9	233865.0	[1000] ug/L	10:28:28
1	Al 396.153Radial†	10920.1	11158.0	[10000] ug/L	10:27:05
1	As 188.979†	2738.1	2874.1	[1000] ug/L	10:28:49
1	B 249.677†	46350.1	48753.4	[1000] ug/L	10:28:28
1	Ba 233.527†	132639.6	137604.2	[1000] ug/L	10:28:28
1	Be 313.107†	2851071.1	2962297.1	[1000] ug/L	10:28:23
1	Ca 317.933Radial†	5910.2	6011.9	[10000] ug/L	10:27:25
1	Cd 226.502†	102524.3	106605.9	[1000] ug/L	10:28:28
1	Co 228.616†	51547.3	53563.6	[1000] ug/L	10:28:28
1	Cr 267.716†	96715.8	100237.2	[1000] ug/L	10:28:28
1	Cu 324.752†	334819.6	339371.6	[1000] ug/L	10:28:28
1	Fe 238.204 Radial†	1132.1	1140.1	[10000] ug/L	10:27:25
1	K 766.490 Radial†	52192.2	49864.5	[10000] ug/L	10:27:05
1	Mg 279.077 IEC†	320.5	325.0	[10000] ug/L	10:27:25
1	Mn 257.610†	916466.8	950304.8	[1000] ug/L	10:28:23
1	Mo 202.031†	15444.9	16003.9	[1000] ug/L	10:28:49
1	Na 589.592 Radial†	30756.6	33101.3	[10000] ug/L	10:27:05
1	Ni 231.604†	44283.7	45818.7	[1000] ug/L	10:28:28
1	P 214.914†	10191.8	10325.2	[5000] ug/L	10:28:49
1	Pb 220.353†	9273.6	9699.0	[1000] ug/L	10:28:49
1	S 181.975 Axial†	1777.1	1783.8	[2000] ug/L	10:28:49
1	Sb 206.836†	3289.2	3375.4	[1000] ug/L	10:28:49
1	Se 196.026†	1867.2	1970.5	[1000] ug/L	10:28:49
1	Si 251.611†	169164.9	174889.6	[5000] ug/L	10:28:28
1	Sn 189.927†	6538.0	6779.7	[1000] ug/L	10:28:49
1	Sr 421.552†	132173.6	134713.1	[1000] ug/L	10:27:05
1	Ti 334.940†	605418.2	629930.1	[1000] ug/L	10:28:28
1	Tl 190.801†	3494.5	3678.9	[1000] ug/L	10:28:49
1	U 409.014†	30337.2	34143.1	[1000] ug/L	10:28:28
1	V 292.402†	152445.1	159961.5	[1000] ug/L	10:28:28
1	Zn 213.857†	118494.0	122104.1	[1000] ug/L	10:28:28
1	SiO2†	169704.7	175430.1	[10695] ug/L	10:29:57
2	Sc 361.383	858196.3	858196.3	96.795 %	10:29:00
2	Sc Radial	4524.0	4524.0	96.9 %	10:27:50
2	Y 371.029	732256.6	732256.6	96.127 %	10:29:00
2	Y RADIAL	4715.6	4715.6	95.59 %	10:27:50
2	Ag 328.068†	226859.1	233857.6	[1000] ug/L	10:29:00
2	Al 396.153Radial†	10942.0	11316.0	[10000] ug/L	10:27:30
2	As 188.979†	2707.6	2830.6	[1000] ug/L	10:29:20
2	B 249.677†	46591.3	48799.7	[1000] ug/L	10:29:00
2	Ba 233.527†	133100.4	137499.6	[1000] ug/L	10:29:00
2	Be 313.107†	2844083.0	2942596.8	[1000] ug/L	10:28:54
2	Ca 317.933Radial†	5868.1	6041.8	[10000] ug/L	10:27:50
2	Cd 226.502†	102682.4	106320.4	[1000] ug/L	10:29:00
2	Co 228.616†	51719.3	53515.6	[1000] ug/L	10:29:00
2	Cr 267.716†	96914.5	100019.1	[1000] ug/L	10:29:00
2	Cu 324.752†	336569.7	339713.9	[1000] ug/L	10:29:00
2	Fe 238.204 Radial†	1122.1	1143.9	[10000] ug/L	10:27:50
2	K 766.490 Radial†	52429.8	50757.1	[10000] ug/L	10:27:30
2	Mg 279.077 IEC†	314.1	322.4	[10000] ug/L	10:27:50
2	Mn 257.610†	914632.9	944398.2	[1000] ug/L	10:28:54
2	Mo 202.031†	15333.9	15821.6	[1000] ug/L	10:29:20
2	Na 589.592 Radial†	30925.2	33656.9	[10000] ug/L	10:27:30
2	Ni 231.604†	44461.0	45808.0	[1000] ug/L	10:29:00

2	P 214.914†	10085.9	10171.2	[5000]	ug/L	10:29:20
2	Pb 220.353†	9186.3	9568.2	[1000]	ug/L	10:29:20
2	S 181.975 Axial†	1757.9	1756.2	[2000]	ug/L	10:29:20
2	Sb 206.836†	3244.2	3314.5	[1000]	ug/L	10:29:20
2	Se 196.026†	1837.0	1931.0	[1000]	ug/L	10:29:20
2	Si 251.611†	170090.1	175104.9	[5000]	ug/L	10:29:00
2	Sn 189.927†	6497.8	6709.5	[1000]	ug/L	10:29:20
2	Sr 421.552†	132770.8	136968.8	[1000]	ug/L	10:27:30
2	Ti 334.940†	608846.1	630821.2	[1000]	ug/L	10:29:00
2	Tl 190.801†	3461.5	3629.5	[1000]	ug/L	10:29:20
2	U 409.014†	30543.7	34223.7	[1000]	ug/L	10:29:00
2	V 292.402†	152968.7	159835.0	[1000]	ug/L	10:29:00
2	Zn 213.857†	118722.7	121821.7	[1000]	ug/L	10:29:00
2	SiO2†	170248.2	175248.8	[10695]	ug/L	10:30:02
3	Sc 361.383	848819.7	848819.7	95.738	%	10:29:32
3	Sc Radial	4499.1	4499.1	96.4	%	10:28:16
3	Y 371.029	724197.9	724197.9	95.069	%	10:29:32
3	Y RADIAL	4687.7	4687.7	95.03	%	10:28:16
3	Ag 328.068†	224046.8	233509.2	[1000]	ug/L	10:29:32
3	Al 396.153Radial†	10912.2	11347.6	[10000]	ug/L	10:27:56
3	As 188.979†	2741.3	2896.8	[1000]	ug/L	10:29:52
3	B 249.677†	46090.8	48808.7	[1000]	ug/L	10:29:32
3	Ba 233.527†	131592.1	137443.1	[1000]	ug/L	10:29:32
3	Be 313.107†	2844415.3	2975401.5	[1000]	ug/L	10:29:26
3	Ca 317.933Radial†	5826.7	6032.3	[10000]	ug/L	10:28:16
3	Cd 226.502†	101521.4	106279.5	[1000]	ug/L	10:29:32
3	Co 228.616†	51116.9	53476.7	[1000]	ug/L	10:29:32
3	Cr 267.716†	95939.3	100106.5	[1000]	ug/L	10:29:32
3	Cu 324.752†	331317.2	338068.6	[1000]	ug/L	10:29:32
3	Fe 238.204 Radial†	1112.8	1140.6	[10000]	ug/L	10:28:16
3	K 766.490 Radial†	51979.0	50588.9	[10000]	ug/L	10:27:56
3	Mg 279.077 IEC†	309.4	319.3	[10000]	ug/L	10:28:16
3	Mn 257.610†	913765.8	953930.6	[1000]	ug/L	10:29:26
3	Mo 202.031†	15519.8	16190.8	[1000]	ug/L	10:29:52
3	Na 589.592 Radial†	30476.4	33367.8	[10000]	ug/L	10:27:56
3	Ni 231.604†	43886.2	45715.0	[1000]	ug/L	10:29:32
3	P 214.914†	10188.8	10393.9	[5000]	ug/L	10:29:52
3	Pb 220.353†	9282.8	9773.9	[1000]	ug/L	10:29:52
3	S 181.975 Axial†	1773.5	1792.6	[2000]	ug/L	10:29:52
3	Sb 206.836†	3297.2	3406.9	[1000]	ug/L	10:29:52
3	Se 196.026†	1859.1	1975.1	[1000]	ug/L	10:29:52
3	Si 251.611†	167775.3	174628.2	[5000]	ug/L	10:29:32
3	Sn 189.927†	6568.9	6858.0	[1000]	ug/L	10:29:52
3	Sr 421.552†	131436.1	136342.3	[1000]	ug/L	10:27:56
3	Ti 334.940†	600971.6	629544.5	[1000]	ug/L	10:29:32
3	Tl 190.801†	3500.4	3709.6	[1000]	ug/L	10:29:52
3	U 409.014†	30036.8	34042.8	[1000]	ug/L	10:29:32
3	V 292.402†	151366.7	159907.4	[1000]	ug/L	10:29:32
3	Zn 213.857†	117155.4	121539.5	[1000]	ug/L	10:29:32
3	SiO2†	167148.2	173953.7	[10695]	ug/L	10:30:08

## Mean Data: SCAL

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	853863.7	4728.60	0.55%	96.307 %
Sc Radial	4534.0	40.91	0.90%	97.1 %
Y 371.029	728330.8	4033.35	0.55%	95.612 %
Y RADIAL	4720.6	35.55	0.75%	95.70 %
Ag 328.068†	233743.9	203.34	0.09%	[1000] ug/L
Al 396.153Radial†	11273.9	101.59	0.90%	[10000] ug/L
As 188.979†	2867.2	33.62	1.17%	[1000] ug/L
B 249.677†	48787.3	29.65	0.06%	[1000] ug/L
Ba 233.527†	137515.6	81.75	0.06%	[1000] ug/L
Be 313.107†	2960098.5	16512.52	0.56%	[1000] ug/L
Ca 317.933Radial†	6028.6	15.28	0.25%	[10000] ug/L
Cd 226.502†	106401.9	177.79	0.17%	[1000] ug/L
Co 228.616†	53518.6	43.54	0.08%	[1000] ug/L
Cr 267.716†	100120.9	109.77	0.11%	[1000] ug/L
Cu 324.752†	339051.3	868.12	0.26%	[1000] ug/L
Fe 238.204 Radial†	1141.5	2.02	0.18%	[10000] ug/L

K 766.490 Radial†	50403.5	474.29	0.94%	[10000]	ug/L
Mg 279.077 IEC†	322.3	2.85	0.88%	[10000]	ug/L
Mn 257.610†	949544.6	4811.46	0.51%	[1000]	ug/L
Mo 202.031†	16005.4	184.60	1.15%	[1000]	ug/L
Na 589.592 Radial†	33375.3	277.85	0.83%	[10000]	ug/L
Ni 231.604†	45780.5	57.00	0.12%	[1000]	ug/L
P 214.914†	10296.8	114.02	1.11%	[5000]	ug/L
Pb 220.353†	9680.4	104.09	1.08%	[1000]	ug/L
S 181.975 Axial†	1777.5	19.00	1.07%	[2000]	ug/L
Sb 206.836†	3365.6	46.99	1.40%	[1000]	ug/L
Se 196.026†	1958.9	24.22	1.24%	[1000]	ug/L
Si 251.611†	174874.3	238.73	0.14%	[5000]	ug/L
Sn 189.927†	6782.4	74.28	1.10%	[1000]	ug/L
Sr 421.552†	136008.0	1164.39	0.86%	[1000]	ug/L
Ti 334.940†	630098.6	654.84	0.10%	[1000]	ug/L
Tl 190.801†	3672.7	40.46	1.10%	[1000]	ug/L
U 409.014†	34136.5	90.64	0.27%	[1000]	ug/L
V 292.402†	159901.3	63.47	0.04%	[1000]	ug/L
Zn 213.857†	121821.8	282.30	0.23%	[1000]	ug/L
SiO2†	174877.5	805.17	0.46%	[10695]	ug/L

Sequence No.: 5  
 Sample ID: S10  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 5  
 Date Collected: 1/6/2010 10:32:18  
 Data Type: Reprocessed on 1/6/2010 11:55:30  
 Initial Sample Vol:  
 Sample Prep Vol:

## Replicate Data: S10

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Analysis Time
1	Sc 361.383	861751.7	861751.7	97.196 %	10:35:29
1	Sc Radial	4571.4	4571.4	97.9 %	10:34:32
1	Y 371.029	729816.8	729816.8	95.807 %	10:35:29
1	Y RADIAL	4793.7	4793.7	97.18 %	10:34:32
1	Al 396.153Radial†	54896.5	56078.0	[50000] ug/L	10:34:12
1	Ca 317.933Radial†	29031.6	29629.7	[50000] ug/L	10:34:12
1	Fe 238.204 Radial†	2245.0	2278.4	[20000] ug/L	10:34:32
1	Mg 279.077 IEC†	1543.0	1573.8	[50000] ug/L	10:34:32
1	Na 589.592 Radial†	62736.0	65805.8	[20000] ug/L	10:34:12
2	Sc 361.383	845745.1	845745.1	95.391 %	10:35:34
2	Sc Radial	4549.2	4549.2	97.5 %	10:34:57
2	Y 371.029	716040.3	716040.3	93.999 %	10:35:34
2	Y RADIAL	4774.2	4774.2	96.78 %	10:34:57
2	Al 396.153Radial†	54557.8	56003.9	[50000] ug/L	10:34:37
2	Ca 317.933Radial†	28909.0	29648.5	[50000] ug/L	10:34:37
2	Fe 238.204 Radial†	2233.3	2277.5	[20000] ug/L	10:34:57
2	Mg 279.077 IEC†	1522.9	1560.9	[50000] ug/L	10:34:57
2	Na 589.592 Radial†	62157.3	65524.6	[20000] ug/L	10:34:37
3	Sc 361.383	859471.0	859471.0	96.939 %	10:35:40
3	Sc Radial	4549.1	4549.1	97.5 %	10:35:22
3	Y 371.029	728245.3	728245.3	95.601 %	10:35:40
3	Y RADIAL	4768.4	4768.4	96.66 %	10:35:22
3	Al 396.153Radial†	55563.5	57036.8	[50000] ug/L	10:35:02
3	Ca 317.933Radial†	29433.3	30187.0	[50000] ug/L	10:35:02
3	Fe 238.204 Radial†	2223.3	2267.3	[20000] ug/L	10:35:22
3	Mg 279.077 IEC†	1511.5	1549.2	[50000] ug/L	10:35:22
3	Na 589.592 Radial†	63482.8	66885.7	[20000] ug/L	10:35:02

## Mean Data: S10

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
Sc 361.383	855655.9	8658.47	1.01%	96.509 %
Sc Radial	4556.6	12.84	0.28%	97.6 %
Y 371.029	724700.8	7541.27	1.04%	95.135 %
Y RADIAL	4778.7	13.24	0.28%	96.87 %
Al 396.153Radial†	56372.9	576.17	1.02%	[50000] ug/L
Ca 317.933Radial†	29821.8	316.47	1.06%	[50000] ug/L
Fe 238.204 Radial†	2274.4	6.14	0.27%	[20000] ug/L
Mg 279.077 IEC†	1561.3	12.27	0.79%	[50000] ug/L
Na 589.592 Radial†	66072.1	718.58	1.09%	[20000] ug/L

## Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	3	Lin Thru 0	0.0	232.8	0.00000	0.999966	
Al 396.153Radial	3	Lin Thru 0	0.0	1.127	0.00000	1.000000	
As 188.979	3	Lin Thru 0	0.0	2.857	0.00000	0.999974	
B 249.677	3	Lin Thru 0	0.0	48.50	0.00000	0.999931	
Ba 233.527	3	Lin Thru 0	0.0	137.1	0.00000	0.999983	
Be 313.107	3	Lin Thru 0	0.0	2959	0.00000	0.999999	
Ca 317.933Radial	3	Lin Thru 0	0.0	0.5968	0.00000	0.999997	
Cd 226.502	3	Lin Thru 0	0.0	106.2	0.00000	0.999991	
Co 228.616	3	Lin Thru 0	0.0	53.19	0.00000	0.999923	
Cr 267.716	3	Lin Thru 0	0.0	99.81	0.00000	0.999978	
Cu 324.752	3	Lin Thru 0	0.0	337.8	0.00000	0.999970	
Fe 238.204 Radia	2	Lin Thru 0	0.0	0.1138	0.00000	0.999999	

K 766.490 Radial	3	Lin Thru 0	0.0	5.038	0.00000	0.999998
Mg 279.077 IEC	3	Lin Thru 0	0.0	0.0313	0.00000	0.999975
Mn 257.610	3	Lin Thru 0	0.0	949.1	0.00000	0.999995
Mo 202.031	3	Lin Thru 0	0.0	15.96	0.00000	0.999982
Na 589.592 Radia	2	Lin Thru 0	0.0	3.310	0.00000	0.999992
Ni 231.604	3	Lin Thru 0	0.0	45.55	0.00000	0.999946
P 214.914	3	Lin Thru 0	0.0	2.051	0.00000	0.999968
Pb 220.353	3	Lin Thru 0	0.0	9.653	0.00000	0.999984
S 181.975 Axial	3	Lin Thru 0	0.0	0.8848	0.00000	0.999961
Sb 206.836	3	Lin Thru 0	0.0	3.348	0.00000	0.999943
Se 196.026	3	Lin Thru 0	0.0	1.954	0.00000	0.999985
Si 251.611	3	Lin Thru 0	0.0	34.86	0.00000	0.999978
Sn 189.927	3	Lin Thru 0	0.0	6.761	0.00000	0.999977
Sr 421.552	3	Lin Thru 0	0.0	136.6	0.00000	0.999965
Ti 334.940	3	Lin Thru 0	0.0	630.3	0.00000	0.999999
Tl 190.801	3	Lin Thru 0	0.0	3.661	0.00000	0.999975
U 409.014	3	Lin Thru 0	0.0	33.64	0.00000	0.999572
V 292.402	3	Lin Thru 0	0.0	159.3	0.00000	0.999972
Zn 213.857	3	Lin Thru 0	0.0	121.6	0.00000	0.999995
SiO2	3	Lin Thru 0	0.0	16.29	0.00000	0.999972



Sequence No.: 6  
 Sample ID: ICV  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 9  
 Date Collected: 1/6/2010 10:37:51  
 Data Type: Reprocessed on 1/6/2010 11:55:31  
 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 361.383	875249.9	875249.9	98.719 %		10:41:01
1	Sc Radial	4611.4	4611.4	98.8 %		10:39:44
1	Y 371.029	746029.3	746029.3	97.935 %		10:41:01
1	Y RADIAL	4861.5	4861.5	98.55 %		10:39:44
1	Ag 328.068†	58592.2	58840.3	255.97 ug/L	255.97 ppb	10:41:01
1	Al 396.153Radial†	5658.3	5754.0	5080.5 ug/L	5080.5 ppb	10:39:44
1	As 188.979†	1300.3	1350.6	477.00 ug/L	477.00 ppb	10:41:21
1	B 249.677†	23792.7	24767.3	508.73 ug/L	508.73 ppb	10:41:01
1	Ba 233.527†	68181.7	69059.1	504.81 ug/L	504.81 ppb	10:41:01
1	Be 313.107†	750258.5	764347.5	259.32 ug/L	259.32 ppb	10:41:01
1	Ca 317.933Radial†	2964.6	2988.2	5007.2 ug/L	5007.2 ppb	10:40:04
1	Cd 226.502†	51645.3	52554.0	494.77 ug/L	494.77 ppb	10:41:01
1	Co 228.616†	26107.0	26529.8	499.07 ug/L	499.07 ppb	10:41:21
1	Cr 267.716†	47678.5	48193.3	483.68 ug/L	483.68 ppb	10:41:01
1	Cu 324.752†	174605.9	168873.0	500.23 ug/L	500.23 ppb	10:41:01
1	Fe 238.204 Radial†	594.9	588.3	5184.9 ug/L	5184.9 ppb	10:40:04
1	K 766.490 Radial†	15727.6	12582.4	2492.3 ug/L	2492.3 ppb	10:39:44
1	Mg 279.077 IEC†	164.0	164.4	5262.6 ug/L	5262.6 ppb	10:40:04
1	Mn 257.610†	479368.3	485073.5	511.51 ug/L	511.51 ppb	10:41:01
1	Mo 202.031†	8416.8	8506.1	533.38 ug/L	533.38 ppb	10:41:21
1	Na 589.592 Radial†	6799.8	8632.7	2607.8 ug/L	2607.8 ppb	10:39:44
1	Ni 231.604†	22404.2	22569.9	495.15 ug/L	495.15 ppb	10:41:21
1	P 214.914†	5293.0	5113.1	2417.4 ug/L	2417.4 ppb	10:41:21
1	Pb 220.353†	4662.5	4800.8	498.97 ug/L	498.97 ppb	10:41:21
1	S 181.975 Axial†	2212.8	2181.6	2464.5 ug/L	2464.5 ppb	10:41:21
1	Sb 206.836†	1689.6	1674.4	509.06 ug/L	509.06 ppb	10:41:21
1	Se 196.026†	4904.6	5001.5	2577.8 ug/L	2577.8 ppb	10:41:21
1	Si 251.611†	164206.4	165721.0	4742.2 ug/L	4742.2 ppb	10:41:01
1	Sn 189.927†	3563.3	3606.1	533.98 ug/L	533.98 ppb	10:41:21
1	Sr 421.552†	72600.4	73468.6	537.87 ug/L	537.87 ppb	10:39:44
1	Ti 334.940†	306956.3	312757.6	496.10 ug/L	496.10 ppb	10:41:01
1	Tl 190.801†	1835.3	1912.5	525.70 ug/L	525.70 ppb	10:41:21
1	U 409.014†	13384.3	16226.8	480.81 ug/L	480.81 ppb	10:41:01
1	V 292.402†	76997.8	79799.0	508.10 ug/L	508.10 ppb	10:41:01
1	Zn 213.857†	61557.9	61525.2	501.66 ug/L	501.66 ppb	10:41:01
1	SiO2†	163209.8	164692.0	10085 ug/L	10085 ppb	10:42:19
2	Sc 361.383	875752.3	875752.3	98.775 %		10:41:27
2	Sc Radial	4643.7	4643.7	99.5 %		10:40:09
2	Y 371.029	745923.5	745923.5	97.922 %		10:41:27
2	Y RADIAL	4862.5	4862.5	98.57 %		10:40:09
2	Ag 328.068†	58994.0	59213.1	257.54 ug/L	257.54 ppb	10:41:27
2	Al 396.153Radial†	5570.1	5625.5	4966.6 ug/L	4966.6 ppb	10:40:09
2	As 188.979†	1303.5	1353.1	477.90 ug/L	477.90 ppb	10:41:27
2	B 249.677†	24003.0	24966.4	512.85 ug/L	512.85 ppb	10:41:27
2	Ba 233.527†	68768.7	69613.7	508.87 ug/L	508.87 ppb	10:41:27
2	Be 313.107†	757527.9	771271.0	261.67 ug/L	261.67 ppb	10:41:27
2	Ca 317.933Radial†	2967.9	2970.6	4977.8 ug/L	4977.8 ppb	10:40:29
2	Cd 226.502†	51932.9	52815.1	497.24 ug/L	497.24 ppb	10:41:27
2	Co 228.616†	26075.2	26482.4	498.17 ug/L	498.17 ppb	10:41:47
2	Cr 267.716†	48078.8	48570.9	487.47 ug/L	487.47 ppb	10:41:27
2	Cu 324.752†	176133.4	170318.0	504.51 ug/L	504.51 ppb	10:41:27
2	Fe 238.204 Radial†	587.9	577.0	5086.0 ug/L	5086.0 ppb	10:40:29
2	K 766.490 Radial†	15626.5	12370.1	2450.1 ug/L	2450.1 ppb	10:40:09
2	Mg 279.077 IEC†	163.2	162.4	5197.8 ug/L	5197.8 ppb	10:40:29
2	Mn 257.610†	483197.1	488671.2	515.30 ug/L	515.30 ppb	10:41:27
2	Mo 202.031†	8421.6	8506.1	533.37 ug/L	533.37 ppb	10:41:47
2	Na 589.592 Radial†	6730.1	8514.8	2572.2 ug/L	2572.2 ppb	10:40:09
2	Ni 231.604†	22358.8	22511.0	493.85 ug/L	493.85 ppb	10:41:47

2	P 214.914†	5291.5	5108.5	2414.5 ug/L	2414.5 ppb	10:41:47
2	Pb 220.353†	4645.7	4781.1	496.91 ug/L	496.91 ppb	10:41:47
2	S 181.975 Axial†	2208.4	2175.9	2458.1 ug/L	2458.1 ppb	10:41:47
2	Sb 206.836†	1662.2	1645.7	500.33 ug/L	500.33 ppb	10:41:47
2	Se 196.026†	4899.9	4993.9	2573.6 ug/L	2573.6 ppb	10:41:47
2	Si 251.611†	165602.3	167038.8	4780.0 ug/L	4780.0 ppb	10:41:27
2	Sn 189.927†	3536.1	3576.5	529.60 ug/L	529.60 ppb	10:41:47
2	Sr 421.552†	71798.5	72151.8	528.23 ug/L	528.23 ppb	10:40:09
2	Ti 334.940†	309702.6	315359.5	500.22 ug/L	500.22 ppb	10:41:27
2	Tl 190.801†	1842.0	1918.3	527.32 ug/L	527.32 ppb	10:41:47
2	U 409.014†	13830.5	16670.7	494.02 ug/L	494.02 ppb	10:41:27
2	V 292.402†	77815.0	80581.6	513.04 ug/L	513.04 ppb	10:41:27
2	Zn 213.857†	62091.2	62029.3	505.82 ug/L	505.82 ppb	10:41:27
2	SiO2†	164649.5	166054.7	10168 ug/L	10168 ppb	10:42:24
3	Sc 361.383	876292.2	876292.2	98.836 %		10:41:53
3	Sc Radial	4648.7	4648.7	99.6 %		10:40:34
3	Y 371.029	748097.3	748097.3	98.207 %		10:41:53
3	Y RADIAL	4889.0	4889.0	99.11 %		10:40:34
3	Ag 328.068†	58712.7	58891.7	256.18 ug/L	256.18 ppb	10:41:53
3	Al 396.153Radial†	5662.3	5712.0	5043.4 ug/L	5043.4 ppb	10:40:34
3	As 188.979†	1287.3	1335.9	471.85 ug/L	471.85 ppb	10:42:13
3	B 249.677†	23901.6	24848.9	510.43 ug/L	510.43 ppb	10:41:53
3	Ba 233.527†	68267.4	69063.7	504.85 ug/L	504.85 ppb	10:41:53
3	Be 313.107†	752113.5	765320.3	259.65 ug/L	259.65 ppb	10:41:53
3	Ca 317.933Radial†	2982.5	2982.1	4997.0 ug/L	4997.0 ppb	10:40:54
3	Cd 226.502†	51696.0	52543.0	494.66 ug/L	494.66 ppb	10:41:53
3	Co 228.616†	25907.2	26296.2	494.67 ug/L	494.67 ppb	10:42:13
3	Cr 267.716†	47758.4	48216.6	483.92 ug/L	483.92 ppb	10:41:53
3	Cu 324.752†	174915.4	168975.9	500.54 ug/L	500.54 ppb	10:41:53
3	Fe 238.204 Radial†	596.9	585.4	5159.8 ug/L	5159.8 ppb	10:40:54
3	K 766.490 Radial†	15874.5	12602.1	2496.2 ug/L	2496.2 ppb	10:40:34
3	Mg 279.077 IEC†	169.1	168.1	5381.8 ug/L	5381.8 ppb	10:40:54
3	Mn 257.610†	479775.8	484908.2	511.34 ug/L	511.34 ppb	10:41:53
3	Mo 202.031†	8365.9	8444.5	529.52 ug/L	529.52 ppb	10:42:13
3	Na 589.592 Radial†	6779.6	8557.2	2585.0 ug/L	2585.0 ppb	10:40:34
3	Ni 231.604†	22192.2	22328.4	489.85 ug/L	489.85 ppb	10:42:13
3	P 214.914†	5264.0	5077.4	2399.9 ug/L	2399.9 ppb	10:42:13
3	Pb 220.353†	4633.2	4765.5	495.30 ug/L	495.30 ppb	10:42:13
3	S 181.975 Axial†	2187.9	2153.8	2433.1 ug/L	2433.1 ppb	10:42:13
3	Sb 206.836†	1651.0	1633.3	496.56 ug/L	496.56 ppb	10:42:13
3	Se 196.026†	4863.7	4954.2	2553.5 ug/L	2553.5 ppb	10:42:13
3	Si 251.611†	164437.9	165757.4	4743.3 ug/L	4743.3 ppb	10:41:53
3	Sn 189.927†	3512.5	3550.4	525.74 ug/L	525.74 ppb	10:42:13
3	Sr 421.552†	72663.7	72942.4	534.01 ug/L	534.01 ppb	10:40:34
3	Ti 334.940†	307375.9	312812.2	496.18 ug/L	496.18 ppb	10:41:53
3	Tl 190.801†	1835.3	1910.3	525.13 ug/L	525.13 ppb	10:42:13
3	U 409.014†	13660.4	16490.0	488.64 ug/L	488.64 ppb	10:41:53
3	V 292.402†	77277.5	79989.2	509.26 ug/L	509.26 ppb	10:41:53
3	Zn 213.857†	61683.6	61578.2	502.13 ug/L	502.13 ppb	10:41:53
3	SiO2†	163090.9	164375.0	10065 ug/L	10065 ppb	10:42:30

## Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	875764.8	98.777 %	0.0588			0.06%
Sc Radial	4634.6	99.3 %	0.43			0.44%
Y 371.029	746683.4	98.021 %	0.1609			0.16%
Y RADIAL	4871.0	98.75 %	0.316			0.32%
Ag 328.068†	58981.7	256.56 ug/L	0.856	256.56 ppb	0.856	0.33%
QC value within limits for Ag 328.068 Recovery = 102.63%						
Al 396.153Radial†	5697.1	5030.2 ug/L	58.13	5030.2 ppb	58.13	1.16%
QC value within limits for Al 396.153Radial Recovery = 100.60%						
As 188.979†	1346.5	475.58 ug/L	3.265	475.58 ppb	3.265	0.69%
QC value within limits for As 188.979 Recovery = 95.12%						
B 249.677†	24860.9	510.67 ug/L	2.071	510.67 ppb	2.071	0.41%
QC value within limits for B 249.677 Recovery = 102.13%						
Ba 233.527†	69245.5	506.18 ug/L	2.330	506.18 ppb	2.330	0.46%
QC value within limits for Ba 233.527 Recovery = 101.24%						
Be 313.107†	766979.6	260.21 ug/L	1.271	260.21 ppb	1.271	0.49%
QC value within limits for Be 313.107 Recovery = 104.08%						

Ca	317.933Radial†	2980.3	4994.0 ug/L	14.95	4994.0 ppb	14.95	0.30%
	QC value within limits for Ca 317.933Radial			Recovery = 99.88%			
Cd	226.502†	52637.4	495.56 ug/L	1.456	495.56 ppb	1.456	0.29%
	QC value within limits for Cd 226.502			Recovery = 99.11%			
Co	228.616†	26436.1	497.30 ug/L	2.326	497.30 ppb	2.326	0.47%
	QC value within limits for Co 228.616			Recovery = 99.46%			
Cr	267.716†	48326.9	485.02 ug/L	2.122	485.02 ppb	2.122	0.44%
	QC value within limits for Cr 267.716			Recovery = 97.00%			
Cu	324.752†	169389.0	501.76 ug/L	2.384	501.76 ppb	2.384	0.48%
	QC value within limits for Cu 324.752			Recovery = 100.35%			
Fe	238.204 Radial†	583.6	5143.6 ug/L	51.43	5143.6 ppb	51.43	1.00%
	QC value within limits for Fe 238.204 Radial			Recovery = 102.87%			
K	766.490 Radial†	12518.2	2479.5 ug/L	25.56	2479.5 ppb	25.56	1.03%
	QC value within limits for K 766.490 Radial			Recovery = 99.18%			
Mg	279.077 IEC†	165.0	5280.7 ug/L	93.33	5280.7 ppb	93.33	1.77%
	QC value within limits for Mg 279.077 IEC			Recovery = 105.61%			
Mn	257.610†	486217.6	512.72 ug/L	2.237	512.72 ppb	2.237	0.44%
	QC value within limits for Mn 257.610			Recovery = 102.54%			
Mo	202.031†	8485.6	532.09 ug/L	2.226	532.09 ppb	2.226	0.42%
	QC value within limits for Mo 202.031			Recovery = 106.42%			
Na	589.592 Radial†	8568.3	2588.3 ug/L	18.04	2588.3 ppb	18.04	0.70%
	QC value within limits for Na 589.592 Radial			Recovery = 103.53%			
Ni	231.604†	22469.8	492.95 ug/L	2.762	492.95 ppb	2.762	0.56%
	QC value within limits for Ni 231.604			Recovery = 98.59%			
P	214.914†	5099.7	2410.6 ug/L	9.41	2410.6 ppb	9.41	0.39%
	QC value within limits for P 214.914			Recovery = 96.42%			
Pb	220.353†	4782.5	497.06 ug/L	1.840	497.06 ppb	1.840	0.37%
	QC value within limits for Pb 220.353			Recovery = 99.41%			
S	181.975 Axial†	2170.4	2451.9 ug/L	16.61	2451.9 ppb	16.61	0.68%
	QC value within limits for S 181.975 Axial			Recovery = 98.08%			
Sb	206.836†	1651.1	501.98 ug/L	6.414	501.98 ppb	6.414	1.28%
	QC value within limits for Sb 206.836			Recovery = 100.40%			
Se	196.026†	4983.2	2568.3 ug/L	12.98	2568.3 ppb	12.98	0.51%
	QC value within limits for Se 196.026			Recovery = 102.73%			
Si	251.611†	166172.4	4755.2 ug/L	21.52	4755.2 ppb	21.52	0.45%
	QC value within limits for Si 251.611			Recovery = 95.10%			
Sn	189.927†	3577.7	529.77 ug/L	4.123	529.77 ppb	4.123	0.78%
	QC value within limits for Sn 189.927			Recovery = 105.95%			
Sr	421.552†	72854.3	533.37 ug/L	4.852	533.37 ppb	4.852	0.91%
	QC value within limits for Sr 421.552			Recovery = 106.67%			
Ti	334.940†	313643.1	497.50 ug/L	2.355	497.50 ppb	2.355	0.47%
	QC value within limits for Ti 334.940			Recovery = 99.50%			
Tl	190.801†	1913.7	526.05 ug/L	1.138	526.05 ppb	1.138	0.22%
	QC value within limits for Tl 190.801			Recovery = 105.21%			
U	409.014†	16462.5	487.82 ug/L	6.639	487.82 ppb	6.639	1.36%
	QC value within limits for U 409.014			Recovery = 97.56%			
V	292.402†	80123.3	510.13 ug/L	2.587	510.13 ppb	2.587	0.51%
	QC value within limits for V 292.402			Recovery = 102.03%			
Zn	213.857†	61710.9	503.21 ug/L	2.277	503.21 ppb	2.277	0.45%
	QC value within limits for Zn 213.857			Recovery = 100.64%			
SiO2†		165040.6	10106 ug/L	54.7	10106 ppb	54.7	0.54%
	QC value within limits for SiO2			Recovery = 94.49%			
All analyte(s) passed QC.							

Sequence No.: 7

Sample ID: ICB

Analyst:

Logged In Analyst (Original) : Optima3

Initial Sample Wt:

Dilution:

Autosampler Location: 10

Date Collected: 1/6/2010 10:44:40

Data Type: Reprocessed on 1/6/2010 11:55:32

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 361.383	887280.4	887280.4	100.08 %		10:47:50
1	Sc Radial	4700.6	4700.6	101 %		10:46:33
1	Y 371.029	762353.6	762353.6	100.08 %		10:47:50
1	Y RADIAL	4975.1	4975.1	100.9 %		10:46:33
1	Ag 328.068†	578.7	66.0	0.2835 ug/L	0.2835 ppb	10:47:55
1	Al 396.153Radial†	6.3	33.0	29.215 ug/L	29.215 ppb	10:46:33
1	As 188.979†	-34.7	-1.2	-0.4330 ug/L	-0.4330 ppb	10:48:15
1	B 249.677†	-414.0	252.1	5.2003 ug/L	5.2003 ppb	10:47:55
1	Ba 233.527†	32.2	24.6	0.1800 ug/L	0.1800 ppb	10:48:15
1	Be 313.107†	-4259.0	95.7	0.0324 ug/L	0.0324 ppb	10:47:55
1	Ca 317.933Radial†	23.7	11.0	18.355 ug/L	18.355 ppb	10:46:53
1	Cd 226.502†	-236.8	1.8	0.0179 ug/L	0.0179 ppb	10:48:15
1	Co 228.616†	-93.5	-9.5	-0.1754 ug/L	-0.1754 ppb	10:48:15
1	Cr 267.716†	169.9	65.7	0.6597 ug/L	0.6597 ppb	10:47:55
1	Cu 324.752†	7947.1	-57.9	-0.1719 ug/L	-0.1719 ppb	10:47:55
1	Fe 238.204 Radial†	12.8	-1.1	-9.8464 ug/L	-9.8464 ppb	10:46:53
1	K 766.490 Radial†	3328.9	-31.3	-6.2120 ug/L	-6.2120 ppb	10:46:33
1	Mg 279.077 IEC†	5.2	3.5	111.29 ug/L	111.29 ppb	10:46:53
1	Mn 257.610†	576.1	59.3	0.0594 ug/L	0.0594 ppb	10:47:55
1	Mo 202.031†	34.6	14.6	0.9162 ug/L	0.9162 ppb	10:48:15
1	Na 589.592 Radial†	-1693.2	68.9	20.802 ug/L	20.802 ppb	10:46:33
1	Ni 231.604†	154.8	29.6	0.6495 ug/L	0.6495 ppb	10:48:15
1	P 214.914†	270.5	21.7	10.641 ug/L	10.641 ppb	10:48:15
1	Pb 220.353†	-87.1	-9.2	-0.9477 ug/L	-0.9477 ppb	10:48:15
1	S 181.975 Axial†	57.7	-2.3	-2.5814 ug/L	-2.5814 ppb	10:48:15
1	Sb 206.836†	46.0	8.9	2.6823 ug/L	2.6823 ppb	10:48:15
1	Se 196.026†	-28.9	4.4	2.2057 ug/L	2.2057 ppb	10:48:15
1	Si 251.611†	668.3	51.3	1.4538 ug/L	1.4538 ppb	10:48:15
1	Sn 189.927†	9.4	6.0	0.8890 ug/L	0.8890 ppb	10:48:15
1	Sr 421.552†	31.7	15.5	0.1132 ug/L	0.1132 ppb	10:46:33
1	Ti 334.940†	-1819.0	-0.3	0.0015 ug/L	0.0015 ppb	10:47:55
1	Tl 190.801†	-44.2	9.2	2.5136 ug/L	2.5136 ppb	10:48:15
1	U 409.014†	-2765.4	-94.6	-2.8110 ug/L	-2.8110 ppb	10:47:50
1	V 292.402†	-1751.4	51.8	0.3365 ug/L	0.3365 ppb	10:47:55
1	Zn 213.857†	904.4	72.0	0.5850 ug/L	0.5850 ppb	10:48:15
1	SiO2†	710.9	74.3	4.5260 ug/L	4.5260 ppb	10:49:21
2	Sc 361.383	883890.9	883890.9	99.693 %		10:48:20
2	Sc Radial	4679.7	4679.7	100 %		10:46:58
2	Y 371.029	758461.0	758461.0	99.567 %		10:48:20
2	Y RADIAL	4921.0	4921.0	99.76 %		10:46:58
2	Ag 328.068†	470.6	-40.3	-0.1638 ug/L	-0.1638 ppb	10:48:25
2	Al 396.153Radial†	-17.6	9.1	8.0671 ug/L	8.0671 ppb	10:46:58
2	As 188.979†	-29.7	3.6	1.2519 ug/L	1.2519 ppb	10:48:45
2	B 249.677†	-379.8	284.8	5.8698 ug/L	5.8698 ppb	10:48:25
2	Ba 233.527†	-1.7	-9.3	-0.0668 ug/L	-0.0668 ppb	10:48:45
2	Be 313.107†	-4371.6	-33.6	-0.0115 ug/L	-0.0115 ppb	10:48:25
2	Ca 317.933Radial†	27.7	15.1	25.290 ug/L	25.290 ppb	10:47:18
2	Cd 226.502†	-245.6	-8.0	-0.0772 ug/L	-0.0772 ppb	10:48:45
2	Co 228.616†	-81.3	2.5	0.0475 ug/L	0.0475 ppb	10:48:45
2	Cr 267.716†	72.3	-31.5	-0.3142 ug/L	-0.3142 ppb	10:48:25
2	Cu 324.752†	8005.0	30.6	0.0918 ug/L	0.0918 ppb	10:48:25
2	Fe 238.204 Radial†	16.5	2.5	22.405 ug/L	22.405 ppb	10:47:18
2	K 766.490 Radial†	3266.9	-78.2	-15.531 ug/L	-15.531 ppb	10:46:58
2	Mg 279.077 IEC†	6.2	4.6	146.57 ug/L	146.57 ppb	10:47:18
2	Mn 257.610†	547.8	33.1	0.0344 ug/L	0.0344 ppb	10:48:25
2	Mo 202.031†	28.2	8.4	0.5288 ug/L	0.5288 ppb	10:48:45
2	Na 589.592 Radial†	-1736.9	17.6	5.3292 ug/L	5.3292 ppb	10:46:58
2	Ni 231.604†	122.0	-2.7	-0.0600 ug/L	-0.0600 ppb	10:48:45

2	P 214.914†	252.5	4.7	2.2638 ug/L	2.2638 ppb	10:48:45
2	Pb 220.353†	-87.6	-10.1	-1.0474 ug/L	-1.0474 ppb	10:48:45
2	S 181.975 Axial†	60.1	0.4	0.4845 ug/L	0.4845 ppb	10:48:45
2	Sb 206.836†	44.0	7.0	2.1190 ug/L	2.1190 ppb	10:48:45
2	Se 196.026†	-31.9	1.3	0.7134 ug/L	0.7134 ppb	10:48:45
2	Si 251.611†	664.7	50.2	1.4339 ug/L	1.4339 ppb	10:48:45
2	Sn 189.927†	6.7	3.3	0.4945 ug/L	0.4945 ppb	10:48:45
2	Sr 421.552†	19.9	3.9	0.0283 ug/L	0.0283 ppb	10:46:58
2	Ti 334.940†	-1853.3	-41.7	-0.0638 ug/L	-0.0638 ppb	10:48:25
2	Tl 190.801†	-47.7	5.6	1.5221 ug/L	1.5221 ppb	10:48:45
2	U 409.014†	-2732.6	-72.2	-2.1498 ug/L	-2.1498 ppb	10:48:20
2	V 292.402†	-1788.5	7.8	0.0523 ug/L	0.0523 ppb	10:48:25
2	Zn 213.857†	890.3	61.4	0.4990 ug/L	0.4990 ppb	10:48:45
2	SiO2†	656.1	22.1	1.3473 ug/L	1.3473 ppb	10:49:26
3	Sc 361.383	881844.3	881844.3	99.463 %		10:48:51
3	Sc Radial	4730.7	4730.7	101 %		10:47:23
3	Y 371.029	757223.1	757223.1	99.405 %		10:48:51
3	Y RADIAL	4981.0	4981.0	101.0 %		10:47:23
3	Ag 328.068†	598.1	89.0	0.3682 ug/L	0.3682 ppb	10:48:56
3	Al 396.153Radial†	-39.0	-11.7	-10.402 ug/L	-10.402 ppb	10:47:23
3	As 188.979†	-23.7	9.6	3.3395 ug/L	3.3395 ppb	10:49:16
3	B 249.677†	-385.7	278.1	5.7395 ug/L	5.7395 ppb	10:48:56
3	Ba 233.527†	2.2	-5.2	-0.0390 ug/L	-0.0390 ppb	10:49:16
3	Be 313.107†	-4297.4	30.9	0.0105 ug/L	0.0105 ppb	10:48:56
3	Ca 317.933Radial†	17.4	4.6	7.6932 ug/L	7.6932 ppb	10:47:43
3	Cd 226.502†	-225.4	11.7	0.1141 ug/L	0.1141 ppb	10:49:16
3	Co 228.616†	-92.2	-8.7	-0.1625 ug/L	-0.1625 ppb	10:49:16
3	Cr 267.716†	121.8	18.4	0.1828 ug/L	0.1828 ppb	10:48:56
3	Cu 324.752†	8074.5	119.1	0.3507 ug/L	0.3507 ppb	10:48:56
3	Fe 238.204 Radial†	9.9	-4.1	-36.031 ug/L	-36.031 ppb	10:47:43
3	K 766.490 Radial†	3300.1	-80.7	-16.033 ug/L	-16.033 ppb	10:47:23
3	Mg 279.077 IEC†	5.0	3.3	106.65 ug/L	106.65 ppb	10:47:43
3	Mn 257.610†	527.8	14.3	0.0095 ug/L	0.0095 ppb	10:48:56
3	Mo 202.031†	25.2	5.4	0.3373 ug/L	0.3373 ppb	10:49:16
3	Na 589.592 Radial†	-1666.8	105.5	31.869 ug/L	31.869 ppb	10:47:23
3	Ni 231.604†	115.1	-9.3	-0.2042 ug/L	-0.2042 ppb	10:49:16
3	P 214.914†	245.4	-1.8	-0.9247 ug/L	-0.9247 ppb	10:49:16
3	Pb 220.353†	-100.2	-23.0	-2.3814 ug/L	-2.3814 ppb	10:49:16
3	S 181.975 Axial†	55.0	-4.6	-5.1525 ug/L	-5.1525 ppb	10:49:16
3	Sb 206.836†	58.9	22.1	6.6083 ug/L	6.6083 ppb	10:49:16
3	Se 196.026†	-24.7	8.4	4.1781 ug/L	4.1781 ppb	10:49:16
3	Si 251.611†	670.0	57.0	1.6361 ug/L	1.6361 ppb	10:49:16
3	Sn 189.927†	1.5	-1.9	-0.2812 ug/L	-0.2812 ppb	10:49:16
3	Sr 421.552†	-14.3	-30.1	-0.2203 ug/L	-0.2203 ppb	10:47:23
3	Ti 334.940†	-1775.1	32.6	0.0509 ug/L	0.0509 ppb	10:48:56
3	Tl 190.801†	-51.0	2.1	0.5852 ug/L	0.5852 ppb	10:49:16
3	U 409.014†	-2560.8	94.1	2.8018 ug/L	2.8018 ppb	10:48:51
3	V 292.402†	-1781.6	10.6	0.0843 ug/L	0.0843 ppb	10:48:56
3	Zn 213.857†	874.0	47.1	0.3862 ug/L	0.3862 ppb	10:49:16
3	SiO2†	736.2	104.1	6.3943 ug/L	6.3943 ppb	10:49:31

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Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	884338.5	99.744 %	0.3097			0.31%
Sc Radial	4703.7	101 %	0.5			0.55%
Y 371.029	759345.9	99.684 %	0.3515			0.35%
Y RADIAL	4959.1	100.5 %	0.67			0.67%
Ag 328.068†	38.2	0.1626 ug/L	0.28587	0.1626 ppb	0.28587	175.79%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	10.1	8.9600 ug/L	19.82374	8.9600 ppb	19.82374	221.25%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	4.0	1.3861 ug/L	1.88986	1.3861 ppb	1.88986	136.34%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	271.7	5.6032 ug/L	0.35498	5.6032 ppb	0.35498	6.34%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	3.4	0.0247 ug/L	0.13521	0.0247 ppb	0.13521	546.69%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	31.0	0.0105 ug/L	0.02191	0.0105 ppb	0.02191	209.31%
QC value within limits for Be 313.107 Recovery = Not calculated						

Ca 317.933Radial†	10.2	17.113 ug/L	8.8641	17.113 ppb	8.8641	51.80%
QC value within limits for Ca 317.933Radial	Recovery = Not calculated					
Cd 226.502†	1.8	0.0183 ug/L	0.09567	0.0183 ppb	0.09567	523.59%
QC value within limits for Cd 226.502	Recovery = Not calculated					
Co 228.616†	-5.2	-0.0968 ug/L	0.12513	-0.0968 ppb	0.12513	129.26%
QC value within limits for Co 228.616	Recovery = Not calculated					
Cr 267.716†	17.5	0.1761 ug/L	0.48700	0.1761 ppb	0.48700	276.53%
QC value within limits for Cr 267.716	Recovery = Not calculated					
Cu 324.752†	30.6	0.0902 ug/L	0.26132	0.0902 ppb	0.26132	289.73%
QC value within limits for Cu 324.752	Recovery = Not calculated					
Fe 238.204 Radial†	-0.9	-7.8241 ug/L	29.27009	-7.8241 ppb	29.27009	374.10%
QC value within limits for Fe 238.204 Radial	Recovery = Not calculated					
K 766.490 Radial†	-63.4	-12.592 ug/L	5.5311	-12.592 ppb	5.5311	43.92%
QC value within limits for K 766.490 Radial	Recovery = Not calculated					
Mg 279.077 IEC†	3.8	121.50 ug/L	21.831	121.50 ppb	21.831	17.97%
QC value within limits for Mg 279.077 IEC	Recovery = Not calculated					
Mn 257.610†	35.5	0.0344 ug/L	0.02496	0.0344 ppb	0.02496	72.55%
QC value within limits for Mn 257.610	Recovery = Not calculated					
Mo 202.031†	9.5	0.5941 ug/L	0.29489	0.5941 ppb	0.29489	49.64%
QC value within limits for Mo 202.031	Recovery = Not calculated					
Na 589.592 Radial†	64.0	19.333 ug/L	13.3307	19.333 ppb	13.3307	68.95%
QC value within limits for Na 589.592 Radial	Recovery = Not calculated					
Ni 231.604†	5.8	0.1284 ug/L	0.45698	0.1284 ppb	0.45698	355.80%
QC value within limits for Ni 231.604	Recovery = Not calculated					
P 214.914†	8.2	3.9933 ug/L	5.97360	3.9933 ppb	5.97360	149.59%
QC value within limits for P 214.914	Recovery = Not calculated					
Pb 220.353†	-14.1	-1.4589 ug/L	0.80054	-1.4589 ppb	0.80054	54.87%
QC value within limits for Pb 220.353	Recovery = Not calculated					
S 181.975 Axial†	-2.1	-2.4165 ug/L	2.82211	-2.4165 ppb	2.82211	116.79%
QC value within limits for S 181.975 Axial	Recovery = Not calculated					
Sb 206.836†	12.7	3.8032 ug/L	2.44553	3.8032 ppb	2.44553	64.30%
QC value within limits for Sb 206.836	Recovery = Not calculated					
Se 196.026†	4.7	2.3657 ug/L	1.73788	2.3657 ppb	1.73788	73.46%
QC value within limits for Se 196.026	Recovery = Not calculated					
Si 251.611†	52.8	1.5080 ug/L	0.11146	1.5080 ppb	0.11146	7.39%
QC value within limits for Si 251.611	Recovery = Not calculated					
Sn 189.927†	2.5	0.3674 ug/L	0.59538	0.3674 ppb	0.59538	162.04%
QC value within limits for Sn 189.927	Recovery = Not calculated					
Sr 421.552†	-3.6	-0.0263 ug/L	0.17334	-0.0263 ppb	0.17334	659.55%
QC value within limits for Sr 421.552	Recovery = Not calculated					
Ti 334.940†	-3.1	-0.0038 ug/L	0.05750	-0.0038 ppb	0.05750	>999.9%
QC value within limits for Ti 334.940	Recovery = Not calculated					
Tl 190.801†	5.6	1.5403 ug/L	0.96431	1.5403 ppb	0.96431	62.60%
QC value within limits for Tl 190.801	Recovery = Not calculated					
U 409.014†	-24.2	-0.7197 ug/L	3.06754	-0.7197 ppb	3.06754	426.23%
QC value within limits for U 409.014	Recovery = Not calculated					
V 292.402†	23.4	0.1577 ug/L	0.15568	0.1577 ppb	0.15568	98.71%
QC value within limits for V 292.402	Recovery = Not calculated					
Zn 213.857†	60.2	0.4901 ug/L	0.09967	0.4901 ppb	0.09967	20.34%
QC value within limits for Zn 213.857	Recovery = Not calculated					
SiO2†	66.9	4.0892 ug/L	2.55169	4.0892 ppb	2.55169	62.40%
QC value within limits for SiO2	Recovery = Not calculated					
All analyte(s) passed QC.						

Sequence No.: 8  
 Sample ID: PQL  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 11  
 Date Collected: 1/6/2010 10:51:42  
 Data Type: Reprocessed on 1/6/2010 11:55:33  
 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 361.383	864890.2	864890.2	97.550 %		10:54:52
1	Sc Radial	4615.5	4615.5	98.9 %		10:53:35
1	Y 371.029	744403.8	744403.8	97.722 %		10:54:52
1	Y RADIAL	4870.5	4870.5	98.73 %		10:53:35
1	Ag 328.068†	1666.1	1195.6	5.1487 ug/L	5.1487 ppb	10:54:52
1	Al 396.153Radial†	219.5	248.7	220.16 ug/L	220.16 ppb	10:53:35
1	As 188.979†	48.9	83.6	29.265 ug/L	29.265 ppb	10:55:12
1	B 249.677†	1786.7	2497.4	51.469 ug/L	51.469 ppb	10:55:12
1	Ba 233.527†	713.3	723.7	5.2911 ug/L	5.2911 ppb	10:55:12
1	Be 313.107†	10181.7	14788.9	5.0087 ug/L	5.0087 ppb	10:54:52
1	Ca 317.933Radial†	139.5	128.5	215.32 ug/L	215.32 ppb	10:53:55
1	Cd 226.502†	270.6	515.8	4.8513 ug/L	4.8513 ppb	10:55:12
1	Co 228.616†	165.6	253.7	4.7842 ug/L	4.7842 ppb	10:55:12
1	Cr 267.716†	602.9	514.0	5.1464 ug/L	5.1464 ppb	10:55:12
1	Cu 324.752†	11320.6	3605.9	10.681 ug/L	10.681 ppb	10:54:52
1	Fe 238.204 Radial†	24.7	11.1	97.487 ug/L	97.487 ppb	10:53:55
1	K 766.490 Radial†	4010.4	718.9	142.49 ug/L	142.49 ppb	10:53:35
1	Mg 279.077 IEC†	12.5	11.0	351.81 ug/L	351.81 ppb	10:53:55
1	Mn 257.610†	10207.6	9947.6	10.484 ug/L	10.484 ppb	10:54:52
1	Mo 202.031†	173.7	158.1	9.9167 ug/L	9.9167 ppb	10:55:12
1	Na 589.592 Radial†	-812.7	928.3	280.42 ug/L	280.42 ppb	10:53:35
1	Ni 231.604†	359.3	243.3	5.3375 ug/L	5.3375 ppb	10:55:12
1	P 214.914†	560.6	326.1	157.39 ug/L	157.39 ppb	10:55:12
1	Pb 220.353†	11.0	89.0	9.2802 ug/L	9.2802 ppb	10:55:12
1	S 181.975 Axial†	145.2	88.9	100.43 ug/L	100.43 ppb	10:55:12
1	Sb 206.836†	76.5	41.3	12.599 ug/L	12.599 ppb	10:55:12
1	Se 196.026†	34.9	69.1	35.713 ug/L	35.713 ppb	10:55:12
1	Si 251.611†	4048.3	3533.4	101.11 ug/L	101.11 ppb	10:55:12
1	Sn 189.927†	66.4	64.7	9.5959 ug/L	9.5959 ppb	10:55:12
1	Sr 421.552†	681.4	673.1	4.9260 ug/L	4.9260 ppb	10:53:35
1	Ti 334.940†	1405.7	3258.4	5.1599 ug/L	5.1599 ppb	10:54:52
1	Tl 190.801†	23.8	77.8	21.321 ug/L	21.321 ppb	10:55:12
1	U 409.014†	-1169.6	1469.8	43.672 ug/L	43.672 ppb	10:54:52
1	V 292.402†	-943.7	834.4	5.4501 ug/L	5.4501 ppb	10:55:12
1	Zn 213.857†	2094.7	1315.6	10.754 ug/L	10.754 ppb	10:55:12
1	SiO2†	4055.3	3521.1	215.61 ug/L	215.61 ppb	10:56:08
2	Sc 361.383	862681.9	862681.9	97.301 %		10:55:18
2	Sc Radial	4754.1	4754.1	102 %		10:54:00
2	Y 371.029	742521.1	742521.1	97.475 %		10:55:18
2	Y RADIAL	5002.0	5002.0	101.4 %		10:54:00
2	Ag 328.068†	1578.1	1109.5	4.7828 ug/L	4.7828 ppb	10:55:18
2	Al 396.153Radial†	210.6	233.5	206.60 ug/L	206.60 ppb	10:54:00
2	As 188.979†	48.6	83.4	29.197 ug/L	29.197 ppb	10:55:38
2	B 249.677†	1770.5	2485.5	51.222 ug/L	51.222 ppb	10:55:38
2	Ba 233.527†	700.4	712.3	5.2089 ug/L	5.2089 ppb	10:55:38
2	Be 313.107†	10220.4	14855.4	5.0311 ug/L	5.0311 ppb	10:55:18
2	Ca 317.933Radial†	134.8	119.8	200.76 ug/L	200.76 ppb	10:54:20
2	Cd 226.502†	289.3	535.7	5.0374 ug/L	5.0374 ppb	10:55:38
2	Co 228.616†	167.8	256.4	4.8384 ug/L	4.8384 ppb	10:55:38
2	Cr 267.716†	566.5	478.2	4.7880 ug/L	4.7880 ppb	10:55:38
2	Cu 324.752†	11291.1	3605.3	10.680 ug/L	10.680 ppb	10:55:18
2	Fe 238.204 Radial†	26.8	12.5	109.61 ug/L	109.61 ppb	10:54:20
2	K 766.490 Radial†	4121.7	710.0	140.70 ug/L	140.70 ppb	10:54:00
2	Mg 279.077 IEC†	14.7	12.8	410.58 ug/L	410.58 ppb	10:54:20
2	Mn 257.610†	10171.1	9936.8	10.473 ug/L	10.473 ppb	10:55:18
2	Mo 202.031†	193.2	178.6	11.199 ug/L	11.199 ppb	10:55:38
2	Na 589.592 Radial†	-664.3	1097.9	331.66 ug/L	331.66 ppb	10:54:00
2	Ni 231.604†	359.6	244.5	5.3646 ug/L	5.3646 ppb	10:55:38

2	P 214.914†	540.0	306.4	147.80 ug/L	147.80 ppb	10:55:38
2	Pb 220.353†	-4.4	73.3	7.6473 ug/L	7.6473 ppb	10:55:38
2	S 181.975 Axial†	153.9	98.2	110.96 ug/L	110.96 ppb	10:55:38
2	Sb 206.836†	82.6	47.8	14.571 ug/L	14.571 ppb	10:55:38
2	Se 196.026†	23.0	56.9	29.508 ug/L	29.508 ppb	10:55:38
2	Si 251.611†	4055.7	3551.6	101.61 ug/L	101.61 ppb	10:55:38
2	Sn 189.927†	69.5	68.0	10.077 ug/L	10.077 ppb	10:55:38
2	Sr 421.552†	680.6	652.3	4.7737 ug/L	4.7737 ppb	10:54:00
2	Ti 334.940†	1359.5	3214.5	5.0894 ug/L	5.0894 ppb	10:55:18
2	Tl 190.801†	32.2	86.5	23.700 ug/L	23.700 ppb	10:55:38
2	U 409.014†	-1144.5	1492.5	44.347 ug/L	44.347 ppb	10:55:18
2	V 292.402†	-926.4	849.7	5.5654 ug/L	5.5654 ppb	10:55:38
2	Zn 213.857†	2085.8	1312.0	10.721 ug/L	10.721 ppb	10:55:38
2	SiO2†	4086.4	3563.7	218.18 ug/L	218.18 ppb	10:56:13
3	Sc 361.383	872526.3	872526.3	98.412 %		10:55:43
3	Sc Radial	4661.1	4661.1	99.9 %		10:54:26
3	Y 371.029	750241.4	750241.4	98.488 %		10:55:43
3	Y RADIAL	4937.4	4937.4	100.1 %		10:54:26
3	Ag 328.068†	1623.4	1137.3	4.9014 ug/L	4.9014 ppb	10:55:43
3	Al 396.153Radial†	216.7	243.8	215.75 ug/L	215.75 ppb	10:54:26
3	As 188.979†	47.1	81.3	28.469 ug/L	28.469 ppb	10:56:03
3	B 249.677†	1751.4	2445.5	50.399 ug/L	50.399 ppb	10:56:03
3	Ba 233.527†	706.2	710.1	5.1916 ug/L	5.1916 ppb	10:56:03
3	Be 313.107†	10363.1	14881.9	5.0399 ug/L	5.0399 ppb	10:55:43
3	Ca 317.933Radial†	139.2	126.9	212.59 ug/L	212.59 ppb	10:54:46
3	Cd 226.502†	272.7	515.5	4.8480 ug/L	4.8480 ppb	10:56:03
3	Co 228.616†	158.4	245.0	4.6209 ug/L	4.6209 ppb	10:56:03
3	Cr 267.716†	576.9	482.2	4.8283 ug/L	4.8283 ppb	10:56:03
3	Cu 324.752†	11366.5	3551.0	10.518 ug/L	10.518 ppb	10:55:43
3	Fe 238.204 Radial†	25.7	11.8	104.23 ug/L	104.23 ppb	10:54:46
3	K 766.490 Radial†	4132.4	801.4	158.86 ug/L	158.86 ppb	10:54:26
3	Mg 279.077 IEC†	14.8	13.2	421.14 ug/L	421.14 ppb	10:54:46
3	Mn 257.610†	10368.6	10019.5	10.560 ug/L	10.560 ppb	10:55:43
3	Mo 202.031†	183.5	166.6	10.445 ug/L	10.445 ppb	10:56:03
3	Na 589.592 Radial†	-719.9	1029.2	310.91 ug/L	310.91 ppb	10:54:26
3	Ni 231.604†	357.1	237.8	5.2178 ug/L	5.2178 ppb	10:56:03
3	P 214.914†	529.6	289.5	139.61 ug/L	139.61 ppb	10:56:03
3	Pb 220.353†	1.8	79.6	8.3021 ug/L	8.3021 ppb	10:56:03
3	S 181.975 Axial†	142.6	85.0	96.017 ug/L	96.017 ppb	10:56:03
3	Sb 206.836†	69.5	33.5	10.312 ug/L	10.312 ppb	10:56:03
3	Se 196.026†	31.2	64.9	33.613 ug/L	33.613 ppb	10:56:03
3	Si 251.611†	4006.5	3454.6	98.832 ug/L	98.832 ppb	10:56:03
3	Sn 189.927†	76.4	74.3	11.010 ug/L	11.010 ppb	10:56:03
3	Sr 421.552†	673.2	658.2	4.8171 ug/L	4.8171 ppb	10:54:26
3	Ti 334.940†	1360.9	3200.2	5.0685 ug/L	5.0685 ppb	10:55:43
3	Tl 190.801†	31.5	85.3	23.387 ug/L	23.387 ppb	10:56:03
3	U 409.014†	-1259.2	1389.2	41.277 ug/L	41.277 ppb	10:55:43
3	V 292.402†	-985.6	800.3	5.2394 ug/L	5.2394 ppb	10:56:03
3	Zn 213.857†	2075.9	1277.8	10.440 ug/L	10.440 ppb	10:56:03
3	SiO2†	4122.9	3553.4	217.55 ug/L	217.55 ppb	10:56:18

## Mean Data: PQL

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	866699.4	97.754 %	0.5826			0.60%
Sc Radial	4676.9	100 %	1.5			1.51%
Y 371.029	745722.1	97.895 %	0.5284			0.54%
Y RADIAL	4936.6	100.1 %	1.33			1.33%
Ag 328.068†	1147.5	4.9443 ug/L	0.18669	4.9443 ppb	0.18669	3.78%
QC value within limits for Ag 328.068 Recovery = 98.89%						
Al 396.153Radial†	242.0	214.17 ug/L	6.917	214.17 ppb	6.917	3.23%
QC value within limits for Al 396.153Radial Recovery = 107.09%						
As 188.979†	82.7	28.977 ug/L	0.4416	28.977 ppb	0.4416	1.52%
QC value within limits for As 188.979 Recovery = 96.59%						
B 249.677†	2476.1	51.030 ug/L	0.5600	51.030 ppb	0.5600	1.10%
QC value within limits for B 249.677 Recovery = 102.06%						
Ba 233.527†	715.4	5.2305 ug/L	0.05318	5.2305 ppb	0.05318	1.02%
QC value within limits for Ba 233.527 Recovery = 104.61%						
Be 313.107†	14842.1	5.0266 ug/L	0.01610	5.0266 ppb	0.01610	0.32%
QC value within limits for Be 313.107 Recovery = 100.53%						



Ca 317.933Radial†	125.1	209.56 ug/L	7.740	209.56 ppb	7.740	3.69%
QC value within limits for Ca 317.933Radial Recovery = 104.78%						
Cd 226.502†	522.3	4.9122 ug/L	0.10842	4.9122 ppb	0.10842	2.21%
QC value within limits for Cd 226.502 Recovery = 98.24%						
Co 228.616†	251.7	4.7478 ug/L	0.11318	4.7478 ppb	0.11318	2.38%
QC value within limits for Co 228.616 Recovery = 94.96%						
Cr 267.716†	491.4	4.9209 ug/L	0.19632	4.9209 ppb	0.19632	3.99%
QC value within limits for Cr 267.716 Recovery = 98.42%						
Cu 324.752†	3587.4	10.626 ug/L	0.0933	10.626 ppb	0.0933	0.88%
QC value within limits for Cu 324.752 Recovery = 106.26%						
Fe 238.204 Radial†	11.8	103.78 ug/L	6.074	103.78 ppb	6.074	5.85%
QC value within limits for Fe 238.204 Radial Recovery = 103.78%						
K 766.490 Radial†	743.5	147.35 ug/L	10.005	147.35 ppb	10.005	6.79%
QC value within limits for K 766.490 Radial Recovery = 98.23%						
Mg 279.077 IEC†	12.3	394.51 ug/L	37.353	394.51 ppb	37.353	9.47%
QC value greater than the upper limit for Mg 279.077 IEC Recovery = 131.50%						
Mn 257.610†	9968.0	10.506 ug/L	0.0470	10.506 ppb	0.0470	0.45%
QC value within limits for Mn 257.610 Recovery = 105.06%						
Mo 202.031†	167.8	10.520 ug/L	0.6446	10.520 ppb	0.6446	6.13%
QC value within limits for Mo 202.031 Recovery = 105.20%						
Na 589.592 Radial†	1018.5	307.66 ug/L	25.776	307.66 ppb	25.776	8.38%
QC value within limits for Na 589.592 Radial Recovery = 102.55%						
Ni 231.604†	241.9	5.3066 ug/L	0.07809	5.3066 ppb	0.07809	1.47%
QC value within limits for Ni 231.604 Recovery = 106.13%						
P 214.914†	307.4	148.27 ug/L	8.897	148.27 ppb	8.897	6.00%
QC value within limits for P 214.914 Recovery = 98.84%						
Pb 220.353†	80.6	8.4099 ug/L	0.82175	8.4099 ppb	0.82175	9.77%
QC value within limits for Pb 220.353 Recovery = 84.10%						
S 181.975 Axial†	90.7	102.47 ug/L	7.681	102.47 ppb	7.681	7.50%
QC value within limits for S 181.975 Axial Recovery = 102.47%						
Sb 206.836†	40.9	12.494 ug/L	2.1317	12.494 ppb	2.1317	17.06%
QC value within limits for Sb 206.836 Recovery = 124.94%						
Se 196.026†	63.6	32.945 ug/L	3.1563	32.945 ppb	3.1563	9.58%
QC value within limits for Se 196.026 Recovery = 109.82%						
Si 251.611†	3513.2	100.52 ug/L	1.482	100.52 ppb	1.482	1.47%
QC value within limits for Si 251.611 Recovery = 100.52%						
Sn 189.927†	69.0	10.228 ug/L	0.7190	10.228 ppb	0.7190	7.03%
QC value within limits for Sn 189.927 Recovery = 102.28%						
Sr 421.552†	661.2	4.8389 ug/L	0.07843	4.8389 ppb	0.07843	1.62%
QC value within limits for Sr 421.552 Recovery = 96.78%						
Ti 334.940†	3224.4	5.1059 ug/L	0.04787	5.1059 ppb	0.04787	0.94%
QC value within limits for Ti 334.940 Recovery = 102.12%						
Tl 190.801†	83.2	22.803 ug/L	1.2930	22.803 ppb	1.2930	5.67%
QC value within limits for Tl 190.801 Recovery = 114.01%						
U 409.014†	1450.5	43.099 ug/L	1.6133	43.099 ppb	1.6133	3.74%
QC value within limits for U 409.014 Recovery = 86.20%						
V 292.402†	828.1	5.4183 ug/L	0.16533	5.4183 ppb	0.16533	3.05%
QC value within limits for V 292.402 Recovery = 108.37%						
Zn 213.857†	1301.8	10.638 ug/L	0.1721	10.638 ppb	0.1721	1.62%
QC value within limits for Zn 213.857 Recovery = 106.38%						
SiO2†	3546.1	217.11 ug/L	1.338	217.11 ppb	1.338	0.62%
QC value within limits for SiO2 Recovery = 101.93%						
QC Failed. Continue with analysis.						

Sequence No.: 9  
 Sample ID: ICSA  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 13  
 Date Collected: 1/6/2010 10:58:30  
 Data Type: Reprocessed on 1/6/2010 11:55:34  
 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 361.383	753202.5	753202.5	84.953 %		11:00:55
1	Sc Radial	4258.7	4258.7	91.2 %		11:00:28
1	Y 371.029	636756.7	636756.7	83.591 %		11:00:55
1	Y RADIAL	4458.6	4458.6	90.39 %		11:00:28
1	Ag 328.068†	-10379.9	-12730.8	1.7815 ug/L	1.7815 ppb	11:00:55
1	Al 396.153Radial†	543336.5	595526.4	528190 ug/L	528190 ppb	11:00:23
1	As 188.979†	-110.8	-97.0	-4.7044 ug/L	-4.7044 ppb	11:01:15
1	B 249.677†	4.9	671.6	-11.419 ug/L	-11.419 ppb	11:00:55
1	Ba 233.527†	-722.9	-858.4	-1.4244 ug/L	-1.4244 ppb	11:01:15
1	Be 313.107†	-4139.1	-520.6	-0.2187 ug/L	-0.2187 ppb	11:00:55
1	Ca 317.933Radial†	268839.9	294637.4	493710 ug/L	493710 ppb	11:00:23
1	Cd 226.502†	1292.9	1760.3	-2.4583 ug/L	-2.4583 ppb	11:01:15
1	Co 228.616†	-10.0	72.2	-1.3635 ug/L	-1.3635 ppb	11:01:15
1	Cr 267.716†	-61.3	-176.2	1.6644 ug/L	1.6644 ppb	11:01:15
1	Cu 324.752†	4196.3	-3059.4	0.6567 ug/L	0.6567 ppb	11:00:55
1	Fe 238.204 Radial†	19787.2	21673.0	190440 ug/L	190440 ppb	11:00:28
1	K 766.490 Radial†	2915.0	-141.9	-12.209 ug/L	-12.209 ppb	11:00:23
1	Mg 279.077 IEC†	14063.0	15411.5	492600 ug/L	492600 ppb	11:00:28
1	Mn 257.610†	-569.1	-1186.3	8.5667 ug/L	8.5667 ppb	11:00:55
1	Mo 202.031†	-238.4	-300.6	-0.5758 ug/L	-0.5758 ppb	11:01:15
1	Na 589.592 Radial†	-1538.9	63.5	19.169 ug/L	19.169 ppb	11:00:28
1	Ni 231.604†	227.1	142.3	3.1234 ug/L	3.1234 ppb	11:01:15
1	P 214.914†	231.9	24.4	37.831 ug/L	37.831 ppb	11:01:15
1	Pb 220.353†	-995.9	-1094.5	-10.525 ug/L	-10.525 ppb	11:01:15
1	S 181.975 Axial†	83.4	38.2	-60.693 ug/L	-60.693 ppb	11:01:15
1	Sb 206.836†	61.5	35.3	-2.2838 ug/L	-2.2838 ppb	11:01:15
1	Se 196.026†	-1144.8	-1314.3	-4.4475 ug/L	-4.4475 ppb	11:01:15
1	Si 251.611†	537.0	15.6	0.9976 ug/L	0.9976 ppb	11:01:15
1	Sn 189.927†	-390.5	-463.1	-14.397 ug/L	-14.397 ppb	11:01:15
1	Sr 421.552†	470.2	499.4	-0.9197 ug/L	-0.9197 ppb	11:00:28
1	Ti 334.940†	-13182.1	-13699.6	4.0139 ug/L	4.0139 ppb	11:00:55
1	Tl 190.801†	-107.0	-72.6	-5.5819 ug/L	-5.5819 ppb	11:01:15
1	U 409.014†	-1998.0	316.8	-14.537 ug/L	-14.537 ppb	11:00:55
1	V 292.402†	565.4	2467.3	-2.5903 ug/L	-2.5903 ppb	11:01:15
1	Zn 213.857†	3443.4	3221.6	-0.2562 ug/L	-0.2562 ppb	11:01:15
1	SiO2†	550.4	11.8	1.9222 ug/L	1.9222 ppb	11:02:12
2	Sc 361.383	759275.0	759275.0	85.638 %		11:01:21
2	Sc Radial	4214.5	4214.5	90.3 %		11:00:38
2	Y 371.029	641859.3	641859.3	84.260 %		11:01:21
2	Y RADIAL	4476.8	4476.8	90.75 %		11:00:38
2	Ag 328.068†	-10380.1	-12633.2	2.5928 ug/L	2.5928 ppb	11:01:21
2	Al 396.153Radial†	526541.1	583169.3	517230 ug/L	517230 ppb	11:00:33
2	As 188.979†	-100.8	-84.3	-0.1464 ug/L	-0.1464 ppb	11:01:41
2	B 249.677†	87.7	768.3	-9.5295 ug/L	-9.5295 ppb	11:01:21
2	Ba 233.527†	-705.8	-831.7	-1.2098 ug/L	-1.2098 ppb	11:01:41
2	Be 313.107†	-4067.1	-397.7	-0.1780 ug/L	-0.1780 ppb	11:01:21
2	Ca 317.933Radial†	261146.2	289206.0	484610 ug/L	484610 ppb	11:00:33
2	Cd 226.502†	1288.6	1743.1	-2.7001 ug/L	-2.7001 ppb	11:01:41
2	Co 228.616†	-36.7	41.2	-1.9559 ug/L	-1.9559 ppb	11:01:41
2	Cr 267.716†	-60.1	-174.2	1.6951 ug/L	1.6951 ppb	11:01:41
2	Cu 324.752†	4267.8	-3015.4	0.8279 ug/L	0.8279 ppb	11:01:21
2	Fe 238.204 Radial†	19664.5	21764.5	191240 ug/L	191240 ppb	11:00:38
2	K 766.490 Radial†	2915.7	-107.6	-5.9274 ug/L	-5.9274 ppb	11:00:33
2	Mg 279.077 IEC†	13981.2	15482.5	494870 ug/L	494870 ppb	11:00:38
2	Mn 257.610†	-551.4	-1160.3	8.6320 ug/L	8.6320 ppb	11:01:21
2	Mo 202.031†	-236.8	-296.4	-0.2373 ug/L	-0.2373 ppb	11:01:41
2	Na 589.592 Radial†	-1549.5	34.1	10.299 ug/L	10.299 ppb	11:00:38
2	Ni 231.604†	257.1	175.1	3.8435 ug/L	3.8435 ppb	11:01:41

2	P 214.914†	255.3	49.5	45.646 ug/L	45.646 ppb	11:01:41
2	Pb 220.353†	-991.5	-1080.0	-11.551 ug/L	-11.551 ppb	11:01:41
2	S 181.975 Axial†	88.3	43.2	-52.950 ug/L	-52.950 ppb	11:01:41
2	Sb 206.836†	77.5	53.4	3.4112 ug/L	3.4112 ppb	11:01:41
2	Se 196.026†	-1139.5	-1297.3	5.0374 ug/L	5.0374 ppb	11:01:41
2	Si 251.611†	573.3	52.9	2.0679 ug/L	2.0679 ppb	11:01:41
2	Sn 189.927†	-407.9	-479.7	-17.799 ug/L	-17.799 ppb	11:01:41
2	Sr 421.552†	452.7	485.4	-0.9382 ug/L	-0.9382 ppb	11:00:38
2	Ti 334.940†	-13537.0	-13989.8	3.0739 ug/L	3.0739 ppb	11:01:21
2	Tl 190.801†	-114.3	-80.1	-7.9393 ug/L	-7.9393 ppb	11:01:41
2	U 409.014†	-1707.5	674.9	-3.9930 ug/L	-3.9930 ppb	11:01:21
2	V 292.402†	546.7	2440.3	-2.8065 ug/L	-2.8065 ppb	11:01:41
2	Zn 213.857†	3441.4	3186.9	-0.6655 ug/L	-0.6655 ppb	11:01:41
2	SiO2†	505.9	-45.3	-1.5806 ug/L	-1.5806 ppb	11:02:17
3	Sc 361.383	751186.8	751186.8	84.726 %		11:01:46
3	Sc Radial	4186.9	4186.9	89.7 %		11:00:49
3	Y 371.029	635002.1	635002.1	83.360 %		11:01:46
3	Y RADIAL	4447.4	4447.4	90.16 %		11:00:49
3	Ag 328.068†	-10460.2	-12858.3	1.7968 ug/L	1.7968 ppb	11:01:46
3	Al 396.153Radial†	532654.5	593833.3	526690 ug/L	526690 ppb	11:00:44
3	As 188.979†	-114.1	-101.3	-5.9524 ug/L	-5.9524 ppb	11:02:06
3	B 249.677†	113.1	799.4	-9.0024 ug/L	-9.0024 ppb	11:01:46
3	Ba 233.527†	-713.1	-849.2	-1.3160 ug/L	-1.3160 ppb	11:02:06
3	Be 313.107†	-4125.4	-517.6	-0.2177 ug/L	-0.2177 ppb	11:01:46
3	Ca 317.933Radial†	263738.1	294004.4	492650 ug/L	492650 ppb	11:00:44
3	Cd 226.502†	1283.9	1753.7	-2.6857 ug/L	-2.6857 ppb	11:02:06
3	Co 228.616†	-34.4	43.3	-1.9279 ug/L	-1.9279 ppb	11:02:06
3	Cr 267.716†	-93.5	-214.4	1.3088 ug/L	1.3088 ppb	11:02:06
3	Cu 324.752†	4225.0	-3012.4	0.8806 ug/L	0.8806 ppb	11:01:46
3	Fe 238.204 Radial†	19622.8	21861.8	192100 ug/L	192100 ppb	11:00:49
3	K 766.490 Radial†	2882.8	-123.0	-8.5384 ug/L	-8.5384 ppb	11:00:44
3	Mg 279.077 IEC†	13916.3	15512.4	495830 ug/L	495830 ppb	11:00:49
3	Mn 257.610†	-533.9	-1146.5	8.7140 ug/L	8.7140 ppb	11:01:46
3	Mo 202.031†	-233.8	-295.9	-0.1250 ug/L	-0.1250 ppb	11:02:06
3	Na 589.592 Radial†	-1593.1	-25.9	-7.8365 ug/L	-7.8365 ppb	11:00:49
3	Ni 231.604†	234.5	151.7	3.3293 ug/L	3.3293 ppb	11:02:06
3	P 214.914†	250.9	47.5	47.212 ug/L	47.212 ppb	11:02:06
3	Pb 220.353†	-1005.0	-1108.4	-12.435 ug/L	-12.435 ppb	11:02:06
3	S 181.975 Axial†	96.9	54.5	-42.024 ug/L	-42.024 ppb	11:02:06
3	Sb 206.836†	74.2	50.4	2.3042 ug/L	2.3042 ppb	11:02:06
3	Se 196.026†	-1143.4	-1316.3	-0.5904 ug/L	-0.5904 ppb	11:02:06
3	Si 251.611†	593.1	83.5	2.9418 ug/L	2.9418 ppb	11:02:06
3	Sn 189.927†	-395.6	-470.4	-15.565 ug/L	-15.565 ppb	11:02:06
3	Sr 421.552†	518.1	561.7	-0.4542 ug/L	-0.4542 ppb	11:00:49
3	Ti 334.940†	-13154.2	-13708.3	3.9422 ug/L	3.9422 ppb	11:01:46
3	Tl 190.801†	-98.0	-62.3	-2.8132 ug/L	-2.8132 ppb	11:02:06
3	U 409.014†	-1817.7	523.3	-8.6066 ug/L	-8.6066 ppb	11:01:46
3	V 292.402†	510.1	2403.8	-3.1522 ug/L	-3.1522 ppb	11:02:06
3	Zn 213.857†	3432.7	3219.8	-0.4685 ug/L	-0.4685 ppb	11:02:06
3	SiO2†	498.3	-47.9	-1.7492 ug/L	-1.7492 ppb	11:02:22

## Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	754554.8	85.106 %	0.4749			0.56%
Sc Radial	4220.0	90.4 %	0.78			0.86%
Y 371.029	637872.7	83.737 %	0.4676			0.56%
Y RADIAL	4461.0	90.43 %	0.300			0.33%
Ag 328.068†	-12740.8	2.0571 ug/L	0.46404	2.0571 ppb	0.46404	22.56%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	590843.0	524030 ug/L	5941.8	524030 ppb	5941.8	1.13%
QC value within limits for Al 396.153Radial Recovery = 104.81%						
As 188.979†	-94.2	-3.6010 ug/L	3.05620	-3.6010 ppb	3.05620	84.87%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	746.4	-9.9835 ug/L	1.27043	-9.9835 ppb	1.27043	12.73%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-846.4	-1.3167 ug/L	0.10732	-1.3167 ppb	0.10732	8.15%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-478.7	-0.2048 ug/L	0.02319	-0.2048 ppb	0.02319	11.32%
QC value within limits for Be 313.107 Recovery = Not calculated						

Ca 317.933Radial†	292615.9	490330 ug/L	4976.7	490330 ppb	4976.7	1.01%
QC value within limits for Ca 317.933Radial Recovery = 98.07%						
Cd 226.502†	1752.4	-2.6147 ug/L	0.13567	-2.6147 ppb	0.13567	5.19%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	52.2	-1.7491 ug/L	0.33421	-1.7491 ppb	0.33421	19.11%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	-188.3	1.5561 ug/L	0.21472	1.5561 ppb	0.21472	13.80%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	-3029.1	0.7884 ug/L	0.11705	0.7884 ppb	0.11705	14.85%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	21766.4	191260 ug/L	829.5	191260 ppb	829.5	0.43%
QC value within limits for Fe 238.204 Radial Recovery = 95.63%						
K 766.490 Radial†	-124.2	-8.8918 ug/L	3.15589	-8.8918 ppb	3.15589	35.49%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	15468.8	494430 ug/L	1657.1	494430 ppb	1657.1	0.34%
QC value within limits for Mg 279.077 IEC Recovery = 98.89%						
Mn 257.610†	-1164.4	8.6375 ug/L	0.07379	8.6375 ppb	0.07379	0.85%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	-297.6	-0.3127 ug/L	0.23467	-0.3127 ppb	0.23467	75.05%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	23.9	7.2102 ug/L	13.76491	7.2102 ppb	13.76491	190.91%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	156.4	3.4321 ug/L	0.37090	3.4321 ppb	0.37090	10.81%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	40.5	43.563 ug/L	5.0252	43.563 ppb	5.0252	11.54%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	-1094.3	-11.504 ug/L	0.9561	-11.504 ppb	0.9561	8.31%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	45.3	-51.889 ug/L	9.3800	-51.889 ppb	9.3800	18.08%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	46.4	1.1439 ug/L	3.01962	1.1439 ppb	3.01962	263.98%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-1309.3	-0.0001 ug/L	4.76989	-0.0001 ppb	4.76989	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	50.6	2.0024 ug/L	0.97379	2.0024 ppb	0.97379	48.63%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	-471.0	-15.920 ug/L	1.7286	-15.920 ppb	1.7286	10.86%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	515.5	-0.7707 ug/L	0.27428	-0.7707 ppb	0.27428	35.59%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	-13799.2	3.6767 ug/L	0.52321	3.6767 ppb	0.52321	14.23%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	-71.7	-5.4448 ug/L	2.56579	-5.4448 ppb	2.56579	47.12%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	505.0	-9.0456 ug/L	5.28573	-9.0456 ppb	5.28573	58.43%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	2437.2	-2.8497 ug/L	0.28341	-2.8497 ppb	0.28341	9.95%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	3209.4	-0.4634 ug/L	0.20471	-0.4634 ppb	0.20471	44.18%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	-27.1	-0.4692 ug/L	2.07277	-0.4692 ppb	2.07277	441.76%
QC value within limits for SiO2 Recovery = Not calculated						
All analyte(s) passed QC.						

Sequence No.: 10

Sample ID: ICSAB

Analyst:

Logged In Analyst (Original) : Optima3

Initial Sample Wt:

Dilution:

Autosampler Location: 14

Date Collected: 1/6/2010 11:04:33

Data Type: Reprocessed on 1/6/2010 11:55:35

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 361.383	779127.1	779127.1	87.877 %		11:06:59
1	Sc Radial	4454.4	4454.4	95.4 %		11:06:31
1	Y 371.029	656369.1	656369.1	86.165 %		11:06:59
1	Y RADIAL	4717.2	4717.2	95.63 %		11:06:31
1	Ag 328.068†	44700.6	50354.8	271.57 ug/L	271.57 ppb	11:06:59
1	Al 396.153Radial†	542854.2	568858.2	504510 ug/L	504510 ppb	11:06:26
1	As 188.979†	1186.0	1383.0	515.64 ug/L	515.64 ppb	11:07:04
1	B 249.677†	22144.7	25865.5	508.09 ug/L	508.09 ppb	11:06:59
1	Ba 233.527†	59785.3	68025.3	501.76 ug/L	501.76 ppb	11:06:59
1	Be 313.107†	638883.9	731370.9	248.18 ug/L	248.18 ppb	11:06:59
1	Ca 317.933Radial†	269440.5	282321.5	473080 ug/L	473080 ppb	11:06:26
1	Cd 226.502†	44934.9	51372.1	466.00 ug/L	466.00 ppb	11:07:04
1	Co 228.616†	21546.0	24602.3	460.14 ug/L	460.14 ppb	11:07:04
1	Cr 267.716†	41176.3	46752.7	472.42 ug/L	472.42 ppb	11:07:04
1	Cu 324.752†	172238.2	187999.8	565.85 ug/L	565.85 ppb	11:06:59
1	Fe 238.204 Radial†	19710.1	20639.4	181370 ug/L	181370 ppb	11:06:31
1	K 766.490 Radial†	28330.7	26349.7	5238.8 ug/L	5238.8 ppb	11:06:26
1	Mg 279.077 IEC†	14049.6	14720.3	470520 ug/L	470520 ppb	11:06:31
1	Mn 257.610†	413808.4	470377.9	504.94 ug/L	504.94 ppb	11:06:59
1	Mo 202.031†	6539.3	7421.5	482.32 ug/L	482.32 ppb	11:07:04
1	Na 589.592 Radial†	15160.6	17636.2	5327.5 ug/L	5327.5 ppb	11:06:31
1	Ni 231.604†	18561.1	20996.6	460.63 ug/L	460.63 ppb	11:07:04
1	P 214.914†	4828.3	5245.8	2498.8 ug/L	2498.8 ppb	11:07:04
1	Pb 220.353†	3022.4	3517.1	463.40 ug/L	463.40 ppb	11:07:04
1	S 181.975 Axial†	2097.2	2326.6	2530.2 ug/L	2530.2 ppb	11:07:04
1	Sb 206.836†	1597.3	1780.5	526.98 ug/L	526.98 ppb	11:07:04
1	Se 196.026†	3327.7	3820.0	2592.9 ug/L	2592.9 ppb	11:07:04
1	Si 251.611†	162299.0	184072.0	5269.3 ug/L	5269.3 ppb	11:06:59
1	Sn 189.927†	2534.0	2880.2	477.84 ug/L	477.84 ppb	11:07:04
1	Sr 421.552†	64399.4	67465.1	489.57 ug/L	489.57 ppb	11:06:26
1	Ti 334.940†	273893.2	313494.8	521.66 ug/L	521.66 ppb	11:06:59
1	Tl 190.801†	1424.0	1673.8	474.24 ug/L	474.24 ppb	11:07:04
1	U 409.014†	13388.8	17904.5	508.55 ug/L	508.55 ppb	11:06:59
1	V 292.402†	71020.6	82619.9	508.63 ug/L	508.63 ppb	11:06:59
1	Zn 213.857†	55652.9	62498.7	484.76 ug/L	484.76 ppb	11:07:04
1	SiO2†	160345.8	181829.9	11138 ug/L	11138 ppb	11:07:31
2	Sc 361.383	782551.7	782551.7	88.263 %		11:07:10
2	Sc Radial	4310.7	4310.7	92.4 %		11:06:41
2	Y 371.029	659175.2	659175.2	86.534 %		11:07:10
2	Y RADIAL	4569.4	4569.4	92.63 %		11:06:41
2	Ag 328.068†	44733.5	50169.5	271.97 ug/L	271.97 ppb	11:07:10
2	Al 396.153Radial†	524292.2	567719.1	503500 ug/L	503500 ppb	11:06:36
2	As 188.979†	1190.8	1382.6	516.02 ug/L	516.02 ppb	11:07:15
2	B 249.677†	22208.8	25827.8	506.84 ug/L	506.84 ppb	11:07:10
2	Ba 233.527†	59710.0	67642.3	499.05 ug/L	499.05 ppb	11:07:10
2	Be 313.107†	638538.1	727797.6	246.96 ug/L	246.96 ppb	11:07:10
2	Ca 317.933Radial†	260192.9	281718.8	472070 ug/L	472070 ppb	11:06:36
2	Cd 226.502†	45076.0	51308.3	465.04 ug/L	465.04 ppb	11:07:15
2	Co 228.616†	21732.6	24706.4	462.06 ug/L	462.06 ppb	11:07:15
2	Cr 267.716†	41362.7	46758.8	472.54 ug/L	472.54 ppb	11:07:15
2	Cu 324.752†	172268.0	187175.8	563.59 ug/L	563.59 ppb	11:07:10
2	Fe 238.204 Radial†	19447.4	21043.4	184920 ug/L	184920 ppb	11:06:41
2	K 766.490 Radial†	27448.6	26384.1	5245.5 ug/L	5245.5 ppb	11:06:36
2	Mg 279.077 IEC†	13853.6	14998.7	479420 ug/L	479420 ppb	11:06:41
2	Mn 257.610†	413221.7	467652.3	502.25 ug/L	502.25 ppb	11:07:10
2	Mo 202.031†	6615.2	7474.9	486.01 ug/L	486.01 ppb	11:07:15
2	Na 589.592 Radial†	14817.5	17794.2	5375.3 ug/L	5375.3 ppb	11:06:41
2	Ni 231.604†	18668.1	21025.4	461.26 ug/L	461.26 ppb	11:07:15

2	P 214.914†	4811.7	5202.9	2474.9 ug/L	2474.9 ppb	11:07:15
2	Pb 220.353†	3019.9	3499.2	461.03 ug/L	461.03 ppb	11:07:15
2	S 181.975 Axial†	2128.5	2351.6	2558.6 ug/L	2558.6 ppb	11:07:15
2	Sb 206.836†	1622.3	1800.9	533.15 ug/L	533.15 ppb	11:07:15
2	Se 196.026†	3297.2	3768.9	2577.5 ug/L	2577.5 ppb	11:07:15
2	Si 251.611†	162156.2	183101.9	5241.4 ug/L	5241.4 ppb	11:07:10
2	Sn 189.927†	2516.2	2847.4	472.92 ug/L	472.92 ppb	11:07:15
2	Sr 421.552†	62261.9	67399.9	489.10 ug/L	489.10 ppb	11:06:36
2	Ti 334.940†	273884.8	312121.3	519.44 ug/L	519.44 ppb	11:07:10
2	Tl 190.801†	1448.5	1694.4	479.82 ug/L	479.82 ppb	11:07:15
2	U 409.014†	13235.3	17663.9	500.95 ug/L	500.95 ppb	11:07:10
2	V 292.402†	70906.1	82136.5	505.30 ug/L	505.30 ppb	11:07:10
2	Zn 213.857†	56331.5	62990.4	488.31 ug/L	488.31 ppb	11:07:15
2	SiO2†	158587.0	179038.7	10966 ug/L	10966 ppb	11:07:36
3	Sc 361.383	775657.2	775657.2	87.486 %		11:07:21
3	Sc Radial	4197.2	4197.2	89.9 %		11:06:52
3	Y 371.029	654106.3	654106.3	85.868 %		11:07:21
3	Y RADIAL	4453.0	4453.0	90.27 %		11:06:52
3	Ag 328.068†	44493.8	50346.0	274.39 ug/L	274.39 ppb	11:07:21
3	Al 396.153Radial†	539688.6	600202.2	532310 ug/L	532310 ppb	11:06:47
3	As 188.979†	1204.7	1410.4	526.71 ug/L	526.71 ppb	11:07:26
3	B 249.677†	22061.1	25882.7	507.15 ug/L	507.15 ppb	11:07:21
3	Ba 233.527†	59567.4	68080.6	502.41 ug/L	502.41 ppb	11:07:21
3	Be 313.107†	635782.5	731078.2	248.08 ug/L	248.08 ppb	11:07:21
3	Ca 317.933Radial†	267429.2	297389.5	498320 ug/L	498320 ppb	11:06:47
3	Cd 226.502†	45046.1	51728.0	468.39 ug/L	468.39 ppb	11:07:26
3	Co 228.616†	21698.9	24886.7	465.37 ug/L	465.37 ppb	11:07:26
3	Cr 267.716†	41445.2	47269.6	477.77 ug/L	477.77 ppb	11:07:26
3	Cu 324.752†	171054.1	187523.2	564.93 ug/L	564.93 ppb	11:07:21
3	Fe 238.204 Radial†	19560.0	21738.4	191030 ug/L	191030 ppb	11:06:52
3	K 766.490 Radial†	28206.6	28031.2	5573.4 ug/L	5573.4 ppb	11:06:47
3	Mg 279.077 IEC†	13930.5	15490.2	495130 ug/L	495130 ppb	11:06:52
3	Mn 257.610†	411428.3	469763.8	504.79 ug/L	504.79 ppb	11:07:21
3	Mo 202.031†	6618.5	7545.3	491.00 ug/L	491.00 ppb	11:07:26
3	Na 589.592 Radial†	15048.5	18485.2	5584.0 ug/L	5584.0 ppb	11:06:52
3	Ni 231.604†	18707.8	21258.7	466.38 ug/L	466.38 ppb	11:07:26
3	P 214.914†	4808.0	5247.2	2501.4 ug/L	2501.4 ppb	11:07:26
3	Pb 220.353†	2979.3	3483.2	465.35 ug/L	465.35 ppb	11:07:26
3	S 181.975 Axial†	2148.9	2396.4	2603.6 ug/L	2603.6 ppb	11:07:26
3	Sb 206.836†	1590.7	1781.1	526.70 ug/L	526.70 ppb	11:07:26
3	Se 196.026†	3309.9	3816.6	2625.3 ug/L	2625.3 ppb	11:07:26
3	Si 251.611†	161445.6	183922.7	5264.7 ug/L	5264.7 ppb	11:07:21
3	Sn 189.927†	2557.6	2920.1	486.49 ug/L	486.49 ppb	11:07:26
3	Sr 421.552†	64130.0	71301.5	517.43 ug/L	517.43 ppb	11:06:47
3	Ti 334.940†	272561.7	313367.1	522.78 ug/L	522.78 ppb	11:07:21
3	Tl 190.801†	1491.8	1758.5	498.12 ug/L	498.12 ppb	11:07:26
3	U 409.014†	13359.2	17938.9	508.35 ug/L	508.35 ppb	11:07:21
3	V 292.402†	70827.0	82760.2	508.71 ug/L	508.71 ppb	11:07:21
3	Zn 213.857†	56121.4	63317.5	490.12 ug/L	490.12 ppb	11:07:26
3	SiO2†	161991.9	184527.6	11303 ug/L	11303 ppb	11:07:42

## Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	779112.0	87.875 %	0.3888			0.44%
Sc Radial	4320.8	92.6 %	2.76			2.98%
Y 371.029	656550.2	86.189 %	0.3333			0.39%
Y RADIAL	4579.9	92.84 %	2.683			2.89%
Ag 328.068†	50290.1	272.65 ug/L	1.527	272.65 ppb	1.527	0.56%
QC value within limits for Ag 328.068 Recovery = 109.06%						
Al 396.153Radial†	578926.5	513440 ug/L	16349.5	513440 ppb	16349.5	3.18%
QC value within limits for Al 396.153Radial Recovery = 102.69%						
As 188.979†	1392.0	519.46 ug/L	6.281	519.46 ppb	6.281	1.21%
QC value within limits for As 188.979 Recovery = 103.89%						
B 249.677†	25858.6	507.36 ug/L	0.652	507.36 ppb	0.652	0.13%
QC value within limits for B 249.677 Recovery = 101.47%						
Ba 233.527†	67916.1	501.07 ug/L	1.782	501.07 ppb	1.782	0.36%
QC value within limits for Ba 233.527 Recovery = 100.21%						
Be 313.107†	730082.2	247.74 ug/L	0.673	247.74 ppb	0.673	0.27%
QC value within limits for Be 313.107 Recovery = 99.10%						

Ca 317.933Radial†	287143.3	481160 ug/L	14877.5	481160 ppb	14877.5	3.09%
QC value within limits for Ca 317.933Radial Recovery = 96.23%						
Cd 226.502†	51469.4	466.48 ug/L	1.723	466.48 ppb	1.723	0.37%
QC value within limits for Cd 226.502 Recovery = 93.30%						
Co 228.616†	24731.8	462.53 ug/L	2.645	462.53 ppb	2.645	0.57%
QC value within limits for Co 228.616 Recovery = 92.51%						
Cr 267.716†	46927.0	474.24 ug/L	3.056	474.24 ppb	3.056	0.64%
QC value within limits for Cr 267.716 Recovery = 94.85%						
Cu 324.752†	187566.3	564.79 ug/L	1.136	564.79 ppb	1.136	0.20%
QC value within limits for Cu 324.752 Recovery = 112.96%						
Fe 238.204 Radial†	21140.4	185770 ug/L	4884.4	185770 ppb	4884.4	2.63%
QC value within limits for Fe 238.204 Radial Recovery = 92.89%						
K 766.490 Radial†	26921.7	5352.6 ug/L	191.29	5352.6 ppb	191.29	3.57%
QC value within limits for K 766.490 Radial Recovery = 107.05%						
Mg 279.077 IEC†	15069.7	481690 ug/L	12459.7	481690 ppb	12459.7	2.59%
QC value within limits for Mg 279.077 IEC Recovery = 96.34%						
Mn 257.610†	469264.6	503.99 ug/L	1.510	503.99 ppb	1.510	0.30%
QC value within limits for Mn 257.610 Recovery = 100.80%						
Mo 202.031†	7480.6	486.44 ug/L	4.356	486.44 ppb	4.356	0.90%
QC value within limits for Mo 202.031 Recovery = 97.29%						
Na 589.592 Radial†	17971.9	5428.9 ug/L	136.40	5428.9 ppb	136.40	2.51%
QC value within limits for Na 589.592 Radial Recovery = 108.58%						
Ni 231.604†	21093.6	462.76 ug/L	3.154	462.76 ppb	3.154	0.68%
QC value within limits for Ni 231.604 Recovery = 92.55%						
P 214.914†	5232.0	2491.7 ug/L	14.56	2491.7 ppb	14.56	0.58%
QC value within limits for P 214.914 Recovery = 99.67%						
Pb 220.353†	3499.9	463.26 ug/L	2.165	463.26 ppb	2.165	0.47%
QC value within limits for Pb 220.353 Recovery = 92.65%						
S 181.975 Axial†	2358.2	2564.1 ug/L	37.04	2564.1 ppb	37.04	1.44%
QC value within limits for S 181.975 Axial Recovery = 102.57%						
Sb 206.836†	1787.5	528.94 ug/L	3.648	528.94 ppb	3.648	0.69%
QC value within limits for Sb 206.836 Recovery = 105.79%						
Se 196.026†	3801.8	2598.5 ug/L	24.38	2598.5 ppb	24.38	0.94%
QC value within limits for Se 196.026 Recovery = 103.94%						
Si 251.611†	183698.9	5258.4 ug/L	14.95	5258.4 ppb	14.95	0.28%
QC value within limits for Si 251.611 Recovery = 105.17%						
Sn 189.927†	2882.5	479.08 ug/L	6.874	479.08 ppb	6.874	1.43%
QC value within limits for Sn 189.927 Recovery = 95.82%						
Sr 421.552†	68722.2	498.70 ug/L	16.219	498.70 ppb	16.219	3.25%
QC value within limits for Sr 421.552 Recovery = 99.74%						
Ti 334.940†	312994.4	521.29 ug/L	1.701	521.29 ppb	1.701	0.33%
QC value within limits for Ti 334.940 Recovery = 104.26%						
Tl 190.801†	1708.9	484.06 ug/L	12.491	484.06 ppb	12.491	2.58%
QC value within limits for Tl 190.801 Recovery = 96.81%						
U 409.014†	17835.8	505.95 ug/L	4.330	505.95 ppb	4.330	0.86%
QC value within limits for U 409.014 Recovery = 101.19%						
V 292.402†	82505.5	507.55 ug/L	1.950	507.55 ppb	1.950	0.38%
QC value within limits for V 292.402 Recovery = 101.51%						
Zn 213.857†	62935.5	487.73 ug/L	2.725	487.73 ppb	2.725	0.56%
QC value within limits for Zn 213.857 Recovery = 97.55%						
SiO2†	181798.7	11136 ug/L	168.2	11136 ppb	168.2	1.51%
QC value within limits for SiO2 Recovery = 104.12%						
All analyte(s) passed QC.						

Sequence No.: 11  
 Sample ID: LR1  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 15  
 Date Collected: 1/6/2010 11:09:52  
 Data Type: Reprocessed on 1/6/2010 11:55:36  
 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 361.383	757190.3	757190.3	85.403 %		11:12:18
1	Sc Radial	4069.5	4069.5	87.2 %		11:11:50
1	Y 371.029	639627.2	639627.2	83.967 %		11:12:18
1	Y RADIAL	4307.8	4307.8	87.33 %		11:11:50
1	Ag 328.068†	-25114.7	-29919.6	3.2743 ug/L	3.2743 ppb	11:12:18
1	Al 396.153Radial†	510246.3	585257.6	519080 ug/L	519080 ppb	11:11:45
1	As 188.979†	-226.9	-232.3	-11.379 ug/L	-11.379 ppb	11:12:38
1	B 249.677†	930.6	1755.6	-23.986 ug/L	-23.986 ppb	11:12:18
1	Ba 233.527†	-1963.0	-2306.0	-5.3258 ug/L	-5.3258 ppb	11:12:38
1	Be 313.107†	-10999.8	-8528.4	-2.9251 ug/L	-2.9251 ppb	11:12:18
1	Ca 317.933Radial†	255686.9	293249.5	491390 ug/L	491390 ppb	11:11:45
1	Cd 226.502†	3401.1	4220.8	-5.5906 ug/L	-5.5906 ppb	11:12:38
1	Co 228.616†	183.2	298.5	-0.9238 ug/L	-0.9238 ppb	11:12:38
1	Cr 267.716†	44.1	-52.4	2.8440 ug/L	2.8440 ppb	11:12:38
1	Cu 324.752†	557.6	-7346.1	1.3885 ug/L	1.3885 ppb	11:12:18
1	Fe 238.204 Radial†	45017.9	51619.7	453570 ug/L	453570 ppb	11:11:50
1	K 766.490 Radial†	3444.5	613.9	-90.690 ug/L	-90.690 ppb	11:11:45
1	Mg 279.077 IEC†	13372.4	15335.9	489960 ug/L	489960 ppb	11:11:50
1	Mn 257.610†	-26979.7	-32107.5	2.2724 ug/L	2.2724 ppb	11:12:18
1	Mo 202.031†	-544.9	-658.0	2.2543 ug/L	2.2543 ppb	11:12:18
1	Na 589.592 Radial†	1546860.8	1775933.7	536470 ug/L	536470 ppb	11:11:45
1	Ni 231.604†	305.8	233.0	5.1111 ug/L	5.1111 ppb	11:12:38
1	P 214.914†	643.8	505.2	58.913 ug/L	58.913 ppb	11:12:38
1	Pb 220.353†	-720.0	-765.3	-0.1074 ug/L	-0.1074 ppb	11:12:38
1	S 181.975 Axial†	91.6	47.4	-48.518 ug/L	-48.518 ppb	11:12:38
1	Sb 206.836†	64.7	38.7	2.6602 ug/L	2.6602 ppb	11:12:38
1	Se 196.026†	-2673.6	-3097.3	-109.20 ug/L	-109.20 ppb	11:12:38
1	Si 251.611†	-394.3	-1078.3	-30.022 ug/L	-30.022 ppb	11:12:38
1	Sn 189.927†	-428.8	-505.5	-17.410 ug/L	-17.410 ppb	11:12:38
1	Sr 421.552†	654.3	734.5	0.8228 ug/L	0.8228 ppb	11:11:50
1	Ti 334.940†	-13218.6	-13660.6	-2.6075 ug/L	-2.6075 ppb	11:12:18
1	Tl 190.801†	-112.2	-78.0	-7.5455 ug/L	-7.5455 ppb	11:12:38
1	U 409.014†	424989.0	500297.0	14816 ug/L	14816 ppb	11:12:18
1	V 292.402†	1846.6	3964.0	-4.7330 ug/L	-4.7330 ppb	11:12:18
1	Zn 213.857†	6309.6	6556.3	13.614 ug/L	13.614 ppb	11:12:38
1	SiO2†	-467.6	-1183.5	-70.679 ug/L	-70.679 ppb	11:13:35
2	Sc 361.383	747932.4	747932.4	84.359 %		11:12:44
2	Sc Radial	4162.5	4162.5	89.2 %		11:12:00
2	Y 371.029	631266.1	631266.1	82.870 %		11:12:44
2	Y RADIAL	4406.2	4406.2	89.32 %		11:12:00
2	Ag 328.068†	-24896.5	-30025.0	2.7957 ug/L	2.7957 ppb	11:12:44
2	Al 396.153Radial†	513742.4	576099.8	510960 ug/L	510960 ppb	11:11:55
2	As 188.979†	-230.4	-239.8	-14.056 ug/L	-14.056 ppb	11:13:04
2	B 249.677†	877.2	1705.6	-24.970 ug/L	-24.970 ppb	11:12:44
2	Ba 233.527†	-1965.8	-2337.8	-5.5667 ug/L	-5.5667 ppb	11:13:04
2	Be 313.107†	-10971.6	-8654.3	-2.9684 ug/L	-2.9684 ppb	11:12:44
2	Ca 317.933Radial†	256858.8	288010.2	482610 ug/L	482610 ppb	11:11:55
2	Cd 226.502†	3363.5	4225.5	-5.5103 ug/L	-5.5103 ppb	11:13:04
2	Co 228.616†	225.5	351.3	0.0756 ug/L	0.0756 ppb	11:13:04
2	Cr 267.716†	11.6	-90.3	2.4440 ug/L	2.4440 ppb	11:13:04
2	Cu 324.752†	691.5	-7179.3	1.8641 ug/L	1.8641 ppb	11:12:44
2	Fe 238.204 Radial†	46010.4	51578.8	453210 ug/L	453210 ppb	11:12:00
2	K 766.490 Radial†	3371.7	444.0	-120.26 ug/L	-120.26 ppb	11:11:55
2	Mg 279.077 IEC†	13639.9	15293.2	488600 ug/L	488600 ppb	11:12:00
2	Mn 257.610†	-26627.6	-32081.1	2.2899 ug/L	2.2899 ppb	11:12:44
2	Mo 202.031†	-533.2	-652.0	2.5949 ug/L	2.5949 ppb	11:12:44
2	Na 589.592 Radial†	1553333.5	1743544.6	526690 ug/L	526690 ppb	11:11:55
2	Ni 231.604†	303.3	234.4	5.1418 ug/L	5.1418 ppb	11:13:04



2	P 214.914†	620.8	487.3	47.656 ug/L	47.656 ppb	11:13:04
2	Pb 220.353†	-807.2	-879.1	-13.693 ug/L	-13.693 ppb	11:13:04
2	S 181.975 Axial†	115.8	77.4	-13.020 ug/L	-13.020 ppb	11:13:04
2	Sb 206.836†	71.1	47.2	5.4744 ug/L	5.4744 ppb	11:13:04
2	Se 196.026†	-2683.9	-3148.3	-137.67 ug/L	-137.67 ppb	11:13:04
2	Si 251.611†	-403.6	-1095.0	-30.500 ug/L	-30.500 ppb	11:13:04
2	Sn 189.927†	-418.3	-499.2	-17.395 ug/L	-17.395 ppb	11:13:04
2	Sr 421.552†	692.7	760.8	1.0971 ug/L	1.0971 ppb	11:12:00
2	Ti 334.940†	-13250.4	-13889.9	-3.4473 ug/L	-3.4473 ppb	11:12:44
2	Tl 190.801†	-129.1	-99.7	-13.698 ug/L	-13.698 ppb	11:13:04
2	U 409.014†	420957.2	501677.2	14857 ug/L	14857 ppb	11:12:44
2	V 292.402†	1835.9	3978.1	-4.5353 ug/L	-4.5353 ppb	11:12:44
2	Zn 213.857†	6334.6	6677.4	14.674 ug/L	14.674 ppb	11:13:04
2	SiO2†	-393.1	-1102.1	-65.675 ug/L	-65.675 ppb	11:13:40
3	Sc 361.383	755624.4	755624.4	85.226 %		11:13:10
3	Sc Radial	4203.6	4203.6	90.1 %		11:12:11
3	Y 371.029	637710.9	637710.9	83.716 %		11:13:10
3	Y RADIAL	4489.0	4489.0	91.00 %		11:12:11
3	Ag 328.068†	-24986.3	-29829.9	2.9540 ug/L	2.9540 ppb	11:13:10
3	Al 396.153Radial†	523842.6	581687.2	515910 ug/L	515910 ppb	11:12:06
3	As 188.979†	-238.1	-245.9	-16.509 ug/L	-16.509 ppb	11:13:30
3	B 249.677†	950.0	1780.5	-23.167 ug/L	-23.167 ppb	11:13:10
3	Ba 233.527†	-1897.4	-2233.8	-4.8555 ug/L	-4.8555 ppb	11:13:30
3	Be 313.107†	-10926.8	-8469.5	-2.9039 ug/L	-2.9039 ppb	11:13:10
3	Ca 317.933Radial†	261514.2	290365.6	486560 ug/L	486560 ppb	11:12:06
3	Cd 226.502†	3385.8	4211.0	-5.4515 ug/L	-5.4515 ppb	11:13:30
3	Co 228.616†	222.9	345.5	-0.0118 ug/L	-0.0118 ppb	11:13:30
3	Cr 267.716†	23.1	-76.9	2.5547 ug/L	2.5547 ppb	11:13:30
3	Cu 324.752†	722.6	-7151.2	1.8478 ug/L	1.8478 ppb	11:13:10
3	Fe 238.204 Radial†	46264.7	51357.2	451270 ug/L	451270 ppb	11:12:11
3	K 766.490 Radial†	3543.4	597.7	-92.508 ug/L	-92.508 ppb	11:12:06
3	Mg 279.077 IEC†	13726.0	15239.3	486870 ug/L	486870 ppb	11:12:11
3	Mn 257.610†	-26793.1	-31954.0	2.2617 ug/L	2.2617 ppb	11:13:10
3	Mo 202.031†	-566.7	-684.9	0.3482 ug/L	0.3482 ppb	11:13:10
3	Na 589.592 Radial†	1588770.3	1765877.1	533430 ug/L	533430 ppb	11:12:06
3	Ni 231.604†	321.7	252.4	5.5371 ug/L	5.5371 ppb	11:13:30
3	P 214.914†	641.1	503.6	58.829 ug/L	58.829 ppb	11:13:30
3	Pb 220.353†	-758.3	-811.9	-5.4667 ug/L	-5.4667 ppb	11:13:30
3	S 181.975 Axial†	105.2	63.5	-29.686 ug/L	-29.686 ppb	11:13:30
3	Sb 206.836†	58.4	31.4	0.5209 ug/L	0.5209 ppb	11:13:30
3	Se 196.026†	-2673.4	-3103.6	-119.97 ug/L	-119.97 ppb	11:13:30
3	Si 251.611†	-378.8	-1061.0	-29.495 ug/L	-29.495 ppb	11:13:30
3	Sn 189.927†	-428.5	-506.2	-18.044 ug/L	-18.044 ppb	11:13:30
3	Sr 421.552†	720.4	783.9	1.2299 ug/L	1.2299 ppb	11:12:11
3	Ti 334.940†	-12836.6	-13244.5	-2.2045 ug/L	-2.2045 ppb	11:13:10
3	Tl 190.801†	-138.0	-108.6	-15.974 ug/L	-15.974 ppb	11:13:30
3	U 409.014†	424448.1	500693.5	14828 ug/L	14828 ppb	11:13:10
3	V 292.402†	1986.5	4132.7	-3.3948 ug/L	-3.3948 ppb	11:13:10
3	Zn 213.857†	6330.3	6595.9	14.161 ug/L	14.161 ppb	11:13:30
3	SiO2†	-463.9	-1180.3	-70.415 ug/L	-70.415 ppb	11:13:45

## Mean Data: LRI

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	753582.4	84.996 %	0.5589			0.66%
Sc Radial	4145.2	88.8 %	1.47			1.66%
Y 371.029	636201.4	83.518 %	0.5750			0.69%
Y RADIAL	4401.0	89.22 %	1.839			2.06%
Ag 328.068†	-29924.8	3.0080 ug/L	0.24381	3.0080 ppb	0.24381	8.11%
Al 396.153Radial†	581014.9	515320 ug/L	4093.8	515320 ppb	4093.8	0.79%
QC value within limits for Al 396.153Radial Recovery = 103.06%						
As 188.979†	-239.3	-13.981 ug/L	2.5661	-13.981 ppb	2.5661	18.35%
B 249.677†	1747.2	-24.041 ug/L	0.9025	-24.041 ppb	0.9025	3.75%
Ba 233.527†	-2292.5	-5.2493 ug/L	0.36169	-5.2493 ppb	0.36169	6.89%
Be 313.107†	-8550.7	-2.9325 ug/L	0.03287	-2.9325 ppb	0.03287	1.12%
Ca 317.933Radial†	290541.7	486850 ug/L	4397.1	486850 ppb	4397.1	0.90%
QC value within limits for Ca 317.933Radial Recovery = 97.37%						
Cd 226.502†	4219.1	-5.5175 ug/L	0.06982	-5.5175 ppb	0.06982	1.27%
Co 228.616†	331.8	-0.2866 ug/L	0.55349	-0.2866 ppb	0.55349	193.09%
Cr 267.716†	-73.2	2.6142 ug/L	0.20654	2.6142 ppb	0.20654	7.90%

Cu 324.752†	-7225.5	1.7001 ug/L	0.26998	1.7001 ppb	0.26998	15.88%
Fe 238.204 Radial†	51518.6	452680 ug/L	1240.8	452680 ppb	1240.8	0.27%
QC value within limits for Fe 238.204 Radial Recovery = 90.54%						
K 766.490 Radial†	551.9	-101.15 ug/L	16.572	-101.15 ppb	16.572	16.38%
Mg 279.077 IEC†	15289.5	488480 ug/L	1547.1	488480 ppb	1547.1	0.32%
QC value within limits for Mg 279.077 IEC Recovery = 97.70%						
Mn 257.610†	-32047.5	2.2747 ug/L	0.01421	2.2747 ppb	0.01421	0.62%
Mo 202.031†	-665.0	1.7325 ug/L	1.21083	1.7325 ppb	1.21083	69.89%
Na 589.592 Radial†	1761785.1	532200 ug/L	5007.8	532200 ppb	5007.8	0.94%
QC value within limits for Na 589.592 Radial Recovery = 106.44%						
Ni 231.604†	239.9	5.2633 ug/L	0.23757	5.2633 ppb	0.23757	4.51%
P 214.914†	498.7	55.133 ug/L	6.4747	55.133 ppb	6.4747	11.74%
Pb 220.353†	-818.8	-6.4224 ug/L	6.84309	-6.4224 ppb	6.84309	106.55%
S 181.975 Axial†	62.8	-30.408 ug/L	17.7598	-30.408 ppb	17.7598	58.40%
Sb 206.836†	39.1	2.8852 ug/L	2.48438	2.8852 ppb	2.48438	86.11%
Se 196.026†	-3116.4	-122.28 ug/L	14.375	-122.28 ppb	14.375	11.76%
Si 251.611†	-1078.1	-30.006 ug/L	0.5029	-30.006 ppb	0.5029	1.68%
Sn 189.927†	-503.7	-17.617 ug/L	0.3704	-17.617 ppb	0.3704	2.10%
Sr 421.552†	759.7	1.0499 ug/L	0.20764	1.0499 ppb	0.20764	19.78%
Ti 334.940†	-13598.3	-2.7531 ug/L	0.63406	-2.7531 ppb	0.63406	23.03%
Tl 190.801†	-95.4	-12.406 ug/L	4.3601	-12.406 ppb	4.3601	35.15%
U 409.014†	500889.3	14834 ug/L	21.1	14834 ppb	21.1	0.14%
QC value within limits for U 409.014 Recovery = 98.89%						
V 292.402†	4024.9	-4.2210 ug/L	0.72230	-4.2210 ppb	0.72230	17.11%
Zn 213.857†	6609.9	14.150 ug/L	0.5302	14.150 ppb	0.5302	3.75%
SiO2†	-1155.3	-68.923 ug/L	2.8164	-68.923 ppb	2.8164	4.09%
All analyte(s) passed QC.						

Sequence No.: 12

Sample ID: LR2

Analyst:

Logged In Analyst (Original) : Optima3

Initial Sample Wt:

Dilution:

Autosampler Location: 16

Date Collected: 1/6/2010 11:15:55

Data Type: Reprocessed on 1/6/2010 11:55:37

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 361.383	855143.5	855143.5	96.451 %		11:19:29
1	Sc Radial	4532.6	4532.6	97.1 %		11:17:52
1	Y 371.029	719027.8	719027.8	94.391 %		11:19:29
1	Y RADIAL	4745.9	4745.9	96.21 %		11:17:52
1	Ag 328.068†	-7632.1	-8425.2	3.0535 ug/L	3.0535 ppb	11:19:35
1	Al 396.153Radial†	509.7	551.6	74.517 ug/L	74.517 ppb	11:17:52
1	As 188.979†	27888.2	28947.8	10215 ug/L	10215 ppb	11:19:35
1	B 249.677†	235236.7	244558.4	5018.7 ug/L	5018.7 ppb	11:19:29
1	Ba 233.527†	1893929.7	1963611.5	14341 ug/L	14341 ppb	11:19:29
1	Be 313.107†	8254992.6	8563096.1	2913.7 ug/L	2913.7 ppb	11:19:23
1	Ca 317.933Radial†	29.4	17.7	29.623 ug/L	29.623 ppb	11:18:12
1	Cd 226.502†	994256.1	1031079.3	9717.3 ug/L	9717.3 ppb	11:19:29
1	Co 228.616†	483605.0	501483.8	9429.4 ug/L	9429.4 ppb	11:19:35
1	Cr 267.716†	2313418.7	2398439.6	24048 ug/L	24048 ppb	11:19:29
1	Cu 324.752†	6593986.3	6828620.7	20217 ug/L	20217 ppb	11:19:23
1	Fe 238.204 Radial†	-18.7	-33.1	6.3256 ug/L	6.3256 ppb	11:18:12
1	K 766.490 Radial†	1422221.0	1461231.3	289970 ug/L	289970 ppb	11:17:47
1	Mg 279.077 IEC†	0.5	-1.2	158.74 ug/L	158.74 ppb	11:18:12
1	Mn 257.610†	8734405.4	9055281.5	9541.1 ug/L	9541.1 ppb	11:19:23
1	Mo 202.031†	149158.2	154626.7	9686.9 ug/L	9686.9 ppb	11:19:35
1	Na 589.592 Radial†	-946.1	775.9	234.37 ug/L	234.37 ppb	11:17:52
1	Ni 231.604†	433885.0	449725.2	9866.6 ug/L	9866.6 ppb	11:19:29
1	P 214.914†	35103.9	36147.0	14522 ug/L	14522 ppb	11:19:35
1	Pb 220.353†	225385.4	233756.5	24224 ug/L	24224 ppb	11:19:35
1	S 181.975 Axial†	43781.0	45332.1	51232 ug/L	51232 ppb	11:19:35
1	Sb 206.836†	33207.8	34392.6	10072 ug/L	10072 ppb	11:19:35
1	Se 196.026†	19445.2	20194.0	10364 ug/L	10364 ppb	11:19:35
1	Si 251.611†	1634255.5	1693773.3	48292 ug/L	48292 ppb	11:19:29
1	Sn 189.927†	67140.8	69607.9	10296 ug/L	10296 ppb	11:19:35
1	Sr 421.552†	1283469.1	1321668.7	9676.8 ug/L	9676.8 ppb	11:17:47
1	Ti 334.940†	6020668.2	6244023.1	9898.3 ug/L	9898.3 ppb	11:19:23
1	Tl 190.801†	34515.2	35838.6	9851.2 ug/L	9851.2 ppb	11:19:35
1	U 409.014†	-1575.9	1034.8	-15.619 ug/L	-15.619 ppb	11:19:35
1	V 292.402†	1537981.1	1596374.8	10140 ug/L	10140 ppb	11:19:29
1	Zn 213.857†	1663348.7	1723721.9	14086 ug/L	14086 ppb	11:19:29
1	SiO2†	1661507.8	1722008.9	105060 ug/L	105060 ppb	11:20:22
2	Sc 361.383	852719.5	852719.5	96.178 %		11:19:49
2	Sc Radial	4559.9	4559.9	97.7 %		11:18:22
2	Y 371.029	717455.3	717455.3	94.184 %		11:19:49
2	Y RADIAL	4799.5	4799.5	97.30 %		11:18:22
2	Ag 328.068†	-7539.2	-8351.2	3.3458 ug/L	3.3458 ppb	11:19:54
2	Al 396.153Radial†	529.3	568.5	92.510 ug/L	92.510 ppb	11:18:22
2	As 188.979†	27510.7	28637.5	10106 ug/L	10106 ppb	11:19:54
2	B 249.677†	234879.8	244880.5	5025.5 ug/L	5025.5 ppb	11:19:49
2	Ba 233.527†	1886474.8	1961442.2	14325 ug/L	14325 ppb	11:19:49
2	Be 313.107†	8221762.2	8552874.5	2910.2 ug/L	2910.2 ppb	11:19:43
2	Ca 317.933Radial†	27.6	15.7	26.326 ug/L	26.326 ppb	11:18:43
2	Cd 226.502†	990836.2	1030453.7	9711.4 ug/L	9711.4 ppb	11:19:49
2	Co 228.616†	479786.7	498939.0	9381.4 ug/L	9381.4 ppb	11:19:54
2	Cr 267.716†	2306239.8	2397793.6	24042 ug/L	24042 ppb	11:19:49
2	Cu 324.752†	6556528.0	6809107.7	20159 ug/L	20159 ppb	11:19:43
2	Fe 238.204 Radial†	-21.7	-36.1	-20.921 ug/L	-20.921 ppb	11:18:43
2	K 766.490 Radial†	1435740.8	1466307.3	290980 ug/L	290980 ppb	11:18:17
2	Mg 279.077 IEC†	-6.1	-7.8	-55.841 ug/L	-55.841 ppb	11:18:43
2	Mn 257.610†	8690389.9	9035259.1	9520.0 ug/L	9520.0 ppb	11:19:43
2	Mo 202.031†	147648.8	153497.0	9616.1 ug/L	9616.1 ppb	11:19:54
2	Na 589.592 Radial†	-1022.3	703.7	212.57 ug/L	212.57 ppb	11:18:22
2	Ni 231.604†	432587.9	449655.4	9865.1 ug/L	9865.1 ppb	11:19:49

2	P 214.914†	34621.3	35748.7	14337 ug/L	14337 ppb	11:19:54
2	Pb 220.353†	223665.0	232632.0	24107 ug/L	24107 ppb	11:19:54
2	S 181.975 Axial†	43159.2	44814.6	50647 ug/L	50647 ppb	11:19:54
2	Sb 206.836†	32939.0	34211.0	10015 ug/L	10015 ppb	11:19:54
2	Se 196.026†	19215.5	20012.5	10271 ug/L	10271 ppb	11:19:54
2	Si 251.611†	1630656.6	1694847.8	48323 ug/L	48323 ppb	11:19:49
2	Sn 189.927†	66660.2	69306.1	10251 ug/L	10251 ppb	11:19:54
2	Sr 421.552†	1293913.8	1324452.0	9697.2 ug/L	9697.2 ppb	11:18:17
2	Ti 334.940†	5988704.5	6228533.4	9873.7 ug/L	9873.7 ppb	11:19:43
2	Tl 190.801†	34232.4	35646.3	9798.7 ug/L	9798.7 ppb	11:19:54
2	U 409.014†	-1574.4	1031.7	-15.694 ug/L	-15.694 ppb	11:19:54
2	V 292.402†	1532941.9	1595668.1	10134 ug/L	10134 ppb	11:19:49
2	Zn 213.857†	1658548.0	1723632.6	14085 ug/L	14085 ppb	11:19:49
2	SiO2†	1655031.2	1720171.7	104950 ug/L	104950 ppb	11:20:29
3	Sc 361.383	857798.8	857798.8	96.750 %		11:20:09
3	Sc Radial	4449.0	4449.0	95.3 %		11:18:53
3	Y 371.029	721549.0	721549.0	94.722 %		11:20:09
3	Y RADIAL	4659.1	4659.1	94.45 %		11:18:53
3	Ag 328.068†	-7591.1	-8358.3	3.2878 ug/L	3.2878 ppb	11:20:14
3	Al 396.153Radial†	549.6	603.3	121.01 ug/L	121.01 ppb	11:18:53
3	As 188.979†	27884.6	28854.6	10183 ug/L	10183 ppb	11:20:14
3	B 249.677†	236512.7	245122.2	5030.4 ug/L	5030.4 ppb	11:20:09
3	Ba 233.527†	1897433.0	1961154.3	14323 ug/L	14323 ppb	11:20:09
3	Be 313.107†	8335052.1	8619351.9	2932.9 ug/L	2932.9 ppb	11:20:02
3	Ca 317.933Radial†	32.4	21.4	35.884 ug/L	35.884 ppb	11:19:13
3	Cd 226.502†	994033.2	1027658.0	9685.1 ug/L	9685.1 ppb	11:20:09
3	Co 228.616†	484126.0	500470.3	9410.2 ug/L	9410.2 ppb	11:20:14
3	Cr 267.716†	2315895.2	2393574.8	24000 ug/L	24000 ppb	11:20:09
3	Cu 324.752†	6658558.7	6874199.8	20352 ug/L	20352 ppb	11:20:02
3	Fe 238.204 Radial†	-19.0	-33.8	0.0691 ug/L	0.0691 ppb	11:19:13
3	K 766.490 Radial†	1453148.7	1521214.6	301880 ug/L	301880 ppb	11:18:48
3	Mg 279.077 IEC†	-5.4	-7.3	-36.118 ug/L	-36.118 ppb	11:19:13
3	Mn 257.610†	8805381.2	9100610.0	9588.8 ug/L	9588.8 ppb	11:20:02
3	Mo 202.031†	149382.4	154379.7	9671.4 ug/L	9671.4 ppb	11:20:14
3	Na 589.592 Radial†	-1048.5	650.1	196.38 ug/L	196.38 ppb	11:18:53
3	Ni 231.604†	434754.6	449231.6	9855.7 ug/L	9855.7 ppb	11:20:09
3	P 214.914†	35004.0	35931.1	14395 ug/L	14395 ppb	11:20:14
3	Pb 220.353†	225554.5	233207.9	24167 ug/L	24167 ppb	11:20:14
3	S 181.975 Axial†	43866.1	45279.5	51173 ug/L	51173 ppb	11:20:14
3	Sb 206.836†	33327.1	34409.3	10077 ug/L	10077 ppb	11:20:14
3	Se 196.026†	19458.9	20145.7	10339 ug/L	10339 ppb	11:20:14
3	Si 251.611†	1642305.9	1696849.3	48376 ug/L	48376 ppb	11:20:09
3	Sn 189.927†	67120.8	69371.7	10261 ug/L	10261 ppb	11:20:14
3	Sr 421.552†	1310935.2	1375334.0	10070 ug/L	10070 ppb	11:18:48
3	Ti 334.940†	6074754.7	6280604.0	9956.3 ug/L	9956.3 ppb	11:20:02
3	Tl 190.801†	34481.6	35693.1	9812.4 ug/L	9812.4 ppb	11:20:14
3	U 409.014†	-1695.1	916.7	-19.035 ug/L	-19.035 ppb	11:20:14
3	V 292.402†	1540635.9	1594182.9	10126 ug/L	10126 ppb	11:20:09
3	Zn 213.857†	1666183.8	1721314.0	14066 ug/L	14066 ppb	11:20:09
3	SiO2†	1649310.9	1704070.0	103950 ug/L	103950 ppb	11:20:36

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Mean Data: LR2

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	855220.6	96.460 %	0.2865			0.30%
Sc Radial	4513.8	96.7 %	1.24			1.28%
Y 371.029	719344.0	94.432 %	0.2711			0.29%
Y RADIAL	4734.8	95.98 %	1.437			1.50%
Ag 328.068†	-8378.2	3.2290 ug/L	0.15473	3.2290 ppb	0.15473	4.79%
Al 396.153Radial†	574.5	96.012 ug/L	23.4424	96.012 ppb	23.4424	24.42%
As 188.979†	28813.3	10168 ug/L	55.9	10168 ppb	55.9	0.55%
QC value within limits for As 188.979 Recovery = 101.68%						
B 249.677†	244853.7	5024.9 ug/L	5.86	5024.9 ppb	5.86	0.12%
QC value within limits for B 249.677 Recovery = 100.50%						
Ba 233.527†	1962069.3	14329 ug/L	9.8	14329 ppb	9.8	0.07%
QC value within limits for Ba 233.527 Recovery = 95.53%						
Be 313.107†	8578440.8	2918.9 ug/L	12.18	2918.9 ppb	12.18	0.42%
QC value within limits for Be 313.107 Recovery = 97.30%						
Ca 317.933Radial†	18.3	30.611 ug/L	4.8545	30.611 ppb	4.8545	15.86%
Cd 226.502†	1029730.3	9704.6 ug/L	17.16	9704.6 ppb	17.16	0.18%

QC value within limits for Cd 226.502 Recovery = 97.05%									
Co	228.616†	500297.7	9407.0 ug/L	24.15	9407.0 ppb	24.15	0.26%		
QC value within limits for Co 228.616 Recovery = 94.07%									
Cr	267.716†	2396602.7	24030 ug/L	26.5	24030 ppb	26.5	0.11%		
QC value within limits for Cr 267.716 Recovery = 96.12%									
Cu	324.752†	6837309.4	20243 ug/L	98.9	20243 ppb	98.9	0.49%		
QC value within limits for Cu 324.752 Recovery = 101.21%									
Fe	238.204 Radial†	-34.3	-4.8420 ug/L	14.27150	-4.8420 ppb	14.27150	294.75%		
K	766.490 Radial†	1482917.8	294280 ug/L	6602.4	294280 ppb	6602.4	2.24%		
QC value within limits for K 766.490 Radial Recovery = 98.09%									
Mg	279.077 IEC†	-5.4	22.261 ug/L	118.6075	22.261 ppb	118.6075	532.79%		
Mn	257.610†	9063716.9	9549.9 ug/L	35.28	9549.9 ppb	35.28	0.37%		
QC value within limits for Mn 257.610 Recovery = 95.50%									
Mo	202.031†	154167.8	9658.1 ug/L	37.21	9658.1 ppb	37.21	0.39%		
QC value within limits for Mo 202.031 Recovery = 96.58%									
Na	589.592 Radial†	709.9	214.44 ug/L	19.065	214.44 ppb	19.065	8.89%		
Ni	231.604†	449537.4	9862.5 ug/L	5.86	9862.5 ppb	5.86	0.06%		
QC value within limits for Ni 231.604 Recovery = 98.62%									
P	214.914†	35942.3	14418 ug/L	94.9	14418 ppb	94.9	0.66%		
QC value within limits for P 214.914 Recovery = 96.12%									
Pb	220.353†	233198.8	24166 ug/L	58.3	24166 ppb	58.3	0.24%		
QC value within limits for Pb 220.353 Recovery = 96.66%									
S	181.975 Axial†	45142.1	51017 ug/L	321.9	51017 ppb	321.9	0.63%		
QC value within limits for S 181.975 Axial Recovery = 102.03%									
Sb	206.836†	34337.6	10055 ug/L	34.1	10055 ppb	34.1	0.34%		
QC value within limits for Sb 206.836 Recovery = 100.55%									
Se	196.026†	20117.4	10325 ug/L	48.3	10325 ppb	48.3	0.47%		
QC value within limits for Se 196.026 Recovery = 103.25%									
Si	251.611†	1695156.8	48330 ug/L	42.8	48330 ppb	42.8	0.09%		
QC value within limits for Si 251.611 Recovery = 96.66%									
Sn	189.927†	69428.6	10269 ug/L	23.5	10269 ppb	23.5	0.23%		
QC value within limits for Sn 189.927 Recovery = 102.69%									
Sr	421.552†	1340484.9	9814.6 ug/L	221.20	9814.6 ppb	221.20	2.25%		
QC value within limits for Sr 421.552 Recovery = 98.15%									
Ti	334.940†	6251053.5	9909.4 ug/L	42.43	9909.4 ppb	42.43	0.43%		
QC value within limits for Ti 334.940 Recovery = 99.09%									
Tl	190.801†	35726.0	9820.7 ug/L	27.28	9820.7 ppb	27.28	0.28%		
QC value within limits for Tl 190.801 Recovery = 98.21%									
U	409.014†	994.4	-16.782 ug/L	1.9508	-16.782 ppb	1.9508	11.62%		
V	292.402†	1595408.6	10133 ug/L	7.1	10133 ppb	7.1	0.07%		
QC value within limits for V 292.402 Recovery = 101.33%									
Zn	213.857†	1722889.5	14079 ug/L	11.3	14079 ppb	11.3	0.08%		
QC value within limits for Zn 213.857 Recovery = 93.86%									
SiO2†		1715416.9	104650 ug/L	611.0	104650 ppb	611.0	0.58%		
QC value within limits for SiO2 Recovery = 97.81%									

All analyte(s) passed QC.

Sequence No.: 15  
 Sample ID: CCV  
 Analyst:  
 Logged In Analyst (Original) : Optima3  
 Initial Sample Wt:  
 Dilution:

Autosampler Location: 7  
 Date Collected: 1/6/2010 11:40:15  
 Data Type: Reprocessed on 1/6/2010 11:55:41  
 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 361.383	880607.9	880607.9	99.323 %		11:43:26
1	Sc Radial	4577.3	4577.3	98.1 %		11:42:07
1	Y 371.029	748816.6	748816.6	98.301 %		11:43:26
1	Y RADIAL	4817.1	4817.1	97.65 %		11:42:07
1	Ag 328.068†	113728.4	113991.1	492.76 ug/L	492.76 ppb	11:43:26
1	Al 396.153Radial†	5558.8	5695.1	5030.1 ug/L	5030.1 ppb	11:42:07
1	As 188.979†	1375.6	1418.4	500.79 ug/L	500.79 ppb	11:43:46
1	B 249.677†	23608.4	24435.1	501.95 ug/L	501.95 ppb	11:43:26
1	Ba 233.527†	66877.5	67325.8	492.14 ug/L	492.14 ppb	11:43:26
1	Be 313.107†	1452961.5	1467215.3	496.89 ug/L	496.89 ppb	11:43:26
1	Ca 317.933Radial†	2960.6	3006.4	5037.8 ug/L	5037.8 ppb	11:42:27
1	Cd 226.502†	51692.2	52282.8	492.23 ug/L	492.23 ppb	11:43:26
1	Co 228.616†	25597.3	25855.7	486.28 ug/L	486.28 ppb	11:43:46
1	Cr 267.716†	48593.4	48820.6	489.95 ug/L	489.95 ppb	11:43:26
1	Cu 324.752†	172560.6	165737.6	490.94 ug/L	490.94 ppb	11:43:26
1	Fe 238.204 Radial†	564.9	562.2	4955.2 ug/L	4955.2 ppb	11:42:27
1	K 766.490 Radial†	28441.4	25665.3	5086.2 ug/L	5086.2 ppb	11:42:07
1	Mg 279.077 IEC†	156.3	157.8	5049.8 ug/L	5049.8 ppb	11:42:27
1	Mn 257.610†	467681.0	470352.0	495.98 ug/L	495.98 ppb	11:43:26
1	Mo 202.031†	7795.0	7828.2	490.89 ug/L	490.89 ppb	11:43:46
1	Na 589.592 Radial†	29691.6	32027.0	9674.7 ug/L	9674.7 ppb	11:42:07
1	Ni 231.604†	22169.3	22195.3	486.93 ug/L	486.93 ppb	11:43:46
1	P 214.914†	5231.3	5018.4	2372.3 ug/L	2372.3 ppb	11:43:46
1	Pb 220.353†	4637.7	4747.1	493.32 ug/L	493.32 ppb	11:43:46
1	S 181.975 Axial†	914.5	860.8	971.85 ug/L	971.85 ppb	11:43:46
1	Sb 206.836†	1672.4	1646.7	498.92 ug/L	498.92 ppb	11:43:46
1	Se 196.026†	933.3	972.9	515.40 ug/L	515.40 ppb	11:43:46
1	Si 251.611†	85554.9	85521.4	2441.6 ug/L	2441.6 ppb	11:43:26
1	Sn 189.927†	3296.8	3315.9	491.05 ug/L	491.05 ppb	11:43:46
1	Sr 421.552†	65973.1	67257.6	492.39 ug/L	492.39 ppb	11:42:07
1	Ti 334.940†	309958.2	313888.0	497.89 ug/L	497.89 ppb	11:43:26
1	Tl 190.801†	1738.9	1804.1	496.11 ug/L	496.11 ppb	11:43:46
1	U 409.014†	13104.2	15862.3	469.99 ug/L	469.99 ppb	11:43:26
1	V 292.402†	75644.0	77961.4	495.96 ug/L	495.96 ppb	11:43:26
1	Zn 213.857†	60403.7	59983.7	489.07 ug/L	489.07 ppb	11:43:26
1	SiO2†	84375.4	84314.4	5150.3 ug/L	5150.3 ppb	11:44:46
2	Sc 361.383	881660.6	881660.6	99.442 %		11:43:54
2	Sc Radial	4591.0	4591.0	98.4 %		11:42:32
2	Y 371.029	749459.3	749459.3	98.386 %		11:43:54
2	Y RADIAL	4873.5	4873.5	98.80 %		11:42:32
2	Ag 328.068†	113707.1	113833.1	492.09 ug/L	492.09 ppb	11:43:54
2	Al 396.153Radial†	5586.7	5706.6	5040.2 ug/L	5040.2 ppb	11:42:32
2	As 188.979†	1370.8	1411.9	498.49 ug/L	498.49 ppb	11:44:14
2	B 249.677†	23565.3	24363.4	500.46 ug/L	500.46 ppb	11:43:54
2	Ba 233.527†	67254.5	67624.5	494.32 ug/L	494.32 ppb	11:43:54
2	Be 313.107†	1456068.8	1468593.5	497.35 ug/L	497.35 ppb	11:43:54
2	Ca 317.933Radial†	2992.2	3029.6	5076.6 ug/L	5076.6 ppb	11:42:52
2	Cd 226.502†	52002.1	52532.3	494.58 ug/L	494.58 ppb	11:43:54
2	Co 228.616†	25716.5	25944.8	487.96 ug/L	487.96 ppb	11:44:14
2	Cr 267.716†	48785.1	48954.9	491.30 ug/L	491.30 ppb	11:43:54
2	Cu 324.752†	172808.2	165779.2	491.06 ug/L	491.06 ppb	11:43:54
2	Fe 238.204 Radial†	569.0	564.6	4976.5 ug/L	4976.5 ppb	11:42:52
2	K 766.490 Radial†	28423.4	25560.6	5065.4 ug/L	5065.4 ppb	11:42:32
2	Mg 279.077 IEC†	156.7	157.7	5047.7 ug/L	5047.7 ppb	11:42:52
2	Mn 257.610†	469471.6	471590.5	497.29 ug/L	497.29 ppb	11:43:54
2	Mo 202.031†	7836.0	7860.0	492.88 ug/L	492.88 ppb	11:44:14
2	Na 589.592 Radial†	29774.4	32020.9	9672.9 ug/L	9672.9 ppb	11:42:32
2	Ni 231.604†	22217.9	22217.6	487.42 ug/L	487.42 ppb	11:44:14

2	P 214.914†	5265.1	5046.1	2385.8 ug/L	2385.8 ppb	11:44:14
2	Pb 220.353†	4670.1	4774.1	496.12 ug/L	496.12 ppb	11:44:14
2	S 181.975 Axial†	924.2	869.5	981.68 ug/L	981.68 ppb	11:44:14
2	Sb 206.836†	1678.1	1650.4	500.03 ug/L	500.03 ppb	11:44:14
2	Se 196.026†	922.1	960.5	509.14 ug/L	509.14 ppb	11:44:14
2	Si 251.611†	85834.1	85699.4	2446.6 ug/L	2446.6 ppb	11:43:54
2	Sn 189.927†	3300.3	3315.5	490.99 ug/L	490.99 ppb	11:44:14
2	Sr 421.552†	66332.7	67422.8	493.60 ug/L	493.60 ppb	11:42:32
2	Ti 334.940†	310595.5	314156.3	498.32 ug/L	498.32 ppb	11:43:54
2	Tl 190.801†	1745.4	1808.6	497.34 ug/L	497.34 ppb	11:44:14
2	U 409.014†	12971.1	15712.6	465.54 ug/L	465.54 ppb	11:43:54
2	V 292.402†	75758.6	77985.7	496.13 ug/L	496.13 ppb	11:43:54
2	Zn 213.857†	60678.4	60187.3	490.74 ug/L	490.74 ppb	11:43:54
2	SiO2†	85279.4	85122.1	5199.8 ug/L	5199.8 ppb	11:44:52
3	Sc 361.383	875525.0	875525.0	98.750 %		11:44:21
3	Sc Radial	4595.9	4595.9	98.5 %		11:42:57
3	Y 371.029	743592.4	743592.4	97.615 %		11:44:21
3	Y RADIAL	4837.2	4837.2	98.06 %		11:42:57
3	Ag 328.068†	113388.1	114311.3	494.11 ug/L	494.11 ppb	11:44:21
3	Al 396.153Radial†	5602.4	5716.4	5048.8 ug/L	5048.8 ppb	11:42:57
3	As 188.979†	1373.1	1423.9	502.68 ug/L	502.68 ppb	11:44:41
3	B 249.677†	23651.1	24616.4	505.68 ug/L	505.68 ppb	11:44:21
3	Ba 233.527†	66854.7	67693.6	494.82 ug/L	494.82 ppb	11:44:21
3	Be 313.107†	1447710.5	1470390.7	497.96 ug/L	497.96 ppb	11:44:21
3	Ca 317.933Radial†	2982.6	3016.6	5054.7 ug/L	5054.7 ppb	11:43:17
3	Cd 226.502†	51693.2	52586.0	495.10 ug/L	495.10 ppb	11:44:21
3	Co 228.616†	25676.6	26085.7	490.61 ug/L	490.61 ppb	11:44:41
3	Cr 267.716†	48536.4	49046.9	492.21 ug/L	492.21 ppb	11:44:21
3	Cu 324.752†	171989.4	166167.9	492.21 ug/L	492.21 ppb	11:44:21
3	Fe 238.204 Radial†	558.0	552.8	4873.3 ug/L	4873.3 ppb	11:43:17
3	K 766.490 Radial†	28341.4	25446.5	5042.8 ug/L	5042.8 ppb	11:42:57
3	Mg 279.077 IEC†	160.4	161.3	5161.7 ug/L	5161.7 ppb	11:43:17
3	Mn 257.610†	467425.0	472826.5	498.58 ug/L	498.58 ppb	11:44:21
3	Mo 202.031†	7819.0	7898.1	495.26 ug/L	495.26 ppb	11:44:41
3	Na 589.592 Radial†	29641.6	31853.8	9622.4 ug/L	9622.4 ppb	11:42:57
3	Ni 231.604†	22160.8	22316.3	489.58 ug/L	489.58 ppb	11:44:41
3	P 214.914†	5238.5	5056.3	2390.7 ug/L	2390.7 ppb	11:44:41
3	Pb 220.353†	4658.3	4795.0	498.31 ug/L	498.31 ppb	11:44:41
3	S 181.975 Axial†	919.0	870.7	983.04 ug/L	983.04 ppb	11:44:41
3	Sb 206.836†	1680.5	1664.7	504.38 ug/L	504.38 ppb	11:44:41
3	Se 196.026†	919.7	964.6	510.91 ug/L	510.91 ppb	11:44:41
3	Si 251.611†	85447.2	85912.4	2452.7 ug/L	2452.7 ppb	11:44:21
3	Sn 189.927†	3298.3	3336.7	494.12 ug/L	494.12 ppb	11:44:41
3	Sr 421.552†	66374.7	67393.4	493.39 ug/L	493.39 ppb	11:42:57
3	Ti 334.940†	309182.0	314913.7	499.52 ug/L	499.52 ppb	11:44:21
3	Tl 190.801†	1756.6	1832.2	503.78 ug/L	503.78 ppb	11:44:41
3	U 409.014†	13124.0	15958.8	472.87 ug/L	472.87 ppb	11:44:21
3	V 292.402†	75255.1	78009.7	496.34 ug/L	496.34 ppb	11:44:21
3	Zn 213.857†	60325.0	60257.1	491.30 ug/L	491.30 ppb	11:44:21
3	SiO2†	84657.8	85093.6	5198.0 ug/L	5198.0 ppb	11:44:57

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	879264.5	99.172 %	0.3701			0.37%
Sc Radial	4588.1	98.3 %	0.21			0.21%
Y 371.029	747289.4	98.101 %	0.4224			0.43%
Y RADIAL	4842.6	98.17 %	0.580			0.59%
Ag 328.068†	114045.2	492.99 ug/L	1.026	492.99 ppb	1.026	0.21%
QC value within limits for Ag 328.068 Recovery = 98.60%						
Al 396.153Radial†	5706.0	5039.7 ug/L	9.37	5039.7 ppb	9.37	0.19%
QC value within limits for Al 396.153Radial Recovery = 100.79%						
As 188.979†	1418.1	500.65 ug/L	2.096	500.65 ppb	2.096	0.42%
QC value within limits for As 188.979 Recovery = 100.13%						
B 249.677†	24471.6	502.70 ug/L	2.691	502.70 ppb	2.691	0.54%
QC value within limits for B 249.677 Recovery = 100.54%						
Ba 233.527†	67548.0	493.76 ug/L	1.425	493.76 ppb	1.425	0.29%
QC value within limits for Ba 233.527 Recovery = 98.75%						
Be 313.107†	1468733.2	497.40 ug/L	0.540	497.40 ppb	0.540	0.11%
QC value within limits for Be 313.107 Recovery = 99.48%						

Ca 317.933Radial†	3017.5	5056.4 ug/L	19.44	5056.4 ppb	19.44	0.38%
QC value within limits for Ca 317.933Radial Recovery = 101.13%						
Cd 226.502†	52467.1	493.97 ug/L	1.527	493.97 ppb	1.527	0.31%
QC value within limits for Cd 226.502 Recovery = 98.79%						
Co 228.616†	25962.1	488.28 ug/L	2.184	488.28 ppb	2.184	0.45%
QC value within limits for Co 228.616 Recovery = 97.66%						
Cr 267.716†	48940.8	491.15 ug/L	1.140	491.15 ppb	1.140	0.23%
QC value within limits for Cr 267.716 Recovery = 98.23%						
Cu 324.752†	165894.9	491.40 ug/L	0.700	491.40 ppb	0.700	0.14%
QC value within limits for Cu 324.752 Recovery = 98.28%						
Fe 238.204 Radial†	559.9	4935.0 ug/L	54.52	4935.0 ppb	54.52	1.10%
QC value within limits for Fe 238.204 Radial Recovery = 98.70%						
K 766.490 Radial†	25557.5	5064.8 ug/L	21.73	5064.8 ppb	21.73	0.43%
QC value within limits for K 766.490 Radial Recovery = 101.30%						
Mg 279.077 IEC†	158.9	5086.4 ug/L	65.22	5086.4 ppb	65.22	1.28%
QC value within limits for Mg 279.077 IEC Recovery = 101.73%						
Mn 257.610†	471589.6	497.29 ug/L	1.298	497.29 ppb	1.298	0.26%
QC value within limits for Mn 257.610 Recovery = 99.46%						
Mo 202.031†	7862.1	493.01 ug/L	2.187	493.01 ppb	2.187	0.44%
QC value within limits for Mo 202.031 Recovery = 98.60%						
Na 589.592 Radial†	31967.3	9656.6 ug/L	29.69	9656.6 ppb	29.69	0.31%
QC value within limits for Na 589.592 Radial Recovery = 96.57%						
Ni 231.604†	22243.0	487.98 ug/L	1.412	487.98 ppb	1.412	0.29%
QC value within limits for Ni 231.604 Recovery = 97.60%						
P 214.914†	5040.3	2383.0 ug/L	9.52	2383.0 ppb	9.52	0.40%
QC value within limits for P 214.914 Recovery = 95.32%						
Pb 220.353†	4772.1	495.91 ug/L	2.500	495.91 ppb	2.500	0.50%
QC value within limits for Pb 220.353 Recovery = 99.18%						
S 181.975 Axial†	867.0	978.86 ug/L	6.106	978.86 ppb	6.106	0.62%
QC value within limits for S 181.975 Axial Recovery = 97.89%						
Sb 206.836†	1653.9	501.11 ug/L	2.885	501.11 ppb	2.885	0.58%
QC value within limits for Sb 206.836 Recovery = 100.22%						
Se 196.026†	966.0	511.82 ug/L	3.226	511.82 ppb	3.226	0.63%
QC value within limits for Se 196.026 Recovery = 102.36%						
Si 251.611†	85711.1	2447.0 ug/L	5.58	2447.0 ppb	5.58	0.23%
QC value within limits for Si 251.611 Recovery = 97.88%						
Sn 189.927†	3322.7	492.06 ug/L	1.792	492.06 ppb	1.792	0.36%
QC value within limits for Sn 189.927 Recovery = 98.41%						
Sr 421.552†	67357.9	493.13 ug/L	0.645	493.13 ppb	0.645	0.13%
QC value within limits for Sr 421.552 Recovery = 98.63%						
Ti 334.940†	314319.4	498.58 ug/L	0.843	498.58 ppb	0.843	0.17%
QC value within limits for Ti 334.940 Recovery = 99.72%						
Tl 190.801†	1815.0	499.07 ug/L	4.120	499.07 ppb	4.120	0.83%
QC value within limits for Tl 190.801 Recovery = 99.81%						
U 409.014†	15844.6	469.47 ug/L	3.694	469.47 ppb	3.694	0.79%
QC value within limits for U 409.014 Recovery = 93.89%						
V 292.402†	77985.6	496.14 ug/L	0.192	496.14 ppb	0.192	0.04%
QC value within limits for V 292.402 Recovery = 99.23%						
Zn 213.857†	60142.7	490.37 ug/L	1.160	490.37 ppb	1.160	0.24%
QC value within limits for Zn 213.857 Recovery = 98.07%						
SiO2†	84843.4	5182.7 ug/L	28.07	5182.7 ppb	28.07	0.54%
QC value within limits for SiO2 Recovery = 96.92%						
All analyte(s) passed QC.						



Sequence No.: 16

Sample ID: CCB

Analyst:

Logged In Analyst (Original) : Optima3

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/6/2010 11:47:06

Data Type: Reprocessed on 1/6/2010 11:55:42

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 361.383	853425.9	853425.9	96.257 %		11:50:16
1	Sc Radial	4639.9	4639.9	99.4 %		11:48:59
1	Y 371.029	734376.1	734376.1	96.406 %		11:50:16
1	Y RADIAL	4904.2	4904.2	99.42 %		11:48:59
1	Ag 328.068†	487.6	-5.7	-0.0153 ug/L	-0.0153 ppb	11:50:16
1	Al 396.153Radial†	0.7	27.4	24.328 ug/L	24.328 ppb	11:48:59
1	As 188.979†	-20.0	12.6	4.4098 ug/L	4.4098 ppb	11:50:36
1	B 249.677†	138.9	810.2	16.706 ug/L	16.706 ppb	11:50:16
1	Ba 233.527†	2.4	-5.0	-0.0370 ug/L	-0.0370 ppb	11:50:36
1	Be 313.107†	-4320.5	-137.0	-0.0464 ug/L	-0.0464 ppb	11:50:16
1	Ca 317.933Radial†	11.6	-0.9	-1.5441 ug/L	-1.5441 ppb	11:49:19
1	Cd 226.502†	-209.8	20.4	0.1926 ug/L	0.1926 ppb	11:50:36
1	Co 228.616†	-98.8	-18.6	-0.3493 ug/L	-0.3493 ppb	11:50:36
1	Cr 267.716†	104.7	4.7	0.0501 ug/L	0.0501 ppb	11:50:16
1	Cu 324.752†	8033.0	346.3	1.0255 ug/L	1.0255 ppb	11:50:16
1	Fe 238.204 Radial†	14.2	0.4	3.1714 ug/L	3.1714 ppb	11:49:19
1	K 766.490 Radial†	3805.5	491.5	97.544 ug/L	97.544 ppb	11:48:59
1	Mg 279.077 IEC†	0.6	-1.0	-33.016 ug/L	-33.016 ppb	11:49:19
1	Mn 257.610†	560.9	66.3	0.0707 ug/L	0.0707 ppb	11:50:16
1	Mo 202.031†	24.3	5.3	0.3311 ug/L	0.3311 ppb	11:50:36
1	Na 589.592 Radial†	-1577.7	163.0	49.249 ug/L	49.249 ppb	11:48:59
1	Ni 231.604†	151.8	32.7	0.7176 ug/L	0.7176 ppb	11:50:36
1	P 214.914†	245.6	6.6	3.0816 ug/L	3.0816 ppb	11:50:36
1	Pb 220.353†	-75.7	-0.9	-0.0843 ug/L	-0.0843 ppb	11:50:36
1	S 181.975 Axial†	57.4	-0.3	-0.3460 ug/L	-0.3460 ppb	11:50:36
1	Sb 206.836†	59.7	24.9	7.4621 ug/L	7.4621 ppb	11:50:36
1	Se 196.026†	-38.5	-6.7	-3.4348 ug/L	-3.4348 ppb	11:50:36
1	Si 251.611†	660.5	69.6	1.9575 ug/L	1.9575 ppb	11:50:36
1	Sn 189.927†	6.2	3.0	0.4452 ug/L	0.4452 ppb	11:50:36
1	Sr 421.552†	31.8	16.0	0.1172 ug/L	0.1172 ppb	11:48:59
1	Ti 334.940†	-1772.5	-24.1	-0.0337 ug/L	-0.0337 ppb	11:50:16
1	Tl 190.801†	-44.0	7.7	2.1129 ug/L	2.1129 ppb	11:50:36
1	U 409.014†	-2905.4	-349.7	-10.395 ug/L	-10.395 ppb	11:50:16
1	V 292.402†	-1761.0	-27.7	-0.1902 ug/L	-0.1902 ppb	11:50:16
1	Zn 213.857†	885.4	88.2	0.7201 ug/L	0.7201 ppb	11:50:36
1	SiO2†	691.8	82.7	4.9899 ug/L	4.9899 ppb	11:51:32
2	Sc 361.383	869080.1	869080.1	98.023 %		11:50:41
2	Sc Radial	4769.4	4769.4	102 %		11:49:24
2	Y 371.029	747962.0	747962.0	98.189 %		11:50:41
2	Y RADIAL	5060.7	5060.7	102.6 %		11:49:24
2	Ag 328.068†	532.8	31.3	0.1537 ug/L	0.1537 ppb	11:50:41
2	Al 396.153Radial†	-14.9	12.1	10.712 ug/L	10.712 ppb	11:49:24
2	As 188.979†	-17.2	15.8	5.5311 ug/L	5.5311 ppb	11:51:01
2	B 249.677†	127.0	795.4	16.399 ug/L	16.399 ppb	11:50:41
2	Ba 233.527†	23.8	16.8	0.1239 ug/L	0.1239 ppb	11:51:01
2	Be 313.107†	-4341.0	-77.1	-0.0263 ug/L	-0.0263 ppb	11:50:41
2	Ca 317.933Radial†	15.1	2.2	3.7179 ug/L	3.7179 ppb	11:49:44
2	Cd 226.502†	-221.8	12.1	0.1116 ug/L	0.1116 ppb	11:51:01
2	Co 228.616†	-104.7	-22.9	-0.4282 ug/L	-0.4282 ppb	11:51:01
2	Cr 267.716†	85.2	-17.2	-0.1670 ug/L	-0.1670 ppb	11:50:41
2	Cu 324.752†	8191.6	357.8	1.0606 ug/L	1.0606 ppb	11:50:41
2	Fe 238.204 Radial†	17.0	2.8	24.255 ug/L	24.255 ppb	11:49:44
2	K 766.490 Radial†	3825.8	407.3	80.820 ug/L	80.820 ppb	11:49:24
2	Mg 279.077 IEC†	4.7	3.0	94.742 ug/L	94.742 ppb	11:49:44
2	Mn 257.610†	530.5	24.7	0.0267 ug/L	0.0267 ppb	11:50:41
2	Mo 202.031†	29.1	9.8	0.6168 ug/L	0.6168 ppb	11:51:01
2	Na 589.592 Radial†	-1515.3	267.2	80.710 ug/L	80.710 ppb	11:49:24
2	Ni 231.604†	126.0	3.5	0.0763 ug/L	0.0763 ppb	11:51:01

2	P 214.914†	258.5	15.2	7.2242 ug/L	7.2242 ppb	11:51:01
2	Pb 220.353†	-78.5	-2.3	-0.2359 ug/L	-0.2359 ppb	11:51:01
2	S 181.975 Axial†	57.2	-1.5	-1.6884 ug/L	-1.6884 ppb	11:51:01
2	Sb 206.836†	66.5	30.8	9.2191 ug/L	9.2191 ppb	11:51:01
2	Se 196.026†	-40.1	-7.6	-3.8284 ug/L	-3.8284 ppb	11:51:01
2	Si 251.611†	656.8	53.5	1.4953 ug/L	1.4953 ppb	11:51:01
2	Sn 189.927†	6.6	3.3	0.4884 ug/L	0.4884 ppb	11:51:01
2	Sr 421.552†	30.0	13.3	0.0976 ug/L	0.0976 ppb	11:49:24
2	Ti 334.940†	-1843.9	-63.8	-0.0958 ug/L	-0.0958 ppb	11:50:41
2	Tl 190.801†	-38.8	13.8	3.7753 ug/L	3.7753 ppb	11:51:01
2	U 409.014†	-2996.6	-388.3	-11.548 ug/L	-11.548 ppb	11:50:41
2	V 292.402†	-1708.0	59.3	0.3575 ug/L	0.3575 ppb	11:50:41
2	Zn 213.857†	895.7	82.1	0.6691 ug/L	0.6691 ppb	11:51:01
2	SiO2†	718.4	96.9	5.8610 ug/L	5.8610 ppb	11:51:37
3	Sc 361.383	855687.9	855687.9	96.512 %		11:51:07
3	Sc Radial	4706.5	4706.5	101 %		11:49:49
3	Y 371.029	736491.2	736491.2	96.683 %		11:51:07
3	Y RADIAL	4963.4	4963.4	100.6 %		11:49:49
3	Ag 328.068†	448.2	-47.9	-0.2025 ug/L	-0.2025 ppb	11:51:07
3	Al 396.153Radial†	-29.2	-2.2	-2.0198 ug/L	-2.0198 ppb	11:49:49
3	As 188.979†	-17.7	15.1	5.2772 ug/L	5.2772 ppb	11:51:27
3	B 249.677†	117.7	787.8	16.244 ug/L	16.244 ppb	11:51:07
3	Ba 233.527†	7.8	0.5	0.0028 ug/L	0.0028 ppb	11:51:27
3	Be 313.107†	-4264.9	-67.5	-0.0227 ug/L	-0.0227 ppb	11:51:07
3	Ca 317.933Radial†	14.7	2.0	3.3743 ug/L	3.3743 ppb	11:50:09
3	Cd 226.502†	-208.0	22.8	0.2144 ug/L	0.2144 ppb	11:51:27
3	Co 228.616†	-108.7	-28.6	-0.5356 ug/L	-0.5356 ppb	11:51:27
3	Cr 267.716†	93.3	-7.4	-0.0731 ug/L	-0.0731 ppb	11:51:07
3	Cu 324.752†	8026.2	317.2	0.9391 ug/L	0.9391 ppb	11:51:07
3	Fe 238.204 Radial†	14.2	0.2	1.8112 ug/L	1.8112 ppb	11:50:09
3	K 766.490 Radial†	3800.7	432.5	85.837 ug/L	85.837 ppb	11:49:49
3	Mg 279.077 IEC†	3.1	1.4	45.216 ug/L	45.216 ppb	11:50:09
3	Mn 257.610†	551.8	55.3	0.0576 ug/L	0.0576 ppb	11:51:07
3	Mo 202.031†	35.1	16.4	1.0303 ug/L	1.0303 ppb	11:51:27
3	Na 589.592 Radial†	-1580.0	183.2	55.348 ug/L	55.348 ppb	11:49:49
3	Ni 231.604†	110.5	-10.5	-0.2312 ug/L	-0.2312 ppb	11:51:27
3	P 214.914†	242.8	3.0	1.3094 ug/L	1.3094 ppb	11:51:27
3	Pb 220.353†	-101.4	-27.3	-2.8273 ug/L	-2.8273 ppb	11:51:27
3	S 181.975 Axial†	56.1	-1.7	-1.9684 ug/L	-1.9684 ppb	11:51:27
3	Sb 206.836†	52.3	17.1	5.1370 ug/L	5.1370 ppb	11:51:27
3	Se 196.026†	-37.0	-5.1	-2.5822 ug/L	-2.5822 ppb	11:51:27
3	Si 251.611†	671.7	79.4	2.2299 ug/L	2.2299 ppb	11:51:27
3	Sn 189.927†	4.4	1.2	0.1772 ug/L	0.1772 ppb	11:51:27
3	Sr 421.552†	3.4	-12.6	-0.0920 ug/L	-0.0920 ppb	11:49:49
3	Ti 334.940†	-1711.2	44.3	0.0730 ug/L	0.0730 ppb	11:51:07
3	Tl 190.801†	-46.9	4.8	1.3094 ug/L	1.3094 ppb	11:51:27
3	U 409.014†	-2756.2	-187.0	-5.5607 ug/L	-5.5607 ppb	11:51:07
3	V 292.402†	-1813.5	-77.2	-0.4800 ug/L	-0.4800 ppb	11:51:07
3	Zn 213.857†	870.5	70.2	0.5763 ug/L	0.5763 ppb	11:51:27
3	SiO2†	683.0	71.6	4.2941 ug/L	4.2941 ppb	11:51:42

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	859398.0	96.931 %		0.9543			0.98%
Sc Radial	4705.3	101 %		1.4			1.38%
Y 371.029	739609.8	97.093 %		0.9596			0.99%
Y RADIAL	4976.1	100.9 %		1.60			1.59%
Ag 328.068†	-7.5	-0.0214 ug/L		0.17817	-0.0214 ppb	0.17817	833.12%
QC value within limits for Ag 328.068 Recovery = Not calculated							
Al 396.153Radial†	12.4	11.007 ug/L		13.1764	11.007 ppb	13.1764	119.71%
QC value within limits for Al 396.153Radial Recovery = Not calculated							
As 188.979†	14.5	5.0727 ug/L		0.58799	5.0727 ppb	0.58799	11.59%
QC value within limits for As 188.979 Recovery = Not calculated							
B 249.677†	797.8	16.450 ug/L		0.2350	16.450 ppb	0.2350	1.43%
QC value within limits for B 249.677 Recovery = Not calculated							
Ba 233.527†	4.1	0.0299 ug/L		0.08381	0.0299 ppb	0.08381	280.45%
QC value within limits for Ba 233.527 Recovery = Not calculated							
Be 313.107†	-93.9	-0.0318 ug/L		0.01279	-0.0318 ppb	0.01279	40.26%
QC value within limits for Be 313.107 Recovery = Not calculated							

Ca 317.933Radial†	1.1	1.8494 ug/L	2.94383	1.8494 ppb	2.94383	159.18%
QC value within limits for Ca 317.933Radial Recovery = Not calculated						
Cd 226.502†	18.4	0.1729 ug/L	0.05420	0.1729 ppb	0.05420	31.35%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-23.4	-0.4377 ug/L	0.09355	-0.4377 ppb	0.09355	21.37%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	-6.6	-0.0634 ug/L	0.10892	-0.0634 ppb	0.10892	171.93%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	340.4	1.0084 ug/L	0.06251	1.0084 ppb	0.06251	6.20%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	1.1	9.7460 ug/L	12.58394	9.7460 ppb	12.58394	129.12%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	443.8	88.067 ug/L	8.5823	88.067 ppb	8.5823	9.75%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	1.1	35.647 ug/L	64.4140	35.647 ppb	64.4140	180.70%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	48.8	0.0517 ug/L	0.02260	0.0517 ppb	0.02260	43.71%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	10.5	0.6594 ug/L	0.35156	0.6594 ppb	0.35156	53.31%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	204.5	61.769 ug/L	16.6847	61.769 ppb	16.6847	27.01%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	8.5	0.1876 ug/L	0.48411	0.1876 ppb	0.48411	258.07%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	8.3	3.8717 ug/L	3.03553	3.8717 ppb	3.03553	78.40%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	-10.2	-1.0492 ug/L	1.54178	-1.0492 ppb	1.54178	146.95%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	-1.2	-1.3343 ug/L	0.86725	-1.3343 ppb	0.86725	65.00%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	24.3	7.2727 ug/L	2.04763	7.2727 ppb	2.04763	28.16%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-6.5	-3.2818 ug/L	0.63701	-3.2818 ppb	0.63701	19.41%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	67.5	1.8942 ug/L	0.37137	1.8942 ppb	0.37137	19.60%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	2.5	0.3703 ug/L	0.16858	0.3703 ppb	0.16858	45.53%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	5.6	0.0409 ug/L	0.11554	0.0409 ppb	0.11554	282.26%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	-14.5	-0.0189 ug/L	0.08539	-0.0189 ppb	0.08539	452.74%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	8.8	2.3992 ug/L	1.25764	2.3992 ppb	1.25764	52.42%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-308.3	-9.1679 ug/L	3.17654	-9.1679 ppb	3.17654	34.65%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	-15.2	-0.1042 ug/L	0.42535	-0.1042 ppb	0.42535	408.06%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	80.2	0.6552 ug/L	0.07293	0.6552 ppb	0.07293	11.13%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	83.7	5.0483 ug/L	0.78506	5.0483 ppb	0.78506	15.55%
QC value within limits for SiO2 Recovery = Not calculated						
All analyte(s) passed QC.						

Sequence No.: 9

Sample ID: 243273001|935381|1

Analyst: HSC

Initial Sample Wt:

Dilution:

Autosampler Location: 46

Date Collected: 1/6/2010 12:53:12

Data Type: Original

Initial Sample Vol:

Sample Prep Vol:

Replicate Data: 243273001|935381|1

Repl#	Analyte	Net Intensity	Corrected Intensity	Calib. Conc. Units	Sample Conc. Units	Analysis Time
1	Sc Radial	4597.9	4597.9	98.5 %		12:55:26
1	Y RADIAL	5192.3	5192.3	105.3 %		12:55:26
1	Al 396.153Radial†	62852.2	63832.0	56614 ug/L	56614 ppb	12:55:06
1	Ca 317.933Radial†	15431.8	15653.3	26230 ug/L	26230 ppb	12:55:06
1	Fe 238.204 Radial†	10457.6	10602.3	93162 ug/L	93162 ppb	12:55:06
1	K 766.490 Radial†	52287.2	49743.4	9841.3 ug/L	9841.3 ppb	12:55:06
1	Mg 279.077 IEC†	503.8	509.8	16220 ug/L	16220 ppb	12:55:26
1	Na 589.592 Radial†	5623.4	7458.7	2253.1 ug/L	2253.1 ppb	12:55:06
1	Sr 421.552†	34526.0	35033.6	256.26 ug/L	256.26 ppb	12:55:06
1	Sc 361.383	894382.3	894382.3	100.88 %		12:56:24
1	Y 371.029	811782.0	811782.0	106.57 %		12:56:24
1	Ag 328.068†	-1797.6	-2294.3	21.851 ug/L	21.851 ppb	12:56:24
1	As 188.979†	-109.5	-75.1	21.877 ug/L	21.877 ppb	12:56:44
1	B 249.677†	402.9	1065.2	9.4689 ug/L	9.4689 ppb	12:56:24
1	Ba 233.527†	353065.2	349989.4	2554.9 ug/L	2554.9 ppb	12:56:24
1	Be 313.107†	-21865.1	-17323.5	2.0383 ug/L	2.0383 ppb	12:56:24
1	Cd 226.502†	1693.0	1916.6	8.8277 ug/L	8.8277 ppb	12:56:44
1	Co 228.616†	2798.8	2858.4	44.942 ug/L	44.942 ppb	12:56:44
1	Cr 267.716†	16453.5	16206.4	164.47 ug/L	164.47 ppb	12:56:44
1	Cu 324.752†	101312.3	92432.9	278.41 ug/L	278.41 ppb	12:56:24
1	Mn 257.610†	3038073.6	3011154.4	3181.7 ug/L	3181.7 ppb	12:56:24
1	Mo 202.031†	-54.2	-73.6	4.3168 ug/L	4.3168 ppb	12:56:44
1	Ni 231.604†	6581.8	6399.5	140.45 ug/L	140.45 ppb	12:56:44
1	P 214.914†	7327.2	7014.9	3319.7 ug/L	3319.7 ppb	12:56:44
1	Pb 220.353†	695.8	767.5	84.340 ug/L	84.340 ppb	12:56:44
1	S 181.975 Axial†	605.0	539.8	598.97 ug/L	598.97 ppb	12:56:44
1	Sb 206.836†	94.6	56.6	1.9076 ug/L	1.9076 ppb	12:56:44
1	Se 196.026†	-581.4	-543.1	17.417 ug/L	17.417 ppb	12:56:44
1	Si 251.611†	1123174.1	1112796.5	31919 ug/L	31919 ppb	12:56:24
1	Sn 189.927†	-167.5	-169.4	-21.056 ug/L	-21.056 ppb	12:56:44
1	Ti 334.940†	2551534.2	2531177.1	4017.3 ug/L	4017.3 ppb	12:56:24
1	Tl 190.801†	-223.8	-168.5	4.1597 ug/L	4.1597 ppb	12:56:44
1	U 409.014†	-5998.4	-3277.5	-109.47 ug/L	-109.47 ppb	12:56:24
1	V 292.402†	33821.7	35329.6	203.24 ug/L	203.24 ppb	12:56:24
1	Zn 213.857†	48479.7	47226.7	381.70 ug/L	381.70 ppb	12:56:24
1	SiO2†	1116660.9	1106320.4	67908 ug/L	67908 ppb	12:57:45
2	Sc Radial	4803.9	4803.9	103 %		12:55:51
2	Y RADIAL	5392.9	5392.9	109.3 %		12:55:51
2	Al 396.153Radial†	66993.1	65119.0	57756 ug/L	57756 ppb	12:55:31
2	Ca 317.933Radial†	16351.1	15874.6	26600 ug/L	26600 ppb	12:55:31
2	Fe 238.204 Radial†	11072.9	10744.9	94415 ug/L	94415 ppb	12:55:31
2	K 766.490 Radial†	55067.2	50168.1	9925.7 ug/L	9925.7 ppb	12:55:31
2	Mg 279.077 IEC†	495.7	480.0	15266 ug/L	15266 ppb	12:55:51
2	Na 589.592 Radial†	5971.0	7551.7	2281.2 ug/L	2281.2 ppb	12:55:31
2	Sr 421.552†	36890.2	35827.5	262.07 ug/L	262.07 ppb	12:55:31
2	Sc 361.383	890720.8	890720.8	100.46 %		12:56:51
2	Y 371.029	808397.2	808397.2	106.12 %		12:56:51
2	Ag 328.068†	-1719.3	-2223.7	22.575 ug/L	22.575 ppb	12:56:51
2	As 188.979†	-97.1	-63.2	26.270 ug/L	26.270 ppb	12:57:11
2	B 249.677†	392.2	1056.3	9.1163 ug/L	9.1163 ppb	12:56:51
2	Ba 233.527†	352117.1	350484.4	2558.5 ug/L	2558.5 ppb	12:56:51
2	Be 313.107†	-21801.9	-17349.8	2.0357 ug/L	2.0357 ppb	12:56:51
2	Cd 226.502†	1691.8	1922.4	8.7572 ug/L	8.7572 ppb	12:57:11
2	Co 228.616†	2831.8	2902.7	45.750 ug/L	45.750 ppb	12:57:11
2	Cr 267.716†	16443.7	16263.7	165.06 ug/L	165.06 ppb	12:57:11
2	Cu 324.752†	100870.3	92405.7	278.40 ug/L	278.40 ppb	12:56:51
2	Mn 257.610†	3027096.3	3012608.0	3183.4 ug/L	3183.4 ppb	12:56:51
2	Mo 202.031†	-58.7	-78.4	4.1413 ug/L	4.1413 ppb	12:57:11
2	Ni 231.604†	6592.5	6437.0	141.27 ug/L	141.27 ppb	12:57:11

2	P 214.914†	7303.0	7020.7	3321.9 ug/L	3321.9 ppb	12:57:11
2	Pb 220.353†	716.0	790.5	86.873 ug/L	86.873 ppb	12:57:11
2	S 181.975 Axial†	628.8	566.0	628.26 ug/L	628.26 ppb	12:57:11
2	Sb 206.836†	89.7	52.2	0.5213 ug/L	0.5213 ppb	12:57:11
2	Se 196.026†	-558.0	-522.2	32.133 ug/L	32.133 ppb	12:57:11
2	Si 251.611†	1119045.1	1113263.4	31933 ug/L	31933 ppb	12:56:51
2	Sn 189.927†	-174.3	-176.9	-22.105 ug/L	-22.105 ppb	12:57:11
2	Ti 334.940†	2543107.3	2533186.6	4020.5 ug/L	4020.5 ppb	12:56:51
2	Tl 190.801†	-242.8	-188.2	-1.1716 ug/L	-1.1716 ppb	12:57:11
2	U 409.014†	-6286.2	-3588.4	-118.87 ug/L	-118.87 ppb	12:56:51
2	V 292.402†	33674.8	35321.2	202.95 ug/L	202.95 ppb	12:56:51
2	Zn 213.857†	48444.3	47389.0	383.00 ug/L	383.00 ppb	12:56:51
2	SiO2†	1114120.7	1108342.3	68032 ug/L	68032 ppb	12:57:51
3	Sc Radial	4788.7	4788.7	103 %		12:56:16
3	Y RADIAL	5391.8	5391.8	109.3 %		12:56:16
3	Al 396.153Radial†	64460.3	62857.1	55750 ug/L	55750 ppb	12:55:56
3	Ca 317.933Radial†	15825.8	15413.1	25827 ug/L	25827 ppb	12:55:56
3	Fe 238.204 Radial†	10713.4	10428.7	91637 ug/L	91637 ppb	12:55:56
3	K 766.490 Radial†	53313.7	48629.0	9620.0 ug/L	9620.0 ppb	12:55:56
3	Mg 279.077 IEC†	490.5	476.4	15155 ug/L	15155 ppb	12:56:16
3	Na 589.592 Radial†	5737.5	7342.6	2218.0 ug/L	2218.0 ppb	12:55:56
3	Sr 421.552†	35294.2	34385.8	251.52 ug/L	251.52 ppb	12:55:56
3	Sc 361.383	897206.3	897206.3	101.20 %		12:57:18
3	Y 371.029	814820.3	814820.3	106.97 %		12:57:18
3	Ag 328.068†	-1661.8	-2154.5	21.949 ug/L	21.949 ppb	12:57:18
3	As 188.979†	-96.0	-61.4	26.423 ug/L	26.423 ppb	12:57:38
3	B 249.677†	560.5	1219.7	12.855 ug/L	12.855 ppb	12:57:18
3	Ba 233.527†	354100.5	349910.8	2554.2 ug/L	2554.2 ppb	12:57:18
3	Be 313.107†	-21962.4	-17351.5	2.0291 ug/L	2.0291 ppb	12:57:18
3	Cd 226.502†	1711.1	1929.3	9.1001 ug/L	9.1001 ppb	12:57:38
3	Co 228.616†	2836.7	2887.2	45.504 ug/L	45.504 ppb	12:57:38
3	Cr 267.716†	16561.1	16261.5	164.99 ug/L	164.99 ppb	12:57:38
3	Cu 324.752†	101428.5	92231.5	277.74 ug/L	277.74 ppb	12:57:18
3	Mn 257.610†	3044021.7	3007552.9	3177.8 ug/L	3177.8 ppb	12:57:18
3	Mo 202.031†	-54.6	-73.9	4.1532 ug/L	4.1532 ppb	12:57:38
3	Ni 231.604†	6628.5	6425.1	141.01 ug/L	141.01 ppb	12:57:38
3	P 214.914†	7372.9	7037.3	3331.6 ug/L	3331.6 ppb	12:57:38
3	Pb 220.353†	677.6	747.4	82.191 ug/L	82.191 ppb	12:57:38
3	S 181.975 Axial†	616.1	548.9	609.35 ug/L	609.35 ppb	12:57:38
3	Sb 206.836†	89.1	50.9	0.1823 ug/L	0.1823 ppb	12:57:38
3	Se 196.026†	-568.2	-528.2	20.193 ug/L	20.193 ppb	12:57:38
3	Si 251.611†	1125497.4	1111587.8	31885 ug/L	31885 ppb	12:57:18
3	Sn 189.927†	-171.0	-172.4	-21.562 ug/L	-21.562 ppb	12:57:38
3	Ti 334.940†	2559684.0	2531269.4	4017.4 ug/L	4017.4 ppb	12:57:18
3	Tl 190.801†	-215.9	-160.0	6.4375 ug/L	6.4375 ppb	12:57:38
3	U 409.014†	-6048.6	-3308.5	-110.20 ug/L	-110.20 ppb	12:57:18
3	V 292.402†	33942.9	35343.8	203.54 ug/L	203.54 ppb	12:57:18
3	Zn 213.857†	48601.9	47196.2	381.56 ug/L	381.56 ppb	12:57:18
3	SiO2†	1117828.3	1103989.8	67765 ug/L	67765 ppb	12:57:56

Mean Data: 243273001|935381|1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	894103.1	100.85 %		0.367			0.36%
Sc Radial	4730.1	101 %		2.5			2.43%
Y 371.029	811666.5	106.55 %		0.422			0.40%
Y RADIAL	5325.7	108.0 %		2.34			2.17%
Ag 328.068†	-2224.1	22.125 ug/L		0.3929	22.125 ppb	0.3929	1.78%
Al 396.153Radial†	63936.0	56707 ug/L		1006.2	56707 ppb	1006.2	1.77%
As 188.979†	-66.6	24.856 ug/L		2.5818	24.856 ppb	2.5818	10.39%
B 249.677†	1113.7	10.480 ug/L		2.0644	10.480 ppb	2.0644	19.70%
Ba 233.527†	350128.2	2555.9 ug/L		2.30	2555.9 ppb	2.30	0.09%
Be 313.107†	-17341.6	2.0344 ug/L		0.00472	2.0344 ppb	0.00472	0.23%
Ca 317.933Radial†	15647.0	26219 ug/L		386.7	26219 ppb	386.7	1.48%
Cd 226.502†	1922.8	8.8950 ug/L		0.18107	8.8950 ppb	0.18107	2.04%
Co 228.616†	2882.7	45.399 ug/L		0.4141	45.399 ppb	0.4141	0.91%
Cr 267.716†	16243.9	164.84 ug/L		0.327	164.84 ppb	0.327	0.20%
Cu 324.752†	92356.7	278.18 ug/L		0.384	278.18 ppb	0.384	0.14%
Fe 238.204 Radial†	10592.0	93071 ug/L		1391.4	93071 ppb	1391.4	1.49%
K 766.490 Radial†	49513.5	9795.7 ug/L		157.87	9795.7 ppb	157.87	1.61%

Mg 279.077 IEC†	488.7	15547 ug/L	585.4	15547 ppb	585.4	3.77%
Mn 257.610†	3010438.4	3180.9 ug/L	2.88	3180.9 ppb	2.88	0.09%
Mo 202.031†	-75.3	4.2038 ug/L	0.09806	4.2038 ppb	0.09806	2.33%
Na 589.592 Radial†	7451.0	2250.8 ug/L	31.65	2250.8 ppb	31.65	1.41%
Ni 231.604†	6420.5	140.91 ug/L	0.420	140.91 ppb	0.420	0.30%
P 214.914†	7024.3	3324.4 ug/L	6.34	3324.4 ppb	6.34	0.19%
Pb 220.353†	768.4	84.468 ug/L	2.3438	84.468 ppb	2.3438	2.77%
S 181.975 Axial†	551.6	612.20 ug/L	14.852	612.20 ppb	14.852	2.43%
Sb 206.836†	53.3	0.8704 ug/L	0.91408	0.8704 ppb	0.91408	105.02%
Se 196.026†	-531.1	23.248 ug/L	7.8189	23.248 ppb	7.8189	33.63%
Si 251.611†	1112549.2	31912 ug/L	24.8	31912 ppb	24.8	0.08%
Sn 189.927†	-172.9	-21.574 ug/L	0.5243	-21.574 ppb	0.5243	2.43%
Sr 421.552†	35082.3	256.62 ug/L	5.284	256.62 ppb	5.284	2.06%
Ti 334.940†	2531877.7	4018.4 ug/L	1.82	4018.4 ppb	1.82	0.05%
Tl 190.801†	-172.3	3.1419 ug/L	3.90533	3.1419 ppb	3.90533	124.30%
U 409.014†	-3391.5	-112.85 ug/L	5.231	-112.85 ppb	5.231	4.64%
V 292.402†	35331.5	203.24 ug/L	0.293	203.24 ppb	0.293	0.14%
Zn 213.857†	47270.6	382.09 ug/L	0.792	382.09 ppb	0.792	0.21%
SiO2†	1106217.5	67902 ug/L	133.6	67902 ppb	133.6	0.20%

Sequence No.: 10

Sample ID: CCV

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 7

Date Collected: 1/6/2010 13:00:07

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	4856.0	4856.0	104 %		13:01:59
1	Y RADIAL	5121.0	5121.0	103.8 %		13:01:59
1	Al 396.153Radial†	5697.4	5503.1	4858.6 ug/L	4858.6 ppb	13:01:59
1	Ca 317.933Radial†	3059.6	2928.3	4906.9 ug/L	4906.9 ppb	13:02:19
1	Fe 238.204 Radial†	578.8	542.4	4782.6 ug/L	4782.6 ppb	13:02:19
1	K 766.490 Radial†	28302.2	23867.6	4729.0 ug/L	4729.0 ppb	13:01:59
1	Mg 279.077 IEC†	164.4	156.4	5006.5 ug/L	5006.5 ppb	13:02:19
1	Na 589.592 Radial†	31958.0	32468.4	9808.0 ug/L	9808.0 ppb	13:01:59
1	Sr 421.552†	69958.6	67228.8	492.18 ug/L	492.18 ppb	13:01:59
1	Sc 361.383	842039.2	842039.2	94.973 %		13:03:18
1	Y 371.029	715710.2	715710.2	93.955 %		13:03:18
1	Ag 328.068†	114518.0	120067.2	518.88 ug/L	518.88 ppb	13:03:18
1	As 188.979†	1365.3	1471.0	519.37 ug/L	519.37 ppb	13:03:38
1	B 249.677†	22939.8	24819.9	509.82 ug/L	509.82 ppb	13:03:18
1	Ba 233.527†	67506.8	71072.5	519.52 ug/L	519.52 ppb	13:03:18
1	Be 313.107†	1460375.3	1542026.6	522.23 ug/L	522.23 ppb	13:03:18
1	Cd 226.502†	51942.2	54929.9	517.20 ug/L	517.20 ppb	13:03:18
1	Co 228.616†	25997.5	27457.5	516.41 ug/L	516.41 ppb	13:03:38
1	Cr 267.716†	48970.5	51458.5	516.41 ug/L	516.41 ppb	13:03:18
1	Cu 324.752†	173918.9	175125.7	518.73 ug/L	518.73 ppb	13:03:18
1	Mn 257.610†	471957.9	496422.9	523.44 ug/L	523.44 ppb	13:03:18
1	Mo 202.031†	7903.7	8302.2	520.56 ug/L	520.56 ppb	13:03:38
1	Ni 231.604†	22421.0	23482.7	515.17 ug/L	515.17 ppb	13:03:38
1	P 214.914†	5291.9	5323.4	2517.0 ug/L	2517.0 ppb	13:03:38
1	Pb 220.353†	4699.1	5025.6	522.20 ug/L	522.20 ppb	13:03:38
1	S 181.975 Axial†	932.7	922.2	1041.3 ug/L	1041.3 ppb	13:03:38
1	Sb 206.836†	1677.4	1729.1	523.96 ug/L	523.96 ppb	13:03:38
1	Se 196.026†	933.1	1015.8	536.88 ug/L	536.88 ppb	13:03:38
1	Si 251.611†	86436.0	90394.6	2580.9 ug/L	2580.9 ppb	13:03:18
1	Sn 189.927†	3316.2	3488.3	516.54 ug/L	516.54 ppb	13:03:38
1	Ti 334.940†	313158.3	331551.6	525.89 ug/L	525.89 ppb	13:03:18
1	Tl 190.801†	1738.2	1883.6	517.98 ug/L	517.98 ppb	13:03:38
1	U 409.014†	13404.7	16783.0	497.34 ug/L	497.34 ppb	13:03:18
1	V 292.402†	76181.2	82015.4	521.87 ug/L	521.87 ppb	13:03:18
1	Zn 213.857†	60758.2	63142.5	514.84 ug/L	514.84 ppb	13:03:18
1	SiO2†	86463.8	90404.4	5523.1 ug/L	5523.1 ppb	13:04:39
2	Sc Radial	4805.7	4805.7	103 %		13:02:24
2	Y RADIAL	5062.2	5062.2	102.6 %		13:02:24
2	Al 396.153Radial†	5749.5	5611.0	4955.1 ug/L	4955.1 ppb	13:02:24
2	Ca 317.933Radial†	3033.6	2933.9	4916.2 ug/L	4916.2 ppb	13:02:44
2	Fe 238.204 Radial†	577.5	547.0	4822.3 ug/L	4822.3 ppb	13:02:44
2	K 766.490 Radial†	28602.5	24443.8	4843.6 ug/L	4843.6 ppb	13:02:24
2	Mg 279.077 IEC†	163.4	157.0	5027.1 ug/L	5027.1 ppb	13:02:44
2	Na 589.592 Radial†	32358.7	33178.9	10023 ug/L	10023 ppb	13:02:24
2	Sr 421.552†	70895.8	68842.4	504.00 ug/L	504.00 ppb	13:02:24
2	Sc 361.383	874072.2	874072.2	98.586 %		13:03:46
2	Y 371.029	742675.6	742675.6	97.495 %		13:03:46
2	Ag 328.068†	112980.0	114088.2	493.13 ug/L	493.13 ppb	13:03:46
2	As 188.979†	1374.2	1427.3	503.90 ug/L	503.90 ppb	13:04:06
2	B 249.677†	22603.2	23593.2	484.58 ug/L	484.58 ppb	13:03:46
2	Ba 233.527†	66392.4	67337.2	492.22 ug/L	492.22 ppb	13:03:46
2	Be 313.107†	1437065.2	1462029.4	495.14 ug/L	495.14 ppb	13:03:46
2	Cd 226.502†	50968.4	51937.9	489.00 ug/L	489.00 ppb	13:03:46
2	Co 228.616†	25908.2	26363.8	495.85 ug/L	495.85 ppb	13:04:06
2	Cr 267.716†	48182.3	48769.4	489.43 ug/L	489.43 ppb	13:03:46
2	Cu 324.752†	171662.5	166125.8	492.08 ug/L	492.08 ppb	13:03:46
2	Mn 257.610†	464646.5	470794.8	496.44 ug/L	496.44 ppb	13:03:46
2	Mo 202.031†	7877.6	7970.6	499.80 ug/L	499.80 ppb	13:04:06
2	Ni 231.604†	22351.7	22547.2	494.65 ug/L	494.65 ppb	13:04:06

2	P 214.914†	5282.5	5109.7	2416.9 ug/L	2416.9 ppb	13:04:06
2	Pb 220.353†	4655.9	4800.4	498.86 ug/L	498.86 ppb	13:04:06
2	S 181.975 Axial†	925.7	879.1	992.57 ug/L	992.57 ppb	13:04:06
2	Sb 206.836†	1683.0	1670.0	506.21 ug/L	506.21 ppb	13:04:06
2	Se 196.026†	942.5	989.3	523.42 ug/L	523.42 ppb	13:04:06
2	Si 251.611†	85091.3	85695.2	2446.4 ug/L	2446.4 ppb	13:03:46
2	Sn 189.927†	3322.8	3367.1	498.60 ug/L	498.60 ppb	13:04:06
2	Ti 334.940†	308868.6	315116.3	499.84 ug/L	499.84 ppb	13:03:46
2	Tl 190.801†	1762.5	1841.2	506.21 ug/L	506.21 ppb	13:04:06
2	U 409.014†	13158.3	16015.7	474.57 ug/L	474.57 ppb	13:03:46
2	V 292.402†	75003.8	77881.4	495.61 ug/L	495.61 ppb	13:03:46
2	Zn 213.857†	59690.5	59715.0	486.82 ug/L	486.82 ppb	13:03:46
2	SiO2†	87595.3	88215.7	5389.6 ug/L	5389.6 ppb	13:04:44
3	Sc Radial	4717.8	4717.8	101 %		13:02:50
3	Y RADIAL	4979.5	4979.5	100.9 %		13:02:50
3	Al 396.153Radial†	5700.2	5666.2	5004.1 ug/L	5004.1 ppb	13:02:50
3	Ca 317.933Radial†	3031.7	2986.8	5005.0 ug/L	5005.0 ppb	13:03:10
3	Fe 238.204 Radial†	577.5	557.4	4913.7 ug/L	4913.7 ppb	13:03:10
3	K 766.490 Radial†	28171.1	24534.3	4861.4 ug/L	4861.4 ppb	13:02:50
3	Mg 279.077 IEC†	161.3	157.9	5056.0 ug/L	5056.0 ppb	13:03:10
3	Na 589.592 Radial†	31937.2	33347.1	10073 ug/L	10073 ppb	13:02:50
3	Sr 421.552†	69652.2	68894.3	504.37 ug/L	504.37 ppb	13:02:50
3	Sc 361.383	873987.6	873987.6	98.576 %		13:04:13
3	Y 371.029	742146.3	742146.3	97.426 %		13:04:13
3	Ag 328.068†	114711.1	115855.4	500.78 ug/L	500.78 ppb	13:04:13
3	As 188.979†	1371.9	1425.1	503.21 ug/L	503.21 ppb	13:04:33
3	B 249.677†	23028.3	24026.7	493.50 ug/L	493.50 ppb	13:04:13
3	Ba 233.527†	67698.4	68668.6	501.95 ug/L	501.95 ppb	13:04:13
3	Be 313.107†	1463549.1	1489036.8	504.28 ug/L	504.28 ppb	13:04:13
3	Cd 226.502†	52057.4	53047.6	499.44 ug/L	499.44 ppb	13:04:13
3	Co 228.616†	25979.4	26438.6	497.24 ug/L	497.24 ppb	13:04:33
3	Cr 267.716†	48922.0	49524.5	497.01 ug/L	497.01 ppb	13:04:13
3	Cu 324.752†	174448.1	168968.4	500.50 ug/L	500.50 ppb	13:04:13
3	Mn 257.610†	472896.4	479209.5	505.31 ug/L	505.31 ppb	13:04:13
3	Mo 202.031†	7888.3	7982.3	500.54 ug/L	500.54 ppb	13:04:33
3	Ni 231.604†	22358.9	22556.8	494.86 ug/L	494.86 ppb	13:04:33
3	P 214.914†	5279.2	5106.9	2414.0 ug/L	2414.0 ppb	13:04:33
3	Pb 220.353†	4680.4	4825.8	501.48 ug/L	501.48 ppb	13:04:33
3	S 181.975 Axial†	927.0	880.5	994.10 ug/L	994.10 ppb	13:04:33
3	Sb 206.836†	1676.1	1663.2	503.95 ug/L	503.95 ppb	13:04:33
3	Se 196.026†	926.0	972.6	515.15 ug/L	515.15 ppb	13:04:33
3	Si 251.611†	86441.6	87073.4	2486.0 ug/L	2486.0 ppb	13:04:13
3	Sn 189.927†	3297.2	3341.5	494.83 ug/L	494.83 ppb	13:04:33
3	Ti 334.940†	313960.0	320311.5	508.08 ug/L	508.08 ppb	13:04:13
3	Tl 190.801†	1765.9	1844.8	507.28 ug/L	507.28 ppb	13:04:33
3	U 409.014†	13331.1	16192.3	479.80 ug/L	479.80 ppb	13:04:13
3	V 292.402†	76340.9	79245.2	504.17 ug/L	504.17 ppb	13:04:13
3	Zn 213.857†	60884.5	60932.1	496.81 ug/L	496.81 ppb	13:04:13
3	SiO2†	86336.1	86946.9	5311.7 ug/L	5311.7 ppb	13:04:49

## Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	863366.3	97.378 %	2.0832			2.14%
Sc Radial	4793.2	103 %	1.5			1.46%
Y 371.029	733510.7	96.292 %	2.0240			2.10%
Y RADIAL	5054.2	102.5 %	1.44			1.41%
Ag 328.068†	116670.3	504.27 ug/L	13.225	504.27 ppb	13.225	2.62%
QC value within limits for Ag 328.068 Recovery = 100.85%						
Al 396.153Radial†	5593.4	4939.3 ug/L	74.04	4939.3 ppb	74.04	1.50%
QC value within limits for Al 396.153Radial Recovery = 98.79%						
As 188.979†	1441.2	508.83 ug/L	9.142	508.83 ppb	9.142	1.80%
QC value within limits for As 188.979 Recovery = 101.77%						
B 249.677†	24146.6	495.97 ug/L	12.802	495.97 ppb	12.802	2.58%
QC value within limits for B 249.677 Recovery = 99.19%						
Ba 233.527†	69026.1	504.56 ug/L	13.833	504.56 ppb	13.833	2.74%
QC value within limits for Ba 233.527 Recovery = 100.91%						
Be 313.107†	1497697.6	507.22 ug/L	13.781	507.22 ppb	13.781	2.72%
QC value within limits for Be 313.107 Recovery = 101.44%						
Ca 317.933Radial†	2949.7	4942.7 ug/L	54.14	4942.7 ppb	54.14	1.10%



QC value within limits for Ca 317.933 Radial Recovery = 98.85%							
Cd	226.502†	53305.1	501.88 ug/L	14.256	501.88 ppb	14.256	2.84%
QC value within limits for Cd 226.502 Recovery = 100.38%							
Co	228.616†	26753.3	503.17 ug/L	11.492	503.17 ppb	11.492	2.28%
QC value within limits for Co 228.616 Recovery = 100.63%							
Cr	267.716†	49917.5	500.95 ug/L	13.915	500.95 ppb	13.915	2.78%
QC value within limits for Cr 267.716 Recovery = 100.19%							
Cu	324.752†	170073.3	503.77 ug/L	13.619	503.77 ppb	13.619	2.70%
QC value within limits for Cu 324.752 Recovery = 100.75%							
Fe	238.204 Radial†	549.0	4839.5 ug/L	67.25	4839.5 ppb	67.25	1.39%
QC value within limits for Fe 238.204 Radial Recovery = 96.79%							
K	766.490 Radial†	24281.9	4811.3 ug/L	71.85	4811.3 ppb	71.85	1.49%
QC value within limits for K 766.490 Radial Recovery = 96.23%							
Mg	279.077 IEC†	157.1	5029.8 ug/L	24.85	5029.8 ppb	24.85	0.49%
QC value within limits for Mg 279.077 IEC Recovery = 100.60%							
Mn	257.610†	482142.4	508.40 ug/L	13.761	508.40 ppb	13.761	2.71%
QC value within limits for Mn 257.610 Recovery = 101.68%							
Mo	202.031†	8085.0	506.97 ug/L	11.782	506.97 ppb	11.782	2.32%
QC value within limits for Mo 202.031 Recovery = 101.39%							
Na	589.592 Radial†	32998.1	9968.1 ug/L	140.90	9968.1 ppb	140.90	1.41%
QC value within limits for Na 589.592 Radial Recovery = 99.68%							
Ni	231.604†	22862.2	501.56 ug/L	11.789	501.56 ppb	11.789	2.35%
QC value within limits for Ni 231.604 Recovery = 100.31%							
P	214.914†	5180.0	2449.3 ug/L	58.67	2449.3 ppb	58.67	2.40%
QC value within limits for P 214.914 Recovery = 97.97%							
Pb	220.353†	4883.9	507.51 ug/L	12.786	507.51 ppb	12.786	2.52%
QC value within limits for Pb 220.353 Recovery = 101.50%							
S	181.975 Axial†	893.9	1009.3 ug/L	27.69	1009.3 ppb	27.69	2.74%
QC value within limits for S 181.975 Axial Recovery = 100.93%							
Sb	206.836†	1687.5	511.38 ug/L	10.959	511.38 ppb	10.959	2.14%
QC value within limits for Sb 206.836 Recovery = 102.28%							
Se	196.026†	992.6	525.15 ug/L	10.969	525.15 ppb	10.969	2.09%
QC value within limits for Se 196.026 Recovery = 105.03%							
Si	251.611†	87721.1	2504.4 ug/L	69.09	2504.4 ppb	69.09	2.76%
QC value within limits for Si 251.611 Recovery = 100.18%							
Sn	189.927†	3399.0	503.33 ug/L	11.602	503.33 ppb	11.602	2.31%
QC value within limits for Sn 189.927 Recovery = 100.67%							
Sr	421.552†	68321.8	500.18 ug/L	6.933	500.18 ppb	6.933	1.39%
QC value within limits for Sr 421.552 Recovery = 100.04%							
Ti	334.940†	322326.5	511.27 ug/L	13.318	511.27 ppb	13.318	2.60%
QC value within limits for Ti 334.940 Recovery = 102.25%							
Tl	190.801†	1856.5	510.49 ug/L	6.510	510.49 ppb	6.510	1.28%
QC value within limits for Tl 190.801 Recovery = 102.10%							
U	409.014†	16330.3	483.90 ug/L	11.923	483.90 ppb	11.923	2.46%
QC value within limits for U 409.014 Recovery = 96.78%							
V	292.402†	79714.0	507.22 ug/L	13.392	507.22 ppb	13.392	2.64%
QC value within limits for V 292.402 Recovery = 101.44%							
Zn	213.857†	61263.2	499.49 ug/L	14.202	499.49 ppb	14.202	2.84%
QC value within limits for Zn 213.857 Recovery = 99.90%							
SiO2†		88522.3	5408.1 ug/L	106.94	5408.1 ppb	106.94	1.98%
QC value within limits for SiO2 Recovery = 101.13%							
All analyte(s) passed QC.							

Sequence No.: 11

Sample ID: CCB

Analyst:

Initial Sample Wt:

Dilution:

Autosampler Location: 8

Date Collected: 1/6/2010 13:06:58

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	4723.3	4723.3	101 %		13:08:51
1	Y RADIAL	4994.7	4994.7	101.3 %		13:08:51
1	Al 396.153Radial†	-28.6	-1.5	-1.3680 ug/L	-1.3680 ppb	13:08:51
1	Ca 317.933Radial†	13.3	0.6	1.0280 ug/L	1.0280 ppb	13:09:11
1	Fe 238.204 Radial†	10.5	-3.5	-30.742 ug/L	-30.742 ppb	13:09:11
1	K 766.490 Radial†	3481.9	104.1	20.621 ug/L	20.621 ppb	13:08:51
1	Mg 279.077 IEC†	1.9	0.2	7.1369 ug/L	7.1369 ppb	13:09:11
1	Na 589.592 Radial†	-1480.5	287.1	86.728 ug/L	86.728 ppb	13:08:51
1	Sr 421.552†	-36.2	-51.8	-0.3789 ug/L	-0.3789 ppb	13:08:51
1	Sc 361.383	861858.8	861858.8	97.208 %		13:10:08
1	Y 371.029	740906.7	740906.7	97.263 %		13:10:08
1	Ag 328.068†	518.8	21.3	0.0925 ug/L	0.0925 ppb	13:10:08
1	As 188.979†	-30.5	2.0	0.6959 ug/L	0.6959 ppb	13:10:28
1	B 249.677†	-522.9	127.9	2.6417 ug/L	2.6417 ppb	13:10:08
1	Ba 233.527†	-0.1	-7.6	-0.0555 ug/L	-0.0555 ppb	13:10:28
1	Be 313.107†	-4357.5	-131.2	-0.0441 ug/L	-0.0441 ppb	13:10:08
1	Cd 226.502†	-245.3	-14.0	-0.1287 ug/L	-0.1287 ppb	13:10:28
1	Co 228.616†	-86.0	-4.5	-0.0828 ug/L	-0.0828 ppb	13:10:28
1	Cr 267.716†	103.7	2.7	0.0306 ug/L	0.0306 ppb	13:10:08
1	Cu 324.752†	8041.2	273.1	0.8070 ug/L	0.8070 ppb	13:10:08
1	Mn 257.610†	590.9	91.4	0.0931 ug/L	0.0931 ppb	13:10:08
1	Mo 202.031†	33.1	14.1	0.8822 ug/L	0.8822 ppb	13:10:28
1	Ni 231.604†	114.2	-7.6	-0.1660 ug/L	-0.1660 ppb	13:10:28
1	P 214.914†	245.4	3.8	1.7810 ug/L	1.7810 ppb	13:10:28
1	Pb 220.353†	-73.6	2.0	0.2157 ug/L	0.2157 ppb	13:10:28
1	S 181.975 Axial†	59.9	1.7	1.9633 ug/L	1.9633 ppb	13:10:28
1	Sb 206.836†	49.1	13.5	4.0644 ug/L	4.0644 ppb	13:10:28
1	Se 196.026†	-39.0	-6.8	-3.5885 ug/L	-3.5885 ppb	13:10:28
1	Si 251.611†	654.5	56.7	1.5997 ug/L	1.5997 ppb	13:10:28
1	Sn 189.927†	12.2	9.1	1.3525 ug/L	1.3525 ppb	13:10:28
1	Ti 334.940†	-1683.9	85.1	0.1401 ug/L	0.1401 ppb	13:10:08
1	Tl 190.801†	-40.6	11.7	3.1853 ug/L	3.1853 ppb	13:10:28
1	U 409.014†	-2971.5	-388.1	-11.533 ug/L	-11.533 ppb	13:10:08
1	V 292.402†	-1701.2	51.8	0.3202 ug/L	0.3202 ppb	13:10:08
1	Zn 213.857†	814.7	6.4	0.0545 ug/L	0.0545 ppb	13:10:28
1	SiO2†	659.4	42.3	2.5374 ug/L	2.5374 ppb	13:11:24
2	Sc Radial	4629.7	4629.7	99.2 %		13:09:16
2	Y RADIAL	4889.1	4889.1	99.11 %		13:09:16
2	Al 396.153Radial†	-12.2	14.4	12.777 ug/L	12.777 ppb	13:09:16
2	Ca 317.933Radial†	18.1	5.7	9.5745 ug/L	9.5745 ppb	13:09:36
2	Fe 238.204 Radial†	12.8	-1.0	-8.4932 ug/L	-8.4932 ppb	13:09:36
2	K 766.490 Radial†	3521.1	213.2	42.283 ug/L	42.283 ppb	13:09:16
2	Mg 279.077 IEC†	2.8	1.2	39.321 ug/L	39.321 ppb	13:09:36
2	Na 589.592 Radial†	-1484.5	253.5	76.571 ug/L	76.571 ppb	13:09:16
2	Sr 421.552†	13.6	-2.2	-0.0164 ug/L	-0.0164 ppb	13:09:16
2	Sc 361.383	857375.9	857375.9	96.703 %		13:10:33
2	Y 371.029	736432.9	736432.9	96.676 %		13:10:33
2	Ag 328.068†	421.8	-76.1	-0.3214 ug/L	-0.3214 ppb	13:10:33
2	As 188.979†	-38.3	-6.2	-2.1704 ug/L	-2.1704 ppb	13:10:53
2	B 249.677†	-592.2	53.5	1.1047 ug/L	1.1047 ppb	13:10:33
2	Ba 233.527†	13.0	6.0	0.0447 ug/L	0.0447 ppb	13:10:53
2	Be 313.107†	-4316.0	-111.6	-0.0375 ug/L	-0.0375 ppb	13:10:33
2	Cd 226.502†	-226.8	3.9	0.0377 ug/L	0.0377 ppb	13:10:53
2	Co 228.616†	-93.4	-12.6	-0.2350 ug/L	-0.2350 ppb	13:10:53
2	Cr 267.716†	115.9	15.8	0.1616 ug/L	0.1616 ppb	13:10:33
2	Cu 324.752†	7932.6	204.0	0.6036 ug/L	0.6036 ppb	13:10:33
2	Mn 257.610†	576.2	79.5	0.0822 ug/L	0.0822 ppb	13:10:33
2	Mo 202.031†	28.0	9.0	0.5658 ug/L	0.5658 ppb	13:10:53
2	Ni 231.604†	140.4	20.1	0.4414 ug/L	0.4414 ppb	13:10:53

2	P 214.914†	256.3	16.5	7.9317 ug/L	7.9317 ppb	13:10:53
2	Pb 220.353†	-74.4	0.8	0.0874 ug/L	0.0874 ppb	13:10:53
2	S 181.975 Axial†	63.5	5.8	6.5329 ug/L	6.5329 ppb	13:10:53
2	Sb 206.836†	36.8	1.0	0.2943 ug/L	0.2943 ppb	13:10:53
2	Se 196.026†	-31.0	1.2	0.5889 ug/L	0.5889 ppb	13:10:53
2	Si 251.611†	653.3	59.1	1.6711 ug/L	1.6711 ppb	13:10:53
2	Sn 189.927†	1.1	-2.3	-0.3399 ug/L	-0.3399 ppb	13:10:53
2	Ti 334.940†	-1676.8	83.4	0.1358 ug/L	0.1358 ppb	13:10:33
2	Tl 190.801†	-43.1	8.8	2.4144 ug/L	2.4144 ppb	13:10:53
2	U 409.014†	-2807.1	-234.1	-6.9582 ug/L	-6.9582 ppb	13:10:33
2	V 292.402†	-1642.6	103.3	0.6448 ug/L	0.6448 ppb	13:10:33
2	Zn 213.857†	830.1	26.7	0.2152 ug/L	0.2152 ppb	13:10:53
2	SiO2†	675.5	62.5	3.7868 ug/L	3.7868 ppb	13:11:29
3	Sc Radial	4641.1	4641.1	99.4 %		13:09:41
3	Y RADIAL	4899.8	4899.8	99.33 %		13:09:41
3	Al 396.153Radial†	-37.6	-11.0	-9.8208 ug/L	-9.8208 ppb	13:09:41
3	Ca 317.933Radial†	17.1	4.6	7.7157 ug/L	7.7157 ppb	13:10:01
3	Fe 238.204 Radial†	8.5	-5.3	-46.933 ug/L	-46.933 ppb	13:10:01
3	K 766.490 Radial†	3545.5	229.0	45.418 ug/L	45.418 ppb	13:09:41
3	Mg 279.077 IEC†	0.1	-1.5	-48.406 ug/L	-48.406 ppb	13:10:01
3	Na 589.592 Radial†	-1461.4	280.3	84.676 ug/L	84.676 ppb	13:09:41
3	Sr 421.552†	-10.5	-26.5	-0.1943 ug/L	-0.1943 ppb	13:09:41
3	Sc 361.383	852049.0	852049.0	96.102 %		13:10:59
3	Y 371.029	732328.1	732328.1	96.137 %		13:10:59
3	Ag 328.068†	417.5	-77.9	-0.3474 ug/L	-0.3474 ppb	13:10:59
3	As 188.979†	-30.8	1.4	0.4873 ug/L	0.4873 ppb	13:11:19
3	B 249.677†	-557.3	85.9	1.7791 ug/L	1.7791 ppb	13:10:59
3	Ba 233.527†	-8.4	-16.2	-0.1204 ug/L	-0.1204 ppb	13:11:19
3	Be 313.107†	-4302.7	-125.7	-0.0424 ug/L	-0.0424 ppb	13:10:59
3	Cd 226.502†	-241.3	-12.7	-0.1148 ug/L	-0.1148 ppb	13:11:19
3	Co 228.616†	-96.6	-16.5	-0.3092 ug/L	-0.3092 ppb	13:11:19
3	Cr 267.716†	96.2	-3.9	-0.0387 ug/L	-0.0387 ppb	13:10:59
3	Cu 324.752†	8069.9	398.2	1.1765 ug/L	1.1765 ppb	13:10:59
3	Mn 257.610†	541.9	47.5	0.0462 ug/L	0.0462 ppb	13:10:59
3	Mo 202.031†	26.7	7.9	0.4875 ug/L	0.4875 ppb	13:11:19
3	Ni 231.604†	125.1	5.1	0.1124 ug/L	0.1124 ppb	13:11:19
3	P 214.914†	242.2	3.5	1.5427 ug/L	1.5427 ppb	13:11:19
3	Pb 220.353†	-74.8	-0.0	-0.0013 ug/L	-0.0013 ppb	13:11:19
3	S 181.975 Axial†	57.9	0.3	0.3542 ug/L	0.3542 ppb	13:11:19
3	Sb 206.836†	37.5	1.9	0.5855 ug/L	0.5855 ppb	13:11:19
3	Se 196.026†	-45.3	-13.9	-7.2614 ug/L	-7.2614 ppb	13:11:19
3	Si 251.611†	670.6	81.2	2.3048 ug/L	2.3048 ppb	13:11:19
3	Sn 189.927†	5.0	1.8	0.2708 ug/L	0.2708 ppb	13:11:19
3	Ti 334.940†	-1707.3	40.8	0.0676 ug/L	0.0676 ppb	13:10:59
3	Tl 190.801†	-36.7	15.2	4.1554 ug/L	4.1554 ppb	13:11:19
3	U 409.014†	-2740.6	-183.0	-5.4354 ug/L	-5.4354 ppb	13:10:59
3	V 292.402†	-1786.4	-57.1	-0.3558 ug/L	-0.3558 ppb	13:10:59
3	Zn 213.857†	831.9	33.9	0.2811 ug/L	0.2811 ppb	13:11:19
3	SiO2†	702.8	95.3	5.7935 ug/L	5.7935 ppb	13:11:34

## Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Sc 361.383	857094.6	96.671 %	0.5539			0.57%
Sc Radial	4664.7	99.9 %	1.09			1.09%
Y 371.029	736555.9	96.692 %	0.5633			0.58%
Y RADIAL	4927.9	99.90 %	1.178			1.18%
Ag 328.068†	-44.2	-0.1921 ug/L	0.24681	-0.1921 ppb	0.24681	128.49%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153Radial†	0.6	0.5294 ug/L	11.41775	0.5294 ppb	11.41775	>999.9%
QC value within limits for Al 396.153Radial Recovery = Not calculated						
As 188.979†	-0.9	-0.3291 ug/L	1.59804	-0.3291 ppb	1.59804	485.61%
QC value within limits for As 188.979 Recovery = Not calculated						
B 249.677†	89.1	1.8418 ug/L	0.77039	1.8418 ppb	0.77039	41.83%
QC value within limits for B 249.677 Recovery = Not calculated						
Ba 233.527†	-6.0	-0.0437 ug/L	0.08313	-0.0437 ppb	0.08313	190.09%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 313.107†	-122.8	-0.0413 ug/L	0.00343	-0.0413 ppb	0.00343	8.29%
QC value within limits for Be 313.107 Recovery = Not calculated						
Ca 317.933Radial†	3.6	6.1061 ug/L	4.49484	6.1061 ppb	4.49484	73.61%

QC value within limits for Ca 317.933 Radial Recovery = Not calculated						
Cd 226.502†	-7.6	-0.0686 ug/L	0.09233	-0.0686 ppb	0.09233	134.52%
QC value within limits for Cd 226.502 Recovery = Not calculated						
Co 228.616†	-11.2	-0.2090 ug/L	0.11545	-0.2090 ppb	0.11545	55.24%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	4.9	0.0511 ug/L	0.10175	0.0511 ppb	0.10175	198.97%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 324.752†	291.8	0.8624 ug/L	0.29040	0.8624 ppb	0.29040	33.67%
QC value within limits for Cu 324.752 Recovery = Not calculated						
Fe 238.204 Radial†	-3.3	-28.723 ug/L	19.2994	-28.723 ppb	19.2994	67.19%
QC value within limits for Fe 238.204 Radial Recovery = Not calculated						
K 766.490 Radial†	182.1	36.107 ug/L	13.5031	36.107 ppb	13.5031	37.40%
QC value within limits for K 766.490 Radial Recovery = Not calculated						
Mg 279.077 IEC†	-0.0	-0.6497 ug/L	44.37884	-0.6497 ppb	44.37884	>999.9%
QC value within limits for Mg 279.077 IEC Recovery = Not calculated						
Mn 257.610†	72.8	0.0738 ug/L	0.02453	0.0738 ppb	0.02453	33.22%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	10.3	0.6451 ug/L	0.20898	0.6451 ppb	0.20898	32.39%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Na 589.592 Radial†	273.6	82.658 ug/L	5.3706	82.658 ppb	5.3706	6.50%
QC value within limits for Na 589.592 Radial Recovery = Not calculated						
Ni 231.604†	5.9	0.1293 ug/L	0.30403	0.1293 ppb	0.30403	235.19%
QC value within limits for Ni 231.604 Recovery = Not calculated						
P 214.914†	7.9	3.7518 ug/L	3.62188	3.7518 ppb	3.62188	96.54%
QC value within limits for P 214.914 Recovery = Not calculated						
Pb 220.353†	0.9	0.1006 ug/L	0.10913	0.1006 ppb	0.10913	108.46%
QC value within limits for Pb 220.353 Recovery = Not calculated						
S 181.975 Axial†	2.6	2.9501 ug/L	3.20539	2.9501 ppb	3.20539	108.65%
QC value within limits for S 181.975 Axial Recovery = Not calculated						
Sb 206.836†	5.5	1.6481 ug/L	2.09765	1.6481 ppb	2.09765	127.28%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-6.5	-3.4203 ug/L	3.92786	-3.4203 ppb	3.92786	114.84%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	65.6	1.8586 ug/L	0.38813	1.8586 ppb	0.38813	20.88%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	2.9	0.4278 ug/L	0.85708	0.4278 ppb	0.85708	200.34%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Sr 421.552†	-26.8	-0.1965 ug/L	0.18125	-0.1965 ppb	0.18125	92.22%
QC value within limits for Sr 421.552 Recovery = Not calculated						
Ti 334.940†	69.8	0.1145 ug/L	0.04068	0.1145 ppb	0.04068	35.53%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	11.9	3.2517 ug/L	0.87238	3.2517 ppb	0.87238	26.83%
QC value within limits for Tl 190.801 Recovery = Not calculated						
U 409.014†	-268.4	-7.9756 ug/L	3.17367	-7.9756 ppb	3.17367	39.79%
QC value within limits for U 409.014 Recovery = Not calculated						
V 292.402†	32.7	0.2030 ug/L	0.51048	0.2030 ppb	0.51048	251.43%
QC value within limits for V 292.402 Recovery = Not calculated						
Zn 213.857†	22.4	0.1836 ug/L	0.11656	0.1836 ppb	0.11656	63.50%
QC value within limits for Zn 213.857 Recovery = Not calculated						
SiO2†	66.7	4.0392 ug/L	1.64266	4.0392 ppb	1.64266	40.67%
QC value within limits for SiO2 Recovery = Not calculated						
All analyte(s) passed QC.						

## Daily Performance Report

### Sample ID: Sample

Sample Date/Time: Wednesday, January 06, 2010 11:10:30

Sample Description:

Method File: c:\elandata\Method\daily2.mth

Dataset File: c:\elandata\Dataset\090811\Sample.346

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

### Summary

Analyte	Mass	Meas. Intens.	Mean	Net Intens.	Mean	Net Intens.	SD	Net Intens.	RSD
Be	9.0		919.6		919.630		21.572		2.3
Mg	24.0		20080.9		20080.906		307.562		1.5
Co	58.9		49084.0		49083.984		419.634		0.9
Rh	102.9		85969.7		85969.738		1140.741		1.3
In	114.9		111872.1		111872.135		429.627		0.4
Pb	208.0		37594.6		37594.607		394.480		1.0
[> Ba	137.9		89335.1		89335.070		586.494		0.7
[ Ba++	69.0		2230.9		0.025		0.001		4.2
[> Ce	139.9		105853.1		105853.128		429.147		0.4
[ CeO	155.9		2311.3		0.022		0.000		0.9
[ Bkgd	220.0		7.2		7.200		1.151		16.0

### Current Optimization File Data

Current Value	Description
0.84	Nebulizer Gas Flow
6.00	Lens Voltage
1000.00	ICP RF Power
-1875.00	Analog Stage Voltage
1100.00	Pulse Stage Voltage
50.00	Discriminator Threshold
-2.00	AC Rod Offset

### Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	17	7.3	978.0
Co	59	17	8.3	36100.6
In	115	17	9.8	82051.3

## ICPMS #4 TUNING REPORT

File Name: default2.tun  
File Path: c:\elandata\Tuning

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas Peak W
He	3.0	3.0	602	2060	0.636
Be	9.0	9.0	2029	2055	0.641
Mg	24.0	24.0	5677	2075	0.627
Mg	25.0	25.1	5963	2080	0.655
Mg	26.0	26.0	6130	2085	0.620
Co	58.9	59.0	14168	2140	0.623
Rh	102.9	102.9	24866	2230	0.647
In	114.9	114.9	27785	2255	0.658
Ce	139.9	139.9	33852	2310	0.623
Pb	206.0	206.0	49940	2500	0.624
Pb	207.0	207.0	50113	2380	0.631
Pb	208.0	208.0	50448	2570	0.630
U	238.1	238.1	57687	2510	0.672

## ICPMS#4 - Summary Report

Sample ID: Blank

Sample Date/Time: Wednesday, January 06, 2010 16:43:21

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\Blank.039

### Concentration Results

Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	ug/L		9	
Be	9	ug/L		3	
B	11	ug/L		29	
Na	23	ug/L		15676	
Mg	24	ug/L		667	
Al	27	ug/L		1667	
P	31	ug/L		2483	
K	39	ug/L		397471	
Ca	43	ug/L		469	
> Sc	45	ug/L		240093	
Ti	47	ug/L		164	
V	51	ug/L		4411	
Cr	52	ug/L		3369	
Cr	53	ug/L		171322	
Mn	55	ug/L		862	
Fe	57	ug/L		4820	
Co	59	ug/L		156	
Ni	60	ug/L		35	
Cu	63	ug/L		82	
Cu	65	ug/L		52	
Zn	66	ug/L		65	
Zn	67	ug/L		7154	
Zn	68	ug/L		629	
> Ge	74	ug/L		95347	
As	75	ug/L		398	
Se	77	ug/L		6899	
Se	82	ug/L		-4	
Kr	83	ug/L		49	
Sr	88	ug/L		67	
Y	89	ug/L		12	
Zr	90	ug/L		105	
Mo	98	ug/L		14	
Ag	107	ug/L		49	
Cd	111	ug/L		7	
Cd	114	ug/L		21	
> In	115	ug/L		56646	
Sn	120	ug/L		109	
Sb	121	ug/L		183	
Sb	123	ug/L		174	
Ba	135	ug/L		12	
Ba	137	ug/L		16	
Ho	165	ug/L		6	
> Lu	175	ug/L		44715	
Tl	205	ug/L		29	
Pb	208	ug/L		184	
Bi	209	ug/L		18	
Th	232	ug/L		101	
U	238	ug/L		52	

Sample ID: Blank

Report Date/Time: Wednesday, January 06, 2010 16:46:09

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## Calibration

Analyte	MassCurve Type	Correlation Coefficient
Li	7Linear Thru Zero	
Be	9Linear Thru Zero	
B	11Linear Thru Zero	
Na	23Linear Thru Zero	
Mg	24Linear Thru Zero	
Al	27Linear Thru Zero	
P	31Linear Thru Zero	
K	39Linear Thru Zero	
Ca	43Linear Thru Zero	
Sc	45Linear Thru Zero	
Ti	47Linear Thru Zero	
V	51Linear Thru Zero	
Cr	52Linear Thru Zero	
Cr	53Linear Thru Zero	
Mn	55Linear Thru Zero	
Fe	57Linear Thru Zero	
Co	59Linear Thru Zero	
Ni	60Linear Thru Zero	
Cu	63Linear Thru Zero	
Cu	65Linear Thru Zero	
Zn	66Linear Thru Zero	
Zn	67Linear Thru Zero	
Zn	68Linear Thru Zero	
Ge	74Linear Thru Zero	
As	75Linear Thru Zero	
Se	77Linear Thru Zero	
Se	82Linear Thru Zero	
Kr	83Linear Thru Zero	
Sr	88Linear Thru Zero	
Y	89Linear Thru Zero	
Zr	90Linear Thru Zero	
Mo	98Linear Thru Zero	
Ag	107Linear Thru Zero	
Cd	111Linear Thru Zero	
Cd	114Linear Thru Zero	
In	115Linear Thru Zero	
Sn	120Linear Thru Zero	
Sb	121Linear Thru Zero	
Sb	123Linear Thru Zero	
Ba	135Linear Thru Zero	
Ba	137Linear Thru Zero	
Ho	165Linear Thru Zero	
Lu	175Linear Thru Zero	
Tl	205Linear Thru Zero	
Pb	208Linear Thru Zero	
Bi	209Linear Thru Zero	
Th	232Linear Thru Zero	
U	238Linear Thru Zero	



## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45					
Ti	47					
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					
Zr	90					
Mo	98					
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					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: Blank

Report Date/Time: Wednesday, January 06, 2010 16:46:09

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## ICPMS#4 - Summary Report

Sample ID: Standard 1

Sample Date/Time: Wednesday, January 06, 2010 16:49:33

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\Standard 1.040

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	10.000	ug/L	1.698	2109	0.009
Be	9	10.000	ug/L	3.327	574	0.002
B	11	20.000	ug/L	6.805	954	0.004
Na	23	1000.000	ug/L	5.191	1220048	4.907
Mg	24	1000.000	ug/L	2.576	794862	3.237
Al	27	1000.000	ug/L	4.340	1127543	4.588
P	31	1000.000	ug/L	0.753	84160	0.251
K	39	1000.000	ug/L	9.054	2469573	8.415
Ca	43	1000.000	ug/L	1.655	4634	0.017
> Sc	45		ug/L		245356	245356.296
Ti	47	10.000	ug/L	3.079	2051	0.008
V	51	10.000	ug/L	19.605	21408	0.069
Cr	52	10.000	ug/L	0.903	21441	0.073
Cr	53		ug/L		146403	-0.117
Mn	55	10.000	ug/L	1.415	31045	0.123
Fe	57	1000.000	ug/L	1.104	65588	0.247
Co	59	10.000	ug/L	1.375	22844	0.092
Ni	60	10.000	ug/L	2.286	4816	0.019
Cu	63		ug/L		11090	0.045
Cu	65	10.000	ug/L	0.241	5268	0.021
Zn	66	10.000	ug/L	1.819	2847	0.028
Zn	67		ug/L		6568	-0.008
Zn	68		ug/L		2559	0.020
> Ge	74		ug/L		97686	97686.178
As	75	10.000	ug/L	6.770	3297	0.030
Se	77		ug/L		5817	-0.013
Se	82	10.000	ug/L	13.781	318	0.003
Kr	83		ug/L		48	-0.000
Sr	88	10.000	ug/L	1.280	46591	0.807
Y	89		ug/L		11	-0.000
Zr	90	10.000	ug/L	0.446	24377	0.421
Mo	98	10.000	ug/L	1.028	10840	0.188
Ag	107	10.000	ug/L	1.478	17116	0.296
Cd	111	10.000	ug/L	1.876	3983	0.069
Cd	114		ug/L		9154	0.158
> In	115		ug/L		57641	57641.414
Sn	120	10.000	ug/L	2.163	17667	0.305
Sb	121	10.000	ug/L	6.392	12607	0.215
Sb	123		ug/L		9622	0.164
Ba	135		ug/L		3982	0.085
Ba	137	10.000	ug/L	4.204	6870	0.147
Ho	165		ug/L		10	0.000
> Lu	175		ug/L		46636	46636.150
Tl	205	10.000	ug/L	1.046	6770	0.145
Pb	208	10.000	ug/L	0.794	36636	0.782
Bi	209		ug/L		22	0.000
Th	232	10.000	ug/L	0.864	45331	0.970
U	238	10.000	ug/L	2.723	47701	1.022

Sample ID: Standard 1

Report Date/Time: Wednesday, January 06, 2010 16:52:18

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7				
	Be	9				
	B	11				
	Na	23				
	Mg	24				
	Al	27				
	P	31				
	K	39				
	Ca	43				
>	Sc	45				
	Ti	47				
	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				
	Zr	90				
	Mo	98				
	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				
	Th	232				
	U	238				

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: Standard 2

Sample Date/Time: Wednesday, January 06, 2010 16:55:42

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\Standard 2.041

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	99.917	ug/L	4.472	20082	0.079
Be	9	99.930	ug/L	1.444	5528	0.022
B	11	200.029	ug/L	0.972	9759	0.038
Na	23	9999.807	ug/L	2.587	12473965	48.978
Mg	24	9998.704	ug/L	3.264	8128801	31.948
Al	27	10005.967	ug/L	1.751	12421103	48.817
P	31	9998.926	ug/L	1.190	634731	2.485
K	39	9993.032	ug/L	7.049	20416652	78.611
Ca	43	9999.653	ug/L	1.029	43439	0.169
> Sc	45		ug/L		254412	254412.327
Ti	47	100.017	ug/L	1.683	20040	0.078
V	51	100.094	ug/L	2.247	198364	0.761
Cr	52	100.023	ug/L	1.402	194696	0.751
Cr	53		ug/L		160081	-0.084
Mn	55	99.988	ug/L	0.284	309839	1.214
Fe	57	9998.182	ug/L	0.114	622804	2.428
Co	59	99.981	ug/L	0.858	231012	0.907
Ni	60	99.968	ug/L	1.351	48043	0.189
Cu	63		ug/L		110074	0.432
Cu	65	99.967	ug/L	0.480	52362	0.206
Zn	66	99.991	ug/L	2.013	28003	0.282
Zn	67		ug/L		10418	0.030
Zn	68		ug/L		20392	0.199
> Ge	74		ug/L		99097	99097.259
As	75	100.083	ug/L	2.620	32400	0.323
Se	77		ug/L		7343	0.002
Se	82	99.947	ug/L	2.992	3100	0.031
Kr	83		ug/L		43	-0.000
Sr	88	100.012	ug/L	0.700	476818	8.170
Y	89		ug/L		55	0.001
Zr	90	100.037	ug/L	0.643	255295	4.373
Mo	98	100.001	ug/L	0.436	109665	1.879
Ag	107	99.979	ug/L	1.743	169233	2.899
Cd	111	99.982	ug/L	1.173	39544	0.677
Cd	114		ug/L		93632	1.604
> In	115		ug/L		58357	58356.882
Sn	120	100.011	ug/L	0.657	179860	3.080
Sb	121	100.081	ug/L	2.928	137146	2.346
Sb	123		ug/L		105013	1.796
Ba	135		ug/L		41098	0.874
Ba	137	100.017	ug/L	1.884	70260	1.495
Ho	165		ug/L		10	0.000
> Lu	175		ug/L		46992	46992.322
Tl	205	100.017	ug/L	0.824	69135	1.471
Pb	208	99.993	ug/L	2.058	364944	7.764
Bi	209		ug/L		51	0.001
Th	232	100.028	ug/L	2.562	469192	9.986
U	238	99.998	ug/L	3.212	478907	10.195

Sample ID: Standard 2

Report Date/Time: Wednesday, January 06, 2010 16:58:27

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7				
	Be	9				
	B	11				
	Na	23				
	Mg	24				
	Al	27				
	P	31				
	K	39				
	Ca	43				
>	Sc	45				
	Ti	47				
	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				
	Zr	90				
	Mo	98				
	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				
	Th	232				
	U	238				

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: Standard 2

Report Date/Time: Wednesday, January 06, 2010 16:58:27

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## ICPMS#4 - Summary Report

Sample ID: QC Std 1

Sample Date/Time: Wednesday, January 06, 2010 17:01:51

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 1.042

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
	Li	7	51.029 ug/L	2.409	10341	0.040
	Be	9	52.223 ug/L	0.338	2913	0.011
	B	11	102.435 ug/L	0.964	5050	0.020
	Na	23	4803.620 ug/L	0.571	6047416	23.528
	Mg	24	4989.471 ug/L	4.556	4088052	15.942
	Al	27	4983.578 ug/L	7.387	6236310	24.314
	P	31	4952.061 ug/L	0.667	318071	1.231
	K	39	5254.176 ug/L	7.208	11022033	41.333
	Ca	43	4929.073 ug/L	0.281	21824	0.083
>	Sc	45	ug/L		256318	256318.420
	Ti	47	49.976 ug/L	1.910	10176	0.039
	V	51	48.539 ug/L	1.784	99347	0.369
	Cr	52	50.627 ug/L	0.317	101070	0.380
	Cr	53	ug/L		147348	-0.139
	Mn	55	51.432 ug/L	0.665	161015	0.625
	Fe	57	4968.475 ug/L	0.784	314398	1.207
	Co	59	49.737 ug/L	1.129	115864	0.451
	Ni	60	51.736 ug/L	1.186	25065	0.098
	Cu	63	ug/L		56364	0.220
	Cu	65	51.279 ug/L	1.187	27087	0.105
	Zn	66	51.894 ug/L	1.410	14698	0.146
	Zn	67	ug/L		8212	0.007
	Zn	68	ug/L		11077	0.104
>	Ge	74	ug/L		99966	99966.229
	As	75	48.712 ug/L	3.543	16126	0.157
	Se	77	ug/L		6000	-0.012
	Se	82	51.829 ug/L	5.440	1620	0.016
	Kr	83	ug/L		53	0.000
	Sr	88	51.379 ug/L	1.013	247168	4.197
	Y	89	ug/L		19	0.000
	Zr	90	49.542 ug/L	1.711	127604	2.166
	Mo	98	49.909 ug/L	1.195	55227	0.938
	Ag	107	50.694 ug/L	1.927	86595	1.470
	Cd	111	51.216 ug/L	2.844	20434	0.347
	Cd	114	ug/L		47589	0.808
>	In	115	ug/L		58884	58883.736
	Sn	120	50.191 ug/L	1.217	91127	1.546
	Sb	121	49.631 ug/L	5.298	68744	1.164
	Sb	123	ug/L		52794	0.893
	Ba	135	ug/L		20954	0.438
	Ba	137	49.969 ug/L	0.640	35710	0.747
	Ho	165	ug/L		12	0.000
>	Lu	175	ug/L		47781	47780.934
	Tl	205	48.391 ug/L	1.054	34027	0.712
	Pb	208	50.640 ug/L	2.234	188023	3.932
	Bi	209	ug/L		40	0.000
	Th	232	50.472 ug/L	1.536	240834	5.039
	U	238	52.261 ug/L	1.602	254593	5.328

Sample ID: QC Std 1

Report Date/Time: Wednesday, January 06, 2010 17:04:37

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7	102.057			
	Be	9	104.446			
	B	11	102.435			
	Na	23	96.072			
	Mg	24	99.789			
	Al	27	98.685			
	P	31	99.041			
	K	39	105.084			
	Ca	43	98.581			
>	Sc	45		106.8		
	Ti	47	99.952			
	V	51	97.078			
	Cr	52	101.254			
	Cr	53				
	Mn	55	102.865			
	Fe	57	99.369			
	Co	59	99.474			
	Ni	60	103.472			
	Cu	63				
	Cu	65	102.558			
	Zn	66	103.789			
	Zn	67				
	Zn	68				
>	Ge	74		104.8		
	As	75	97.424			
	Se	77				
	Se	82	103.658			
	Kr	83				
	Sr	88	102.759			
	Y	89				
	Zr	90	99.085			
	Mo	98	99.819			
	Ag	107	101.388			
	Cd	111	102.432			
	Cd	114				
>	In	115		104.0		
	Sn	120	100.383			
	Sb	121	99.261			
	Sb	123				
	Ba	135				
	Ba	137	99.938			
	Ho	165				
>	Lu	175		106.9		
	Tl	205	96.783			
	Pb	208	101.280			
	Bi	209				
	Th	232	100.943			
	U	238	104.522			

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 1

Report Date/Time: Wednesday, January 06, 2010 17:04:37

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## ICPMS#4 - Summary Report

Sample ID: QC Std 2

Sample Date/Time: Wednesday, January 06, 2010 17:08:03

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 2.043

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.084	ug/L	40.126	26	0.000
Be	9	0.011	ug/L	198.279	4	0.000
B	11	5.316	ug/L	5.737	280	0.001
Na	23	6.861	ug/L	20.031	24354	0.034
Mg	24	-0.024	ug/L	3021.941	667	-0.000
Al	27	0.246	ug/L	590.905	2000	0.001
P	31	-0.638	ug/L	46.820	2508	-0.000
K	39	5.258	ug/L	200.865	418040	0.041
Ca	43	-7.207	ug/L	191.666	451	-0.000
> Sc	45		ug/L		246323	246323.292
Ti	47	-0.019	ug/L	297.978	165	-0.000
V	51	0.308	ug/L	448.016	5108	0.002
Cr	52	-0.511	ug/L	31.570	2512	-0.004
Cr	53		ug/L		152899	-0.093
Mn	55	-0.021	ug/L	28.921	822	-0.000
Fe	57	-3.014	ug/L	29.584	4765	-0.001
Co	59	0.003	ug/L	385.369	166	0.000
Ni	60	0.012	ug/L	123.735	42	0.000
Cu	63		ug/L		104	0.000
Cu	65	0.017	ug/L	96.567	62	0.000
Zn	66	0.027	ug/L	124.303	73	0.000
Zn	67		ug/L		6301	-0.010
Zn	68		ug/L		581	-0.001
> Ge	74		ug/L		97058	97057.642
As	75	-0.213	ug/L	334.385	336	-0.001
Se	77		ug/L		5749	-0.013
Se	82	0.173	ug/L	314.605	2	0.000
Kr	83		ug/L		50	0.000
Sr	88	0.004	ug/L	48.245	87	0.000
Y	89		ug/L		12	-0.000
Zr	90	0.259	ug/L	4.481	758	0.011
Mo	98	0.079	ug/L	17.077	100	0.001
Ag	107	0.015	ug/L	57.593	76	0.000
Cd	111	0.026	ug/L	18.268	18	0.000
Cd	114		ug/L		31	0.000
> In	115		ug/L		57569	57568.890
Sn	120	0.295	ug/L	5.084	635	0.009
Sb	121	1.328	ug/L	9.615	1978	0.031
Sb	123		ug/L		1528	0.023
Ba	135		ug/L		14	0.000
Ba	137	0.010	ug/L	68.267	24	0.000
Ho	165		ug/L		8	0.000
> Lu	175		ug/L		45975	45974.665
Tl	205	0.125	ug/L	13.454	115	0.002
Pb	208	0.011	ug/L	44.569	227	0.001
Bi	209		ug/L		19	0.000
Th	232	0.185	ug/L	17.688	952	0.018
U	238	0.013	ug/L	8.824	114	0.001

Sample ID: QC Std 2

Report Date/Time: Wednesday, January 06, 2010 17:10:51

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

### QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		102.6			
Ti	47					
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		101.8			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115		101.6			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		102.8			
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 2

Report Date/Time: Wednesday, January 06, 2010 17:10:51

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## ICPMS#4 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Wednesday, January 06, 2010 17:14:15

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 3.044

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	11.643	ug/L	0.819	2304	0.009
Be	9	0.546	ug/L	12.659	33	0.000
B	11	18.065	ug/L	7.296	891	0.003
Na	23	295.859	ug/L	12.819	377637	1.449
Mg	24	17.540	ug/L	3.776	14674	0.056
Al	27	27.890	ug/L	11.908	35712	0.136
P	31	46.347	ug/L	5.922	5452	0.012
K	39	327.018	ug/L	2.805	1054917	2.573
Ca	43	191.309	ug/L	8.136	1292	0.003
> Sc	45		ug/L		249482	249482.495
Ti	47	9.459	ug/L	1.947	2013	0.007
V	51	10.190	ug/L	20.825	23939	0.078
Cr	52	10.092	ug/L	2.183	22409	0.076
Cr	53		ug/L		138747	-0.157
Mn	55	5.629	ug/L	2.132	17945	0.068
Fe	57	105.256	ug/L	2.321	11384	0.026
Co	59	1.082	ug/L	1.860	2612	0.010
Ni	60	2.246	ug/L	4.005	1094	0.004
Cu	63		ug/L		1304	0.005
Cu	65	1.136	ug/L	7.190	637	0.002
Zn	66	10.981	ug/L	1.262	3087	0.031
Zn	67		ug/L		6205	-0.011
Zn	68		ug/L		2664	0.021
> Ge	74		ug/L		97541	97540.860
As	75	4.358	ug/L	20.572	1780	0.014
Se	77		ug/L		5053	-0.021
Se	82	5.880	ug/L	0.578	176	0.002
Kr	83		ug/L		45	-0.000
Sr	88	10.809	ug/L	0.785	51702	0.883
Y	89		ug/L		11	-0.000
Zr	90	1.993	ug/L	4.176	5206	0.087
Mo	98	0.583	ug/L	6.487	656	0.011
Ag	107	1.033	ug/L	4.586	1803	0.030
Cd	111	1.091	ug/L	5.008	440	0.007
Cd	114		ug/L		1018	0.017
> In	115		ug/L		58478	58477.817
Sn	120	5.245	ug/L	1.530	9557	0.162
Sb	121	3.147	ug/L	6.365	4505	0.074
Sb	123		ug/L		3552	0.058
Ba	135		ug/L		842	0.018
Ba	137	2.078	ug/L	1.660	1474	0.031
Ho	165		ug/L		8	0.000
> Lu	175		ug/L		46903	46903.006
Tl	205	1.066	ug/L	2.923	766	0.016
Pb	208	2.168	ug/L	1.237	8090	0.168
Bi	209		ug/L		20	0.000
Th	232	1.059	ug/L	4.972	5063	0.106
U	238	0.226	ug/L	1.999	1133	0.023

Sample ID: QC Std 3

Report Date/Time: Wednesday, January 06, 2010 17:17:02

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7	116.425			
	Be	9	109.148			
	B	11	120.434			
	Na	23	118.344			
	Mg	24	116.931			
	Al	27	92.966			
	P	31	92.694			
	K	39	109.006			
	Ca	43	95.655			
>	Sc	45		103.9		
	Ti	47	94.590			
	V	51	101.897			
	Cr	52	100.917			
	Cr	53				
	Mn	55	112.571			
	Fe	57	105.256			
	Co	59	108.217			
	Ni	60	112.306			
	Cu	63				
	Cu	65	113.570			
[	Zn	66	109.809			
	Zn	67				
	Zn	68				
>	Ge	74		102.3		
	As	75	87.166			
	Se	77				
	Se	82	117.608			
	Kr	83				
[	Sr	88	108.085			
	Y	89				
	Zr	90	99.671			
	Mo	98	116.699			
	Ag	107	103.328			
	Cd	111	109.087			
	Cd	114				
>	In	115		103.2		
	Sn	120	104.892			
	Sb	121	104.893			
	Sb	123				
[	Ba	135				
	Ba	137	103.919			
	Ho	165				
>	Lu	175		104.9		
	Tl	205	106.602			
	Pb	208	108.416			
	Bi	209				
	Th	232	105.867			
	U	238	112.780			

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 3

Report Date/Time: Wednesday, January 06, 2010 17:17:02

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## ICPMS#4 - Summary Report

Sample ID: QC Std 4

Sample Date/Time: Wednesday, January 06, 2010 17:20:26

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 4.045

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.110	ug/L	26.559	31	0.000
Be	9	0.028	ug/L	131.080	5	0.000
B	11	2.350	ug/L	10.024	142	0.000
Na	23	96290.800	ug/L	8.895	117428458	471.622
Mg	24	99819.268	ug/L	6.151	79351039	318.939
Al	27	94884.550	ug/L	1.516	115225322	462.917
P	31	96729.795	ug/L	1.724	5985180	24.036
K	39	99767.072	ug/L	1.229	195744934	784.830
Ca	43	97119.854	ug/L	0.782	408438	1.639
> Sc	45		ug/L		248854	248854.011
Ti	47	1486.876	ug/L	0.890	289119	1.161
V	51	-1.493	ug/L	127.139	1680	-0.011
Cr	52	2.898	ug/L	4.787	8908	0.022
Cr	53		ug/L		124508	-0.213
Mn	55	5.609	ug/L	1.686	17850	0.068
Fe	57	96043.957	ug/L	1.319	5810502	23.323
Co	59	0.238	ug/L	5.814	700	0.002
Ni	60	2.914	ug/L	2.645	1406	0.006
Cu	63		ug/L		2317	0.009
Cu	65	2.359	ug/L	1.329	1261	0.005
Zn	66	3.550	ug/L	6.085	1013	0.010
Zn	67		ug/L		5774	-0.014
Zn	68		ug/L		698	0.001
> Ge	74		ug/L		94804	94804.202
As	75	-0.200	ug/L	320.005	334	-0.001
Se	77		ug/L		4329	-0.027
Se	82	0.030	ug/L	1408.117	-3	0.000
Kr	83		ug/L		70	0.000
Sr	88	1.118	ug/L	3.344	5175	0.091
Y	89		ug/L		139	0.002
Zr	90	0.657	ug/L	48.420	1713	0.029
Mo	98	2039.214	ug/L	1.415	2143415	38.316
Ag	107	0.053	ug/L	23.108	134	0.002
Cd	111	0.458	ug/L	38.014	181	0.003
Cd	114		ug/L		2055	0.036
> In	115		ug/L		55940	55940.331
Sn	120	0.186	ug/L	4.128	428	0.006
Sb	121	0.385	ug/L	17.082	686	0.009
Sb	123		ug/L		581	0.007
Ba	135		ug/L		280	0.006
Ba	137	0.643	ug/L	6.346	468	0.010
Ho	165		ug/L		191	0.004
> Lu	175		ug/L		46888	46888.291
Tl	205	0.029	ug/L	49.804	51	0.000
Pb	208	0.165	ug/L	1.010	793	0.013
Bi	209		ug/L		117	0.002
Th	232	0.144	ug/L	40.555	782	0.014
U	238	-0.006	ug/L	11.384	28	-0.001

Sample ID: QC Std 4

Report Date/Time: Wednesday, January 06, 2010 17:23:13

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7				
	Be	9				
	B	11				
	Na	23		96.291		
	Mg	24		99.819		
	Al	27		94.885		
	P	31		96.730		
	K	39		99.767		
	Ca	43		97.120		
>	Sc	45		103.6		
	Ti	47		74.344		
	V	51				
	Cr	52		78.335		
	Cr	53				
	Mn	55		96.714		
	Fe	57		96.044		
	Co	59		95.339		
	Ni	60		107.929		
	Cu	63				
	Cu	65		81.335		
	Zn	66		98.608		
	Zn	67				
	Zn	68				
>	Ge	74		99.4		
	As	75				
	Se	77				
	Se	82				
	Kr	83				
	Sr	88		93.180		
	Y	89				
	Zr	90				
	Mo	98		101.961		
	Ag	107				
	Cd	111		114.533		
	Cd	114				
>	In	115		98.8		
	Sn	120				
	Sb	121		385.161		
	Sb	123				
	Ba	135				
	Ba	137		95.923		
	Ho	165				
>	Lu	175		104.9		
	Tl	205				
	Pb	208		82.408		
	Bi	209				
	Th	232				
	U	238				

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message  
 QC Std 4 Ti 47ICSA is out of limits

## QC Action

QC Action Line: Continue

## ICPMS#4 - Summary Report

Sample ID: QC Std 5

Sample Date/Time: Wednesday, January 06, 2010 17:26:37

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 5.046

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	19.221	ug/L	5.590	3724	0.015
Be	9	20.452	ug/L	5.163	1091	0.004
B	11	21.271	ug/L	4.661	1025	0.004
Na	23	97916.465	ug/L	3.661	117428458	479.584
Mg	24	103486.244	ug/L	2.997	80944434	330.656
Al	27	96286.730	ug/L	0.831	115051790	469.758
P	31	99969.959	ug/L	2.921	6083725	24.841
K	39	107275.793	ug/L	6.330	206852321	843.898
Ca	43	99386.622	ug/L	2.664	411167	1.677
Sc	45		ug/L		244962	244961.927
Ti	47	1518.585	ug/L	1.815	290494	1.186
V	51	18.537	ug/L	5.217	39024	0.141
Cr	52	22.965	ug/L	2.910	45665	0.173
Cr	53		ug/L		126578	-0.196
Mn	55	26.147	ug/L	3.053	78606	0.318
Fe	57	101289.936	ug/L	2.792	6026266	24.597
Co	59	19.684	ug/L	3.367	43888	0.179
Ni	60	22.614	ug/L	4.453	10480	0.043
Cu	63		ug/L		21832	0.089
Cu	65	20.847	ug/L	2.120	10553	0.043
Zn	66	22.609	ug/L	2.688	5990	0.064
Zn	67		ug/L		6439	-0.006
Zn	68		ug/L		4230	0.039
Ge	74		ug/L		92965	92964.549
As	75	20.191	ug/L	5.241	6448	0.065
Se	77		ug/L		4682	-0.022
Se	82	20.850	ug/L	3.898	604	0.007
Kr	83		ug/L		74	0.000
Sr	88	21.828	ug/L	1.293	98775	1.783
Y	89		ug/L		143	0.002
Zr	90	21.302	ug/L	3.647	51629	0.931
Mo	98	2093.230	ug/L	3.319	2176429	39.331
Ag	107	19.391	ug/L	1.694	31174	0.562
Cd	111	20.150	ug/L	3.233	7562	0.137
Cd	114		ug/L		19299	0.348
In	115		ug/L		55367	55366.698
Sn	120	20.387	ug/L	2.094	34862	0.628
Sb	121	22.153	ug/L	2.648	28922	0.519
Sb	123		ug/L		22181	0.398
Ba	135		ug/L		7961	0.170
Ba	137	19.540	ug/L	3.271	13683	0.292
Ho	165		ug/L		191	0.004
Lu	175		ug/L		46807	46807.052
Tl	205	18.156	ug/L	1.258	12528	0.267
Pb	208	18.800	ug/L	1.952	68514	1.460
Bi	209		ug/L		180	0.003
Th	232	19.736	ug/L	3.546	92274	1.970
U	238	20.241	ug/L	4.356	96578	2.064

Sample ID: QC Std 5

Report Date/Time: Wednesday, January 06, 2010 17:29:24

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7	96.107			
	Be	9	102.261			
	B	11	106.354			
	Na	23	97.916			
	Mg	24	103.486			
	Al	27	96.287			
	P	31	99.970			
	K	39	107.276			
	Ca	43	99.387			
>	Sc	45		102.0		
	Ti	47	75.929			
	V	51	92.686			
	Cr	52	96.898			
	Cr	53				
	Mn	55	101.345			
	Fe	57	101.290			
	Co	59	97.207			
	Ni	60	99.623			
	Cu	63				
	Cu	65	91.034			
	Zn	66	95.802			
	Zn	67				
	Zn	68				
>	Ge	74		97.5		
	As	75	100.957			
	Se	77				
	Se	82	104.252			
	Kr	83				
	Sr	88	102.964			
	Y	89				
	Zr	90	106.512			
	Mo	98	104.661			
	Ag	107	96.955			
	Cd	111	98.776			
	Cd	114				
>	In	115		97.7		
	Sn	120	101.934			
	Sb	121	110.212			
	Sb	123				
	Ba	135				
	Ba	137	94.533			
	Ho	165				
>	Lu	175		104.7		
	Tl	205	90.779			
	Pb	208	93.069			
	Bi	209				
	Th	232	98.679			
	U	238	101.207			

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message  
 QC Std 5 Ti 47IC5AB is out of limits

## QC Action

QC Action Line: Continue

Sample ID: QC Std 5

Report Date/Time: Wednesday, January 06, 2010 17:29:24

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## ICPMS#4 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 06, 2010 17:32:49

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 6.047

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	50.403	ug/L	0.892	9905	0.040
Be	9	52.121	ug/L	1.285	2819	0.011
B	11	101.619	ug/L	0.859	4857	0.019
Na	23	4883.026	ug/L	4.479	5960824	23.917
Mg	24	5168.871	ug/L	3.782	4105480	16.515
Al	27	4741.368	ug/L	2.630	5750963	23.132
P	31	4985.650	ug/L	0.311	310455	1.239
K	39	5435.672	ug/L	6.106	11039104	42.760
Ca	43	5024.270	ug/L	0.292	21560	0.085
> Sc	45		ug/L		248523	248522.600
Ti	47	52.259	ug/L	1.662	10310	0.041
V	51	50.768	ug/L	3.240	100563	0.386
Cr	52	50.381	ug/L	0.916	97542	0.378
Cr	53		ug/L		143094	-0.138
Mn	55	52.310	ug/L	0.419	158767	0.635
Fe	57	5081.149	ug/L	0.425	311638	1.234
Co	59	50.661	ug/L	0.627	114432	0.460
Ni	60	52.263	ug/L	0.576	24551	0.099
Cu	63		ug/L		55314	0.222
Cu	65	51.012	ug/L	0.382	26128	0.105
Zn	66	50.631	ug/L	1.017	14294	0.143
Zn	67		ug/L		7830	0.004
Zn	68		ug/L		10715	0.101
> Ge	74		ug/L		99638	99638.263
As	75	46.830	ug/L	1.286	15469	0.151
Se	77		ug/L		5720	-0.015
Se	82	50.492	ug/L	1.726	1573	0.016
Kr	83		ug/L		49	-0.000
Sr	88	50.929	ug/L	1.416	240766	4.160
Y	89		ug/L		28	0.000
Zr	90	49.418	ug/L	0.959	125105	2.160
Mo	98	50.355	ug/L	1.148	54758	0.946
Ag	107	50.328	ug/L	2.153	84493	1.460
Cd	111	50.941	ug/L	2.118	19975	0.345
Cd	114		ug/L		46416	0.802
> In	115		ug/L		57866	57866.137
Sn	120	50.149	ug/L	0.836	89491	1.545
Sb	121	49.077	ug/L	5.304	66809	1.151
Sb	123		ug/L		50708	0.873
Ba	135		ug/L		20526	0.437
Ba	137	50.076	ug/L	1.614	35150	0.749
Ho	165		ug/L		13	0.000
> Lu	175		ug/L		46932	46931.768
Tl	205	48.344	ug/L	1.146	33393	0.711
Pb	208	50.295	ug/L	0.816	183475	3.905
Bi	209		ug/L		43	0.001
Th	232	50.370	ug/L	0.596	236100	5.028
U	238	51.772	ug/L	0.523	247759	5.278

Sample ID: QC Std 6

Report Date/Time: Wednesday, January 06, 2010 17:35:36

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7	100.805			
	Be	9	104.242			
	B	11	101.619			
	Na	23	97.661			
	Mg	24	103.377			
	Al	27	93.888			
	P	31	99.713			
	K	39	108.713			
	Ca	43	100.485			
>	Sc	45		103.5		
	Ti	47	104.518			
	V	51	101.535			
	Cr	52	100.761			
	Cr	53				
	Mn	55	104.619			
	Fe	57	101.623			
	Co	59	101.322			
	Ni	60	104.526			
	Cu	63				
	Cu	65	102.024			
	Zn	66	101.261			
	Zn	67				
	Zn	68				
>	Ge	74		104.5		
	As	75	93.659			
	Se	77				
	Se	82	100.984			
	Kr	83				
	Sr	88	101.858			
	Y	89				
	Zr	90	98.836			
	Mo	98	100.709			
	Ag	107	100.657			
	Cd	111	101.881			
	Cd	114				
>	In	115		102.2		
	Sn	120	100.298			
	Sb	121	98.154			
	Sb	123				
	Ba	135				
	Ba	137	100.152			
	Ho	165				
>	Lu	175		105.0		
	Tl	205	96.688			
	Pb	208	100.590			
	Bi	209				
	Th	232	100.739			
	U	238	103.543			

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 6

Report Date/Time: Wednesday, January 06, 2010 17:35:36

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## ICPMS#4 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 06, 2010 17:39:02

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 7.048

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.109	ug/L	22.774	30	0.000
Be	9	0.024	ug/L	42.525	4	0.000
B	11	3.522	ug/L	12.539	193	0.001
Na	23	5.690	ug/L	48.910	22685	0.028
Mg	24	1.691	ug/L	200.501	2000	0.005
Al	27	2.500	ug/L	96.616	4668	0.012
P	31	-3.488	ug/L	24.558	2308	-0.001
K	39	-8.746	ug/L	87.994	386496	-0.069
Ca	43	13.244	ug/L	10.196	530	0.000
> Sc	45		ug/L		243616	243616.187
Ti	47	0.468	ug/L	4.823	255	0.000
V	51	2.573	ug/L	59.239	9229	0.020
Cr	52	-1.129	ug/L	3.787	1353	-0.008
Cr	53		ug/L		147430	-0.108
Mn	55	-0.042	ug/L	13.118	751	-0.001
Fe	57	-2.461	ug/L	125.279	4744	-0.001
Co	59	0.002	ug/L	302.417	162	0.000
Ni	60	0.028	ug/L	1.304	49	0.000
Cu	63		ug/L		84	0.000
Cu	65	0.024	ug/L	22.453	65	0.000
Zn	66	0.061	ug/L	66.863	83	0.000
Zn	67		ug/L		6041	-0.013
Zn	68		ug/L		514	-0.001
> Ge	74		ug/L		96804	96803.862
As	75	-0.722	ug/L	94.140	180	-0.002
Se	77		ug/L		5574	-0.015
Se	82	0.057	ug/L	590.469	-2	0.000
Kr	83		ug/L		47	-0.000
Sr	88	0.006	ug/L	54.819	95	0.000
Y	89		ug/L		10	-0.000
Zr	90	0.221	ug/L	19.313	660	0.010
Mo	98	0.141	ug/L	26.149	167	0.003
Ag	107	0.015	ug/L	34.487	75	0.000
Cd	111	-0.003	ug/L	385.138	6	-0.000
Cd	114		ug/L		25	0.000
> In	115		ug/L		57471	57471.434
Sn	120	0.237	ug/L	20.443	529	0.007
Sb	121	0.881	ug/L	18.175	1371	0.021
Sb	123		ug/L		1068	0.016
Ba	135		ug/L		16	0.000
Ba	137	0.011	ug/L	46.219	24	0.000
Ho	165		ug/L		12	0.000
> Lu	175		ug/L		45258	45257.699
Tl	205	0.112	ug/L	25.059	104	0.002
Pb	208	0.008	ug/L	47.565	215	0.001
Bi	209		ug/L		22	0.000
Th	232	0.115	ug/L	29.461	623	0.011
U	238	0.011	ug/L	36.722	105	0.001

Sample ID: QC Std 7

Report Date/Time: Wednesday, January 06, 2010 17:41:50

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# 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

### QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		101.5			
Ti	47					
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		101.5			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115		101.5			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		101.2			
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 7

Report Date/Time: Wednesday, January 06, 2010 17:41:50

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## ICPMS#4 - Summary Report

Sample ID: QC Std 10

Sample Date/Time: Wednesday, January 06, 2010 17:45:14

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 10.049

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	944.773	ug/L	2.286	183207	0.746
Be	9	999.188	ug/L	0.608	53318	0.217
B	11	1.847	ug/L	23.096	116	0.000
Na	23	48925.605	ug/L	5.784	58864010	239.632
Mg	24	49751.122	ug/L	3.251	39038162	158.963
Al	27	47206.730	ug/L	6.223	56571468	230.309
P	31	23593.570	ug/L	1.227	1441879	5.863
K	39	53647.028	ug/L	11.722	103972425	422.021
Ca	43	48949.098	ug/L	0.702	203314	0.826
Sc	45		ug/L		245504	245503.575
Ti	47	31.114	ug/L	1.747	6131	0.024
V	51	950.017	ug/L	0.927	1778885	7.227
Cr	52	944.235	ug/L	1.585	1744604	7.093
Cr	53		ug/L		335815	0.655
Mn	55	990.233	ug/L	2.557	2953072	12.025
Fe	57	50036.105	ug/L	1.871	2988141	12.151
Co	59	960.558	ug/L	1.957	2140395	8.718
Ni	60	963.024	ug/L	1.904	446254	1.818
Cu	63		ug/L		977618	3.982
Cu	65	937.603	ug/L	0.731	473506	1.928
Zn	66	2372.797	ug/L	2.460	641944	6.691
Zn	67		ug/L		104619	1.016
Zn	68		ug/L		450439	4.689
Ge	74		ug/L		95950	95950.175
As	75	943.610	ug/L	1.224	292470	3.044
Se	77		ug/L		14697	0.081
Se	82	472.150	ug/L	1.201	14195	0.148
Kr	83		ug/L		55	0.000
Sr	88	992.870	ug/L	0.950	4499592	81.104
Y	89		ug/L		154	0.003
Zr	90	496.758	ug/L	0.153	1204834	21.715
Mo	98	992.918	ug/L	1.050	1034932	18.657
Ag	107	239.682	ug/L	1.460	385606	6.951
Cd	111	990.190	ug/L	2.093	372116	6.709
Cd	114		ug/L		861300	15.527
In	115		ug/L		55479	55479.365
Sn	120	1007.489	ug/L	1.891	1721249	31.030
Sb	121	255.005	ug/L	2.011	331942	5.979
Sb	123		ug/L		254520	4.584
Ba	135		ug/L		387388	8.249
Ba	137	940.064	ug/L	1.886	659926	14.053
Ho	165		ug/L		62	0.001
Lu	175		ug/L		46970	46969.914
Tl	205	468.557	ug/L	2.401	323588	6.890
Pb	208	4798.518	ug/L	2.602	17496918	372.581
Bi	209		ug/L		397	0.008
Th	232	2419.731	ug/L	2.268	11343960	241.559
U	238	4965.430	ug/L	1.775	23774504	506.219

Sample ID: QC Std 10

Report Date/Time: Wednesday, January 06, 2010 17:48:00

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7	94.477			
	Be	9	99.919			
	B	11				
	Na	23	97.851			
	Mg	24	99.502			
	Al	27	94.413			
	P	31	94.374			
	K	39	107.294			
	Ca	43	97.898			
>	Sc	45		102.3		
	Ti	47				
	V	51	95.002			
	Cr	52	94.423			
	Cr	53				
	Mn	55	99.023			
	Fe	57	100.072			
	Co	59	96.056			
	Ni	60	96.302			
	Cu	63				
	Cu	65	93.760			
	Zn	66	94.912			
	Zn	67				
	Zn	68				
>	Ge	74		100.6		
	As	75	94.361			
	Se	77				
	Se	82	94.430			
	Kr	83				
	Sr	88	99.287			
	Y	89				
	Zr	90	99.352			
	Mo	98	99.292			
	Ag	107	95.873			
	Cd	111	99.019			
	Cd	114				
>	In	115		97.9		
	Sn	120	100.749			
	Sb	121	102.002			
	Sb	123				
	Ba	135				
	Ba	137	94.006			
	Ho	165				
>	Lu	175		105.0		
	Tl	205	93.711			
	Pb	208	95.970			
	Bi	209				
	Th	232	96.789			
	U	238	99.309			

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 10

Report Date/Time: Wednesday, January 06, 2010 17:48:00

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## ICPMS#4 - Summary Report

Sample ID: QC Std 11

Sample Date/Time: Wednesday, January 06, 2010 17:51:23

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 11.050

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	49.156	ug/L	1.968	9851	0.039
Be	9	51.548	ug/L	2.935	2842	0.011
B	11	98.996	ug/L	0.379	4827	0.019
Na	23	5228.494	ug/L	0.798	6508461	25.609
Mg	24	5623.160	ug/L	2.759	4553622	17.967
Al	27	5182.485	ug/L	3.633	6409842	25.284
P	31	4982.684	ug/L	0.492	316481	1.238
K	39	5364.940	ug/L	2.513	11118767	42.204
Ca	43	4993.365	ug/L	0.747	21859	0.084
Sc	45		ug/L		253484	253484.426
Ti	47	50.503	ug/L	1.027	10170	0.039
V	51	50.454	ug/L	2.765	101964	0.384
Cr	52	50.789	ug/L	1.468	100251	0.382
Cr	53		ug/L		144490	-0.143
Mn	55	52.720	ug/L	2.406	163162	0.640
Fe	57	5060.450	ug/L	2.168	316516	1.229
Co	59	51.076	ug/L	0.187	117672	0.464
Ni	60	53.132	ug/L	0.613	25458	0.100
Cu	63		ug/L		57058	0.225
Cu	65	52.514	ug/L	0.218	27434	0.108
Zn	66	52.300	ug/L	1.299	14848	0.147
Zn	67		ug/L		8112	0.006
Zn	68		ug/L		11273	0.106
Ge	74		ug/L		100222	100221.736
As	75	49.601	ug/L	3.107	16459	0.160
Se	77		ug/L		5399	-0.018
Se	82	51.414	ug/L	4.209	1611	0.016
Kr	83		ug/L		54	0.000
Sr	88	51.342	ug/L	0.346	249653	4.194
Y	89		ug/L		25	0.000
Zr	90	54.044	ug/L	2.334	140709	2.362
Mo	98	50.246	ug/L	0.500	56200	0.944
Ag	107	50.048	ug/L	1.534	86424	1.451
Cd	111	51.348	ug/L	2.081	20712	0.348
Cd	114		ug/L		48137	0.809
In	115		ug/L		59511	59510.836
Sn	120	53.404	ug/L	0.799	97998	1.645
Sb	121	52.772	ug/L	4.170	73816	1.237
Sb	123		ug/L		56148	0.940
Ba	135		ug/L		21102	0.441
Ba	137	50.593	ug/L	1.688	36195	0.756
Ho	165		ug/L		14	0.000
Lu	175		ug/L		47843	47842.805
Tl	205	49.546	ug/L	0.924	34884	0.729
Pb	208	51.793	ug/L	1.493	192562	4.021
Bi	209		ug/L		46	0.001
Th	232	52.049	ug/L	0.674	248687	5.196
U	238	53.776	ug/L	1.039	262324	5.482

Sample ID: QC Std 11

Report Date/Time: Wednesday, January 06, 2010 17:54:09

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
	Li	7	98.313				
	Be	9	103.095				
	B	11	98.996				
	Na	23	104.570				
	Mg	24	112.463				
	Al	27	102.623				
	P	31	99.654				
	K	39	107.299				
	Ca	43	99.867				
>	Sc	45		105.6			
	Ti	47	101.006				
	V	51	100.909				
	Cr	52	101.578				
	Cr	53					
	Mn	55	105.440				
	Fe	57	101.209				
	Co	59	102.152				
	Ni	60	106.265				
	Cu	63					
	Cu	65	105.028				
	Zn	66	104.601				
	Zn	67					
	Zn	68					
>	Ge	74		105.1			
	As	75	99.201				
	Se	77					
	Se	82	102.827				
	Kr	83					
	Sr	88	102.684				
	Y	89					
	Zr	90	108.088				
	Mo	98	100.492				
	Ag	107	100.095				
	Cd	111	102.697				
	Cd	114					
>	In	115		105.1			
	Sn	120	106.807				
	Sb	121	105.544				
	Sb	123					
	Ba	135					
	Ba	137	101.186				
	Ho	165					
>	Lu	175		107.0			
	Tl	205	99.093				
	Pb	208	103.586				
	Bi	209					
	Th	232	104.097				
	U	238	107.553				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message  
 QC Std 11 Mg 24CCV is out of limits (+/- 10%)

### QC Action

QC Action Line: Continue

# ICPMS#4 - Summary Report

Sample ID: QC Std 12

Sample Date/Time: Wednesday, January 06, 2010 17:57:35

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 12.051

## Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.196	ug/L	24.374	48	0.000
Be	9	0.029	ug/L	137.630	5	0.000
B	11	3.663	ug/L	15.667	205	0.001
Na	23	2.769	ug/L	138.124	19681	0.014
Mg	24	4.159	ug/L	31.781	4001	0.013
Al	27	2.674	ug/L	60.175	5001	0.013
P	31	-4.080	ug/L	15.011	2328	-0.001
K	39	3.750	ug/L	137.235	420432	0.029
Ca	43	-5.675	ug/L	66.806	463	-0.000
Sc	45		ug/L		249547	249547.444
Ti	47	0.082	ug/L	73.581	186	0.000
V	51	0.064	ug/L	2636.304	4681	0.000
Cr	52	-1.119	ug/L	9.039	1405	-0.008
Cr	53		ug/L		150467	-0.110
Mn	55	-0.019	ug/L	36.548	837	-0.000
Fe	57	-10.729	ug/L	11.833	4359	-0.003
Co	59	0.011	ug/L	85.827	186	0.000
Ni	60	0.032	ug/L	31.296	52	0.000
Cu	63		ug/L		144	0.000
Cu	65	0.038	ug/L	19.604	74	0.000
Zn	66	0.173	ug/L	45.821	114	0.000
Zn	67		ug/L		6220	-0.011
Zn	68		ug/L		581	-0.001
Ge	74		ug/L		97473	97472.733
As	75	0.819	ug/L	39.022	665	0.003
Se	77		ug/L		5183	-0.019
Se	82	-0.163	ug/L	135.162	-9	-0.000
Kr	83		ug/L		54	0.000
Sr	88	0.018	ug/L	25.196	154	0.001
Y	89		ug/L		9	-0.000
Zr	90	0.468	ug/L	5.499	1294	0.020
Mo	98	0.199	ug/L	11.346	232	0.004
Ag	107	0.035	ug/L	16.775	109	0.001
Cd	111	0.063	ug/L	36.251	32	0.000
Cd	114		ug/L		46	0.000
In	115		ug/L		57996	57996.265
Sn	120	1.393	ug/L	7.312	2600	0.043
Sb	121	2.470	ug/L	9.541	3548	0.058
Sb	123		ug/L		2814	0.045
Ba	135		ug/L		21	0.000
Ba	137	0.019	ug/L	18.099	30	0.000
Ho	165		ug/L		10	0.000
Lu	175		ug/L		46692	46692.047
Tl	205	0.234	ug/L	4.818	191	0.003
Pb	208	0.244	ug/L	5.116	1079	0.019
Bi	209		ug/L		18	-0.000
Th	232	0.398	ug/L	13.237	1967	0.040
U	238	0.110	ug/L	4.797	579	0.011

Sample ID: QC Std 12

Report Date/Time: Wednesday, January 06, 2010 18:00:23

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45			103.9		
Ti	47					
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			102.2		
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115			102.4		
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175			104.4		
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 12

Report Date/Time: Wednesday, January 06, 2010 18:00:23

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## ICPMS#4 - Summary Report

Sample ID: 1202001488

Sample Date/Time: Wednesday, January 06, 2010 18:03:48

Sample Type:

Sample Description: LANL 6020 MB

Number of Replicates: 3

Batch ID: 935378|2|skj

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\1202001488.052

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.108	ug/L	11.533	31	0.000
Be	9	-0.015	ug/L	68.566	2	-0.000
B	11	2.019	ug/L	16.980	128	0.000
Na	23	11.475	ug/L	11.230	30700	0.056
Mg	24	1.188	ug/L	58.252	1667	0.004
Al	27	3.728	ug/L	67.869	6335	0.018
P	31	16.524	ug/L	6.622	3652	0.004
K	39	-3.970	ug/L	191.120	410482	-0.031
Ca	43	-1.571	ug/L	235.070	487	-0.000
> Sc	45		ug/L		252807	252807.077
Ti	47	0.147	ug/L	38.680	202	0.000
V	51	0.588	ug/L	301.823	5745	0.004
Cr	52	-0.507	ug/L	14.175	2584	-0.004
Cr	53		ug/L		116944	-0.251
Mn	55	0.115	ug/L	13.835	1260	0.001
Fe	57	-0.544	ug/L	558.866	5040	-0.000
Co	59	-0.005	ug/L	175.543	152	-0.000
Ni	60	0.052	ug/L	47.516	62	0.000
Cu	63		ug/L		208	0.000
Cu	65	0.108	ug/L	15.909	111	0.000
Zn	66	1.254	ug/L	8.932	414	0.004
Zn	67		ug/L		5111	-0.023
Zn	68		ug/L		675	0.000
> Ge	74		ug/L		98131	98130.567
As	75	-0.160	ug/L	406.704	357	-0.001
Se	77		ug/L		3799	-0.034
Se	82	0.317	ug/L	38.689	6	0.000
Kr	83		ug/L		50	-0.000
Sr	88	0.026	ug/L	6.926	193	0.002
Y	89		ug/L		22	0.000
Zr	90	0.614	ug/L	16.969	1692	0.027
Mo	98	0.088	ug/L	11.278	112	0.002
Ag	107	0.008	ug/L	72.668	64	0.000
Cd	111	0.025	ug/L	63.469	17	0.000
Cd	114		ug/L		27	0.000
> In	115		ug/L		59054	59053.986
Sn	120	0.599	ug/L	6.182	1204	0.018
Sb	121	1.133	ug/L	17.104	1757	0.027
Sb	123		ug/L		1402	0.021
Ba	135		ug/L		27	0.000
Ba	137	0.040	ug/L	14.516	45	0.001
Ho	165		ug/L		7	0.000
> Lu	175		ug/L		46860	46859.879
Tl	205	0.094	ug/L	2.206	96	0.001
Pb	208	0.196	ug/L	8.050	905	0.015
Bi	209		ug/L		26	0.000
Th	232	0.261	ug/L	15.090	1325	0.026
U	238	0.043	ug/L	34.401	259	0.004

Sample ID: 1202001488

Report Date/Time: Wednesday, January 06, 2010 18:06:34

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7				
	Be	9				
	B	11				
	Na	23				
	Mg	24				
	Al	27				
	P	31				
	K	39				
	Ca	43				
	Sc	45	105.3			
	Ti	47				
	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	102.9			
	As	75				
	Se	77				
	Se	82				
	Kr	83				
	Sr	88				
	Y	89				
	Zr	90				
	Mo	98				
	Ag	107				
	Cd	111				
	Cd	114				
	In	115	104.3			
	Sn	120				
	Sb	121				
	Sb	123				
	Ba	135				
	Ba	137				
	Ho	165				
	Lu	175	104.8			
	Tl	205				
	Pb	208				
	Bi	209				
	Th	232				
	U	238				

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: 1202001488

Report Date/Time: Wednesday, January 06, 2010 18:06:34

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## ICPMS#4 - Summary Report

Sample ID: 1202001489

Sample Date/Time: Wednesday, January 06, 2010 18:09:59

Sample Type:

Sample Description: LANL 6020 LCS

Number of Replicates: 3

Batch ID: 935378|40|skj

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\1202001489.053

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	2.746	ug/L	10.063	566	0.002
Be	9	21.166	ug/L	2.407	1182	0.005
B	11	39.792	ug/L	1.837	1980	0.008
Na	23	261.873	ug/L	3.612	345464	1.283
Mg	24	1182.466	ug/L	7.124	968868	3.778
Al	27	3227.139	ug/L	2.548	4037333	15.744
P	31	199.343	ug/L	1.168	15346	0.050
K	39	1272.662	ug/L	2.194	2990231	10.012
Ca	43	2733.863	ug/L	0.982	12327	0.046
> Sc	45		ug/L		256297	256296.580
Ti	47	129.121	ug/L	0.643	26014	0.101
V	51	24.247	ug/L	5.676	51991	0.184
Cr	52	63.582	ug/L	0.954	126007	0.478
Cr	53		ug/L		157059	-0.101
Mn	55	151.303	ug/L	1.161	471848	1.837
Fe	57	4706.903	ug/L	1.288	298101	1.143
Co	59	25.624	ug/L	1.016	59772	0.233
Ni	60	38.066	ug/L	1.653	18451	0.072
Cu	63		ug/L		52604	0.205
Cu	65	47.857	ug/L	0.901	25283	0.098
Zn	66	159.483	ug/L	1.479	44787	0.450
Zn	67		ug/L		12746	0.053
Zn	68		ug/L		32488	0.320
> Ge	74		ug/L		99443	99442.916
As	75	28.186	ug/L	1.938	9458	0.091
Se	77		ug/L		6890	-0.003
Se	82	78.006	ug/L	1.778	2427	0.024
Kr	83		ug/L		56	0.000
Sr	88	61.909	ug/L	1.097	299136	5.057
Y	89		ug/L		15211	0.257
Zr	90	2.697	ug/L	1.356	7082	0.118
Mo	98	13.602	ug/L	1.669	15130	0.256
Ag	107	6.359	ug/L	1.139	10958	0.184
Cd	111	16.221	ug/L	1.864	6507	0.110
Cd	114		ug/L		15468	0.261
> In	115		ug/L		59140	59140.056
Sn	120	9.546	ug/L	2.765	17502	0.294
Sb	121	14.140	ug/L	1.903	19796	0.332
Sb	123		ug/L		15250	0.255
Ba	135		ug/L		21545	0.464
Ba	137	52.738	ug/L	1.410	36628	0.788
Ho	165		ug/L		497	0.011
> Lu	175		ug/L		46438	46438.153
Tl	205	33.060	ug/L	0.500	22605	0.486
Pb	208	23.612	ug/L	0.436	85328	1.833
Bi	209		ug/L		685	0.014
Th	232	2.578	ug/L	2.257	12057	0.257
U	238	0.519	ug/L	0.781	2509	0.053

Sample ID: 1202001489

Report Date/Time: Wednesday, January 06, 2010 18:12:45

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45			106.7		
Ti	47					
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			104.3		
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115			104.4		
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175			103.9		
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type Analyte  
Ti 47 Upper, S, EETi

MassOut of Limits Message  
47Sample is out of limits (over linear range)

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: 1202001489

Report Date/Time: Wednesday, January 06, 2010 18:12:45

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# ICPMS#4 - Summary Report

Sample ID: 1202001490

Sample Date/Time: Wednesday, January 06, 2010 18:22:22

Sample Type:

Sample Description: LANL 6020 DUP

Number of Replicates: 3

Batch ID: 935378|2|skj

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\1202001490.055

## Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	66.399	ug/L	3.756	14735	0.052
Be	9	4.844	ug/L	4.741	299	0.001
B	11	22.208	ug/L	2.387	1226	0.004
Na	23	1238.724	ug/L	4.832	1721180	6.067
Mg	24	13091.643	ug/L	3.675	11746304	41.830
Al	27	81787.156	ug/L	3.988	112101744	399.018
P	31	293.675	ug/L	1.737	23396	0.073
K	39	12413.467	ug/L	9.014	27859511	97.652
Ca	43	9625.370	ug/L	0.821	46173	0.162
Sc	45		ug/L		280825	280825.328
Ti	47	1339.125	ug/L	1.044	293822	1.046
V	51	99.939	ug/L	2.000	218707	0.760
Cr	52	48.746	ug/L	1.345	106760	0.366
Cr	53		ug/L		112503	-0.313
Mn	55	1004.594	ug/L	0.239	3426957	12.200
Fe	57	57986.744	ug/L	0.666	3959804	14.081
Co	59	23.649	ug/L	0.326	60459	0.215
Ni	60	38.391	ug/L	0.707	20390	0.072
Cu	63		ug/L		39298	0.140
Cu	65	33.376	ug/L	1.258	19336	0.069
Zn	66	130.216	ug/L	1.453	34132	0.367
Zn	67		ug/L		10768	0.041
Zn	68		ug/L		26851	0.283
Ge	74		ug/L		92793	92792.695
As	75	10.701	ug/L	1.864	3590	0.035
Se	77		ug/L		3039	-0.040
Se	82	0.609	ug/L	82.318	14	0.000
Kr	83		ug/L		83	0.000
Sr	88	155.141	ug/L	0.807	722151	12.673
Y	89		ug/L		259225	4.549
Zr	90	108.709	ug/L	1.205	270874	4.752
Mo	98	1.746	ug/L	0.390	1883	0.033
Ag	107	0.515	ug/L	4.755	901	0.015
Cd	111	1.620	ug/L	5.517	633	0.011
Cd	114		ug/L		212	0.003
In	115		ug/L		56980	56979.832
Sn	120	0.872	ug/L	3.092	1640	0.027
Sb	121	0.495	ug/L	7.620	845	0.012
Sb	123		ug/L		724	0.010
Ba	135		ug/L		259027	5.180
Ba	137	589.936	ug/L	2.596	441076	8.819
Ho	165		ug/L		8748	0.175
Lu	175		ug/L		50022	50021.597
Tl	205	0.932	ug/L	1.316	718	0.014
Pb	208	44.823	ug/L	0.944	174287	3.480
Bi	209		ug/L		2118	0.042
Th	232	33.378	ug/L	1.009	166779	3.332
U	238	2.981	ug/L	1.140	15261	0.304

Sample ID: 1202001490

Report Date/Time: Wednesday, January 06, 2010 18:25:09

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45			117.0		
Ti	47					
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			97.3		
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115			100.6		
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175			111.9		
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type	Analyte	MassOut of Limits Message
Al 27 Upper, S, EEEAl		27Sample is out of limits (over linear range)
Ti 47 Upper, S, EETi		47Sample is out of limits (over linear range)
Mn 55 Upper, S, EEIMn		55Sample is out of limits (over linear range)
Fe 57 Upper, S, EEFe		57Sample is out of limits (over linear range)

## QC Action

QC Action Line: Continue

## ICPMS#4 - Summary Report

Sample ID: 1202001491

Sample Date/Time: Wednesday, January 06, 2010 18:28:35

Sample Type:

Sample Description: LANL 6020 MS

Number of Replicates: 3

Batch ID: 935378|2|skj

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\1202001491.056

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	100.877	ug/L	1.687	23746	0.080
Be	9	27.510	ug/L	2.299	1784	0.006
B	11	68.800	ug/L	2.828	3953	0.013
Na	23	2503.572	ug/L	1.895	3671980	12.262
Mg	24	16674.764	ug/L	4.151	15874191	53.279
Al	27	104519.551	ug/L	4.918	151840597	509.924
P	31	1140.620	ug/L	0.669	87500	0.283
K	39	16652.300	ug/L	2.574	39513163	130.997
Ca	43	11304.628	ug/L	0.555	57411	0.191
Sc	45		ug/L		297861	297861.024
Ti	47	1771.861	ug/L	0.590	412279	1.383
V	51	143.686	ug/L	1.445	331073	1.093
Cr	52	80.501	ug/L	0.466	184298	0.605
Cr	53		ug/L		121754	-0.305
Mn	55	1138.735	ug/L	0.534	4120106	13.829
Fe	57	67071.845	ug/L	1.202	4857492	16.288
Co	59	43.507	ug/L	1.260	117811	0.395
Ni	60	63.746	ug/L	1.372	35882	0.120
Cu	63		ug/L		70782	0.237
Cu	65	55.299	ug/L	0.972	33944	0.114
Zn	66	181.383	ug/L	1.392	48396	0.511
Zn	67		ug/L		13169	0.064
Zn	68		ug/L		37635	0.392
Ge	74		ug/L		94488	94487.745
As	75	51.273	ug/L	2.393	16022	0.165
Se	77		ug/L		3151	-0.039
Se	82	8.059	ug/L	10.929	235	0.003
Kr	83		ug/L		90	0.000
Sr	88	212.913	ug/L	1.733	988645	17.392
Y	89		ug/L		291370	5.126
Zr	90	170.955	ug/L	0.920	424885	7.473
Mo	98	24.542	ug/L	1.804	26226	0.461
Ag	107	24.704	ug/L	0.723	40772	0.716
Cd	111	7.483	ug/L	1.901	2889	0.051
Cd	114		ug/L		4889	0.086
In	115		ug/L		56841	56840.694
Sn	120	8.098	ug/L	0.849	14286	0.249
Sb	121	22.164	ug/L	1.264	29720	0.520
Sb	123		ug/L		22659	0.396
Ba	135		ug/L		328231	6.441
Ba	137	731.273	ug/L	1.492	557085	10.932
Ho	165		ug/L		10011	0.196
Lu	175		ug/L		50959	50958.914
Tl	205	48.085	ug/L	1.431	36060	0.707
Pb	208	71.326	ug/L	1.535	282390	5.538
Bi	209		ug/L		2438	0.047
Th	232	62.554	ug/L	1.675	318308	6.245
U	238	29.221	ug/L	2.484	151840	2.979

Sample ID: 1202001491

Report Date/Time: Wednesday, January 06, 2010 18:31:22

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45			124.1		
Ti	47					
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			99.1		
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115			100.3		
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175			114.0		
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEEAI		27	Sample is out of limits (over linear range)
Sc 45 Int Std for sanSc		45	
Ti 47 Upper, S, EEETi		47	Sample is out of limits (over linear range)
V 51 Upper, S, EEE V		51	Sample is out of limits (over linear range)
Mn 55 Upper, S, EEIMn		55	Sample is out of limits (over linear range)

## QC Action

QC Action Line: Continue

## ICPMS#4 - Summary Report

Sample ID: 1202001493

Sample Date/Time: Wednesday, January 06, 2010 18:34:48

Sample Type:

Sample Description: LANL 6020 MSD

Number of Replicates: 3

Batch ID: 935378|2|skj

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\1202001493.057

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	95.332	ug/L	3.712	23056	0.075
Be	9	26.640	ug/L	2.477	1776	0.006
B	11	67.091	ug/L	2.721	3962	0.013
Na	23	2389.982	ug/L	3.323	3604110	11.706
Mg	24	17878.366	ug/L	1.478	17489993	57.124
Al	27	105048.775	ug/L	2.325	156873029	512.506
P	31	1065.773	ug/L	1.113	84225	0.265
K	39	16579.991	ug/L	2.278	40423605	130.428
Ca	43	11457.075	ug/L	1.458	59779	0.193
Sc	45		ug/L		306108	306108.130
Ti	47	1413.492	ug/L	0.663	338027	1.104
V	51	141.601	ug/L	0.726	335372	1.077
Cr	52	83.133	ug/L	1.996	195417	0.624
Cr	53		ug/L		122166	-0.314
Mn	55	941.565	ug/L	0.204	3501289	11.434
Fe	57	70171.850	ug/L	0.760	5222051	17.040
Co	59	40.540	ug/L	1.258	112818	0.368
Ni	60	65.092	ug/L	1.830	37647	0.123
Cu	63		ug/L		69315	0.226
Cu	65	52.916	ug/L	1.292	33378	0.109
Zn	66	188.257	ug/L	0.838	50955	0.531
Zn	67		ug/L		13386	0.065
Zn	68		ug/L		39459	0.405
Ge	74		ug/L		95856	95855.826
As	75	50.811	ug/L	0.667	16113	0.164
Se	77		ug/L		3111	-0.040
Se	82	8.340	ug/L	12.952	247	0.003
Kr	83		ug/L		87	0.000
Sr	88	212.988	ug/L	1.614	998462	17.398
Y	89		ug/L		252598	4.402
Zr	90	168.740	ug/L	0.606	423457	7.376
Mo	98	23.073	ug/L	0.857	24901	0.434
Ag	107	24.277	ug/L	2.087	40450	0.704
Cd	111	7.043	ug/L	3.169	2748	0.048
Cd	114		ug/L		4844	0.084
In	115		ug/L		57399	57398.525
Sn	120	6.853	ug/L	1.251	12226	0.211
Sb	121	19.772	ug/L	1.506	26798	0.464
Sb	123		ug/L		20664	0.357
Ba	135		ug/L		293727	5.766
Ba	137	660.980	ug/L	1.405	503387	9.881
Ho	165		ug/L		8720	0.171
Lu	175		ug/L		50944	50944.185
Tl	205	47.261	ug/L	0.796	35438	0.695
Pb	208	66.679	ug/L	0.856	263959	5.177
Bi	209		ug/L		2343	0.046
Th	232	60.656	ug/L	0.474	308599	6.055
U	238	28.714	ug/L	0.191	149194	2.927

Sample ID: 1202001493

Report Date/Time: Wednesday, January 06, 2010 18:37:36

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# 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45			127.5		
Ti	47					
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			100.5		
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115			101.3		
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175			113.9		
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
AI 27 Upper, S, EEEAI		27	Sample is out of limits (over linear range)
Sc 45 Int Std for sanSc		45	
Ti 47 Upper, S, EEE Ti		47	Sample is out of limits (over linear range)
V 51 Upper, S, EEE V		51	Sample is out of limits (over linear range)
Fe 57 Upper, S, EEE Fe		57	Sample is out of limits (over linear range)

Sample ID: 1202001493

Report Date/Time: Wednesday, January 06, 2010 18:37:36

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## QC Action

QC Action Line: Continue

## ICPMS#4 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 06, 2010 18:41:01

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 6.058

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	47.207	ug/L	1.115	9555	0.037
Be	9	50.227	ug/L	3.169	2798	0.011
B	11	100.197	ug/L	3.040	4934	0.019
Na	23	4969.780	ug/L	3.197	6248684	24.341
Mg	24	5334.325	ug/L	2.602	4364407	17.044
Al	27	4743.605	ug/L	2.213	5924495	23.143
P	31	4864.020	ug/L	0.534	312028	1.209
K	39	5215.598	ug/L	3.763	10922453	41.029
Ca	43	4938.948	ug/L	1.008	21837	0.083
Sc	45		ug/L		255966	255965.939
Ti	47	50.045	ug/L	0.751	10177	0.039
V	51	51.367	ug/L	3.847	104708	0.391
Cr	52	50.423	ug/L	1.663	100551	0.379
Cr	53		ug/L		134143	-0.189
Mn	55	52.216	ug/L	0.798	163238	0.634
Fe	57	4992.031	ug/L	1.894	315490	1.212
Co	59	49.608	ug/L	0.821	115422	0.450
Ni	60	51.115	ug/L	1.560	24735	0.096
Cu	63		ug/L		56404	0.220
Cu	65	50.922	ug/L	1.972	26867	0.105
Zn	66	50.610	ug/L	0.981	14472	0.143
Zn	67		ug/L		7480	-0.001
Zn	68		ug/L		10678	0.099
Ge	74		ug/L		100930	100930.383
As	75	47.208	ug/L	2.533	15792	0.152
Se	77		ug/L		5061	-0.022
Se	82	51.161	ug/L	2.944	1615	0.016
Kr	83		ug/L		51	-0.000
Sr	88	50.698	ug/L	1.834	246631	4.141
Y	89		ug/L		120	0.002
Zr	90	49.842	ug/L	3.032	129799	2.179
Mo	98	49.397	ug/L	3.604	55261	0.928
Ag	107	49.214	ug/L	1.043	85040	1.427
Cd	111	50.189	ug/L	0.619	20259	0.340
Cd	114		ug/L		46987	0.789
In	115		ug/L		59550	59550.172
Sn	120	50.301	ug/L	2.385	92335	1.549
Sb	121	49.034	ug/L	4.535	68681	1.150
Sb	123		ug/L		52467	0.877
Ba	135		ug/L		20986	0.433
Ba	137	49.553	ug/L	1.438	35889	0.741
Ho	165		ug/L		17	0.000
Lu	175		ug/L		48428	48428.438
Tl	205	49.002	ug/L	0.556	34926	0.721
Pb	208	50.007	ug/L	1.213	188224	3.883
Bi	209		ug/L		47	0.001
Th	232	50.588	ug/L	1.072	244664	5.050
U	238	52.066	ug/L	0.706	257104	5.308

Sample ID: QC Std 6

Report Date/Time: Wednesday, January 06, 2010 18:43:48

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7	94.414				
Be	9	100.454				
B	11	100.197				
Na	23	99.396				
Mg	24	106.686				
Al	27	93.933				
P	31	97.280				
K	39	104.312				
Ca	43	98.779				
> Sc	45		106.6			
Ti	47	100.090				
V	51	102.733				
Cr	52	100.846				
Cr	53					
Mn	55	104.431				
Fe	57	99.841				
Co	59	99.215				
Ni	60	102.231				
Cu	63					
Cu	65	101.844				
Zn	66	101.219				
Zn	67					
Zn	68					
> Ge	74		105.9			
As	75	94.415				
Se	77					
Se	82	102.323				
Kr	83					
Sr	88	101.395				
Y	89					
Zr	90	99.683				
Mo	98	98.794				
Ag	107	98.429				
Cd	111	100.378				
Cd	114					
> In	115		105.1			
Sn	120	100.601				
Sb	121	98.068				
Sb	123					
Ba	135					
Ba	137	99.106				
Ho	165					
> Lu	175		108.3			
Tl	205	98.004				
Pb	208	100.014				
Bi	209					
Th	232	101.176				
U	238	104.132				

## QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 6

Report Date/Time: Wednesday, January 06, 2010 18:43:48

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## ICPMS#4 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 06, 2010 18:47:14

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 7.059

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.166	ug/L	32.898	41	0.000
Be	9	-0.001	ug/L	2820.196	3	-0.000
B	11	4.241	ug/L	15.938	226	0.001
Na	23	2.118	ug/L	233.269	18346	0.010
Mg	24	-0.447	ug/L	163.771	333	-0.001
Al	27	1.959	ug/L	76.502	4001	0.010
P	31	-5.714	ug/L	13.295	2169	-0.001
K	39	-13.969	ug/L	40.432	375887	-0.110
Ca	43	-10.701	ug/L	36.728	431	-0.000
> Sc	45		ug/L		243133	243132.859
Ti	47	0.174	ug/L	69.393	199	0.000
V	51	0.304	ug/L	242.973	5016	0.002
Cr	52	-1.045	ug/L	9.661	1503	-0.008
Cr	53		ug/L		136183	-0.153
Mn	55	-0.016	ug/L	75.370	825	-0.000
Fe	57	-9.689	ug/L	24.279	4308	-0.002
Co	59	0.008	ug/L	125.042	176	0.000
Ni	60	0.026	ug/L	18.272	48	0.000
Cu	63		ug/L		108	0.000
Cu	65	0.001	ug/L	1129.748	53	0.000
Zn	66	0.081	ug/L	45.017	88	0.000
Zn	67		ug/L		5579	-0.017
Zn	68		ug/L		455	-0.002
> Ge	74		ug/L		96906	96905.534
As	75	0.696	ug/L	87.002	623	0.002
Se	77		ug/L		4551	-0.025
Se	82	0.004	ug/L	15049.175	-4	0.000
Kr	83		ug/L		47	-0.000
Sr	88	0.010	ug/L	4.821	113	0.001
Y	89		ug/L		18	0.000
Zr	90	0.304	ug/L	12.446	864	0.013
Mo	98	0.050	ug/L	16.826	68	0.001
Ag	107	0.017	ug/L	89.431	77	0.000
Cd	111	0.009	ug/L	296.727	11	0.000
Cd	114		ug/L		30	0.000
> In	115		ug/L		57029	57029.144
Sn	120	0.260	ug/L	8.122	566	0.008
Sb	121	0.951	ug/L	9.216	1456	0.022
Sb	123		ug/L		1138	0.017
Ba	135		ug/L		24	0.000
Ba	137	0.011	ug/L	90.789	25	0.000
Ho	165		ug/L		7	0.000
> Lu	175		ug/L		46092	46092.032
Tl	205	0.132	ug/L	26.589	120	0.002
Pb	208	0.061	ug/L	7.885	408	0.005
Bi	209		ug/L		15	-0.000
Th	232	0.123	ug/L	22.796	669	0.012
U	238	0.017	ug/L	18.117	135	0.002

Sample ID: QC Std 7

Report Date/Time: Wednesday, January 06, 2010 18:50:02

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45					101.3
Ti	47					
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					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115					100.7
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175					103.1
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 7

Report Date/Time: Wednesday, January 06, 2010 18:50:02

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## ICPMS#4 - Summary Report

Sample ID: 1202001492

Sample Date/Time: Wednesday, January 06, 2010 18:53:28

Sample Type:

Sample Description: LANL 6020 SDILT

Number of Replicates: 3

Batch ID: 935378|10|skj

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\1202001492.060

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	16.282	ug/L	2.230	3148	0.013
Be	9	1.157	ug/L	8.545	64	0.000
B	11	6.227	ug/L	6.027	320	0.001
Na	23	279.074	ug/L	6.513	349224	1.367
Mg	24	3278.111	ug/L	5.459	2556900	10.474
Al	27	18811.795	ug/L	4.759	22385642	91.778
P	31	55.078	ug/L	3.731	5861	0.014
K	39	2924.784	ug/L	1.836	6017450	23.008
Ca	43	2124.780	ug/L	1.888	9225	0.036
Sc	45		ug/L		243965	243965.287
Ti	47	300.604	ug/L	0.654	57426	0.235
V	51	24.900	ug/L	6.497	50665	0.189
Cr	52	10.365	ug/L	2.747	22416	0.078
Cr	53		ug/L		123975	-0.205
Mn	55	212.954	ug/L	2.104	631747	2.586
Fe	57	13621.760	ug/L	2.545	811807	3.308
Co	59	4.841	ug/L	1.940	10877	0.044
Ni	60	9.154	ug/L	5.390	4250	0.017
Cu	63		ug/L		7821	0.032
Cu	65	7.395	ug/L	2.267	3763	0.015
Zn	66	28.864	ug/L	1.160	7565	0.081
Zn	67		ug/L		6444	-0.005
Zn	68		ug/L		6319	0.062
Ge	74		ug/L		92187	92187.126
As	75	1.990	ug/L	34.229	976	0.006
Se	77		ug/L		3702	-0.032
Se	82	0.100	ug/L	191.890	-1	0.000
Kr	83		ug/L		54	0.000
Sr	88	32.470	ug/L	0.342	146917	2.652
Y	89		ug/L		46450	0.839
Zr	90	19.121	ug/L	4.743	46396	0.836
Mo	98	0.328	ug/L	2.512	355	0.006
Ag	107	0.081	ug/L	5.172	178	0.002
Cd	111	0.293	ug/L	13.862	117	0.002
Cd	114		ug/L		50	0.001
In	115		ug/L		55368	55367.786
Sn	120	0.239	ug/L	4.971	514	0.007
Sb	121	0.411	ug/L	10.350	712	0.010
Sb	123		ug/L		595	0.008
Ba	135		ug/L		58124	1.241
Ba	137	141.869	ug/L	0.513	99325	2.121
Ho	165		ug/L		1616	0.034
Lu	175		ug/L		46826	46825.759
Tl	205	0.232	ug/L	5.286	190	0.003
Pb	208	10.527	ug/L	0.807	38469	0.817
Bi	209		ug/L		436	0.009
Th	232	6.985	ug/L	1.869	32756	0.697
U	238	0.570	ug/L	0.984	2775	0.058

Sample ID: 1202001492

Report Date/Time: Wednesday, January 06, 2010 18:56:16

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		101.6			
Ti	47					
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		96.7			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115		97.7			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		104.7			
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type	Analyte	MassOut of Limits Message
Ti 47 Upper, S, EETi		47Sample is out of limits (over linear range)

## QC Action

QC Action Line: No QC out of limits detected



## ICPMS#4 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 06, 2010 19:30:43

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 6.066

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	48.783	ug/L	4.716	9473	0.039
Be	9	50.995	ug/L	3.002	2727	0.011
B	11	99.508	ug/L	2.837	4705	0.019
Na	23	5170.576	ug/L	7.672	6239323	25.325
Mg	24	5118.269	ug/L	2.707	4018341	16.354
Al	27	4752.149	ug/L	2.461	5699445	23.184
P	31	4890.546	ug/L	1.681	301173	1.215
K	39	5119.102	ug/L	2.607	10299370	40.270
Ca	43	4939.989	ug/L	1.167	20967	0.083
> Sc	45		ug/L		245775	245774.777
Ti	47	50.328	ug/L	2.375	9822	0.039
V	51	51.027	ug/L	7.082	99863	0.388
Cr	52	50.160	ug/L	0.492	96052	0.377
Cr	53		ug/L		130468	-0.182
Mn	55	52.127	ug/L	1.325	156428	0.633
Fe	57	5044.381	ug/L	1.665	305906	1.225
Co	59	50.132	ug/L	2.227	111941	0.455
Ni	60	52.385	ug/L	1.542	24329	0.099
Cu	63		ug/L		55023	0.224
Cu	65	51.971	ug/L	0.943	26320	0.107
Zn	66	50.641	ug/L	0.624	14220	0.143
Zn	67		ug/L		7032	-0.004
Zn	68		ug/L		10613	0.101
> Ge	74		ug/L		99098	99098.247
As	75	47.908	ug/L	2.126	15727	0.155
Se	77		ug/L		4936	-0.023
Se	82	49.841	ug/L	3.031	1545	0.016
Kr	83		ug/L		44	-0.000
Sr	88	50.712	ug/L	0.732	240375	4.142
Y	89		ug/L		136	0.002
Zr	90	50.426	ug/L	1.229	127974	2.204
Mo	98	49.440	ug/L	1.039	53904	0.929
Ag	107	49.377	ug/L	0.645	83129	1.432
Cd	111	50.567	ug/L	3.681	19876	0.343
Cd	114		ug/L		46447	0.800
> In	115		ug/L		58015	58015.455
Sn	120	49.682	ug/L	1.846	88866	1.530
Sb	121	48.803	ug/L	4.097	66574	1.144
Sb	123		ug/L		51283	0.881
Ba	135		ug/L		20783	0.434
Ba	137	49.421	ug/L	1.362	35369	0.739
Ho	165		ug/L		19	0.000
> Lu	175		ug/L		47855	47854.503
Tl	205	48.667	ug/L	2.108	34273	0.716
Pb	208	50.073	ug/L	1.819	186224	3.888
Bi	209		ug/L		59	0.001
Th	232	50.328	ug/L	2.191	240501	5.024
U	238	52.049	ug/L	2.927	253928	5.306

Sample ID: QC Std 6

Report Date/Time: Wednesday, January 06, 2010 19:33:30

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

### QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7	97.566				
Be	9	101.990				
B	11	99.508				
Na	23	103.412				
Mg	24	102.365				
Al	27	94.102				
P	31	97.811				
K	39	102.382				
Ca	43	98.800				
> Sc	45		102.4			
Ti	47	100.656				
V	51	102.054				
Cr	52	100.321				
Cr	53					
Mn	55	104.254				
Fe	57	100.888				
Co	59	100.265				
Ni	60	104.769				
Cu	63					
Cu	65	103.942				
Zn	66	101.283				
Zn	67					
Zn	68					
> Ge	74		103.9			
As	75	95.816				
Se	77					
Se	82	99.682				
Kr	83					
Sr	88	101.424				
Y	89					
Zr	90	100.851				
Mo	98	98.881				
Ag	107	98.755				
Cd	111	101.134				
Cd	114					
> In	115		102.4			
Sn	120	99.364				
Sb	121	97.606				
Sb	123					
Ba	135					
Ba	137	98.841				
Ho	165					
> Lu	175		107.0			
Tl	205	97.334				
Pb	208	100.145				
Bi	209					
Th	232	100.657				
U	238	104.097				

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 6

Report Date/Time: Wednesday, January 06, 2010 19:33:30

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## ICPMS#4 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 06, 2010 19:36:56

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 7.067

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.154	ug/L	5.935	38	0.000
Be	9	0.000	ug/L	417.306	3	0.000
B	11	3.362	ug/L	20.523	182	0.001
Na	23	-2.217	ug/L	81.016	13006	-0.011
Mg	24	0.884	ug/L	226.116	1333	0.003
Al	27	4.325	ug/L	71.654	6669	0.021
P	31	-6.128	ug/L	27.027	2109	-0.002
K	39	-6.351	ug/L	118.336	384102	-0.050
Ca	43	-6.092	ug/L	145.866	442	-0.000
Sc	45		ug/L		239197	239197.297
Ti	47	0.260	ug/L	34.077	212	0.000
V	51	-1.781	ug/L	71.388	1177	-0.014
Cr	52	-1.108	ug/L	8.159	1364	-0.008
Cr	53		ug/L		135240	-0.148
Mn	55	0.008	ug/L	109.020	882	0.000
Fe	57	-9.354	ug/L	15.368	4258	-0.002
Co	59	-0.001	ug/L	339.567	153	-0.000
Ni	60	0.001	ug/L	1635.958	36	0.000
Cu	63		ug/L		102	0.000
Cu	65	0.012	ug/L	59.242	58	0.000
Zn	66	0.036	ug/L	89.649	75	0.000
Zn	67		ug/L		5244	-0.020
Zn	68		ug/L		416	-0.002
Ge	74		ug/L		95413	95412.894
As	75	-0.747	ug/L	70.489	170	-0.002
Se	77		ug/L		4363	-0.027
Se	82	-0.053	ug/L	532.608	-5	-0.000
Kr	83		ug/L		50	0.000
Sr	88	0.018	ug/L	23.230	148	0.001
Y	89		ug/L		21	0.000
Zr	90	0.299	ug/L	11.163	845	0.013
Mo	98	0.047	ug/L	42.564	65	0.001
Ag	107	0.011	ug/L	35.128	67	0.000
Cd	111	0.024	ug/L	74.219	16	0.000
Cd	114		ug/L		28	0.000
In	115		ug/L		56545	56544.743
Sn	120	0.248	ug/L	9.888	541	0.008
Sb	121	0.850	ug/L	18.900	1309	0.020
Sb	123		ug/L		1075	0.016
Ba	135		ug/L		26	0.000
Ba	137	0.045	ug/L	28.095	47	0.001
Ho	165		ug/L		10	0.000
Lu	175		ug/L		45394	45394.480
Tl	205	0.074	ug/L	36.624	79	0.001
Pb	208	0.053	ug/L	19.782	376	0.004
Bi	209		ug/L		18	0.000
Th	232	0.128	ug/L	29.486	685	0.013
U	238	0.019	ug/L	29.213	139	0.002

Sample ID: QC Std 7

Report Date/Time: Wednesday, January 06, 2010 19:39:44

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		99.6			
Ti	47					
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		100.1			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115		99.8			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		101.5			
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

## QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

## QC Action

QC Action Line: No QC out of limits detected

Sample ID: QC Std 7

Report Date/Time: Wednesday, January 06, 2010 19:39:44

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## ICPMS#4 - Summary Report

Sample ID: 243273001

Sample Date/Time: Wednesday, January 06, 2010 20:08:03

Sample Type:

Sample Description: LANL 6020

Number of Replicates: 3

Batch ID: 935378[2]skj

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\243273001.072

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	30.376	ug/L	2.067	5900	0.024
Be	9	1.411	ug/L	6.530	78	0.000
B	11	9.491	ug/L	4.027	475	0.002
Na	23	819.751	ug/L	1.015	1001589	4.015
Mg	24	7950.774	ug/L	3.389	6236645	25.404
Al	27	29413.160	ug/L	0.845	35227019	143.499
P	31	1192.882	ug/L	0.690	75303	0.296
K	39	5554.032	ug/L	3.567	11132993	43.691
Ca	43	9899.189	ug/L	1.280	41491	0.167
Sc	45		ug/L		245477	245476.569
Ti	47	1175.477	ug/L	0.852	225459	0.918
V	51	74.298	ug/L	0.259	143263	0.565
Cr	52	21.865	ug/L	0.768	43763	0.164
Cr	53		ug/L		95628	-0.324
Mn	55	1260.293	ug/L	1.654	3757685	15.305
Fe	57	28599.657	ug/L	1.932	1709673	6.945
Co	59	21.823	ug/L	1.825	48778	0.198
Ni	60	34.026	ug/L	1.912	15800	0.064
Cu	63		ug/L		92081	0.375
Cu	65	87.813	ug/L	0.576	44389	0.181
Zn	66	140.446	ug/L	1.986	35263	0.396
Zn	67		ug/L		10268	0.041
Zn	68		ug/L		28972	0.319
Ge	74		ug/L		88909	88909.117
As	75	2.763	ug/L	17.269	1165	0.009
Se	77		ug/L		2614	-0.043
Se	82	0.239	ug/L	55.966	3	0.000
Kr	83		ug/L		55	0.000
Sr	88	110.065	ug/L	2.256	489009	8.991
Y	89		ug/L		129090	2.373
Zr	90	60.828	ug/L	2.249	144708	2.659
Mo	98	0.851	ug/L	3.505	884	0.016
Ag	107	13.427	ug/L	2.496	21223	0.389
Cd	111	7.104	ug/L	0.655	2625	0.048
Cd	114		ug/L		5583	0.102
In	115		ug/L		54394	54394.060
Sn	120	0.802	ug/L	2.034	1448	0.025
Sb	121	0.221	ug/L	7.526	457	0.005
Sb	123		ug/L		383	0.004
Ba	135		ug/L		424457	9.021
Ba	137	1024.912	ug/L	1.216	720917	15.322
Ho	165		ug/L		4523	0.096
Lu	175		ug/L		47055	47054.844
Tl	205	0.413	ug/L	5.656	317	0.006
Pb	208	37.868	ug/L	0.575	138542	2.940
Bi	209		ug/L		1187	0.025
Th	232	13.703	ug/L	0.167	64475	1.368
U	238	17.980	ug/L	1.187	86299	1.833

Sample ID: 243273001

Report Date/Time: Wednesday, January 06, 2010 20:10:50

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000



### QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45		102.2			
Ti	47					
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		93.2			
As	75					
Se	77					
Se	82					
Kr	83					
Sr	88					
Y	89					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115		96.0			
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175		105.2			
Tl	205					
Pb	208					
Bi	209					
Th	232					
U	238					

### QC Out Of Limits

Measurement Type Analyte

Ti 47 Upper, S, EEETi

Mn 55 Upper, S, EEIMn

Ba 137 Upper, S, EEBa

MassOut of Limits Message

47Sample is out of limits (over linear range)

55Sample is out of limits (over linear range)

137Sample is out of limits (over linear range)

## QC Action

QC Action Line: Continue

## ICPMS#4 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Wednesday, January 06, 2010 20:14:15

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 6.073

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	51.984	ug/L	2.780	9598	0.041
Be	9	52.102	ug/L	2.387	2647	0.011
B	11	99.584	ug/L	1.966	4473	0.019
Na	23	4915.627	ug/L	6.238	5635518	24.076
Mg	24	5163.746	ug/L	3.269	3854023	16.499
Al	27	5236.825	ug/L	3.013	5970589	25.549
P	31	4989.171	ug/L	0.926	291959	1.240
K	39	5296.423	ug/L	4.772	10117282	41.665
Ca	43	4965.838	ug/L	0.638	20031	0.084
Sc	45		ug/L		233577	233577.163
Ti	47	50.528	ug/L	1.750	9377	0.039
V	51	52.922	ug/L	2.498	98329	0.403
Cr	52	50.269	ug/L	0.704	91485	0.378
Cr	53		ug/L		121967	-0.191
Mn	55	53.195	ug/L	1.211	151715	0.646
Fe	57	5121.388	ug/L	1.403	295169	1.244
Co	59	51.131	ug/L	0.593	108541	0.464
Ni	60	52.832	ug/L	1.129	23328	0.100
Cu	63		ug/L		52242	0.223
Cu	65	52.566	ug/L	1.279	25302	0.108
Zn	66	52.210	ug/L	2.622	13893	0.147
Zn	67		ug/L		6487	-0.006
Zn	68		ug/L		9994	0.100
Ge	74		ug/L		93956	93955.729
As	75	47.588	ug/L	1.137	14818	0.154
Se	77		ug/L		4536	-0.024
Se	82	51.334	ug/L	3.806	1508	0.016
Kr	83		ug/L		43	-0.000
Sr	88	50.480	ug/L	2.456	229641	4.124
Y	89		ug/L		100	0.002
Zr	90	48.840	ug/L	1.876	118983	2.135
Mo	98	49.687	ug/L	1.086	51996	0.934
Ag	107	49.855	ug/L	1.141	80558	1.446
Cd	111	50.411	ug/L	1.365	19025	0.342
Cd	114		ug/L		44570	0.800
In	115		ug/L		55683	55682.980
Sn	120	49.502	ug/L	1.374	84996	1.525
Sb	121	48.608	ug/L	6.124	63635	1.140
Sb	123		ug/L		49204	0.881
Ba	135		ug/L		19781	0.427
Ba	137	48.927	ug/L	1.790	33845	0.731
Ho	165		ug/L		17	0.000
Lu	175		ug/L		46259	46259.255
Tl	205	49.700	ug/L	1.093	33832	0.731
Pb	208	51.912	ug/L	1.782	186617	4.031
Bi	209		ug/L		45	0.001
Th	232	52.089	ug/L	2.511	240581	5.200
U	238	53.958	ug/L	2.078	254460	5.501

Sample ID: QC Std 6

Report Date/Time: Wednesday, January 06, 2010 20:17:02

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Li	7	103.968			
	Be	9	104.205			
	B	11	99.584			
	Na	23	98.313			
	Mg	24	103.275			
	Al	27	103.700			
	P	31	99.783			
	K	39	105.928			
	Ca	43	99.317			
>	Sc	45		97.3		
	Ti	47	101.055			
	V	51	105.845			
	Cr	52	100.539			
	Cr	53				
	Mn	55	106.389			
	Fe	57	102.428			
	Co	59	102.261			
	Ni	60	105.665			
	Cu	63				
[	Cu	65	105.132			
	Zn	66	104.421			
	Zn	67				
	Zn	68				
>	Ge	74		98.5		
	As	75	95.176			
	Se	77				
	Se	82	102.669			
[	Kr	83				
	Sr	88	100.961			
	Y	89				
	Zr	90	97.680			
	Mo	98	99.373			
	Ag	107	99.711			
	Cd	111	100.821			
	Cd	114				
>	In	115		98.3		
	Sn	120	99.003			
	Sb	121	97.216			
[	Sb	123				
	Ba	135				
	Ba	137	97.854			
	Ho	165				
>	Lu	175		103.5		
	Tl	205	99.399			
	Pb	208	103.824			
	Bi	209				
	Th	232	104.179			
[	U	238	107.915			

### QC Out Of Limits

Measurement Type Analyte Mass Out of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Wednesday, January 06, 2010 20:20:28

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\6020.mth

Dataset File: C:\elandata\Dataset\100106\QC Std 7.074

### Concentration Results

Analyte	Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
Li	7	0.130	ug/L	19.474	32	0.000
Be	9	0.057	ug/L	74.395	6	0.000
B	11	3.190	ug/L	9.440	167	0.001
Na	23	0.368	ug/L	774.361	15342	0.002
Mg	24	0.955	ug/L	218.608	1333	0.003
Al	27	0.968	ug/L	106.977	2667	0.005
P	31	-6.837	ug/L	11.113	1976	-0.002
K	39	-18.735	ug/L	29.958	344780	-0.147
Ca	43	-11.124	ug/L	52.243	403	-0.000
> Sc	45		ug/L		228618	228618.068
Ti	47	0.219	ug/L	24.768	195	0.000
V	51	-0.107	ug/L	1624.223	4010	-0.001
Cr	52	-1.204	ug/L	1.369	1140	-0.009
Cr	53		ug/L		124298	-0.170
Mn	55	-0.000	ug/L	8176.595	821	-0.000
Fe	57	-12.377	ug/L	27.216	3903	-0.003
Co	59	-0.001	ug/L	1952.437	147	-0.000
Ni	60	0.026	ug/L	55.159	45	0.000
Cu	63		ug/L		89	0.000
Cu	65	-0.004	ug/L	461.386	48	-0.000
Zn	66	0.015	ug/L	67.921	66	0.000
Zn	67		ug/L		4819	-0.022
Zn	68		ug/L		354	-0.003
> Ge	74		ug/L		91064	91063.621
As	75	0.158	ug/L	491.069	424	0.001
Se	77		ug/L		3943	-0.029
Se	82	0.339	ug/L	223.721	6	0.000
Kr	83		ug/L		37	-0.000
Sr	88	0.014	ug/L	31.307	128	0.001
Y	89		ug/L		16	0.000
Zr	90	0.279	ug/L	4.579	763	0.012
Mo	98	0.065	ug/L	28.465	80	0.001
Ag	107	0.016	ug/L	24.930	72	0.000
Cd	111	0.036	ug/L	22.717	20	0.000
Cd	114		ug/L		23	0.000
> In	115		ug/L		54357	54356.812
Sn	120	0.248	ug/L	8.914	521	0.008
Sb	121	0.835	ug/L	16.020	1241	0.020
Sb	123		ug/L		997	0.015
Ba	135		ug/L		27	0.000
Ba	137	0.040	ug/L	48.140	43	0.001
Ho	165		ug/L		9	0.000
> Lu	175		ug/L		45036	45036.000
Tl	205	0.085	ug/L	20.028	86	0.001
Pb	208	0.046	ug/L	19.519	347	0.004
Bi	209		ug/L		20	0.000
Th	232	0.129	ug/L	21.564	685	0.013
U	238	0.021	ug/L	1.756	149	0.002

Sample ID: QC Std 7

Report Date/Time: Wednesday, January 06, 2010 20:23:16

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## 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	
Ti	47Linear Thru Zero	1.0000
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	
Zr	90Linear Thru Zero	1.0000
Mo	98Linear Thru Zero	1.0000
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	
Th	232Linear Thru Zero	1.0000
U	238Linear Thru Zero	1.0000

## QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
Li	7					
Be	9					
B	11					
Na	23					
Mg	24					
Al	27					
P	31					
K	39					
Ca	43					
> Sc	45			95.2		
Ti	47					
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					
Zr	90					
Mo	98					
Ag	107					
Cd	111					
Cd	114					
> In	115			96.0		
Sn	120					
Sb	121					
Sb	123					
Ba	135					
Ba	137					
Ho	165					
> Lu	175			100.7		
Tl	205					
Pb	208					
Bi	209					
Th	232					
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

Sample ID: QC Std 7

Report Date/Time: Wednesday, January 06, 2010 20:23:16

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## Daily Performance Report

### Sample ID: Sample

Sample Date/Time: Thursday, January 07, 2010 10:41:36

Sample Description:

Method File: c:\elandata\Method\daily2.mth

Dataset File: c:\elandata\Dataset\090811\Sample.347

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

### Summary

Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
Be	9.0	1035.6	1035.638	39.109	3.8
Mg	24.0	19340.7	19340.684	122.061	0.6
Co	58.9	50689.4	50689.371	155.025	0.3
Rh	102.9	84264.2	84264.192	495.230	0.6
In	114.9	107705.7	107705.718	943.088	0.9
Pb	208.0	38437.6	38437.644	325.734	0.8
[> Ba	137.9	85539.0	85538.975	598.451	0.7
[ Ba++	69.0	1678.6	0.020	0.000	1.0
[> Ce	139.9	100755.1	100755.059	304.348	0.3
[ CeO	155.9	2306.1	0.023	0.001	2.4
Bkgd	220.0	8.5	8.500	1.458	17.1

### Current Optimization File Data

Current Value	Description
0.84	Nebulizer Gas Flow
6.00	Lens Voltage
1000.00	ICP RF Power
-1875.00	Analog Stage Voltage
1100.00	Pulse Stage Voltage
50.00	Discriminator Threshold
-2.00	AC Rod Offset

### Current Autolens Data

Analyte	Mass	Num of Pts	DAC Value	Maximum Intensity
Be	9	17	7.0	862.7
Co	59	17	8.5	33104.6
In	115	17	9.5	79556.6

## ICPMS #4 TUNING REPORT

File Name: default2.tun  
File Path: c:\elandata\Tuning

Analyte	Exact Mass	Meas. Mass	Mass DAC	Res. DAC	Meas Peak W
He	3.0	3.0	617	2060	0.671
Be	9.0	9.1	2062	2045	0.678
Mg	24.0	24.0	5671	2075	0.585
Mg	25.0	24.9	5957	2080	0.645
Mg	26.0	26.0	6149	2085	0.616
Co	58.9	58.9	14186	2140	0.623
Rh	102.9	102.9	24869	2230	0.628
In	114.9	114.9	27789	2255	0.664
Ce	139.9	139.9	33855	2310	0.640
Pb	206.0	206.0	49930	2500	0.686
Pb	207.0	207.0	50101	2380	0.636
Pb	208.0	208.0	50448	2570	0.638
U	238.1	238.1	57705	2510	0.677

## ICPMS#4 - Summary Report

Sample ID: Blank

Sample Date/Time: Thursday, January 07, 2010 11:14:27

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\Blank.001

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	ug/L		3	
>	Sc	45	ug/L		219020	
[	Ni	60	ug/L		29	

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Simple Linear	
Sc	45Simple Linear	
Ni	60Simple Linear	

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45				
[	Ni	60				

### QC Out Of Limits

Measurement Type	Analyte	MassOut of Limits Message
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### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: Standard 1

Sample Date/Time: Thursday, January 07, 2010 11:18:06

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\Standard 1.002

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	10.000 ug/L	0.754	527	0.002
>	Sc	45	ug/L		225178	225178.478
[	Ni	60	10.000 ug/L	1.051	4769	0.021

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45				
[	Ni	60				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: Standard 2

Sample Date/Time: Thursday, January 07, 2010 11:21:42

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\Standard 2.003

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	99.980 ug/L	1.435	5180	0.023
>	Sc	45	ug/L		227053	227053.421
[	Ni	60	99.966 ug/L	0.256	46210	0.203

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45				
[	Ni	60				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 1

Sample Date/Time: Thursday, January 07, 2010 11:25:20

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 1.004

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	52.321 ug/L	3.832	2745	0.012
>	Sc	45	ug/L		229720	229720.071
[	Ni	60	51.806 ug/L	1.674	24242	0.105

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9	104.641			
>	Sc	45		104.9		
[	Ni	60	103.612			

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 2

Sample Date/Time: Thursday, January 07, 2010 11:28:59

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 2.005

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	0.006 ug/L	203.149	4	0.000
>	Sc	45	ug/L		222215	222214.818
[	Ni	60	0.011 ug/L	22.443	35	0.000

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45	101.5			
[	Ni	60				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 3

Sample Date/Time: Thursday, January 07, 2010 11:32:39

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 3.006

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	0.499 ug/L	28.438	29	0.000
>	Sc	45	ug/L		221976	221976.487
[	Ni	60	2.247 ug/L	3.772	1045	0.005

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9	99.890			
>	Sc	45		101.3		
[	Ni	60	112.372			

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#4 - Summary Report

Sample ID: QC Std 4

Sample Date/Time: Thursday, January 07, 2010 11:36:18

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 4.007

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be 9	0.044	ug/L	223.360	6	0.000
>	Sc 45		ug/L		225823	225822.536
[	Ni 60	3.314	ug/L	1.259	1552	0.007

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be 9					
>	Sc 45		103.1			
[	Ni 60	122.726				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 5

Sample Date/Time: Thursday, January 07, 2010 11:39:57

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 5.008

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	19.866 ug/L	3.628	1002	0.005
>	Sc	45	ug/L		220391	220390.897
[	Ni	60	21.817 ug/L	0.701	9812	0.044

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9	99.330			
>	Sc	45		100.6		
[	Ni	60	96.109			

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Thursday, January 07, 2010 11:43:36

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 6.009

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	51.685 ug/L	2.111	2613	0.012
>	Sc	45	ug/L		221366	221365.784
[	Ni	60	51.465 ug/L	1.795	23204	0.105

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9	103.370			
>	Sc	45		101.1		
[	Ni	60	102.930			

### QC Out Of Limits

Measurement Type	Analyte	MassOut of Limits Message
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### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, January 07, 2010 11:47:17

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 7.010

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	-0.027 ug/L	71.542	2	-0.000
>	Sc	45	ug/L		222235	222234.508
[	Ni	60	0.022 ug/L	32.812	40	0.000

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45	101.5			
[	Ni	60				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: 1202001488

Sample Date/Time: Thursday, January 07, 2010 11:50:57

Sample Type:

Sample Description: LANL 6020 MB

Number of Replicates: 3

Batch ID: 935378|2|skj

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\1202001488.011

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	0.032 ug/L	146.084	5	0.000
>	Sc	45	ug/L		216212	216211.959
[	Ni	60	0.091 ug/L	26.938	68	0.000

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45		98.7		
[	Ni	60				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: 1202001489

Sample Date/Time: Thursday, January 07, 2010 11:54:36

Sample Type:

Sample Description: LANL 6020 LCS

Number of Replicates: 3

Batch ID: 935378|40|skj

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\1202001489.012

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	21.728 ug/L	2.373	1125	0.005
>	Sc	45	ug/L		226363	226363.233
[	Ni	60	37.798 ug/L	1.056	17438	0.077

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45	103.4			
[	Ni	60				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: 1202001490

Sample Date/Time: Thursday, January 07, 2010 12:01:55

Sample Type:

Sample Description: LANL 6020 DUP

Number of Replicates: 3

Batch ID: 935378|2|skj

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\1202001490.014

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	4.921 ug/L	1.883	278	0.001
>	Sc	45	ug/L		244738	244737.812
[	Ni	60	37.218 ug/L	1.266	18565	0.076

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45	111.7			
[	Ni	60				

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: 1202001491

Sample Date/Time: Thursday, January 07, 2010 12:05:35

Sample Type:

Sample Description: LANL 6020 MS

Number of Replicates: 3

Batch ID: 935378|2|skj

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\1202001491.015

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	29.055 ug/L	4.096	1706	0.007
>	Sc	45	ug/L		256948	256947.786
[	Ni	60	61.451 ug/L	0.356	32160	0.125

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9			
>	Sc	45	117.3		
[	Ni	60			

### QC Out Of Limits

Measurement Type	Analyte	MassOut of Limits Message
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### QC Action

QC Action Line: No QC out of limits detected



## ICPMS#4 - Summary Report

Sample ID: 1202001493

Sample Date/Time: Thursday, January 07, 2010 12:09:16

Sample Type:

Sample Description: LANL 6020 MSD

Number of Replicates: 3

Batch ID: 935378|2|skj

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\1202001493.016

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	28.572 ug/L	3.527	1708	0.007
>	Sc	45	ug/L		261488	261487.512
[	Ni	60	63.636 ug/L	0.937	33892	0.129

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45	119.4			
[	Ni	60				

### QC Out Of Limits

Measurement Type	Analyte	MassOut of Limits Message
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### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: 1202001492

Sample Date/Time: Thursday, January 07, 2010 12:12:58

Sample Type:

Sample Description: LANL 6020 SDILT

Number of Replicates: 3

Batch ID: 935378|10|skj

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\1202001492.017

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	1.288 ug/L	10.795	67	0.000
>	Sc	45	ug/L		216899	216899.053
[	Ni	60	8.871 ug/L	1.686	3944	0.018

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45	99.0			
[	Ni	60				

### QC Out Of Limits

Measurement Type	Analyte	MassOut of Limits Message
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### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 6

Sample Date/Time: Thursday, January 07, 2010 12:20:20

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 6.019

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	52.825 ug/L	3.606	2560	0.012
>	Sc	45	ug/L		212162	212162.374
[	Ni	60	50.350 ug/L	0.515	21762	0.102

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9	105.651			
>	Sc	45		96.9		
[	Ni	60	100.700			

### QC Out Of Limits

Measurement Type Analyte MassOut of Limits Message

### QC Action

QC Action Line: No QC out of limits detected

## ICPMS#4 - Summary Report

Sample ID: QC Std 7

Sample Date/Time: Thursday, January 07, 2010 12:24:01

Sample Type:

Sample Description:

Number of Replicates: 3

Batch ID:

Method File: c:\elandata\Method\be and ni only.mth

Dataset File: C:\elandata\Dataset\100107\QC Std 7.020

### Concentration Results

	Analyte Mass	Conc. Mean	Report Unit	Conc. RSD	Meas. Intens. Mean	Net Intens. Mean
[	Be	9	-0.004 ug/L	537.028	3	-0.000
>	Sc	45	ug/L		209239	209239.284
[	Ni	60	-0.003 ug/L	230.502	27	-0.000

### Calibration

Analyte	MassCurve Type	Correlation Coefficient
Be	9Linear Thru Zero	1.0000
Sc	45Linear Thru Zero	
Ni	60Linear Thru Zero	1.0000

### QC Calculated Values

	Analyte Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Diff	Dup. Rel. % Diff
[	Be	9				
>	Sc	45	95.5			
[	Ni	60				

### QC Out Of Limits

Measurement Type	Analyte	MassOut of Limits Message
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### QC Action

QC Action Line: No QC out of limits detected

Method Name: SOIL  
 Method Description: 7471A, ILM04 ANALYST JXL1  
 Element: Hg

Date: 01/08/2010  
 Technique: FI-MHS  
 Calibration Type:  
 Hg, Calc. Intercept : Linear  
 Wavelength: 253.7 nm  
 Sample Info Name: 010810S1.SIF Results Data Set Name: 010810S1

Element: Hg Seq. No.: 1 AS Loc.: 1 Date: 01/08/2010  
 Sample ID: Calib Blank

Repl #	SampleConc µg/L	StndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1			0.0032	0.0032	09:50:25	No
2			0.0030	0.0030	09:51:00	No
Mean:			0.0031			
SD :			0.0002			
%RSD:			5.9411			

Auto-zero performed.

Element: Hg Seq. No.: 2 AS Loc.: 2 Date: 01/08/2010  
 Sample ID: S0.2

Repl #	SampleConc µg/L	StndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1			0.0021	0.0052	09:52:23	No
2			0.0018	0.0049	09:52:58	No
Mean:			0.0020			
SD :			0.0002			
%RSD:			10.6180			

[Hg] Standard number 1 applied. [0.200]

Correlation Coefficient: 1.00000

Slope: 0.00986

Intercept : 0.00000

Element: Hg Seq. No.: 3 AS Loc.: 3 Date: 01/08/2010  
 Sample ID: S0.5

Repl #	SampleConc µg/L	StndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1			0.0043	0.0073	09:54:21	No
2			0.0041	0.0072	09:54:56	No
Mean:			0.0042			
SD :			0.0001			
%RSD:			2.2433			

[Hg] Standard number 2 applied. [0.500]

Correlation Coefficient: 0.99675

Slope: 0.00831

Intercept : 0.00012

Element: Hg Seq. No.: 4 AS Loc.: 4 Date: 01/08/2010  
 Sample ID: S2.0

Repl #	SampleConc µg/L	StndConc µg/L	BlncCorr Signal	Peak Height	Time	Peak Stored
1			0.0157	0.0187	09:56:20	No
2			0.0154	0.0185	09:56:54	No
Mean:			0.0155			
SD :			0.0002			
%RSD:			1.0558			

[Hg] Standard number 3 applied. [2.000]

Correlation Coefficient: 0.99961  
Intercept : 0.00025

Slope: 0.00767

=====

Element: Hg Seq. No.: 5 AS Loc.: 5 Date: 01/08/2010  
Sample ID: S5.0

-----

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1			0.0387	0.0418	09:58:20	No
2			0.0383	0.0413	09:58:55	No
Mean:			0.0385			
SD :			0.0003			
%RSD:			0.7545			

[Hg] Standard number 4 applied. [5.000]  
Correlation Coefficient: 0.99994 Slope: 0.00764  
Intercept : 0.00026

=====

Element: Hg Seq. No.: 6 AS Loc.: 6 Date: 01/08/2010  
Sample ID: S10

-----

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1			0.0762	0.0793	10:00:21	No
2			0.0739	0.0770	10:00:56	No
Mean:			0.0751			
SD :			0.0016			
%RSD:			2.1729			

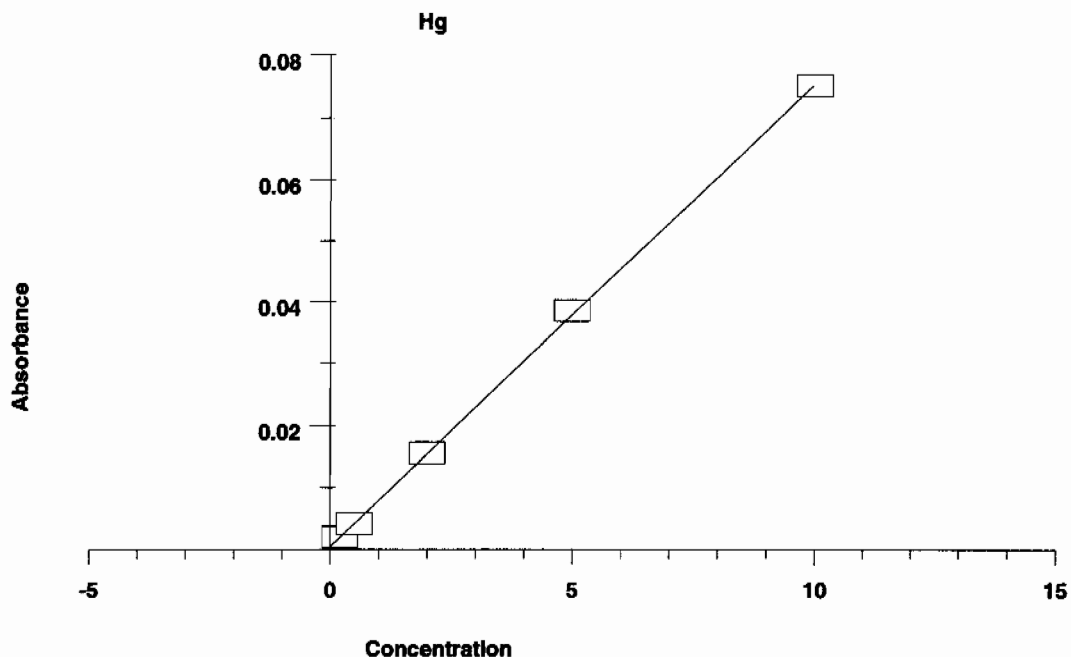
[Hg] Standard number 5 applied. [10.00]  
Correlation Coefficient: 0.99993 Slope: 0.00749  
Intercept : 0.00043

-----

Calibration data for Hg

Standard ID	Mean Signal (Pk Height)	Entered Concentration (µg/L)	Calculated Concentration (µg/L)	Standard Deviation	%RSD
Calib Blank	0.0031	---	----	----	----
S0.2	0.0020	0.200	0.205	0.0002	10.6
S0.5	0.0042	0.500	0.502	0.0001	2.2
S2.0	0.0155	2.000	2.016	0.0002	1.1
S5.0	0.0385	5.000	5.076	0.0003	0.8
S10	0.0751	10.000	9.959	0.0016	2.2
Correlation Coefficient: 0.99993		Slope:	0.00749	Intercept:	0.0004

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=====  
 Element: Hg Seq. No.: 7 AS Loc.: 9 Date: 01/08/2010  
 Sample ID: ICV

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	4.978	4.978	0.0377	0.0408	10:02:24	No
2	5.084	5.084	0.0385	0.0416	10:02:59	No
Mean:	5.031	5.031	0.0381			
SD :	0.0752	0.0752	0.0006			
%RSD:	1.5	1.5	1.4774			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 8 AS Loc.: 10 Date: 01/08/2010  
 Sample ID: ICB

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	-0.049	-0.049	0.0001	0.0031	10:04:21	No
2	-0.045	-0.045	0.0001	0.0032	10:04:56	No
Mean:	-0.047	-0.047	0.0001			
SD :	0.0033	0.0033	0.0000			
%RSD:	7.0	7.0	30.5107			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 9 AS Loc.: 11 Date: 01/08/2010  
 Sample ID: CRDL

Repl #	SampleConc µg/L	StndConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.180	0.180	0.0018	0.0049	10:06:18	No
2	0.186	0.186	0.0018	0.0049	10:06:53	No
Mean:	0.183	0.183	0.0018			
SD :	0.0038	0.0038	0.0000			
%RSD:	2.1	2.1	1.5959			

QC value within specified limits.

=====

Element: Hg Seq. No.: 10 AS Loc.: 7 Date: 01/08/2010  
Sample ID: CCV

-----

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	5.011	5.011	0.0380	0.0411	10:08:18	No
2	4.983	4.983	0.0378	0.0409	10:08:54	No
Mean:	4.997	4.997	0.0379			
SD :	0.0202	0.0202	0.0002			
%RSD:	0.4	0.4	0.4003			

QC value within specified limits.

=====

Element: Hg Seq. No.: 11 AS Loc.: 8 Date: 01/08/2010  
Sample ID: CCB

-----

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	-0.039	-0.039	0.0001	0.0032	10:10:22	No
2	-0.032	-0.032	0.0002	0.0033	10:10:57	No
Mean:	-0.036	-0.036	0.0002			
SD :	0.0045	0.0045	0.0000			
%RSD:	12.7	12.7	20.1775			

QC value within specified limits.

=====

Element: Hg Seq. No.: 12 AS Loc.: 12 Date: 01/08/2010  
Sample ID: 1202002063|i||935670|MB

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Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	-0.037	-0.037	0.0002	0.0032	10:12:23	No
2	-0.059	-0.059	0.0000	0.0031	10:12:58	No
Mean:	-0.048	-0.048	0.0001			
SD :	0.0158	0.0158	0.0001			
%RSD:	32.9	32.9	162.5804			

=====

Element: Hg Seq. No.: 13 AS Loc.: 13 Date: 01/08/2010  
Sample ID: 1202002064|i|10||

-----

Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	3.408	3.408	0.0260	0.0291	10:14:22	No
2	3.427	3.427	0.0261	0.0292	10:14:57	No
Mean:	3.418	3.418	0.0260			
SD :	0.0138	0.0138	0.0001			
%RSD:	0.4	0.4	0.3959			

=====

Element: Hg Seq. No.: 14 AS Loc.: 14 Date: 01/08/2010  
Sample ID: 243270001|i|||

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Repl #	SampleConc µg/L	StdConc µg/L	Blncorr Signal	Peak Height	Time	Peak Stored
1	0.311	0.311	0.0028	0.0058	10:16:23	No
2	0.311	0.311	0.0028	0.0058	10:16:58	No
Mean:	0.311	0.311	0.0028			
SD :	0.0001	0.0001	0.0000			
%RSD:						

=====

Element: Hg Seq. No.: 15 AS Loc.: 15 Date: 01/08/2010  
Sample ID: 1202002065|i|||DUP



Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.294	0.294	0.0026	0.0057	10:18:24	No
2	0.274	0.274	0.0025	0.0056	10:18:59	No
Mean:	0.284	0.284	0.0026			
SD :	0.0143	0.0143	0.0001			
%RSD:	5.0	5.0	4.1756			

=====  
 Element: Hg Seq. No.: 16 AS Loc.: 16 Date: 01/08/2010  
 Sample ID: 1202002066|i||MS  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	2.629	2.629	0.0201	0.0232	10:20:28	No
2	2.577	2.577	0.0197	0.0228	10:21:03	No
Mean:	2.603	2.603	0.0199			
SD :	0.0368	0.0368	0.0003			
%RSD:	1.4	1.4	1.3848			

=====  
 Element: Hg Seq. No.: 17 AS Loc.: 17 Date: 01/08/2010  
 Sample ID: 1202002068|i||MSD  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	2.414	2.414	0.0185	0.0216	10:22:27	No
2	2.351	2.351	0.0180	0.0211	10:23:02	No
Mean:	2.382	2.382	0.0183			
SD :	0.0449	0.0449	0.0003			
%RSD:	1.9	1.9	1.8400			

=====  
 Element: Hg Seq. No.: 18 AS Loc.: 18 Date: 01/08/2010  
 Sample ID: 1202002067|i|5|SDILT  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	-0.045	-0.045	0.0001	0.0032	10:24:23	No
2	-0.081	-0.081	-0.0002	0.0029	10:24:58	No
Mean:	-0.063	-0.063	0.0000			
SD :	0.0250	0.0250	0.0002			
%RSD:	39.7	39.7	475.1963			

=====  
 Element: Hg Seq. No.: 19 AS Loc.: 19 Date: 01/08/2010  
 Sample ID: 243270002|i|||  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.385	0.385	0.0033	0.0064	10:26:20	No
2	0.381	0.381	0.0033	0.0064	10:26:54	No
Mean:	0.383	0.383	0.0033			
SD :	0.0027	0.0027	0.0000			
%RSD:	0.7	0.7	0.6221			

=====  
 Element: Hg Seq. No.: 20 AS Loc.: 20 Date: 01/08/2010  
 Sample ID: 243270003|i|||  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.436	0.436	0.0037	0.0068	10:28:16	No
2	0.404	0.404	0.0035	0.0065	10:28:50	No
Mean:	0.420	0.420	0.0036			
SD :	0.0230	0.0230	0.0002			

%RSD: 5.5 5.5 4.8110

=====  
 Element: Hg Seq. No.: 21 AS Loc.: 21 Date: 01/08/2010  
 Sample ID: 243270004|i|||

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.232	0.232	0.0022	0.0053	10:30:12	No
2	0.212	0.212	0.0020	0.0051	10:30:46	No
Mean:	0.222	0.222	0.0021			
SD :	0.0142	0.0142	0.0001			
%RSD:	6.4	6.4	5.0583			

=====  
 Element: Hg Seq. No.: 22 AS Loc.: 7 Date: 01/08/2010  
 Sample ID: CCV

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	5.155	5.155	0.0391	0.0421	10:32:10	No
2	5.161	5.161	0.0391	0.0422	10:32:44	No
Mean:	5.158	5.158	0.0391			
SD :	0.0041	0.0041	0.0000			
%RSD:						

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 23 AS Loc.: 8 Date: 01/08/2010  
 Sample ID: CCB

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	-0.082	-0.082	-0.0002	0.0029	10:34:12	No
2	-0.086	-0.086	-0.0002	0.0029	10:34:47	No
Mean:	-0.084	-0.084	-0.0002			
SD :	0.0031	0.0031	0.0000			
%RSD:	3.7	3.7	11.7413			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 24 AS Loc.: 22 Date: 01/08/2010  
 Sample ID: 243270005|i|||

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.234	0.234	0.0022	0.0053	10:36:12	No
2	0.218	0.218	0.0021	0.0051	10:36:47	No
Mean:	0.226	0.226	0.0021			
SD :	0.0115	0.0115	0.0001			
%RSD:	5.1	5.1	4.0405			

=====  
 Element: Hg Seq. No.: 25 AS Loc.: 23 Date: 01/08/2010  
 Sample ID: 243270006|i|||

Repl #	SampleConc µg/L	StdConc µg/L	BlkCorr Signal	Peak Height	Time	Peak Stored
1	0.475	0.475	0.0040	0.0071	10:38:10	No
2	0.455	0.455	0.0038	0.0069	10:38:45	No
Mean:	0.465	0.465	0.0039			
SD :	0.0142	0.0142	0.0001			
%RSD:	3.0	3.0	2.7092			

=====  
 Element: Hg Seq. No.: 26 AS Loc.: 24 Date: 01/08/2010  
 Sample ID: 243270007|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.324	0.324	0.0029	0.0059	10:40:09	No
2	0.300	0.300	0.0027	0.0058	10:40:44	No
Mean:	0.312	0.312	0.0028			
SD :	0.0176	0.0176	0.0001			
%RSD:	5.6	5.6	4.7608			

=====  
 Element: Hg Seq. No.: 27 AS Loc.: 25 Date: 01/08/2010  
 Sample ID: 243270008|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.263	0.263	0.0024	0.0055	10:42:08	No
2	0.249	0.249	0.0023	0.0054	10:42:43	No
Mean:	0.256	0.256	0.0024			
SD :	0.0098	0.0098	0.0001			
%RSD:	3.8	3.8	3.1346			

=====  
 Element: Hg Seq. No.: 28 AS Loc.: 26 Date: 01/08/2010  
 Sample ID: 243270009|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.321	0.321	0.0028	0.0059	10:44:09	No
2	0.318	0.318	0.0028	0.0059	10:44:44	No
Mean:	0.319	0.319	0.0028			
SD :	0.0024	0.0024	0.0000			
%RSD:	0.7	0.7	0.6301			

=====  
 Element: Hg Seq. No.: 29 AS Loc.: 27 Date: 01/08/2010  
 Sample ID: 243270010|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.461	0.461	0.0039	0.0070	10:46:10	No
2	0.463	0.463	0.0039	0.0070	10:46:44	No
Mean:	0.462	0.462	0.0039			
SD :	0.0012	0.0012	0.0000			
%RSD:	0.3	0.3	0.2370			

=====  
 Element: Hg Seq. No.: 30 AS Loc.: 28 Date: 01/08/2010  
 Sample ID: 243273001|i|||

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.101	0.101	0.0012	0.0043	10:48:10	No
2	0.077	0.077	0.0010	0.0041	10:48:45	No
Mean:	0.089	0.089	0.0011			
SD :	0.0167	0.0167	0.0001			
%RSD:	18.8	18.8	11.3681			

=====  
 Element: Hg Seq. No.: 31 AS Loc.: 29 Date: 01/08/2010  
 Sample ID: 1202006363|i||937607|MB

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	-0.030	-0.030	0.0002	0.0033	10:50:11	No
2	-0.052	-0.052	0.0000	0.0031	10:50:45	No
Mean:	-0.041	-0.041	0.0001			
SD :	0.0158	0.0158	0.0001			

%RSD: 38.5 38.5 93.4754

=====  
 Element: Hg Seq. No.: 32 AS Loc.: 30 Date: 01/08/2010  
 Sample ID: 1202006368|i|10|LCS  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	3.778	3.778	0.0287	0.0318	10:52:11	No
2	3.786	3.786	0.0288	0.0319	10:52:46	No
Mean:	3.782	3.782	0.0288			
SD :	0.0057	0.0057	0.0000			
%RSD:	0.2	0.2	0.1489			

=====  
 Element: Hg Seq. No.: 33 AS Loc.: 31 Date: 01/08/2010  
 Sample ID: 243514001|i|||  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.316	0.316	0.0028	0.0059	10:54:13	No
2	0.311	0.311	0.0028	0.0058	10:54:48	No
Mean:	0.313	0.313	0.0028			
SD :	0.0036	0.0036	0.0000			
%RSD:	1.2	1.2	0.9778			

=====  
 Element: Hg Seq. No.: 34 AS Loc.: 7 Date: 01/08/2010  
 Sample ID: CCV  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	5.421	5.421	0.0411	0.0441	10:56:15	No
2	5.272	5.272	0.0399	0.0430	10:56:51	No
Mean:	5.347	5.347	0.0405			
SD :	0.1052	0.1052	0.0008			
%RSD:	2.0	2.0	1.9466			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 35 AS Loc.: 8 Date: 01/08/2010  
 Sample ID: CCB  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	-0.050	-0.050	0.0001	0.0031	10:58:19	No
2	-0.074	-0.074	-0.0001	0.0030	10:58:54	No
Mean:	-0.062	-0.062	0.0000			
SD :	0.0169	0.0169	0.0001			
%RSD:	27.2	27.2	395.8322			

QC value within specified limits.

=====  
 Element: Hg Seq. No.: 36 AS Loc.: 32 Date: 01/08/2010  
 Sample ID: 1202006364|i|||DUP  
 =====

Repl #	SampleConc µg/L	StdndConc µg/L	BlndCorr Signal	Peak Height	Time	Peak Stored
1	0.306	0.306	0.0027	0.0058	11:00:18	No
2	0.281	0.281	0.0025	0.0056	11:00:53	No
Mean:	0.294	0.294	0.0026			
SD :	0.0178	0.0178	0.0001			
%RSD:	6.1	6.1	5.0595			

=====  
 Element: Hg Seq. No.: 37 AS Loc.: 33 Date: 01/08/2010  
 Sample ID: 1202006366|i|||MS  
 =====

# Miscellaneous

# Prep LogBook

Analyst: BXA1 Verified by: \_\_\_\_\_

Batch: 935377

Lab SOP: GL-MA-E-009 REV# 19

Sample Type	Sample ID	Parent Sample ID	Method	Prep Date	Type	Sample Id	Lot Id	Spike Amount	Spike Units
MB	1202001488		SW846 3050B	21-DEC-2009 17:56	LCS	1202001489	U1062540-MS	.519	g
LCS	1202001489		SW846 3050B	21-DEC-2009 17:56	MS	1202001491	U1090827-A	.5	mL
SAMPLE	243270001		SW846 3050B	21-DEC-2009 17:56	MS	1202001491	U1090827-B	.5	mL
DUP	1202001490	243270001	SW846 3050B	21-DEC-2009 17:56	MSD	1202001493	U1090827-A	.5	mL
MS	1202001491	243270001	SW846 3050B	21-DEC-2009 17:56	MSD	1202001493	U1090827-B	.5	mL
MSD	1202001493	243270001	SW846 3050B	21-DEC-2009 17:56					
SDILT	1202001492	243270001	SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270002		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270003		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270004		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270005		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270006		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270007		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270008		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270009		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243270010		SW846 3050B	21-DEC-2009 17:56					
SAMPLE	243273001		SW846 3050B	21-DEC-2009 17:56					

Comments: sample#243270001 is brown, medium soil.

Reagent/Solvent Lot ID	Amount	Description
1203655-02	1.5 mL	Hydrogen Peroxide 30%
1234886	5 mL	Nitric Acid CONC.

# Prep LogBook

Analyst: BXA1  
 Batch: 935380  
 Lab SOP: GL-MA-E-009 REV# 19

Verified by: \_\_\_\_\_

Sample Type	Sample ID	Parent Sample ID	Method	Prep Date	Initial Wt.	Final Volume	Prep Factor	Spike Amount	Spike Units
MB	1202001494		SW846 3050B	21-DEC-2009 18:19	0.521 g	50 mL	95.96929	.525	g
LCS	1202001495		SW846 3050B	21-DEC-2009 18:19	0.525 g	50 mL	95.2381	.25	mL
SAMPLE	243270001		SW846 3050B	21-DEC-2009 18:19	0.506 g	50 mL	98.81423	.25	mL
DUP	1202001496	243270001	SW846 3050B	21-DEC-2009 18:19	0.551 g	50 mL	90.7441	.25	mL
MS	1202001497	243270001	SW846 3050B	21-DEC-2009 18:19	0.563 g	50 mL	88.80995	.25	mL
MSD	1202001499	243270001	SW846 3050B	21-DEC-2009 18:19	0.519 g	50 mL	96.33911	.25	mL
SDILT	1202001498	243270001	SW846 3050B	21-DEC-2009 18:19	0.506 g	50 mL	98.81423	.25	mL
SAMPLE	243270002		SW846 3050B	21-DEC-2009 18:19	0.507 g	50 mL	98.61933	.25	mL
SAMPLE	243270003		SW846 3050B	21-DEC-2009 18:19	0.5 g	50 mL	100	.25	mL
SAMPLE	243270004		SW846 3050B	21-DEC-2009 18:19	0.531 g	50 mL	94.16196	.25	mL
SAMPLE	243270005		SW846 3050B	21-DEC-2009 18:19	0.559 g	50 mL	89.44544	.25	mL
SAMPLE	243270006		SW846 3050B	21-DEC-2009 18:19	0.566 g	50 mL	88.33922	.25	mL
SAMPLE	243270007		SW846 3050B	21-DEC-2009 18:19	0.502 g	50 mL	99.60159	.25	mL
SAMPLE	243270008		SW846 3050B	21-DEC-2009 18:19	0.502 g	50 mL	99.60159	.25	mL
SAMPLE	243270009		SW846 3050B	21-DEC-2009 18:19	0.516 g	50 mL	96.89922	.25	mL
SAMPLE	243270010		SW846 3050B	21-DEC-2009 18:19	0.521 g	50 mL	95.96929	.25	mL
SAMPLE	243270001		SW846 3050B	21-DEC-2009 18:19	0.549 g	50 mL	91.07468	.25	mL

Comments: sample# brown medium soil.

Reagent/Solvent Lot ID	Amount	Description
1244970	10 mL	HYDROCHLORIC ACID
1234886	1.25 mL	Nitric Acid CONC.

# Prep LogBook

Analyst: AXG2  
 Batch: 935669  
 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	1202002063		SW846 7471A Prep	07-JAN-2010 13:30	LCS	1202002064	U1031809A	.206	g
LCS	1202002064		SW846 7471A Prep	07-JAN-2010 13:30	MS	1202002066	WHG100107-14	.3	mL
SAMPLE	243270001		SW846 7471A Prep	07-JAN-2010 13:30	MSD	1202002068	WHG100107-14	.3	mL
DUP	1202002065	243270001	SW846 7471A Prep	07-JAN-2010 13:30					
MS	1202002066	243270001	SW846 7471A Prep	07-JAN-2010 13:30					
MSD	1202002068	243270001	SW846 7471A Prep	07-JAN-2010 13:30					
SDILT	1202002067	243270001	SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270002		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270003		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270004		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270005		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270006		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270007		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270008		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270009		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243270010		SW846 7471A Prep	07-JAN-2010 13:30					
SAMPLE	243273001		SW846 7471A Prep	07-JAN-2010 13:30					

Comments: Sample 243270001 consist of brown, medium soil.  
 Digestion Start Date: 07-JAN-10 13:30  
 Digestion End Date: 07-JAN-10 14:00

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
WHG100107-07	30 uL	Mercury Working Standard 1st Source CAL S 0.2/CRA
WHG100107-08	75 uL	Mercury Working Standard 1st Source CAL S 0.5
WHG100107-11	1.5 mL	Mercury Working 1st Source CAL S 10.0
WHG100107-09	300 uL	Mercury Working 1st Source CAL S 2.0
WHG100107-10	750 uL	Mercury Working 1st Source CAL S 5.0/CCV
WHG100107-12	750 uL	Mercury Working 2nd Source S 5.0/ICV



### DATA EXCEPTION REPORT

<b>Mo. Day Yr.</b> 08-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> 935381	<b>Sample Numbers:</b> See Below		
<b>Potentially affected work order(s)(SDG):</b> 243270(10-990),243273(10-988) <b>Application Issues:</b> Failed Recovery for MS/PS Failed RPD for MS/MSD, or PS/PSD 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 1202001497MS  2. Failed RPD for MS/MSD, or PS/PSD: QC 1202001499MSD  3. Failed Recovery for MSD/PSD: QC 1202001499MSD		1. The matrix spike recovery failed outside of the control limits for antimony and barium 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.  2. The matrix spike and matrix spike duplicate % RPD failed outside of the control limits for manganese due to possible matrix interferences and/or sample non-homogeneity. Per GEL's accredited methods and SOPs, a corrective action is not required and the data is qualified and reported.  3. The matrix spike duplicate recovery failed outside of the control limits for antimony 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 11-JAN-10

**Data Validator/Group Leader:**

Louise Smith 12-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 :** 1016476  
**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:** UI090827-A      **Opened:** 27-AUG-09      **Catalog Number :** 160067-03  
**Name:** ICP-MS DOE SOIL SPIKE      **Received:** 27-AUG-09      **Lot Number :** 1015749  
**Type:** Source Material      **Expires:** 27-AUG-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

**Serial ID:** UI090827-B      **Opened:** 27-AUG-09      **Catalog Number :** 160067-03  
**Name:** ICP-MS DOE SOIL SPIKE      **Received:** 27-AUG-09      **Lot Number :** 1015749  
**Type:** Source Material      **Expires:** 27-AUG-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

# Standard Logbook

**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:** Q2SI  
**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
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

# Standard Logbook

**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%H2O(NH4)2SiF6  
**Supplier:** o2si  
**Description:** Silicon 1000mg/L+/-0.3%in H2O(NH4)2SiF6  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Silica	2139 mg/L	Silicon	1000 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
Tin	200 mg/L	Titanium	200 mg/L



# Standard Logbook

**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

Analyte	Concentration	Analyte	Concentration
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

Analyte	Concentration	Analyte	Concentration
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

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

# Standard Logbook

**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:** O2SI  
**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:** UI091212-60      **Opened:** 12-DEC-09      **Amount :** .5 mL  
**Name:** ICPMS High Range Standard      **Received:** 12-DEC-09      **Catalog Number :** 160212-02-01  
**Type:** Source Material      **Expires:** 12-DEC-10      **Lot Number :** 1018064  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3 + Tr HF  
**Supplier:** O2SI  
**Description:** Linear Range Standard A  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	5000 mg/L	Arsenic	100 mg/L
Barium	250 mg/L	Beryllium	100 mg/L
Cadmium	100 mg/L	Calcium	5000 mg/L
Chromium	100 mg/L	Cobalt	100 mg/L
Copper	100 mg/L	Iron	5000 mg/L
Lead	500 mg/L	Lithium	100 mg/L
Magnesium	5000 mg/L	Manganese	100 mg/L
Nickel	100 mg/L	Phosphorous	2500 mg/L
Potassium	5000 mg/L	Selenium	50 mg/L
Sodium	5000 mg/L	Strontium	100 mg/L
Thallium	50 mg/L	Thorium	250 mg/L
Uranium	500 mg/L	Vanadium	100 mg/L
Zinc	250 mg/L		

**Serial ID:** UI091212-61      **Opened:** 12-DEC-09      **Amount :** .5 mL  
**Name:** ICPMS High Range Standard      **Received:** 12-DEC-09      **Catalog Number :** 160212-02-01  
**Type:** Source Material      **Expires:** 12-DEC-10      **Lot Number :** 1018064  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3 + Tr HF  
**Supplier:** O2SI  
**Description:** Linear Range Standard B  
**Comments:** None

# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Antimony	25 mg/L	Molybdenum	100 mg/L
Silver	25 mg/L	Tin	100 mg/L
Tungsten	100 mg/L	Zirconium	50 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:** 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  
**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

# Standard Logbook

Analyte	Concentration	Analyte	Concentration
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
Uranium	2 mg/L	Vanadium	2 mg/L
Zinc	2 mg/L		

# Standard Logbook

**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      **Expires:** 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  
**Description:** ICP HIGH RANGE STD SOLUTION B  
**Comments:** None

Analyte	Concentration	Analyte	Concentration
Aluminum	500000 ug/L	Calcium	500000 ug/L

# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Iron	500000 ug/L	Magnesium	500000 ug/L
Sodium	500000 ug/L	Uranium	15000 ug/L

**Serial ID:** UMS090303-01      **Opened:** 03-MAR-09      **Amount :** 250 mL  
**Name:** ICPMSCalSPIKEB      **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:** ICPMSCalSPIKEA      **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:** ICPMSCalSPIKEC      **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

# Standard Logbook

Analyte	Concentration	Analyte	Concentration
Antimony	10 mg/L	Molybdenum	10 mg/L
Tin	10 mg/L	Titanium	10 mg/L
Zirconium	10 mg/L		

**Serial ID:** IHG100107-01      **Opened:** 07-JAN-10      **Instrument Id :** Mercury  
**Name:** MHGINTER1      **Received:** 07-JAN-10      **Pipet Id :** Minou1  
**Type:** Intermediate      **Expires:** 08-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.	Allquot	Final Vol.	Final Conc.
UHG1167639-01	Mercury	1000 mg/L	.05 mL	250 mL	200 ug/L

**Serial ID:** IHG100107-02      **Opened:** 07-JAN-10      **Pipet Id :** Minou1  
**Name:** MHGINTER2      **Received:** 07-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Intermediate      **Expires:** 08-JAN-10  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Mercury Intermediate 2nd Source 200 ug/L  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
UHG1167641-02	Mercury	999.7 mg/L	.05 mL	250 mL	200 ug/L

**Serial ID:** WHG100107-07      **Opened:** 07-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS0.2CRA      **Received:** 07-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 08-JAN-10  
**Employee:** Jason Loy  
**Supplier:** GEL  
**Description:** Mercury Working Standard 1st Source CAL S 0.2/CRA  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
IHG100107-01	Mercury	200 ug/L	30 uL	30 mL	.2 ug/L

**Serial ID:** WHG100107-08      **Opened:** 07-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS0.5      **Received:** 07-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 08-JAN-10  
**Employee:** Jason Loy      **Verified:** 20-JUL-07  
**Supplier:** GEL  
**Description:** Mercury Working Standard 1st Source CAL S 0.5  
**Comments:** None

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100107-01	Mercury	200 ug/L	75 uL	30 mL	.5 ug/L

**Serial ID:** WHG100107-09      **Opened:** 07-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS2.0      **Received:** 07-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 08-JAN-10  
**Employee:** Jason Loy      **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.
IHG100107-01	Mercury	200 ug/L	300 uL	30 mL	2 ug/L

**Serial ID:** WHG100107-10      **Opened:** 07-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS5.0CCV      **Received:** 07-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 08-JAN-10  
**Employee:** Jason Loy      **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.
IHG100107-01	Mercury	200 ug/L	750 uL	30 mL	5 ug/L

**Serial ID:** WHG100107-11      **Opened:** 07-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKCALS10.0      **Received:** 07-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 08-JAN-10  
**Employee:** Jason Loy  
**Supplier:** GEL  
**Description:** Mercury Working 1st Source CAL S 10.0  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100107-01	Mercury	200 ug/L	1.5 mL	30 mL	10 ug/L

**Serial ID:** WHG100107-12      **Opened:** 07-JAN-10      **Pipet Id :** Hg1289245  
**Name:** MHGWORKS5.0ICV      **Received:** 07-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 08-JAN-10  
**Employee:** Jason Loy      **Verified:** 20-JUL-07  
**Supplier:** GEL  
**Description:** Mercury Working 2nd Source S 5.0/ICV  
**Comments:** None



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
IHG100107-02	Mercury	200 ug/L	750 uL	30 mL	5 ug/L

**Serial ID:** WHG100107-14      **Opened:** 07-JAN-10      **Pipet Id :** Hq1289245  
**Name:** MHGSOILMSSPIKE      **Received:** 07-JAN-10      **Solvent :** 2% HNO3-1240182  
**Type:** Working      **Expires:** 08-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:** WI100105-42      **Opened:** 05-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP 0.1 PPM STD.      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 06-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1249941  
**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.
WI100105-44	Aluminum	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100105-44	Antimony	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Arsenic	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Barium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Beryllium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Boron	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Cadmium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Calcium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100105-44	Chromium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Cobalt	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Copper	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Iron	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100105-44	Lead	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Magnesium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100105-44	Manganese	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Molybdenum	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Nickel	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Phosphorous	5000 ug/L	10 mL	100 mL	500 ug/L
WI100105-44	Potassium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100105-44	Selenium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Silica	10698 ug/L	10 mL	100 mL	1069 ug/L
WI100105-44	Silicon	5000 ug/L	10 mL	100 mL	500 ug/L
WI100105-44	Silver	1000 ug/L	10 mL	100 mL	100 ug/L

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WI100105-44	Sodium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100105-44	Strontium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Sulfur	2000 ug/L	10 mL	100 mL	200 ug/L
WI100105-44	Thallium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Tin	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Titanium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Uranium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Vanadium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100105-44	Zinc	1000 ug/L	10 mL	100 mL	100 ug/L

**Serial ID:** WI100105-43      **Opened:** 05-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP 0.5/CCV STD.      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 06-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1249941  
**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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
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

**Serial ID:** WI100105-44      **Opened:** 05-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP SCAL 1.0      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 06-JAN-10      **Solvent :** 3%HCL and 1 %HNO3-1249941  
**Employee:** Helen Camello  
**Supplier:** o2si  
**Description:** Trace ICP Calibration Standard 1.0ppm  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
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

**Serial ID:** WI100105-45      **Opened:** 05-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP S-10 STD      **Received:** 22-APR-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 06-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1249941  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP S-10 CALIBRATION STD.  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	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:** WI100105-46      **Opened:** 05-JAN-10      **Balance Id :** 216  
**Name:** ICP TRACE ICV      **Received:** 25-SEP-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 06-JAN-10      **Solvent :** 3%HCL AND 1%HNO3-1249941  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** Initial Calibration Verification ICP Trace Metals  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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
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:** WI100105-47      **Opened:** 05-JAN-10      **Balance Id :** 216  
**Name:** PQL Working Standard      **Received:** 30-JUN-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 06-JAN-10      **Solvent :** 3%HCL &1%HNO3-1249941  
**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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
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
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:** WI100106-42      **Opened:** 06-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP 0.1 PPM STD.      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1249941  
**Employee:** Helen Camello  
**Supplier:** GEL  
**Description:** TRACE ICP 0.1 PPM CALIBRATION STD.  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
WI100106-44	Aluminum	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100106-44	Antimony	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Arsenic	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Barium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Beryllium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Boron	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Cadmium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Calcium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100106-44	Chromium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Cobalt	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Copper	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Iron	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100106-44	Lead	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Magnesium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100106-44	Manganese	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Molybdenum	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Nickel	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Phosphorous	5000 ug/L	10 mL	100 mL	500 ug/L
WI100106-44	Potassium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100106-44	Selenium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Silica	10698 ug/L	10 mL	100 mL	1069 ug/L
WI100106-44	Silicon	5000 ug/L	10 mL	100 mL	500 ug/L
WI100106-44	Silver	1000 ug/L	10 mL	100 mL	100 ug/L

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WI100106-44	Sodium	10000 ug/L	10 mL	100 mL	1000 ug/L
WI100106-44	Strontium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Sulfur	2000 ug/L	10 mL	100 mL	200 ug/L
WI100106-44	Thallium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Tin	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Titanium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Uranium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Vanadium	1000 ug/L	10 mL	100 mL	100 ug/L
WI100106-44	Zinc	1000 ug/L	10 mL	100 mL	100 ug/L

**Serial ID:** WI100106-43      **Opened:** 06-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP 0.5/CCV STD.      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 3%HCL and 1%HNO3 -1249941  
**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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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

**Serial ID:** WI100106-44      **Opened:** 06-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP SCAL 1.0      **Received:** 02-NOV-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 3%HCL and 1 %HNO3-1249941  
**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



## Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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

**Serial ID:** WI100106-45      **Opened:** 06-JAN-10      **Balance Id :** 216  
**Name:** TRACE ICP S-10 STD      **Received:** 22-APR-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 3%HCL and 1%HNO3-1249941  
**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:** WI100106-46      **Opened:** 06-JAN-10      **Balance Id :** 216  
**Name:** ICP TRACE ICV      **Received:** 25-SEP-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 3%HCL AND 1%HNO3-1249941  
**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

## Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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
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:** WI100106-47      **Opened:** 06-JAN-10      **Balance Id :** 216  
**Name:** PQL Working Standard      **Received:** 30-JUN-09      **Pipet Id :** 1099667  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 3%HCL & 1%HNO3-1249941  
**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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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
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:** WMS100105-04B      **Opened:** 05-JAN-10      **Amount :** 50 mL  
**Name:** ICPMS Cal Standard 100      **Received:** 05-JAN-10      **Balance Id :** 40245216  
**Type:** Working      **Expires:** 06-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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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:** WMS100106-04      **Opened:** 06-JAN-10      **Amount :** 50 mL  
**Name:** ICPMS Cal Standard 100      **Received:** 06-JAN-10      **Balance Id :** 4025216  
**Type:** Working      **Expires:** 07-JAN-10      **Pipet Id :** 3541598  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3/1%HCl-1249336  
**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 mL	50 mL	100 ug/l
UMS090303-01	Barium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Beryllium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Boron	20 mg/L	.5 mL	50 mL	200 ug/l
UMS090303-01	Cadmium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Chromium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Cobalt	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Copper	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Lead	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Lithium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Manganese	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Nickel	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Selenium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Silver	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Strontium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Thallium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Thorium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Uranium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Vanadium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Zinc	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-02	Aluminum	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Calcium	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Iron	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Magnesium	1000 mg/L	.5 mL	50 mL	10000 ug/l

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UMS090303-02	Phosphorous	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Potassium	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Sodium	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-03	Antimony	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-03	Molybdenum	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-03	Tin	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-03	Titanium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-03	Zirconium	10 mg/L	.5 mL	50 mL	100 ug/l

**Serial ID:** WMS100106-04A      **Opened:** 06-JAN-10      **Balance Id :** 4025216  
**Name:** ICPMS Cal Standard 10      **Received:** 06-JAN-10      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (10 ppb)  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS100105-04B	Aluminum	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100105-04B	Antimony	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Arsenic	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Barium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Beryllium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Boron	200 ug/l	5 mL	50 mL	20 ug/l
WMS100105-04B	Cadmium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Calcium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100105-04B	Chromium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Cobalt	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Copper	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Iron	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100105-04B	Lead	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Lithium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Magnesium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100105-04B	Manganese	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Molybdenum	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Nickel	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Phosphorous	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100105-04B	Potassium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100105-04B	Selenium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Silver	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Sodium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100105-04B	Strontium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Thallium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Thorium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Tin	100 ug/l	5 mL	50 mL	10 ug/l

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
WMS100105-04B	Titanium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Tungsten	100 ug/L	5 mL	50 mL	10 ug/L
WMS100105-04B	Uranium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Vanadium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Zinc	100 ug/l	5 mL	50 mL	10 ug/l
WMS100105-04B	Zirconium	100 ug/l	5 mL	50 mL	10 ug/l

**Serial ID:** WMS100106-05      **Opened:** 06-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICV      **Received:** 06-JAN-10      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**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
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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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:** WMS100106-06      **Opened:** 06-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS CRDL      **Received:** 06-JAN-10      **Pipet Id :** 3820544  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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:** WMS100106-07      **Opened:** 06-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICSA      **Received:** 06-JAN-10      **Lot Number :** 1010773  
**Type:** Working      **Expires:** 07-JAN-10      **Pipet Id :** 3541598  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3/1%HCl - 1249336  
**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:** WMS100106-08      **Opened:** 06-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICSAB      **Received:** 06-JAN-10      **Pipet Id :** 1758088  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**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



# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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:** WMS100106-70      **Opened:** 06-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS LINEAR RANGE ST      **Received:** 06-JAN-10      **Pipet Id :** 1758088  
**Type:** Working      **Expires:** 07-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**Supplier:** 02SI  
**Description:** ICPMS LINEAR RANGE STANDARD  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UI091212-60	Aluminum	5000 mg/L	.5 mL	50 mL	50000 ug/L
UI091212-60	Arsenic	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Barium	250 mg/L	.5 mL	50 mL	2500 ug/L
UI091212-60	Beryllium	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Cadmium	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Calcium	5000 mg/L	.5 mL	50 mL	50000 ug/L
UI091212-60	Chromium	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Cobalt	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Copper	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Iron	5000 mg/L	.5 mL	50 mL	50000 ug/L
UI091212-60	Lead	500 mg/L	.5 mL	50 mL	5000 ug/L
UI091212-60	Lithium	100 mg/L	.5 mL	50 mL	1000 ug/L

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
UI091212-60	Magnesium	5000 mg/L	.5 mL	50 mL	50000 ug/L
UI091212-60	Manganese	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Nickel	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Phosphorous	2500 mg/L	.5 mL	50 mL	25000 ug/L
UI091212-60	Potassium	5000 mg/L	.5 mL	50 mL	50000 ug/L
UI091212-60	Selenium	50 mg/L	.5 mL	50 mL	500 ug/L
UI091212-60	Sodium	5000 mg/L	.5 mL	50 mL	50000 ug/L
UI091212-60	Strontium	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Thallium	50 mg/L	.5 mL	50 mL	500 ug/L
UI091212-60	Thorium	250 mg/L	.5 mL	50 mL	2500 ug/L
UI091212-60	Uranium	500 mg/L	.5 mL	50 mL	5000 ug/L
UI091212-60	Vanadium	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-60	Zinc	250 mg/L	.5 mL	50 mL	2500 ug/L
UI091212-61	Antimony	25 mg/L	.5 mL	50 mL	250 ug/L
UI091212-61	Molybdenum	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-61	Silver	25 mg/L	.5 mL	50 mL	250 ug/L
UI091212-61	Tin	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-61	Tungsten	100 mg/L	.5 mL	50 mL	1000 ug/L
UI091212-61	Zirconium	50 mg/L	.5 mL	50 mL	500 ug/L

**Serial ID:** WMS100107-04      **Opened:** 07-JAN-10      **Amount :** 50 mL  
**Name:** ICPMS Cal Standard 100      **Received:** 07-JAN-10      **Balance Id :** 4025216  
**Type:** Working      **Expires:** 08-JAN-10      **Pipet Id :** 3541598  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3/1%HCl-1249336  
**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 mL	50 mL	100 ug/l
UMS090303-01	Barium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Beryllium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Boron	20 mg/L	.5 mL	50 mL	200 ug/l
UMS090303-01	Cadmium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Chromium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Cobalt	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Copper	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Lead	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Lithium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Manganese	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Nickel	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Selenium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Silver	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Strontium	10 mg/L	.5 mL	50 mL	100 ug/l

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
UMS090303-01	Thallium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Thorium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Uranium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Vanadium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-01	Zinc	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-02	Aluminum	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Calcium	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Iron	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Magnesium	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Phosphorous	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Potassium	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-02	Sodium	1000 mg/L	.5 mL	50 mL	10000 ug/l
UMS090303-03	Antimony	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-03	Molybdenum	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-03	Tin	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-03	Titanium	10 mg/L	.5 mL	50 mL	100 ug/l
UMS090303-03	Zirconium	10 mg/L	.5 mL	50 mL	100 ug/l

**Serial ID:** WMS100107-04A      **Opened:** 07-JAN-10      **Balance Id :** 4025216  
**Name:** ICPMS Cal Standard 10      **Received:** 07-JAN-10      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 08-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS Calibration Standard (10 ppb)  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS100107-04	Aluminum	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100107-04	Antimony	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Arsenic	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Barium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Beryllium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Boron	200 ug/l	5 mL	50 mL	20 ug/l
WMS100107-04	Cadmium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Calcium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100107-04	Chromium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Cobalt	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Copper	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Iron	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100107-04	Lead	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Lithium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Magnesium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100107-04	Manganese	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Molybdenum	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Nickel	100 ug/l	5 mL	50 mL	10 ug/l

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
WMS100107-04	Phosphorous	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100107-04	Potassium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100107-04	Selenium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Silver	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Sodium	10000 ug/l	5 mL	50 mL	1000 ug/l
WMS100107-04	Strontium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Thallium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Thorium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Tin	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Titanium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Tungsten	100 ug/L	5 mL	50 mL	10 ug/L
WMS100107-04	Uranium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Vanadium	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Zinc	100 ug/l	5 mL	50 mL	10 ug/l
WMS100107-04	Zirconium	100 ug/l	5 mL	50 mL	10 ug/l

**Serial ID:** WMS100107-05      **Opened:** 07-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICV      **Received:** 07-JAN-10      **Pipet Id :** 3541598  
**Type:** Working      **Expires:** 08-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS ICV  
**Comments:** None

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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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

**Serial ID:** WMS100107-06      **Opened:** 07-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS CRDL      **Received:** 07-JAN-10      **Pipet Id :** 3820544  
**Type:** Working      **Expires:** 08-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Allquot	Final Vol.	Final Conc.
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

**Serial ID:** WMS100107-07      **Opened:** 07-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICSA      **Received:** 07-JAN-10      **Lot Number :** 1010773  
**Type:** Working      **Expires:** 08-JAN-10      **Pipet Id :** 3541598  
**Employee:** Paul Boyd      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Supplier:** GEL  
**Description:** ICPMS ICSA  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	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:** WMS100107-08      **Opened:** 07-JAN-10      **Balance Id :** 40245216  
**Name:** ICPMS ICSAB      **Received:** 07-JAN-10      **Pipet Id :** 1758088  
**Type:** Working      **Expires:** 08-JAN-10      **Solvent :** 2%HNO3/1%HCl - 1249336  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** ICPMS ICSAB  
**Comments:** None

Parent Material	Analyte	Parent Conc.	Allquot	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

# Standard Logbook

Parent Material	Analyte	Parent Conc.	Aliquot	Final Vol.	Final Conc.
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
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:** 06-AUG-10  
**Employee:** Tara Griffin  
**Supplier:** GEL  
**Description:** Hg 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:** 1249336      **Opened:** 04-JAN-10      **Solvent :** Type I Water  
**Name:** B-2%HNO3/1%HCl-ICPMS      **Received:** 04-JAN-10  
**Type:** Reagent/Solvent      **Expires:** 11-JAN-10  
**Employee:** Paul Boyd  
**Supplier:** GEL  
**Description:** 2%HNO3/1%HCl Solution (Type I Water)  
**Comments:** None

## Standard Logbook

Parent Material	Analyte	Parent Conc.	Allquot	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

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Serial ID: 1249941      Opened: 04-JAN-10      Amount : 20 L  
Name: B-ICP-RINSE SOLN      Received: 15-DEC-10      Lot Number : H04040+G34050  
Type: Reagent/Solvent      Expires: 10-JAN-10      Solvent : 3%HCL+1%HNO3  
Employee: Helen Camello  
Supplier: GEL  
Description: 3%HCL+1%HNO3 RINSE SOLN.  
Comments: None

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# **General Chemistry Analysis**

# Case Narrative

**General Chemistry Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-988**

**Method/Analysis Information**

**Product:** Cyanide, Total

**Analytical Batch:** 935219      **Method:** SW846 9012A

**Prep Batch :** 935217      **Method:** 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>
243273001	RE12-10-7351
1202000965	Method Blank (MB)
1202000966	243243019(RE16-10-324) Sample Duplicate (DUP)
1202000967	243249001(RE16-10-144) Sample Duplicate (DUP)
1202000968	243243019(RE16-10-324) Matrix Spike (MS)
1202000969	243249001(RE16-10-144) Matrix Spike (MS)
1202000970	243243019(RE16-10-324) Matrix Spike Duplicate (MSD)
1202000971	243249001(RE16-10-144) Matrix Spike Duplicate (MSD)
1202000972	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-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: 243243019 (RE16-10-324) and 243249001 (RE16-10-144).

**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. 1202000966 (RE16-10-324).

**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: 1202000972 (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: 14Jan10



# **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: 10-988 GEL Work Order: 243273

**The Qualifiers in this report are defined as follows:**

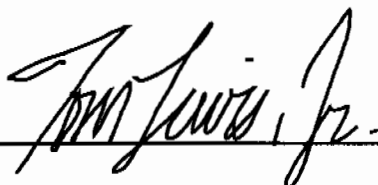
- \* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
- \*\* Indicates the analyte is a surrogate compound.

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 4, 2010

Client SDG: 10-988

Client Sample ID: RE12-10-7351  
Sample ID: 243273001  
Matrix: R  
Collect Date: 15-DEC-09 12:00  
Receive Date: 18-DEC-09  
Collector: Client  
Moisture: 10.5%

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	76.0	279	ug/kg	1	AXC2	12/29/09	1349	935219	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010B Prep	SW846 9010B Prep	AXS5	12/29/09	1259	935217

### 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 4, 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: 243273

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Flow Injection Analysis</b>											
Batch	935219										
QC1202000966	243243019	DUP									
Cyanide, Total		J	226	J	161	ug/kg	33.6	^	(+/-266)	AXC2	12/29/09 13:22
QC1202000967	243249001	DUP									
Cyanide, Total			324		276	ug/kg	15.9	^	(+/-246)		12/29/09 13:25
QC1202000972	LCS										
Cyanide, Total	67900				80000	ug/kg		118	(46%-145%)		12/29/09 13:19
QC1202000965	MB										
Cyanide, Total				U	250	ug/kg					12/29/09 13:18
QC1202000968	243243019	MS									
Cyanide, Total	5920	J	226		4950	ug/kg		79.7	(50%-130%)		12/29/09 13:23
QC1202000969	243249001	MS									
Cyanide, Total	5010		324		4810	ug/kg		89.6	(50%-130%)		12/29/09 13:26
QC1202000970	243243019	MSD									
Cyanide, Total	6160	J	226		5230	ug/kg	5.58	81.2	(0%-30%)		12/29/09 13:24
QC1202000971	243249001	MSD									
Cyanide, Total	5390		324		5230	ug/kg	8.34	91	(0%-30%)		12/29/09 13:31

### 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

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### QC Summary

Workorder: 243273

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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: 04-JAN-2010 15:24

**GEL Laboratories LLC**

**Contract: LANL01004**

**SDG #: 10-988**

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	29-DEC-2009 10:13:05	OM_12-29-2009_10-02-35	149	150	99	(90%-110%)	Yes
CCV	29-DEC-2009 13:15:09	OM_12-29-2009_13-11-48	95.5	100	96	(90%-110%)	Yes
CCV	29-DEC-2009 13:27:36	OM_12-29-2009_13-11-48	102	100	102	(90%-110%)	Yes
CCV	29-DEC-2009 13:40:01	OM_12-29-2009_13-11-48	104	100	104	(90%-110%)	Yes
CCV	29-DEC-2009 13:50:41	OM_12-29-2009_13-11-48	105	100	105	(90%-110%)	Yes

Sample Type	Run Date	Data File	Result	Limits	Within Limits
ICB	29-DEC-2009 10:14:56	OM_12-29-2009_10-02-35	-1.83	5	Yes
CCB	29-DEC-2009 13:16:59	OM_12-29-2009_13-11-48	-2.07	5	Yes
CCB	29-DEC-2009 13:29:26	OM_12-29-2009_13-11-48	-2.23	5	Yes
CCB	29-DEC-2009 13:41:52	OM_12-29-2009_13-11-48	-3.07	5	Yes
CCB	29-DEC-2009 13:52:31	OM_12-29-2009_13-11-48	-2.09	5	Yes



# Cyanide, Total

# Prep LogBook

Analyst: AXS5  
 Batch: 935217  
 Lab SOP: GL-GC-E-067 REV# 13

Verified by: \_\_\_\_\_

Type	Sample Id	Lot. Id	Spike Amount	Spike Units
LCS	1202000972	URF1200957-01	.25	g
MS	1202000968	URF1184831-02	.025	mL
MS	1202000969	URF1184831-02	.025	mL
MSD	1202000970	URF1184831-02	.025	mL
MSD	1202000971	URF1184831-02	.025	mL

Sample Type	Sample ID	Parent Sample ID	Method	Prep Date	Ph	Initial Wt.	Final Volume	Prep Factor	Matrix
MB	1202000965		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.5 g	25 mL	50	SOIL
LCS	1202000972		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.25 g	25 mL	100	SOIL
SAMPLE	243194001		SW846 9010C Distillation	29-DEC-2009 12:59	>12	0.58 g	25 mL	43.10345	SOLID
SAMPLE	243243019		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.51 g	25 mL	49.01961	SOIL
DUP	1202000966	243243019	SW846 9010B Prep	29-DEC-2009 12:59	>12	0.58 g	25 mL	43.10345	SOIL
MS	1202000968	243243019	SW846 9010B Prep	29-DEC-2009 12:59	>12	0.52 g	25 mL	48.07692	SOIL
MSD	1202000970	243243019	SW846 9010B Prep	29-DEC-2009 12:59	>12	0.5 g	25 mL	50	SOIL
SAMPLE	243249001		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.5 g	25 mL	50	SOIL
DUP	1202000967	243249001	SW846 9010B Prep	29-DEC-2009 12:59	>12	0.57 g	25 mL	43.85965	SOIL
MS	1202000969	243249001	SW846 9010B Prep	29-DEC-2009 12:59	>12	0.56 g	25 mL	44.64286	SOIL
MSD	1202000971	243249001	SW846 9010B Prep	29-DEC-2009 12:59	>12	0.52 g	25 mL	48.07692	SOIL
SAMPLE	243249002		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.52 g	25 mL	48.07692	SOIL
SAMPLE	243249003		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.54 g	25 mL	46.2963	SOIL
SAMPLE	243249004		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.5 g	25 mL	50	SOIL
SAMPLE	243249005		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.52 g	25 mL	48.07692	SOIL
SAMPLE	243256001		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.54 g	25 mL	46.2963	SOIL
SAMPLE	243256002		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.58 g	25 mL	43.10345	SOIL
SAMPLE	243256003		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.51 g	25 mL	49.01961	SOIL
SAMPLE	243270001		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.54 g	25 mL	46.2963	SOIL
SAMPLE	243270002		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.51 g	25 mL	49.01961	SOIL
SAMPLE	243270003		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.55 g	25 mL	45.45455	SOIL
SAMPLE	243270004		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.54 g	25 mL	46.2963	SOIL
SAMPLE	243270005		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.56 g	25 mL	44.64286	SOIL
SAMPLE	243270006		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.55 g	25 mL	45.45455	SOIL
SAMPLE	243270007		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.51 g	25 mL	49.01961	SOIL
SAMPLE	243270008		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.56 g	25 mL	44.64286	SOIL
SAMPLE	243270009		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.56 g	25 mL	44.64286	SOIL
SAMPLE	243273001		SW846 9010B Prep	29-DEC-2009 12:59	>12	0.5 g	25 mL	50	SOIL

## Prep LogBook

Reagent/Solvent Lot ID	Amount	Description	Comments
091211-C	25 mL	0.25N Sodium Hydroxide Solution	
WCN091229-07	.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	12/29/2009 10:05:56	OM_12-29-2009_10-02-35
150 ppb		1	axc2	12/29/2009 10:06:48	OM_12-29-2009_10-02-35
100 ppb		1	axc2	12/29/2009 10:07:40	OM_12-29-2009_10-02-35
50 ppb		1	axc2	12/29/2009 10:08:33	OM_12-29-2009_10-02-35
10 ppb		1	axc2	12/29/2009 10:09:27	OM_12-29-2009_10-02-35
CRDL 5.0 ppb		1	axc2	12/29/2009 10:10:20	OM_12-29-2009_10-02-35
ICAL-00		1	axc2	12/29/2009 10:11:15	OM_12-29-2009_10-02-35
ICV		1	axc2	12/29/2009 10:13:05	OM_12-29-2009_10-02-35
ICB		1	axc2	12/29/2009 10:14:56	OM_12-29-2009_10-02-35
CRDL		1	axc2	12/29/2009 10:16:46	OM_12-29-2009_10-02-35
1202004489	936839	1	axc2	12/29/2009 10:18:35	OM_12-29-2009_10-02-35
1202004496	936839	25	axc2	12/29/2009 10:19:29	OM_12-29-2009_10-02-35
243501001	936839	1	axc2	12/29/2009 10:20:22	OM_12-29-2009_10-02-35
1202004490	936839	1	axc2	12/29/2009 10:21:15	OM_12-29-2009_10-02-35
1202004492	936839	1	axc2	12/29/2009 10:22:08	OM_12-29-2009_10-02-35
1202004494	936839	1	axc2	12/29/2009 10:23:01	OM_12-29-2009_10-02-35
243501002	936839	1	axc2	12/29/2009 10:23:53	OM_12-29-2009_10-02-35
1202004491	936839	1	axc2	12/29/2009 10:24:46	OM_12-29-2009_10-02-35
1202004493	936839	1	axc2	12/29/2009 10:25:38	OM_12-29-2009_10-02-35
1202004495	936839	1	axc2	12/29/2009 10:26:31	OM_12-29-2009_10-02-35
CCV		1	axc2	12/29/2009 10:27:23	OM_12-29-2009_10-02-35
CCB		1	axc2	12/29/2009 10:29:14	OM_12-29-2009_10-02-35
243501003	936839	1	axc2	12/29/2009 10:31:02	OM_12-29-2009_10-02-35
243505003	936839	1	axc2	12/29/2009 10:31:54	OM_12-29-2009_10-02-35
243505004	936839	1	axc2	12/29/2009 10:32:46	OM_12-29-2009_10-02-35
243505005	936839	1	axc2	12/29/2009 10:33:37	OM_12-29-2009_10-02-35
243505006	936839	1	axc2	12/29/2009 10:34:29	OM_12-29-2009_10-02-35
243505007	936839	1	axc2	12/29/2009 10:35:23	OM_12-29-2009_10-02-35
243505008	936839	1	axc2	12/29/2009 10:36:16	OM_12-29-2009_10-02-35
243509001	936839	1	axc2	12/29/2009 10:37:10	OM_12-29-2009_10-02-35
243509002	936839	1	axc2	12/29/2009 10:38:03	OM_12-29-2009_10-02-35
243509003	936839	1	axc2	12/29/2009 10:38:56	OM_12-29-2009_10-02-35
CCV		1	axc2	12/29/2009 10:39:49	OM_12-29-2009_10-02-35
CCB		1	axc2	12/29/2009 10:41:39	OM_12-29-2009_10-02-35
243517003	936839	1	axc2	12/29/2009 10:43:29	OM_12-29-2009_10-02-35
243517004	936839	1	axc2	12/29/2009 10:44:22	OM_12-29-2009_10-02-35
243517005	936839	1	axc2	12/29/2009 10:45:15	OM_12-29-2009_10-02-35
243517006	936839	1	axc2	12/29/2009 10:46:07	OM_12-29-2009_10-02-35
243517007	936839	1	axc2	12/29/2009 10:46:59	OM_12-29-2009_10-02-35
243543001	936839	1	axc2	12/29/2009 10:47:52	OM_12-29-2009_10-02-35
CCV		1	axc2	12/29/2009 10:48:44	OM_12-29-2009_10-02-35
CCB		1	axc2	12/29/2009 10:50:34	OM_12-29-2009_10-02-35

Original Run Filename: OM\_12-29-2009\_10-02-35.OMN created 12/29/2009 10:02:35  
 Original Run Author's Signature: [axc2]  
 Current Run Filename: OM\_12-29-2009\_10-02-35.OMN last modified 12/29/2009 10:51:39  
 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 TCYANIDE		Detection Time	ADF	MDF	Description
			Conc. (ug/L)	Area (Vs)				
WCN091229-01	1	S1	200	7.42	12/29/2009@10:05:56			200 ppb
WCN091229-02	1	S2	150	5.62	12/29/2009@10:06:48			150 ppb
WCN091229-03	1	S3	100	3.70	12/29/2009@10:07:40			100 ppb
WCN091229-04	1	S4	50.0	2.07	12/29/2009@10:08:33			50 ppb
WCN091229-05	1	S5	10.0	0.457	12/29/2009@10:09:27			10 ppb
WCN091229-06	1	S6	5.00	0.281	12/29/2009@10:10:20			CRDL 5.0 ppb
WCN091229-08	1	S7	0.00	-0.00218	12/29/2009@10:11:15			0.0 ppb
DQM Test: Minimum Correlation Coefficient								
Result:			0.99966 > 0.99500					
Message			Pass					
Action			Continue					
WCN091229-07	1	S8	149	5.55	12/29/2009@10:13:05			ICV
Known Conc:			150					
DQM Test: > + Percent Relative Difference								
Result:			-0.9 < 10.0					
Message			ICV Passed					
Action			Continue					
DQM Test: < - Percent Relative Difference								
Result:			-0.9 < 10.0					
Message			ICV Passed					
Action			Continue					
Calibration:			Table/Fig. 1					
WCN091229-08	1	S7	-1.83	0.0193	12/29/2009@10:14:56			ICB/CCB
Known Conc:			0.00					
DQM Test: > + Concentration Limit								
Result:			-1.83 < 5.01					
Message			ICB/CCB Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			-1.83 > -5.01					
Message			ICB/CCB Passed					
Action			Continue					
WCN091229-06	1	S6	5.37	0.284	12/29/2009@10:16:46			CRDL
Known Conc:			5.00					
DQM Test: > + Concentration Limit								
Result:			5.37 < 7.50					
Message			CRDL Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			5.37 > 2.50					
Message			Pass					
Action			None					
1202004489 936839 MB	1	1	-2.36	-1.76e-4	12/29/2009@10:18:35			
1202004496 LCS	1	2	28.4	1.13	12/29/2009@10:19:29		25.00	
243501001	1	3	-1.09	0.0466	12/29/2009@10:20:22			
1202004490 DUP	1	4	-1.18	0.0433	12/29/2009@10:21:15			
1202004492 MS	1	5	85.0	3.21	12/29/2009@10:22:08			
1202004494 MSD	1	6	102	3.84	12/29/2009@10:23:01			
243501002	1	7	-1.09	0.0463	12/29/2009@10:23:53			
1202004491 DUP	1	8	-1.69	0.0243	12/29/2009@10:24:46			
1202004493 MS	1	9	103	3.87	12/29/2009@10:25:38			
1202004495 MSD	1	10	102	3.85	12/29/2009@10:26:31			
WCN091229-03	1	S3	104	3.92	12/29/2009@10:27:23			CCV
Known Conc:			100					
DQM Test: > + Percent Relative Difference								
Result:			4.1 < 10.0					

Message			CCV Passed				
Action			Continue				
DQM Test: < - Percent Relative Difference							
Result:			4.1 < 10.0				
Message			CCV Passed				
Action			Continue				
WCN091229-08	1	S7	-1.84	0.0190	12/29/2009@10:29:14		CCB
Known Conc:			0.00				
DQM Test: > + Concentration Limit							
Result:			-1.84 < 5.00				
Message			CCB Passed				
Action			Continue				
DQM Test: < - Concentration Limit							
Result:			-1.84 > -5.00				
Message			CCB Passed				
Action			Continue				
243501003	1	11	-1.09	0.0465	12/29/2009@10:31:02		
243505003	1	12	-1.78	0.0212	12/29/2009@10:31:54		
243505004	1	13	-1.73	0.0229	12/29/2009@10:32:46		
243505005	1	14	0.958	0.122	12/29/2009@10:33:37		
243505006	1	15	2.37	0.174	12/29/2009@10:34:29		
243505007	1	16	-1.49	0.0317	12/29/2009@10:35:23		
243505008	1	17	-1.26	0.0402	12/29/2009@10:36:16		
243509001	1	18	0.238	0.0953	12/29/2009@10:37:10		
243509002	1	19	2.59	0.182	12/29/2009@10:38:03		
243509003	1	20	-1.40	0.0351	12/29/2009@10:38:56		
WCN091229-03	1	S3	105	3.94	12/29/2009@10:39:49		CCV
Known Conc:			100				
DQM Test: > + Percent Relative Difference							
Result:			4.9 < 10.0				
Message			CCV Passed				
Action			Continue				
DQM Test: < - Percent Relative Difference							
Result:			4.9 < 10.0				
Message			CCV Passed				
Action			Continue				
WCN091229-08	1	S7	-2.37	-3.86e-4	12/29/2009@10:41:39		CCB
Known Conc:			0.00				
DQM Test: > + Concentration Limit							
Result:			-2.37 < 5.00				
Message			CCB Passed				
Action			Continue				
DQM Test: < - Concentration Limit							
Result:			-2.37 > -5.00				
Message			CCB Passed				
Action			Continue				
243517003	1	21	0.325	0.0986	12/29/2009@10:43:29		
243517004	1	22	-1.24	0.0409	12/29/2009@10:44:22		
243517005	1	23	-1.27	0.0399	12/29/2009@10:45:15		
243517006	1	24	-1.47	0.0326	12/29/2009@10:46:07		
243517007	1	25	-0.795	0.0574	12/29/2009@10:46:59		
243543001	1	26	12.2	0.535	12/29/2009@10:47:52		
WCN091229-03	1	S3	105	3.95	12/29/2009@10:48:44		CCV
Known Conc:			100				
DQM Test: > + Percent Relative Difference							
Result:			5.2 < 10.0				
Message			CCV Passed				
Action			Continue				
DQM Test: < - Percent Relative Difference							
Result:			5.2 < 10.0				
Message			CCV Passed				
Action			Continue				
WCN091229-08	1	S7	-1.88	0.0176	12/29/2009@10:50:34		CCB
Known Conc:			0.00				
DQM Test: > + Concentration Limit							
Result:			-1.88 < 5.00				
Message			CCB Passed				
Action			Continue				

DQM Test: < - Concentration Limit					
Result:	-1.88 > -5.00				
Message	CCB Passed				
Action	Continue				

Analyte Properties Table for OM\_12-29-2009\_10-02-35.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

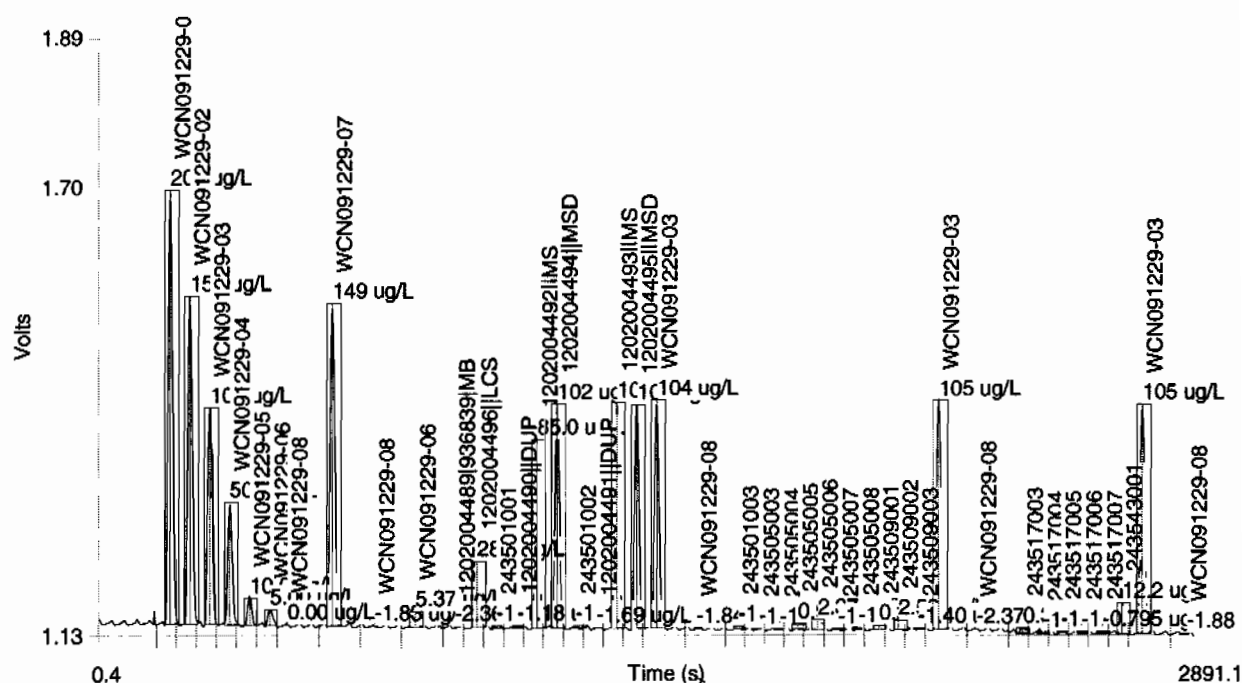
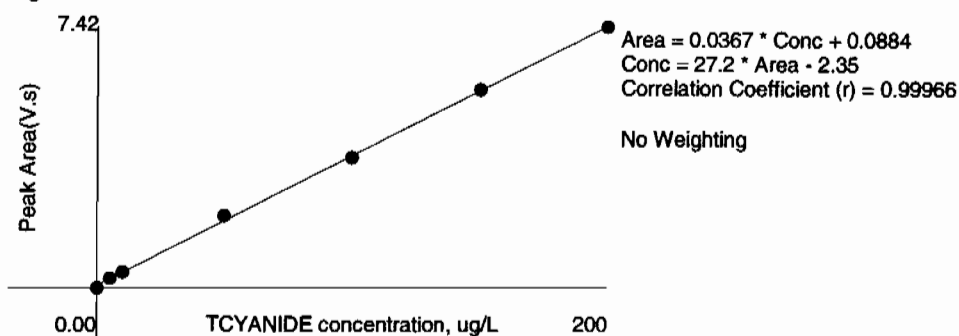


Table 1: TCYANIDE

	Conc. (ug/L)	Rep	Peak Area (Volt-s)	Peak Height (Volts)	% Residual	Detection Date	Detection Time
1	200	1	7.42	0.548	0.3	12/29/2009	10:06:59
2	150	1	5.62	0.415	-0.4	12/29/2009	10:07:51
3	100	1	3.70	0.272	1.7	12/29/2009	10:08:44
4	50.0	1	2.07	0.153	-7.4	12/29/2009	10:09:36
5	10.0	1	0.457	0.0333	-0.2	12/29/2009	10:10:30
6	5.00	1	0.281	0.0196	-3.4	12/29/2009	10:11:24
7	0.00	1	-0.00218	-8.80e-4		12/29/2009	10:12:18

Figure 1: TCYANIDE





This is runlog Lachat1

Sample ID	Batch	Dilution	Analyst	Runtime	Dataset
CCV		1	axc2	12/29/2009 13:15:09	OM_12-29-2009_13-11-48
CCB		1	axc2	12/29/2009 13:16:59	OM_12-29-2009_13-11-48
1202000965	935219	1	axc2	12/29/2009 13:18:48	OM_12-29-2009_13-11-48
1202000972	935219	25	axc2	12/29/2009 13:19:42	OM_12-29-2009_13-11-48
243194001	935219	1	axc2	12/29/2009 13:20:35	OM_12-29-2009_13-11-48
243243019	935219	1	axc2	12/29/2009 13:21:28	OM_12-29-2009_13-11-48
1202000966	935219	1	axc2	12/29/2009 13:22:21	OM_12-29-2009_13-11-48
1202000968	935219	1	axc2	12/29/2009 13:23:14	OM_12-29-2009_13-11-48
1202000970	935219	1	axc2	12/29/2009 13:24:06	OM_12-29-2009_13-11-48
243249001	935219	1	axc2	12/29/2009 13:24:59	OM_12-29-2009_13-11-48
1202000967	935219	1	axc2	12/29/2009 13:25:51	OM_12-29-2009_13-11-48
1202000969	935219	1	axc2	12/29/2009 13:26:43	OM_12-29-2009_13-11-48
CCV		1	axc2	12/29/2009 13:27:36	OM_12-29-2009_13-11-48
CCB		1	axc2	12/29/2009 13:29:26	OM_12-29-2009_13-11-48
1202000971	935219	1	axc2	12/29/2009 13:31:15	OM_12-29-2009_13-11-48
243249002	935219	1	axc2	12/29/2009 13:32:07	OM_12-29-2009_13-11-48
243249003	935219	1	axc2	12/29/2009 13:32:58	OM_12-29-2009_13-11-48
243249004	935219	1	axc2	12/29/2009 13:33:50	OM_12-29-2009_13-11-48
243249005	935219	1	axc2	12/29/2009 13:34:41	OM_12-29-2009_13-11-48
243256001	935219	1	axc2	12/29/2009 13:35:35	OM_12-29-2009_13-11-48
243256002	935219	1	axc2	12/29/2009 13:36:29	OM_12-29-2009_13-11-48
243256003	935219	1	axc2	12/29/2009 13:37:22	OM_12-29-2009_13-11-48
243270001	935219	1	axc2	12/29/2009 13:38:15	OM_12-29-2009_13-11-48
243270002	935219	1	axc2	12/29/2009 13:39:09	OM_12-29-2009_13-11-48
CCV		1	axc2	12/29/2009 13:40:01	OM_12-29-2009_13-11-48
CCB		1	axc2	12/29/2009 13:41:52	OM_12-29-2009_13-11-48
243270003	935219	1	axc2	12/29/2009 13:43:41	OM_12-29-2009_13-11-48
243270004	935219	1	axc2	12/29/2009 13:44:34	OM_12-29-2009_13-11-48
243270005	935219	1	axc2	12/29/2009 13:45:27	OM_12-29-2009_13-11-48
243270006	935219	1	axc2	12/29/2009 13:46:20	OM_12-29-2009_13-11-48
243270007	935219	1	axc2	12/29/2009 13:47:12	OM_12-29-2009_13-11-48
243270008	935219	1	axc2	12/29/2009 13:48:04	OM_12-29-2009_13-11-48
243270009	935219	1	axc2	12/29/2009 13:48:56	OM_12-29-2009_13-11-48
243273001	935219	1	axc2	12/29/2009 13:49:49	OM_12-29-2009_13-11-48
CCV		1	axc2	12/29/2009 13:50:41	OM_12-29-2009_13-11-48
CCB		1	axc2	12/29/2009 13:52:31	OM_12-29-2009_13-11-48

Original Run Filename: OM\_12-29-2009\_13-11-48.OMN created 12/29/2009 13:11:48  
 Original Run Author's Signature: [axc2]  
 Current Run Filename: OM\_12-29-2009\_13-11-48.OMN last modified 12/29/2009 13:53:36  
 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	Area				
			Conc. (ug/L)	(Vs)				
WCN091229-03	1	S3	95.5	3.60	12/29/2009@13:15:09			CCV
Known Conc:			100					
DQM Test: > + Percent Relative Difference								
Result:			-4.5 < 10.0					
Message			CCV Passed					
Action			Continue					
DQM Test: < - Percent Relative Difference								
Result:			-4.5 < 10.0					
Message			CCV Passed					
Action			Continue					
Calibration:			Table/Fig. 1					
WCN091229-08	1	S7	-2.07	0.0103	12/29/2009@13:16:59			CCB
Known Conc:			0.00					
DQM Test: > + Concentration Limit								
Result:			-2.07 < 5.00					
Message			CCB Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			-2.07 > -5.00					
Message			CCB Passed					
Action			Continue					
1202000965 935219 MB	1	1	-2.29	0.00254	12/29/2009@13:18:48			
1202000972  LCS	1	2	32.0	1.26	12/29/2009@13:19:42		25.00	
243194001	1	3	79.0	2.99	12/29/2009@13:20:35			
243243019	1	4	3.74	0.224	12/29/2009@13:21:28			
1202000966  DUP	1	5	3.03	0.198	12/29/2009@13:22:21			
1202000968  MS	1	6	83.5	3.16	12/29/2009@13:23:14			
1202000970  MSD	1	7	84.9	3.21	12/29/2009@13:24:06			
243249001	1	8	5.77	0.299	12/29/2009@13:24:59			
1202000967  DUP	1	9	5.61	0.293	12/29/2009@13:25:51			
1202000969  MS	1	10	96.1	3.62	12/29/2009@13:26:43			
WCN091229-03	1	S3	102	3.83	12/29/2009@13:27:36			CCV
Known Conc:			100					
DQM Test: > + Percent Relative Difference								
Result:			1.7 < 10.0					
Message			CCV Passed					
Action			Continue					
DQM Test: < - Percent Relative Difference								
Result:			1.7 < 10.0					
Message			CCV Passed					
Action			Continue					
WCN091229-08	1	S7	-2.23	0.00475	12/29/2009@13:29:26			CCB
Known Conc:			0.00					
DQM Test: > + Concentration Limit								
Result:			-2.23 < 5.00					
Message			CCB Passed					
Action			Continue					
DQM Test: < - Concentration Limit								
Result:			-2.23 > -5.00					
Message			CCB Passed					
Action			Continue					
1202000971  MSD	1	11	97.0	3.65	12/29/2009@13:31:15			
243249002	1	12	2.67	0.185	12/29/2009@13:32:07			
243249003	1	13	-1.01	0.0495	12/29/2009@13:32:58			
243249004	1	14	1.68	0.148	12/29/2009@13:33:50			
243249005	1	15	2.54	0.180	12/29/2009@13:34:41			

243256001	1	16	2.33	0.172	12/29/2009@13:35:35		
243256002	1	17	1.81	0.153	12/29/2009@13:36:29		
243256003	1	18	-0.913	0.0530	12/29/2009@13:37:22		
243270001	1	19	-1.35	0.0370	12/29/2009@13:38:15		
243270002	1	20	-0.608	0.0642	12/29/2009@13:39:09		
WCN091229-03	1	S3	104	3.93	12/29/2009@13:40:01		CCV
Known Conc:			100				
DQM Test: > + Percent Relative Difference							
Result:			4.4 < 10.0				
Message			CCV Passed				
Action			Continue				
DQM Test: < - Percent Relative Difference							
Result:			4.4 < 10.0				
Message			CCV Passed				
Action			Continue				
WCN091229-08	1	S7	-3.07	-0.0261	12/29/2009@13:41:52		CCB
Known Conc:			0.00				
DQM Test: > + Concentration Limit							
Result:			-3.07 < 5.00				
Message			CCB Passed				
Action			Continue				
DQM Test: < - Concentration Limit							
Result:			-3.07 > -5.00				
Message			CCB Passed				
Action			Continue				
243270003	1	21	1.93	0.158	12/29/2009@13:43:41		
243270004	1	22	3.47	0.214	12/29/2009@13:44:34		
243270005	1	23	2.51	0.179	12/29/2009@13:45:27		
243270006	1	24	-1.03	0.0488	12/29/2009@13:46:20		
243270007	1	25	-0.480	0.0689	12/29/2009@13:47:12		
243270008	1	26	3.13	0.202	12/29/2009@13:48:04		
243270009	1	27	-0.549	0.0664	12/29/2009@13:48:56		
243273001	1	28	-0.265	0.0768	12/29/2009@13:49:49		
WCN091229-03	1	S3	105	3.95	12/29/2009@13:50:41		CCV
Known Conc:			100				
DQM Test: > + Percent Relative Difference							
Result:			5.2 < 10.0				
Message			CCV Passed				
Action			Continue				
DQM Test: < - Percent Relative Difference							
Result:			5.2 < 10.0				
Message			CCV Passed				
Action			Continue				
WCN091229-08	1	S7	-2.09	0.00983	12/29/2009@13:52:31		CCB
Known Conc:			0.00				
DQM Test: > + Concentration Limit							
Result:			-2.09 < 5.00				
Message			CCB Passed				
Action			Continue				
DQM Test: < - Concentration Limit							
Result:			-2.09 > -5.00				
Message			CCB Passed				
Action			Continue				

Analyte Properties Table for OM\_12-29-2009\_13-11-48.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

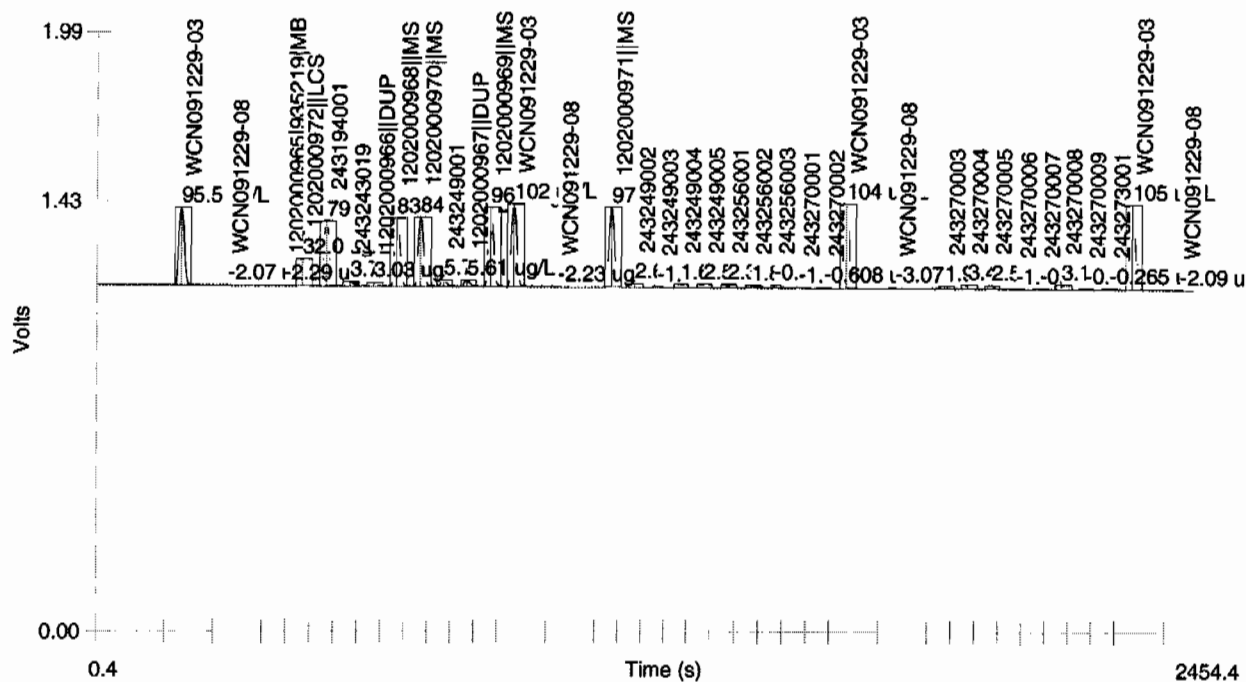
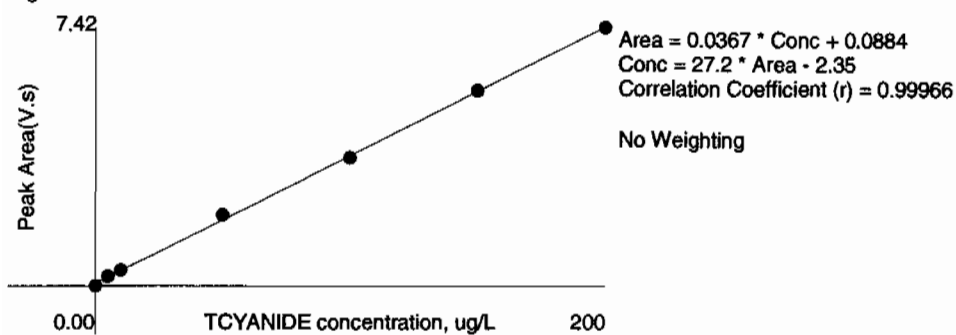


Table 1: TCYANIDE

	Conc. (ug/L)	Rep	Peak Area (Volt-s)	Peak Height (Volts)	% Residual	Detection Date	Detection Time
1	200	1	7.42	0.548	0.3	12/29/2009	10:06:59
2	150	1	5.62	0.415	-0.4	12/29/2009	10:07:51
3	100	1	3.70	0.272	1.7	12/29/2009	10:08:44
4	50.0	1	2.07	0.153	-7.4	12/29/2009	10:09:36
5	10.0	1	0.457	0.0333	-0.2	12/29/2009	10:10:30
6	5.00	1	0.281	0.0196	-3.4	12/29/2009	10:11:24
7	0.00	1	-0.00218	-8.80e-4		12/29/2009	10:12:18

Figure 1: TCYANIDE



# RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative  
Los Alamos National Laboratory (LANL)  
SDG 10-988**

**Method/Analysis Information**

**Procedure:**                      **Dry Weight-Percent Moisture**

Analytical Method:

Analytical Batch Number:    935188

<b>Sample ID</b>	<b>Client ID</b>
243273001	RE12-10-7351
1202000888	243273001(RE12-10-7351) 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: 243273001 (RE12-10-7351). The QC was from LANL work order 243273.

**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:**

#### **NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) 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:	935836
Prep Batch Number:	935181

<b>Sample ID</b>	<b>Client ID</b>
243273001	RE12-10-7351
1202002408	Method Blank (MB)
1202002409	243274006(RE12-10-7356) Sample Duplicate (DUP)
1202002410	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 1202002408 (MB) was changed to 1.0 per client request.

**Designated QC**

The following sample was used for QC: 243274006 (RE12-10-7356). The QC was from LANL work order 243274.

**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:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) 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:** 935838  
**Prep Batch Number:** 935181

Sample ID	Client ID
243273001	RE12-10-7351
1202002411	Method Blank (MB)
1202002412	243274006(RE12-10-7356) Sample Duplicate (DUP)
1202002413	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 1202002411 (MB) was changed to 1.0 per client request.

##### **Designated QC**

The following sample was used for QC: 243274006 (RE12-10-7356). The QC was from LANL work order 243274.

##### **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:****NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) 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:	938206
Prep Batch Number:	935181

Sample ID	Client ID
243273001	RE12-10-7351
1202007528	Method Blank (MB)
1202007529	243274010(RE12-10-7364) Sample Duplicate (DUP)
1202007530	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 1202007528 (MB) was changed to 1.0 per client request.

##### **Designated QC**

The following sample was used for QC: 243274010 (RE12-10-7364). The QC was from LANL work order 243274.

##### **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 1202007528 (MB) was recounted due to high carrier/tracer yield. Samples were reprepared due to high relative percent difference/relative error ratio.

### **Miscellaneous Information:**

#### **NCR Documentation**

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) 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:	935341
Prep Batch Number:	935181

<b>Sample ID</b>	<b>Client ID</b>
243273001	RE12-10-7351
1202001375	Method Blank (MB)
1202001376	243274001(RE12-10-7352) Sample Duplicate (DUP)
1202001377	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 January 2009, February 2009, June 2009 and July 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: 243274001 (RE12-10-7352). The QC was from LANL work order 243274.

#### **QC Information**

All of the QC samples met the required acceptance limits.

#### **CSU**

The blank results for Pb-212, Ra-224, Tl-208 and U-235 for sample 1202001375 (MB) are greater than 1.65 times the CSU but less than the MDC.

### **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 prep or reanalysis.

### **Miscellaneous Information:**

#### **NCR Documentation**

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

#### **Additional Comments**

Additional comments were not required for this sample set.

#### **Blank Decision Level**

The blank results for Pb-212, Ra-224, Tl-208 and U-235 for sample 1202001375 (MB) are greater than the decision level but less than the MDC.

**Qualifier information**

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to interference.	Bismuth-211	243273001	RE12-10-7351
			1202001376	RE12-10-7352(243274001DUP)
		Cadmium-109	1202001376	RE12-10-7352(243274001DUP)
		Radium-224	243273001	RE12-10-7351
			1202001376	RE12-10-7352(243274001DUP)
UI	Data rejected due to low abundance.	Americium-241	1202001376	RE12-10-7352(243274001DUP)
			243273001	RE12-10-7351
		Strontium-85	1202001375	MB for batch 935341
			1202001376	RE12-10-7352(243274001DUP)

**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: Kath Bell 1/12/10

# SAMPLE DATA SUMMARY

## **GEL LABORATORIES LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - [www.gel.com](http://www.gel.com)

### **Certificate of Analysis Report for**

LANL010 Los Alamos National Laboratory (72733-001-09)

Client SDG: 10-988 GEL Work Order: 243273

**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





# 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 12, 2010

Client Sample ID: RE12-10-7351  
Sample ID: 243273001  
Matrix: R  
Collect Date: 15-DEC-09  
Receive Date: 18-DEC-09  
Collector: Client  
Moisture: 10.5%

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	0.022	0.0224	+/-0.00669	0.050	pCi/g		KXM4	12/30/09	1044	935836	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00117	0.019	+/-0.00117	0.050	pCi/g		KXM4	12/29/09	1535	935838	3
Plutonium-239/240		0.0387	0.0214	+/-0.00701	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.54	0.106	+/-0.131	0.100	pCi/g		KXM4	01/07/10	1757	938206	4
Uranium-235/236		0.0929	0.0657	+/-0.0209	0.100	pCi/g						
Uranium-238		1.88	0.0614	+/-0.154	0.100	pCi/g						
<b>Rad Gamma Spec Analysis</b>												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0968	0.290	+/-0.0886	0.200	pCi/g		MXR1	12/30/09	2247	935341	7
Bismuth-211	UI	2.11	0.235	+/-0.185		pCi/g						
Bismuth-214		0.612	0.0743	+/-0.0551	0.200	pCi/g						
Cadmium-109	U	0.959	1.17	+/-0.365		pCi/g						
Cerium-139	U	-0.00989	0.0346	+/-0.0102	0.050	pCi/g						
Cesium-134	U	0.029	0.0527	+/-0.0155	0.100	pCi/g						
Cesium-137		0.584	0.0404	+/-0.0309	0.100	pCi/g						
Cobalt-60	U	-0.0106	0.0374	+/-0.012	0.100	pCi/g						
Europium-152	U	0.0221	0.111	+/-0.0535	0.200	pCi/g						
Lanthanum-140	U	-0.0143	0.0805	+/-0.0275		pCi/g						
Lead-212		0.914	0.0631	+/-0.051	0.100	pCi/g						
Lead-214		0.734	0.0819	+/-0.067	0.100	pCi/g						
Mercury-203	U	0.00167	0.0478	+/-0.0135	0.100	pCi/g						
Potassium-40		17.8	0.362	+/-0.840	1.00	pCi/g						
Radium-223	U	-0.263	0.790	+/-0.232		pCi/g						
Radium-224	UI	2.68	0.717	+/-0.356		pCi/g						
Radium-226		0.612	0.0743	+/-0.0551		pCi/g						
Radium-228		0.804	0.130	+/-0.0868	0.500	pCi/g						
Ruthenium-106	U	-0.078	0.340	+/-0.105	0.800	pCi/g						

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

Report Date: January 12, 2010

Client Sample ID: RE12-10-7351  
Sample ID: 243273001  
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	-0.00337	0.0416	+/-0.0128	0.080	pCi/g					
Strontium-85	UI	0.0592	0.0472	+/-0.0143		pCi/g					
Thallium-208		0.270	0.0376	+/-0.0242	0.080	pCi/g					
Thorium-227	U	0.151	0.460	+/-0.128		pCi/g					
Thorium-231	U	-0.263	0.790	+/-0.232		pCi/g					
Thorium-234	U	0.825	2.11	+/-0.924	2.00	pCi/g					
Tin-113	U	0.00687	0.0531	+/-0.0152	0.100	pCi/g					
Uranium-235	U	0.0893	0.250	+/-0.0709	0.500	pCi/g					
Yttrium-88	U	-0.000693	0.0326	+/-0.00994	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, U-02-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE EML HASL-300, U-02-RC Modified
7	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	94.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	80.9	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	103	(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

# GEL LABORATORIES LLC

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## Certificate of Analysis

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

Report Date: January 12, 2010

Client Sample ID: RE12-10-7351  
Sample ID: 243273001  
Project: LANL01004  
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.

# QUALITY CONTROL DATA

# GEL LABORATORIES LLC

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## QC Summary

Report Date: January 12, 2010

Page 1 of 6

Client : Los Alamos National Laboratory  
PO Box 1663  
TA-03, SM271, Drop Pt. 02U, Rm  
Los Alamos, New Mexico  
Contact: Ms. Joylene Valdez  
Workorder: 243273

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
<b>Rad Alpha Spec</b>										
Batch	935836									
QC1202002409	243274006	DUP								
Americium-241	U	0.00224	U	-0.00182	pCi/g	0.462		(0-1) KXM4		12/30/0910:44
	TPU:	+/-0.00259		+/-0.0018						
	Yield:	90.4		85.4						
QC1202002410	LCS									
Americium-241	33.2			32.3	pCi/g		97.3	(75%-125%)		
	TPU:			+/-2.28						
	Yield:			95.8						
QC1202002408	MB									
Americium-241			U	-0.0039	pCi/g					
	TPU:			+/-0.00714						
	Yield:			86.6						
Batch	935838									
QC1202002412	243274006	DUP								
Plutonium-238	U	-0.00103	U	1.35E-10	pCi/g	0.139		(0-1) KXM4		12/29/0911:04
	TPU:	+/-0.00146		+/-0.00227						
	Yield:	94.4		89.2						
Plutonium-239/240	U	0.00	U	0.00227	pCi/g	0.369		(0-1)		
	TPU:	+/-0.00146		+/-0.00161						
	Yield:	94.4		89.2						
QC1202002413	LCS									
Plutonium-238				6.40	pCi/g			(75%-125%)		
	TPU:			+/-0.487						
	Yield:			97.1						
Plutonium-239/240	41.8			36.9	pCi/g		88.4	(75%-125%)		
	TPU:			+/-2.31						
	Yield:			97.1						
QC1202002411	MB									
Plutonium-238			U	0.00144	pCi/g					
	TPU:			+/-0.00693						
	Yield:			97.4						
Plutonium-239/240			U	0.00289	pCi/g					
	TPU:			+/-0.00354						
	Yield:			97.4						
Batch	938206									
QC1202007529	243274010	DUP								
Uranium-233/234		1.16		1.10	pCi/g	0.146		(0-1) KXM4		01/07/1009:01
	TPU:	+/-0.106		+/-0.0965						
	Yield:	99.7		90.9						
Uranium-235/236		0.0797		0.0638	pCi/g	0.213		(0-1)		
	TPU:	+/-0.0197		+/-0.0178						
	Yield:	99.7		90.9						
Uranium-238		1.19		1.14	pCi/g	0.107		(0-1)		
	TPU:	+/-0.107		+/-0.0993						

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## QC Summary

Workorder: 243273

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time										
Rad Alpha Spec																					
Batch	938206																				
QC1202007530	LCS	Yield:	99.7	90.9																	
Uranium-233/234				5.39	pCi/g			(75%-125%)													
		TPU:		+/-0.489																	
		Yield:		104																	
Uranium-235/236				0.301	pCi/g			(75%-125%)													
		TPU:		+/-0.0745																	
		Yield:		104																	
Uranium-238	5.75			5.90	pCi/g		103	(75%-125%)													
		TPU:		+/-0.527																	
		Yield:		104																	
QC1202007528	MB																				
Uranium-233/234			U	-0.00205	pCi/g					01/08/10	12:40										
		TPU:		+/-0.0029																	
		Yield:		103																	
Uranium-235/236			U	0.00414	pCi/g																
		TPU:		+/-0.00294																	
		Yield:		103																	
Uranium-238			U	0.00168	pCi/g																
		TPU:		+/-0.00168																	
		Yield:		103																	
Rad Gamma Spec																					
Batch	935341																				
QC1202001376	243274001	DUP																			
Americium-241		U	0.0196	UI	0.122	pCi/g	0.883	(0-1)	MXR1	12/31/09	15:32										
		TPU:	+/-0.0236		+/-0.0345																
Bismuth-211		UI	3.08	UI	3.43	pCi/g	0.371	(0-1)													
		TPU:	+/-0.215		+/-0.246																
Bismuth-214			0.922		1.19	pCi/g	0.767	(0-1)													
		TPU:	+/-0.0738		+/-0.100																
Cadmium-109		UI	2.17	UI	3.34	pCi/g	0.864	(0-1)													
		TPU:	+/-0.280		+/-0.393																
Cerium-139		U	0.00869	U	0.000361	pCi/g	0.170	(0-1)													
		TPU:	+/-0.00941		+/-0.0152																
Cesium-134		UI	0.0766	U	0.0881	pCi/g	0.103	(0-1)													
		TPU:	+/-0.0303		+/-0.0255																
Cesium-137		U	-0.0089	U	0.0397	pCi/g	0.677	(0-1)													
		TPU:	+/-0.0149		+/-0.021																
Cobalt-60		U	0.0118	U	0.00938	pCi/g	0.0345	(0-1)													
		TPU:	+/-0.0147		+/-0.0209																
Europium-152		U	0.00648	U	0.00153	pCi/g	0.0265	(0-1)													
		TPU:	+/-0.0352		+/-0.0582																
Lanthanum-140		U	0.00249	U	-0.0594	pCi/g	0.393	(0-1)													
		TPU:	+/-0.0346		+/-0.0442																
Lead-212			1.46		1.52	pCi/g	0.184	(0-1)													
		TPU:	+/-0.0755		+/-0.0983																
Lead-214			1.07		1.19	pCi/g	0.348	(0-1)													
		TPU:	+/-0.0799		+/-0.091																
Mercury-203		U	-0.0237	U	0.0443	pCi/g	0.928	(0-1)													
		TPU:	+/-0.0146		+/-0.022																

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## QC Summary

Workorder: 243273

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	935341										
Potassium-40		23.3		23.6	pCi/g	0.0676		(0-1)			
	TPU:	+/-0.968		+/-1.10							
Radium-223	U	0.060	U	0.256	pCi/g	0.159		(0-1)			
	TPU:	+/-0.237		+/-0.381							
Radium-224	UI	4.38	UI	4.36	pCi/g	0.00943		(0-1)			
	TPU:	+/-0.449		+/-0.771							
Radium-226		0.922		1.19	pCi/g	0.767		(0-1)			
	TPU:	+/-0.0738		+/-0.100							
Radium-228		1.47		1.44	pCi/g	0.0534		(0-1)			
	TPU:	+/-0.150		+/-0.160							
Ruthenium-106	U	0.0189	U	0.273	pCi/g	0.415		(0-1)			
	TPU:	+/-0.125		+/-0.182							
Sodium-22	U	-0.00088	U	-0.0304	pCi/g	0.335		(0-1)			
	TPU:	+/-0.0186		+/-0.0254							
Strontium-85	U	0.0145	UI	0.104	pCi/g	1.19		(0-1)			
	TPU:	+/-0.0142		+/-0.0234							
Thallium-208		0.520		0.489	pCi/g	0.189		(0-1)			
	TPU:	+/-0.0397		+/-0.0416							
Thorium-227	U	-0.00998	U	-0.0889	pCi/g	0.119		(0-1)			
	TPU:	+/-0.131		+/-0.201							
Thorium-231	U	0.060	U	0.256	pCi/g	0.159		(0-1)			
	TPU:	+/-0.237		+/-0.381							
Thorium-234	UI	0.760	U	0.918	pCi/g	0.103		(0-1)			
	TPU:	+/-0.399		+/-0.365							
Tin-113	U	0.00321	U	-0.03	pCi/g	0.415		(0-1)			
	TPU:	+/-0.0158		+/-0.0243							
Uranium-235	U	0.121	U	0.013	pCi/g	0.304		(0-1)			
	TPU:	+/-0.0703		+/-0.108							
Yttrium-88	U	0.00383	U	3.03E-05	pCi/g	0.0657		(0-1)			
	TPU:	+/-0.0112		+/-0.0177							
QC1202001377	LCS										
Americium-241	15.9			14.0	pCi/g		88.2	(75%-125%)		12/31/09	15:32
	TPU:			+/-0.637							
Bismuth-211				2.17	pCi/g						
	TPU:			+/-0.337							
Bismuth-214				0.791	pCi/g						
	TPU:			+/-0.127							
Cadmium-109				33.6	pCi/g						
	TPU:			+/-2.02							
Cerium-139			U	-0.0153	pCi/g						
	TPU:			+/-0.0235							
Cesium-134			U	0.142	pCi/g						
	TPU:			+/-0.0475							
Cesium-137	5.58			5.92	pCi/g		106	(75%-125%)			
	TPU:			+/-0.299							
Cobalt-60	6.51			6.79	pCi/g		104	(75%-125%)			
	TPU:			+/-0.329							
Europium-152			U	-0.0758	pCi/g						
	TPU:			+/-0.098							
Lanthanum-140			U	0.0545	pCi/g						
	TPU:			+/-0.0479							

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## QC Summary

Workorder: 243273

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
<b>Rad Gamma Spec</b>									
Batch	935341								
Lead-212			0.957	pCi/g					
	TPU:		+/-0.0927						
Lead-214			0.756	pCi/g					
	TPU:		+/-0.119						
Mercury-203		U	-0.021	pCi/g					
	TPU:		+/-0.032						
Potassium-40		U	0.374	pCi/g					
	TPU:		+/-0.242						
Radium-223		U	-1.06	pCi/g					
	TPU:		+/-0.593						
Radium-224			2.41	pCi/g					
	TPU:		+/-0.593						
Radium-226			0.791	pCi/g					
	TPU:		+/-0.127						
Radium-228			0.843	pCi/g					
	TPU:		+/-0.268						
Ruthenium-106		U	0.104	pCi/g					
	TPU:		+/-0.300						
Sodium-22		U	-0.042	pCi/g					
	TPU:		+/-0.0248						
Strontium-85		U	0.055	pCi/g					
	TPU:		+/-0.0377						
Thallium-208			0.265	pCi/g					
	TPU:		+/-0.0537						
Thorium-227		U	0.456	pCi/g					
	TPU:		+/-0.315						
Thorium-231		U	-1.06	pCi/g					
	TPU:		+/-0.593						
Thorium-234		U	-1.83	pCi/g					
	TPU:		+/-0.819						
Tin-113		U	-0.000604	pCi/g					
	TPU:		+/-0.041						
Uranium-235		U	-0.0481	pCi/g					
	TPU:		+/-0.151						
Yttrium-88		U	-0.00278	pCi/g					
	TPU:		+/-0.0251						
QC1202001375 MB									
Americium-241		U	-0.00986	pCi/g					12/31/0914:42
	TPU:		+/-0.0708						
Bismuth-211		U	-0.0369	pCi/g					
	TPU:		+/-0.0765						
Bismuth-214		U	0.0405	pCi/g					
	TPU:		+/-0.0369						
Cadmium-109		U	-0.724	pCi/g					
	TPU:		+/-0.262						
Cerium-139		U	-0.00354	pCi/g					
	TPU:		+/-0.00786						
Cesium-134		U	0.0127	pCi/g					
	TPU:		+/-0.0123						
Cesium-137		U	-0.0099	pCi/g					
	TPU:		+/-0.0115						



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## QC Summary

Workorder: 243273

Page 5 of 6

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
<b>Rad Gamma Spec</b>											
Batch	935341										
Cobalt-60			U	-0.0098	pCi/g						
	TPU:			+/-0.0111							
Europium-152			U	0.0181	pCi/g						
	TPU:			+/-0.0314							
Lanthanum-140			U	-0.000683	pCi/g						
	TPU:			+/-0.0175							
Lead-212			U	0.0721	pCi/g						
	TPU:			+/-0.0382							
Lead-214			U	-0.0223	pCi/g						
	TPU:			+/-0.0262							
Mercury-203			U	-0.0312	pCi/g						
	TPU:			+/-0.0116							
Potassium-40			U	-0.119	pCi/g						
	TPU:			+/-0.125							
Radium-223			U	-0.28	pCi/g						
	TPU:			+/-0.212							
Radium-224			U	0.519	pCi/g						
	TPU:			+/-0.198							
Radium-226			U	0.0405	pCi/g						
	TPU:			+/-0.0369							
Radium-228			U	-0.0115	pCi/g						
	TPU:			+/-0.0414							
Ruthenium-106			U	-0.137	pCi/g						
	TPU:			+/-0.0911							
Sodium-22			U	0.00114	pCi/g						
	TPU:			+/-0.00914							
Strontium-85			UI	0.0645	pCi/g						
	TPU:			+/-0.0124							
Thallium-208			U	0.0448	pCi/g						
	TPU:			+/-0.0148							
Thorium-227			U	-0.0659	pCi/g						
	TPU:			+/-0.113							
Thorium-231			U	-0.28	pCi/g						
	TPU:			+/-0.212							
Thorium-234			U	-1.27	pCi/g						
	TPU:			+/-0.589							
Tin-113			U	0.0141	pCi/g						
	TPU:			+/-0.0124							
Uranium-235			U	0.149	pCi/g						
	TPU:			+/-0.0596							
Yttrium-88			U	0.00767	pCi/g						
	TPU:			+/-0.0121							

### 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

# GEL LABORATORIES LLC

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

## QC Summary

Workorder: 243273

Page 6 of 6

Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
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									
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# 935836 Product: Am Date: 12/31/09

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.			N/A
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	✓		
Hit 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:

Debbie Green 12/31/09

Secondary Review Performed By:

Sup LML 1/4/10

## Am/Cm Que Sheet

22-DEC-09

Batch #: 935836

Analyst: KXM4

First Client Due Date: 15-JAN-10

Internal Due Date: 04-JAN-10

Comments:

Tracer(s): Am241/Cm244Tracer Code: 445-96-2-55Expiration Date: 5-11-10Vol: 0.121LCS Isotope(s): Am241/Cm244LCS Code(s): SBM 0244-B1 NAExpiration Date: 4-30-10 NAVol(s): 0.12 NASpike Isotope(s): Am241/Cm244Spike Code(s): NA NAExpiration Date: NA NAVol(s): NA NAPrep Date: 11-28-09Initials: KMBalance ID: 19352208Witness: NA 12-23-09

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Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Aliquot	Am/Cm	Det #
243273901-1	RE12-10-7351	SAMPLE		.05 pC/g	SOIL	LANL010	15-DEC-09	1	1	1.259		83
243274001-1	RE12-10-7352	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	2	2	1.259		84
243274002-1	RE12-10-7360	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	3	3	1.255		85
243274003-1	RE12-10-7358	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	4	4	1.254		86
243274004-1	RE12-10-7357	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	5	5	1.253		87
243274005-1	RE12-10-7359	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	6	6	1.257		88
243274006-1	RE12-10-7356	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	7	7	1.253		89
243274007-1	RE12-10-7353	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	8	8	1.259		90
243274008-1	RE12-10-7354	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	9	9	1.254		91
243274009-1	RE12-10-7355	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	10	10	1.255		92
243274010-1	RE12-10-7364	SAMPLE		.05 pC/g	SOIL	LANL010	16-DEC-09	11	11	1.251		93
1202002408-1	MB for batch 935836	MB		.05 pC/g	SOIL	QC ACCOUNT		12	12	1.251		94
1202002409-1	RE12-10-7356(243274006DUP)	DUP		.05 pC/g	SOIL	QC ACCOUNT		13	13	1.255		95
1202002410-1	LCS for batch 935836	LCS		.05 pC/g	SOIL	QC ACCOUNT		14	14	0.103		96

12/31/09

Choose SOP Used GL-RAD-A-011  
GL-RAD-A-036Solid Sample Dissolution by: LEACH or DIGESTION  
Circle OneData Reviewed By: DL

12/31/09

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

11/1/10

# Blank Correction Report

**Batch ID 935836**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202002409	DUP	Americium-241	1.26 g	-0.00182	0.0018	0.0251	-.00309524	pCi/g	NO
1202002410	LCS	Americium-241	0.103 g	32.3	2.28	0.284	-.03786408	pCi/g	NO
1202002408	MB	Americium-241	1.00 g	-0.0039	0.00714	0.0318	-.0039	pCi/g	NO
243273001	RE12-10-7351	Americium-241	1.26 g	0.022	0.00669	0.0224	-.00309524	pCi/g	NO
243274001	RE12-10-7352	Americium-241	1.26 g	-0.000589	0.00173	0.0241	-.00309524	pCi/g	NO
243274002	RE12-10-7360	Americium-241	1.26 g	0.00683	0.00293	0.0244	-.00309524	pCi/g	NO
243274003	RE12-10-7358	Americium-241	1.25 g	0.00201	0.00242	0.0252	-.00312	pCi/g	NO
243274004	RE12-10-7357	Americium-241	1.25 g	0.00236	0.00387	0.0275	-.00312	pCi/g	NO
243274005	RE12-10-7359	Americium-241	1.26 g	0.00821	0.00647	0.0247	-.00309524	pCi/g	NO
243274006	RE12-10-7356	Americium-241	1.25 g	0.00224	0.00259	0.0267	-.00312	pCi/g	NO
243274007	RE12-10-7353	Americium-241	1.26 g	0.00183	0.00149	0.0239	-.00309524	pCi/g	NO
243274008	RE12-10-7354	Americium-241	1.25 g	0.00509	0.00244	0.0227	-.00312	pCi/g	NO
243274009	RE12-10-7355	Americium-241	1.26 g	-0.000401	0.00142	0.028	-.00309524	pCi/g	NO
243274010	RE12-10-7364	Americium-241	1.25 g	0.00188	0.00141	0.0231	-.00312	pCi/g	NO

*EDM*  
1/4/10

GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 935836 SAMPLE DATE : 15-DEC-2009 00:00:00		SAMPLE ID : S0243273001_AM SAMPLE QTY: 1.259 G	
DETECTOR NUMBER :64278 AVERAGE %EFFICIENCY :33.5347 % YIELD : 94.065		COUNT DATE:30-DEC-2009 10:44:23 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
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 : 2.74351 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B083.CNF;1005 BKG DATE : 27-DEC-2009 EFF FILE : W083.CNF;288 CAL DATE : 10-DEC-2009

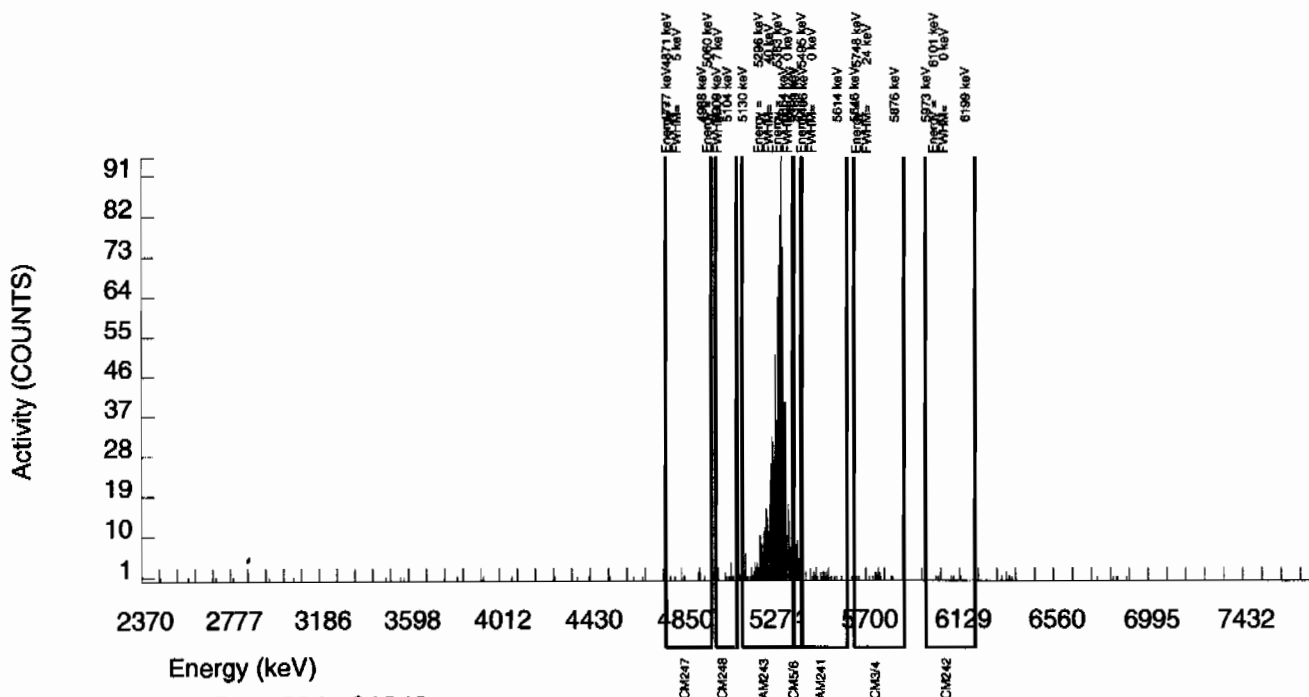
NUCLIDE ACTIVITY SUMMARY

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	18.000	12.000	6.000	4.8778	100.0000	1.36E-02	5.62E-03	1.29E-02	2.88E-02	5.57E-03
CM-5/6	5386.000	42.000	40.000	2.000	19.8796	86.09000	5.27E-02	9.28E-03	6.09E-02	1.25E-01	8.74E-03
AM-241	5479.150	28.000	19.402	7.000	3.6563	99.94000	2.20E-02	6.69E-03	9.65E-03	2.24E-02	6.56E-03
CM-242	6102.000	6.000	6.000	0.000	3.7846	100.0000	7.28E-03	3.00E-03	9.99E-03	2.30E-02	2.97E-03
AM243	5270.000	921.000	918.000	3.000	1.7321	99.78000	1.04E+00	7.09E-02	4.58E-03	1.22E-02	3.46E-02
CM-247	4946.000	8.000	6.000	2.000	18.5713	79.30000	8.58E-03	4.55E-03	6.18E-02	1.27E-01	4.52E-03
CM-248	5078.600	15.000	13.000	2.000	26.3889	91.00000	1.62E-02	5.23E-03	7.65E-02	1.56E-01	5.14E-03

NOTE: Sg calculated via blank population (updated 1-DEC-2009)

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: 935836 SAMPLE DATE : 16-DEC-2009 00:00:00		SAMPLE ID : S0243274006_AM SAMPLE QTY: 1.253 G	
DETECTOR NUMBER :78262 AVERAGE %EFFICIENCY :29.3731 % YIELD : 90.430		COUNT DATE:30-DEC-2009 10:44:24 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
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 : 2.63747 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B089.CNF;699 BKG DATE : 27-DEC-2009 EFF FILE : W089.CNF;191 CAL DATE : 10-DEC-2009

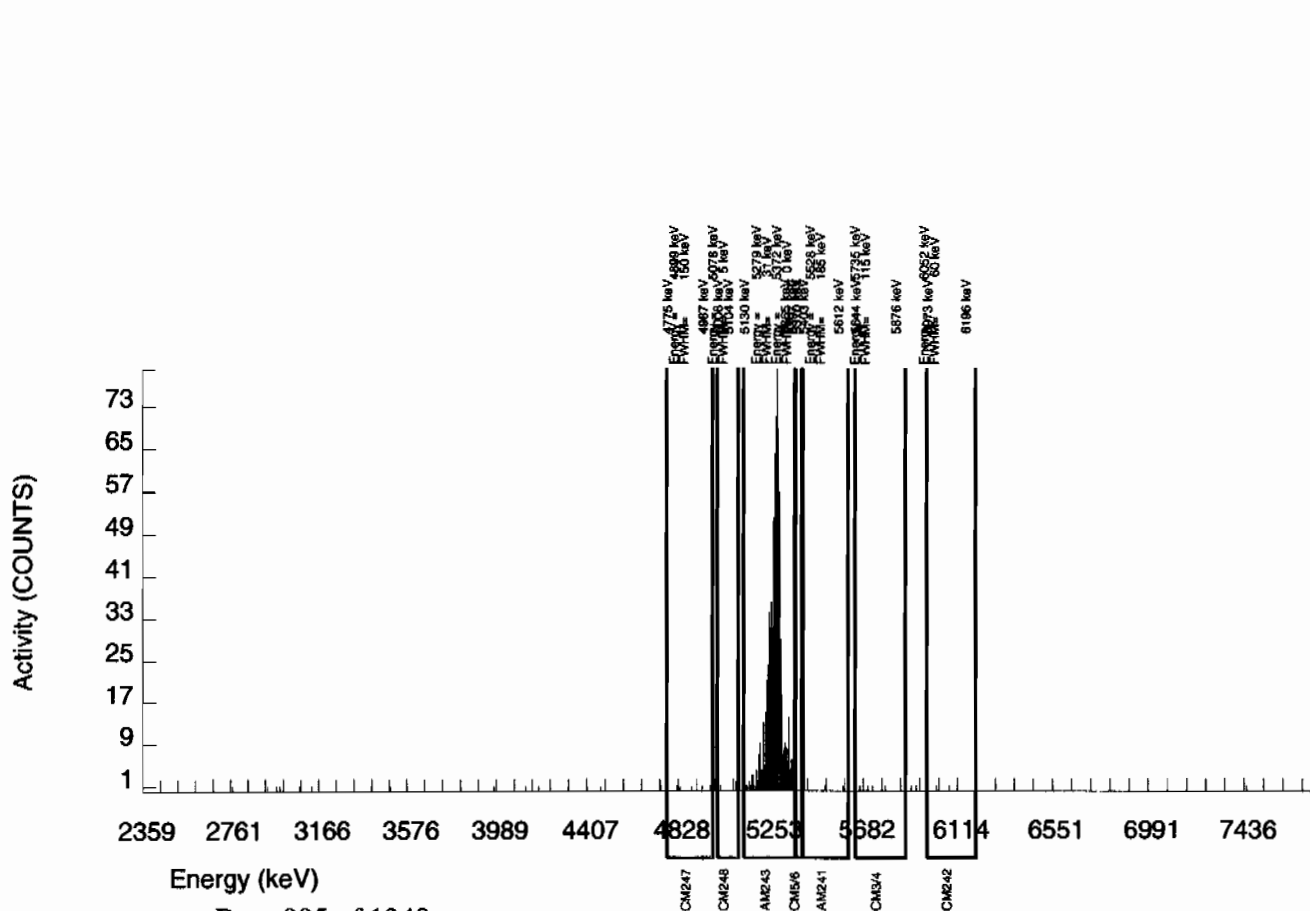
NUCLIDE ACTIVITY SUMMARY

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	4.8778	100.0000	6.78E-03	3.06E-03	1.54E-02	3.44E-02	3.03E-03
CM-5/6	5386.000	3.000	3.000	0.000	19.8796	86.09000	4.72E-03	2.74E-03	7.27E-02	1.50E-01	2.72E-03
AM-241	5479.150	4.000	1.655	1.000	3.6563	99.94000	2.24E-03	2.59E-03	1.15E-02	2.67E-02	2.59E-03
CM-242	6102.000	2.000	2.000	0.000	3.7846	100.0000	2.88E-03	2.05E-03	1.19E-02	2.75E-02	2.04E-03
AM243	5270.000	773.000	773.000	0.000	0.0000	99.78000	1.05E+00	7.43E-02	0.00E+00	3.68E-03	3.77E-02
CM-247	4946.000	5.000	3.000	2.000	18.5713	79.30000	5.12E-03	4.53E-03	7.37E-02	1.52E-01	4.52E-03
CM-248	5078.600	4.000	3.000	1.000	26.3889	91.00000	4.46E-03	3.34E-03	9.13E-02	1.87E-01	3.33E-03

NOTE: Sg calculated via blank population (updated 1-DEC-2009)

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: 935836 SAMPLE DATE : 23-DEC-2009 00:00:00		SAMPLE ID : S1202002408_AM SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :45-149AA3 AVERAGE %EFFICIENCY :32.2571 % YIELD : 86.606		COUNT DATE:30-DEC-2009 10:44:21 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
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 : 2.52593 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B072.CNF;1083 BKG DATE : 27-DEC-2009 EFF FILE : W072.CNF;273 CAL DATE : 10-DEC-2009

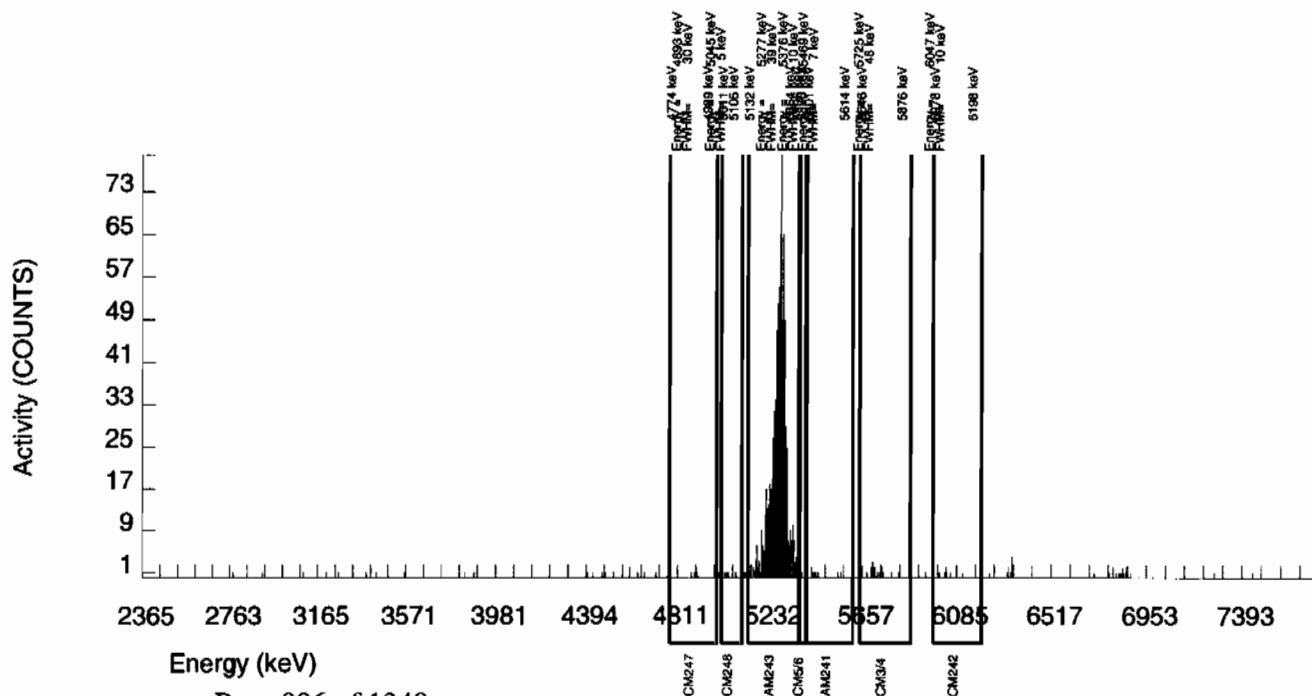
NUCLIDE ACTIVITY SUMMARY

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	20.000	9.000	11.000	4.8778	100.0000	1.45E-02	9.03E-03	1.83E-02	4.10E-02	8.98E-03
CM-5/6	5386.000	9.000	8.000	1.000	19.8796	86.09000	1.50E-02	5.99E-03	8.66E-02	1.78E-01	5.92E-03
AM-241	5479.150	10.000	-2.415	11.000	3.6563	99.94000	-3.90E-03	7.14E-03	1.37E-02	3.18E-02	7.14E-03
CM-242	6102.000	8.000	4.000	4.000	3.7846	100.0000	6.67E-03	5.79E-03	1.42E-02	3.28E-02	5.77E-03
AM243	5270.000	817.000	813.000	4.000	2.0000	99.78000	1.31E+00	9.21E-02	7.52E-03	1.94E-02	4.63E-02
CM-247	4946.000	3.000	-1.000	4.000	18.5713	79.30000	-2.03E-03	5.38E-03	8.78E-02	1.81E-01	5.38E-03
CM-248	5078.600	7.000	4.000	3.000	26.3889	91.00000	7.09E-03	5.62E-03	1.09E-01	2.22E-01	5.60E-03

NOTE: Sg calculated via blank population (updated 1-DEC-2009)

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: 935836  
SAMPLE DATE : 16-DEC-2009 00:00:00

SAMPLE ID : S1202002409\_AM  
SAMPLE QTY: 1.255 G

DETECTOR NUMBER :78775  
AVERAGE %EFFICIENCY :33.0537  
% YIELD : 85.350

COUNT DATE:30-DEC-2009 10:44:21  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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 : 2.48932 dpm

LIB FILE : ENV\_ALPHA\_AM.N  
BKG FILE : B073.CNF;1085  
BKG DATE : 27-DEC-2009  
EFF FILE : W073.CNF;281  
CAL DATE : 10-DEC-2009

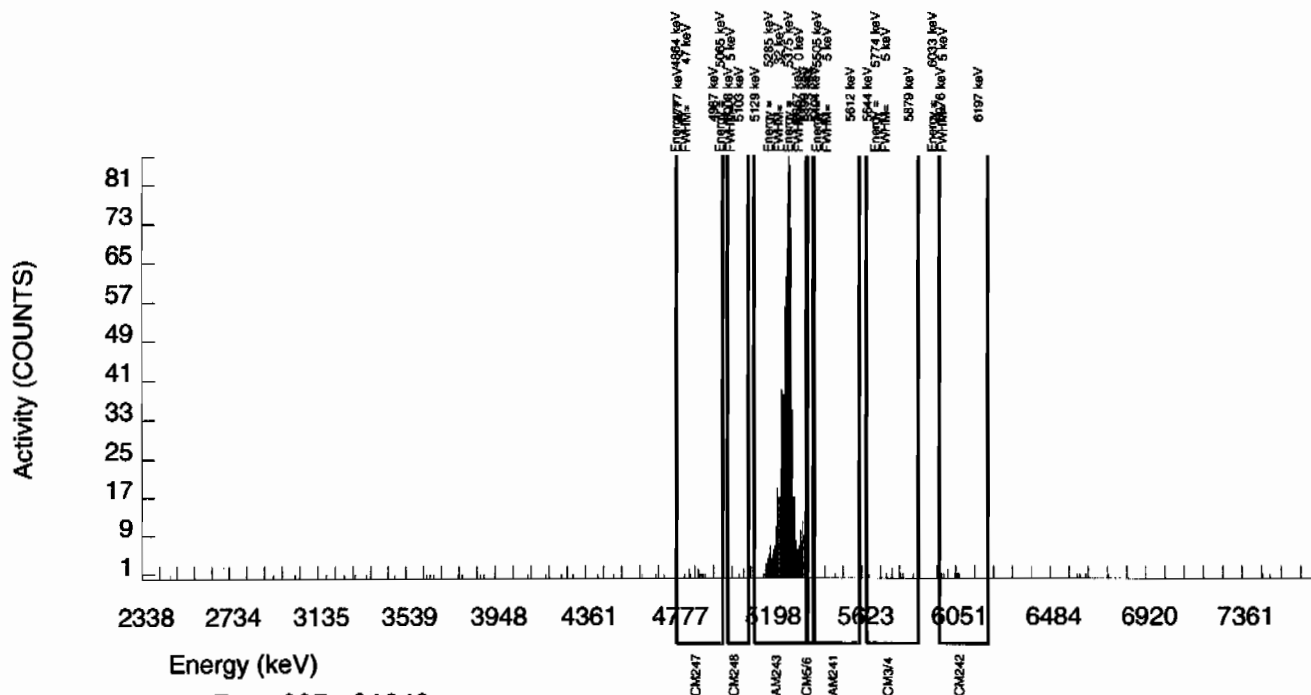
NUCLIDE ACTIVITY SUMMARY

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	7.000	5.000	2.000	4.8778	100.0000	6.37E-03	3.84E-03	1.44E-02	3.23E-02	3.82E-03
CM-5/6	5386.000	2.000	2.000	0.000	19.8796	86.09000	2.96E-03	2.10E-03	6.83E-02	1.41E-01	2.09E-03
AM-241	5479.150	1.000	-1.429	1.000	3.6563	99.94000	-1.82E-03	1.80E-03	1.08E-02	2.51E-02	1.80E-03
CM-242	6102.000	10.000	10.000	0.000	3.7846	100.0000	1.35E-02	4.36E-03	1.12E-02	2.59E-02	4.28E-03
AM243	5270.000	822.000	821.000	1.000	1.0000	99.78000	1.05E+00	7.30E-02	2.97E-03	9.39E-03	3.66E-02
CM-247	4946.000	12.000	6.000	6.000	18.5713	79.30000	9.63E-03	6.83E-03	6.93E-02	1.43E-01	6.81E-03
CM-248	5078.600	4.000	2.000	2.000	26.3889	91.00000	2.80E-03	3.43E-03	8.58E-02	1.75E-01	3.42E-03

NOTE: Sg calculated via blank population (updated 1-DEC-2009)

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: 935836 SAMPLE DATE : 23-DEC-2009 00:00:00		SAMPLE ID : S1202002410_AM SAMPLE QTY: 0.103 G	
DETECTOR NUMBER :78266 AVERAGE %EFFICIENCY :31.6766 % YIELD : 95.786		COUNT DATE:30-DEC-2009 10:44:21 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
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 : 2.79370 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B074.CNF;1107 BKG DATE : 27-DEC-2009 EFF FILE : W074.CNF;328 CAL DATE : 10-DEC-2009

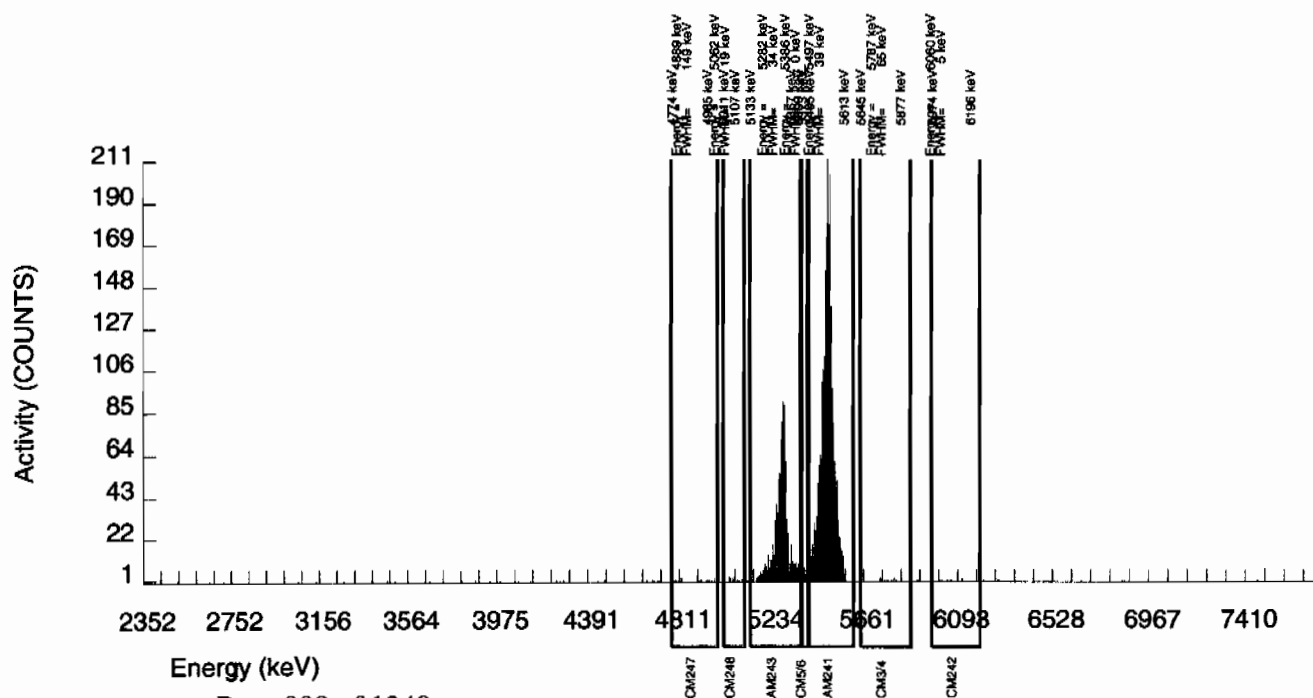
NUCLIDE ACTIVITY SUMMARY

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	10.000	7.000	3.000	4.8778	100.0000	1.01E-01	5.25E-02	1.64E-01	3.66E-01	5.20E-02
CM-5/6	5386.000	30.000	30.000	0.000	19.8796	86.09000	5.02E-01	9.77E-02	7.74E-01	1.59E+00	9.17E-02
AM-241	5479.150	2242.000	2236.463	4.000	3.6563	99.94000	3.23E+01	2.28E+00	1.23E-01	2.84E-01	6.83E-01
CM-242	6102.000	9.000	7.000	2.000	3.7846	100.0000	1.04E-01	4.99E-02	1.27E-01	2.93E-01	4.94E-02
AM243	5270.000	885.000	883.000	2.000	1.4142	99.78000	1.28E+01	9.61E-01	4.75E-02	1.34E-01	4.30E-01
CM-247	4946.000	12.000	9.000	3.000	18.5713	79.30000	1.64E-01	7.13E-02	7.85E-01	1.62E+00	7.04E-02
CM-248	5078.600	12.000	11.000	1.000	26.3889	91.00000	1.74E-01	5.83E-02	9.72E-01	1.99E+00	5.71E-02

NOTE: Sg calculated via blank population (updated 1-DEC-2009)

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: 935838 Product: Pu Date: 12/30/09

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	✓		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch non-conformances completed. if applicable.			MA
Batch non-conformances second reviewed and disposition verified to be completed.			MA
Aliquot Correction completed if required.			MA
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:

Deirdre Green 12/30/09

Secondary Review Performed By:

E. Hoff 12/30/09

 1/15  
 LANL

# Plutonium Que Sheet

22-DEC-09

Batch #: 935838 Analyst: KXM4 First Client Due Date: 15-JAN-10 Internal Due Date: 04-JAN-10

Tracer Isotope(s): Pu-239/Pu-238 Tracer Code: 1374-A Expiration Date: 12-8-10 Vol: 0.121  
 LCS Isotope(s): Pu-239/Pu-238 LCS Code: SA10244-D Expiration Date: 8-30-20 Vol: 0.15  
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: NA Expiration Date: NA Vol: NA

Prep Date: 12-23-09 Initials: LN Pipet ID: 2971056 Balance ID: 19350208

Witness: NA 12-23-09

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/f)	Pu Det #
243274001-1	RE12-10-7351	SAMPLE	.05 pCi/g		SOIL	LANL010	15-DEC-09	1	1	1.254	220
243274001-1	RE12-10-7352	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	2	2	1.254	221
243274002-1	RE12-10-7360	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	3	3	1.255	222
243274003-1	RE12-10-7358	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	4	4	1.254	225
243274004-1	RE12-10-7357	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	5	5	1.253	224
243274005-1	RE12-10-7359	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	6	6	1.257	227
243274006-1	RE12-10-7356	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	7	7	1.253	228
243274007-1	RE12-10-7353	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	8	8	1.254	224
243274008-1	RE12-10-7354	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	9	9	1.254	107
243274009-1	RE12-10-7355	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	10	10	1.255	108
243274010-1	RE12-10-7364	SAMPLE	.05 pCi/g		SOIL	LANL010	16-DEC-09	11	11	1.251	109
1202002411-1	MB for batch 935838	MB	.05 pCi/g		SOIL	QC ACCOUNT	16-DEC-09	12	12	1.254	110
1202002412-1	RE12-10-7356(243274006DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	16-DEC-09	13	13	1.255	111
1202002413-1	LCS for batch 935838	LCS	.05 pCi/g		SOIL	QC ACCOUNT	16-DEC-09	14	14	0.103	112

Wet/Dry

Choose SOP Used: GL-RAD-A-011 GL-RAD-A-036, GL-RAD-A-045, GL-RAD-A-043

Solid Sample Dissolution by: LEACH or DIGESTION Circle One

Data Reviewed By: [Signature]

12/30/09

# Blank Correction Report

**Batch ID 935838**

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202002412	DUP	Plutonium-238	1.26 g	1.35E-10	0.00227	0.0184	.001142857	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00227	0.00161	0.0207	.002293651	pCi/g	YES
1202002413	LCS	Plutonium-238	0.103 g	6.40	0.487	0.232	.013980583	pCi/g	NO
		Plutonium-239/240	0.103 g	36.9	2.31	0.261	.026058252	pCi/g	NO
1202002411	MB	Plutonium-238	1.00 g	0.00144	0.00693	0.0235	.00144	pCi/g	YES
		Plutonium-239/240	1.00 g	0.00289	0.00354	0.0264	.00289	pCi/g	YES
243273001	RE12-10-7351	Plutonium-238	1.26 g	0.00117	0.00117	0.019	.001142857	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0387	0.00701	0.0214	.002293651	pCi/g	NO
243274001	RE12-10-7352	Plutonium-238	1.26 g	0.00	0.0011	0.0179	.001142857	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0011	0.0011	0.0201	.002293651	pCi/g	YES
243274002	RE12-10-7360	Plutonium-238	1.26 g	0.00106	0.00107	0.0173	.001142857	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00106	0.00107	0.0195	.002293651	pCi/g	YES
243274003	RE12-10-7358	Plutonium-238	1.25 g	0.00	0.00138	0.0224	.001152	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0069	0.00311	0.0252	.002312	pCi/g	YES
243274004	RE12-10-7357	Plutonium-238	1.25 g	0.00421	0.00211	0.0171	.001152	pCi/g	YES
		Plutonium-239/240	1.25 g	0.0179	0.00467	0.0192	.002312	pCi/g	NO
243274005	RE12-10-7359	Plutonium-238	1.26 g	0.000973	0.000975	0.0158	.001142857	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0175	0.00422	0.0178	.002293651	pCi/g	NO
243274006	RE12-10-7356	Plutonium-238	1.25 g	-0.00103	0.00146	0.0168	.001152	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00	0.00146	0.0189	.002312	pCi/g	YES
243274007	RE12-10-7353	Plutonium-238	1.26 g	0.00	0.0015	0.0173	.001142857	pCi/g	YES
		Plutonium-239/240	1.26 g	0.0106	0.0034	0.0194	.002293651	pCi/g	YES
243274008	RE12-10-7354	Plutonium-238	1.25 g	0.00	0.00118	0.0192	.001152	pCi/g	YES
		Plutonium-239/240	1.25 g	7.04E-11	0.00167	0.0216	.002312	pCi/g	YES
243274009	RE12-10-7355	Plutonium-238	1.26 g	0.00117	0.00203	0.0191	.001142857	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00938	0.00335	0.0215	.002293651	pCi/g	YES
243274010	RE12-10-7364	Plutonium-238	1.25 g	-0.00258	0.00224	0.0209	.001152	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00645	0.0029	0.0236	.002312	pCi/g	YES

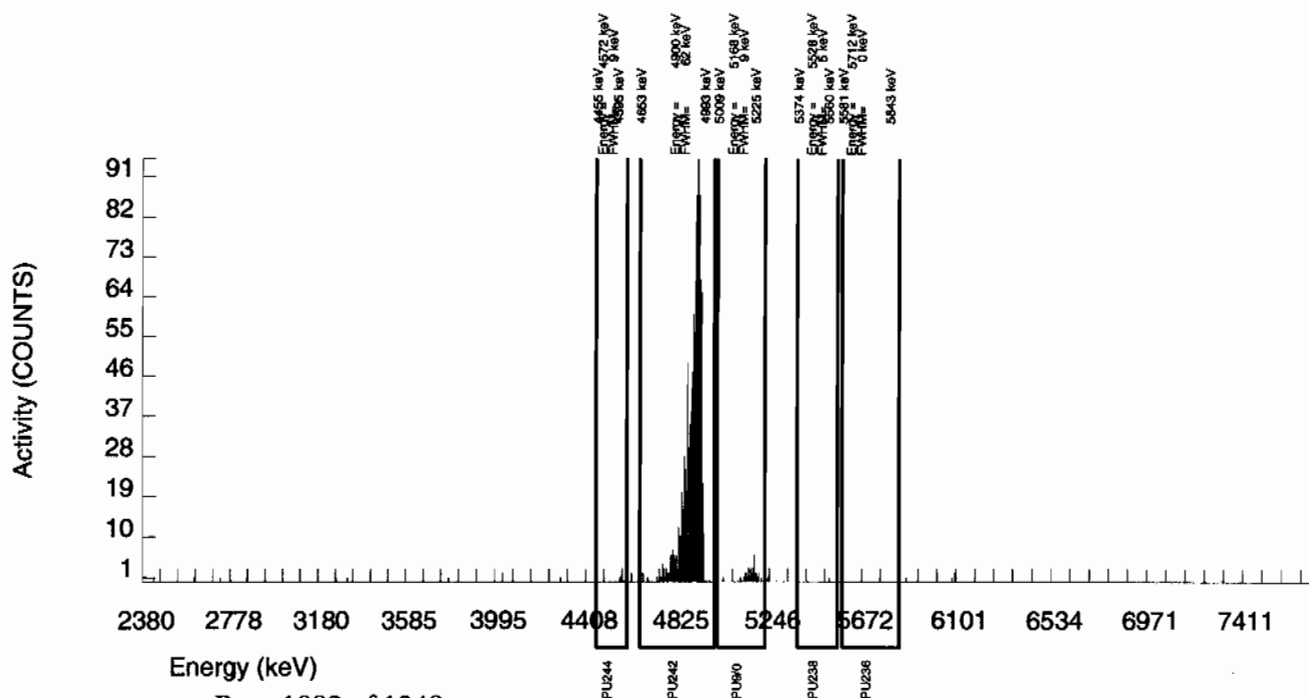
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 935838 SAMPLE DATE : 15-DEC-2009 00:00:00		SAMPLE ID : S0243273001_PU SAMPLE QTY: 1.259 G	
DETECTOR NUMBER :79413 AVERAGE %EFFICIENCY :37.7498 % YIELD : 80.908		COUNT DATE:29-DEC-2009 15:35:55 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
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 : 2.73909 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B220.CNF;64 BKG DATE : 27-DEC-2009 EFF FILE : W220.CNF;26 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	33.000	33.000	0.000	3.3488	99.90000	3.87E-02	7.01E-03	9.14E-03	2.14E-02	6.74E-03
PU-236	5749.000	0.000	0.000	0.000	2.0294	100.0000	0.00E+00	1.18E-03	5.53E-03	1.42E-02	1.18E-03
PU-238	5499.000	1.000	1.000	0.000	2.9082	99.90000	1.17E-03	1.17E-03	7.93E-03	1.90E-02	1.17E-03
PU242	4890.000	1036.000	1034.000	2.000	1.4142	100.0000	1.21E+00	7.17E-02	3.85E-03	1.09E-02	3.77E-02
PU-244	4589.000	2.000	1.000	1.000	6.8218	99.90000	1.17E-03	2.03E-03	1.86E-02	4.04E-02	2.03E-03

NOTE: Sg calculated via blank population (updated 1-DEC-2009)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



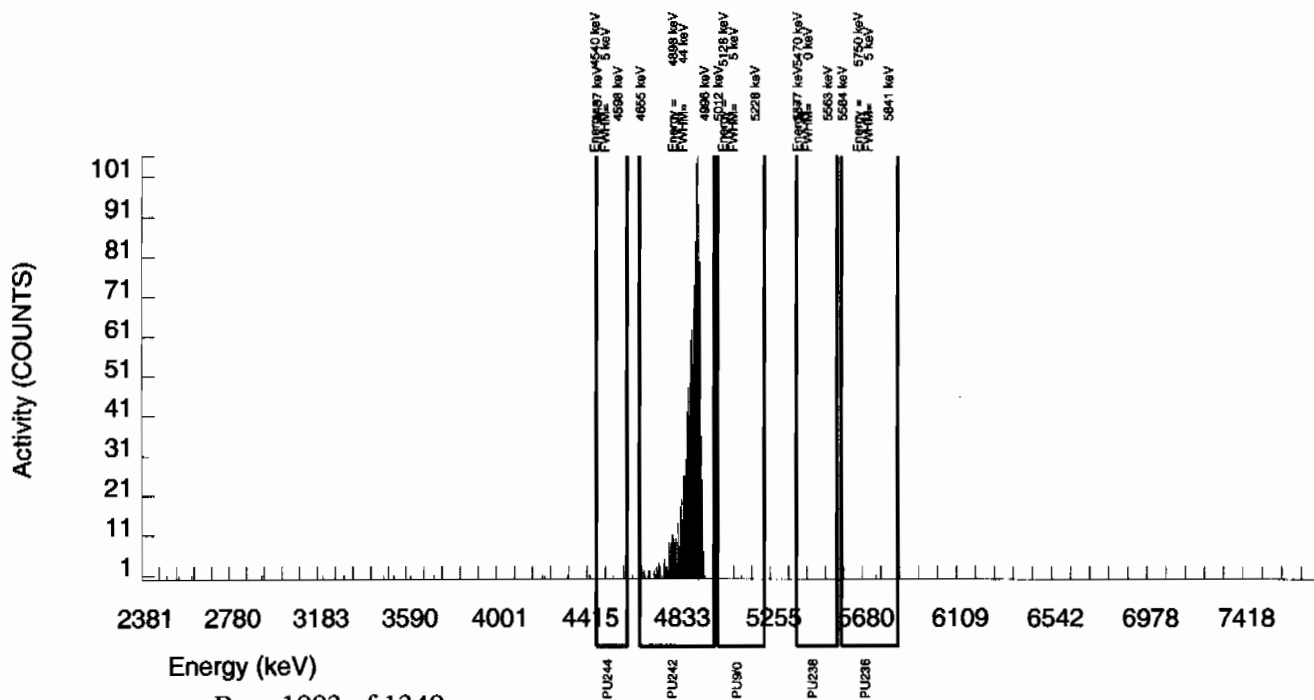
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 935838 SAMPLE DATE : 16-DEC-2009 00:00:00			SAMPLE ID : S0243274006_PU SAMPLE QTY: 1.253 G		
DETECTOR NUMBER :79421 AVERAGE %EFFICIENCY :36.8770 % YIELD : 94.437			COUNT DATE:29-DEC-2009 15:36:10 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4		
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 : 3.19711 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B228.CNF;64 BKG DATE : 27-DEC-2009 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
PU-9/0	5155.000	1.000	0.000	1.000	3.3488	99.90000	0.00E+00	1.46E-03	8.05E-03	1.89E-02	1.46E-03
PU-236	5749.000	1.000	1.000	0.000	2.0294	100.0000	1.04E-03	1.04E-03	4.87E-03	1.25E-02	1.04E-03
PU-238	5499.000	0.000	-1.000	1.000	2.9082	99.90000	-1.03E-03	1.46E-03	6.99E-03	1.68E-02	1.46E-03
PU242	4890.000	1180.000	1179.000	1.000	1.0000	100.0000	1.22E+00	6.95E-02	2.40E-03	7.60E-03	3.55E-02
PU-244	4589.000	1.000	0.000	1.000	6.8218	99.90000	0.00E+00	1.46E-03	1.64E-02	3.56E-02	1.46E-03

NOTE: Sg calculated via blank population (updated 1-DEC-2009)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)





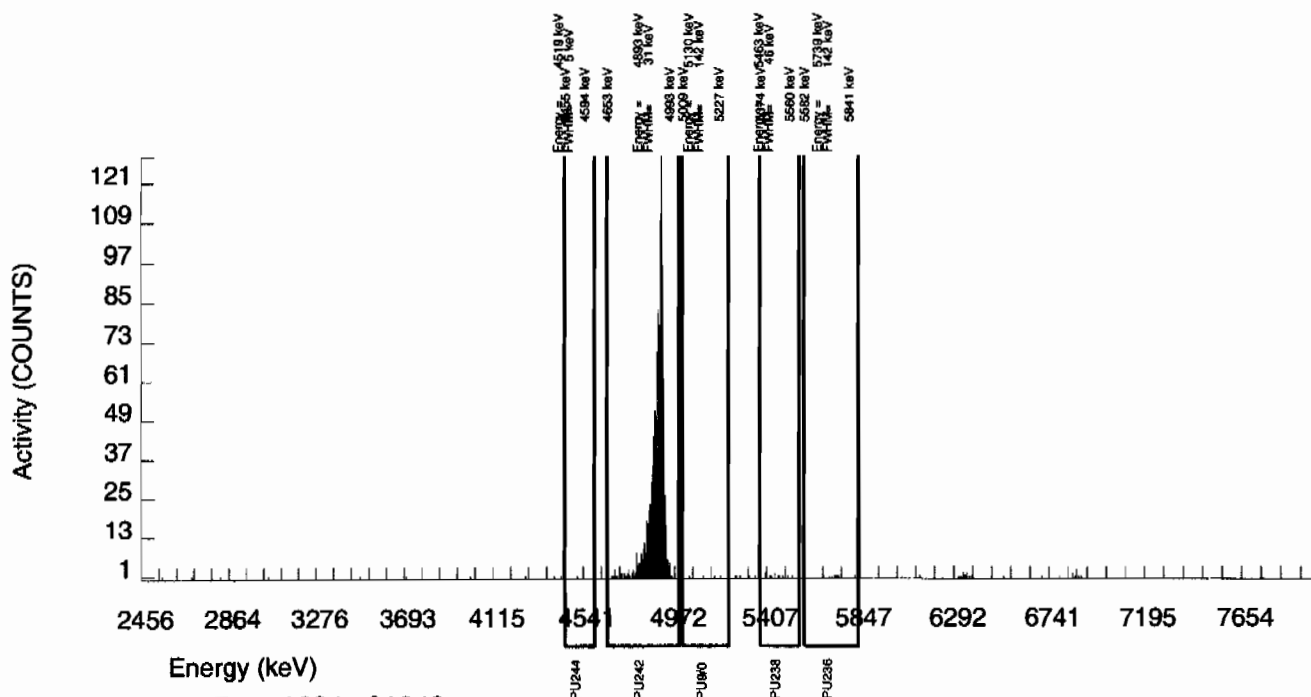
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 935838 SAMPLE DATE : 23-DEC-2009 00:00:00		SAMPLE ID : S1202002411_PU SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :67602 AVERAGE %EFFICIENCY :32.0568 % YIELD : 97.396		COUNT DATE:29-DEC-2009 11:04:26 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
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 : 3.29727 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B110.CNF;668 BKG DATE : 27-DEC-2009 EFF FILE : W110.CNF;209 CAL DATE : 10-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	4.000	2.000	2.000	3.3488	99.90000	2.89E-03	3.54E-03	1.13E-02	2.64E-02	3.54E-03
PU-236	5749.000	9.000	-2.000	11.000	2.0294	100.0000	-2.90E-03	6.48E-03	6.81E-03	1.75E-02	6.48E-03
PU-238	5499.000	12.000	1.000	11.000	2.9082	99.90000	1.44E-03	6.93E-03	9.77E-03	2.35E-02	6.93E-03
PU242	4890.000	1061.000	1057.000	4.000	2.0000	100.0000	1.52E+00	9.02E-02	6.71E-03	1.73E-02	4.71E-02
PU-244	4589.000	1.000	1.000	0.000	6.8218	99.90000	1.44E-03	1.45E-03	2.29E-02	4.98E-02	1.44E-03

NOTE: Sg calculated via blank population (updated 1-DEC-2009)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



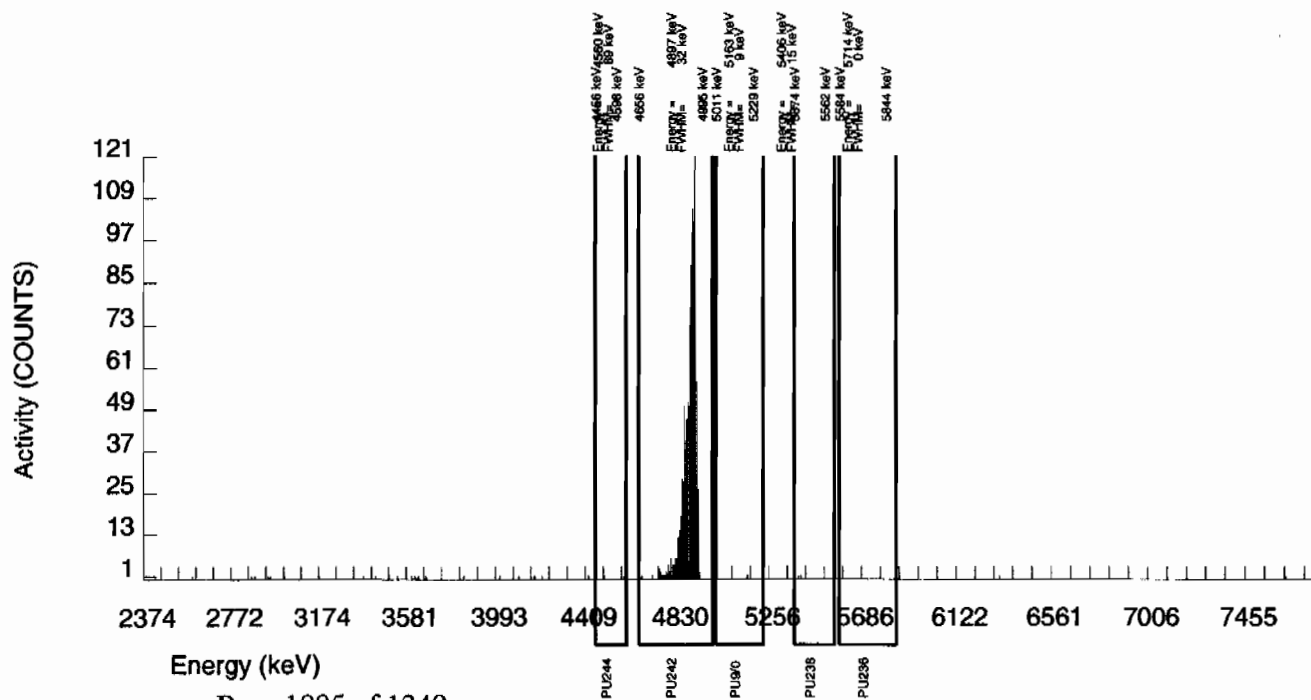
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 935838 SAMPLE DATE : 16-DEC-2009 00:00:00		SAMPLE ID : S1202002412_PU SAMPLE QTY: 1.255 G	
DETECTOR NUMBER :79462 AVERAGE %EFFICIENCY :35.5462 % YIELD : 89.248		COUNT DATE:29-DEC-2009 11:04:26 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
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 : 3.02142 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B111.CNF;663 BKG DATE : 27-DEC-2009 EFF FILE : W111.CNF;205 CAL DATE : 10-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	2.000	2.000	0.000	3.3488	99.90000	2.27E-03	1.61E-03	8.82E-03	2.07E-02	1.60E-03
PU-236	5749.000	0.000	0.000	0.000	2.0294	100.0000	0.00E+00	1.14E-03	5.34E-03	1.37E-02	1.14E-03
PU-238	5499.000	2.000	0.000	2.000	2.9082	99.90000	1.35E-10	2.27E-03	7.66E-03	1.84E-02	2.27E-03
PU242	4890.000	1080.000	1074.000	6.000	2.4495	100.0000	1.22E+00	7.15E-02	6.45E-03	1.60E-02	3.73E-02
PU-244	4589.000	3.000	3.000	0.000	6.8218	99.90000	3.40E-03	1.97E-03	1.80E-02	3.90E-02	1.96E-03

NOTE: Sg calculated via blank population (updated 1-DEC-2009)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



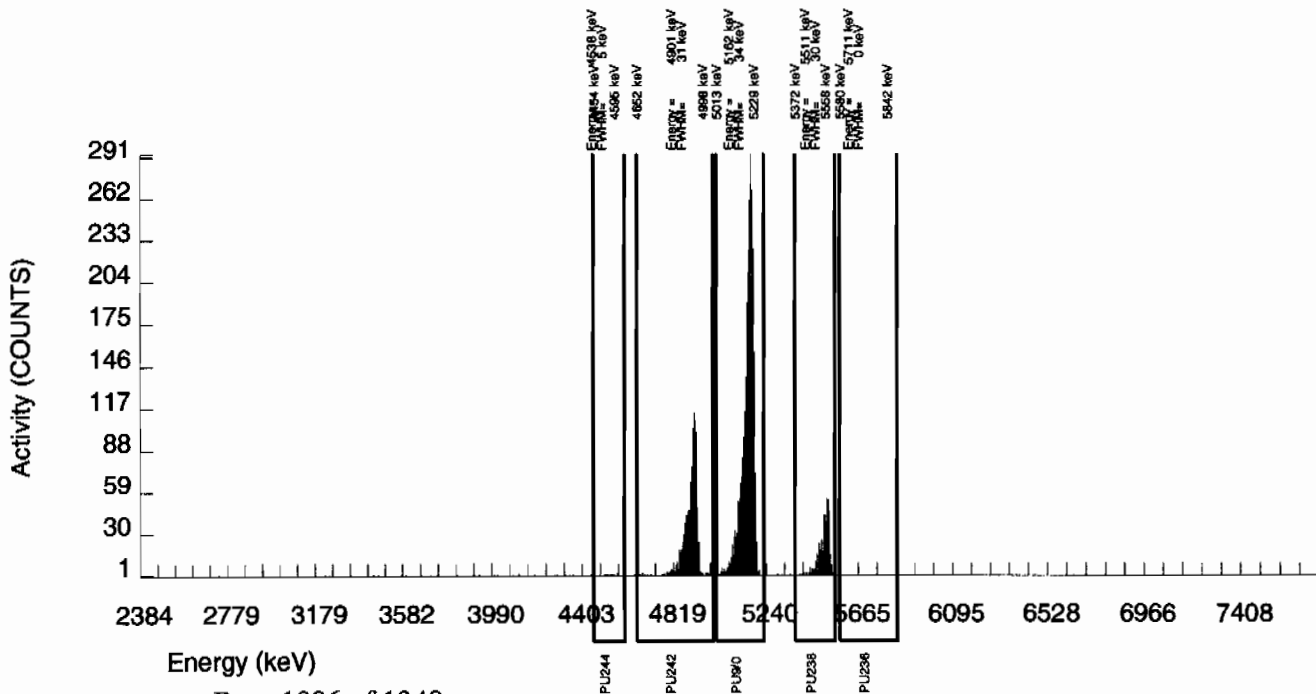
GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 935838 SAMPLE DATE : 23-DEC-2009 00:00:00		SAMPLE ID : S1202002413_PU SAMPLE QTY: 0.103 G	
DETECTOR NUMBER :78261 AVERAGE %EFFICIENCY :31.5612 % YIELD : 97.053		COUNT DATE:29-DEC-2009 11:04:26 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
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 : 3.28568 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B112.CNF;671 BKG DATE : 27-DEC-2009 EFF FILE : W112.CNF;216 CAL DATE : 10-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	2588.000	2585.000	3.000	3.3488	99.90000	3.69E+01	2.31E+00	1.11E-01	2.61E-01	7.27E-01
PU-236	5749.000	0.000	0.000	0.000	2.0294	100.0000	0.00E+00	1.44E-02	6.74E-02	1.74E-01	1.43E-02
PU-238	5499.000	450.000	448.000	2.000	2.9082	99.90000	6.40E+00	4.87E-01	9.67E-02	2.32E-01	3.04E-01
PU242	4890.000	1039.000	1037.000	2.000	1.4142	100.0000	1.48E+01	9.93E-01	4.70E-02	1.33E-01	4.61E-01
PU-244	4589.000	12.000	12.000	0.000	6.8218	99.90000	1.71E-01	5.05E-02	2.27E-01	4.92E-01	4.95E-02

NOTE: Sg calculated via blank population (updated 1-DEC-2009)  
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



## Radiochemistry Batch Checklist, Rev 9

Batch# 938206 Product: U Date: 1/11/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			NA
Samples have been blank corrected (if required)	/		
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.			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] 1/11/10Secondary Review Performed By: J. L. M. - 1/12/10

# Uranium Que Sheet

04-JAN-10

Batch #: 938206 Analyst: KXM4 First Client Due Date: 15-JAN-10 Internal Due Date: 09-JAN-10  
 Tracer Isotope: U-232/236 Tracer Code: 1783-H Expiration Date: 17-9-10 Vol: 0.1ml  
 LCS Isotope: U-238 LCS Code: SH10144-A Expiration Date: 10-31-10 Vol: 0.1g  
 Spike Isotope: U-238 Spike Code: NA Expiration Date: NA Vol: NA  
 Prep Date: 1-4-10 Initials: KM Pipet ID: 297058 Balance ID: 5040272

Witness: CHAKA 14/10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Weight Aliquot (g)	U Det #
243273001-3	RE12-10-7351	SAMPLE		.1 pCi/g	SOIL	LANL010	15-DEC-09	1	1	0.513	137
243274001-3	RE12-10-7352	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	2	2	0.519	138
243274002-3	RE12-10-7360	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	3	3	0.513	139
243274003-3	RE12-10-7358	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	4	4	0.502	140
243274004-3	RE12-10-7357	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	5	5	0.517	141
243274005-3	RE12-10-7359	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	6	6	0.503	142
243274006-3	RE12-10-7356	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	7	7	0.519	143
243274007-3	RE12-10-7353	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	8	8	0.519	144
243274008-3	RE12-10-7354	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	9	9	0.509	145
243274009-3	RE12-10-7355	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	10	10	0.512	146
243274010-3	RE12-10-7364	SAMPLE		.1 pCi/g	SOIL	LANL010	16-DEC-09	11	11	0.511	147
1202007528-1	MB for batch 938206	MB		UCF pCi/g to pCi	SOIL	QC ACCOUNT		12	12	0.511	148
1302007529-3	RE12-10-7364(243274010DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	16-DEC-09	13	13	0.511	149
1302007530-1	LCS for batch 938206	LCS		UCF pCi/g to pCi	SOIL	QC ACCOUNT		14	14	0.511	150
0.103											

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION  
 Circle One

Data Reviewed By: CHAKA 11/12/10

# Blank Correction Report

**Batch ID 938206**

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202007529	DUP	Uranium-233/234	0.541 g	1.10	0.0965	0.0941	-.00378928	pCi/g	NO
		Uranium-235/236	0.541 g	0.0638	0.0178	0.0584	.007652495	pCi/g	NO
		Uranium-238	0.541 g	1.14	0.0993	0.0546	.003105360	pCi/g	NO
1202007530	LCS	Uranium-233/234	0.103 g	5.39	0.489	0.419	-.01990291	pCi/g	NO
		Uranium-235/236	0.103 g	0.301	0.0745	0.260	.040194175	pCi/g	NO
		Uranium-238	0.103 g	5.90	0.527	0.243	.016310680	pCi/g	NO
1202007528	MB	Uranium-233/234	1.00 g	-0.00205	0.0029	0.0519	-.00205	pCi/g	NO
		Uranium-235/236	1.00 g	0.00414	0.00294	0.0322	.00414	pCi/g	YES
		Uranium-238	1.00 g	0.00168	0.00168	0.0301	.00168	pCi/g	YES
243273001	RE12-10-7351	Uranium-233/234	0.513 g	1.54	0.131	0.106	-.00399610	pCi/g	NO
		Uranium-235/236	0.513 g	0.0929	0.0209	0.0657	.008070175	pCi/g	NO
		Uranium-238	0.513 g	1.88	0.154	0.0614	.003274854	pCi/g	NO
243274001	RE12-10-7352	Uranium-233/234	0.519 g	0.786	0.0782	0.107	-.00394990	pCi/g	NO
		Uranium-235/236	0.519 g	0.0724	0.0219	0.0663	.007976879	pCi/g	NO
		Uranium-238	0.519 g	0.848	0.0807	0.062	.003236994	pCi/g	NO
243274002	RE12-10-7360	Uranium-233/234	0.513 g	0.811	0.0807	0.116	-.00399610	pCi/g	NO
		Uranium-235/236	0.513 g	0.065	0.018	0.0723	.008070175	pCi/g	NO
		Uranium-238	0.513 g	0.793	0.0793	0.0675	.003274854	pCi/g	NO
243274003	RE12-10-7358	Uranium-233/234	0.502 g	1.04	0.0954	0.110	-.00408367	pCi/g	NO
		Uranium-235/236	0.502 g	0.0571	0.0175	0.0684	.008247012	pCi/g	NO
		Uranium-238	0.502 g	1.14	0.103	0.0639	.003346614	pCi/g	NO
243274004	RE12-10-7357	Uranium-233/234	0.517 g	1.45	0.125	0.105	-.00396518	pCi/g	NO
		Uranium-235/236	0.517 g	0.0585	0.0162	0.065	.008007737	pCi/g	NO
		Uranium-238	0.517 g	1.51	0.130	0.0607	.003249516	pCi/g	NO
243274005	RE12-10-7359	Uranium-233/234	0.505 g	1.34	0.117	0.113	-.00405941	pCi/g	NO
		Uranium-235/236	0.505 g	0.099	0.0222	0.070	.008198020	pCi/g	NO
		Uranium-238	0.505 g	1.89	0.143	0.0854	.003326733	pCi/g	NO
243274006	RE12-10-7356	Uranium-233/234	0.519 g	0.518	0.0568	0.110	-.00394990	pCi/g	NO
		Uranium-235/236	0.519 g	0.0219	0.00993	0.0683	.007976879	pCi/g	YES
		Uranium-238	0.519 g	0.564	0.061	0.0638	.003236994	pCi/g	NO
243274007	RE12-10-7353	Uranium-233/234	0.519 g	1.08	0.0978	0.105	-.00394990	pCi/g	NO
		Uranium-235/236	0.519 g	0.0546	0.0156	0.0654	.007976879	pCi/g	NO
		Uranium-238	0.519 g	1.26	0.110	0.0611	.003236994	pCi/g	NO
243274008	RE12-10-7354	Uranium-233/234	0.509 g	0.504	0.056	0.112	-.00402750	pCi/g	NO
		Uranium-235/236	0.509 g	0.0535	0.0159	0.0693	.008133585	pCi/g	NO
		Uranium-238	0.509 g	0.458	0.0528	0.0648	.003300589	pCi/g	NO
243274009	RE12-10-7355	Uranium-233/234	0.512 g	1.11	0.100	0.111	-.00400391	pCi/g	NO
		Uranium-235/236	0.512 g	0.0574	0.0164	0.0688	.008085938	pCi/g	NO
		Uranium-238	0.512 g	1.30	0.114	0.0642	.00328125	pCi/g	NO
243274010	RE12-10-7364	Uranium-233/234	0.511 g	1.16	0.106	0.111	-.00401174	pCi/g	NO
		Uranium-235/236	0.511 g	0.0797	0.0197	0.0689	.008101761	pCi/g	NO

*Don* 11/2/10

## Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
243274010	RE12-10-7364	Uranium-238	0.511 g	1.19	0.107	0.0644	.003287671	pCi/g	NO

GEL Laboratories LLC  
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938206 SAMPLE DATE : 15-DEC-2009 00:00:00		SAMPLE ID : S0243273001_UU SAMPLE QTY: 0.513 G	
DETECTOR NUMBER :79467 AVERAGE %EFFICIENCY :24.9930 % YIELD : 102.853		COUNT DATE: 7-JAN-2010 17:57:50 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
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 : 4.51164 dpm RESULTS : 4.64037 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B137.CNF;380 BKG DATE : 3-JAN-2010 EFF FILE : W137.CNF;108 CAL DATE : 15-DEC-2009

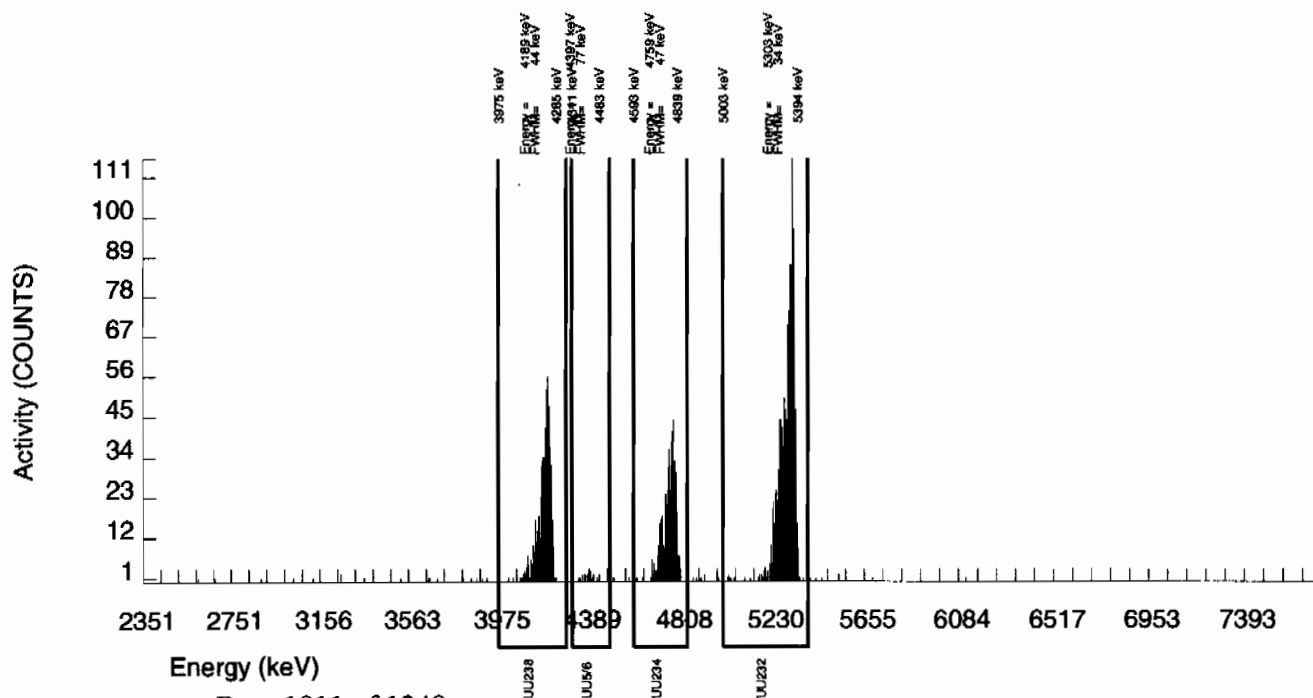
NUCLIDE ACTIVITY SUMMARY

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	454.000	451.828	1.000	6.0782	100.0000	1.54E+00	1.31E-01	4.83E-02	1.06E-01	7.28E-02
U232	5302.100	1160.000	1159.000	1.000	1.0000	100.0000	3.96E+00	3.02E-01	7.95E-03	2.51E-02	1.16E-01
U-235	4391.000	22.000	22.000	0.000	2.7628	80.90000	9.29E-02	2.09E-02	2.71E-02	6.57E-02	1.98E-02
U-238	4184.730	549.000	549.000	0.000	3.2810	100.0000	1.88E+00	1.54E-01	2.61E-02	6.14E-02	8.00E-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: 938206  
SAMPLE DATE : 16-DEC-2009 00:00:00

SAMPLE ID : S0243274010\_UU  
SAMPLE QTY: 0.511 G

DETECTOR NUMBER :75550  
AVERAGE %EFFICIENCY :24.6783  
% YIELD : 99.672

COUNT DATE: 7-JAN-2010 17:58:16  
ELAPSED LIVE TIME(SEC): 60000.00  
ANALYST :KXM4

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 : 4.51151 dpm  
RESULTS : 4.49670 dpm

LIB FILE : ENV\_ALPHA\_UU.N  
BKG FILE : B147.CNF;384  
BKG DATE : 3-JAN-2010  
EFF FILE : W147.CNF;110  
CAL DATE : 15-DEC-2009

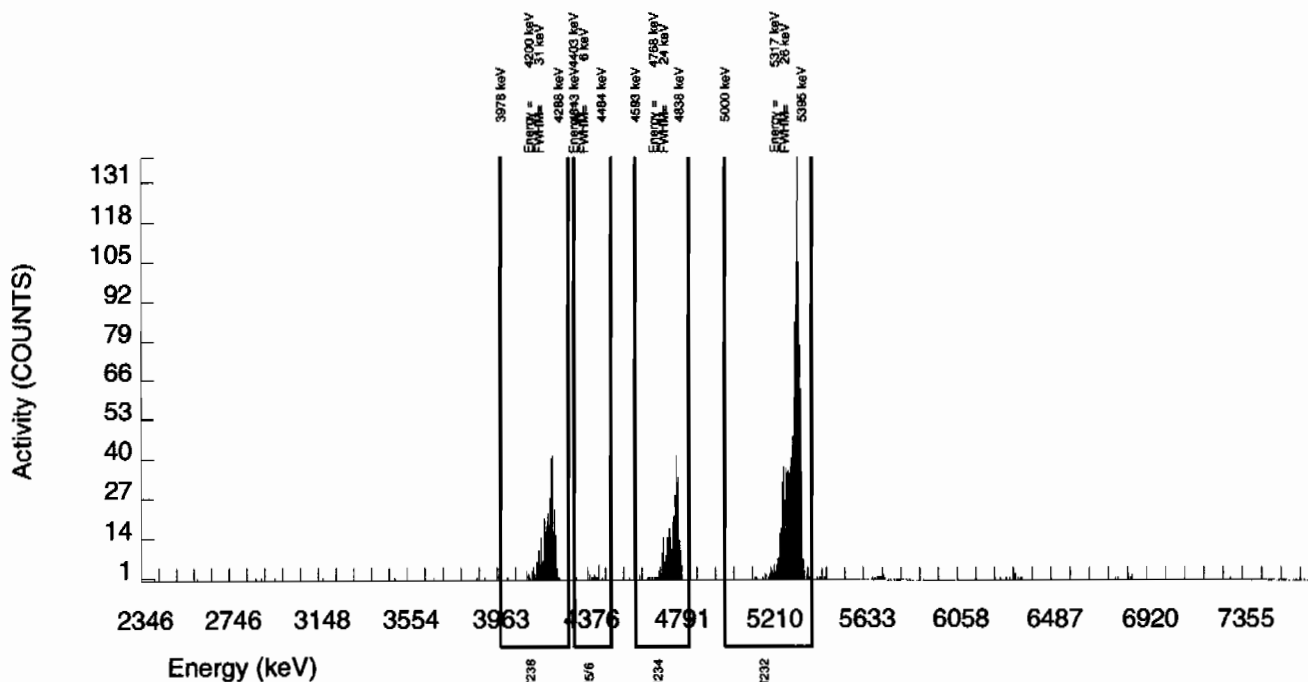
NUCLIDE ACTIVITY SUMMARY

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	327.000	323.879	2.000	6.0782	100.0000	1.16E+00	1.06E-01	5.07E-02	1.11E-01	6.49E-02
U232	5302.100	1117.000	1109.000	8.000	2.8284	100.0000	3.98E+00	3.10E-01	2.36E-02	5.69E-02	1.20E-01
U-235	4391.000	18.000	18.000	0.000	2.7628	80.90000	7.97E-02	1.97E-02	2.85E-02	6.89E-02	1.88E-02
U-238	4184.730	331.000	331.000	0.000	3.2810	100.0000	1.19E+00	1.07E-01	2.74E-02	6.44E-02	6.52E-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: 938206 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S1202007528_UU SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :45-142V3 AVERAGE %EFFICIENCY :25.9872 % YIELD : 103.444		COUNT DATE: 8-JAN-2010 12:40:55 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :KXM4	
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 : 4.66446 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

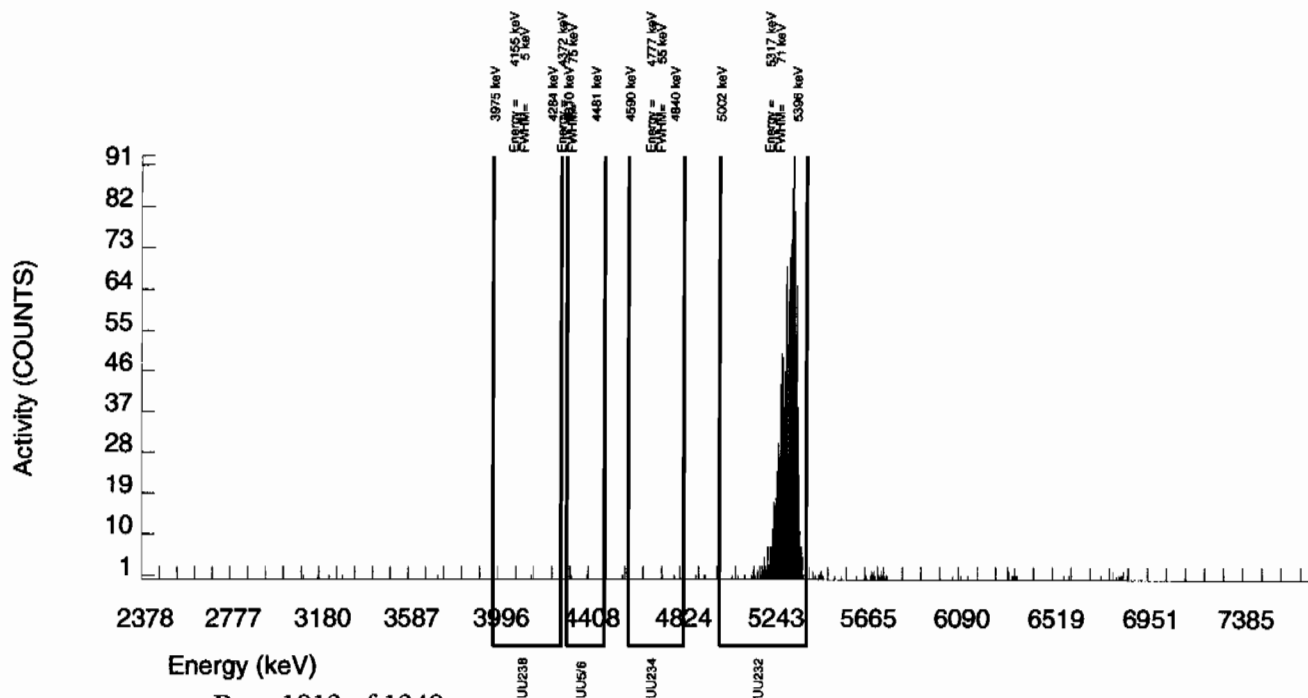
NUCLIDE ACTIVITY SUMMARY

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	2.000	-1.225	2.000	6.0782	100.0000	-2.05E-03	2.90E-03	2.37E-02	5.19E-02	2.90E-03
U232	5302.100	1219.000	1212.000	7.000	2.6458	100.0000	2.03E+00	1.53E-01	1.03E-02	2.52E-02	5.87E-02
U-235	4391.000	2.000	2.000	0.000	2.7628	80.90000	4.14E-03	2.94E-03	1.33E-02	3.22E-02	2.93E-03
U-238	4184.730	1.000	1.000	0.000	3.2810	100.0000	1.68E-03	1.68E-03	1.28E-02	3.01E-02	1.68E-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: 938206 SAMPLE DATE : 16-DEC-2009 00:00:00		SAMPLE ID : S1202007529_UU SAMPLE QTY: 0.541 G	
DETECTOR NUMBER :67047 AVERAGE %EFFICIENCY :30.1536 % YIELD : 90.914		COUNT DATE: 7-JAN-2010 09:01:35 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
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 : 4.51151 dpm RESULTS : 4.10158 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B021.CNF;1093 BKG DATE : 3-JAN-2010 EFF FILE : W021.CNF;326 CAL DATE : 4-JAN-2010

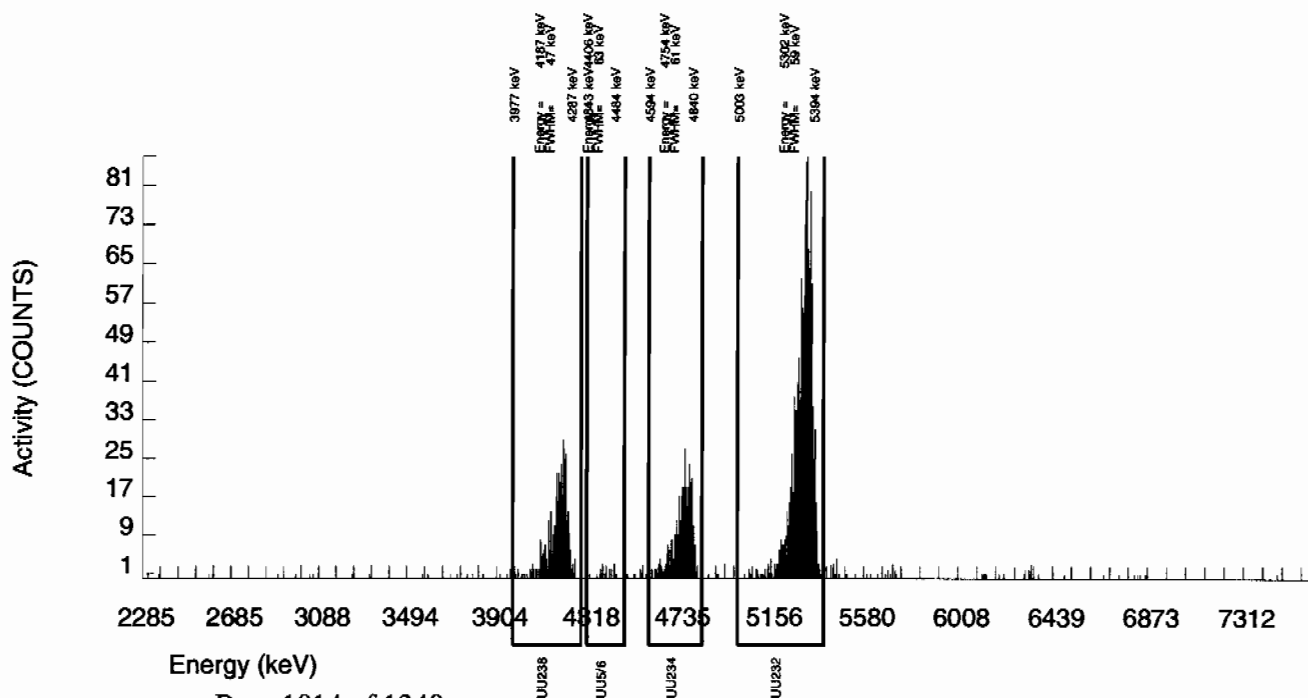
NUCLIDE ACTIVITY SUMMARY

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
U-3/4	4763.020	366.000	362.750	2.000	6.0782	100.0000	1.10E+00	9.65E-02	4.29E-02	9.41E-02	5.82E-02
U232	5302.100	1245.000	1236.000	9.000	3.0000	100.0000	3.76E+00	2.84E-01	2.12E-02	5.06E-02	1.08E-01
U-235	4391.000	19.000	17.000	2.000	2.7628	80.90000	6.38E-02	1.78E-02	2.41E-02	5.84E-02	1.72E-02
U-238	4184.730	378.000	376.000	2.000	3.2810	100.0000	1.14E+00	9.93E-02	2.32E-02	5.46E-02	5.92E-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: 938206 SAMPLE DATE : 4-JAN-2010 00:00:00.		SAMPLE ID : S1202007530_UU SAMPLE QTY: 0.103 G	
DETECTOR NUMBER :72530 AVERAGE %EFFICIENCY :31.2191 % YIELD : 103.583		COUNT DATE: 7-JAN-2010 09:01:35 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :KXM4	
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 : 4.67070 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B022.CNF;1097 BKG DATE : 3-JAN-2010 EFF FILE : W022.CNF;316 CAL DATE : 4-JAN-2010

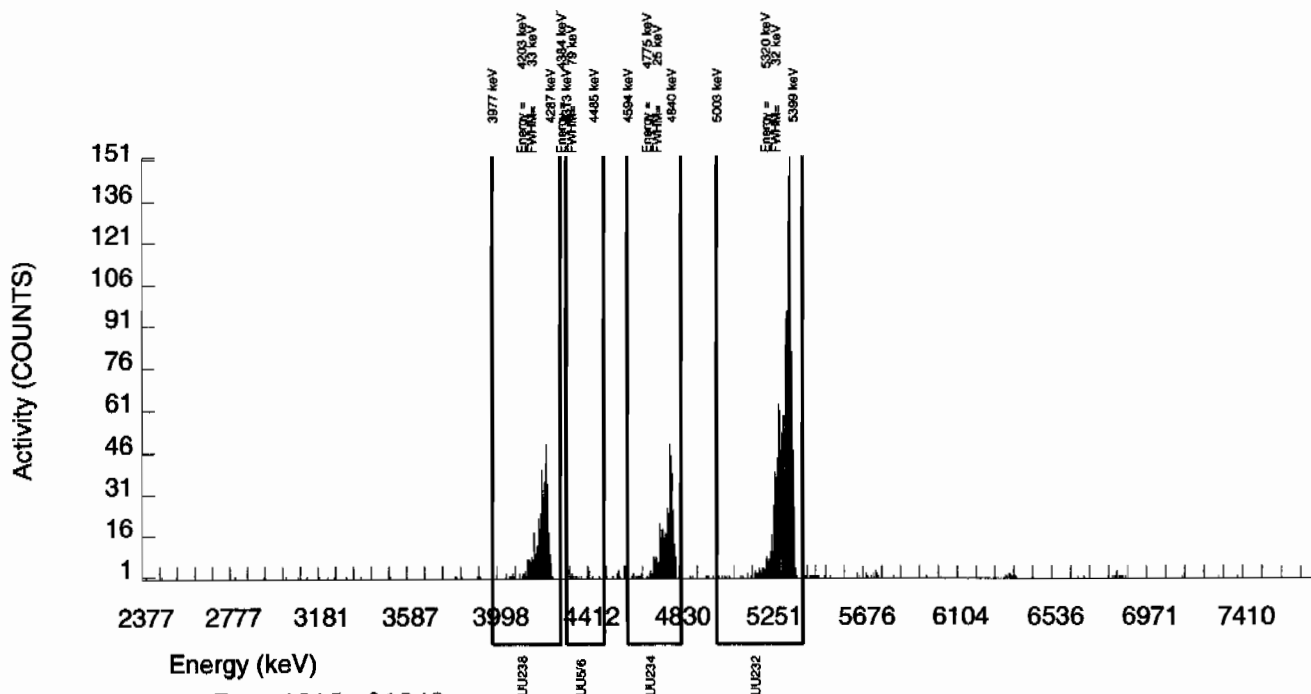
NUCLIDE ACTIVITY SUMMARY

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
U-3/4	4763.020	403.000	398.526	3.000	6.0782	100.0000	5.39E+00	4.89E-01	1.91E-01	4.19E-01	2.72E-01
U232	5302.100	1466.000	1458.000	8.000	2.8284	100.0000	1.97E+01	1.58E+00	8.90E-02	2.15E-01	5.19E-01
U-235	4391.000	18.000	18.000	0.000	2.7628	80.90000	3.01E-01	7.45E-02	1.07E-01	2.60E-01	7.09E-02
U-238	4184.730	436.000	436.000	0.000	3.2810	100.0000	5.90E+00	5.27E-01	1.03E-01	2.43E-01	2.82E-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# 935341 Product: OS Date: 11/11/10

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.	✓		GOOD
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.	✓		
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.			NO
Aliquot Correction completed if required.			NA
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.)	✓		NONE

GEL Laboratories, LLC

revised 8/1/08

Primary Review Performed By: Heccey, McCarty 11/11/10

Secondary Review Performed By: Robt 11/15/10

1115

# Gamma Spec Que Sheet 12/29/09

12/21/2009

Batch #: 935341 Analyst: MXR1 First Client Due Date: 01/04/2010 Internal Due Date: 01/04/2010

Gamma Spike Isotope: Mixed Gamma Spike Code: NA Expiration Date: NA Vol: NA Nominal Concentration: NA

Gamma LCS Isotope: Mixed Gamma LCS Code: 1032-A Expiration Date: 12/2/10 Vol: 1.0 mL Nominal Concentration: NA AMAL: 15.91

Initials: MS Prep Date: 12/22/09 Library: SOLID Witness: NA CS131: 5.574 COO: 6.500

Sample ID	Client Description / Container ID	Type	Hazard Code	Matrix	Collect Date	Geometry	Aliquot	Detector	Sealing Date/Time (if Applicable)
243273001-1	RE12-10-7351	SAMPLE	LANL010	SOIL	15-DEC-09 12:00:00	CAV	156.78	15	12/22/09
243274001-1	RE12-10-7352	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	132.93	17	
243274002-1	RE12-10-7360	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	131.64	12	
243274003-1	RE12-10-7358	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	128.02	1	
243274004-1	RE12-10-7357	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	132.02	25	
243274005-1	RE12-10-7359	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	152.20	13	
243274006-1	RE12-10-7356	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	124.07	17	
243274007-1	RE12-10-7353	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	130.53	18	
243274008-1	RE12-10-7354	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	103.79	20	
243274009-1	RE12-10-7355	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	137.32	21	
243274010-1	RE12-10-7364	SAMPLE	LANL010	SOIL	16-DEC-09 12:00:00	CAV	147.40	23	
1202001375-1	MB	MB	QC ACCOUNT	SOIL	12/22/09	CAV	156.78	15	
1202001376-1	DUP RE12-10-7352(243274001)	DUP	QC ACCOUNT	SOIL	16-DEC-09 12:00:00	CAV	132.93	5	
1202001377-1	LCS	LCS	QC ACCOUNT	SOIL	12/22/09	CAV	155.44	7	

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: Hewitt, McCarty 114110

✓ no history ✓ dates

12/15/10

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# Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
935341	243273001	SAMPLE	30-DEC-09		Americium-241	0.09678	0.2899	0.200
					Thorium-234	0.8245	2.11	2.00
935341	243274001	SAMPLE	30-DEC-09					
935341	243274002	SAMPLE	30-DEC-09					
935341	243274003	SAMPLE	30-DEC-09		Americium-241	-0.01055	0.2202	0.200
935341	243274004	SAMPLE	30-DEC-09					
935341	243274005	SAMPLE	31-DEC-09		Sodium-22	-0.01901	0.0826	0.080
935341	243274006	SAMPLE	31-DEC-09		Cesium-134	0.04731	0.112	0.100
					Sodium-22	0.01852	0.09582	0.080
935341	243274007	SAMPLE	31-DEC-09		Americium-241	-0.1181	0.2739	0.200
					Thorium-234	2.053	2.132	2.00
935341	243274008	SAMPLE	31-DEC-09		Americium-241	0.09029	0.2012	0.200
935341	243274009	SAMPLE	31-DEC-09		Cesium-134	0.08491	0.1051	0.100
					Sodium-22	-0.003	0.09307	0.080
935341	243274010	SAMPLE	31-DEC-09		Americium-241	0.06963	0.3272	0.200
935341	1202001375	MB	31-DEC-09		Americium-241	-0.00986	0.2569	0.200
935341	1202001376	DUP	31-DEC-09		Cerium-139	0.00036	0.05077	0.050
935341	1202001377	LCS	31-DEC-09		Cerium-139	-0.01529	0.07807	0.050
					Cesium-134	0.1419	0.1744	0.100
					Europium-152	-0.07584	0.3176	0.200
					Mercury-203	-0.02099	0.1101	0.100
					Ruthenium-106	0.1038	1.043	0.800
					Thorium-234	-1.834	2.477	2.00
					Tin-113	-0.0006	0.1393	0.100
					Uranium-235	-0.0481	0.5104	0.500

# GEL QUALS

Batch ID: 935341

Report run on: January 4, 2010 3:10 PM

Samp Id	Parname	Cofa	Edd	Qual Comments	Auto	Result	MDA	Uncert	SQL
243273001-1 30-DEC-2009 22:47	Bismuth-211	UI	UI	Data rejected due to interference.		2.108			
	Radium-224	UI	UI	Data rejected due to interference.		2.675			
	Strontium-85	UI	UI	Data rejected due to low abundance.		.05916			
243274001-1 30-DEC-2009 22:47	Bismuth-211	UI	UI	Data rejected due to interference.		3.083			
	Cadmium-109	UI	UI	Data rejected due to interference.		2.173			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.0766		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.378			
	Thorium-234	UI	UI	Data rejected due to high counting uncertainty.		.7604		2	2
243274002-1 30-DEC-2009 22:52	Bismuth-211	UI	UI	Data rejected due to interference.		3.351			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.109			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1187		.1	.1
	Radium-224	UI	UI	Data rejected due to interference.		4.575			
243274003-1 30-DEC-2009 23:08	Bismuth-211	UI	UI	Data rejected due to interference.		4.203			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.857			
	Cesium-137	UI	UI	Data rejected due to high counting uncertainty.		.05804		.1	.1
	Strontium-85	UI	UI	Data rejected due to low abundance.		.05199			
	Re-224			Data rejected due to interference		4.63			
243274004-1 30-DEC-2009 23:08	Bismuth-211	UI	UI	Data rejected due to interference.		4.553			
	Cadmium-109	UI	UI	Data rejected due to interference.		3.813			
	Cesium-134	UI	UI	Data rejected due to low abundance.		.1117		.1	.1
	Re-224			Data rejected due to interference		4.68			



# GEL QUALS

Batch ID: 935341

Report run on: January 4, 2010 3:10 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
243274005-1 31-DEC-2009 14:35	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.834			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.747			
243274006-1 31-DEC-2009 14:35	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.665			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.171			
	Bismuth-211	UI	UI	UI			3.17			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.382			
243274007-1 31-DEC-2009 14:35	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.441			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.08385		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.537			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1299			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.986			
243274008-1 31-DEC-2009 14:36	Cadmium-109	UI	UI	UI	Data rejected due to high peak-width.		4.273			
	Mercury-203	UI	UI	UI	Data rejected due to high counting uncertainty.		.08032		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.836			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.156			
243274009-1 31-DEC-2009 14:36	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.01			
	Radium-224	UI	UI	UI	Data rejected due to interference.		1.36			
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.253			
243274010-1 31-DEC-2009 14:37	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.403			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1044		.1	.1

# GEL QUALS

Batch ID: 935341

Report run on: January 4, 2010 3:10 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
243274010-1 31-DEC-2009 14:37	Radium-224	UI	UI	UI	Data rejected due to interference.		3.711			
1202001375-1 MB 31-DEC-2009 14:42	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.06453			
1202001376-1 DUP 31-DEC-2009 15:32	Americium-241	UI	UI	UI	Data rejected due to low abundance.		.1222		.2	.2
	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.425			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.335			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.355			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1041			

## Gamma Review Report based on Result &gt; MDA for Batch:935341

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project Quals	Zero?	queue
243273001	15-DEC-09 12:00	30-DEC-09 22:47	15.4	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	✓	0.8035	0.08675	pCi/g 0.1301	N	910.9	3 1.615	IDENTIFIED 9.256	✓	
Americium-243	✗	0.2123	0.03375	pCi/g 0.07445	N	74.13	1 1.439	IDENTIFIED 14.89	✓	
Annihilation Rad.	HE	0.04556	0.02288	pCi/g 0.03354	N	510.5	1 2.086	IDENTIFIED 50.13	✓	
Barium-137m	✓	0.5526	0.02919	pCi/g 0.03823	N	661.3	2 1.64	IDENTIFIED 4.645	✓	
Bismuth-211	✗	2.109	0.1845	pCi/g 0.235	Y	351.4	4 1.392	IDENTIFIED 8.048	✓	✗
Bismuth-212	✓	0.6993	0.1611	pCi/g 0.263	N	727.3	1 1.666	IDENTIFIED 22.7	✓	
Bismuth-214	✓	0.6121	0.05506	pCi/g 0.07426	0.200	608.9	4 1.723	IDENTIFIED 8.193	✓	
Cerium-143	—	733.2	118.9	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	
Cesium-135	HE	0.2121	0.05387	pCi/g 0.2004	N	0	14 0	NOT_IDENTI 0	✓	
Cesium-137	✓	0.5841	0.0309	pCi/g 0.04041	0.100	661.3	2 1.64	IDENTIFIED 4.645	✓	
Gross Gamma	—	5.689	0.9657	pCi/g 2.578	N	0	0		✓	
Iodine-133	HE	2878	2551	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	
Iodine-135	HE	6.81E+14	4.36E+15	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	
Krypton-85	HE	11.49	2.77	pCi/g 9.159	N	0	14 0	NOT_IDENTI 0	✓	
Lead-212	✓	0.9139	0.05097	pCi/g 0.06307	0.100	238.1	4 1.415	IDENTIFIED 3.738	✓	
Lead-214	✓	0.7335	0.06697	pCi/g 0.08188	0.100	351.4	4 1.392	IDENTIFIED 8.048	✓	
Lutetium-177	—	2.565	0.4996	pCi/g 1.434	N	0	14 0	FAIL_ABUND 0	✓	
Niobium-95m	—	0.8465	0.06609	pCi/g 0.2155	N	0	14 0	NOT_IDENTI 0	✓	
Niobium-97	—	3.89E+05	61460	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	
Polonium-212	NR	0.9139	0.05097	pCi/g 0.06307	N	238.1	4 1.415	IDENTIFIED 3.738	✓	
Polonium-214	NR	0.7335	0.06697	pCi/g 0.08188	N	351.4	4 1.392	IDENTIFIED 8.048	✓	
Polonium-216	NR	0.9139	0.05097	pCi/g 0.06307	N	238.1	4 1.415	IDENTIFIED 3.738	✓	
Polonium-218	NR	0.7335	0.06697	pCi/g 0.08188	N	351.4	4 1.392	IDENTIFIED 8.048	✓	
Potassium-40	✓	17.77	0.8401	pCi/g 0.3619	1.00	1461	1 2.051	IDENTIFIED 2.782	✓	
Radium-224	✗	2.675	0.3561	pCi/g 0.7174	Y	241.2	1 1.668	IDENTIFIED 12.85	✓	✗
Radium-226	✓	0.6121	0.05506	pCi/g 0.07426	Y	608.9	4 1.723	IDENTIFIED 8.193	✓	
Radium-228	✓	0.8035	0.08675	pCi/g 0.1301	0.500	910.9	3 1.615	IDENTIFIED 9.256	✓	
Silver-110m	HE	0.07441	0.01473	pCi/g 0.04959	N	0	14 0	NOT_IDENTI 0	✓	
Sodium-24	HE	1.89E+05	3.80E+05	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	
Strontium-85	LA	0.05916	0.01426	pCi/g 0.04715	Y	0	14 0	NOT_IDENTI 0	✓	UI Data rejected due to low abundance.
Thallium-200	HE	154.4	193.3	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	
Thallium-208	✓	0.2695	0.02419	pCi/g 0.03764	0.080	583	1 1.711	IDENTIFIED 8.392	✓	
Thorium-228	✓	0.9281	0.05176	pCi/g 0.06405	N	238.1	4 1.415	IDENTIFIED 3.738	✓	
Thorium-230	✓	0.6121	0.05506	pCi/g 0.07425	N	608.9	4 1.723	IDENTIFIED 8.193	✓	
Thorium-232	✓	0.8035	0.08675	pCi/g 0.1301	N	910.9	3 1.615	IDENTIFIED 9.256	✓	
Titanium-44	—	0.1124	0.01642	pCi/g 0.05387	N	0	14 0	NOT_IDENTI 0	✓	
Uranium-234	✓	0.6121	0.05506	pCi/g 0.07425	N	608.9	4 1.723	IDENTIFIED 8.193	✓	
Zirconium-97	—	6.11E+06	1.07E+06	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	

\*\*\* = 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
243274001	16-DEC-09 12:00	30-DEC-09 22:47	14.4	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	✓	1.471	0.1495	pCi/g 0.165	N	911	3 1.515	IDENTIFIED 8.779	✓	
Americium-243	✗	0.2976	0.02074	pCi/g 0.04028	N	73.97	1 0.8786	IDENTIFIED 5.518	✓	
Annihilation Rad.	—	0.1075	0.02622	pCi/g 0.03449	N	510.3	1 2.225	IDENTIFIED 24.15	✓	
Bismuth-211	✗	3.083	0.2153	pCi/g 0.2391	Y	351.3	4 1.164	IDENTIFIED 5.989	✓	✗
Bismuth-212	—	1.145	0.1757	pCi/g 0.5556	N	0	10 0	FAIL_ABUND 0	✓	
Bismuth-214	✓	0.9223	0.07377	pCi/g 0.08541	0.200	609	4 1.375	IDENTIFIED 6.622	✓	
Cadmium-109	✗	2.173	0.2799	pCi/g 0.6402	Y	89.02	1 1.111	IDENTIFIED 12.22	✓	✗
Cerium-143	—	801.4	111.7	pCi/g 0	N	0	10 0	SHORT_HLIF 0	✓	
Cesium-134	✗	0.0766	0.03027	pCi/g 0.07368	0.100	0	10 0	FAIL_ABUND 0	✓	UI Data rejected due to low abundance.
Cesium-135	HE	0.2156	0.07887	pCi/g 0.1602	N	269.3	1 1.084	IDENTIFIED 36.3	✓	
Curium-243	HE	0.1088	0.02878	pCi/g 0.1059	N	0	10 0	FAIL_ABUND 0	✓	
Gross Gamma	—	8.175	1.114	pCi/g 3.167	N	0	0		✓	
Iodine-133	HE	1285	1321	pCi/g 0	N	0	10 0	SHORT_HLIF 0	✓	

Iodine-135	HE	8.56E+14	4.97E+14	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Lead-212	✓	1.46	0.07554	pCi/g	0.05786	0.100	237.9	4	1.048	IDENTIFIED	2.738	✓
Lead-214	✓	1.072	0.07994	pCi/g	0.0834	0.100	351.3	4	1.164	IDENTIFIED	5.989	✓
Lutetium-177	—	2.587	0.4971	pCi/g	1.32	N	0	10	0	FAIL_ABUND	0	✓
Neptunium-237	IN	1.022	0.1403	pCi/g	0.1843	N	86.37	2	1.214	IDENTIFIED	8.102	✓
Niobium-95m	—	0.314	0.0514	pCi/g	0.1694	N	0	10	0	NOT_IDENTI	0	✓
Polonium-212	NR	1.46	0.07554	pCi/g	0.05786	N	237.9	4	1.048	IDENTIFIED	2.738	✓
Polonium-214	NR	1.072	0.07994	pCi/g	0.0834	N	351.3	4	1.164	IDENTIFIED	5.989	✓
Polonium-216	NR	1.46	0.07554	pCi/g	0.05786	N	237.9	4	1.048	IDENTIFIED	2.738	✓
Polonium-218	NR	1.072	0.07994	pCi/g	0.0834	N	351.3	4	1.164	IDENTIFIED	5.989	✓
Potassium-40	✓	23.31	0.9675	pCi/g	0.4417	1.00	1461	1	2.096	IDENTIFIED	2.789	✓
Radium-224	IN	4.378	0.449	pCi/g	0.659	Y	240.9	1	1.748	IDENTIFIED	9.538	✓
Radium-226	✓	0.9223	0.07377	pCi/g	0.08541	Y	609	4	1.375	IDENTIFIED	6.622	✓
Radium-228	✓	1.471	0.1495	pCi/g	0.165	0.500	911	3	1.515	IDENTIFIED	8.779	✓
Thallium-200	✓	234.3	105.4	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Thallium-208	✓	0.5198	0.03971	pCi/g	0.0467	0.080	582.7	1	1.57	IDENTIFIED	6.533	✓
Thorium-228	✓	1.482	0.07663	pCi/g	0.0587	N	237.9	4	1.048	IDENTIFIED	2.738	✓
Thorium-230	✓	0.9222	0.07376	pCi/g	0.08541	N	609	4	1.375	IDENTIFIED	6.622	✓
Thorium-232	✓	1.471	0.1495	pCi/g	0.165	N	911	3	1.515	IDENTIFIED	8.779	✓
Thorium-234	PUNC	0.7604	0.3985	pCi/g	0.6854	2.00	62.41	2	0.7089	IDENTIFIED	51.62	✓
Tin-126	IN	0.3481	0.03153	pCi/g	0.06292	N	86.37	2	1.214	IDENTIFIED	8.102	✓
Total Uranium	✓	2.3185	1.19E-06	ug/g	1.0216	N	0	0	0			✓
Uranium-234	✓	0.9222	0.07376	pCi/g	0.08541	N	609	4	1.375	IDENTIFIED	6.622	✓
Uranium-238	HE	0.7604	0.3985	pCi/g	0.6854	N	62.41	2	0.7089	IDENTIFIED	51.62	✓
Zirconium-97	—	1.56E+06	4.19E+05	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓

\*\*\* = 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
243274002	16-DEC-09 12:00	30-DEC-09 22:52	14.5	SAMPLE	LOAD	1	LANL	LANL01004	GEL	N	RCSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	***FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.652	0.1283	pCi/g	0.1414	N	910.8	3	1.856	IDENTIFIED	5.494
Americium-243	IN	0.3803	0.03006	pCi/g	0.05932	N	74.7	1	1.086	IDENTIFIED	7.136
Annihilation Rad.	—	0.09666	0.02515	pCi/g	0.03109	N	510.6	1	1.422	IDENTIFIED	25.84
Bismuth-211	IN	3.351	0.1839	pCi/g	0.2201	Y	351.7	4	1.335	IDENTIFIED	4.498
Bismuth-212	—	1.078	0.1716	pCi/g	0.4722	N	0	8	0	FAIL_ABUND	0
Bismuth-214	✓	1.088	0.06758	pCi/g	0.07971	0.200	609	4	1.469	IDENTIFIED	4.655
Cadmium-109	IN	3.109	0.3332	pCi/g	0.8974	Y	87.07	3	0.9969	IDENTIFIED	10.03
Cerium-143	—	490.5	66.78	pCi/g	0	N	0	8	0	SHORT_HLIF	0
Cesium-134	LA	0.1187	0.02341	pCi/g	0.0666	0.100	0	8	0	FAIL_ABUND	0
Gross Gamma	✓	8.786	1.061	pCi/g	2.443	N	0	0	0		
Lead-212	✓	1.53	0.06622	pCi/g	0.05951	0.100	238.5	4	1.083	IDENTIFIED	2.476
Lead-214	✓	1.166	0.07082	pCi/g	0.07674	0.100	351.7	4	1.335	IDENTIFIED	4.498
Lutetium-177	✓	2.799	0.5094	pCi/g	1.272	N	0	8	0	FAIL_ABUND	0
Neptunium-237	IN	0.8981	0.1336	pCi/g	0.2743	N	87.07	3	0.9969	IDENTIFIED	10.03
Polonium-212	NR	1.53	0.06622	pCi/g	0.05951	N	238.5	4	1.083	IDENTIFIED	2.476
Polonium-214	NR	1.166	0.07082	pCi/g	0.07674	N	351.7	4	1.335	IDENTIFIED	4.498
Polonium-216	NR	1.53	0.06622	pCi/g	0.05951	N	238.5	4	1.083	IDENTIFIED	2.476
Polonium-218	NR	1.166	0.07082	pCi/g	0.07674	N	351.7	4	1.335	IDENTIFIED	4.498
Potassium-40	✓	26.59	1.128	pCi/g	0.3845	1.00	1460	1	2.146	IDENTIFIED	2.3
Radium-224	IN	4.575	0.4733	pCi/g	0.6773	Y	241.3	1	1.855	IDENTIFIED	9.971
Radium-226	✓	1.088	0.06758	pCi/g	0.07971	Y	609	4	1.469	IDENTIFIED	4.655
Radium-228	✓	1.652	0.1283	pCi/g	0.1414	0.500	910.8	3	1.856	IDENTIFIED	5.494
Rhenium-188	HE	0.1951	0.0539	pCi/g	0.1912	N	0	8	0	NOT_IDENTI	0
Technetium-99m	HE	3.13E+14	2.32E+15	pCi/g	0	N	0	8	0	SHORT_HLIF	0
Thallium-208	✓	0.4624	0.03032	pCi/g	0.04112	0.080	583	1	1.531	IDENTIFIED	5.495
Thorium-228	✓	1.552	0.06718	pCi/g	0.06038	N	238.5	4	1.083	IDENTIFIED	2.476
Thorium-230	✓	1.088	0.06758	pCi/g	0.07971	N	609	4	1.469	IDENTIFIED	4.655
Thorium-232	✓	1.652	0.1283	pCi/g	0.1414	N	910.8	3	1.856	IDENTIFIED	5.494
Tin-126	IN	0.3058	0.03278	pCi/g	0.08871	N	87.07	3	0.9969	IDENTIFIED	10.03
Titanium-44	—	0.3402	0.02023	pCi/g	0.05022	N	0	8	0	FAIL_ABUND	0
Uranium-234	✓	1.088	0.06758	pCi/g	0.07971	N	609	4	1.469	IDENTIFIED	4.655
Zirconium-97	—	1.58E+06	3.79E+05	pCi/g	0	N	0	8	0	SHORT_HLIF	0

\*\*\* = 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
243274003	16-DEC-09 12:00	30-DEC-09 23:06	14.5	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.74	0.1503	pCi/g	0.1639	N	910.9	3	1.548	IDENTIFIED	7.006
Americium-243	0.3218	0.03091	pCi/g	0.07702	N	74.88	1	1.015	IDENTIFIED	8.631
Annihilation Rad.	0.1186	0.02659	pCi/g	0.03733	N	510.9	1	1.951	IDENTIFIED	22.24
Barium-137m	0.0549	0.02467	pCi/g	0.04495	N	661.1	2	1.191	IDENTIFIED	44.86
Bismuth-211	4.203	0.2161	pCi/g	0.261	Y	352	4	1.338	IDENTIFIED	4.053
Bismuth-212	1.397	0.2087	pCi/g	0.5396	N	0	9	0	FAIL_ABUND	0
Bismuth-214	1.361	0.08216	pCi/g	0.08965	0.200	609.3	4	1.497	IDENTIFIED	4.765
Cadmium-109	3.657	0.45	pCi/g	0.9359	Y	87.27	3	1.279	IDENTIFIED	11.43
Cerium-143	428.7	66.1	pCi/g	0	N	0	9	0	SHORT_HLIF	0
Cesium-135	0.2421	0.06785	pCi/g	0.2183	N	0	9	0	NOT_IDENTI	0
Cesium-137	0.05804	0.02607	pCi/g	0.04752	0.100	661.1	2	1.191	IDENTIFIED	44.86
Gross Gamma	9.075	1.277	pCi/g	3.473	N	0	0	0	0	0
Krypton-85	10.21	3.238	pCi/g	10.18	N	0	9	0	NOT_IDENTI	0
Lead-212	1.798	0.07921	pCi/g	0.0732	0.100	238.9	4	1.215	IDENTIFIED	2.476
Lead-214	1.462	0.08429	pCi/g	0.09099	0.100	352	4	1.338	IDENTIFIED	4.053
Lutetium-177	2.389	0.5533	pCi/g	1.487	N	0	9	0	FAIL_ABUND	0
Neptunium-237	1.056	0.1697	pCi/g	0.2755	N	87.27	3	1.279	IDENTIFIED	11.43
Niobium-97	15950	22840	pCi/g	0	N	0	9	0	SHORT_HLIF	0
Polonium-212	1.798	0.07921	pCi/g	0.0732	N	238.9	4	1.215	IDENTIFIED	2.476
Polonium-214	1.462	0.08429	pCi/g	0.09099	N	352	4	1.338	IDENTIFIED	4.053
Polonium-216	1.798	0.07921	pCi/g	0.0732	N	238.9	4	1.215	IDENTIFIED	2.476
Polonium-218	1.462	0.08429	pCi/g	0.09099	N	352	4	1.338	IDENTIFIED	4.053
Potassium-40	19.51	0.9225	pCi/g	0.3985	1.00	1460	1	1.92	IDENTIFIED	3.117
Radium-224	4.629	0.5146	pCi/g	0.8331	Y	241.7	1	1.708	IDENTIFIED	10.74
Radium-226	1.361	0.08216	pCi/g	0.08965	Y	609.3	4	1.497	IDENTIFIED	4.765
Radium-228	1.74	0.1503	pCi/g	0.1639	0.500	910.9	3	1.548	IDENTIFIED	7.006
Strontium-85	0.05199	0.0165	pCi/g	0.05187	Y	0	9	0	NOT_IDENTI	0
Thallium-208	0.6079	0.03909	pCi/g	0.04354	0.080	583	1	1.451	IDENTIFIED	5.596
Thorium-228	1.824	0.08036	pCi/g	0.07427	N	238.9	4	1.215	IDENTIFIED	2.476
Thorium-230	1.361	0.08216	pCi/g	0.08964	N	609.3	4	1.497	IDENTIFIED	4.765
Thorium-232	1.74	0.1503	pCi/g	0.1639	N	910.9	3	1.548	IDENTIFIED	7.006
Tin-126	0.3597	0.04427	pCi/g	0.09258	N	87.27	3	1.279	IDENTIFIED	11.43
Titanium-44	0.3692	0.02658	pCi/g	0.06632	N	0	9	0	FAIL_ABUND	0
Total Uranium	4.1327	2.10E-06	ug/g	2.7386	N	0	0	0	0	0
Uranium-234	1.361	0.08216	pCi/g	0.08964	N	609.3	4	1.497	IDENTIFIED	4.765
Zirconium-97	1.44E+06	4.45E+05	pCi/g	0	N	0	9	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
243274004	16-DEC-09 12:00	30-DEC-09 23:06	14.5	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	1.625	0.1351	pCi/g	0.1509	N	911	3	1.599	IDENTIFIED	5.815
Americium-243	0.3702	0.02324	pCi/g	0.03203	N	74.78	1	0.8446	IDENTIFIED	3.686
Annihilation Rad.	0.1371	0.02642	pCi/g	0.03129	N	510.4	1	1.549	IDENTIFIED	18.57
Barium-137m	0.2303	0.02808	pCi/g	0.04275	N	661.5	2	1.276	IDENTIFIED	10.86
Bismuth-210	1.549	0.2473	pCi/g	0.4005	N	46.41	3	0.973	IDENTIFIED	15.11
Bismuth-211	4.553	0.2882	pCi/g	0.1971	Y	351.8	4	1.236	IDENTIFIED	3.523
Bismuth-212	1.069	0.1876	pCi/g	0.33	N	727	1	1.597	IDENTIFIED	16.49
Bismuth-214	1.355	0.1002	pCi/g	0.0763	0.200	609.2	4	1.393	IDENTIFIED	4.272
Cadmium-109	3.613	0.2767	pCi/g	0.5014	Y	87.23	3	1.194	IDENTIFIED	5.478
Cerium-143	403.4	61.65	pCi/g	0	N	0	10	0	SHORT_HLIF	0
Cesium-134	0.1117	0.02334	pCi/g	0.06525	0.100	0	10	0	FAIL_ABUND	0
Cesium-135	0.2257	0.05459	pCi/g	0.1723	N	0	10	0	NOT_IDENTI	0
Cesium-137	0.2435	0.02969	pCi/g	0.04519	0.100	661.5	2	1.276	IDENTIFIED	10.86
Gold-195	0.2039	0.05562	pCi/g	0.1917	N	0	10	0	FAIL_ABUND	0
Gross Gamma	9.442	1.056	pCi/g	3.328	N	0	0	0	0	0
Lead-210	1.549	0.2473	pCi/g	0.4005	N	46.41	3	0.973	IDENTIFIED	15.11
Lead-212	1.763	0.1074	pCi/g	0.05726	0.100	238.6	4	0.9778	IDENTIFIED	2.168
Lead-214	1.584	0.1084	pCi/g	0.06873	0.100	351.8	4	1.236	IDENTIFIED	3.523

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Lutetium-177	—	3.056	0.4775	pCi/g	1.201	N	0	10	0	FAIL_ABUND	0	✓
Neptunium-237	INT	1.044	0.1341	pCi/g	0.1554	N	87.23	3	1.194	IDENTIFIED	5.478	✓
Niobium-95	HE	0.05806	0.01726	pCi/g	0.05569	N	0	10	0	NOT_IDENTIF	0	✓
Niobium-97	HE	11640	21230	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Polonium-210	✓	1.549	0.2454	pCi/g	0.4005	N	46.41	3	0.973	IDENTIFIED	15.11	✓
Polonium-212	NR	1.763	0.1074	pCi/g	0.05726	N	238.6	4	0.9778	IDENTIFIED	2.168	✓
Polonium-214	NR	1.584	0.1084	pCi/g	0.06873	N	351.8	4	1.236	IDENTIFIED	3.523	✓
Polonium-216	NR	1.763	0.1074	pCi/g	0.05726	N	238.6	4	0.9778	IDENTIFIED	2.168	✓
Polonium-218	NR	1.584	0.1084	pCi/g	0.06873	N	351.8	4	1.236	IDENTIFIED	3.523	✓
Potassium-40	✓	20.33	1.035	pCi/g	0.3354	1.00	1461	1	1.917	IDENTIFIED	2.796	✓
Radium-224	INT	4.676	0.4416	pCi/g	0.6524	Y	241.6	1	1.533	IDENTIFIED	7.844	✓
Radium-226	✓	1.355	0.1002	pCi/g	0.0763	Y	609.2	4	1.393	IDENTIFIED	4.272	✓
Radium-228	✓	1.625	0.1351	pCi/g	0.1509	0.500	911	3	1.599	IDENTIFIED	5.815	✓
Technetium-99m	HE	7.14E+14	1.87E+15	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Thallium-208	✓	0.5931	0.04491	pCi/g	0.04051	0.080	583	1	1.315	IDENTIFIED	5.057	✓
Thorium-228	✓	1.789	0.109	pCi/g	0.0581	N	238.6	4	0.9778	IDENTIFIED	2.168	✓
Thorium-230	✓	1.355	0.1002	pCi/g	0.0763	N	609.2	4	1.393	IDENTIFIED	4.272	✓
Thorium-232	✓	1.625	0.1351	pCi/g	0.1509	N	911	3	1.599	IDENTIFIED	5.815	✓
Thorium-234	✓	1.589	0.3427	pCi/g	0.5212	2.00	63.22	2	0.717	IDENTIFIED	19.45	✓
Tin-126	INT	0.3555	0.02723	pCi/g	0.04923	N	87.23	3	1.194	IDENTIFIED	5.478	✓
Titanium-44	—	0.3745	0.02173	pCi/g	0.03085	N	0	10	0	FAIL_ABUND	0	✓
Total Uranium	—	4.7799	1.02E-06	ug/g	0.77723	N	0					✓
Uranium-234	✓	1.355	0.1002	pCi/g	0.0763	N	609.2	4	1.393	IDENTIFIED	4.272	✓
Uranium-238	✓	1.589	0.3427	pCi/g	0.5212	N	63.22	2	0.717	IDENTIFIED	19.45	✓
Zirconium-97	—	1.54E+06	3.78E+05	pCi/g	0	N	0	10	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	
243274005	16-DEC-09 12:00	31-DEC-09 14:35	15.1	SAMPLE	LOAD	1	LANL	LANL010041GEL		N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy	***FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.248	0.1588	pCi/g	0.2256	N	910.9	3	1.76	IDENTIFIED	11.62	✓
Americium-243	INT	0.2491	0.02642	pCi/g	0.05666	N	74.76	1	1.108	IDENTIFIED	9.687	✓
Annihilation Rad.	—	0.1322	0.03418	pCi/g	0.04954	N	510.4	1	1.569	IDENTIFIED	25.62	✓
Barium-137m	✓	0.6407	0.05207	pCi/g	0.06787	N	661.5	2	1.636	IDENTIFIED	7.03	✓
Bismuth-210	✓	1.998	0.3906	pCi/g	0.7232	N	46.48	3	1.199	IDENTIFIED	19.13	✓
Bismuth-211	INT	2.834	0.2376	pCi/g	0.3446	Y	351.7	4	1.286	IDENTIFIED	7.554	✓ UT
Bismuth-214	✓	0.8846	0.08863	pCi/g	0.1181	0.200	609	4	1.742	IDENTIFIED	8.863	✓
Cadmium-109	INT	2.747	0.4157	pCi/g	1.071	Y	87.18	3	1.234	IDENTIFIED	14.6	✓ UT
Cerium-143	—	604	104.3	pCi/g	0	N	0	8	0	SHORT_HLIF	0	✓
Cesium-137	✓	0.6773	0.05507	pCi/g	0.07174	0.100	661.5	2	1.636	IDENTIFIED	7.03	✓
Gross Gamma	—	6.782	1.054	pCi/g	3.353	N	0					✓
Lead-210	✓	1.998	0.3906	pCi/g	0.7232	N	46.48	3	1.199	IDENTIFIED	19.13	✓
Lead-212	✓	1.051	0.08794	pCi/g	0.09983	0.100	238.4	4	1.192	IDENTIFIED	7.029	✓
Lead-214	✓	0.9857	0.08656	pCi/g	0.1201	0.100	351.7	4	1.286	IDENTIFIED	7.554	✓
Lutetium-177	HE	1.911	0.6114	pCi/g	1.832	N	0	8	0	FAIL_ABUND	0	✓
Neptunium-237	INT	0.7929	0.1452	pCi/g	0.3315	N	87.18	3	1.234	IDENTIFIED	14.6	✓
Niobium-97	HE	1.36E+05	71690	pCi/g	0	N	0	8	0	SHORT_HLIF	0	✓
Polonium-210	✓	1.998	0.3886	pCi/g	0.7232	N	46.48	3	1.199	IDENTIFIED	19.13	✓
Polonium-212	NR	1.051	0.08794	pCi/g	0.09983	N	238.4	4	1.192	IDENTIFIED	7.029	✓
Polonium-214	NR	0.9857	0.08656	pCi/g	0.1201	N	351.7	4	1.286	IDENTIFIED	7.554	✓
Polonium-216	NR	1.051	0.08794	pCi/g	0.09983	N	238.4	4	1.192	IDENTIFIED	7.029	✓
Polonium-218	NR	0.9857	0.08656	pCi/g	0.1201	N	351.7	4	1.286	IDENTIFIED	7.554	✓
Potassium-40	✓	17.11	0.902	pCi/g	0.6267	1.00	1460	1	2.128	IDENTIFIED	4.294	✓
Radium-226	✓	0.8846	0.08863	pCi/g	0.1181	Y	609	4	1.742	IDENTIFIED	8.863	✓
Radium-228	✓	1.248	0.1588	pCi/g	0.2256	0.500	910.9	3	1.76	IDENTIFIED	11.62	✓
Sodium-24	HE	55560	4.58E+05	pCi/g	0	N	0	8	0	SHORT_HLIF	0	✓
Technetium-99m	—	3.52E+15	0	pCi/g	0	N	0	8	0	SHORT_HLIF	0	✓
Thallium-200	HE	48.07	238.5	pCi/g	0	N	0	8	0	SHORT_HLIF	0	✓
Thallium-208	✓	0.37	0.04712	pCi/g	0.06509	0.080	583.2	1	1.749	IDENTIFIED	12.04	✓
Thorium-228	✓	1.067	0.08928	pCi/g	0.1013	N	238.4	4	1.192	IDENTIFIED	7.029	✓
Thorium-230	✓	0.8846	0.08863	pCi/g	0.1181	N	609	4	1.742	IDENTIFIED	8.863	✓
Thorium-232	✓	1.248	0.1588	pCi/g	0.2256	N	910.9	3	1.76	IDENTIFIED	11.62	✓
Thorium-234	✓	2.502	0.4946	pCi/g	0.9305	2.00	63.2	2	1.306	IDENTIFIED	17.51	✓
Tin-126	INT	0.27	0.04086	pCi/g	0.1143	N	87.18	3	1.234	IDENTIFIED	14.6	✓

Titanium-44	—	0.2501	0.02067	pCi/g	0.05087	N	0	8	0	FAIL_ABUND 0	┐
Total Uranium	—	7.4993	1.47E-06	ug/g	1.3872	N		0			┐
Uranium-234	✓	0.8846	0.08863	pCi/g	0.1181	N	609	4	1.742	IDENTIFIED 8.863	┐
Uranium-238	✓	2.502	0.4946	pCi/g	0.9305	N	63.2	2	1.306	IDENTIFIED 17.51	┐
Zirconium-97	—	4.02E+06	1.10E+06	pCi/g	0	N	0	8	0	SHORT_HLIF 0	┐

\*\*\* = 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	
243274006	16-DEC-09 12:00	31-DEC-09 14:35	15.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.557	0.2026	pCi/g	0.2488	N	911	3	1.57	IDENTIFIED 11.96	┐
Americium-243	┐	0.3857	0.03243	pCi/g	0.05901	N	74.01	1	1.128	IDENTIFIED 7.253	┐
Annihilation Rad.	HE	0.1482	0.04969	pCi/g	0.05412	N	510.9	1	2.454	IDENTIFIED 33.36	┐
Bismuth-211	┐	3.171	0.2856	pCi/g	0.3004	Y	351.2	4	1.314	IDENTIFIED 8.257	┐ U
Bismuth-212	HE	1.392	0.2981	pCi/g	0.8149	N	0	7	0	FAIL_ABUND 0	┐
Bismuth-214	✓	0.9588	0.1024	pCi/g	0.1299	0.200	608.8	4	1.337	IDENTIFIED 9.692	┐
Cadmium-109	┐	2.665	0.4062	pCi/g	0.9504	Y	89.1	1	1.206	IDENTIFIED 14.69	┐ U
Cerium-143	—	1066	161.3	pCi/g	0	N	0	7	0	SHORT_HLIF 0	┐
Cesium-135	HE	0.4181	0.1112	pCi/g	0.2395	N	269.4	1	1.814	IDENTIFIED 26.22	┐
Gross Gamma	—	8.34	1.508	pCi/g	3.381	N	0				┐
Iodine-123	HE	9.15E+05	2.61E+06	pCi/g	0	N	0	7	0	SHORT_HLIF 0	┐
Lead-212	✓	1.34	0.08195	pCi/g	0.09199	0.100	237.9	4	0.9863	IDENTIFIED 4.259	┐
Lead-214	✓	1.103	0.1034	pCi/g	0.1048	0.100	351.2	4	1.314	IDENTIFIED 8.257	┐
Lutetium-177	HE	2.417	0.757	pCi/g	1.979	N	0	7	0	FAIL_ABUND 0	┐
Neptunium-237	┐	1.194	0.1857	pCi/g	0.2734	N	86.43	2	1.273	IDENTIFIED 10.91	┐
Niobium-95m	HE	0.34	0.07181	pCi/g	0.2427	N	0	7	0	NOT_IDENTI 0	┐
Niobium-97	HE	1800	59550	pCi/g	0	N	0	7	0	SHORT_HLIF 0	┐
Polonium-212	NR	1.34	0.08195	pCi/g	0.09199	N	237.9	4	0.9863	IDENTIFIED 4.259	┐
Polonium-214	NR	1.103	0.1034	pCi/g	0.1048	N	351.2	4	1.314	IDENTIFIED 8.257	┐
Polonium-216	NR	1.34	0.08195	pCi/g	0.09199	N	237.9	4	0.9863	IDENTIFIED 4.259	┐
Polonium-218	NR	1.103	0.1034	pCi/g	0.1048	N	351.2	4	1.314	IDENTIFIED 8.257	┐
Potassium-40	✓	28.23	1.342	pCi/g	0.6954	1.00	1461	1	1.847	IDENTIFIED 3.626	┐
Radium-224	┐	4.171	0.5498	pCi/g	1.048	Y	241	1	1.536	IDENTIFIED 12.63	┐ U
Radium-226	✓	0.9588	0.1024	pCi/g	0.1299	Y	608.8	4	1.337	IDENTIFIED 9.692	┐
Radium-228	✓	1.557	0.2026	pCi/g	0.2488	0.500	911	3	1.57	IDENTIFIED 11.96	┐
Thallium-208	✓	0.4695	0.05367	pCi/g	0.06806	0.080	582.7	1	1.388	IDENTIFIED 10.72	┐
Thorium-228	✓	1.361	0.0832	pCi/g	0.09339	N	237.9	4	0.9863	IDENTIFIED 4.259	┐
Thorium-230	✓	0.9588	0.1024	pCi/g	0.1299	N	608.8	4	1.337	IDENTIFIED 9.692	┐
Thorium-232	✓	1.557	0.2026	pCi/g	0.2488	N	911	3	1.57	IDENTIFIED 11.96	┐
Tin-126	┐	0.4066	0.04732	pCi/g	0.09331	N	86.43	2	1.273	IDENTIFIED 10.91	┐
Uranium-234	✓	0.9588	0.1024	pCi/g	0.1299	N	608.8	4	1.337	IDENTIFIED 9.692	┐
Zirconium-97	—	4.89E+06	1.20E+06	pCi/g	0	N	0	7	0	SHORT_HLIF 0	┐

\*\*\* = 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	
243274007	16-DEC-09 12:00	31-DEC-09 14:35	15.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.177	0.1313	pCi/g	0.1542	N	911.3	3	1.609	IDENTIFIED 8.975	┐
Americium-243	┐	0.3335	0.0377	pCi/g	0.08076	N	75.1	1	1.185	IDENTIFIED 10.5	┐
Annihilation Rad.	HE	0.08726	0.02824	pCi/g	0.03129	N	511.2	1	2.082	IDENTIFIED 32.19	┐
Barium-137m	✓	0.3179	0.03161	pCi/g	0.04308	N	661.8	2	1.542	IDENTIFIED 9.183	┐
Bismuth-211	┐	3.382	0.1971	pCi/g	0.239	Y	352.2	4	1.299	IDENTIFIED 4.863	┐ U
Bismuth-212	✓	1.319	0.1559	pCi/g	0.5216	N	0	9	0	FAIL_ABUND 0	┐
Bismuth-214	✓	0.9605	0.07527	pCi/g	0.08804	0.200	609.5	4	1.633	IDENTIFIED 6.439	┐
Cadmium-109	┐	3.441	0.4973	pCi/g	1.05	Y	87.5	3	1.312	IDENTIFIED 13.7	┐ U
Cerium-143	—	417.3	78.47	pCi/g	0	N	0	9	0	SHORT_HLIF 0	┐
Cesium-134	✓	0.09385	0.02425	pCi/g	0.06919	0.100	0	9	0	FAIL_ABUND 0	┐ UI Data rejected due to low abundance.
Cesium-137	✓	0.3361	0.03343	pCi/g	0.04554	0.100	661.8	2	1.542	IDENTIFIED 9.183	┐
Gross Gamma	—	7.793	1.01	pCi/g	2.115	N	0				┐
Krypton-85	—	25.34	3.305	pCi/g	11.86	N	0	9	0	NOT_IDENTI 0	┐
Lead-212	✓	1.331	0.06468	pCi/g	0.07121	0.100	238.9	4	1.171	IDENTIFIED 3.294	┐
Lead-214	✓	1.177	0.07511	pCi/g	0.08328	0.100	352.2	4	1.299	IDENTIFIED 4.863	┐
Lutetium-177	—	3.067	0.6401	pCi/g	1.591	N	0	9	0	FAIL_ABUND 0	┐

Neptunium-237	INT	0.9932	0.1764	pCi/g	0.3098	N	87.5	3	1.312	IDENTIFIED	13.7	✓
Niobium-97	HE	69150	39960	pCi/g	0	N	0	9	0	SHORT_HLIF	0	✓
Polonium-212	NR	1.331	0.06468	pCi/g	0.07121	N	238.9	4	1.171	IDENTIFIED	3.294	✓
Polonium-214	NR	1.177	0.07511	pCi/g	0.08328	N	352.2	4	1.299	IDENTIFIED	4.863	✓
Polonium-216	NR	1.331	0.06468	pCi/g	0.07121	N	238.9	4	1.171	IDENTIFIED	3.294	✓
Polonium-218	NR	1.177	0.07511	pCi/g	0.08328	N	352.2	4	1.299	IDENTIFIED	4.863	✓
Potassium-40	✓	19.77	0.9387	pCi/g	0.4232	1.00	1461	1	2.286	IDENTIFIED	2.856	✓
Radium-224	INT	3.537	0.5591	pCi/g	0.8093	Y	241.8	1	1.767	IDENTIFIED	15.56	✓
Radium-226	✓	0.9605	0.07527	pCi/g	0.08804	Y	609.5	4	1.633	IDENTIFIED	6.439	✓
Radium-228	✓	1.177	0.1313	pCi/g	0.1542	0.500	911.3	3	1.609	IDENTIFIED	8.975	✓
Strontium-85	SA	0.1299	0.01695	pCi/g	0.06078	Y	0	9	0	NOT_IDENTI	0	UI Data rejected due to low abundance.
Thallium-208	✓	0.4029	0.03287	pCi/g	0.04871	0.080	583.3	1	1.43	IDENTIFIED	7.153	✓
Thorium-228	✓	1.351	0.06566	pCi/g	0.07229	N	238.9	4	1.171	IDENTIFIED	3.294	✓
Thorium-230	✓	0.9605	0.07527	pCi/g	0.08804	N	609.5	4	1.633	IDENTIFIED	6.439	✓
Thorium-232	✓	1.177	0.1313	pCi/g	0.1542	N	911.3	3	1.609	IDENTIFIED	8.975	✓
Tin-126	INT	0.3382	0.04888	pCi/g	0.1039	N	87.5	3	1.312	IDENTIFIED	13.7	✓
Titanium-44	—	0.2883	0.02449	pCi/g	0.07585	N	0	9	0	FAIL_ABUND	0	✓
Total Uranium	—	6.0522	3.01E-06	ug/g	3.1735	N	0	0	0			✓
Uranium-234	✓	0.9605	0.07527	pCi/g	0.08804	N	609.5	4	1.633	IDENTIFIED	6.439	✓
Zirconium-97	—	3.41E+06	7.27E+05	pCi/g	0	N	0	9	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	
243274008	16-DEC-09 12:00	31-DEC-09 14:36	15.1	SAMPLE	LOAD	1	LANL	LANL010041GEL		N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy	***FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment		
Actinium-228	✓	1.821	0.1798	pCi/g	0.2241	N	911.1	3	1.67	IDENTIFIED	7.744	✓
Americium-243	INT	0.3705	0.03755	pCi/g	0.07912	N	74.9	1	1.092	IDENTIFIED	9.298	✓
Annihilation Rad.	HE	0.1071	0.03512	pCi/g	0.04814	N	510.7	1	2.215	IDENTIFIED	32.47	✓
Bismuth-210	HE	3.566	1.889	pCi/g	3.454	N	46.67	3	1.468	IDENTIFIED	52.78	✓
Bismuth-211	INT	2.986	0.2709	pCi/g	0.3521	Y	351.8	4	1.358	IDENTIFIED	7.707	✓
Bismuth-212	—	1.29	0.2621	pCi/g	0.7289	N	0	10	0	FAIL_ABUND	0	✓
Bismuth-214	✓	1.027	0.09843	pCi/g	0.1098	0.200	609.3	4	1.409	IDENTIFIED	7.798	✓
Cadmium-109	↑PW	4.273	0.703	pCi/g	1.088	Y	88.03	2	3.409	IDENTIFIED	15.76	UI Data rejected due to high peak-width.
Cerium-143	—	583.9	109.1	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Gross Gamma	—	9.332	1.554	pCi/g	3.297	N	0	0	0			✓
Iodine-133	HE	1964	2803	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Iodine-135	HE	8.00E+14	3.23E+15	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Lead-210	HE	3.566	1.889	pCi/g	3.454	N	46.67	3	1.468	IDENTIFIED	52.78	✓
Lead-212	✓	1.632	0.1041	pCi/g	0.08859	0.100	238.6	4	1.185	IDENTIFIED	3.526	✓
Lead-214	✓	1.039	0.09804	pCi/g	0.1227	0.100	351.8	4	1.358	IDENTIFIED	7.707	✓
Lutetium-177	HE	2.333	0.9224	pCi/g	2.107	N	0	10	0	FAIL_ABUND	0	✓
Mercury-203	↑PUNC	0.06032	0.03079	pCi/g	0.05958	0.100	277.7	1	1.568	IDENTIFIED	50.79	✓
Neptunium-237	—	0.8693	0.1804	pCi/g	0.4252	N	0	10	0	NOT_IDENTI	0	✓
Polonium-210	HE	3.566	1.888	pCi/g	3.454	N	46.67	3	1.468	IDENTIFIED	52.78	✓
Polonium-212	NR	1.632	0.1041	pCi/g	0.08859	N	238.6	4	1.185	IDENTIFIED	3.526	✓
Polonium-214	NR	1.039	0.09804	pCi/g	0.1227	N	351.8	4	1.358	IDENTIFIED	7.707	✓
Polonium-216	NR	1.632	0.1041	pCi/g	0.08859	N	238.6	4	1.185	IDENTIFIED	3.526	✓
Polonium-218	NR	1.039	0.09804	pCi/g	0.1227	N	351.8	4	1.358	IDENTIFIED	7.707	✓
Potassium-40	✓	33.44	1.76	pCi/g	0.5706	1.00	1461	1	1.738	IDENTIFIED	2.949	✓
Radium-224	INT	4.836	0.8059	pCi/g	1.008	Y	241.5	1	1.973	IDENTIFIED	15.95	✓
Radium-226	✓	1.027	0.09843	pCi/g	0.1098	Y	609.3	4	1.409	IDENTIFIED	7.798	✓
Radium-228	✓	1.821	0.1798	pCi/g	0.2241	0.500	911.1	3	1.67	IDENTIFIED	7.744	✓
Sodium-24	HE	34580	3.42E+05	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Thallium-200	HE	194.2	229	pCi/g	0	N	0	10	0	SHORT_HLIF	0	✓
Thallium-208	✓	0.5197	0.0496	pCi/g	0.06297	0.080	583.3	1	1.444	IDENTIFIED	8.042	✓
Thorium-228	✓	1.657	0.1057	pCi/g	0.08994	N	238.6	4	1.185	IDENTIFIED	3.526	✓
Thorium-230	✓	1.027	0.09843	pCi/g	0.1098	N	609.3	4	1.409	IDENTIFIED	7.798	✓
Thorium-232	✓	1.821	0.1798	pCi/g	0.2241	N	911.1	3	1.67	IDENTIFIED	7.744	✓
Tin-126	INT	0.42	0.0691	pCi/g	0.1073	N	88.03	2	3.409	IDENTIFIED	15.76	✓
Titanium-44	—	0.337	0.02604	pCi/g	0.0756	N	0	10	0	FAIL_ABUND	0	✓
Total Uranium	—	4.7459	2.06E-06	ug/g	2.635	N	0	0	0			✓
Uranium-234	✓	1.027	0.09843	pCi/g	0.1098	N	609.3	4	1.409	IDENTIFIED	7.798	✓
Zirconium-97	—	3.15E+06	9.48E+05	pCi/g	0	N	0	10	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
243274009	16-DEC-09 12:00	31-DEC-09 14:36	15.1	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	✓	1.527	0.1726	pCi/g 0.1991	N	911.1	3 1.468	IDENTIFIED 9.774	✓	
Americium-243	✓	0.327	0.02263	pCi/g 0.04684	N	74.9	1 0.6909	IDENTIFIED 5.465	✓	
Annihilation Rad.	—	0.1248	0.03444	pCi/g 0.05011	N	511	1 1.97	IDENTIFIED 27.18	✓	
Barium-137m	✓	0.2009	0.0357	pCi/g 0.07906	N	661.7	2 1.143	IDENTIFIED 16.89	✓	
Bismuth-210	✓	1.386	0.3274	pCi/g 0.6069	N	46.35	3 0.631	IDENTIFIED 23.13	✓	
Bismuth-211	✓	4.156	0.2807	pCi/g 0.3063	Y	351.9	4 1.057	IDENTIFIED 5.029	✓	
Bismuth-212	HE	1.176	0.2272	pCi/g 0.7324	N	0	8 0	FAIL_ABUND 0	✓	
Bismuth-214	✓	1.102	0.1117	pCi/g 0.1207	0.200	609.3	4 1.335	IDENTIFIED 8.229	✓	
Cadmium-109	✓	3.01	0.3431	pCi/g 0.718	Y	87.22	3 1.02	IDENTIFIED 10.4	✓	
Cerium-143	—	303.1	74.26	pCi/g 0	N	0	8 0	SHORT_HLIF 0	✓	
Cesium-135	HE	0.2535	0.07049	pCi/g 0.2449	N	0	8 0	NOT_IDENTI 0	✓	
Cesium-137	✓	0.2124	0.03775	pCi/g 0.08357	0.100	661.7	2 1.143	IDENTIFIED 16.89	✓	
Gross Gamma	—	8.285	1.126	pCi/g 3.265	N	0			✓	
Iodine-123	HE	2.68E+05	2.10E+06	pCi/g 0	N	0	8 0	SHORT_HLIF 0	✓	
Iodine-135	HE	8.83E+14	3.25E+15	pCi/g 0	N	0	8 0	SHORT_HLIF 0	✓	
Lead-210	✓	1.386	0.3274	pCi/g 0.6069	N	46.35	3 0.631	IDENTIFIED 23.13	✓	
Lead-212	✓	1.567	0.09347	pCi/g 0.07492	0.100	238.6	4 0.8696	IDENTIFIED 3.295	✓	
Lead-214	✓	1.446	0.1047	pCi/g 0.1069	0.100	351.9	4 1.057	IDENTIFIED 5.029	✓	
Lutetium-177	HE	2.839	0.624	pCi/g 1.797	N	0	8 0	FAIL_ABUND 0	✓	
Neptunium-237	✓	0.8689	0.1336	pCi/g 0.1915	N	87.22	3 1.02	IDENTIFIED 10.4	✓	
Polonium-210	✓	1.386	0.3262	pCi/g 0.6069	N	46.35	3 0.631	IDENTIFIED 23.13	✓	
Polonium-212	NR	1.567	0.09347	pCi/g 0.07492	N	238.6	4 0.8696	IDENTIFIED 3.295	✓	
Polonium-214	NR	1.446	0.1047	pCi/g 0.1069	N	351.9	4 1.057	IDENTIFIED 5.029	✓	
Polonium-216	NR	1.567	0.09347	pCi/g 0.07492	N	238.6	4 0.8696	IDENTIFIED 3.295	✓	
Polonium-218	NR	1.446	0.1047	pCi/g 0.1069	N	351.9	4 1.057	IDENTIFIED 5.029	✓	
Potassium-40	✓	18.35	1.146	pCi/g 0.6692	1.00	1461	1 2.068	IDENTIFIED 4.561	✓	
Radium-224	✓	1.36	0.4756	pCi/g 0.8549	Y	240.7	1 1.168	IDENTIFIED 34.69	✓	
Radium-226	✓	1.102	0.1117	pCi/g 0.1207	Y	609.3	4 1.335	IDENTIFIED 8.229	✓	
Radium-228	✓	1.527	0.1726	pCi/g 0.1991	0.500	911.1	3 1.468	IDENTIFIED 9.774	✓	
Thallium-208	✓	0.4977	0.04603	pCi/g 0.06056	0.080	583.2	1 1.042	IDENTIFIED 7.475	✓	
Thorium-228	✓	1.591	0.09489	pCi/g 0.07606	N	238.6	4 0.8696	IDENTIFIED 3.295	✓	
Thorium-230	✓	1.102	0.1117	pCi/g 0.1207	N	609.3	4 1.335	IDENTIFIED 8.229	✓	
Thorium-232	✓	1.527	0.1726	pCi/g 0.1991	N	911.1	3 1.468	IDENTIFIED 9.774	✓	
Thorium-234	✓	1.487	0.4047	pCi/g 0.7195	2.00	63.43	2 0.7214	IDENTIFIED 25.74	✓	
Tin-126	✓	0.2959	0.03373	pCi/g 0.06831	N	87.22	3 1.02	IDENTIFIED 10.4	✓	
Titanium-44	—	0.3603	0.02085	pCi/g 0.03988	N	0	8 0	FAIL_ABUND 0	✓	
Total Uranium	—	4.5104	1.20E-06	ug/g 1.0729	N	0			✓	
Uranium-234	✓	1.102	0.1117	pCi/g 0.1207	N	609.3	4 1.335	IDENTIFIED 8.229	✓	
Uranium-238	HE	1.487	0.4047	pCi/g 0.7195	N	63.43	2 0.7214	IDENTIFIED 25.74	✓	
Zirconium-97	HE	1.47E+06	8.48E+05	pCi/g 0	N	0	8 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
243274010	16-DEC-09 12:00	31-DEC-09 14:37	15.1	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	✓	1.297	0.1611	pCi/g 0.2138	N	910.8	3 1.858	IDENTIFIED 11	✓	
Americium-243	✓	0.3683	0.043	pCi/g 0.1022	N	74.66	1 1.357	IDENTIFIED 10.8	✓	
Annihilation Rad.	—	0.145	0.03286	pCi/g 0.04392	N	510.7	1 2.659	IDENTIFIED 22.48	✓	
Barium-137m	✓	0.1911	0.0325	pCi/g 0.06169	N	660.9	2 1.557	IDENTIFIED 16.81	✓	
Bismuth-211	✓	3.253	0.2387	pCi/g 0.3186	Y	351.6	4 1.165	IDENTIFIED 6.576	✓	
Bismuth-212	HE	0.8514	0.2294	pCi/g 0.6133	N	0	14 0	FAIL_ABUND 0	✓	
Bismuth-214	✓	0.9239	0.09073	pCi/g 0.1182	0.200	608.9	4 1.435	IDENTIFIED 9.072	✓	
Cadmium-109	✓	2.403	0.5628	pCi/g 1.415	Y	87.38	3 0.8006	IDENTIFIED 22.91	✓	
Cerium-143	—	1063	144.9	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	
Cesium-134	LA	0.1044	0.03043	pCi/g 0.08203	0.100	0	14 0	FAIL_ABUND 0	✓	Data rejected due to low abundance.
Cesium-135	HE	0.3819	0.09267	pCi/g 0.3049	N	0	14 0	NOT_IDENTI 0	✓	
Cesium-137	✓	0.202	0.03436	pCi/g 0.06522	0.100	660.9	2 1.557	IDENTIFIED 16.81	✓	
Gross Gamma	—	7.485	1.207	pCi/g 3.257	N	0			✓	
Iodine-123	HE	5.01E+05	2.90E+06	pCi/g 0	N	0	14 0	SHORT_HLIF 0	✓	

Iodine-133	HE	1427	3005	pCi/g 0	N	0	14	0	SHORT_HLIF 0	✓
Iodine-135	HE	4.16E+15	2.69E+15	pCi/g 0	N	0	14	0	SHORT_HLIF 0	✓
Lead-212	✓	1.362	0.07025	pCi/g 0.09025	0.100	238.4	4	1.155	IDENTIFIED 3.697	✓
Lead-214	✓	1.132	0.08813	pCi/g 0.1131	0.100	351.6	4	1.165	IDENTIFIED 6.576	✓
Neptunium-237	HE	0.6937	0.1775	pCi/g 0.4581	N	87.38	3	0.8006	IDENTIFIED 22.91	✓
Niobium-95m	—	0.5445	0.07785	pCi/g 0.2651	N	0	14	0	NOT_IDENTI 0	✓
Niobium-97	—	1.69E+05	56580	pCi/g 0	N	0	14	0	SHORT_HLIF 0	✓
Polonium-212	NR	1.362	0.07025	pCi/g 0.09025	N	238.4	4	1.155	IDENTIFIED 3.697	✓
Polonium-214	NR	1.132	0.08813	pCi/g 0.1131	N	351.6	4	1.165	IDENTIFIED 6.576	✓
Polonium-216	NR	1.362	0.07025	pCi/g 0.09025	N	238.4	4	1.155	IDENTIFIED 3.697	✓
Polonium-218	NR	1.132	0.08813	pCi/g 0.1131	N	351.6	4	1.165	IDENTIFIED 6.576	✓
Potassium-40	✓	18.92	1.018	pCi/g 0.4185	1.00	1460	1	2.341	IDENTIFIED 3.864	✓
Radium-224	INT	3.711	0.5482	pCi/g 1.027	Y	241.4	1	1.631	IDENTIFIED 14.5	✓ UI
Radium-226	✓	0.9239	0.09073	pCi/g 0.1182	Y	608.9	4	1.435	IDENTIFIED 9.072	✓
Radium-228	✓	1.297	0.1611	pCi/g 0.2138	0.500	910.8	3	1.858	IDENTIFIED 11	✓
Sodium-24	—	6.72E+05	2.89E+05	pCi/g 0	N	0	14	0	SHORT_HLIF 0	✓
Technetium-99m	—	2.02E+16	0	pCi/g 0	N	0	14	0	SHORT_HLIF 0	✓
Thallium-200	HE	337.5	224	pCi/g 0	N	0	14	0	SHORT_HLIF 0	✓
Thallium-208	✓	0.5393	0.04118	pCi/g 0.05252	0.080	582.6	1	1.581	IDENTIFIED 6.911	✓
Thorium-228	✓	1.383	0.07131	pCi/g 0.09162	N	238.4	4	1.155	IDENTIFIED 3.697	✓
Thorium-230	✓	0.9239	0.09073	pCi/g 0.1182	N	608.9	4	1.435	IDENTIFIED 9.072	✓
Thorium-232	✓	1.297	0.1611	pCi/g 0.2138	N	910.8	3	1.858	IDENTIFIED 11	✓
Thorium-234	✓	2.968	0.9346	pCi/g 2.49	2.00	63.38	2	1.223	IDENTIFIED 30.17	✓
Tin-126	HE	0.2362	0.05532	pCi/g 0.1399	N	87.38	3	0.8006	IDENTIFIED 22.91	✓
Titanium-44	—	0.329	0.02709	pCi/g 0.0842	N	0	14	0	FAIL_ABUND 0	✓
Total Uranium	—	8.8675	2.78E-06	ug/g 3.7065	N	0	0	0		✓
Uranium-234	✓	0.9239	0.09073	pCi/g 0.1182	N	608.9	4	1.435	IDENTIFIED 9.072	✓
Uranium-238	HE	2.968	0.9346	pCi/g 2.49	N	63.38	2	1.223	IDENTIFIED 30.17	✓
Zirconium-97	—	6.34E+06	1.02E+06	pCi/g 0	N	0	14	0	SHORT_HLIF 0	✓

\*\*\* = 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
1202001375		31-DEC-09 14:42	0	MB	LOAD	1		GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL Energy	***FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Annihilation Rad. HE	0.03862	0.01496	pCi/g	0.02443	N	512.4	1	1.731	IDENTIFIED 38.64	✓
Krypton-85	HE	13.34	2.554	pCi/g	9.952	N	0	5	0	NOT_IDENTI 0
Niobium-97	HE	38.55	124.5	pCi/g	0	N	0	5	0	SHORT_HLIF 0
Strontium-85	UI	0.06453	0.01236	pCi/g	0.04816	Y	0	5	0	NOT_IDENTI 0
Thallium-200	HE	1.719	4.362	pCi/g	0	N	0	5	0	SHORT_HLIF 0
Zirconium-97	—	21310	2980	pCi/g	0	N	0	5	0	SHORT_HLIF 0

\*\*\* = 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
1202001376	16-DEC-09 12:00	31-DEC-09 15:32	15.1	DUP	LOAD	1		LANL01004 GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL Energy	***FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment	
Actinium-228	✓	1.438	0.1595	pCi/g	0.235	N	910.9 3 1.858	IDENTIFIED 9.206	✓	
Americium-241	UI	0.1222	0.0345	pCi/g	0.113	0.200	0 12 0	NOT_IDENTI 0	UI	Data rejected due to low abundance.
Americium-243	INT	0.3803	0.03238	pCi/g	0.0637	N	74.76 1 1.484	IDENTIFIED 7.56	✓	
Annihilation Rad.	HE	0.09447	0.03285	pCi/g	0.0513	N	510.7 1 1.214	IDENTIFIED 34.62	✓	
Bismuth-210	HE	1.182	0.3943	pCi/g	0.898	N	46.47 3 1.329	IDENTIFIED 33.12	✓	
Bismuth-211	INT	3.425	0.2459	pCi/g	0.3452	Y	351.9 4 1.278	IDENTIFIED 5.995	✓ UI	
Bismuth-212	—	1.224	0.2306	pCi/g	0.7103	N	0 12 0	FAIL_ABUND 0	✓	
Bismuth-214	✓	1.189	0.1002	pCi/g	0.1272	0.200	609.3 4 1.646	IDENTIFIED 7.304	✓	
Cadmium-109	INT	3.335	0.3925	pCi/g	1.095	Y	87.25 3 1.104	IDENTIFIED 11.14	✓ UI	
Cerium-143	—	612	113.8	pCi/g	0	N	0 12 0	SHORT_HLIF 0	✓	
Gold-195	HE	0.4525	0.1098	pCi/g	0.3589	N	0 12 0	FAIL_ABUND 0	✓	
Gross Gamma	—	8.184	1.226	pCi/g	3.675	N	0		✓	
Iodine-123	HE	4.73E+06	3.14E+06	pCi/g	0	N	0 12 0	SHORT_HLIF 0	✓	
Krypton-85	HE	20.29	4.566	pCi/g	15.58	N	0 12 0	NOT_IDENTI 0	✓	
Lead-210	HE	1.182	0.3943	pCi/g	0.898	N	46.47 3 1.329	IDENTIFIED 33.12	✓	
Lead-212	✓	1.524	0.09831	pCi/g	0.09125	0.100	238.7 4 1.209	IDENTIFIED 3.541	✓	
Lead-214	✓	1.191	0.091	pCi/g	0.1167	0.100	351.9 4 1.278	IDENTIFIED 5.995	✓	
Lutetium-177	HE	2.252	0.707	pCi/g	2.086	N	0 12 0	FAIL_ABUND 0	✓	

Neptunium-237	ITG	0.9625	0.1506	pCi/g	0.3445	N	87.25	3	1.104	IDENTIFIED	11.14	✓
Niobium-95m	HE	0.2795	0.07486	pCi/g	0.245	N	0	12	0	NOT_IDENTI	0	✓
Polonium-210	HE	1.182	0.3937	pCi/g	0.898	N	46.47	3	1.329	IDENTIFIED	33.12	✓
Polonium-212	NQ	1.524	0.09831	pCi/g	0.09125	N	238.7	4	1.209	IDENTIFIED	3.541	✓
Polonium-214	NQ	1.191	0.091	pCi/g	0.1167	N	351.9	4	1.278	IDENTIFIED	5.995	✓
Polonium-216	NQ	1.524	0.09831	pCi/g	0.09125	N	238.7	4	1.209	IDENTIFIED	3.541	✓
Polonium-218	NQ	1.191	0.091	pCi/g	0.1167	N	351.9	4	1.278	IDENTIFIED	5.995	✓
Potassium-40	✓	23.59	1.102	pCi/g	0.5967	1.00	1461	1	2.133	IDENTIFIED	3.488	✓
Radium-224	ITG	4.355	0.7706	pCi/g	1.038	Y	241.7	1	2.235	IDENTIFIED	17.01	✓
Radium-226	✓	1.189	0.1002	pCi/g	0.1272	Y	609.3	4	1.646	IDENTIFIED	7.304	✓
Radium-228	✓	1.438	0.1595	pCi/g	0.235	0.500	910.9	3	1.858	IDENTIFIED	9.206	✓
Sodium-24	HE	1.31E+05	3.89E+05	pCi/g	0	N	0	12	0	SHORT_HLIF	0	✓
Strontium-85	SA	0.1041	0.02342	pCi/g	0.07989	Y	0	12	0	NOT_IDENTI	0	✓
Thallium-208	✓	0.489	0.04156	pCi/g	0.06209	0.080	583.2	1	1.656	IDENTIFIED	7.662	✓
Thorium-228	✓	1.547	0.09981	pCi/g	0.09263	N	238.7	4	1.209	IDENTIFIED	3.541	✓
Thorium-230	✓	1.189	0.1002	pCi/g	0.1272	N	609.3	4	1.646	IDENTIFIED	7.304	✓
Thorium-232	✓	1.438	0.1595	pCi/g	0.235	N	910.9	3	1.858	IDENTIFIED	9.206	✓
Tin-126	ITG	0.3278	0.03858	pCi/g	0.1075	N	87.25	3	1.104	IDENTIFIED	11.14	✓
Titanium-44	—	0.3375	0.02188	pCi/g	0.06515	N	0	12	0	FAIL_ABUND	0	✓
Total Uranium	—	2.7362	1.09E-06	ug/g	1.624	N	0					✓
Uranium-234	✓	1.189	0.1002	pCi/g	0.1272	N	609.3	4	1.646	IDENTIFIED	7.304	✓
Zirconium-97	—	5.08E+06	1.09E+06	pCi/g	0	N	0	12	0	SHORT_HLIF	0	✓

\*\*\* = 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
1202001377		31-DEC-09 15:32	0	ICS	LOAD	1		GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 HE	0.8426	0.2675	pCi/g	0.458	N	910.7	3	1.098	IDENTIFIED	31.2
Americium-241 ✓	14.04	0.6372	pCi/g	0.4164	0.200	59.43	1	1.03	IDENTIFIED	2.212
Americium-243 HE	0.1849	0.04457	pCi/g	0.122	N	74.78	1	1.106	IDENTIFIED	23.77
Barium-137m	5.601	0.2822	pCi/g	0.1116	N	661.7	2	1.432	IDENTIFIED	2.411
Bismuth-211	2.174	0.3366	pCi/g	0.6369	Y	352	4	1.219	IDENTIFIED	14.82
Bismuth-214	0.7911	0.1268	pCi/g	0.2168	0.200	609.8	4	1.764	IDENTIFIED	15.17
Cadmium-109	33.61	2.02	pCi/g	1.95	Y	88.04	2	1.074	IDENTIFIED	3.734
Cesium-137 ✓	5.921	0.2988	pCi/g	0.118	0.100	661.7	2	1.432	IDENTIFIED	2.411
Cobalt-57	0.2238	0.03446	pCi/g	0.06053	N	122	1	1.111	IDENTIFIED	14.79
Cobalt-60 ✓	6.786	0.3287	pCi/g	0.09138	0.100	1333	1	1.931	IDENTIFIED	2.587
Gross Gamma	27.63	3.838	pCi/g	5.84	N	0				
Iodine-123 HE	5963	4130	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Iodine-135 HE	1.96E+09	3.26E+09	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Lead-212	0.9569	0.09267	pCi/g	0.1604	0.100	238.6	4	1.17	IDENTIFIED	8.421
Lead-214	0.7562	0.1187	pCi/g	0.2085	0.100	352	4	1.219	IDENTIFIED	14.82
Neptunium-237	4.968	0.6136	pCi/g	1.023	N	0	7	0	NOT_IDENTI	0
Niobium-97 HE	471.4	538.5	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Polonium-212	0.9569	0.09267	pCi/g	0.1604	N	238.6	4	1.17	IDENTIFIED	8.421
Polonium-214	0.7562	0.1187	pCi/g	0.2085	N	352	4	1.219	IDENTIFIED	14.82
Polonium-216	0.9569	0.09267	pCi/g	0.1604	N	238.6	4	1.17	IDENTIFIED	8.421
Polonium-218	0.7562	0.1187	pCi/g	0.2085	N	352	4	1.219	IDENTIFIED	14.82
Radium-224	2.41	0.5928	pCi/g	2.069	Y	241.5	1	1.629	IDENTIFIED	24.23
Radium-226	0.7911	0.1268	pCi/g	0.2168	Y	609.8	4	1.764	IDENTIFIED	15.17
Radium-228	0.8426	0.2675	pCi/g	0.458	0.500	910.7	3	1.098	IDENTIFIED	31.2
Sodium-24 HE	605.8	889.8	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Thallium-200 HE	1.354	12.6	pCi/g	0	N	0	7	0	SHORT_HLIF	0
Thallium-208	0.2654	0.05365	pCi/g	0.1211	0.080	583.1	1	1.528	IDENTIFIED	19.64
Thorium-228	0.9661	0.09356	pCi/g	0.162	N	238.6	4	1.17	IDENTIFIED	8.421
Thorium-230	0.7911	0.1268	pCi/g	0.2168	N	609.8	4	1.764	IDENTIFIED	15.17
Thorium-232 HE	0.8426	0.2675	pCi/g	0.458	N	910.7	3	1.098	IDENTIFIED	31.2
Tin-126	3.331	0.2002	pCi/g	0.1937	N	88.04	2	1.074	IDENTIFIED	3.734
Titanium-44	0.2025	0.03119	pCi/g	0.08973	N	0	7	0	FAIL_ABUND	0
Uranium-234	0.7911	0.1268	pCi/g	0.2168	N	609.8	4	1.764	IDENTIFIED	15.17

\*\*\* = 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
935341	243274010	SAMPLE	31-DEC-09	Gross Gamma	7.485	1.207	pCi/g	1.579	N
				Iodine-123	5.01E+05	2.90E+06	pCi/g	0	N
				Iodine-133	1427	3005	pCi/g	0	N
				Iodine-135	4.16E+15	2.69E+15	pCi/g	0	N
				Krypton-85	8.878	3.348	pCi/g	6.158	N
				Lead-212	1.362	0.07025	pCi/g	0.04515	0.100
				Lead-214	1.132	0.08813	pCi/g	0.0566	0.100
				Niobium-97	1.69E+05	56580	pCi/g	0	N
				Potassium-40	18.92	1.018	pCi/g	0.2094	1.00
				Promethium-149	93.54	44.34	pCi/g	81.18	N
				Radium-224	3.711	0.5482	pCi/g	0.5138	Y
				Radium-226	0.9239	0.09073	pCi/g	0.05912	Y
				Radium-228	1.297	0.1611	pCi/g	0.107	0.500
				Sodium-24	6.72E+05	2.89E+05	pCi/g	0	N
				Strontium-85	0.04551	0.01716	pCi/g	0.03157	Y
				Technetium-99m	2.02E+16	0	pCi/g	0	N
				Thallium-200	337.5	224	pCi/g	0	N
				Thallium-208	0.5393	0.04118	pCi/g	0.02628	0.080
				Thorium-234	2.968	0.9346	pCi/g	1.240	2.00
				Yttrium-88	0.03568	0.01569	pCi/g	0.03141	0.100
				Zirconium-97	6.34E+06	1.02E+06	pCi/g	0	N
935341	1202001375	MB	31-DEC-09	Krypton-85	13.34	2.554	pCi/g	4.979	N
				Lead-212	0.0721	0.03815	pCi/g	0.04242	0.100
				Niobium-97	38.55	124.5	pCi/g	0	N
				Radium-224	0.519	0.1979	pCi/g	0.3815	Y
				Strontium-85	0.06453	0.01236	pCi/g	0.02409	Y QUAL
				Thallium-208	0.04475	0.01482	pCi/g	0.02598	0.080
				Uranium-235	0.1485	0.05956	pCi/g	0.1106	0.500
				Zirconium-97	21310	2980	pCi/g	0	N
935341	1202001376	DUP	31-DEC-09	Americium-241	0.1222	0.0345	pCi/g	0.05653	0.200
				Bismuth-211	3.425	0.2459	pCi/g	0.1727	Y
				Bismuth-214	1.189	0.1002	pCi/g	0.08366	0.200
				Cadmium-109	3.335	0.3925	pCi/g	0.548	Y
				Cerium-143	612	113.8	pCi/g	0	N
				Cesium-134	0.08809	0.0255	pCi/g	0.04825	0.100
				Cesium-137	0.03974	0.02103	pCi/g	0.03693	0.100
				Gross Gamma	8.184	1.226	pCi/g	1.791	N

VAX/VMS Nuclide Identification Report Generated 31-DEC-2009 02:48:01.55

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243273001.CNF;1
Sample date        : 15-DEC-2009 12:00:00 Acquisition date : 30-DEC-2009 22:47:32
Sample ID          : G243273001 Sample quantity : 1.56780E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:02.17 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 935341 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.32*	44	661	1.16	125.14	121	9	3.07E-03	111.6	
2	1	74.13*	368	708	1.44	148.74	141	20	2.55E-02	14.9	2.28E+00
3	1	76.63*	568	687	1.44	153.74	141	20	3.94E-02	10.2	
4	0	92.54*	348	1042	1.61	185.55	180	11	2.42E-02	20.1	
5	0	185.26*	319	666	1.30	370.91	366	11	2.21E-02	17.9	
6	0	208.28	219	446	1.57	416.94	413	10	1.52E-02	19.2	
7	2	238.12*	1437	367	1.41	476.59	471	17	9.98E-02	3.7	6.85E-01
8	2	241.17	369	420	1.67	482.68	471	17	2.56E-02	12.8	
9	0	294.70*	371	362	1.34	589.69	584	11	2.58E-02	11.7	
10	0	299.55*	58	324	1.19	599.39	595	9	4.03E-03	59.9	
11	0	338.25	266	367	1.56	676.77	670	14	1.85E-02	16.5	
12	0	351.43*	731	508	1.39	703.11	695	16	5.07E-02	8.0	
13	0	510.51*	94	304	2.09	1021.15	1013	16	6.51E-03	50.1	
14	0	582.95*	423	154	1.71	1165.99	1160	13	2.93E-02	8.4	
15	0	608.94*	510	225	1.72	1217.96	1209	16	3.54E-02	8.2	
16	0	661.28	838	159	1.64	1322.60	1316	13	5.82E-02	4.6	
17	0	687.44	20	87	0.94	1374.91	1368	9	1.42E-03	85.2	
18	0	727.29*	129	135	1.67	1454.58	1446	16	8.94E-03	22.7	
19	0	785.42	46	78	0.92	1570.81	1566	10	3.17E-03	39.0	
20	0	795.12	32	84	1.17	1590.21	1585	8	2.21E-03	53.4	
21	0	861.17*	81	104	1.79	1722.26	1716	15	5.65E-03	31.6	
22	0	910.86*	285	78	1.61	1821.63	1815	13	1.98E-02	9.3	
23	1	964.37	65	94	2.11	1928.62	1923	26	4.51E-03	29.4	1.81E+00
24	1	968.90	155	83	2.19	1937.67	1923	26	1.08E-02	15.1	
25	0	1001.00*	38	68	0.99	2001.86	1994	13	2.65E-03	50.4	
26	0	1120.31*	134	75	1.30	2240.43	2232	15	9.30E-03	17.3	
27	0	1237.93	57	88	2.24	2475.64	2470	11	3.94E-03	34.7	
28	0	1377.22	47	52	1.80	2754.18	2745	20	3.29E-03	39.5	
29	0	1460.87*	1582	47	2.05	2921.47	2911	21	1.10E-01	2.8	
30	0	1589.04	24	28	3.26	3177.79	3169	14	1.69E-03	50.3	
31	0	1630.37	47	0	0.79	3260.45	3252	18	3.26E-03	14.6	
32	0	1764.62*	87	12	2.65	3528.93	3521	16	6.02E-03	15.7	
33	0	1848.16	14	10	1.54	3696.01	3691	8	9.98E-04	46.1	
34	0	1863.29	8	8	0.56	3726.28	3719	9	5.30E-04	79.0	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 31-DEC-2009 02:48:04

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243273001.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 15-DEC-2009 12:00:00 Acquisition date : 30-DEC-2009 22:47:32  
 Sample ID : G243273001 Sample quantity : 156.78 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA15 Detector geometry: CAN  
 Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:02.17 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	*	1.777E+01	1.680E+00	3.587E-01	2.742E-02	49.549
BA-137M	+	661.65	*	5.526E-01	5.838E-02	3.705E-02	1.864E-03	14.913
CS-137	+	661.65	*	5.841E-01	6.180E-02	3.917E-02	1.982E-03	14.913
TL-208		277.35		2.249E-01	2.584E-01	4.220E-01	4.728E-02	0.533
	+	510.84		2.109E-01	2.125E-01	1.494E-01	1.504E-02	1.412
	+	583.14	*	2.695E-01	4.839E-02	3.636E-02	2.315E-03	7.413
	+	860.37		4.846E-01	3.090E-01	2.667E-01	2.293E-02	1.817
BI-211	+	72.87		1.103E+01	3.507E+00	3.790E+00	4.225E-01	2.911
	+	351.07	*	2.109E+00	3.690E-01	2.238E-01	1.538E-02	9.421
BI-212	+	727.18	*	6.993E-01	3.222E-01	2.556E-01	1.990E-02	2.736
	+	785.46		1.588E+00	1.244E+00	1.564E+00	1.053E-01	1.015
		1620.62		1.134E+00	7.085E-01	1.342E+00	9.231E-02	0.845
PB-212	+	74.81		1.309E+00	4.339E-01	4.184E-01	6.075E-02	3.129
	+	77.11		1.101E+00	2.565E-01	2.305E-01	2.559E-02	4.778
		87.30		3.199E-01	3.360E-01	4.883E-01	7.449E-02	0.655
	+	238.63	*	9.139E-01	1.019E-01	5.948E-02	4.923E-03	15.365
	+	300.09		5.673E-01	6.819E-01	7.744E-01	6.945E-02	0.733
PO-212	+	74.81		1.309E+00	4.339E-01	4.184E-01	6.075E-02	3.129
	+	77.11		1.101E+00	2.565E-01	2.305E-01	2.559E-02	4.778
		87.30		3.199E-01	3.360E-01	4.883E-01	7.449E-02	0.655
		115.19		-2.099E+00	2.342E+00	3.708E+00	2.837E-01	-0.566
	+	238.63	*	9.139E-01	1.019E-01	5.948E-02	4.923E-03	15.365
	+	300.09		5.673E-01	6.819E-01	7.744E-01	6.945E-02	0.733
BI-214	+	609.31	*	6.121E-01	1.101E-01	7.181E-02	5.331E-03	8.525
	+	1120.29		8.403E-01	3.003E-01	2.713E-01	2.503E-02	3.097
	+	1764.49		7.457E-01	2.392E-01	1.641E-01	1.021E-02	4.544
PB-214	+	74.81		2.256E+00	7.365E-01	7.209E-01	9.627E-02	3.129
	+	77.11		1.888E+00	4.627E-01	3.951E-01	5.320E-02	4.778
		87.30		5.480E-01	5.745E-01	8.365E-01	1.159E-01	0.655
	+	241.98		1.411E+00	3.838E-01	3.327E-01	2.974E-02	4.241
	+	295.21		6.378E-01	1.610E-01	1.376E-01	1.273E-02	4.635
	+	351.92	*	7.335E-01	1.339E-01	7.801E-02	6.725E-03	9.403
PO-214	+	74.81		2.256E+00	7.365E-01	7.209E-01	9.627E-02	3.129
	+	77.11		1.888E+00	4.627E-01	3.951E-01	5.320E-02	4.778

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		87.30		5.480E-01	5.745E-01	8.365E-01	1.159E-01	0.655
	+	241.98		1.411E+00	3.838E-01	3.327E-01	2.974E-02	4.241
	+	295.21		6.378E-01	1.610E-01	1.376E-01	1.273E-02	4.635
	+	351.92	*	7.335E-01	1.339E-01	7.801E-02	6.725E-03	9.403
PO-216	+	74.81		1.309E+00	4.339E-01	4.184E-01	6.075E-02	3.129
	+	77.11		1.101E+00	2.565E-01	2.305E-01	2.559E-02	4.778
		87.30		3.199E-01	3.360E-01	4.883E-01	7.449E-02	0.655
	+	238.63	*	9.139E-01	1.019E-01	5.948E-02	4.923E-03	15.365
	+	300.09		5.673E-01	6.819E-01	7.744E-01	6.945E-02	0.733
PO-218	+	74.81		2.256E+00	7.365E-01	7.209E-01	9.627E-02	3.129
	+	77.11		1.888E+00	4.627E-01	3.951E-01	5.320E-02	4.778
		87.30		5.480E-01	5.745E-01	8.365E-01	1.159E-01	0.655
	+	241.98		1.411E+00	3.838E-01	3.327E-01	2.974E-02	4.241
	+	295.21		6.378E-01	1.610E-01	1.376E-01	1.273E-02	4.635
	+	351.92	*	7.335E-01	1.339E-01	7.801E-02	6.725E-03	9.403
RA-224	+	240.98	*	2.675E+00	7.122E-01	6.767E-01	4.710E-02	3.953
RA-226	+	609.31	*	6.121E-01	1.101E-01	7.181E-02	5.331E-03	8.525
	+	1120.29		8.403E-01	3.003E-01	2.713E-01	2.503E-02	3.097
	+	1764.49		7.457E-01	2.392E-01	1.641E-01	1.021E-02	4.544
AC-228	+	338.32		8.488E-01	4.454E-01	2.498E-01	1.021E-01	3.398
	+	911.07	*	8.035E-01	1.735E-01	1.272E-01	1.414E-02	6.316
	+	969.11		7.738E-01	2.947E-01	2.167E-01	5.011E-02	3.570
RA-228	+	338.32		8.488E-01	4.454E-01	2.498E-01	1.021E-01	3.398
	+	911.07	*	8.035E-01	1.735E-01	1.272E-01	1.414E-02	6.316
	+	969.11		7.738E-01	2.947E-01	2.167E-01	5.011E-02	3.570
TH-228	+	74.81		1.330E+00	4.230E-01	4.249E-01	4.745E-02	3.129
	+	77.11		1.118E+00	2.605E-01	2.340E-01	2.599E-02	4.778
		87.30		3.249E-01	3.397E-01	4.959E-01	5.713E-02	0.655
	+	238.63	*	9.281E-01	1.035E-01	6.040E-02	5.000E-03	15.365
	+	300.09		5.761E-01	7.698E-01	7.865E-01	4.643E-01	0.733
TH-230	+	609.31	*	6.121E-01	1.101E-01	7.180E-02	5.331E-03	8.525
	+	1120.29		8.403E-01	3.003E-01	2.713E-01	2.503E-02	3.097
	+	1764.49		7.457E-01	2.392E-01	1.641E-01	1.021E-02	4.544
TH-232	+	338.32		8.488E-01	2.847E-01	2.498E-01	1.608E-02	3.398
	+	911.07	*	8.035E-01	1.735E-01	1.272E-01	1.414E-02	6.316
	+	969.11		7.738E-01	2.947E-01	2.167E-01	5.011E-02	3.570
TH-234	+	63.29	*	8.245E-01	1.847E+00	1.924E+00	3.798E-01	0.428
	+	92.38		1.592E+00	7.080E-01	5.837E-01	1.113E-01	2.728
U-234	+	609.31	*	6.121E-01	1.101E-01	7.180E-02	5.331E-03	8.525
	+	1120.29		8.403E-01	3.003E-01	2.713E-01	2.503E-02	3.097
	+	1764.49		7.457E-01	2.392E-01	1.641E-01	1.021E-02	4.544
U-238	+	63.29	*	8.245E-01	1.847E+00	1.924E+00	3.798E-01	0.428
	+	92.38		1.592E+00	6.612E-01	5.837E-01	6.141E-02	2.728
AM-243	+	74.67	*	2.123E-01	6.749E-02	6.817E-02	7.576E-03	3.114
		86.72		3.385E+00	7.992E+00	1.153E+01	1.324E+00	0.294
		117.66		4.979E-01	2.495E+00	4.096E+00	3.060E-01	0.122
		142.18		1.313E+01	1.172E+01	1.960E+01	1.335E+00	0.670
ANH-511	+	511.00	*	4.556E-02	4.575E-02	3.227E-02	1.822E-03	1.412

## ---- 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	*	2.872E-01	2.313E-01	3.987E-01	2.657E-02	0.720

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22		1274.54	*	-3.366E-03	2.569E-02	4.110E-02	2.821E-03	-0.082
NA-24		1368.53	*	1.885E-01	2.569E-02	Half-Life	too short	
AL-26		1129.67		1.632E-03	1.117E+00	1.822E+00	1.148E-01	0.001
		1808.65	*	-4.091E-03	1.719E-02	2.717E-02	1.626E-03	-0.151
TI-44		67.85		-1.557E-02	5.274E-02	6.363E-02	7.260E-03	-0.245
		78.38	*	1.124E-01	3.284E-02	4.938E-02	5.491E-03	2.275
SC-46		889.25	*	-1.627E-02	2.418E-02	3.801E-02	3.189E-03	-0.428
	+	1120.51		1.443E-01	5.067E-02	7.242E-02	4.649E-03	1.992
V-48		944.10		-2.084E-02	5.532E-01	9.100E-01	7.480E-02	-0.023
		983.50	*	6.863E-03	4.385E-02	7.299E-02	5.766E-03	0.094
		1312.09		-9.023E-03	5.046E-02	8.017E-02	5.852E-03	-0.113
CR-51		320.08	*	3.790E-02	2.571E-01	4.303E-01	3.103E-02	0.088
MN-52		744.21		5.984E-02	1.448E-01	2.483E-01	1.523E-02	0.241
		848.13		-6.933E+00	4.171E+00	6.000E+00	4.625E-01	-1.156
		935.52		2.437E-01	1.658E-01	2.983E-01	2.471E-02	0.817
		1246.25		-4.529E+00	4.818E+00	7.010E+00	4.571E-01	-0.646
		1333.61		-2.021E-01	3.122E+00	5.006E+00	3.778E-01	-0.040
		1434.06	*	1.644E-02	1.331E-01	2.254E-01	1.672E-02	0.073
MN-54		834.83	*	-2.752E-03	2.312E-02	3.811E-02	2.857E-03	-0.072
CO-56		846.75	*	-1.336E-02	2.257E-02	3.580E-02	2.752E-03	-0.373
		977.42		3.510E-02	2.008E+00	2.843E+00	2.261E-01	0.012
		1037.82		-1.467E-01	1.886E-01	2.895E-01	2.291E-02	-0.507
		1175.09		-7.407E-01	1.267E+00	1.959E+00	1.120E-01	-0.378
	+	1238.25		1.009E-01	7.032E-02	1.049E-01	7.088E-03	0.962
		1360.21		-8.612E-02	6.573E-01	1.046E+00	7.867E-02	-0.082
		1771.40		-5.923E-03	1.574E-01	2.194E-01	1.357E-02	-0.027
CO-57		122.06	*	-7.239E-03	1.696E-02	2.725E-02	1.959E-03	-0.266
		136.48		-4.069E-03	1.374E-01	2.229E-01	1.711E-02	-0.018
CO-58		810.76	*	-2.280E-02	2.399E-02	3.724E-02	2.660E-03	-0.612
FE-59		142.65		1.849E+00	1.822E+00	3.037E+00	2.068E-01	0.609
		192.34		-1.854E-01	6.614E-01	1.051E+00	1.295E-01	-0.176
		1099.22	*	-7.170E-02	5.478E-02	7.932E-02	6.003E-03	-0.904
		1291.56		2.697E-02	8.007E-02	1.331E-01	1.123E-02	0.203
CO-60		1173.22		6.390E-03	2.511E-02	4.172E-02	2.376E-03	0.153
		1332.49	*	-1.055E-02	2.399E-02	3.696E-02	2.790E-03	-0.285
ZN-65		1115.52	*	-4.434E-02	6.732E-02	8.990E-02	5.840E-03	-0.493
GE-68		1077.35	*	2.651E-01	6.894E-01	1.164E+00	8.090E-02	0.228
AS-73		53.44	*	1.078E-01	1.107E+00	1.848E+00	2.525E-01	0.058
AS-74		595.88	*	-1.015E-02	5.934E-02	9.488E-02	5.101E-03	-0.107
		634.78		8.796E-02	2.408E-01	3.831E-01	1.987E-02	0.230
SE-75		66.05		-8.678E+00	5.180E+00	6.653E+00	8.628E-01	-1.304
		96.73		2.264E-01	5.931E-01	8.651E-01	1.241E-01	0.262
		121.11		-4.390E-02	9.131E-02	1.464E-01	1.493E-02	-0.300
		136.00		4.773E-03	2.575E-02	4.207E-02	2.929E-03	0.113
		198.60		-9.672E-01	1.321E+00	1.942E+00	1.550E-01	-0.498
		264.65	*	-3.972E-02	2.940E-02	4.667E-02	3.264E-03	-0.851
		279.53		-5.138E-02	7.261E-02	1.183E-01	8.628E-03	-0.434
		303.91		-1.210E+00	1.639E+00	2.273E+00	2.307E-01	-0.532
		400.65		-1.289E-01	1.739E-01	2.762E-01	2.495E-02	-0.466



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77		87.88		2.498E+02	1.763E+02	2.592E+02	2.997E+01	0.964
		200.40		1.735E+01	1.255E+02	2.020E+02	1.380E+01	0.086
	+	239.00		1.637E+02	1.672E+01	2.478E+01	1.724E+00	6.604
		249.79		2.140E+01	4.820E+01	8.220E+01	5.723E+00	0.260
		281.68		-7.177E+01	6.800E+01	1.091E+02	7.514E+00	-0.658
		297.23		1.600E+02	6.552E+01	7.790E+01	5.300E+00	2.054
		303.76		-1.092E+02	1.553E+02	2.162E+02	1.462E+01	-0.505
		439.47		-1.537E+02	1.035E+02	1.559E+02	8.909E+00	-0.986
		484.57		1.323E+01	1.748E+02	2.866E+02	1.630E+01	0.046
		520.65	*	-2.542E+00	7.705E+00	1.231E+01	6.923E-01	-0.207
		574.64		-6.197E+01	1.573E+02	2.415E+02	1.319E+01	-0.257
		578.91		-1.935E+01	7.374E+01	1.008E+02	5.487E+00	-0.192
		585.48		8.170E+02	1.624E+02	2.890E+02	1.566E+01	2.827
		755.35		1.027E+02	1.094E+02	1.930E+02	1.215E+01	0.532
		817.79		-1.128E+01	8.863E+01	1.461E+02	1.056E+01	-0.077
SR-82		698.33		1.134E+01	2.169E+01	3.737E+01	2.057E+00	0.304
		776.49	*	-1.646E-01	2.202E-01	3.480E-01	2.297E-02	-0.473
		1395.20		4.196E-01	6.315E+00	1.064E+01	7.954E-01	0.039
RB-83		520.41	*	-2.903E-02	4.659E-02	7.316E-02	4.117E-03	-0.397
		529.64		3.705E-02	6.519E-02	1.095E-01	6.136E-03	0.338
		552.65		-7.331E-02	1.291E-01	2.023E-01	1.121E-02	-0.362
RB-84		881.50	*	3.443E-02	4.215E-02	7.362E-02	6.079E-03	0.468
KR-85		513.99	*	1.149E+01	5.541E+00	8.816E+00	4.973E-01	1.304
SR-85		513.99	*	5.916E-02	2.852E-02	4.538E-02	2.560E-03	1.304
RB-86		1076.63	*	-8.882E-03	4.436E-01	7.247E-01	5.042E-02	-0.012
Y-88		898.02		-4.664E-02	2.575E-02	3.627E-02	3.112E-03	-1.286
		1836.01	*	-6.932E-04	1.988E-02	3.249E-02	1.898E-03	-0.021
ZR-88		392.90	*	-1.078E-02	2.093E-02	3.370E-02	1.911E-03	-0.320
Y-91		1204.90	*	-7.117E+00	1.248E+01	1.946E+01	1.177E+00	-0.366
NB-94		702.63	*	-9.137E-03	2.059E-02	3.365E-02	1.872E-03	-0.272
		871.10		-3.350E-04	2.135E-02	3.325E-02	2.688E-03	-0.010
NB-95		765.79	*	2.008E-02	2.631E-02	4.571E-02	2.946E-03	0.439
NB-95M		235.69	*	8.465E-01	1.322E-01	2.032E-01	1.717E-02	4.166
ZR-95		724.18		1.414E-01	6.078E-02	1.037E-01	7.160E-03	1.364
		756.15	*	2.566E-02	4.210E-02	7.289E-02	5.434E-03	0.352
NB-97		657.90	*	3.893E-01	4.210E-02	Half-Life	too short	
		1024.50		6.438E+00	4.210E-02	Half-Life	too short	
ZR-97		254.15		2.243E+00	4.210E-02	Half-Life	too short	
		355.39		3.087E+00	4.210E-02	Half-Life	too short	
		507.63	*	6.114E+00	4.210E-02	Half-Life	too short	
		602.52		2.941E+00	4.210E-02	Half-Life	too short	
		1021.30		-1.252E+00	4.210E-02	Half-Life	too short	
		1147.95		-1.903E+00	4.210E-02	Half-Life	too short	
		1362.66		3.349E+00	4.210E-02	Half-Life	too short	
		1750.46		1.859E+00	4.210E-02	Half-Life	too short	
MO-99		140.51		-1.199E+01	1.952E+01	3.062E+01	8.325E+00	-0.392
		181.06		-5.523E+00	1.480E+01	2.037E+01	3.560E+00	-0.271
		366.43		1.826E+00	6.275E+01	1.040E+02	6.313E+00	0.018
		739.58	*	-3.616E+00	7.356E+00	1.187E+01	1.650E+00	-0.305

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	778.00			-2.657E+01	2.366E+01	3.302E+01	2.187E+00	-0.805
TC-99M	140.51	*		-4.435E+10	2.366E+01	Half-Life	too short	
RH-101	127.23			3.403E-02	2.159E-02	3.655E-02	2.575E-03	0.931
	198.01	*		-6.886E-03	2.413E-02	3.610E-02	2.463E-03	-0.191
	325.23			-7.084E-03	1.545E-01	2.565E-01	1.687E-02	-0.028
RH-102	418.52			4.369E-02	1.968E-01	3.270E-01	1.865E-02	0.134
	475.06	*		5.459E-03	2.088E-02	3.455E-02	1.969E-03	0.158
	631.29			-2.644E-02	3.541E-02	5.425E-02	2.824E-03	-0.487
	697.49			7.814E-03	4.849E-02	8.202E-02	4.506E-03	0.095
	766.84			5.636E-02	6.835E-02	1.189E-01	7.683E-03	0.474
	1046.59			5.568E-02	7.177E-02	1.241E-01	9.046E-03	0.449
	1112.84			1.984E-03	1.874E-01	2.302E-01	1.501E-02	0.009
RU-103	497.08	*		-5.816E-03	2.567E-02	4.131E-02	5.199E-03	-0.141
	610.33	+		6.654E+00	1.489E+00	1.590E+00	2.423E-01	4.184
RH-106	511.85	+		2.277E-01	2.287E-01	2.705E-01	1.527E-02	0.842
	621.84	*		-7.796E-02	2.091E-01	3.291E-01	3.777E-02	-0.237
	1050.47			-4.249E-01	1.455E+00	2.332E+00	1.691E-01	-0.182
RU-106	511.85	+		2.277E-01	2.287E-01	2.705E-01	1.527E-02	0.842
	621.84	*		-7.796E-02	2.090E-01	3.291E-01	1.729E-02	-0.237
	1050.47			-4.249E-01	1.455E+00	2.332E+00	1.691E-01	-0.182
AG-108M	433.93	*		2.482E-02	2.145E-02	3.710E-02	2.307E-03	0.669
	614.37			-2.869E-02	2.898E-02	3.670E-02	2.138E-03	-0.782
	722.95			9.418E-03	2.547E-02	3.806E-02	2.408E-03	0.247
CD-109	88.03	*		9.586E-01	7.304E-01	1.072E+00	1.240E-01	0.894
AG-110M	657.75	*		7.441E-02	2.946E-02	4.805E-02	2.634E-03	1.549
	677.61			-2.740E-03	1.856E-01	2.975E-01	1.674E-02	-0.009
	706.67			4.700E-02	1.249E-01	2.138E-01	1.278E-02	0.220
	763.93			-1.696E-01	9.985E-02	1.478E-01	9.962E-03	-1.147
	884.67			-1.682E-02	2.973E-02	4.713E-02	4.052E-03	-0.357
	937.48			-6.266E-02	7.206E-02	1.114E-01	9.574E-03	-0.562
	1384.27			3.758E-03	9.827E-02	1.418E-01	1.102E-02	0.026
IN-111	171.28			-6.353E-02	7.384E-01	1.186E+00	7.919E-02	-0.054
	245.39	*		-1.060E-01	8.427E-01	1.226E+00	8.539E-02	-0.086
IN-113M	391.69	*		6.871E-03	3.043E-02	5.069E-02	3.075E-03	0.136
SN-113	391.69	*		6.871E-03	3.043E-02	5.069E-02	3.075E-03	0.136
IN-114M	190.27	*		1.835E-02	1.420E-01	2.000E-01	1.356E-02	0.092
CD-115	260.90			-1.034E+01	9.541E+01	1.594E+02	1.108E+01	-0.065
	492.35			2.302E+00	2.629E+01	4.311E+01	2.448E+00	0.053
	527.90	*		-1.312E+00	7.681E+00	1.236E+01	6.935E-01	-0.106
SN-117M	156.02			1.858E-01	1.591E+00	2.581E+00	1.730E-01	0.072
	158.56	*		-1.747E-02	3.933E-02	6.265E-02	4.189E-03	-0.279
SB-122	563.90	*		-7.683E-01	1.398E+00	2.188E+00	1.204E-01	-0.351
	692.80			1.189E+00	3.487E+01	5.189E+01	2.818E+00	0.023
I-123	159.00	*		-4.190E+00	3.487E+01	Half-Life	too short	
	528.96			2.428E+02	3.487E+01	Half-Life	too short	
TE-123M	159.00	*		-1.293E-02	2.025E-02	3.204E-02	2.163E-03	-0.403
I-124	602.71	*		2.222E-01	5.246E-01	7.558E-01	4.040E-02	0.294
	722.78			8.116E-01	2.816E+00	4.178E+00	2.438E-01	0.194
	1325.50			2.356E+00	2.273E+01	3.708E+01	2.767E+00	0.064

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124	+	1376.25		4.386E+01	3.477E+01	3.881E+01	2.912E+00	1.130
		1509.49		1.093E+01	9.789E+00	1.810E+01	1.311E+00	0.604
		1691.02		8.094E-01	2.566E+00	4.411E+00	2.904E-01	0.183
		602.71		1.219E-02	2.878E-02	4.146E-02	2.218E-03	0.294
		645.85		-2.910E-01	3.071E-01	4.604E-01	2.741E-02	-0.632
		709.31		-3.080E-01	1.704E+00	2.825E+00	1.597E-01	-0.109
		713.82		4.447E-02	9.766E-01	1.640E+00	1.667E-01	0.027
		722.78		6.454E-02	2.239E-01	3.323E-01	2.029E-02	0.194
	+	968.20		8.000E+00	2.505E+00	3.791E+00	3.044E-01	2.110
		1045.16		9.613E-01	1.699E+00	2.641E+00	1.929E-01	0.364
SB-125		1325.50		2.001E-01	1.931E+00	3.150E+00	2.350E-01	0.064
		1368.21		1.926E-01	1.186E+00	1.676E+00	2.144E-01	0.115
		1436.60		1.349E+00	2.098E+00	3.590E+00	2.660E-01	0.376
		1691.02	*	1.518E-02	4.813E-02	8.275E-02	5.811E-03	0.183
		427.89	*	-2.041E-02	6.070E-02	9.806E-02	5.844E-03	-0.208
		463.38		1.536E-01	2.080E-01	3.394E-01	2.269E-02	0.453
		600.56		2.819E-02	1.319E-01	1.870E-01	1.184E-02	0.151
		635.90		-4.022E-02	1.743E-01	2.764E-01	1.733E-02	-0.145
	TE-125M	109.28	*	-2.833E-01	6.143E+00	1.003E+01	9.969E-01	-0.028
	I-126	388.63		1.411E-01	1.416E-01	2.433E-01	1.392E-02	0.580
SB-126		666.33	*	6.488E-02	1.285E-01	1.862E-01	9.476E-03	0.349
		753.82		7.709E-01	8.968E-01	1.574E+00	9.870E-02	0.490
		223.80		-1.508E+00	2.907E+00	4.547E+00	3.150E-01	-0.332
		278.60		1.091E+00	1.656E+00	2.831E+00	1.954E-01	0.385
		296.50		6.465E+00	1.651E+00	2.103E+00	1.432E-01	3.074
		414.70		-2.236E-02	5.231E-02	8.433E-02	4.808E-03	-0.265
		415.30		-2.457E+00	4.354E+00	6.972E+00	3.975E-01	-0.352
		555.20		3.548E-02	2.544E+00	4.130E+00	2.284E-01	0.009
		573.80		2.178E-01	6.685E-01	1.103E+00	6.030E-02	0.197
		593.00		7.744E-02	5.953E-01	9.699E-01	5.227E-02	0.080
SN-126		656.30		2.421E+00	2.440E+00	3.681E+00	1.864E-01	0.658
		666.33		2.714E-02	5.375E-02	7.787E-02	3.963E-03	0.349
		675.00		1.161E+00	1.204E+00	2.057E+00	1.070E-01	0.565
		695.00		2.758E-02	5.013E-02	8.652E-02	4.725E-03	0.319
		697.00		-1.575E-02	1.729E-01	2.886E-01	1.584E-02	-0.055
		720.50	*	1.831E-02	8.908E-02	1.313E-01	7.620E-03	0.140
		856.80		1.672E-03	3.305E-01	4.719E-01	3.703E-02	0.004
		989.30		3.262E-01	7.816E-01	1.325E+00	1.040E-01	0.246
		1034.80		3.782E+00	5.242E+00	9.074E+00	6.727E-01	0.417
		1213.00		-1.078E+00	3.043E+00	4.818E+00	2.958E-01	-0.224
SB-127		64.28		-3.872E-03	5.465E-01	7.727E-01	1.325E-01	-0.005
		86.94		1.433E-01	3.065E-01	4.348E-01	1.828E-01	0.330
		87.57	*	1.015E-01	7.225E-02	1.062E-01	1.226E-02	0.956
	+	61.10		3.616E+01	8.086E+01	1.080E+02	1.524E+01	0.335
		252.40		-1.884E+00	3.208E+00	5.115E+00	2.136E+00	-0.368
		290.80		-7.878E+00	1.772E+01	2.512E+01	2.507E+00	-0.314
		411.60		1.306E+00	8.783E+00	1.455E+01	2.098E+00	0.090
		444.90		-1.630E-01	6.991E+00	1.145E+01	1.243E+00	-0.014
		473.00		-9.017E-01	1.275E+00	2.005E+00	2.252E-01	-0.450

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		543.00		2.486E+00	1.064E+01	1.753E+01	2.261E+00	0.142
		603.60		1.515E+00	9.232E+00	1.302E+01	1.386E+00	0.116
		685.20	*	6.260E-01	8.553E-01	1.494E+00	1.388E-01	0.419
		698.50		6.393E+00	1.020E+01	1.761E+01	2.544E+00	0.363
		722.20		3.441E+00	1.901E+01	2.794E+01	2.601E+00	0.123
		783.80		4.944E+00	2.442E+00	4.086E+00	4.612E-01	1.210
		57.60		1.313E+00	7.646E+00	1.125E+01	1.433E+00	0.117
		145.22		1.258E-01	4.696E-01	7.672E-01	5.204E-02	0.164
		172.10		1.578E-02	8.133E-02	1.319E-01	8.807E-03	0.120
		202.84	*	1.116E-02	3.468E-02	5.191E-02	3.554E-03	0.215
I-131		374.96		-2.450E-02	1.323E-01	2.168E-01	1.289E-02	-0.113
		80.18		-7.156E+00	4.070E+00	5.387E+00	6.035E-01	-1.329
		284.30		3.386E-01	1.048E+00	1.771E+00	1.317E-01	0.191
		364.48	*	-4.175E-02	8.161E-02	1.320E-01	8.906E-03	-0.316
		636.97		4.104E-01	1.034E+00	1.705E+00	1.014E-01	0.241
TE-132		722.89		1.508E+00	4.422E+00	6.592E+00	3.904E-01	0.229
		49.72		-2.131E+01	3.429E+01	5.580E+01	8.410E+00	-0.382
		111.76		-1.103E+01	2.084E+01	3.344E+01	3.484E+00	-0.330
		116.30		-7.021E-01	1.963E+01	3.200E+01	3.247E+00	-0.022
		228.16	*	3.013E-01	5.043E-01	8.623E-01	1.288E-01	0.349
BA-133		53.15		3.157E-01	4.842E+00	8.076E+00	1.107E+00	0.039
		79.62		-1.547E+00	1.121E+00	1.494E+00	2.508E-01	-1.035
		81.00		-1.603E-01	8.673E-02	1.101E-01	1.917E-02	-1.455
		276.40		2.781E-01	2.582E-01	4.226E-01	5.704E-02	0.658
		302.84		-5.815E-02	1.115E-01	1.568E-01	1.908E-02	-0.371
I-133		356.01	*	-1.740E-03	3.440E-02	4.930E-02	5.805E-03	-0.035
		383.85		-8.729E-02	2.037E-01	3.295E-01	3.582E-02	-0.265
	+	510.53		6.250E-01	2.037E-01	Half-Life	too short	
		529.87	*	2.878E-03	2.037E-01	Half-Life	too short	
		706.58		1.270E-01	2.037E-01	Half-Life	too short	
		856.28		-4.281E-02	2.037E-01	Half-Life	too short	
		875.33		-8.988E-02	2.037E-01	Half-Life	too short	
		1236.41		7.351E-01	2.037E-01	Half-Life	too short	
		1298.22		-9.875E-02	2.037E-01	Half-Life	too short	
		475.35		3.809E-01	1.372E+00	2.272E+00	1.295E-01	0.168
CS-134		563.23		-9.778E-02	2.211E-01	3.485E-01	1.963E-02	-0.281
		569.32		-7.252E-02	1.379E-01	2.024E-01	1.146E-02	-0.358
		604.70		3.605E-03	2.516E-02	3.544E-02	1.904E-03	0.102
	+	795.84	*	2.903E-02	3.107E-02	5.131E-02	3.576E-03	0.566
		801.93		-1.423E-02	2.450E-01	3.974E-01	2.799E-02	-0.036
CS-135		1038.57		-2.255E+00	2.311E+00	3.478E+00	2.565E-01	-0.648
		1167.94		1.253E+00	1.462E+00	2.534E+00	1.463E-01	0.495
		1365.15		-4.364E-01	8.019E-01	1.217E+00	9.696E-02	-0.358
		268.24	*	2.121E-01	1.077E-01	1.895E-01	1.620E-02	1.119
		288.45		3.166E+10	1.077E-01	Half-Life	too short	
I-135		417.63		-1.379E+10	1.077E-01	Half-Life	too short	
		546.56		-1.983E+10	1.077E-01	Half-Life	too short	
		836.80		1.396E+10	1.077E-01	Half-Life	too short	
		1038.76		-2.693E+10	1.077E-01	Half-Life	too short	

---- Non-Identified Nuclides ----

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	1124.00			-1.300E+10	1.077E-01	Half-Life	too short	
	1131.51			-1.873E+09	1.077E-01	Half-Life	too short	
	1260.41	*		6.812E+08	1.077E-01	Half-Life	too short	
	1457.56			9.933E+11	1.077E-01	Half-Life	too short	
	1678.03			-4.509E+09	1.077E-01	Half-Life	too short	
	1706.46			-2.458E+08	1.077E-01	Half-Life	too short	
	1791.20			2.678E+10	1.077E-01	Half-Life	too short	
CS-136	66.91			-1.466E-01	9.203E-01	1.103E+00	1.897E-01	-0.133
	86.29			3.769E-01	9.239E-01	1.399E+00	2.085E-01	0.269
	153.22			-4.052E-02	4.563E-01	7.362E-01	5.875E-02	-0.055
	163.89			1.780E-01	7.548E-01	1.227E+00	9.761E-02	0.145
	176.55			1.325E-01	2.567E-01	4.199E-01	3.079E-02	0.316
	273.65			-8.697E-01	3.199E-01	4.733E-01	3.604E-02	-1.837
	340.57			1.986E-01	9.656E-02	1.533E-01	1.034E-02	1.295
	818.51			6.161E-03	4.520E-02	7.586E-02	5.498E-03	0.081
	1048.07	*		-8.150E-03	6.955E-02	1.130E-01	8.708E-03	-0.072
	1235.34			3.494E-01	4.568E-01	6.763E-01	6.995E-02	0.517
CE-139	165.85	*		-9.887E-03	2.034E-02	3.228E-02	2.147E-03	-0.306
BA-140	162.64			5.319E-01	5.370E-01	8.910E-01	6.507E-02	0.597
	304.84			-7.235E-01	1.028E+00	1.403E+00	3.860E-01	-0.516
	423.70			8.942E-01	1.365E+00	2.261E+00	7.184E-01	0.395
	537.32	*		1.165E-02	1.626E-01	2.653E-01	8.619E-02	0.044
LA-140	328.77			1.529E-01	2.057E-01	3.508E-01	2.514E-02	0.436
	432.53			9.344E-01	1.399E+00	2.369E+00	1.499E-01	0.394
	487.03			4.610E-02	9.601E-02	1.605E-01	1.038E-02	0.287
	751.79			-5.825E-01	1.060E+00	1.709E+00	1.275E-01	-0.341
	815.85			-1.245E-02	1.994E-01	3.302E-01	2.761E-02	-0.038
	867.82			8.874E-01	9.238E-01	1.446E+00	1.232E-01	0.614
	919.63			6.125E-01	1.779E+00	2.947E+00	3.085E-01	0.208
	925.24			-7.716E-03	7.165E-01	1.182E+00	1.054E-01	-0.007
	1596.49	*		-1.429E-02	5.497E-02	7.994E-02	5.572E-03	-0.179
CE-141	145.44	*		9.274E-03	4.240E-02	6.916E-02	4.827E-03	0.134
CE-143	57.37			3.057E-04	4.240E-02	Half-Life	too short	
	231.56			-2.124E-04	4.240E-02	Half-Life	too short	
+	293.26	*		7.332E-04	4.240E-02	Half-Life	too short	
+	350.59			2.018E-02	4.240E-02	Half-Life	too short	
	490.36			-1.025E-03	4.240E-02	Half-Life	too short	
	664.57			6.001E-03	4.240E-02	Half-Life	too short	
	721.93			-1.259E-04	4.240E-02	Half-Life	too short	
CE-144	80.11			-3.175E+00	1.817E+00	2.407E+00	2.686E-01	-1.319
	133.54	*		-7.861E-02	1.352E-01	2.148E-01	3.158E-02	-0.366
PM-144	476.78			4.878E-02	4.801E-02	8.205E-02	5.627E-03	0.595
	618.01			-2.862E-03	2.100E-02	3.359E-02	1.899E-03	-0.085
	696.49	*		2.994E-03	2.213E-02	3.739E-02	2.051E-03	0.080
	778.57			-1.060E+00	1.440E+00	2.002E+00	1.328E-01	-0.529
PR-144	696.49	*		2.029E-01	1.500E+00	2.534E+00	1.389E-01	0.080
	1489.15			-9.719E+00	6.564E+00	8.667E+00	6.323E-01	-1.121
PM-146	453.90	*		-1.117E-02	2.986E-02	4.800E-02	4.111E-03	-0.233
	633.02			-4.122E-01	9.221E-01	1.369E+00	5.027E-01	-0.301

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	735.90		8.425E-03	8.897E-02	1.430E-01	3.995E-02	0.059
		747.13		1.298E-02	5.365E-02	9.098E-02	1.154E-02	0.143
		91.11		8.202E-01	3.419E-01	4.080E-01	4.641E-02	2.010
		319.41		8.857E-01	2.328E+00	3.930E+00	2.607E-01	0.225
		439.89		-4.401E+00	3.803E+00	5.842E+00	3.340E-01	-0.753
PM-149	*	531.02		5.308E-02	3.607E-01	5.913E-01	7.946E-02	0.090
EU-152	*	285.90		2.570E+01	7.078E+01	1.197E+02	1.753E+01	0.215
		121.78		-2.463E-02	4.932E-02	7.906E-02	6.895E-03	-0.312
		244.69		6.086E-03	2.376E-01	3.485E-01	2.427E-02	0.017
		344.27		2.210E-02	1.069E-01	1.057E-01	7.447E-03	0.209
		443.98		-1.740E-01	6.252E-01	1.011E+00	5.776E-02	-0.172
		778.89		-1.870E-02	1.558E-01	2.303E-01	1.528E-02	-0.081
		867.32		5.053E-01	5.331E-01	8.350E-01	6.697E-02	0.605
		964.01		3.726E-01	2.214E-01	3.389E-01	2.733E-02	1.099
		1085.78		-2.111E-01	2.373E-01	3.588E-01	2.458E-02	-0.588
		1112.02		5.523E-02	2.663E-01	3.353E-01	2.189E-02	0.165
GD-153		1407.95		-4.058E-02	1.123E-01	1.813E-01	1.352E-02	-0.224
		69.67		2.354E+00	1.495E+00	2.271E+00	2.563E-01	1.037
		83.37		-2.703E+01	1.324E+01	1.774E+01	2.001E+00	-1.524
		97.43	*	6.518E-02	6.138E-02	9.160E-02	8.790E-03	0.712
		103.18		-1.307E-02	7.121E-02	1.160E-01	1.020E-02	-0.113
EU-154		123.07		-1.491E-02	3.457E-02	5.551E-02	5.714E-03	-0.269
		247.94		-3.130E-02	2.406E-01	3.922E-01	4.036E-02	-0.080
		591.81		-2.124E-02	3.858E-01	6.215E-01	5.928E-02	-0.034
		723.30		9.564E-02	1.077E-01	1.679E-01	1.195E-02	0.570
		756.87		3.101E-01	4.555E-01	7.909E-01	8.257E-02	0.392
		873.19		-8.518E-02	1.725E-01	2.747E-01	3.268E-02	-0.310
		996.32		-1.015E-01	2.588E-01	3.483E-01	6.052E-02	-0.291
		1004.76		-8.956E-02	1.512E-01	1.986E-01	2.180E-02	-0.451
		1274.45	*	-9.401E-03	7.174E-02	1.148E-01	1.151E-02	-0.082
		48.70		-1.420E+00	4.169E+00	6.872E+00	8.842E-01	-0.207
EU-155		60.01		4.342E+00	5.619E+00	8.428E+00	1.030E+00	0.515
		86.54		3.332E-02	8.760E-02	1.262E-01	1.456E-02	0.264
		105.31	*	1.712E-02	7.282E-02	1.200E-01	1.039E-02	0.143
		86.79		1.030E-01	2.341E-01	3.379E-01	3.881E-02	0.305
		197.04		1.389E-01	3.825E-01	6.206E-01	4.231E-02	0.224
TB-160		215.65		1.754E-01	5.214E-01	8.427E-01	5.816E-02	0.208
		298.57		8.285E-02	9.946E-02	1.333E-01	9.055E-03	0.622
		879.36	*	5.673E-02	8.396E-02	1.454E-01	1.195E-02	0.390
		962.29		5.557E-01	3.784E-01	6.024E-01	4.866E-02	0.923
		966.15		6.729E-01	1.565E-01	2.952E-01	2.376E-02	2.279
		1177.93		-7.830E-02	2.093E-01	3.302E-01	1.898E-02	-0.237
		1271.85		1.225E-01	4.121E-01	6.849E-01	4.671E-02	0.179
		80.57		-4.596E-01	2.336E-01	3.048E-01	3.404E-02	-1.508
		184.41		1.063E-01	3.883E-02	4.934E-02	3.329E-03	2.155
		280.46		-7.478E-02	5.709E-02	9.056E-02	6.243E-03	-0.826
HO-166M	+	410.95		7.907E-02	1.658E-01	2.785E-01	1.586E-02	0.284
		711.68	*	1.568E-02	3.673E-02	6.304E-02	3.583E-03	0.249
		752.31		-2.239E-02	1.654E-01	2.740E-01	1.713E-02	-0.082

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		810.29	-3.354E-02	3.633E-02	5.657E-02	4.022E-03	-0.593
		51.35	9.200E+00	4.513E+01	7.563E+01	1.045E+01	0.122
		52.39	-4.359E+00	2.207E+01	3.652E+01	5.037E+00	-0.119
		59.40	1.316E+01	3.068E+01	4.554E+01	5.604E+00	0.289
LU-176		66.72 *	-6.453E+00	3.294E+01	3.941E+01	4.532E+00	-0.164
		88.36	1.784E-01	1.637E-01	2.427E-01	2.784E-02	0.735
		201.83	-2.564E-03	1.948E-02	3.106E-02	2.125E-03	-0.083
		306.84 *	7.611E-03	1.679E-02	2.845E-02	1.917E-03	0.267
LU-177		401.10	-9.256E-01	4.525E+00	7.387E+00	4.199E-01	-0.125
		112.95	2.675E-01	1.086E+00	1.787E+00	1.399E-01	0.150
LU-177M	+	208.36 *	2.565E+00	9.992E-01	1.347E+00	9.258E-02	1.903
		52.97	-8.039E-02	2.214E+00	3.682E+00	5.057E-01	-0.022
		54.07	-2.636E-02	1.100E+00	1.829E+00	2.479E-01	-0.014
	+	61.30	8.819E-01	1.971E+00	2.609E+00	3.149E-01	0.338
		121.62	-1.229E-01	2.534E-01	4.065E-01	2.929E-02	-0.302
		147.16	-9.834E-02	4.326E-01	6.957E-01	4.707E-02	-0.141
		171.86	-2.618E-02	3.263E-01	5.243E-01	3.501E-02	-0.050
		218.09	1.897E-01	5.810E-01	9.386E-01	6.486E-02	0.202
		268.79	1.438E+00	5.436E-01	9.732E-01	6.748E-02	1.478
		319.02	8.849E-02	1.771E-01	3.002E-01	1.992E-02	0.295
		367.43	1.950E-01	6.082E-01	1.020E+00	6.179E-02	0.191
		413.65 *	-7.860E-02	1.205E-01	1.922E-01	1.096E-02	-0.409
HF-181		56.28	-1.657E-01	1.153E+00	1.845E+00	2.409E-01	-0.090
		57.53	8.447E-02	6.447E-01	9.473E-01	1.208E-01	0.089
		65.20	-1.676E+00	1.034E+00	1.340E+00	1.560E-01	-1.251
		133.02	-4.966E-02	4.407E-02	6.887E-02	4.776E-03	-0.721
		136.25	1.079E-01	3.000E-01	4.926E-01	3.392E-02	0.219
		345.85	-4.482E-02	1.718E-01	2.118E-01	1.345E-02	-0.212
		482.03 *	-3.570E-02	3.015E-02	4.616E-02	2.628E-03	-0.773
		56.28	-6.436E-02	4.496E-01	7.192E-01	9.392E-02	-0.089
W-181		57.53	3.281E-02	2.516E-01	3.696E-01	4.714E-02	0.089
		65.20 *	-6.489E-01	4.002E-01	5.189E-01	6.039E-02	-1.251
TA-182		67.75	-3.944E-02	1.264E-01	1.524E-01	1.740E-02	-0.259
		100.10	7.900E-02	1.215E-01	2.026E-01	1.864E-02	0.390
		152.43	-9.909E-02	2.288E-01	3.651E-01	2.455E-02	-0.271
		222.10	-6.633E-02	2.357E-01	3.721E-01	2.576E-02	-0.178
	+	1001.68	1.711E+00	1.730E+00	2.236E+00	1.730E-01	0.765
	+	1121.28	3.982E-01	1.398E-01	1.980E-01	1.269E-02	2.011
		1189.05	1.265E-02	2.010E-01	3.283E-01	1.927E-02	0.039
		1221.42 *	-3.342E-02	1.254E-01	1.997E-01	1.245E-02	-0.167
RE-183		1230.97	1.520E-02	3.564E-01	4.969E-01	3.152E-02	0.031
		57.98	5.905E-02	2.460E-01	3.629E-01	4.588E-02	0.163
		59.32	4.914E-02	1.268E-01	1.880E-01	2.317E-02	0.261
		67.20	-4.661E-02	2.667E-01	2.771E-01	3.176E-02	-0.168
		162.32 *	6.736E-02	7.686E-02	1.272E-01	8.480E-03	0.529
	+	208.81	2.226E+00	8.674E-01	1.173E+00	8.065E-02	1.897
		291.72	4.842E-01	7.353E-01	1.102E+00	7.537E-02	0.439
RE-184		57.98	2.171E-01	9.044E-01	1.334E+00	1.687E-01	0.163
		59.32	1.806E-01	4.658E-01	6.905E-01	8.511E-02	0.261

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	67.20			-1.713E-01	9.804E-01	1.019E+00	1.167E-01	-0.168
	161.27			1.594E-02	2.511E-01	4.063E-01	2.710E-02	0.039
	216.55			4.600E-02	1.853E-01	2.986E-01	2.062E-02	0.154
	252.85	*		-1.366E-01	1.554E-01	2.525E-01	1.758E-02	-0.541
	318.01			3.020E-02	3.024E-01	5.054E-01	3.358E-02	0.060
	792.07			3.188E-01	9.683E-01	1.079E+00	7.370E-02	0.296
	903.28			9.693E-01	6.446E-01	1.080E+00	9.182E-02	0.898
	920.93			-1.428E-01	2.855E-01	4.543E-01	3.810E-02	-0.314
OS-185	59.72			2.189E-01	3.360E-01	5.023E-01	6.158E-02	0.436
	61.14	+		9.657E-02	2.158E-01	2.878E-01	3.480E-02	0.335
	69.30			3.525E-01	2.700E-01	4.079E-01	4.613E-02	0.864
	592.07			-4.075E-01	1.608E+00	2.558E+00	1.380E-01	-0.159
	646.12	*		-1.246E-02	2.531E-02	3.928E-02	2.012E-03	-0.317
	717.42			-5.116E-01	5.239E-01	7.988E-01	4.603E-02	-0.640
	874.81			-2.902E-01	3.439E-01	5.321E-01	4.334E-02	-0.545
	880.27			4.414E-01	4.680E-01	8.233E-01	6.781E-02	0.536
RE-188	155.03	*		1.291E-01	1.171E-01	1.952E-01	1.310E-02	0.661
	477.96			3.689E+00	2.184E+00	3.837E+00	2.186E-01	0.961
	633.10			-7.343E-01	1.851E+00	2.797E+00	1.453E-01	-0.263
W-188	63.58	+		3.326E+01	7.434E+01	8.569E+01	1.012E+01	0.388
	227.08			6.418E+00	8.529E+00	1.469E+01	1.019E+00	0.437
	290.67	*		-2.541E+00	5.757E+00	8.165E+00	5.588E-01	-0.311
IR-192	295.96	+		4.880E-01	1.195E-01	1.641E-01	1.131E-02	2.974
	308.46			6.195E-02	6.413E-02	1.106E-01	7.502E-03	0.560
	316.51	*		5.077E-04	2.309E-02	3.848E-02	2.571E-03	0.013
	468.07			-1.409E-02	4.612E-02	7.430E-02	4.907E-03	-0.190
	604.41			1.778E-02	3.399E-01	4.753E-01	5.285E-02	0.037
	612.46			8.591E-01	5.174E-01	8.092E-01	5.824E-02	1.062
AU-195	65.12			-2.945E-01	1.857E-01	2.414E-01	2.811E-02	-1.220
	66.83			-1.898E-02	1.087E-01	1.303E-01	1.497E-02	-0.146
	75.70	+		9.733E-01	2.267E-01	3.222E-01	3.577E-02	3.021
	98.88	*		1.132E-01	1.601E-01	2.588E-01	2.426E-02	0.437
	129.76			2.371E+00	1.894E+00	3.183E+00	2.226E-01	0.745
TL-200	367.94	*		1.544E-04	1.894E+00	Half-Life	too short	
	579.30			1.883E-03	1.894E+00	Half-Life	too short	
	828.27			2.517E-04	1.894E+00	Half-Life	too short	
	1205.75			-8.136E-04	1.894E+00	Half-Life	too short	
TL-201	68.90			3.789E+00	4.787E+00	7.144E+00	8.098E-01	0.530
	70.82			2.570E+00	2.642E+00	3.956E+00	4.441E-01	0.650
	80.30			-8.298E+00	4.669E+00	6.171E+00	6.888E-01	-1.345
	135.34			-6.499E+00	1.803E+01	2.895E+01	1.997E+00	-0.225
	167.43	*		-4.454E+00	5.145E+00	8.045E+00	5.354E-01	-0.554
TL-202	68.90			3.197E-01	4.039E-01	6.027E-01	6.832E-02	0.530
	70.82			2.162E-01	2.223E-01	3.328E-01	3.737E-02	0.650
	80.30			-6.983E-01	3.929E-01	5.194E-01	5.797E-02	-1.345
	439.56	*		-6.834E-02	4.588E-02	6.907E-02	3.947E-03	-0.989
HG-203	70.83			9.279E-01	9.533E-01	1.420E+00	2.185E-01	0.653
	72.87	+		2.206E+00	7.354E-01	9.490E-01	1.421E-01	2.325
	82.60			-2.381E+00	1.097E+00	1.329E+00	2.063E-01	-1.792



---- Non-Identified Nuclides ----

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BI-207		279.20	*	1.667E-03	2.700E-02	4.528E-02	3.261E-03	0.037
	+	72.80		6.432E-01	2.045E-01	2.758E-01	3.076E-02	2.332
	+	74.97		3.810E-01	1.211E-01	1.799E-01	1.999E-02	2.118
		84.90		2.966E-01	1.455E-01	2.447E-01	2.781E-02	1.212
		569.67		-1.536E-02	2.160E-02	3.133E-02	1.717E-03	-0.490
TL-207		1063.62	*	-9.597E-03	3.296E-02	5.278E-02	3.750E-03	-0.182
		1770.23		-1.376E-02	3.346E-01	4.662E-01	2.887E-02	-0.030
		81.07		-2.269E-01	1.788E-01	2.437E-01	2.725E-02	-0.931
		83.78		-1.472E-01	1.046E-01	1.516E-01	1.713E-02	-0.971
		94.90		2.630E-01	1.792E-01	2.695E-01	2.702E-02	0.976
		122.32		-1.073E-01	1.160E+00	1.885E+00	1.492E-01	-0.057
		144.24		2.896E-01	4.568E-01	7.537E-01	6.067E-02	0.384
		154.21		2.462E-01	2.688E-01	4.459E-01	3.472E-02	0.552
		269.46		3.240E-01	1.271E-01	2.270E-01	1.624E-02	1.428
		323.87	*	-2.631E-01	4.634E-01	7.506E-01	1.262E-01	-0.351
PO-209	+	338.28		3.544E+00	1.229E+00	1.436E+00	1.564E-01	2.469
		445.03		2.323E-02	1.525E+00	2.503E+00	2.559E-01	0.009
		260.50		-3.828E+00	6.382E+00	1.047E+01	7.279E-01	-0.366
		262.80		-8.747E+00	1.742E+01	2.867E+01	1.992E+00	-0.305
		896.60	*	-3.054E+00	4.334E+00	6.773E+00	5.765E-01	-0.451
BI-210		46.50	*	-1.488E+00	7.456E+00	1.154E+01	1.199E+00	-0.129
PB-210		46.50	*	-1.488E+00	7.456E+00	1.154E+01	1.199E+00	-0.129
PO-210		46.50	*	-1.488E+00	7.456E+00	1.154E+01	1.109E+00	-0.129
PB-211		404.84	*	3.881E-01	6.942E-01	1.099E+00	6.851E-01	0.353
PO-215		427.08		-1.083E-01	1.371E+00	2.241E+00	1.385E+00	-0.048
		831.96		3.429E-01	7.709E-01	1.266E+00	7.916E-01	0.271
		81.07		-2.269E-01	1.788E-01	2.437E-01	2.725E-02	-0.931
		83.78		-1.472E-01	1.046E-01	1.516E-01	1.713E-02	-0.971
		94.90		2.630E-01	1.792E-01	2.695E-01	2.702E-02	0.976
		122.32		-1.073E-01	1.160E+00	1.885E+00	1.492E-01	-0.057
		144.24		2.896E-01	4.568E-01	7.537E-01	6.067E-02	0.384
		154.21		2.462E-01	2.688E-01	4.459E-01	3.472E-02	0.552
		269.46		3.240E-01	1.271E-01	2.270E-01	1.624E-02	1.428
		323.87	*	-2.631E-01	4.634E-01	7.506E-01	1.262E-01	-0.351
RN-219	+	338.28		3.544E+00	1.229E+00	1.436E+00	1.564E-01	2.469
		445.03		2.323E-02	1.525E+00	2.503E+00	2.559E-01	0.009
		271.23		1.809E-01	1.614E-01	2.791E-01	2.496E-02	0.648
		401.81	*	-6.760E-02	2.802E-01	4.565E-01	6.189E-02	-0.148
RN-220		549.76	*	1.479E+01	1.613E+01	2.757E+01	1.530E+00	0.537
RA-223		81.07		-2.269E-01	1.788E-01	2.437E-01	2.725E-02	-0.931
		83.78		-1.472E-01	1.046E-01	1.516E-01	1.713E-02	-0.971
		94.90		2.630E-01	1.792E-01	2.695E-01	2.702E-02	0.976
		122.32		-1.073E-01	1.160E+00	1.885E+00	1.492E-01	-0.057
		144.24		2.896E-01	4.568E-01	7.537E-01	6.067E-02	0.384
		154.21		2.462E-01	2.688E-01	4.459E-01	3.472E-02	0.552
		269.46		3.240E-01	1.271E-01	2.270E-01	1.624E-02	1.428
		323.87	*	-2.631E-01	4.634E-01	7.506E-01	1.262E-01	-0.351
	+	338.28		3.544E+00	1.229E+00	1.436E+00	1.564E-01	2.469
		445.03		2.323E-02	1.525E+00	2.503E+00	2.559E-01	0.009

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		79.80		-2.055E+00	1.454E+00	1.882E+00	4.260E-01	-1.092
		236.00		2.272E+00	3.365E-01	4.225E-01	4.705E-02	5.377
		256.20	*	1.505E-01	2.545E-01	4.343E-01	6.288E-02	0.347
		286.10		2.510E-01	1.057E+00	1.781E+00	2.161E-01	0.141
	+	299.80		1.051E+00	1.272E+00	1.741E+00	2.901E-01	0.604
		304.40		-1.000E+00	1.448E+00	2.003E+00	3.533E-01	-0.499
		334.20		-7.946E-01	1.734E+00	2.425E+00	4.501E-01	-0.328
TH-227		79.80		-2.055E+00	1.455E+00	1.882E+00	4.309E-01	-1.092
	+	94.00		6.153E+00	2.836E+00	2.591E+00	5.817E-01	2.374
		236.00		2.272E+00	3.150E-01	4.225E-01	4.156E-02	5.377
		256.20	*	1.505E-01	2.549E-01	4.343E-01	7.526E-02	0.347
		286.10		2.510E-01	1.086E+00	1.781E+00	1.786E+00	0.141
	+	299.80		1.051E+00	1.272E+00	1.741E+00	2.901E-01	0.604
		304.40		-1.000E+00	1.448E+00	2.003E+00	3.533E-01	-0.499
TH-229		334.20		-7.946E-01	1.734E+00	2.425E+00	4.501E-01	-0.328
		85.43		2.062E-01	1.456E-01	2.395E-01	2.730E-02	0.861
		88.47		8.759E-02	9.354E-02	1.383E-01	1.583E-02	0.633
		100.00		5.254E-02	1.267E-01	2.100E-01	1.934E-02	0.250
		193.63	*	1.539E-02	3.495E-01	5.616E-01	3.818E-02	0.027
		210.97		5.129E-01	5.906E-01	8.555E-01	5.888E-02	0.599
		283.67	*	-1.250E-02	1.031E+00	1.723E+00	2.458E-01	-0.007
PA-231		301.29		7.501E-01	4.483E-01	6.931E-01	7.641E-02	1.082
TH-231		81.07		-2.269E-01	1.788E-01	2.437E-01	2.725E-02	-0.931
		83.78		-1.472E-01	1.046E-01	1.516E-01	1.713E-02	-0.971
		94.90		2.630E-01	1.792E-01	2.695E-01	2.702E-02	0.976
		122.32		-1.073E-01	1.160E+00	1.885E+00	1.492E-01	-0.057
		144.24		2.896E-01	4.568E-01	7.537E-01	6.067E-02	0.384
		154.21		2.462E-01	2.688E-01	4.459E-01	3.472E-02	0.552
		269.46		3.240E-01	1.271E-01	2.270E-01	1.624E-02	1.428
		323.87	*	-2.631E-01	4.634E-01	7.506E-01	1.262E-01	-0.351
	+	338.28		3.544E+00	1.229E+00	1.436E+00	1.564E-01	2.469
		445.03		2.323E-02	1.525E+00	2.503E+00	2.559E-01	0.009
U-231		84.21		1.922E+00	4.462E+00	7.103E+00	8.044E-01	0.271
	+	92.29		6.464E+00	2.684E+00	3.134E+00	3.303E-01	2.062
		95.87	*	-1.689E-01	8.924E-01	1.274E+00	1.256E-01	-0.133
PA-233		108.00		-1.551E-01	1.466E+00	2.391E+00	1.978E-01	-0.065
	+	75.28		1.112E+01	3.807E+00	5.293E+00	8.929E-01	2.101
		86.59		5.583E-01	1.430E+00	2.051E+00	5.716E-01	0.272
	+	300.12		2.931E-01	3.537E-01	4.864E-01	6.757E-02	0.603
		311.98	*	-1.319E-02	4.231E-02	6.958E-02	4.877E-03	-0.190
		340.50		1.025E+00	5.153E-01	7.385E-01	1.708E-01	1.388
		398.62		-8.620E-01	1.412E+00	2.233E+00	5.767E-01	-0.386
PA-234		415.76		-2.315E-01	1.115E+00	1.815E+00	3.731E-01	-0.128
	+	63.00		9.611E-01	2.152E+00	2.575E+00	4.511E-01	0.373
		94.67		2.866E-01	1.348E-01	2.010E-01	2.704E-02	1.426
		98.44		4.565E-02	7.241E-02	1.053E-01	5.890E-02	0.433
		99.86		1.075E-01	3.211E-01	5.313E-01	4.905E-02	0.202
		111.00		-2.785E-02	1.207E-01	1.959E-01	2.282E-02	-0.142
		131.20		-7.556E-02	7.090E-02	1.112E-01	7.745E-03	-0.680

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		152.70		-3.780E-02	2.193E-01	3.527E-01	5.703E-02	-0.107
	+	186.00		3.827E+00	1.809E+00	1.771E+00	5.446E-01	2.161
		226.40		2.166E-01	2.710E-01	4.658E-01	5.669E-02	0.465
		227.20		2.241E-01	2.873E-01	4.953E-01	3.436E-02	0.453
		248.90		-1.085E-01	5.383E-01	8.975E-01	1.959E-01	-0.121
	+	293.70		3.061E+00	8.783E-01	1.035E+00	1.705E-01	2.959
		369.80		4.639E-02	5.722E-01	9.496E-01	1.983E-01	0.049
		568.70		-2.880E-01	6.949E-01	1.026E+00	5.628E-02	-0.281
		569.50		-1.062E-01	1.905E-01	2.789E-01	1.529E-02	-0.381
		574.00		8.348E-02	9.536E-01	1.552E+00	8.481E-02	0.054
		699.00		2.408E-01	4.443E-01	7.634E-01	1.366E-01	0.315
		706.10		1.953E-01	6.308E-01	1.066E+00	4.702E-01	0.183
		733.00		-1.629E-01	2.464E-01	3.286E-01	7.002E-02	-0.496
		742.81		2.478E-01	8.118E-01	1.355E+00	9.068E-01	0.183
	+	796.30		5.640E-01	6.206E-01	9.903E-01	2.630E-01	0.569
		805.60		1.755E-01	6.057E-01	1.023E+00	3.094E-01	0.172
		819.60		-3.030E-01	7.560E-01	1.208E+00	4.560E-01	-0.251
		826.30		-3.002E-01	5.140E-01	7.905E-01	3.519E-01	-0.380
		831.60		1.508E-01	3.808E-01	6.445E-01	1.903E-01	0.234
		876.40		-2.344E-01	5.499E-01	7.902E-01	8.121E-01	-0.297
		880.51		1.822E-01	1.671E-01	2.966E-01	2.444E-02	0.614
		883.24		6.372E-02	1.790E-01	2.952E-01	1.983E-01	0.216
		899.00		-1.365E+00	7.895E-01	6.806E-01	2.974E-01	-2.006
		925.00		1.755E-02	7.314E-01	1.210E+00	1.011E-01	0.015
		926.50		3.456E-02	1.103E-01	1.856E-01	4.675E-02	0.186
		946.00	*	-6.449E-02	1.847E-01	2.962E-01	5.502E-02	-0.218
		949.00		1.536E-01	2.661E-01	4.567E-01	3.737E-02	0.336
		980.50		-4.807E-02	4.465E-01	7.289E-01	5.777E-02	-0.066
PA-234M		1394.10		3.207E-01	6.782E-01	1.136E+00	7.378E-01	0.282
		766.42		7.443E+00	7.956E+00	1.239E+01	6.244E+00	0.601
	+	1001.03	*	3.875E+00	3.923E+00	5.134E+00	4.732E-01	0.755
U-235		89.95		-3.180E-01	1.011E+00	1.437E+00	4.544E-01	-0.221
	+	93.35		1.914E+00	9.447E-01	8.873E-01	2.537E-01	2.157
		105.00		-4.452E-02	7.122E-01	1.163E+00	3.471E-01	-0.038
		143.76	*	8.933E-02	1.418E-01	2.329E-01	3.886E-02	0.384
		163.35		3.996E-01	3.327E-01	5.439E-01	9.941E-02	0.735
	+	185.71		1.417E-01	5.177E-02	6.575E-02	4.441E-03	2.156
		205.31		3.332E-02	3.944E-01	5.526E-01	1.014E-01	0.060
NP-236		94.67		2.190E-01	1.004E-01	1.526E-01	1.537E-02	1.435
		98.44		3.453E-02	5.133E-02	7.962E-02	7.516E-03	0.434
		111.00		-2.106E-02	9.132E-02	1.482E-01	1.184E-02	-0.142
		160.31	*	1.619E-03	5.635E-02	9.109E-02	6.082E-03	0.018
NP-237		86.50	*	8.820E-02	2.039E-01	3.080E-01	7.269E-02	0.286
		95.87		-1.401E-01	7.410E-01	1.057E+00	2.652E-01	-0.133
NP-239		99.55		3.113E-02	1.071E-01	1.771E-01	1.643E-02	0.176
		117.00	*	4.464E-02	1.253E-01	2.066E-01	1.553E-02	0.216
	+	209.75		1.750E+00	6.818E-01	9.138E-01	6.285E-02	1.915
		228.18		9.082E-02	1.518E-01	2.604E-01	1.807E-02	0.349
		277.60		1.189E-01	1.178E-01	2.036E-01	1.406E-02	0.584

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		-4.480E-01	9.798E-01	1.375E+00	8.910E-02	-0.326
AM-241		59.54	*	9.678E-02	1.771E-01	2.640E-01	3.359E-02	0.367
CM-243		99.55		3.203E-02	1.103E-01	1.822E-01	1.690E-02	0.176
		103.76	*	1.609E-02	6.549E-02	1.080E-01	9.428E-03	0.149
		117.00		4.593E-02	1.289E-01	2.125E-01	1.598E-02	0.216
	+	209.75		1.725E+00	6.721E-01	9.008E-01	6.196E-02	1.915
		228.18		9.177E-02	1.534E-01	2.632E-01	1.826E-02	0.349
		277.60		1.198E-01	1.188E-01	2.053E-01	1.417E-02	0.584
AM-246		798.80		-8.274E-02	9.861E-02	1.297E-01	8.995E-03	-0.638
		1036.00		5.329E-02	1.765E-01	2.962E-01	2.192E-02	0.180
		1062.04		-6.375E-02	1.479E-01	2.344E-01	1.670E-02	-0.272
		1078.86	*	7.486E-02	7.863E-02	1.385E-01	9.596E-03	0.541
CM-247		278.00		4.333E-01	4.916E-01	8.465E-01	5.843E-02	0.512
		287.40		5.963E-02	8.990E-01	1.423E+00	9.763E-02	0.042
		402.60	*	-1.236E-03	2.543E-02	4.181E-02	2.378E-03	-0.030
CF-249		252.85		-5.118E-01	5.822E-01	9.462E-01	6.586E-02	-0.541
		333.44		-1.537E-01	1.346E-01	1.809E-01	1.174E-02	-0.850
		387.95	*	3.266E-02	2.712E-02	4.697E-02	2.693E-03	0.695
CF-251		176.60	*	4.204E-02	8.670E-02	1.417E-01	9.499E-03	0.297
		227.00		1.869E-01	2.548E-01	4.387E-01	3.043E-02	0.426
		285.00		6.673E-01	1.189E+00	2.027E+00	1.393E-01	0.329

## 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]G243273001
* Acquisition date   : 30-DEC-2009 22:47:32 Detector SN#      :
* Detector ID        : GAM15 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 04:00:02.17 Half life ratio : 8.000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-DEC-2009 12:00:00 Nuclide Library : SOLID
* Sample ID          : G243273001 Analyst initials: MXR1
* Batch Number       : 935341 Sample Quantity : 1.5678E+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	1.777E+01	1.647E+00	3.619E-01	0.000E+00
BA-137M	5.526E-01	5.722E-02	3.823E-02	0.000E+00
CS-137	5.841E-01	6.056E-02	4.041E-02	0.000E+00
TL-208	2.695E-01	4.742E-02	3.764E-02	0.000E+00
BI-211	2.109E+00	3.616E-01	2.350E-01	0.000E+00
BI-212	6.993E-01	3.157E-01	2.630E-01	0.000E+00
PB-212	9.139E-01	9.989E-02	6.307E-02	0.000E+00
PO-212	9.139E-01	9.989E-02	6.307E-02	0.000E+00
BI-214	6.121E-01	1.079E-01	7.426E-02	0.000E+00
PB-214	7.335E-01	1.313E-01	8.188E-02	0.000E+00
PO-214	7.335E-01	1.313E-01	8.188E-02	0.000E+00
PO-216	9.139E-01	9.989E-02	6.307E-02	0.000E+00
PO-218	7.335E-01	1.313E-01	8.188E-02	0.000E+00
RA-224	2.675E+00	6.980E-01	7.174E-01	0.000E+00
RA-226	6.121E-01	1.079E-01	7.426E-02	0.000E+00
AC-228	8.035E-01	1.700E-01	1.301E-01	0.000E+00
RA-228	8.035E-01	1.700E-01	1.301E-01	0.000E+00
TH-228	9.281E-01	1.014E-01	6.405E-02	0.000E+00
TH-230	6.121E-01	1.079E-01	7.425E-02	0.000E+00
TH-232	8.035E-01	1.700E-01	1.301E-01	0.000E+00
TH-234	8.245E-01	1.810E+00	2.110E+00	0.000E+00
U-234	6.121E-01	1.079E-01	7.425E-02	0.000E+00
U-238	8.245E-01	1.810E+00	2.110E+00	0.000E+00
AM-243	2.123E-01	6.614E-02	7.445E-02	0.000E+00
ANH-511	4.556E-02	4.484E-02	3.354E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	2.872E-01	2.266E-01	4.151E-01	0.000E+00 NOT IDENT.
NA-22	-3.366E-03	2.518E-02	4.163E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	7.441E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-4.091E-03	1.685E-02	2.724E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	3.218E-02	5.387E-02	0.000E+00	NOT IDENT.
SC-46	-1.627E-02	2.369E-02	3.890E-02	0.000E+00	FAIL ABUN
V-48	6.863E-03	4.297E-02	7.448E-02	0.000E+00	NOT IDENT.
CR-51	3.790E-02	2.520E-01	4.528E-01	0.000E+00	NOT IDENT.
MN-52	1.644E-02	1.305E-01	2.276E-01	0.000E+00	NOT IDENT.
MN-54	-2.752E-03	2.266E-02	3.907E-02	0.000E+00	NOT IDENT.
CO-56	-1.336E-02	2.212E-02	3.669E-02	0.000E+00	FAIL ABUN
CO-57	-7.239E-03	1.662E-02	2.940E-02	0.000E+00	NOT IDENT.
CO-58	-2.280E-02	2.351E-02	3.821E-02	0.000E+00	NOT IDENT.
FE-59	-7.170E-02	5.368E-02	8.069E-02	0.000E+00	NOT IDENT.
CO-60	-1.055E-02	2.351E-02	3.739E-02	0.000E+00	NOT IDENT.
ZN-65	-4.434E-02	6.597E-02	9.141E-02	0.000E+00	NOT IDENT.
GE-68	2.651E-01	6.756E-01	1.185E+00	0.000E+00	NOT IDENT.
AS-73	1.078E-01	1.085E+00	2.035E+00	0.000E+00	NOT IDENT.
AS-74	-1.015E-02	5.815E-02	9.818E-02	0.000E+00	NOT IDENT.
SE-75	-3.972E-02	2.881E-02	4.936E-02	0.000E+00	NOT IDENT.
BR-77	-2.542E+00	7.551E+00	1.278E+01	0.000E+00	FAIL ABUN
SR-82	-1.646E-01	2.158E-01	3.575E-01	0.000E+00	NOT IDENT.
RB-83	-2.903E-02	4.566E-02	7.599E-02	0.000E+00	NOT IDENT.
RB-84	3.443E-02	4.131E-02	7.536E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	5.430E+00	9.159E+00	0.000E+00	NOT IDENT.
SR-85	0.000E+00	2.795E-02	4.715E-02	0.000E+00	NOT IDENT.
RB-86	-8.882E-03	4.347E-01	7.376E-01	0.000E+00	NOT IDENT.
Y-88	-6.932E-04	1.948E-02	3.256E-02	0.000E+00	NOT IDENT.
ZR-88	-1.078E-02	2.051E-02	3.527E-02	0.000E+00	NOT IDENT.
Y-91	-7.117E+00	1.223E+01	1.974E+01	0.000E+00	NOT IDENT.
NB-94	-9.137E-03	2.018E-02	3.466E-02	0.000E+00	NOT IDENT.
NB-95	2.008E-02	2.578E-02	4.698E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.295E-01	2.155E-01	0.000E+00	NOT IDENT.
ZR-95	2.566E-02	4.126E-02	7.493E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.205E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.095E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-3.616E+00	7.209E+00	1.221E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.088E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.886E-03	2.364E-02	3.847E-02	0.000E+00	NOT IDENT.
RH-102	5.459E-03	2.046E-02	3.597E-02	0.000E+00	NOT IDENT.
RU-103	-5.816E-03	2.515E-02	4.296E-02	0.000E+00	FAIL ABUN
RH-106	-7.796E-02	2.049E-01	3.401E-01	0.000E+00	FAIL ABUN
RU-106	-7.796E-02	2.048E-01	3.401E-01	0.000E+00	FAIL ABUN
AG-108M	2.482E-02	2.102E-02	3.872E-02	0.000E+00	NOT IDENT.
CD-109	9.586E-01	7.158E-01	1.166E+00	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	2.887E-02	4.959E-02	0.000E+00	NOT IDENT.
IN-111	-1.060E-01	8.259E-01	1.300E+00	0.000E+00	NOT IDENT.
IN-113M	6.871E-03	2.982E-02	5.305E-02	0.000E+00	NOT IDENT.
SN-113	6.871E-03	2.982E-02	5.305E-02	0.000E+00	NOT IDENT.
IN-114M	1.835E-02	1.391E-01	2.134E-01	0.000E+00	NOT IDENT.
CD-115	-1.312E+00	7.527E+00	1.284E+01	0.000E+00	NOT IDENT.
SN-117M	-1.747E-02	3.854E-02	6.714E-02	0.000E+00	NOT IDENT.
SB-122	-7.683E-01	1.370E+00	2.268E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.432E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.293E-02	1.984E-02	3.434E-02	0.000E+00	NOT IDENT.
I-124	2.222E-01	5.141E-01	7.818E-01	0.000E+00	FAIL ABUN
SB-124	1.518E-02	4.717E-02	8.313E-02	0.000E+00	FAIL ABUN
SB-125	-2.041E-02	5.949E-02	1.024E-01	0.000E+00	NOT IDENT.
TE-125M	-2.833E-01	6.020E+00	1.085E+01	0.000E+00	NOT IDENT.
I-126	6.488E-02	1.259E-01	1.921E-01	0.000E+00	NOT IDENT.
SB-126	1.831E-02	8.730E-02	1.351E-01	0.000E+00	NOT IDENT.
SN-126	1.015E-01	7.081E-02	1.156E-01	0.000E+00	NOT IDENT.
SB-127	6.260E-01	8.382E-01	1.540E+00	0.000E+00	FAIL ABUN
XE-127	1.116E-02	3.398E-02	5.529E-02	0.000E+00	NOT IDENT.
I-131	-4.175E-02	7.998E-02	1.384E-01	0.000E+00	NOT IDENT.
TE-132	3.013E-01	4.942E-01	9.154E-01	0.000E+00	NOT IDENT.
BA-133	-1.740E-03	3.371E-02	5.173E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.999E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.903E-02	3.045E-02	5.267E-02	0.000E+00	FAIL ABUN
CS-135	0.000E+00	1.056E-01	2.004E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.548E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.150E-03	6.816E-02	1.151E-01	0.000E+00	NOT IDENT.
CE-139	-9.887E-03	1.993E-02	3.456E-02	0.000E+00	NOT IDENT.
BA-140	1.165E-02	1.594E-01	2.753E-01	0.000E+00	NOT IDENT.
LA-140	-1.429E-02	5.387E-02	8.045E-02	0.000E+00	NOT IDENT.
CE-141	9.274E-03	4.155E-02	7.428E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.330E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-7.861E-02	1.325E-01	2.313E-01	0.000E+00	NOT IDENT.
PM-144	2.994E-03	2.169E-02	3.852E-02	0.000E+00	NOT IDENT.
PR-144	2.029E-01	1.470E+00	2.611E+00	0.000E+00	NOT IDENT.

PM-146	-1.117E-02	2.927E-02	5.004E-02	0.000E+00	NOT IDENT.
ND-147	5.308E-02	3.535E-01	6.138E-01	0.000E+00	FAIL ABUN
PM-149	2.570E+01	6.936E+01	1.263E+02	0.000E+00	NOT IDENT.
EU-152	2.210E-02	1.048E-01	1.110E-01	0.000E+00	FAIL ABUN
GD-153	6.518E-02	6.016E-02	9.939E-02	0.000E+00	NOT IDENT.
EU-154	-9.401E-03	7.031E-02	1.163E-01	0.000E+00	NOT IDENT.
EU-155	1.712E-02	7.136E-02	1.299E-01	0.000E+00	NOT IDENT.
TB-160	5.673E-02	8.228E-02	1.488E-01	0.000E+00	FAIL ABUN
HO-166M	1.568E-02	3.600E-02	6.491E-02	0.000E+00	FAIL ABUN
TM-171	-6.453E+00	3.228E+01	4.316E+01	0.000E+00	NOT IDENT.
LU-176	7.611E-03	1.645E-02	2.997E-02	0.000E+00	NOT IDENT.
LU-177	0.000E+00	9.792E-01	1.434E+00	0.000E+00	FAIL ABUN
LU-177M	-7.860E-02	1.181E-01	2.009E-01	0.000E+00	FAIL ABUN
HF-181	-3.570E-02	2.955E-02	4.805E-02	0.000E+00	NOT IDENT.
W-181	-6.489E-01	3.922E-01	5.686E-01	0.000E+00	NOT IDENT.
TA-182	-3.342E-02	1.229E-01	2.025E-01	0.000E+00	FAIL ABUN
RE-183	6.736E-02	7.532E-02	1.363E-01	0.000E+00	FAIL ABUN
RE-184	-1.366E-01	1.523E-01	2.674E-01	0.000E+00	NOT IDENT.
OS-185	-1.246E-02	2.480E-02	4.055E-02	0.000E+00	FAIL ABUN
RE-188	1.291E-01	1.148E-01	2.094E-01	0.000E+00	NOT IDENT.
W-188	-2.541E+00	5.642E+00	8.614E+00	0.000E+00	FAIL ABUN
IR-192	5.077E-04	2.263E-02	4.050E-02	0.000E+00	FAIL ABUN
AU-195	1.132E-01	1.569E-01	2.807E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	3.789E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-4.454E+00	5.042E+00	8.610E+00	0.000E+00	NOT IDENT.
TL-202	-6.834E-02	4.496E-02	7.207E-02	0.000E+00	NOT IDENT.
HG-203	1.667E-03	2.646E-02	4.782E-02	0.000E+00	FAIL ABUN
BI-207	-9.597E-03	3.230E-02	5.374E-02	0.000E+00	FAIL ABUN
TL-207	-2.631E-01	4.541E-01	7.896E-01	0.000E+00	FAIL ABUN
PO-209	-3.054E+00	4.247E+00	6.929E+00	0.000E+00	NOT IDENT.
BI-210	-1.488E+00	7.307E+00	1.275E+01	0.000E+00	NOT IDENT.
PB-210	-1.488E+00	7.307E+00	1.275E+01	0.000E+00	NOT IDENT.
PO-210	-1.488E+00	7.307E+00	1.275E+01	0.000E+00	NOT IDENT.
PB-211	3.881E-01	6.803E-01	1.149E+00	0.000E+00	NOT IDENT.
PO-215	-2.631E-01	4.541E-01	7.896E-01	0.000E+00	FAIL ABUN
RN-219	-6.760E-02	2.746E-01	4.774E-01	0.000E+00	NOT IDENT.
RN-220	1.479E+01	1.581E+01	2.859E+01	0.000E+00	NOT IDENT.
RA-223	-2.631E-01	4.541E-01	7.896E-01	0.000E+00	FAIL ABUN
AC-227	1.505E-01	2.494E-01	4.597E-01	0.000E+00	FAIL ABUN
TH-227	1.505E-01	2.498E-01	4.597E-01	0.000E+00	FAIL ABUN
TH-229	1.539E-02	3.425E-01	5.988E-01	0.000E+00	NOT IDENT.
PA-231	-1.250E-02	1.010E+00	1.819E+00	0.000E+00	NOT IDENT.
TH-231	-2.631E-01	4.541E-01	7.896E-01	0.000E+00	FAIL ABUN
U-231	-1.689E-01	8.745E-01	1.383E+00	0.000E+00	FAIL ABUN
PA-233	-1.319E-02	4.147E-02	7.327E-02	0.000E+00	FAIL ABUN
PA-234	-6.449E-02	1.810E-01	3.026E-01	0.000E+00	FAIL ABUN
PA-234M	3.875E+00	3.845E+00	5.236E+00	0.000E+00	FAIL ABUN
U-235	8.933E-02	1.389E-01	2.502E-01	0.000E+00	FAIL ABUN
NP-236	1.619E-03	5.522E-02	9.760E-02	0.000E+00	NOT IDENT.
NP-237	8.820E-02	1.998E-01	3.351E-01	0.000E+00	NOT IDENT.
NP-239	4.464E-02	1.228E-01	2.231E-01	0.000E+00	FAIL ABUN
AM-241	9.678E-02	1.736E-01	2.899E-01	0.000E+00	NOT IDENT.
CM-243	1.609E-02	6.418E-02	1.170E-01	0.000E+00	FAIL ABUN
AM-246	7.486E-02	7.705E-02	1.409E-01	0.000E+00	NOT IDENT.
CM-247	-1.236E-03	2.492E-02	4.373E-02	0.000E+00	NOT IDENT.
CF-249	3.266E-02	2.658E-02	4.917E-02	0.000E+00	NOT IDENT.
CF-251	4.204E-02	8.496E-02	1.515E-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]G243273001.CNF;1
Sample date        : 15-DEC-2009 12:00:00 Acquisition date : 30-DEC-2009 22:47:32
Sample ID          : G243273001 Sample quantity : 1.56780E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:02.17 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 935341 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	1582	10.67*	9.987E-01	1.777E+01	1.777E+01	9.45
BA-137M	661.65	838	89.98*	2.019E+00	5.520E-01	5.526E-01	10.57
CS-137	661.65	838	85.12*	2.019E+00	5.836E-01	5.841E-01	10.58
TL-208	277.35	-----	6.80	3.788E+00	-----	Line Not Found	-----
	510.84	94	21.60	2.461E+00	2.109E-01	2.109E-01	100.76
	583.14	423	84.20*	2.229E+00	2.695E-01	2.695E-01	17.95
	860.37	81	12.46	1.612E+00	4.846E-01	4.846E-01	63.75
BI-211	72.87	368	1.27	3.141E+00	1.103E+01	1.103E+01	31.79
	351.07	731	12.94*	3.206E+00	2.109E+00	2.109E+00	17.50
BI-212	727.18	129	11.80*	1.867E+00	6.993E-01	6.993E-01	46.07
	785.46	46	1.97	1.748E+00	1.588E+00	1.588E+00	78.33
	1620.62	-----	2.75	9.260E-01	-----	Line Not Found	-----
PB-212	74.81	368	10.70	3.141E+00	1.309E+00	1.309E+00	33.14
	77.11	568	18.00	3.428E+00	1.101E+00	1.101E+00	23.29
	87.30	-----	8.00	4.461E+00	-----	Line Not Found	-----
	238.63	1437	44.60*	4.220E+00	9.139E-01	9.139E-01	11.15
	300.09	58	3.41	3.587E+00	5.673E-01	5.673E-01	120.20
PO-212	74.81	368	10.70	3.141E+00	1.309E+00	1.309E+00	33.14
	77.11	568	18.00	3.428E+00	1.101E+00	1.101E+00	23.29
	87.30	-----	8.00	4.461E+00	-----	Line Not Found	-----
	115.19	-----	0.60	5.666E+00	-----	Line Not Found	-----
	238.63	1437	44.60*	4.220E+00	9.139E-01	9.139E-01	11.15
	300.09	58	3.41	3.587E+00	5.673E-01	5.673E-01	120.20
BI-214	609.31	510	46.30*	2.156E+00	6.121E-01	6.121E-01	17.99
	1120.29	134	15.10	1.263E+00	8.403E-01	8.403E-01	35.74
	1764.49	87	15.80	8.815E-01	7.457E-01	7.457E-01	32.08
PB-214	74.81	368	6.21	3.141E+00	2.256E+00	2.256E+00	32.65
	77.11	568	10.50	3.428E+00	1.888E+00	1.888E+00	24.51
	87.30	-----	4.67	4.461E+00	-----	Line Not Found	-----
	241.98	369	7.49	4.182E+00	1.411E+00	1.411E+00	27.21
	295.21	371	19.20	3.629E+00	6.378E-01	6.378E-01	25.24
	351.92	731	37.20*	3.206E+00	7.335E-01	7.335E-01	18.26



Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	74.81	368	6.21	3.141E+00	2.256E+00	2.256E+00	32.65
	77.11	568	10.50	3.428E+00	1.888E+00	1.888E+00	24.51
	87.30	-----	4.67	4.461E+00	-----	Line Not Found	-----
	241.98	369	7.49	4.182E+00	1.411E+00	1.411E+00	27.21
	295.21	371	19.20	3.629E+00	6.378E-01	6.378E-01	25.24
	351.92	731	37.20*	3.206E+00	7.335E-01	7.335E-01	18.26
PO-216	74.81	368	10.70	3.141E+00	1.309E+00	1.309E+00	33.14
	77.11	568	18.00	3.428E+00	1.101E+00	1.101E+00	23.29
	87.30	-----	8.00	4.461E+00	-----	Line Not Found	-----
	238.63	1437	44.60*	4.220E+00	9.139E-01	9.139E-01	11.15
	300.09	58	3.41	3.587E+00	5.673E-01	5.673E-01	120.20
PO-218	74.81	368	6.21	3.141E+00	2.256E+00	2.256E+00	32.65
	77.11	568	10.50	3.428E+00	1.888E+00	1.888E+00	24.51
	87.30	-----	4.67	4.461E+00	-----	Line Not Found	-----
	241.98	369	7.49	4.182E+00	1.411E+00	1.411E+00	27.21
	295.21	371	19.20	3.629E+00	6.378E-01	6.378E-01	25.24
	351.92	731	37.20*	3.206E+00	7.335E-01	7.335E-01	18.26
RA-224	240.98	369	3.95*	4.182E+00	2.675E+00	2.675E+00	26.62
RA-226	609.31	510	46.30*	2.156E+00	6.121E-01	6.121E-01	17.99
	1120.29	134	15.10	1.263E+00	8.403E-01	8.403E-01	35.74
	1764.49	87	15.80	8.815E-01	7.457E-01	7.457E-01	32.08
AC-228	338.32	266	11.40	3.293E+00	8.488E-01	8.488E-01	52.47
	911.07	285	27.70*	1.532E+00	8.035E-01	8.035E-01	21.59
	969.11	155	16.60	1.447E+00	7.738E-01	7.738E-01	38.09
RA-228	338.32	266	11.40	3.293E+00	8.488E-01	8.488E-01	52.47
	911.07	285	27.70*	1.532E+00	8.035E-01	8.035E-01	21.59
	969.11	155	16.60	1.447E+00	7.738E-01	7.738E-01	38.09
TH-228	74.81	368	10.70	3.141E+00	1.309E+00	1.330E+00	31.81
	77.11	568	18.00	3.428E+00	1.101E+00	1.118E+00	23.29
	87.30	-----	8.00	4.461E+00	-----	Line Not Found	-----
	238.63	1437	44.60*	4.220E+00	9.139E-01	9.281E-01	11.15
	300.09	58	3.41	3.587E+00	5.673E-01	5.761E-01	133.62
TH-230	609.31	510	46.30*	2.156E+00	6.121E-01	6.121E-01	17.99
	1120.29	134	15.10	1.263E+00	8.403E-01	8.403E-01	35.74
	1764.49	87	15.80	8.815E-01	7.457E-01	7.457E-01	32.08
TH-232	338.32	266	11.40	3.293E+00	8.488E-01	8.488E-01	33.54
	911.07	285	27.70*	1.532E+00	8.035E-01	8.035E-01	21.59
	969.11	155	16.60	1.447E+00	7.738E-01	7.738E-01	38.09
TH-234	63.29	44	3.80*	1.689E+00	8.245E-01	8.245E-01	224.05
	92.38	348	5.41	4.842E+00	1.592E+00	1.592E+00	44.46
U-234	609.31	510	46.30*	2.156E+00	6.121E-01	6.121E-01	17.99
	1120.29	134	15.10	1.263E+00	8.403E-01	8.403E-01	35.74
	1764.49	87	15.80	8.815E-01	7.457E-01	7.457E-01	32.08
U-238	63.29	44	3.80*	1.689E+00	8.245E-01	8.245E-01	224.05
	92.38	348	5.41	4.842E+00	1.592E+00	1.592E+00	41.53
AM-243	74.67	368	66.00*	3.141E+00	2.123E-01	2.123E-01	31.79
	86.72	-----	0.34	4.414E+00	-----	Line Not Found	-----
	117.66	-----	0.55	5.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.637E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
ANH-511	511.00	94	100.00*	2.461E+00	4.556E-02	4.556E-02	100.42

Flag: "\*" = Keyline

Total number of lines in spectrum 34  
Number of unidentified lines 5  
Number of lines tentatively identified by NID 29 85.29%

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	1.777E+01	1.777E+01	0.168E+01	9.45	
BA-137M	30.17Y	1.00	5.520E-01	5.526E-01	0.584E-01	10.57	
CS-137	30.17Y	1.00	5.836E-01	5.841E-01	0.618E-01	10.58	
TL-208	1.41E+10Y	1.00	2.695E-01	2.695E-01	0.484E-01	17.95	
BI-211	7.04E+08Y	1.00	2.109E+00	2.109E+00	0.369E+00	17.50	
BI-212	1.41E+10Y	1.00	6.993E-01	6.993E-01	3.222E-01	46.07	
PB-212	1.41E+10Y	1.00	9.139E-01	9.139E-01	1.019E-01	11.15	
PO-212	1.41E+10Y	1.00	9.139E-01	9.139E-01	1.019E-01	11.15	
BI-214	1600.00Y	1.00	6.121E-01	6.121E-01	1.101E-01	17.99	
PB-214	1600.00Y	1.00	7.335E-01	7.335E-01	1.339E-01	18.26	
PO-214	1600.00Y	1.00	7.335E-01	7.335E-01	1.339E-01	18.26	
PO-216	1.41E+10Y	1.00	9.139E-01	9.139E-01	1.019E-01	11.15	
PO-218	1600.00Y	1.00	7.335E-01	7.335E-01	1.339E-01	18.26	
RA-224	1.41E+10Y	1.00	2.675E+00	2.675E+00	0.712E+00	26.62	
RA-226	1600.00Y	1.00	6.121E-01	6.121E-01	1.101E-01	17.99	
AC-228	1.41E+10Y	1.00	8.035E-01	8.035E-01	1.735E-01	21.59	
RA-228	1.41E+10Y	1.00	8.035E-01	8.035E-01	1.735E-01	21.59	
TH-228	1.91Y	1.02	9.139E-01	9.281E-01	1.035E-01	11.15	
TH-230	4.47E+09Y	1.00	6.121E-01	6.121E-01	1.101E-01	17.99	
TH-232	1.41E+10Y	1.00	8.035E-01	8.035E-01	1.735E-01	21.59	
TH-234	4.47E+09Y	1.00	8.245E-01	8.245E-01	18.47E-01	224.05	
U-234	4.47E+09Y	1.00	6.121E-01	6.121E-01	1.101E-01	17.99	
U-238	4.47E+09Y	1.00	8.245E-01	8.245E-01	18.47E-01	224.05	
AM-243	7380.00Y	1.00	2.123E-01	2.123E-01	0.675E-01	31.79	
ANH-511	1.00E+09Y	1.00	4.556E-02	4.556E-02	4.575E-02	100.42	

Total Activity : 3.728E+01 3.730E+01

Grand Total Activity : 3.728E+01 3.730E+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	185.26	319	666	1.30	370.91	366	11	2.21E-02	35.9	4.99E+00	T
0	208.28	219	446	1.57	416.94	413	10	1.52E-02	38.4	4.63E+00	T
0	687.44	20	87	0.94	1374.91	1368	9	1.42E-03	****	1.96E+00	
0	795.12	32	84	1.17	1590.21	1585	8	2.21E-03	****	1.73E+00	T
1	964.37	65	94	2.11	1928.62	1923	26	4.51E-03	58.9	1.45E+00	T
0	1001.00	38	68	0.99	2001.86	1994	13	2.65E-03	****	1.40E+00	T
0	1237.93	57	88	2.24	2475.64	2470	11	3.94E-03	69.4	1.15E+00	T
0	1377.22	47	52	1.80	2754.18	2745	20	3.29E-03	78.9	1.05E+00	T
0	1589.04	24	28	3.26	3177.79	3169	14	1.69E-03	****	9.38E-01	
0	1630.37	47	0	0.79	3260.45	3252	18	3.26E-03	29.2	9.22E-01	
0	1848.16	14	10	1.54	3696.01	3691	8	9.98E-04	92.3	8.64E-01	
0	1863.29	8	8	0.56	3726.28	3719	9	5.30E-04	****	8.61E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243273001.CNF;1 *
* Acquisition date   : 30-DEC-2009 22:47:32  Detector SN#      :             *
* Detector ID        : GAM15                  Sensitivity       : 5.00000      *
* Geometry           : CAN                    Energy tolerance: 1.50000      *
* Elapsed live time  : 0 04:00:00.00          Abundance limit  : 75.00000      *
* Elapsed real time  : 0 04:00:02.17          Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 15-DEC-2009 12:00:00  Nuclide Library   : SOLID        *
* Sample ID          : G243273001            Analyst initials: MXR1         *
* Batch Number       : 935341                Sample Quantity  : 1.56780E+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	1.777E+01	1.680E+00	3.587E-01	2.742E-02	49.549
BA-137M	5.526E-01	5.838E-02	3.705E-02	1.864E-03	14.913
CS-137	5.841E-01	6.180E-02	3.917E-02	1.982E-03	14.913
TL-208	2.695E-01	4.839E-02	3.636E-02	2.315E-03	7.413
BI-211	2.109E+00	3.690E-01	2.238E-01	1.538E-02	9.421
BI-212	6.993E-01	3.222E-01	2.556E-01	1.990E-02	2.736
PB-212	9.139E-01	1.019E-01	5.948E-02	4.923E-03	15.365
PO-212	9.139E-01	1.019E-01	5.948E-02	4.923E-03	15.365
BI-214	6.121E-01	1.101E-01	7.181E-02	5.331E-03	8.525
PB-214	7.335E-01	1.339E-01	7.801E-02	6.725E-03	9.403
PO-214	7.335E-01	1.339E-01	7.801E-02	6.725E-03	9.403
PO-216	9.139E-01	1.019E-01	5.948E-02	4.923E-03	15.365
PO-218	7.335E-01	1.339E-01	7.801E-02	6.725E-03	9.403
RA-224	2.675E+00	7.122E-01	6.767E-01	4.710E-02	3.953
RA-226	6.121E-01	1.101E-01	7.181E-02	5.331E-03	8.525
AC-228	8.035E-01	1.735E-01	1.272E-01	1.414E-02	6.316
RA-228	8.035E-01	1.735E-01	1.272E-01	1.414E-02	6.316
TH-228	9.281E-01	1.035E-01	6.040E-02	5.000E-03	15.365

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	6.121E-01	1.101E-01	7.180E-02	5.331E-03	8.525
TH-232	8.035E-01	1.735E-01	1.272E-01	1.414E-02	6.316
TH-234	8.245E-01	1.847E+00	1.924E+00	3.798E-01	0.428
U-234	6.121E-01	1.101E-01	7.180E-02	5.331E-03	8.525
U-238	8.245E-01	1.847E+00	1.924E+00	3.798E-01	0.428
AM-243	2.123E-01	6.749E-02	6.817E-02	7.576E-03	3.114
ANH-511	4.556E-02	4.575E-02	3.227E-02	1.822E-03	1.412

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.872E-01		2.313E-01	3.987E-01	2.657E-02	0.720
NA-22	-3.366E-03		2.569E-02	4.110E-02	2.821E-03	-0.082
NA-24	1.885E-01		3.796E-01	Half-Life too short		
AL-26	-4.091E-03		1.719E-02	2.717E-02	1.626E-03	-0.151
TI-44	1.124E-01		3.284E-02	4.938E-02	5.491E-03	2.275
SC-46	-1.627E-02		2.418E-02	3.801E-02	3.189E-03	-0.428
V-48	6.863E-03		4.385E-02	7.299E-02	5.766E-03	0.094
CR-51	3.790E-02		2.571E-01	4.303E-01	3.103E-02	0.088
MN-52	1.644E-02		1.331E-01	2.254E-01	1.672E-02	0.073
MN-54	-2.752E-03		2.312E-02	3.811E-02	2.857E-03	-0.072
CO-56	-1.336E-02		2.257E-02	3.580E-02	2.752E-03	-0.373
CO-57	-7.239E-03		1.696E-02	2.725E-02	1.959E-03	-0.266
CO-58	-2.280E-02		2.399E-02	3.724E-02	2.660E-03	-0.612
FE-59	-7.170E-02		5.478E-02	7.932E-02	6.003E-03	-0.904
CO-60	-1.055E-02		2.399E-02	3.696E-02	2.790E-03	-0.285
ZN-65	-4.434E-02		6.732E-02	8.990E-02	5.840E-03	-0.493
GE-68	2.651E-01		6.894E-01	1.164E+00	8.090E-02	0.228
AS-73	1.078E-01		1.107E+00	1.848E+00	2.525E-01	0.058
AS-74	-1.015E-02		5.934E-02	9.488E-02	5.101E-03	-0.107
SE-75	-3.972E-02		2.940E-02	4.667E-02	3.264E-03	-0.851
BR-77	-2.542E+00		7.705E+00	1.231E+01	6.923E-01	-0.207
SR-82	-1.646E-01		2.202E-01	3.480E-01	2.297E-02	-0.473
RB-83	-2.903E-02		4.659E-02	7.316E-02	4.117E-03	-0.397
RB-84	3.443E-02		4.215E-02	7.362E-02	6.079E-03	0.468
KR-85	1.149E+01		5.541E+00	8.816E+00	4.973E-01	1.304
SR-85	5.916E-02		2.852E-02	4.538E-02	2.560E-03	1.304
RB-86	-8.882E-03		4.436E-01	7.247E-01	5.042E-02	-0.012
Y-88	-6.932E-04		1.988E-02	3.249E-02	1.898E-03	-0.021
ZR-88	-1.078E-02		2.093E-02	3.370E-02	1.911E-03	-0.320
Y-91	-7.117E+00		1.248E+01	1.946E+01	1.177E+00	-0.366
NB-94	-9.137E-03		2.059E-02	3.365E-02	1.872E-03	-0.272
NB-95	2.008E-02		2.631E-02	4.571E-02	2.946E-03	0.439
NB-95M	8.465E-01		1.322E-01	2.032E-01	1.717E-02	4.166
ZR-95	2.566E-02		4.210E-02	7.289E-02	5.434E-03	0.352
NB-97	3.893E-01		6.146E-02	Half-Life too short		
ZR-97	6.114E+00		1.069E+00	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
MO-99	-3.616E+00		7.356E+00	1.187E+01	1.650E+00	-0.305
TC-99M	-4.435E+10		3.617E+10	Half-Life too short		
RH-101	-6.886E-03		2.413E-02	3.610E-02	2.463E-03	-0.191
RH-102	5.459E-03		2.088E-02	3.455E-02	1.969E-03	0.158
RU-103	-5.816E-03		2.567E-02	4.131E-02	5.199E-03	-0.141
RH-106	-7.796E-02		2.091E-01	3.291E-01	3.777E-02	-0.237
RU-106	-7.796E-02		2.090E-01	3.291E-01	1.729E-02	-0.237
AG-108M	2.482E-02		2.145E-02	3.710E-02	2.307E-03	0.669
CD-109	9.586E-01		7.304E-01	1.072E+00	1.240E-01	0.894
AG-110M	7.441E-02		2.946E-02	4.805E-02	2.634E-03	1.549
IN-111	-1.060E-01		8.427E-01	1.226E+00	8.539E-02	-0.086
IN-113M	6.871E-03		3.043E-02	5.069E-02	3.075E-03	0.136
SN-113	6.871E-03		3.043E-02	5.069E-02	3.075E-03	0.136
IN-114M	1.835E-02		1.420E-01	2.000E-01	1.356E-02	0.092
CD-115	-1.312E+00		7.681E+00	1.236E+01	6.935E-01	-0.106
SN-117M	-1.747E-02		3.933E-02	6.265E-02	4.189E-03	-0.279
SB-122	-7.683E-01		1.398E+00	2.188E+00	1.204E-01	-0.351
I-123	-4.190E+00		3.281E+00	Half-Life too short		
TE-123M	-1.293E-02		2.025E-02	3.204E-02	2.163E-03	-0.403
I-124	2.222E-01		5.246E-01	7.558E-01	4.040E-02	0.294
SB-124	1.518E-02		4.813E-02	8.275E-02	5.811E-03	0.183
SB-125	-2.041E-02		6.070E-02	9.806E-02	5.844E-03	-0.208
TE-125M	-2.833E-01		6.143E+00	1.003E+01	9.969E-01	-0.028
I-126	6.488E-02		1.285E-01	1.862E-01	9.476E-03	0.349
SB-126	1.831E-02		8.908E-02	1.313E-01	7.620E-03	0.140
SN-126	1.015E-01		7.225E-02	1.062E-01	1.226E-02	0.956
SB-127	6.260E-01		8.553E-01	1.494E+00	1.388E-01	0.419
XE-127	1.116E-02		3.468E-02	5.191E-02	3.554E-03	0.215
I-131	-4.175E-02		8.161E-02	1.320E-01	8.906E-03	-0.316
TE-132	3.013E-01		5.043E-01	8.623E-01	1.288E-01	0.349
BA-133	-1.740E-03		3.440E-02	4.930E-02	5.805E-03	-0.035
I-133	2.878E-03		2.551E-03	Half-Life too short		
CS-134	2.903E-02	+	3.107E-02	5.131E-02	3.576E-03	0.566
CS-135	2.121E-01		1.077E-01	1.895E-01	1.620E-02	1.119
I-135	6.812E+08		4.361E+09	Half-Life too short		
CS-136	-8.150E-03		6.955E-02	1.130E-01	8.708E-03	-0.072
CE-139	-9.887E-03		2.034E-02	3.228E-02	2.147E-03	-0.306
BA-140	1.165E-02		1.626E-01	2.653E-01	8.619E-02	0.044
LA-140	-1.429E-02		5.497E-02	7.994E-02	5.572E-03	-0.179
CE-141	9.274E-03		4.240E-02	6.916E-02	4.827E-03	0.134
CE-143	7.332E-04	+	1.189E-04	Half-Life too short		
CE-144	-7.861E-02		1.352E-01	2.148E-01	3.158E-02	-0.366
PM-144	2.994E-03		2.213E-02	3.739E-02	2.051E-03	0.080
PR-144	2.029E-01		1.500E+00	2.534E+00	1.389E-01	0.080
PM-146	-1.117E-02		2.986E-02	4.800E-02	4.111E-03	-0.233
ND-147	5.308E-02		3.607E-01	5.913E-01	7.946E-02	0.090
PM-149	2.570E+01		7.078E+01	1.197E+02	1.753E+01	0.215
EU-152	2.210E-02		1.069E-01	1.057E-01	7.447E-03	0.209

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	6.518E-02		6.138E-02	9.160E-02	8.790E-03	0.712
EU-154	-9.401E-03		7.174E-02	1.148E-01	1.151E-02	-0.082
EU-155	1.712E-02		7.282E-02	1.200E-01	1.039E-02	0.143
TB-160	5.673E-02		8.396E-02	1.454E-01	1.195E-02	0.390
HO-166M	1.568E-02		3.673E-02	6.304E-02	3.583E-03	0.249
TM-171	-6.453E+00		3.294E+01	3.941E+01	4.532E+00	-0.164
LU-176	7.611E-03		1.679E-02	2.845E-02	1.917E-03	0.267
LU-177	2.565E+00	+	9.992E-01	1.347E+00	9.258E-02	1.903
LU-177M	-7.860E-02		1.205E-01	1.922E-01	1.096E-02	-0.409
HF-181	-3.570E-02		3.015E-02	4.616E-02	2.628E-03	-0.773
W-181	-6.489E-01		4.002E-01	5.189E-01	6.039E-02	-1.251
TA-182	-3.342E-02		1.254E-01	1.997E-01	1.245E-02	-0.167
RE-183	6.736E-02		7.686E-02	1.272E-01	8.480E-03	0.529
RE-184	-1.366E-01		1.554E-01	2.525E-01	1.758E-02	-0.541
OS-185	-1.246E-02		2.531E-02	3.928E-02	2.012E-03	-0.317
RE-188	1.291E-01		1.171E-01	1.952E-01	1.310E-02	0.661
W-188	-2.541E+00		5.757E+00	8.165E+00	5.588E-01	-0.311
IR-192	5.077E-04		2.309E-02	3.848E-02	2.571E-03	0.013
AU-195	1.132E-01		1.601E-01	2.588E-01	2.426E-02	0.437
TL-200	1.544E-04		1.933E-04	Half-Life too short		
TL-201	-4.454E+00		5.145E+00	8.045E+00	5.354E-01	-0.554
TL-202	-6.834E-02		4.588E-02	6.907E-02	3.947E-03	-0.989
HG-203	1.667E-03		2.700E-02	4.528E-02	3.261E-03	0.037
BI-207	-9.597E-03		3.296E-02	5.278E-02	3.750E-03	-0.182
TL-207	-2.631E-01		4.634E-01	7.506E-01	1.262E-01	-0.351
PO-209	-3.054E+00		4.334E+00	6.773E+00	5.765E-01	-0.451
BI-210	-1.488E+00		7.456E+00	1.154E+01	1.199E+00	-0.129
PB-210	-1.488E+00		7.456E+00	1.154E+01	1.199E+00	-0.129
PO-210	-1.488E+00		7.456E+00	1.154E+01	1.109E+00	-0.129
PB-211	3.881E-01		6.942E-01	1.099E+00	6.851E-01	0.353
PO-215	-2.631E-01		4.634E-01	7.506E-01	1.262E-01	-0.351
RN-219	-6.760E-02		2.802E-01	4.565E-01	6.189E-02	-0.148
RN-220	1.479E+01		1.613E+01	2.757E+01	1.530E+00	0.537
RA-223	-2.631E-01		4.634E-01	7.506E-01	1.262E-01	-0.351
AC-227	1.505E-01		2.545E-01	4.343E-01	6.288E-02	0.347
TH-227	1.505E-01		2.549E-01	4.343E-01	7.526E-02	0.347
TH-229	1.539E-02		3.495E-01	5.616E-01	3.818E-02	0.027
PA-231	-1.250E-02		1.031E+00	1.723E+00	2.458E-01	-0.007
TH-231	-2.631E-01		4.634E-01	7.506E-01	1.262E-01	-0.351
U-231	-1.689E-01		8.924E-01	1.274E+00	1.256E-01	-0.133
PA-233	-1.319E-02		4.231E-02	6.958E-02	4.877E-03	-0.190
PA-234	-6.449E-02		1.847E-01	2.962E-01	5.502E-02	-0.218
PA-234M	3.875E+00	+	3.923E+00	5.134E+00	4.732E-01	0.755
U-235	8.933E-02		1.418E-01	2.329E-01	3.886E-02	0.384
NP-236	1.619E-03		5.635E-02	9.109E-02	6.082E-03	0.018
NP-237	8.820E-02		2.039E-01	3.080E-01	7.269E-02	0.286
NP-239	4.464E-02		1.253E-01	2.066E-01	1.553E-02	0.216
AM-241	9.678E-02		1.771E-01	2.640E-01	3.359E-02	0.367



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.609E-02		6.549E-02	1.080E-01	9.428E-03	0.149
AM-246	7.486E-02		7.863E-02	1.385E-01	9.596E-03	0.541
CM-247	-1.236E-03		2.543E-02	4.181E-02	2.378E-03	-0.030
CF-249	3.266E-02		2.712E-02	4.697E-02	2.693E-03	0.695
CF-251	4.204E-02		8.670E-02	1.417E-01	9.499E-03	0.297

# VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G243273001
* Acquisition date   : 30-DEC-2009 22:47:32 Detector SN#      :
* Detector ID        : GAM15 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 04:00:02.17 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 15-DEC-2009 12:00:00 Nuclide Library : SOLID
* Sample ID          : G243273001 Analyst initials: MXR1
* Batch Number       : 935341 Sample Quantity : 1.5678E+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	1.777E+01	1.647E+00	1.811E-01	8.401E-01
BA-137M	5.526E-01	5.722E-02	1.913E-02	2.919E-02
CS-137	5.841E-01	6.056E-02	2.022E-02	3.090E-02
TL-208	2.695E-01	4.742E-02	1.883E-02	2.419E-02
BI-211	2.109E+00	3.616E-01	1.175E-01	1.845E-01
BI-212	6.993E-01	3.157E-01	1.316E-01	1.611E-01
PB-212	9.139E-01	9.989E-02	3.155E-02	5.097E-02
PO-212	9.139E-01	9.989E-02	3.155E-02	5.097E-02
BI-214	6.121E-01	1.079E-01	3.715E-02	5.506E-02
PB-214	7.335E-01	1.313E-01	4.097E-02	6.697E-02
PO-214	7.335E-01	1.313E-01	4.097E-02	6.697E-02
PO-216	9.139E-01	9.989E-02	3.155E-02	5.097E-02
PO-218	7.335E-01	1.313E-01	4.097E-02	6.697E-02
RA-224	2.675E+00	6.980E-01	3.589E-01	3.561E-01
RA-226	6.121E-01	1.079E-01	3.715E-02	5.506E-02
AC-228	8.035E-01	1.700E-01	6.509E-02	8.675E-02
RA-228	8.035E-01	1.700E-01	6.509E-02	8.675E-02
TH-228	9.281E-01	1.014E-01	3.205E-02	5.176E-02
TH-230	6.121E-01	1.079E-01	3.715E-02	5.506E-02
TH-232	8.035E-01	1.700E-01	6.509E-02	8.675E-02
TH-234	8.245E-01	1.810E+00	1.056E+00	9.237E-01
U-234	6.121E-01	1.079E-01	3.715E-02	5.506E-02
U-238	8.245E-01	1.810E+00	1.056E+00	9.237E-01
AM-243	2.123E-01	6.614E-02	3.725E-02	3.375E-02
ANH-511	4.556E-02	4.484E-02	1.678E-02	2.288E-02

### ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
BE-7	2.872E-01	2.266E-01	2.076E-01	1.156E-01 NOT IDENT.
NA-22	-3.366E-03	2.518E-02	2.083E-02	1.284E-02 NOT IDENT.

NA-24	1.885E+05	7.441E+05	0.000E+00	3.796E+05	SHORT HLIF
AL-26	-4.091E-03	1.685E-02	1.363E-02	8.594E-03	NOT IDENT.
TI-44	1.124E-01	3.218E-02	2.695E-02	1.642E-02	NOT IDENT.
SC-46	-1.627E-02	2.369E-02	1.946E-02	1.209E-02	FAIL ABUN
V-48	6.863E-03	4.297E-02	3.726E-02	2.193E-02	NOT IDENT.
CR-51	3.790E-02	2.520E-01	2.265E-01	1.286E-01	NOT IDENT.
MN-52	1.644E-02	1.305E-01	1.139E-01	6.657E-02	NOT IDENT.
MN-54	-2.752E-03	2.266E-02	1.955E-02	1.156E-02	NOT IDENT.
CO-56	-1.336E-02	2.212E-02	1.835E-02	1.129E-02	FAIL ABUN
CO-57	-7.239E-03	1.662E-02	1.471E-02	8.479E-03	NOT IDENT.
CO-58	-2.280E-02	2.351E-02	1.912E-02	1.199E-02	NOT IDENT.
FE-59	-7.170E-02	5.368E-02	4.037E-02	2.739E-02	NOT IDENT.
CO-60	-1.055E-02	2.351E-02	1.871E-02	1.199E-02	NOT IDENT.
ZN-65	-4.434E-02	6.597E-02	4.573E-02	3.366E-02	NOT IDENT.
GE-68	2.651E-01	6.756E-01	5.928E-01	3.447E-01	NOT IDENT.
AS-73	1.078E-01	1.085E+00	1.018E+00	5.535E-01	NOT IDENT.
AS-74	-1.015E-02	5.815E-02	4.912E-02	2.967E-02	NOT IDENT.
SE-75	-3.972E-02	2.881E-02	2.469E-02	1.470E-02	NOT IDENT.
BR-77	-2.542E+00	7.551E+00	6.394E+00	3.853E+00	FAIL ABUN
SR-82	-1.646E-01	2.158E-01	1.788E-01	1.101E-01	NOT IDENT.
RB-83	-2.903E-02	4.566E-02	3.802E-02	2.330E-02	NOT IDENT.
RB-84	3.443E-02	4.131E-02	3.770E-02	2.108E-02	NOT IDENT.
KR-85	1.149E+01	5.430E+00	4.582E+00	2.770E+00	NOT IDENT.
SR-85	5.916E-02	2.795E-02	2.359E-02	1.426E-02	NOT IDENT.
RB-86	-8.882E-03	4.347E-01	3.690E-01	2.218E-01	NOT IDENT.
Y-88	-6.932E-04	1.948E-02	1.629E-02	9.941E-03	NOT IDENT.
ZR-88	-1.078E-02	2.051E-02	1.765E-02	1.046E-02	NOT IDENT.
Y-91	-7.117E+00	1.223E+01	9.876E+00	6.238E+00	NOT IDENT.
NB-94	-9.137E-03	2.018E-02	1.734E-02	1.030E-02	NOT IDENT.
NB-95	2.008E-02	2.578E-02	2.350E-02	1.315E-02	NOT IDENT.
NB-95M	8.465E-01	1.295E-01	1.078E-01	6.609E-02	NOT IDENT.
ZR-95	2.566E-02	4.126E-02	3.749E-02	2.105E-02	NOT IDENT.
NB-97	3.893E+05	1.205E+05	0.000E+00	6.146E+04	SHORT HLIF
ZR-97	6.114E+06	2.095E+06	0.000E+00	1.069E+06	SHORT HLIF
MO-99	-3.616E+00	7.209E+00	6.109E+00	3.678E+00	NOT IDENT.
TC-99M	-4.435E+16	7.088E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.886E-03	2.364E-02	1.925E-02	1.206E-02	NOT IDENT.
RH-102	5.459E-03	2.046E-02	1.800E-02	1.044E-02	NOT IDENT.
RU-103	-5.816E-03	2.515E-02	2.149E-02	1.283E-02	FAIL ABUN
RH-106	-7.796E-02	2.049E-01	1.701E-01	1.046E-01	FAIL ABUN
RU-106	-7.796E-02	2.048E-01	1.701E-01	1.045E-01	FAIL ABUN
AG-108M	2.482E-02	2.102E-02	1.937E-02	1.072E-02	NOT IDENT.
CD-109	9.586E-01	7.158E-01	5.835E-01	3.652E-01	NOT IDENT.
AG-110M	7.441E-02	2.887E-02	2.481E-02	1.473E-02	NOT IDENT.
IN-111	-1.060E-01	8.259E-01	6.502E-01	4.214E-01	NOT IDENT.
IN-113M	6.871E-03	2.982E-02	2.654E-02	1.521E-02	NOT IDENT.
SN-113	6.871E-03	2.982E-02	2.654E-02	1.521E-02	NOT IDENT.
IN-114M	1.835E-02	1.391E-01	1.068E-01	7.099E-02	NOT IDENT.
CD-115	-1.312E+00	7.527E+00	6.422E+00	3.840E+00	NOT IDENT.
SN-117M	-1.747E-02	3.854E-02	3.359E-02	1.966E-02	NOT IDENT.
SB-122	-7.683E-01	1.370E+00	1.135E+00	6.991E-01	NOT IDENT.
I-123	-4.190E+06	6.432E+06	0.000E+00	3.281E+06	SHORT HLIF
TE-123M	-1.293E-02	1.984E-02	1.718E-02	1.012E-02	NOT IDENT.
I-124	2.222E-01	5.141E-01	3.911E-01	2.623E-01	FAIL ABUN
SB-124	1.518E-02	4.717E-02	4.159E-02	2.407E-02	FAIL ABUN
SB-125	-2.041E-02	5.949E-02	5.122E-02	3.035E-02	NOT IDENT.
TE-125M	-2.833E-01	6.020E+00	5.429E+00	3.072E+00	NOT IDENT.
I-126	6.488E-02	1.259E-01	9.609E-02	6.425E-02	NOT IDENT.
SB-126	1.831E-02	8.730E-02	6.760E-02	4.454E-02	NOT IDENT.
SN-126	1.015E-01	7.081E-02	5.781E-02	3.613E-02	NOT IDENT.
SB-127	6.260E-01	8.382E-01	7.706E-01	4.276E-01	FAIL ABUN
XE-127	1.116E-02	3.398E-02	2.766E-02	1.734E-02	NOT IDENT.
I-131	-4.175E-02	7.998E-02	6.923E-02	4.080E-02	NOT IDENT.
TE-132	3.013E-01	4.942E-01	4.580E-01	2.522E-01	NOT IDENT.
BA-133	-1.740E-03	3.371E-02	2.588E-02	1.720E-02	NOT IDENT.
I-133	2.878E+03	4.999E+03	0.000E+00	2.551E+03	SHORT HLIF
CS-134	2.903E-02	3.045E-02	2.635E-02	1.553E-02	FAIL ABUN
CS-135	2.121E-01	1.056E-01	1.002E-01	5.387E-02	NOT IDENT.
I-135	6.812E+14	8.548E+15	0.000E+00	4.361E+15	SHORT HLIF
CS-136	-8.150E-03	6.816E-02	5.759E-02	3.477E-02	NOT IDENT.
CE-139	-9.887E-03	1.993E-02	1.729E-02	1.017E-02	NOT IDENT.
BA-140	1.165E-02	1.594E-01	1.377E-01	8.132E-02	NOT IDENT.
LA-140	-1.429E-02	5.387E-02	4.025E-02	2.748E-02	NOT IDENT.
CE-141	9.274E-03	4.155E-02	3.716E-02	2.120E-02	NOT IDENT.
CE-143	7.332E+02	2.330E+02	0.000E+00	1.189E+02	SHORT HLIF
CE-144	-7.861E-02	1.325E-01	1.157E-01	6.759E-02	NOT IDENT.
PM-144	2.994E-03	2.169E-02	1.927E-02	1.107E-02	NOT IDENT.
PR-144	2.029E-01	1.470E+00	1.306E+00	7.501E-01	NOT IDENT.

PM-146	-1.117E-02	2.927E-02	2.503E-02	1.493E-02	NOT IDENT.
ND-147	5.308E-02	3.535E-01	3.071E-01	1.803E-01	FAIL ABUN
PM-149	2.570E+01	6.936E+01	6.319E+01	3.539E+01	NOT IDENT.
EU-152	2.210E-02	1.048E-01	5.553E-02	5.347E-02	FAIL ABUN
GD-153	6.518E-02	6.016E-02	4.972E-02	3.069E-02	NOT IDENT.
EU-154	-9.401E-03	7.031E-02	5.817E-02	3.587E-02	NOT IDENT.
EU-155	1.712E-02	7.136E-02	6.501E-02	3.641E-02	NOT IDENT.
TB-160	5.673E-02	8.228E-02	7.445E-02	4.198E-02	FAIL ABUN
HO-166M	1.568E-02	3.600E-02	3.248E-02	1.837E-02	FAIL ABUN
TM-171	-6.453E+00	3.228E+01	2.159E+01	1.647E+01	NOT IDENT.
LU-176	7.611E-03	1.645E-02	1.500E-02	8.394E-03	NOT IDENT.
LU-177	2.565E+00	9.792E-01	7.173E-01	4.996E-01	FAIL ABUN
LU-177M	-7.860E-02	1.181E-01	1.005E-01	6.025E-02	FAIL ABUN
HF-181	-3.570E-02	2.955E-02	2.404E-02	1.508E-02	NOT IDENT.
W-181	-6.489E-01	3.922E-01	2.845E-01	2.001E-01	NOT IDENT.
TA-182	-3.342E-02	1.229E-01	1.013E-01	6.269E-02	FAIL ABUN
RE-183	6.736E-02	7.532E-02	6.817E-02	3.843E-02	FAIL ABUN
RE-184	-1.366E-01	1.523E-01	1.338E-01	7.770E-02	NOT IDENT.
OS-185	-1.246E-02	2.480E-02	2.029E-02	1.266E-02	FAIL ABUN
RE-188	1.291E-01	1.148E-01	1.047E-01	5.855E-02	NOT IDENT.
W-188	-2.541E+00	5.642E+00	4.310E+00	2.878E+00	FAIL ABUN
IR-192	5.077E-04	2.263E-02	2.026E-02	1.155E-02	FAIL ABUN
AU-195	1.132E-01	1.569E-01	1.404E-01	8.007E-02	FAIL ABUN
TL-200	1.544E+02	3.789E+02	0.000E+00	1.933E+02	SHORT HLIF
TL-201	-4.454E+00	5.042E+00	4.307E+00	2.572E+00	NOT IDENT.
TL-202	-6.834E-02	4.496E-02	3.606E-02	2.294E-02	NOT IDENT.
HG-203	1.667E-03	2.646E-02	2.393E-02	1.350E-02	FAIL ABUN
BI-207	-9.597E-03	3.230E-02	2.688E-02	1.648E-02	FAIL ABUN
TL-207	-2.631E-01	4.541E-01	3.950E-01	2.317E-01	FAIL ABUN
PO-209	-3.054E+00	4.247E+00	3.467E+00	2.167E+00	NOT IDENT.
BI-210	-1.488E+00	7.307E+00	6.381E+00	3.728E+00	NOT IDENT.
PB-210	-1.488E+00	7.307E+00	6.381E+00	3.728E+00	NOT IDENT.
PO-210	-1.488E+00	7.307E+00	6.381E+00	3.728E+00	NOT IDENT.
PB-211	3.881E-01	6.803E-01	5.750E-01	3.471E-01	NOT IDENT.
PO-215	-2.631E-01	4.541E-01	3.950E-01	2.317E-01	FAIL ABUN
RN-219	-6.760E-02	2.746E-01	2.389E-01	1.401E-01	NOT IDENT.
RN-220	1.479E+01	1.581E+01	1.430E+01	8.066E+00	NOT IDENT.
RA-223	-2.631E-01	4.541E-01	3.950E-01	2.317E-01	FAIL ABUN
AC-227	1.505E-01	2.494E-01	2.300E-01	1.273E-01	FAIL ABUN
TH-227	1.505E-01	2.498E-01	2.300E-01	1.275E-01	FAIL ABUN
TH-229	1.539E-02	3.425E-01	2.996E-01	1.748E-01	NOT IDENT.
PA-231	-1.250E-02	1.010E+00	9.100E-01	5.154E-01	NOT IDENT.
TH-231	-2.631E-01	4.541E-01	3.950E-01	2.317E-01	FAIL ABUN
U-231	-1.689E-01	8.745E-01	6.919E-01	4.462E-01	FAIL ABUN
PA-233	-1.319E-02	4.147E-02	3.666E-02	2.116E-02	FAIL ABUN
PA-234	-6.449E-02	1.810E-01	1.514E-01	9.235E-02	FAIL ABUN
PA-234M	3.875E+00	3.845E+00	2.620E+00	1.962E+00	FAIL ABUN
U-235	8.933E-02	1.389E-01	1.252E-01	7.088E-02	FAIL ABUN
NP-236	1.619E-03	5.522E-02	4.883E-02	2.817E-02	NOT IDENT.
NP-237	8.820E-02	1.998E-01	1.677E-01	1.019E-01	NOT IDENT.
NP-239	4.464E-02	1.228E-01	1.116E-01	6.263E-02	FAIL ABUN
AM-241	9.678E-02	1.736E-01	1.450E-01	8.857E-02	NOT IDENT.
CM-243	1.609E-02	6.418E-02	5.853E-02	3.274E-02	FAIL ABUN
AM-246	7.486E-02	7.705E-02	7.050E-02	3.931E-02	NOT IDENT.
CM-247	-1.236E-03	2.492E-02	2.188E-02	1.272E-02	NOT IDENT.
CF-249	3.266E-02	2.658E-02	2.460E-02	1.356E-02	NOT IDENT.
CF-251	4.204E-02	8.496E-02	7.577E-02	4.335E-02	NOT IDENT.

\*\*\*\*\*  
 \* 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	467.9759
46.50	467.9759
46.50	467.9759
48.70	482.9795
49.72	501.7756
51.35	466.1983
52.39	484.0870
52.97	483.5980
53.15	480.8896
53.44	479.2147
54.07	482.5604
56.28	505.4142
56.28	505.4162
57.37	0.0000
57.53	499.1895
57.53	499.1915
57.60	497.7128
57.98	498.0064
57.98	498.0064
59.32	502.1069
59.32	502.1069
59.40	502.1687
59.54	497.6675
59.72	497.8049
60.01	502.6358
61.10	509.6236
61.14	509.6539
61.30	509.7762
63.00	574.3732
63.29	563.8052
63.29	563.8052
63.58	576.4089
64.28	624.9548
65.12	681.4756
65.20	681.5542
65.20	681.5542
66.05	682.3894
66.72	587.3126
66.83	587.4073
66.91	587.4742
67.20	633.0253
67.20	633.0253
67.75	650.3597
67.85	650.4517
68.90	594.8372
68.90	594.8372
69.30	565.5679
69.67	554.9484
70.82	616.7222
70.82	616.7222
70.83	616.7319
72.80	669.2734
72.87	669.3360
72.87	669.3360
74.67	670.9590
74.81	671.0842
74.81	671.0842
74.81	671.0842
74.81	671.0842
74.81	671.0842
74.81	671.0842
74.97	671.2277
75.28	671.5043
75.70	671.8774
77.11	673.1246
77.11	673.1246

77.11	673.1246
77.11	673.1246
77.11	673.1246
77.11	673.1246
77.11	673.1246
78.38	649.7927
79.62	778.7889
79.80	778.9695
79.80	778.9695
80.11	796.6670
80.18	796.7378
80.30	796.8608
80.30	796.8608
80.57	812.9507
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81.07	756.4939
81.07	756.4939
81.07	756.4939
81.07	756.4939
82.60	957.7515
83.37	948.3562
83.78	898.3684
83.78	898.3684
83.78	898.3684
83.78	898.3684
84.21	787.4854
84.90	757.3491
85.43	791.6578
86.29	877.4502
86.50	877.6754
86.54	881.1716
86.59	881.2256
86.72	881.3640
86.79	881.4382
86.94	881.6003
87.30	864.4443
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87.30	864.4443
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87.57	840.7940
87.88	841.1093
88.03	849.2453
88.36	849.5829
88.47	849.6966
89.95	1089.6041
91.11	914.8651
92.29	751.0801
92.38	751.1600
92.38	751.1600
93.35	597.5931
94.00	572.3247
94.67	608.1615
94.67	608.1638
94.90	608.3253
94.90	608.3253
94.90	608.3253
94.90	608.3253
95.87	634.7839
95.87	634.7839
96.73	577.3525
97.43	553.6004
98.44	568.2388
98.44	568.2388
98.88	565.8255
99.55	577.3755
99.55	577.3755
99.86	577.5760
100.00	573.6186
100.10	557.4969
103.18	577.6736
103.76	561.7862
105.00	573.7355
105.31	567.8214
108.00	580.6928
109.28	556.9564

111.00	554.8954
111.00	554.8954
111.76	559.4363
112.95	524.2222
115.19	575.8188
116.30	543.5312
117.00	525.3762
117.00	525.3762
117.66	525.7274
121.11	559.6151
121.62	564.0396
121.78	564.1290
122.06	559.1080
122.32	538.5372
122.32	538.5372
122.32	538.5372
122.32	538.5372
123.07	560.7006
127.23	533.8395
129.76	539.3085
131.20	617.3414
133.02	599.5665
133.54	564.2656
135.34	546.3361
136.00	529.8817
136.25	518.4603
136.48	540.6141
140.51	599.5051
140.51	0.0000
142.18	538.1513
142.65	547.8798
143.76	565.3313
144.24	562.4007
144.24	562.4007
144.24	562.4007
144.24	562.4007
145.22	574.5306
145.44	569.3511
147.16	565.9776
152.43	585.6129
152.70	574.0363
153.22	578.5532
154.21	537.4534
154.21	537.4534
154.21	537.4534
154.21	537.4534
155.03	531.4275
156.02	576.7328
158.56	600.4496
159.00	0.0000
159.00	617.7993
160.31	590.6082
161.27	585.7153
162.32	543.2767
162.64	543.4235
163.35	517.9500
163.89	555.8089
165.85	554.5468
167.43	549.8690
171.28	503.9884
171.86	509.6331
172.10	499.9901
176.55	501.7525
176.60	501.7701
181.06	552.7765
184.41	536.7141
185.71	531.5588
186.00	519.8588
190.27	498.7057
192.34	523.2180
193.63	501.7124
197.04	486.4250
198.01	504.4322
198.60	519.0002
200.40	495.3560
201.83	490.3310
202.84	472.5944
205.31	468.6967

208.36	475.9358
208.81	476.0860
209.75	463.0457
209.75	463.0457
210.97	465.2217
215.65	457.1263
216.55	458.5255
218.09	429.9023
222.10	436.6901
223.80	473.1561
226.40	434.1266
227.00	426.1908
227.08	426.2139
227.20	426.2456
228.16	438.2424
228.18	438.2484
228.18	438.2484
231.56	0.0000
235.69	439.5105
236.00	447.1526
236.00	447.1526
238.63	403.1230
238.63	403.1230
238.63	403.1230
238.63	403.1230
239.00	403.2178
240.98	403.7327
241.98	348.7903
241.98	348.7903
241.98	348.7903
244.69	373.6996
245.39	370.8252
247.94	368.3789
248.90	376.5208
249.79	351.1289
252.40	395.6634
252.85	399.4387
252.85	399.4387
254.15	0.0000
256.20	356.2003
256.20	356.2003
260.50	378.3111
260.90	350.7832
262.80	358.5619
264.65	393.1035
268.24	336.6156
268.79	315.4500
269.46	317.4299
269.46	317.4299
269.46	317.4299
269.46	317.4299
271.23	356.6702
273.65	485.2115
276.40	320.5906
277.35	320.7675
277.60	328.2529
277.60	328.2529
278.00	335.7714
278.60	339.6122
279.20	350.9018
279.53	377.0327
280.46	391.2070
281.68	384.0271
283.67	341.5434
284.30	336.0674
285.00	329.6663
285.90	341.9812
286.10	347.6284
286.10	347.6284
287.40	353.0307
288.45	0.0000
290.67	363.8350
290.80	363.8634
291.72	346.8660
293.26	0.0000
293.70	347.2544
295.21	295.8854
295.21	295.8854



295.21	295.8854
295.96	296.0085
296.50	296.1008
297.23	296.2200
298.57	296.4430
299.80	268.3912
299.80	268.3912
300.09	288.8439
300.09	288.8439
300.09	288.8439
300.09	288.8439
300.12	288.8477
301.29	315.7391
302.84	347.4527
303.76	349.2010
303.91	349.2327
304.40	336.7348
304.40	336.7348
304.84	341.5392
306.84	302.5234
308.46	274.4026
311.98	297.6790
316.51	290.8046
318.01	293.8895
319.02	293.0963
319.41	297.9155
320.08	303.7354
323.87	344.4174
323.87	344.4174
323.87	344.4174
323.87	344.4174
325.23	335.1167
328.77	311.8250
333.44	346.7797
334.20	302.1531
334.20	302.1531
334.30	302.1685
338.28	283.5630
338.28	283.5630
338.28	283.5630
338.28	283.5630
338.32	283.5702
338.32	283.5702
338.32	283.5702
340.50	256.6178
340.57	256.6276
344.27	250.6816
345.85	287.0664
350.59	0.0000
351.07	278.6309
351.92	278.7469
351.92	278.7469
351.92	278.7469
355.39	0.0000
356.01	286.1017
364.48	271.7117
366.43	251.4996
367.43	240.8943
367.94	0.0000
369.80	247.0271
374.96	246.6598
383.85	258.5150
387.95	223.5557
388.63	228.5534
391.69	245.6504
391.69	245.6504
392.90	258.6195
398.62	250.3934
400.65	261.5218
401.10	249.6867
401.81	252.7401
402.60	254.8165
404.84	249.1187
410.95	237.8651
411.60	239.9233
413.65	258.0800
414.70	247.2341
415.30	249.2950

415.76	235.3835
417.63	0.0000
418.52	230.6785
423.70	219.1951
427.08	217.5166
427.89	217.5934
432.53	195.9283
433.93	178.9539
439.47	225.7391
439.56	225.7473
439.89	212.6768
443.98	202.9506
444.90	207.0695
445.03	207.0820
445.03	207.0820
445.03	207.0820
445.03	207.0820
453.90	223.0669
463.38	211.7324
468.07	224.3801
473.00	234.0317
475.06	217.8622
475.35	219.9341
476.78	198.5682
477.59	195.5605
477.96	180.2303
482.03	235.9128
484.57	198.1642
487.03	188.0821
490.36	0.0000
492.35	172.0006
497.08	167.1634
507.63	0.0000
510.53	0.0000
510.84	203.3333
511.00	203.3464
511.85	216.2132
511.85	216.2132
513.99	180.0365
513.99	180.0365
520.41	191.5873
520.65	180.1506
527.90	158.7168
528.96	0.0000
529.64	138.9681
529.87	0.0000
531.02	150.5391
537.32	145.6548
543.00	134.4125
546.56	0.0000
549.76	129.4833
552.65	169.6671
555.20	147.6733
563.23	155.5092
563.90	157.6613
568.70	143.0947
569.32	147.3685
569.50	147.3753
569.67	152.6871
573.80	146.5408
574.00	155.0466
574.64	172.3136
578.91	179.0761
579.30	0.0000
583.14	150.2222
585.48	124.3998
591.81	142.1308
592.07	150.6903
593.00	141.1201
595.88	155.1705
600.56	157.2083
602.52	0.0000
602.71	157.3265
602.71	157.3265
603.60	166.3147
604.41	169.9397
604.70	169.9571
609.31	165.5650

609.31	165.5650
609.31	165.5650
609.31	165.5650
610.33	145.1909
612.46	136.3244
614.37	175.9023
618.01	156.3494
621.84	155.4715
621.84	155.4715
631.29	153.7975
633.02	136.5482
633.10	136.5513
634.78	126.8690
635.90	142.1011
636.97	133.4712
645.85	137.1265
646.12	122.9896
656.30	114.6617
657.75	136.5662
657.90	0.0000
661.65	145.8529
661.65	145.8529
664.57	0.0000
666.33	118.6827
666.33	118.6827
675.00	99.9689
677.61	117.6451
685.20	109.2915
692.80	142.3882
695.00	140.0291
696.49	152.9975
696.49	152.9975
697.00	152.0993
697.49	148.4350
698.33	142.0157
698.50	138.3362
699.00	136.5128
702.63	149.5942
706.10	127.5669
706.58	0.0000
706.67	125.7402
709.31	137.8717
711.68	122.2300
713.82	122.3079
717.42	126.4898
720.50	93.9078
721.93	0.0000
722.20	95.5476
722.78	98.7498
722.78	98.7498
722.89	98.7541
722.95	98.7563
723.30	93.9880
724.18	84.4521
727.18	102.3372
733.00	115.0313
735.90	105.2153
739.58	114.8571
742.81	105.6202
744.21	102.8587
747.13	107.6253
751.79	128.3901
752.31	120.9113
753.82	103.1496
755.35	99.4418
756.15	104.1573
756.87	102.3028
763.93	157.0620
765.79	127.9759
766.42	126.1157
766.84	136.4862
776.49	115.1569
778.00	123.3906
778.57	109.0849
778.89	89.2609
783.80	68.1035
785.46	93.6866
792.07	125.1492

795.84	99.2484
796.30	107.3973
798.80	128.6423
801.93	113.0498
805.60	105.6388
810.29	123.8824
810.76	121.9948
815.85	104.9870
817.79	102.1781
818.51	98.3772
819.60	108.9160
826.30	111.9893
828.27	0.0000
831.60	104.4827
831.96	106.4111
834.83	123.7641
836.80	0.0000
846.75	100.1004
848.13	118.4330
856.28	0.0000
856.80	102.5772
860.37	92.7383
867.32	71.3402
867.82	73.0100
871.10	87.7178
873.19	94.0220
874.81	100.8494
875.33	0.0000
876.40	97.9814
879.36	84.4653
880.27	80.6021
880.51	76.7225
881.50	81.5989
883.24	90.3832
884.67	101.1118
889.25	107.0728
896.60	97.5240
898.02	123.8994
899.00	137.5949
903.28	70.3374
911.07	93.9707
911.07	93.9707
911.07	93.9707
919.63	89.8951
920.93	106.9642
925.00	96.2694
925.24	96.2754
926.50	94.3398
935.52	79.7805
937.48	121.2057
944.10	92.7818
946.00	98.7508
949.00	82.0240
962.29	96.8833
964.01	95.2227
966.15	87.3340
968.20	87.3770
969.11	87.3967
969.11	87.3967
969.11	87.3967
977.42	81.8873
980.50	90.6260
983.50	86.7062
989.30	81.8365
996.32	94.2569
1001.03	87.4997
1001.68	82.3661
1004.76	97.8813
1021.30	0.0000
1024.50	0.0000
1034.80	68.5977
1036.00	76.6896
1037.82	94.8950
1038.57	94.9103
1038.76	0.0000
1045.16	72.8086
1046.59	80.9245
1048.07	95.1169

1050.47	97.1953
1050.47	97.1953
1062.04	103.5439
1063.62	96.4728
1076.63	71.2960
1077.35	66.2140
1078.86	59.1021
1085.78	92.8736
1099.22	100.3208
1112.02	80.9524
1112.84	82.7287
1115.52	109.1920
1120.29	86.3892
1120.29	86.3892
1120.29	86.3892
1120.29	86.3892
1120.51	86.3926
1121.28	88.1696
1124.00	0.0000
1129.67	105.1169
1131.51	0.0000
1147.95	0.0000
1167.94	73.7734
1173.22	74.8975
1175.09	86.3739
1177.93	88.5071
1189.05	107.5012
1204.90	123.5649
1205.75	0.0000
1213.00	114.3311
1221.42	114.5307
1230.97	115.5045
1235.34	119.2199
1236.41	0.0000
1238.25	99.1100
1246.25	104.8390
1260.41	0.0000
1271.85	62.6299
1274.45	70.0955
1274.54	70.0955
1291.56	72.4658
1298.22	0.0000
1312.09	65.2667
1325.50	56.8538
1325.50	56.8538
1332.49	60.1540
1333.61	52.6467
1360.21	58.3132
1362.66	0.0000
1365.15	59.4491
1368.21	40.7881
1368.53	0.0000
1376.25	38.9927
1384.27	37.4241
1394.10	34.4655
1395.20	41.9270
1407.95	55.1006
1434.06	33.7814
1436.60	24.4095
1457.56	0.0000
1460.81	47.1453
1489.15	42.6458
1509.49	29.4842
1596.49	35.1394
1620.62	13.5693
1678.03	0.0000
1691.02	25.4913
1691.02	25.4913
1706.46	0.0000
1750.46	0.0000
1764.49	16.8619
1764.49	16.8619
1764.49	16.8619
1764.49	16.8619
1770.23	26.0596
1771.40	22.5889
1791.20	0.0000
1808.65	20.9707

1836.01

21.0579

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G243273001

Total Uranium Activity	2.4943E+00	ug/g
Total Uranium Counting Unc.	5.3865E+00	ug/g
Total Uranium Tpu	2.7482E-06	ug/g
Total Uranium Mda	3.1414E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 935341                          SAMPLE ID   : G243273001
*  ANALYST       : MXR1                             DETECTOR    : GAM15
*  SAMPLE DATE   : 15-DEC-2009 12:00:00.00          COUNT TIME   : 0 04:00:00.00
*  ANALYSIS DATE : 30-DEC-2009 22:47:32.95          SAMPLE ALQT  : 156.780 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 5.689E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 9.657E-01
GROSS GAMMA MDA      (pCi/GRAM ) : 2.578E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 1.257E+00

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VAX/VMS Nuclide Identification Report Generated 31-DEC-2009 02:48:52.78

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243274001.CNF;1
Sample date        : 16-DEC-2009 12:00:00 Acquisition date : 30-DEC-2009 22:47:57
Sample ID          : G243274001      Sample quantity   : 1.32930E+02 GRAM
Detector name      : GAM17           Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00   Elapsed real time: 0 04:00:17.43 0.1%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 935341          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	45.77*	82	655	0.94	92.99	89	8	5.69E-03	59.8	
2	0	62.41*	136	1295	0.71	126.27	121	10	9.45E-03	51.6	
3	3	73.97*	925	671	0.88	149.37	143	16	6.43E-02	5.5	6.61E-01
4	3	76.25*	1519	717	0.93	153.93	143	16	1.05E-01	3.9	
5	7	83.34*	296	688	1.69	168.10	164	28	2.05E-02	16.9	1.11E+00
6	7	86.37*	600	589	1.21	174.15	164	28	4.17E-02	8.1	
7	7	89.02	367	579	1.11	179.44	164	28	2.55E-02	12.2	
8	7	91.97*	490	649	1.36	185.34	164	28	3.40E-02	10.9	
9	0	128.18	145	476	0.96	257.73	254	7	1.01E-02	26.3	
10	0	185.30*	344	509	1.35	371.91	368	11	2.39E-02	14.5	
11	0	208.51	205	396	1.01	418.31	414	9	1.43E-02	18.8	
12	5	237.91*	1911	215	1.05	477.07	471	18	1.33E-01	2.7	1.68E+00
13	5	240.86	502	309	1.75	482.96	471	18	3.49E-02	9.5	
14	0	269.30	92	314	1.08	539.82	537	9	6.36E-03	36.3	
15	0	294.47*	545	342	1.21	590.13	584	13	3.78E-02	8.4	
16	0	298.92	114	362	1.44	599.04	596	13	7.93E-03	35.2	
17	0	327.06	86	190	1.16	655.28	652	8	5.98E-03	29.7	
18	0	337.94*	314	300	1.20	677.04	671	12	2.18E-02	12.8	
19	0	351.25*	837	344	1.16	703.65	697	14	5.81E-02	6.0	
20	0	462.17	104	152	1.34	925.40	921	10	7.23E-03	24.1	
21	0	510.27*	158	172	2.23	1021.55	1014	15	1.10E-02	24.1	
22	0	582.72*	566	155	1.57	1166.40	1161	14	3.93E-02	6.5	
23	0	608.98*	529	148	1.38	1218.91	1213	12	3.68E-02	6.6	
24	0	726.66*	142	73	1.38	1454.20	1449	10	9.84E-03	14.6	
25	0	770.08	88	171	4.78	1541.02	1531	20	6.08E-03	38.4	
26	0	794.90	56	106	1.29	1590.63	1584	12	3.89E-03	39.3	
27	0	860.78	62	92	1.59	1722.37	1714	11	4.33E-03	32.2	
28	0	910.96*	347	114	1.52	1822.70	1817	15	2.41E-02	8.8	
29	0	968.10*	320	168	5.86	1936.97	1924	26	2.22E-02	12.5	
30	0	1120.51	142	69	1.81	2241.76	2237	13	9.89E-03	14.4	
31	0	1237.94	55	61	1.36	2476.59	2472	9	3.83E-03	28.8	
32	0	1377.70	37	18	1.91	2756.11	2752	8	2.58E-03	25.7	
33	0	1460.90	1406	21	2.10	2922.51	2912	21	9.76E-02	2.8	
34	0	1591.40	48	32	0.66	3183.54	3175	20	3.33E-03	33.3	
35	0	1730.42	22	25	1.34	3461.63	3454	16	1.53E-03	54.3	
36	0	1764.79*	79	6	2.59	3530.37	3524	12	5.48E-03	14.2	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 31-DEC-2009 02:48:55

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243274001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 16-DEC-2009 12:00:00 Acquisition date : 30-DEC-2009 22:47:57
Sample ID        : G243274001 Sample quantity : 132.93 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 04:00:00.00 Elapsed real time: 0 04:00:17.43 0.1%
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	*	2.331E+01	1.935E+00	4.410E-01	2.711E-02	52.869
CD-109	+	88.03	*	2.173E+00	5.598E-01	6.090E-01	4.905E-02	3.568
SN-126		64.28		-1.392E-01	1.917E-01	2.589E-01	3.973E-02	-0.538
	+	86.94		1.447E+00	6.414E-01	2.484E-01	1.025E-01	5.826
	+	87.57	*	3.481E-01	6.306E-02	5.985E-02	4.826E-03	5.817
CS-135	+	268.24	*	2.156E-01	1.577E-01	1.553E-01	1.398E-02	1.389
TL-208		277.35		2.956E-01	2.626E-01	4.378E-01	5.054E-02	0.675
	+	510.84		4.979E-01	2.463E-01	1.564E-01	1.678E-02	3.183
	+	583.14	*	5.198E-01	7.943E-02	4.587E-02	3.637E-03	11.331
	+	860.37		5.580E-01	3.623E-01	3.711E-01	3.028E-02	1.503
BI-210	+	46.50	*	4.359E-01	5.229E-01	4.971E-01	3.978E-02	0.877
PB-210	+	46.50	*	4.359E-01	5.229E-01	4.971E-01	3.978E-02	0.877
PO-210	+	46.50	*	4.359E-01	5.226E-01	4.971E-01	3.460E-02	0.877
BI-211	+	72.87		1.547E+01	2.155E+00	1.980E+00	1.693E-01	7.809
	+	351.07	*	3.083E+00	4.305E-01	2.328E-01	1.673E-02	13.239
PB-212	+	74.81		1.836E+00	3.080E-01	2.358E-01	2.975E-02	7.786
	+	77.11		1.793E+00	2.067E-01	1.407E-01	1.182E-02	12.743
	+	87.30		1.610E+00	3.332E-01	2.766E-01	3.555E-02	5.821
	+	238.63	*	1.460E+00	1.511E-01	5.597E-02	4.911E-03	26.096
	+	300.09		1.380E+00	9.805E-01	7.510E-01	7.022E-02	1.837
PO-212	+	74.81		1.836E+00	3.080E-01	2.358E-01	2.975E-02	7.786
	+	77.11		1.793E+00	2.067E-01	1.407E-01	1.182E-02	12.743
	+	87.30		1.610E+00	3.332E-01	2.766E-01	3.555E-02	5.821
		115.19		4.332E-01	2.105E+00	3.555E+00	3.698E-01	0.122
	+	238.63	*	1.460E+00	1.511E-01	5.597E-02	4.911E-03	26.096
	+	300.09		1.380E+00	9.805E-01	7.510E-01	7.022E-02	1.837
BI-214	+	609.31	*	9.223E-01	1.475E-01	8.396E-02	7.534E-03	10.984
	+	1120.29		1.328E+00	4.011E-01	4.160E-01	3.714E-02	3.193
	+	1764.49		1.043E+00	3.024E-01	2.216E-01	1.274E-02	4.709
PB-214	+	74.81		3.163E+00	4.992E-01	4.063E-01	4.574E-02	7.786
	+	77.11		3.074E+00	4.247E-01	2.412E-01	2.735E-02	12.743
	+	87.30		2.758E+00	5.430E-01	4.738E-01	5.289E-02	5.821
	+	241.98		2.309E+00	4.909E-01	3.375E-01	3.172E-02	6.840
	+	295.21		1.154E+00	2.231E-01	1.368E-01	1.317E-02	8.434

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	351.92	*	1.072E+00	1.599E-01	8.120E-02	7.201E-03	13.205
	+	74.81		3.163E+00	4.992E-01	4.063E-01	4.574E-02	7.786
	+	77.11		3.074E+00	4.247E-01	2.412E-01	2.735E-02	12.743
	+	87.30		2.758E+00	5.430E-01	4.738E-01	5.289E-02	5.821
	+	241.98		2.309E+00	4.909E-01	3.375E-01	3.172E-02	6.840
PO-216	+	295.21		1.154E+00	2.231E-01	1.368E-01	1.317E-02	8.434
	+	351.92	*	1.072E+00	1.599E-01	8.120E-02	7.201E-03	13.205
	+	74.81		1.836E+00	3.080E-01	2.358E-01	2.975E-02	7.786
	+	77.11		1.793E+00	2.067E-01	1.407E-01	1.182E-02	12.743
	+	87.30		1.610E+00	3.332E-01	2.766E-01	3.555E-02	5.821
PO-218	+	238.63	*	1.460E+00	1.511E-01	5.597E-02	4.911E-03	26.096
	+	300.09		1.380E+00	9.805E-01	7.510E-01	7.022E-02	1.837
	+	74.81		3.163E+00	4.992E-01	4.063E-01	4.574E-02	7.786
	+	77.11		3.074E+00	4.247E-01	2.412E-01	2.735E-02	12.743
	+	87.30		2.758E+00	5.430E-01	4.738E-01	5.289E-02	5.821
RA-224	+	241.98		2.309E+00	4.909E-01	3.375E-01	3.172E-02	6.840
	+	295.21		1.154E+00	2.231E-01	1.368E-01	1.317E-02	8.434
	+	351.92	*	1.072E+00	1.599E-01	8.120E-02	7.201E-03	13.205
	+	240.98	*	4.378E+00	8.980E-01	6.376E-01	4.809E-02	6.866
	+	609.31	*	9.223E-01	1.475E-01	8.396E-02	7.534E-03	10.984
AC-228	+	1120.29		1.328E+00	4.011E-01	4.160E-01	3.714E-02	3.193
	+	1764.49		1.043E+00	3.024E-01	2.216E-01	1.274E-02	4.709
	+	338.32		1.269E+00	6.121E-01	2.579E-01	1.055E-01	4.923
	+	911.07	*	1.471E+00	2.989E-01	1.633E-01	1.671E-02	9.007
	+	969.11		2.385E+00	8.082E-01	2.989E-01	6.811E-02	7.980
TH-228	+	338.32		1.269E+00	6.121E-01	2.579E-01	1.055E-01	4.923
	+	911.07	*	1.471E+00	2.989E-01	1.633E-01	1.671E-02	9.007
	+	969.11		2.385E+00	8.082E-01	2.989E-01	6.811E-02	7.980
	+	74.81		1.862E+00	2.604E-01	2.392E-01	2.046E-02	7.786
	+	77.11		1.819E+00	2.097E-01	1.428E-01	1.199E-02	12.743
TH-230	+	87.30		1.633E+00	2.959E-01	2.806E-01	2.265E-02	5.821
	+	238.63	*	1.482E+00	1.533E-01	5.678E-02	4.983E-03	26.096
	+	300.09		1.400E+00	1.287E+00	7.619E-01	4.503E-01	1.837
	+	609.31	*	9.222E-01	1.475E-01	8.396E-02	7.534E-03	10.984
	+	1120.29		1.328E+00	4.011E-01	4.160E-01	3.714E-02	3.193
TH-232	+	1764.49		1.043E+00	3.024E-01	2.216E-01	1.274E-02	4.709
	+	338.32		1.269E+00	3.351E-01	2.579E-01	1.761E-02	4.923
	+	911.07	*	1.471E+00	2.989E-01	1.633E-01	1.671E-02	9.007
	+	969.11		2.385E+00	8.082E-01	2.989E-01	6.811E-02	7.980
	+	63.29	*	7.604E-01	7.971E-01	6.485E-01	1.177E-01	1.173
U-234	+	92.38		1.959E+00	5.523E-01	4.144E-01	7.449E-02	4.729
	+	609.31	*	9.222E-01	1.475E-01	8.396E-02	7.534E-03	10.984
	+	1120.29		1.328E+00	4.011E-01	4.160E-01	3.714E-02	3.193
	+	1764.49		1.043E+00	3.024E-01	2.216E-01	1.274E-02	4.709
	+	86.50	*	1.022E+00	2.807E-01	1.753E-01	3.885E-02	5.832
NP-237	+	95.87		-6.718E-01	5.802E-01	8.047E-01	1.984E-01	-0.835
	+	63.29	*	7.604E-01	7.971E-01	6.485E-01	1.177E-01	1.173
	+	92.38		1.959E+00	4.561E-01	4.144E-01	3.478E-02	4.729
	+	74.67	*	2.976E-01	4.147E-02	3.822E-02	3.242E-03	7.787
	+							

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	86.72		3.833E+01	6.944E+00	6.577E+00	5.320E-01	5.829
		117.66		-4.469E-01	2.184E+00	3.633E+00	3.867E-01	-0.123
		142.18		6.308E+00	1.174E+01	1.893E+01	1.795E+00	0.333
ANH-511	+	511.00	*	1.075E-01	5.244E-02	3.380E-02	2.284E-03	3.182

---- 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	*	-4.035E-02	2.357E-01	3.856E-01	2.843E-02	-0.105
NA-22		1274.54	*	-8.804E-04	3.720E-02	5.999E-02	3.400E-03	-0.015
NA-24		1368.53	*	-6.634E-02	3.720E-02	Half-Life	too short	
AL-26		1129.67		-4.109E-01	1.374E+00	2.186E+00	1.292E-01	-0.188
		1808.65	*	-1.742E-03	2.407E-02	3.897E-02	2.228E-03	-0.045
TI-44		67.85		1.190E-03	1.696E-02	2.794E-02	2.443E-03	0.043
		78.38	*	7.555E-03	1.693E-02	2.436E-02	2.035E-03	0.310
SC-46		889.25	*	-3.492E-02	3.125E-02	4.708E-02	3.450E-03	-0.742
	+	1120.51		2.262E-01	6.665E-02	1.015E-01	6.079E-03	2.228
V-48		944.10		1.114E-01	6.569E-01	1.105E+00	7.862E-02	0.101
		983.50	*	2.171E-03	5.026E-02	8.338E-02	5.773E-03	0.026
		1312.09		-9.180E-04	6.516E-02	1.049E-01	5.970E-03	-0.009
CR-51		320.08	*	-3.206E-02	2.414E-01	4.073E-01	3.106E-02	-0.079
MN-52		744.21		6.131E-02	1.842E-01	3.018E-01	2.299E-02	0.203
		848.13		-2.020E+00	4.463E+00	7.169E+00	5.353E-01	-0.282
		935.52		1.657E-01	1.915E-01	3.379E-01	2.417E-02	0.490
		1246.25		7.803E-01	5.752E+00	9.417E+00	5.293E-01	0.083
		1333.61		4.840E-01	3.716E+00	5.783E+00	3.303E-01	0.084
		1434.06	*	-1.734E-01	1.807E-01	2.687E-01	1.553E-02	-0.645
MN-54		834.83	*	-1.552E-02	3.018E-02	4.866E-02	3.651E-03	-0.319
CO-56		846.75	*	-6.933E-03	2.803E-02	4.590E-02	3.429E-03	-0.151
		977.42		7.848E-01	2.512E+00	3.744E+00	2.604E-01	0.210
		1037.82		-1.394E-01	2.381E-01	3.703E-01	2.663E-02	-0.376
		1175.09		-5.236E-01	1.913E+00	3.045E+00	1.682E-01	-0.172
	+	1238.25		1.435E-01	8.319E-02	1.368E-01	8.191E-03	1.049
		1360.21		-2.973E-01	8.012E-01	1.228E+00	7.042E-02	-0.242
		1771.40		-4.317E-01	2.432E-01	2.939E-01	1.689E-02	-1.469
CO-57		122.06	*	-2.394E-03	1.499E-02	2.494E-02	2.767E-03	-0.096
		136.48		4.323E-03	1.324E-01	2.205E-01	2.320E-02	0.020
CO-58		810.76	*	-1.137E-02	3.031E-02	4.940E-02	3.744E-03	-0.230
FE-59		142.65		1.606E+00	1.777E+00	2.892E+00	2.730E-01	0.555
		192.34		5.439E-01	6.115E-01	1.027E+00	1.304E-01	0.530
		1099.22	*	4.898E-02	7.303E-02	1.261E-01	8.959E-03	0.388
		1291.56		-1.325E-01	1.117E-01	1.593E-01	1.167E-02	-0.832
CO-60		1173.22		1.176E-03	3.797E-02	6.197E-02	3.420E-03	0.019
		1332.49	*	1.184E-02	2.935E-02	4.950E-02	2.826E-03	0.239
ZN-65		1115.52	*	1.099E-01	8.613E-02	1.381E-01	8.339E-03	0.796
GE-68		1077.35	*	3.712E-01	1.073E+00	1.808E+00	1.143E-01	0.205
AS-73		53.44	*	9.245E-03	1.559E-01	2.357E-01	1.913E-02	0.039
AS-74		595.88	*	2.885E-02	7.142E-02	1.135E-01	8.241E-03	0.254

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SE-75	634.78			-1.241E-01	2.838E-01	4.443E-01	3.303E-02	-0.279
	66.05			-1.244E+00	1.978E+00	2.693E+00	2.855E-01	-0.462
	96.73			-1.998E-01	4.740E-01	6.877E-01	9.429E-02	-0.291
	121.11			3.981E-02	7.900E-02	1.343E-01	1.763E-02	0.296
	136.00			2.793E-03	2.466E-02	4.119E-02	4.138E-03	0.068
	198.60			-1.048E+00	1.204E+00	1.828E+00	1.560E-01	-0.573
	264.65	*		-8.420E-03	3.090E-02	4.626E-02	3.490E-03	-0.182
	279.53			-4.892E-02	7.785E-02	1.201E-01	9.371E-03	-0.407
	303.91			7.643E-01	1.547E+00	2.257E+00	2.366E-01	0.339
	400.65			2.233E-02	1.843E-01	3.103E-01	2.837E-02	0.072
BR-77	87.88		+	3.915E+02	1.009E+02	1.464E+02	1.179E+01	2.675
	200.40			6.103E-01	8.860E+01	1.443E+02	1.078E+01	0.004
	239.00		+	1.954E+02	1.822E+01	2.211E+01	1.668E+00	8.841
	249.79			-5.248E+00	3.687E+01	5.881E+01	4.431E+00	-0.089
	281.68			2.337E+01	5.175E+01	8.431E+01	6.254E+00	0.277
	297.23			7.023E+01	3.524E+01	4.781E+01	3.493E+00	1.469
	303.76			6.301E+01	1.106E+02	1.622E+02	1.176E+01	0.388
	439.47			6.124E+00	8.829E+01	1.474E+02	9.145E+00	0.042
	484.57			-9.167E+01	1.370E+02	2.161E+02	1.419E+01	-0.424
	520.65	*		-1.774E+00	6.411E+00	1.033E+01	7.051E-01	-0.172
SR-82	574.64			1.046E+02	1.259E+02	2.171E+02	1.552E+01	0.482
	578.91			2.103E+01	5.930E+01	8.754E+01	6.280E+00	0.240
	585.48			2.610E+02	1.306E+02	2.145E+02	1.546E+01	1.217
	755.35			5.344E+01	1.207E+02	1.988E+02	1.514E+01	0.269
	817.79			-4.399E+01	9.095E+01	1.390E+02	1.048E+01	-0.316
	698.33			4.295E+00	2.889E+01	4.686E+01	3.558E+00	0.092
	776.49	*		-2.590E-01	3.253E-01	4.348E-01	3.305E-02	-0.596
	1395.20			-5.217E+00	8.398E+00	1.309E+01	7.538E-01	-0.399
	520.41	*		-1.481E-02	5.055E-02	8.137E-02	5.552E-03	-0.182
	529.64			4.872E-02	7.462E-02	1.278E-01	8.800E-03	0.381
RB-83	552.65			-7.713E-02	1.452E-01	2.283E-01	1.604E-02	-0.338
	881.50	*		-2.853E-03	5.722E-02	9.503E-02	6.993E-03	-0.030
RB-84	513.99	*		2.855E+00	5.569E+00	8.393E+00	5.689E-01	0.340
KR-85	513.99	*		1.454E-02	2.836E-02	4.275E-02	2.898E-03	0.340
SR-85	1076.63	*		1.929E-01	6.626E-01	1.112E+00	7.039E-02	0.174
RB-86	898.02			-2.060E-02	3.299E-02	5.210E-02	3.826E-03	-0.395
Y-88	1836.01	*		3.827E-03	2.248E-02	3.815E-02	2.178E-03	0.100
ZR-88	392.90	*		1.032E-02	2.135E-02	3.666E-02	2.122E-03	0.281
Y-91	1204.90	*		1.043E+01	1.569E+01	2.678E+01	1.491E+00	0.389
NB-94	702.63	*		5.735E-03	2.913E-02	4.738E-02	3.599E-03	0.121
NB-95	871.10			1.035E-02	2.568E-02	4.424E-02	3.272E-03	0.234
	765.79	*		2.466E-02	3.870E-02	6.007E-02	4.572E-03	0.410
NB-95M	235.69	*		3.140E-01	1.028E-01	1.638E-01	1.465E-02	1.917
ZR-95	724.18			9.068E-02	8.507E-02	1.311E-01	1.107E-02	0.692
NB-97	756.15	*		-4.120E-03	6.045E-02	9.591E-02	8.240E-03	-0.043
	657.90	*		-1.996E-02	6.045E-02	Half-Life	too short	
ZR-97	1024.50			2.228E+00	6.045E-02	Half-Life	too short	
	254.15			1.180E+00	6.045E-02	Half-Life	too short	
	355.39			9.064E-03	6.045E-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
	507.63	*		1.560E+00	6.045E-02	Half-Life	too short	
	602.52			-6.982E-01	6.045E-02	Half-Life	too short	
	1021.30			-2.312E+00	6.045E-02	Half-Life	too short	
	1147.95			-1.997E+00	6.045E-02	Half-Life	too short	
	1362.66			-2.957E-01	6.045E-02	Half-Life	too short	
	1750.46			-2.749E+00	6.045E-02	Half-Life	too short	
MO-99	140.51			-1.171E+01	1.463E+01	2.301E+01	6.448E+00	-0.509
	181.06			-5.935E+00	1.008E+01	1.421E+01	2.520E+00	-0.418
	366.43			1.362E+01	5.096E+01	8.691E+01	5.508E+00	0.157
	739.58	*		-4.747E-01	8.617E+00	1.371E+01	2.007E+00	-0.035
	778.00			-1.644E+01	2.593E+01	3.543E+01	2.693E+00	-0.464
TC-99M	140.51	*		-3.518E+09	2.593E+01	Half-Life	too short	
RH-101	+	127.23		5.072E-02	2.727E-02	3.704E-02	3.961E-03	1.369
		198.01	*	-1.329E-03	2.182E-02	3.437E-02	2.564E-03	-0.039
		325.23		7.940E-02	1.620E-01	2.503E-01	1.755E-02	0.317
RH-102		418.52		-1.156E-01	2.084E-01	3.368E-01	2.028E-02	-0.343
		475.06	*	-5.949E-03	2.084E-02	3.383E-02	2.197E-03	-0.176
		631.29		1.706E-03	4.265E-02	6.925E-02	5.138E-03	0.025
		697.49		2.550E-02	6.552E-02	1.080E-01	8.201E-03	0.236
		766.84		9.915E-02	1.038E-01	1.643E-01	1.251E-02	0.603
		1046.59		-2.982E-02	9.136E-02	1.459E-01	9.545E-03	-0.204
		1112.84		1.509E-01	2.115E-01	3.550E-01	2.147E-02	0.425
RU-103		497.08	*	-1.349E-02	2.890E-02	4.605E-02	6.015E-03	-0.293
	+	610.33		9.850E+00	2.050E+00	2.073E+00	3.329E-01	4.751
RH-106		511.85		8.544E-01	1.721E-01	3.055E-01	2.067E-02	2.796
		621.84	*	1.888E-02	2.496E-01	4.068E-01	5.123E-02	0.046
		1050.47		1.076E-01	1.908E+00	3.151E+00	2.053E-01	0.034
RU-106		511.85		8.544E-01	1.721E-01	3.055E-01	2.067E-02	2.796
		621.84	*	1.888E-02	2.496E-01	4.068E-01	3.002E-02	0.046
		1050.47		1.076E-01	1.908E+00	3.151E+00	2.053E-01	0.034
AG-108M		433.93	*	1.343E-02	2.387E-02	4.095E-02	2.714E-03	0.328
		614.37		1.688E-02	3.101E-02	4.646E-02	3.597E-03	0.363
		722.95		-1.753E-02	3.770E-02	4.986E-02	3.985E-03	-0.352
AG-110M		657.75	*	-1.295E-02	2.732E-02	4.245E-02	3.316E-03	-0.305
		677.61		3.300E-02	2.369E-01	3.855E-01	3.022E-02	0.086
		706.67		-1.511E-01	1.756E-01	2.628E-01	2.069E-02	-0.575
		763.93		8.194E-02	1.377E-01	2.141E-01	1.688E-02	0.383
		884.67		3.154E-02	3.870E-02	6.846E-02	5.251E-03	0.461
		937.48		-1.267E-01	9.055E-02	1.319E-01	9.913E-03	-0.961
		1384.27		1.189E-02	1.336E-01	2.165E-01	1.323E-02	0.055
IN-111		171.28		-2.339E-02	5.438E-01	8.923E-01	6.545E-02	-0.026
		245.39	*	-1.454E-01	6.311E-01	8.895E-01	6.707E-02	-0.163
IN-113M		391.69	*	3.210E-03	3.152E-02	5.311E-02	3.275E-03	0.060
SN-113		391.69	*	3.210E-03	3.152E-02	5.311E-02	3.275E-03	0.060
IN-114M		190.27	*	5.131E-02	1.281E-01	1.909E-01	1.418E-02	0.269
CD-115		260.90		-1.743E+01	7.338E+01	1.161E+02	8.720E+00	-0.150
		492.35		1.572E+01	2.189E+01	3.770E+01	2.498E+00	0.417
		527.90	*	2.275E+00	6.330E+00	1.065E+01	7.316E-01	0.214
SN-117M		156.02		-4.727E-01	1.421E+00	2.319E+00	1.914E-01	-0.204

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-122	158.56	*		-3.039E-02	3.319E-02	5.272E-02	4.227E-03	-0.576
	563.90	*		1.171E+00	1.441E+00	2.467E+00	1.750E-01	0.475
	692.80			3.206E+00	3.007E+01	4.870E+01	3.694E+00	0.066
I-123	159.00	*		-6.939E-01	3.007E+01	Half-Life	too short	
	528.96			3.579E+01	3.007E+01	Half-Life	too short	
TE-123M	159.00	*		-7.552E-03	1.761E-02	2.857E-02	2.295E-03	-0.264
I-124	602.71	*		-1.465E-01	5.144E-01	7.102E-01	5.180E-02	-0.206
	722.78			-1.910E+00	3.534E+00	4.629E+00	3.524E-01	-0.413
	1325.50			-1.537E+01	2.327E+01	3.434E+01	1.959E+00	-0.447
+	1376.25			4.293E+01	2.219E+01	4.540E+01	2.608E+00	0.946
	1509.49			1.175E+01	1.090E+01	2.037E+01	1.183E+00	0.577
	1691.02			1.726E+00	3.220E+00	5.685E+00	3.290E-01	0.304
SB-124	602.71			-9.375E-03	3.293E-02	4.546E-02	3.317E-03	-0.206
	645.85			1.585E-01	4.079E-01	6.773E-01	5.463E-02	0.234
	709.31			-2.092E-01	2.252E+00	3.585E+00	2.726E-01	-0.058
	713.82			-5.153E-01	1.358E+00	2.111E+00	2.392E-01	-0.244
	722.78			-1.772E-01	3.280E-01	4.295E-01	3.361E-02	-0.413
	968.20			2.438E+01	6.347E+00	6.113E+00	4.280E-01	3.988
+	1045.16			-4.089E-01	1.869E+00	3.011E+00	1.973E-01	-0.136
	1325.50			-1.523E+00	2.307E+00	3.403E+00	1.941E-01	-0.447
	1368.21			-5.144E-01	1.476E+00	2.270E+00	2.688E-01	-0.227
	1436.60			-6.164E-01	3.252E+00	5.336E+00	3.084E-01	-0.116
	1691.02	*		3.777E-02	7.048E-02	1.244E-01	7.819E-03	0.304
SB-125	427.89	*		3.455E-02	6.597E-02	1.131E-01	7.167E-03	0.306
	463.38			6.285E-01	3.067E-01	4.258E-01	3.102E-02	1.476
	600.56			-1.661E-02	1.331E-01	2.144E-01	1.721E-02	-0.077
+	635.90			-7.419E-02	2.210E-01	3.486E-01	2.870E-02	-0.213
	109.28	*		1.144E+00	5.186E+00	8.784E+00	9.987E-01	0.130
	388.63			-3.295E-02	1.392E-01	2.306E-01	1.349E-02	-0.143
TE-125M	666.33	*		7.088E-02	1.346E-01	2.254E-01	1.700E-02	0.314
	753.82			1.834E+00	1.245E+00	2.187E+00	1.666E-01	0.839
	223.80			7.587E-01	2.536E+00	4.155E+00	3.130E-01	0.183
SB-126	278.60			-5.426E-01	1.670E+00	2.620E+00	1.948E-01	-0.207
	296.50			4.822E+00	1.200E+00	1.805E+00	1.320E-01	2.671
	414.70			5.829E-02	5.260E-02	9.273E-02	5.553E-03	0.629
	415.30			2.319E+00	4.407E+00	7.557E+00	4.530E-01	0.307
	555.20			-8.290E-01	2.773E+00	4.434E+00	3.122E-01	-0.187
	573.80			7.317E-01	7.204E-01	1.257E+00	8.980E-02	0.582
	593.00			-3.168E-01	6.995E-01	1.100E+00	7.974E-02	-0.288
	656.30			6.719E-02	2.504E+00	4.049E+00	3.042E-01	0.017
	666.33			2.958E-02	5.618E-02	9.407E-02	7.094E-03	0.314
	675.00			1.793E+00	1.433E+00	2.524E+00	1.908E-01	0.710
	695.00			-3.525E-02	6.384E-02	9.836E-02	7.464E-03	-0.358
	697.00			6.314E-02	2.202E-01	3.606E-01	2.738E-02	0.175
	720.50	*		1.263E-02	1.211E-01	1.807E-01	1.376E-02	0.070
	856.80			1.876E-01	3.741E-01	5.746E-01	4.276E-02	0.326
	989.30			-2.100E-01	9.510E-01	1.540E+00	1.062E-01	-0.136
	1034.80			2.699E+00	6.553E+00	1.117E+01	7.397E-01	0.242
	1213.00			3.022E+00	3.850E+00	6.614E+00	3.689E-01	0.457

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	+	61.10	2.786E+01	2.893E+01	2.656E+01	3.003E+00	1.049
		252.40	-1.782E+00	2.783E+00	4.166E+00	1.740E+00	-0.428
		290.80	6.980E+00	1.348E+01	1.976E+01	1.979E+00	0.353
		411.60	-1.034E+01	8.657E+00	1.338E+01	1.913E+00	-0.773
		444.90	3.772E+00	6.329E+00	1.086E+01	1.178E+00	0.347
		473.00	6.020E-02	1.048E+00	1.741E+00	1.978E-01	0.035
		543.00	4.926E-01	1.148E+01	1.885E+01	2.511E+00	0.026
		603.60	2.914E-01	8.754E+00	1.248E+01	1.430E+00	0.023
		685.20	2.224E-01	1.001E+00	1.637E+00	1.705E-01	0.136
		698.50	1.178E+00	1.177E+01	1.903E+01	2.882E+00	0.062
		722.20	-1.407E+01	2.402E+01	3.125E+01	3.189E+00	-0.450
		783.80	1.808E+00	2.544E+00	4.469E+00	5.163E-01	0.405
XE-127		57.60	1.112E+00	1.616E+00	2.384E+00	2.098E-01	0.466
		145.22	-2.715E-01	4.294E-01	6.950E-01	6.409E-02	-0.391
		172.10	-3.931E-02	7.559E-02	1.216E-01	8.923E-03	-0.323
		202.84	2.233E-02	3.040E-02	5.084E-02	3.802E-03	0.439
		374.96	9.237E-02	1.340E-01	2.330E-01	1.435E-02	0.396
I-131		80.18	1.983E+00	2.360E+00	3.042E+00	2.539E-01	0.652
		284.30	-8.667E-02	1.047E+00	1.597E+00	1.264E-01	-0.054
		364.48	-1.051E-02	7.550E-02	1.262E-01	8.823E-03	-0.083
		636.97	1.518E-01	1.191E+00	1.945E+00	1.554E-01	0.078
TE-132		722.89	-2.952E+00	6.006E+00	7.917E+00	6.073E-01	-0.373
		49.72	1.457E+00	2.163E+00	3.481E+00	3.415E-01	0.419
		111.76	1.675E+00	1.523E+01	2.568E+01	3.055E+00	0.065
		116.30	-6.290E+00	1.400E+01	2.309E+01	2.832E+00	-0.272
BA-133		228.16	-1.767E-01	3.992E-01	6.307E-01	9.480E-02	-0.280
		53.15	-2.755E-01	6.775E-01	1.007E+00	8.122E-02	-0.274
		79.62	4.882E-03	7.446E-01	9.162E-01	1.379E-01	0.005
		81.00	1.329E-02	4.870E-02	6.945E-02	1.090E-02	0.191
		276.40	3.122E-01	2.580E-01	4.297E-01	5.922E-02	0.727
		302.84	1.892E-02	1.096E-01	1.563E-01	1.945E-02	0.121
I-133	+	356.01	-2.468E-03	3.247E-02	4.806E-02	5.741E-03	-0.051
		383.85	-8.568E-02	2.106E-01	3.454E-01	3.786E-02	-0.248
		510.53	6.632E-01	2.106E-01	Half-Life	too short	
		529.87	1.285E-03	2.106E-01	Half-Life	too short	
		706.58	-2.508E-01	2.106E-01	Half-Life	too short	
		856.28	1.190E-01	2.106E-01	Half-Life	too short	
		875.33	6.753E-03	2.106E-01	Half-Life	too short	
		1236.41	2.438E-01	2.106E-01	Half-Life	too short	
CS-134		1298.22	1.240E-01	2.106E-01	Half-Life	too short	
		475.35	-2.545E-01	1.354E+00	2.213E+00	1.438E-01	-0.115
		563.23	4.420E-01	2.920E-01	5.182E-01	3.725E-02	0.853
		569.32	-1.564E-01	1.490E-01	2.242E-01	1.629E-02	-0.697
		604.70	-2.201E-02	3.022E-02	3.987E-02	2.922E-03	-0.552
		795.84	7.660E-02	6.054E-02	7.277E-02	5.566E-03	1.053
		801.93	-4.274E-02	3.314E-01	5.333E-01	4.066E-02	-0.080
		1038.57	-1.034E+00	2.972E+00	4.733E+00	3.122E-01	-0.218
		1167.94	1.372E+00	2.177E+00	3.715E+00	2.069E-01	0.369
		1365.15	-5.378E-01	9.659E-01	1.437E+00	9.072E-02	-0.374



----- 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			-3.850E+09	9.659E-01	Half-Life too short		
	417.63			-9.126E+08	9.659E-01	Half-Life too short		
	546.56			-5.141E+08	9.659E-01	Half-Life too short		
	836.80			1.655E+09	9.659E-01	Half-Life too short		
	1038.76			-1.080E+09	9.659E-01	Half-Life too short		
	1124.00			5.547E+09	9.659E-01	Half-Life too short		
	1131.51			-2.404E+07	9.659E-01	Half-Life too short		
	1260.41	*		8.564E+08	9.659E-01	Half-Life too short		
	1457.56			5.307E+10	9.659E-01	Half-Life too short		
	1678.03			8.915E+08	9.659E-01	Half-Life too short		
	1706.46			3.074E+09	9.659E-01	Half-Life too short		
	1791.20			2.447E+09	9.659E-01	Half-Life too short		
CS-136	66.91			7.054E-03	2.836E-01	4.401E-01	6.834E-02	0.016
	86.29	+		4.396E+00	8.998E-01	1.105E+00	1.382E-01	3.978
	153.22			-9.186E-02	4.276E-01	6.856E-01	6.540E-02	-0.134
	163.89			3.184E-01	6.788E-01	1.101E+00	9.549E-02	0.289
	176.55			-1.250E-01	2.204E-01	3.530E-01	2.802E-02	-0.354
	273.65			-6.355E-01	3.620E-01	4.505E-01	3.653E-02	-1.411
	340.57			2.889E-02	8.368E-02	1.279E-01	9.092E-03	0.226
	818.51			-2.015E-02	5.955E-02	9.235E-02	6.970E-03	-0.218
	1048.07	*		2.792E-03	8.271E-02	1.364E-01	9.556E-03	0.020
	1235.34			3.147E-01	5.671E-01	8.365E-01	8.261E-02	0.376
BA-137M	661.65	*		-8.420E-03	2.822E-02	4.448E-02	3.350E-03	-0.189
CS-137	661.65	*		-8.901E-03	2.983E-02	4.702E-02	3.550E-03	-0.189
CE-139	165.85	*		8.689E-03	1.881E-02	3.149E-02	2.303E-03	0.276
BA-140	162.64			3.815E-02	4.772E-01	7.636E-01	6.254E-02	0.050
	304.84			1.743E-01	9.250E-01	1.319E+00	3.644E-01	0.132
LA-140	423.70			-9.196E-02	1.332E+00	2.211E+00	7.038E-01	-0.042
	537.32	*		-3.492E-02	1.906E-01	3.080E-01	1.008E-01	-0.113
	328.77			1.579E-01	2.266E-01	3.528E-01	2.665E-02	0.448
	432.53			-1.577E+00	1.458E+00	2.267E+00	1.524E-01	-0.696
	487.03			1.780E-02	9.455E-02	1.580E-01	1.148E-02	0.113
	751.79			-2.099E-01	1.512E+00	2.388E+00	2.065E-01	-0.088
	815.85			-1.177E-01	2.535E-01	4.048E-01	3.506E-02	-0.291
	867.82			-3.073E-01	9.921E-01	1.612E+00	1.279E-01	-0.191
	919.63			1.671E+00	2.159E+00	3.631E+00	3.467E-01	0.460
	925.24			-2.082E-01	8.158E-01	1.324E+00	1.038E-01	-0.157
CE-141	1596.49	*		2.492E-03	6.928E-02	9.962E-02	5.791E-03	0.025
	145.44	*		-2.956E-02	3.878E-02	6.240E-02	5.834E-03	-0.474
CE-143	57.37			1.333E-04	3.878E-02	Half-Life too short		
	231.56			6.712E-04	3.878E-02	Half-Life too short		
	293.26	*		8.014E-04	3.878E-02	Half-Life too short		
	350.59	+		1.783E-02	3.878E-02	Half-Life too short		
	490.36			4.615E-04	3.878E-02	Half-Life too short		
	664.57			2.484E-04	3.878E-02	Half-Life too short		
	721.93			-3.719E-04	3.878E-02	Half-Life too short		
	80.11			1.021E+00	1.145E+00	1.480E+00	1.228E-01	0.689
CE-144	133.54	*		-6.407E-02	1.272E-01	2.074E-01	3.419E-02	-0.309
PM-144	476.78			6.802E-03	4.953E-02	8.257E-02	6.229E-03	0.082

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01		-3.965E-03	2.423E-02	3.881E-02	-0.102
		696.49	*	9.498E-03	2.947E-02	4.838E-02	0.196
		778.57		2.509E-01	1.885E+00	2.928E+00	0.086
PR-144		696.49	*	6.434E-01	1.996E+00	3.277E+00	0.196
		1489.15		6.084E+00	7.948E+00	1.467E+01	0.415
PM-146		453.90	*	4.788E-02	3.279E-02	5.834E-02	0.821
		633.02		1.917E-01	1.085E+00	1.776E+00	0.108
		735.90		-5.307E-02	1.242E-01	1.902E-01	-0.279
		747.13		-2.016E-02	7.695E-02	1.202E-01	-0.168
ND-147	+	91.11		9.476E-01	2.232E-01	2.780E-01	3.409
		319.41		-2.811E-01	2.246E+00	3.521E+00	-0.080
		439.89		7.813E-01	4.111E+00	6.908E+00	0.113
		531.02	*	7.844E-02	3.923E-01	6.522E-01	0.120
PM-149		285.90	*	-1.184E+01	5.489E+01	8.293E+01	-0.143
EU-152		121.78		-6.658E-03	4.359E-02	7.254E-02	-0.092
		244.69		-2.309E-02	2.221E-01	3.159E-01	-0.073
		344.27	*	6.476E-03	7.032E-02	1.111E-01	0.058
		443.98		2.832E-01	7.004E-01	1.190E+00	0.238
		778.89		4.097E-02	2.115E-01	3.421E-01	0.120
		867.32		-2.577E-01	6.188E-01	9.964E-01	-0.259
		964.01		6.129E-01	2.568E-01	4.813E-01	1.273
		1085.78		-6.039E-02	3.180E-01	5.124E-01	-0.118
		1112.02		3.017E-02	2.909E-01	4.795E-01	0.063
		1407.95		9.729E-02	1.494E-01	2.665E-01	0.365
GD-153		69.67		8.110E-03	6.851E-01	1.061E+00	0.008
	+	83.37		2.993E+01	1.040E+01	1.283E+01	2.334
		97.43	*	4.037E-02	4.634E-02	7.432E-02	0.543
		103.18		8.060E-02	6.131E-02	1.067E-01	0.755
EU-154		123.07		-1.728E-02	3.130E-02	5.121E-02	-0.337
		247.94		9.459E-02	2.319E-01	3.799E-01	0.249
		591.81		-1.145E-01	4.704E-01	7.515E-01	-0.152
		723.30		-1.130E-02	1.525E-01	2.111E-01	-0.054
		756.87		-8.696E-02	6.402E-01	1.010E+00	-0.086
		873.19		9.379E-02	2.298E-01	3.954E-01	0.237
		996.32		-1.909E-01	2.973E-01	4.612E-01	-0.414
		1004.76		-8.564E-02	1.807E-01	2.875E-01	-0.298
		1274.45	*	-4.062E-03	1.038E-01	1.672E-01	-0.024
EU-155		48.70		-1.436E-01	3.123E-01	4.417E-01	-0.325
		60.01		1.136E+00	1.526E+00	2.248E+00	0.505
	+	86.54		4.192E-01	7.611E-02	1.049E-01	3.995
		105.31	*	1.305E-02	6.253E-02	1.060E-01	0.123
TB-160	+	86.79		1.113E+00	2.017E-01	2.778E-01	4.007
		197.04		1.236E-01	3.681E-01	5.891E-01	0.210
		215.65		5.011E-01	4.821E-01	8.135E-01	0.616
	+	298.57		1.996E-01	1.413E-01	1.392E-01	1.434
		879.36	*	-6.721E-03	1.133E-01	1.880E-01	-0.036
		962.29		5.315E-01	5.035E-01	7.949E-01	0.669
		966.15		8.562E-01	2.094E-01	4.048E-01	2.115
		1177.93		7.381E-02	3.001E-01	4.981E-01	0.148

---- 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		-4.486E-02	5.595E-01	8.972E-01	5.069E-02	-0.050
		80.57		-6.066E-03	1.547E-01	1.897E-01	1.571E-02	-0.032
	+	184.41		1.361E-01	4.085E-02	4.768E-02	3.529E-03	2.855
		280.46		-1.801E-02	5.942E-02	9.323E-02	6.921E-03	-0.193
		410.95		-1.946E-02	1.889E-01	3.140E-01	1.870E-02	-0.062
		711.68	*	-1.076E-03	4.876E-02	7.804E-02	5.935E-03	-0.014
TM-171		752.31		1.566E-01	2.427E-01	4.053E-01	3.087E-02	0.386
		810.29		-3.572E-02	4.970E-02	7.539E-02	5.696E-03	-0.474
		51.35		-1.339E+00	4.915E+00	7.337E+00	5.700E-01	-0.183
		52.39		-1.841E+00	2.807E+00	4.127E+00	3.277E-01	-0.446
		59.40		2.436E+00	8.044E+00	1.167E+01	1.061E+00	0.209
		66.72	*	-3.802E+00	1.189E+01	1.641E+01	1.443E+00	-0.232
LU-176	+	88.36		5.070E-01	1.306E-01	1.838E-01	1.485E-02	2.759
		201.83		1.043E-02	1.877E-02	3.121E-02	2.333E-03	0.334
		306.84	*	-5.564E-03	1.728E-02	2.544E-02	1.837E-03	-0.219
		401.10		-1.513E-01	4.821E+00	8.054E+00	4.723E-01	-0.019
LU-177		112.95		1.186E+00	9.075E-01	1.574E+00	1.603E-01	0.753
LU-177M	+	208.36	*	2.587E+00	9.942E-01	1.274E+00	9.549E-02	2.031
		52.97		-1.613E-01	3.009E-01	4.446E-01	3.573E-02	-0.363
		54.07		-5.383E-02	1.621E-01	2.505E-01	2.058E-02	-0.215
	+	61.30		8.098E-01	8.392E-01	8.091E-01	7.304E-02	1.001
		121.62		3.920E-02	2.205E-01	3.713E-01	4.100E-02	0.106
		147.16		-7.594E-02	3.915E-01	6.440E-01	5.830E-02	-0.118
		171.86		-1.647E-01	3.090E-01	4.969E-01	3.646E-02	-0.331
		218.09		8.521E-02	5.431E-01	8.859E-01	6.664E-02	0.096
	+	268.79		1.081E+00	7.887E-01	9.817E-01	7.345E-02	1.101
		319.02		-4.739E-02	1.804E-01	2.805E-01	1.988E-02	-0.169
		367.43		8.444E-01	6.304E-01	1.127E+00	7.121E-02	0.749
		413.65	*	1.580E-02	1.312E-01	2.205E-01	1.318E-02	0.072
HF-181		56.28		1.228E-01	2.129E-01	3.392E-01	2.910E-02	0.362
		57.53		9.167E-02	1.357E-01	2.001E-01	1.758E-02	0.458
		65.20		-1.555E-01	3.667E-01	5.042E-01	4.465E-02	-0.308
		133.02		-2.260E-03	4.015E-02	6.676E-02	6.833E-03	-0.034
		136.25		4.660E-03	2.873E-01	4.783E-01	4.771E-02	0.010
		345.85		3.838E-02	1.480E-01	2.245E-01	1.507E-02	0.171
W-181		482.03	*	1.010E-02	3.067E-02	5.169E-02	3.385E-03	0.195
		56.28		4.848E-02	8.391E-02	1.337E-01	1.147E-02	0.363
		57.53		3.612E-02	5.350E-02	7.889E-02	6.931E-03	0.458
		65.20	*	-6.082E-02	1.435E-01	1.972E-01	1.747E-02	-0.308
TA-182		67.75		-5.209E-03	3.863E-02	6.611E-02	5.785E-03	-0.079
		100.10		-8.944E-02	9.894E-02	1.618E-01	1.462E-02	-0.553
		152.43		1.859E-01	2.203E-01	3.654E-01	3.137E-02	0.509
		222.10		4.658E-03	2.235E-01	3.620E-01	2.726E-02	0.013
		1001.68		9.445E-01	1.619E+00	2.794E+00	1.906E-01	0.338
	+	1121.28		6.256E-01	1.843E-01	2.867E-01	1.715E-02	2.182
RE-183		1189.05		-3.503E-02	2.363E-01	3.792E-01	2.102E-02	-0.092
		1221.42	*	1.425E-01	1.715E-01	2.948E-01	1.647E-02	0.483
		1230.97		3.039E-01	4.185E-01	6.793E-01	3.805E-02	0.447
		57.98		3.047E-03	5.582E-02	8.029E-02	7.114E-03	0.038

----- 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		7.812E-03	3.271E-02	4.734E-02	4.299E-03	0.165
		67.20		-1.479E-03	7.520E-02	1.165E-01	1.022E-02	-0.013
		162.32	*	-1.377E-02	7.181E-02	1.137E-01	8.709E-03	-0.121
	+	208.81		2.466E+00	9.475E-01	1.208E+00	9.058E-02	2.041
		291.72		4.865E-01	6.825E-01	1.012E+00	7.440E-02	0.481
		57.98		1.127E-02	2.064E-01	2.969E-01	2.631E-02	0.038
		59.32		2.887E-02	1.209E-01	1.749E-01	1.589E-02	0.165
		67.20		-5.467E-03	2.780E-01	4.308E-01	3.779E-02	-0.013
		161.27		6.479E-02	2.288E-01	3.687E-01	2.860E-02	0.176
		216.55		1.024E-01	1.707E-01	2.836E-01	2.132E-02	0.361
		252.85	*	-6.121E-02	1.599E-01	2.518E-01	1.896E-02	-0.243
		318.01		1.839E-02	3.137E-01	4.974E-01	3.531E-02	0.037
OS-185		792.07		5.257E-01	8.886E-01	1.374E+00	1.042E-01	0.382
		903.28		3.154E-01	8.243E-01	1.377E+00	1.002E-01	0.229
		920.93		-1.571E-01	3.437E-01	5.482E-01	3.953E-02	-0.287
	+	59.72		5.021E-02	9.026E-02	1.321E-01	1.202E-02	0.380
		61.14		8.841E-02	9.161E-02	8.509E-02	7.688E-03	1.039
	+	69.30		3.254E-04	1.212E-01	1.877E-01	1.630E-02	0.002
		592.07		-5.174E-01	1.918E+00	3.058E+00	2.215E-01	-0.169
		646.12	*	-6.507E-04	3.560E-02	5.745E-02	4.296E-03	-0.011
		717.42		3.111E-01	7.249E-01	1.199E+00	9.127E-02	0.259
		874.81		9.218E-02	4.562E-01	7.732E-01	5.708E-02	0.119
		880.27		3.761E-01	6.171E-01	1.076E+00	7.922E-02	0.350
		155.03	*	-1.772E-02	1.084E-01	1.781E-01	1.486E-02	-0.100
RE-188		477.96		2.678E-01	2.253E+00	3.752E+00	2.445E-01	0.071
		633.10		4.711E-01	2.182E+00	3.587E+00	2.664E-01	0.131
	+	63.58		3.037E+01	3.147E+01	2.904E+01	2.592E+00	1.046
W-188		227.08		-4.569E+00	8.301E+00	1.307E+01	9.852E-01	-0.350
		290.67	*	2.474E+00	5.177E+00	7.575E+00	5.574E-01	0.327
	+	295.96		8.746E-01	1.603E-01	1.794E-01	1.325E-02	4.876
IR-192		308.46		-1.842E-02	6.337E-02	9.857E-02	7.153E-03	-0.187
		316.51	*	5.585E-04	2.349E-02	3.719E-02	2.655E-03	0.015
		468.07		1.926E-02	5.235E-02	8.244E-02	5.976E-03	0.234
AU-195		604.41		-2.849E-01	4.079E-01	5.387E-01	6.565E-02	-0.529
		612.46		-6.014E-01	5.825E-01	7.317E-01	6.444E-02	-0.822
		65.12		-2.863E-02	6.636E-02	9.119E-02	8.079E-03	-0.314
		66.83		1.302E-03	3.506E-02	5.443E-02	4.783E-03	0.024
	+	75.70		1.579E+00	1.820E-01	2.291E-01	1.935E-02	6.890
		98.88	*	9.316E-02	1.294E-01	2.143E-01	1.913E-02	0.435
TL-200		129.76		9.073E-01	1.981E+00	3.021E+00	3.170E-01	0.300
		367.94	*	2.343E-04	1.981E+00	Half-Life	too short	
		579.30		1.572E-03	1.981E+00	Half-Life	too short	
		828.27		-2.207E-04	1.981E+00	Half-Life	too short	
TL-201		1205.75		9.256E-04	1.981E+00	Half-Life	too short	
		68.90		6.364E-01	1.653E+00	2.590E+00	2.254E-01	0.246
		70.82		-3.382E-01	1.004E+00	1.536E+00	1.326E-01	-0.220
		80.30		1.795E+00	2.352E+00	3.021E+00	2.504E-01	0.594
		135.34		-5.743E+00	1.380E+01	2.262E+01	2.273E+00	-0.254
		167.43	*	-1.900E+00	3.864E+00	6.235E+00	4.560E-01	-0.305

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90		6.369E-02	1.655E-01	2.593E-01	2.257E-02	0.246
		70.82		-3.376E-02	1.003E-01	1.534E-01	1.323E-02	-0.220
		80.30		1.792E-01	2.349E-01	3.016E-01	2.500E-02	0.594
HG-203		439.56	*	3.961E-03	4.954E-02	8.274E-02	5.135E-03	0.048
		70.83		-1.473E-01	4.465E-01	6.826E-01	9.290E-02	-0.216
	+	72.87		3.048E+00	5.227E-01	5.643E-01	7.424E-02	5.401
	+	82.60		2.209E+00	8.033E-01	9.241E-01	1.247E-01	2.390
		279.20	*	-2.371E-02	2.916E-02	4.454E-02	3.436E-03	-0.532
BI-207	+	72.80		9.017E-01	1.257E-01	1.639E-01	1.402E-02	5.502
	+	74.97		5.342E-01	7.444E-02	1.241E-01	1.051E-02	4.305
	+	84.90		7.909E-01	1.433E-01	1.719E-01	1.400E-02	4.600
		569.67		-2.125E-02	2.279E-02	3.459E-02	2.464E-03	-0.614
TL-207		1063.62	*	5.709E-02	4.310E-02	7.800E-02	5.012E-03	0.732
		1770.23		4.031E-02	4.032E-01	5.834E-01	3.352E-02	0.069
		81.07		2.818E-02	1.075E-01	1.533E-01	1.267E-02	0.184
	+	83.78		2.557E-01	8.889E-02	1.087E-01	8.891E-03	2.352
		94.90		-4.567E-02	1.270E-01	1.905E-01	1.638E-02	-0.240
		122.32		-1.773E-01	1.042E+00	1.733E+00	2.006E-01	-0.102
		144.24		2.784E-01	4.509E-01	7.275E-01	7.464E-02	0.383
		154.21		1.510E-01	2.546E-01	4.289E-01	3.989E-02	0.352
	+	269.46		2.537E-01	1.852E-01	2.357E-01	1.811E-02	1.076
		323.87	*	5.998E-02	4.739E-01	7.163E-01	1.217E-01	0.084
	+	338.28		5.300E+00	1.475E+00	1.770E+00	1.971E-01	2.994
PO-209		445.03		9.173E-01	1.646E+00	2.818E+00	2.967E-01	0.326
		260.50		1.325E+00	6.412E+00	1.038E+01	7.794E-01	0.128
		262.80		4.221E+00	1.786E+01	2.893E+01	2.171E+00	0.146
PB-211		896.60	*	-3.882E+00	6.018E+00	9.492E+00	6.929E-01	-0.409
		404.84	*	-1.084E+00	9.686E-01	1.065E+00	6.639E-01	-1.018
		427.08		1.597E-01	1.480E+00	2.476E+00	1.531E+00	0.064
BI-212		831.96		-6.524E-01	1.045E+00	1.530E+00	9.568E-01	-0.426
	+	727.18	*	1.145E+00	3.514E-01	5.479E-01	5.017E-02	2.090
		785.46		4.007E-01	1.423E+00	2.437E+00	1.850E-01	0.164
PO-215		1620.62		1.353E+00	1.070E+00	2.034E+00	1.182E-01	0.665
		81.07		2.818E-02	1.075E-01	1.533E-01	1.267E-02	0.184
	+	83.78		2.557E-01	8.889E-02	1.087E-01	8.891E-03	2.352
		94.90		-4.567E-02	1.270E-01	1.905E-01	1.638E-02	-0.240
		122.32		-1.773E-01	1.042E+00	1.733E+00	2.006E-01	-0.102
		144.24		2.784E-01	4.509E-01	7.275E-01	7.464E-02	0.383
		154.21		1.510E-01	2.546E-01	4.289E-01	3.989E-02	0.352
	+	269.46		2.537E-01	1.852E-01	2.357E-01	1.811E-02	1.076
		323.87	*	5.998E-02	4.739E-01	7.163E-01	1.217E-01	0.084
	+	338.28		5.300E+00	1.475E+00	1.770E+00	1.971E-01	2.994
		445.03		9.173E-01	1.646E+00	2.818E+00	2.967E-01	0.326
RN-219		271.23		1.872E-01	1.881E-01	2.826E-01	2.649E-02	0.662
		401.81	*	5.158E-02	2.941E-01	4.964E-01	6.768E-02	0.104
RN-220		549.76	*	4.672E+00	1.931E+01	3.212E+01	2.251E+00	0.145
RA-223		81.07		2.818E-02	1.075E-01	1.533E-01	1.267E-02	0.184
	+	83.78		2.557E-01	8.889E-02	1.087E-01	8.891E-03	2.352
		94.90		-4.567E-02	1.270E-01	1.905E-01	1.638E-02	-0.240

---- 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		-1.773E-01	1.042E+00	1.733E+00	2.006E-01	-0.102
		144.24		2.784E-01	4.509E-01	7.275E-01	7.464E-02	0.383
		154.21		1.510E-01	2.546E-01	4.289E-01	3.989E-02	0.352
	+	269.46		2.537E-01	1.852E-01	2.357E-01	1.811E-02	1.076
		323.87	*	5.998E-02	4.739E-01	7.163E-01	1.217E-01	0.084
	+	338.28		5.300E+00	1.475E+00	1.770E+00	1.971E-01	2.994
		445.03		9.173E-01	1.646E+00	2.818E+00	2.967E-01	0.326
		79.80		2.361E-01	9.316E-01	1.161E+00	2.483E-01	0.203
		236.00		1.306E+00	2.565E-01	3.749E-01	4.316E-02	3.483
		256.20	*	-9.976E-03	2.628E-01	4.207E-01	6.209E-02	-0.024
		286.10		-1.362E-01	1.113E+00	1.690E+00	2.101E-01	-0.081
	+	299.80		2.557E+00	1.852E+00	1.794E+00	3.027E-01	1.425
TH-227		304.40		1.295E+00	1.359E+00	2.026E+00	3.613E-01	0.639
		334.20		-1.376E+00	1.819E+00	2.561E+00	4.791E-01	-0.537
		79.80		2.361E-01	9.317E-01	1.161E+00	2.515E-01	0.203
		94.00		1.817E+00	1.104E+00	1.678E+00	3.647E-01	1.083
		236.00		1.306E+00	2.473E-01	3.749E-01	3.848E-02	3.483
		256.20	*	-9.976E-03	2.628E-01	4.207E-01	7.389E-02	-0.024
		286.10		-1.362E-01	1.121E+00	1.690E+00	1.695E+00	-0.081
	+	299.80		2.557E+00	1.852E+00	1.794E+00	3.027E-01	1.425
		304.40		1.295E+00	1.359E+00	2.026E+00	3.613E-01	0.639
		334.20		-1.376E+00	1.819E+00	2.561E+00	4.791E-01	-0.537
	+	85.43		7.806E-01	1.414E-01	1.855E-01	1.508E-02	4.207
	+	88.47		2.919E-01	7.520E-02	1.055E-01	8.537E-03	2.765
TH-229		100.00		-7.992E-02	1.034E-01	1.700E-01	1.534E-02	-0.470
		193.63	*	-2.602E-01	3.368E-01	5.318E-01	3.958E-02	-0.489
		210.97		3.920E-01	4.996E-01	7.558E-01	5.672E-02	0.519
		283.67	*	-2.906E-01	1.093E+00	1.715E+00	2.492E-01	-0.169
PA-231		301.29		4.652E-01	4.207E-01	6.350E-01	7.197E-02	0.733
TH-231		81.07		2.818E-02	1.075E-01	1.533E-01	1.267E-02	0.184
	+	83.78		2.557E-01	8.889E-02	1.087E-01	8.891E-03	2.352
		94.90		-4.567E-02	1.270E-01	1.905E-01	1.638E-02	-0.240
		122.32		-1.773E-01	1.042E+00	1.733E+00	2.006E-01	-0.102
U-231		144.24		2.784E-01	4.509E-01	7.275E-01	7.464E-02	0.383
		154.21		1.510E-01	2.546E-01	4.289E-01	3.989E-02	0.352
	+	269.46		2.537E-01	1.852E-01	2.357E-01	1.811E-02	1.076
		323.87	*	5.998E-02	4.739E-01	7.163E-01	1.217E-01	0.084
	+	338.28		5.300E+00	1.475E+00	1.770E+00	1.971E-01	2.994
		445.03		9.173E-01	1.646E+00	2.818E+00	2.967E-01	0.326
	+	84.21		9.931E+00	3.452E+00	4.181E+00	3.414E-01	2.375
	+	92.29		6.744E+00	1.570E+00	2.111E+00	1.770E-01	3.195
		95.87	*	-6.866E-01	5.715E-01	8.225E-01	7.137E-02	-0.835
		108.00		-2.695E-02	1.023E+00	1.720E+00	1.674E-01	-0.016
	+	75.28		2.562E+01	4.393E+00	3.771E+00	5.754E-01	6.793
	+	86.59		6.815E+00	2.126E+00	1.704E+00	4.543E-01	3.999
	+	300.12		7.128E-01	5.122E-01	4.975E-01	7.035E-02	1.433
PA-233		311.98	*	7.132E-03	4.321E-02	6.903E-02	5.150E-03	0.103
		340.50		1.333E-01	4.198E-01	6.390E-01	1.485E-01	0.209
		398.62		7.624E-01	1.506E+00	2.566E+00	6.637E-01	0.297

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	+	415.76	5.098E-01	1.220E+00	2.073E+00	4.280E-01	0.246
		63.00	8.864E-01	9.256E-01	9.245E-01	1.450E-01	0.959
		94.67	-1.120E-02	9.085E-02	1.377E-01	1.704E-02	-0.081
		98.44	7.012E-02	6.597E-02	8.976E-02	5.011E-02	0.781
		99.86	-1.232E-01	2.609E-01	4.339E-01	3.910E-02	-0.284
		111.00	-2.352E-02	1.073E-01	1.789E-01	2.346E-02	-0.131
		131.20	7.489E-02	7.091E-02	1.105E-01	1.147E-02	0.678
		152.70	6.560E-02	2.158E-01	3.519E-01	5.988E-02	0.186
		186.00	4.901E+00	2.079E+00	1.718E+00	5.310E-01	2.852
		226.40	-5.787E-02	2.625E-01	4.199E-01	5.258E-02	-0.138
		227.20	-1.567E-01	2.821E-01	4.441E-01	3.347E-02	-0.353
		248.90	8.239E-02	5.422E-01	8.771E-01	1.931E-01	0.094
		293.70	5.538E+00	1.310E+00	1.268E+00	2.118E-01	4.367
		369.80	-3.430E-01	6.026E-01	9.768E-01	2.047E-01	-0.351
		568.70	-2.594E-01	7.324E-01	1.164E+00	8.290E-02	-0.223
	+	569.50	-1.815E-01	2.027E-01	3.086E-01	2.199E-02	-0.588
		574.00	1.267E+00	1.068E+00	1.882E+00	1.345E-01	0.673
		699.00	9.868E-02	6.176E-01	1.002E+00	1.868E-01	0.098
		706.10	-6.751E-01	9.438E-01	1.356E+00	6.022E-01	-0.498
		733.00	-2.699E-01	3.217E-01	4.497E-01	9.815E-02	-0.600
		742.81	3.695E-01	1.196E+00	1.914E+00	1.284E+00	0.193
		796.30	1.490E+00	1.238E+00	1.386E+00	3.705E-01	1.075
		805.60	-4.072E-02	7.780E-01	1.301E+00	3.951E-01	-0.031
		819.60	-1.290E-01	1.009E+00	1.588E+00	6.002E-01	-0.081
		826.30	-1.039E-01	6.492E-01	1.072E+00	4.775E-01	-0.097
		831.60	-1.568E-01	4.872E-01	7.927E-01	2.342E-01	-0.198
		876.40	-5.783E-03	6.645E-01	1.107E+00	1.137E+00	-0.005
		880.51	1.881E-01	2.258E-01	3.994E-01	2.941E-02	0.471
		883.24	-7.569E-02	2.399E-01	3.811E-01	2.556E-01	-0.199
		899.00	-1.915E-01	7.112E-01	1.152E+00	5.007E-01	-0.166
	+	925.00	-2.048E-01	8.785E-01	1.429E+00	1.028E-01	-0.143
		926.50	3.454E-02	1.338E-01	2.265E-01	5.624E-02	0.152
		946.00	-4.903E-02	2.424E-01	3.950E-01	7.156E-02	-0.124
		949.00	7.019E-02	3.670E-01	6.172E-01	4.378E-02	0.114
		980.50	-9.774E-02	5.444E-01	8.852E-01	6.142E-02	-0.110
		1394.10	-6.677E-01	9.869E-01	1.355E+00	8.779E-01	-0.493
		766.42	1.006E+01	1.194E+01	1.712E+01	8.659E+00	0.588
		1001.03	4.019E-01	3.760E+00	6.257E+00	5.295E-01	0.064
	U-235	89.95	2.929E+00	1.150E+00	1.037E+00	3.188E-01	2.825
		93.35	2.356E+00	8.338E-01	6.225E-01	1.742E-01	3.784
		105.00	4.640E-01	6.288E-01	1.057E+00	3.182E-01	0.439
		143.76	1.214E-01	1.406E-01	2.266E-01	4.050E-02	0.536
		163.35	8.133E-02	3.124E-01	5.028E-01	9.364E-02	0.162
		185.71	1.815E-01	5.446E-02	6.447E-02	4.776E-03	2.815
		205.31	4.754E-02	3.713E-01	5.425E-01	1.009E-01	0.088
	NP-236	94.67	-8.152E-03	6.891E-02	1.045E-01	8.964E-03	-0.078
		98.44	5.306E-02	4.042E-02	6.786E-02	6.033E-03	0.782
		111.00	-1.779E-02	8.113E-02	1.354E-01	1.354E-02	-0.131
		160.31	-3.637E-02	4.952E-02	7.925E-02	6.222E-03	-0.459

---- 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		-1.197E-02	8.693E-02	1.462E-01	1.314E-02	-0.082
		117.00	*	-5.072E-02	1.112E-01	1.832E-01	1.939E-02	-0.277
	+	209.75		1.957E+00	7.522E-01	9.327E-01	6.996E-02	2.098
		228.18		-6.577E-02	1.489E-01	2.357E-01	1.777E-02	-0.279
		277.60		1.086E-01	1.264E-01	2.096E-01	1.559E-02	0.518
AM-241		334.30		-7.753E-01	1.022E+00	1.452E+00	1.000E-01	-0.534
		59.54	*	1.955E-02	4.721E-02	6.875E-02	6.670E-03	0.284
		99.55		-1.232E-02	8.945E-02	1.505E-01	1.352E-02	-0.082
		103.76	*	1.088E-01	5.756E-02	1.010E-01	9.441E-03	1.077
		117.00		-5.218E-02	1.144E-01	1.885E-01	1.994E-02	-0.277
CM-243	+	209.75		1.929E+00	7.414E-01	9.194E-01	6.897E-02	2.098
		228.18		-6.646E-02	1.505E-01	2.381E-01	1.795E-02	-0.279
		277.60		1.095E-01	1.275E-01	2.113E-01	1.572E-02	0.518
		798.80		2.725E-02	1.196E-01	1.792E-01	1.357E-02	0.152
		1036.00		9.656E-03	2.309E-01	3.813E-01	2.521E-02	0.025
AM-246		1062.04		-4.665E-02	1.920E-01	3.089E-01	1.988E-02	-0.151
		1078.86	*	-2.774E-02	1.203E-01	1.935E-01	1.222E-02	-0.143
		278.00		2.476E-01	5.239E-01	8.541E-01	6.353E-02	0.290
		287.40		1.496E-01	8.204E-01	1.318E+00	9.731E-02	0.114
		402.60	*	5.888E-03	2.615E-02	4.426E-02	2.601E-03	0.133
CF-249		252.85		-2.303E-01	6.016E-01	9.474E-01	7.133E-02	-0.243
		333.44		-3.278E-02	1.323E-01	1.948E-01	1.344E-02	-0.168
		387.95	*	-6.264E-03	2.829E-02	4.690E-02	2.751E-03	-0.134
CF-251		176.60	*	-7.268E-02	7.956E-02	1.254E-01	9.233E-03	-0.580
		227.00		-1.189E-01	2.499E-01	3.950E-01	2.977E-02	-0.301
		285.00		6.843E-01	1.259E+00	1.980E+00	1.465E-01	0.346



# 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]G243274001      *
* Acquisition date   : 30-DEC-2009 22:47:57 Detector SN#                   *
* Detector ID        : GAM17 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 04:00:17.43 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 16-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243274001 Analyst initials: MXR1                  *
* Batch Number       : 935341 Sample Quantity : 1.3293E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 27-JAN-2009 16:21:14 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	2.331E+01	1.896E+00	4.417E-01	0.000E+00
CD-109	2.173E+00	5.486E-01	6.402E-01	0.000E+00
SN-126	3.481E-01	6.180E-02	6.292E-02	0.000E+00
CS-135	2.156E-01	1.546E-01	1.602E-01	0.000E+00
TL-208	5.198E-01	7.784E-02	4.670E-02	0.000E+00
BI-210	4.359E-01	5.124E-01	5.280E-01	0.000E+00
PB-210	4.359E-01	5.124E-01	5.280E-01	0.000E+00
PO-210	4.359E-01	5.121E-01	5.280E-01	0.000E+00
BI-211	3.083E+00	4.219E-01	2.391E-01	0.000E+00
PB-212	1.460E+00	1.480E-01	5.786E-02	0.000E+00
PO-212	1.460E+00	1.480E-01	5.786E-02	0.000E+00
BI-214	9.223E-01	1.446E-01	8.541E-02	0.000E+00
PB-214	1.072E+00	1.567E-01	8.340E-02	0.000E+00
PO-214	1.072E+00	1.567E-01	8.340E-02	0.000E+00
PO-216	1.460E+00	1.480E-01	5.786E-02	0.000E+00
PO-218	1.072E+00	1.567E-01	8.340E-02	0.000E+00
RA-224	4.378E+00	8.800E-01	6.590E-01	0.000E+00
RA-226	9.223E-01	1.446E-01	8.541E-02	0.000E+00
AC-228	1.471E+00	2.929E-01	1.650E-01	0.000E+00
RA-228	1.471E+00	2.929E-01	1.650E-01	0.000E+00
TH-228	1.482E+00	1.502E-01	5.870E-02	0.000E+00
TH-230	9.222E-01	1.446E-01	8.541E-02	0.000E+00
TH-232	1.471E+00	2.929E-01	1.650E-01	0.000E+00
TH-234	7.604E-01	7.811E-01	6.854E-01	0.000E+00
U-234	9.222E-01	1.446E-01	8.541E-02	0.000E+00
NP-237	1.022E+00	2.751E-01	1.843E-01	0.000E+00
U-238	7.604E-01	7.811E-01	6.854E-01	0.000E+00
AM-243	2.976E-01	4.064E-02	4.028E-02	0.000E+00
ANH-511	1.075E-01	5.140E-02	3.449E-02	0.000E+00

### ---- Non-Identified Nuclides ----

Key-Line  
Activity K.L. Act error MDA

Nuclide	(pCi/GRAM	) Ided	(pCi/GRAM	)	
BE-7	-4.035E-02	2.310E-01	3.939E-01	0.000E+00	NOT IDENT.
NA-22	-8.804E-04	3.646E-02	6.024E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	3.110E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.742E-03	2.359E-02	3.888E-02	0.000E+00	NOT IDENT.
TI-44	7.555E-03	1.659E-02	2.566E-02	0.000E+00	NOT IDENT.
SC-46	-3.492E-02	3.062E-02	4.757E-02	0.000E+00	FAIL ABUN
V-48	2.171E-03	4.925E-02	8.411E-02	0.000E+00	NOT IDENT.
CR-51	-3.206E-02	2.366E-01	4.190E-01	0.000E+00	NOT IDENT.
MN-52	-1.734E-01	1.771E-01	2.692E-01	0.000E+00	NOT IDENT.
MN-54	-1.552E-02	2.957E-02	4.923E-02	0.000E+00	NOT IDENT.
CO-56	-6.933E-03	2.747E-02	4.643E-02	0.000E+00	FAIL ABUN
CO-57	-2.394E-03	1.469E-02	2.607E-02	0.000E+00	NOT IDENT.
CO-58	-1.137E-02	2.970E-02	5.000E-02	0.000E+00	NOT IDENT.
FE-59	4.898E-02	7.157E-02	1.270E-01	0.000E+00	NOT IDENT.
CO-60	1.184E-02	2.876E-02	4.966E-02	0.000E+00	NOT IDENT.
ZN-65	1.099E-01	8.440E-02	1.389E-01	0.000E+00	NOT IDENT.
GE-68	3.712E-01	1.051E+00	1.820E+00	0.000E+00	NOT IDENT.
AS-73	9.245E-03	1.528E-01	2.498E-01	0.000E+00	NOT IDENT.
AS-74	2.885E-02	6.999E-02	1.155E-01	0.000E+00	NOT IDENT.
SE-75	-8.420E-03	3.028E-02	4.774E-02	0.000E+00	NOT IDENT.
BR-77	-1.774E+00	6.283E+00	1.054E+01	0.000E+00	FAIL ABUN
SR-82	-2.590E-01	3.188E-01	4.404E-01	0.000E+00	NOT IDENT.
RB-83	-1.481E-02	4.954E-02	8.301E-02	0.000E+00	NOT IDENT.
RB-84	-2.853E-03	5.607E-02	9.605E-02	0.000E+00	NOT IDENT.
KR-85	2.855E+00	5.457E+00	8.563E+00	0.000E+00	NOT IDENT.
SR-85	1.454E-02	2.780E-02	4.362E-02	0.000E+00	NOT IDENT.
RB-86	1.929E-01	6.493E-01	1.120E+00	0.000E+00	NOT IDENT.
Y-88	3.827E-03	2.203E-02	3.806E-02	0.000E+00	NOT IDENT.
ZR-88	1.032E-02	2.092E-02	3.758E-02	0.000E+00	NOT IDENT.
Y-91	1.043E+01	1.538E+01	2.692E+01	0.000E+00	NOT IDENT.
NB-94	5.735E-03	2.854E-02	4.807E-02	0.000E+00	NOT IDENT.
NB-95	2.466E-02	3.792E-02	6.087E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.007E-01	1.694E-01	0.000E+00	NOT IDENT.
ZR-95	-4.120E-03	5.924E-02	9.720E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	4.036E+04	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	8.205E+05	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-4.747E-01	8.445E+00	1.390E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.308E+15	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.329E-03	2.139E-02	3.564E-02	0.000E+00	FAIL ABUN
RH-102	-5.949E-03	2.043E-02	3.457E-02	0.000E+00	NOT IDENT.
RU-103	-1.349E-02	2.832E-02	4.701E-02	0.000E+00	FAIL ABUN
RH-106	1.888E-02	2.446E-01	4.137E-01	0.000E+00	NOT IDENT.
RU-106	1.888E-02	2.446E-01	4.137E-01	0.000E+00	NOT IDENT.
AG-108M	1.343E-02	2.339E-02	4.190E-02	0.000E+00	NOT IDENT.
AG-110M	-1.295E-02	2.678E-02	4.313E-02	0.000E+00	NOT IDENT.
IN-111	-1.454E-01	6.185E-01	9.192E-01	0.000E+00	NOT IDENT.
IN-113M	3.210E-03	3.089E-02	5.445E-02	0.000E+00	NOT IDENT.
SN-113	3.210E-03	3.089E-02	5.445E-02	0.000E+00	NOT IDENT.
IN-114M	5.131E-02	1.256E-01	1.981E-01	0.000E+00	NOT IDENT.
CD-115	2.275E+00	6.203E+00	1.086E+01	0.000E+00	NOT IDENT.
SN-117M	-3.039E-02	3.253E-02	5.489E-02	0.000E+00	NOT IDENT.
SB-122	1.171E+00	1.412E+00	2.513E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.586E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-7.552E-03	1.726E-02	2.974E-02	0.000E+00	NOT IDENT.
I-124	-1.465E-01	5.042E-01	7.226E-01	0.000E+00	FAIL ABUN
SB-124	3.777E-02	6.907E-02	1.243E-01	0.000E+00	FAIL ABUN
SB-125	3.455E-02	6.465E-02	1.157E-01	0.000E+00	FAIL ABUN
TE-125M	1.144E+00	5.082E+00	9.201E+00	0.000E+00	NOT IDENT.
I-126	7.088E-02	1.320E-01	2.290E-01	0.000E+00	NOT IDENT.
SB-126	1.263E-02	1.187E-01	1.833E-01	0.000E+00	NOT IDENT.
SB-127	2.224E-01	9.812E-01	1.661E+00	0.000E+00	FAIL ABUN
XE-127	2.233E-02	2.979E-02	5.271E-02	0.000E+00	NOT IDENT.
I-131	-1.051E-02	7.399E-02	1.295E-01	0.000E+00	NOT IDENT.
TE-132	-1.767E-01	3.912E-01	6.525E-01	0.000E+00	NOT IDENT.
BA-133	-2.468E-03	3.183E-02	4.935E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.589E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.933E-02	7.368E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	9.741E+14	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.792E-03	8.106E-02	1.374E-01	0.000E+00	FAIL ABUN
BA-137M	-8.420E-03	2.766E-02	4.519E-02	0.000E+00	NOT IDENT.
CS-137	-8.901E-03	2.924E-02	4.777E-02	0.000E+00	NOT IDENT.
CE-139	8.689E-03	1.844E-02	3.276E-02	0.000E+00	NOT IDENT.
BA-140	-3.492E-02	1.868E-01	3.140E-01	0.000E+00	NOT IDENT.
LA-140	2.492E-03	6.789E-02	9.961E-02	0.000E+00	NOT IDENT.
CE-141	-2.956E-02	3.801E-02	6.506E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.189E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	-6.407E-02	1.246E-01	2.165E-01	0.000E+00	NOT IDENT.
PM-144	9.498E-03	2.888E-02	4.910E-02	0.000E+00	NOT IDENT.
PR-144	6.434E-01	1.956E+00	3.326E+00	0.000E+00	NOT IDENT.
PM-146	4.788E-02	3.213E-02	5.965E-02	0.000E+00	NOT IDENT.
ND-147	7.844E-02	3.845E-01	6.650E-01	0.000E+00	FAIL ABUN
PM-149	-1.184E+01	5.379E+01	8.548E+01	0.000E+00	NOT IDENT.
EU-152	6.476E-03	6.891E-02	1.141E-01	0.000E+00	NOT IDENT.
GD-153	4.037E-02	4.541E-02	7.800E-02	0.000E+00	FAIL ABUN
EU-154	-4.062E-03	1.017E-01	1.678E-01	0.000E+00	NOT IDENT.
EU-155	1.305E-02	6.128E-02	1.111E-01	0.000E+00	FAIL ABUN
TB-160	-6.721E-03	1.110E-01	1.900E-01	0.000E+00	FAIL ABUN
HO-166M	-1.076E-03	4.778E-02	7.917E-02	0.000E+00	FAIL ABUN
TM-171	-3.802E+00	1.165E+01	1.733E+01	0.000E+00	NOT IDENT.
LU-176	-5.564E-03	1.694E-02	2.619E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	9.743E-01	1.320E+00	0.000E+00	FAIL ABUN
LU-177M	1.580E-02	1.286E-01	2.258E-01	0.000E+00	FAIL ABUN
HF-181	1.010E-02	3.005E-02	5.280E-02	0.000E+00	NOT IDENT.
W-181	-6.082E-02	1.406E-01	2.084E-01	0.000E+00	NOT IDENT.
TA-182	1.425E-01	1.681E-01	2.962E-01	0.000E+00	FAIL ABUN
RE-183	-1.377E-02	7.037E-02	1.183E-01	0.000E+00	FAIL ABUN
RE-184	-6.121E-02	1.567E-01	2.601E-01	0.000E+00	NOT IDENT.
OS-185	-6.507E-04	3.489E-02	5.839E-02	0.000E+00	FAIL ABUN
RE-188	-1.772E-02	1.062E-01	1.854E-01	0.000E+00	NOT IDENT.
W-188	2.474E+00	5.074E+00	7.805E+00	0.000E+00	FAIL ABUN
IR-192	5.585E-04	2.302E-02	3.826E-02	0.000E+00	FAIL ABUN
AU-195	9.316E-02	1.268E-01	2.248E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.066E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.900E+00	3.787E+00	6.485E+00	0.000E+00	NOT IDENT.
TL-202	3.961E-03	4.855E-02	8.465E-02	0.000E+00	NOT IDENT.
HG-203	-2.371E-02	2.858E-02	4.593E-02	0.000E+00	FAIL ABUN
BI-207	5.709E-02	4.224E-02	7.857E-02	0.000E+00	FAIL ABUN
TL-207	5.998E-02	4.644E-01	7.367E-01	0.000E+00	FAIL ABUN
PO-209	-3.882E+00	5.897E+00	9.590E+00	0.000E+00	NOT IDENT.
PB-211	-1.084E+00	9.492E-01	1.091E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	3.443E-01	5.556E-01	0.000E+00	FAIL ABUN
PO-215	5.998E-02	4.644E-01	7.367E-01	0.000E+00	FAIL ABUN
RN-219	5.158E-02	2.882E-01	5.086E-01	0.000E+00	NOT IDENT.
RN-220	4.672E+00	1.892E+01	3.273E+01	0.000E+00	NOT IDENT.
RA-223	5.998E-02	4.644E-01	7.367E-01	0.000E+00	FAIL ABUN
AC-227	-9.976E-03	2.576E-01	4.344E-01	0.000E+00	FAIL ABUN
TH-227	-9.976E-03	2.576E-01	4.344E-01	0.000E+00	FAIL ABUN
TH-229	-2.602E-01	3.300E-01	5.517E-01	0.000E+00	FAIL ABUN
PA-231	-2.906E-01	1.071E+00	1.768E+00	0.000E+00	NOT IDENT.
TH-231	5.998E-02	4.644E-01	7.367E-01	0.000E+00	FAIL ABUN
U-231	-6.866E-01	5.600E-01	8.634E-01	0.000E+00	FAIL ABUN
PA-233	7.132E-03	4.234E-02	7.104E-02	0.000E+00	FAIL ABUN
PA-234	-4.903E-02	2.376E-01	3.987E-01	0.000E+00	FAIL ABUN
PA-234M	4.019E-01	3.685E+00	6.310E+00	0.000E+00	NOT IDENT.
U-235	1.214E-01	1.378E-01	2.362E-01	0.000E+00	FAIL ABUN
NP-236	-3.637E-02	4.853E-02	8.249E-02	0.000E+00	NOT IDENT.
NP-239	-5.072E-02	1.089E-01	1.917E-01	0.000E+00	FAIL ABUN
AM-241	1.955E-02	4.626E-02	7.273E-02	0.000E+00	NOT IDENT.
CM-243	0.000E+00	5.641E-02	1.059E-01	0.000E+00	FAIL ABUN
AM-246	-2.774E-02	1.179E-01	1.949E-01	0.000E+00	NOT IDENT.
CM-247	5.888E-03	2.563E-02	4.535E-02	0.000E+00	NOT IDENT.
CF-249	-6.264E-03	2.773E-02	4.808E-02	0.000E+00	NOT IDENT.
CF-251	-7.268E-02	7.797E-02	1.303E-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]G243274001.CNF;1
Sample date        : 16-DEC-2009 12:00:00 Acquisition date : 30-DEC-2009 22:47:57
Sample ID          : G243274001 Sample quantity : 1.32930E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 04:00:00.00 Elapsed real time: 0 04:00:17.43 0.1%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 935341 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	1406	10.67*	7.981E-01	2.331E+01	2.331E+01	8.30
CD-109	88.03	367	3.72*	6.558E+00	2.126E+00	2.173E+00	25.77
SN-126	64.28	-----	9.60	6.653E+00	-----	Line Not Found	-----
	86.94	600	8.90	6.582E+00	1.447E+00	1.447E+00	44.32
	87.57	600	37.00*	6.582E+00	3.481E-01	3.481E-01	18.12
CS-135	268.24	92	16.00*	3.747E+00	2.156E-01	2.156E-01	73.16
TL-208	277.35	-----	6.80	3.655E+00	-----	Line Not Found	-----
	510.84	158	21.60	2.075E+00	4.979E-01	4.979E-01	49.47
	583.14	566	84.20*	1.825E+00	5.198E-01	5.198E-01	15.28
	860.37	62	12.46	1.267E+00	5.580E-01	5.580E-01	64.93
BI-210	46.50	82	4.05*	6.555E+00	4.354E-01	4.359E-01	119.94
PB-210	46.50	82	4.05*	6.555E+00	4.354E-01	4.359E-01	119.94
PO-210	46.50	82	4.05*	6.555E+00	4.354E-01	4.359E-01	119.87
BI-211	72.87	925	1.27	6.652E+00	1.547E+01	1.547E+01	13.94
	351.07	837	12.94*	2.961E+00	3.083E+00	3.083E+00	13.97
PB-212	74.81	925	10.70	6.652E+00	1.836E+00	1.836E+00	16.78
	77.11	1519	18.00	6.645E+00	1.793E+00	1.793E+00	11.53
	87.30	600	8.00	6.582E+00	1.610E+00	1.610E+00	20.69
	238.63	1911	44.60*	4.143E+00	1.460E+00	1.460E+00	10.34
	300.09	114	3.41	3.426E+00	1.380E+00	1.380E+00	71.07
PO-212	74.81	925	10.70	6.652E+00	1.836E+00	1.836E+00	16.78
	77.11	1519	18.00	6.645E+00	1.793E+00	1.793E+00	11.53
	87.30	600	8.00	6.582E+00	1.610E+00	1.610E+00	20.69
	115.19	-----	0.60	6.204E+00	-----	Line Not Found	-----
	238.63	1911	44.60*	4.143E+00	1.460E+00	1.460E+00	10.34
	300.09	114	3.41	3.426E+00	1.380E+00	1.380E+00	71.07
BI-214	609.31	529	46.30*	1.750E+00	9.222E-01	9.223E-01	16.00
	1120.29	142	15.10	1.003E+00	1.328E+00	1.328E+00	30.20
	1764.49	79	15.80	6.761E-01	1.043E+00	1.043E+00	28.98
PB-214	74.81	925	6.21	6.652E+00	3.163E+00	3.163E+00	15.78
	77.11	1519	10.50	6.645E+00	3.074E+00	3.074E+00	13.82
	87.30	600	4.67	6.582E+00	2.758E+00	2.758E+00	19.69

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	241.98	502	7.49	4.103E+00	2.309E+00	2.309E+00	21.27
	295.21	545	19.20	3.471E+00	1.154E+00	1.154E+00	19.34
	351.92	837	37.20*	2.961E+00	1.072E+00	1.072E+00	14.91
	74.81	925	6.21	6.652E+00	3.163E+00	3.163E+00	15.78
	77.11	1519	10.50	6.645E+00	3.074E+00	3.074E+00	13.82
	87.30	600	4.67	6.582E+00	2.758E+00	2.758E+00	19.69
	241.98	502	7.49	4.103E+00	2.309E+00	2.309E+00	21.27
	295.21	545	19.20	3.471E+00	1.154E+00	1.154E+00	19.34
PO-216	351.92	837	37.20*	2.961E+00	1.072E+00	1.072E+00	14.91
	74.81	925	10.70	6.652E+00	1.836E+00	1.836E+00	16.78
	77.11	1519	18.00	6.645E+00	1.793E+00	1.793E+00	11.53
	87.30	600	8.00	6.582E+00	1.610E+00	1.610E+00	20.69
	238.63	1911	44.60*	4.143E+00	1.460E+00	1.460E+00	10.34
	300.09	114	3.41	3.426E+00	1.380E+00	1.380E+00	71.07
	74.81	925	6.21	6.652E+00	3.163E+00	3.163E+00	15.78
	77.11	1519	10.50	6.645E+00	3.074E+00	3.074E+00	13.82
PO-218	87.30	600	4.67	6.582E+00	2.758E+00	2.758E+00	19.69
	241.98	502	7.49	4.103E+00	2.309E+00	2.309E+00	21.27
	295.21	545	19.20	3.471E+00	1.154E+00	1.154E+00	19.34
	351.92	837	37.20*	2.961E+00	1.072E+00	1.072E+00	14.91
	240.98	502	3.95*	4.103E+00	4.378E+00	4.378E+00	20.51
	609.31	529	46.30*	1.750E+00	9.222E-01	9.223E-01	16.00
	1120.29	142	15.10	1.003E+00	1.328E+00	1.328E+00	30.20
	1764.49	79	15.80	6.761E-01	1.043E+00	1.043E+00	28.98
AC-228	338.32	314	11.40	3.068E+00	1.269E+00	1.269E+00	48.22
	911.07	347	27.70*	1.204E+00	1.471E+00	1.471E+00	20.32
	969.11	320	16.60	1.140E+00	2.385E+00	2.385E+00	33.88
	338.32	314	11.40	3.068E+00	1.269E+00	1.269E+00	48.22
RA-228	911.07	347	27.70*	1.204E+00	1.471E+00	1.471E+00	20.32
	969.11	320	16.60	1.140E+00	2.385E+00	2.385E+00	33.88
	74.81	925	10.70	6.652E+00	1.836E+00	1.862E+00	13.98
	77.11	1519	18.00	6.645E+00	1.793E+00	1.819E+00	11.53
TH-228	87.30	600	8.00	6.582E+00	1.610E+00	1.633E+00	18.12
	238.63	1911	44.60*	4.143E+00	1.460E+00	1.482E+00	10.34
	300.09	114	3.41	3.426E+00	1.380E+00	1.400E+00	91.96
	609.31	529	46.30*	1.750E+00	9.222E-01	9.222E-01	16.00
	1120.29	142	15.10	1.003E+00	1.328E+00	1.328E+00	30.20
	1764.49	79	15.80	6.761E-01	1.043E+00	1.043E+00	28.98
	338.32	314	11.40	3.068E+00	1.269E+00	1.269E+00	26.40
	911.07	347	27.70*	1.204E+00	1.471E+00	1.471E+00	20.32
TH-232	969.11	320	16.60	1.140E+00	2.385E+00	2.385E+00	33.88
	63.29	136	3.80*	6.647E+00	7.604E-01	7.604E-01	104.82
	92.38	490	5.41	6.528E+00	1.959E+00	1.959E+00	28.19
	609.31	529	46.30*	1.750E+00	9.222E-01	9.222E-01	16.00
U-234	1120.29	142	15.10	1.003E+00	1.328E+00	1.328E+00	30.20
	1764.49	79	15.80	6.761E-01	1.043E+00	1.043E+00	28.98
	86.50	600	12.60*	6.582E+00	1.022E+00	1.022E+00	27.46
NP-237	95.87	-----	2.60	6.484E+00	-----	Line Not Found	-----
	63.29	136	3.80*	6.647E+00	7.604E-01	7.604E-01	104.82

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	92.38	490	5.41	6.528E+00	1.959E+00	1.959E+00	23.28
AM-243	74.67	925	66.00*	6.652E+00	2.976E-01	2.976E-01	13.94
	86.72	600	0.34	6.582E+00	3.833E+01	3.833E+01	18.12
	117.66	-----	0.55	6.163E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.726E+00	-----	Line Not Found	-----
ANH-511	511.00	158	100.00*	2.075E+00	1.075E-01	1.075E-01	48.77

Flag: "\*" = Keyline

Total number of lines in spectrum 36  
Number of unidentified lines 4  
Number of lines tentatively identified by NID 32 88.89%

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	2.331E+01	2.331E+01	0.194E+01	8.30	
CD-109	464.00D	1.02	2.126E+00	2.173E+00	0.560E+00	25.77	
SN-126	1.00E+05Y	1.00	3.481E-01	3.481E-01	0.631E-01	18.12	
CS-135	2.30E+06Y	1.00	2.156E-01	2.156E-01	1.577E-01	73.16	
TL-208	1.41E+10Y	1.00	5.198E-01	5.198E-01	0.794E-01	15.28	
BI-210	22.26Y	1.00	4.354E-01	4.359E-01	5.229E-01	119.94	
PB-210	22.26Y	1.00	4.354E-01	4.359E-01	5.229E-01	119.94	
PO-210	22.26Y	1.00	4.354E-01	4.359E-01	5.226E-01	119.87	
BI-211	7.04E+08Y	1.00	3.083E+00	3.083E+00	0.431E+00	13.97	
PB-212	1.41E+10Y	1.00	1.460E+00	1.460E+00	0.151E+00	10.34	
PO-212	1.41E+10Y	1.00	1.460E+00	1.460E+00	0.151E+00	10.34	
BI-214	1600.00Y	1.00	9.222E-01	9.223E-01	1.475E-01	16.00	
PB-214	1600.00Y	1.00	1.072E+00	1.072E+00	0.160E+00	14.91	
PO-214	1600.00Y	1.00	1.072E+00	1.072E+00	0.160E+00	14.91	
PO-216	1.41E+10Y	1.00	1.460E+00	1.460E+00	0.151E+00	10.34	
PO-218	1600.00Y	1.00	1.072E+00	1.072E+00	0.160E+00	14.91	
RA-224	1.41E+10Y	1.00	4.378E+00	4.378E+00	0.898E+00	20.51	
RA-226	1600.00Y	1.00	9.222E-01	9.223E-01	1.475E-01	16.00	
AC-228	1.41E+10Y	1.00	1.471E+00	1.471E+00	0.299E+00	20.32	
RA-228	1.41E+10Y	1.00	1.471E+00	1.471E+00	0.299E+00	20.32	
TH-228	1.91Y	1.01	1.460E+00	1.482E+00	0.153E+00	10.34	
TH-230	4.47E+09Y	1.00	9.222E-01	9.222E-01	1.475E-01	16.00	
TH-232	1.41E+10Y	1.00	1.471E+00	1.471E+00	0.299E+00	20.32	
TH-234	4.47E+09Y	1.00	7.604E-01	7.604E-01	7.971E-01	104.82	
U-234	4.47E+09Y	1.00	9.222E-01	9.222E-01	1.475E-01	16.00	
NP-237	2.14E+06Y	1.00	1.022E+00	1.022E+00	0.281E+00	27.46	
U-238	4.47E+09Y	1.00	7.604E-01	7.604E-01	7.971E-01	104.82	
AM-243	7380.00Y	1.00	2.976E-01	2.976E-01	0.415E-01	13.94	
ANH-511	1.00E+09Y	1.00	1.075E-01	1.075E-01	0.524E-01	48.77	

Total Activity : 5.540E+01 5.547E+01

Grand Total Activity : 5.540E+01 5.547E+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
7	83.34	296	688	1.69	168.10	164	28	2.05E-02	33.8	6.61E+00	T
0	128.18	145	476	0.96	257.73	254	7	1.01E-02	52.7	5.98E+00	T
0	185.30	344	509	1.35	371.91	368	11	2.39E-02	29.1	4.95E+00	T
0	208.51	205	396	1.01	418.31	414	9	1.43E-02	37.7	4.57E+00	T
0	327.06	86	190	1.16	655.28	652	8	5.98E-03	59.3	3.16E+00	
0	462.17	104	152	1.34	925.40	921	10	7.23E-03	48.3	2.28E+00	T
0	726.66	142	73	1.38	1454.20	1449	10	9.84E-03	29.3	1.48E+00	T
0	770.08	88	171	4.78	1541.02	1531	20	6.08E-03	76.9	1.40E+00	
0	794.90	56	106	1.29	1590.63	1584	12	3.89E-03	78.7	1.36E+00	T
0	1237.94	55	61	1.36	2476.59	2472	9	3.83E-03	57.7	9.20E-01	T
0	1377.70	37	18	1.91	2756.11	2752	8	2.58E-03	51.4	8.39E-01	T
0	1591.40	48	32	0.66	3183.54	3175	20	3.33E-03	66.7	7.41E-01	
0	1730.42	22	25	1.34	3461.63	3454	16	1.53E-03	***	6.88E-01	

Flags: "T" = Tentatively associated



```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243274001.CNF;1
* Acquisition date   : 30-DEC-2009 22:47:57  Detector SN#      :
* Detector ID        : GAM17                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 04:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 04:00:17.43             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 16-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G243274001             Analyst initials: MXR1
* Batch Number       : 935341                 Sample Quantity : 1.32930E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 27-JAN-2009 16:21:14.8MS 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	2.331E+01	1.935E+00	4.410E-01	2.711E-02	52.869
CD-109	2.173E+00	5.598E-01	6.090E-01	4.905E-02	3.568
SN-126	3.481E-01	6.306E-02	5.985E-02	4.826E-03	5.817
CS-135	2.156E-01	1.577E-01	1.553E-01	1.398E-02	1.389
TL-208	5.198E-01	7.943E-02	4.587E-02	3.637E-03	11.331
BI-210	4.359E-01	5.229E-01	4.971E-01	3.978E-02	0.877
PB-210	4.359E-01	5.229E-01	4.971E-01	3.978E-02	0.877
PO-210	4.359E-01	5.226E-01	4.971E-01	3.460E-02	0.877
BI-211	3.083E+00	4.305E-01	2.328E-01	1.673E-02	13.239
PB-212	1.460E+00	1.511E-01	5.597E-02	4.911E-03	26.096
PO-212	1.460E+00	1.511E-01	5.597E-02	4.911E-03	26.096
BI-214	9.223E-01	1.475E-01	8.396E-02	7.534E-03	10.984
PB-214	1.072E+00	1.599E-01	8.120E-02	7.201E-03	13.205
PO-214	1.072E+00	1.599E-01	8.120E-02	7.201E-03	13.205
PO-216	1.460E+00	1.511E-01	5.597E-02	4.911E-03	26.096
PO-218	1.072E+00	1.599E-01	8.120E-02	7.201E-03	13.205
RA-224	4.378E+00	8.980E-01	6.376E-01	4.809E-02	6.866
RA-226	9.223E-01	1.475E-01	8.396E-02	7.534E-03	10.984

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.471E+00	2.989E-01	1.633E-01	1.671E-02	9.007
RA-228	1.471E+00	2.989E-01	1.633E-01	1.671E-02	9.007
TH-228	1.482E+00	1.533E-01	5.678E-02	4.983E-03	26.096
TH-230	9.222E-01	1.475E-01	8.396E-02	7.534E-03	10.984
TH-232	1.471E+00	2.989E-01	1.633E-01	1.671E-02	9.007
TH-234	7.604E-01	7.971E-01	6.485E-01	1.177E-01	1.173
U-234	9.222E-01	1.475E-01	8.396E-02	7.534E-03	10.984
NP-237	1.022E+00	2.807E-01	1.753E-01	3.885E-02	5.832
U-238	7.604E-01	7.971E-01	6.485E-01	1.177E-01	1.173
AM-243	2.976E-01	4.147E-02	3.822E-02	3.242E-03	7.787
ANH-511	1.075E-01	5.244E-02	3.380E-02	2.284E-03	3.182

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.035E-02		2.357E-01	3.856E-01	2.843E-02	-0.105
NA-22	-8.804E-04		3.720E-02	5.999E-02	3.400E-03	-0.015
NA-24	-6.634E-02		1.587E-01	Half-Life too short		
AL-26	-1.742E-03		2.407E-02	3.897E-02	2.228E-03	-0.045
TI-44	7.555E-03		1.693E-02	2.436E-02	2.035E-03	0.310
SC-46	-3.492E-02		3.125E-02	4.708E-02	3.450E-03	-0.742
V-48	2.171E-03		5.026E-02	8.338E-02	5.773E-03	0.026
CR-51	-3.206E-02		2.414E-01	4.073E-01	3.106E-02	-0.079
MN-52	-1.734E-01		1.807E-01	2.687E-01	1.553E-02	-0.645
MN-54	-1.552E-02		3.018E-02	4.866E-02	3.651E-03	-0.319
CO-56	-6.933E-03		2.803E-02	4.590E-02	3.429E-03	-0.151
CO-57	-2.394E-03		1.499E-02	2.494E-02	2.767E-03	-0.096
CO-58	-1.137E-02		3.031E-02	4.940E-02	3.744E-03	-0.230
FE-59	4.898E-02		7.303E-02	1.261E-01	8.959E-03	0.388
CO-60	1.184E-02		2.935E-02	4.950E-02	2.826E-03	0.239
ZN-65	1.099E-01		8.613E-02	1.381E-01	8.339E-03	0.796
GE-68	3.712E-01		1.073E+00	1.808E+00	1.143E-01	0.205
AS-73	9.245E-03		1.559E-01	2.357E-01	1.913E-02	0.039
AS-74	2.885E-02		7.142E-02	1.135E-01	8.241E-03	0.254
SE-75	-8.420E-03		3.090E-02	4.626E-02	3.490E-03	-0.182
BR-77	-1.774E+00		6.411E+00	1.033E+01	7.051E-01	-0.172
SR-82	-2.590E-01		3.253E-01	4.348E-01	3.305E-02	-0.596
RB-83	-1.481E-02		5.055E-02	8.137E-02	5.552E-03	-0.182
RB-84	-2.853E-03		5.722E-02	9.503E-02	6.993E-03	-0.030
KR-85	2.855E+00		5.569E+00	8.393E+00	5.689E-01	0.340
SR-85	1.454E-02		2.836E-02	4.275E-02	2.898E-03	0.340
RB-86	1.929E-01		6.626E-01	1.112E+00	7.039E-02	0.174
Y-88	3.827E-02		2.248E-02	3.815E-02	2.178E-03	0.100
ZR-88	1.032E-02		2.135E-02	3.666E-02	2.122E-03	0.281
Y-91	1.043E+01		1.569E+01	2.678E+01	1.491E+00	0.389
NB-94	5.735E-03		2.913E-02	4.738E-02	3.599E-03	0.121
NB-95	2.466E-02		3.870E-02	6.007E-02	4.572E-03	0.410

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M	3.140E-01		1.028E-01	1.638E-01	1.465E-02	1.917
ZR-95	-4.120E-03		6.045E-02	9.591E-02	8.240E-03	-0.043
NB-97	-1.996E-02		2.059E-02	Half-Life too short		
ZR-97	1.560E+00		4.186E-01	Half-Life too short		
MO-99	-4.747E-01		8.617E+00	1.371E+01	2.007E+00	-0.035
TC-99M	-3.518E+09		2.198E+09	Half-Life too short		
RH-101	-1.329E-03		2.182E-02	3.437E-02	2.564E-03	-0.039
RH-102	-5.949E-03		2.084E-02	3.383E-02	2.197E-03	-0.176
RU-103	-1.349E-02		2.890E-02	4.605E-02	6.015E-03	-0.293
RH-106	1.888E-02		2.496E-01	4.068E-01	5.123E-02	0.046
RU-106	1.888E-02		2.496E-01	4.068E-01	3.002E-02	0.046
AG-108M	1.343E-02		2.387E-02	4.095E-02	2.714E-03	0.328
AG-110M	-1.295E-02		2.732E-02	4.245E-02	3.316E-03	-0.305
IN-111	-1.454E-01		6.311E-01	8.895E-01	6.707E-02	-0.163
IN-113M	3.210E-03		3.152E-02	5.311E-02	3.275E-03	0.060
SN-113	3.210E-03		3.152E-02	5.311E-02	3.275E-03	0.060
IN-114M	5.131E-02		1.281E-01	1.909E-01	1.418E-02	0.269
CD-115	2.275E+00		6.330E+00	1.065E+01	7.316E-01	0.214
SN-117M	-3.039E-02		3.319E-02	5.272E-02	4.227E-03	-0.576
SB-122	1.171E+00		1.441E+00	2.467E+00	1.750E-01	0.475
I-123	-6.939E-01		8.091E-01	Half-Life too short		
TE-123M	-7.552E-03		1.761E-02	2.857E-02	2.295E-03	-0.264
I-124	-1.465E-01		5.144E-01	7.102E-01	5.180E-02	-0.206
SB-124	3.777E-02		7.048E-02	1.244E-01	7.819E-03	0.304
SB-125	3.455E-02		6.597E-02	1.131E-01	7.167E-03	0.306
TE-125M	1.144E+00		5.186E+00	8.784E+00	9.987E-01	0.130
I-126	7.088E-02		1.346E-01	2.254E-01	1.700E-02	0.314
SB-126	1.263E-02		1.211E-01	1.807E-01	1.376E-02	0.070
SB-127	2.224E-01		1.001E+00	1.637E+00	1.705E-01	0.136
XE-127	2.233E-02		3.040E-02	5.084E-02	3.802E-03	0.439
I-131	-1.051E-02		7.550E-02	1.262E-01	8.823E-03	-0.083
TE-132	-1.767E-01		3.992E-01	6.307E-01	9.480E-02	-0.280
BA-133	-2.468E-03		3.247E-02	4.806E-02	5.741E-03	-0.051
I-133	1.285E-03		1.321E-03	Half-Life too short		
CS-134	7.660E-02	+	6.054E-02	7.277E-02	5.566E-03	1.053
I-135	8.564E+08		4.970E+08	Half-Life too short		
CS-136	2.792E-03		8.271E-02	1.364E-01	9.556E-03	0.020
BA-137M	-8.420E-03		2.822E-02	4.448E-02	3.350E-03	-0.189
CS-137	-8.901E-03		2.983E-02	4.702E-02	3.550E-03	-0.189
CE-139	8.689E-03		1.881E-02	3.149E-02	2.303E-03	0.276
BA-140	-3.492E-02		1.906E-01	3.080E-01	1.008E-01	-0.113
LA-140	2.492E-03		6.928E-02	9.962E-02	5.791E-03	0.025
CE-141	-2.956E-02		3.878E-02	6.240E-02	5.834E-03	-0.474
CE-143	8.014E-04	+	1.117E-04	Half-Life too short		
CE-144	-6.407E-02		1.272E-01	2.074E-01	3.419E-02	-0.309
PM-144	9.498E-03		2.947E-02	4.838E-02	3.674E-03	0.196
PR-144	6.434E-01		1.996E+00	3.277E+00	2.488E-01	0.196
PM-146	4.788E-02		3.279E-02	5.834E-02	5.241E-03	0.821

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	7.844E-02		3.923E-01	6.522E-01	9.147E-02	0.120
PM-149	-1.184E+01		5.489E+01	8.293E+01	1.235E+01	-0.143
EU-152	6.476E-03		7.032E-02	1.111E-01	8.199E-03	0.058
GD-153	4.037E-02		4.634E-02	7.432E-02	6.545E-03	0.543
EU-154	-4.062E-03		1.038E-01	1.672E-01	1.547E-02	-0.024
EU-155	1.305E-02		6.253E-02	1.060E-01	1.016E-02	0.123
TB-160	-6.721E-03		1.133E-01	1.880E-01	1.385E-02	-0.036
HO-166M	-1.076E-03		4.876E-02	7.804E-02	5.935E-03	-0.014
TM-171	-3.802E+00		1.189E+01	1.641E+01	1.443E+00	-0.232
LU-176	-5.564E-03		1.728E-02	2.544E-02	1.837E-03	-0.219
LU-177	2.587E+00	+	9.942E-01	1.274E+00	9.549E-02	2.031
LU-177M	1.580E-02		1.312E-01	2.205E-01	1.318E-02	0.072
HF-181	1.010E-02		3.067E-02	5.169E-02	3.385E-03	0.195
W-181	-6.082E-02		1.435E-01	1.972E-01	1.747E-02	-0.308
TA-182	1.425E-01		1.715E-01	2.948E-01	1.647E-02	0.483
RE-183	-1.377E-02		7.181E-02	1.137E-01	8.709E-03	-0.121
RE-184	-6.121E-02		1.599E-01	2.518E-01	1.896E-02	-0.243
OS-185	-6.507E-04		3.560E-02	5.745E-02	4.296E-03	-0.011
RE-188	-1.772E-02		1.084E-01	1.781E-01	1.486E-02	-0.100
W-188	2.474E+00		5.177E+00	7.575E+00	5.574E-01	0.327
IR-192	5.585E-04		2.349E-02	3.719E-02	2.655E-03	0.015
AU-195	9.316E-02		1.294E-01	2.143E-01	1.913E-02	0.435
TL-200	2.343E-04		1.054E-04	Half-Life too short		
TL-201	-1.900E+00		3.864E+00	6.235E+00	4.560E-01	-0.305
TL-202	3.961E-03		4.954E-02	8.274E-02	5.135E-03	0.048
HG-203	-2.371E-02		2.916E-02	4.454E-02	3.436E-03	-0.532
BI-207	5.709E-02		4.310E-02	7.800E-02	5.012E-03	0.732
TL-207	5.998E-02		4.739E-01	7.163E-01	1.217E-01	0.084
PO-209	-3.882E+00		6.018E+00	9.492E+00	6.929E-01	-0.409
PB-211	-1.084E+00		9.686E-01	1.065E+00	6.639E-01	-1.018
BI-212	1.145E+00	+	3.514E-01	5.479E-01	5.017E-02	2.090
PO-215	5.998E-02		4.739E-01	7.163E-01	1.217E-01	0.084
RN-219	5.158E-02		2.941E-01	4.964E-01	6.768E-02	0.104
RN-220	4.672E+00		1.931E+01	3.212E+01	2.251E+00	0.145
RA-223	5.998E-02		4.739E-01	7.163E-01	1.217E-01	0.084
AC-227	-9.976E-03		2.628E-01	4.207E-01	6.209E-02	-0.024
TH-227	-9.976E-03		2.628E-01	4.207E-01	7.389E-02	-0.024
TH-229	-2.602E-01		3.368E-01	5.318E-01	3.958E-02	-0.489
PA-231	-2.906E-01		1.093E+00	1.715E+00	2.492E-01	-0.169
TH-231	5.998E-02		4.739E-01	7.163E-01	1.217E-01	0.084
U-231	-6.866E-01		5.715E-01	8.225E-01	7.137E-02	-0.835
PA-233	7.132E-03		4.321E-02	6.903E-02	5.150E-03	0.103
PA-234	-4.903E-02		2.424E-01	3.950E-01	7.156E-02	-0.124
PA-234M	4.019E-01		3.760E+00	6.257E+00	5.295E-01	0.064
U-235	1.214E-01		1.406E-01	2.266E-01	4.050E-02	0.536
NP-236	-3.637E-02		4.952E-02	7.925E-02	6.222E-03	-0.459
NP-239	-5.072E-02		1.112E-01	1.832E-01	1.939E-02	-0.277
AM-241	1.955E-02		4.721E-02	6.875E-02	6.670E-03	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	1.088E-01		5.756E-02	1.010E-01	9.441E-03	1.077
AM-246	-2.774E-02		1.203E-01	1.935E-01	1.222E-02	-0.143
CM-247	5.888E-03		2.615E-02	4.426E-02	2.601E-03	0.133
CF-249	-6.264E-03		2.829E-02	4.690E-02	2.751E-03	-0.134
CF-251	-7.268E-02		7.956E-02	1.254E-01	9.233E-03	-0.580

# VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G243274001          *
* Acquisition date   : 30-DEC-2009 22:47:57 Detector SN#                  *
* Detector ID        : GAM17 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 04:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 04:00:17.43 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 16-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243274001 Analyst initials: MXR1                 *
* Batch Number       : 935341 Sample Quantity : 1.3293E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 27-JAN-2009 16:21:14 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	2.331E+01	1.896E+00	2.210E-01	9.675E-01
CD-109	2.173E+00	5.486E-01	3.203E-01	2.799E-01
SN-126	3.481E-01	6.180E-02	3.148E-02	3.153E-02
CS-135	2.156E-01	1.546E-01	8.016E-02	7.887E-02
TL-208	5.198E-01	7.784E-02	2.336E-02	3.971E-02
BI-210	4.359E-01	5.124E-01	2.641E-01	2.614E-01
PB-210	4.359E-01	5.124E-01	2.641E-01	2.614E-01
PO-210	4.359E-01	5.121E-01	2.641E-01	2.613E-01
BI-211	3.083E+00	4.219E-01	1.196E-01	2.153E-01
PB-212	1.460E+00	1.480E-01	2.895E-02	7.554E-02
PO-212	1.460E+00	1.480E-01	2.895E-02	7.554E-02
BI-214	9.223E-01	1.446E-01	4.273E-02	7.377E-02
PB-214	1.072E+00	1.567E-01	4.172E-02	7.994E-02
PO-214	1.072E+00	1.567E-01	4.172E-02	7.994E-02
PO-216	1.460E+00	1.480E-01	2.895E-02	7.554E-02
RA-218	1.072E+00	1.567E-01	4.172E-02	7.994E-02
RA-224	4.378E+00	8.800E-01	3.297E-01	4.490E-01
RA-226	9.223E-01	1.446E-01	4.273E-02	7.377E-02
AC-228	1.471E+00	2.929E-01	8.253E-02	1.495E-01
RA-228	1.471E+00	2.929E-01	8.253E-02	1.495E-01
TH-228	1.482E+00	1.502E-01	2.937E-02	7.663E-02
TH-230	9.222E-01	1.446E-01	4.273E-02	7.376E-02
TH-232	1.471E+00	2.929E-01	8.253E-02	1.495E-01
TH-234	7.604E-01	7.811E-01	3.429E-01	3.985E-01
U-234	9.222E-01	1.446E-01	4.273E-02	7.376E-02
NP-237	1.022E+00	2.751E-01	9.221E-02	1.403E-01
U-238	7.604E-01	7.811E-01	3.429E-01	3.985E-01
AM-243	2.976E-01	4.064E-02	2.015E-02	2.074E-02
ANH-511	1.075E-01	5.140E-02	1.725E-02	2.622E-02

### ---- Non-Identified Nuclides ----

Key-Line Activity	K.L Act error	DLC	TPU
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Nuclide	(pCi/GRAM )		(pCi/GRAM )	
BE-7	-4.035E-02	2.310E-01	1.971E-01	1.179E-01 NOT IDENT.
NA-22	-8.804E-04	3.646E-02	3.014E-02	1.860E-02 NOT IDENT.
NA-24	-6.634E+04	3.110E+05	0.000E+00	1.587E+05 SHORT HLIF
AL-26	-1.742E-03	2.359E-02	1.945E-02	1.204E-02 NOT IDENT.
TI-44	7.555E-03	1.659E-02	1.284E-02	8.465E-03 NOT IDENT.
SC-46	-3.492E-02	3.062E-02	2.380E-02	1.562E-02 FAIL ABUN
V-48	2.171E-03	4.925E-02	4.208E-02	2.513E-02 NOT IDENT.
CR-51	-3.206E-02	2.366E-01	2.096E-01	1.207E-01 NOT IDENT.
MN-52	-1.734E-01	1.771E-01	1.347E-01	9.037E-02 NOT IDENT.
MN-54	-1.552E-02	2.957E-02	2.463E-02	1.509E-02 NOT IDENT.
CO-56	-6.933E-03	2.747E-02	2.323E-02	1.402E-02 FAIL ABUN
CO-57	-2.394E-03	1.469E-02	1.304E-02	7.495E-03 NOT IDENT.
CO-58	-1.137E-02	2.970E-02	2.502E-02	1.515E-02 NOT IDENT.
FE-59	4.898E-02	7.157E-02	6.351E-02	3.651E-02 NOT IDENT.
CO-60	1.184E-02	2.876E-02	2.484E-02	1.467E-02 NOT IDENT.
ZN-65	1.099E-01	8.440E-02	6.951E-02	4.306E-02 NOT IDENT.
GE-68	3.712E-01	1.051E+00	9.108E-01	5.365E-01 NOT IDENT.
AS-73	9.245E-03	1.528E-01	1.250E-01	7.796E-02 NOT IDENT.
AS-74	2.885E-02	6.999E-02	5.778E-02	3.571E-02 NOT IDENT.
SE-75	-8.420E-03	3.028E-02	2.389E-02	1.545E-02 NOT IDENT.
BR-77	-1.774E+00	6.283E+00	5.273E+00	3.205E+00 FAIL ABUN
SR-82	-2.590E-01	3.188E-01	2.203E-01	1.626E-01 NOT IDENT.
RB-83	-1.481E-02	4.954E-02	4.153E-02	2.527E-02 NOT IDENT.
RB-84	-2.853E-03	5.607E-02	4.805E-02	2.861E-02 NOT IDENT.
KR-85	2.855E+00	5.457E+00	4.284E+00	2.784E+00 NOT IDENT.
SR-85	1.454E-02	2.780E-02	2.182E-02	1.418E-02 NOT IDENT.
RB-86	1.929E-01	6.493E-01	5.602E-01	3.313E-01 NOT IDENT.
Y-88	3.827E-03	2.203E-02	1.904E-02	1.124E-02 NOT IDENT.
ZR-88	1.032E-02	2.092E-02	1.880E-02	1.067E-02 NOT IDENT.
Y-91	1.043E+01	1.538E+01	1.347E+01	7.846E+00 NOT IDENT.
NB-94	5.735E-03	2.854E-02	2.405E-02	1.456E-02 NOT IDENT.
NB-95	2.466E-02	3.792E-02	3.045E-02	1.935E-02 NOT IDENT.
NB-95M	3.140E-01	1.007E-01	8.474E-02	5.140E-02 NOT IDENT.
ZR-95	-4.120E-03	5.924E-02	4.863E-02	3.022E-02 NOT IDENT.
NB-97	-1.996E+04	4.036E+04	0.000E+00	2.059E+04 SHORT HLIF
ZR-97	1.560E+06	8.205E+05	0.000E+00	4.186E+05 SHORT HLIF
MO-99	-4.747E-01	8.445E+00	6.956E+00	4.309E+00 NOT IDENT.
TC-99M	-3.518E+15	4.308E+15	0.000E+00	2.198E+15 SHORT HLIF
RH-101	-1.329E-03	2.139E-02	1.783E-02	1.091E-02 FAIL ABUN
RH-102	-5.949E-03	2.043E-02	1.729E-02	1.042E-02 NOT IDENT.
RU-103	-1.349E-02	2.832E-02	2.352E-02	1.445E-02 FAIL ABUN
RH-106	1.888E-02	2.446E-01	2.069E-01	1.248E-01 NOT IDENT.
RU-106	1.888E-02	2.446E-01	2.069E-01	1.248E-01 NOT IDENT.
AG-108M	1.343E-02	2.339E-02	2.096E-02	1.193E-02 NOT IDENT.
AG-110M	-1.295E-02	2.678E-02	2.158E-02	1.366E-02 NOT IDENT.
IN-111	-1.454E-01	6.185E-01	4.599E-01	3.155E-01 NOT IDENT.
IN-113M	3.210E-03	3.089E-02	2.724E-02	1.576E-02 NOT IDENT.
SN-113	3.210E-03	3.089E-02	2.724E-02	1.576E-02 NOT IDENT.
IN-114M	5.131E-02	1.256E-01	9.911E-02	6.406E-02 NOT IDENT.
CD-115	2.275E+00	6.203E+00	5.432E+00	3.165E+00 NOT IDENT.
SN-117M	-3.039E-02	3.253E-02	2.746E-02	1.660E-02 NOT IDENT.
SB-122	1.171E+00	1.412E+00	1.257E+00	7.205E-01 NOT IDENT.
I-123	-6.939E+05	1.586E+06	0.000E+00	8.091E+05 SHORT HLIF
TE-123M	-7.552E-03	1.726E-02	1.488E-02	8.806E-03 NOT IDENT.
I-124	-1.465E-01	5.042E-01	3.615E-01	2.572E-01 FAIL ABUN
SB-124	3.777E-02	6.907E-02	6.218E-02	3.524E-02 FAIL ABUN
SB-125	3.455E-02	6.465E-02	5.790E-02	3.299E-02 FAIL ABUN
TE-125M	1.144E+00	5.082E+00	4.603E+00	2.593E+00 NOT IDENT.
I-126	7.088E-02	1.320E-01	1.146E-01	6.732E-02 NOT IDENT.
SB-126	1.263E-02	1.187E-01	9.171E-02	6.055E-02 NOT IDENT.
SB-127	2.224E-01	9.812E-01	8.312E-01	5.006E-01 FAIL ABUN
XE-127	2.233E-02	2.979E-02	2.637E-02	1.520E-02 NOT IDENT.
I-131	-1.051E-02	7.399E-02	6.481E-02	3.775E-02 NOT IDENT.
TE-132	-1.767E-01	3.912E-01	3.264E-01	1.996E-01 NOT IDENT.
BA-133	-2.468E-03	3.183E-02	2.469E-02	1.624E-02 NOT IDENT.
I-133	1.285E+03	2.589E+03	0.000E+00	1.321E+03 SHORT HLIF
CS-134	7.660E-02	5.933E-02	3.686E-02	3.027E-02 FAIL ABUN
I-135	8.564E+14	9.741E+14	0.000E+00	4.970E+14 SHORT HLIF
CS-136	2.792E-03	8.106E-02	6.874E-02	4.135E-02 FAIL ABUN
BA-137M	-8.420E-03	2.766E-02	2.261E-02	1.411E-02 NOT IDENT.
CS-137	-8.901E-03	2.924E-02	2.390E-02	1.492E-02 NOT IDENT.
CE-139	8.689E-03	1.844E-02	1.639E-02	9.406E-03 NOT IDENT.
BA-140	-3.492E-02	1.868E-01	1.571E-01	9.531E-02 NOT IDENT.
LA-140	2.492E-03	6.789E-02	4.984E-02	3.464E-02 NOT IDENT.
CE-141	-2.956E-02	3.801E-02	3.255E-02	1.939E-02 NOT IDENT.
CE-143	8.014E+02	2.189E+02	0.000E+00	1.117E+02 SHORT HLIF

CE-144	-6.407E-02	1.246E-01	1.083E-01	6.358E-02	NOT IDENT.
PM-144	9.498E-03	2.888E-02	2.457E-02	1.474E-02	NOT IDENT.
PR-144	6.434E-01	1.956E+00	1.664E+00	9.982E-01	NOT IDENT.
PM-146	4.788E-02	3.213E-02	2.984E-02	1.639E-02	NOT IDENT.
ND-147	7.844E-02	3.845E-01	3.327E-01	1.961E-01	FAIL ABUN
PM-149	-1.184E+01	5.379E+01	4.276E+01	2.744E+01	NOT IDENT.
EU-152	6.476E-03	6.891E-02	5.710E-02	3.516E-02	NOT IDENT.
GD-153	4.037E-02	4.541E-02	3.902E-02	2.317E-02	FAIL ABUN
EU-154	-4.062E-03	1.017E-01	8.397E-02	5.190E-02	NOT IDENT.
EU-155	1.305E-02	6.128E-02	5.560E-02	3.127E-02	FAIL ABUN
TB-160	-6.721E-03	1.110E-01	9.508E-02	5.664E-02	FAIL ABUN
HO-166M	-1.076E-03	4.778E-02	3.961E-02	2.438E-02	FAIL ABUN
TM-171	-3.802E+00	1.165E+01	8.672E+00	5.945E+00	NOT IDENT.
LU-176	-5.564E-03	1.694E-02	1.310E-02	8.642E-03	FAIL ABUN
LU-177	2.587E+00	9.743E-01	6.603E-01	4.971E-01	FAIL ABUN
LU-177M	1.580E-02	1.286E-01	1.130E-01	6.562E-02	FAIL ABUN
HF-181	1.010E-02	3.005E-02	2.642E-02	1.533E-02	NOT IDENT.
W-181	-6.082E-02	1.406E-01	1.042E-01	7.174E-02	NOT IDENT.
TA-182	1.425E-01	1.681E-01	1.482E-01	8.575E-02	FAIL ABUN
RE-183	-1.377E-02	7.037E-02	5.921E-02	3.591E-02	FAIL ABUN
RE-184	-6.121E-02	1.567E-01	1.301E-01	7.996E-02	NOT IDENT.
OS-185	-6.507E-04	3.489E-02	2.921E-02	1.780E-02	FAIL ABUN
RE-188	-1.772E-02	1.062E-01	9.277E-02	5.420E-02	NOT IDENT.
W-188	2.474E+00	5.074E+00	3.905E+00	2.589E+00	FAIL ABUN
IR-192	5.585E-04	2.302E-02	1.914E-02	1.175E-02	FAIL ABUN
AU-195	9.316E-02	1.268E-01	1.125E-01	6.470E-02	FAIL ABUN
TL-200	2.343E+02	2.066E+02	0.000E+00	1.054E+02	SHORT HLIF
TL-201	-1.900E+00	3.787E+00	3.244E+00	1.932E+00	NOT IDENT.
TL-202	3.961E-03	4.855E-02	4.235E-02	2.477E-02	NOT IDENT.
HG-203	-2.371E-02	2.858E-02	2.298E-02	1.458E-02	FAIL ABUN
BI-207	5.709E-02	4.224E-02	3.931E-02	2.155E-02	FAIL ABUN
TL-207	5.998E-02	4.644E-01	3.686E-01	2.369E-01	FAIL ABUN
PO-209	-3.882E+00	5.897E+00	4.798E+00	3.009E+00	NOT IDENT.
PB-211	-1.084E+00	9.492E-01	5.458E-01	4.843E-01	NOT IDENT.
BI-212	1.145E+00	3.443E-01	2.780E-01	1.757E-01	FAIL ABUN
PO-215	5.998E-02	4.644E-01	3.686E-01	2.369E-01	FAIL ABUN
RN-219	5.158E-02	2.882E-01	2.545E-01	1.470E-01	NOT IDENT.
RN-220	4.672E+00	1.892E+01	1.638E+01	9.655E+00	NOT IDENT.
RA-223	5.998E-02	4.644E-01	3.686E-01	2.369E-01	FAIL ABUN
AC-227	-9.976E-03	2.576E-01	2.173E-01	1.314E-01	FAIL ABUN
TH-227	-9.976E-03	2.576E-01	2.173E-01	1.314E-01	FAIL ABUN
TH-229	-2.602E-01	3.300E-01	2.760E-01	1.684E-01	FAIL ABUN
PA-231	-2.906E-01	1.071E+00	8.846E-01	5.463E-01	NOT IDENT.
TH-231	5.998E-02	4.644E-01	3.686E-01	2.369E-01	FAIL ABUN
U-231	-6.866E-01	5.600E-01	4.320E-01	2.857E-01	FAIL ABUN
PA-233	7.132E-03	4.234E-02	3.554E-02	2.160E-02	FAIL ABUN
PA-234	-4.903E-02	2.376E-01	1.995E-01	1.212E-01	FAIL ABUN
PA-234M	4.019E-01	3.685E+00	3.157E+00	1.880E+00	NOT IDENT.
U-235	1.214E-01	1.378E-01	1.182E-01	7.028E-02	FAIL ABUN
NP-236	-3.637E-02	4.853E-02	4.127E-02	2.476E-02	NOT IDENT.
NP-239	-5.072E-02	1.089E-01	9.591E-02	5.558E-02	FAIL ABUN
AM-241	1.955E-02	4.626E-02	3.639E-02	2.360E-02	NOT IDENT.
CM-243	1.088E-01	5.641E-02	5.297E-02	2.878E-02	FAIL ABUN
AM-246	-2.774E-02	1.179E-01	9.750E-02	6.017E-02	NOT IDENT.
CM-247	5.888E-03	2.563E-02	2.269E-02	1.307E-02	NOT IDENT.
CF-249	-6.264E-03	2.773E-02	2.406E-02	1.415E-02	NOT IDENT.
CF-251	-7.268E-02	7.797E-02	6.520E-02	3.978E-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	403.3925
46.50	403.3925
46.50	403.3925
48.70	439.4172
49.72	390.0718
51.35	424.2899
52.39	459.1883
52.97	457.5782
53.15	457.8224
53.44	423.3375
54.07	474.7256
56.28	498.3726
56.28	498.3773
57.37	0.0000
57.53	519.2057
57.53	519.2090
57.60	519.3082
57.98	571.8461
57.98	571.8461
59.32	588.6484
59.32	588.6484
59.40	588.7788
59.54	589.0046
59.72	589.2947
60.01	570.1587
61.10	619.3641
61.14	619.4315
61.30	619.6987
63.00	622.5143
63.29	622.9902
63.29	622.9902
63.58	648.2067
64.28	659.3095
65.12	642.5303
65.20	642.6644
65.20	642.6644
66.05	672.2891
66.72	661.7989
66.83	671.1332
66.91	671.2686
67.20	671.7653
67.20	671.7653
67.75	684.3671
67.85	672.3650
68.90	662.0947
68.90	662.0947
69.30	701.6672
69.67	702.3112
70.82	728.2327
70.82	728.2327
70.83	728.2504
72.80	649.8676
72.87	649.9734
72.87	649.9734
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74.81	652.9773
74.81	652.9773
74.81	652.9773
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74.97	653.2240
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77.11	656.4864
77.11	656.4864

77.11	656.4864
77.11	656.4864
77.11	656.4864
77.11	656.4864
77.11	656.4864
78.38	542.1124
79.62	553.0732
79.80	527.5616
79.80	527.5616
80.11	458.3983
80.18	458.4690
80.30	458.5939
80.30	458.5939
80.57	528.4750
81.00	510.9219
81.07	511.0005
81.07	511.0005
81.07	511.0005
81.07	511.0005
82.60	485.9758
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83.78	487.2343
83.78	487.2343
83.78	487.2343
84.21	487.6911
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85.43	488.9797
86.29	489.8817
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86.59	490.1938
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87.30	490.9355
87.57	491.2161
87.88	491.5369
88.03	491.6929
88.36	492.0351
88.47	492.1497
89.95	493.6731
91.11	494.8557
92.29	496.0556
92.38	496.1472
92.38	496.1472
93.35	497.1237
94.00	424.3921
94.67	466.1290
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94.90	469.0059
94.90	469.0059
94.90	469.0059
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98.44	401.3855
98.88	407.9803
99.55	452.3111
99.55	452.3111
99.86	461.5283
100.00	471.4930
100.10	471.5869
103.18	411.3553
103.76	395.5863
105.00	419.0864
105.31	434.6928
108.00	389.6279
109.28	389.6274

111.00	419.1461
111.00	419.1461
111.76	416.9749
112.95	380.2879
115.19	397.4304
116.30	391.7493
117.00	390.3791
117.00	390.3791
117.66	367.7241
121.11	341.0852
121.62	355.3311
121.78	372.1741
122.06	371.4182
122.32	374.3744
122.32	374.3744
122.32	374.3744
122.32	374.3744
123.07	395.3585
127.23	419.6741
129.76	411.5011
131.20	350.0875
133.02	391.3719
133.54	403.0764
135.34	404.2135
136.00	391.3037
136.25	398.1213
136.48	398.2617
140.51	434.2909
140.51	0.0000
142.18	383.4871
142.65	364.5230
143.76	364.1688
144.24	370.2109
144.24	370.2109
144.24	370.2109
144.24	370.2109
145.22	407.4431
145.44	407.5762
147.16	359.2289
152.43	350.2792
152.70	377.7447
153.22	401.4717
154.21	369.7559
154.21	369.7559
154.21	369.7559
154.21	369.7559
155.03	381.9385
156.02	396.2039
158.56	370.0600
159.00	0.0000
159.00	354.5288
160.31	361.0929
161.27	325.0207
162.32	352.2011
162.64	343.4454
163.35	342.7900
163.89	329.1597
165.85	335.0083
167.43	359.6266
171.28	330.4330
171.86	353.7325
172.10	349.8343
176.55	327.6680
176.60	343.8202
181.06	333.1115
184.41	322.2953
185.71	321.2869
186.00	321.4055
190.27	313.8660
192.34	305.4021
193.63	360.4640
197.04	298.8574
198.01	311.6249
198.60	340.8509
200.40	324.9655
201.83	314.0703
202.84	309.2330
205.31	314.8201

208.36	299.6826
208.81	299.8369
209.75	288.0876
209.75	288.0876
210.97	249.0761
215.65	267.2915
216.55	272.8469
218.09	275.4301
222.10	279.8361
223.80	272.8906
226.40	283.2797
227.00	287.7389
227.08	290.9728
227.20	291.0115
228.16	291.3104
228.18	291.3159
228.18	291.3159
231.56	0.0000
235.69	296.3307
236.00	306.1445
236.00	306.1445
238.63	246.8840
238.63	246.8840
238.63	246.8840
238.63	246.8840
239.00	246.9791
240.98	247.4824
241.98	247.7352
241.98	247.7352
241.98	247.7352
244.69	217.3670
245.39	225.6987
247.94	215.3485
248.90	233.0619
249.79	242.0312
252.40	266.8145
252.85	259.2437
252.85	259.2437
254.15	0.0000
256.20	250.1805
256.20	250.1805
260.50	222.4528
260.90	242.4675
262.80	219.6200
264.65	229.3445
268.24	202.3670
268.79	214.1836
269.46	235.5291
269.46	235.5291
269.46	235.5291
269.46	235.5291
271.23	236.4788
273.65	321.0651
276.40	216.8344
277.35	222.6493
277.60	230.5708
277.60	230.5708
278.00	238.5345
278.60	254.4247
279.20	273.7161
279.53	265.9129
280.46	241.3291
281.68	214.5038
283.67	236.3794
284.30	220.6723
285.00	193.6344
285.90	215.3233
286.10	210.8280
286.10	210.8280
287.40	195.1867
288.45	0.0000
290.67	174.1359
290.80	174.1545
291.72	186.2593
293.26	0.0000
293.70	191.7207
295.21	191.9771
295.21	191.9771

295.21	191.9771
295.96	123.4951
296.50	123.5522
297.23	123.6313
298.57	123.7764
299.80	177.2607
299.80	177.2607
300.09	177.3047
300.09	177.3047
300.09	177.3047
300.09	177.3047
300.12	177.3079
301.29	177.4902
302.84	196.7064
303.76	176.1405
303.91	176.1638
304.40	155.5032
304.40	155.5032
304.84	183.2194
306.84	181.4555
308.46	179.1620
311.98	172.7420
316.51	176.8911
318.01	184.1019
319.02	188.9209
319.41	188.9835
320.08	191.7119
323.87	177.0337
323.87	177.0337
323.87	177.0337
323.87	177.0337
325.23	180.0437
328.77	215.8286
333.44	215.2269
334.20	228.1082
334.20	228.1082
334.30	228.1279
338.28	188.3402
338.28	188.3402
338.28	188.3402
338.28	188.3402
338.32	188.3467
338.32	188.3467
338.32	188.3467
340.50	165.1754
340.57	165.1867
344.27	178.5187
345.85	183.0313
350.59	0.0000
351.07	184.8487
351.92	184.9681
351.92	184.9681
351.92	184.9681
355.39	0.0000
356.01	167.1748
364.48	167.7042
366.43	166.1314
367.43	140.8188
367.94	0.0000
369.80	179.2888
374.96	146.1694
383.85	169.1842
387.95	169.6812
388.63	167.9173
391.69	161.8114
391.69	161.8114
392.90	148.0688
398.62	152.3812
400.65	163.7620
401.10	165.6745
401.81	158.3063
402.60	154.6650
404.84	206.2298
410.95	191.1660
411.60	216.5625
413.65	168.0474
414.70	136.2251
415.30	148.4987

415.76	152.3051
417.63	0.0000
418.52	162.9478
423.70	150.2829
427.08	142.0944
427.89	133.6398
432.53	162.5695
433.93	133.2196
439.47	144.2053
439.56	144.2145
439.89	139.4681
443.98	132.1735
444.90	125.5430
445.03	125.5530
445.03	125.5530
445.03	125.5530
445.03	125.5530
453.90	116.6261
463.38	158.2345
468.07	128.3564
473.00	115.0903
475.06	125.0000
475.35	122.0913
476.78	125.1309
477.59	131.0598
477.96	125.2207
482.03	116.7012
484.57	127.6851
487.03	111.1499
490.36	0.0000
492.35	107.5547
497.08	119.7297
507.63	0.0000
510.53	0.0000
510.84	113.7078
511.00	113.7191
511.85	121.3588
511.85	121.3588
513.99	111.9146
513.99	111.9146
520.41	115.3334
520.65	115.3474
527.90	95.6784
528.96	0.0000
529.64	91.7387
529.87	0.0000
531.02	101.8969
537.32	116.4284
543.00	115.7778
546.56	0.0000
549.76	100.9124
552.65	110.2610
555.20	102.2339
563.23	102.6733
563.90	117.0894
568.70	109.1475
569.32	125.6636
569.50	119.4976
569.67	119.5082
573.80	82.5977
574.00	79.5073
574.64	86.7660
578.91	97.7245
579.30	0.0000
583.14	115.1632
585.48	104.7067
591.81	105.2566
592.07	106.3112
593.00	113.6603
595.88	88.7639
600.56	107.8187
602.52	0.0000
602.71	112.3362
602.71	112.3362
603.60	107.3531
604.41	132.5680
604.70	132.5873
609.31	107.2419

609.31	107.2419
609.31	107.2419
609.31	107.2419
610.33	82.4698
612.46	116.2556
614.37	84.3213
618.01	100.3142
621.84	100.5026
621.84	100.5026
631.29	96.7153
633.02	94.6684
633.10	94.6739
634.78	111.7836
635.90	109.7141
636.97	102.3105
645.85	98.4659
646.12	109.1812
656.30	94.6521
657.75	104.4035
657.90	0.0000
661.65	105.6712
661.65	105.6712
664.57	0.0000
666.33	88.6115
666.33	88.6115
675.00	67.2676
677.61	86.9019
685.20	97.0124
692.80	100.6278
695.00	121.5316
696.49	110.6537
696.49	110.6537
697.00	109.5856
697.49	109.6100
698.33	116.2286
698.50	118.4315
699.00	116.2642
702.63	115.3532
706.10	124.3335
706.58	0.0000
706.67	121.0645
709.31	101.3718
711.68	94.8577
713.82	105.9873
717.42	88.4644
720.50	93.0106
721.93	0.0000
722.20	101.0581
722.78	101.0832
722.78	101.0832
722.89	101.0887
722.95	101.0915
723.30	90.4652
724.18	86.9487
727.18	101.2780
733.00	103.0580
735.90	98.0923
739.58	101.5946
742.81	93.9078
744.21	88.3711
747.13	97.4422
751.79	113.3445
752.31	95.4097
753.82	80.8682
755.35	95.5316
756.15	98.9355
756.87	93.3421
763.93	79.7070
765.79	91.8103
766.42	97.8544
766.84	99.3787
776.49	92.2148
778.00	93.7846
778.57	79.1094
778.89	79.4443
783.80	82.7865
785.46	93.7662
792.07	85.1940

795.84	88.3712
796.30	94.4834
798.80	77.7970
801.93	81.4583
805.60	83.5152
810.29	86.4290
810.76	84.6059
815.85	80.1691
817.79	76.5420
818.51	76.5643
819.60	71.0596
826.30	81.4236
828.27	0.0000
831.60	86.2271
831.96	95.5114
834.83	101.1869
836.80	0.0000
846.75	68.0793
848.13	69.0480
856.28	0.0000
856.80	62.4105
860.37	79.6813
867.32	72.3699
867.82	69.5629
871.10	62.1199
873.19	64.9941
874.81	69.7454
875.33	0.0000
876.40	74.5023
879.36	79.3037
880.27	67.0530
880.51	65.1710
881.50	81.2570
883.24	82.2549
884.67	61.4866
889.25	88.1207
896.60	84.5587
898.02	82.7010
899.00	87.4854
903.28	74.0750
911.07	68.7656
911.07	68.7656
911.07	68.7656
919.63	56.2830
920.93	70.9251
925.00	65.2690
925.24	65.2740
926.50	62.4229
935.52	67.4382
937.48	94.4805
944.10	61.8438
946.00	75.4216
949.00	74.5336
962.29	84.2757
964.01	73.9479
966.15	74.0017
968.20	74.0536
969.11	74.0759
969.11	74.0759
969.11	74.0759
977.42	57.0174
980.50	61.6434
983.50	56.8091
989.30	67.7147
996.32	79.6790
1001.03	75.8627
1001.68	67.0106
1004.76	78.9160
1021.30	0.0000
1024.50	0.0000
1034.80	56.7829
1036.00	61.7881
1037.82	68.8046
1038.57	65.8292
1038.76	0.0000
1045.16	63.9688
1046.59	71.0000
1048.07	66.0290



1050.47	72.0879
1050.47	72.0879
1062.04	77.3797
1063.62	55.2981
1076.63	73.6951
1077.35	73.7129
1078.86	77.7896
1085.78	68.8434
1099.22	62.0157
1112.02	92.8751
1112.84	85.0749
1115.52	68.1152
1120.29	92.0874
1120.29	92.0874
1120.29	92.0874
1120.29	92.0874
1120.51	85.9523
1121.28	85.9728
1124.00	0.0000
1129.67	75.9295
1131.51	0.0000
1147.95	0.0000
1167.94	77.8345
1173.22	81.0735
1175.09	87.3551
1177.93	77.0207
1189.05	71.0016
1204.90	76.5716
1205.75	0.0000
1213.00	78.8489
1221.42	84.3047
1230.97	80.5688
1235.34	96.9751
1236.41	0.0000
1238.25	86.8207
1246.25	79.5850
1260.41	0.0000
1271.85	57.7046
1274.45	66.3019
1274.54	66.3019
1291.56	83.7967
1298.22	0.0000
1312.09	52.9310
1325.50	44.4454
1325.50	44.4454
1332.49	34.7531
1333.61	34.7625
1360.21	42.6601
1362.66	0.0000
1365.15	40.5248
1368.21	44.9398
1368.53	0.0000
1376.25	35.1469
1384.27	39.6211
1394.10	40.4551
1395.20	42.3052
1407.95	35.9833
1434.06	46.4315
1436.60	43.6724
1457.56	0.0000
1460.81	32.7142
1489.15	15.9977
1509.49	22.6943
1596.49	23.1514
1620.62	19.3970
1678.03	0.0000
1691.02	22.6500
1691.02	22.6500
1706.46	0.0000
1750.46	0.0000
1764.49	13.0005
1764.49	13.0005
1764.49	13.0005
1764.49	13.0005
1770.23	15.4474
1771.40	45.0659
1791.20	0.0000
1808.65	16.1452

1836.01

10.1461

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G243274001

Total Uranium Activity	2.3185E+00	ug/g
Total Uranium Counting Unc.	2.3248E+00	ug/g
Total Uranium Tpu	1.1861E-06	ug/g
Total Uranium Mda	1.0216E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 935341                          SAMPLE ID   : G243274001
*  ANALYST       : MXR1                             DETECTOR    : GAM17
*  SAMPLE DATE   : 16-DEC-2009 12:00:00.00          COUNT TIME   : 0 04:00:00.00
*  ANALYSIS DATE : 30-DEC-2009 22:47:57.99          SAMPLE ALQT  : 132.930 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.175E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.114E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.167E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.547E+00

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VAX/VMS Nuclide Identification Report Generated 31-DEC-2009 16:44:33.69

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202001375.CNF;1
Sample date        : 22-DEC-2009 00:00:00 Acquisition date : 31-DEC-2009 14:42:59
Sample ID          : G1202001375 Sample quantity : 1.56780E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.52 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 935341 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	185.09*	5	94	0.95	370.57	365	11	7.03E-04	445.5	
2	0	239.26*	56	126	1.96	478.86	472	17	7.84E-03	52.8	
3	3	512.43	40	27	1.73	1025.00	1010	23	5.50E-03	38.6	1.11E+00
4	0	582.70*	35	9	1.42	1165.50	1159	13	4.87E-03	33.0	
5	0	609.05*	17	39	1.68	1218.18	1212	15	2.34E-03	91.1	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 31-DEC-2009 16:44:36

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202001375.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 22-DEC-2009 00:00:00 Acquisition date : 31-DEC-2009 14:42:59
Sample ID        : G1202001375 Sample quantity : 156.78 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.52 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
ANH-511	+	511.00	*	3.862E-02	2.992E-02	2.351E-02	1.328E-03	1.643

## ---- 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	*	1.080E-01	1.771E-01	3.091E-01	2.060E-02	0.349
NA-22		1274.54	*	1.137E-03	1.828E-02	3.005E-02	2.062E-03	0.038
NA-24		1368.53	*	-5.963E-04	1.828E-02	Half-Life too short		
AL-26		1129.67		5.928E-02	8.381E-01	1.386E+00	8.729E-02	0.043
		1808.65	*	-8.236E-03	1.826E-02	2.561E-02	1.533E-03	-0.322
K-40		1460.81	*	-1.191E-01	2.500E-01	3.731E-01	2.852E-02	-0.319
TI-44		67.85		-1.742E-02	3.129E-02	4.970E-02	5.670E-03	-0.351
		78.38	*	-5.892E-03	2.005E-02	3.240E-02	3.603E-03	-0.182
SC-46		889.25	*	-1.035E-02	2.094E-02	3.187E-02	2.673E-03	-0.325
		1120.51		-2.031E-02	2.262E-02	3.143E-02	2.018E-03	-0.646
V-48		944.10		2.654E-01	3.797E-01	6.936E-01	5.701E-02	0.383
		983.50	*	-4.280E-03	2.709E-02	4.322E-02	3.415E-03	-0.099
		1312.09		2.793E-02	3.331E-02	6.287E-02	4.589E-03	0.444
CR-51		320.08	*	1.317E-01	2.081E-01	3.637E-01	2.623E-02	0.362
MN-52		744.21		1.560E-02	6.697E-02	1.154E-01	7.077E-03	0.135
		848.13		-1.124E+00	2.047E+00	3.127E+00	2.411E-01	-0.359
		935.52		3.031E-02	7.325E-02	1.281E-01	1.061E-02	0.237
		1246.25		4.487E-01	1.393E+00	2.433E+00	1.586E-01	0.184
		1333.61		4.421E-02	1.309E+00	2.130E+00	1.608E-01	0.021
		1434.06	*	-2.036E-02	6.858E-02	1.070E-01	7.931E-03	-0.190
MN-54		834.83	*	1.875E-03	2.052E-02	3.451E-02	2.586E-03	0.054
CO-56		846.75	*	-2.607E-03	2.196E-02	3.584E-02	2.755E-03	-0.073
		977.42		9.684E-02	1.780E+00	2.953E+00	2.348E-01	0.033
		1037.82		-9.682E-02	1.436E-01	2.022E-01	1.601E-02	-0.479
		1175.09		-1.893E-01	9.172E-01	1.425E+00	8.145E-02	-0.133
		1238.25		1.931E-02	3.091E-02	5.686E-02	3.843E-03	0.340
		1360.21		2.663E-02	4.925E-01	8.047E-01	6.053E-02	0.033
		1771.40		-9.505E-02	1.567E-01	2.166E-01	1.340E-02	-0.439

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57		122.06	*	-7.537E-03	1.358E-02	2.114E-02	1.520E-03	-0.356
		136.48		1.995E-02	1.109E-01	1.825E-01	1.401E-02	0.109
CO-58		810.76	*	6.616E-03	2.006E-02	3.495E-02	2.497E-03	0.189
FE-59		142.65		1.011E+00	1.398E+00	2.381E+00	1.621E-01	0.425
		192.34		-4.542E-01	5.241E-01	7.777E-01	9.588E-02	-0.584
		1099.22	*	2.271E-02	4.108E-02	7.382E-02	5.586E-03	0.308
		1291.56		-1.218E-02	6.227E-02	9.672E-02	8.160E-03	-0.126
CO-60		1173.22		-1.621E-02	2.019E-02	2.689E-02	1.532E-03	-0.603
		1332.49	*	-9.796E-03	2.210E-02	3.204E-02	2.418E-03	-0.306
ZN-65		1115.52	*	-2.482E-02	3.639E-02	5.635E-02	3.661E-03	-0.440
GE-68		1077.35	*	1.687E-01	7.191E-01	1.220E+00	8.479E-02	0.138
AS-73		53.44	*	-2.544E-01	8.206E-01	1.331E+00	1.818E-01	-0.191
AS-74		595.88	*	2.642E-02	4.441E-02	7.701E-02	4.140E-03	0.343
		634.78		-1.116E-01	1.813E-01	2.586E-01	1.341E-02	-0.432
SE-75		66.05		-4.418E+00	3.717E+00	5.324E+00	6.905E-01	-0.830
		96.73		-1.464E-01	4.419E-01	7.081E-01	1.016E-01	-0.207
		121.11		2.217E-02	6.880E-02	1.149E-01	1.172E-02	0.193
		136.00		3.813E-03	2.023E-02	3.334E-02	2.322E-03	0.114
		198.60		-5.569E-01	1.156E+00	1.675E+00	1.337E-01	-0.332
		264.65	*	-2.137E-02	2.496E-02	3.881E-02	2.714E-03	-0.551
		279.53		-8.327E-02	6.490E-02	9.681E-02	7.063E-03	-0.860
		303.91		-7.290E-01	1.206E+00	1.901E+00	1.930E-01	-0.383
		400.65		6.088E-02	1.495E-01	2.561E-01	2.313E-02	0.238
BR-77		87.88		-1.932E+01	2.217E+01	3.351E+01	3.875E+00	-0.576
		200.40		-8.095E+00	1.891E+01	2.920E+01	1.996E+00	-0.277
	+	239.00		2.326E+00	2.459E+00	2.565E+00	1.785E-01	0.906
		249.79		-6.393E+00	7.647E+00	1.195E+01	8.321E-01	-0.535
		281.68		1.832E+00	1.092E+01	1.851E+01	1.275E+00	0.099
		297.23		4.111E-01	6.147E+00	1.032E+01	7.018E-01	0.040
		303.76		-1.460E+01	2.113E+01	3.306E+01	2.234E+00	-0.442
		439.47		1.052E+00	1.777E+01	2.934E+01	1.676E+00	0.036
		484.57		1.123E+01	2.533E+01	4.362E+01	2.482E+00	0.258
		520.65	*	2.278E-01	1.349E+00	2.116E+00	1.191E-01	0.108
		574.64		-2.833E+00	2.642E+01	3.961E+01	2.164E+00	-0.072
		578.91		2.986E+00	1.135E+01	1.661E+01	9.046E-01	0.180
		585.48		3.080E+01	1.943E+01	3.490E+01	1.892E+00	0.882
		755.35		6.636E+00	1.705E+01	3.003E+01	1.890E+00	0.221
		817.79		3.755E+00	1.419E+01	2.453E+01	1.773E+00	0.153
SR-82		698.33		1.452E+00	1.945E+01	3.287E+01	1.810E+00	0.044
		776.49	*	-4.245E-02	1.751E-01	2.818E-01	1.860E-02	-0.151
		1395.20		-3.401E+00	5.688E+00	8.328E+00	6.228E-01	-0.408
RB-83		520.41	*	9.394E-03	4.196E-02	6.635E-02	3.733E-03	0.142
		529.64		-7.219E-03	5.807E-02	9.290E-02	5.206E-03	-0.078
		552.65		5.458E-02	1.179E-01	2.016E-01	1.117E-02	0.271
RB-84		881.50	*	2.650E-02	3.324E-02	6.158E-02	5.085E-03	0.430
KR-85		513.99	*	1.334E+01	5.107E+00	9.578E+00	5.403E-01	1.392
SR-85		513.99	*	6.453E-02	2.471E-02	4.635E-02	2.615E-03	1.392
RB-86		1076.63	*	2.101E-01	3.669E-01	6.543E-01	4.552E-02	0.321
Y-88		898.02		2.485E-03	2.478E-02	4.155E-02	3.565E-03	0.060

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1836.01	*		7.668E-03	2.418E-02	4.270E-02	2.494E-03	0.180
ZR-88	392.90	*		1.313E-02	1.718E-02	3.046E-02	1.728E-03	0.431
Y-91	1204.90	*		-3.287E+00	7.998E+00	1.189E+01	7.188E-01	-0.277
NB-94	702.63	*		2.789E-03	2.054E-02	3.496E-02	1.944E-03	0.080
	871.10			-6.076E-03	1.723E-02	2.535E-02	2.049E-03	-0.240
NB-95	765.79	*		1.771E-02	2.228E-02	4.068E-02	2.622E-03	0.435
NB-95M	235.69	*		9.236E-02	8.115E-02	1.306E-01	1.103E-02	0.707
ZR-95	724.18			2.554E-03	4.554E-02	7.679E-02	5.303E-03	0.033
	756.15	*		2.632E-02	3.480E-02	6.403E-02	4.773E-03	0.411
NB-97	657.90	*		3.855E-05	3.480E-02	Half-Life	too short	
	1024.50			4.314E-03	3.480E-02	Half-Life	too short	
ZR-97	254.15			5.846E-03	3.480E-02	Half-Life	too short	
	355.39			-8.862E-03	3.480E-02	Half-Life	too short	
	507.63	*		2.131E-02	3.480E-02	Half-Life	too short	
	602.52			-9.561E-03	3.480E-02	Half-Life	too short	
	1021.30			-1.341E-02	3.480E-02	Half-Life	too short	
	1147.95			5.104E-03	3.480E-02	Half-Life	too short	
	1362.66			9.894E-03	3.480E-02	Half-Life	too short	
	1750.46			2.334E-02	3.480E-02	Half-Life	too short	
MO-99	140.51			-6.291E-01	3.580E+00	5.725E+00	1.557E+00	-0.110
	181.06			4.064E-01	2.638E+00	3.767E+00	6.583E-01	0.108
	366.43			2.140E+00	1.405E+01	2.356E+01	1.431E+00	0.091
	739.58	*		1.057E+00	1.740E+00	3.111E+00	4.323E-01	0.340
	778.00			1.394E+00	4.861E+00	8.408E+00	5.569E-01	0.166
TC-99M	140.51	*		-9.084E+02	4.861E+00	Half-Life	too short	
RH-101	127.23			8.133E-03	1.720E-02	2.895E-02	2.039E-03	0.281
	198.01	*		-5.346E-03	2.148E-02	3.171E-02	2.163E-03	-0.169
	325.23			5.045E-02	1.403E-01	2.400E-01	1.578E-02	0.210
RH-102	418.52			1.265E-01	1.695E-01	2.999E-01	1.711E-02	0.422
	475.06	*		2.167E-03	1.713E-02	2.842E-02	1.620E-03	0.076
	631.29			3.249E-02	3.090E-02	5.674E-02	2.954E-03	0.573
	697.49			1.289E-02	5.091E-02	8.756E-02	4.810E-03	0.147
	766.84			4.510E-02	5.809E-02	1.061E-01	6.851E-03	0.425
	1046.59			3.187E-02	6.371E-02	1.128E-01	8.222E-03	0.283
	1112.84			-1.044E-01	1.391E-01	1.404E-01	9.153E-03	-0.744
RU-103	497.08	*		-1.533E-02	2.193E-02	3.249E-02	4.090E-03	-0.472
	610.33	+		3.969E-01	7.260E-01	8.754E-01	1.334E-01	0.453
RH-106	511.85	+		1.909E-01	1.479E-01	2.965E-01	1.674E-02	0.644
	621.84	*		-1.372E-01	1.827E-01	2.608E-01	2.993E-02	-0.526
	1050.47			-3.812E-01	1.170E+00	1.800E+00	1.305E-01	-0.212
RU-106	511.85	+		1.909E-01	1.479E-01	2.965E-01	1.674E-02	0.644
	621.84	*		-1.372E-01	1.821E-01	2.608E-01	1.370E-02	-0.526
	1050.47			-3.812E-01	1.170E+00	1.800E+00	1.305E-01	-0.212
AG-108M	433.93	*		1.119E-02	2.029E-02	3.518E-02	2.187E-03	0.318
	614.37			-2.494E-02	2.893E-02	3.380E-02	1.969E-03	-0.738
	722.95			2.077E-03	2.153E-02	3.650E-02	2.309E-03	0.057
CD-109	88.03	*		-7.241E-01	5.244E-01	7.619E-01	8.810E-02	-0.950
AG-110M	657.75	*		3.067E-03	1.983E-02	3.255E-02	1.784E-03	0.094
	677.61			6.980E-02	1.483E-01	2.565E-01	1.443E-02	0.272



---- Non-Identified Nuclides ----

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	706.67			-1.874E-02	1.228E-01	2.021E-01	1.207E-02	-0.093
	763.93			-4.051E-02	9.483E-02	1.497E-01	1.009E-02	-0.271
	884.67			-1.618E-02	2.676E-02	3.983E-02	3.425E-03	-0.406
	937.48			-4.588E-02	6.357E-02	9.267E-02	7.964E-03	-0.495
	1384.27			7.814E-02	1.058E-01	1.979E-01	1.538E-02	0.395
IN-111	171.28			8.275E-03	1.433E-01	2.320E-01	1.548E-02	0.036
	245.39	*		6.161E-02	1.674E-01	2.556E-01	1.779E-02	0.241
IN-113M	391.69	*		1.407E-02	2.486E-02	4.334E-02	2.629E-03	0.325
SN-113	391.69	*		1.407E-02	2.486E-02	4.334E-02	2.629E-03	0.325
IN-114M	190.27	*		-6.772E-02	1.137E-01	1.485E-01	1.007E-02	-0.456
CD-115	260.90			1.954E+01	1.413E+01	2.602E+01	1.809E+00	0.751
	492.35			2.647E+00	3.939E+00	6.912E+00	3.926E-01	0.383
	527.90	*		5.675E-01	1.104E+00	1.911E+00	1.072E-01	0.297
SN-117M	156.02			-7.796E-02	9.485E-01	1.524E+00	1.021E-01	-0.051
	158.56	*		-2.336E-02	2.348E-02	3.484E-02	2.330E-03	-0.670
SB-122	563.90	*		-1.442E-01	2.825E-01	4.255E-01	2.341E-02	-0.339
	692.80			-1.593E+00	7.435E+00	1.169E+01	6.348E-01	-0.136
I-123	159.00	*		-2.104E-03	7.435E+00	Half-Life too short		
	528.96			-1.315E-02	7.435E+00	Half-Life too short		
TE-123M	159.00	*		-1.075E-02	1.550E-02	2.364E-02	1.596E-03	-0.455
I-124	602.71	*		-9.388E-02	1.982E-01	2.531E-01	1.353E-02	-0.371
	722.78			1.315E-01	9.093E-01	1.551E+00	9.051E-02	0.085
	1325.50			4.838E+00	7.308E+00	1.347E+01	1.005E+00	0.359
	1376.25			2.112E+00	8.485E+00	1.426E+01	1.070E+00	0.148
	1509.49			2.177E+00	3.577E+00	6.708E+00	4.858E-01	0.325
	1691.02			3.705E-01	9.925E-01	1.790E+00	1.178E-01	0.207
SB-124	602.71			-1.276E-02	2.693E-02	3.440E-02	1.840E-03	-0.371
	645.85			9.687E-02	2.612E-01	4.427E-01	2.636E-02	0.219
	709.31			2.944E-02	1.519E+00	2.552E+00	1.442E-01	0.012
	713.82			-3.008E-01	8.411E-01	1.340E+00	1.362E-01	-0.224
	722.78			2.590E-02	1.791E-01	3.055E-01	1.866E-02	0.085
	968.20			-6.270E-01	1.401E+00	2.159E+00	1.734E-01	-0.290
	1045.16			-3.134E-02	1.495E+00	2.249E+00	1.643E-01	-0.014
	1325.50			1.018E+00	1.538E+00	2.833E+00	2.114E-01	0.359
	1368.21			-5.293E-01	9.938E-01	1.397E+00	1.788E-01	-0.379
	1436.60			-5.212E-03	2.100E+00	3.434E+00	2.545E-01	-0.002
	1691.02	*		1.722E-02	4.612E-02	8.317E-02	5.841E-03	0.207
SB-125	427.89	*		-3.123E-02	4.917E-02	7.431E-02	4.429E-03	-0.420
	463.38			-7.088E-02	1.839E-01	2.852E-01	1.906E-02	-0.249
	600.56			7.248E-02	1.127E-01	1.913E-01	1.210E-02	0.379
	635.90			-1.440E-01	1.679E-01	2.374E-01	1.489E-02	-0.606
TE-125M	109.28	*		-5.012E+00	4.933E+00	7.418E+00	7.364E-01	-0.676
I-126	388.63			-2.434E-02	9.076E-02	1.457E-01	8.335E-03	-0.167
	666.33	*		-4.104E-04	7.836E-02	1.258E-01	6.400E-03	-0.003
	753.82			-2.469E-02	5.585E-01	9.267E-01	5.812E-02	-0.027
SB-126	223.80			2.589E-02	1.809E+00	2.889E+00	2.001E-01	0.009
	278.60			-9.583E-01	1.104E+00	1.716E+00	1.184E-01	-0.558
	296.50			1.293E-01	5.822E-01	9.892E-01	6.735E-02	0.131
	414.70			-3.353E-03	3.378E-02	5.501E-02	3.136E-03	-0.061

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	415.30			-8.152E-01	2.850E+00	4.552E+00	2.595E-01	-0.179
	555.20			8.009E-01	1.844E+00	3.143E+00	1.738E-01	0.255
	573.80			1.961E-01	4.278E-01	7.341E-01	4.012E-02	0.267
	593.00			-2.353E-01	3.757E-01	5.504E-01	2.966E-02	-0.428
	656.30			4.338E-01	1.452E+00	2.428E+00	1.230E-01	0.179
	666.33			-1.694E-04	3.233E-02	5.189E-02	2.641E-03	-0.003
	675.00			-1.443E-01	6.764E-01	1.043E+00	5.422E-02	-0.138
	695.00			1.753E-02	3.740E-02	6.573E-02	3.589E-03	0.267
	697.00			3.362E-02	1.302E-01	2.240E-01	1.229E-02	0.150
	720.50	*		3.940E-02	5.793E-02	1.051E-01	6.103E-03	0.375
	856.80			-4.305E-02	2.226E-01	3.601E-01	2.826E-02	-0.120
	989.30			2.962E-01	4.887E-01	8.837E-01	6.936E-02	0.335
	1034.80			-1.543E+00	2.784E+00	3.971E+00	2.944E-01	-0.389
	1213.00			-8.482E-02	1.471E+00	2.360E+00	1.449E-01	-0.036
SN-126	64.28			1.164E-01	4.076E-01	6.563E-01	1.125E-01	0.177
	86.94			-9.868E-02	2.025E-01	3.071E-01	1.291E-01	-0.321
	87.57	*		-4.218E-02	5.055E-02	7.667E-02	8.847E-03	-0.550
SB-127	61.10			-7.208E+00	1.994E+01	3.215E+01	4.151E+00	-0.224
	252.40			3.645E-01	9.207E-01	1.574E+00	6.512E-01	0.232
	290.80			-4.309E+00	4.822E+00	7.439E+00	6.098E-01	-0.579
	411.60			-2.728E-01	2.785E+00	4.539E+00	6.015E-01	-0.060
	444.90			1.519E-02	2.252E+00	3.696E+00	3.418E-01	0.004
	473.00			-1.715E-01	3.766E-01	5.823E-01	5.642E-02	-0.294
	543.00			9.298E-02	3.925E+00	6.391E+00	7.399E-01	0.015
	603.60			-1.761E+00	3.139E+00	3.930E+00	3.533E-01	-0.448
	685.20	*		5.979E-02	2.719E-01	4.694E-01	3.444E-02	0.127
	698.50			7.443E-01	3.718E+00	6.360E+00	8.446E-01	0.117
	722.20			-1.916E-01	5.946E+00	9.912E+00	7.307E-01	-0.019
	783.80			-4.502E-01	7.657E-01	1.172E+00	1.142E-01	-0.384
XE-127	57.60			1.533E+00	4.960E+00	8.423E+00	1.073E+00	0.182
	145.22			9.663E-02	3.424E-01	5.664E-01	3.842E-02	0.171
	172.10			2.342E-02	5.889E-02	9.792E-02	6.540E-03	0.239
	202.84	*		-8.934E-03	2.372E-02	3.675E-02	2.516E-03	-0.243
	374.96			-4.078E-02	1.136E-01	1.813E-01	1.077E-02	-0.225
I-131	80.18			-1.409E+00	1.665E+00	2.577E+00	2.879E-01	-0.547
	284.30			3.843E-01	5.759E-01	1.011E+00	7.477E-02	0.380
	364.48	*		2.051E-02	4.459E-02	7.691E-02	5.156E-03	0.267
	636.97			-5.229E-01	5.773E-01	8.044E-01	4.742E-02	-0.650
	722.89			2.568E-01	2.262E+00	3.843E+00	2.256E-01	0.067
TE-132	49.72			-3.223E+00	8.064E+00	1.301E+01	1.836E+00	-0.248
	111.76			-2.164E+00	5.087E+00	8.045E+00	7.219E-01	-0.269
	116.30			1.717E+00	4.407E+00	7.407E+00	6.412E-01	0.232
	228.16	*		5.186E-02	1.249E-01	2.163E-01	3.021E-02	0.240
BA-133	53.15			-8.883E-01	3.815E+00	6.230E+00	8.542E-01	-0.143
	79.62			-8.464E-01	7.660E-01	1.146E+00	1.923E-01	-0.739
	81.00			-6.582E-02	5.615E-02	8.301E-02	1.445E-02	-0.793
	276.40			7.079E-02	2.362E-01	3.846E-01	5.191E-02	0.184
	302.84			-8.199E-02	8.209E-02	1.233E-01	1.501E-02	-0.665
	356.01	*		-1.898E-02	2.794E-02	4.329E-02	5.098E-03	-0.438

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-133	383.85			-2.553E-02	1.762E-01	2.865E-01	3.115E-02	-0.089
	510.53			5.839E-04	1.762E-01	Half-Life	too short	
	529.87	*		-1.163E-05	1.762E-01	Half-Life	too short	
	706.58			-4.949E-04	1.762E-01	Half-Life	too short	
	856.28			3.426E-04	1.762E-01	Half-Life	too short	
	875.33			-5.220E-04	1.762E-01	Half-Life	too short	
	1236.41			1.861E-03	1.762E-01	Half-Life	too short	
CS-134	1298.22			-1.330E-03	1.762E-01	Half-Life	too short	
	475.35			-1.063E-02	1.131E+00	1.847E+00	1.053E-01	-0.006
	563.23			-5.857E-02	1.963E-01	3.049E-01	1.717E-02	-0.192
	569.32			-7.939E-02	1.293E-01	1.892E-01	1.072E-02	-0.420
	604.70			-7.696E-03	2.319E-02	3.033E-02	1.629E-03	-0.254
	795.84	*		1.267E-02	2.463E-02	4.385E-02	3.056E-03	0.289
	801.93			4.797E-02	2.221E-01	3.806E-01	2.680E-02	0.126
CS-135	1038.57			-7.255E-01	1.966E+00	2.997E+00	2.210E-01	-0.242
	1167.94			1.838E-01	1.056E+00	1.783E+00	1.029E-01	0.103
	1365.15			2.545E-01	6.960E-01	1.213E+00	9.665E-02	0.210
	268.24	*		5.858E-02	8.598E-02	1.518E-01	1.298E-02	0.386
	288.45			-6.499E+03	8.598E-02	Half-Life	too short	
	417.63			-2.281E+01	8.598E-02	Half-Life	too short	
	546.56			2.131E+03	8.598E-02	Half-Life	too short	
I-135	836.80			8.654E+02	8.598E-02	Half-Life	too short	
	1038.76			-2.639E+03	8.598E-02	Half-Life	too short	
	1124.00			-6.661E+03	8.598E-02	Half-Life	too short	
	1131.51			-1.577E+02	8.598E-02	Half-Life	too short	
	1260.41	*		-4.574E+02	8.598E-02	Half-Life	too short	
	1457.56			-3.167E+03	8.598E-02	Half-Life	too short	
	1678.03			5.713E+03	8.598E-02	Half-Life	too short	
CS-136	1706.46			1.015E+03	8.598E-02	Half-Life	too short	
	1791.20			7.628E+03	8.598E-02	Half-Life	too short	
	66.91			-5.129E-01	4.578E-01	6.542E-01	1.125E-01	-0.784
	86.29			-3.301E-01	4.713E-01	7.156E-01	1.066E-01	-0.461
	153.22			5.445E-02	2.711E-01	4.453E-01	3.551E-02	0.122
	163.89			5.627E-02	4.500E-01	7.333E-01	5.829E-02	0.077
	176.55			-1.773E-02	1.576E-01	2.515E-01	1.843E-02	-0.071
BA-137M	273.65			1.190E-01	2.019E-01	3.525E-01	2.682E-02	0.338
	340.57			-3.108E-02	5.530E-02	8.710E-02	5.870E-03	-0.357
	818.51			2.338E-03	3.072E-02	5.165E-02	3.740E-03	0.045
	1048.07	*		-9.241E-03	4.349E-02	6.861E-02	5.283E-03	-0.135
	1235.34			7.238E-02	1.624E-01	2.887E-01	2.985E-02	0.251
	661.65	*		-9.364E-03	2.184E-02	3.303E-02	1.662E-03	-0.283
	661.65	*		-9.898E-03	2.309E-02	3.492E-02	1.767E-03	-0.283
CE-139	165.85	*		-3.540E-03	1.572E-02	2.489E-02	1.655E-03	-0.142
BA-140	162.64			3.388E-01	3.119E-01	5.428E-01	3.964E-02	0.624
	304.84			-1.384E-01	5.635E-01	9.176E-01	2.524E-01	-0.151
	423.70			-1.150E+00	8.379E-01	9.886E-01	3.141E-01	-1.164
LA-140	537.32	*		7.862E-02	1.199E-01	2.053E-01	6.668E-02	0.383
	328.77			1.090E-01	1.373E-01	2.422E-01	1.736E-02	0.450
	432.53			1.429E-01	9.591E-01	1.599E+00	1.012E-01	0.089

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		487.03		-2.537E-02	6.085E-02	9.430E-02	6.097E-03	-0.269
		751.79		2.024E-01	6.128E-01	1.074E+00	8.019E-02	0.188
		815.85		1.341E-02	1.233E-01	2.085E-01	1.743E-02	0.064
		867.82		3.110E-01	5.205E-01	9.438E-01	8.038E-02	0.330
		919.63		-7.217E-01	1.095E+00	1.595E+00	1.669E-01	-0.453
		925.24		-1.384E-01	4.360E-01	6.798E-01	6.060E-02	-0.204
		1596.49	*	-6.827E-04	3.507E-02	5.789E-02	4.035E-03	-0.012
CE-141		145.44	*	3.123E-03	2.994E-02	4.891E-02	3.414E-03	0.064
CE-143		57.37		2.961E+00	6.125E+01	1.022E+02	1.439E+01	0.029
		231.56		2.586E+01	9.872E+01	1.601E+02	5.021E+01	0.161
		293.26	*	3.575E+00	4.800E+00	8.384E+00	1.767E+00	0.426
		350.59		-2.750E-01	7.524E+01	1.200E+02	3.677E+01	-0.002
		490.36		2.508E+01	1.110E+02	1.853E+02	5.763E+01	0.135
		664.57		-1.602E+01	5.014E+01	7.670E+01	2.434E+01	-0.209
		721.93		3.257E+00	4.564E+01	7.710E+01	2.211E+01	0.042
CE-144		80.11		-1.046E+00	1.216E+00	1.879E+00	2.096E-01	-0.557
		133.54	*	-4.319E-02	1.105E-01	1.739E-01	2.557E-02	-0.248
PM-144		476.78		3.068E-02	3.915E-02	6.955E-02	4.768E-03	0.441
		618.01		8.035E-04	1.816E-02	2.947E-02	1.665E-03	0.027
		696.49	*	7.026E-03	2.290E-02	3.958E-02	2.170E-03	0.178
		778.57		4.839E-01	1.312E+00	2.291E+00	1.520E-01	0.211
PR-144		696.49	*	4.747E-01	1.547E+00	2.674E+00	1.466E-01	0.178
		1489.15		3.583E+00	6.521E+00	1.221E+01	8.909E-01	0.293
PM-146		453.90	*	-1.105E-02	2.658E-02	4.150E-02	3.554E-03	-0.266
		633.02		3.166E-01	8.535E-01	1.390E+00	5.107E-01	0.228
		735.90		-3.325E-02	8.862E-02	1.403E-01	3.918E-02	-0.237
		747.13		-1.178E-02	4.629E-02	7.435E-02	9.431E-03	-0.158
ND-147		91.11		-7.380E-02	1.310E-01	2.146E-01	2.440E-02	-0.344
		319.41		2.689E+00	1.452E+00	2.759E+00	1.830E-01	0.974
		439.89		-5.189E-02	2.552E+00	4.179E+00	2.389E-01	-0.012
		531.02	*	-2.619E-02	2.181E-01	3.488E-01	4.686E-02	-0.075
PM-149		285.90	*	2.990E+00	9.931E+00	1.698E+01	2.485E+00	0.176
EU-152		121.78		-1.973E-02	3.919E-02	6.125E-02	5.342E-03	-0.322
		244.69		8.894E-02	2.053E-01	3.151E-01	2.194E-02	0.282
		344.27	*	1.809E-02	6.288E-02	1.068E-01	7.528E-03	0.169
		443.98		-2.449E-01	6.071E-01	9.526E-01	5.444E-02	-0.257
		778.89		6.769E-02	1.518E-01	2.676E-01	1.776E-02	0.253
		867.32		1.138E-01	4.292E-01	7.412E-01	5.945E-02	0.153
		964.01		7.027E-02	1.614E-01	2.816E-01	2.271E-02	0.250
		1085.78		6.815E-02	2.234E-01	3.836E-01	2.628E-02	0.178
		1112.02		-1.238E-01	1.925E-01	1.959E-01	1.279E-02	-0.632
		1407.95		-6.459E-02	9.494E-02	1.324E-01	9.878E-03	-0.488
GD-153		69.67		5.667E-02	1.055E+00	1.752E+00	1.978E-01	0.032
		83.37		3.296E+00	8.742E+00	1.374E+01	1.550E+00	0.240
		97.43	*	2.856E-02	4.425E-02	7.567E-02	7.261E-03	0.377
		103.18		-2.099E-02	5.665E-02	9.015E-02	7.932E-03	-0.233
EU-154		123.07		-2.026E-03	2.738E-02	4.435E-02	4.566E-03	-0.046
		247.94		-3.544E-02	2.118E-01	3.310E-01	3.406E-02	-0.107
		591.81		-2.225E-01	3.259E-01	4.694E-01	4.477E-02	-0.474

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155		723.30		2.359E-03	9.068E-02	1.523E-01	1.084E-02	0.015
		756.87		2.411E-01	3.920E-01	7.101E-01	7.414E-02	0.340
		873.19		-5.002E-02	1.450E-01	2.250E-01	2.677E-02	-0.222
		996.32		-1.157E-01	2.225E-01	3.348E-01	5.818E-02	-0.346
		1004.76		-6.602E-02	1.172E-01	1.734E-01	1.905E-02	-0.381
		1274.45	*	4.268E-03	5.145E-02	8.500E-02	8.524E-03	0.050
		48.70		-1.791E+00	3.429E+00	5.476E+00	7.046E-01	-0.327
		60.01		-1.061E+00	4.411E+00	7.203E+00	8.805E-01	-0.147
		86.54		-4.006E-02	5.720E-02	8.698E-02	1.003E-02	-0.461
		105.31	*	2.726E-02	6.027E-02	1.017E-01	8.810E-03	0.268
TB-160		86.79		-8.351E-02	1.455E-01	2.237E-01	2.569E-02	-0.373
		197.04		2.171E-01	3.257E-01	5.473E-01	3.731E-02	0.397
		215.65		1.191E-02	4.211E-01	6.744E-01	4.654E-02	0.018
		298.57		-4.375E-02	6.632E-02	1.005E-01	6.832E-03	-0.435
		879.36	*	3.735E-02	6.913E-02	1.241E-01	1.020E-02	0.301
		962.29		2.386E-01	2.710E-01	4.998E-01	4.037E-02	0.477
		966.15		-4.040E-02	1.119E-01	1.752E-01	1.410E-02	-0.231
		1177.93		1.001E-01	1.404E-01	2.624E-01	1.508E-02	0.382
		1271.85		-9.142E-02	3.239E-01	4.909E-01	3.348E-02	-0.186
		80.57		-1.454E-01	1.583E-01	2.435E-01	2.720E-02	-0.597
HO-166M	+	184.41		3.376E-03	3.008E-02	3.935E-02	2.655E-03	0.086
		280.46		-2.334E-02	5.209E-02	8.402E-02	5.791E-03	-0.278
		410.95		-6.977E-03	1.491E-01	2.442E-01	1.391E-02	-0.029
		711.68	*	2.406E-02	3.281E-02	5.998E-02	3.409E-03	0.401
		752.31		3.750E-02	1.344E-01	2.338E-01	1.461E-02	0.160
		810.29		6.132E-04	3.315E-02	5.530E-02	3.932E-03	0.011
		51.35		1.449E+01	3.491E+01	5.998E+01	8.285E+00	0.242
		52.39		2.259E+00	1.746E+01	2.936E+01	4.050E+00	0.077
		59.40		1.623E+00	2.437E+01	4.066E+01	5.004E+00	0.040
		66.72	*	-2.700E+01	2.189E+01	3.126E+01	3.595E+00	-0.864
LU-176		88.36		-1.464E-01	1.170E-01	1.758E-01	2.017E-02	-0.833
		201.83		-1.938E-02	1.650E-02	2.367E-02	1.619E-03	-0.819
		306.84	*	3.805E-03	1.541E-02	2.621E-02	1.766E-03	0.145
		401.10		-3.195E-01	4.077E+00	6.665E+00	3.789E-01	-0.048
		112.95		4.957E-01	4.921E-01	8.602E-01	6.733E-02	0.576
		208.36	*	1.928E-02	3.468E-01	5.573E-01	3.830E-02	0.035
		52.97		-1.186E-01	1.704E+00	2.821E+00	3.874E-01	-0.042
		54.07		-3.008E-01	8.554E-01	1.382E+00	1.874E-01	-0.218
		61.30		-5.027E-01	1.344E+00	2.166E+00	2.615E-01	-0.232
		121.62		-1.060E-01	1.959E-01	3.052E-01	2.199E-02	-0.347
LU-177		147.16		-2.452E-01	3.527E-01	5.402E-01	3.655E-02	-0.454
		171.86		8.854E-02	2.596E-01	4.297E-01	2.869E-02	0.206
		218.09		3.025E-01	4.951E-01	8.296E-01	5.732E-02	0.365
		268.79		8.058E-02	4.305E-01	7.322E-01	5.077E-02	0.110
		319.02		3.014E-01	1.541E-01	2.951E-01	1.958E-02	1.021
		367.43		-2.688E-02	5.781E-01	9.524E-01	5.769E-02	-0.028
		413.65	*	5.855E-02	1.014E-01	1.765E-01	1.006E-02	0.332
		56.28		-6.112E-01	8.423E-01	1.317E+00	1.720E-01	-0.464
		57.53		1.358E-02	4.319E-01	7.194E-01	9.175E-02	0.019
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---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
W-181		65.20		-5.472E-01	6.947E-01	1.035E+00	1.205E-01	-0.528
		133.02		-2.751E-02	3.310E-02	5.027E-02	3.486E-03	-0.547
		136.25		6.982E-02	2.221E-01	3.694E-01	2.544E-02	0.189
		345.85		6.338E-03	1.131E-01	1.884E-01	1.196E-02	0.034
		482.03	*	-1.777E-02	2.333E-02	3.453E-02	1.966E-03	-0.514
		56.28		-2.534E-01	3.495E-01	5.466E-01	7.139E-02	-0.464
		57.53		5.558E-03	1.794E-01	2.988E-01	3.811E-02	0.019
		65.20	*	-2.255E-01	2.862E-01	4.266E-01	4.965E-02	-0.528
		67.75		-3.521E-02	7.275E-02	1.163E-01	1.327E-02	-0.303
		100.10		-5.535E-02	9.551E-02	1.496E-01	1.376E-02	-0.370
TA-182		152.43		8.213E-02	1.807E-01	3.022E-01	2.032E-02	0.272
		222.10		-3.429E-02	2.004E-01	3.151E-01	2.182E-02	-0.109
		1001.68		-2.216E-02	1.098E+00	1.826E+00	1.413E-01	-0.012
		1121.28		-6.961E-02	6.320E-02	8.295E-02	5.317E-03	-0.839
		1189.05		-7.483E-02	1.281E-01	1.804E-01	1.059E-02	-0.415
		1221.42	*	-3.529E-03	9.666E-02	1.559E-01	9.721E-03	-0.023
		1230.97		-1.668E-01	1.941E-01	2.523E-01	1.600E-02	-0.661
		57.98		8.101E-02	1.704E-01	2.923E-01	3.696E-02	0.277
		59.32		7.449E-03	9.581E-02	1.599E-01	1.971E-02	0.047
		67.20		-2.642E-02	1.305E-01	2.131E-01	2.442E-02	-0.124
RE-183		162.32	*	5.733E-02	5.836E-02	1.009E-01	6.728E-03	0.568
		208.81		-1.695E-01	5.176E-01	8.052E-01	5.534E-02	-0.211
		291.72		-3.614E-01	5.322E-01	8.382E-01	5.731E-02	-0.431
		57.98		3.082E-01	6.483E-01	1.112E+00	1.406E-01	0.277
		59.32		2.831E-02	3.642E-01	6.080E-01	7.494E-02	0.047
		67.20		-1.005E-01	4.964E-01	8.106E-01	9.289E-02	-0.124
		161.27		1.476E-01	1.950E-01	3.324E-01	2.217E-02	0.444
		216.55		2.362E-02	1.573E-01	2.543E-01	1.756E-02	0.093
		252.85	*	6.610E-02	1.286E-01	2.246E-01	1.563E-02	0.294
		318.01		3.727E-01	2.653E-01	4.915E-01	3.265E-02	0.758
RE-184		792.07		1.161E-02	5.191E-01	8.674E-01	5.927E-02	0.013
		903.28		-1.953E-01	5.068E-01	7.833E-01	6.660E-02	-0.249
		920.93		-1.115E-01	2.147E-01	3.193E-01	2.678E-02	-0.349
		59.72		-3.336E-02	2.550E-01	4.197E-01	5.145E-02	-0.079
		61.14		-5.330E-02	1.464E-01	2.361E-01	2.855E-02	-0.226
		69.30		-4.801E-02	1.873E-01	3.043E-01	3.442E-02	-0.158
		592.07		-8.077E-01	1.338E+00	1.969E+00	1.062E-01	-0.410
		646.12	*	2.851E-02	2.056E-02	3.988E-02	2.043E-03	0.715
		717.42		-2.742E-01	4.759E-01	7.344E-01	4.232E-02	-0.373
		874.81		-2.002E-01	2.806E-01	4.032E-01	3.284E-02	-0.497
OS-185		880.27		2.296E-01	4.038E-01	7.256E-01	5.977E-02	0.316
		155.03	*	5.350E-03	9.044E-02	1.469E-01	9.854E-03	0.036
		477.96		1.017E+00	1.698E+00	2.963E+00	1.688E-01	0.343
		633.10		5.269E-01	1.611E+00	2.632E+00	1.368E-01	0.200
		63.58		-2.445E+01	4.174E+01	6.621E+01	7.818E+00	-0.369
		227.08		-3.485E+00	7.073E+00	1.150E+01	7.978E-01	-0.303
		290.67	*	-3.511E+00	4.250E+00	6.605E+00	4.520E-01	-0.531
		295.96		-4.191E-02	6.529E-02	1.015E-01	6.994E-03	-0.413
		308.46		4.001E-02	5.616E-02	9.899E-02	6.712E-03	0.404
RE-188								
W-188								
IR-192								

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AU-195	316.51	*		-3.209E-03	2.014E-02	3.307E-02	2.210E-03	-0.097
	468.07			1.144E-02	3.854E-02	6.506E-02	4.297E-03	0.176
	604.41			-1.094E-01	2.985E-01	3.874E-01	4.308E-02	-0.282
	612.46			-8.156E-02	4.498E-01	6.045E-01	4.351E-02	-0.135
	65.12			-1.024E-01	1.345E-01	2.010E-01	2.341E-02	-0.510
	66.83			-8.366E-02	7.125E-02	1.024E-01	1.177E-02	-0.817
	75.70			-3.721E-02	1.163E-01	1.765E-01	1.960E-02	-0.211
	98.88	*		1.616E-02	1.204E-01	1.994E-01	1.869E-02	0.081
TL-200	129.76			7.130E-01	1.518E+00	2.552E+00	1.784E-01	0.279
	367.94	*		1.719E-06	1.518E+00	Half-Life	too short	
	579.30			1.503E-05	1.518E+00	Half-Life	too short	
	828.27			-4.409E-05	1.518E+00	Half-Life	too short	
TL-201	1205.75			-8.364E-06	1.518E+00	Half-Life	too short	
	68.90			-2.674E-01	8.951E-01	1.450E+00	1.644E-01	-0.184
	70.82			1.796E-01	4.850E-01	8.215E-01	9.224E-02	0.219
	80.30			-6.838E-01	8.328E-01	1.291E+00	1.441E-01	-0.530
TL-202	135.34			4.839E-01	3.874E+00	6.353E+00	4.383E-01	0.076
	167.43	*		-7.936E-01	1.071E+00	1.616E+00	1.075E-01	-0.491
	68.90			-6.163E-02	2.063E-01	3.343E-01	3.789E-02	-0.184
	70.82			4.128E-02	1.115E-01	1.889E-01	2.121E-02	0.219
HG-203	80.30			-1.572E-01	1.915E-01	2.970E-01	3.314E-02	-0.530
	439.56	*		1.857E-03	3.134E-02	5.175E-02	2.958E-03	0.036
	70.83			2.247E-01	6.085E-01	1.030E+00	1.585E-01	0.218
	72.87			-2.098E-01	3.703E-01	5.725E-01	8.574E-02	-0.366
BI-207	82.60			2.312E-01	6.262E-01	9.845E-01	1.529E-01	0.235
	279.20	*		-3.120E-02	2.309E-02	3.421E-02	2.464E-03	-0.912
	72.80			-6.434E-02	1.181E-01	1.831E-01	2.042E-02	-0.351
	74.97			-2.852E-02	6.443E-02	1.006E-01	1.118E-02	-0.283
TL-207	84.90			3.113E-02	1.081E-01	1.811E-01	2.058E-02	0.172
	569.67			-1.559E-02	2.018E-02	2.884E-02	1.580E-03	-0.541
	1063.62	*		-2.412E-03	2.342E-02	3.751E-02	2.665E-03	-0.064
	1770.23			-5.279E-01	3.776E-01	3.971E-01	2.459E-02	-1.329
TL-208	81.07			-1.131E-01	1.198E-01	1.831E-01	2.048E-02	-0.618
	83.78			1.130E-02	7.566E-02	1.173E-01	1.326E-02	0.096
	94.90			-2.648E-01	1.477E-01	2.112E-01	2.118E-02	-1.254
	122.32			-9.921E-02	9.276E-01	1.499E+00	1.187E-01	-0.066
PO-209	144.24			4.246E-01	3.836E-01	6.676E-01	5.374E-02	0.636
	154.21			1.033E-01	2.194E-01	3.671E-01	2.858E-02	0.281
	269.46			-8.924E-03	1.066E-01	1.774E-01	1.269E-02	-0.050
	323.87	*		-2.799E-01	4.230E-01	6.597E-01	1.109E-01	-0.424
TL-208	338.28			7.002E-02	5.824E-01	9.770E-01	1.065E-01	0.072
	445.03			4.873E-02	1.417E+00	2.333E+00	2.384E-01	0.021
	277.35			-6.018E-02	2.424E-01	3.787E-01	4.244E-02	-0.159
	510.84			1.637E-02	1.530E-01	2.917E-01	2.936E-02	0.056
+ PO-209	583.14	*		4.475E-02	2.964E-02	5.012E-02	3.191E-03	0.893
	860.37			-5.821E-02	1.931E-01	2.870E-01	2.467E-02	-0.203
	260.50			8.406E+00	5.734E+00	1.061E+01	7.379E-01	0.792
	262.80			2.720E+00	1.642E+01	2.788E+01	1.937E+00	0.098
PO-209	896.60	*		3.664E+00	4.544E+00	8.310E+00	7.074E-01	0.441

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-210	46.50	*		-5.114E+00	6.592E+00	9.563E+00	9.933E-01	-0.535
PB-210	46.50	*		-5.114E+00	6.592E+00	9.563E+00	9.933E-01	-0.535
PO-210	46.50	*		-5.114E+00	6.589E+00	9.563E+00	9.186E-01	-0.535
BI-211	72.87			-1.145E+00	2.017E+00	3.124E+00	3.483E-01	-0.366
	351.07	*		-3.690E-02	1.529E-01	2.392E-01	1.644E-02	-0.154
PB-211	404.84	*		-2.771E-01	6.024E-01	9.048E-01	5.640E-01	-0.306
	427.08			-4.406E-01	1.069E+00	1.603E+00	9.906E-01	-0.275
	831.96			3.284E-01	6.914E-01	1.173E+00	7.332E-01	0.280
BI-212	727.18	*		-8.622E-02	1.731E-01	2.587E-01	2.014E-02	-0.333
	785.46			-7.392E-01	1.021E+00	1.533E+00	1.032E-01	-0.482
	1620.62			2.965E-01	6.704E-01	1.237E+00	8.506E-02	0.240
PB-212	74.81			-1.212E-01	2.234E-01	3.460E-01	5.023E-02	-0.350
	77.11			-2.815E-02	1.257E-01	1.915E-01	2.126E-02	-0.147
	87.30			-6.544E-02	2.228E-01	3.501E-01	5.341E-02	-0.187
+	238.63	*		7.210E-02	7.630E-02	7.995E-02	6.618E-03	0.902
	300.09			2.649E-02	4.569E-01	7.349E-01	6.591E-02	0.036
PO-212	74.81			-1.212E-01	2.234E-01	3.460E-01	5.023E-02	-0.350
	77.11			-2.815E-02	1.257E-01	1.915E-01	2.126E-02	-0.147
	87.30			-6.544E-02	2.228E-01	3.501E-01	5.341E-02	-0.187
	115.19			-9.729E-01	1.950E+00	3.061E+00	2.342E-01	-0.318
+	238.63	*		7.210E-02	7.630E-02	7.995E-02	6.618E-03	0.902
	300.09			2.649E-02	4.569E-01	7.349E-01	6.591E-02	0.036
BI-214	609.31	*		4.049E-02	7.388E-02	9.250E-02	6.868E-03	0.438
	1120.29			-1.186E-01	1.395E-01	1.960E-01	1.808E-02	-0.605
	1764.49			-3.194E-02	1.694E-01	3.174E-01	1.975E-02	-0.101
PB-214	74.81			-2.089E-01	3.847E-01	5.961E-01	7.961E-02	-0.350
	77.11			-4.826E-02	2.156E-01	3.282E-01	4.420E-02	-0.147
	87.30			-1.121E-01	3.817E-01	5.997E-01	8.313E-02	-0.187
	241.98			1.042E-01	2.152E-01	3.311E-01	2.960E-02	0.315
	295.21			-4.845E-02	8.879E-02	1.389E-01	1.285E-02	-0.349
	351.92	*		-2.226E-02	5.231E-02	8.035E-02	6.927E-03	-0.277
PO-214	74.81			-2.089E-01	3.847E-01	5.961E-01	7.961E-02	-0.350
	77.11			-4.826E-02	2.156E-01	3.282E-01	4.420E-02	-0.147
	87.30			-1.121E-01	3.817E-01	5.997E-01	8.313E-02	-0.187
	241.98			1.042E-01	2.152E-01	3.311E-01	2.960E-02	0.315
	295.21			-4.845E-02	8.879E-02	1.389E-01	1.285E-02	-0.349
	351.92	*		-2.226E-02	5.231E-02	8.035E-02	6.927E-03	-0.277
PO-215	81.07			-1.131E-01	1.198E-01	1.831E-01	2.048E-02	-0.618
	83.78			1.130E-02	7.566E-02	1.173E-01	1.326E-02	0.096
	94.90			-2.648E-01	1.477E-01	2.112E-01	2.118E-02	-1.254
	122.32			-9.921E-02	9.276E-01	1.499E+00	1.187E-01	-0.066
	144.24			4.246E-01	3.836E-01	6.676E-01	5.374E-02	0.636
	154.21			1.033E-01	2.194E-01	3.671E-01	2.858E-02	0.281
	269.46			-8.924E-03	1.066E-01	1.774E-01	1.269E-02	-0.050
	323.87	*		-2.799E-01	4.230E-01	6.597E-01	1.109E-01	-0.424
	338.28			7.002E-02	5.824E-01	9.770E-01	1.065E-01	0.072
	445.03			4.873E-02	1.417E+00	2.333E+00	2.384E-01	0.021
PO-216	74.81			-1.212E-01	2.234E-01	3.460E-01	5.023E-02	-0.350
	77.11			-2.815E-02	1.257E-01	1.915E-01	2.126E-02	-0.147



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA		
PO-218	+	87.30		-6.544E-02	2.228E-01	3.501E-01	5.341E-02	-0.187		
		238.63	*	7.210E-02	7.630E-02	7.995E-02	6.618E-03	0.902		
		300.09		2.649E-02	4.569E-01	7.349E-01	6.591E-02	0.036		
		74.81		-2.089E-01	3.847E-01	5.961E-01	7.961E-02	-0.350		
		77.11		-4.826E-02	2.156E-01	3.282E-01	4.420E-02	-0.147		
		87.30		-1.121E-01	3.817E-01	5.997E-01	8.313E-02	-0.187		
		241.98		1.042E-01	2.152E-01	3.311E-01	2.960E-02	0.315		
RN-219		295.21		-4.845E-02	8.879E-02	1.389E-01	1.285E-02	-0.349		
		351.92	*	-2.226E-02	5.231E-02	8.035E-02	6.927E-03	-0.277		
		271.23		-3.908E-02	1.440E-01	2.361E-01	2.112E-02	-0.166		
		401.81	*	2.779E-02	2.535E-01	4.222E-01	5.724E-02	0.066		
RN-220		549.76	*	-6.540E+00	1.643E+01	2.535E+01	1.406E+00	-0.258		
RA-223		81.07		-1.131E-01	1.198E-01	1.831E-01	2.048E-02	-0.618		
		83.78		1.130E-02	7.566E-02	1.173E-01	1.326E-02	0.096		
		94.90		-2.648E-01	1.477E-01	2.112E-01	2.118E-02	-1.254		
		122.32		-9.921E-02	9.276E-01	1.499E+00	1.187E-01	-0.066		
		144.24		4.246E-01	3.836E-01	6.676E-01	5.374E-02	0.636		
		154.21		1.033E-01	2.194E-01	3.671E-01	2.858E-02	0.281		
		269.46		-8.924E-03	1.066E-01	1.774E-01	1.269E-02	-0.050		
		323.87	*	-2.799E-01	4.230E-01	6.597E-01	1.109E-01	-0.424		
		338.28		7.002E-02	5.824E-01	9.770E-01	1.065E-01	0.072		
		445.03		4.873E-02	1.417E+00	2.333E+00	2.384E-01	0.021		
		RA-224		240.98	*	5.190E-01	3.959E-01	7.193E-01	5.006E-02	0.722
		RA-226	+	609.31	*	4.049E-02	7.388E-02	9.250E-02	6.868E-03	0.438
AC-227		1120.29		-1.186E-01	1.395E-01	1.960E-01	1.808E-02	-0.605		
		1764.49		-3.194E-02	1.694E-01	3.174E-01	1.975E-02	-0.101		
		79.80		-1.026E+00	9.843E-01	1.462E+00	3.310E-01	-0.702		
		236.00		2.398E-01	1.674E-01	2.722E-01	3.031E-02	0.881		
TH-227		256.20	*	-6.591E-02	2.254E-01	3.694E-01	5.349E-02	-0.178		
		286.10		1.843E-01	9.439E-01	1.602E+00	1.943E-01	0.115		
		299.80		-1.860E-01	8.716E-01	1.372E+00	2.286E-01	-0.136		
		304.40		-3.152E-01	1.099E+00	1.784E+00	3.146E-01	-0.177		
		334.20		-1.448E+00	1.398E+00	2.058E+00	3.819E-01	-0.704		
		79.80		-1.026E+00	9.849E-01	1.462E+00	3.348E-01	-0.702		
		94.00		1.545E+00	1.187E+00	2.014E+00	4.521E-01	0.767		
		236.00		2.398E-01	1.670E-01	2.722E-01	2.678E-02	0.881		
		256.20	*	-6.591E-02	2.255E-01	3.694E-01	6.402E-02	-0.178		
		286.10		1.843E-01	9.616E-01	1.602E+00	1.606E+00	0.115		
AC-228		299.80		-1.860E-01	8.716E-01	1.372E+00	2.286E-01	-0.136		
		304.40		-3.152E-01	1.099E+00	1.784E+00	3.146E-01	-0.177		
		334.20		-1.448E+00	1.398E+00	2.058E+00	3.819E-01	-0.704		
		338.32		1.830E-02	1.398E-01	2.344E-01	9.580E-02	0.078		
		911.07	*	-1.145E-02	8.287E-02	1.293E-01	1.437E-02	-0.089		
		969.11		-7.166E-02	1.530E-01	2.345E-01	5.423E-02	-0.306		
		338.32		1.830E-02	1.398E-01	2.344E-01	9.580E-02	0.078		
RA-228		911.07	*	-1.145E-02	8.287E-02	1.293E-01	1.437E-02	-0.089		
		969.11		-7.166E-02	1.530E-01	2.345E-01	5.423E-02	-0.306		
		TH-228		74.81		-1.224E-01	2.253E-01	3.493E-01	3.901E-02	-0.350
		77.11		-2.842E-02	1.269E-01	1.933E-01	2.147E-02	-0.147		

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-229	+	87.30	-6.607E-02	2.249E-01	3.535E-01	4.072E-02	-0.187
		238.63 *	7.279E-02	7.704E-02	8.072E-02	6.682E-03	0.902
		300.09	2.675E-02	4.616E-01	7.420E-01	4.381E-01	0.036
		85.43	-2.062E-02	1.104E-01	1.748E-01	1.992E-02	-0.118
		88.47	-8.625E-02	6.712E-02	1.006E-01	1.151E-02	-0.858
		100.00	-3.948E-02	1.017E-01	1.618E-01	1.491E-02	-0.244
TH-230	+	193.63 *	2.007E-01	3.054E-01	5.138E-01	3.493E-02	0.391
		210.97	-1.993E-02	4.150E-01	6.609E-01	4.548E-02	-0.030
		609.31 *	4.049E-02	7.388E-02	9.250E-02	6.867E-03	0.438
		1120.29	-1.186E-01	1.395E-01	1.960E-01	1.808E-02	-0.605
PA-231	+	1764.49	-3.193E-02	1.694E-01	3.174E-01	1.975E-02	-0.101
		283.67 *	5.864E-01	9.626E-01	1.678E+00	2.395E-01	0.349
TH-231	+	301.29	1.832E-02	3.147E-01	5.275E-01	5.816E-02	0.035
		81.07	-1.131E-01	1.198E-01	1.831E-01	2.048E-02	-0.618
		83.78	1.130E-02	7.566E-02	1.173E-01	1.326E-02	0.096
		94.90	-2.648E-01	1.477E-01	2.112E-01	2.118E-02	-1.254
U-231	+	122.32	-9.921E-02	9.276E-01	1.499E+00	1.187E-01	-0.066
		144.24	4.246E-01	3.836E-01	6.676E-01	5.374E-02	0.636
		154.21	1.033E-01	2.194E-01	3.671E-01	2.858E-02	0.281
		269.46	-8.924E-03	1.066E-01	1.774E-01	1.269E-02	-0.050
		323.87 *	-2.799E-01	4.230E-01	6.597E-01	1.109E-01	-0.424
		338.28	7.002E-02	5.824E-01	9.770E-01	1.065E-01	0.072
		445.03	4.873E-02	1.417E+00	2.333E+00	2.384E-01	0.021
		84.21	1.094E-01	1.311E+00	2.026E+00	2.294E-01	0.054
		92.29	-3.075E-01	5.596E-01	9.174E-01	9.669E-02	-0.335
		95.87 *	-7.015E-01	2.944E-01	3.962E-01	3.905E-02	-1.770
TH-232	+	108.00	8.885E-02	4.572E-01	7.583E-01	6.273E-02	0.117
		338.32	1.830E-02	1.396E-01	2.344E-01	1.509E-02	0.078
		911.07 *	-1.145E-02	8.287E-02	1.293E-01	1.437E-02	-0.089
PA-233	+	969.11	-7.166E-02	1.530E-01	2.345E-01	5.423E-02	-0.306
		75.28	-5.591E-01	1.863E+00	2.939E+00	4.958E-01	-0.190
		86.59	-6.288E-01	9.457E-01	1.421E+00	3.959E-01	-0.443
		300.12	1.126E-02	2.359E-01	3.791E-01	5.265E-02	0.030
PA-234	+	311.98 *	2.499E-02	3.707E-02	6.536E-02	4.581E-03	0.382
		340.50	-1.566E-01	3.557E-01	5.638E-01	1.304E-01	-0.278
		398.62	6.318E-01	1.285E+00	2.202E+00	5.689E-01	0.287
		415.76	-6.556E-01	1.051E+00	1.604E+00	3.297E-01	-0.409
		63.00	-1.507E+00	1.389E+00	2.099E+00	3.677E-01	-0.718
		94.67	-1.584E-01	1.079E-01	1.577E-01	2.121E-02	-1.004
		98.44	1.172E-02	5.080E-02	8.400E-02	4.698E-02	0.140
		99.86	-5.609E-02	2.567E-01	4.138E-01	3.820E-02	-0.136
		111.00	6.916E-03	1.017E-01	1.671E-01	1.946E-02	0.041
		131.20	2.116E-03	5.764E-02	9.399E-02	6.547E-03	0.023
	+	152.70	8.300E-02	1.804E-01	3.011E-01	4.869E-02	0.276
		186.00	1.215E-01	1.083E+00	1.390E+00	4.275E-01	0.087
		226.40	-5.662E-02	2.359E-01	3.909E-01	4.757E-02	-0.145
		227.20	-1.336E-01	2.517E-01	4.081E-01	2.831E-02	-0.328
		248.90	-8.795E-02	4.550E-01	7.520E-01	1.642E-01	-0.117
		293.70	-3.070E-02	4.162E-01	6.765E-01	1.115E-01	-0.045

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		369.80		2.025E-01	5.431E-01	9.262E-01	1.934E-01	0.219
		568.70		-1.365E-01	6.288E-01	9.664E-01	5.300E-02	-0.141
		569.50		-1.106E-01	1.775E-01	2.590E-01	1.420E-02	-0.427
		574.00		4.713E-01	8.470E-01	1.469E+00	8.028E-02	0.321
		699.00		1.670E-01	4.650E-01	8.069E-01	1.444E-01	0.207
		706.10		-1.758E-01	6.259E-01	1.006E+00	4.438E-01	-0.175
		733.00		-4.500E-02	2.133E-01	3.466E-01	7.386E-02	-0.130
		742.81		4.128E-01	8.114E-01	1.364E+00	9.132E-01	0.303
		796.30		3.203E-01	4.799E-01	8.594E-01	2.282E-01	0.373
		805.60		2.821E-01	5.753E-01	1.009E+00	3.053E-01	0.279
		819.60		-2.455E-01	6.583E-01	1.019E+00	3.844E-01	-0.241
		826.30		-9.665E-02	4.456E-01	7.124E-01	3.171E-01	-0.136
		831.60		1.987E-01	3.510E-01	6.201E-01	1.831E-01	0.320
		876.40		-2.105E-01	4.722E-01	6.332E-01	6.507E-01	-0.333
		880.51		8.383E-02	1.516E-01	2.720E-01	2.241E-02	0.308
		883.24		2.942E-02	1.589E-01	2.685E-01	1.804E-01	0.110
		899.00		-8.635E-02	5.200E-01	8.378E-01	3.661E-01	-0.103
		925.00		-1.937E-01	6.105E-01	9.518E-01	7.956E-02	-0.203
		926.50		8.676E-03	9.458E-02	1.585E-01	3.991E-02	0.055
		946.00	*	8.988E-02	1.630E-01	2.907E-01	5.400E-02	0.309
		949.00		-5.176E-02	2.345E-01	3.721E-01	3.044E-02	-0.139
		980.50		-1.008E-01	4.166E-01	6.584E-01	5.219E-02	-0.153
		1394.10		-3.681E-01	7.653E-01	1.092E+00	7.095E-01	-0.337
PA-234M		766.42		3.765E+00	6.380E+00	1.095E+01	5.519E+00	0.344
		1001.03	*	2.395E-01	2.620E+00	4.430E+00	4.083E-01	0.054
TH-234		63.29	*	-1.267E+00	1.178E+00	1.773E+00	3.499E-01	-0.714
		92.38		-1.930E-01	3.648E-01	5.966E-01	1.137E-01	-0.324
U-234	+	609.31	*	4.049E-02	7.388E-02	9.250E-02	6.867E-03	0.438
		1120.29		-1.186E-01	1.395E-01	1.960E-01	1.808E-02	-0.605
		1764.49		-3.193E-02	1.694E-01	3.174E-01	1.975E-02	-0.101
U-235		89.95		-3.833E-01	6.845E-01	1.071E+00	3.389E-01	-0.358
		93.35		-3.192E-01	4.372E-01	6.952E-01	1.988E-01	-0.459
		105.00		2.705E-01	6.010E-01	1.006E+00	3.002E-01	0.269
		143.76	*	1.485E-01	1.191E-01	2.059E-01	3.435E-02	0.721
		163.35		1.491E-01	2.685E-01	4.493E-01	8.212E-02	0.332
	+	185.71		4.501E-03	4.010E-02	5.145E-02	3.475E-03	0.087
		205.31		-5.326E-04	2.909E-01	4.656E-01	8.544E-02	-0.001
NP-236		94.67		-1.196E-01	8.113E-02	1.197E-01	1.206E-02	-0.999
		98.44		8.887E-03	3.809E-02	6.351E-02	5.995E-03	0.140
		111.00		5.231E-03	7.694E-02	1.264E-01	1.010E-02	0.041
		160.31	*	-2.501E-03	4.508E-02	7.250E-02	4.840E-03	-0.035
NP-237		86.50	*	-1.079E-01	1.422E-01	2.124E-01	5.013E-02	-0.508
		95.87		-1.535E+00	7.353E-01	8.672E-01	2.176E-01	-1.770
U-238		63.29	*	-1.267E+00	1.178E+00	1.773E+00	3.499E-01	-0.714
		92.38		-1.930E-01	3.635E-01	5.966E-01	6.277E-02	-0.324
NP-239		99.55		-7.166E-03	8.658E-02	1.411E-01	1.309E-02	-0.051
		117.00	*	-4.745E-02	1.000E-01	1.569E-01	1.180E-02	-0.302
		209.75		-7.463E-02	4.264E-01	6.719E-01	4.621E-02	-0.111
		228.18		5.552E-02	1.317E-01	2.284E-01	1.585E-02	0.243

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		277.60		-1.188E-02	1.098E-01	1.823E-01	1.259E-02	-0.065
		334.30		-7.069E-01	7.709E-01	1.170E+00	7.581E-02	-0.604
AM-241		59.54	*	-9.857E-03	1.415E-01	2.340E-01	2.977E-02	-0.042
AM-243		74.67	*	-2.103E-02	3.628E-02	5.609E-02	6.233E-03	-0.375
		86.72		-3.193E+00	5.249E+00	8.045E+00	9.235E-01	-0.397
		117.66		-1.232E+00	2.006E+00	3.108E+00	2.322E-01	-0.396
		142.18		6.827E+00	1.008E+01	1.710E+01	1.165E+00	0.399
CM-243		99.55		-7.371E-03	8.906E-02	1.451E-01	1.346E-02	-0.051
		103.76	*	4.418E-04	5.187E-02	8.499E-02	7.419E-03	0.005
		117.00		-4.880E-02	1.029E-01	1.614E-01	1.213E-02	-0.302
		209.75		-7.354E-02	4.202E-01	6.621E-01	4.554E-02	-0.111
		228.18		5.608E-02	1.330E-01	2.307E-01	1.601E-02	0.243
		277.60		-1.198E-02	1.107E-01	1.837E-01	1.268E-02	-0.065
AM-246		798.80		-4.684E-02	8.003E-02	1.223E-01	8.483E-03	-0.383
		1036.00		-3.602E-02	1.294E-01	1.989E-01	1.472E-02	-0.181
		1062.04		-5.213E-03	9.893E-02	1.602E-01	1.141E-02	-0.033
		1078.86	*	6.090E-02	8.132E-02	1.484E-01	1.029E-02	0.410
CM-247		278.00		-1.335E-01	4.574E-01	7.482E-01	5.165E-02	-0.178
		287.40		9.860E-02	7.586E-01	1.281E+00	8.788E-02	0.077
		402.60	*	-9.179E-04	2.284E-02	3.748E-02	2.131E-03	-0.024
CF-249		252.85		2.537E-01	4.935E-01	8.619E-01	6.000E-02	0.294
		333.44		-1.034E-01	1.014E-01	1.522E-01	9.878E-03	-0.680
		387.95	*	-7.074E-03	2.276E-02	3.630E-02	2.081E-03	-0.195
CF-251		176.60	*	-7.380E-03	7.270E-02	1.161E-01	7.781E-03	-0.064
		227.00		-1.048E-01	2.247E-01	3.661E-01	2.539E-02	-0.286
		285.00		3.125E-01	1.091E+00	1.864E+00	1.281E-01	0.168

## 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]G1202001375      *
* Acquisition date   : 31-DEC-2009 14:42:59 Detector SN#      :              *
* Detector ID        : GAM15                      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 02:00:00.52           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 00:00:00 Nuclide Library : SOLID            *
* Sample ID          : G1202001375           Analyst initials: MXR1           *
* Batch Number       : 935341                Sample Quantity : 1.5678E+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 )	
ANH-511	3.862E-02	2.932E-02	2.443E-02	0.000E+00

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L. Act error ) Ided	MDA (pCi/GRAM )	
BE-7	1.080E-01	1.736E-01	3.218E-01	0.000E+00 NOT IDENT.
NA-22	1.137E-03	1.791E-02	3.043E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	9.638E+02	0.000E+00	0.000E+00 SHORT HLIF
AL-26	-8.236E-03	1.789E-02	2.568E-02	0.000E+00 NOT IDENT.
K-40	-1.191E-01	2.450E-01	3.765E-01	0.000E+00 NOT IDENT.
TI-44	-5.892E-03	1.965E-02	3.535E-02	0.000E+00 NOT IDENT.
SC-46	-1.035E-02	2.052E-02	3.262E-02	0.000E+00 NOT IDENT.
V-48	-4.280E-03	2.655E-02	4.411E-02	0.000E+00 NOT IDENT.
CR-51	1.317E-01	2.039E-01	3.827E-01	0.000E+00 NOT IDENT.
MN-52	-2.036E-02	6.720E-02	1.080E-01	0.000E+00 NOT IDENT.
MN-54	1.875E-03	2.011E-02	3.537E-02	0.000E+00 NOT IDENT.
CO-56	-2.607E-03	2.152E-02	3.673E-02	0.000E+00 NOT IDENT.
CO-57	-7.537E-03	1.330E-02	2.281E-02	0.000E+00 NOT IDENT.
CO-58	6.616E-03	1.966E-02	3.586E-02	0.000E+00 NOT IDENT.
FE-59	2.271E-02	4.025E-02	7.509E-02	0.000E+00 NOT IDENT.
CO-60	-9.796E-03	2.166E-02	3.242E-02	0.000E+00 NOT IDENT.
ZN-65	-2.482E-02	3.567E-02	5.730E-02	0.000E+00 NOT IDENT.
GE-68	1.687E-01	7.047E-01	1.242E+00	0.000E+00 NOT IDENT.
AS-73	-2.544E-01	8.042E-01	1.465E+00	0.000E+00 NOT IDENT.
AS-74	2.642E-02	4.352E-02	7.968E-02	0.000E+00 NOT IDENT.
SE-75	-2.137E-02	2.446E-02	4.104E-02	0.000E+00 NOT IDENT.
BR-77	2.278E-01	1.322E+00	2.198E+00	0.000E+00 FAIL ABUN
SR-82	-4.245E-02	1.716E-01	2.894E-01	0.000E+00 NOT IDENT.
RB-83	9.394E-03	4.113E-02	6.891E-02	0.000E+00 NOT IDENT.
RB-84	2.650E-02	3.258E-02	6.303E-02	0.000E+00 NOT IDENT.
KR-85	0.000E+00	5.005E+00	9.952E+00	0.000E+00 NOT IDENT.

SR-85	0.000E+00	2.422E-02	4.816E-02	0.000E+00	NOT IDENT.
RB-86	2.101E-01	3.595E-01	6.659E-01	0.000E+00	NOT IDENT.
Y-88	7.668E-03	2.369E-02	4.280E-02	0.000E+00	NOT IDENT.
ZR-88	1.313E-02	1.684E-02	3.188E-02	0.000E+00	NOT IDENT.
Y-91	-3.287E+00	7.838E+00	1.206E+01	0.000E+00	NOT IDENT.
NB-94	2.789E-03	2.013E-02	3.601E-02	0.000E+00	NOT IDENT.
NB-95	1.771E-02	2.183E-02	4.181E-02	0.000E+00	NOT IDENT.
NB-95M	9.236E-02	7.953E-02	1.385E-01	0.000E+00	NOT IDENT.
ZR-95	2.632E-02	3.410E-02	6.582E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.441E+02	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.841E+03	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.057E+00	1.705E+00	3.200E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.063E+09	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-5.346E-03	2.105E-02	3.379E-02	0.000E+00	NOT IDENT.
RH-102	2.167E-03	1.679E-02	2.959E-02	0.000E+00	NOT IDENT.
RU-103	-1.533E-02	2.149E-02	3.379E-02	0.000E+00	FAIL ABUN
RH-106	-1.372E-01	1.790E-01	2.696E-01	0.000E+00	FAIL ABUN
RU-106	-1.372E-01	1.785E-01	2.696E-01	0.000E+00	FAIL ABUN
AG-108M	1.119E-02	1.989E-02	3.672E-02	0.000E+00	NOT IDENT.
CD-109	-7.241E-01	5.139E-01	8.288E-01	0.000E+00	NOT IDENT.
AG-110M	3.067E-03	1.943E-02	3.359E-02	0.000E+00	NOT IDENT.
IN-111	6.161E-02	1.640E-01	2.708E-01	0.000E+00	NOT IDENT.
IN-113M	1.407E-02	2.436E-02	4.536E-02	0.000E+00	NOT IDENT.
SN-113	1.407E-02	2.436E-02	4.536E-02	0.000E+00	NOT IDENT.
IN-114M	-6.772E-02	1.115E-01	1.584E-01	0.000E+00	NOT IDENT.
CD-115	5.675E-01	1.082E+00	1.984E+00	0.000E+00	NOT IDENT.
SN-117M	-2.336E-02	2.301E-02	3.734E-02	0.000E+00	NOT IDENT.
SB-122	-1.442E-01	2.768E-01	4.410E-01	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.973E+03	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.075E-02	1.519E-02	2.534E-02	0.000E+00	NOT IDENT.
I-124	-9.388E-02	1.942E-01	2.618E-01	0.000E+00	NOT IDENT.
SB-124	1.722E-02	4.519E-02	8.355E-02	0.000E+00	NOT IDENT.
SB-125	-3.123E-02	4.819E-02	7.759E-02	0.000E+00	NOT IDENT.
TE-125M	-5.012E+00	4.834E+00	8.026E+00	0.000E+00	NOT IDENT.
I-126	-4.104E-04	7.679E-02	1.297E-01	0.000E+00	NOT IDENT.
SB-126	3.940E-02	5.677E-02	1.082E-01	0.000E+00	NOT IDENT.
SN-126	-4.218E-02	4.954E-02	8.341E-02	0.000E+00	NOT IDENT.
SB-127	5.979E-02	2.665E-01	4.838E-01	0.000E+00	NOT IDENT.
XE-127	-8.934E-03	2.324E-02	3.914E-02	0.000E+00	NOT IDENT.
I-131	2.051E-02	4.370E-02	8.065E-02	0.000E+00	NOT IDENT.
TE-132	5.186E-02	1.224E-01	2.297E-01	0.000E+00	NOT IDENT.
BA-133	-1.898E-02	2.738E-02	4.543E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.166E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.267E-02	2.414E-02	4.502E-02	0.000E+00	NOT IDENT.
CS-135	5.858E-02	8.426E-02	1.605E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.552E+09	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-9.241E-03	4.262E-02	6.988E-02	0.000E+00	NOT IDENT.
BA-137M	-9.364E-03	2.140E-02	3.408E-02	0.000E+00	NOT IDENT.
CS-137	-9.898E-03	2.262E-02	3.603E-02	0.000E+00	NOT IDENT.
CE-139	-3.540E-03	1.540E-02	2.664E-02	0.000E+00	NOT IDENT.
BA-140	7.862E-02	1.175E-01	2.130E-01	0.000E+00	NOT IDENT.
LA-140	-6.827E-04	3.437E-02	5.825E-02	0.000E+00	NOT IDENT.
CE-141	3.123E-03	2.934E-02	5.253E-02	0.000E+00	NOT IDENT.
CE-143	3.575E+00	4.704E+00	8.842E+00	0.000E+00	NOT IDENT.
CE-144	-4.319E-02	1.083E-01	1.872E-01	0.000E+00	NOT IDENT.
PM-144	7.026E-03	2.244E-02	4.078E-02	0.000E+00	NOT IDENT.
PR-144	4.747E-01	1.516E+00	2.755E+00	0.000E+00	NOT IDENT.
PM-146	-1.105E-02	2.605E-02	4.326E-02	0.000E+00	NOT IDENT.
ND-147	-2.619E-02	2.138E-01	3.620E-01	0.000E+00	NOT IDENT.
PM-149	2.990E+00	9.732E+00	1.793E+01	0.000E+00	NOT IDENT.
EU-152	1.809E-02	6.163E-02	1.122E-01	0.000E+00	NOT IDENT.
GD-153	2.856E-02	4.337E-02	8.210E-02	0.000E+00	NOT IDENT.
EU-154	4.268E-03	5.042E-02	8.609E-02	0.000E+00	NOT IDENT.
EU-155	2.726E-02	5.907E-02	1.102E-01	0.000E+00	NOT IDENT.
TB-160	3.735E-02	6.774E-02	1.270E-01	0.000E+00	NOT IDENT.
HO-166M	2.406E-02	3.215E-02	6.176E-02	0.000E+00	FAIL ABUN
TM-171	-2.700E+01	2.145E+01	3.424E+01	0.000E+00	NOT IDENT.
LU-176	3.805E-03	1.511E-02	2.761E-02	0.000E+00	NOT IDENT.
LU-177	1.928E-02	3.399E-01	5.931E-01	0.000E+00	NOT IDENT.
LU-177M	5.855E-02	9.934E-02	1.845E-01	0.000E+00	NOT IDENT.
HF-181	-1.777E-02	2.286E-02	3.594E-02	0.000E+00	NOT IDENT.
W-181	-2.255E-01	2.805E-01	4.675E-01	0.000E+00	NOT IDENT.
TA-182	-3.529E-03	9.472E-02	1.581E-01	0.000E+00	NOT IDENT.
RE-183	5.733E-02	5.719E-02	1.081E-01	0.000E+00	NOT IDENT.
RE-184	6.610E-02	1.260E-01	2.378E-01	0.000E+00	NOT IDENT.
OS-185	2.851E-02	2.015E-02	4.117E-02	0.000E+00	NOT IDENT.
RE-188	5.350E-03	8.863E-02	1.575E-01	0.000E+00	NOT IDENT.
W-188	-3.511E+00	4.165E+00	6.968E+00	0.000E+00	NOT IDENT.

IR-192	-3.209E-03	1.974E-02	3.481E-02	0.000E+00	NOT IDENT.
AU-195	1.616E-02	1.180E-01	2.163E-01	0.000E+00	NOT IDENT.
TL-200	0.000E+00	8.549E+00	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-7.936E-01	1.049E+00	1.729E+00	0.000E+00	NOT IDENT.
TL-202	1.857E-03	3.072E-02	5.400E-02	0.000E+00	NOT IDENT.
HG-203	-3.120E-02	2.263E-02	3.613E-02	0.000E+00	NOT IDENT.
BI-207	-2.412E-03	2.295E-02	3.819E-02	0.000E+00	NOT IDENT.
TL-207	-2.799E-01	4.146E-01	6.940E-01	0.000E+00	NOT IDENT.
TL-208	4.475E-02	2.904E-02	5.190E-02	0.000E+00	FAIL ABUN
PO-209	3.664E+00	4.453E+00	8.502E+00	0.000E+00	NOT IDENT.
BI-210	-5.114E+00	6.460E+00	1.057E+01	0.000E+00	NOT IDENT.
PB-210	-5.114E+00	6.460E+00	1.057E+01	0.000E+00	NOT IDENT.
PO-210	-5.114E+00	6.457E+00	1.057E+01	0.000E+00	NOT IDENT.
BI-211	-3.690E-02	1.498E-01	2.511E-01	0.000E+00	NOT IDENT.
PB-211	-2.771E-01	5.904E-01	9.462E-01	0.000E+00	NOT IDENT.
BI-212	-8.622E-02	1.696E-01	2.662E-01	0.000E+00	NOT IDENT.
PB-212	7.210E-02	7.478E-02	8.478E-02	0.000E+00	FAIL ABUN
PO-212	7.210E-02	7.478E-02	8.478E-02	0.000E+00	FAIL ABUN
BI-214	4.049E-02	7.240E-02	9.565E-02	0.000E+00	FAIL ABUN
PB-214	-2.226E-02	5.127E-02	8.434E-02	0.000E+00	NOT IDENT.
PO-214	-2.226E-02	5.127E-02	8.434E-02	0.000E+00	NOT IDENT.
PO-215	-2.799E-01	4.146E-01	6.940E-01	0.000E+00	NOT IDENT.
PO-216	7.210E-02	7.478E-02	8.478E-02	0.000E+00	FAIL ABUN
PO-218	-2.226E-02	5.127E-02	8.434E-02	0.000E+00	NOT IDENT.
RN-219	2.779E-02	2.485E-01	4.416E-01	0.000E+00	NOT IDENT.
RN-220	-6.540E+00	1.610E+01	2.629E+01	0.000E+00	NOT IDENT.
RA-223	-2.799E-01	4.146E-01	6.940E-01	0.000E+00	NOT IDENT.
RA-224	5.190E-01	3.879E-01	7.626E-01	0.000E+00	NOT IDENT.
RA-226	4.049E-02	7.240E-02	9.565E-02	0.000E+00	FAIL ABUN
AC-227	-6.591E-02	2.209E-01	3.910E-01	0.000E+00	NOT IDENT.
TH-227	-6.591E-02	2.210E-01	3.910E-01	0.000E+00	NOT IDENT.
AC-228	-1.145E-02	8.121E-02	1.322E-01	0.000E+00	NOT IDENT.
RA-228	-1.145E-02	8.121E-02	1.322E-01	0.000E+00	NOT IDENT.
TH-228	7.279E-02	7.550E-02	8.560E-02	0.000E+00	FAIL ABUN
TH-229	2.007E-01	2.993E-01	5.478E-01	0.000E+00	NOT IDENT.
TH-230	4.049E-02	7.240E-02	9.565E-02	0.000E+00	FAIL ABUN
PA-231	5.864E-01	9.433E-01	1.772E+00	0.000E+00	NOT IDENT.
TH-231	-2.799E-01	4.146E-01	6.940E-01	0.000E+00	NOT IDENT.
U-231	-7.015E-01	2.885E-01	4.301E-01	0.000E+00	NOT IDENT.
TH-232	-1.145E-02	8.121E-02	1.322E-01	0.000E+00	NOT IDENT.
PA-233	2.499E-02	3.633E-02	6.882E-02	0.000E+00	NOT IDENT.
PA-234	8.988E-02	1.597E-01	2.969E-01	0.000E+00	FAIL ABUN
PA-234M	2.395E-01	2.568E+00	4.519E+00	0.000E+00	NOT IDENT.
TH-234	-1.267E+00	1.155E+00	1.944E+00	0.000E+00	NOT IDENT.
U-234	4.049E-02	7.240E-02	9.565E-02	0.000E+00	FAIL ABUN
U-235	1.485E-01	1.167E-01	2.212E-01	0.000E+00	FAIL ABUN
NP-236	-2.501E-03	4.418E-02	7.768E-02	0.000E+00	NOT IDENT.
NP-237	-1.079E-01	1.393E-01	2.311E-01	0.000E+00	NOT IDENT.
U-238	-1.267E+00	1.155E+00	1.944E+00	0.000E+00	NOT IDENT.
NP-239	-4.745E-02	9.801E-02	1.695E-01	0.000E+00	NOT IDENT.
AM-241	-9.857E-03	1.387E-01	2.569E-01	0.000E+00	NOT IDENT.
AM-243	-2.103E-02	3.555E-02	6.126E-02	0.000E+00	NOT IDENT.
CM-243	4.418E-04	5.083E-02	9.207E-02	0.000E+00	NOT IDENT.
AM-246	6.090E-02	7.969E-02	1.511E-01	0.000E+00	NOT IDENT.
CM-247	-9.179E-04	2.238E-02	3.920E-02	0.000E+00	NOT IDENT.
CF-249	-7.074E-03	2.230E-02	3.800E-02	0.000E+00	NOT IDENT.
CF-251	-7.380E-03	7.124E-02	1.241E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202001375.CNF;1
Sample date        : 22-DEC-2009 00:00:00 Acquisition date : 31-DEC-2009 14:42:59
Sample ID          : G1202001375          Sample quantity  : 1.56780E+02 GRAM
Detector name      : GAM15                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:00.52  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity       : 5.00000
Batch ID           : 935341               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
ANH-511	511.00	40	100.00*	2.455E+00	3.862E-02	3.862E-02	77.48

Flag: "\*" = Keyline



Summary of Nuclide Activity  
Sample ID : G1202001375

Page : 2  
Acquisition date : 31-DEC-2009 14:42:59

Total number of lines in spectrum 5  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 5 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
ANH-511	1.00E+09Y	1.00	3.862E-02	3.862E-02	2.992E-02	77.48	
Total Activity :			3.862E-02	3.862E-02			

Grand Total Activity : 3.862E-02 3.862E-02

Flags: "K" = Keyline not found "M" = Manually accepted  
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G1202001375

Page : 3  
Acquisition date : 31-DEC-2009 14:42:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.09	5	94	0.95	370.57	365	11	7.03E-04	****	4.99E+00	T
0	239.26	56	126	1.96	478.86	472	17	7.84E-03	****	4.21E+00	T
0	582.70	35	9	1.42	1165.50	1159	13	4.87E-03	65.9	2.23E+00	T
0	609.05	17	39	1.68	1218.18	1212	15	2.34E-03	****	2.16E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202001375.CNF;1
* Acquisition date   : 31-DEC-2009 14:42:59  Detector SN#      :
* Detector ID        : GAM15                  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 02:00:00.52          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202001375          Analyst initials: MXR1
* Batch Number       : 935341               Sample Quantity : 1.56780E+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
ANH-511	3.862E-02	2.992E-02	2.351E-02	1.328E-03	1.643

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.080E-01		1.771E-01	3.091E-01	2.060E-02	0.349
NA-22	1.137E-03		1.828E-02	3.005E-02	2.062E-03	0.038
NA-24	-5.963E-04		4.917E-04	Half-Life too short		
AL-26	-8.236E-03		1.826E-02	2.561E-02	1.533E-03	-0.322
K-40	-1.191E-01		2.500E-01	3.731E-01	2.852E-02	-0.319
TI-44	-5.892E-03		2.005E-02	3.240E-02	3.603E-03	-0.182
SC-46	-1.035E-02		2.094E-02	3.187E-02	2.673E-03	-0.325
V-48	-4.280E-03		2.709E-02	4.322E-02	3.415E-03	-0.099
CR-51	1.317E-01		2.081E-01	3.637E-01	2.623E-02	0.362
MN-52	-2.036E-02		6.858E-02	1.070E-01	7.931E-03	-0.190
MN-54	1.875E-03		2.052E-02	3.451E-02	2.586E-03	0.054

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-56	-2.607E-03		2.196E-02	3.584E-02	2.755E-03	-0.073
CO-57	-7.537E-03		1.358E-02	2.114E-02	1.520E-03	-0.356
CO-58	6.616E-03		2.006E-02	3.495E-02	2.497E-03	0.189
FE-59	2.271E-02		4.108E-02	7.382E-02	5.586E-03	0.308
CO-60	-9.796E-03		2.210E-02	3.204E-02	2.418E-03	-0.306
ZN-65	-2.482E-02		3.639E-02	5.635E-02	3.661E-03	-0.440
GE-68	1.687E-01		7.191E-01	1.220E+00	8.479E-02	0.138
AS-73	-2.544E-01		8.206E-01	1.331E+00	1.818E-01	-0.191
AS-74	2.642E-02		4.441E-02	7.701E-02	4.140E-03	0.343
SE-75	-2.137E-02		2.496E-02	3.881E-02	2.714E-03	-0.551
BR-77	2.278E-01		1.349E+00	2.116E+00	1.191E-01	0.108
SR-82	-4.245E-02		1.751E-01	2.818E-01	1.860E-02	-0.151
RB-83	9.394E-03		4.196E-02	6.635E-02	3.733E-03	0.142
RB-84	2.650E-02		3.324E-02	6.158E-02	5.085E-03	0.430
KR-85	1.334E+01		5.107E+00	9.578E+00	5.403E-01	1.392
SR-85	6.453E-02		2.471E-02	4.635E-02	2.615E-03	1.392
RB-86	2.101E-01		3.669E-01	6.543E-01	4.552E-02	0.321
Y-88	7.668E-03		2.418E-02	4.270E-02	2.494E-03	0.180
ZR-88	1.313E-02		1.718E-02	3.046E-02	1.728E-03	0.431
Y-91	-3.287E+00		7.998E+00	1.189E+01	7.188E-01	-0.277
NB-94	2.789E-03		2.054E-02	3.496E-02	1.944E-03	0.080
NB-95	1.771E-02		2.228E-02	4.068E-02	2.622E-03	0.435
NB-95M	9.236E-02		8.115E-02	1.306E-01	1.103E-02	0.707
ZR-95	2.632E-02		3.480E-02	6.403E-02	4.773E-03	0.411
NB-97	3.855E-05		1.245E-04	Half-Life too short		
ZR-97	2.131E-02		2.980E-03	Half-Life too short		
MO-99	1.057E+00		1.740E+00	3.111E+00	4.323E-01	0.340
TC-99M	-9.084E+02		2.583E+03	Half-Life too short		
RH-101	-5.346E-03		2.148E-02	3.171E-02	2.163E-03	-0.169
RH-102	2.167E-03		1.713E-02	2.842E-02	1.620E-03	0.076
RU-103	-1.533E-02		2.193E-02	3.249E-02	4.090E-03	-0.472
RH-106	-1.372E-01		1.827E-01	2.608E-01	2.993E-02	-0.526
RU-106	-1.372E-01		1.821E-01	2.608E-01	1.370E-02	-0.526
AG-108M	1.119E-02		2.029E-02	3.518E-02	2.187E-03	0.318
CD-109	-7.241E-01		5.244E-01	7.619E-01	8.810E-02	-0.950
AG-110M	3.067E-03		1.983E-02	3.255E-02	1.784E-03	0.094
IN-111	6.161E-02		1.674E-01	2.556E-01	1.779E-02	0.241
IN-113M	1.407E-02		2.486E-02	4.334E-02	2.629E-03	0.325
SN-113	1.407E-02		2.486E-02	4.334E-02	2.629E-03	0.325
IN-114M	-6.772E-02		1.137E-01	1.485E-01	1.007E-02	-0.456
CD-115	5.675E-01		1.104E+00	1.911E+00	1.072E-01	0.297
SN-117M	-2.336E-02		2.348E-02	3.484E-02	2.330E-03	-0.670
SB-122	-1.442E-01		2.825E-01	4.255E-01	2.341E-02	-0.339
I-123	-2.104E-03		1.517E-03	Half-Life too short		
TE-123M	-1.075E-02		1.550E-02	2.364E-02	1.596E-03	-0.455
I-124	-9.388E-02		1.982E-01	2.531E-01	1.353E-02	-0.371
SB-124	1.722E-02		4.612E-02	8.317E-02	5.841E-03	0.207
SB-125	-3.123E-02		4.917E-02	7.431E-02	4.429E-03	-0.420

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-125M	-5.012E+00		4.933E+00	7.418E+00	7.364E-01	-0.676
I-126	-4.104E-04		7.836E-02	1.258E-01	6.400E-03	-0.003
SB-126	3.940E-02		5.793E-02	1.051E-01	6.103E-03	0.375
SN-126	-4.218E-02		5.055E-02	7.667E-02	8.847E-03	-0.550
SB-127	5.979E-02		2.719E-01	4.694E-01	3.444E-02	0.127
XE-127	-8.934E-03		2.372E-02	3.675E-02	2.516E-03	-0.243
I-131	2.051E-02		4.459E-02	7.691E-02	5.156E-03	0.267
TE-132	5.186E-02		1.249E-01	2.163E-01	3.021E-02	0.240
BA-133	-1.898E-02		2.794E-02	4.329E-02	5.098E-03	-0.438
I-133	-1.163E-05		2.126E-05	Half-Life too short		
CS-134	1.267E-02		2.463E-02	4.385E-02	3.056E-03	0.289
CS-135	5.858E-02		8.598E-02	1.518E-01	1.298E-02	0.386
I-135	-4.574E+02		1.302E+03	Half-Life too short		
CS-136	-9.241E-03		4.349E-02	6.861E-02	5.283E-03	-0.135
BA-137M	-9.364E-03		2.184E-02	3.303E-02	1.662E-03	-0.283
CS-137	-9.898E-03		2.309E-02	3.492E-02	1.767E-03	-0.283
CE-139	-3.540E-03		1.572E-02	2.489E-02	1.655E-03	-0.142
BA-140	7.862E-02		1.199E-01	2.053E-01	6.668E-02	0.383
LA-140	-6.827E-04		3.507E-02	5.789E-02	4.035E-03	-0.012
CE-141	3.123E-03		2.994E-02	4.891E-02	3.414E-03	0.064
CE-143	3.575E+00		4.800E+00	8.384E+00	1.767E+00	0.426
CE-144	-4.319E-02		1.105E-01	1.739E-01	2.557E-02	-0.248
PM-144	7.026E-03		2.290E-02	3.958E-02	2.170E-03	0.178
PR-144	4.747E-01		1.547E+00	2.674E+00	1.466E-01	0.178
PM-146	-1.105E-02		2.658E-02	4.150E-02	3.554E-03	-0.266
ND-147	-2.619E-02		2.181E-01	3.488E-01	4.686E-02	-0.075
PM-149	2.990E+00		9.931E+00	1.698E+01	2.485E+00	0.176
EU-152	1.809E-02		6.288E-02	1.068E-01	7.528E-03	0.169
GD-153	2.856E-02		4.425E-02	7.567E-02	7.261E-03	0.377
EU-154	4.268E-03		5.145E-02	8.500E-02	8.524E-03	0.050
EU-155	2.726E-02		6.027E-02	1.017E-01	8.810E-03	0.268
TB-160	3.735E-02		6.913E-02	1.241E-01	1.020E-02	0.301
HO-166M	2.406E-02		3.281E-02	5.998E-02	3.409E-03	0.401
TM-171	-2.700E+01		2.189E+01	3.126E+01	3.595E+00	-0.864
LU-176	3.805E-03		1.541E-02	2.621E-02	1.766E-03	0.145
LU-177	1.928E-02		3.468E-01	5.573E-01	3.830E-02	0.035
LU-177M	5.855E-02		1.014E-01	1.765E-01	1.006E-02	0.332
HF-181	-1.777E-02		2.333E-02	3.453E-02	1.966E-03	-0.514
W-181	-2.255E-01		2.862E-01	4.266E-01	4.965E-02	-0.528
TA-182	-3.529E-03		9.666E-02	1.559E-01	9.721E-03	-0.023
RE-183	5.733E-02		5.836E-02	1.009E-01	6.728E-03	0.568
RE-184	6.610E-02		1.286E-01	2.246E-01	1.563E-02	0.294
OS-185	2.851E-02		2.056E-02	3.988E-02	2.043E-03	0.715
RE-188	5.350E-03		9.044E-02	1.469E-01	9.854E-03	0.036
W-188	-3.511E+00		4.250E+00	6.605E+00	4.520E-01	-0.531
IR-192	-3.209E-03		2.014E-02	3.307E-02	2.210E-03	-0.097
AU-195	1.616E-02		1.204E-01	1.994E-01	1.869E-02	0.081
TL-200	1.719E-06		4.362E-06	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
TL-201	-7.936E-01		1.071E+00	1.616E+00	1.075E-01	-0.491
TL-202	1.857E-03		3.134E-02	5.175E-02	2.958E-03	0.036
HG-203	-3.120E-02		2.309E-02	3.421E-02	2.464E-03	-0.912
BI-207	-2.412E-03		2.342E-02	3.751E-02	2.665E-03	-0.064
TL-207	-2.799E-01		4.230E-01	6.597E-01	1.109E-01	-0.424
TL-208	4.475E-02	+	2.964E-02	5.012E-02	3.191E-03	0.893
PO-209	3.664E+00		4.544E+00	8.310E+00	7.074E-01	0.441
BI-210	-5.114E+00		6.592E+00	9.563E+00	9.933E-01	-0.535
PB-210	-5.114E+00		6.592E+00	9.563E+00	9.933E-01	-0.535
PO-210	-5.114E+00		6.589E+00	9.563E+00	9.186E-01	-0.535
BI-211	-3.690E-02		1.529E-01	2.392E-01	1.644E-02	-0.154
PB-211	-2.771E-01		6.024E-01	9.048E-01	5.640E-01	-0.306
BI-212	-8.622E-02		1.731E-01	2.587E-01	2.014E-02	-0.333
PB-212	7.210E-02	+	7.630E-02	7.995E-02	6.618E-03	0.902
PO-212	7.210E-02	+	7.630E-02	7.995E-02	6.618E-03	0.902
BI-214	4.049E-02	+	7.388E-02	9.250E-02	6.868E-03	0.438
PB-214	-2.226E-02		5.231E-02	8.035E-02	6.927E-03	-0.277
PO-214	-2.226E-02		5.231E-02	8.035E-02	6.927E-03	-0.277
PO-215	-2.799E-01		4.230E-01	6.597E-01	1.109E-01	-0.424
PO-216	7.210E-02	+	7.630E-02	7.995E-02	6.618E-03	0.902
PO-218	-2.226E-02		5.231E-02	8.035E-02	6.927E-03	-0.277
RN-219	2.779E-02		2.535E-01	4.222E-01	5.724E-02	0.066
RN-220	-6.540E+00		1.643E+01	2.535E+01	1.406E+00	-0.258
RA-223	-2.799E-01		4.230E-01	6.597E-01	1.109E-01	-0.424
RA-224	5.190E-01		3.959E-01	7.193E-01	5.006E-02	0.722
RA-226	4.049E-02	+	7.388E-02	9.250E-02	6.868E-03	0.438
AC-227	-6.591E-02		2.254E-01	3.694E-01	5.349E-02	-0.178
TH-227	-6.591E-02		2.255E-01	3.694E-01	6.402E-02	-0.178
AC-228	-1.145E-02		8.287E-02	1.293E-01	1.437E-02	-0.089
RA-228	-1.145E-02		8.287E-02	1.293E-01	1.437E-02	-0.089
TH-228	7.279E-02	+	7.704E-02	8.072E-02	6.682E-03	0.902
TH-229	2.007E-01		3.054E-01	5.138E-01	3.493E-02	0.391
TH-230	4.049E-02	+	7.388E-02	9.250E-02	6.867E-03	0.438
PA-231	5.864E-01		9.626E-01	1.678E+00	2.395E-01	0.349
TH-231	-2.799E-01		4.230E-01	6.597E-01	1.109E-01	-0.424
U-231	-7.015E-01		2.944E-01	3.962E-01	3.905E-02	-1.770
TH-232	-1.145E-02		8.287E-02	1.293E-01	1.437E-02	-0.089
PA-233	2.499E-02		3.707E-02	6.536E-02	4.581E-03	0.382
PA-234	8.988E-02		1.630E-01	2.907E-01	5.400E-02	0.309
PA-234M	2.395E-01		2.620E+00	4.430E+00	4.083E-01	0.054
TH-234	-1.267E+00		1.178E+00	1.773E+00	3.499E-01	-0.714
U-234	4.049E-02	+	7.388E-02	9.250E-02	6.867E-03	0.438
U-235	1.485E-01		1.191E-01	2.059E-01	3.435E-02	0.721
NP-236	-2.501E-03		4.508E-02	7.250E-02	4.840E-03	-0.035
NP-237	-1.079E-01		1.422E-01	2.124E-01	5.013E-02	-0.508
U-238	-1.267E+00		1.178E+00	1.773E+00	3.499E-01	-0.714
NP-239	-4.745E-02		1.000E-01	1.569E-01	1.180E-02	-0.302
AM-241	-9.857E-03		1.415E-01	2.340E-01	2.977E-02	-0.042

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-243	-2.103E-02		3.628E-02	5.609E-02	6.233E-03	-0.375
CM-243	4.418E-04		5.187E-02	8.499E-02	7.419E-03	0.005
AM-246	6.090E-02		8.132E-02	1.484E-01	1.029E-02	0.410
CM-247	-9.179E-04		2.284E-02	3.748E-02	2.131E-03	-0.024
CF-249	-7.074E-03		2.276E-02	3.630E-02	2.081E-03	-0.195
CF-251	-7.380E-03		7.270E-02	1.161E-01	7.781E-03	-0.064

## 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]G1202001375          *
* Acquisition date   : 31-DEC-2009 14:42:59 Detector SN# :                  *
* Detector ID        : GAM15 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 02:00:00.52 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202001375 Analyst initials: MXR1                *
* Batch Number       : 935341 Sample Quantity : 1.5678E+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
ANH-511	3.862E-02	2.932E-02	1.222E-02	1.496E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU	
BE-7	1.080E-01	1.736E-01	1.610E-01	8.856E-02	NOT IDENT.
NA-22	1.137E-03	1.791E-02	1.523E-02	9.138E-03	NOT IDENT.
NA-24	-5.963E+02	9.638E+02	0.000E+00	4.917E+02	SHORT HLIF
AL-26	-8.236E-03	1.789E-02	1.285E-02	9.130E-03	NOT IDENT.
K-40	-1.191E-01	2.450E-01	1.883E-01	1.250E-01	NOT IDENT.
TI-44	-5.892E-03	1.965E-02	1.768E-02	1.002E-02	NOT IDENT.
SC-46	-1.035E-02	2.052E-02	1.632E-02	1.047E-02	NOT IDENT.
V-48	-4.280E-03	2.655E-02	2.207E-02	1.354E-02	NOT IDENT.
CR-51	1.317E-01	2.039E-01	1.915E-01	1.041E-01	NOT IDENT.
MN-52	-2.036E-02	6.720E-02	5.402E-02	3.429E-02	NOT IDENT.
MN-54	1.875E-03	2.011E-02	1.770E-02	1.026E-02	NOT IDENT.
CO-56	-2.607E-03	2.152E-02	1.837E-02	1.098E-02	NOT IDENT.
CO-57	-7.537E-03	1.330E-02	1.141E-02	6.788E-03	NOT IDENT.
CO-58	6.616E-03	1.966E-02	1.794E-02	1.003E-02	NOT IDENT.
FE-59	2.271E-02	4.025E-02	3.757E-02	2.054E-02	NOT IDENT.
CO-60	-9.796E-03	2.166E-02	1.622E-02	1.105E-02	NOT IDENT.
ZN-65	-2.482E-02	3.567E-02	2.866E-02	1.820E-02	NOT IDENT.
GE-68	1.687E-01	7.047E-01	6.213E-01	3.595E-01	NOT IDENT.
AS-73	-2.544E-01	8.042E-01	7.330E-01	4.103E-01	NOT IDENT.
AS-74	2.642E-02	4.352E-02	3.986E-02	2.221E-02	NOT IDENT.
SE-75	-2.137E-02	2.446E-02	2.053E-02	1.248E-02	NOT IDENT.
BR-77	2.278E-01	1.322E+00	1.100E+00	6.746E-01	FAIL ABUN
SR-82	-4.245E-02	1.716E-01	1.448E-01	8.755E-02	NOT IDENT.
RB-83	9.394E-03	4.113E-02	3.447E-02	2.098E-02	NOT IDENT.
RB-84	2.650E-02	3.258E-02	3.154E-02	1.662E-02	NOT IDENT.
KR-85	1.334E+01	5.005E+00	4.979E+00	2.554E+00	NOT IDENT.



SR-85	6.453E-02	2.422E-02	2.409E-02	1.236E-02	NOT IDENT.
RB-86	2.101E-01	3.595E-01	3.332E-01	1.834E-01	NOT IDENT.
Y-88	7.668E-03	2.369E-02	2.141E-02	1.209E-02	NOT IDENT.
ZR-88	1.313E-02	1.684E-02	1.595E-02	8.589E-03	NOT IDENT.
Y-91	-3.287E+00	7.838E+00	6.033E+00	3.999E+00	NOT IDENT.
NB-94	2.789E-03	2.013E-02	1.801E-02	1.027E-02	NOT IDENT.
NB-95	1.771E-02	2.183E-02	2.092E-02	1.114E-02	NOT IDENT.
NB-95M	9.236E-02	7.953E-02	6.931E-02	4.057E-02	NOT IDENT.
ZR-95	2.632E-02	3.410E-02	3.293E-02	1.740E-02	NOT IDENT.
NB-97	3.855E+01	2.441E+02	0.000E+00	1.245E+02	SHORT HLIF
ZR-97	2.131E+04	5.841E+03	0.000E+00	2.980E+03	SHORT HLIF
MO-99	1.057E+00	1.705E+00	1.601E+00	8.698E-01	NOT IDENT.
TC-99M	-9.084E+08	5.063E+09	0.000E+00	2.583E+09	SHORT HLIF
RH-101	-5.346E-03	2.105E-02	1.690E-02	1.074E-02	NOT IDENT.
RH-102	2.167E-03	1.679E-02	1.480E-02	8.567E-03	NOT IDENT.
RU-103	-1.533E-02	2.149E-02	1.691E-02	1.097E-02	FAIL ABUN
RH-106	-1.372E-01	1.790E-01	1.349E-01	9.134E-02	FAIL ABUN
RU-106	-1.372E-01	1.785E-01	1.349E-01	9.107E-02	FAIL ABUN
AG-108M	1.119E-02	1.989E-02	1.837E-02	1.015E-02	NOT IDENT.
CD-109	-7.241E-01	5.139E-01	4.146E-01	2.622E-01	NOT IDENT.
AG-110M	3.067E-03	1.943E-02	1.681E-02	9.913E-03	NOT IDENT.
IN-111	6.161E-02	1.640E-01	1.355E-01	8.368E-02	NOT IDENT.
IN-113M	1.407E-02	2.436E-02	2.269E-02	1.243E-02	NOT IDENT.
SN-113	1.407E-02	2.436E-02	2.269E-02	1.243E-02	NOT IDENT.
IN-114M	-6.772E-02	1.115E-01	7.926E-02	5.687E-02	NOT IDENT.
CD-115	5.675E-01	1.082E+00	9.926E-01	5.519E-01	NOT IDENT.
SN-117M	-2.336E-02	2.301E-02	1.868E-02	1.174E-02	NOT IDENT.
SB-122	-1.442E-01	2.768E-01	2.206E-01	1.412E-01	NOT IDENT.
I-123	-2.104E+03	2.973E+03	0.000E+00	1.517E+03	SHORT HLIF
TE-123M	-1.075E-02	1.519E-02	1.268E-02	7.750E-03	NOT IDENT.
I-124	-9.388E-02	1.942E-01	1.310E-01	9.910E-02	NOT IDENT.
SB-124	1.722E-02	4.519E-02	4.180E-02	2.306E-02	NOT IDENT.
SB-125	-3.123E-02	4.819E-02	3.882E-02	2.459E-02	NOT IDENT.
TE-125M	-5.012E+00	4.834E+00	4.015E+00	2.466E+00	NOT IDENT.
I-126	-4.104E-04	7.679E-02	6.490E-02	3.918E-02	NOT IDENT.
SB-126	3.940E-02	5.677E-02	5.415E-02	2.896E-02	NOT IDENT.
SN-126	-4.218E-02	4.954E-02	4.173E-02	2.527E-02	NOT IDENT.
SB-127	5.979E-02	2.665E-01	2.420E-01	1.360E-01	NOT IDENT.
XE-127	-8.934E-03	2.324E-02	1.958E-02	1.186E-02	NOT IDENT.
I-131	2.051E-02	4.370E-02	4.035E-02	2.230E-02	NOT IDENT.
TE-132	5.186E-02	1.224E-01	1.149E-01	6.246E-02	NOT IDENT.
BA-133	-1.898E-02	2.738E-02	2.273E-02	1.397E-02	NOT IDENT.
I-133	-1.163E+01	4.166E+01	0.000E+00	2.126E+01	SHORT HLIF
CS-134	1.267E-02	2.414E-02	2.252E-02	1.232E-02	NOT IDENT.
CS-135	5.858E-02	8.426E-02	8.028E-02	4.299E-02	NOT IDENT.
I-135	-4.574E+08	2.552E+09	0.000E+00	1.302E+09	SHORT HLIF
CS-136	-9.241E-03	4.262E-02	3.496E-02	2.175E-02	NOT IDENT.
BA-137M	-9.364E-03	2.140E-02	1.705E-02	1.092E-02	NOT IDENT.
CS-137	-9.898E-03	2.262E-02	1.802E-02	1.154E-02	NOT IDENT.
CE-139	-3.540E-03	1.540E-02	1.333E-02	7.858E-03	NOT IDENT.
BA-140	7.862E-02	1.175E-01	1.066E-01	5.993E-02	NOT IDENT.
LA-140	-6.827E-04	3.437E-02	2.914E-02	1.754E-02	NOT IDENT.
CE-141	3.123E-03	2.934E-02	2.628E-02	1.497E-02	NOT IDENT.
CE-143	3.575E+00	4.704E+00	4.424E+00	2.400E+00	NOT IDENT.
CE-144	-4.319E-02	1.083E-01	9.367E-02	5.526E-02	NOT IDENT.
PM-144	7.026E-03	2.244E-02	2.040E-02	1.145E-02	NOT IDENT.
PR-144	4.747E-01	1.516E+00	1.379E+00	7.736E-01	NOT IDENT.
PM-146	-1.105E-02	2.605E-02	2.164E-02	1.329E-02	NOT IDENT.
ND-147	-2.619E-02	2.138E-01	1.811E-01	1.091E-01	NOT IDENT.
PM-149	2.990E+00	9.732E+00	8.968E+00	4.966E+00	NOT IDENT.
EU-152	1.809E-02	6.163E-02	5.613E-02	3.144E-02	NOT IDENT.
GD-153	2.856E-02	4.337E-02	4.107E-02	2.213E-02	NOT IDENT.
EU-154	4.268E-03	5.042E-02	4.307E-02	2.572E-02	NOT IDENT.
EU-155	2.726E-02	5.907E-02	5.512E-02	3.014E-02	NOT IDENT.
TB-160	3.735E-02	6.774E-02	6.355E-02	3.456E-02	NOT IDENT.
HO-166M	2.406E-02	3.215E-02	3.090E-02	1.640E-02	FAIL ABUN
TM-171	-2.700E+01	2.145E+01	1.713E+01	1.095E+01	NOT IDENT.
LU-176	3.805E-03	1.511E-02	1.381E-02	7.707E-03	NOT IDENT.
LU-177	1.928E-02	3.399E-01	2.967E-01	1.734E-01	NOT IDENT.
LU-177M	5.855E-02	9.934E-02	9.229E-02	5.068E-02	NOT IDENT.
HF-181	-1.777E-02	2.286E-02	1.798E-02	1.166E-02	NOT IDENT.
W-181	-2.255E-01	2.805E-01	2.339E-01	1.431E-01	NOT IDENT.
TA-182	-3.529E-03	9.472E-02	7.911E-02	4.833E-02	NOT IDENT.
RE-183	5.733E-02	5.719E-02	5.409E-02	2.918E-02	NOT IDENT.
RE-184	6.610E-02	1.260E-01	1.190E-01	6.429E-02	NOT IDENT.
OS-185	2.851E-02	2.015E-02	2.060E-02	1.028E-02	NOT IDENT.
RE-188	5.350E-03	8.863E-02	7.881E-02	4.522E-02	NOT IDENT.
W-188	-3.511E+00	4.165E+00	3.486E+00	2.125E+00	NOT IDENT.

IR-192	-3.209E-03	1.974E-02	1.741E-02	1.007E-02	NOT IDENT.
AU-195	1.616E-02	1.180E-01	1.082E-01	6.022E-02	NOT IDENT.
TL-200	1.719E+00	8.549E+00	0.000E+00	4.362E+00	SHORT HLIF
TL-201	-7.936E-01	1.049E+00	8.651E-01	5.353E-01	NOT IDENT.
TL-202	1.857E-03	3.072E-02	2.701E-02	1.567E-02	NOT IDENT.
HG-203	-3.120E-02	2.263E-02	1.807E-02	1.155E-02	NOT IDENT.
BI-207	-2.412E-03	2.295E-02	1.911E-02	1.171E-02	NOT IDENT.
TL-207	-2.799E-01	4.146E-01	3.472E-01	2.115E-01	NOT IDENT.
TL-208	4.475E-02	2.904E-02	2.596E-02	1.482E-02	FAIL ABUN
PO-209	3.664E+00	4.453E+00	4.253E+00	2.272E+00	NOT IDENT.
BI-210	-5.114E+00	6.460E+00	5.286E+00	3.296E+00	NOT IDENT.
PB-210	-5.114E+00	6.460E+00	5.286E+00	3.296E+00	NOT IDENT.
PO-210	-5.114E+00	6.457E+00	5.286E+00	3.294E+00	NOT IDENT.
BI-211	-3.690E-02	1.498E-01	1.256E-01	7.645E-02	NOT IDENT.
PB-211	-2.771E-01	5.904E-01	4.734E-01	3.012E-01	NOT IDENT.
BI-212	-8.622E-02	1.696E-01	1.332E-01	8.655E-02	NOT IDENT.
PB-212	7.210E-02	7.478E-02	4.242E-02	3.815E-02	FAIL ABUN
PO-212	7.210E-02	7.478E-02	4.242E-02	3.815E-02	FAIL ABUN
BI-214	4.049E-02	7.240E-02	4.786E-02	3.694E-02	FAIL ABUN
PB-214	-2.226E-02	5.127E-02	4.220E-02	2.616E-02	NOT IDENT.
PO-214	-2.226E-02	5.127E-02	4.220E-02	2.616E-02	NOT IDENT.
PO-215	-2.799E-01	4.146E-01	3.472E-01	2.115E-01	NOT IDENT.
PO-216	7.210E-02	7.478E-02	4.242E-02	3.815E-02	FAIL ABUN
PO-218	-2.226E-02	5.127E-02	4.220E-02	2.616E-02	NOT IDENT.
RN-219	2.779E-02	2.485E-01	2.209E-01	1.268E-01	NOT IDENT.
RN-220	-6.540E+00	1.610E+01	1.315E+01	8.213E+00	NOT IDENT.
RA-223	-2.799E-01	4.146E-01	3.472E-01	2.115E-01	NOT IDENT.
RA-224	5.190E-01	3.879E-01	3.815E-01	1.979E-01	NOT IDENT.
RA-226	4.049E-02	7.240E-02	4.786E-02	3.694E-02	FAIL ABUN
AC-227	-6.591E-02	2.209E-01	1.956E-01	1.127E-01	NOT IDENT.
TH-227	-6.591E-02	2.210E-01	1.956E-01	1.127E-01	NOT IDENT.
AC-228	-1.145E-02	8.121E-02	6.613E-02	4.143E-02	NOT IDENT.
RA-228	-1.145E-02	8.121E-02	6.613E-02	4.143E-02	NOT IDENT.
TH-228	7.279E-02	7.550E-02	4.283E-02	3.852E-02	FAIL ABUN
TH-229	2.007E-01	2.993E-01	2.741E-01	1.527E-01	NOT IDENT.
TH-230	4.049E-02	7.240E-02	4.785E-02	3.694E-02	FAIL ABUN
PA-231	5.864E-01	9.433E-01	8.864E-01	4.813E-01	NOT IDENT.
TH-231	-2.799E-01	4.146E-01	3.472E-01	2.115E-01	NOT IDENT.
U-231	-7.015E-01	2.885E-01	2.152E-01	1.472E-01	NOT IDENT.
TH-232	-1.145E-02	8.121E-02	6.613E-02	4.143E-02	NOT IDENT.
PA-233	2.499E-02	3.633E-02	3.443E-02	1.853E-02	NOT IDENT.
PA-234	8.988E-02	1.597E-01	1.486E-01	8.148E-02	FAIL ABUN
PA-234M	2.395E-01	2.568E+00	2.261E+00	1.310E+00	NOT IDENT.
TH-234	-1.267E+00	1.155E+00	9.728E-01	5.892E-01	NOT IDENT.
U-234	4.049E-02	7.240E-02	4.785E-02	3.694E-02	FAIL ABUN
U-235	1.485E-01	1.167E-01	1.106E-01	5.956E-02	FAIL ABUN
NP-236	-2.501E-03	4.418E-02	3.886E-02	2.254E-02	NOT IDENT.
NP-237	-1.079E-01	1.393E-01	1.156E-01	7.108E-02	NOT IDENT.
U-238	-1.267E+00	1.155E+00	9.728E-01	5.892E-01	NOT IDENT.
NP-239	-4.745E-02	9.801E-02	8.479E-02	5.000E-02	NOT IDENT.
AM-241	-9.857E-03	1.387E-01	1.285E-01	7.077E-02	NOT IDENT.
AM-243	-2.103E-02	3.555E-02	3.065E-02	1.814E-02	NOT IDENT.
CM-243	4.418E-04	5.083E-02	4.606E-02	2.593E-02	NOT IDENT.
AM-246	6.090E-02	7.969E-02	7.558E-02	4.066E-02	NOT IDENT.
CM-247	-9.179E-04	2.238E-02	1.961E-02	1.142E-02	NOT IDENT.
CF-249	-7.074E-03	2.230E-02	1.901E-02	1.138E-02	NOT IDENT.
CF-251	-7.380E-03	7.124E-02	6.207E-02	3.635E-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	93.0313
46.50	93.0313
46.50	93.0313
48.70	86.7854
49.72	86.9366
51.35	66.3290
52.39	74.0368
52.97	76.0075
53.15	77.9307
53.44	77.0166
54.07	80.9026
56.28	95.5156
56.28	95.5160
57.37	86.1117
57.53	88.0472
57.53	88.0476
57.60	81.3569
57.98	81.4049
57.98	81.4049
59.32	105.5653
59.32	105.5653
59.40	105.5783
59.54	107.5208
59.72	107.5504
60.01	109.5193
61.10	94.3035
61.14	94.3091
61.30	94.3317
63.00	113.8710
63.29	114.8850
63.29	114.8850
63.58	97.5491
64.28	91.8482
65.12	111.3206
65.20	111.3334
65.20	111.3334
66.05	118.2550
66.72	117.3978
66.83	117.4168
66.91	117.4302
67.20	107.7696
67.20	107.7696
67.75	110.7684
67.85	110.7841
68.90	107.0551
68.90	107.0551
69.30	109.0627
69.67	103.2734
70.82	98.5585
70.82	98.5585
70.83	98.5600
72.80	112.5240
72.87	112.5346
72.87	112.5346
74.67	112.8074
74.81	112.8285
74.81	112.8285
74.81	112.8285
74.81	112.8285
74.81	112.8285
74.81	112.8285
74.81	112.8285
74.97	110.8900
75.28	108.9722
75.70	107.0682
77.11	99.3941
77.11	99.3941

77.11	99.3941
77.11	99.3941
77.11	99.3941
77.11	99.3941
77.11	99.3941
78.38	114.3446
79.62	130.3247
79.80	130.3549
79.80	130.3549
80.11	126.4551
80.18	126.4663
80.30	126.4858
80.30	126.4858
80.57	129.4948
81.00	126.5986
81.07	118.6967
81.07	118.6967
81.07	118.6967
81.07	118.6967
82.60	104.0603
83.37	101.1844
83.78	107.1917
83.78	107.1917
83.78	107.1917
83.78	107.1917
84.21	110.2281
84.90	118.2737
85.43	120.3399
86.29	126.4404
86.50	126.4729
86.54	124.4874
86.59	124.4950
86.72	124.5146
86.79	124.5251
86.94	124.5480
87.30	125.5996
87.30	125.5996
87.30	125.5996
87.30	125.5996
87.30	125.5996
87.30	125.5996
87.57	149.5720
87.88	149.6281
88.03	168.6119
88.36	168.6790
88.47	168.7015
89.95	167.0006
91.11	111.1537
92.29	112.3110
92.38	112.3230
92.38	112.3230
93.35	113.4543
94.00	111.5310
94.67	173.9615
94.67	173.9622
94.90	174.0084
94.90	174.0084
94.90	174.0084
94.90	174.0084
95.87	188.3004
95.87	188.3004
96.73	118.9379
97.43	93.8135
98.44	91.9012
98.44	91.9012
98.88	91.9466
99.55	97.0719
99.55	97.0719
99.86	97.1056
100.00	100.1556
100.10	104.2145
103.18	98.4786
103.76	89.3982
105.00	93.5881
105.31	92.6017
108.00	94.9111
109.28	116.5010

111.00	96.2365
111.00	96.2365
111.76	104.5101
112.95	77.9665
115.19	101.7965
116.30	78.2355
117.00	91.6833
117.00	91.6833
117.66	93.8063
121.11	78.6151
121.62	93.1441
121.78	93.1589
122.06	97.3262
122.32	86.9945
122.32	86.9945
122.32	86.9945
122.32	86.9945
123.07	87.0589
127.23	88.4529
129.76	91.7972
131.20	96.1005
133.02	107.7755
133.54	99.4531
135.34	88.0849
136.00	86.0402
136.25	83.9612
136.48	88.1778
140.51	99.0395
140.51	0.0000
142.18	97.0783
142.65	92.8968
143.76	82.4221
144.24	86.6858
144.24	86.6858
144.24	86.6858
144.24	86.6858
145.22	93.1099
145.44	91.0115
147.16	107.0482
152.43	89.4391
152.70	89.4602
153.22	91.6309
154.21	88.5092
154.21	88.5092
154.21	88.5092
154.21	88.5092
155.03	94.9740
156.02	95.0541
158.56	108.1023
159.00	0.0000
159.00	102.7881
160.31	95.3977
161.27	82.6009
162.32	79.4515
162.64	77.3251
163.35	87.0414
163.89	91.3806
165.85	88.2968
167.43	91.6448
171.28	83.2770
171.86	80.0697
172.10	77.9205
176.55	92.3138
176.60	92.3170
181.06	81.9574
184.41	96.1540
185.71	101.4993
186.00	96.2701
190.27	101.8483
192.34	107.7213
193.63	86.9195
197.04	91.5494
198.01	96.0298
198.60	102.6958
200.40	92.8792
201.83	101.8295
202.84	87.5038
205.31	84.3299

208.36	86.7360
208.81	90.1004
209.75	85.7080
209.75	85.7080
210.97	80.2106
215.65	84.9428
216.55	86.1133
218.09	76.1285
222.10	85.3174
223.80	85.4153
226.40	90.9684
227.00	93.7079
227.08	93.7130
227.20	93.7200
228.16	80.2543
228.18	80.2554
228.18	80.2554
231.56	83.5978
235.69	89.1104
236.00	93.6603
236.00	93.6603
238.63	78.0824
238.63	78.0824
238.63	78.0824
238.63	78.0824
239.00	78.1007
240.98	78.2005
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241.98	72.7910
241.98	72.7910
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245.39	60.7910
247.94	68.5002
248.90	68.5414
249.79	80.4670
252.40	62.2803
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252.85	61.3816
254.15	0.0000
256.20	77.1155
256.20	77.1155
260.50	54.3074
260.90	56.1621
262.80	74.6620
264.65	79.3589
268.24	56.4109
268.79	64.7551
269.46	72.1852
269.46	72.1852
269.46	72.1852
269.46	72.1852
271.23	81.5246
273.65	70.5087
276.40	67.8351
277.35	77.1701
277.60	79.0411
277.60	79.0411
278.00	81.8501
278.60	87.4618
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279.53	92.1635
280.46	80.1043
281.68	68.9757
283.67	66.2557
284.30	63.4794
285.00	69.1085
285.90	65.4063
286.10	68.2174
286.10	68.2174
287.40	69.2034
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290.80	82.4549
291.72	78.7479
293.26	60.9891
293.70	55.3730
295.21	64.8130
295.21	64.8130

295.21	64.8130
295.96	68.5988
296.50	65.8002
297.23	67.7074
298.57	70.5817
299.80	61.2120
299.80	61.2120
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302.84	70.7483
303.76	70.7840
303.91	70.7904
304.40	65.1440
304.40	65.1440
304.84	66.1044
306.84	63.3408
308.46	55.8267
311.98	48.3491
316.51	63.6729
318.01	43.7505
319.02	38.0645
319.41	40.9277
320.08	59.9854
323.87	76.3252
323.87	76.3252
323.87	76.3252
323.87	76.3252
325.23	64.9229
328.77	60.2607
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334.20	72.9004
334.20	72.9004
334.30	70.0264
338.28	59.5963
338.28	59.5963
338.28	59.5963
338.28	59.5963
338.32	59.5978
338.32	59.5978
338.32	59.5978
340.50	65.4376
340.57	68.3271
344.27	61.7062
345.85	63.6853
350.59	59.0014
351.07	62.8854
351.92	61.9438
351.92	61.9438
351.92	61.9438
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356.01	69.8282
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366.43	59.4631
367.43	59.4921
367.94	0.0000
369.80	51.7488
374.96	59.7073
383.85	48.1644
387.95	47.2717
388.63	51.2275
391.69	39.4619
391.69	39.4619
392.90	38.4968
398.62	44.5364
400.65	44.5776
401.10	50.5318
401.81	49.5569
402.60	51.5582
404.84	56.5728
410.95	50.7578
411.60	51.7677
413.65	39.8579
414.70	48.8487
415.30	51.8534

415.76	56.8511
417.63	0.0000
418.52	36.9485
423.70	48.0428
427.08	34.0809
427.89	40.1094
432.53	45.2142
433.93	40.2144
439.47	44.3416
439.56	44.3432
439.89	45.3576
443.98	50.4852
444.90	44.4442
445.03	44.4469
445.03	44.4469
445.03	44.4469
445.03	44.4469
453.90	46.6413
463.38	43.7716
468.07	39.7765
473.00	43.9448
475.06	36.8218
475.35	38.8721
476.78	30.7064
477.59	32.7641
477.96	31.7451
482.03	45.1312
484.57	28.7492
487.03	41.1108
490.36	38.0777
492.35	31.9283
497.08	42.3068
507.63	0.0000
510.53	0.0000
510.84	26.9728
511.00	26.9745
511.85	26.9834
511.85	26.9834
513.99	24.2357
513.99	24.2357
520.41	33.8401
520.65	35.1450
527.90	27.1489
528.96	0.0000
529.64	33.4359
529.87	0.0000
531.02	30.3169
537.32	30.3884
543.00	38.8536
546.56	0.0000
549.76	41.0557
552.65	32.6688
555.20	33.7539
563.23	31.7366
563.90	34.9183
568.70	23.3191
569.32	30.7459
569.50	29.6871
569.67	31.8098
573.80	26.5472
574.00	26.5491
574.64	34.5217
578.91	30.1415
579.30	0.0000
583.14	24.8595
585.48	15.9943
591.81	29.9223
592.07	32.0618
593.00	32.0728
595.88	28.8938
600.56	32.1563
602.52	0.0000
602.71	44.6950
602.71	44.6950
603.60	44.7083
604.41	39.3545
604.70	39.3585
609.31	31.1778



609.31	31.1778
609.31	31.1778
609.31	31.1778
610.33	31.1892
612.46	35.8748
614.37	46.6680
618.01	29.1133
621.84	34.5492
621.84	34.5492
631.29	19.4955
633.02	23.8417
633.10	23.8423
634.78	33.6149
635.90	39.0507
636.97	36.8945
645.85	22.8544
646.12	11.9724
656.30	27.3004
657.75	27.3132
657.90	0.0000
661.65	36.0986
661.65	36.0986
664.57	36.1324
666.33	29.5794
666.33	29.5794
675.00	18.6755
677.61	16.4923
685.20	23.8788
692.80	38.6658
695.00	35.9285
696.49	39.6319
696.49	39.6319
697.00	38.7162
697.49	39.6441
698.33	41.4981
698.50	39.6564
699.00	36.8953
702.63	34.1666
706.10	35.1271
706.58	0.0000
706.67	34.2087
709.31	30.5353
711.68	20.3717
713.82	28.7238
717.42	30.6105
720.50	21.3547
721.93	25.0796
722.20	26.9391
722.78	24.1565
722.78	24.1565
722.89	24.1576
722.95	24.1581
723.30	25.0900
724.18	25.0966
727.18	29.7708
733.00	28.8909
735.90	31.7138
739.58	24.2787
742.81	21.4979
744.21	23.3770
747.13	22.4609
751.79	16.8688
752.31	17.8086
753.82	21.5676
755.35	18.7626
756.15	16.8904
756.87	16.8940
763.93	33.8577
765.79	22.5840
766.42	22.5879
766.84	21.6495
776.49	24.5416
778.00	23.6079
778.57	23.6115
778.89	22.6694
783.80	31.2141
785.46	33.1215
792.07	23.7025

795.84	19.9310
796.30	18.0352
798.80	30.3965
801.93	22.8174
805.60	20.9374
810.29	22.8706
810.76	19.0617
815.85	18.1341
817.79	18.1438
818.51	21.0126
819.60	21.9743
826.30	22.0150
828.27	0.0000
831.60	19.1711
831.96	19.1732
834.83	23.9853
836.80	0.0000
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848.13	28.8861
856.28	0.0000
856.80	31.8486
860.37	26.0826
867.32	16.4525
867.82	13.5511
871.10	15.5003
873.19	17.4474
874.81	20.3638
875.33	0.0000
876.40	19.4023
879.36	14.5630
880.27	15.5378
880.51	15.5387
881.50	13.5998
883.24	18.4654
884.67	23.3335
889.25	23.3613
896.60	18.5296
898.02	24.3896
899.00	26.3480
903.28	20.5151
911.07	15.6618
911.07	15.6618
911.07	15.6618
919.63	21.5820
920.93	17.6638
925.00	18.6645
925.24	18.6656
926.50	17.6887
935.52	18.7139
937.48	26.6061
944.10	13.8186
946.00	14.8126
949.00	18.7766
962.29	16.8554
964.01	21.8219
966.15	30.7654
968.20	29.7876
969.11	32.7737
969.11	32.7737
969.11	32.7737
977.42	23.8838
980.50	20.9137
983.50	14.9493
989.30	12.9741
996.32	25.9921
1001.03	13.0106
1001.68	13.0127
1004.76	22.0376
1021.30	0.0000
1024.50	0.0000
1034.80	13.1143
1036.00	12.1089
1037.82	17.1619
1038.57	17.1646
1038.76	0.0000
1045.16	16.1797
1046.59	15.1733
1048.07	18.2139

1050.47	17.2117
1050.47	17.2117
1062.04	11.1665
1063.62	12.1860
1076.63	15.2777
1077.35	18.3362
1078.86	14.2660
1085.78	16.3294
1099.22	11.2605
1112.02	10.2657
1112.84	12.3213
1115.52	10.2734
1120.29	12.3413
1120.29	12.3413
1120.29	12.3413
1120.29	12.3413
1120.51	12.3418
1121.28	13.3724
1124.00	0.0000
1129.67	14.4278
1131.51	0.0000
1147.95	0.0000
1167.94	10.3906
1173.22	16.6439
1175.09	12.4878
1177.93	7.2888
1189.05	14.6118
1204.90	15.7074
1205.75	0.0000
1213.00	12.5869
1221.42	17.8626
1230.97	16.8444
1235.34	8.4297
1236.41	0.0000
1238.25	7.3805
1246.25	7.3925
1260.41	0.0000
1271.85	12.7383
1274.45	8.4964
1274.54	8.4964
1291.56	14.9194
1298.22	0.0000
1312.09	7.4896
1325.50	7.5090
1325.50	7.5090
1332.49	13.9643
1333.61	9.6698
1360.21	8.6390
1362.66	0.0000
1365.15	8.6471
1368.21	14.0595
1368.53	0.0000
1376.25	16.2469
1384.27	11.1575
1394.10	14.9040
1395.20	14.9074
1407.95	12.1408
1434.06	11.2605
1436.60	8.4494
1457.56	0.0000
1460.81	8.4862
1489.15	5.6861
1509.49	6.6577
1596.49	7.7229
1620.62	4.8462
1678.03	0.0000
1691.02	5.8826
1691.02	5.8826
1706.46	0.0000
1750.46	0.0000
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1764.49	4.9594
1764.49	4.9594
1764.49	4.9594
1770.23	17.8694
1771.40	10.9221
1791.20	0.0000
1808.65	6.9902

1836.01

7.0193

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202001375

Total Uranium Activity	-3.6993E+00	ug/g
Total Uranium Counting Unc.	3.4359E+00	ug/g
Total Uranium Tpu	1.7530E-06	ug/g
Total Uranium Mda	2.8945E+00	ug/g

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*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
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*  BATCH ID      : 935341          SAMPLE ID   : G1202001375
*  ANALYST       : MXR1            DETECTOR    : GAM15
*  SAMPLE DATE   : 22-DEC-2009 00:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 31-DEC-2009 14:42:59.93  SAMPLE ALQT: 156.780 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.296E-01
GROSS GAMMA ERROR (pCi/GRAM )   : 1.239E-01
GROSS GAMMA MDA (pCi/GRAM )     : 1.969E-01
GROSS GAMMA DLC (pCi/GRAM )     : 9.280E-02

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VAX/VMS Nuclide Identification Report Generated 31-DEC-2009 17:32:29.79

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                   *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202001376.CNF;1
Sample date        : 16-DEC-2009 12:00:00 Acquisition date : 31-DEC-2009 15:32:03
Sample ID          : G1202001376 Sample quantity : 1.32930E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.68 0.0%
Energy tolerance  : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 5.00000
Batch ID          : 935341 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	46.47*	129	425	1.33	93.93	89	9	1.79E-02	33.1	
2	0	53.71	55	397	1.08	108.41	103	8	7.70E-03	63.7	
3	0	63.15*	100	467	1.21	127.29	124	7	1.38E-02	38.8	
4	2	74.76*	714	615	1.48	150.49	145	17	9.92E-02	7.6	3.50E+00
5	2	77.09*	934	452	1.13	155.15	145	17	1.30E-01	5.2	
6	3	87.25*	337	420	1.10	175.48	172	23	4.69E-02	11.1	3.20E+00
7	3	90.02	214	352	1.13	181.01	172	23	2.97E-02	16.0	
8	3	92.91*	341	379	1.55	186.80	172	23	4.74E-02	13.1	
9	0	128.46	127	330	1.73	257.90	253	10	1.76E-02	28.3	
10	0	185.90*	230	359	1.60	372.75	367	13	3.19E-02	18.6	
11	0	209.13	96	242	1.10	419.19	415	9	1.33E-02	31.0	
12	4	238.71*	1149	149	1.21	478.34	471	22	1.60E-01	3.5	1.27E+00
13	4	241.69	288	247	2.23	484.30	471	22	4.00E-02	17.0	
14	0	270.17	95	246	2.06	541.24	534	14	1.32E-02	36.9	
15	0	295.21*	324	163	1.26	591.33	584	13	4.49E-02	10.0	
16	0	299.78	56	128	0.91	600.46	598	8	7.72E-03	37.6	
17	0	328.10	74	151	1.48	657.08	652	10	1.03E-02	33.2	
18	0	338.25	248	156	1.37	677.37	671	11	3.45E-02	11.6	
19	0	351.89*	552	138	1.28	704.65	698	11	7.66E-02	6.0	
20	0	463.39	72	74	1.11	927.56	923	9	1.00E-02	24.6	
21	0	510.70*	85	131	1.21	1022.15	1016	13	1.18E-02	34.6	
22	0	583.17*	329	71	1.66	1167.02	1161	12	4.57E-02	7.7	
23	0	609.29*	423	105	1.65	1219.23	1213	15	5.88E-02	7.3	
24	0	727.48	95	45	1.25	1455.48	1448	14	1.31E-02	18.3	
25	0	860.18	56	39	1.75	1720.70	1714	12	7.78E-03	26.0	
26	0	910.93*	213	46	1.86	1822.12	1815	15	2.96E-02	9.2	
27	5	964.67	36	45	1.82	1929.50	1926	18	4.97E-03	33.9	3.03E+00
28	5	968.87	118	55	1.95	1937.90	1926	18	1.64E-02	16.0	
29	0	1120.29*	100	38	1.33	2240.47	2234	14	1.39E-02	17.0	
30	0	1460.56*	894	10	2.13	2920.27	2910	21	1.24E-01	3.5	
31	0	1509.51	18	14	1.09	3018.04	3012	11	2.50E-03	46.4	
32	0	1764.33*	67	3	1.94	3526.99	3519	15	9.34E-03	14.6	

Flag: "\*" = Peak area was modified by background subtraction

## VMS Nuclide Identification Report V3.1 Generated 31-DEC-2009 17:32:32

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202001376.CNF;1  
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8  
 Sample title : MXR1  
 Sample date : 16-DEC-2009 12:00:00 Acquisition date : 31-DEC-2009 15:32:03  
 Sample ID : G1202001376 Sample quantity : 132.93 GRAM  
 Sample type : SOLID Sample geometry :  
 Detector name : GAMMA5 Detector geometry: CAN  
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.68 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	*	2.359E+01	2.205E+00	5.957E-01	3.705E-02	39.596
AS-73	+	53.44	*	2.190E-01	2.796E-01	3.907E-01	2.941E-02	0.561
CD-109	+	88.03	*	3.335E+00	7.850E-01	1.042E+00	7.934E-02	3.200
SN-126	+	64.28		3.633E-01	2.869E-01	3.917E-01	5.838E-02	0.927
	+	86.94		1.363E+00	6.377E-01	4.806E-01	1.978E-01	2.835
	+	87.57	*	3.278E-01	7.715E-02	1.023E-01	7.788E-03	3.205
TL-208		277.35		3.398E-01	4.333E-01	7.040E-01	9.031E-02	0.483
	+	510.84		4.374E-01	3.063E-01	2.327E-01	2.445E-02	1.880
	+	583.14	*	4.890E-01	8.312E-02	6.099E-02	4.488E-03	8.017
	+	860.37		7.984E-01	4.229E-01	5.402E-01	5.482E-02	1.478
BI-210	+	46.50	*	1.182E+00	7.887E-01	8.455E-01	6.595E-02	1.398
PB-210	+	46.50	*	1.182E+00	7.887E-01	8.455E-01	6.595E-02	1.398
PO-210	+	46.50	*	1.182E+00	7.873E-01	8.455E-01	5.687E-02	1.398
BI-211		72.87		9.382E+00	2.534E+00	3.967E+00	3.123E-01	2.365
	+	351.07	*	3.425E+00	4.917E-01	3.361E-01	2.664E-02	10.189
PB-212	+	74.81		2.346E+00	4.556E-01	3.729E-01	4.546E-02	6.291
	+	77.11		1.829E+00	2.371E-01	2.226E-01	1.733E-02	8.214
	+	87.30		1.516E+00	3.877E-01	4.726E-01	5.942E-02	3.207
	+	238.63	*	1.524E+00	1.966E-01	8.826E-02	9.516E-03	17.271
	+	300.09		1.148E+00	8.714E-01	1.220E+00	1.297E-01	0.941
PO-212	+	74.81		2.346E+00	4.556E-01	3.729E-01	4.546E-02	6.291
	+	77.11		1.829E+00	2.371E-01	2.226E-01	1.733E-02	8.214
	+	87.30		1.516E+00	3.877E-01	4.726E-01	5.942E-02	3.207
		115.19		3.978E-01	3.487E+00	5.705E+00	7.259E-01	0.070
	+	238.63	*	1.524E+00	1.966E-01	8.826E-02	9.516E-03	17.271
	+	300.09		1.148E+00	8.714E-01	1.220E+00	1.297E-01	0.941
BI-214	+	609.31	*	1.189E+00	2.003E-01	1.251E-01	1.049E-02	9.509
	+	1120.29		1.488E+00	5.257E-01	5.204E-01	4.971E-02	2.859
	+	1764.49		1.395E+00	4.144E-01	4.021E-01	2.324E-02	3.470
PB-214	+	74.81		4.041E+00	7.505E-01	6.425E-01	6.925E-02	6.291
	+	77.11		3.135E+00	4.715E-01	3.817E-01	4.157E-02	8.214
	+	87.30		2.597E+00	6.432E-01	8.097E-01	8.776E-02	3.207
	+	241.98		2.297E+00	8.230E-01	5.315E-01	5.990E-02	4.321
	+	295.21		1.173E+00	2.683E-01	2.218E-01	2.425E-02	5.287



---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	351.92	*	1.191E+00	1.820E-01	1.137E-01	1.076E-02	10.483
	+	74.81		4.041E+00	7.505E-01	6.425E-01	6.925E-02	6.291
	+	77.11		3.135E+00	4.715E-01	3.817E-01	4.157E-02	8.214
	+	87.30		2.597E+00	6.432E-01	8.097E-01	8.776E-02	3.207
	+	241.98		2.297E+00	8.230E-01	5.315E-01	5.990E-02	4.321
	+	295.21		1.173E+00	2.683E-01	2.218E-01	2.425E-02	5.287
PO-216	+	351.92	*	1.191E+00	1.820E-01	1.137E-01	1.076E-02	10.483
	+	74.81		2.346E+00	4.556E-01	3.729E-01	4.546E-02	6.291
	+	77.11		1.829E+00	2.371E-01	2.226E-01	1.733E-02	8.214
	+	87.30		1.516E+00	3.877E-01	4.726E-01	5.942E-02	3.207
	+	238.63	*	1.524E+00	1.966E-01	8.826E-02	9.516E-03	17.271
	+	300.09		1.148E+00	8.714E-01	1.220E+00	1.297E-01	0.941
PO-218	+	74.81		4.041E+00	7.505E-01	6.425E-01	6.925E-02	6.291
	+	77.11		3.135E+00	4.715E-01	3.817E-01	4.157E-02	8.214
	+	87.30		2.597E+00	6.432E-01	8.097E-01	8.776E-02	3.207
	+	241.98		2.297E+00	8.230E-01	5.315E-01	5.990E-02	4.321
	+	295.21		1.173E+00	2.683E-01	2.218E-01	2.425E-02	5.287
	+	351.92	*	1.191E+00	1.820E-01	1.137E-01	1.076E-02	10.483
RA-224	+	240.98	*	4.355E+00	1.541E+00	1.004E+00	9.828E-02	4.336
RA-226	+	609.31	*	1.189E+00	2.003E-01	1.251E-01	1.049E-02	9.509
	+	1120.29		1.488E+00	5.257E-01	5.204E-01	4.971E-02	2.859
	+	1764.49		1.395E+00	4.144E-01	4.021E-01	2.324E-02	3.470
AC-228	+	338.32		1.693E+00	7.997E-01	4.044E-01	1.662E-01	4.186
	+	911.07	*	1.438E+00	3.189E-01	2.327E-01	2.880E-02	6.179
	+	969.11		1.407E+00	5.586E-01	3.756E-01	8.872E-02	3.745
RA-228	+	338.32		1.693E+00	7.997E-01	4.044E-01	1.662E-01	4.186
	+	911.07	*	1.438E+00	3.189E-01	2.327E-01	2.880E-02	6.179
	+	969.11		1.407E+00	5.586E-01	3.756E-01	8.872E-02	3.745
TH-228	+	74.81		2.381E+00	4.063E-01	3.785E-01	2.994E-02	6.290
	+	77.11		1.857E+00	2.407E-01	2.260E-01	1.759E-02	8.214
	+	87.30		1.539E+00	3.623E-01	4.798E-01	3.656E-02	3.207
	+	238.63	*	1.547E+00	1.996E-01	8.960E-02	9.660E-03	17.271
TH-230	+	300.09		1.165E+00	1.116E+00	1.239E+00	7.348E-01	0.941
	+	609.31	*	1.189E+00	2.003E-01	1.251E-01	1.048E-02	9.509
	+	1120.29		1.488E+00	5.257E-01	5.204E-01	4.970E-02	2.859
	+	1764.49		1.395E+00	4.143E-01	4.021E-01	2.324E-02	3.470
TH-232	+	338.32		1.693E+00	4.158E-01	4.044E-01	3.171E-02	4.186
	+	911.07	*	1.438E+00	3.189E-01	2.327E-01	2.880E-02	6.179
	+	969.11		1.407E+00	5.586E-01	3.756E-01	8.872E-02	3.745
TH-234	+	63.29	*	9.177E-01	7.303E-01	1.031E+00	1.832E-01	0.890
	+	92.38		2.300E+00	7.301E-01	7.098E-01	1.275E-01	3.240
U-234	+	609.31	*	1.189E+00	2.003E-01	1.251E-01	1.048E-02	9.509
	+	1120.29		1.488E+00	5.257E-01	5.204E-01	4.970E-02	2.859
	+	1764.49		1.395E+00	4.143E-01	4.021E-01	2.324E-02	3.470
NP-237	+	86.50	*	9.625E-01	3.013E-01	3.276E-01	7.208E-02	2.937
	+	95.87		-3.886E-01	9.507E-01	1.330E+00	3.293E-01	-0.292
U-238	+	63.29	*	9.177E-01	7.303E-01	1.031E+00	1.832E-01	0.890
	+	92.38		2.300E+00	6.320E-01	7.098E-01	5.939E-02	3.240
AM-243	+	74.67	*	3.803E-01	6.475E-02	6.043E-02	4.734E-03	6.292

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	86.72		3.609E+01	8.496E+00	1.229E+01	9.377E-01	2.936
		117.66		-5.738E-01	3.728E+00	6.031E+00	7.985E-01	-0.095
		142.18		2.626E+00	1.786E+01	2.908E+01	3.614E+00	0.090
ANH-511	+	511.00	*	9.447E-02	6.570E-02	5.027E-02	3.217E-03	1.879

---- 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	*	-1.506E-01	3.443E-01	5.436E-01	3.894E-02	-0.277
NA-22		1274.54	*	-3.039E-02	5.079E-02	7.674E-02	4.470E-03	-0.396
NA-24		1368.53	*	1.314E-01	5.079E-02	Half-Life too short		
AL-26		1129.67		3.414E-01	1.848E+00	3.006E+00	2.014E-01	0.114
		1808.65	*	2.017E-02	3.908E-02	6.969E-02	3.999E-03	0.289
TI-44		67.85		-3.237E-02	3.023E-02	4.178E-02	3.343E-03	-0.775
	+	78.38	*	3.375E-01	4.375E-02	6.185E-02	4.799E-03	5.456
SC-46		889.25	*	-1.177E-02	4.198E-02	6.752E-02	6.781E-03	-0.174
	+	1120.51		2.547E-01	8.842E-02	1.412E-01	9.717E-03	1.803
V-48		944.10		-5.020E-01	9.898E-01	1.548E+00	1.497E-01	-0.324
		983.50	*	-3.853E-02	7.818E-02	1.220E-01	1.118E-02	-0.316
		1312.09		-3.842E-02	8.270E-02	1.251E-01	7.252E-03	-0.307
CR-51		320.08	*	1.462E-01	3.818E-01	6.474E-01	5.726E-02	0.226
MN-52		744.21		-1.951E-02	2.729E-01	4.532E-01	3.519E-02	-0.043
		848.13		-1.447E+00	7.877E+00	1.286E+01	1.205E+00	-0.113
		935.52		3.075E-01	3.040E-01	5.413E-01	5.292E-02	0.568
		1246.25		-9.378E+00	8.098E+00	1.147E+01	6.668E-01	-0.818
		1333.61		-9.123E-01	5.607E+00	8.855E+00	5.125E-01	-0.103
		1434.06	*	-1.313E-02	2.232E-01	3.693E-01	2.163E-02	-0.036
MN-54		834.83	*	-3.192E-02	4.365E-02	6.797E-02	6.227E-03	-0.470
CO-56		846.75	*	-2.048E-02	4.571E-02	7.282E-02	6.810E-03	-0.281
		977.42		-4.327E-01	3.269E+00	5.186E+00	4.793E-01	-0.083
		1037.82		-2.982E-01	3.226E-01	4.716E-01	4.160E-02	-0.632
		1175.09		5.146E-01	2.446E+00	4.062E+00	2.357E-01	0.127
		1238.25		1.248E-01	1.074E-01	1.896E-01	1.172E-02	0.658
		1360.21		-2.062E-01	9.873E-01	1.539E+00	8.942E-02	-0.134
		1771.40		-9.519E-01	4.081E-01	4.415E-01	2.550E-02	-2.156
CO-57		122.06	*	-1.222E-03	2.638E-02	4.081E-02	5.790E-03	-0.030
		136.48		2.745E-02	2.015E-01	3.285E-01	4.400E-02	0.084
CO-58		810.76	*	6.597E-03	4.259E-02	7.177E-02	6.316E-03	0.092
FE-59		142.65		-5.963E-02	2.736E+00	4.424E+00	5.478E-01	-0.013
		192.34		-6.894E-01	1.154E+00	1.543E+00	2.213E-01	-0.447
		1099.22	*	-3.720E-02	9.716E-02	1.522E-01	1.232E-02	-0.244
		1291.56		1.585E-02	1.361E-01	2.231E-01	1.657E-02	0.071
CO-60		1173.22		-1.263E-02	5.059E-02	8.029E-02	4.657E-03	-0.157
		1332.49	*	9.381E-03	4.187E-02	6.958E-02	4.026E-03	0.135
ZN-65		1115.52	*	-1.689E-02	1.257E-01	1.727E-01	1.206E-02	-0.098
GE-68		1077.35	*	2.401E-01	1.385E+00	2.304E+00	1.770E-01	0.104
AS-74		595.88	*	-3.136E-02	1.036E-01	1.632E-01	1.073E-02	-0.192
		634.78		3.013E-01	3.926E-01	6.722E-01	4.431E-02	0.448

----- 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			-1.614E+00	2.906E+00	4.108E+00	4.098E-01	-0.393
	96.73			-5.060E-01	7.662E-01	1.057E+00	1.477E-01	-0.479
	121.11			2.625E-02	1.350E-01	2.212E-01	3.476E-02	0.119
	136.00			-7.595E-03	3.820E-02	6.137E-02	8.003E-03	-0.124
	198.60			-3.860E-01	2.012E+00	3.145E+00	3.399E-01	-0.123
	264.65	*		3.840E-03	5.157E-02	7.551E-02	7.209E-03	0.051
	279.53			1.144E-01	1.169E-01	2.012E-01	1.926E-02	0.568
	303.91			-1.302E+00	2.486E+00	3.447E+00	3.996E-01	-0.378
	400.65			-1.381E-01	2.856E-01	4.558E-01	4.171E-02	-0.303
	87.88			7.269E+02	1.711E+02	2.977E+02	2.266E+01	2.442
BR-77	200.40			7.264E+00	1.762E+02	2.823E+02	2.819E+01	0.026
	239.00			2.470E+02	2.987E+01	3.856E+01	3.780E+00	6.404
	249.79			1.760E+01	7.030E+01	1.130E+02	1.096E+01	0.156
	281.68			-1.078E+02	9.372E+01	1.465E+02	1.353E+01	-0.736
	297.23			3.518E+02	9.496E+01	1.282E+02	1.145E+01	2.744
	303.76			-1.180E+02	2.132E+02	2.951E+02	2.591E+01	-0.400
	439.47			-6.549E+01	1.579E+02	2.513E+02	1.532E+01	-0.261
	484.57			-1.305E+02	2.345E+02	3.653E+02	2.303E+01	-0.357
	520.65	*		-7.926E+00	1.176E+01	1.811E+01	1.164E+00	-0.438
	574.64			-1.943E+02	2.424E+02	3.666E+02	2.402E+01	-0.530
SR-82	578.91			3.049E+01	1.071E+02	1.542E+02	1.011E+01	0.198
	585.48			1.460E+03	2.960E+02	5.366E+02	3.524E+01	2.721
	755.35			8.012E+01	1.890E+02	3.256E+02	2.582E+01	0.246
	817.79			-8.373E+01	1.519E+02	2.397E+02	2.131E+01	-0.349
	698.33			9.465E+00	4.000E+01	6.811E+01	4.832E+00	0.139
	776.49	*		-1.453E-01	4.290E-01	6.948E-01	5.733E-02	-0.209
	1395.20			-9.669E+00	1.159E+01	1.712E+01	9.988E-01	-0.565
	520.41	*		-5.513E-02	7.644E-02	1.171E-01	7.531E-03	-0.471
	529.64			-4.235E-02	1.218E-01	1.927E-01	1.244E-02	-0.220
	552.65			-3.051E-03	2.123E-01	3.436E-01	2.238E-02	-0.009
RB-84	881.50	*		3.632E-02	8.104E-02	1.364E-01	1.352E-02	0.266
KR-85	513.99	*		2.029E+01	9.132E+00	1.527E+01	9.786E-01	1.329
SR-85	513.99	*		1.041E-01	4.684E-02	7.830E-02	5.019E-03	1.329
RB-86	1076.63	*		-1.319E-01	9.035E-01	1.457E+00	1.121E-01	-0.091
Y-88	898.02			4.076E-02	4.626E-02	8.217E-02	8.402E-03	0.496
	1836.01	*		3.027E-05	3.532E-02	5.804E-02	3.321E-03	0.001
ZR-88	392.90	*		-2.723E-02	3.357E-02	5.244E-02	3.054E-03	-0.519
Y-91	1204.90	*		1.052E+00	2.365E+01	3.857E+01	2.241E+00	0.027
NB-94	702.63	*		2.278E-02	3.929E-02	6.837E-02	4.892E-03	0.333
	871.10			4.531E-03	3.561E-02	5.969E-02	5.818E-03	0.076
NB-95	765.79	*		1.214E-02	4.704E-02	7.995E-02	6.467E-03	0.152
NB-95M	235.69	*		2.795E-01	1.497E-01	2.370E-01	2.592E-02	1.179
ZR-95	724.18			3.016E-02	1.237E-01	1.830E-01	1.522E-02	0.165
	756.15	*		7.521E-02	8.136E-02	1.448E-01	1.286E-02	0.519
NB-97	657.90	*		-3.758E-02	8.136E-02	Half-Life	too short	
	1024.50			4.374E+00	8.136E-02	Half-Life	too short	
ZR-97	254.15			-1.629E+00	8.136E-02	Half-Life	too short	
	355.39			-5.221E-01	8.136E-02	Half-Life	too short	
	507.63	*		5.075E+00	8.136E-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
	602.52			-1.287E+00	8.136E-02	Half-Life	too short	
	1021.30			-1.352E+01	8.136E-02	Half-Life	too short	
	1147.95			1.307E+00	8.136E-02	Half-Life	too short	
	1362.66			1.863E+00	8.136E-02	Half-Life	too short	
	1750.46			-3.852E+00	8.136E-02	Half-Life	too short	
MO-99	140.51			-5.554E+00	2.694E+01	4.245E+01	1.238E+01	-0.131
	181.06			-5.686E+00	2.026E+01	2.782E+01	5.275E+00	-0.204
	366.43			-3.309E+01	9.281E+01	1.501E+02	1.030E+01	-0.221
	739.58	*		1.128E+01	1.360E+01	2.396E+01	3.517E+00	0.471
	778.00			-2.326E+01	3.831E+01	6.049E+01	5.006E+00	-0.385
TC-99M	140.51	*		-8.711E+09	3.831E+01	Half-Life	too short	
RH-101	127.23	+		7.668E-02	4.470E-02	5.483E-02	7.548E-03	1.399
	198.01	*		-6.510E-03	3.692E-02	5.777E-02	5.769E-03	-0.113
	325.23			8.655E-02	2.615E-01	3.866E-01	3.182E-02	0.224
RH-102	418.52			4.954E-02	3.316E-01	5.343E-01	3.195E-02	0.093
	475.06	*		1.597E-02	3.080E-02	5.216E-02	3.267E-03	0.306
	631.29			1.203E-02	5.980E-02	9.793E-02	6.455E-03	0.123
	697.49			2.440E-02	8.686E-02	1.484E-01	1.051E-02	0.164
	766.84			-2.916E-03	1.214E-01	2.020E-01	1.637E-02	-0.014
	1046.59			-5.292E-02	1.378E-01	2.126E-01	1.745E-02	-0.249
	1112.84			1.500E-01	2.992E-01	4.466E-01	3.138E-02	0.336
RU-103	497.08	*		-1.124E-02	4.442E-02	7.073E-02	9.129E-03	-0.159
	610.33	+		1.285E+01	2.759E+00	3.172E+00	4.990E-01	4.052
RH-106	511.85	+		4.719E-01	3.282E-01	4.805E-01	3.077E-02	0.982
	621.84	*		2.733E-01	3.652E-01	6.212E-01	7.546E-02	0.440
	1050.47			9.959E-01	2.624E+00	4.454E+00	3.626E-01	0.224
RU-106	511.85	+		4.719E-01	3.282E-01	4.805E-01	3.077E-02	0.982
	621.84	*		2.733E-01	3.641E-01	6.212E-01	4.095E-02	0.440
	1050.47			9.959E-01	2.624E+00	4.454E+00	3.626E-01	0.224
AG-108M	433.93	*		-2.205E-02	3.539E-02	5.550E-02	3.631E-03	-0.397
	614.37			9.816E-03	4.667E-02	6.648E-02	4.671E-03	0.148
	722.95			-3.176E-02	5.055E-02	6.726E-02	5.272E-03	-0.472
AG-110M	657.75	*		-1.493E-02	4.065E-02	6.324E-02	4.371E-03	-0.236
	677.61			-5.581E-02	3.275E-01	5.422E-01	3.852E-02	-0.103
	706.67			7.166E-03	2.325E-01	3.903E-01	2.926E-02	0.018
	763.93			-1.833E-01	1.921E-01	2.960E-01	2.463E-02	-0.619
	884.67			2.941E-02	5.717E-02	9.871E-02	1.008E-02	0.298
	937.48			-9.524E-02	1.312E-01	2.014E-01	2.020E-02	-0.473
	1384.27			-4.228E-02	1.834E-01	2.985E-01	1.845E-02	-0.142
IN-111	171.28			2.823E-01	1.011E+00	1.646E+00	1.636E-01	0.172
	245.39	*		6.508E-01	1.165E+00	1.765E+00	1.720E-01	0.369
IN-113M	391.69	*		-3.004E-02	4.866E-02	7.706E-02	4.780E-03	-0.390
SN-113	391.69	*		-3.004E-02	4.866E-02	7.706E-02	4.780E-03	-0.390
IN-114M	190.27	*		-3.203E-02	2.124E-01	2.938E-01	2.933E-02	-0.109
CD-115	260.90			-4.794E+01	1.356E+02	2.232E+02	2.134E+01	-0.215
	492.35			-1.625E+01	4.005E+01	6.329E+01	4.009E+00	-0.257
	527.90	*		-6.513E+00	1.275E+01	1.992E+01	1.285E+00	-0.327
SN-117M	156.02			-1.362E+00	2.422E+00	3.808E+00	4.199E-01	-0.358
	158.56	*		9.855E-03	5.808E-02	9.432E-02	1.014E-02	0.104

## ---- 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	*		1.114E+00	2.461E+00	4.112E+00	2.687E-01	0.271
	692.80			-4.364E+01	5.364E+01	8.100E+01	5.682E+00	-0.539
I-123	159.00	*		4.731E+00	5.364E+01	Half-Life	too short	
	528.96			-4.593E+02	5.364E+01	Half-Life	too short	
TE-123M	159.00	*		2.250E-02	2.989E-02	4.956E-02	5.325E-03	0.454
I-124	602.71	*		2.729E-02	8.849E-01	1.235E+00	8.131E-02	0.022
	722.78			-1.896E+00	5.109E+00	7.027E+00	5.233E-01	-0.270
	1325.50			-1.219E+01	3.981E+01	6.178E+01	3.577E+00	-0.197
	1376.25			2.184E+01	3.059E+01	5.553E+01	3.233E+00	0.393
+	1509.49			2.220E+01	2.065E+01	3.520E+01	2.070E+00	0.631
	1691.02			-1.502E+00	4.373E+00	4.775E+00	2.787E-01	-0.314
SB-124	602.71			1.579E-03	5.119E-02	7.144E-02	4.705E-03	0.022
	645.85			-2.352E-01	5.502E-01	8.495E-01	6.160E-02	-0.277
	709.31			-1.537E+00	3.164E+00	5.102E+00	3.699E-01	-0.301
	713.82			-1.301E-01	1.822E+00	3.033E+00	3.379E-01	-0.043
	722.78			-1.590E-01	4.284E-01	5.893E-01	4.515E-02	-0.270
+	968.20			1.449E+01	4.819E+00	7.575E+00	7.095E-01	1.913
	1045.16			-2.013E+00	2.989E+00	4.472E+00	3.680E-01	-0.450
	1325.50			-1.092E+00	3.566E+00	5.533E+00	3.204E-01	-0.197
	1368.21			2.738E-01	1.820E+00	2.997E+00	3.561E-01	0.091
	1436.60			-9.914E-01	3.745E+00	5.902E+00	3.457E-01	-0.168
	1691.02	*		-2.971E-02	8.649E-02	9.446E-02	5.978E-03	-0.314
SB-125	427.89	*		-1.762E-02	1.008E-01	1.634E-01	1.025E-02	-0.108
+	463.38			7.157E-01	3.554E-01	5.869E-01	4.179E-02	1.220
	600.56			-4.101E-02	2.060E-01	3.274E-01	2.421E-02	-0.125
	635.90			1.602E-01	3.021E-01	5.076E-01	3.796E-02	0.316
TE-125M	109.28	*		-1.575E+00	9.250E+00	1.481E+01	1.903E+00	-0.106
I-126	388.63			2.136E-01	2.263E-01	3.927E-01	2.337E-02	0.544
	666.33	*		-9.923E-02	2.050E-01	3.150E-01	2.092E-02	-0.315
	753.82			-2.556E-01	1.655E+00	2.727E+00	2.157E-01	-0.094
SB-126	223.80			-1.996E+00	4.058E+00	6.683E+00	6.622E-01	-0.299
	278.60			4.104E+00	2.694E+00	4.716E+00	4.381E-01	0.870
+	296.50			1.170E+01	2.574E+00	3.502E+00	3.132E-01	3.340
	414.70			-7.171E-02	8.259E-02	1.279E-01	7.620E-03	-0.561
	415.30			-8.456E+00	7.015E+00	1.060E+01	6.320E-01	-0.798
	555.20			-1.070E+00	4.398E+00	6.986E+00	4.553E-01	-0.153
	573.80			-1.157E+00	1.231E+00	1.842E+00	1.207E-01	-0.628
	593.00			3.899E-01	1.025E+00	1.706E+00	1.122E-01	0.229
	656.30			-1.243E+00	3.880E+00	6.061E+00	3.988E-01	-0.205
	666.33			-4.147E-02	8.569E-02	1.317E-01	8.743E-03	-0.315
	675.00			-9.919E-01	2.111E+00	3.409E+00	2.305E-01	-0.291
	695.00			-3.827E-02	9.646E-02	1.511E-01	1.065E-02	-0.253
	697.00			1.152E-01	3.103E-01	5.334E-01	3.773E-02	0.216
	720.50	*		5.507E-02	1.837E-01	2.739E-01	2.030E-02	0.201
	856.80			-3.252E-02	6.218E-01	8.808E-01	8.380E-02	-0.037
	989.30			8.493E-02	1.392E+00	2.302E+00	2.090E-01	0.037
	1034.80			-6.295E+00	9.341E+00	1.416E+01	1.189E+00	-0.445
	1213.00			3.017E+00	5.652E+00	9.592E+00	5.575E-01	0.315
SB-127	61.10			3.001E+01	2.888E+01	4.351E+01	4.731E+00	0.690

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		252.40		2.871E+00	4.625E+00	7.707E+00	3.257E+00	0.373
		290.80		9.133E+00	2.364E+01	3.525E+01	4.059E+00	0.259
		411.60		1.085E+01	1.340E+01	2.295E+01	3.314E+00	0.473
		444.90		1.271E+01	1.117E+01	1.948E+01	2.137E+00	0.653
		473.00		-4.229E-01	1.795E+00	2.879E+00	3.290E-01	-0.147
		543.00		-3.057E+00	1.834E+01	2.935E+01	3.885E+00	-0.104
		603.60		-6.964E+00	1.597E+01	2.114E+01	2.369E+00	-0.329
		685.20	*	2.352E-01	1.523E+00	2.584E+00	2.625E-01	0.091
		698.50		4.462E+00	1.793E+01	3.053E+01	4.594E+00	0.146
		722.20		-2.965E-01	3.605E+01	5.196E+01	5.344E+00	-0.006
		783.80		5.187E+00	4.037E+00	7.310E+00	8.953E-01	0.710
		57.60		-1.564E+00	2.815E+00	3.711E+00	2.988E-01	-0.422
		145.22		4.695E-01	7.076E-01	1.172E+00	1.422E-01	0.401
		172.10		1.990E-02	1.202E-01	1.947E-01	1.937E-02	0.102
I-131		202.84	*	-1.144E-02	5.162E-02	7.866E-02	7.851E-03	-0.145
		374.96		-1.343E-01	2.170E-01	3.446E-01	2.249E-02	-0.390
		80.18		-5.238E+00	3.881E+00	5.248E+00	4.088E-01	-0.998
		284.30		-1.369E+00	1.490E+00	2.356E+00	2.264E-01	-0.581
TE-132		364.48	*	6.490E-02	1.248E-01	2.123E-01	1.595E-02	0.306
		636.97		-1.470E+00	1.839E+00	2.753E+00	1.985E-01	-0.534
		722.89		-5.437E+00	8.530E+00	1.133E+01	8.516E-01	-0.480
		49.72		-2.674E+00	6.168E+00	6.276E+00	6.082E-01	-0.426
BA-133		111.76		-1.227E+01	2.954E+01	4.734E+01	6.495E+00	-0.259
		116.30		8.725E+00	2.750E+01	4.529E+01	6.587E+00	0.193
		228.16	*	-5.069E-02	6.968E-01	1.169E+00	1.923E-01	-0.043
	+	53.15		9.272E-01	1.183E+00	1.641E+00	1.230E-01	0.565
I-133		79.62		1.764E+00	1.103E+00	1.649E+00	2.431E-01	1.070
		81.00		-1.578E-01	8.806E-02	1.125E-01	1.732E-02	-1.403
		276.40		6.765E-01	4.531E-01	7.056E-01	1.050E-01	0.959
		302.84		-4.649E-02	1.698E-01	2.405E-01	3.224E-02	-0.193
CS-134		356.01	*	-2.397E-04	5.069E-02	7.271E-02	8.979E-03	-0.003
		383.85		-1.929E-01	3.324E-01	5.279E-01	5.842E-02	-0.365
	+	510.53		9.847E-01	3.324E-01	Half-Life	too short	
		529.87	*	-1.217E-03	3.324E-01	Half-Life	too short	
CS-135		706.58		4.498E-02	3.324E-01	Half-Life	too short	
		856.28		-1.165E-01	3.324E-01	Half-Life	too short	
		875.33		-1.100E-01	3.324E-01	Half-Life	too short	
		1236.41		7.670E-01	3.324E-01	Half-Life	too short	
CS-134		1298.22		-2.222E-01	3.324E-01	Half-Life	too short	
		475.35		5.264E-01	2.062E+00	3.427E+00	2.147E-01	0.154
		563.23		3.060E-01	4.133E-01	7.048E-01	4.681E-02	0.434
		569.32		2.734E-01	2.262E-01	3.970E-01	2.659E-02	0.689
CS-135		604.70		9.252E-03	4.310E-02	6.136E-02	4.058E-03	0.151
		795.84	*	8.809E-02	5.100E-02	9.525E-02	8.203E-03	0.925
		801.93		1.127E-01	3.996E-01	6.817E-01	5.925E-02	0.165
		1038.57		-3.507E+00	4.083E+00	6.037E+00	5.033E-01	-0.581
CS-135		1167.94		1.460E+00	2.628E+00	4.516E+00	2.670E-01	0.323
		1365.15		-3.841E-01	1.252E+00	1.919E+00	1.225E-01	-0.200
	*	268.24		1.731E-01	1.921E-01	2.944E-01	3.149E-02	0.588

## ---- 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			1.698E+10	1.921E-01	Half-Life	too short	
	417.63			-2.147E+09	1.921E-01	Half-Life	too short	
	546.56			-1.064E+10	1.921E-01	Half-Life	too short	
	836.80			-2.013E+08	1.921E-01	Half-Life	too short	
	1038.76			-1.827E+10	1.921E-01	Half-Life	too short	
	1124.00			4.626E+10	1.921E-01	Half-Life	too short	
	1131.51			7.523E+09	1.921E-01	Half-Life	too short	
	1260.41	*		-1.333E+09	1.921E-01	Half-Life	too short	
	1457.56			7.162E+11	1.921E-01	Half-Life	too short	
	1678.03			3.074E+09	1.921E-01	Half-Life	too short	
	1706.46			2.227E+10	1.921E-01	Half-Life	too short	
	1791.20			1.116E+10	1.921E-01	Half-Life	too short	
CS-136	66.91			-4.680E-01	4.996E-01	6.890E-01	1.041E-01	-0.679
	86.29		+	4.284E+00	1.088E+00	1.717E+00	2.096E-01	2.496
	153.22			7.245E-01	6.952E-01	1.161E+00	1.406E-01	0.624
	163.89			1.155E-01	1.115E+00	1.804E+00	1.993E-01	0.064
	176.55			-7.755E-02	3.764E-01	5.989E-01	6.225E-02	-0.129
	273.65			-1.136E+00	5.801E-01	7.159E-01	7.086E-02	-1.587
	340.57			5.835E-01	1.735E-01	2.926E-01	2.354E-02	1.994
	818.51			1.894E-03	8.126E-02	1.353E-01	1.206E-02	0.014
	1048.07	*		4.085E-02	1.225E-01	2.071E-01	1.774E-02	0.197
	1235.34			2.690E-01	6.830E-01	1.144E+00	1.143E-01	0.235
	661.65	*		3.760E-02	3.978E-02	6.875E-02	4.521E-03	0.547
	661.65	*		3.974E-02	4.206E-02	7.267E-02	4.795E-03	0.547
	165.85	*		3.609E-04	3.029E-02	4.881E-02	4.846E-03	0.007
BA-137M								
CS-137								
CE-139								
BA-140	162.64			-2.346E-01	8.037E-01	1.278E+00	1.370E-01	-0.184
	304.84			1.871E-01	1.493E+00	2.180E+00	6.118E-01	0.086
LA-140	423.70			-9.151E-01	2.207E+00	3.499E+00	1.113E+00	-0.262
	537.32	*		-1.599E-01	2.979E-01	4.559E-01	1.489E-01	-0.351
	328.77		+	6.239E-01	4.182E-01	5.782E-01	4.995E-02	1.079
	432.53			2.358E-01	2.224E+00	3.673E+00	2.440E-01	0.064
	487.03			2.016E-03	1.415E-01	2.311E-01	1.623E-02	0.009
	751.79			-1.536E+00	1.853E+00	2.865E+00	2.543E-01	-0.536
	815.85			8.795E-03	3.517E-01	5.858E-01	5.758E-02	0.015
	867.82			-7.688E-02	1.667E+00	2.623E+00	2.649E-01	-0.029
	919.63			-5.111E-01	3.303E+00	5.114E+00	6.012E-01	-0.100
	925.24			1.575E+00	1.353E+00	2.438E+00	2.528E-01	0.646
	1596.49	*		-5.938E-02	8.831E-02	1.298E-01	7.631E-03	-0.457
	145.44	*		5.104E-02	6.424E-02	1.068E-01	1.305E-02	0.478
	57.37			-3.682E-04	6.424E-02	Half-Life	too short	
CE-141	231.56			-5.763E-05	6.424E-02	Half-Life	too short	
	293.26	*		6.120E-04	6.424E-02	Half-Life	too short	
	350.59		+	2.757E-02	6.424E-02	Half-Life	too short	
	490.36			1.576E-03	6.424E-02	Half-Life	too short	
	664.57			-4.148E-04	6.424E-02	Half-Life	too short	
	721.93			2.117E-05	6.424E-02	Half-Life	too short	
	80.11			-2.126E+00	1.785E+00	2.436E+00	1.882E-01	-0.873
CE-144	133.54	*		-7.501E-02	2.260E-01	3.134E-01	5.803E-02	-0.239
	476.78			1.395E-02	7.226E-02	1.196E-01	8.781E-03	0.117
PM-144								

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	618.01			-3.195E-03	3.872E-02	5.822E-02	4.017E-03	-0.055
	696.49	*		2.500E-02	3.958E-02	6.918E-02	4.892E-03	0.361
	778.57			-7.475E-01	2.504E+00	4.065E+00	3.368E-01	-0.184
PR-144	696.49	*		1.694E+00	2.682E+00	4.688E+00	3.313E-01	0.361
	1489.15			-5.114E+00	1.116E+01	1.708E+01	1.004E+00	-0.299
PM-146	453.90	*		1.810E-03	4.766E-02	7.820E-02	6.939E-03	0.023
	633.02			7.089E-01	1.563E+00	2.576E+00	9.520E-01	0.275
	735.90			-3.479E-02	1.692E-01	2.714E-01	7.686E-02	-0.128
	747.13			-2.309E-02	9.700E-02	1.586E-01	2.150E-02	-0.146
ND-147	91.11	+		7.212E-01	2.393E-01	4.570E-01	4.065E-02	1.578
	319.41			9.319E-01	3.440E+00	5.800E+00	4.867E-01	0.161
	439.89			-1.366E+00	6.298E+00	1.017E+01	6.202E-01	-0.134
	531.02	*		4.504E-01	6.226E-01	1.061E+00	1.466E-01	0.424
PM-149	285.90	*		-2.522E+01	9.104E+01	1.496E+02	2.371E+01	-0.169
EU-152	121.78			-1.168E-02	7.686E-02	1.183E-01	1.770E-02	-0.099
	244.69			5.986E-01	3.733E-01	5.947E-01	5.798E-02	1.007
	344.27	*		1.534E-03	1.164E-01	1.675E-01	1.378E-02	0.009
	443.98			1.452E-01	1.081E+00	1.787E+00	1.093E-01	0.081
	778.89			-1.285E-01	2.937E-01	4.710E-01	3.903E-02	-0.273
	867.32			3.713E-01	9.845E-01	1.574E+00	1.524E-01	0.236
	964.01	+		4.900E-01	3.356E-01	6.741E-01	6.351E-02	0.727
	1085.78			2.183E-01	4.402E-01	7.546E-01	5.682E-02	0.289
	1112.02			2.235E-01	3.888E-01	6.253E-01	4.404E-02	0.357
	1407.95			2.414E-01	2.255E-01	4.181E-01	2.443E-02	0.577
GD-153	69.67			3.192E-01	1.111E+00	1.628E+00	1.295E-01	0.196
	83.37			-2.124E+00	1.573E+01	1.895E+01	1.454E+00	-0.112
	97.43	*		-3.635E-02	7.818E-02	1.093E-01	1.013E-02	-0.333
	103.18			-1.281E-01	9.763E-02	1.500E-01	1.551E-02	-0.854
EU-154	123.07			-3.942E-03	5.935E-02	8.351E-02	1.331E-02	-0.047
	247.94			-4.643E-01	4.242E-01	5.666E-01	6.980E-02	-0.819
	591.81			-1.705E-01	6.846E-01	1.082E+00	1.110E-01	-0.158
	723.30			-9.986E-02	2.113E-01	2.873E-01	2.439E-02	-0.348
	756.87			6.871E-01	9.240E-01	1.620E+00	1.864E-01	0.424
	873.19			-2.535E-01	2.985E-01	4.460E-01	5.836E-02	-0.568
	996.32			-1.919E-01	3.931E-01	6.109E-01	1.096E-01	-0.314
	1004.76			1.341E-02	2.352E-01	3.884E-01	4.590E-02	0.035
	1274.45	*		-8.362E-02	1.421E-01	2.148E-01	2.008E-02	-0.389
EU-155	48.70			8.771E-01	6.829E-01	7.998E-01	5.574E-02	1.097
	60.01			2.132E+00	2.285E+00	3.447E+00	2.854E-01	0.619
	86.54	+		3.947E-01	9.305E-02	1.572E-01	1.215E-02	2.510
	105.31	*		-8.795E-03	9.886E-02	1.609E-01	1.743E-02	-0.055
TB-160	86.79	+		1.055E+00	2.483E-01	4.178E-01	3.186E-02	2.524
	197.04			3.509E-01	6.227E-01	1.005E+00	1.004E-01	0.349
	215.65			-1.808E-01	7.753E-01	1.261E+00	1.254E-01	-0.143
	298.57	+		1.671E-01	1.265E-01	2.091E-01	1.861E-02	0.799
	879.36	*		7.091E-02	1.546E-01	2.603E-01	2.572E-02	0.272
	962.29			9.024E-01	7.376E-01	1.176E+00	1.111E-01	0.767
	966.15	+		3.365E-01	2.305E-01	5.907E-01	5.549E-02	0.570
	1177.93			1.961E-01	3.846E-01	6.572E-01	3.813E-02	0.298



## ---- Non-Identified Nuclides ----

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HO-166M	1271.85			2.529E-01	7.436E-01	1.251E+00	7.270E-02	0.202
	80.57			-4.770E-01	2.355E-01	3.063E-01	2.365E-02	-1.557
	184.41		+	1.594E-01	6.150E-02	6.827E-02	6.812E-03	2.335
	280.46			-5.254E-02	8.846E-02	1.432E-01	1.326E-02	-0.367
	410.95			2.772E-01	2.684E-01	4.675E-01	2.775E-02	0.593
	711.68		*	-2.964E-03	6.682E-02	1.115E-01	8.122E-03	-0.027
TM-171	752.31			-1.750E-01	2.806E-01	4.415E-01	3.481E-02	-0.396
	810.29			-1.135E-02	6.467E-02	1.058E-01	9.287E-03	-0.107
	51.35			1.360E+00	9.610E+00	1.197E+01	8.706E-01	0.114
	52.39		+	3.863E+00	4.930E+00	6.903E+00	5.108E-01	0.560
	59.40			2.176E+01	1.182E+01	1.836E+01	1.522E+00	1.185
	66.72		*	-1.556E+01	1.790E+01	2.495E+01	2.005E+00	-0.624
LU-176	88.36		+	7.774E-01	1.830E-01	3.290E-01	2.524E-02	2.363
	201.83			-1.752E-02	3.074E-02	4.777E-02	4.768E-03	-0.367
	306.84		*	2.412E-02	2.638E-02	4.484E-02	3.905E-03	0.538
	401.10			-3.623E+00	7.432E+00	1.186E+01	6.969E-01	-0.305
LU-177	112.95			-5.662E-01	1.604E+00	2.578E+00	3.162E-01	-0.220
	208.36		*	2.252E+00	1.414E+00	2.013E+00	2.007E-01	1.119
LU-177M	52.97		+	4.144E-01	5.289E-01	7.309E-01	5.459E-02	0.567
	54.07		+	2.348E-01	2.997E-01	4.185E-01	3.182E-02	0.561
HF-181	61.30			8.906E-01	7.583E-01	1.149E+00	9.453E-02	0.775
	121.62			-2.596E-02	3.807E-01	6.085E-01	8.571E-02	-0.043
	147.16			-2.581E-01	6.861E-01	1.091E+00	1.303E-01	-0.236
	171.86			1.844E-01	4.797E-01	7.848E-01	7.804E-02	0.235
	218.09			8.300E-02	8.461E-01	1.432E+00	1.423E-01	0.058
	268.79		+	1.933E+00	1.438E+00	1.521E+00	1.437E-01	1.271
	319.02			4.127E-02	2.699E-01	4.523E-01	3.800E-02	0.091
	367.43			-1.116E+00	1.007E+00	1.548E+00	1.056E-01	-0.721
	413.65		*	-1.712E-01	1.961E-01	3.041E-01	1.810E-02	-0.563
	56.28			-5.724E-01	3.765E-01	5.072E-01	3.998E-02	-1.128
	57.53			-1.443E-01	2.357E-01	3.098E-01	2.491E-02	-0.466
	65.20			7.020E-01	5.579E-01	8.445E-01	6.827E-02	0.831
	133.02			-4.681E-03	7.125E-02	1.006E-01	1.335E-02	-0.047
	136.25			-4.098E-02	4.446E-01	7.177E-01	9.314E-02	-0.057
W-181	345.85			-9.704E-02	2.305E-01	3.194E-01	2.426E-02	-0.304
	482.03		*	-9.857E-03	4.406E-02	7.065E-02	4.447E-03	-0.140
	56.28			-2.237E-01	1.473E-01	1.985E-01	1.565E-02	-1.127
	57.53			-5.665E-02	9.230E-02	1.213E-01	9.754E-03	-0.467
TA-182	65.20		*	2.727E-01	2.168E-01	3.281E-01	2.652E-02	0.831
	67.75			-6.561E-02	6.767E-02	9.965E-02	7.977E-03	-0.658
	100.10			2.980E-01	1.706E-01	2.746E-01	2.681E-02	1.085
	152.43			2.262E-01	3.528E-01	5.832E-01	6.652E-02	0.388
RE-183	222.10			2.340E-03	3.483E-01	5.870E-01	5.822E-02	0.004
	1001.68			1.480E+00	2.141E+00	3.746E+00	3.335E-01	0.395
	1121.28		+	7.035E-01	2.442E-01	3.805E-01	2.612E-02	1.849
	1189.05			-5.475E-03	3.474E-01	5.639E-01	3.274E-02	-0.010
	1221.42		*	8.731E-02	2.249E-01	3.777E-01	2.196E-02	0.231
	1230.97			-2.405E-01	5.304E-01	8.233E-01	4.787E-02	-0.292
	57.98			4.832E-02	9.040E-02	1.259E-01	1.020E-02	0.384

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RE-184		59.32		1.018E-01	4.820E-02	7.545E-02	6.245E-03	1.349
		67.20		-1.404E-01	1.277E-01	1.759E-01	1.411E-02	-0.798
		162.32	*	2.819E-02	1.144E-01	1.863E-01	1.925E-02	0.151
	+	208.81		2.019E+00	1.268E+00	1.800E+00	1.794E-01	1.122
		291.72		-2.563E-01	1.069E+00	1.521E+00	1.376E-01	-0.168
		57.98		1.780E-01	3.331E-01	4.639E-01	3.758E-02	0.384
		59.32		3.748E-01	1.774E-01	2.778E-01	2.299E-02	1.349
		67.20		-5.170E-01	4.702E-01	6.478E-01	5.196E-02	-0.798
		161.27		1.809E-02	3.748E-01	6.054E-01	6.327E-02	0.030
		216.55		1.179E-02	2.691E-01	4.546E-01	4.520E-02	0.026
		252.85	*	2.227E-01	2.395E-01	4.171E-01	4.030E-02	0.534
		318.01		-3.047E-02	4.666E-01	7.729E-01	6.514E-02	-0.039
		792.07		5.372E-01	1.122E+00	1.936E+00	1.644E-01	0.278
		903.28		-9.263E-01	1.337E+00	1.715E+00	1.738E-01	-0.540
OS-185		920.93		-4.980E-01	5.410E-01	8.134E-01	8.088E-02	-0.612
		59.72		1.295E-01	1.345E-01	2.032E-01	1.685E-02	0.637
		61.14		9.058E-02	8.182E-02	1.238E-01	1.019E-02	0.731
		69.30		4.362E-02	1.969E-01	2.879E-01	2.292E-02	0.152
		592.07		-5.284E-01	2.808E+00	4.463E+00	2.934E-01	-0.118
		646.12	*	-2.208E-02	4.664E-02	7.168E-02	4.722E-03	-0.308
		717.42		2.245E-01	1.010E+00	1.718E+00	1.266E-01	0.131
		874.81		-3.826E-01	5.963E-01	9.193E-01	9.015E-02	-0.416
		880.27		3.554E-01	9.019E-01	1.511E+00	1.495E-01	0.235
		155.03	*	-1.675E-02	1.823E-01	2.931E-01	3.263E-02	-0.057
RE-188		477.96		3.938E-01	3.255E+00	5.361E+00	3.365E-01	0.073
		633.10		1.433E+00	3.116E+00	5.208E+00	3.433E-01	0.275
	+	63.58		3.690E+01	2.878E+01	4.590E+01	3.736E+00	0.804
W-188		227.08		3.215E-01	1.287E+01	2.170E+01	2.146E+00	0.015
		290.67	*	3.303E+00	8.148E+00	1.217E+01	1.103E+00	0.271
IR-192	+	295.96		8.946E-01	1.971E-01	2.701E-01	2.435E-02	3.312
		308.46		1.001E-01	9.937E-02	1.735E-01	1.512E-02	0.577
		316.51	*	3.024E-02	3.505E-02	6.086E-02	5.165E-03	0.497
		468.07		8.904E-02	7.719E-02	1.217E-01	8.599E-03	0.732
		604.41		-4.836E-02	6.002E-01	8.273E-01	9.738E-02	-0.058
AU-195		612.46		2.757E+00	1.056E+00	1.771E+00	1.451E-01	1.557
		65.12		1.391E-01	1.006E-01	1.528E-01	1.235E-02	0.910
		66.83		-5.351E-02	5.941E-02	8.271E-02	6.644E-03	-0.647
	+	75.70		1.231E+00	2.096E-01	3.586E-01	2.801E-02	3.432
		98.88	*	4.525E-01	2.195E-01	3.421E-01	3.262E-02	1.323
	+	129.76		6.759E+00	3.941E+00	4.895E+00	6.633E-01	1.381
TL-200		367.94	*	-4.576E-04	3.941E+00	Half-Life	too short	
		579.30		2.863E-03	3.941E+00	Half-Life	too short	
		828.27		-6.893E-04	3.941E+00	Half-Life	too short	
		1205.75		-9.524E-04	3.941E+00	Half-Life	too short	
TL-201		68.90		-4.161E-01	3.169E+00	4.570E+00	3.643E-01	-0.091
		70.82		2.219E+00	1.845E+00	2.789E+00	2.209E-01	0.796
		80.30		-8.839E+00	4.364E+00	5.678E+00	4.387E-01	-1.557
		135.34		-8.378E+00	2.499E+01	3.989E+01	5.210E+00	-0.210
		167.43	*	-4.327E+00	7.304E+00	1.142E+01	1.134E+00	-0.379

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90		-3.723E-02	2.835E-01	4.088E-01	3.260E-02	-0.091
		70.82		1.980E-01	1.646E-01	2.488E-01	1.971E-02	0.796
		80.30		-7.889E-01	3.895E-01	5.068E-01	3.915E-02	-1.557
HG-203		439.56	*	-3.193E-02	7.585E-02	1.207E-01	7.358E-03	-0.265
		70.83		8.630E-01	7.185E-01	1.078E+00	1.420E-01	0.801
		72.87		1.867E+00	5.377E-01	7.894E-01	1.005E-01	2.365
		82.60		1.308E+00	1.274E+00	1.417E+00	1.867E-01	0.923
BI-207		279.20	*	4.429E-02	4.407E-02	7.593E-02	7.219E-03	0.583
		72.80		4.955E-01	1.455E-01	2.274E-01	1.790E-02	2.179
	+	74.97		6.826E-01	1.162E-01	1.767E-01	1.383E-02	3.863
		84.90		3.604E-01	1.730E-01	2.666E-01	2.040E-02	1.352
		569.67		5.138E-02	3.535E-02	6.293E-02	4.119E-03	0.816
TL-207		1063.62	*	2.632E-02	6.337E-02	1.076E-01	8.520E-03	0.245
		1770.23		1.025E-01	6.098E-01	8.955E-01	5.172E-02	0.114
		81.07		-3.425E-01	1.890E-01	2.491E-01	1.921E-02	-1.375
		83.78		-3.409E-02	1.213E-01	1.605E-01	1.231E-02	-0.212
		94.90		7.489E-01	2.387E-01	3.758E-01	3.312E-02	1.993
		122.32		4.575E-01	1.886E+00	2.839E+00	4.136E-01	0.161
		144.24		2.462E-01	6.900E-01	1.131E+00	1.467E-01	0.218
		154.21		-6.448E-02	4.207E-01	6.748E-01	8.025E-02	-0.096
	+	269.46		4.524E-01	3.368E-01	3.603E-01	3.460E-02	1.255
		323.87	*	2.564E-01	7.620E-01	1.127E+00	1.976E-01	0.228
PO-209	+	338.28		7.069E+00	1.844E+00	2.611E+00	3.075E-01	2.708
		445.03		2.770E+00	2.573E+00	4.477E+00	4.681E-01	0.619
		260.50		-7.889E-01	9.718E+00	1.622E+01	1.551E+00	-0.049
		262.80		-1.556E+01	3.070E+01	4.529E+01	4.319E+00	-0.344
		896.60	*	3.503E+00	8.360E+00	1.433E+01	1.457E+00	0.244
PB-211		404.84	*	-2.823E-02	1.055E+00	1.733E+00	1.081E+00	-0.016
		427.08		-8.781E-01	2.390E+00	3.727E+00	2.305E+00	-0.236
		831.96		9.749E-01	1.466E+00	2.347E+00	1.473E+00	0.415
BI-212	+	727.18	*	1.224E+00	4.612E-01	7.004E-01	6.354E-02	1.748
		785.46		1.676E+00	1.921E+00	3.413E+00	2.863E-01	0.491
PO-215		1620.62		1.086E+00	1.237E+00	2.341E+00	1.374E-01	0.464
		81.07		-3.425E-01	1.890E-01	2.491E-01	1.921E-02	-1.375
		83.78		-3.409E-02	1.213E-01	1.605E-01	1.231E-02	-0.212
		94.90		7.489E-01	2.387E-01	3.758E-01	3.312E-02	1.993
		122.32		4.575E-01	1.886E+00	2.839E+00	4.136E-01	0.161
		144.24		2.462E-01	6.900E-01	1.131E+00	1.467E-01	0.218
		154.21		-6.448E-02	4.207E-01	6.748E-01	8.025E-02	-0.096
RN-219	+	269.46		4.524E-01	3.368E-01	3.603E-01	3.460E-02	1.255
		323.87	*	2.564E-01	7.620E-01	1.127E+00	1.976E-01	0.228
	+	338.28		7.069E+00	1.844E+00	2.611E+00	3.075E-01	2.708
		445.03		2.770E+00	2.573E+00	4.477E+00	4.681E-01	0.619
	+	271.23		5.804E-01	4.332E-01	4.402E-01	4.835E-02	1.318
RN-220		401.81	*	-1.942E-01	4.638E-01	7.427E-01	1.013E-01	-0.261
		549.76	*	-6.263E-01	2.784E+01	4.504E+01	2.931E+00	-0.014
RA-223		81.07		-3.425E-01	1.890E-01	2.491E-01	1.921E-02	-1.375
		83.78		-3.409E-02	1.213E-01	1.605E-01	1.231E-02	-0.212
		94.90		7.489E-01	2.387E-01	3.758E-01	3.312E-02	1.993

----- 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		4.575E-01	1.886E+00	2.839E+00	4.136E-01	0.161
		144.24		2.462E-01	6.900E-01	1.131E+00	1.467E-01	0.218
		154.21		-6.448E-02	4.207E-01	6.748E-01	8.025E-02	-0.096
	+	269.46		4.524E-01	3.368E-01	3.603E-01	3.460E-02	1.255
		323.87	*	2.564E-01	7.620E-01	1.127E+00	1.976E-01	0.228
	+	338.28		7.069E+00	1.844E+00	2.611E+00	3.075E-01	2.708
		445.03		2.770E+00	2.573E+00	4.477E+00	4.681E-01	0.619
		79.80		-6.954E-01	1.401E+00	1.970E+00	4.169E-01	-0.353
		236.00		1.109E+00	3.263E-01	5.067E-01	6.649E-02	2.188
		256.20	*	-8.890E-02	4.022E-01	6.670E-01	1.063E-01	-0.133
TH-227		286.10		-8.317E-02	1.498E+00	2.494E+00	3.381E-01	-0.033
	+	299.80		2.128E+00	1.642E+00	2.532E+00	4.460E-01	0.840
		304.40		-4.536E-01	2.251E+00	3.205E+00	5.931E-01	-0.142
		334.20		2.787E-02	3.306E+00	3.748E+00	7.169E-01	0.007
		79.80		-6.954E-01	1.401E+00	1.970E+00	4.224E-01	-0.353
	+	94.00		8.888E+00	3.021E+00	3.420E+00	7.453E-01	2.599
		236.00		1.109E+00	3.211E-01	5.067E-01	6.101E-02	2.188
		256.20	*	-8.890E-02	4.023E-01	6.670E-01	1.238E-01	-0.133
		286.10		-8.317E-02	1.501E+00	2.494E+00	2.504E+00	-0.033
	+	299.80		2.128E+00	1.642E+00	2.532E+00	4.460E-01	0.840
TH-229		304.40		-4.536E-01	2.251E+00	3.205E+00	5.931E-01	-0.142
		334.20		2.787E-02	3.306E+00	3.748E+00	7.169E-01	0.007
		85.43		6.099E-01	1.803E-01	2.838E-01	2.170E-02	2.149
	+	88.47		4.475E-01	1.053E-01	1.891E-01	1.454E-02	2.367
		100.00		3.228E-01	1.776E-01	2.863E-01	2.790E-02	1.127
		193.63	*	-3.281E-01	5.471E-01	8.505E-01	8.494E-02	-0.386
		210.97		1.416E+00	9.547E-01	1.432E+00	1.427E-01	0.988
	PA-231	283.67	*	-4.650E-01	1.493E+00	2.449E+00	3.800E-01	-0.190
		301.29		5.021E-01	6.887E-01	1.043E+00	1.293E-01	0.481
	TH-231	81.07		-3.425E-01	1.890E-01	2.491E-01	1.921E-02	-1.375
U-231		83.78		-3.409E-02	1.213E-01	1.605E-01	1.231E-02	-0.212
		94.90		7.489E-01	2.387E-01	3.758E-01	3.312E-02	1.993
		122.32		4.575E-01	1.886E+00	2.839E+00	4.136E-01	0.161
		144.24		2.462E-01	6.900E-01	1.131E+00	1.467E-01	0.218
		154.21		-6.448E-02	4.207E-01	6.748E-01	8.025E-02	-0.096
	+	269.46		4.524E-01	3.368E-01	3.603E-01	3.460E-02	1.255
		323.87	*	2.564E-01	7.620E-01	1.127E+00	1.976E-01	0.228
	+	338.28		7.069E+00	1.844E+00	2.611E+00	3.075E-01	2.708
		445.03		2.770E+00	2.573E+00	4.477E+00	4.681E-01	0.619
		84.21		-5.142E-01	5.277E+00	7.046E+00	5.399E-01	-0.073
PA-233	+	92.29		8.821E+00	2.424E+00	3.505E+00	2.927E-01	2.517
		95.87	*	-4.425E-01	1.078E+00	1.514E+00	1.361E-01	-0.292
		108.00		-5.506E-01	1.972E+00	3.183E+00	3.588E-01	-0.173
	+	75.28		1.992E+01	4.231E+00	5.505E+00	8.210E-01	3.618
	+	86.59		6.416E+00	2.222E+00	2.553E+00	6.770E-01	2.513
	+	300.12		5.931E-01	4.546E-01	7.158E-01	1.075E-01	0.829
		311.98	*	-1.897E-02	6.480E-02	1.060E-01	9.359E-03	-0.179
		340.50		3.005E+00	1.080E+00	1.440E+00	3.391E-01	2.086
		398.62		3.524E-01	2.238E+00	3.718E+00	9.618E-01	0.095

---- 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		-2.026E+00	1.895E+00	2.824E+00	5.826E-01	-0.717
		63.00		1.070E+00	8.456E-01	1.314E+00	2.003E-01	0.814
		94.67		3.490E-01	1.667E-01	2.798E-01	3.500E-02	1.247
		98.44		1.463E-01	1.195E-01	1.358E-01	7.595E-02	1.077
		99.86		8.632E-01	4.515E-01	7.295E-01	7.088E-02	1.183
		111.00		5.530E-02	1.839E-01	2.993E-01	4.365E-02	0.185
		131.20		5.537E-02	1.168E-01	1.699E-01	2.281E-02	0.326
		152.70		3.013E-01	3.434E-01	5.668E-01	1.054E-01	0.532
		186.00		5.738E+00	2.804E+00	2.621E+00	8.285E-01	2.189
		226.40		1.672E-01	3.988E-01	6.823E-01	9.598E-02	0.245
		227.20		6.049E-03	4.345E-01	7.320E-01	7.239E-02	0.008
	+	248.90		-1.070E+00	9.973E-01	1.304E+00	2.980E-01	-0.821
		293.70		4.058E+00	1.171E+00	1.655E+00	2.895E-01	2.452
		369.80		2.044E-02	9.159E-01	1.515E+00	3.196E-01	0.013
		568.70		5.395E-01	1.177E+00	1.968E+00	1.288E-01	0.274
		569.50		4.023E-01	3.147E-01	5.545E-01	3.629E-02	0.725
		574.00		-1.782E+00	1.757E+00	2.610E+00	1.710E-01	-0.683
		699.00		8.489E-02	8.428E-01	1.422E+00	2.622E-01	0.060
		706.10		1.943E-01	1.203E+00	2.032E+00	9.011E-01	0.096
		733.00		-5.599E-01	4.852E-01	5.725E-01	1.249E-01	-0.978
		742.81		7.901E-01	1.666E+00	2.738E+00	1.838E+00	0.289
		796.30		1.380E+00	1.054E+00	1.819E+00	4.918E-01	0.758
		805.60		1.261E+00	1.125E+00	1.935E+00	5.934E-01	0.652
		819.60		4.001E-01	1.338E+00	2.268E+00	8.641E-01	0.176
		826.30		-8.978E-01	9.373E-01	1.257E+00	5.633E-01	-0.714
		831.60		4.767E-01	6.970E-01	1.199E+00	3.596E-01	0.398
		876.40		-9.546E-01	1.323E+00	1.305E+00	1.343E+00	-0.732
		880.51		1.071E-01	3.240E-01	5.400E-01	5.346E-02	0.198
		883.24		3.846E-01	4.188E-01	5.986E-01	4.035E-01	0.643
		899.00		8.169E-01	1.004E+00	1.668E+00	7.348E-01	0.490
		925.00		1.702E+00	1.399E+00	2.531E+00	2.505E-01	0.672
		926.50		1.390E-01	2.076E-01	3.576E-01	9.204E-02	0.389
		946.00	*	-9.834E-03	3.345E-01	5.497E-01	1.059E-01	-0.018
		949.00		1.727E-01	4.892E-01	8.327E-01	8.005E-02	0.207
		980.50		5.171E-01	7.785E-01	1.363E+00	1.254E-01	0.379
		1394.10		-9.587E-01	1.385E+00	1.848E+00	1.197E+00	-0.519
PA-234M		766.42		3.035E-01	1.281E+01	2.139E+01	1.084E+01	0.014
		1001.03	*	6.558E-02	4.954E+00	8.149E+00	8.327E-01	0.008
U-235	+	89.95		2.867E+00	1.271E+00	1.616E+00	4.957E-01	1.774
		93.35		2.765E+00	1.059E+00	1.082E+00	3.031E-01	2.555
	*	105.00		1.316E-01	9.654E-01	1.584E+00	4.831E-01	0.083
		143.76		1.300E-02	2.157E-01	3.499E-01	6.846E-02	0.037
		163.35		9.284E-02	4.878E-01	7.918E-01	1.572E-01	0.117
NP-236	+	185.71		2.125E-01	8.199E-02	9.702E-02	9.683E-03	2.190
		205.31		-2.216E-01	6.211E-01	8.424E-01	1.662E-01	-0.263
	*	94.67		2.666E-01	1.243E-01	2.124E-01	1.863E-02	1.255
		98.44		1.105E-01	6.666E-02	1.027E-01	9.706E-03	1.077
		111.00		4.183E-02	1.391E-01	2.264E-01	2.687E-02	0.185
		160.31	*	3.018E-02	8.410E-02	1.375E-01	1.452E-02	0.219

---- 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		3.630E-01	1.558E-01	2.442E-01	2.359E-02	1.486
		117.00	*	5.722E-02	1.872E-01	3.083E-01	4.039E-02	0.186
	+	209.75		1.592E+00	9.997E-01	1.439E+00	1.434E-01	1.107
		228.18		-1.647E-02	2.264E-01	3.800E-01	3.755E-02	-0.043
		277.60		2.482E-01	2.062E-01	3.417E-01	3.180E-02	0.727
		334.30		4.135E-01	1.647E+00	2.130E+00	1.696E-01	0.194
AM-241		59.54	*	1.222E-01	6.900E-02	1.068E-01	9.557E-03	1.144
CM-243		99.55		3.735E-01	1.604E-01	2.513E-01	2.427E-02	1.486
		103.76	*	-6.499E-02	9.016E-02	1.429E-01	1.493E-02	-0.455
		117.00		5.886E-02	1.926E-01	3.171E-01	4.155E-02	0.186
	+	209.75		1.570E+00	9.855E-01	1.418E+00	1.414E-01	1.107
		228.18		-1.665E-02	2.288E-01	3.839E-01	3.794E-02	-0.043
		277.60		2.503E-01	2.078E-01	3.445E-01	3.206E-02	0.727
AM-246		798.80		-4.380E-01	1.604E-01	1.907E-01	1.639E-02	-2.297
		1036.00		-8.661E-02	3.030E-01	4.807E-01	4.027E-02	-0.180
		1062.04		-9.794E-02	2.831E-01	4.486E-01	3.565E-02	-0.218
		1078.86	*	1.163E-01	1.577E-01	2.761E-01	2.113E-02	0.421
CM-247		278.00		1.280E+00	8.325E-01	1.430E+00	1.330E-01	0.896
		287.40		6.113E-01	1.268E+00	2.056E+00	1.877E-01	0.297
		402.60	*	7.674E-04	4.100E-02	6.754E-02	3.975E-03	0.011
CF-249		252.85		8.355E-01	8.986E-01	1.565E+00	1.512E-01	0.534
		333.44		8.690E-02	2.710E-01	2.754E-01	2.201E-02	0.315
		387.95	*	4.708E-02	4.416E-02	7.710E-02	4.611E-03	0.611
CF-251		176.60	*	-4.580E-02	1.307E-01	2.065E-01	2.057E-02	-0.222
		227.00		8.440E-02	3.832E-01	6.510E-01	6.439E-02	0.130
		285.00		-1.406E+00	1.746E+00	2.783E+00	2.553E-01	-0.505

# 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]G1202001376      *
* Acquisition date   : 31-DEC-2009 15:32:03 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 02:00:01.68 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 16-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G1202001376 Analyst initials: MXR1                 *
* Batch Number      : 935341 Sample Quantity : 1.3293E+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	2.359E+01	2.161E+00	5.967E-01	0.000E+00
AS-73	2.190E-01	2.740E-01	4.141E-01	0.000E+00
CD-109	3.335E+00	7.693E-01	1.095E+00	0.000E+00
SN-126	3.278E-01	7.561E-02	1.075E-01	0.000E+00
TL-208	4.890E-01	8.146E-02	6.209E-02	0.000E+00
BI-210	1.182E+00	7.729E-01	8.980E-01	0.000E+00
PB-210	1.182E+00	7.729E-01	8.980E-01	0.000E+00
PO-210	1.182E+00	7.716E-01	8.980E-01	0.000E+00
BI-211	3.425E+00	4.819E-01	3.452E-01	0.000E+00
PB-212	1.524E+00	1.927E-01	9.125E-02	0.000E+00
PO-212	1.524E+00	1.927E-01	9.125E-02	0.000E+00
BI-214	1.189E+00	1.963E-01	1.272E-01	0.000E+00
PB-214	1.191E+00	1.784E-01	1.167E-01	0.000E+00
PO-214	1.191E+00	1.784E-01	1.167E-01	0.000E+00
PO-216	1.524E+00	1.927E-01	9.125E-02	0.000E+00
PO-218	1.191E+00	1.784E-01	1.167E-01	0.000E+00
RA-224	4.355E+00	1.510E+00	1.038E+00	0.000E+00
RA-226	1.189E+00	1.963E-01	1.272E-01	0.000E+00
AC-228	1.438E+00	3.126E-01	2.350E-01	0.000E+00
RA-228	1.438E+00	3.126E-01	2.350E-01	0.000E+00
TH-228	1.547E+00	1.956E-01	9.263E-02	0.000E+00
TH-230	1.189E+00	1.963E-01	1.272E-01	0.000E+00
TH-232	1.438E+00	3.126E-01	2.350E-01	0.000E+00
TH-234	9.177E-01	7.157E-01	1.090E+00	0.000E+00
U-234	1.189E+00	1.963E-01	1.272E-01	0.000E+00
NP-237	9.625E-01	2.953E-01	3.445E-01	0.000E+00
U-238	9.177E-01	7.157E-01	1.090E+00	0.000E+00
AM-243	3.803E-01	6.346E-02	6.370E-02	0.000E+00
ANH-511	9.447E-02	6.438E-02	5.130E-02	0.000E+00

---- Non-Identified Nuclides ----

Key-Line	Activity	K.L. Act error	MDA
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Nuclide	(pCi/GRAM	) Ided	(pCi/GRAM	)	
BE-7	-1.506E-01	3.375E-01	5.554E-01	0.000E+00	NOT IDENT.
NA-22	-3.039E-02	4.977E-02	7.705E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	7.620E+05	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.017E-02	3.830E-02	6.953E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.288E-02	6.515E-02	0.000E+00	FAIL ABUN
SC-46	-1.177E-02	4.115E-02	6.823E-02	0.000E+00	FAIL ABUN
V-48	-3.853E-02	7.662E-02	1.231E-01	0.000E+00	NOT IDENT.
CR-51	1.462E-01	3.742E-01	6.660E-01	0.000E+00	NOT IDENT.
MN-52	-1.313E-02	2.187E-01	3.700E-01	0.000E+00	NOT IDENT.
MN-54	-3.192E-02	4.277E-02	6.877E-02	0.000E+00	NOT IDENT.
CO-56	-2.048E-02	4.480E-02	7.365E-02	0.000E+00	NOT IDENT.
CO-57	-1.222E-03	2.585E-02	4.267E-02	0.000E+00	NOT IDENT.
CO-58	6.597E-03	4.174E-02	7.264E-02	0.000E+00	NOT IDENT.
FE-59	-3.720E-02	9.522E-02	1.532E-01	0.000E+00	NOT IDENT.
CO-60	9.381E-03	4.103E-02	6.981E-02	0.000E+00	NOT IDENT.
ZN-65	-1.689E-02	1.232E-01	1.738E-01	0.000E+00	NOT IDENT.
GE-68	2.401E-01	1.357E+00	2.321E+00	0.000E+00	NOT IDENT.
AS-74	-3.136E-02	1.016E-01	1.661E-01	0.000E+00	NOT IDENT.
SE-75	3.840E-03	5.054E-02	7.793E-02	0.000E+00	NOT IDENT.
BR-77	-7.926E+00	1.153E+01	1.847E+01	0.000E+00	FAIL ABUN
SR-82	-1.453E-01	4.204E-01	7.038E-01	0.000E+00	NOT IDENT.
RB-83	-5.513E-02	7.491E-02	1.195E-01	0.000E+00	NOT IDENT.
RB-84	3.632E-02	7.942E-02	1.378E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	8.949E+00	1.558E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.590E-02	7.989E-02	0.000E+00	NOT IDENT.
RB-86	-1.319E-01	8.855E-01	1.467E+00	0.000E+00	NOT IDENT.
Y-88	3.027E-05	3.462E-02	5.789E-02	0.000E+00	NOT IDENT.
ZR-88	-2.723E-02	3.290E-02	5.375E-02	0.000E+00	NOT IDENT.
Y-91	1.052E+00	2.318E+01	3.876E+01	0.000E+00	NOT IDENT.
NB-94	2.278E-02	3.850E-02	6.938E-02	0.000E+00	NOT IDENT.
NB-95	1.214E-02	4.610E-02	8.101E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.467E-01	2.450E-01	0.000E+00	NOT IDENT.
ZR-95	7.521E-02	7.973E-02	1.467E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.148E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.140E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.128E+01	1.333E+01	2.429E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.142E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.510E-03	3.618E-02	5.992E-02	0.000E+00	FAIL ABUN
RH-102	1.597E-02	3.018E-02	5.329E-02	0.000E+00	NOT IDENT.
RU-103	-1.124E-02	4.353E-02	7.221E-02	0.000E+00	FAIL ABUN
RH-106	2.733E-01	3.579E-01	6.317E-01	0.000E+00	FAIL ABUN
RU-106	2.733E-01	3.568E-01	6.317E-01	0.000E+00	FAIL ABUN
AG-108M	-2.205E-02	3.468E-02	5.679E-02	0.000E+00	NOT IDENT.
AG-110M	-1.493E-02	3.984E-02	6.425E-02	0.000E+00	NOT IDENT.
IN-111	6.508E-01	1.142E+00	1.824E+00	0.000E+00	NOT IDENT.
IN-113M	-3.004E-02	4.769E-02	7.899E-02	0.000E+00	NOT IDENT.
SN-113	-3.004E-02	4.769E-02	7.899E-02	0.000E+00	NOT IDENT.
IN-114M	-3.203E-02	2.081E-01	3.049E-01	0.000E+00	NOT IDENT.
CD-115	-6.513E+00	1.250E+01	2.031E+01	0.000E+00	NOT IDENT.
SN-117M	9.855E-03	5.692E-02	9.819E-02	0.000E+00	NOT IDENT.
SB-122	1.114E+00	2.411E+00	4.189E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.160E+06	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	2.250E-02	2.929E-02	5.159E-02	0.000E+00	NOT IDENT.
I-124	2.729E-02	8.672E-01	1.257E+00	0.000E+00	FAIL ABUN
SB-124	-2.971E-02	8.476E-02	9.436E-02	0.000E+00	FAIL ABUN
SB-125	-1.762E-02	9.875E-02	1.673E-01	0.000E+00	FAIL ABUN
TE-125M	-1.575E+00	9.065E+00	1.551E+01	0.000E+00	NOT IDENT.
I-126	-9.923E-02	2.009E-01	3.200E-01	0.000E+00	NOT IDENT.
SB-126	5.507E-02	1.800E-01	2.778E-01	0.000E+00	FAIL ABUN
SB-127	2.352E-01	1.493E+00	2.623E+00	0.000E+00	NOT IDENT.
XE-127	-1.144E-02	5.059E-02	8.154E-02	0.000E+00	NOT IDENT.
I-131	6.490E-02	1.223E-01	2.180E-01	0.000E+00	NOT IDENT.
TE-132	-5.069E-02	6.828E-01	1.210E+00	0.000E+00	NOT IDENT.
BA-133	-2.397E-04	4.967E-02	7.466E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	6.978E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.809E-02	4.998E-02	9.644E-02	0.000E+00	NOT IDENT.
CS-135	1.731E-01	1.883E-01	3.038E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.975E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-136	4.085E-02	1.200E-01	2.086E-01	0.000E+00	FAIL ABUN
BA-137M	3.760E-02	3.899E-02	6.984E-02	0.000E+00	NOT IDENT.
CS-137	3.974E-02	4.121E-02	7.382E-02	0.000E+00	NOT IDENT.
CE-139	3.609E-04	2.969E-02	5.077E-02	0.000E+00	NOT IDENT.
BA-140	-1.599E-01	2.920E-01	4.649E-01	0.000E+00	NOT IDENT.
LA-140	-5.938E-02	8.654E-02	1.298E-01	0.000E+00	FAIL ABUN
CE-141	5.104E-02	6.295E-02	1.113E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.231E+02	0.000E+00	0.000E+00	SHORT HLIF



CE-144	-7.501E-02	2.215E-01	3.272E-01	0.000E+00	NOT IDENT.
PM-144	2.500E-02	3.879E-02	7.021E-02	0.000E+00	NOT IDENT.
PR-144	1.694E+00	2.629E+00	4.758E+00	0.000E+00	NOT IDENT.
PM-146	1.810E-03	4.671E-02	7.996E-02	0.000E+00	NOT IDENT.
ND-147	4.504E-01	6.101E-01	1.082E+00	0.000E+00	FAIL ABUN
PM-149	-2.522E+01	8.922E+01	1.542E+02	0.000E+00	NOT IDENT.
EU-152	1.534E-03	1.141E-01	1.721E-01	0.000E+00	FAIL ABUN
GD-153	-3.635E-02	7.661E-02	1.147E-01	0.000E+00	NOT IDENT.
EU-154	-8.362E-02	1.393E-01	2.157E-01	0.000E+00	NOT IDENT.
EU-155	-8.795E-03	9.688E-02	1.687E-01	0.000E+00	FAIL ABUN
TB-160	7.091E-02	1.515E-01	2.631E-01	0.000E+00	FAIL ABUN
HO-166M	-2.964E-03	6.549E-02	1.131E-01	0.000E+00	FAIL ABUN
TM-171	-1.556E+01	1.754E+01	2.635E+01	0.000E+00	FAIL ABUN
LU-176	2.412E-02	2.585E-02	4.616E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.386E+00	2.086E+00	0.000E+00	FAIL ABUN
LU-177M	-1.712E-01	1.922E-01	3.114E-01	0.000E+00	FAIL ABUN
HF-181	-9.857E-03	4.318E-02	7.217E-02	0.000E+00	NOT IDENT.
W-181	2.727E-01	2.124E-01	3.466E-01	0.000E+00	NOT IDENT.
TA-182	8.731E-02	2.204E-01	3.795E-01	0.000E+00	FAIL ABUN
RE-183	2.819E-02	1.122E-01	1.939E-01	0.000E+00	FAIL ABUN
RE-184	2.227E-01	2.347E-01	4.308E-01	0.000E+00	NOT IDENT.
OS-185	-2.208E-02	4.571E-02	7.285E-02	0.000E+00	NOT IDENT.
RE-188	-1.675E-02	1.787E-01	3.052E-01	0.000E+00	NOT IDENT.
W-188	3.303E+00	7.985E+00	1.254E+01	0.000E+00	FAIL ABUN
IR-192	3.024E-02	3.435E-02	6.262E-02	0.000E+00	FAIL ABUN
AU-195	0.000E+00	2.151E-01	3.589E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	5.049E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-4.327E+00	7.158E+00	1.188E+01	0.000E+00	NOT IDENT.
TL-202	-3.193E-02	7.433E-02	1.235E-01	0.000E+00	NOT IDENT.
HG-203	4.429E-02	4.319E-02	7.829E-02	0.000E+00	NOT IDENT.
BI-207	2.632E-02	6.211E-02	1.084E-01	0.000E+00	FAIL ABUN
TL-207	2.564E-01	7.468E-01	1.159E+00	0.000E+00	FAIL ABUN
PO-209	3.503E+00	8.192E+00	1.448E+01	0.000E+00	NOT IDENT.
PB-211	-2.823E-02	1.034E+00	1.776E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.520E-01	7.103E-01	0.000E+00	FAIL ABUN
PO-215	2.564E-01	7.468E-01	1.159E+00	0.000E+00	FAIL ABUN
RN-219	-1.942E-01	4.545E-01	7.611E-01	0.000E+00	FAIL ABUN
RN-220	-6.263E-01	2.728E+01	4.590E+01	0.000E+00	NOT IDENT.
RA-223	2.564E-01	7.468E-01	1.159E+00	0.000E+00	FAIL ABUN
AC-227	-8.890E-02	3.942E-01	6.888E-01	0.000E+00	FAIL ABUN
TH-227	-8.890E-02	3.943E-01	6.888E-01	0.000E+00	FAIL ABUN
TH-229	-3.281E-01	5.362E-01	8.824E-01	0.000E+00	FAIL ABUN
PA-231	-4.650E-01	1.463E+00	2.524E+00	0.000E+00	NOT IDENT.
TH-231	2.564E-01	7.468E-01	1.159E+00	0.000E+00	FAIL ABUN
U-231	-4.425E-01	1.056E+00	1.590E+00	0.000E+00	FAIL ABUN
PA-233	-1.897E-02	6.350E-02	1.091E-01	0.000E+00	FAIL ABUN
PA-234	-9.834E-03	3.278E-01	5.549E-01	0.000E+00	FAIL ABUN
PA-234M	6.558E-02	4.855E+00	8.218E+00	0.000E+00	NOT IDENT.
U-235	1.300E-02	2.114E-01	3.648E-01	0.000E+00	FAIL ABUN
NP-236	3.018E-02	8.241E-02	1.431E-01	0.000E+00	NOT IDENT.
NP-239	5.722E-02	1.835E-01	3.225E-01	0.000E+00	FAIL ABUN
AM-241	0.000E+00	6.762E-02	1.130E-01	0.000E+00	NOT IDENT.
CM-243	-6.499E-02	8.836E-02	1.498E-01	0.000E+00	FAIL ABUN
AM-246	1.163E-01	1.546E-01	2.781E-01	0.000E+00	NOT IDENT.
CM-247	7.674E-04	4.018E-02	6.920E-02	0.000E+00	NOT IDENT.
CF-249	4.708E-02	4.327E-02	7.905E-02	0.000E+00	NOT IDENT.
CF-251	-4.580E-02	1.281E-01	2.146E-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]G1202001376.CNF;1
Sample date        : 16-DEC-2009 12:00:00 Acquisition date : 31-DEC-2009 15:32:03
Sample ID          : G1202001376 Sample quantity   : 1.32930E+02 GRAM
Detector name      : GAM05 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.68 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity         : 5.00000
Batch ID           : 935341 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	894	10.67*	1.003E+00	2.359E+01	2.359E+01	9.35
AS-73	53.44	55	10.30*	7.914E+00	1.921E-01	2.190E-01	127.64
CD-109	88.03	337	3.72*	7.859E+00	3.260E+00	3.335E+00	23.54
SN-126	64.28	100	9.60	8.064E+00	3.633E-01	3.633E-01	78.99
	86.94	337	8.90	7.859E+00	1.363E+00	1.363E+00	46.80
	87.57	337	37.00*	7.859E+00	3.278E-01	3.278E-01	23.54
TL-208	277.35	-----	6.80	4.261E+00	-----	Line Not Found	-----
	510.84	85	21.60	2.545E+00	4.374E-01	4.374E-01	70.04
	583.14	329	84.20*	2.259E+00	4.890E-01	4.890E-01	17.00
	860.37	56	12.46	1.590E+00	7.984E-01	7.984E-01	52.97
BI-210	46.50	129	4.05*	7.630E+00	1.181E+00	1.182E+00	66.71
PB-210	46.50	129	4.05*	7.630E+00	1.181E+00	1.182E+00	66.71
PO-210	46.50	129	4.05*	7.630E+00	1.181E+00	1.182E+00	66.59
BI-211	72.87	-----	1.27	8.052E+00	-----	Line Not Found	-----
	351.07	552	12.94*	3.516E+00	3.425E+00	3.425E+00	14.36
PB-212	74.81	714	10.70	8.036E+00	2.346E+00	2.346E+00	19.42
	77.11	934	18.00	8.012E+00	1.829E+00	1.829E+00	12.96
	87.30	337	8.00	7.859E+00	1.516E+00	1.516E+00	25.58
	238.63	1149	44.60*	4.771E+00	1.524E+00	1.524E+00	12.90
	300.09	56	3.41	4.008E+00	1.148E+00	1.148E+00	75.91
PO-212	74.81	714	10.70	8.036E+00	2.346E+00	2.346E+00	19.42
	77.11	934	18.00	8.012E+00	1.829E+00	1.829E+00	12.96
	87.30	337	8.00	7.859E+00	1.516E+00	1.516E+00	25.58
	115.19	-----	0.60	7.241E+00	-----	Line Not Found	-----
	238.63	1149	44.60*	4.771E+00	1.524E+00	1.524E+00	12.90
	300.09	56	3.41	4.008E+00	1.148E+00	1.148E+00	75.91
BI-214	609.31	423	46.30*	2.171E+00	1.189E+00	1.189E+00	16.84
	1120.29	100	15.10	1.258E+00	1.488E+00	1.488E+00	35.34
	1764.49	67	15.80	8.612E-01	1.395E+00	1.395E+00	29.70
PB-214	74.81	714	6.21	8.036E+00	4.041E+00	4.041E+00	18.57
	77.11	934	10.50	8.012E+00	3.135E+00	3.135E+00	15.04
	87.30	337	4.67	7.859E+00	2.597E+00	2.597E+00	24.77

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	241.98	288	7.49	4.728E+00	2.297E+00	2.297E+00	35.83
	295.21	324	19.20	4.058E+00	1.173E+00	1.173E+00	22.88
	351.92	552	37.20*	3.516E+00	1.191E+00	1.191E+00	15.28
	74.81	714	6.21	8.036E+00	4.041E+00	4.041E+00	18.57
	77.11	934	10.50	8.012E+00	3.135E+00	3.135E+00	15.04
	87.30	337	4.67	7.859E+00	2.597E+00	2.597E+00	24.77
PO-216	241.98	288	7.49	4.728E+00	2.297E+00	2.297E+00	35.83
	295.21	324	19.20	4.058E+00	1.173E+00	1.173E+00	22.88
	351.92	552	37.20*	3.516E+00	1.191E+00	1.191E+00	15.28
	74.81	714	10.70	8.036E+00	2.346E+00	2.346E+00	19.42
	77.11	934	18.00	8.012E+00	1.829E+00	1.829E+00	12.96
	87.30	337	8.00	7.859E+00	1.516E+00	1.516E+00	25.58
PO-218	238.63	1149	44.60*	4.771E+00	1.524E+00	1.524E+00	12.90
	300.09	56	3.41	4.008E+00	1.148E+00	1.148E+00	75.91
	74.81	714	6.21	8.036E+00	4.041E+00	4.041E+00	18.57
	77.11	934	10.50	8.012E+00	3.135E+00	3.135E+00	15.04
	87.30	337	4.67	7.859E+00	2.597E+00	2.597E+00	24.77
	241.98	288	7.49	4.728E+00	2.297E+00	2.297E+00	35.83
RA-224	295.21	324	19.20	4.058E+00	1.173E+00	1.173E+00	22.88
	351.92	552	37.20*	3.516E+00	1.191E+00	1.191E+00	15.28
	240.98	288	3.95*	4.728E+00	4.355E+00	4.355E+00	35.39
	609.31	423	46.30*	2.171E+00	1.189E+00	1.189E+00	16.84
	1120.29	100	15.10	1.258E+00	1.488E+00	1.488E+00	35.34
	1764.49	67	15.80	8.612E-01	1.395E+00	1.395E+00	29.70
AC-228	338.32	248	11.40	3.633E+00	1.693E+00	1.693E+00	47.24
	911.07	213	27.70*	1.510E+00	1.438E+00	1.438E+00	22.18
	969.11	118	16.60	1.430E+00	1.407E+00	1.407E+00	39.71
	338.32	248	11.40	3.633E+00	1.693E+00	1.693E+00	47.24
	911.07	213	27.70*	1.510E+00	1.438E+00	1.438E+00	22.18
	969.11	118	16.60	1.430E+00	1.407E+00	1.407E+00	39.71
TH-228	74.81	714	10.70	8.036E+00	2.346E+00	2.381E+00	17.06
	77.11	934	18.00	8.012E+00	1.829E+00	1.857E+00	12.96
	87.30	337	8.00	7.859E+00	1.516E+00	1.539E+00	23.54
	238.63	1149	44.60*	4.771E+00	1.524E+00	1.547E+00	12.90
	300.09	56	3.41	4.008E+00	1.148E+00	1.165E+00	95.75
	609.31	423	46.30*	2.171E+00	1.189E+00	1.189E+00	16.84
TH-230	1120.29	100	15.10	1.258E+00	1.488E+00	1.488E+00	35.34
	1764.49	67	15.80	8.612E-01	1.395E+00	1.395E+00	29.70
	338.32	248	11.40	3.633E+00	1.693E+00	1.693E+00	24.56
	911.07	213	27.70*	1.510E+00	1.438E+00	1.438E+00	22.18
	969.11	118	16.60	1.430E+00	1.407E+00	1.407E+00	39.71
	63.29	100	3.80*	8.064E+00	9.177E-01	9.177E-01	79.57
TH-232	92.38	341	5.41	7.749E+00	2.300E+00	2.300E+00	31.74
	609.31	423	46.30*	2.171E+00	1.189E+00	1.189E+00	16.84
	1120.29	100	15.10	1.258E+00	1.488E+00	1.488E+00	35.34
	1764.49	67	15.80	8.612E-01	1.395E+00	1.395E+00	29.70
	86.50	337	12.60*	7.859E+00	9.625E-01	9.625E-01	31.30
	95.87	-----	2.60	7.687E+00	-----	Line Not Found	-----
U-234	63.29	100	3.80*	8.064E+00	9.177E-01	9.177E-01	79.57

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	92.38	341	5.41	7.749E+00	2.300E+00	2.300E+00	27.48
AM-243	74.67	714	66.00*	8.036E+00	3.803E-01	3.803E-01	17.03
	86.72	337	0.34	7.859E+00	3.609E+01	3.609E+01	23.54
	117.66	-----	0.55	7.181E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.593E+00	-----	Line Not Found	-----
ANH-511	511.00	85	100.00*	2.545E+00	9.447E-02	9.447E-02	69.54

Flag: "\*" = Keyline

Total number of lines in spectrum 32  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 32 100.00%

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	2.359E+01	2.359E+01	0.220E+01	9.35	
AS-73	80.30D	1.14	1.921E-01	2.190E-01	2.796E-01	127.64	
CD-109	464.00D	1.02	3.260E+00	3.335E+00	0.785E+00	23.54	
SN-126	1.00E+05Y	1.00	3.278E-01	3.278E-01	0.772E-01	23.54	
TL-208	1.41E+10Y	1.00	4.890E-01	4.890E-01	0.831E-01	17.00	
BI-210	22.26Y	1.00	1.181E+00	1.182E+00	0.789E+00	66.71	
PB-210	22.26Y	1.00	1.181E+00	1.182E+00	0.789E+00	66.71	
PO-210	22.26Y	1.00	1.181E+00	1.182E+00	0.787E+00	66.59	
BI-211	7.04E+08Y	1.00	3.425E+00	3.425E+00	0.492E+00	14.36	
PB-212	1.41E+10Y	1.00	1.524E+00	1.524E+00	0.197E+00	12.90	
PO-212	1.41E+10Y	1.00	1.524E+00	1.524E+00	0.197E+00	12.90	
BI-214	1600.00Y	1.00	1.189E+00	1.189E+00	0.200E+00	16.84	
PB-214	1600.00Y	1.00	1.191E+00	1.191E+00	0.182E+00	15.28	
PO-214	1600.00Y	1.00	1.191E+00	1.191E+00	0.182E+00	15.28	
PO-216	1.41E+10Y	1.00	1.524E+00	1.524E+00	0.197E+00	12.90	
PO-218	1600.00Y	1.00	1.191E+00	1.191E+00	0.182E+00	15.28	
RA-224	1.41E+10Y	1.00	4.355E+00	4.355E+00	1.541E+00	35.39	
RA-226	1600.00Y	1.00	1.189E+00	1.189E+00	0.200E+00	16.84	
AC-228	1.41E+10Y	1.00	1.438E+00	1.438E+00	0.319E+00	22.18	
RA-228	1.41E+10Y	1.00	1.438E+00	1.438E+00	0.319E+00	22.18	
TH-228	1.91Y	1.02	1.524E+00	1.547E+00	0.200E+00	12.90	
TH-230	4.47E+09Y	1.00	1.189E+00	1.189E+00	0.200E+00	16.84	
TH-232	1.41E+10Y	1.00	1.438E+00	1.438E+00	0.319E+00	22.18	
TH-234	4.47E+09Y	1.00	9.177E-01	9.177E-01	7.303E-01	79.57	
U-234	4.47E+09Y	1.00	1.189E+00	1.189E+00	0.200E+00	16.84	
NP-237	2.14E+06Y	1.00	9.625E-01	9.625E-01	3.013E-01	31.30	
U-238	4.47E+09Y	1.00	9.177E-01	9.177E-01	7.303E-01	79.57	
AM-243	7380.00Y	1.00	3.803E-01	3.803E-01	0.648E-01	17.03	
ANH-511	1.00E+09Y	1.00	9.447E-02	9.447E-02	6.570E-02	69.54	

Total Activity : 6.120E+01 6.132E+01

Grand Total Activity : 6.120E+01 6.132E+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	90.02	214	352	1.13	181.01	172	23	2.97E-02	32.0	7.81E+00	T
0	128.46	127	330	1.73	257.90	253	10	1.76E-02	56.7	6.92E+00	T
0	185.90	230	359	1.60	372.75	367	13	3.19E-02	37.3	5.66E+00	T
0	209.13	96	242	1.10	419.19	415	9	1.33E-02	62.0	5.24E+00	T
0	270.17	95	246	2.06	541.24	534	14	1.32E-02	73.8	4.35E+00	T
0	328.10	74	151	1.48	657.08	652	10	1.03E-02	66.5	3.73E+00	T
0	463.39	72	74	1.11	927.56	923	9	1.00E-02	49.1	2.77E+00	T
0	727.48	95	45	1.25	1455.48	1448	14	1.31E-02	36.6	1.85E+00	T
5	964.67	36	45	1.82	1929.50	1926	18	4.97E-03	67.8	1.44E+00	T
0	1509.51	18	14	1.09	3018.04	3012	11	2.50E-03	92.8	9.76E-01	T

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]G1202001376.CNF;1
* Acquisition date   : 31-DEC-2009 15:32:03  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 02:00:01.68             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 16-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G1202001376           Analyst initials: MXR1
* Batch Number       : 935341                Sample Quantity : 1.32930E+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	2.359E+01	2.205E+00	5.957E-01	3.705E-02	39.596
AS-73	2.190E-01	2.796E-01	3.907E-01	2.941E-02	0.561
CD-109	3.335E+00	7.850E-01	1.042E+00	7.934E-02	3.200
SN-126	3.278E-01	7.715E-02	1.023E-01	7.788E-03	3.205
TL-208	4.890E-01	8.312E-02	6.099E-02	4.488E-03	8.017
BI-210	1.182E+00	7.887E-01	8.455E-01	6.595E-02	1.398
PB-210	1.182E+00	7.887E-01	8.455E-01	6.595E-02	1.398
PO-210	1.182E+00	7.873E-01	8.455E-01	5.687E-02	1.398
BI-211	3.425E+00	4.917E-01	3.361E-01	2.664E-02	10.189
PB-212	1.524E+00	1.966E-01	8.826E-02	9.516E-03	17.271
PO-212	1.524E+00	1.966E-01	8.826E-02	9.516E-03	17.271
BI-214	1.189E+00	2.003E-01	1.251E-01	1.049E-02	9.509
PB-214	1.191E+00	1.820E-01	1.137E-01	1.076E-02	10.483
PO-214	1.191E+00	1.820E-01	1.137E-01	1.076E-02	10.483
PO-216	1.524E+00	1.966E-01	8.826E-02	9.516E-03	17.271
PO-218	1.191E+00	1.820E-01	1.137E-01	1.076E-02	10.483
RA-224	4.355E+00	1.541E+00	1.004E+00	9.828E-02	4.336
RA-226	1.189E+00	2.003E-01	1.251E-01	1.049E-02	9.509

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.438E+00	3.189E-01	2.327E-01	2.880E-02	6.179
RA-228	1.438E+00	3.189E-01	2.327E-01	2.880E-02	6.179
TH-228	1.547E+00	1.996E-01	8.960E-02	9.660E-03	17.271
TH-230	1.189E+00	2.003E-01	1.251E-01	1.048E-02	9.509
TH-232	1.438E+00	3.189E-01	2.327E-01	2.880E-02	6.179
TH-234	9.177E-01	7.303E-01	1.031E+00	1.832E-01	0.890
U-234	1.189E+00	2.003E-01	1.251E-01	1.048E-02	9.509
NP-237	9.625E-01	3.013E-01	3.276E-01	7.208E-02	2.937
U-238	9.177E-01	7.303E-01	1.031E+00	1.832E-01	0.890
AM-243	3.803E-01	6.475E-02	6.043E-02	4.734E-03	6.292
ANH-511	9.447E-02	6.570E-02	5.027E-02	3.217E-03	1.879

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.506E-01		3.443E-01	5.436E-01	3.894E-02	-0.277
NA-22	-3.039E-02		5.079E-02	7.674E-02	4.470E-03	-0.396
NA-24	1.314E-01		3.888E-01	Half-Life too short		
AL-26	2.017E-02		3.908E-02	6.969E-02	3.999E-03	0.289
TI-44	3.375E-01	+	4.375E-02	6.185E-02	4.799E-03	5.456
SC-46	-1.177E-02		4.198E-02	6.752E-02	6.781E-03	-0.174
V-48	-3.853E-02		7.818E-02	1.220E-01	1.118E-02	-0.316
CR-51	1.462E-01		3.818E-01	6.474E-01	5.726E-02	0.226
MN-52	-1.313E-02		2.232E-01	3.693E-01	2.163E-02	-0.036
MN-54	-3.192E-02		4.365E-02	6.797E-02	6.227E-03	-0.470
CO-56	-2.048E-02		4.571E-02	7.282E-02	6.810E-03	-0.281
CO-57	-1.222E-03		2.638E-02	4.081E-02	5.790E-03	-0.030
CO-58	6.597E-03		4.259E-02	7.177E-02	6.316E-03	0.092
FE-59	-3.720E-02		9.716E-02	1.522E-01	1.232E-02	-0.244
CO-60	9.381E-03		4.187E-02	6.958E-02	4.026E-03	0.135
ZN-65	-1.689E-02		1.257E-01	1.727E-01	1.206E-02	-0.098
GE-68	2.401E-01		1.385E+00	2.304E+00	1.770E-01	0.104
AS-74	-3.136E-02		1.036E-01	1.632E-01	1.073E-02	-0.192
SE-75	3.840E-03		5.157E-02	7.551E-02	7.209E-03	0.051
BR-77	-7.926E+00		1.176E+01	1.811E+01	1.164E+00	-0.438
SR-82	-1.453E-01		4.290E-01	6.948E-01	5.733E-02	-0.209
RB-83	-5.513E-02		7.644E-02	1.171E-01	7.531E-03	-0.471
RB-84	3.632E-02		8.104E-02	1.364E-01	1.352E-02	0.266
KR-85	2.029E+01		9.132E+00	1.527E+01	9.786E-01	1.329
SR-85	1.041E-01		4.684E-02	7.830E-02	5.019E-03	1.329
RB-86	-1.319E-01		9.035E-01	1.457E+00	1.121E-01	-0.091
Y-88	3.027E-05		3.532E-02	5.804E-02	3.321E-03	0.001
ZR-88	-2.723E-02		3.357E-01	5.244E-02	3.054E-03	-0.519
Y-91	1.052E+00		2.365E+01	3.857E+01	2.241E+00	0.027
NB-94	2.278E-02		3.929E-02	6.837E-02	4.892E-03	0.333
NB-95	1.214E-02		4.704E-02	7.995E-02	6.467E-03	0.152
NB-95M	2.795E-01		1.497E-01	2.370E-01	2.592E-02	1.179



----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	7.521E-02		8.136E-02	1.448E-01	1.286E-02	0.519
NB-97	-3.758E-02		5.858E-02	Half-Life too short		
ZR-97	5.075E+00		1.092E+00	Half-Life too short		
MO-99	1.128E+01		1.360E+01	2.396E+01	3.517E+00	0.471
TC-99M	-8.711E+09		2.113E+10	Half-Life too short		
RH-101	-6.510E-03		3.692E-02	5.777E-02	5.769E-03	-0.113
RH-102	1.597E-02		3.080E-02	5.216E-02	3.267E-03	0.306
RU-103	-1.124E-02		4.442E-02	7.073E-02	9.129E-03	-0.159
RH-106	2.733E-01		3.652E-01	6.212E-01	7.546E-02	0.440
RU-106	2.733E-01		3.641E-01	6.212E-01	4.095E-02	0.440
AG-108M	-2.205E-02		3.539E-02	5.550E-02	3.631E-03	-0.397
AG-110M	-1.493E-02		4.065E-02	6.324E-02	4.371E-03	-0.236
IN-111	6.508E-01		1.165E+00	1.765E+00	1.720E-01	0.369
IN-113M	-3.004E-02		4.866E-02	7.706E-02	4.780E-03	-0.390
SN-113	-3.004E-02		4.866E-02	7.706E-02	4.780E-03	-0.390
IN-114M	-3.203E-02		2.124E-01	2.938E-01	2.933E-02	-0.109
CD-115	-6.513E+00		1.275E+01	1.992E+01	1.285E+00	-0.327
SN-117M	9.855E-03		5.808E-02	9.432E-02	1.014E-02	0.104
SB-122	1.114E+00		2.461E+00	4.112E+00	2.687E-01	0.271
I-123	4.731E+00		3.143E+00	Half-Life too short		
TE-123M	2.250E-02		2.989E-02	4.956E-02	5.325E-03	0.454
I-124	2.729E-02		8.849E-01	1.235E+00	8.131E-02	0.022
SB-124	-2.971E-02		8.649E-02	9.446E-02	5.978E-03	-0.314
SB-125	-1.762E-02		1.008E-01	1.634E-01	1.025E-02	-0.108
TE-125M	-1.575E+00		9.250E+00	1.481E+01	1.903E+00	-0.106
I-126	-9.923E-02		2.050E-01	3.150E-01	2.092E-02	-0.315
SB-126	5.507E-02		1.837E-01	2.739E-01	2.030E-02	0.201
SB-127	2.352E-01		1.523E+00	2.584E+00	2.625E-01	0.091
XE-127	-1.144E-02		5.162E-02	7.866E-02	7.851E-03	-0.145
I-131	6.490E-02		1.248E-01	2.123E-01	1.595E-02	0.306
TE-132	-5.069E-02		6.968E-01	1.169E+00	1.923E-01	-0.043
BA-133	-2.397E-04		5.069E-02	7.271E-02	8.979E-03	-0.003
I-133	-1.217E-03		3.560E-03	Half-Life too short		
CS-134	8.809E-02		5.100E-02	9.525E-02	8.203E-03	0.925
CS-135	1.731E-01		1.921E-01	2.944E-01	3.149E-02	0.588
I-135	-1.333E+09		3.559E+09	Half-Life too short		
CS-136	4.085E-02		1.225E-01	2.071E-01	1.774E-02	0.197
BA-137M	3.760E-02		3.978E-02	6.875E-02	4.521E-03	0.547
CS-137	3.974E-02		4.206E-02	7.267E-02	4.795E-03	0.547
CE-139	3.609E-04		3.029E-02	4.881E-02	4.846E-03	0.007
BA-140	-1.599E-01		2.979E-01	4.559E-01	1.489E-01	-0.351
LA-140	-5.938E-02		8.831E-02	1.298E-01	7.631E-03	-0.457
CE-141	5.104E-02		6.424E-02	1.068E-01	1.305E-02	0.478
CE-143	6.120E-04		1.138E-04	Half-Life too short		
CE-144	-7.501E-02		2.260E-01	3.134E-01	5.803E-02	-0.239
PM-144	2.500E-02		3.958E-02	6.918E-02	4.892E-03	0.361
PR-144	1.694E+00		2.682E+00	4.688E+00	3.313E-01	0.361
PM-146	1.810E-03		4.766E-02	7.820E-02	6.939E-03	0.023

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	4.504E-01		6.226E-01	1.061E+00	1.466E-01	0.424
PM-149	-2.522E+01		9.104E+01	1.496E+02	2.371E+01	-0.169
EU-152	1.534E-03		1.164E-01	1.675E-01	1.378E-02	0.009
GD-153	-3.635E-02		7.818E-02	1.093E-01	1.013E-02	-0.333
EU-154	-8.362E-02		1.421E-01	2.148E-01	2.008E-02	-0.389
EU-155	-8.795E-03		9.886E-02	1.609E-01	1.743E-02	-0.055
TB-160	7.091E-02		1.546E-01	2.603E-01	2.572E-02	0.272
HO-166M	-2.964E-03		6.682E-02	1.115E-01	8.122E-03	-0.027
TM-171	-1.556E+01		1.790E+01	2.495E+01	2.005E+00	-0.624
LU-176	2.412E-02		2.638E-02	4.484E-02	3.905E-03	0.538
LU-177	2.252E+00	+	1.414E+00	2.013E+00	2.007E-01	1.119
LU-177M	-1.712E-01		1.961E-01	3.041E-01	1.810E-02	-0.563
HF-181	-9.857E-03		4.406E-02	7.065E-02	4.447E-03	-0.140
W-181	2.727E-01		2.168E-01	3.281E-01	2.652E-02	0.831
TA-182	8.731E-02		2.249E-01	3.777E-01	2.196E-02	0.231
RE-183	2.819E-02		1.144E-01	1.863E-01	1.925E-02	0.151
RE-184	2.227E-01		2.395E-01	4.171E-01	4.030E-02	0.534
OS-185	-2.208E-02		4.664E-02	7.168E-02	4.722E-03	-0.308
RE-188	-1.675E-02		1.823E-01	2.931E-01	3.263E-02	-0.057
W-188	3.303E+00		8.148E+00	1.217E+01	1.103E+00	0.271
IR-192	3.024E-02		3.505E-02	6.086E-02	5.165E-03	0.497
AU-195	4.525E-01		2.195E-01	3.421E-01	3.262E-02	1.323
TL-200	-4.576E-04		2.576E-04	Half-Life too short		
TL-201	-4.327E+00		7.304E+00	1.142E+01	1.134E+00	-0.379
TL-202	-3.193E-02		7.585E-02	1.207E-01	7.358E-03	-0.265
HG-203	4.429E-02		4.407E-02	7.593E-02	7.219E-03	0.583
BI-207	2.632E-02		6.337E-02	1.076E-01	8.520E-03	0.245
TL-207	2.564E-01		7.620E-01	1.127E+00	1.976E-01	0.228
PO-209	3.503E+00		8.360E+00	1.433E+01	1.457E+00	0.244
PB-211	-2.823E-02		1.055E+00	1.733E+00	1.081E+00	-0.016
BI-212	1.224E+00	+	4.612E-01	7.004E-01	6.354E-02	1.748
PO-215	2.564E-01		7.620E-01	1.127E+00	1.976E-01	0.228
RN-219	-1.942E-01		4.638E-01	7.427E-01	1.013E-01	-0.261
RN-220	-6.263E-01		2.784E+01	4.504E+01	2.931E+00	-0.014
RA-223	2.564E-01		7.620E-01	1.127E+00	1.976E-01	0.228
AC-227	-8.890E-02		4.022E-01	6.670E-01	1.063E-01	-0.133
TH-227	-8.890E-02		4.023E-01	6.670E-01	1.238E-01	-0.133
TH-229	-3.281E-01		5.471E-01	8.505E-01	8.494E-02	-0.386
PA-231	-4.650E-01		1.493E+00	2.449E+00	3.800E-01	-0.190
TH-231	2.564E-01		7.620E-01	1.127E+00	1.976E-01	0.228
U-231	-4.425E-01		1.078E+00	1.514E+00	1.361E-01	-0.292
PA-233	-1.897E-02		6.480E-02	1.060E-01	9.359E-03	-0.179
PA-234	-9.834E-03		3.345E-01	5.497E-01	1.059E-01	-0.018
PA-234M	6.558E-02		4.954E+00	8.149E+00	8.327E-01	0.008
U-235	1.300E-02		2.157E-01	3.499E-01	6.846E-02	0.037
NP-236	3.018E-02		8.410E-02	1.375E-01	1.452E-02	0.219
NP-239	5.722E-02		1.872E-01	3.083E-01	4.039E-02	0.186
AM-241	1.222E-01		6.900E-02	1.068E-01	9.557E-03	1.144

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-6.499E-02		9.016E-02	1.429E-01	1.493E-02	-0.455
AM-246	1.163E-01		1.577E-01	2.761E-01	2.113E-02	0.421
CM-247	7.674E-04		4.100E-02	6.754E-02	3.975E-03	0.011
CF-249	4.708E-02		4.416E-02	7.710E-02	4.611E-03	0.611
CF-251	-4.580E-02		1.307E-01	2.065E-01	2.057E-02	-0.222

# 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]G1202001376          *
* Acquisition date   : 31-DEC-2009 15:32:03 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 02:00:01.68 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 16-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202001376 Analyst initials: MXR1                 *
* Batch Number       : 935341 Sample Quantity : 1.3293E+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	2.359E+01	2.161E+00	2.985E-01	1.102E+00
AS-73	2.190E-01	2.740E-01	2.072E-01	1.398E-01
CD-109	3.335E+00	7.693E-01	5.480E-01	3.925E-01
SN-126	3.278E-01	7.561E-02	5.379E-02	3.858E-02
TL-208	4.890E-01	8.146E-02	3.107E-02	4.156E-02
BI-210	1.182E+00	7.729E-01	4.493E-01	3.943E-01
PB-210	1.182E+00	7.729E-01	4.493E-01	3.943E-01
PO-210	1.182E+00	7.716E-01	4.493E-01	3.937E-01
BI-211	3.425E+00	4.819E-01	1.727E-01	2.459E-01
PB-212	1.524E+00	1.927E-01	4.565E-02	9.831E-02
PO-212	1.524E+00	1.927E-01	4.565E-02	9.831E-02
BI-214	1.189E+00	1.963E-01	6.366E-02	1.002E-01
PB-214	1.191E+00	1.784E-01	5.840E-02	9.100E-02
PO-214	1.191E+00	1.784E-01	5.840E-02	9.100E-02
PO-216	1.524E+00	1.927E-01	4.565E-02	9.831E-02
PO-218	1.191E+00	1.784E-01	5.840E-02	9.100E-02
RA-224	4.355E+00	1.510E+00	5.194E-01	7.706E-01
RA-226	1.189E+00	1.963E-01	6.366E-02	1.002E-01
AC-228	1.438E+00	3.126E-01	1.176E-01	1.595E-01
RA-228	1.438E+00	3.126E-01	1.176E-01	1.595E-01
TH-228	1.547E+00	1.956E-01	4.634E-02	9.981E-02
TH-230	1.189E+00	1.963E-01	6.366E-02	1.002E-01
TH-232	1.438E+00	3.126E-01	1.176E-01	1.595E-01
TH-234	9.177E-01	7.157E-01	5.451E-01	3.651E-01
U-234	1.189E+00	1.963E-01	6.366E-02	1.002E-01
NP-237	9.625E-01	2.953E-01	1.724E-01	1.506E-01
U-238	9.177E-01	7.157E-01	5.451E-01	3.651E-01
AM-243	3.803E-01	6.346E-02	3.187E-02	3.238E-02
ANH-511	9.447E-02	6.438E-02	2.566E-02	3.285E-02

### ---- Non-Identified Nuclides ----

Key-Line Activity	K.L Act error	DLC	TPU
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Nuclide	(pCi/GRAM )		(pCi/GRAM )		
BE-7	-1.506E-01	3.375E-01	2.779E-01	1.722E-01	NOT IDENT.
NA-22	-3.039E-02	4.977E-02	3.855E-02	2.539E-02	NOT IDENT.
NA-24	1.314E+05	7.620E+05	0.000E+00	3.888E+05	SHORT HLIF
AL-26	2.017E-02	3.830E-02	3.479E-02	1.954E-02	NOT IDENT.
TI-44	3.375E-01	4.288E-02	3.259E-02	2.188E-02	FAIL ABUN
SC-46	-1.177E-02	4.115E-02	3.413E-02	2.099E-02	FAIL ABUN
V-48	-3.853E-02	7.662E-02	6.158E-02	3.909E-02	NOT IDENT.
CR-51	1.462E-01	3.742E-01	3.332E-01	1.909E-01	NOT IDENT.
MN-52	-1.313E-02	2.187E-01	1.851E-01	1.116E-01	NOT IDENT.
MN-54	-3.192E-02	4.277E-02	3.440E-02	2.182E-02	NOT IDENT.
CO-56	-2.048E-02	4.480E-02	3.685E-02	2.286E-02	NOT IDENT.
CO-57	-1.222E-03	2.585E-02	2.135E-02	1.319E-02	NOT IDENT.
CO-58	6.597E-03	4.174E-02	3.634E-02	2.130E-02	NOT IDENT.
FE-59	-3.720E-02	9.522E-02	7.665E-02	4.858E-02	NOT IDENT.
CO-60	9.381E-03	4.103E-02	3.492E-02	2.094E-02	NOT IDENT.
ZN-65	-1.689E-02	1.232E-01	8.694E-02	6.284E-02	NOT IDENT.
GE-68	2.401E-01	1.357E+00	1.161E+00	6.924E-01	NOT IDENT.
AS-74	-3.136E-02	1.016E-01	8.308E-02	5.181E-02	NOT IDENT.
SE-75	3.840E-03	5.054E-02	3.899E-02	2.579E-02	NOT IDENT.
BR-77	-7.926E+00	1.153E+01	9.241E+00	5.881E+00	FAIL ABUN
SR-82	-1.453E-01	4.204E-01	3.521E-01	2.145E-01	NOT IDENT.
RB-83	-5.513E-02	7.491E-02	5.978E-02	3.822E-02	NOT IDENT.
RB-84	3.632E-02	7.942E-02	6.896E-02	4.052E-02	NOT IDENT.
KR-85	2.029E+01	8.949E+00	7.793E+00	4.566E+00	NOT IDENT.
SR-85	1.041E-01	4.590E-02	3.997E-02	2.342E-02	NOT IDENT.
RB-86	-1.319E-01	8.855E-01	7.339E-01	4.518E-01	NOT IDENT.
Y-88	3.027E-05	3.462E-02	2.896E-02	1.766E-02	NOT IDENT.
ZR-88	-2.723E-02	3.290E-02	2.689E-02	1.678E-02	NOT IDENT.
Y-91	1.052E+00	2.318E+01	1.939E+01	1.183E+01	NOT IDENT.
NB-94	2.278E-02	3.850E-02	3.471E-02	1.964E-02	NOT IDENT.
NB-95	1.214E-02	4.610E-02	4.053E-02	2.352E-02	NOT IDENT.
NB-95M	2.795E-01	1.467E-01	1.226E-01	7.486E-02	NOT IDENT.
ZR-95	7.521E-02	7.973E-02	7.341E-02	4.068E-02	NOT IDENT.
NB-97	-3.758E+04	1.148E+05	0.000E+00	5.858E+04	SHORT HLIF
ZR-97	5.075E+06	2.140E+06	0.000E+00	1.092E+06	SHORT HLIF
MO-99	1.128E+01	1.333E+01	1.215E+01	6.799E+00	NOT IDENT.
TC-99M	-8.711E+15	4.142E+16	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-6.510E-03	3.618E-02	2.998E-02	1.846E-02	FAIL ABUN
RH-102	1.597E-02	3.018E-02	2.666E-02	1.540E-02	NOT IDENT.
RU-103	-1.124E-02	4.353E-02	3.612E-02	2.221E-02	FAIL ABUN
RH-106	2.733E-01	3.579E-01	3.160E-01	1.826E-01	FAIL ABUN
RU-106	2.733E-01	3.568E-01	3.160E-01	1.820E-01	FAIL ABUN
AG-108M	-2.205E-02	3.468E-02	2.841E-02	1.769E-02	NOT IDENT.
AG-110M	-1.493E-02	3.984E-02	3.214E-02	2.033E-02	NOT IDENT.
IN-111	6.508E-01	1.142E+00	9.128E-01	5.824E-01	NOT IDENT.
IN-113M	-3.004E-02	4.769E-02	3.952E-02	2.433E-02	NOT IDENT.
SN-113	-3.004E-02	4.769E-02	3.952E-02	2.433E-02	NOT IDENT.
IN-114M	-3.203E-02	2.081E-01	1.525E-01	1.062E-01	NOT IDENT.
CD-115	-6.513E+00	1.250E+01	1.016E+01	6.376E+00	NOT IDENT.
SN-117M	9.855E-03	5.692E-02	4.913E-02	2.904E-02	NOT IDENT.
SB-122	1.114E+00	2.411E+00	2.096E+00	1.230E+00	NOT IDENT.
I-123	4.731E+06	6.160E+06	0.000E+00	3.143E+06	SHORT HLIF
TE-123M	2.250E-02	2.929E-02	2.581E-02	1.494E-02	NOT IDENT.
I-124	2.729E-02	8.672E-01	6.287E-01	4.425E-01	FAIL ABUN
SB-124	-2.971E-02	8.476E-02	4.721E-02	4.325E-02	FAIL ABUN
SB-125	-1.762E-02	9.875E-02	8.370E-02	5.039E-02	FAIL ABUN
TE-125M	-1.575E+00	9.065E+00	7.761E+00	4.625E+00	NOT IDENT.
I-126	-9.923E-02	2.009E-01	1.601E-01	1.025E-01	NOT IDENT.
SB-126	5.507E-02	1.800E-01	1.390E-01	9.183E-02	FAIL ABUN
SB-127	2.352E-01	1.493E+00	1.313E+00	7.616E-01	NOT IDENT.
XE-127	-1.144E-02	5.059E-02	4.080E-02	2.581E-02	NOT IDENT.
I-131	6.490E-02	1.223E-01	1.090E-01	6.239E-02	NOT IDENT.
TE-132	-5.069E-02	6.828E-01	6.052E-01	3.484E-01	NOT IDENT.
BA-133	-2.397E-04	4.967E-02	3.735E-02	2.534E-02	FAIL ABUN
I-133	-1.217E+03	6.978E+03	0.000E+00	3.560E+03	SHORT HLIF
CS-134	8.809E-02	4.998E-02	4.825E-02	2.550E-02	NOT IDENT.
CS-135	1.731E-01	1.883E-01	1.520E-01	9.605E-02	NOT IDENT.
I-135	-1.333E+15	6.975E+15	0.000E+00	3.559E+15	SHORT HLIF
CS-136	4.085E-02	1.200E-01	1.044E-01	6.125E-02	FAIL ABUN
BA-137M	3.760E-02	3.899E-02	3.494E-02	1.989E-02	NOT IDENT.
CS-137	3.974E-02	4.121E-02	3.693E-02	2.103E-02	NOT IDENT.
CE-139	3.609E-04	2.969E-02	2.540E-02	1.515E-02	NOT IDENT.
BA-140	-1.599E-01	2.920E-01	2.326E-01	1.490E-01	NOT IDENT.
LA-140	-5.938E-02	8.654E-02	6.495E-02	4.415E-02	FAIL ABUN
CE-141	5.104E-02	6.295E-02	5.568E-02	3.212E-02	NOT IDENT.
CE-143	6.120E+02	2.231E+02	0.000E+00	1.138E+02	SHORT HLIF

CE-144	-7.501E-02	2.215E-01	1.637E-01	1.130E-01	NOT IDENT.
PM-144	2.500E-02	3.879E-02	3.513E-02	1.979E-02	NOT IDENT.
PR-144	1.694E+00	2.629E+00	2.380E+00	1.341E+00	NOT IDENT.
PM-146	1.810E-03	4.671E-02	4.001E-02	2.383E-02	NOT IDENT.
ND-147	4.504E-01	6.101E-01	5.414E-01	3.113E-01	FAIL ABUN
PM-149	-2.522E+01	8.922E+01	7.713E+01	4.552E+01	NOT IDENT.
EU-152	1.534E-03	1.141E-01	8.611E-02	5.820E-02	FAIL ABUN
GD-153	-3.635E-02	7.661E-02	5.739E-02	3.909E-02	NOT IDENT.
EU-154	-8.362E-02	1.393E-01	1.079E-01	7.106E-02	NOT IDENT.
EU-155	-8.795E-03	9.688E-02	8.438E-02	4.943E-02	FAIL ABUN
TB-160	7.091E-02	1.515E-01	1.316E-01	7.729E-02	FAIL ABUN
HO-166M	-2.964E-03	6.549E-02	5.658E-02	3.341E-02	FAIL ABUN
TM-171	-1.556E+01	1.754E+01	1.318E+01	8.948E+00	FAIL ABUN
LU-176	2.412E-02	2.585E-02	2.309E-02	1.319E-02	FAIL ABUN
LU-177	2.252E+00	1.386E+00	1.044E+00	7.070E-01	FAIL ABUN
LU-177M	-1.712E-01	1.922E-01	1.558E-01	9.804E-02	FAIL ABUN
HF-181	-9.857E-03	4.318E-02	3.611E-02	2.203E-02	NOT IDENT.
W-181	2.727E-01	2.124E-01	1.734E-01	1.084E-01	NOT IDENT.
TA-182	8.731E-02	2.204E-01	1.899E-01	1.125E-01	FAIL ABUN
RE-183	2.819E-02	1.122E-01	9.699E-02	5.722E-02	FAIL ABUN
RE-184	2.227E-01	2.347E-01	2.155E-01	1.198E-01	NOT IDENT.
OS-185	-2.208E-02	4.571E-02	3.645E-02	2.332E-02	NOT IDENT.
RE-188	-1.675E-02	1.787E-01	1.527E-01	9.115E-02	NOT IDENT.
W-188	3.303E+00	7.985E+00	6.275E+00	4.074E+00	FAIL ABUN
IR-192	3.024E-02	3.435E-02	3.133E-02	1.752E-02	FAIL ABUN
AU-195	4.525E-01	2.151E-01	1.796E-01	1.098E-01	FAIL ABUN
TL-200	-4.576E+02	5.049E+02	0.000E+00	2.576E+02	SHORT HLIF
TL-201	-4.327E+00	7.158E+00	5.945E+00	3.652E+00	NOT IDENT.
TL-202	-3.193E-02	7.433E-02	6.178E-02	3.792E-02	NOT IDENT.
HG-203	4.429E-02	4.319E-02	3.917E-02	2.204E-02	NOT IDENT.
BI-207	2.632E-02	6.211E-02	5.421E-02	3.169E-02	FAIL ABUN
TL-207	2.564E-01	7.468E-01	5.798E-01	3.810E-01	FAIL ABUN
PO-209	3.503E+00	8.192E+00	7.244E+00	4.180E+00	NOT IDENT.
PB-211	-2.823E-02	1.034E+00	8.884E-01	5.277E-01	NOT IDENT.
BI-212	1.224E+00	4.520E-01	3.554E-01	2.306E-01	FAIL ABUN
PO-215	2.564E-01	7.468E-01	5.798E-01	3.810E-01	FAIL ABUN
RN-219	-1.942E-01	4.545E-01	3.808E-01	2.319E-01	FAIL ABUN
RN-220	-6.263E-01	2.728E+01	2.297E+01	1.392E+01	NOT IDENT.
RA-223	2.564E-01	7.468E-01	5.798E-01	3.810E-01	FAIL ABUN
AC-227	-8.890E-02	3.942E-01	3.446E-01	2.011E-01	FAIL ABUN
TH-227	-8.890E-02	3.943E-01	3.446E-01	2.012E-01	FAIL ABUN
TH-229	-3.281E-01	5.362E-01	4.415E-01	2.736E-01	FAIL ABUN
PA-231	-4.650E-01	1.463E+00	1.263E+00	7.465E-01	NOT IDENT.
TH-231	2.564E-01	7.468E-01	5.798E-01	3.810E-01	FAIL ABUN
U-231	-4.425E-01	1.056E+00	7.953E-01	5.389E-01	FAIL ABUN
PA-233	-1.897E-02	6.350E-02	5.458E-02	3.240E-02	FAIL ABUN
PA-234	-9.834E-03	3.278E-01	2.776E-01	1.672E-01	FAIL ABUN
PA-234M	6.558E-02	4.855E+00	4.111E+00	2.477E+00	NOT IDENT.
U-235	1.300E-02	2.114E-01	1.825E-01	1.079E-01	FAIL ABUN
NP-236	3.018E-02	8.241E-02	7.161E-02	4.205E-02	NOT IDENT.
NP-239	5.722E-02	1.835E-01	1.614E-01	9.361E-02	FAIL ABUN
AM-241	1.222E-01	6.762E-02	5.653E-02	3.450E-02	NOT IDENT.
CM-243	-6.499E-02	8.836E-02	7.494E-02	4.508E-02	FAIL ABUN
AM-246	1.163E-01	1.546E-01	1.391E-01	7.885E-02	NOT IDENT.
CM-247	7.674E-04	4.018E-02	3.462E-02	2.050E-02	NOT IDENT.
CF-249	4.708E-02	4.327E-02	3.955E-02	2.208E-02	NOT IDENT.
CF-251	-4.580E-02	1.281E-01	1.073E-01	6.535E-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	394.9409
46.50	394.9409
46.50	394.9409
48.70	354.4944
49.72	408.5547
51.35	405.8225
52.39	388.2906
52.97	402.0874
53.15	402.2029
53.44	451.7513
54.07	466.0465
56.28	535.5669
56.28	535.5690
57.37	0.0000
57.53	535.4374
57.53	535.4385
57.60	535.4945
57.98	470.0376
57.98	470.0376
59.32	409.3523
59.32	409.3523
59.40	424.9090
59.54	424.9977
59.72	474.7604
60.01	474.9649
61.10	525.4813
61.14	525.5122
61.30	538.0771
63.00	577.8014
63.29	579.0177
63.29	579.0177
63.58	569.5083
64.28	534.1564
65.12	542.6138
65.20	542.6752
65.20	542.6752
66.05	590.3005
66.72	630.0339
66.83	631.6995
66.91	631.7709
67.20	632.0255
67.20	632.0255
67.75	631.7216
67.85	642.0132
68.90	597.3542
68.90	597.3542
69.30	583.5256
69.67	583.8223
70.82	535.8715
70.82	535.8715
70.83	535.8798
72.80	614.7264
72.87	614.7834
72.87	614.7834
74.67	596.0430
74.81	596.1509
74.81	596.1509
74.81	596.1509
74.81	596.1509
74.81	596.1509
74.81	596.1509
74.81	596.1509
74.97	596.2750
75.28	596.5161
75.70	596.8422
77.11	597.9261
77.11	597.9261

77.11	597.9261
77.11	597.9261
77.11	597.9261
77.11	597.9261
77.11	597.9261
78.38	518.9099
79.62	522.9122
79.80	612.3281
79.80	612.3281
80.11	612.5672
80.18	612.6211
80.30	655.7938
80.30	655.7938
80.57	656.0146
81.00	649.9778
81.07	650.0350
81.07	650.0350
81.07	650.0350
81.07	650.0350
82.60	484.0499
83.37	592.6165
83.78	594.9200
83.78	594.9200
83.78	594.9200
83.78	594.9200
84.21	595.2304
84.90	518.3042
85.43	510.6070
86.29	612.3975
86.50	612.5510
86.54	612.5812
86.59	612.6184
86.72	612.7137
86.79	656.1867
86.94	656.3062
87.30	511.9533
87.30	511.9533
87.30	511.9533
87.30	511.9533
87.30	511.9533
87.30	511.9533
87.57	512.1164
87.88	512.3047
88.03	512.3960
88.36	512.5960
88.47	512.6620
89.95	513.5532
91.11	514.2484
92.29	514.9493
92.38	515.0017
92.38	515.0017
93.35	515.5745
94.00	515.9570
94.67	516.3454
94.67	516.3492
94.90	381.5279
94.90	381.5279
94.90	381.5279
94.90	381.5279
95.87	437.2054
95.87	437.2054
96.73	414.8528
97.43	394.0092
98.44	301.5430
98.44	301.5430
98.88	291.9052
99.55	288.8566
99.55	288.8566
99.86	314.2589
100.00	314.3070
100.10	314.3423
103.18	406.5288
103.76	392.4368
105.00	351.9170
105.31	360.2428
108.00	383.9078
109.28	379.2670



111.00	356.1945
111.00	356.1945
111.76	395.7358
112.95	383.8024
115.19	352.5303
116.30	346.6939
117.00	335.5100
117.00	335.5100
117.66	341.9658
121.11	324.3538
121.62	320.3413
121.78	323.2232
122.06	317.3466
122.32	304.8955
122.32	304.8955
122.32	304.8955
122.32	304.8955
123.07	319.3281
127.23	327.3123
129.76	272.5682
131.20	299.8883
133.02	291.9544
133.54	303.9126
135.34	309.6985
136.00	301.4231
136.25	297.2590
136.48	287.7985
140.51	315.3880
140.51	0.0000
142.18	325.4238
142.65	326.6232
143.76	333.3315
144.24	315.3582
144.24	315.3582
144.24	315.3582
144.24	315.3582
145.22	307.0986
145.44	302.8919
147.16	349.2712
152.43	307.9286
152.70	301.5596
153.22	298.4695
154.21	336.3260
154.21	336.3260
154.21	336.3260
154.21	336.3260
155.03	333.3318
156.02	343.2915
158.56	308.4267
159.00	0.0000
159.00	288.0407
160.31	301.3099
161.27	308.0310
162.32	295.3133
162.64	323.5205
163.35	291.2285
163.89	296.7713
165.85	280.9654
167.43	301.9585
171.28	252.7606
171.86	247.4257
172.10	257.2841
176.55	273.4871
176.60	281.1565
181.06	286.2847
184.41	288.7677
185.71	274.2872
186.00	274.3480
190.27	265.2667
192.34	288.6923
193.63	298.0484
197.04	258.7955
198.01	283.4276
198.60	282.4343
200.40	277.2298
201.83	291.9995
202.84	277.8679
205.31	275.2844

208.36	270.4950
208.81	268.7878
209.75	258.2033
209.75	258.2033
210.97	258.4195
215.65	260.0441
216.55	253.0972
218.09	238.9335
222.10	242.2861
223.80	249.7999
226.40	221.2158
227.00	229.4650
227.08	237.6406
227.20	237.6598
228.16	235.9932
228.18	235.9963
228.18	235.9963
231.56	0.0000
235.69	238.6622
236.00	238.7101
236.00	238.7101
238.63	204.6898
238.63	204.6898
238.63	204.6898
238.63	204.6898
239.00	204.7377
240.98	204.9934
241.98	205.1219
241.98	205.1219
241.98	205.1219
244.69	177.3406
245.39	180.4762
247.94	223.6546
248.90	228.3851
249.79	188.6365
252.40	188.9381
252.85	184.3811
252.85	184.3811
254.15	0.0000
256.20	218.9357
256.20	218.9357
260.50	193.5699
260.90	205.6589
262.80	211.9866
264.65	190.3357
268.24	203.1443
268.79	206.6210
269.46	206.7023
269.46	206.7023
269.46	206.7023
269.46	206.7023
271.23	201.9454
273.65	276.8973
276.40	179.1798
277.35	198.7648
277.60	183.5915
277.60	183.5915
278.00	174.6650
278.60	174.1025
279.20	179.7797
279.53	177.0029
280.46	206.1453
281.68	208.1629
283.67	167.0945
284.30	183.1172
285.00	182.2515
285.90	168.2451
286.10	161.6846
286.10	161.6846
287.40	150.5137
288.45	0.0000
290.67	153.9305
290.80	153.9405
291.72	177.5948
293.26	0.0000
293.70	173.0678
295.21	173.2133
295.21	173.2133

295.21	173.2133
295.96	132.3267
296.50	132.3660
297.23	132.4189
298.57	132.5164
299.80	176.8070
299.80	176.8070
300.09	161.0455
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300.09	161.0455
300.09	161.0455
300.12	161.0476
301.29	180.1104
302.84	178.6799
303.76	180.3516
303.91	180.3655
304.40	178.8316
304.40	178.8316
304.84	163.0435
306.84	146.8448
308.46	141.7919
311.98	156.3585
316.51	133.7964
318.01	157.8135
319.02	155.0252
319.41	150.2711
320.08	145.5355
323.87	143.9044
323.87	143.9044
323.87	143.9044
323.87	143.9044
325.23	153.6074
328.77	147.4748
333.44	125.3313
334.20	144.6680
334.20	144.6680
334.30	135.0303
338.28	162.6846
338.28	162.6846
338.28	162.6846
338.28	162.6846
338.32	162.6887
338.32	162.6887
338.32	162.6887
340.50	145.1294
340.57	145.1331
344.27	145.4022
345.85	151.9831
350.59	0.0000
351.07	136.1650
351.92	128.1130
351.92	128.1130
351.92	128.1130
355.39	0.0000
356.01	133.2433
364.48	129.2205
366.43	145.9989
367.43	163.7138
367.94	0.0000
369.80	135.4378
374.96	150.5253
383.85	149.1733
387.95	121.7418
388.63	123.7595
391.69	144.7524
391.69	144.7524
392.90	146.8167
398.62	124.3225
400.65	146.3361
401.10	145.3709
401.81	147.4092
402.60	136.5000
404.84	143.6185
410.95	117.0071
411.60	117.0400
413.65	147.1830
414.70	140.2393
415.30	150.2948

415.76	148.3216
417.63	0.0000
418.52	119.4024
423.70	139.7839
427.08	132.9378
427.89	120.8936
432.53	110.0299
433.93	121.2063
439.47	119.4664
439.56	119.4707
439.89	113.4109
443.98	116.6495
444.90	100.4586
445.03	100.4635
445.03	100.4635
445.03	100.4635
445.03	100.4635
453.90	108.9827
463.38	108.3835
468.07	76.8320
473.00	100.5936
475.06	88.3484
475.35	96.5783
476.78	95.6054
477.59	103.8628
477.96	93.5927
482.03	92.7136
484.57	92.8070
487.03	86.7039
490.36	0.0000
492.35	102.3995
497.08	93.2618
507.63	0.0000
510.53	0.0000
510.84	94.7969
511.00	94.8024
511.85	95.5271
511.85	95.5271
513.99	83.4370
513.99	83.4370
520.41	102.4574
520.65	103.5125
527.90	107.9865
528.96	0.0000
529.64	103.8606
529.87	0.0000
531.02	79.7722
537.32	100.9969
543.00	89.6111
546.56	0.0000
549.76	81.3764
552.65	81.4610
555.20	88.9485
563.23	86.0170
563.90	95.5964
568.70	94.6950
569.32	78.7533
569.50	78.7569
569.67	75.5692
573.80	111.9188
574.00	111.9265
574.64	104.4887
578.91	80.0848
579.30	0.0000
583.14	78.0633
585.48	78.4842
591.81	84.7321
592.07	84.7398
593.00	76.1829
595.88	91.2961
600.56	98.9719
602.52	0.0000
602.71	95.0964
602.71	95.0964
603.60	109.4828
604.41	98.7408
604.70	89.7725
609.31	91.7112

609.31	91.7112
609.31	91.7112
609.31	91.7112
610.33	91.7423
612.46	84.6080
614.37	73.8537
618.01	85.2157
621.84	72.5926
621.84	72.5926
631.29	70.6447
633.02	69.5969
633.10	69.6000
634.78	64.1971
635.90	68.5740
636.97	94.7314
645.85	76.4395
646.12	76.4463
656.30	85.4610
657.75	87.6934
657.90	0.0000
661.65	65.8506
661.65	65.8506
664.57	0.0000
666.33	85.7334
666.33	85.7334
675.00	77.1504
677.61	73.5352
685.20	75.5520
692.80	91.4288
695.00	89.6409
696.49	79.5122
696.49	79.5122
697.00	84.1480
697.49	82.3112
698.33	89.7337
698.50	89.7376
699.00	92.5273
702.63	83.3661
706.10	84.3812
706.58	0.0000
706.67	80.6863
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711.68	76.1643
713.82	77.1421
717.42	74.4336
720.50	71.8412
721.93	0.0000
722.20	70.2815
722.78	70.2938
722.78	70.2938
722.89	78.2834
722.95	78.2852
723.30	76.6959
724.18	84.7072
727.18	65.3188
733.00	81.7224
735.90	73.4814
739.58	65.5581
742.81	70.3079
744.21	75.0244
747.13	66.6419
751.79	76.1303
752.31	66.7416
753.82	74.2939
755.35	67.7402
756.15	63.0510
756.87	71.5361
763.93	97.1451
765.79	76.4368
766.42	84.0006
766.84	84.0115
776.49	74.7761
778.00	75.7552
778.57	69.1370
778.89	72.9332
783.80	54.0637
785.46	57.8850
792.07	68.4492

795.84	47.5840
796.30	52.3491
798.80	102.8650
801.93	51.4775
805.60	45.8037
810.29	63.0620
810.76	58.2920
815.85	58.3727
817.79	68.9355
818.51	58.4149
819.60	53.6427
826.30	63.3373
828.27	0.0000
831.60	54.7781
831.96	55.7438
834.83	84.6431
836.80	0.0000
846.75	71.4030
848.13	67.5690
856.28	0.0000
856.80	66.3421
860.37	66.4035
867.32	53.0351
867.82	61.7095
871.10	48.5555
873.19	53.4401
874.81	53.4625
875.33	0.0000
876.40	62.2357
879.36	46.7129
880.27	52.5641
880.51	52.5674
881.50	51.6068
883.24	46.7598
884.67	54.5724
889.25	54.6374
896.60	52.7849
898.02	46.9365
899.00	47.9263
903.28	68.8200
911.07	54.9404
911.07	54.9404
911.07	54.9404
919.63	57.8119
920.93	72.7790
925.00	47.2559
925.24	48.2433
926.50	52.1988
935.52	53.3024
937.48	71.1035
944.10	58.3602
946.00	54.4293
949.00	49.5178
962.29	64.7227
964.01	56.2296
966.15	52.7078
968.20	52.7337
969.11	46.0625
969.11	46.0625
969.11	46.0625
977.42	51.1277
980.50	40.9141
983.50	55.9225
989.30	50.0000
996.32	54.0890
1001.03	52.1439
1001.68	43.1251
1004.76	52.1894
1021.30	0.0000
1024.50	0.0000
1034.80	51.5437
1036.00	44.4816
1037.82	52.5903
1038.57	53.6103
1038.76	0.0000
1045.16	57.7445
1046.59	53.7095
1048.07	49.6719

1050.47	49.6998
1050.47	49.6998
1062.04	67.1172
1063.62	55.9511
1076.63	55.0920
1077.35	48.9805
1078.86	42.8716
1085.78	44.9811
1099.22	51.2675
1112.02	50.7244
1112.84	52.8892
1115.52	68.7968
1120.29	56.6539
1120.29	56.6539
1120.29	56.6539
1120.29	56.6539
1120.51	56.6561
1121.28	38.8560
1124.00	0.0000
1129.67	47.2910
1131.51	0.0000
1147.95	0.0000
1167.94	43.7039
1173.22	59.3773
1175.09	51.0636
1177.93	45.8799
1189.05	58.5270
1204.90	74.4466
1205.75	0.0000
1213.00	64.0679
1221.42	59.9688
1230.97	68.5177
1235.34	69.6335
1236.41	0.0000
1238.25	65.4512
1246.25	65.5546
1260.41	0.0000
1271.85	36.1333
1274.45	54.2269
1274.54	54.2269
1291.56	39.4721
1298.22	0.0000
1312.09	35.3458
1325.50	38.6572
1325.50	38.6572
1332.49	29.0314
1333.61	34.4154
1360.21	24.8605
1362.66	0.0000
1365.15	25.9648
1368.21	23.8145
1368.53	0.0000
1376.25	23.2309
1384.27	34.4333
1394.10	31.6983
1395.20	32.6367
1407.95	28.0402
1434.06	19.7205
1436.60	21.6090
1457.56	0.0000
1460.81	23.5892
1489.15	18.9655
1509.49	15.2260
1596.49	23.1780
1620.62	10.6655
1678.03	0.0000
1691.02	7.8451
1691.02	7.8451
1706.46	0.0000
1750.46	0.0000
1764.49	17.3584
1764.49	17.3584
1764.49	17.3584
1764.49	17.3584
1770.23	13.8989
1771.40	54.6125
1791.20	0.0000
1808.65	13.9805

1836.01

11.0295



TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202001376

Total Uranium Activity	2.7362E+00	ug/g
Total Uranium Counting Unc.	2.1313E+00	ug/g
Total Uranium Tpu	1.0874E-06	ug/g
Total Uranium Mda	1.6240E+00	ug/g

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*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417               *
*               GROSS GAMMA REPORT                 *
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*
*   BATCH ID      : 935341          SAMPLE ID   : G1202001376   *
*   ANALYST       : MXR1            DETECTOR    : GAM05         *
*   SAMPLE DATE   : 16-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00 *
*   ANALYSIS DATE: 31-DEC-2009 15:32:03.22  SAMPLE ALQT: 132.930 GRAM *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.184E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.226E+00
GROSS GAMMA MDA (pCi/GRAM ) : 3.675E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.791E+00

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VAX/VMS Nuclide Identification Report Generated 31-DEC-2009 16:33:02.92

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202001377.CNF;1
Sample date        : 22-DEC-2009 00:00:00 Acquisition date : 31-DEC-2009 15:32:35
Sample ID          : G1202001377      Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM07            Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:01.31  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 935341           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	59.43	4421	1226	1.03	118.51	113	12	1.23E+00	2.2	
2	1	74.78*	153	413	1.11	149.20	144	14	4.26E-02	23.8	1.15E+00
3	1	77.07*	256	394	1.11	153.80	144	14	7.11E-02	14.8	
4	0	88.04*	1752	617	1.07	175.72	170	12	4.87E-01	3.7	
5	0	93.06*	100	304	1.52	185.76	182	8	2.77E-02	32.8	
6	0	122.00	273	364	1.11	243.63	238	11	7.60E-02	14.8	
7	0	185.80*	132	441	1.44	371.21	364	15	3.68E-02	36.0	
8	0	238.62*	434	291	1.17	476.83	473	8	1.21E-01	8.4	
9	0	241.55*	96	165	1.63	482.69	481	6	2.67E-02	24.2	
10	0	295.10	136	210	1.38	589.77	586	9	3.78E-02	21.0	
11	0	338.42	88	147	1.15	676.41	673	8	2.44E-02	26.1	
12	0	352.05*	214	193	1.22	703.65	699	12	5.95E-02	14.8	
13	0	510.83*	5	200	2.38	1021.16	1017	11	1.47E-03	555.6	
14	0	583.05*	115	115	1.53	1165.58	1162	9	3.18E-02	19.6	
15	0	609.81*	181	114	1.76	1219.10	1214	15	5.03E-02	15.2	
16	0	661.66	2327	165	1.43	1322.79	1315	16	6.46E-01	2.4	
17	0	910.70*	82	134	1.10	1820.80	1815	13	2.28E-02	31.2	
18	0	969.30*	85	73	2.67	1937.98	1933	10	2.37E-02	22.0	
19	0	1173.30	1825	68	1.81	2345.94	2338	18	5.07E-01	2.6	
20	0	1238.91	14	18	1.08	2477.16	2469	11	3.91E-03	65.5	
21	0	1332.62	1705	42	1.93	2664.56	2657	17	4.74E-01	2.6	
22	0	1461.06*	9	6	1.83	2921.41	2917	8	2.59E-03	64.6	
23	0	1764.81*	26	12	2.45	3528.88	3523	14	7.36E-03	33.6	

Flag: "\*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202001377.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 22-DEC-2009 00:00:00 Acquisition date : 31-DEC-2009 15:32:35
Sample ID         : G1202001377 Sample quantity : 155.44 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA7 Detector geometry: CAN
Elapsed live time : 0 01:00:00.00 Elapsed real time: 0 01:00:01.31 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	*	3.740E-01	4.841E-01	6.800E-01	5.839E-02	0.550
CO-57	+	122.06	*	2.238E-01	6.893E-02	5.620E-02	4.836E-03	3.982
		136.48		3.789E-01	3.060E-01	5.159E-01	4.644E-02	0.735
CO-60	+	1173.22		6.513E+00	6.268E-01	1.287E-01	1.047E-02	50.627
	+	1332.49	*	6.786E+00	6.575E-01	9.038E-02	7.403E-03	75.083
CD-109	+	88.03	*	3.361E+01	4.040E+00	1.796E+00	1.692E-01	18.715
SN-126		64.28		-3.219E-01	6.110E-01	8.853E-01	1.284E-01	-0.364
	+	86.94		1.385E+01	5.844E+00	7.439E-01	3.087E-01	18.616
	+	87.57	*	3.331E+00	4.004E-01	1.784E-01	1.671E-02	18.674
BA-137M	+	661.65	*	5.601E+00	5.645E-01	1.082E-01	9.579E-03	51.746
CS-137	+	661.65	*	5.921E+00	5.976E-01	1.144E-01	1.014E-02	51.746
TL-208		277.35		6.849E-01	6.398E-01	1.106E+00	1.354E-01	0.619
	+	510.84		4.284E-02	4.761E-01	4.646E-01	5.660E-02	0.092
	+	583.14	*	2.654E-01	1.073E-01	1.171E-01	1.120E-02	2.266
		860.37		6.149E-01	6.661E-01	1.149E+00	1.123E-01	0.535
BI-211		72.87		1.551E-01	4.091E+00	6.023E+00	4.754E-01	0.026
	+	351.07	*	2.174E+00	6.732E-01	6.075E-01	5.450E-02	3.579
PB-212	+	74.81		1.140E+00	5.600E-01	6.890E-01	8.499E-02	1.655
	+	77.11		1.098E+00	3.381E-01	3.984E-01	3.288E-02	2.755
	+	87.30		1.541E+01	2.409E+00	8.261E-01	1.130E-01	18.650
	+	238.63	*	9.569E-01	1.853E-01	1.515E-01	1.449E-02	6.316
		300.09		2.196E+00	1.533E+00	2.412E+00	2.502E-01	0.910
PO-212	+	74.81		1.140E+00	5.600E-01	6.890E-01	8.499E-02	1.655
	+	77.11		1.098E+00	3.381E-01	3.984E-01	3.288E-02	2.755
	+	87.30		1.541E+01	2.409E+00	8.261E-01	1.130E-01	18.650
		115.19		2.300E+00	4.820E+00	7.949E+00	6.846E-01	0.289
	+	238.63	*	9.569E-01	1.853E-01	1.515E-01	1.449E-02	6.316
		300.09		2.196E+00	1.533E+00	2.412E+00	2.502E-01	0.910
BI-214	+	609.31	*	7.911E-01	2.536E-01	2.098E-01	2.171E-02	3.770
		1120.29		4.512E-01	5.923E-01	1.045E+00	1.122E-01	0.432
	+	1764.49		8.235E-01	5.572E-01	3.698E-01	3.041E-02	2.227
PB-214	+	74.81		1.965E+00	9.584E-01	1.187E+00	1.299E-01	1.655
	+	77.11		1.882E+00	5.971E-01	6.830E-01	7.671E-02	2.755
	+	87.30		2.639E+01	3.769E+00	1.415E+00	1.713E-01	18.650

## ---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	241.98		1.271E+00	6.293E-01	8.443E-01	8.570E-02	1.505
	+	295.21		8.138E-01	3.517E-01	3.955E-01	4.186E-02	2.058
	+	351.92	*	7.562E-01	2.375E-01	1.989E-01	2.064E-02	3.802
	+	74.81		1.965E+00	9.584E-01	1.187E+00	1.299E-01	1.655
	+	77.11		1.882E+00	5.971E-01	6.830E-01	7.671E-02	2.755
	+	87.30		2.639E+01	3.769E+00	1.415E+00	1.713E-01	18.650
	+	241.98		1.271E+00	6.293E-01	8.443E-01	8.570E-02	1.505
PO-216	+	295.21		8.138E-01	3.517E-01	3.955E-01	4.186E-02	2.058
	+	351.92	*	7.562E-01	2.375E-01	1.989E-01	2.064E-02	3.802
	+	74.81		1.140E+00	5.600E-01	6.890E-01	8.499E-02	1.655
	+	77.11		1.098E+00	3.381E-01	3.984E-01	3.288E-02	2.755
	+	87.30		1.541E+01	2.409E+00	8.261E-01	1.130E-01	18.650
	+	238.63	*	9.569E-01	1.853E-01	1.515E-01	1.449E-02	6.316
	+	300.09		2.196E+00	1.533E+00	2.412E+00	2.502E-01	0.910
PO-218	+	74.81		1.965E+00	9.584E-01	1.187E+00	1.299E-01	1.655
	+	77.11		1.882E+00	5.971E-01	6.830E-01	7.671E-02	2.755
	+	87.30		2.639E+01	3.769E+00	1.415E+00	1.713E-01	18.650
	+	241.98		1.271E+00	6.293E-01	8.443E-01	8.570E-02	1.505
	+	295.21		8.138E-01	3.517E-01	3.955E-01	4.186E-02	2.058
	+	351.92	*	7.562E-01	2.375E-01	1.989E-01	2.064E-02	3.802
	+	240.98	*	2.410E+00	1.186E+00	1.954E+00	1.653E-01	1.233
RA-224	+	609.31	*	7.911E-01	2.536E-01	2.098E-01	2.171E-02	3.770
AC-228	+	1120.29		4.512E-01	5.923E-01	1.045E+00	1.122E-01	0.432
	+	1764.49		8.235E-01	5.572E-01	3.698E-01	3.041E-02	2.227
	+	338.32		9.813E-01	6.534E-01	7.049E-01	2.908E-01	1.392
	+	911.07	*	8.426E-01	5.349E-01	4.481E-01	5.221E-02	1.880
	+	969.11		1.548E+00	7.734E-01	9.623E-01	2.261E-01	1.609
	+	338.32		9.813E-01	6.534E-01	7.049E-01	2.908E-01	1.392
	+	911.07	*	8.426E-01	5.349E-01	4.481E-01	5.221E-02	1.880
TH-228	+	969.11		1.548E+00	7.734E-01	9.623E-01	2.261E-01	1.609
	+	74.81		1.151E+00	5.552E-01	6.956E-01	5.654E-02	1.655
	+	77.11		1.108E+00	3.414E-01	4.022E-01	3.320E-02	2.755
	+	87.30		1.555E+01	1.870E+00	8.340E-01	7.788E-02	18.650
	+	238.63	*	9.661E-01	1.871E-01	1.530E-01	1.463E-02	6.316
	+	300.09		2.217E+00	2.017E+00	2.436E+00	1.444E+00	0.910
	+	609.31	*	7.911E-01	2.536E-01	2.098E-01	2.171E-02	3.770
TH-230	+	1120.29		4.512E-01	5.923E-01	1.045E+00	1.122E-01	0.432
	+	1764.49		8.235E-01	5.572E-01	3.698E-01	3.041E-02	2.227
	+	338.32		9.813E-01	5.198E-01	7.049E-01	6.034E-02	1.392
	+	911.07	*	8.426E-01	5.349E-01	4.481E-01	5.221E-02	1.880
	+	969.11		1.548E+00	7.734E-01	9.623E-01	2.261E-01	1.609
	+	609.31	*	7.911E-01	2.536E-01	2.098E-01	2.171E-02	3.770
	+	1120.29		4.512E-01	5.923E-01	1.045E+00	1.122E-01	0.432
U-234	+	1764.49		8.235E-01	5.572E-01	3.698E-01	3.041E-02	2.227
	+	59.54	*	1.404E+01	1.274E+00	3.799E-01	3.012E-02	36.948
	+	74.67	*	1.849E-01	8.913E-02	1.119E-01	8.996E-03	1.652
	+	86.72		3.668E+02	4.409E+01	1.973E+01	1.828E+00	18.594
	+	117.66		-1.403E+00	5.944E+00	8.393E+00	7.219E-01	-0.167
	+	142.18		3.842E+00	2.513E+01	4.042E+01	3.336E+00	0.095
	+	142.18		3.842E+00	2.513E+01	4.042E+01	3.336E+00	0.095

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	+	511.00	*	9.254E-03	1.028E-01	1.004E-01	8.920E-03	0.092

---- 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	*	-1.955E-01	6.551E-01	1.031E+00	9.725E-02	-0.190
NA-22		1274.54	*	-4.200E-02	4.968E-02	7.055E-02	5.791E-03	-0.595
NA-24		1368.53	*	6.058E-04	4.968E-02	Half-Life too short		
AL-26		1129.67		-1.326E+00	3.157E+00	5.078E+00	4.266E-01	-0.261
		1808.65	*	-1.502E-02	3.417E-02	4.956E-02	4.041E-03	-0.303
TI-44		67.85		-1.768E-02	5.288E-02	8.602E-02	6.490E-03	-0.206
	+	78.38	*	2.025E-01	6.238E-02	8.241E-02	6.900E-03	2.457
SC-46		889.25	*	-2.955E-02	9.113E-02	1.445E-01	1.324E-02	-0.205
		1120.51		6.455E-02	9.707E-02	1.704E-01	1.440E-02	0.379
V-48		944.10		1.200E+00	1.908E+00	3.202E+00	2.910E-01	0.375
		983.50	*	-2.810E-02	1.360E-01	2.156E-01	1.941E-02	-0.130
		1312.09		4.474E-02	8.292E-02	1.469E-01	1.205E-02	0.304
CR-51		320.08	*	5.557E-03	5.711E-01	9.398E-01	8.492E-02	0.006
MN-52		744.21		-2.911E-03	2.221E-01	3.650E-01	3.313E-02	-0.008
		848.13		-8.844E-01	7.623E+00	1.231E+01	1.130E+00	-0.072
		935.52		3.906E-02	3.197E-01	5.213E-01	4.747E-02	0.075
		1246.25		1.998E+00	4.134E+00	7.282E+00	5.965E-01	0.274
	+	1333.61		4.422E+02	4.285E+01	5.003E+01	4.099E+00	8.839
		1434.06	*	-2.472E-02	1.275E-01	1.994E-01	1.658E-02	-0.124
MN-54		834.83	*	-4.094E-02	7.807E-02	1.223E-01	1.123E-02	-0.335
CO-56		846.75	*	-6.854E-02	8.382E-02	1.279E-01	1.174E-02	-0.536
		977.42		-2.420E-01	6.706E+00	1.078E+01	9.718E-01	-0.022
		1037.82		1.683E-01	6.476E-01	1.106E+00	1.027E-01	0.152
		1175.09		2.781E+02	2.674E+01	3.256E+01	2.650E+00	8.540
	+	1238.25		8.529E-02	1.119E-01	1.566E-01	1.324E-02	0.545
		1360.21		3.306E-01	1.145E+00	1.977E+00	1.627E-01	0.167
		1771.40		2.038E-01	4.401E-01	7.007E-01	5.755E-02	0.291
CO-58		810.76	*	4.329E-02	7.437E-02	1.268E-01	1.165E-02	0.341
FE-59		142.65		5.589E-01	3.576E+00	5.745E+00	4.738E-01	0.097
		192.34		2.079E-02	1.390E+00	2.185E+00	2.869E-01	0.010
		1099.22	*	-7.234E-02	1.766E-01	2.860E-01	2.650E-02	-0.253
		1291.56		1.479E-01	1.495E-01	2.772E-01	2.611E-02	0.533
ZN-65		1115.52	*	-2.776E-01	1.910E-01	2.831E-01	2.403E-02	-0.980
GE-68		1077.35	*	1.418E+00	2.650E+00	4.599E+00	3.985E-01	0.308
AS-73		53.44	*	-1.371E+00	1.248E+00	2.008E+00	1.508E-01	-0.683
AS-74		595.88	*	7.472E-03	1.281E-01	2.149E-01	1.926E-02	0.035
		634.78		-1.481E-01	5.590E-01	9.129E-01	8.138E-02	-0.162
SE-75		66.05		1.899E+00	5.200E+00	8.686E+00	8.240E-01	0.219
		96.73		-6.421E-01	1.037E+00	1.437E+00	1.991E-01	-0.447
	+	121.11		1.182E+00	3.739E-01	4.354E-01	4.878E-02	2.715
		136.00		5.574E-02	5.709E-02	9.532E-02	8.014E-03	0.585
		198.60		1.722E-01	2.642E+00	4.468E+00	4.107E-01	0.039
		264.65	*	3.943E-02	7.352E-02	1.253E-01	1.070E-02	0.315

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77	+	279.53		-1.438E-01	1.838E-01	2.920E-01	2.574E-02	-0.492
		303.91		-2.898E+00	3.534E+00	5.545E+00	6.339E-01	-0.523
		400.65		8.210E-02	5.020E-01	8.216E-01	8.982E-02	0.100
		87.88		1.477E+03	1.775E+02	1.763E+02	1.659E+01	8.373
		200.40		-9.150E+00	4.913E+01	8.218E+01	6.757E+00	-0.111
		239.00		3.099E+01	5.839E+00	9.094E+00	7.685E-01	3.407
		249.79		2.096E+01	2.132E+01	3.716E+01	3.152E+00	0.564
		281.68		-3.476E+00	3.070E+01	5.057E+01	4.297E+00	-0.069
		297.23		2.378E+01	2.381E+01	3.647E+01	3.117E+00	0.652
		303.76		-4.490E+01	6.285E+01	9.953E+01	8.521E+00	-0.451
		439.47		-7.931E+00	5.998E+01	9.591E+01	8.261E+00	-0.083
		484.57		-1.397E+01	9.550E+01	1.515E+02	1.334E+01	-0.092
		520.65	*	-9.820E-01	4.011E+00	6.658E+00	5.930E-01	-0.147
		574.64		1.233E+01	7.532E+01	1.275E+02	1.144E+01	0.097
		578.91		8.788E+00	3.757E+01	5.584E+01	5.009E+00	0.157
		585.48		1.414E+02	7.872E+01	1.291E+02	1.158E+01	1.095
		755.35		-6.137E+01	6.275E+01	9.453E+01	8.600E+00	-0.649
SR-82		817.79		4.106E+01	5.516E+01	9.498E+01	8.711E+00	0.432
		698.33		1.932E+01	5.333E+01	9.037E+01	8.103E+00	0.214
		776.49	*	-9.621E-02	6.942E-01	1.127E+00	1.029E-01	-0.085
RB-83		1395.20		7.086E+00	1.323E+01	2.348E+01	1.943E+00	0.302
		520.41	*	-4.084E-02	1.251E-01	2.066E-01	1.841E-02	-0.198
		529.64		-1.988E-01	1.833E-01	2.850E-01	2.543E-02	-0.698
RB-84		552.65		-1.923E-01	3.336E-01	5.369E-01	4.809E-02	-0.358
		881.50	*	-1.278E-01	1.531E-01	2.333E-01	2.139E-02	-0.548
		513.99	*	1.137E+01	1.558E+01	2.413E+01	2.146E+00	0.471
SR-85		513.99	*	5.503E-02	7.539E-02	1.168E-01	1.039E-02	0.471
RB-86		1076.63	*	8.971E-01	1.378E+00	2.410E+00	2.089E-01	0.372
Y-88		898.02		-1.030E-03	1.016E-01	1.646E-01	1.514E-02	-0.006
ZR-88		1836.01	*	-2.780E-03	5.020E-02	8.269E-02	6.711E-03	-0.034
		392.90	*	-1.002E-02	5.751E-02	9.243E-02	7.699E-03	-0.108
Y-91		1204.90	*	8.751E-01	2.222E+01	3.706E+01	3.026E+00	0.024
NB-94		702.63	*	-1.611E-02	6.485E-02	1.052E-01	9.450E-03	-0.153
		871.10		-9.284E-03	8.139E-02	1.313E-01	1.204E-02	-0.071
NB-95		765.79	*	4.982E-02	7.115E-02	1.232E-01	1.123E-02	0.404
NB-95M		235.69	*	-1.294E-01	2.166E-01	3.070E-01	2.980E-02	-0.422
ZR-95		724.18		-1.448E-01	1.668E-01	2.565E-01	2.500E-02	-0.565
		756.15	*	-1.046E-01	1.216E-01	1.847E-01	1.834E-02	-0.566
NB-97		657.90	*	4.714E-04	1.216E-01	Half-Life	too short	
		1024.50		-1.421E-01	1.216E-01	Half-Life	too short	
ZR-97		254.15		-4.799E-02	1.216E-01	Half-Life	too short	
		355.39		-9.997E-03	1.216E-01	Half-Life	too short	
		507.63	*	-5.030E-04	1.216E-01	Half-Life	too short	
		602.52		1.053E-02	1.216E-01	Half-Life	too short	
		1021.30		4.078E-02	1.216E-01	Half-Life	too short	
		1147.95		4.153E-03	1.216E-01	Half-Life	too short	
		1362.66		-7.611E-06	1.216E-01	Half-Life	too short	
MO-99		1750.46		1.642E-02	1.216E-01	Half-Life	too short	
		140.51		-2.703E+00	9.640E+00	1.513E+01	4.175E+00	-0.179

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	181.06			6.121E-01	6.920E+00	1.042E+01	1.878E+00	0.059
	366.43			-2.675E+01	3.870E+01	6.033E+01	5.110E+00	-0.443
	739.58	*		-1.228E+00	5.652E+00	9.144E+00	1.412E+00	-0.134
	778.00			-9.892E+00	1.793E+01	2.819E+01	2.575E+00	-0.351
TC-99M	140.51	*		-4.046E+03	1.793E+01	Half-Life	too short	
RH-101	127.23			1.318E-02	4.884E-02	7.566E-02	6.426E-03	0.174
	198.01	*		2.036E-02	4.876E-02	8.371E-02	6.866E-03	0.243
	325.23			-2.398E-01	4.017E-01	6.380E-01	5.471E-02	-0.376
RH-102	418.52			-7.163E-02	5.657E-01	9.078E-01	7.713E-02	-0.079
	475.06	*		4.141E-02	6.483E-02	1.077E-01	9.448E-03	0.385
	631.29			-1.072E-02	1.072E-01	1.772E-01	1.580E-02	-0.060
	697.49			-3.066E-02	1.411E-01	2.295E-01	2.057E-02	-0.134
	766.84			1.643E-01	1.966E-01	3.424E-01	3.122E-02	0.480
	1046.59			6.323E-02	2.517E-01	4.295E-01	3.778E-02	0.147
	1112.84			1.142E-01	4.815E-01	8.173E-01	6.940E-02	0.140
RU-103	497.08	*		1.456E-02	7.252E-02	1.175E-01	1.681E-02	0.124
+	610.33			7.755E+00	2.692E+00	3.145E+00	5.303E-01	2.465
RH-106	511.85	+		4.575E-02	5.084E-01	6.558E-01	5.828E-02	0.070
	621.84	*		1.038E-01	5.996E-01	1.010E+00	1.370E-01	0.103
	1050.47			-2.810E+00	4.848E+00	7.772E+00	6.823E-01	-0.362
RU-106	511.85	+		4.575E-02	5.084E-01	6.558E-01	5.828E-02	0.070
	621.84	*		1.038E-01	5.995E-01	1.010E+00	9.029E-02	0.103
	1050.47			-2.810E+00	4.848E+00	7.772E+00	6.823E-01	-0.362
AG-108M	433.93	*		-7.949E-03	6.596E-02	1.056E-01	9.430E-03	-0.075
	614.37			1.164E-02	7.819E-02	1.150E-01	1.066E-02	0.101
	722.95			-1.292E-01	8.057E-02	1.153E-01	1.079E-02	-1.121
AG-110M	657.75	*		-1.154E-02	8.178E-02	1.163E-01	1.059E-02	-0.099
	677.61			-1.496E-01	5.585E-01	9.062E-01	8.282E-02	-0.165
	706.67			-6.229E-02	3.807E-01	6.211E-01	5.725E-02	-0.100
	763.93			-3.173E-01	2.982E-01	4.456E-01	4.164E-02	-0.712
	884.67			3.659E-02	1.143E-01	1.897E-01	1.789E-02	0.193
	937.48			-6.582E-03	2.804E-01	4.526E-01	4.253E-02	-0.015
	1384.27			-1.459E-01	1.836E-01	2.509E-01	2.137E-02	-0.582
IN-111	171.28			-2.113E-01	4.027E-01	6.178E-01	4.917E-02	-0.342
	245.39	*		-2.442E-01	4.816E-01	6.809E-01	5.768E-02	-0.359
IN-113M	391.69	*		-6.037E-04	8.208E-02	1.333E-01	1.145E-02	-0.005
SN-113	391.69	*		-6.037E-04	8.208E-02	1.333E-01	1.145E-02	-0.005
IN-114M	190.27	*		1.350E-01	2.760E-01	4.242E-01	3.452E-02	0.318
CD-115	260.90			-4.562E+01	4.090E+01	6.397E+01	5.435E+00	-0.713
	492.35			-2.602E-01	1.297E+01	2.072E+01	1.830E+00	-0.013
	527.90	*		-1.500E+00	3.656E+00	5.993E+00	5.347E-01	-0.250
SN-117M	156.02			-6.213E-02	2.578E+00	4.092E+00	3.296E-01	-0.015
	158.56	*		3.450E-02	6.263E-02	1.022E-01	8.192E-03	0.338
SB-122	563.90	*		9.484E-02	8.765E-01	1.481E+00	1.328E-01	0.064
	692.80			2.924E+00	1.941E+01	3.244E+01	2.903E+00	0.090
I-123	159.00	*		5.963E-03	1.941E+01	Half-Life	too short	
	528.96			-6.680E-01	1.941E+01	Half-Life	too short	
TE-123M	159.00	*		2.993E-02	4.146E-02	6.817E-02	5.499E-03	0.439
I-124	602.71	*		8.573E-02	4.733E-01	7.574E-01	6.786E-02	0.113



## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		722.78		-5.228E+00	3.396E+00	4.901E+00	4.426E-01	-1.067
		1325.50		7.047E-01	2.175E+01	3.099E+01	2.539E+00	0.023
		1376.25		4.582E+00	1.319E+01	2.304E+01	1.901E+00	0.199
		1509.49		-1.005E+00	8.151E+00	1.298E+01	1.085E+00	-0.077
		1691.02		3.405E-01	1.809E+00	3.069E+00	2.550E-01	0.111
		602.71		1.163E-02	6.418E-02	1.027E-01	9.203E-03	0.113
		645.85		-3.591E-01	8.777E-01	1.414E+00	1.328E-01	-0.254
		709.31		-8.126E-01	4.753E+00	7.744E+00	6.967E-01	-0.105
		713.82		8.324E-01	2.939E+00	4.946E+00	6.093E-01	0.168
		722.78		-1.028E+00	6.678E-01	9.634E-01	8.871E-02	-1.067
	+	968.20		1.496E+01	6.733E+00	1.075E+01	9.716E-01	1.392
		1045.16		5.046E+00	5.096E+00	9.091E+00	8.001E-01	0.555
		1325.50		1.479E-01	4.566E+00	6.506E+00	5.331E-01	0.023
		1368.21		8.255E-01	1.796E+00	3.207E+00	4.246E-01	0.257
SB-125		1436.60		1.685E+00	3.750E+00	6.725E+00	5.594E-01	0.251
		1691.02	*	1.579E-02	8.388E-02	1.423E-01	1.233E-02	0.111
		427.89	*	-9.255E-02	1.848E-01	2.890E-01	2.520E-02	-0.320
		463.38		4.247E-01	6.054E-01	1.009E+00	9.475E-02	0.421
		600.56		-9.564E-02	2.962E-01	4.828E-01	4.622E-02	-0.198
TE-125M		635.90		-2.540E-01	5.354E-01	8.611E-01	8.256E-02	-0.295
		109.28	*	-5.061E+00	1.166E+01	1.842E+01	1.908E+00	-0.275
I-126		388.63		-5.113E-02	2.890E-01	4.647E-01	3.877E-02	-0.110
		666.33	*	2.348E-02	2.831E-01	4.108E-01	3.642E-02	0.057
SB-126		753.82		-2.311E-01	2.083E+00	3.395E+00	3.088E-01	-0.068
		223.80		3.684E-01	4.853E+00	8.168E+00	6.845E-01	0.045
		278.60		1.041E+00	3.050E+00	5.139E+00	4.362E-01	0.203
	+	296.50		5.961E+00	2.549E+00	3.754E+00	3.208E-01	1.588
		414.70		-5.000E-02	1.075E-01	1.688E-01	1.430E-02	-0.296
		415.30		-5.515E+00	9.054E+00	1.408E+01	1.194E+00	-0.392
		555.20		5.979E-01	4.999E+00	8.460E+00	7.579E-01	0.071
		573.80		-1.695E-01	1.351E+00	2.244E+00	2.013E-01	-0.076
		593.00		3.563E-02	1.214E+00	2.034E+00	1.823E-01	0.018
		656.30		-2.375E+00	5.751E+00	7.952E+00	7.049E-01	-0.299
SB-127		666.33		9.688E-03	1.168E-01	1.695E-01	1.503E-02	0.057
		675.00		-7.254E-02	2.735E+00	4.508E+00	4.010E-01	-0.016
		695.00		-3.820E-02	1.049E-01	1.686E-01	1.510E-02	-0.227
		697.00		-3.552E-01	3.688E-01	5.639E-01	5.054E-02	-0.630
		720.50	*	-4.397E-02	1.918E-01	3.106E-01	2.803E-02	-0.142
		856.80		-3.441E-01	7.743E-01	1.219E+00	1.119E-01	-0.282
		989.30		-2.342E-01	2.275E+00	3.635E+00	3.267E-01	-0.064
		1034.80		-6.270E+00	1.519E+01	2.478E+01	2.190E+00	-0.253
		1213.00		2.708E+00	4.128E+00	7.370E+00	6.023E-01	0.367
		61.10		7.205E+02	7.529E+01	9.029E+01	7.701E+00	7.980
		252.40		1.055E+00	2.621E+00	4.395E+00	1.831E+00	0.240
		290.80		-1.075E+00	1.489E+01	2.151E+01	2.077E+00	-0.050
		411.60		-2.285E+00	8.824E+00	1.406E+01	2.059E+00	-0.163
		444.90		-3.475E-01	7.995E+00	1.285E+01	1.451E+00	-0.027
		473.00		-1.337E-03	1.451E+00	2.328E+00	2.737E-01	-0.001
		543.00		-1.138E+01	1.164E+01	1.816E+01	2.457E+00	-0.627

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		603.60		9.100E-01	7.877E+00	1.209E+01	1.392E+00	0.075
		685.20	*	-6.179E-01	9.030E-01	1.409E+00	1.445E-01	-0.439
		698.50		5.500E+00	1.023E+01	1.751E+01	2.635E+00	0.314
		722.20		-2.845E+01	2.116E+01	3.101E+01	3.132E+00	-0.917
		783.80		7.445E-01	2.666E+00	4.456E+00	5.151E-01	0.167
XE-127		57.60		9.271E+01	1.404E+01	2.163E+01	1.568E+00	4.286
		145.22		4.043E-01	8.912E-01	1.452E+00	1.192E-01	0.279
		172.10		-9.178E-02	1.655E-01	2.533E-01	2.018E-02	-0.362
		202.84	*	-6.389E-02	6.525E-02	1.049E-01	8.645E-03	-0.609
		374.96		-5.925E-02	3.263E-01	5.255E-01	4.428E-02	-0.113
I-131		80.18		-1.525E+00	4.119E+00	5.919E+00	5.073E-01	-0.258
		284.30		3.178E-01	1.600E+00	2.677E+00	2.390E-01	0.119
		364.48	*	-8.352E-02	1.317E-01	2.062E-01	1.840E-02	-0.405
		636.97		1.181E+00	1.842E+00	3.190E+00	2.982E-01	0.370
		722.89		-1.338E+01	8.458E+00	1.215E+01	1.100E+00	-1.101
TE-132		49.72		1.027E+01	7.951E+00	1.359E+01	1.221E+00	0.755
		111.76		6.664E-01	1.237E+01	1.996E+01	1.918E+00	0.033
		116.30		3.826E+00	1.227E+01	1.915E+01	1.835E+00	0.200
		228.16	*	-5.998E-02	3.369E-01	5.596E-01	8.252E-02	-0.107
BA-133		53.15		-5.054E+00	5.594E+00	9.059E+00	6.826E-01	-0.558
		79.62		-6.156E-01	1.833E+00	2.636E+00	3.995E-01	-0.233
		81.00		-1.163E-01	1.483E-01	2.073E-01	3.293E-02	-0.561
		276.40		4.331E-01	6.334E-01	1.080E+00	1.552E-01	0.401
		302.84		-1.797E-01	2.534E-01	4.007E-01	5.309E-02	-0.448
		356.01	*	-4.534E-02	8.632E-02	1.190E-01	1.563E-02	-0.381
		383.85		4.346E-01	5.578E-01	9.448E-01	1.175E-01	0.460
I-133	+	510.53		1.167E-03	5.578E-01	Half-Life	too short	
		529.87	*	-1.213E-04	5.578E-01	Half-Life	too short	
		706.58		-1.234E-03	5.578E-01	Half-Life	too short	
		856.28		-1.169E-02	5.578E-01	Half-Life	too short	
		875.33		2.560E-03	5.578E-01	Half-Life	too short	
		1236.41		-9.482E-04	5.578E-01	Half-Life	too short	
		1298.22		-4.124E-03	5.578E-01	Half-Life	too short	
CS-134		475.35		9.690E-01	4.318E+00	7.013E+00	6.153E-01	0.138
		563.23		1.321E-01	6.149E-01	1.046E+00	9.459E-02	0.126
		569.32		-7.714E-02	3.310E-01	5.463E-01	4.960E-02	-0.141
		604.70		9.760E-03	6.571E-02	9.672E-02	8.684E-03	0.101
		795.84	*	1.419E-01	9.506E-02	1.700E-01	1.566E-02	0.835
		801.93		-4.901E-01	8.012E-01	1.256E+00	1.156E-01	-0.390
		1038.57		5.957E-01	8.604E+00	1.451E+01	1.281E+00	0.041
		1167.94		2.734E+00	5.417E+00	8.211E+00	6.710E-01	0.333
		1365.15		-1.401E-02	1.420E+00	2.330E+00	2.015E-01	-0.006
CS-135		268.24	*	1.178E-01	2.650E-01	4.492E-01	4.429E-02	0.262
I-135		288.45		4.052E+03	2.650E-01	Half-Life	too short	
		417.63		1.565E+04	2.650E-01	Half-Life	too short	
		546.56		1.348E+04	2.650E-01	Half-Life	too short	
		836.80		1.705E+04	2.650E-01	Half-Life	too short	
		1038.76		2.193E+03	2.650E-01	Half-Life	too short	
		1124.00		-3.575E+04	2.650E-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-136	1131.51			3.767E+03	2.650E-01	Half-Life	too short	
	1260.41	*		1.958E+03	2.650E-01	Half-Life	too short	
	1457.56			3.902E+03	2.650E-01	Half-Life	too short	
	1678.03			-1.047E+04	2.650E-01	Half-Life	too short	
	1706.46			-2.473E+04	2.650E-01	Half-Life	too short	
	1791.20			-1.764E+04	2.650E-01	Half-Life	too short	
	66.91			3.048E-01	6.571E-01	1.099E+00	1.630E-01	0.277
	86.29			1.035E+01	2.092E+00	2.804E+00	3.718E-01	3.691
	153.22			-3.006E-02	7.285E-01	1.156E+00	1.059E-01	-0.026
	163.89			9.291E-01	1.237E+00	2.031E+00	1.838E-01	0.457
	176.55			8.085E-02	3.925E-01	6.720E-01	5.738E-02	0.120
	273.65			-5.832E-01	5.893E-01	9.276E-01	8.410E-02	-0.629
	340.57			1.088E-01	1.960E-01	2.922E-01	2.572E-02	0.372
	818.51			8.747E-02	1.131E-01	1.952E-01	1.791E-02	0.448
	1048.07	*		-4.188E-02	1.769E-01	2.917E-01	2.668E-02	-0.144
CE-139	1235.34			1.037E-01	6.022E-01	8.831E-01	1.019E-01	0.117
	165.85	*		-1.529E-02	4.691E-02	7.304E-02	5.778E-03	-0.209
	162.64			-2.896E-01	8.694E-01	1.354E+00	1.151E-01	-0.214
	304.84			-1.051E+00	1.654E+00	2.589E+00	7.252E-01	-0.406
LA-140	423.70			2.302E-01	2.826E+00	4.588E+00	1.486E+00	0.050
	537.32	*		6.939E-02	3.633E-01	6.170E-01	2.050E-01	0.112
	328.77			5.060E-01	3.844E-01	6.700E-01	6.069E-02	0.755
	432.53			2.100E+00	3.057E+00	5.130E+00	4.616E-01	0.409
	487.03			-8.344E-02	2.120E-01	3.303E-01	3.084E-02	-0.253
	751.79			3.702E+00	2.341E+00	4.260E+00	4.247E-01	0.869
	815.85			-2.651E-01	4.889E-01	7.630E-01	7.714E-02	-0.347
	867.82			2.504E-01	2.323E+00	3.808E+00	3.659E-01	0.066
	919.63			1.682E+00	5.194E+00	8.591E+00	9.505E-01	0.196
	925.24			-3.300E-01	2.174E+00	3.482E+00	3.355E-01	-0.095
CE-141	1596.49	*		5.454E-02	9.580E-02	1.703E-01	1.424E-02	0.320
	145.44	*		1.064E-02	7.931E-02	1.273E-01	1.066E-02	0.084
	57.37			5.939E+02	1.487E+02	2.288E+02	2.141E+01	2.596
CE-143	231.56			2.559E+01	2.608E+02	4.384E+02	1.390E+02	0.058
	293.26	*		2.204E+01	1.663E+01	2.526E+01	5.480E+00	0.872
	350.59			1.083E+03	4.657E+02	4.203E+02	1.311E+02	2.575
+ CE-144	490.36			7.063E+01	3.632E+02	5.878E+02	1.871E+02	0.120
	664.57			2.819E+03	9.687E+02	6.355E+02	2.069E+02	4.436
	721.93			-1.530E+02	1.644E+02	2.410E+02	7.108E+01	-0.635
	80.11			-1.252E+00	2.998E+00	4.298E+00	3.671E-01	-0.291
	133.54	*		-3.587E-01	3.074E-01	4.552E-01	7.027E-02	-0.788
	476.78			-2.842E-02	1.445E-01	2.289E-01	2.191E-02	-0.124
	618.01			1.847E-02	6.384E-02	9.923E-02	9.100E-03	0.186
	696.49	*		-5.976E-02	6.449E-02	9.903E-02	8.875E-03	-0.604
	778.57			-2.511E+00	4.678E+00	7.356E+00	6.720E-01	-0.341
	696.49	*		-4.038E+00	4.358E+00	6.691E+00	5.996E-01	-0.604
PR-144	1489.15			1.271E+01	1.495E+01	2.826E+01	2.360E+00	0.450
	453.90	*		-4.447E-02	9.253E-02	1.438E-01	1.550E-02	-0.309
	633.02			8.876E-01	2.680E+00	4.524E+00	1.694E+00	0.196
PM-146	735.90			-6.658E-02	2.857E-01	4.609E-01	1.325E-01	-0.144

## ---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	747.13			-1.437E-01	1.750E-01	2.671E-01	3.827E-02	-0.538
	91.11			4.193E-01	3.009E-01	3.861E-01	3.820E-02	1.086
	319.41			2.140E+00	4.139E+00	6.992E+00	5.997E-01	0.306
	439.89			-7.846E-02	8.594E+00	1.385E+01	1.193E+00	-0.006
	531.02	*		-3.878E-01	7.108E-01	1.149E+00	1.738E-01	-0.338
PM-149	285.90	*		5.507E-01	2.788E+01	4.621E+01	7.148E+00	0.012
EU-152	121.78		+	6.583E-01	2.053E-01	2.466E-01	2.443E-02	2.670
	244.69			-1.831E-01	5.556E-01	7.965E-01	6.745E-02	-0.230
	344.27	*		-7.584E-02	1.960E-01	3.028E-01	2.745E-02	-0.250
	443.98			-2.363E-02	2.083E+00	3.353E+00	2.896E-01	-0.007
	778.89			-2.552E-01	5.478E-01	8.666E-01	7.916E-02	-0.294
	867.32			-1.886E-01	1.895E+00	3.059E+00	2.808E-01	-0.062
	964.01			2.488E-01	8.098E-01	1.157E+00	1.047E-01	0.215
	1085.78			-4.985E-01	8.509E-01	1.360E+00	1.173E-01	-0.367
	1112.02			1.374E-01	6.855E-01	1.161E+00	9.860E-02	0.118
	1407.95			2.186E-01	2.252E-01	4.279E-01	3.547E-02	0.511
GD-153	69.67			2.119E-01	2.112E+00	3.125E+00	2.394E-01	0.068
	83.37			2.434E+01	2.160E+01	3.315E+01	2.945E+00	0.734
	97.43	*		-4.287E-02	1.082E-01	1.527E-01	1.365E-02	-0.281
	103.18			-6.305E-02	1.388E-01	2.198E-01	1.928E-02	-0.287
EU-154	123.07		+	4.619E-01	1.463E-01	1.693E-01	1.918E-02	2.728
	247.94			-6.418E-02	5.795E-01	9.614E-01	1.093E-01	-0.067
	591.81			3.191E-01	1.076E+00	1.835E+00	2.189E-01	0.174
	723.30			-5.123E-01	3.385E-01	4.889E-01	4.842E-02	-1.048
	756.87			-1.010E+00	1.401E+00	2.155E+00	2.656E-01	-0.468
	873.19			8.205E-02	7.288E-01	1.194E+00	1.509E-01	0.069
	996.32			-5.036E-01	8.742E-01	1.337E+00	2.398E-01	-0.377
	1004.76			7.988E-02	5.008E-01	8.147E-01	9.678E-02	0.098
	1274.45	*		-1.090E-01	1.374E-01	1.965E-01	2.160E-02	-0.555
	48.70			1.156E+00	3.037E+00	5.109E+00	4.135E-01	0.226
EU-155	60.01		+	4.557E+02	3.846E+01	3.209E+01	2.311E+00	14.199
	86.54		+	4.003E+00	4.837E-01	3.938E-01	3.674E-02	10.165
	105.31	*		1.208E-01	1.452E-01	2.436E-01	2.152E-02	0.496
TB-160	86.79		+	1.017E+01	1.222E+00	1.122E+00	1.040E-01	9.065
	197.04			1.027E-01	8.004E-01	1.358E+00	1.113E-01	0.076
	215.65			4.109E-01	1.129E+00	1.932E+00	1.609E-01	0.213
	298.57			1.710E-01	2.190E-01	3.330E-01	2.848E-02	0.513
	879.36	*		1.342E-01	3.175E-01	5.306E-01	4.866E-02	0.253
	962.29			7.941E-02	1.299E+00	1.981E+00	1.793E-01	0.040
	966.15			1.887E-01	5.513E-01	7.890E-01	7.136E-02	0.239
	1177.93			8.686E-01	5.627E-01	9.776E-01	7.960E-02	0.888
	1271.85			5.582E-01	7.231E-01	1.334E+00	1.094E-01	0.418
	80.57			-1.647E-01	3.974E-01	5.699E-01	4.894E-02	-0.289
HO-166M	184.41		+	1.527E-01	1.106E-01	9.480E-02	7.663E-03	1.611
	280.46			-1.743E-01	1.478E-01	2.289E-01	1.944E-02	-0.761
	410.95			3.369E-01	4.704E-01	7.922E-01	6.694E-02	0.425
	711.68	*		-1.866E-02	1.145E-01	1.867E-01	1.681E-02	-0.100
	752.31			6.801E-01	5.147E-01	9.231E-01	8.393E-02	0.737
	810.29			5.454E-02	1.184E-01	2.002E-01	1.835E-02	0.272

## ----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35		-2.546E+01	4.359E+01	7.136E+01	5.510E+00	-0.357
		52.39		-1.737E+00	2.339E+01	3.881E+01	2.953E+00	-0.045
	+	59.40		2.389E+03	2.016E+02	1.765E+02	1.269E+01	13.530
		66.72	*	1.830E+01	3.154E+01	5.306E+01	3.968E+00	0.345
LU-176	+	88.36		7.901E+00	9.497E-01	9.339E-01	8.777E-02	8.460
		201.83		-1.809E-02	4.303E-02	7.115E-02	5.858E-03	-0.254
		306.84	*	8.220E-03	4.191E-02	6.984E-02	5.983E-03	0.118
		401.10		-2.859E+00	1.352E+01	2.167E+01	1.817E+00	-0.132
LU-177		112.95		-7.548E-01	1.255E+00	1.955E+00	1.687E-01	-0.386
		208.36	*	5.108E-01	9.877E-01	1.696E+00	1.405E-01	0.301
LU-177M		52.97		-6.560E-01	2.427E+00	4.002E+00	3.022E-01	-0.164
		54.07		8.438E-01	1.462E+00	2.215E+00	1.652E-01	0.381
		61.30		2.591E+01	3.089E+00	4.794E+00	3.471E-01	5.403
	+	121.62		3.300E+00	1.016E+00	1.234E+00	1.061E-01	2.673
		147.16		-1.370E-01	9.155E-01	1.447E+00	1.184E-01	-0.095
		171.86		-4.412E-01	7.211E-01	1.100E+00	8.761E-02	-0.401
		218.09		-7.541E-01	1.342E+00	2.196E+00	1.833E-01	-0.343
		268.79		4.815E-02	1.337E+00	2.224E+00	1.890E-01	0.022
		319.02		2.110E-01	4.444E-01	7.494E-01	6.427E-02	0.282
		367.43		-1.751E-01	1.623E+00	2.629E+00	2.225E-01	-0.067
		413.65	*	-1.067E-02	3.316E-01	5.357E-01	4.535E-02	-0.020
		56.28		2.028E+00	1.671E+00	2.563E+00	1.874E-01	0.791
		57.53		6.087E+00	1.109E+00	1.740E+00	1.262E-01	3.498
		65.20		-2.725E-01	1.003E+00	1.560E+00	1.154E-01	-0.175
HF-181		133.02		-6.050E-02	8.731E-02	1.346E-01	1.130E-02	-0.449
		136.25		7.682E-01	6.222E-01	1.050E+00	8.755E-02	0.732
		345.85		1.765E-01	3.382E-01	5.508E-01	4.706E-02	0.320
		482.03	*	5.748E-02	7.948E-02	1.330E-01	1.170E-02	0.432
		56.28		8.455E-01	6.933E-01	1.064E+00	7.778E-02	0.795
		57.53		2.505E+00	4.596E-01	7.213E-01	5.231E-02	3.473
W-181		65.20	*	-1.123E-01	4.133E-01	6.427E-01	4.756E-02	-0.175
		67.75		-3.717E-02	1.221E-01	1.989E-01	1.500E-02	-0.187
		100.10		4.151E-02	2.165E-01	3.545E-01	3.139E-02	0.117
		152.43		1.240E-01	4.758E-01	7.669E-01	6.217E-02	0.162
		222.10		5.034E-01	5.429E-01	9.450E-01	7.911E-02	0.533
		1001.68		-4.579E-01	4.661E+00	7.442E+00	6.661E-01	-0.062
TA-182		1121.28		2.803E-01	2.720E-01	4.848E-01	4.095E-02	0.578
		1189.05		1.191E-01	4.239E-01	7.248E-01	5.910E-02	0.164
		1221.42	*	3.540E-01	2.526E-01	4.768E-01	3.899E-02	0.742
		1230.97		6.897E-02	6.004E-01	8.741E-01	7.154E-02	0.079
	+	57.98		1.621E+01	1.369E+00	9.532E-01	6.895E-02	17.011
	+	59.32		9.320E+00	7.867E-01	6.923E-01	4.979E-02	13.463
		67.20		7.275E-02	2.123E-01	3.541E-01	2.658E-02	0.205
		162.32	*	-7.934E-02	1.609E-01	2.484E-01	1.977E-02	-0.319
RE-183		208.81		2.410E-02	1.492E+00	2.513E+00	2.082E-01	0.010
		291.72		-2.406E-01	1.642E+00	2.358E+00	2.012E-01	-0.102
	+	57.98		6.168E+01	5.207E+00	3.626E+00	2.623E-01	17.011
	+	59.32		3.543E+01	2.990E+00	2.631E+00	1.892E-01	13.463
RE-184		67.20		2.767E-01	8.072E-01	1.347E+00	1.011E-01	0.205

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185	+	161.27		-3.858E-01	5.413E-01	8.253E-01	6.584E-02	-0.467
		216.55		-9.717E-02	4.166E-01	6.945E-01	5.791E-02	-0.140
		252.85	*	-5.221E-02	3.720E-01	6.156E-01	5.225E-02	-0.085
		318.01		3.214E-01	7.833E-01	1.317E+00	1.129E-01	0.244
		792.07		3.194E-01	1.974E+00	3.269E+00	2.992E-01	0.098
		903.28		-1.863E-01	2.306E+00	3.494E+00	3.197E-01	-0.053
		920.93		4.477E-01	1.097E+00	1.825E+00	1.666E-01	0.245
		59.72		2.578E+01	2.176E+00	1.864E+00	1.341E-01	13.827
		61.14		4.791E+00	4.645E-01	6.365E-01	4.604E-02	7.527
		69.30		-3.489E-02	3.471E-01	5.425E-01	4.143E-02	-0.064
		592.07		1.473E-01	4.269E+00	7.152E+00	6.412E-01	0.021
		646.12	*	-2.718E-02	7.508E-02	1.214E-01	1.079E-02	-0.224
		717.42		8.384E-01	1.640E+00	2.803E+00	2.527E-01	0.299
		874.81		1.074E+00	1.383E+00	2.359E+00	2.164E-01	0.455
RE-188	*	880.27		-5.179E-01	1.801E+00	2.865E+00	2.628E-01	-0.181
		155.03		-7.616E-02	2.466E-01	3.856E-01	3.111E-02	-0.198
		477.96		-1.860E+00	6.339E+00	9.973E+00	8.760E-01	-0.186
		633.10		1.847E+00	5.111E+00	8.706E+00	7.764E-01	0.212
W-188		63.58		-5.668E+01	6.038E+01	8.573E+01	6.280E+00	-0.661
		227.08		-2.211E+00	1.891E+01	3.152E+01	2.647E+00	-0.070
		290.67	*	-1.439E+00	1.309E+01	1.886E+01	1.609E+00	-0.076
IR-192	+	295.96		5.894E-01	2.521E-01	3.639E-01	3.132E-02	1.620
		308.46		-5.733E-02	1.596E-01	2.578E-01	2.221E-02	-0.222
		316.51	*	-5.387E-03	5.940E-02	9.728E-02	8.361E-03	-0.055
		468.07		2.302E-02	1.423E-01	2.306E-01	2.157E-02	0.100
AU-195		604.41		1.391E-01	8.423E-01	1.242E+00	1.645E-01	0.112
		612.46		4.830E-02	1.404E+00	2.041E+00	2.080E-01	0.024
		65.12		-5.141E-02	1.934E-01	3.009E-01	2.225E-02	-0.171
		66.83		5.833E-02	1.027E-01	1.727E-01	1.293E-02	0.338
		75.70		5.859E-01	2.825E-01	4.563E-01	3.708E-02	1.284
		98.88	*	9.156E-02	2.695E-01	4.447E-01	3.954E-02	0.206
TL-200		129.76		2.469E+00	4.111E+00	6.770E+00	5.719E-01	0.365
		367.94	*	1.354E-06	4.111E+00	Half-Life	too short	
		579.30		5.803E-05	4.111E+00	Half-Life	too short	
		828.27		-2.042E-05	4.111E+00	Half-Life	too short	
TL-201		1205.75		2.393E-06	4.111E+00	Half-Life	too short	
		68.90		-9.112E-01	1.589E+00	2.559E+00	1.947E-01	-0.356
		70.82		3.205E-01	1.002E+00	1.497E+00	1.158E-01	0.214
		80.30		-5.990E-01	2.070E+00	2.987E+00	2.557E-01	-0.201
TL-202		135.34		3.408E+00	1.080E+01	1.754E+01	1.465E+00	0.194
		167.43	*	1.058E+00	3.135E+00	5.048E+00	3.999E-01	0.210
		68.90		-2.096E-01	3.655E-01	5.886E-01	4.479E-02	-0.356
		70.82		7.351E-02	2.297E-01	3.432E-01	2.656E-02	0.214
HG-203		80.30		-1.374E-01	4.749E-01	6.854E-01	5.868E-02	-0.201
		439.56	*	-1.129E-02	1.056E-01	1.692E-01	1.457E-02	-0.067
		70.83		3.979E-01	1.253E+00	1.871E+00	2.445E-01	0.213
		72.87		2.843E-02	7.499E-01	1.104E+00	1.406E-01	0.026
		82.60		-3.300E-01	1.561E+00	2.263E+00	3.137E-01	-0.146
		279.20	*	-2.099E-02	6.403E-02	1.043E-01	9.115E-03	-0.201

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-207		72.80		-6.237E-03	2.382E-01	3.497E-01	2.758E-02	-0.018
	+	74.97		3.317E-01	1.599E-01	2.361E-01	1.904E-02	1.405
		84.90		5.732E-02	2.908E-01	4.293E-01	3.888E-02	0.134
		569.67		-6.609E-03	5.226E-02	8.694E-02	7.796E-03	-0.076
TL-207		1063.62	*	-8.901E-02	1.104E-01	1.732E-01	1.511E-02	-0.514
		1770.23		8.512E-01	8.874E-01	1.558E+00	1.280E-01	0.546
		81.07		-2.673E-01	3.257E-01	4.569E-01	3.947E-02	-0.585
		83.78		8.944E-02	1.910E-01	2.854E-01	2.549E-02	0.313
		94.90		3.775E-01	3.000E-01	4.664E-01	4.217E-02	0.809
	+	122.32		1.569E+01	4.860E+00	5.888E+00	5.431E-01	2.664
		144.24		-1.143E-01	9.795E-01	1.551E+00	1.441E-01	-0.074
		154.21		-5.087E-01	5.970E-01	9.040E-01	8.128E-02	-0.563
		269.46		7.453E-02	3.236E-01	5.431E-01	4.714E-02	0.137
		323.87	*	-1.057E+00	1.185E+00	1.826E+00	3.229E-01	-0.579
	+	338.28		4.098E+00	2.200E+00	3.350E+00	4.110E-01	1.223
		445.03		-4.284E-02	5.014E+00	8.072E+00	9.770E-01	-0.005
PO-209		260.50		-1.039E+01	1.666E+01	2.684E+01	2.280E+00	-0.387
		262.80		-2.658E+00	4.604E+01	7.635E+01	6.488E+00	-0.035
		896.60	*	2.058E+01	1.878E+01	3.248E+01	2.975E+00	0.634
BI-210		46.50	*	-5.099E+00	3.799E+00	6.064E+00	5.689E-01	-0.841
PB-210		46.50	*	-5.099E+00	3.799E+00	6.064E+00	5.689E-01	-0.841
PO-210		46.50	*	-5.099E+00	3.794E+00	6.064E+00	5.160E-01	-0.841
PB-211		404.84	*	-1.343E+00	2.037E+00	2.878E+00	1.803E+00	-0.467
		427.08		-2.981E-01	4.103E+00	6.591E+00	4.095E+00	-0.045
		831.96		1.115E-02	2.559E+00	4.176E+00	2.620E+00	0.003
		727.18	*	6.328E-01	5.896E-01	1.033E+00	1.071E-01	0.613
BI-212		785.46		-6.841E-01	3.507E+00	5.663E+00	5.178E-01	-0.121
		1620.62		5.310E-01	1.684E+00	2.903E+00	2.426E-01	0.183
		81.07		-2.673E-01	3.257E-01	4.569E-01	3.947E-02	-0.585
PO-215		83.78		8.944E-02	1.910E-01	2.854E-01	2.549E-02	0.313
		94.90		3.775E-01	3.000E-01	4.664E-01	4.217E-02	0.809
	+	122.32		1.569E+01	4.860E+00	5.888E+00	5.431E-01	2.664
		144.24		-1.143E-01	9.795E-01	1.551E+00	1.441E-01	-0.074
		154.21		-5.087E-01	5.970E-01	9.040E-01	8.128E-02	-0.563
		269.46		7.453E-02	3.236E-01	5.431E-01	4.714E-02	0.137
		323.87	*	-1.057E+00	1.185E+00	1.826E+00	3.229E-01	-0.579
	+	338.28		4.098E+00	2.200E+00	3.350E+00	4.110E-01	1.223
		445.03		-4.284E-02	5.014E+00	8.072E+00	9.770E-01	-0.005
		271.23		5.201E-01	4.135E-01	7.209E-01	7.360E-02	0.721
		401.81	*	8.416E-02	8.189E-01	1.336E+00	1.990E-01	0.063
		549.76	*	1.436E+00	4.730E+01	7.959E+01	7.126E+00	0.018
RN-220		81.07		-2.673E-01	3.257E-01	4.569E-01	3.947E-02	-0.585
RA-223		83.78		8.944E-02	1.910E-01	2.854E-01	2.549E-02	0.313
		94.90		3.775E-01	3.000E-01	4.664E-01	4.217E-02	0.809
	+	122.32		1.569E+01	4.860E+00	5.888E+00	5.431E-01	2.664
		144.24		-1.143E-01	9.795E-01	1.551E+00	1.441E-01	-0.074
		154.21		-5.087E-01	5.970E-01	9.040E-01	8.128E-02	-0.563
		269.46		7.453E-02	3.236E-01	5.431E-01	4.714E-02	0.137
		323.87	*	-1.057E+00	1.185E+00	1.826E+00	3.229E-01	-0.579

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227	+	338.28		4.098E+00	2.200E+00	3.350E+00	4.110E-01	1.223
		445.03		-4.284E-02	5.014E+00	8.072E+00	9.770E-01	-0.005
		79.80		-8.908E-01	2.330E+00	3.337E+00	7.161E-01	-0.267
		236.00		-6.924E-02	4.313E-01	6.292E-01	7.624E-02	-0.110
		256.20	*	4.563E-01	6.280E-01	1.077E+00	1.645E-01	0.424
		286.10		-1.431E-01	2.616E+00	4.317E+00	5.670E-01	-0.033
		299.80		5.012E+00	2.904E+00	4.505E+00	7.865E-01	1.113
TH-227		304.40		-3.829E+00	3.345E+00	5.050E+00	9.296E-01	-0.758
		334.20		2.662E+00	4.509E+00	6.737E+00	1.306E+00	0.395
	+	79.80		-8.908E-01	2.330E+00	3.337E+00	7.253E-01	-0.267
	+	94.00		4.900E+00	3.386E+00	4.290E+00	9.423E-01	1.142
		236.00		-6.924E-02	4.313E-01	6.292E-01	6.881E-02	-0.110
		256.20	*	4.563E-01	6.295E-01	1.077E+00	1.938E-01	0.424
		286.10		-1.431E-01	2.620E+00	4.317E+00	4.333E+00	-0.033
TH-229		299.80		5.012E+00	2.904E+00	4.505E+00	7.865E-01	1.113
		304.40		-3.829E+00	3.345E+00	5.050E+00	9.296E-01	-0.758
		334.20		2.662E+00	4.509E+00	6.737E+00	1.306E+00	0.395
		85.43		1.836E-01	2.917E-01	4.369E-01	3.983E-02	0.420
	+	88.47		4.548E+00	5.467E-01	5.365E-01	5.038E-02	8.477
		100.00		2.561E-02	2.346E-01	3.827E-01	3.390E-02	0.067
		193.63	*	-4.576E-01	7.470E-01	1.226E+00	1.001E-01	-0.373
PA-231		210.97		5.782E-01	1.208E+00	2.070E+00	1.719E-01	0.279
		283.67	*	4.306E-01	2.627E+00	4.385E+00	6.630E-01	0.098
		301.29		-1.775E-02	1.063E+00	1.695E+00	2.067E-01	-0.010
TH-231		81.07		-2.673E-01	3.257E-01	4.569E-01	3.947E-02	-0.585
		83.78		8.944E-02	1.910E-01	2.854E-01	2.549E-02	0.313
		94.90		3.775E-01	3.000E-01	4.664E-01	4.217E-02	0.809
	+	122.32		1.569E+01	4.860E+00	5.888E+00	5.431E-01	2.664
		144.24		-1.143E-01	9.795E-01	1.551E+00	1.441E-01	-0.074
		154.21		-5.087E-01	5.970E-01	9.040E-01	8.128E-02	-0.563
		269.46		7.453E-02	3.236E-01	5.431E-01	4.714E-02	0.137
U-231		323.87	*	-1.057E+00	1.185E+00	1.826E+00	3.229E-01	-0.579
	+	338.28		4.098E+00	2.200E+00	3.350E+00	4.110E-01	1.223
		445.03		-4.284E-02	5.014E+00	8.072E+00	9.770E-01	-0.005
		84.21		1.755E+00	3.303E+00	4.949E+00	4.443E-01	0.355
	+	92.29		1.956E+00	1.293E+00	1.759E+00	1.612E-01	1.112
		95.87	*	4.563E-01	5.604E-01	8.541E-01	7.688E-02	0.534
		108.00		-1.148E+00	1.138E+00	1.743E+00	1.514E-01	-0.658
PA-233	+	75.28		9.684E+00	4.828E+00	7.170E+00	1.080E+00	1.350
	+	86.59		6.521E+01	1.832E+01	6.580E+00	1.779E+00	9.910
		300.12		1.115E+00	8.000E-01	1.244E+00	1.845E-01	0.897
		311.98	*	6.770E-02	1.163E-01	1.971E-01	1.738E-02	0.343
		340.50		8.078E-01	1.287E+00	1.909E+00	4.545E-01	0.423
		398.62		-2.816E+00	4.340E+00	6.676E+00	1.773E+00	-0.422
		415.76		-5.708E-01	3.245E+00	5.191E+00	1.116E+00	-0.110
PA-234		63.00		-2.136E+00	1.914E+00	2.662E+00	3.942E-01	-0.803
		94.67		3.221E-01	2.229E-01	3.459E-01	4.395E-02	0.931
		98.44		3.592E-02	1.142E-01	1.855E-01	1.036E-01	0.194
		99.86		6.888E-02	5.939E-01	9.691E-01	8.589E-02	0.071



---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00		1.178E-01	2.423E-01	4.001E-01	4.845E-02	0.294
		131.20		-2.344E-02	1.542E-01	2.452E-01	2.066E-02	-0.096
		152.70		2.235E-01	4.724E-01	7.675E-01	1.289E-01	0.291
	+	186.00		5.498E+00	4.311E+00	3.589E+00	1.115E+00	1.532
		226.40		-6.090E-02	6.271E-01	1.046E+00	1.366E-01	-0.058
		227.20		-1.572E-01	6.755E-01	1.120E+00	9.404E-02	-0.140
		248.90		3.512E-01	1.312E+00	2.214E+00	4.950E-01	0.159
	+	293.70		3.906E+00	1.770E+00	2.215E+00	3.823E-01	1.764
		369.80		1.474E+00	1.583E+00	2.668E+00	5.794E-01	0.552
		568.70		-4.930E-01	1.678E+00	2.757E+00	2.472E-01	-0.179
		569.50		-8.227E-02	4.622E-01	7.659E-01	6.868E-02	-0.107
		574.00		-9.984E-02	2.655E+00	4.435E+00	3.977E-01	-0.023
		699.00		2.151E-01	1.325E+00	2.214E+00	4.260E-01	0.097
		706.10		1.304E+00	1.993E+00	3.302E+00	1.475E+00	0.395
		733.00		-8.295E-01	7.634E-01	1.117E+00	2.499E-01	-0.743
		742.81		-3.010E-01	2.509E+00	4.076E+00	2.742E+00	-0.074
		796.30		2.483E+00	1.950E+00	3.275E+00	8.915E-01	0.758
		805.60		-2.754E-01	2.032E+00	3.286E+00	1.012E+00	-0.084
		819.60		-8.782E-01	2.646E+00	4.179E+00	1.594E+00	-0.210
		826.30		-4.714E-01	1.775E+00	2.819E+00	1.264E+00	-0.167
		831.60		-1.840E-01	1.291E+00	2.082E+00	6.247E-01	-0.088
		876.40		1.135E+00	2.384E+00	3.501E+00	3.600E+00	0.324
		880.51		-2.021E-01	6.777E-01	1.077E+00	9.880E-02	-0.188
		883.24		-8.576E-03	6.766E-01	1.098E+00	7.389E-01	-0.008
		899.00		-1.678E+00	2.270E+00	3.299E+00	1.446E+00	-0.509
		925.00		-4.565E-01	3.042E+00	4.872E+00	4.445E-01	-0.094
		926.50		2.007E-01	4.485E-01	7.429E-01	1.891E-01	0.270
		946.00	*	4.562E-02	8.065E-01	1.308E+00	2.482E-01	0.035
		949.00		-2.570E-01	1.170E+00	1.862E+00	1.691E-01	-0.138
		980.50		-1.221E+00	1.783E+00	2.717E+00	2.448E-01	-0.449
		1394.10		3.945E-01	1.645E+00	2.770E+00	1.802E+00	0.142
PA-234M		766.42		2.131E+01	2.330E+01	3.651E+01	1.856E+01	0.584
		1001.03	*	-8.849E+00	1.118E+01	1.686E+01	1.729E+00	-0.525
TH-234		63.29	*	-1.834E+00	1.638E+00	2.264E+00	3.939E-01	-0.810
	+	92.38		1.268E+00	8.625E-01	1.144E+00	2.099E-01	1.108
U-235		89.95		8.663E+00	3.275E+00	2.877E+00	8.935E-01	3.011
	+	93.35		1.525E+00	1.087E+00	1.399E+00	3.943E-01	1.089
		105.00		1.853E+00	1.512E+00	2.419E+00	7.228E-01	0.766
		143.76	*	-4.810E-02	3.012E-01	4.758E-01	8.241E-02	-0.101
		163.35		3.074E-02	7.355E-01	1.168E+00	2.195E-01	0.026
	+	185.71		2.036E-01	1.475E-01	1.326E-01	1.073E-02	1.536
		205.31		4.049E-01	8.175E-01	1.399E+00	2.648E-01	0.289
NP-236		94.67		2.458E-01	1.677E-01	2.625E-01	2.376E-02	0.936
		98.44		2.713E-02	8.505E-02	1.402E-01	1.249E-02	0.193
		111.00		8.910E-02	1.831E-01	3.027E-01	2.617E-02	0.294
		160.31	*	-1.122E-01	1.242E-01	1.872E-01	1.496E-02	-0.599
NP-237		86.50	*	4.968E+00	1.227E+00	9.420E-01	2.130E-01	5.274
		95.87		9.964E-01	1.245E+00	1.865E+00	4.620E-01	0.534
U-238		63.29	*	-1.834E+00	1.638E+00	2.264E+00	3.939E-01	-0.810

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-239	+	92.38		1.268E+00	8.386E-01	1.144E+00	1.048E-01	1.108
		99.55		5.511E-02	1.930E-01	3.176E-01	2.817E-02	0.174
		117.00	*	5.113E-02	2.915E-01	4.233E-01	3.642E-02	0.121
		209.75		2.210E-01	1.254E+00	2.126E+00	1.763E-01	0.104
		228.18		-6.380E-02	3.542E-01	5.884E-01	4.945E-02	-0.108
CM-243		277.60		3.156E-01	3.050E-01	5.291E-01	4.492E-02	0.596
		334.30		1.595E+00	2.546E+00	3.833E+00	3.283E-01	0.416
		99.55		5.669E-02	1.985E-01	3.267E-01	2.898E-02	0.174
		103.76	*	1.001E-01	1.300E-01	2.177E-01	1.908E-02	0.460
		117.00		5.258E-02	2.997E-01	4.353E-01	3.745E-02	0.121
AM-246		209.75		2.178E-01	1.236E+00	2.095E+00	1.737E-01	0.104
		228.18		-6.445E-02	3.577E-01	5.944E-01	4.995E-02	-0.108
		277.60		3.180E-01	3.074E-01	5.332E-01	4.527E-02	0.596
		798.80		-3.043E-01	2.942E-01	4.425E-01	4.052E-02	-0.688
		1036.00		-2.630E-01	6.766E-01	1.105E+00	9.761E-02	-0.238
CM-247		1062.04		-3.356E-01	4.863E-01	7.716E-01	6.737E-02	-0.435
		1078.86	*	1.629E-01	3.067E-01	5.322E-01	4.608E-02	0.306
		278.00		8.986E-01	1.265E+00	2.166E+00	1.839E-01	0.415
		287.40		-1.170E+00	2.140E+00	3.436E+00	2.927E-01	-0.340
		402.60	*	7.114E-02	7.336E-02	1.251E-01	1.050E-02	0.569
CF-249		252.85		-2.004E-01	1.428E+00	2.363E+00	2.005E-01	-0.085
		333.44		1.157E-01	3.143E-01	4.891E-01	4.190E-02	0.237
CF-251		387.95	*	9.966E-03	7.631E-02	1.250E-01	1.043E-02	0.080
		176.60	*	4.088E-02	1.809E-01	3.100E-01	2.483E-02	0.132
		227.00		-5.281E-02	6.002E-01	1.002E+00	8.414E-02	-0.053
		285.00		1.732E+00	2.994E+00	5.097E+00	4.338E-01	0.340

# 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]G1202001377
* Acquisition date   : 31-DEC-2009 15:32:35 Detector SN#      :
* Detector ID        : GAM07 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 01:00:01.31 Half life ratio : 8.000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202001377 Analyst initials: MXR1
* Batch Number       : 935341 Sample Quantity : 1.5544E+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	3.740E-01	4.744E-01	6.858E-01	0.000E+00
CO-57	2.238E-01	6.755E-02	6.053E-02	0.000E+00
CO-60	6.786E+00	6.443E-01	9.138E-02	0.000E+00
CD-109	3.361E+01	3.960E+00	1.950E+00	0.000E+00
SN-126	3.331E+00	3.924E-01	1.937E-01	0.000E+00
BA-137M	5.601E+00	5.532E-01	1.116E-01	0.000E+00
CS-137	5.921E+00	5.856E-01	1.180E-01	0.000E+00
TL-208	2.654E-01	1.051E-01	1.211E-01	0.000E+00
BI-211	2.174E+00	6.597E-01	6.369E-01	0.000E+00
PB-212	9.569E-01	1.816E-01	1.604E-01	0.000E+00
PO-212	9.569E-01	1.816E-01	1.604E-01	0.000E+00
BI-214	7.911E-01	2.486E-01	2.168E-01	0.000E+00
PB-214	7.562E-01	2.327E-01	2.085E-01	0.000E+00
PO-214	7.562E-01	2.327E-01	2.085E-01	0.000E+00
PO-216	9.569E-01	1.816E-01	1.604E-01	0.000E+00
PO-218	7.562E-01	2.327E-01	2.085E-01	0.000E+00
RA-224	2.410E+00	1.162E+00	2.069E+00	0.000E+00
RA-226	7.911E-01	2.486E-01	2.168E-01	0.000E+00
AC-228	8.426E-01	5.242E-01	4.580E-01	0.000E+00
RA-228	8.426E-01	5.242E-01	4.580E-01	0.000E+00
TH-228	9.661E-01	1.834E-01	1.620E-01	0.000E+00
TH-230	7.911E-01	2.486E-01	2.168E-01	0.000E+00
TH-232	8.426E-01	5.242E-01	4.580E-01	0.000E+00
U-234	7.911E-01	2.486E-01	2.168E-01	0.000E+00
AM-241	1.404E+01	1.249E+00	4.164E-01	0.000E+00
AM-243	1.849E-01	8.735E-02	1.220E-01	0.000E+00
ANH-511	9.254E-03	1.008E-01	1.042E-01	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	-1.955E-01	6.420E-01	1.072E+00	0.000E+00	NOT IDENT.
NA-22	-4.200E-02	4.868E-02	7.142E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.744E+03	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.502E-02	3.348E-02	4.968E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.113E-02	8.973E-02	0.000E+00	FAIL ABUN
SC-46	-2.955E-02	8.931E-02	1.478E-01	0.000E+00	NOT IDENT.
V-48	-2.810E-02	1.333E-01	2.199E-01	0.000E+00	NOT IDENT.
CR-51	5.557E-03	5.597E-01	9.876E-01	0.000E+00	NOT IDENT.
MN-52	-2.472E-02	1.250E-01	2.013E-01	0.000E+00	FAIL ABUN
MN-54	-4.094E-02	7.650E-02	1.253E-01	0.000E+00	NOT IDENT.
CO-56	-6.854E-02	8.215E-02	1.310E-01	0.000E+00	FAIL ABUN
CO-58	4.329E-02	7.288E-02	1.300E-01	0.000E+00	NOT IDENT.
FE-59	-7.234E-02	1.731E-01	2.908E-01	0.000E+00	NOT IDENT.
ZN-65	-2.776E-01	1.872E-01	2.877E-01	0.000E+00	NOT IDENT.
GE-68	1.418E+00	2.597E+00	4.678E+00	0.000E+00	NOT IDENT.
AS-73	-1.371E+00	1.223E+00	2.206E+00	0.000E+00	NOT IDENT.
AS-74	7.472E-03	1.255E-01	2.221E-01	0.000E+00	NOT IDENT.
SE-75	3.943E-02	7.205E-02	1.323E-01	0.000E+00	FAIL ABUN
BR-77	-9.820E-01	3.930E+00	6.908E+00	0.000E+00	FAIL ABUN
SR-82	-9.621E-02	6.803E-01	1.157E+00	0.000E+00	NOT IDENT.
RB-83	-4.084E-02	1.226E-01	2.144E-01	0.000E+00	NOT IDENT.
RB-84	-1.278E-01	1.501E-01	2.386E-01	0.000E+00	NOT IDENT.
KR-85	1.137E+01	1.527E+01	2.505E+01	0.000E+00	NOT IDENT.
SR-85	5.503E-02	7.388E-02	1.212E-01	0.000E+00	NOT IDENT.
RB-86	8.971E-01	1.351E+00	2.452E+00	0.000E+00	NOT IDENT.
Y-88	-2.780E-03	4.920E-02	8.285E-02	0.000E+00	NOT IDENT.
ZR-88	-1.002E-02	5.636E-02	9.662E-02	0.000E+00	NOT IDENT.
Y-91	8.751E-01	2.178E+01	3.758E+01	0.000E+00	NOT IDENT.
NB-94	-1.611E-02	6.355E-02	1.083E-01	0.000E+00	NOT IDENT.
NB-95	4.982E-02	6.973E-02	1.265E-01	0.000E+00	NOT IDENT.
NB-95M	-1.294E-01	2.123E-01	3.252E-01	0.000E+00	NOT IDENT.
ZR-95	-1.046E-01	1.192E-01	1.897E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	1.056E+03	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	1.764E+04	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.228E+00	5.539E+00	9.398E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.412E+10	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.036E-02	4.779E-02	8.907E-02	0.000E+00	NOT IDENT.
RH-102	4.141E-02	6.354E-02	1.120E-01	0.000E+00	NOT IDENT.
RU-103	1.456E-02	7.107E-02	1.221E-01	0.000E+00	FAIL ABUN
RH-106	1.038E-01	5.876E-01	1.043E+00	0.000E+00	FAIL ABUN
RU-106	1.038E-01	5.875E-01	1.043E+00	0.000E+00	FAIL ABUN
AG-108M	-7.949E-03	6.464E-02	1.101E-01	0.000E+00	NOT IDENT.
AG-110M	-1.154E-02	8.014E-02	1.199E-01	0.000E+00	NOT IDENT.
IN-111	-2.442E-01	4.720E-01	7.206E-01	0.000E+00	NOT IDENT.
IN-113M	-6.037E-04	8.043E-02	1.393E-01	0.000E+00	NOT IDENT.
SN-113	-6.037E-04	8.043E-02	1.393E-01	0.000E+00	NOT IDENT.
IN-114M	1.350E-01	2.705E-01	4.519E-01	0.000E+00	NOT IDENT.
CD-115	-1.500E+00	3.583E+00	6.216E+00	0.000E+00	NOT IDENT.
SN-117M	3.450E-02	6.138E-02	1.093E-01	0.000E+00	NOT IDENT.
SB-122	9.484E-02	8.589E-01	1.534E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	8.094E+03	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	2.993E-02	4.064E-02	7.293E-02	0.000E+00	NOT IDENT.
I-124	8.573E-02	4.639E-01	7.828E-01	0.000E+00	NOT IDENT.
SB-124	1.579E-02	8.220E-02	1.429E-01	0.000E+00	FAIL ABUN
SB-125	-9.255E-02	1.811E-01	3.014E-01	0.000E+00	NOT IDENT.
TE-125M	-5.061E+00	1.143E+01	1.989E+01	0.000E+00	NOT IDENT.
I-126	2.348E-02	2.774E-01	4.234E-01	0.000E+00	NOT IDENT.
SB-126	-4.397E-02	1.879E-01	3.194E-01	0.000E+00	FAIL ABUN
SB-127	-6.179E-01	8.850E-01	1.451E+00	0.000E+00	NOT IDENT.
XE-127	-6.389E-02	6.395E-02	1.116E-01	0.000E+00	NOT IDENT.
I-131	-8.352E-02	1.290E-01	2.159E-01	0.000E+00	NOT IDENT.
TE-132	-5.998E-02	3.301E-01	5.933E-01	0.000E+00	NOT IDENT.
BA-133	-4.534E-02	8.459E-02	1.248E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.311E+02	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.419E-01	9.316E-02	1.744E-01	0.000E+00	NOT IDENT.
CS-135	1.178E-01	2.597E-01	4.742E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.393E+09	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-4.188E-02	1.734E-01	2.970E-01	0.000E+00	NOT IDENT.
CE-139	-1.529E-02	4.597E-02	7.807E-02	0.000E+00	NOT IDENT.
BA-140	6.939E-02	3.560E-01	6.396E-01	0.000E+00	NOT IDENT.
LA-140	5.454E-02	9.388E-02	1.713E-01	0.000E+00	NOT IDENT.
CE-141	1.064E-02	7.772E-02	1.365E-01	0.000E+00	NOT IDENT.
CE-143	2.204E+01	1.630E+01	2.661E+01	0.000E+00	FAIL ABUN
CE-144	-3.587E-01	3.013E-01	4.892E-01	0.000E+00	NOT IDENT.
PM-144	-5.976E-02	6.320E-02	1.019E-01	0.000E+00	NOT IDENT.
PR-144	-4.038E+00	4.270E+00	6.888E+00	0.000E+00	NOT IDENT.
PM-146	-4.447E-02	9.068E-02	1.498E-01	0.000E+00	NOT IDENT.
ND-147	-3.878E-01	6.966E-01	1.192E+00	0.000E+00	NOT IDENT.

PM-149	5.507E-01	2.733E+01	4.870E+01	0.000E+00	NOT IDENT.
EU-152	-7.584E-02	1.921E-01	3.176E-01	0.000E+00	FAIL ABUN
GD-153	-4.287E-02	1.061E-01	1.654E-01	0.000E+00	NOT IDENT.
EU-154	-1.090E-01	1.347E-01	1.989E-01	0.000E+00	FAIL ABUN
EU-155	1.208E-01	1.423E-01	2.633E-01	0.000E+00	FAIL ABUN
TB-160	1.342E-01	3.112E-01	5.428E-01	0.000E+00	FAIL ABUN
HO-166M	-1.866E-02	1.122E-01	1.921E-01	0.000E+00	FAIL ABUN
TM-171	1.830E+01	3.091E+01	5.799E+01	0.000E+00	FAIL ABUN
LU-176	8.220E-03	4.108E-02	7.348E-02	0.000E+00	FAIL ABUN
LU-177	5.108E-01	9.680E-01	1.802E+00	0.000E+00	NOT IDENT.
LU-177M	-1.067E-02	3.250E-01	5.592E-01	0.000E+00	FAIL ABUN
HF-181	5.748E-02	7.789E-02	1.383E-01	0.000E+00	NOT IDENT.
W-181	-1.123E-01	4.050E-01	7.029E-01	0.000E+00	NOT IDENT.
TA-182	3.540E-01	2.476E-01	4.833E-01	0.000E+00	NOT IDENT.
RE-183	-7.934E-02	1.577E-01	2.656E-01	0.000E+00	FAIL ABUN
RE-184	-5.221E-02	3.646E-01	6.510E-01	0.000E+00	FAIL ABUN
OS-185	-2.718E-02	7.358E-02	1.252E-01	0.000E+00	FAIL ABUN
RE-188	-7.616E-02	2.416E-01	4.128E-01	0.000E+00	NOT IDENT.
W-188	-1.439E+00	1.283E+01	1.987E+01	0.000E+00	NOT IDENT.
IR-192	-5.387E-03	5.821E-02	1.023E-01	0.000E+00	FAIL ABUN
AU-195	9.156E-02	2.641E-01	4.814E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	2.469E+01	0.000E+00	0.000E+00	SHORT HLIF
TL-201	1.058E+00	3.073E+00	5.394E+00	0.000E+00	NOT IDENT.
TL-202	-1.129E-02	1.035E-01	1.763E-01	0.000E+00	NOT IDENT.
HG-203	-2.099E-02	6.275E-02	1.101E-01	0.000E+00	NOT IDENT.
BI-207	-8.901E-02	1.082E-01	1.763E-01	0.000E+00	FAIL ABUN
TL-207	-1.057E+00	1.161E+00	1.919E+00	0.000E+00	FAIL ABUN
PO-209	2.058E+01	1.840E+01	3.321E+01	0.000E+00	NOT IDENT.
BI-210	-5.099E+00	3.723E+00	6.686E+00	0.000E+00	NOT IDENT.
PB-210	-5.099E+00	3.723E+00	6.686E+00	0.000E+00	NOT IDENT.
PO-210	-5.099E+00	3.718E+00	6.686E+00	0.000E+00	NOT IDENT.
PB-211	-1.343E+00	1.996E+00	3.006E+00	0.000E+00	NOT IDENT.
BI-212	6.328E-01	5.778E-01	1.062E+00	0.000E+00	NOT IDENT.
PO-215	-1.057E+00	1.161E+00	1.919E+00	0.000E+00	FAIL ABUN
RN-219	8.416E-02	8.025E-01	1.395E+00	0.000E+00	NOT IDENT.
RN-220	1.436E+00	4.635E+01	8.246E+01	0.000E+00	NOT IDENT.
RA-223	-1.057E+00	1.161E+00	1.919E+00	0.000E+00	FAIL ABUN
AC-227	4.563E-01	6.155E-01	1.138E+00	0.000E+00	NOT IDENT.
TH-227	4.563E-01	6.170E-01	1.138E+00	0.000E+00	FAIL ABUN
TH-229	-4.576E-01	7.321E-01	1.305E+00	0.000E+00	FAIL ABUN
PA-231	4.306E-01	2.574E+00	4.623E+00	0.000E+00	NOT IDENT.
TH-231	-1.057E+00	1.161E+00	1.919E+00	0.000E+00	FAIL ABUN
U-231	4.563E-01	5.492E-01	9.254E-01	0.000E+00	FAIL ABUN
PA-233	6.770E-02	1.140E-01	2.073E-01	0.000E+00	FAIL ABUN
PA-234	4.562E-02	7.903E-01	1.335E+00	0.000E+00	FAIL ABUN
PA-234M	-8.849E+00	1.095E+01	1.718E+01	0.000E+00	NOT IDENT.
TH-234	-1.834E+00	1.605E+00	2.477E+00	0.000E+00	FAIL ABUN
U-235	-4.810E-02	2.951E-01	5.104E-01	0.000E+00	FAIL ABUN
NP-236	-1.122E-01	1.217E-01	2.002E-01	0.000E+00	NOT IDENT.
NP-237	0.000E+00	1.203E+00	1.023E+00	0.000E+00	NOT IDENT.
U-238	-1.834E+00	1.605E+00	2.477E+00	0.000E+00	FAIL ABUN
NP-239	5.113E-02	2.856E-01	4.564E-01	0.000E+00	NOT IDENT.
CM-243	1.001E-01	1.274E-01	2.354E-01	0.000E+00	NOT IDENT.
AM-246	1.629E-01	3.006E-01	5.413E-01	0.000E+00	NOT IDENT.
CM-247	7.114E-02	7.189E-02	1.306E-01	0.000E+00	NOT IDENT.
CF-249	9.966E-03	7.478E-02	1.307E-01	0.000E+00	NOT IDENT.
CF-251	4.088E-02	1.773E-01	3.309E-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]G1202001377.CNF;1
Sample date        : 22-DEC-2009 00:00:00 Acquisition date : 31-DEC-2009 15:32:35
Sample ID          : G1202001377 Sample quantity      : 1.55440E+02 GRAM
Detector name      : GAM07 Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00 Elapsed real time: 0 01:00:01.31 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity           : 5.00000
Batch ID           : 935341 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	9	10.67*	1.129E+00	3.740E-01	3.740E-01	129.44
CO-57	122.06	273	85.51*	7.075E+00	2.183E-01	2.238E-01	30.80
	136.48	-----	10.60	6.835E+00	-----	Line Not Found	-----
CO-60	1173.22	1825	100.00	1.358E+00	6.491E+00	6.513E+00	9.62
	1332.49	1705	100.00*	1.218E+00	6.762E+00	6.786E+00	9.69
CD-109	88.03	1752	3.72*	6.868E+00	3.313E+01	3.361E+01	12.02
SN-126	64.28	-----	9.60	4.930E+00	-----	Line Not Found	-----
	86.94	1752	8.90	6.868E+00	1.385E+01	1.385E+01	42.20
	87.57	1752	37.00*	6.868E+00	3.331E+00	3.331E+00	12.02
BA-137M	661.65	2327	89.98*	2.232E+00	5.598E+00	5.601E+00	10.08
CS-137	661.65	2327	85.12*	2.232E+00	5.917E+00	5.921E+00	10.09
TL-208	277.35	-----	6.80	4.401E+00	-----	Line Not Found	-----
	510.84	5	21.60	2.756E+00	4.284E-02	4.284E-02	1111.29
	583.14	115	84.20*	2.477E+00	2.654E-01	2.654E-01	40.43
	860.37	-----	12.46	1.783E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	5.899E+00	-----	Line Not Found	-----
	351.07	214	12.94*	3.680E+00	2.174E+00	2.174E+00	30.97
PB-212	74.81	153	10.70	6.070E+00	1.140E+00	1.140E+00	49.11
	77.11	256	18.00	6.255E+00	1.098E+00	1.098E+00	30.80
	87.30	1752	8.00	6.868E+00	1.541E+01	1.541E+01	15.64
	238.63	434	44.60*	4.910E+00	9.569E-01	9.569E-01	19.37
	300.09	-----	3.41	4.151E+00	-----	Line Not Found	-----
PO-212	74.81	153	10.70	6.070E+00	1.140E+00	1.140E+00	49.11
	77.11	256	18.00	6.255E+00	1.098E+00	1.098E+00	30.80
	87.30	1752	8.00	6.868E+00	1.541E+01	1.541E+01	15.64
	115.19	-----	0.60	7.150E+00	-----	Line Not Found	-----
	238.63	434	44.60*	4.910E+00	9.569E-01	9.569E-01	19.37
	300.09	-----	3.41	4.151E+00	-----	Line Not Found	-----
BI-214	609.31	181	46.30*	2.388E+00	7.911E-01	7.911E-01	32.06
	1120.29	-----	15.10	1.414E+00	-----	Line Not Found	-----
	1764.49	26	15.80	9.832E-01	8.235E-01	8.235E-01	67.67
PB-214	74.81	153	6.21	6.070E+00	1.965E+00	1.965E+00	48.78

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	77.11	256	10.50	6.255E+00	1.882E+00	1.882E+00	31.73
	87.30	1752	4.67	6.868E+00	2.639E+01	2.639E+01	14.28
	241.98	96	7.49	4.868E+00	1.271E+00	1.271E+00	49.51
	295.21	136	19.20	4.203E+00	8.138E-01	8.138E-01	43.22
	351.92	214	37.20*	3.680E+00	7.562E-01	7.562E-01	31.40
	74.81	153	6.21	6.070E+00	1.965E+00	1.965E+00	48.78
	77.11	256	10.50	6.255E+00	1.882E+00	1.882E+00	31.73
	87.30	1752	4.67	6.868E+00	2.639E+01	2.639E+01	14.28
	241.98	96	7.49	4.868E+00	1.271E+00	1.271E+00	49.51
	295.21	136	19.20	4.203E+00	8.138E-01	8.138E-01	43.22
PO-216	351.92	214	37.20*	3.680E+00	7.562E-01	7.562E-01	31.40
	74.81	153	10.70	6.070E+00	1.140E+00	1.140E+00	49.11
	77.11	256	18.00	6.255E+00	1.098E+00	1.098E+00	30.80
	87.30	1752	8.00	6.868E+00	1.541E+01	1.541E+01	15.64
	238.63	434	44.60*	4.910E+00	9.569E-01	9.569E-01	19.37
	300.09	-----	3.41	4.151E+00	-----	Line Not Found	-----
	74.81	153	6.21	6.070E+00	1.965E+00	1.965E+00	48.78
	77.11	256	10.50	6.255E+00	1.882E+00	1.882E+00	31.73
	87.30	1752	4.67	6.868E+00	2.639E+01	2.639E+01	14.28
	241.98	96	7.49	4.868E+00	1.271E+00	1.271E+00	49.51
PO-218	295.21	136	19.20	4.203E+00	8.138E-01	8.138E-01	43.22
	351.92	214	37.20*	3.680E+00	7.562E-01	7.562E-01	31.40
	240.98	96	3.95*	4.868E+00	2.410E+00	2.410E+00	49.19
	609.31	181	46.30*	2.388E+00	7.911E-01	7.911E-01	32.06
	1120.29	-----	15.10	1.414E+00	-----	Line Not Found	-----
	1764.49	26	15.80	9.832E-01	8.235E-01	8.235E-01	67.67
	338.32	88	11.40	3.792E+00	9.813E-01	9.813E-01	66.59
	911.07	82	27.70*	1.697E+00	8.426E-01	8.426E-01	63.48
	969.11	85	16.60	1.606E+00	1.548E+00	1.548E+00	49.96
	338.32	88	11.40	3.792E+00	9.813E-01	9.813E-01	66.59
RA-224	911.07	82	27.70*	1.697E+00	8.426E-01	8.426E-01	63.48
	969.11	85	16.60	1.606E+00	1.548E+00	1.548E+00	49.96
	74.81	153	10.70	6.070E+00	1.140E+00	1.151E+00	48.23
	77.11	256	18.00	6.255E+00	1.098E+00	1.108E+00	30.80
	87.30	1752	8.00	6.868E+00	1.541E+01	1.555E+01	12.02
	238.63	434	44.60*	4.910E+00	9.569E-01	9.661E-01	19.37
	300.09	-----	3.41	4.151E+00	-----	Line Not Found	-----
	609.31	181	46.30*	2.388E+00	7.911E-01	7.911E-01	32.06
	1120.29	-----	15.10	1.414E+00	-----	Line Not Found	-----
	1764.49	26	15.80	9.832E-01	8.235E-01	8.235E-01	67.67
AC-228	338.32	88	11.40	3.792E+00	9.813E-01	9.813E-01	52.97
	911.07	82	27.70*	1.697E+00	8.426E-01	8.426E-01	63.48
	969.11	85	16.60	1.606E+00	1.548E+00	1.548E+00	49.96
	338.32	88	11.40	3.792E+00	9.813E-01	9.813E-01	66.59
	911.07	82	27.70*	1.697E+00	8.426E-01	8.426E-01	63.48
	969.11	85	16.60	1.606E+00	1.548E+00	1.548E+00	49.96
	74.81	153	10.70	6.070E+00	1.140E+00	1.151E+00	48.23
	77.11	256	18.00	6.255E+00	1.098E+00	1.108E+00	30.80
	87.30	1752	8.00	6.868E+00	1.541E+01	1.555E+01	12.02
	238.63	434	44.60*	4.910E+00	9.569E-01	9.661E-01	19.37
TH-228	300.09	-----	3.41	4.151E+00	-----	Line Not Found	-----
	609.31	181	46.30*	2.388E+00	7.911E-01	7.911E-01	32.06
	1120.29	-----	15.10	1.414E+00	-----	Line Not Found	-----
	1764.49	26	15.80	9.832E-01	8.235E-01	8.235E-01	67.67
	338.32	88	11.40	3.792E+00	9.813E-01	9.813E-01	52.97
	911.07	82	27.70*	1.697E+00	8.426E-01	8.426E-01	63.48
	969.11	85	16.60	1.606E+00	1.548E+00	1.548E+00	49.96
	609.31	181	46.30*	2.388E+00	7.911E-01	7.911E-01	32.06
	1120.29	-----	15.10	1.414E+00	-----	Line Not Found	-----
	1764.49	26	15.80	9.832E-01	8.235E-01	8.235E-01	67.67
TH-230	59.54	4421	35.90*	4.237E+00	1.404E+01	1.404E+01	9.08
	74.67	153	66.00*	6.070E+00	1.849E-01	1.849E-01	48.21
	86.72	1752	0.34	6.868E+00	3.668E+02	3.668E+02	12.02
TH-232							
U-234							
AM-241							
AM-243							

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	117.66	-----	0.55	7.126E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.723E+00	-----	Line Not Found	-----
ANH-511	511.00	5	100.00*	2.756E+00	9.254E-03	9.254E-03	1111.26

Flag: "\*" = Keyline



Total number of lines in spectrum 23  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 23 100.00%

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	3.740E-01	3.740E-01	4.841E-01	129.44	
CO-57	270.90D	1.03	2.183E-01	2.238E-01	0.689E-01	30.80	
CO-60	5.27Y	1.00	6.762E+00	6.786E+00	0.657E+00	9.69	
CD-109	464.00D	1.01	3.313E+01	3.361E+01	0.404E+01	12.02	
SN-126	1.00E+05Y	1.00	3.331E+00	3.331E+00	0.400E+00	12.02	
BA-137M	30.17Y	1.00	5.598E+00	5.601E+00	0.564E+00	10.08	
CS-137	30.17Y	1.00	5.917E+00	5.921E+00	0.598E+00	10.09	
TL-208	1.41E+10Y	1.00	2.654E-01	2.654E-01	1.073E-01	40.43	
BI-211	7.04E+08Y	1.00	2.174E+00	2.174E+00	0.673E+00	30.97	
PB-212	1.41E+10Y	1.00	9.569E-01	9.569E-01	1.853E-01	19.37	
PO-212	1.41E+10Y	1.00	9.569E-01	9.569E-01	1.853E-01	19.37	
BI-214	1600.00Y	1.00	7.911E-01	7.911E-01	2.536E-01	32.06	
PB-214	1600.00Y	1.00	7.562E-01	7.562E-01	2.375E-01	31.40	
PO-214	1600.00Y	1.00	7.562E-01	7.562E-01	2.375E-01	31.40	
PO-216	1.41E+10Y	1.00	9.569E-01	9.569E-01	1.853E-01	19.37	
PO-218	1600.00Y	1.00	7.562E-01	7.562E-01	2.375E-01	31.40	
RA-224	1.41E+10Y	1.00	2.410E+00	2.410E+00	1.186E+00	49.19	
RA-226	1600.00Y	1.00	7.911E-01	7.911E-01	2.536E-01	32.06	
AC-228	1.41E+10Y	1.00	8.426E-01	8.426E-01	5.349E-01	63.48	
RA-228	1.41E+10Y	1.00	8.426E-01	8.426E-01	5.349E-01	63.48	
TH-228	1.91Y	1.01	9.569E-01	9.661E-01	1.871E-01	19.37	
TH-230	4.47E+09Y	1.00	7.911E-01	7.911E-01	2.536E-01	32.06	
TH-232	1.41E+10Y	1.00	8.426E-01	8.426E-01	5.349E-01	63.48	
U-234	4.47E+09Y	1.00	7.911E-01	7.911E-01	2.536E-01	32.06	
AM-241	432.20Y	1.00	1.404E+01	1.404E+01	0.127E+01	9.08	
AM-243	7380.00Y	1.00	1.849E-01	1.849E-01	0.891E-01	48.21	
ANH-511	1.00E+09Y	1.00	9.254E-03	9.254E-03	102.8E-03	1111.26	
Total Activity :			8.620E+01	8.673E+01			

Grand Total Activity : 8.620E+01 8.673E+01

Flags: "K" = Keyline not found  
"E" = Manually edited

"M" = Manually accepted  
"A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : G1202001377

Page : 5  
Acquisition date : 31-DEC-2009 15:32:35

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	93.06	100	304	1.52	185.76	182	8	2.77E-02	65.5	7.03E+00	T
0	185.80	132	441	1.44	371.21	364	15	3.68E-02	72.0	5.82E+00	T
0	1238.91	14	18	1.08	2477.16	2469	11	3.91E-03	****	1.30E+00	T

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]G1202001377.CNF;1
* Acquisition date   : 31-DEC-2009 15:32:35  Detector SN#      :
* Detector ID        : GAM07                  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 01:00:01.31          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202001377          Analyst initials: MXR1
* Batch Number       : 935341               Sample Quantity : 1.55440E+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	3.740E-01	4.841E-01	6.800E-01	5.839E-02	0.550
CO-57	2.238E-01	6.893E-02	5.620E-02	4.836E-03	3.982
CO-60	6.786E+00	6.575E-01	9.038E-02	7.403E-03	75.083
CD-109	3.361E+01	4.040E+00	1.796E+00	1.692E-01	18.715
SN-126	3.331E+00	4.004E-01	1.784E-01	1.671E-02	18.674
BA-137M	5.601E+00	5.645E-01	1.082E-01	9.579E-03	51.746
CS-137	5.921E+00	5.976E-01	1.144E-01	1.014E-02	51.746
TL-208	2.654E-01	1.073E-01	1.171E-01	1.120E-02	2.266
BI-211	2.174E+00	6.732E-01	6.075E-01	5.450E-02	3.579
PB-212	9.569E-01	1.853E-01	1.515E-01	1.449E-02	6.316
PO-212	9.569E-01	1.853E-01	1.515E-01	1.449E-02	6.316
BI-214	7.911E-01	2.536E-01	2.098E-01	2.171E-02	3.770
PB-214	7.562E-01	2.375E-01	1.989E-01	2.064E-02	3.802
PO-214	7.562E-01	2.375E-01	1.989E-01	2.064E-02	3.802
PO-216	9.569E-01	1.853E-01	1.515E-01	1.449E-02	6.316
PO-218	7.562E-01	2.375E-01	1.989E-01	2.064E-02	3.802
RA-224	2.410E+00	1.186E+00	1.954E+00	1.653E-01	1.233
RA-226	7.911E-01	2.536E-01	2.098E-01	2.171E-02	3.770

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	8.426E-01	5.349E-01	4.481E-01	5.221E-02	1.880
RA-228	8.426E-01	5.349E-01	4.481E-01	5.221E-02	1.880
TH-228	9.661E-01	1.871E-01	1.530E-01	1.463E-02	6.316
TH-230	7.911E-01	2.536E-01	2.098E-01	2.171E-02	3.770
TH-232	8.426E-01	5.349E-01	4.481E-01	5.221E-02	1.880
U-234	7.911E-01	2.536E-01	2.098E-01	2.171E-02	3.770
AM-241	1.404E+01	1.274E+00	3.799E-01	3.012E-02	36.948
AM-243	1.849E-01	8.913E-02	1.119E-01	8.996E-03	1.652
ANH-511	9.254E-03	1.028E-01	1.004E-01	8.920E-03	0.092

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.955E-01		6.551E-01	1.031E+00	9.725E-02	-0.190
NA-22	-4.200E-02		4.968E-02	7.055E-02	5.791E-03	-0.595
NA-24	6.058E-04		8.898E-04	Half-Life too short		
AL-26	-1.502E-02		3.417E-02	4.956E-02	4.041E-03	-0.303
TI-44	2.025E-01	+	6.238E-02	8.241E-02	6.900E-03	2.457
SC-46	-2.955E-02		9.113E-02	1.445E-01	1.324E-02	-0.205
V-48	-2.810E-02		1.360E-01	2.156E-01	1.941E-02	-0.130
CR-51	5.557E-03		5.711E-01	9.398E-01	8.492E-02	0.006
MN-52	-2.472E-02		1.275E-01	1.994E-01	1.658E-02	-0.124
MN-54	-4.094E-02		7.807E-02	1.223E-01	1.123E-02	-0.335
CO-56	-6.854E-02		8.382E-02	1.279E-01	1.174E-02	-0.536
CO-58	4.329E-02		7.437E-02	1.268E-01	1.165E-02	0.341
FE-59	-7.234E-02		1.766E-01	2.860E-01	2.650E-02	-0.253
ZN-65	-2.776E-01		1.910E-01	2.831E-01	2.403E-02	-0.980
GE-68	1.418E+00		2.650E+00	4.599E+00	3.985E-01	0.308
AS-73	-1.371E+00		1.248E+00	2.008E+00	1.508E-01	-0.683
AS-74	7.472E-03		1.281E-01	2.149E-01	1.926E-02	0.035
SE-75	3.943E-02		7.352E-02	1.253E-01	1.070E-02	0.315
BR-77	-9.820E-01		4.011E+00	6.658E+00	5.930E-01	-0.147
SR-82	-9.621E-02		6.942E-01	1.127E+00	1.029E-01	-0.085
RB-83	-4.084E-02		1.251E-01	2.066E-01	1.841E-02	-0.198
RB-84	-1.278E-01		1.531E-01	2.333E-01	2.139E-02	-0.548
KR-85	1.137E+01		1.558E+01	2.413E+01	2.146E+00	0.471
SR-85	5.503E-02		7.539E-02	1.168E-01	1.039E-02	0.471
RB-86	8.971E-01		1.378E+00	2.410E+00	2.089E-01	0.372
Y-88	-2.780E-03		5.020E-02	8.269E-02	6.711E-03	-0.034
ZR-88	-1.002E-02		5.751E-02	9.243E-02	7.699E-03	-0.108
Y-91	8.751E-01		2.222E+01	3.706E+01	3.026E+00	0.024
NB-94	-1.611E-02		6.485E-02	1.052E-01	9.450E-03	-0.153
NB-95	4.982E-02		7.115E-02	1.232E-01	1.123E-02	0.404
NB-95M	-1.294E-01		2.166E-01	3.070E-01	2.980E-02	-0.422
ZR-95	-1.046E-01		1.216E-01	1.847E-01	1.834E-02	-0.566
NB-97	4.714E-04		5.385E-04	Half-Life too short		
ZR-97	-5.030E-04		8.998E-03	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
MO-99	-1.228E+00		5.652E+00	9.144E+00	1.412E+00	-0.134
TC-99M	-4.046E+03		7.203E+03	Half-Life too short		
RH-101	2.036E-02		4.876E-02	8.371E-02	6.866E-03	0.243
RH-102	4.141E-02		6.483E-02	1.077E-01	9.448E-03	0.385
RU-103	1.456E-02		7.252E-02	1.175E-01	1.681E-02	0.124
RH-106	1.038E-01		5.996E-01	1.010E+00	1.370E-01	0.103
RU-106	1.038E-01		5.995E-01	1.010E+00	9.029E-02	0.103
AG-108M	-7.949E-03		6.596E-02	1.056E-01	9.430E-03	-0.075
AG-110M	-1.154E-02		8.178E-02	1.163E-01	1.059E-02	-0.099
IN-111	-2.442E-01		4.816E-01	6.809E-01	5.768E-02	-0.359
IN-113M	-6.037E-04		8.208E-02	1.333E-01	1.145E-02	-0.005
SN-113	-6.037E-04		8.208E-02	1.333E-01	1.145E-02	-0.005
IN-114M	1.350E-01		2.760E-01	4.242E-01	3.452E-02	0.318
CD-115	-1.500E+00		3.656E+00	5.993E+00	5.347E-01	-0.250
SN-117M	3.450E-02		6.263E-02	1.022E-01	8.192E-03	0.338
SB-122	9.484E-02		8.765E-01	1.481E+00	1.328E-01	0.064
I-123	5.963E-03		4.130E-03	Half-Life too short		
TE-123M	2.993E-02		4.146E-02	6.817E-02	5.499E-03	0.439
I-124	8.573E-02		4.733E-01	7.574E-01	6.786E-02	0.113
SB-124	1.579E-02		8.388E-02	1.423E-01	1.233E-02	0.111
SB-125	-9.255E-02		1.848E-01	2.890E-01	2.520E-02	-0.320
TE-125M	-5.061E+00		1.166E+01	1.842E+01	1.908E+00	-0.275
I-126	2.348E-02		2.831E-01	4.108E-01	3.642E-02	0.057
SB-126	-4.397E-02		1.918E-01	3.106E-01	2.803E-02	-0.142
SB-127	-6.179E-01		9.030E-01	1.409E+00	1.445E-01	-0.439
XE-127	-6.389E-02		6.525E-02	1.049E-01	8.645E-03	-0.609
I-131	-8.352E-02		1.317E-01	2.062E-01	1.840E-02	-0.405
TE-132	-5.998E-02		3.369E-01	5.596E-01	8.252E-02	-0.107
BA-133	-4.534E-02		8.632E-02	1.190E-01	1.563E-02	-0.381
I-133	-1.213E-04		6.690E-05	Half-Life too short		
CS-134	1.419E-01		9.506E-02	1.700E-01	1.566E-02	0.835
CS-135	1.178E-01		2.650E-01	4.492E-01	4.429E-02	0.262
I-135	1.958E+03		3.262E+03	Half-Life too short		
CS-136	-4.188E-02		1.769E-01	2.917E-01	2.668E-02	-0.144
CE-139	-1.529E-02		4.691E-02	7.304E-02	5.778E-03	-0.209
BA-140	6.939E-02		3.633E-01	6.170E-01	2.050E-01	0.112
LA-140	5.454E-02		9.580E-02	1.703E-01	1.424E-02	0.320
CE-141	1.064E-02		7.931E-02	1.273E-01	1.066E-02	0.084
CE-143	2.204E+01		1.663E+01	2.526E+01	5.480E+00	0.872
CE-144	-3.587E-01		3.074E-01	4.552E-01	7.027E-02	-0.788
PM-144	-5.976E-02		6.449E-02	9.903E-02	8.875E-03	-0.604
PR-144	-4.038E+00		4.358E+00	6.691E+00	5.996E-01	-0.604
PM-146	-4.447E-02		9.253E-02	1.438E-01	1.550E-02	-0.309
ND-147	-3.878E-01		7.108E-01	1.149E+00	1.738E-01	-0.338
PM-149	5.507E-01		2.788E+01	4.621E+01	7.148E+00	0.012
EU-152	-7.584E-02		1.960E-01	3.028E-01	2.745E-02	-0.250
GD-153	-4.287E-02		1.082E-01	1.527E-01	1.365E-02	-0.281
EU-154	-1.090E-01		1.374E-01	1.965E-01	2.160E-02	-0.555

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	1.208E-01		1.452E-01	2.436E-01	2.152E-02	0.496
TB-160	1.342E-01		3.175E-01	5.306E-01	4.866E-02	0.253
HO-166M	-1.866E-02		1.145E-01	1.867E-01	1.681E-02	-0.100
TM-171	1.830E+01		3.154E+01	5.306E+01	3.968E+00	0.345
LU-176	8.220E-03		4.191E-02	6.984E-02	5.983E-03	0.118
LU-177	5.108E-01		9.877E-01	1.696E+00	1.405E-01	0.301
LU-177M	-1.067E-02		3.316E-01	5.357E-01	4.535E-02	-0.020
HF-181	5.748E-02		7.948E-02	1.330E-01	1.170E-02	0.432
W-181	-1.123E-01		4.133E-01	6.427E-01	4.756E-02	-0.175
TA-182	3.540E-01		2.526E-01	4.768E-01	3.899E-02	0.742
RE-183	-7.934E-02		1.609E-01	2.484E-01	1.977E-02	-0.319
RE-184	-5.221E-02		3.720E-01	6.156E-01	5.225E-02	-0.085
OS-185	-2.718E-02		7.508E-02	1.214E-01	1.079E-02	-0.224
RE-188	-7.616E-02		2.466E-01	3.856E-01	3.111E-02	-0.198
W-188	-1.439E+00		1.309E+01	1.886E+01	1.609E+00	-0.076
IR-192	-5.387E-03		5.940E-02	9.728E-02	8.361E-03	-0.055
AU-195	9.156E-02		2.695E-01	4.447E-01	3.954E-02	0.206
TL-200	1.354E-06		1.260E-05	Half-Life too short		
TL-201	1.058E+00		3.135E+00	5.048E+00	3.999E-01	0.210
TL-202	-1.129E-02		1.056E-01	1.692E-01	1.457E-02	-0.067
HG-203	-2.099E-02		6.403E-02	1.043E-01	9.115E-03	-0.201
BI-207	-8.901E-02		1.104E-01	1.732E-01	1.511E-02	-0.514
TL-207	-1.057E+00		1.185E+00	1.826E+00	3.229E-01	-0.579
PO-209	2.058E+01		1.878E+01	3.248E+01	2.975E+00	0.634
BI-210	-5.099E+00		3.799E+00	6.064E+00	5.689E-01	-0.841
PB-210	-5.099E+00		3.799E+00	6.064E+00	5.689E-01	-0.841
PO-210	-5.099E+00		3.794E+00	6.064E+00	5.160E-01	-0.841
PB-211	-1.343E+00		2.037E+00	2.878E+00	1.803E+00	-0.467
BI-212	6.328E-01		5.896E-01	1.033E+00	1.071E-01	0.613
PO-215	-1.057E+00		1.185E+00	1.826E+00	3.229E-01	-0.579
RN-219	8.416E-02		8.189E-01	1.336E+00	1.990E-01	0.063
RN-220	1.436E+00		4.730E+01	7.959E+01	7.126E+00	0.018
RA-223	-1.057E+00		1.185E+00	1.826E+00	3.229E-01	-0.579
AC-227	4.563E-01		6.280E-01	1.077E+00	1.645E-01	0.424
TH-227	4.563E-01		6.295E-01	1.077E+00	1.938E-01	0.424
TH-229	-4.576E-01		7.470E-01	1.226E+00	1.001E-01	-0.373
PA-231	4.306E-01		2.627E+00	4.385E+00	6.630E-01	0.098
TH-231	-1.057E+00		1.185E+00	1.826E+00	3.229E-01	-0.579
U-231	4.563E-01		5.604E-01	8.541E-01	7.688E-02	0.534
PA-233	6.770E-02		1.163E-01	1.971E-01	1.738E-02	0.343
PA-234	4.562E-02		8.065E-01	1.308E+00	2.482E-01	0.035
PA-234M	-8.849E+00		1.118E+01	1.686E+01	1.729E+00	-0.525
TH-234	-1.834E+00		1.638E+00	2.264E+00	3.939E-01	-0.810
U-235	-4.810E-02		3.012E-01	4.758E-01	8.241E-02	-0.101
NP-236	-1.122E-01		1.242E-01	1.872E-01	1.496E-02	-0.599
NP-237	4.968E+00		1.227E+00	9.420E-01	2.130E-01	5.274
U-238	-1.834E+00		1.638E+00	2.264E+00	3.939E-01	-0.810
NP-239	5.113E-02		2.915E-01	4.233E-01	3.642E-02	0.121

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.001E-01		1.300E-01	2.177E-01	1.908E-02	0.460
AM-246	1.629E-01		3.067E-01	5.322E-01	4.608E-02	0.306
CM-247	7.114E-02		7.336E-02	1.251E-01	1.050E-02	0.569
CF-249	9.966E-03		7.631E-02	1.250E-01	1.043E-02	0.080
CF-251	4.088E-02		1.809E-01	3.100E-01	2.483E-02	0.132

## 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]G1202001377          *
* Acquisition date   : 31-DEC-2009 15:32:35 Detector SN# :                  *
* Detector ID        : GAM07 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 01:00:01.31 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202001377 Analyst initials: MXR1                *
* Batch Number       : 935341 Sample Quantity : 1.5544E+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	3.740E-01	4.744E-01	3.431E-01	2.420E-01
CO-57	2.238E-01	6.755E-02	3.028E-02	3.446E-02
CO-60	6.786E+00	6.443E-01	4.572E-02	3.287E-01
CD-109	3.361E+01	3.960E+00	9.756E-01	2.020E+00
SN-126	3.331E+00	3.924E-01	9.690E-02	2.002E-01
BA-137M	5.601E+00	5.532E-01	5.583E-02	2.822E-01
CS-137	5.921E+00	5.856E-01	5.901E-02	2.988E-01
TL-208	2.654E-01	1.051E-01	6.061E-02	5.365E-02
BI-211	2.174E+00	6.597E-01	3.186E-01	3.366E-01
PB-212	9.569E-01	1.816E-01	8.026E-02	9.267E-02
PO-212	9.569E-01	1.816E-01	8.026E-02	9.267E-02
BI-214	7.911E-01	2.486E-01	1.085E-01	1.268E-01
PB-214	7.562E-01	2.327E-01	1.043E-01	1.187E-01
PO-214	7.562E-01	2.327E-01	1.043E-01	1.187E-01
PO-216	9.569E-01	1.816E-01	8.026E-02	9.267E-02
PO-218	7.562E-01	2.327E-01	1.043E-01	1.187E-01
RA-224	2.410E+00	1.162E+00	1.035E+00	5.928E-01
RA-226	7.911E-01	2.486E-01	1.085E-01	1.268E-01
AC-228	8.426E-01	5.242E-01	2.291E-01	2.675E-01
RA-228	8.426E-01	5.242E-01	2.291E-01	2.675E-01
TH-228	9.661E-01	1.834E-01	8.103E-02	9.356E-02
TH-230	7.911E-01	2.486E-01	1.085E-01	1.268E-01
TH-232	8.426E-01	5.242E-01	2.291E-01	2.675E-01
U-234	7.911E-01	2.486E-01	1.085E-01	1.268E-01
AM-241	1.404E+01	1.249E+00	2.083E-01	6.372E-01
AM-243	1.849E-01	8.735E-02	6.103E-02	4.457E-02
ANH-511	9.254E-03	1.008E-01	5.214E-02	5.142E-02

## ---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM )	K.L Act error	DLC (pCi/GRAM )	TPU
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BE-7	-1.955E-01	6.420E-01	5.361E-01	3.275E-01	NOT IDENT.
NA-22	-4.200E-02	4.868E-02	3.573E-02	2.484E-02	NOT IDENT.
NA-24	6.058E+02	1.744E+03	0.000E+00	8.898E+02	SHORT HLIF
AL-26	-1.502E-02	3.348E-02	2.485E-02	1.708E-02	NOT IDENT.
TI-44	2.025E-01	6.113E-02	4.489E-02	3.119E-02	FAIL ABUN
SC-46	-2.955E-02	8.931E-02	7.392E-02	4.557E-02	NOT IDENT.
V-48	-2.810E-02	1.333E-01	1.100E-01	6.800E-02	NOT IDENT.
CR-51	5.557E-03	5.597E-01	4.941E-01	2.856E-01	NOT IDENT.
MN-52	-2.472E-02	1.250E-01	1.007E-01	6.375E-02	FAIL ABUN
MN-54	-4.094E-02	7.650E-02	6.270E-02	3.903E-02	NOT IDENT.
CO-56	-6.854E-02	8.215E-02	6.552E-02	4.191E-02	FAIL ABUN
CO-58	4.329E-02	7.288E-02	6.505E-02	3.719E-02	NOT IDENT.
FE-59	-7.234E-02	1.731E-01	1.455E-01	8.831E-02	NOT IDENT.
ZN-65	-2.776E-01	1.872E-01	1.439E-01	9.551E-02	NOT IDENT.
GE-68	1.418E+00	2.597E+00	2.340E+00	1.325E+00	NOT IDENT.
AS-73	-1.371E+00	1.223E+00	1.104E+00	6.238E-01	NOT IDENT.
AS-74	7.472E-03	1.255E-01	1.111E-01	6.405E-02	NOT IDENT.
SE-75	3.943E-02	7.205E-02	6.619E-02	3.676E-02	FAIL ABUN
BR-77	-9.820E-01	3.930E+00	3.456E+00	2.005E+00	FAIL ABUN
SR-82	-9.621E-02	6.803E-01	5.789E-01	3.471E-01	NOT IDENT.
RB-83	-4.084E-02	1.226E-01	1.073E-01	6.257E-02	NOT IDENT.
RB-84	-1.278E-01	1.501E-01	1.194E-01	7.656E-02	NOT IDENT.
KR-85	1.137E+01	1.527E+01	1.253E+01	7.788E+00	NOT IDENT.
SR-85	5.503E-02	7.388E-02	6.065E-02	3.769E-02	NOT IDENT.
RB-86	8.971E-01	1.351E+00	1.227E+00	6.891E-01	NOT IDENT.
Y-88	-2.780E-03	4.920E-02	4.145E-02	2.510E-02	NOT IDENT.
ZR-88	-1.002E-02	5.636E-02	4.834E-02	2.875E-02	NOT IDENT.
Y-91	8.751E-01	2.178E+01	1.880E+01	1.111E+01	NOT IDENT.
NB-94	-1.611E-02	6.355E-02	5.419E-02	3.243E-02	NOT IDENT.
NB-95	4.982E-02	6.973E-02	6.328E-02	3.558E-02	NOT IDENT.
NB-95M	-1.294E-01	2.123E-01	1.627E-01	1.083E-01	NOT IDENT.
ZR-95	-1.046E-01	1.192E-01	9.492E-02	6.079E-02	NOT IDENT.
NB-97	4.714E+02	1.056E+03	0.000E+00	5.385E+02	SHORT HLIF
ZR-97	-5.030E+02	1.764E+04	0.000E+00	8.998E+03	SHORT HLIF
MO-99	-1.228E+00	5.539E+00	4.702E+00	2.826E+00	NOT IDENT.
TC-99M	-4.046E+09	1.412E+10	0.000E+00	7.203E+09	SHORT HLIF
RH-101	2.036E-02	4.779E-02	4.456E-02	2.438E-02	NOT IDENT.
RH-102	4.141E-02	6.354E-02	5.604E-02	3.242E-02	NOT IDENT.
RU-103	1.456E-02	7.107E-02	6.108E-02	3.626E-02	FAIL ABUN
RH-106	1.038E-01	5.876E-01	5.219E-01	2.998E-01	FAIL ABUN
RU-106	1.038E-01	5.875E-01	5.219E-01	2.998E-01	FAIL ABUN
AG-108M	-7.949E-03	6.464E-02	5.509E-02	3.298E-02	NOT IDENT.
AG-110M	-1.154E-02	8.014E-02	5.997E-02	4.089E-02	NOT IDENT.
IN-111	-2.442E-01	4.720E-01	3.605E-01	2.408E-01	NOT IDENT.
IN-113M	-6.037E-04	8.043E-02	6.969E-02	4.104E-02	NOT IDENT.
SN-113	-6.037E-04	8.043E-02	6.969E-02	4.104E-02	NOT IDENT.
IN-114M	1.350E-01	2.705E-01	2.261E-01	1.380E-01	NOT IDENT.
CD-115	-1.500E+00	3.583E+00	3.110E+00	1.828E+00	NOT IDENT.
SN-117M	3.450E-02	6.138E-02	5.469E-02	3.132E-02	NOT IDENT.
SB-122	9.484E-02	8.589E-01	7.673E-01	4.382E-01	NOT IDENT.
I-123	5.963E+03	8.094E+03	0.000E+00	4.130E+03	SHORT HLIF
TE-123M	2.993E-02	4.064E-02	3.649E-02	2.073E-02	NOT IDENT.
I-124	8.573E-02	4.639E-01	3.916E-01	2.367E-01	NOT IDENT.
SB-124	1.579E-02	8.220E-02	7.150E-02	4.194E-02	FAIL ABUN
SB-125	-9.255E-02	1.811E-01	1.508E-01	9.242E-02	NOT IDENT.
TE-125M	-5.061E+00	1.143E+01	9.953E+00	5.830E+00	NOT IDENT.
I-126	2.348E-02	2.774E-01	2.118E-01	1.415E-01	NOT IDENT.
SB-126	-4.397E-02	1.879E-01	1.598E-01	9.589E-02	FAIL ABUN
SB-127	-6.179E-01	8.850E-01	7.258E-01	4.515E-01	NOT IDENT.
XE-127	-6.389E-02	6.395E-02	5.581E-02	3.263E-02	NOT IDENT.
I-131	-8.352E-02	1.290E-01	1.080E-01	6.583E-02	NOT IDENT.
TE-132	-5.998E-02	3.301E-01	2.968E-01	1.684E-01	NOT IDENT.
BA-133	-4.534E-02	8.459E-02	6.242E-02	4.316E-02	NOT IDENT.
I-133	-1.213E+02	1.311E+02	0.000E+00	6.690E+01	SHORT HLIF
CS-134	1.419E-01	9.316E-02	8.724E-02	4.753E-02	NOT IDENT.
CS-135	1.178E-01	2.597E-01	2.373E-01	1.325E-01	NOT IDENT.
I-135	1.958E+09	6.393E+09	0.000E+00	3.262E+09	SHORT HLIF
CS-136	-4.188E-02	1.734E-01	1.486E-01	8.846E-02	NOT IDENT.
CE-139	-1.529E-02	4.597E-02	3.906E-02	2.345E-02	NOT IDENT.
BA-140	6.939E-02	3.560E-01	3.200E-01	1.816E-01	NOT IDENT.
LA-140	5.454E-02	9.388E-02	8.570E-02	4.790E-02	NOT IDENT.
CE-141	1.064E-02	7.772E-02	6.831E-02	3.965E-02	NOT IDENT.
CE-143	2.204E+01	1.630E+01	1.331E+01	8.314E+00	FAIL ABUN
CE-144	-3.587E-01	3.013E-01	2.447E-01	1.537E-01	NOT IDENT.
PM-144	-5.976E-02	6.320E-02	5.100E-02	3.225E-02	NOT IDENT.
PR-144	-4.038E+00	4.270E+00	3.446E+00	2.179E+00	NOT IDENT.
PM-146	-4.447E-02	9.068E-02	7.493E-02	4.627E-02	NOT IDENT.
ND-147	-3.878E-01	6.966E-01	5.961E-01	3.554E-01	NOT IDENT.

PM-149	5.507E-01	2.733E+01	2.437E+01	1.394E+01	NOT IDENT.
EU-152	-7.584E-02	1.921E-01	1.589E-01	9.802E-02	FAIL ABUN
GD-153	-4.287E-02	1.061E-01	8.273E-02	5.412E-02	NOT IDENT.
EU-154	-1.090E-01	1.347E-01	9.951E-02	6.871E-02	FAIL ABUN
EU-155	1.208E-01	1.423E-01	1.317E-01	7.259E-02	FAIL ABUN
TB-160	1.342E-01	3.112E-01	2.716E-01	1.588E-01	FAIL ABUN
HO-166M	-1.866E-02	1.122E-01	9.612E-02	5.727E-02	FAIL ABUN
TM-171	1.830E+01	3.091E+01	2.901E+01	1.577E+01	FAIL ABUN
LU-176	8.220E-03	4.108E-02	3.676E-02	2.096E-02	FAIL ABUN
LU-177	5.108E-01	9.680E-01	9.016E-01	4.939E-01	NOT IDENT.
LU-177M	-1.067E-02	3.250E-01	2.798E-01	1.658E-01	FAIL ABUN
HF-181	5.748E-02	7.789E-02	6.919E-02	3.974E-02	NOT IDENT.
W-181	-1.123E-01	4.050E-01	3.517E-01	2.066E-01	NOT IDENT.
TA-182	3.540E-01	2.476E-01	2.418E-01	1.263E-01	NOT IDENT.
RE-183	-7.934E-02	1.577E-01	1.329E-01	8.046E-02	FAIL ABUN
RE-184	-5.221E-02	3.646E-01	3.257E-01	1.860E-01	FAIL ABUN
OS-185	-2.718E-02	7.358E-02	6.263E-02	3.754E-02	FAIL ABUN
RE-188	-7.616E-02	2.416E-01	2.065E-01	1.233E-01	NOT IDENT.
W-188	-1.439E+00	1.283E+01	9.942E+00	6.547E+00	NOT IDENT.
IR-192	-5.387E-03	5.821E-02	5.116E-02	2.970E-02	FAIL ABUN
AU-195	9.156E-02	2.641E-01	2.408E-01	1.347E-01	FAIL ABUN
TL-200	1.354E+00	2.469E+01	0.000E+00	1.260E+01	SHORT HLIF
TL-201	1.058E+00	3.073E+00	2.699E+00	1.568E+00	NOT IDENT.
TL-202	-1.129E-02	1.035E-01	8.820E-02	5.281E-02	NOT IDENT.
HG-203	-2.099E-02	6.275E-02	5.506E-02	3.202E-02	NOT IDENT.
BI-207	-8.901E-02	1.082E-01	8.818E-02	5.519E-02	FAIL ABUN
TL-207	-1.057E+00	1.161E+00	9.599E-01	5.925E-01	FAIL ABUN
PO-209	2.058E+01	1.840E+01	1.661E+01	9.389E+00	NOT IDENT.
BI-210	-5.099E+00	3.723E+00	3.345E+00	1.900E+00	NOT IDENT.
PB-210	-5.099E+00	3.723E+00	3.345E+00	1.900E+00	NOT IDENT.
PO-210	-5.099E+00	3.718E+00	3.345E+00	1.897E+00	NOT IDENT.
PB-211	-1.343E+00	1.996E+00	1.504E+00	1.018E+00	NOT IDENT.
BI-212	6.328E-01	5.778E-01	5.313E-01	2.948E-01	NOT IDENT.
PO-215	-1.057E+00	1.161E+00	9.599E-01	5.925E-01	FAIL ABUN
RN-219	8.416E-02	8.025E-01	6.981E-01	4.094E-01	NOT IDENT.
RN-220	1.436E+00	4.635E+01	4.125E+01	2.365E+01	NOT IDENT.
RA-223	-1.057E+00	1.161E+00	9.599E-01	5.925E-01	FAIL ABUN
AC-227	4.563E-01	6.155E-01	5.695E-01	3.140E-01	NOT IDENT.
TH-227	4.563E-01	6.170E-01	5.695E-01	3.148E-01	FAIL ABUN
TH-229	-4.576E-01	7.321E-01	6.528E-01	3.735E-01	FAIL ABUN
PA-231	4.306E-01	2.574E+00	2.313E+00	1.313E+00	NOT IDENT.
TH-231	-1.057E+00	1.161E+00	9.599E-01	5.925E-01	FAIL ABUN
U-231	4.563E-01	5.492E-01	4.630E-01	2.802E-01	FAIL ABUN
PA-233	6.770E-02	1.140E-01	1.037E-01	5.815E-02	FAIL ABUN
PA-234	4.562E-02	7.903E-01	6.679E-01	4.032E-01	FAIL ABUN
PA-234M	-8.849E+00	1.095E+01	8.597E+00	5.588E+00	NOT IDENT.
TH-234	-1.834E+00	1.605E+00	1.239E+00	8.190E-01	FAIL ABUN
U-235	-4.810E-02	2.951E-01	2.553E-01	1.506E-01	FAIL ABUN
NP-236	-1.122E-01	1.217E-01	1.002E-01	6.209E-02	NOT IDENT.
NP-237	4.968E+00	1.203E+00	5.119E-01	6.136E-01	NOT IDENT.
U-238	-1.834E+00	1.605E+00	1.239E+00	8.190E-01	FAIL ABUN
NP-239	5.113E-02	2.856E-01	2.283E-01	1.457E-01	NOT IDENT.
CM-243	1.001E-01	1.274E-01	1.178E-01	6.500E-02	NOT IDENT.
AM-246	1.629E-01	3.006E-01	2.708E-01	1.534E-01	NOT IDENT.
CM-247	7.114E-02	7.189E-02	6.536E-02	3.668E-02	NOT IDENT.
CF-249	9.966E-03	7.478E-02	6.537E-02	3.815E-02	NOT IDENT.
CF-251	4.088E-02	1.773E-01	1.655E-01	9.047E-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	580.8869
46.50	580.8869
46.50	580.8869
48.70	623.1837
49.72	613.4730
51.35	746.7390
52.39	759.2487
52.97	786.2238
53.15	834.4846
53.44	847.5578
54.07	767.7510
56.28	866.0762
56.28	866.0807
57.37	859.6538
57.53	893.3950
57.53	893.3997
57.60	893.5452
57.98	665.0720
57.98	665.0720
59.32	667.1881
59.32	667.1881
59.40	667.3120
59.54	667.5318
59.72	667.8145
60.01	668.2663
61.10	351.5826
61.14	351.6147
61.30	351.7447
63.00	388.4232
63.29	388.6780
63.29	388.6780
63.58	378.6197
64.28	361.5074
65.12	371.3490
65.20	371.4146
65.20	371.4146
66.05	350.5816
66.72	344.1714
66.83	344.2564
66.91	349.2637
67.20	350.4727
67.20	350.4727
67.75	375.6709
67.85	375.7518
68.90	391.5050
68.90	391.5050
69.30	378.3143
69.67	370.2536
70.82	362.1710
70.82	362.1710
70.83	362.1784
72.80	401.2333
72.87	401.2924
72.87	401.2924
74.67	397.2401
74.81	397.3526
74.81	397.3526
74.81	397.3526
74.81	397.3526
74.81	397.3526
74.81	397.3526
74.81	397.3526
74.97	397.4812
75.28	397.7303
75.70	398.0659
77.11	399.1889
77.11	399.1889

77.11	399.1889
77.11	399.1889
77.11	399.1889
77.11	399.1889
77.11	399.1889
78.38	351.0540
79.62	386.9435
79.80	387.0791
79.80	387.0791
80.11	396.4607
80.18	396.5143
80.30	396.6055
80.30	396.6055
80.57	412.0738
81.00	441.4376
81.07	441.4972
81.07	441.4972
81.07	441.4972
81.07	441.4972
82.60	425.9357
83.37	362.1096
83.78	400.7813
83.78	400.7813
83.78	400.7813
83.78	400.7813
84.21	396.4955
84.90	418.5482
85.43	428.2030
86.29	473.6258
86.50	404.3578
86.54	404.3878
86.59	404.4257
86.72	404.5217
86.79	404.5717
86.94	404.6856
87.30	404.9514
87.30	404.9514
87.30	404.9514
87.30	404.9514
87.30	404.9514
87.30	404.9514
87.57	405.1513
87.88	405.3812
88.03	405.4911
88.36	405.7350
88.47	405.8170
89.95	236.0643
91.11	236.5549
92.29	237.0489
92.38	237.0872
92.38	237.0872
93.35	231.2410
94.00	226.8114
94.67	217.6774
94.67	217.6796
94.90	208.3665
94.90	208.3665
94.90	208.3665
94.90	208.3665
95.87	196.1613
95.87	196.1613
96.73	245.1711
97.43	236.0218
98.44	210.1573
98.44	210.1573
98.88	206.1067
99.55	208.4444
99.55	208.4444
99.86	223.2994
100.00	223.3511
100.10	217.0676
103.18	249.9482
103.76	221.5629
105.00	206.0757
105.31	221.0582
108.00	264.7072
109.28	239.5745

111.00	206.9767
111.00	206.9767
111.76	220.1054
112.95	237.7216
115.19	211.5548
116.30	214.0730
117.00	214.2996
117.00	214.2996
117.66	229.1379
121.11	217.7907
121.62	217.9545
121.78	218.0054
122.06	218.0949
122.32	218.1773
122.32	218.1773
122.32	218.1773
122.32	218.1773
123.07	216.2322
127.23	241.2592
129.76	240.3585
131.20	245.2628
133.02	244.7739
133.54	268.2250
135.34	232.2208
136.00	220.1960
136.25	209.1458
136.48	208.0980
140.51	241.6729
140.51	0.0000
142.18	222.0229
142.65	217.6737
143.76	221.3605
144.24	221.5007
144.24	221.5007
144.24	221.5007
144.24	221.5007
145.22	203.7704
145.44	215.0887
147.16	223.4670
152.43	214.7437
152.70	207.9972
153.22	226.3305
154.21	249.3847
154.21	249.3847
154.21	249.3847
154.21	249.3847
155.03	241.6594
156.02	229.4026
158.56	210.6574
159.00	0.0000
159.00	205.0423
160.31	253.5574
161.27	249.2573
162.32	241.5222
162.64	241.6141
163.35	233.7585
163.89	213.1704
165.85	255.2457
167.43	222.1660
171.28	224.3284
171.86	223.3164
172.10	223.3789
176.55	206.1001
176.60	206.1127
181.06	217.1960
184.41	227.3828
185.71	227.7063
186.00	227.7789
190.27	203.7261
192.34	218.9324
193.63	226.0848
197.04	213.4486
198.01	201.0962
198.60	218.2869
200.40	221.3966
201.83	228.9356
202.84	252.6328
205.31	233.3716

208.36	249.5209
208.81	264.1584
209.75	263.4984
209.75	263.4984
210.97	238.3490
215.65	210.2116
216.55	225.0339
218.09	240.0321
222.10	204.1786
223.80	225.7005
226.40	206.8674
227.00	207.9094
227.08	207.9266
227.20	210.7215
228.16	209.0628
228.18	209.0679
228.18	209.0679
231.56	219.9418
235.69	262.3371
236.00	262.4123
236.00	262.4123
238.63	218.2087
238.63	218.2087
238.63	218.2087
238.63	218.2087
239.00	280.3299
240.98	280.8357
241.98	187.3940
241.98	187.3940
241.98	187.3940
244.69	177.3327
245.39	186.4677
247.94	185.5743
248.90	175.3613
249.79	158.5164
252.40	169.2847
252.85	188.2736
252.85	188.2736
254.15	0.0000
256.20	170.7976
256.20	170.7976
260.50	214.2918
260.90	221.9892
262.80	198.4912
264.65	185.4243
268.24	190.7802
268.79	210.0510
269.46	209.2116
269.46	209.2116
269.46	209.2116
269.46	209.2116
271.23	180.6878
273.65	235.9456
276.40	186.2914
277.35	174.8439
277.60	172.9474
277.60	172.9474
278.00	179.7703
278.60	183.7262
279.20	198.3279
279.53	214.8322
280.46	216.9316
281.68	183.2178
283.67	176.7180
284.30	175.8354
285.00	166.2146
285.90	175.0891
286.10	177.0623
286.10	177.0623
287.40	192.8307
288.45	0.0000
290.67	171.8508
290.80	171.8696
291.72	170.4323
293.26	170.6398
293.70	167.5663
295.21	201.8665
295.21	201.8665

295.21	201.8665
295.96	230.6170
296.50	230.7139
297.23	232.4171
298.57	196.5027
299.80	155.7800
299.80	155.7800
300.09	166.8310
300.09	166.8310
300.09	166.8310
300.09	166.8310
300.12	166.8361
301.29	207.0449
302.84	198.1385
303.76	191.3743
303.91	191.3950
304.40	199.3647
304.40	199.3647
304.84	182.6485
306.84	154.2528
308.46	173.2536
311.98	164.7816
316.51	174.3057
318.01	159.5435
319.02	153.6757
319.41	153.7204
320.08	162.7836
323.87	186.2725
323.87	186.2725
323.87	186.2725
323.87	186.2725
325.23	192.4717
328.77	147.7424
333.44	153.2826
334.20	150.1373
334.20	150.1373
334.30	150.1487
338.28	184.1717
338.28	184.1717
338.28	184.1717
338.28	184.1717
338.32	184.1772
338.32	184.1772
338.32	184.1772
340.50	180.0010
340.57	180.0092
344.27	193.9529
345.85	160.4481
350.59	178.0085
351.07	166.6315
351.92	147.1157
351.92	147.1157
351.92	147.1157
355.39	0.0000
356.01	147.5288
364.48	156.6201
366.43	155.7948
367.43	147.6389
367.94	0.0000
369.80	127.1910
374.96	147.3389
383.85	131.4967
387.95	152.7725
388.63	155.9798
391.69	152.0889
391.69	152.0889
392.90	162.7032
398.62	184.3620
400.65	166.6647
401.10	173.0413
401.81	161.5073
402.60	144.6887
404.84	177.6771
410.95	141.1928
411.60	160.3661
413.65	149.9330
414.70	156.4140
415.30	161.7922

415.76	153.3208
417.63	0.0000
418.52	152.5114
423.70	149.7775
427.08	149.0089
427.89	158.7337
432.53	132.2847
433.93	148.5391
439.47	156.5826
439.56	156.5892
439.89	155.5400
443.98	166.7362
444.90	170.0753
445.03	170.0897
445.03	170.0897
445.03	170.0897
445.03	170.0897
453.90	162.2458
463.38	162.0218
468.07	171.2272
473.00	177.1992
475.06	150.9559
475.35	165.3076
476.78	156.6125
477.59	161.0955
477.96	158.9216
482.03	121.6687
484.57	138.4506
487.03	141.9629
490.36	123.3286
492.35	121.2362
497.08	115.9669
507.63	0.0000
510.53	0.0000
510.84	151.6278
511.00	151.6402
511.85	133.0528
511.85	133.0528
513.99	135.0000
513.99	135.0000
520.41	122.8051
520.65	122.8217
527.90	117.8379
528.96	0.0000
529.64	121.5716
529.87	0.0000
531.02	109.8542
537.32	110.2028
543.00	125.1262
546.56	0.0000
549.76	101.7211
552.65	103.7001
555.20	88.2094
563.23	91.3212
563.90	91.3502
568.70	91.5605
569.32	91.5895
569.50	91.5967
569.67	91.6040
573.80	99.2023
574.00	99.2101
574.64	97.3865
578.91	111.5244
579.30	0.0000
583.14	118.2656
585.48	108.7626
591.81	85.0859
592.07	90.7054
593.00	92.6167
595.88	89.9297
600.56	92.9406
602.52	0.0000
602.71	88.0989
602.71	88.0989
603.60	89.9822
604.41	94.0454
604.70	95.6252
609.31	106.8228



609.31	106.8228
609.31	106.8228
609.31	106.8228
610.33	106.5582
612.46	110.1213
614.37	94.4727
618.01	93.2747
621.84	98.5816
621.84	98.5816
631.29	106.6105
633.02	95.2612
633.10	95.2637
634.78	105.8213
635.90	112.5494
636.97	88.7473
645.85	97.7143
646.12	93.8919
656.30	117.0804
657.75	118.7565
657.90	0.0000
661.65	93.5567
661.65	93.5567
664.57	109.4458
666.33	91.8109
666.33	91.8109
675.00	90.2073
677.61	91.2759
685.20	86.6946
692.80	87.9434
695.00	96.8271
696.49	110.5861
696.49	110.5861
697.00	108.6505
697.49	96.9238
698.33	87.1639
698.50	83.2527
699.00	93.0657
702.63	105.9592
706.10	80.5626
706.58	0.0000
706.67	94.3383
709.31	89.5204
711.68	93.5458
713.82	88.6992
717.42	83.8918
720.50	86.9602
721.93	100.8520
722.20	114.7058
722.78	121.6547
722.78	121.6547
722.89	121.6607
722.95	121.6637
723.30	121.6817
724.18	110.8379
727.18	91.1532
733.00	111.2234
735.90	90.4735
739.58	91.5979
742.81	80.7489
744.21	79.7949
747.13	95.8617
751.79	58.0212
752.31	65.0365
753.82	87.0998
755.35	95.1647
756.15	88.1805
756.87	86.1995
763.93	100.5029
765.79	71.4073
766.42	72.4307
766.84	75.4596
776.49	106.0305
778.00	108.1102
778.57	104.0914
778.89	104.1039
783.80	90.1190
785.46	97.2680
792.07	97.5070

795.84	78.3178
796.30	79.3482
798.80	116.0763
801.93	95.8222
805.60	91.8677
810.29	78.7314
810.76	76.6992
815.85	92.2104
817.79	75.8699
818.51	73.8387
819.60	96.4395
826.30	97.6997
828.27	0.0000
831.60	94.7919
831.96	97.8969
834.83	110.3751
836.80	0.0000
846.75	112.9119
848.13	101.5649
856.28	0.0000
856.80	112.2689
860.37	98.8779
867.32	103.2877
867.82	97.0438
871.10	109.6899
873.19	111.8589
874.81	102.5076
875.33	0.0000
876.40	108.8420
879.36	102.6655
880.27	114.2265
880.51	114.2344
881.50	125.8066
883.24	104.8999
884.67	98.6541
889.25	115.6235
896.60	102.2123
898.02	122.2899
899.00	137.0967
903.28	97.6873
911.07	87.8815
911.07	87.8815
911.07	87.8815
919.63	110.4289
920.93	106.2256
925.00	123.3859
925.24	123.3973
926.50	110.6777
935.52	116.3394
937.48	123.8872
944.10	122.0128
946.00	129.5846
949.00	129.7087
962.29	134.5642
964.01	131.0471
966.15	141.9146
968.20	133.0169
969.11	130.5388
969.11	130.5388
969.11	130.5388
977.42	100.5926
980.50	112.5998
983.50	106.2018
989.30	105.3075
996.32	108.8013
1001.03	120.9428
1001.68	106.7999
1004.76	97.0830
1021.30	0.0000
1024.50	0.0000
1034.80	106.4089
1036.00	100.0231
1037.82	85.3862
1038.57	91.8335
1038.76	0.0000
1045.16	76.3704
1046.59	87.4506
1048.07	93.0149

1050.47	92.1590
1050.47	92.1590
1062.04	93.3971
1063.62	93.4382
1076.63	76.1476
1077.35	78.9508
1078.86	78.9854
1085.78	92.1801
1099.22	89.7305
1112.02	90.0547
1112.84	89.1359
1115.52	118.3147
1120.29	74.2811
1120.29	74.2811
1120.29	74.2811
1120.29	74.2811
1120.51	76.1649
1121.28	74.3004
1124.00	0.0000
1129.67	72.5885
1131.51	0.0000
1147.95	0.0000
1167.94	65.3265
1173.22	60.1033
1175.09	60.1340
1177.93	27.8384
1189.05	39.2817
1204.90	33.6741
1205.75	0.0000
1213.00	26.0321
1221.42	26.0903
1230.97	28.2310
1235.34	33.2506
1236.41	0.0000
1238.25	23.2920
1246.25	21.3958
1260.41	0.0000
1271.85	13.7043
1274.45	25.4679
1274.54	26.4474
1291.56	18.6908
1298.22	0.0000
1312.09	18.7858
1325.50	22.1071
1325.50	22.1071
1332.49	23.8486
1333.61	23.8545
1360.21	14.0046
1362.66	0.0000
1365.15	14.0211
1368.21	10.0224
1368.53	0.0000
1376.25	12.0498
1384.27	18.1091
1394.10	17.1425
1395.20	16.1380
1407.95	10.1164
1434.06	11.1952
1436.60	8.1465
1457.56	0.0000
1460.81	13.3110
1489.15	8.2435
1509.49	14.4910
1596.49	13.7083
1620.62	10.5981
1678.03	0.0000
1691.02	6.4502
1691.02	6.4502
1706.46	0.0000
1750.46	0.0000
1764.49	6.5437
1764.49	6.5437
1764.49	6.5437
1764.49	6.5437
1770.23	9.8262
1771.40	13.1050
1791.20	0.0000
1808.65	7.5416

1836.01

11.3705

TOTAL URANIUM BY GAMMA SPEC REPORT  
Sample:G1202001377

Total Uranium Activity	-5.4796E+00	ug/g
Total Uranium Counting Unc.	4.7776E+00	ug/g
Total Uranium Tpu	2.4376E-06	ug/g
Total Uranium Mda	3.6890E+00	ug/g

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*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
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*
*  BATCH ID      : 935341          SAMPLE ID : G1202001377    *
*  ANALYST       : MXR1           DETECTOR  : GAM07          *
*  SAMPLE DATE   : 22-DEC-2009 00:00:00.00  COUNT TIME :    0 01:00:00.00 *
*  ANALYSIS DATE : 31-DEC-2009 15:32:35.38  SAMPLE ALQT: 155.440 GRAM *
*
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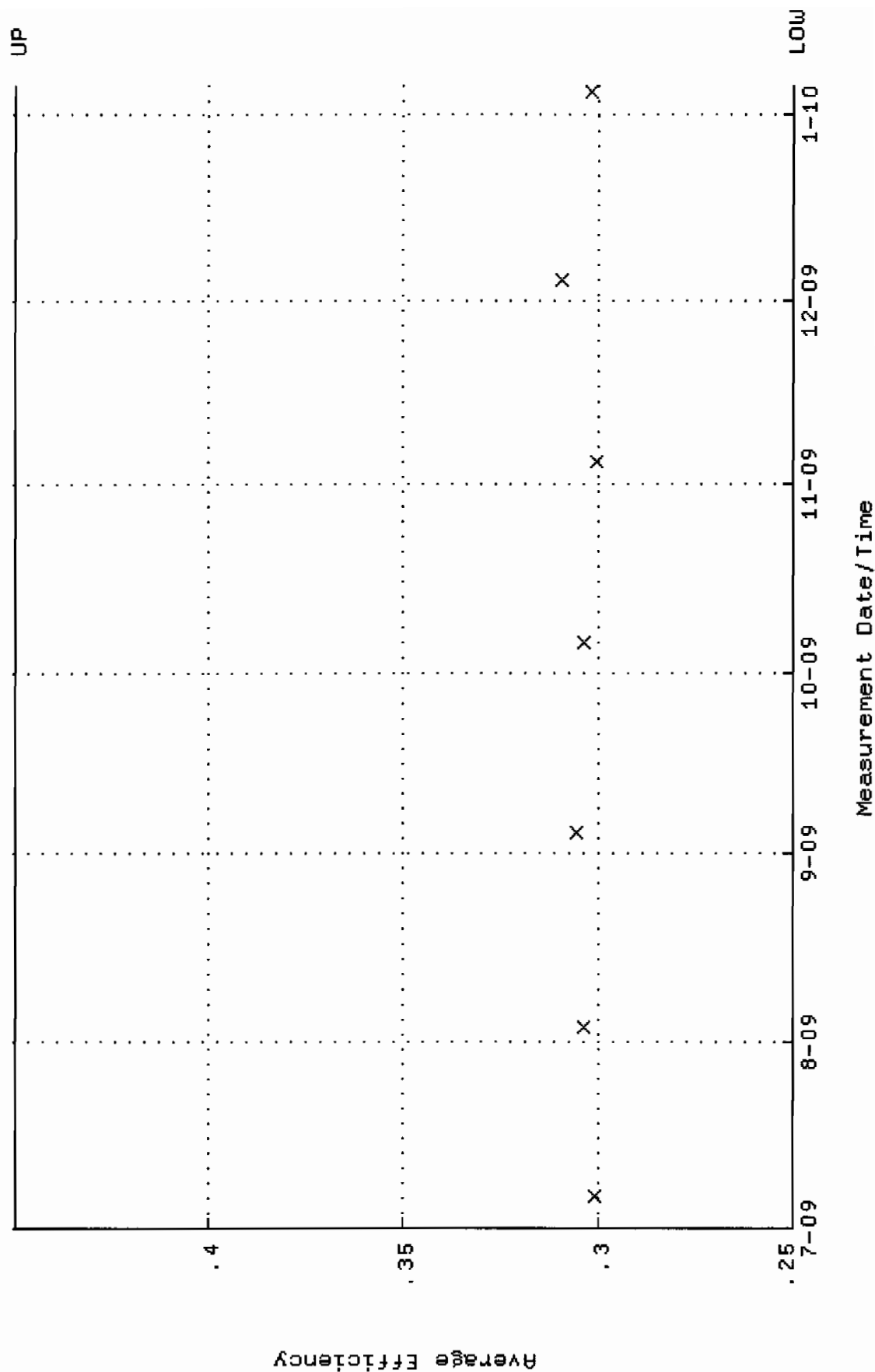
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.763E+01
GROSS GAMMA ERROR (pCi/GRAM ) : 3.838E+00
GROSS GAMMA MDA (pCi/GRAM ) : 5.840E+00
GROSS GAMMA DLC (pCi/GRAM ) : 2.860E+00

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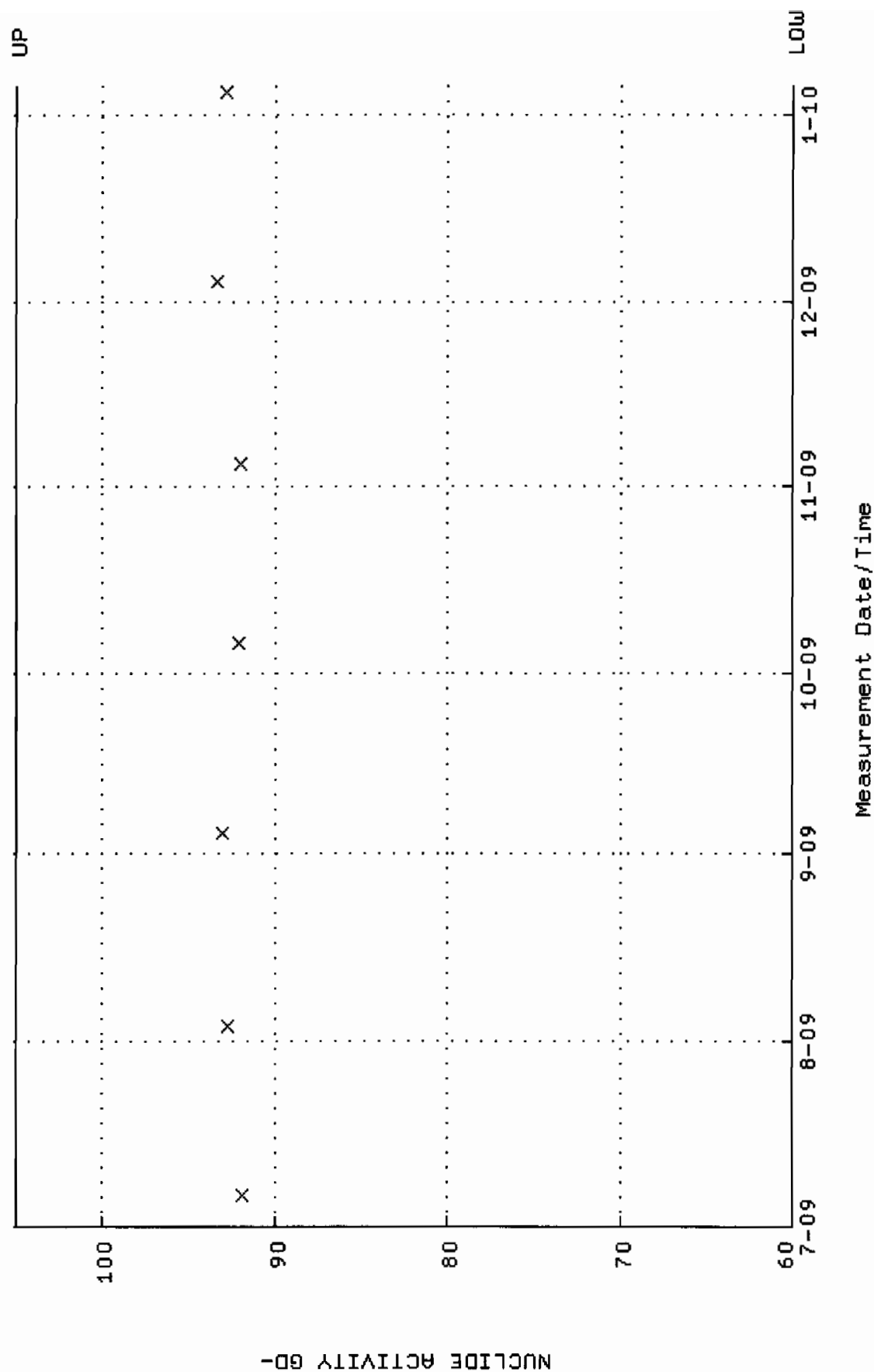
# BACKGROUND AND EFFICIENCY DATA

QA filename : DKA100:[ENV\_ALPHA.QA.W]W021.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000

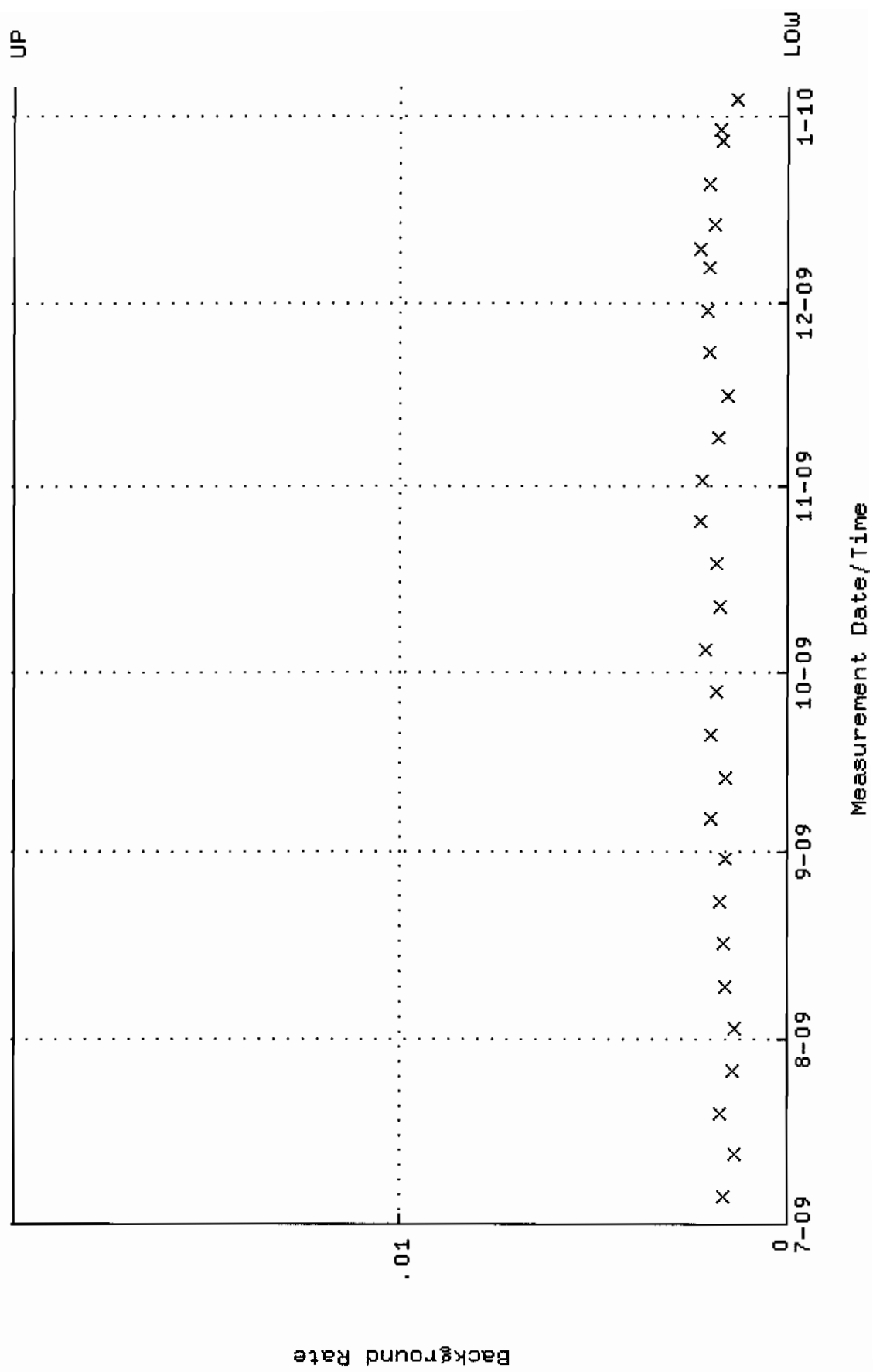




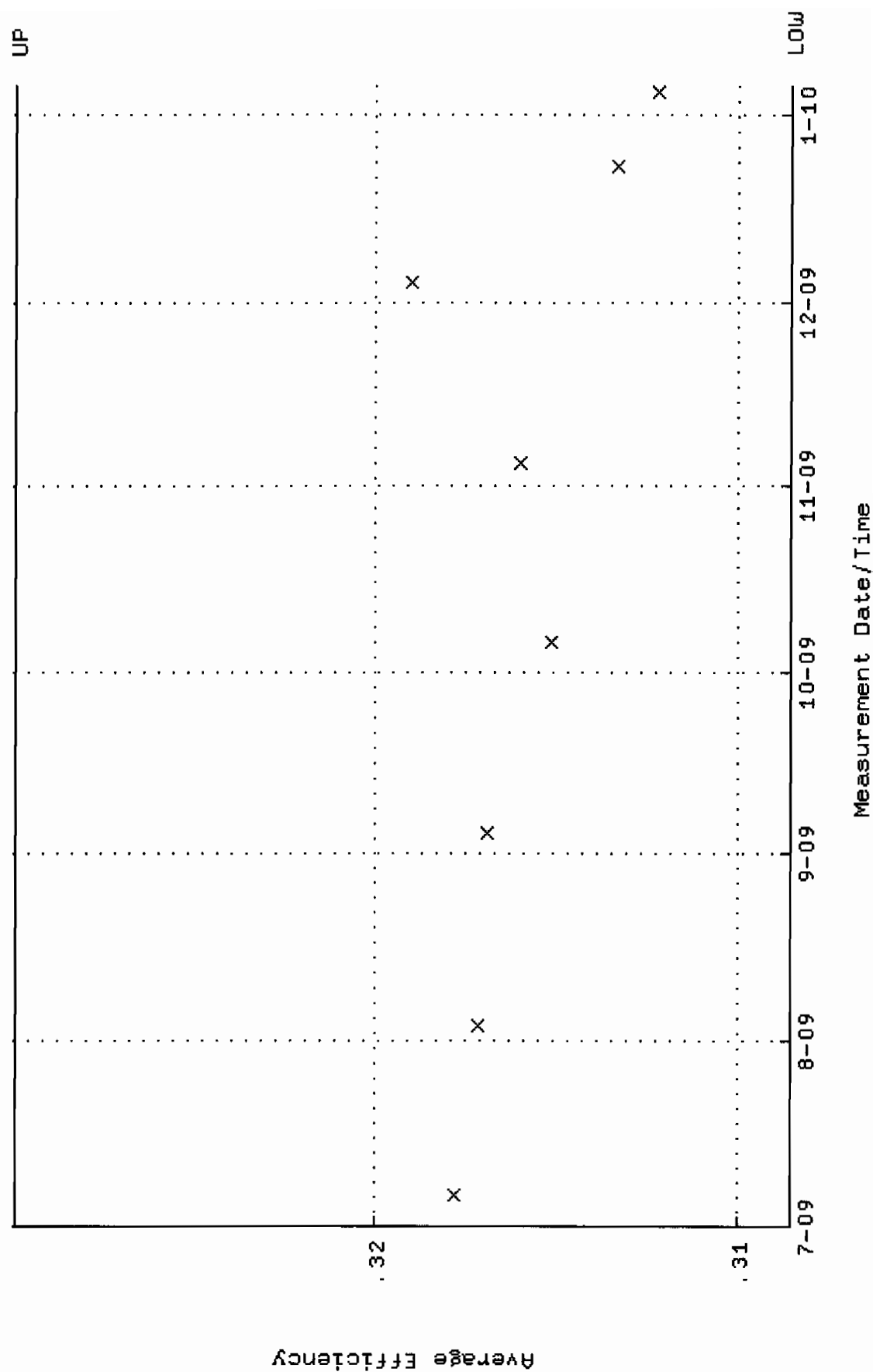
QA filename : DKA100:[ENV\_ALPHA.QA.W]W021.QAF;4  
 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.000



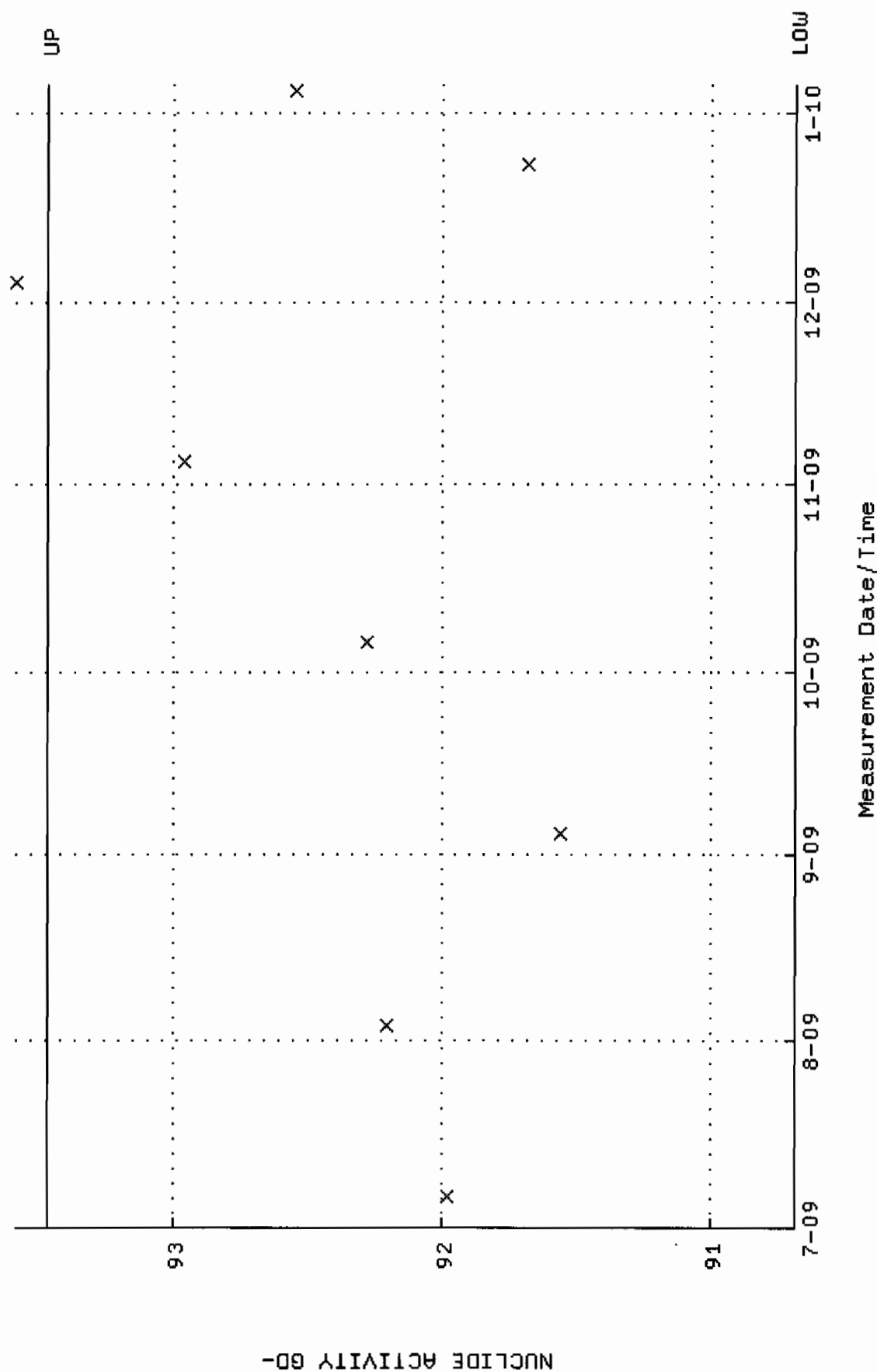
QA filename : DKA100:[ENV\_ALPHA.QA.B]B021.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:11:57 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



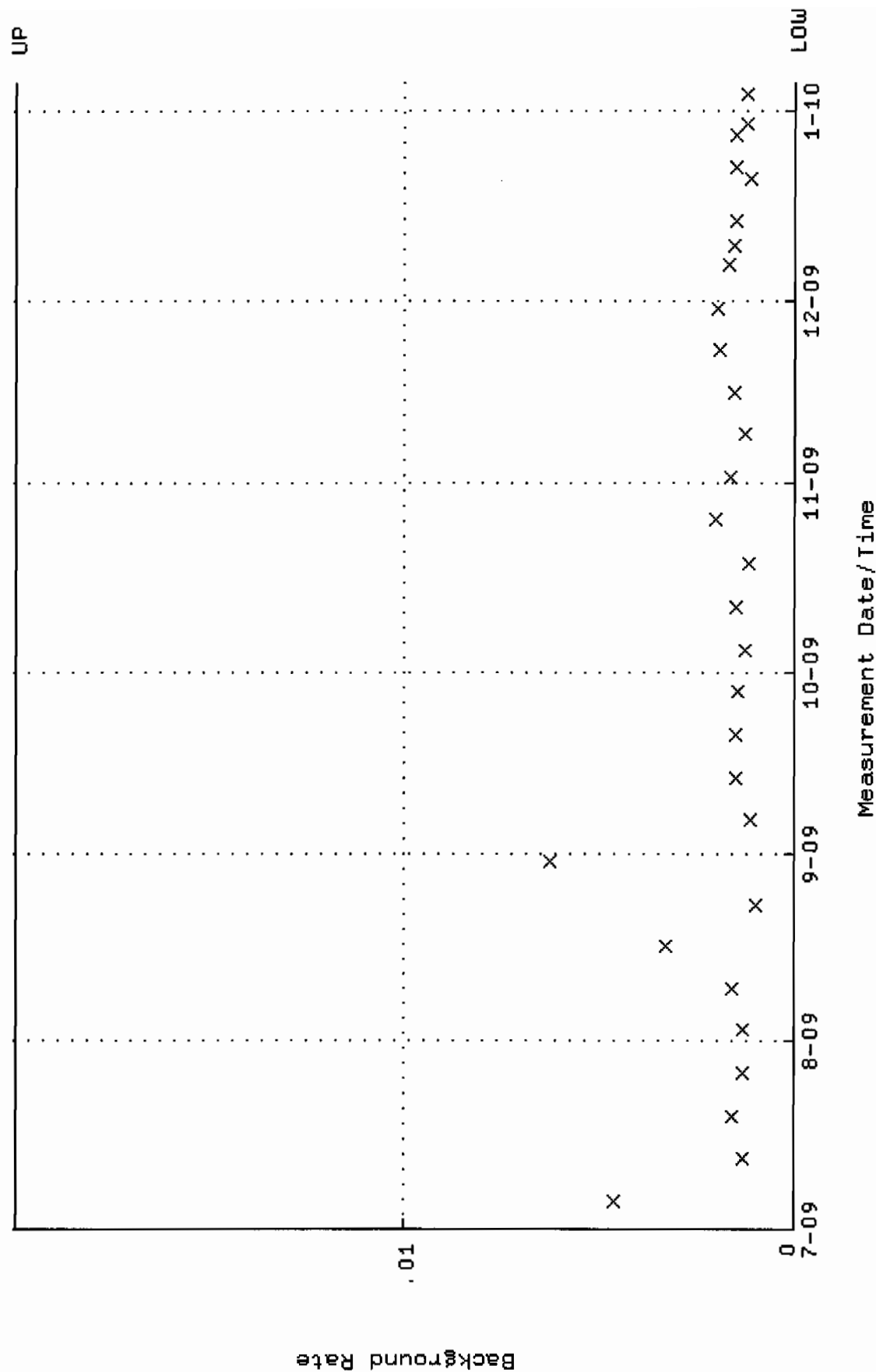
QA filename : DKA100:[ENV\_ALPHA.QA.W]W022.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 6-JUL-2009 09:46:13 through 5-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.308540 through 0.329898



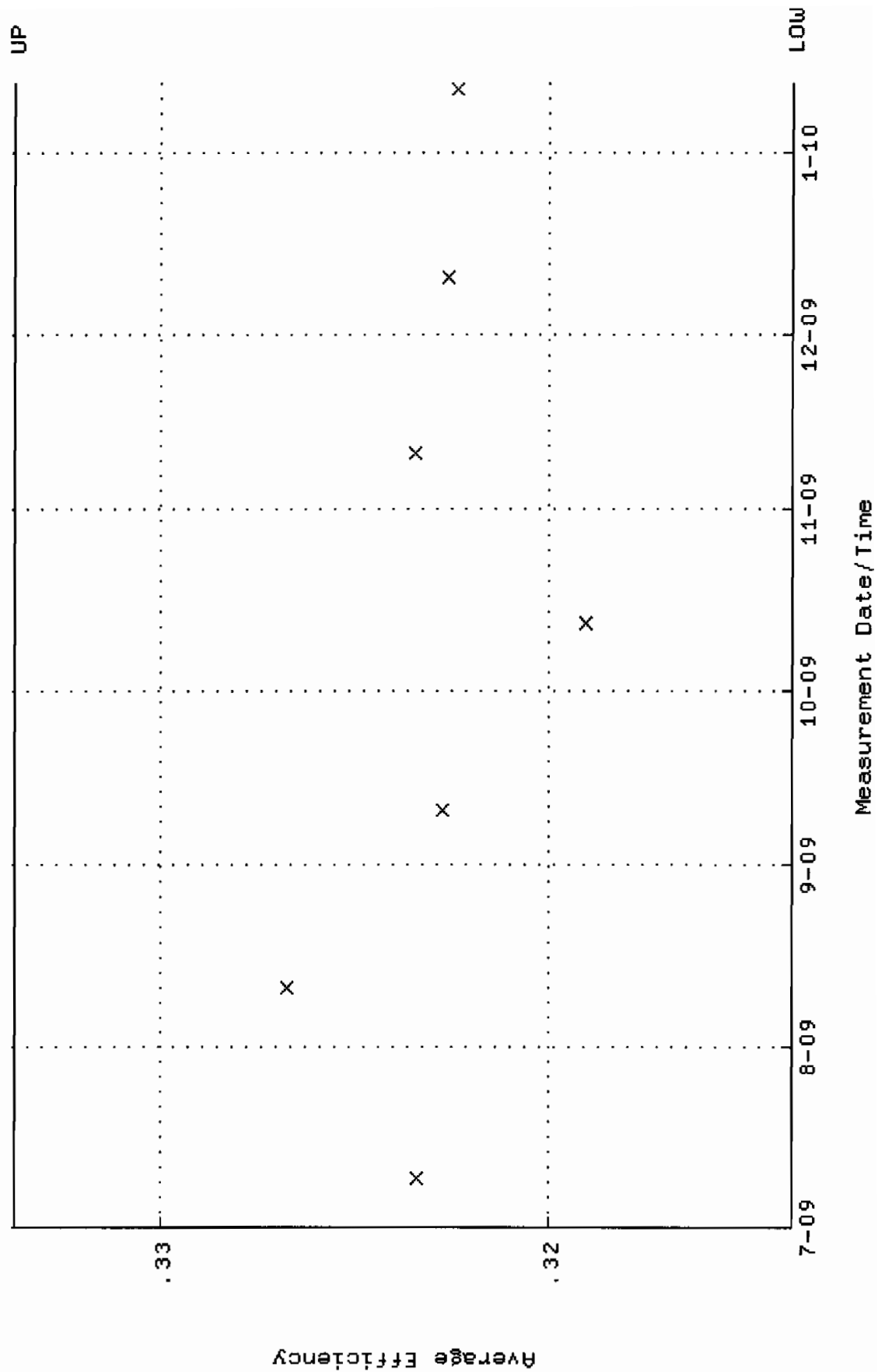
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 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
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 Lower/Upper Lmts: 90.6887 through 93.4713



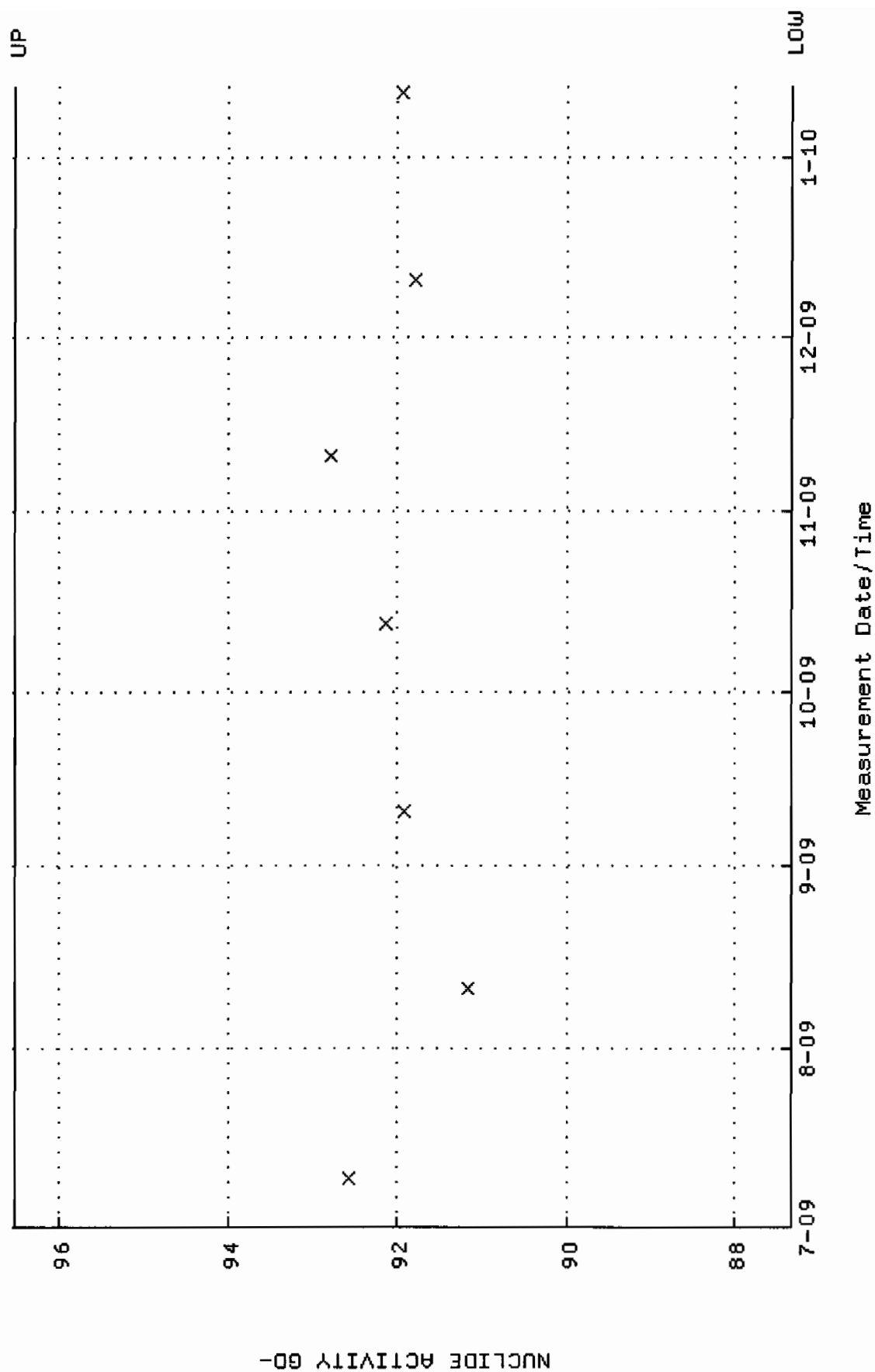
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W072.QAF;2  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.313761 through 0.333761



QA filename : DKA100:[ENV-ALPHA.QA.W]W072.QAF;2  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
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 Lower/Upper Lmts: 87.3348 through 96.5280

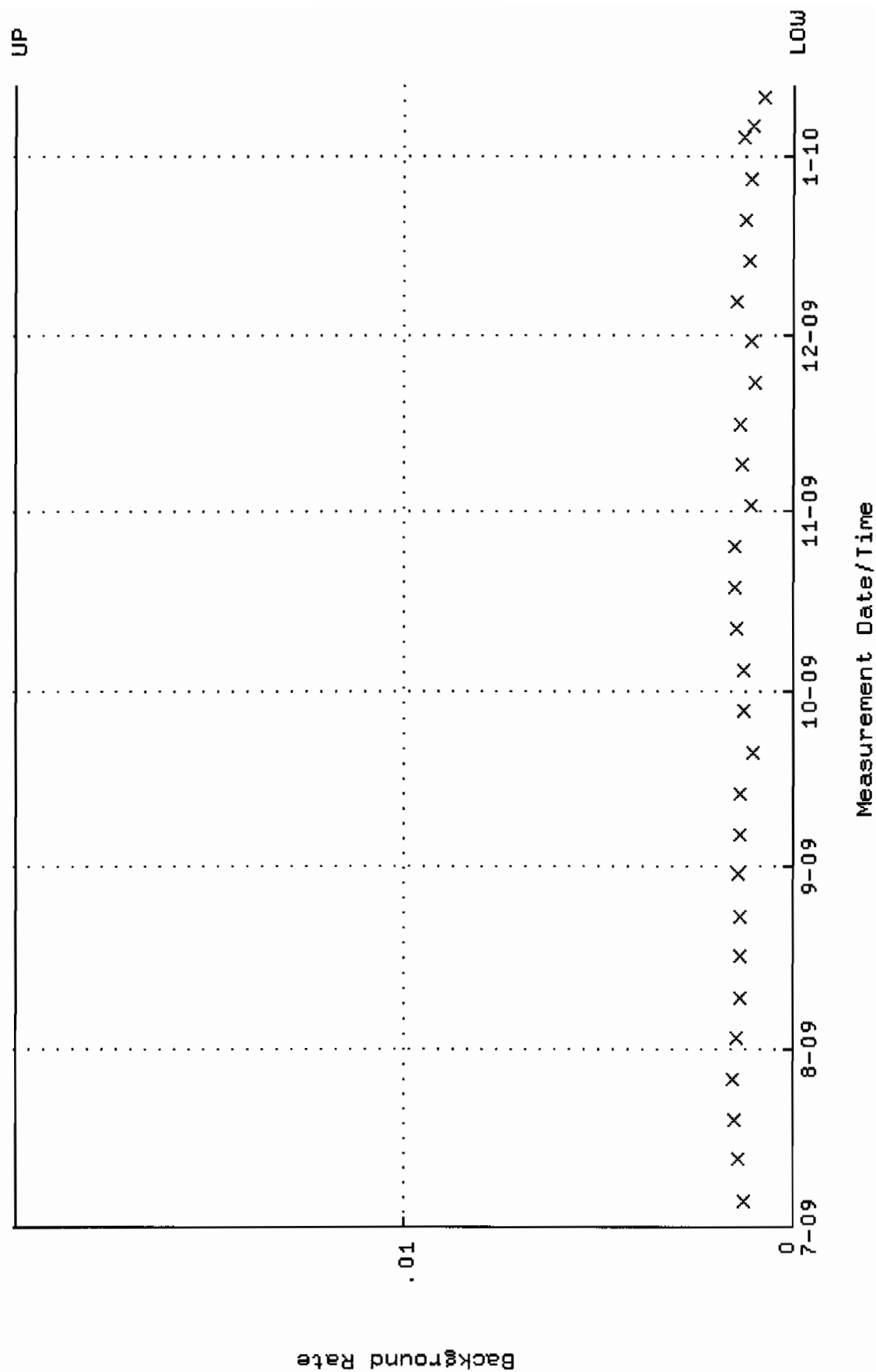


QA filename : DKA100:[ENV\_ALPHA.QA.B]B072.QAF;1

Parameter Name : BACKRATE (Background Rate)

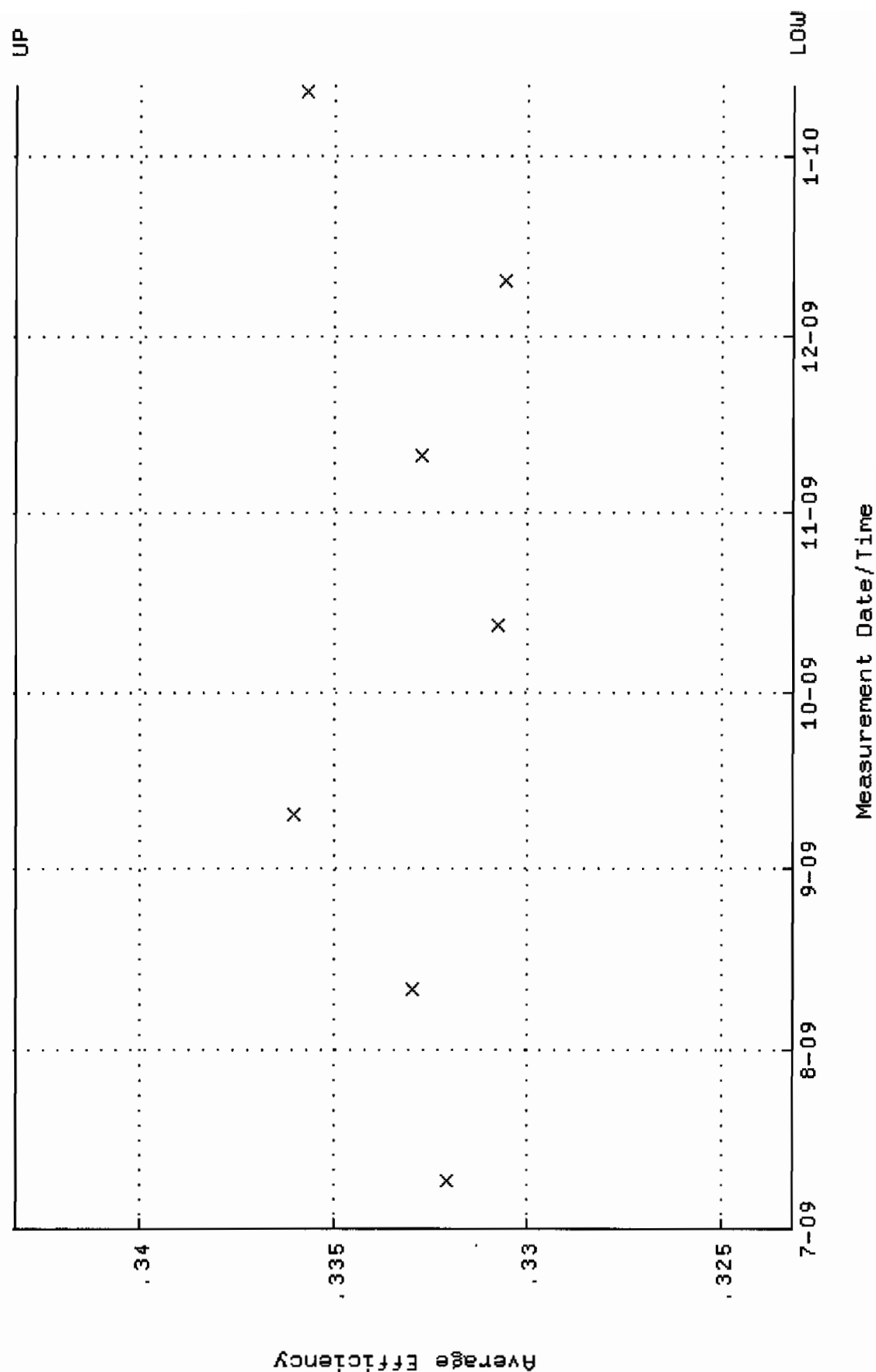
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Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

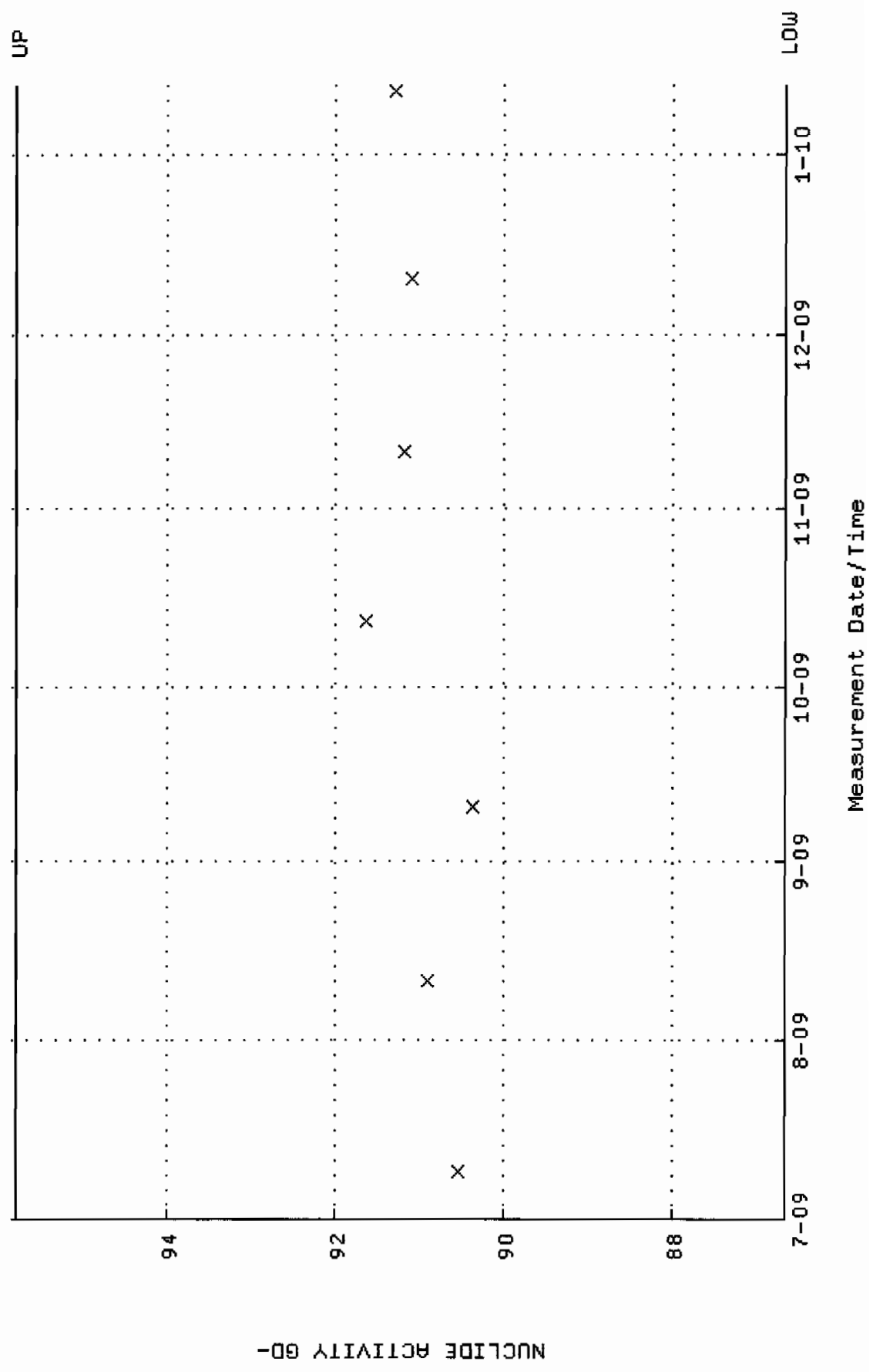




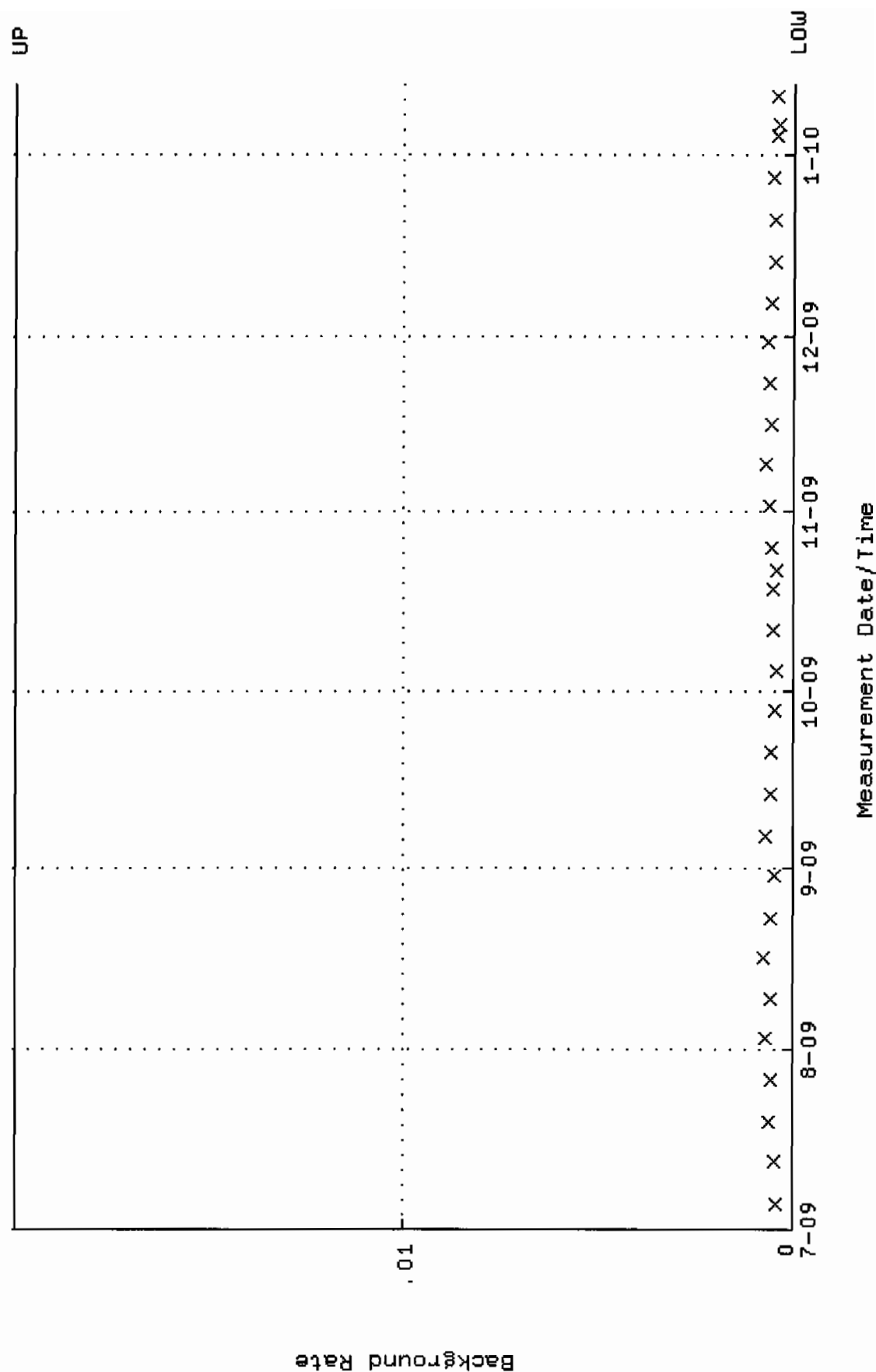
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 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.323184 through 0.343184



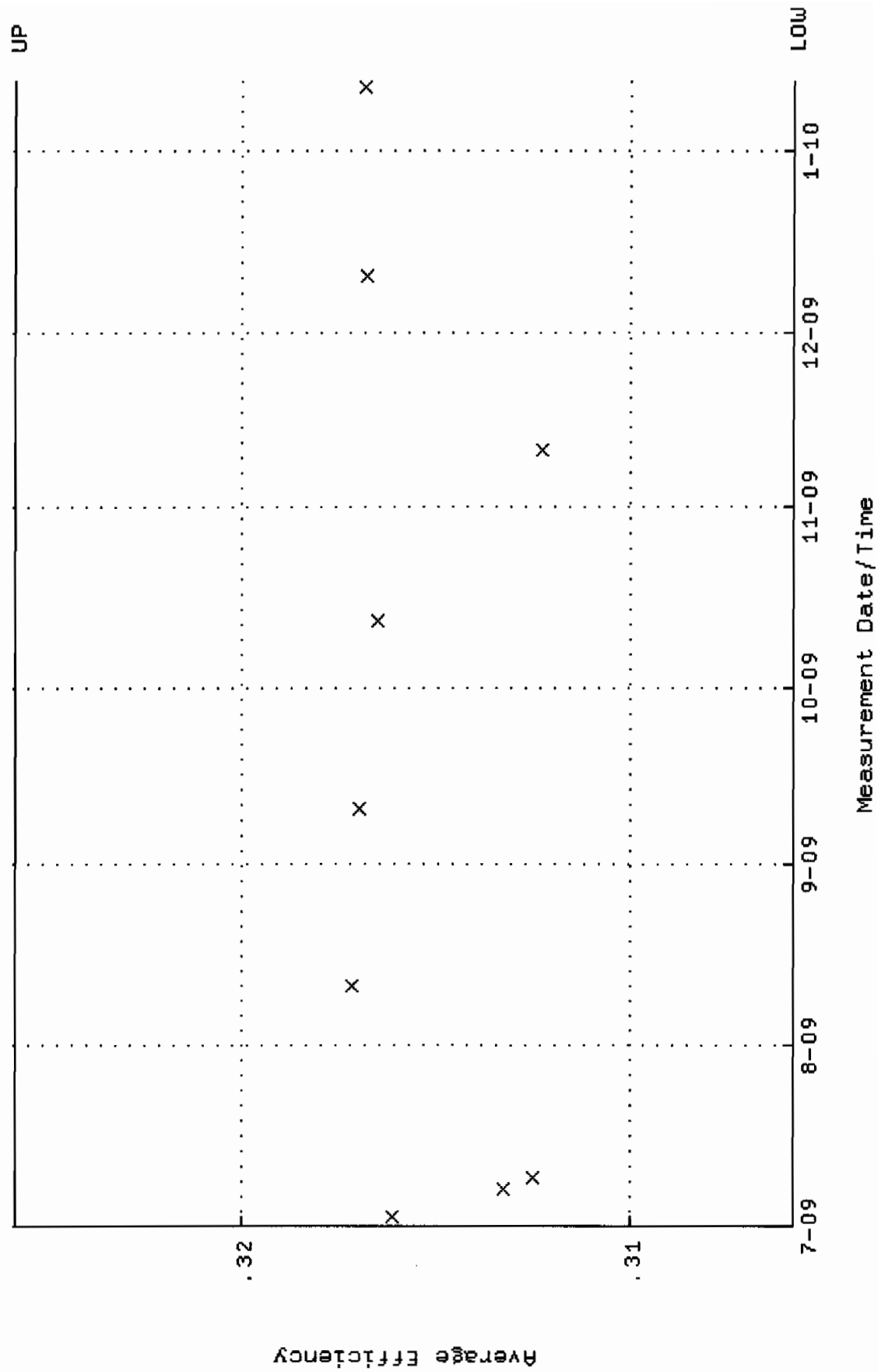
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Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00  
Lower/Upper Lmts: 86.6734 through 95.7970



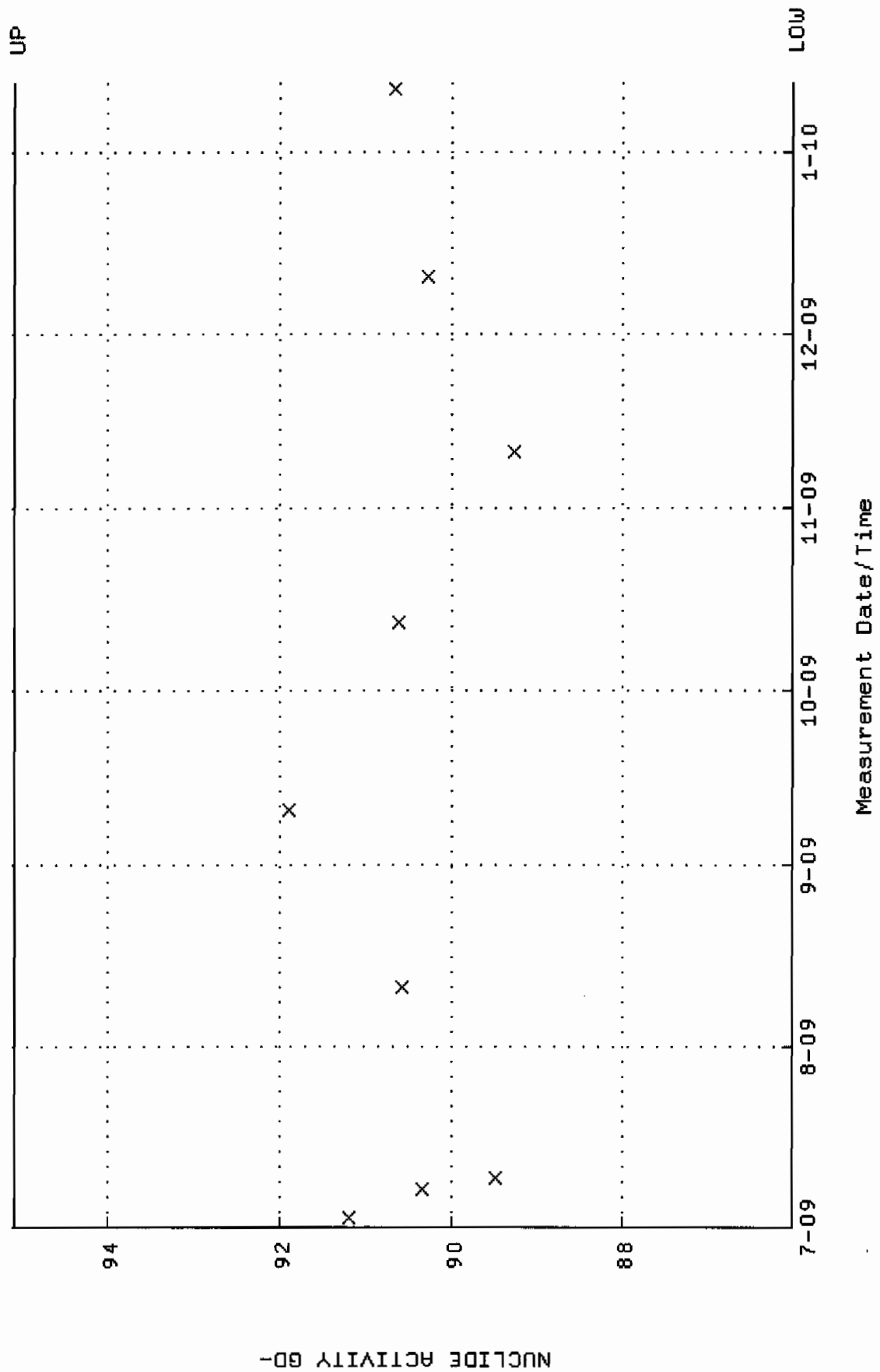
QA filename : DKA100:[ENV\_ALPHA.QA.B]B073.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:02 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



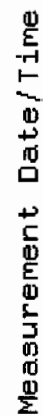
QA filename : DKA100:[ENV\_ALPHA.QA.W]W074.QAF;4  
 Parameter Name : AVRGEFF (Average Efficiency)  
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 Lower/Upper Lmts: 0.305830 through 0.325830



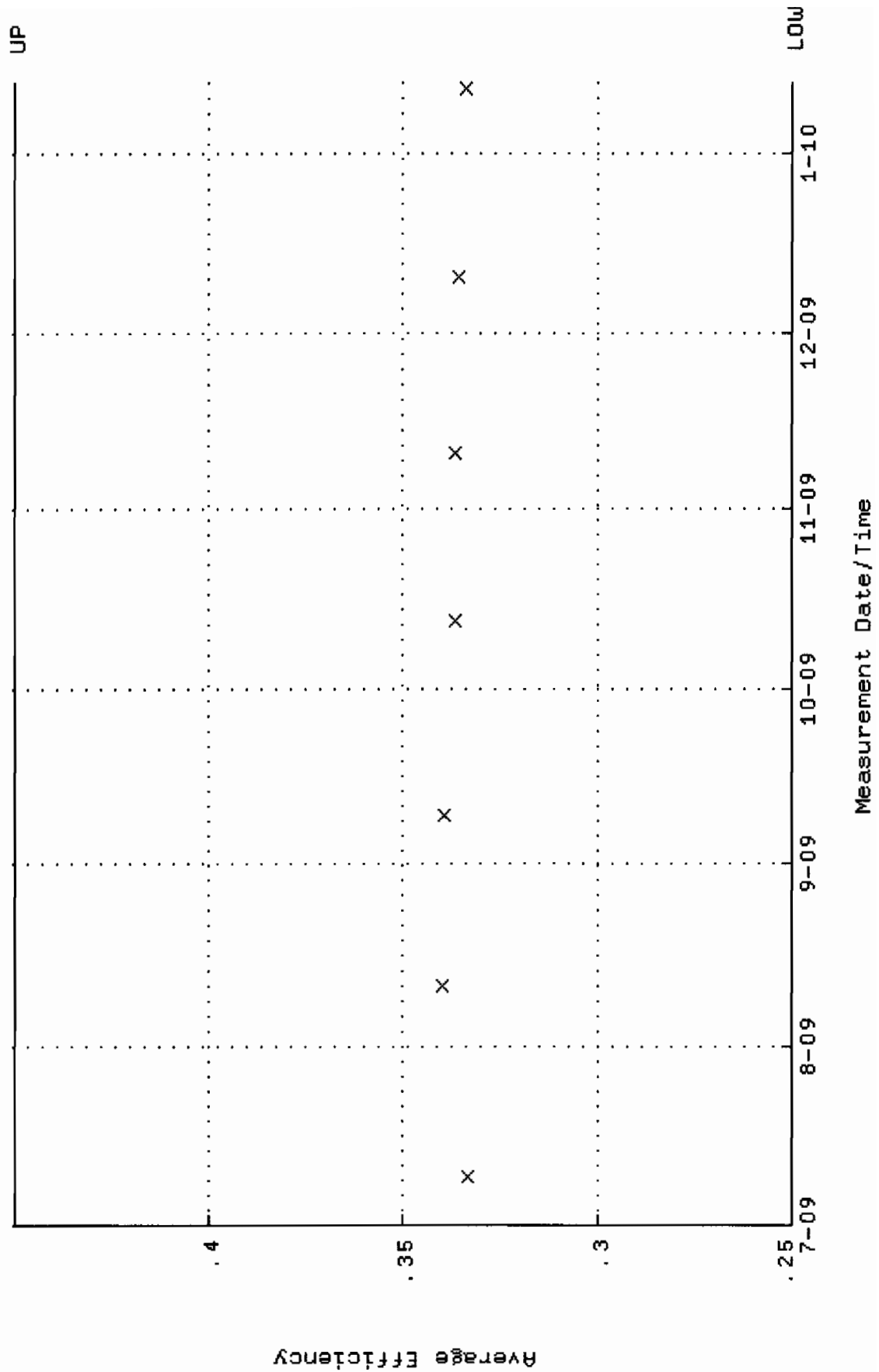
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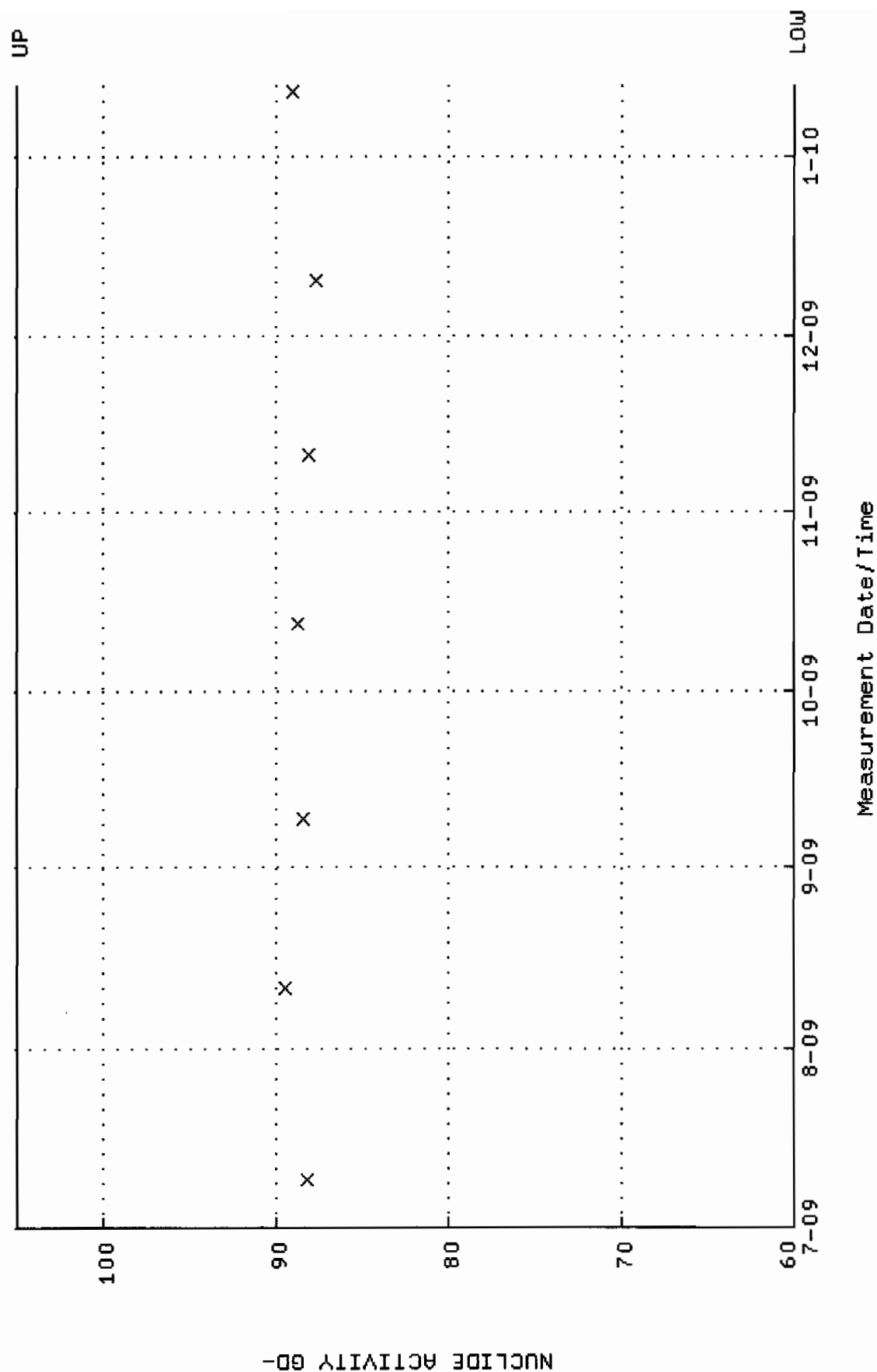
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV\_ALPHA.QA.W]W083.QAF;5  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.250000 through 0.450000

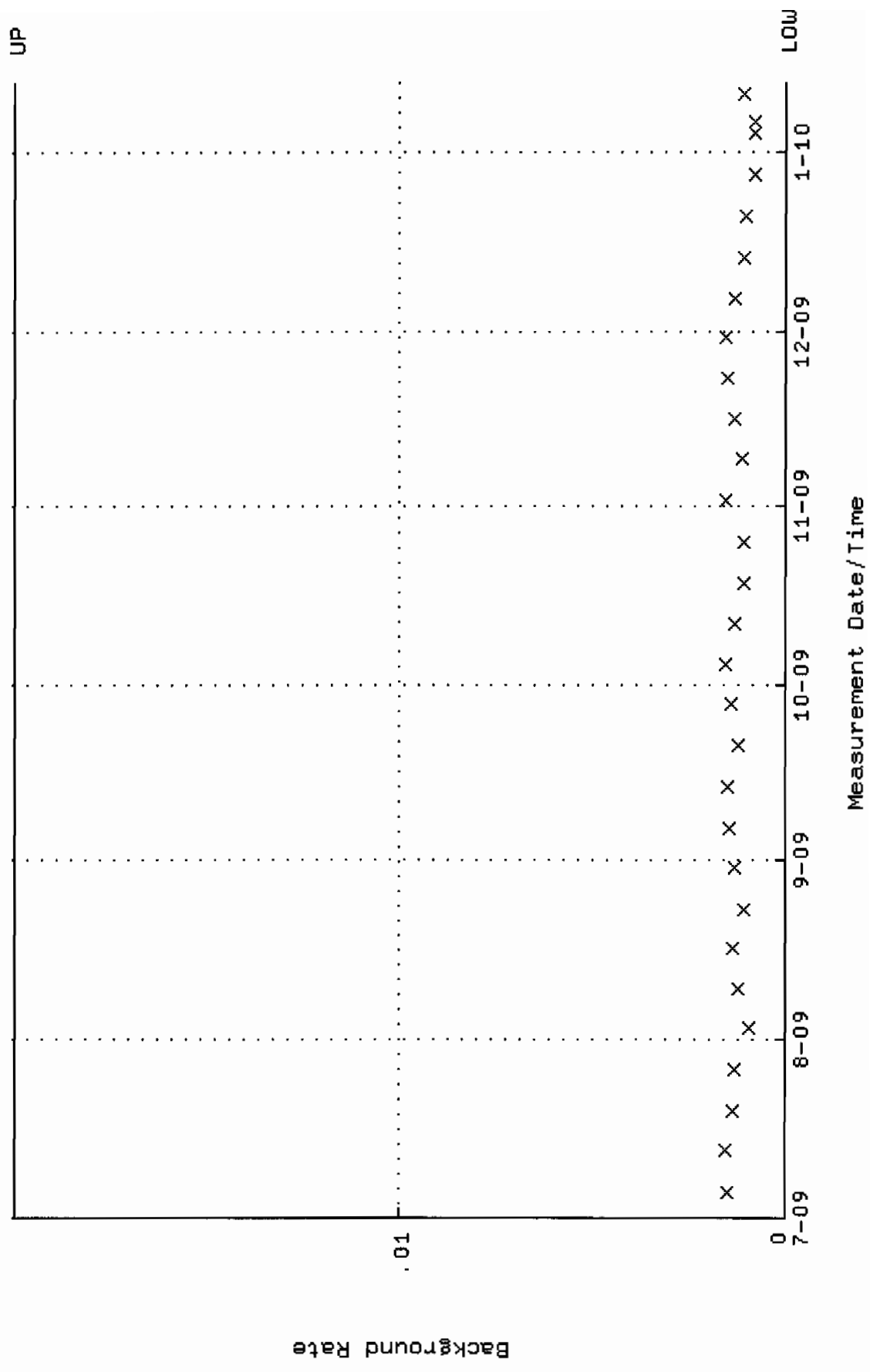


QA filename : DKA100:[ENV\_ALPHA.QA.W]W083.QAF;5  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 60.0000 through 105.0000

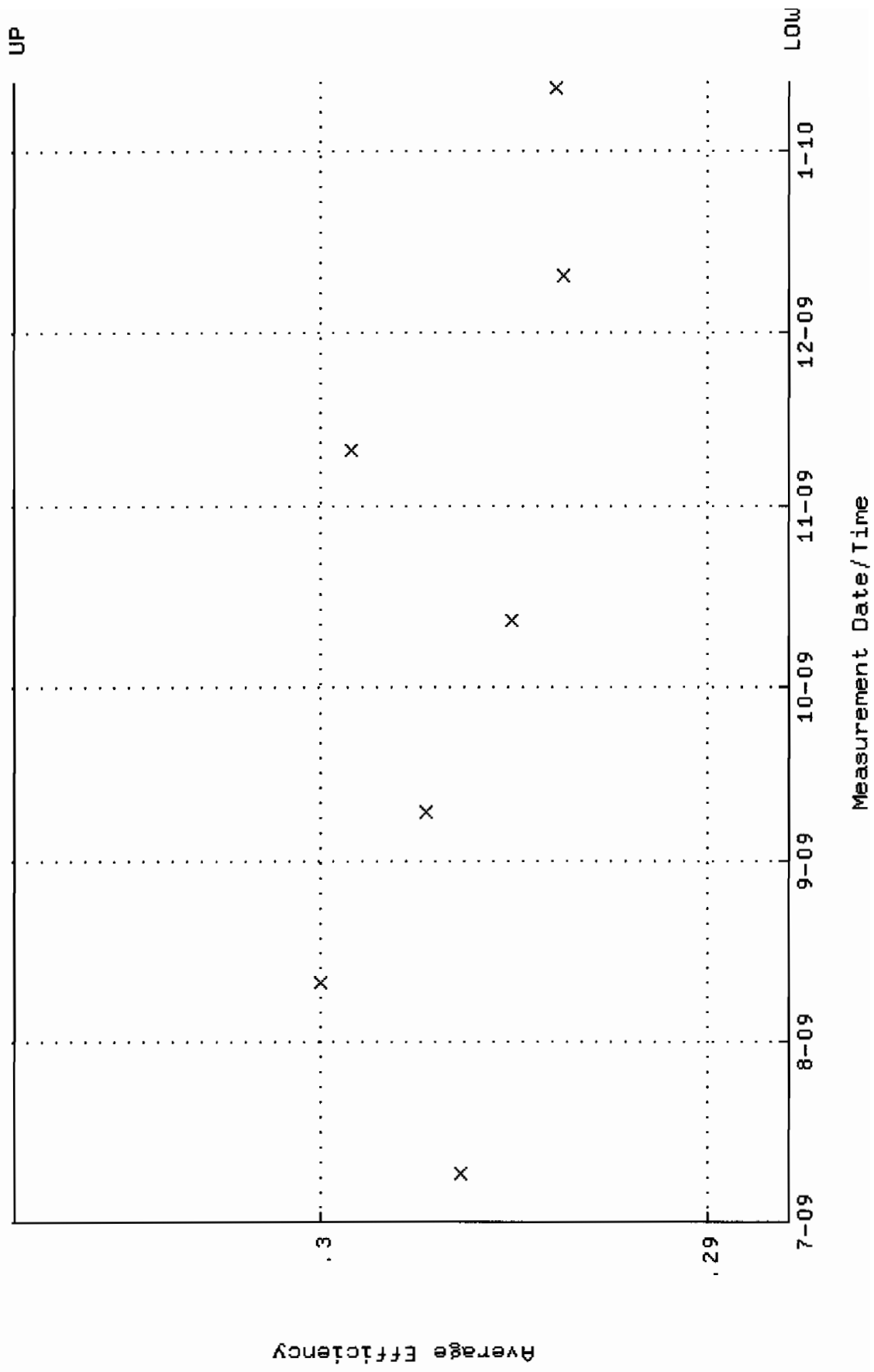




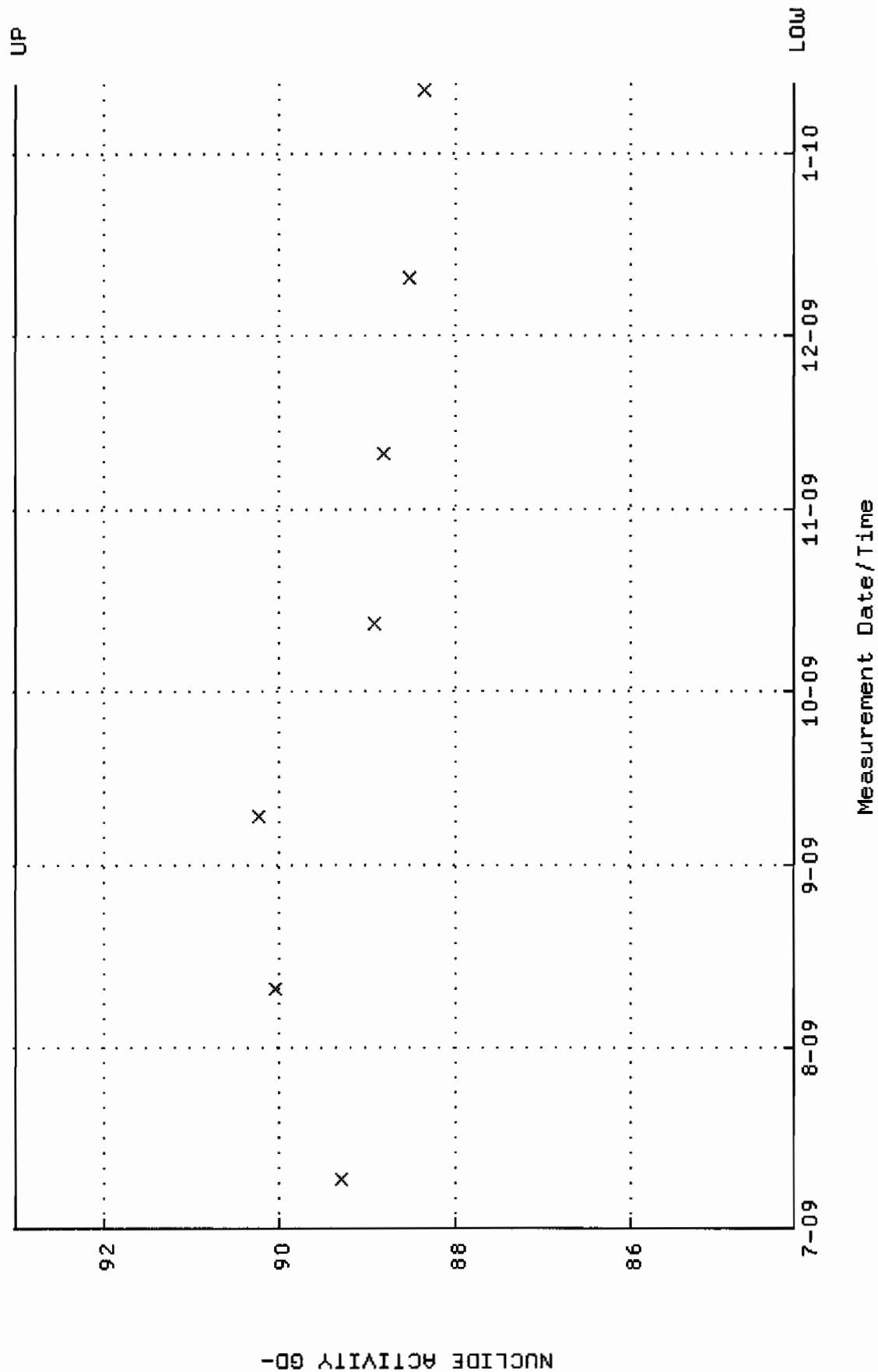
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 Parameter Name : BACKRATE (Background Rate)  
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



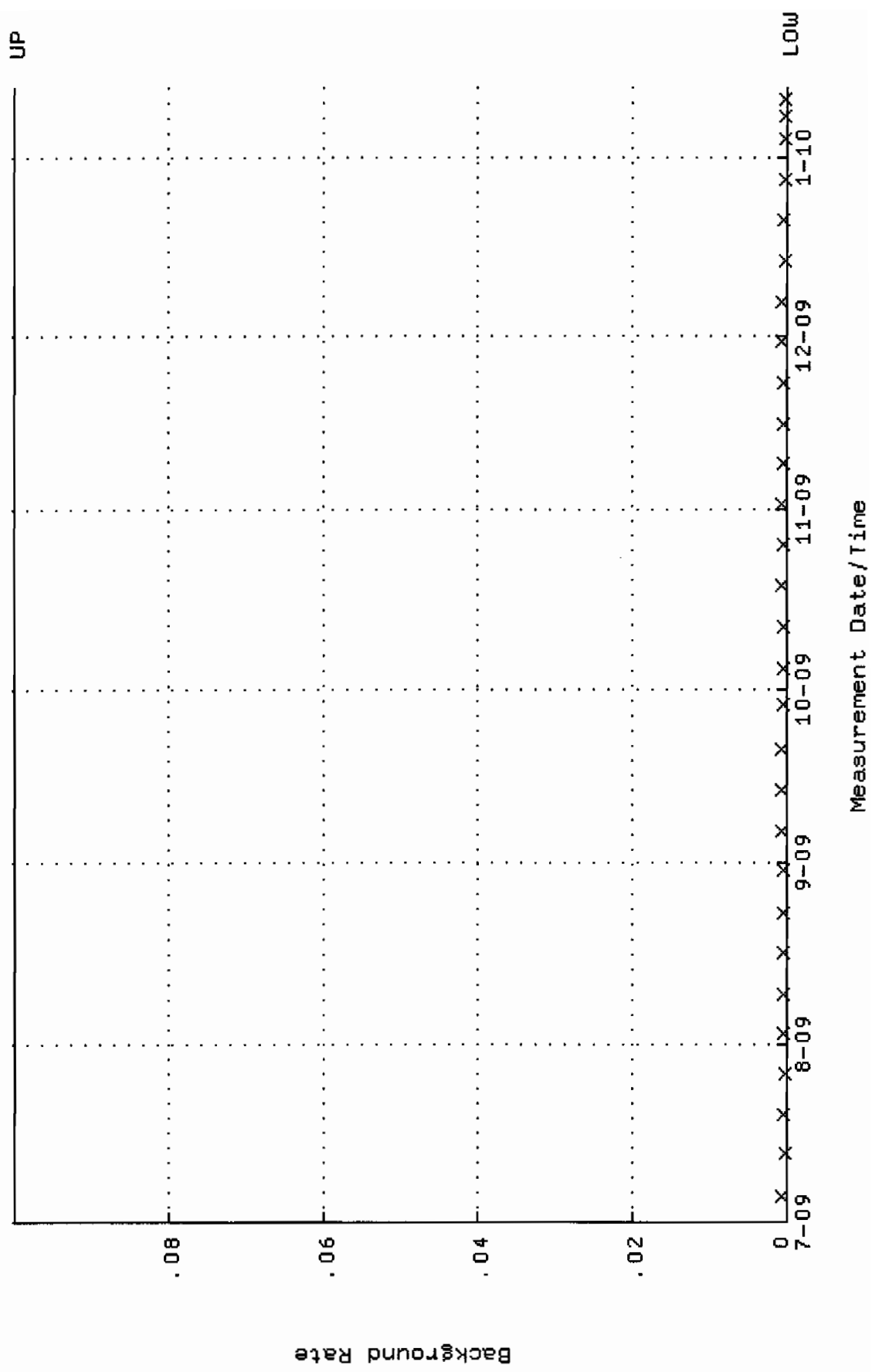
QA filename : DKA100:[ENV\_ALPHA.QA.W]W089.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:13 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.287888 through 0.307888



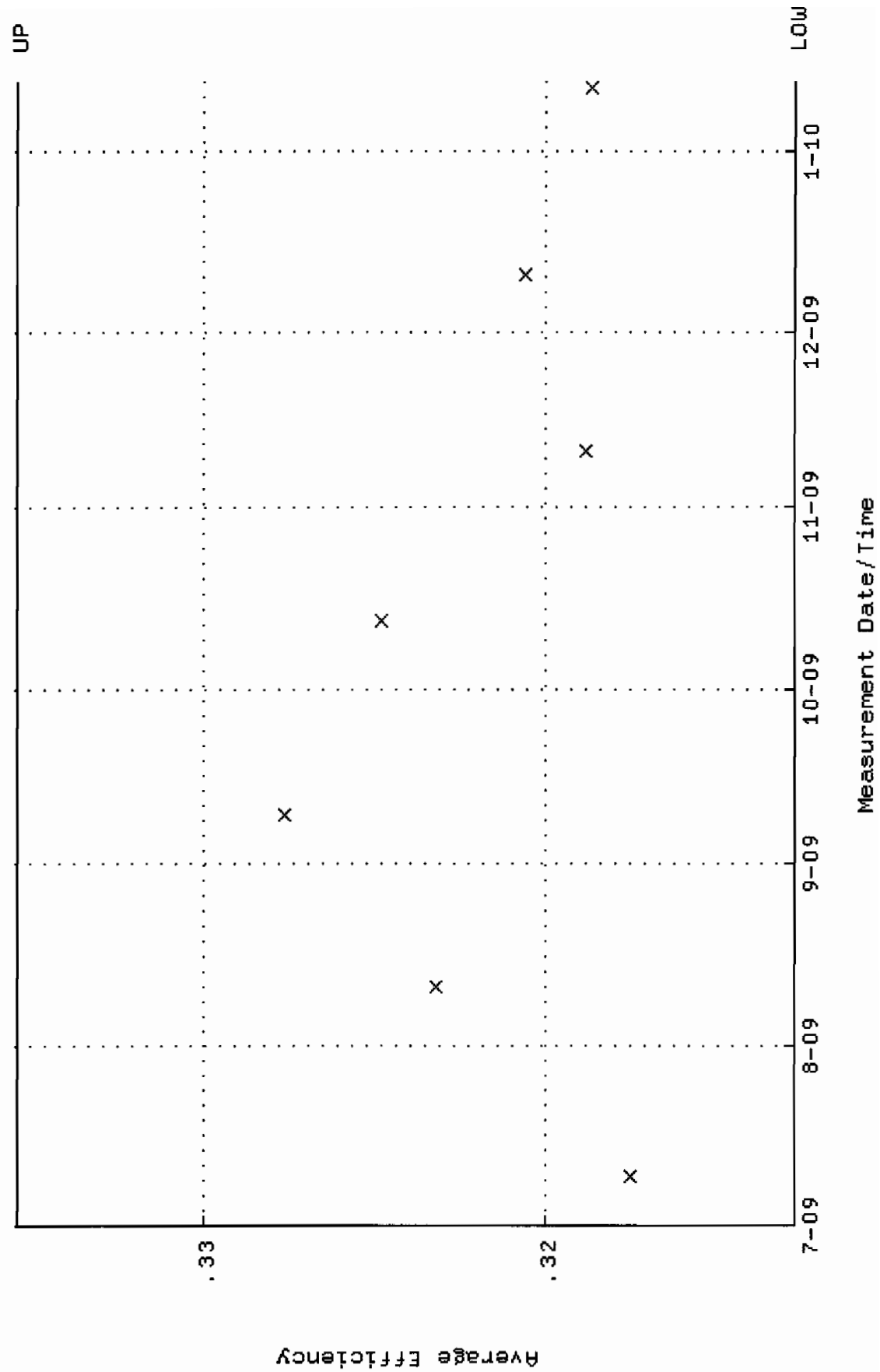
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:13 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 84.1413 through 92.9983



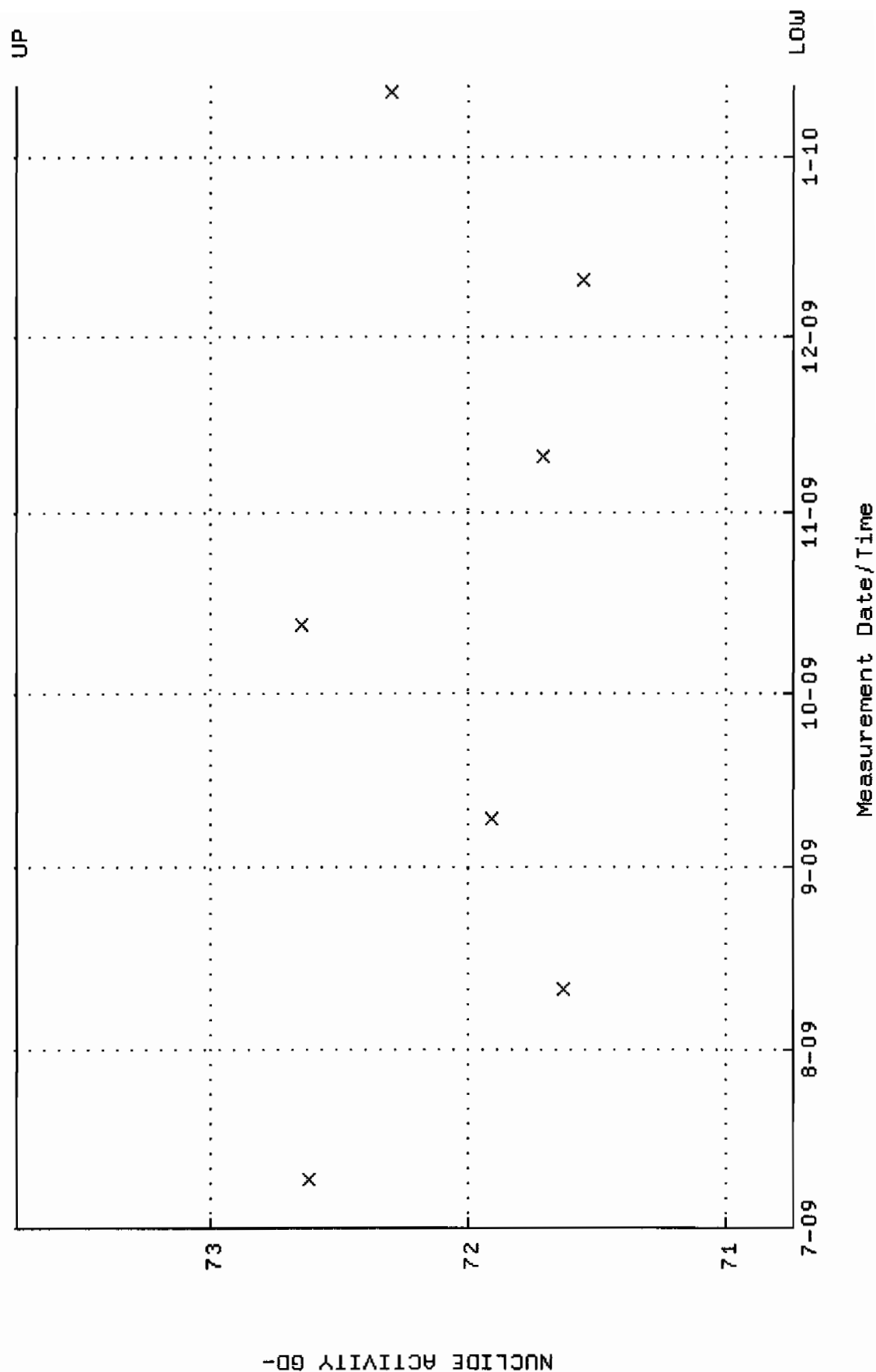
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 Lower/Upper Lmts: 0.000000E+00 through 0.100000



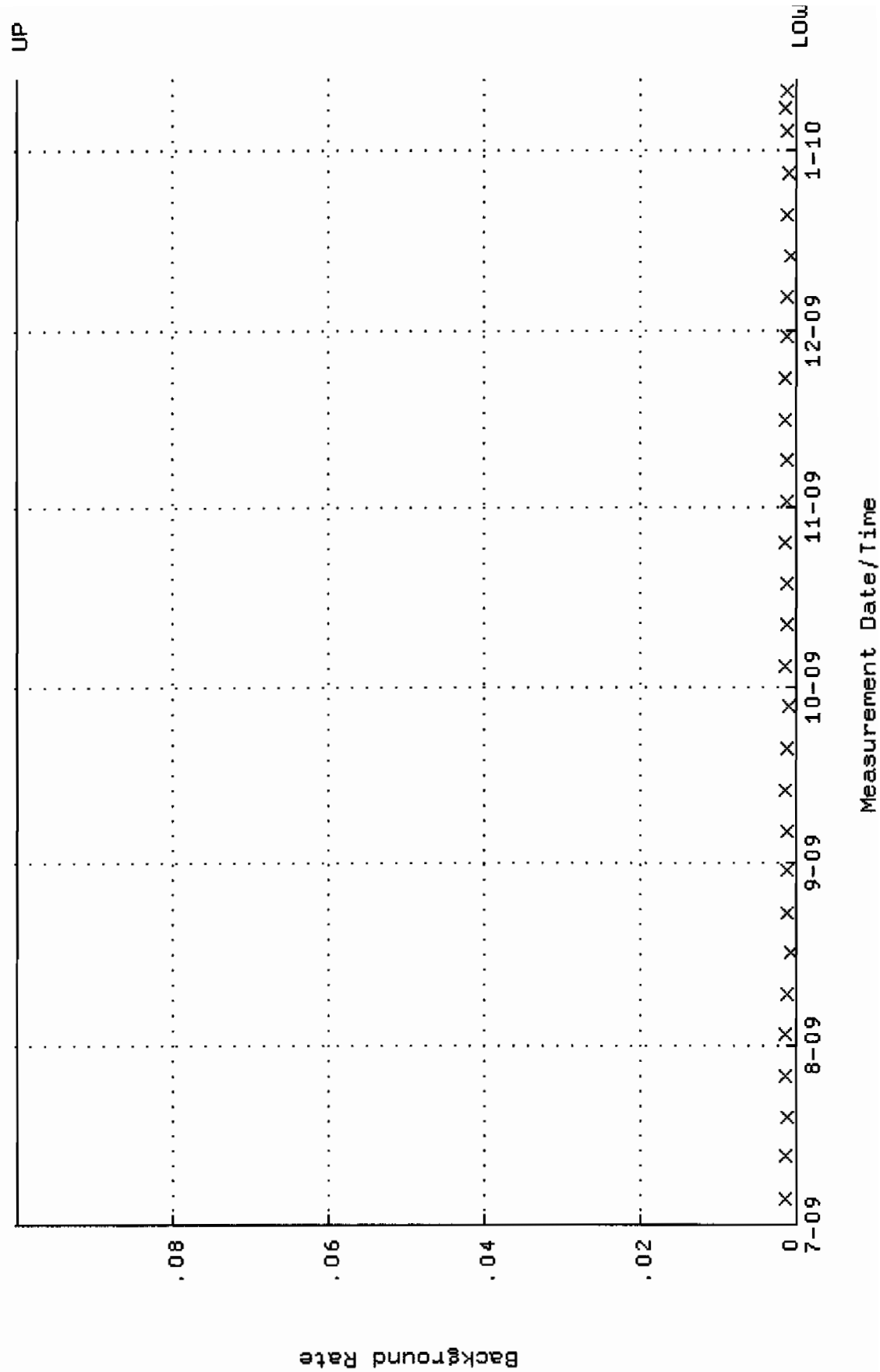
QA filename : DKA100:[ENV\_ALPHA.QA.W]w110.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 9-JUL-2009 08:08:16 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.312683 through 0.335479



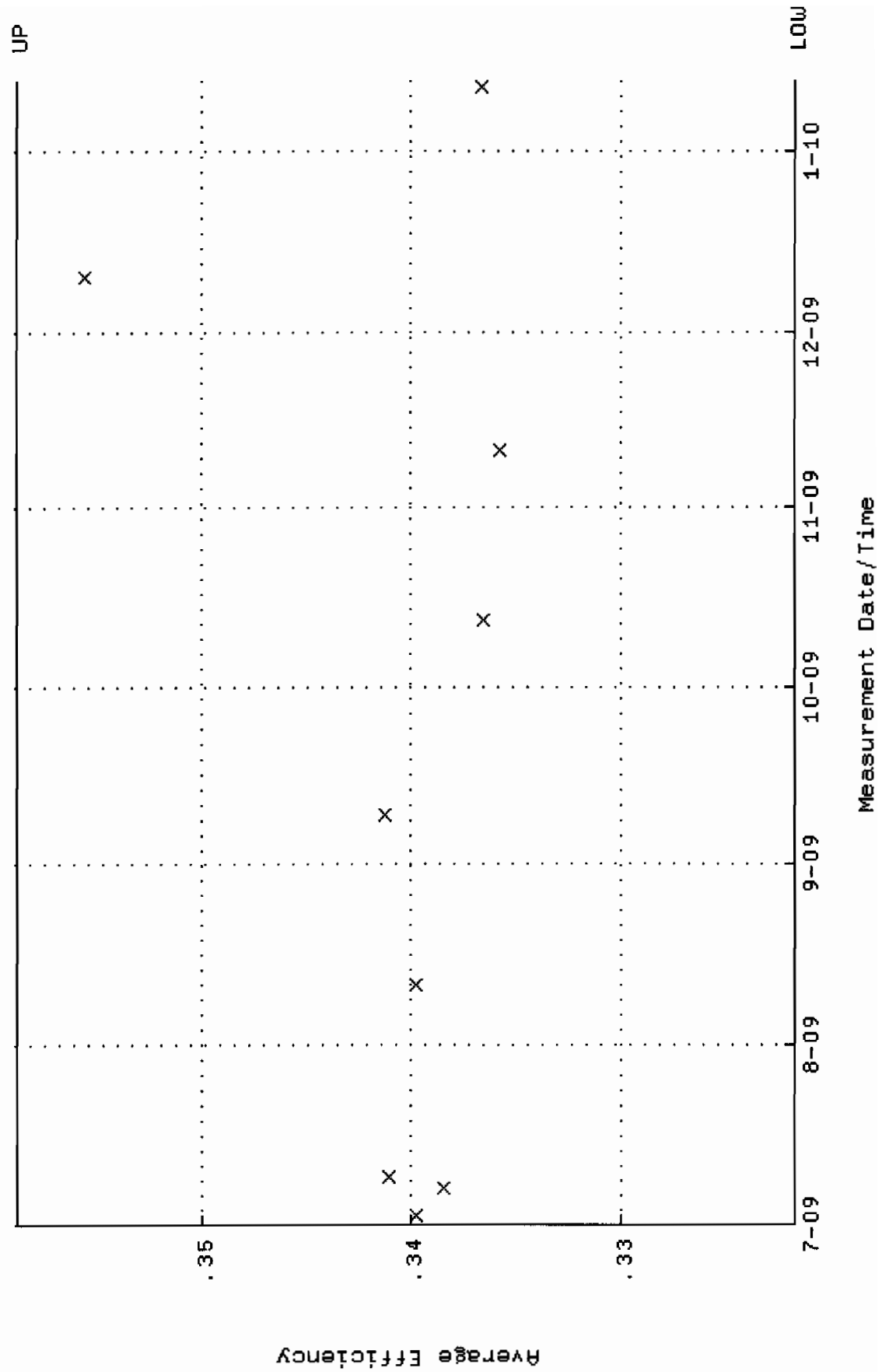
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 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 9-JUL-2009 08:08:16 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 70.7404 through 73.7542



QA filename : DKA100:[ENV\_ALPHA.QA.B]B110.QAF;2  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 5-JUL-2009 15:12:07 through 12-JAN-2010 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

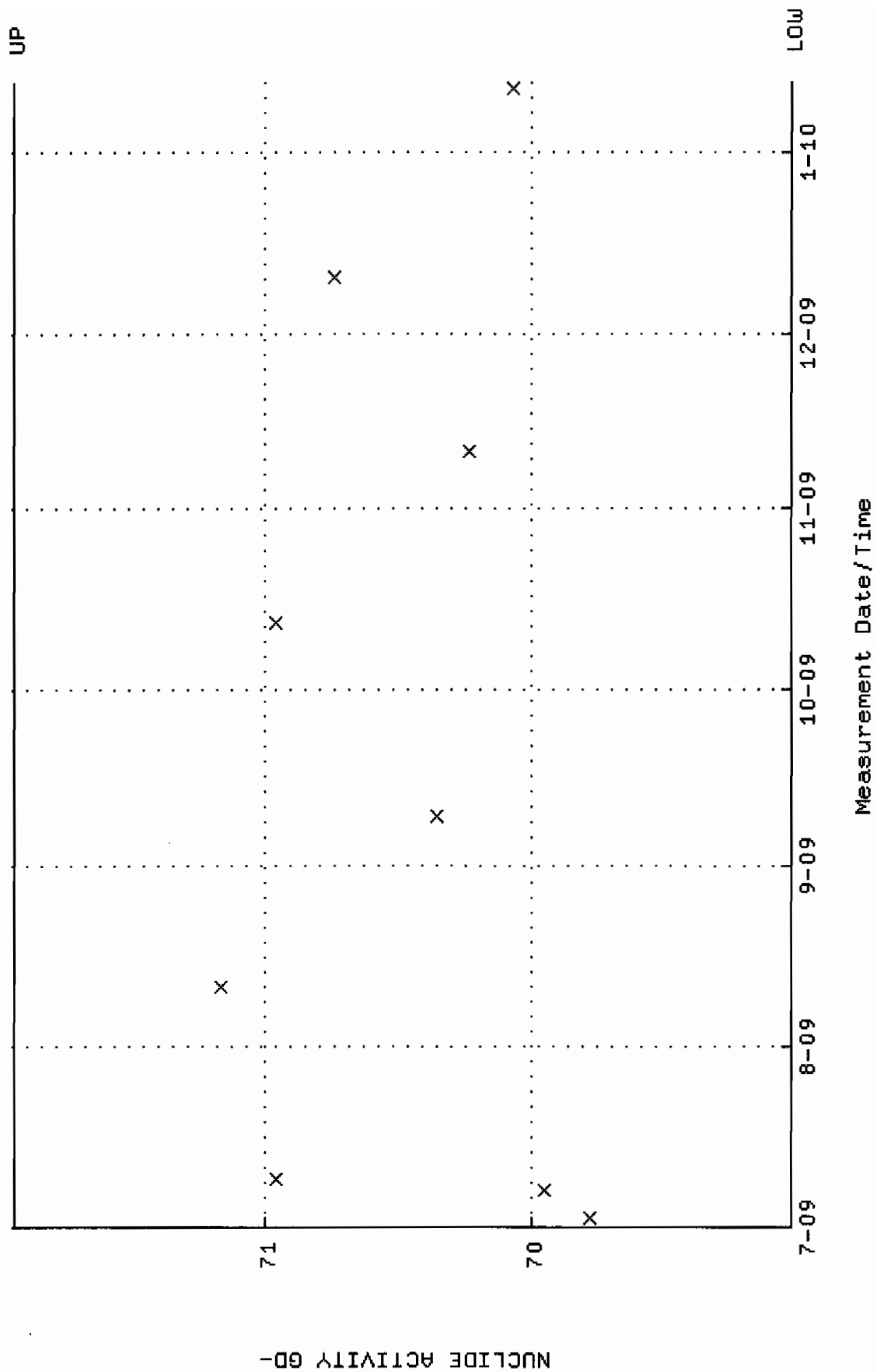


QA filename : DKA100:[ENV\_ALPHA.QA.W]w111.QAF;3  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUL-2009 15:04:17 through 12-JAN-2010 12:00:00  
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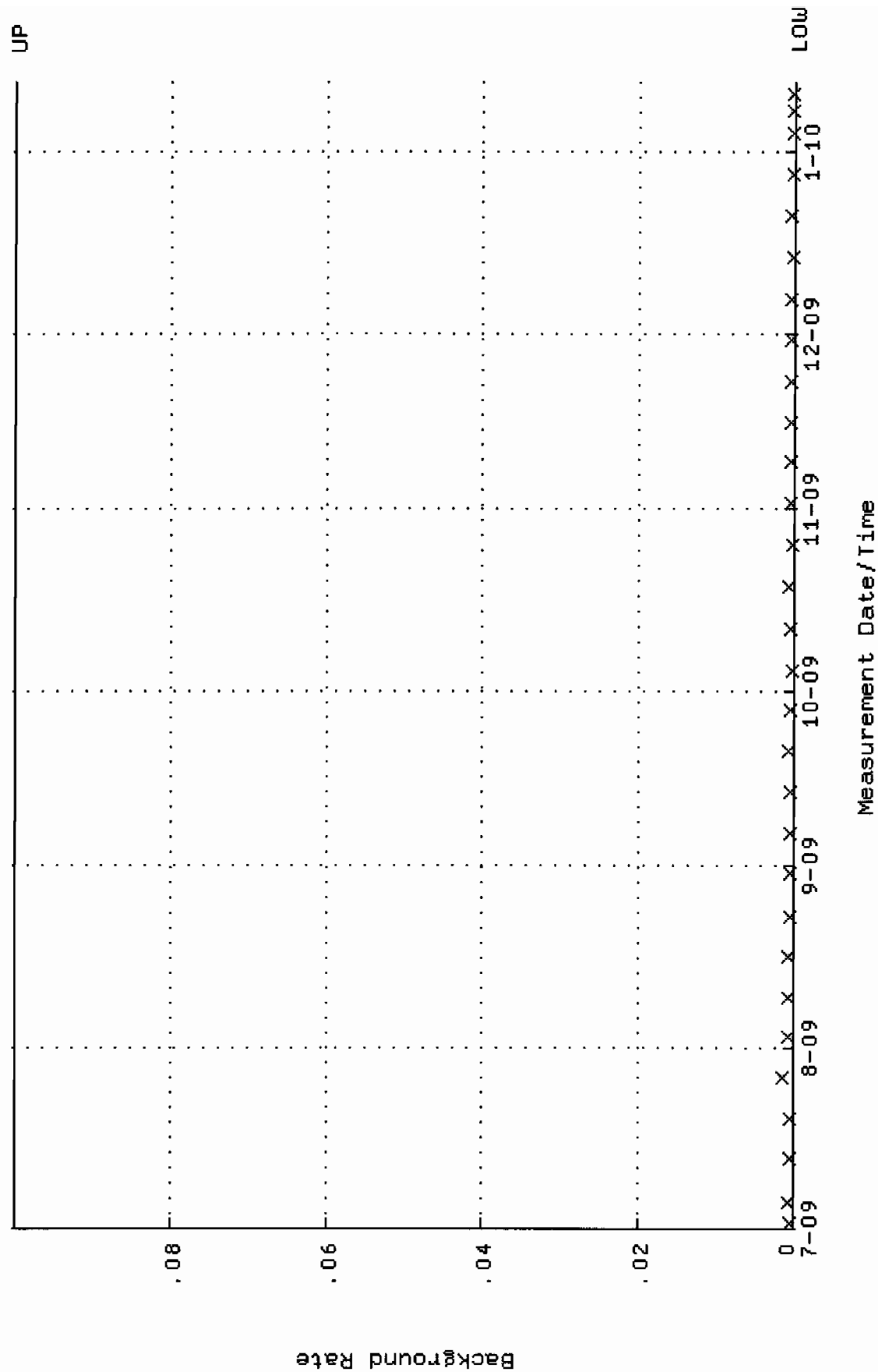




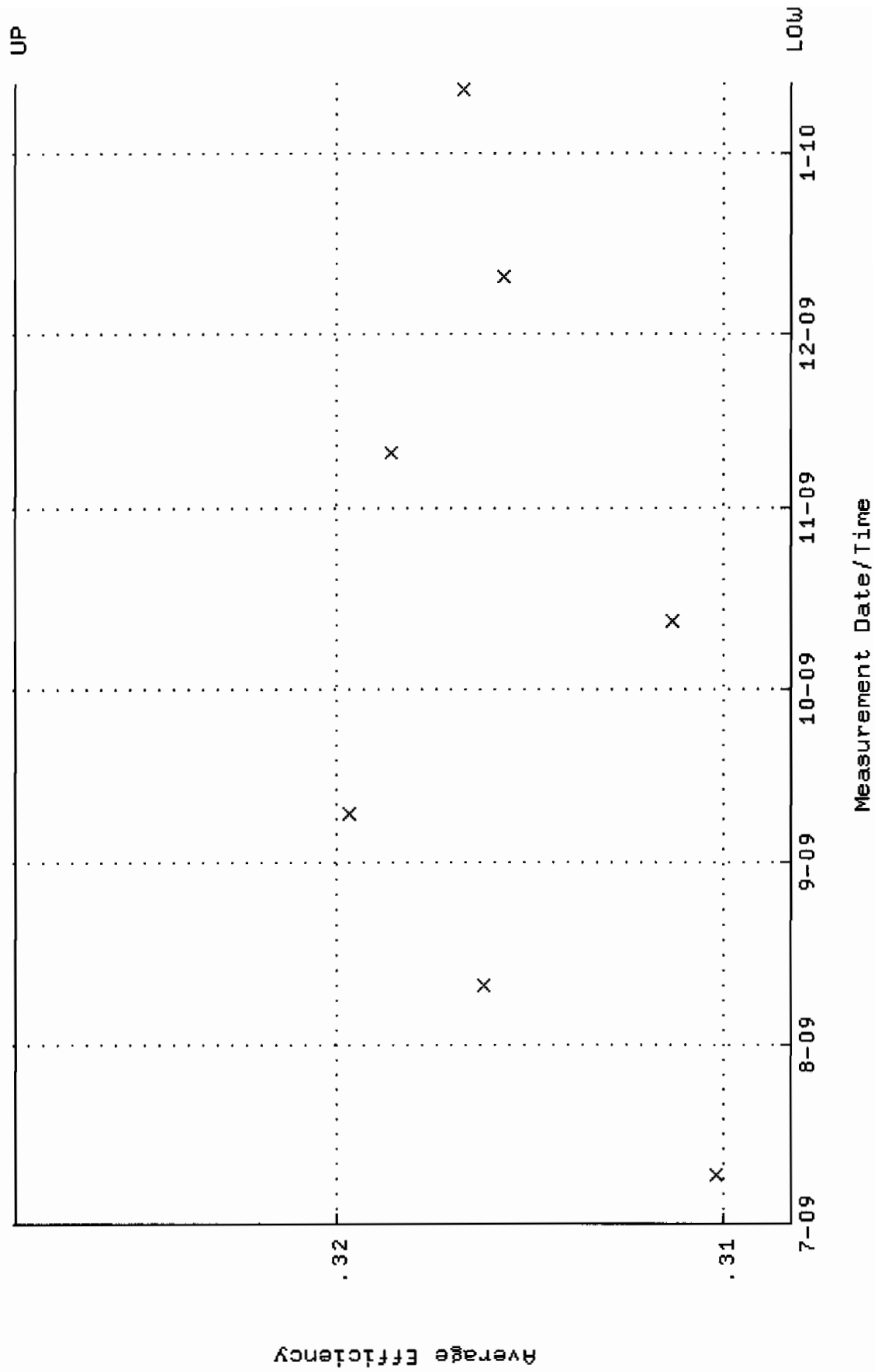
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 Parameter Name : NLACTVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
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 Lower/Upper Lmts: 69.0200 through 71.9448



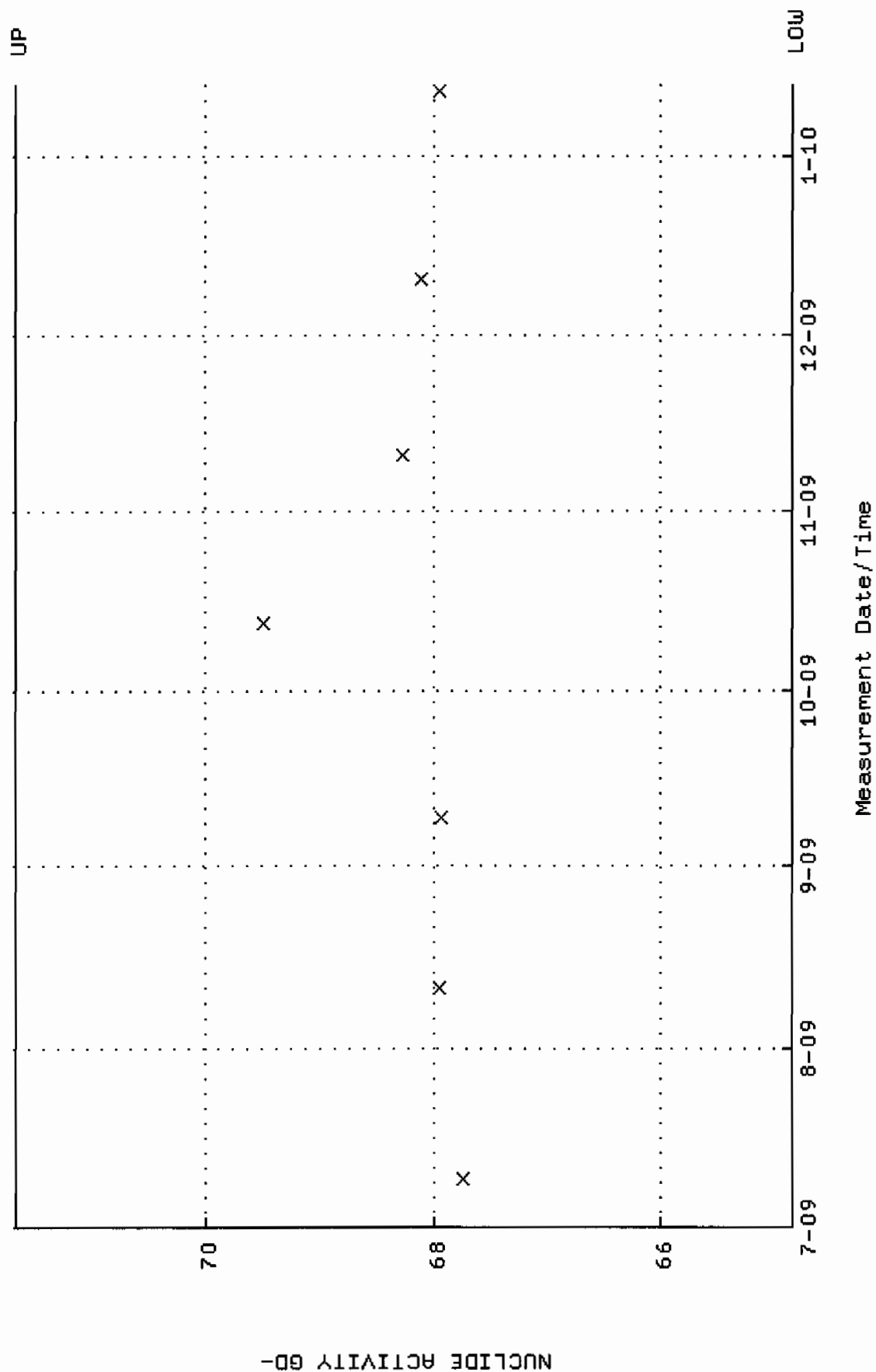
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 Lower/Upper Lmts: 0.000000E+00 through 0.100000



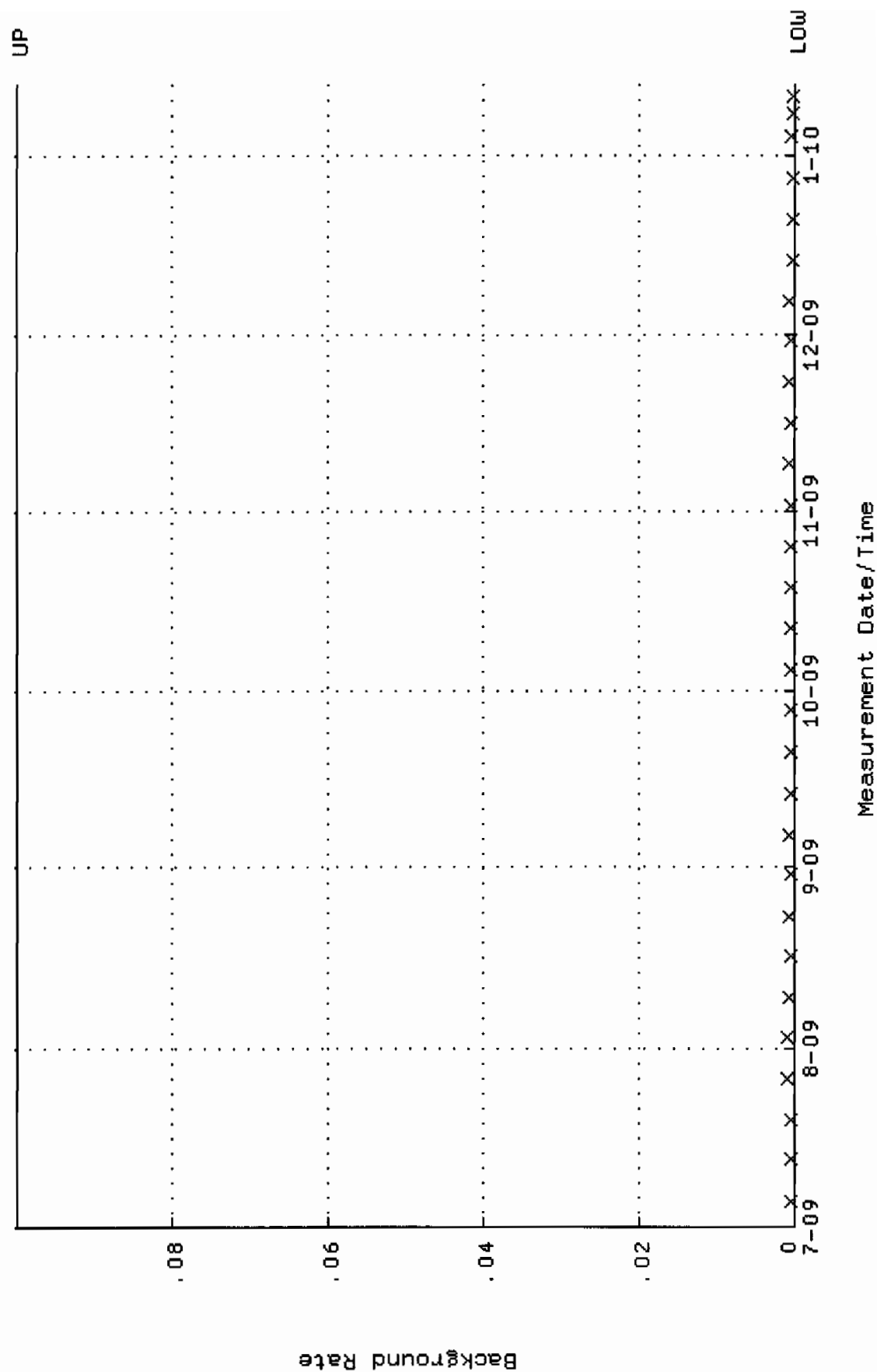
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 Lower/Upper Lmts: 0.308263 through 0.328263



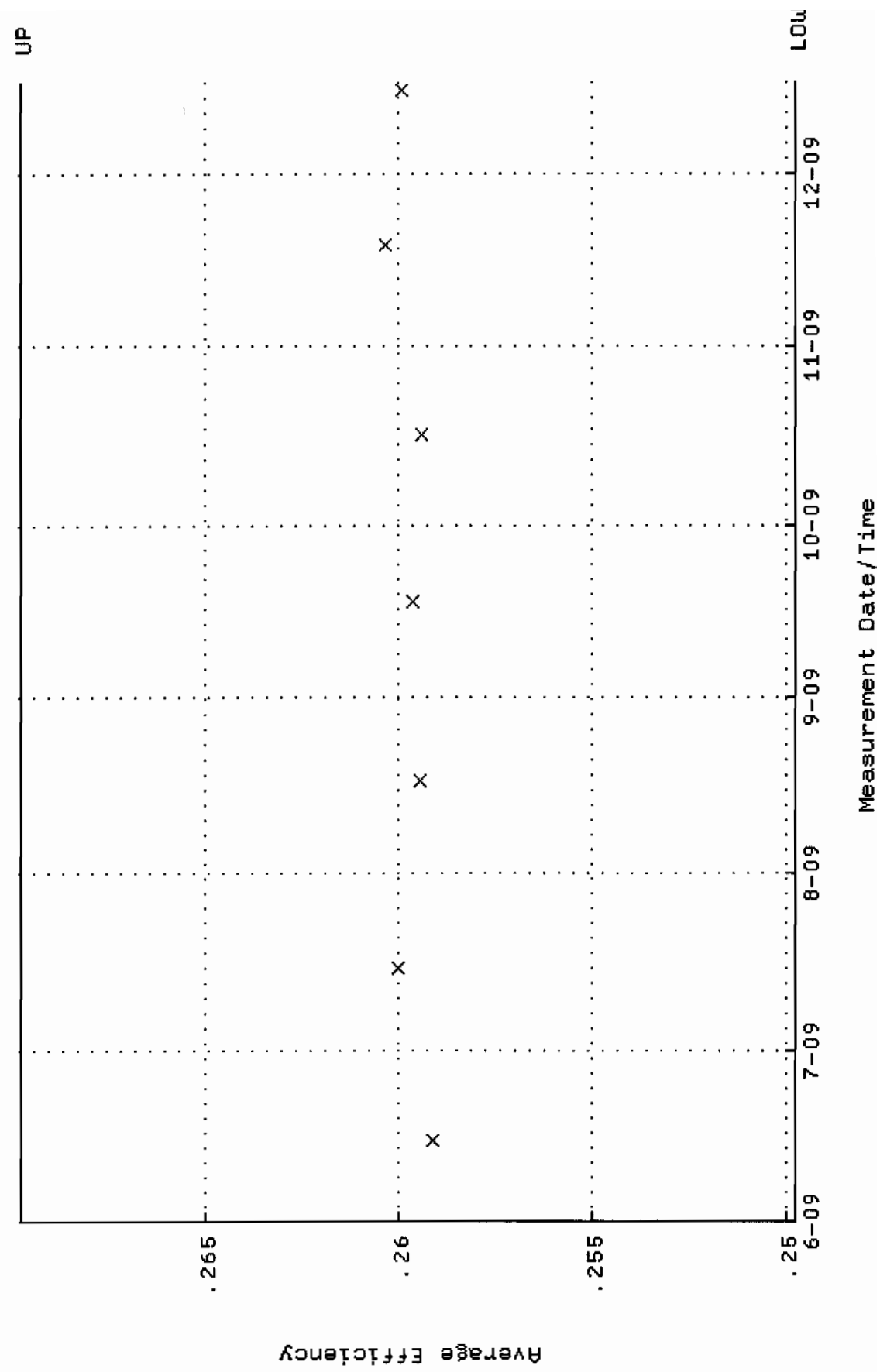
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 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
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 Lower/Upper Lmts: 64.8451 through 71.6709



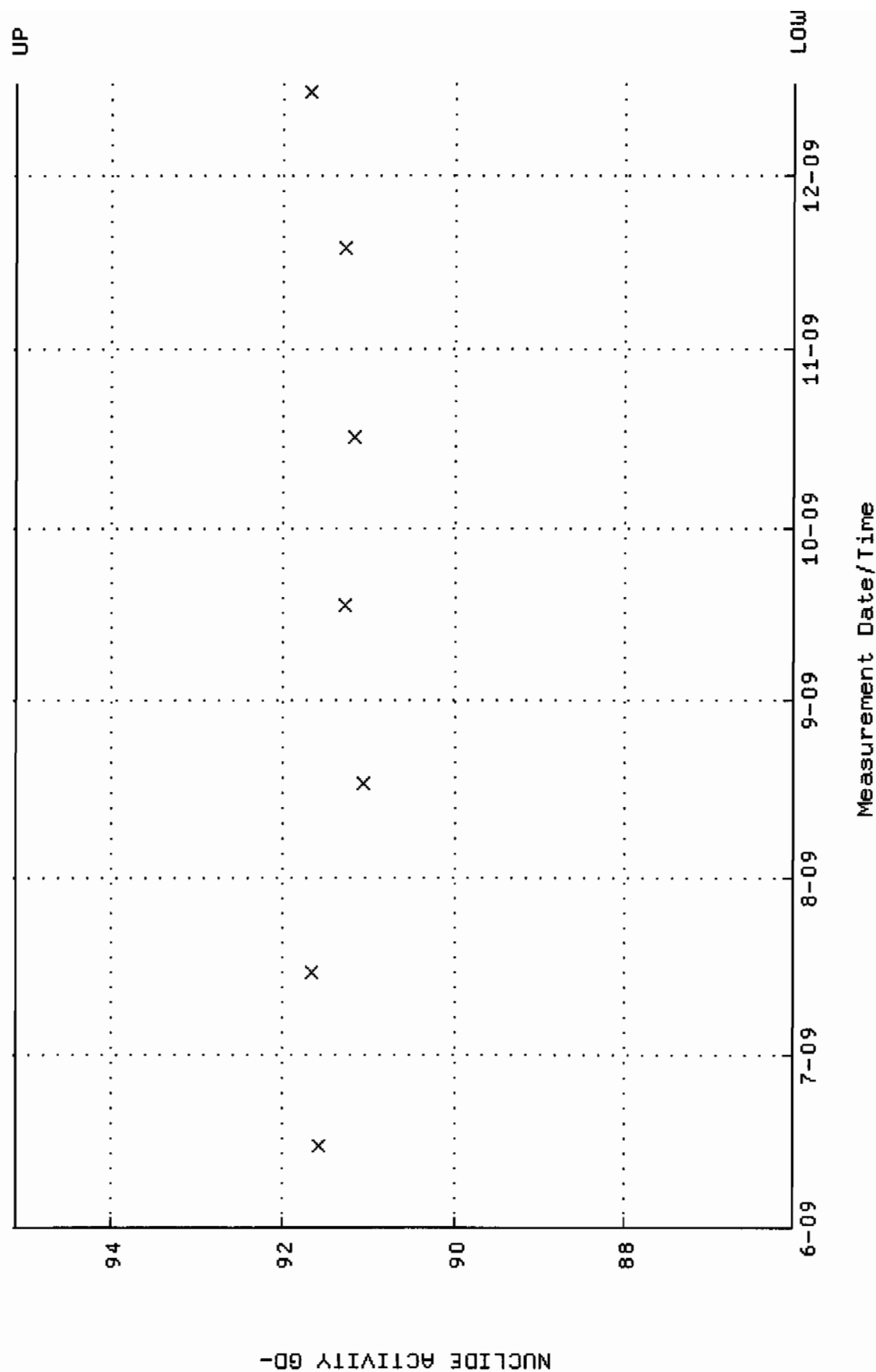
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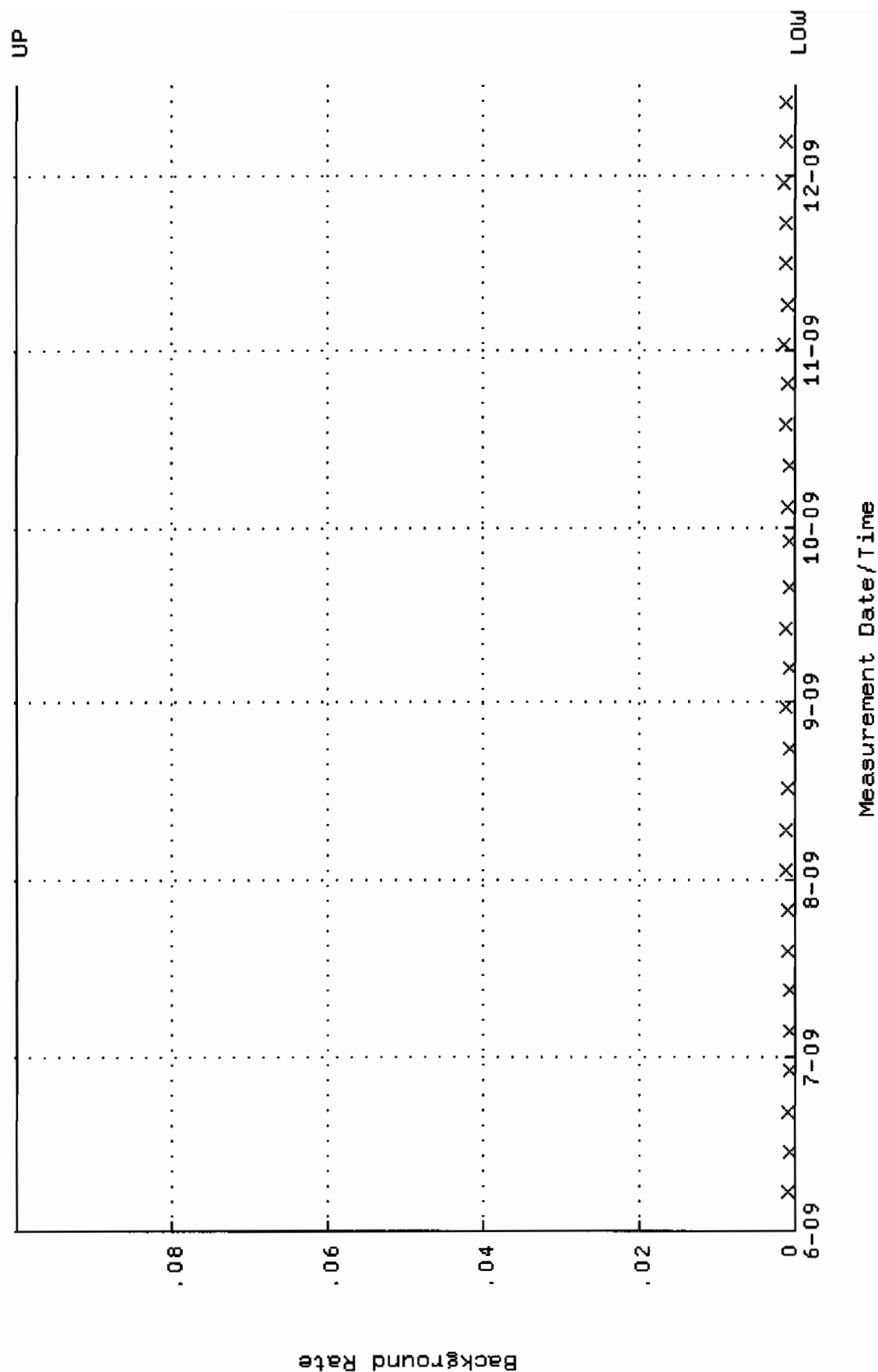
QA filename : DKA100:[ENV\_ALPHA.QA.W]W123.QAF;1  
Parameter Name : AVRGEFF (Average Efficiency)  
Start/End Dates : 15-JUN-2009 10:35:03 through 16-DEC-2009 12:00:00  
Lower/Upper Lmts: 0.249752 through 0.269752



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

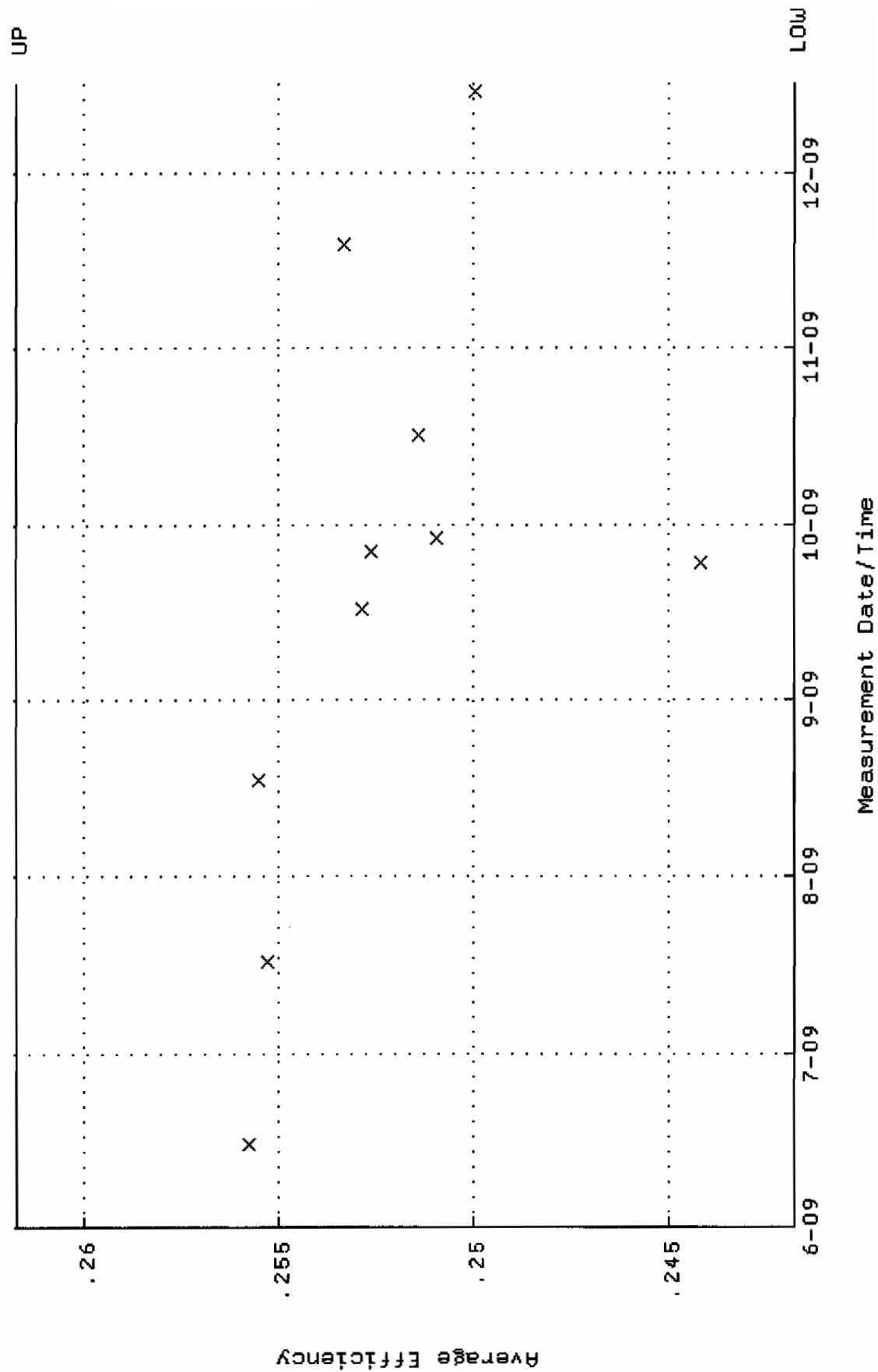


QA filename : DKA100:[ENV\_ALPHA.QA.B]B123.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
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 Lower/Upper Lmts: 0.000000E+00 through 0.100000

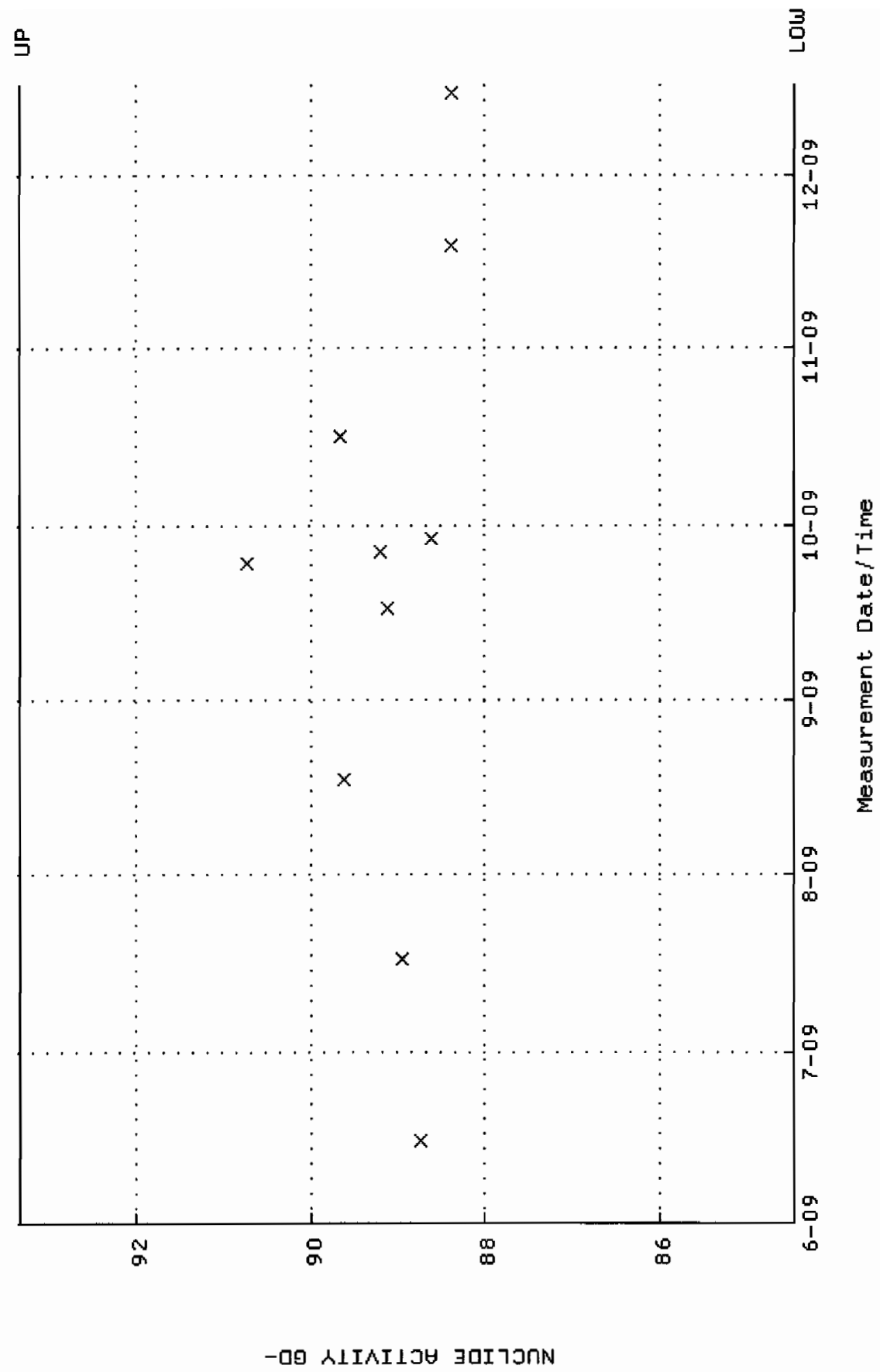




QA filename : DKA100:[ENV\_ALPHA.QA.W]U137.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 15-JUN-2009 10:36:21 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.241744 through 0.261744



QA filename : DKA100:[ENV\_ALPHA.QA.W]W137.QAF;1  
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 15-JUN-2009 10:36:21 through 16-DEC-2009 12:00:00  
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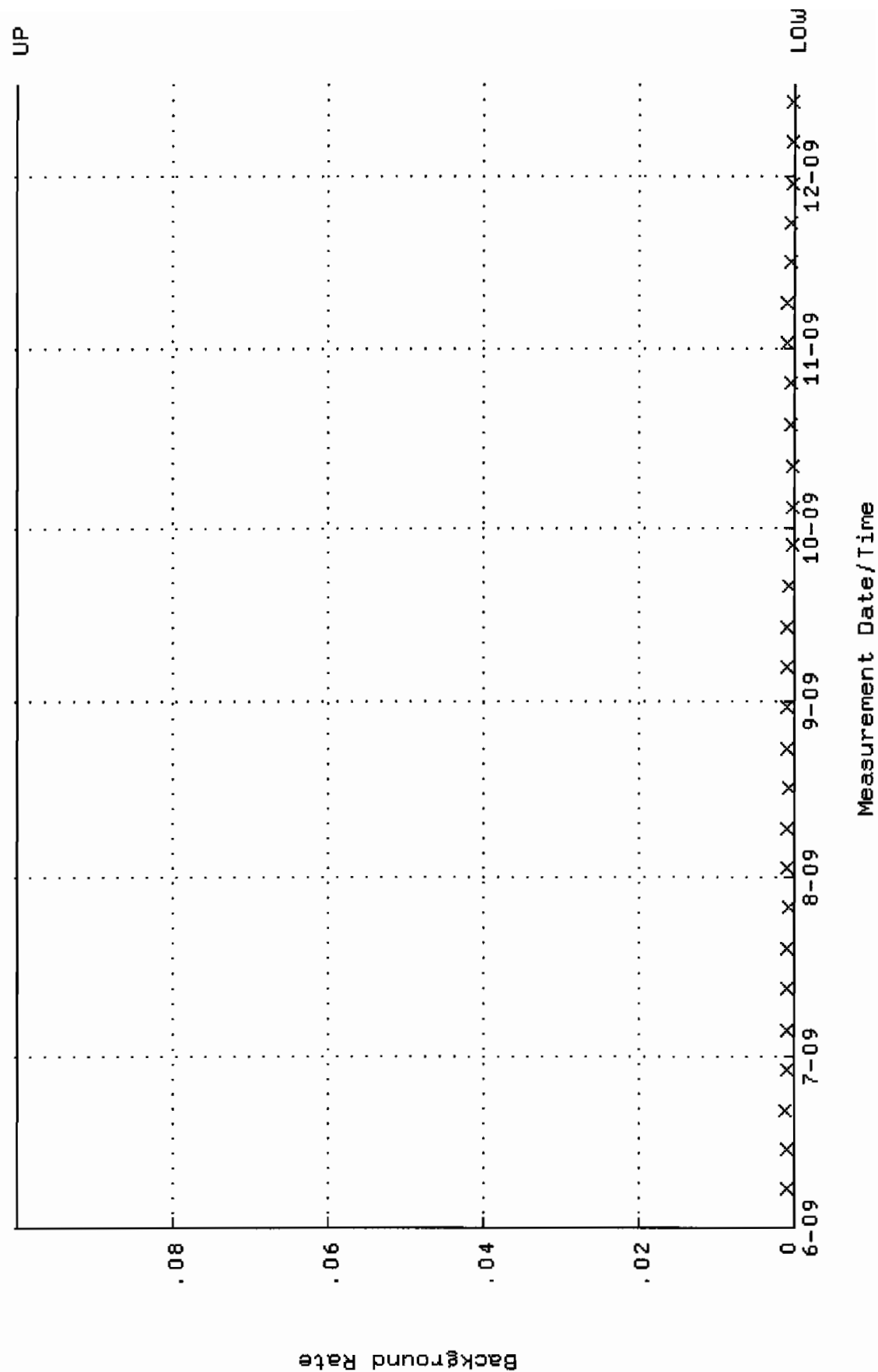


QA filename : DKA100:[ENV\_ALPHA.QA.B]B137.QAF;1

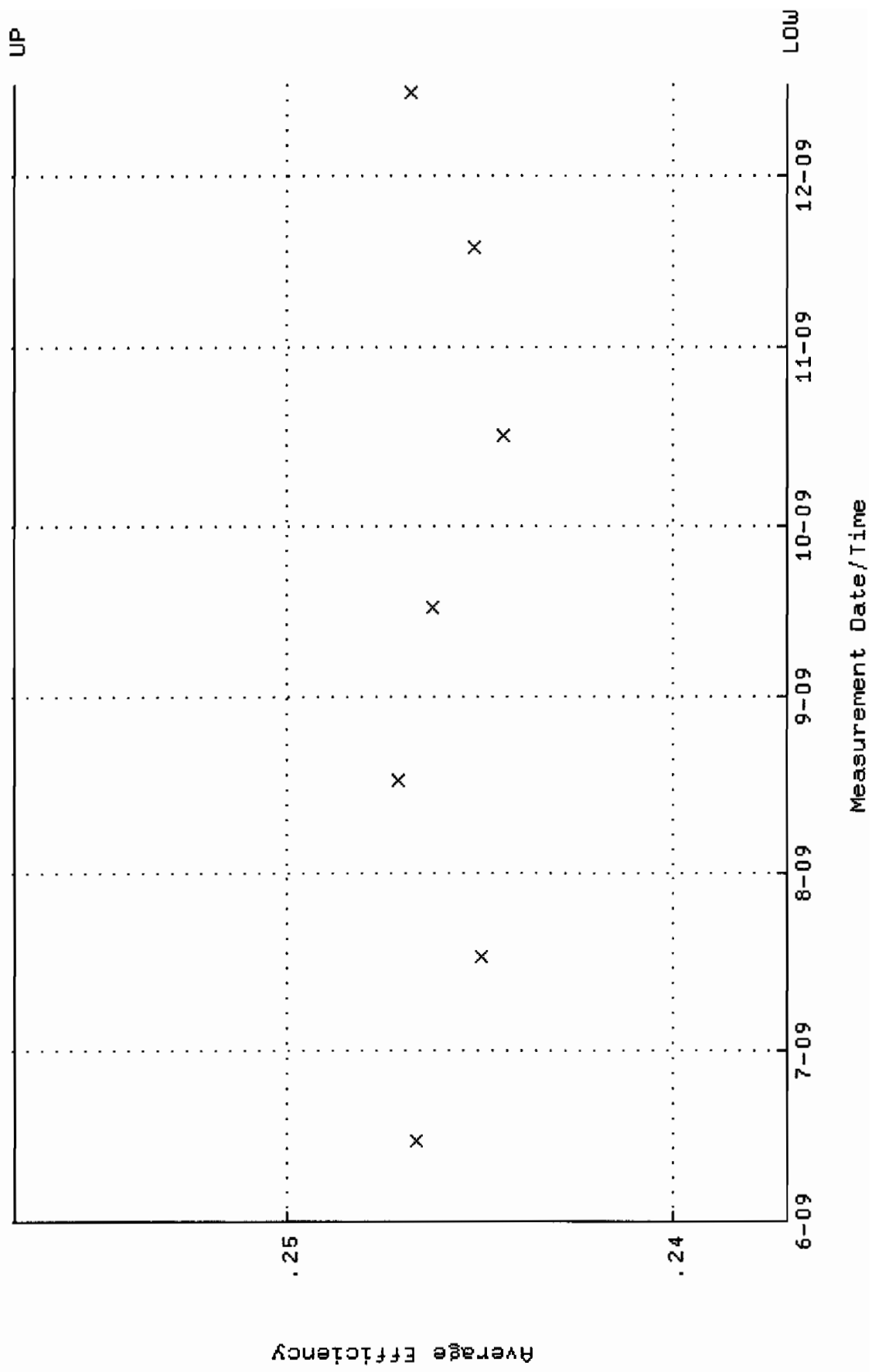
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 7-JUN-2009 17:10:19 through 16-DEC-2009 12:00:00

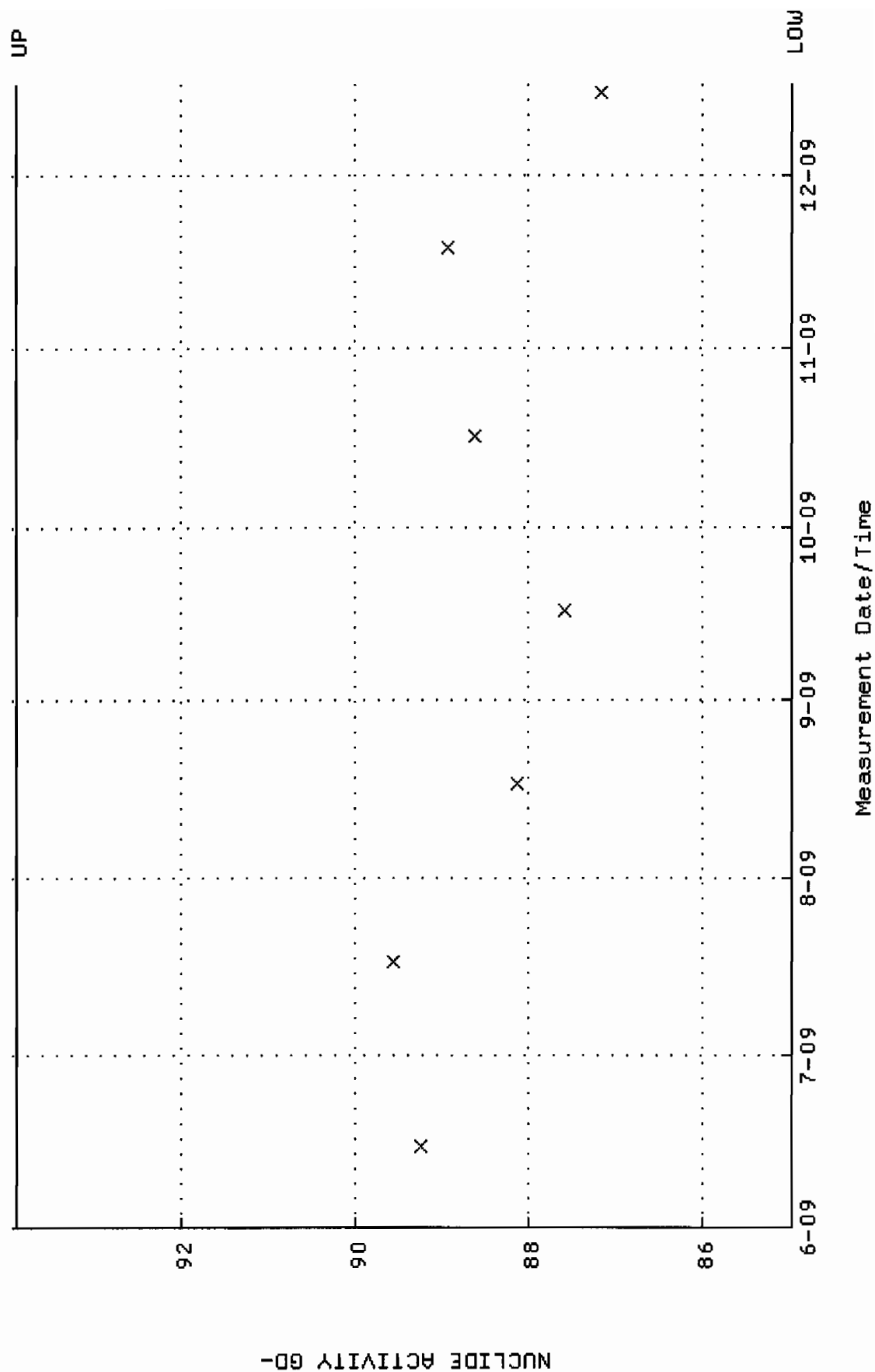
Lower/Upper Lmts: 0.000000E+00 through 0.100000



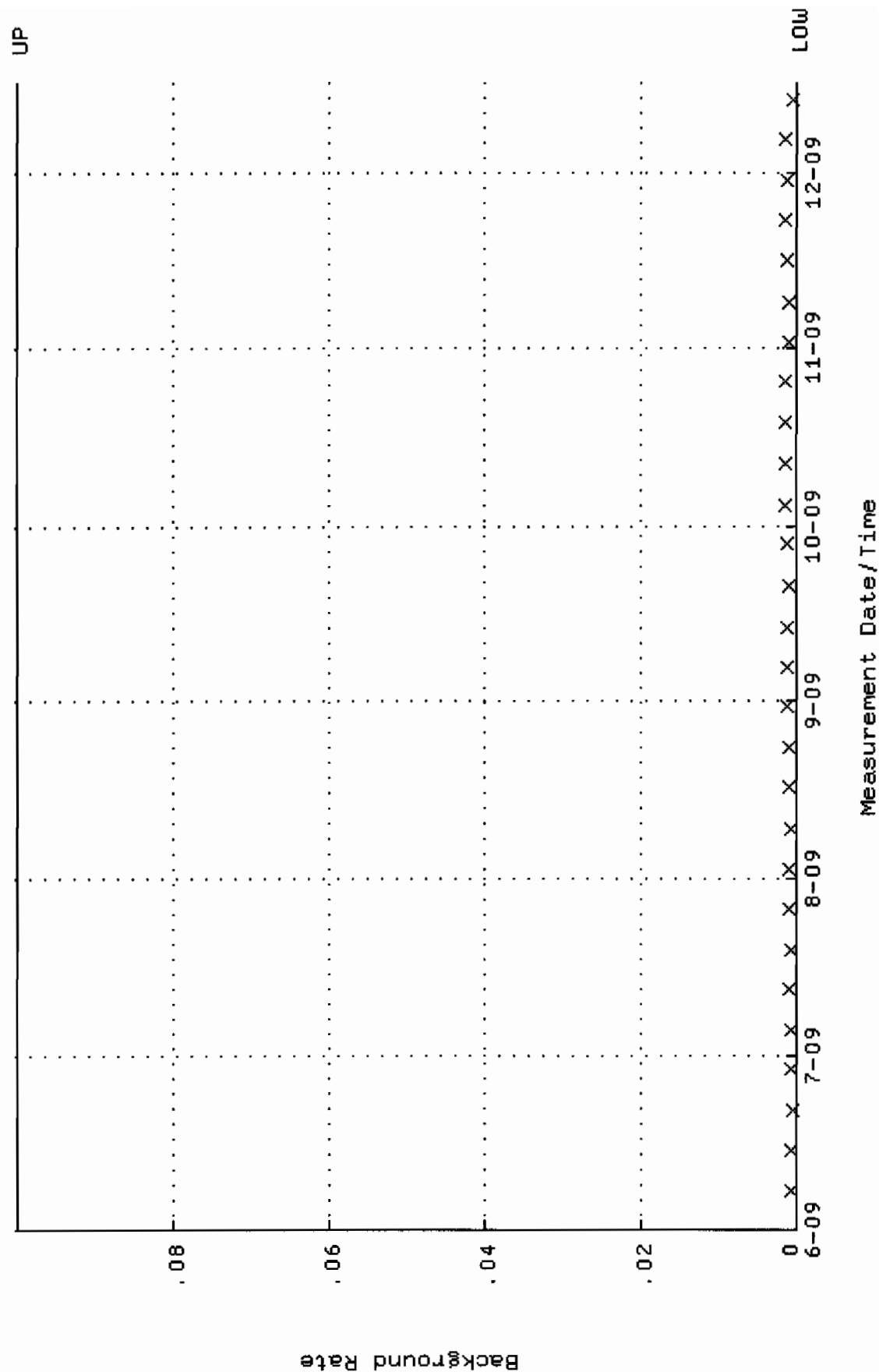
QA filename : DKA100:[ENV\_ALPHA.QA.W]W147.QAF;1  
Parameter Name : AVRGEFF (Average Efficiency)  
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Lower/Upper Lmts: 0.237046 through 0.257046



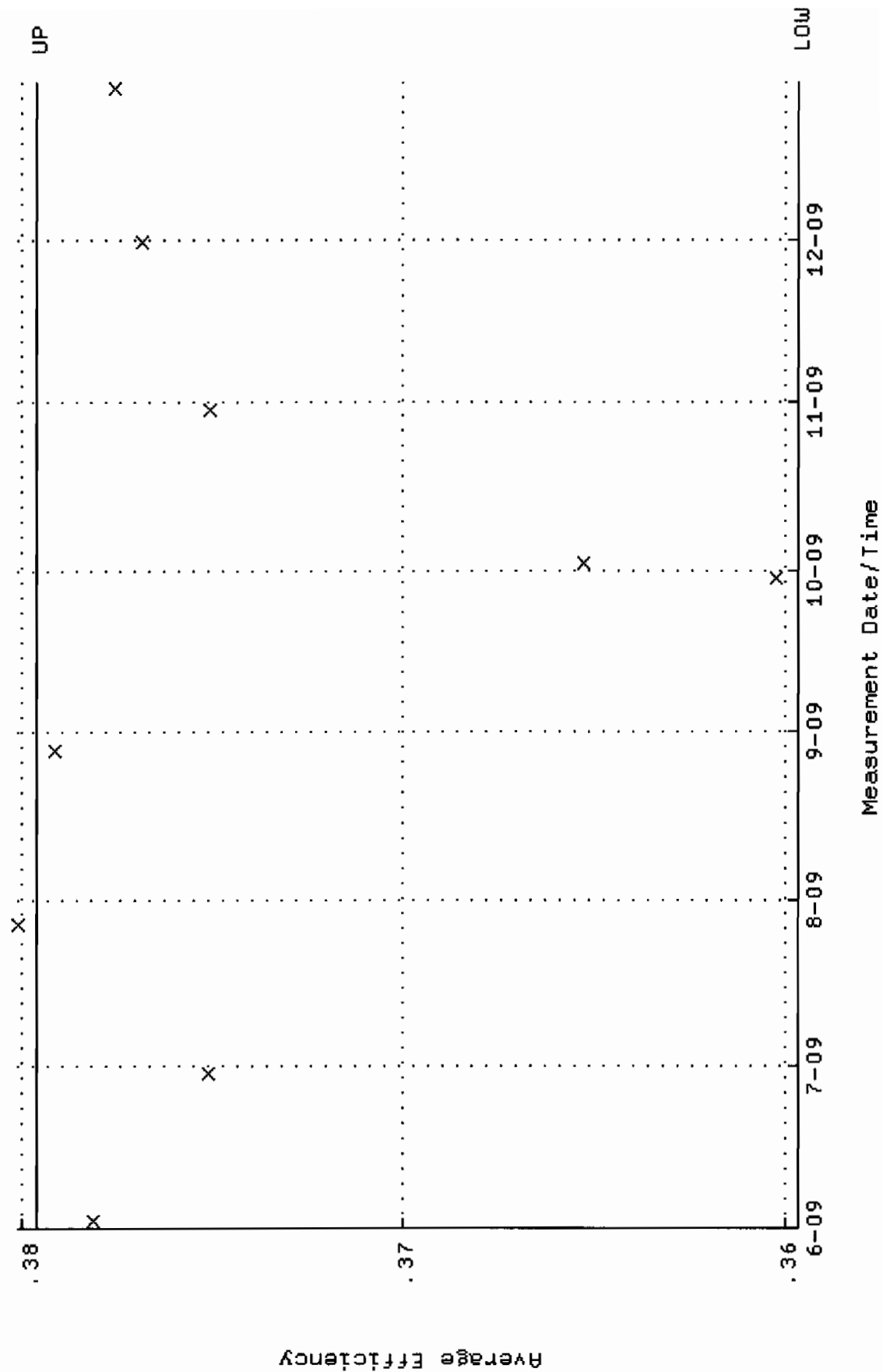
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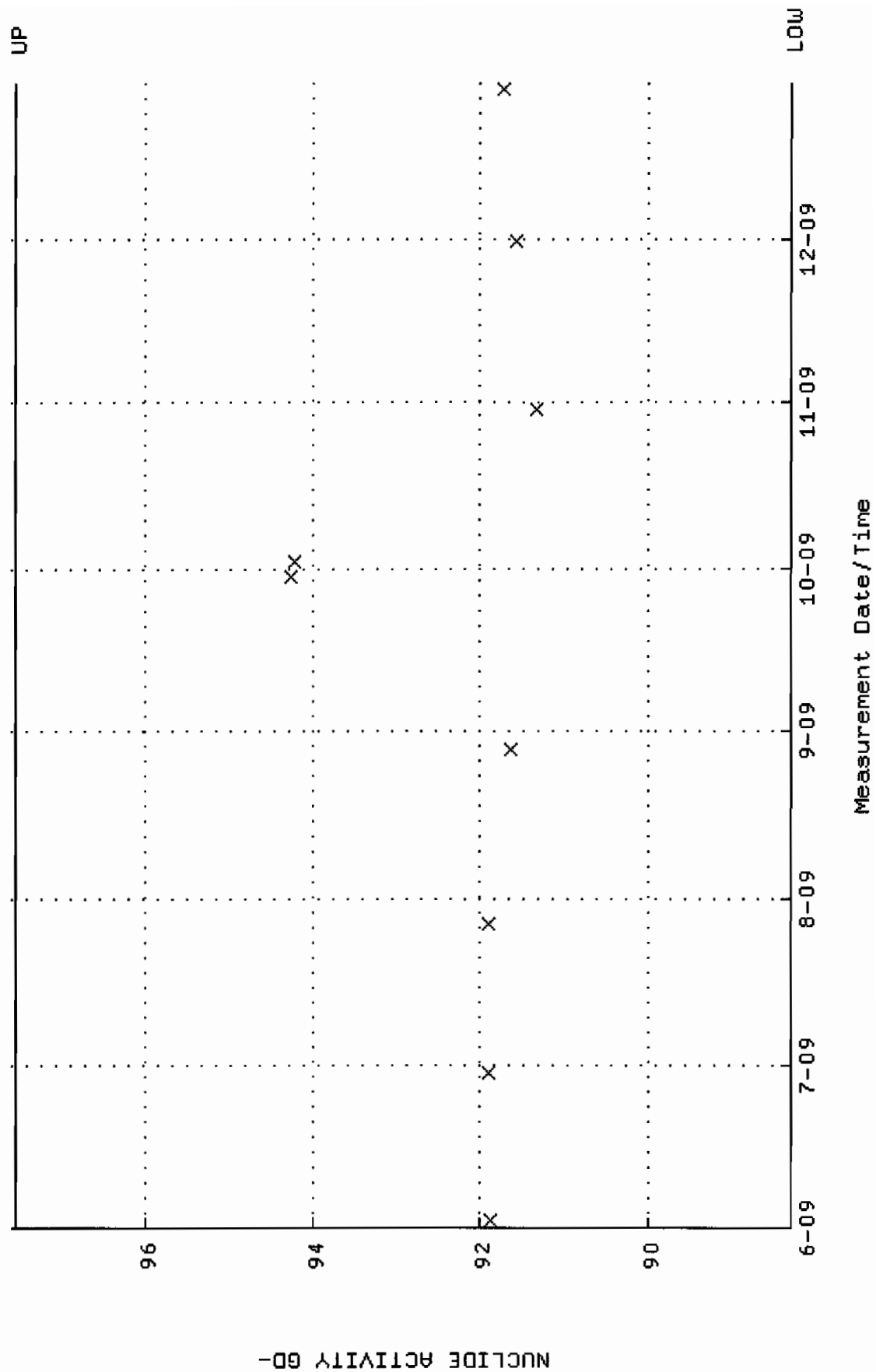
QA filename : DKA100:[ENV\_ALPHA.QA.B]B147.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 7-JUN-2009 17:11:05 through 16-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV\_ALPHA.QA.W]w220.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:04 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.359644 through 0.379644

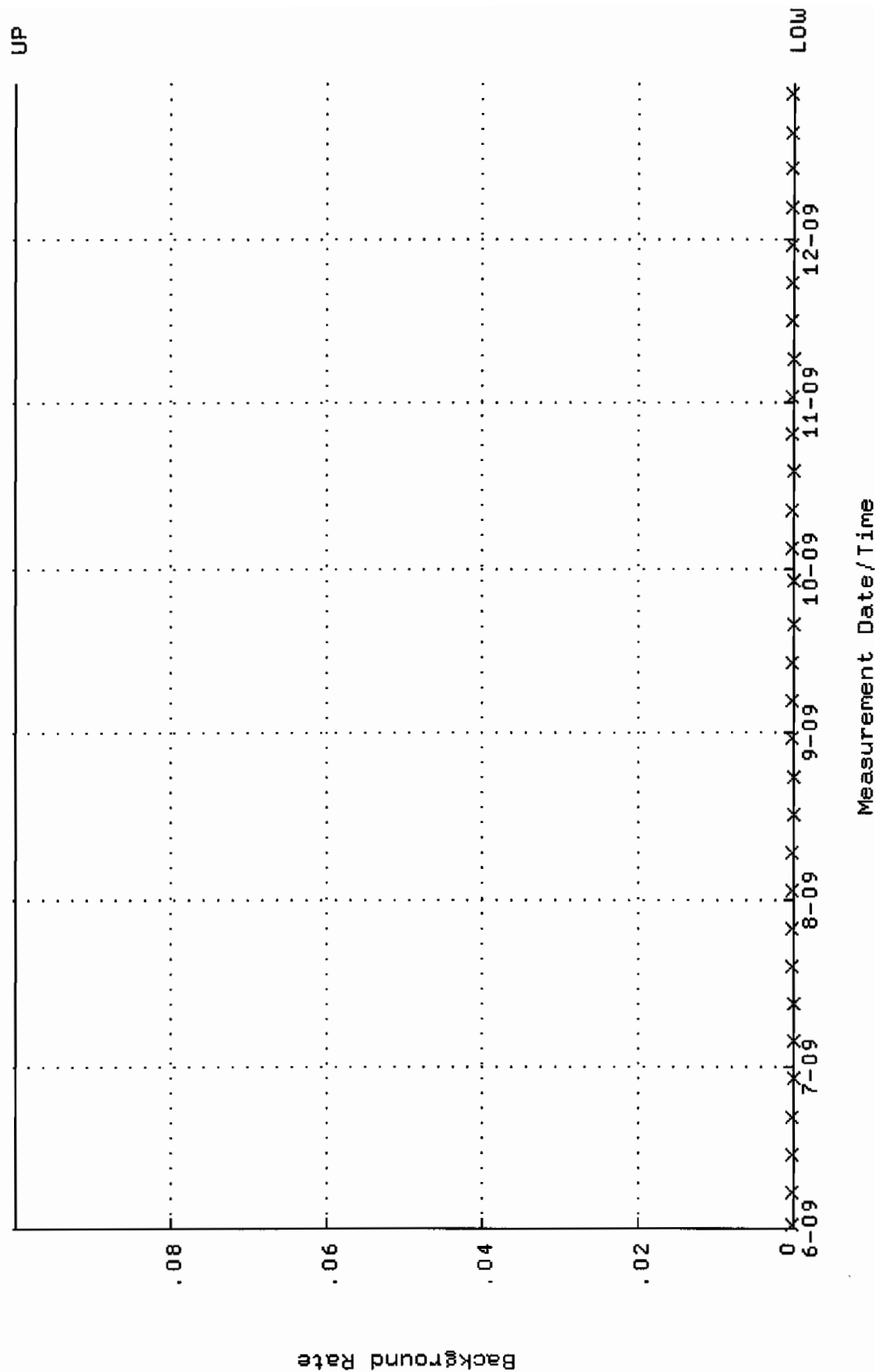


QA filename : DKA100:[ENV\_ALPHA.QA.W]W220.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:04 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 88.2863 through 97.5795

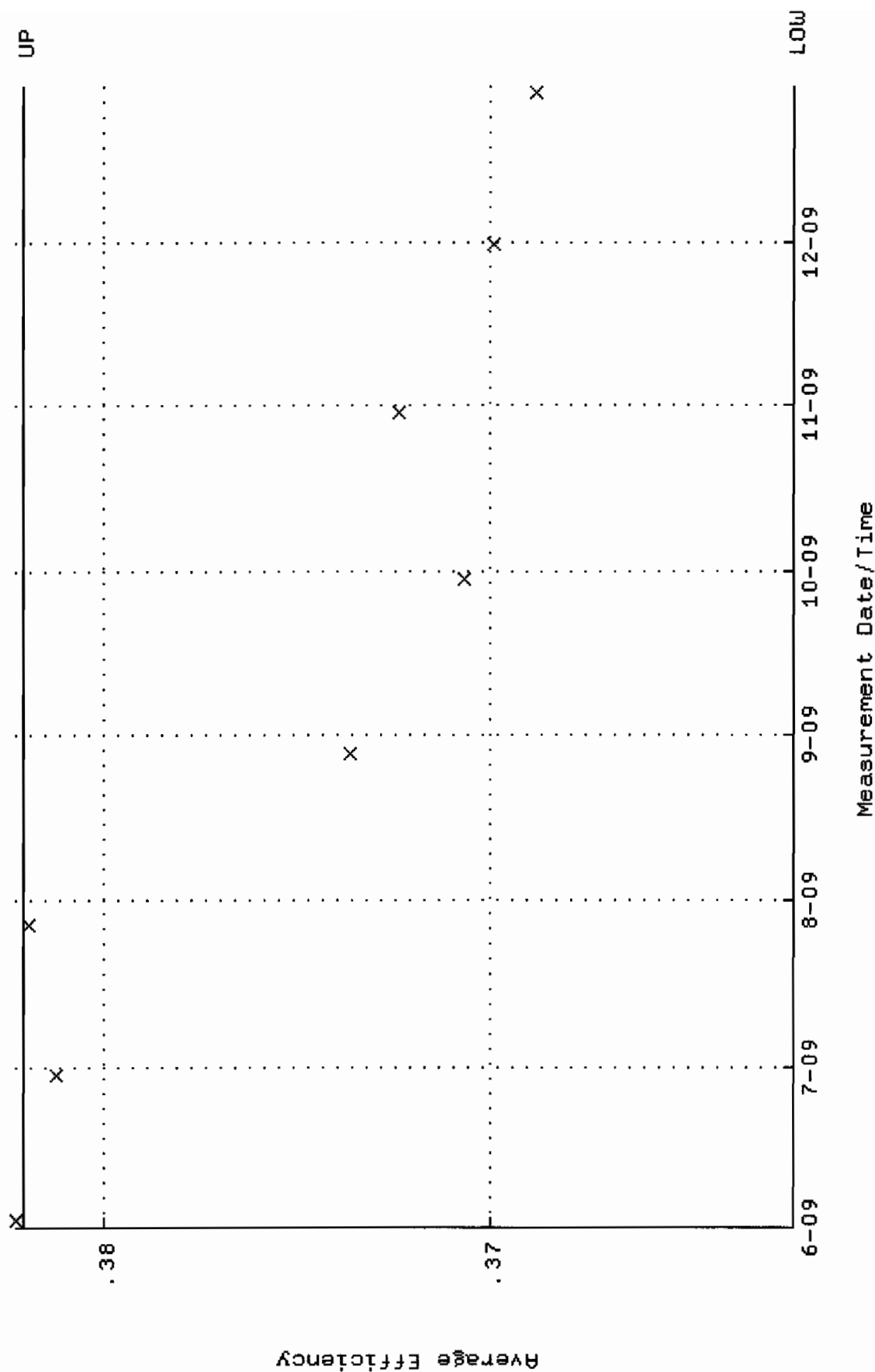




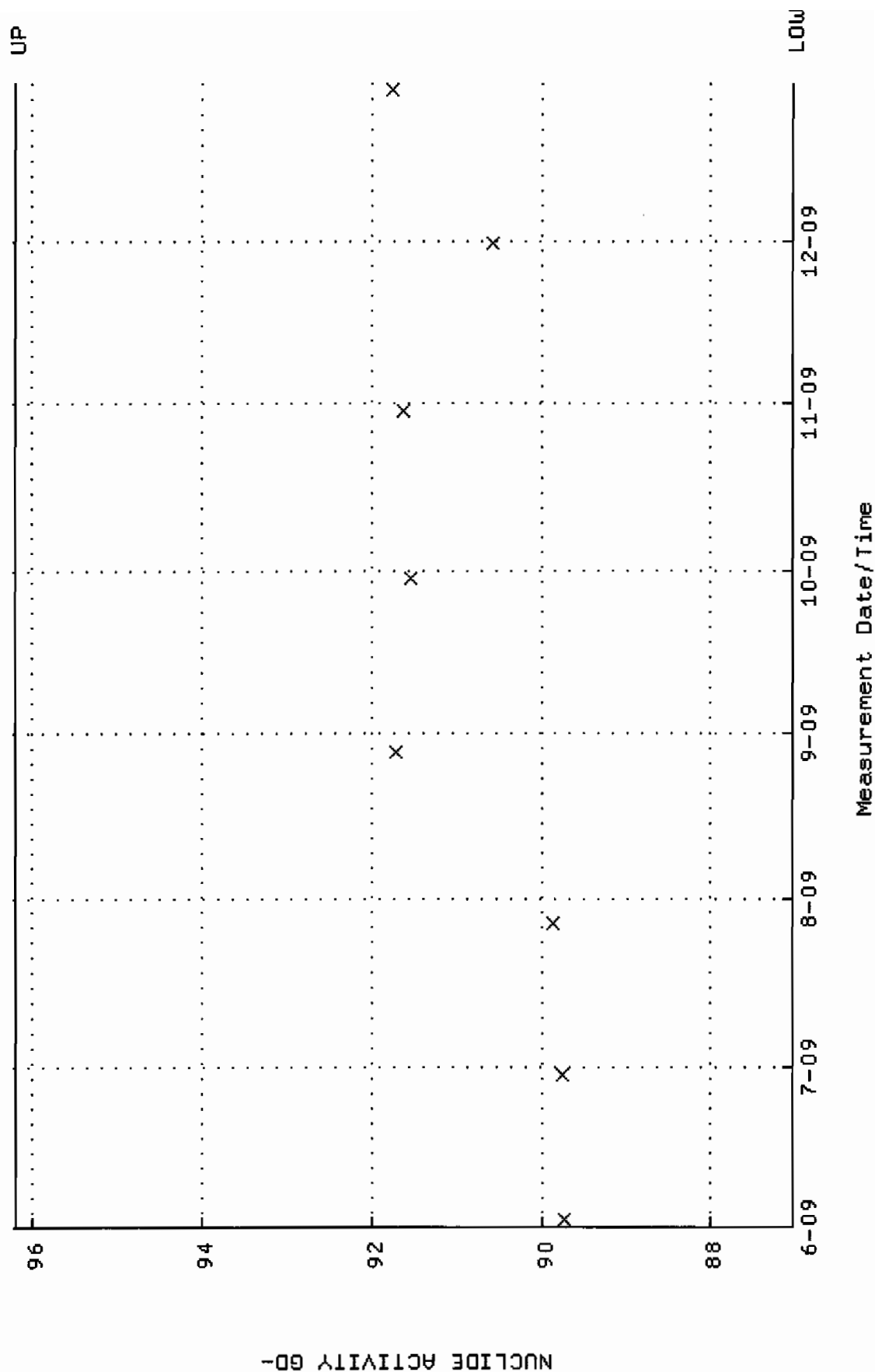
QA filename : DKA100:[ENV\_ALPHA.QA.B]B220.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:44:21 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



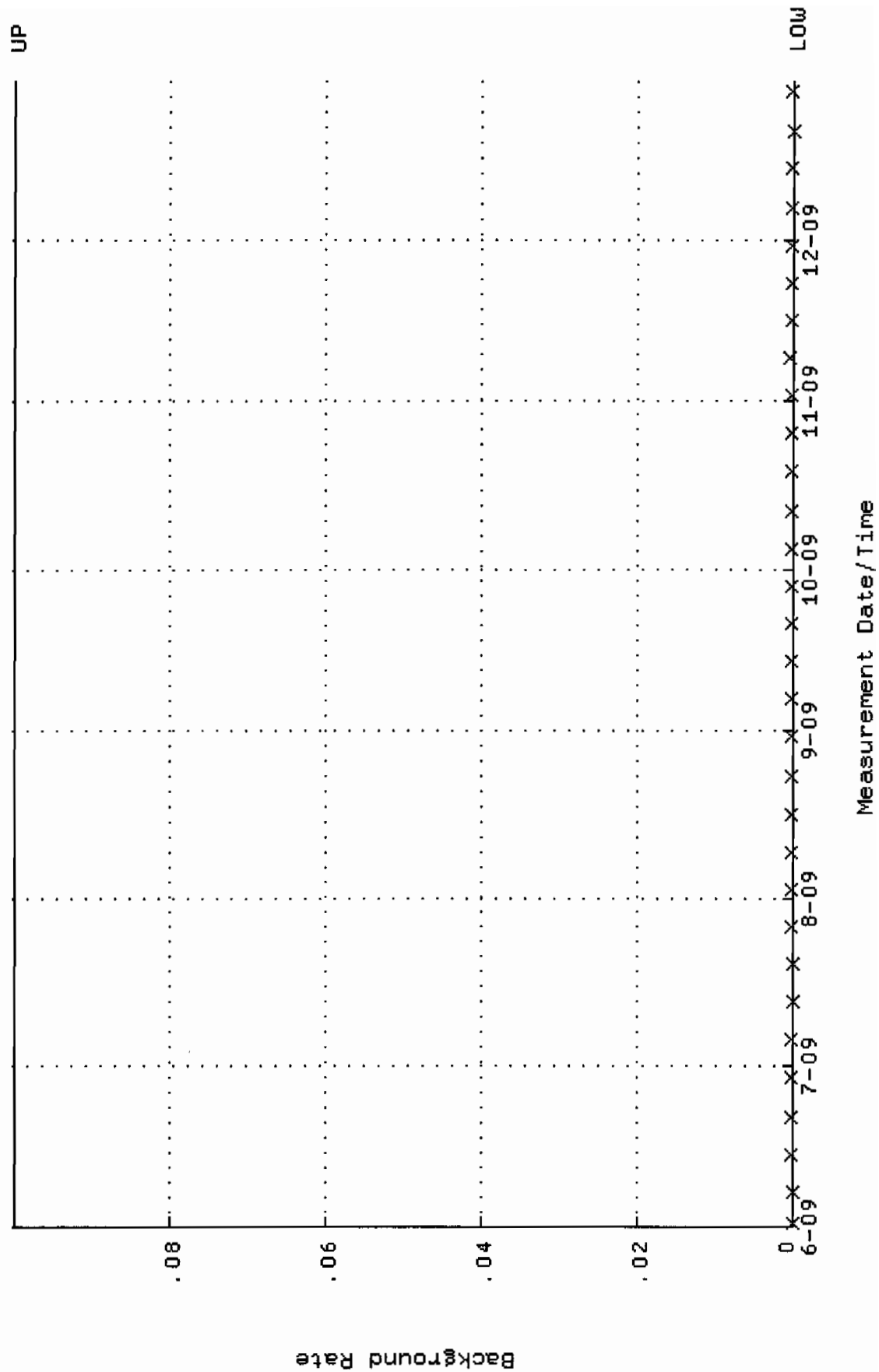
QA filename : DKA100:[ENV\_ALPHA.QA.W]W228.QAF;1  
 Parameter Name : AVRGEFF (Average Efficiency)  
 Start/End Dates : 2-JUN-2009 11:18:47 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.362134 through 0.382134



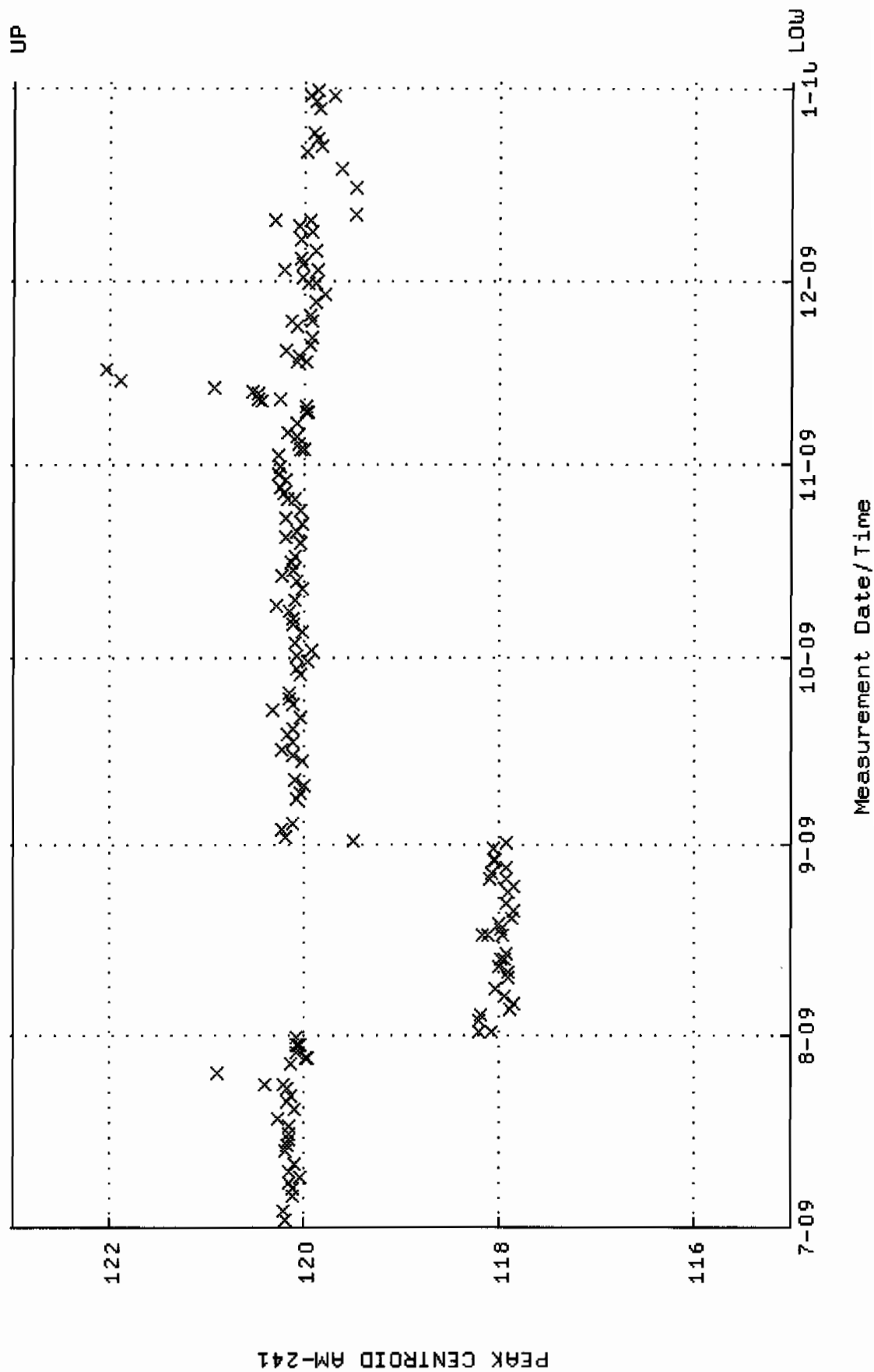
QA filename : DKA100:[ENV\_ALPHA.QA.W]U228.QAF;1  
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)  
 Start/End Dates : 2-JUN-2009 11:18:47 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 87.0370 through 96.1988



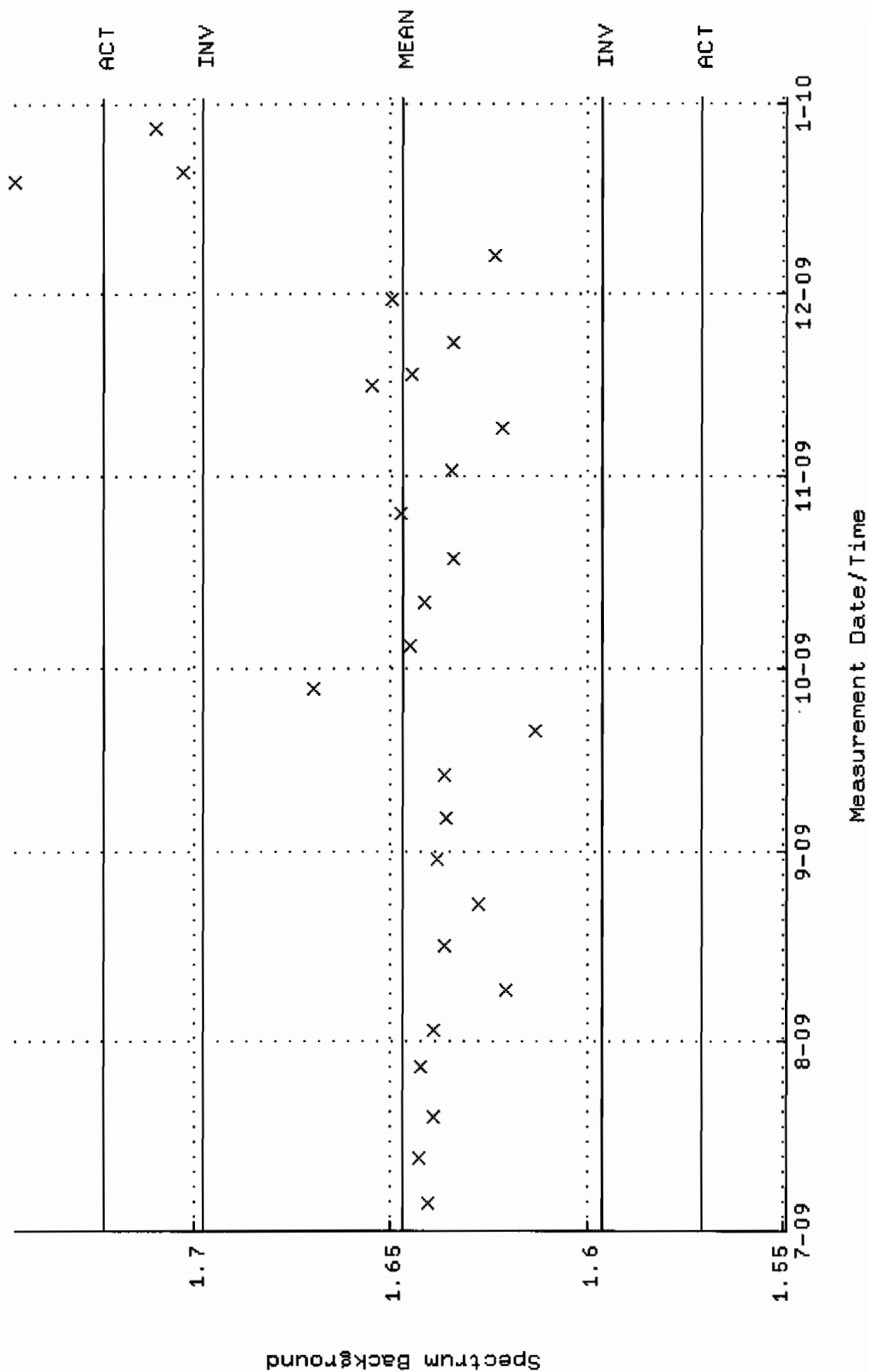
QA filename : DKA100:[ENV\_ALPHA.QA.B]B228.QAF;1  
 Parameter Name : BACKRATE (Background Rate)  
 Start/End Dates : 1-JUN-2009 17:44:57 through 29-DEC-2009 12:00:00  
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



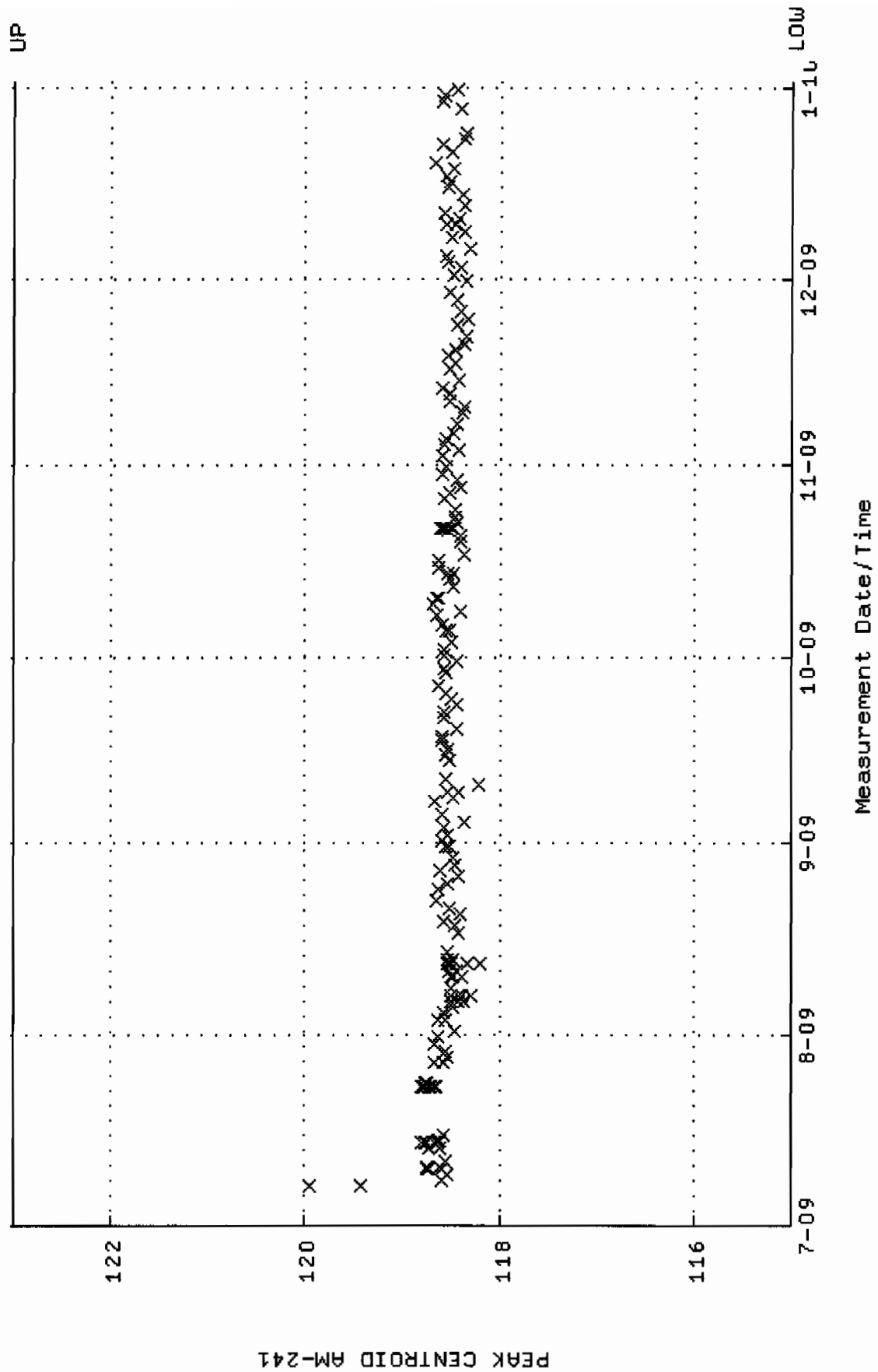
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM05\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 04:59:08 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



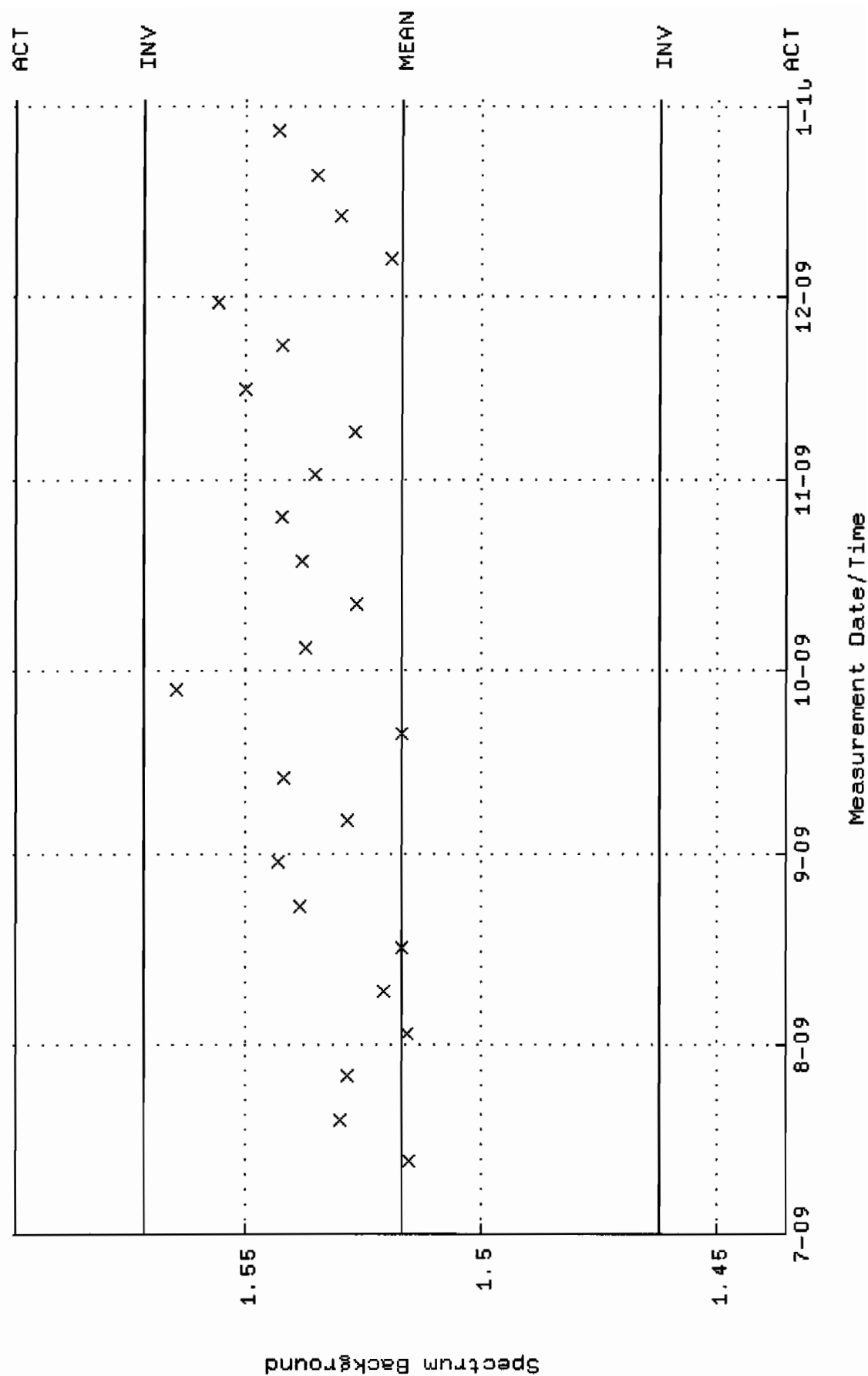
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM05.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:50:04 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.64719 +- 2.547087E-02 (1.55 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM07\_JAR.QAF;1  
 Parameter Name : PSCENTRO-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

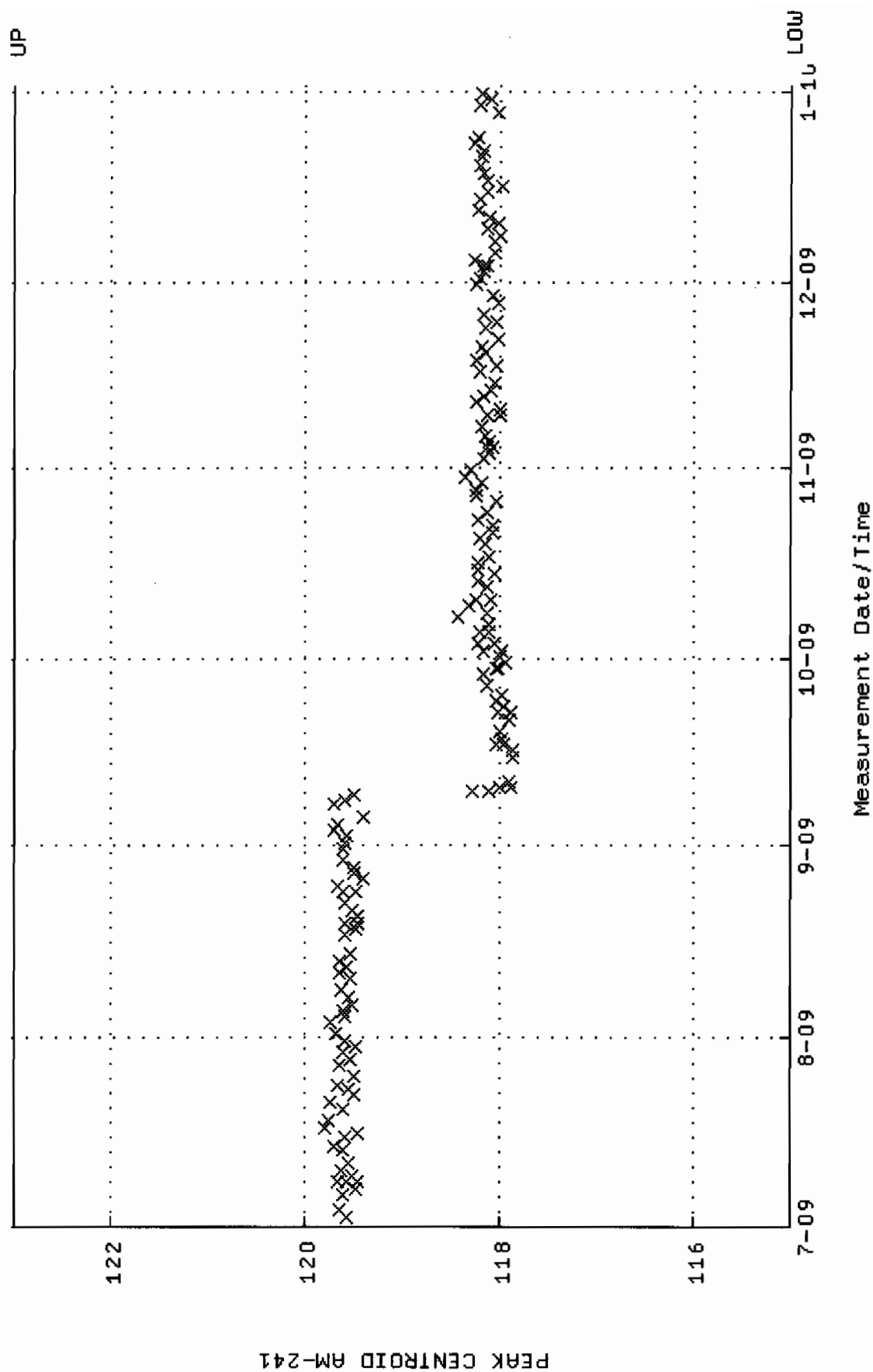


QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM07.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 12-JUL-2009 17:17:31 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)

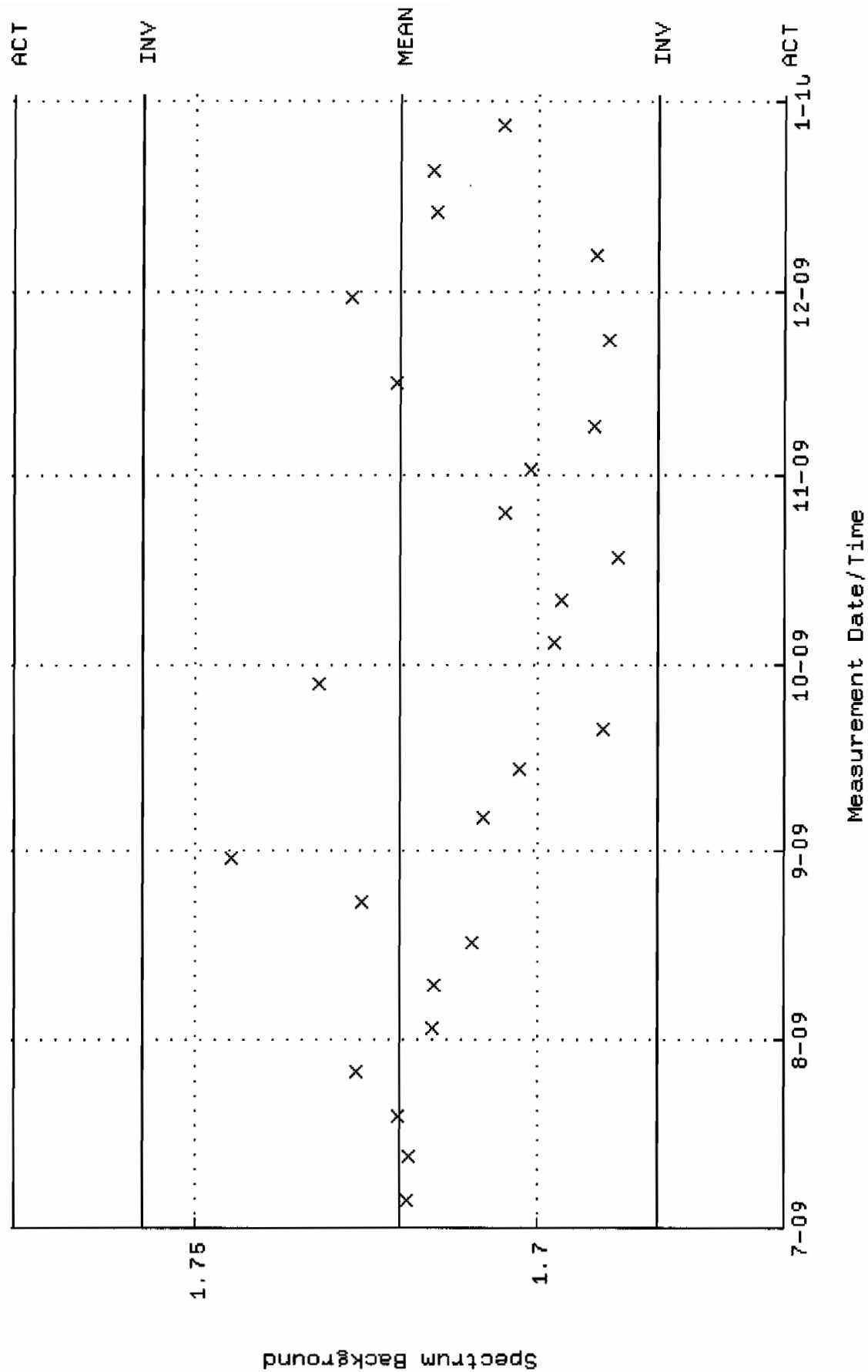




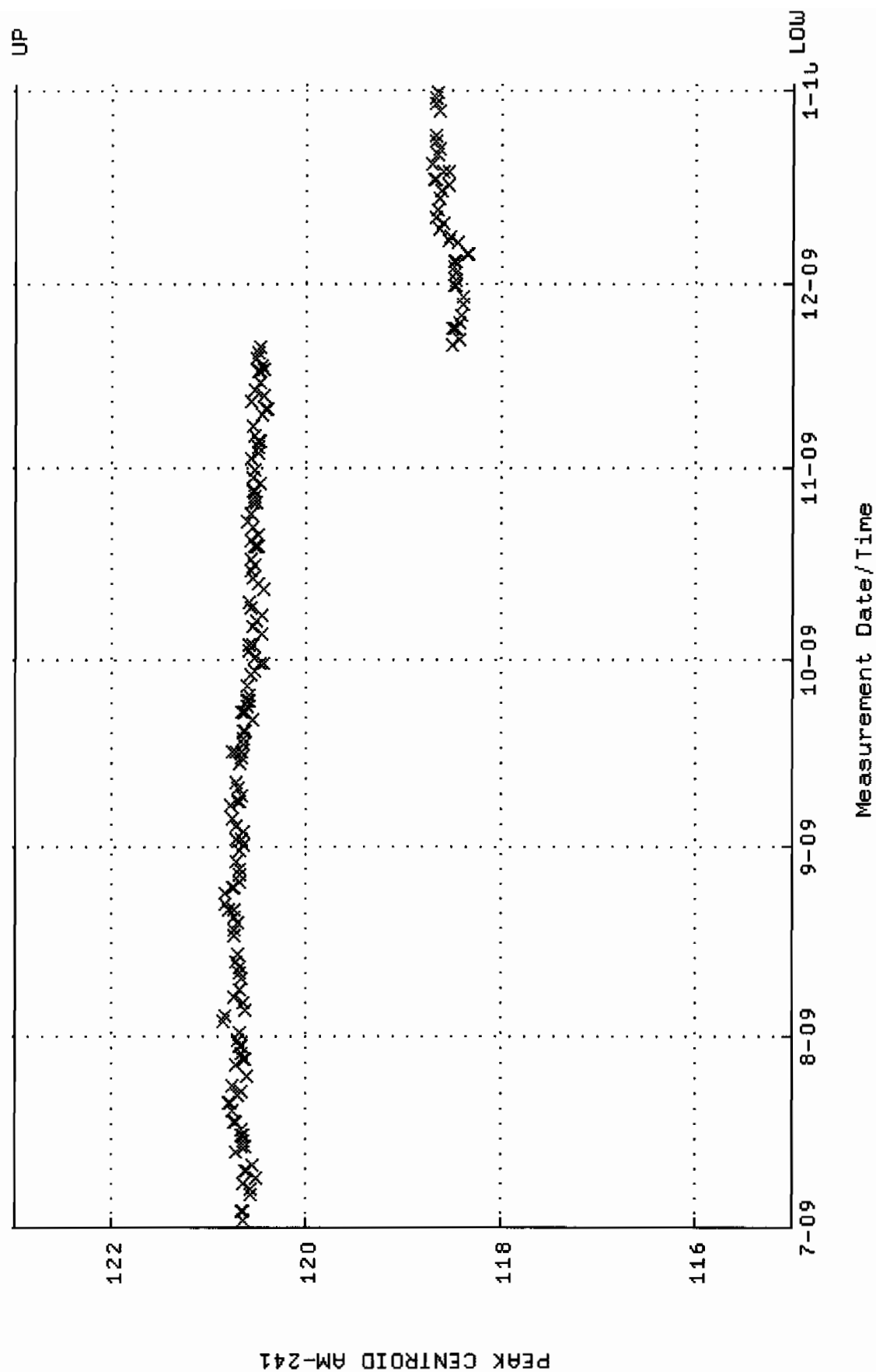
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM15\_CAN.QAF;1  
 Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 10:47:40 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



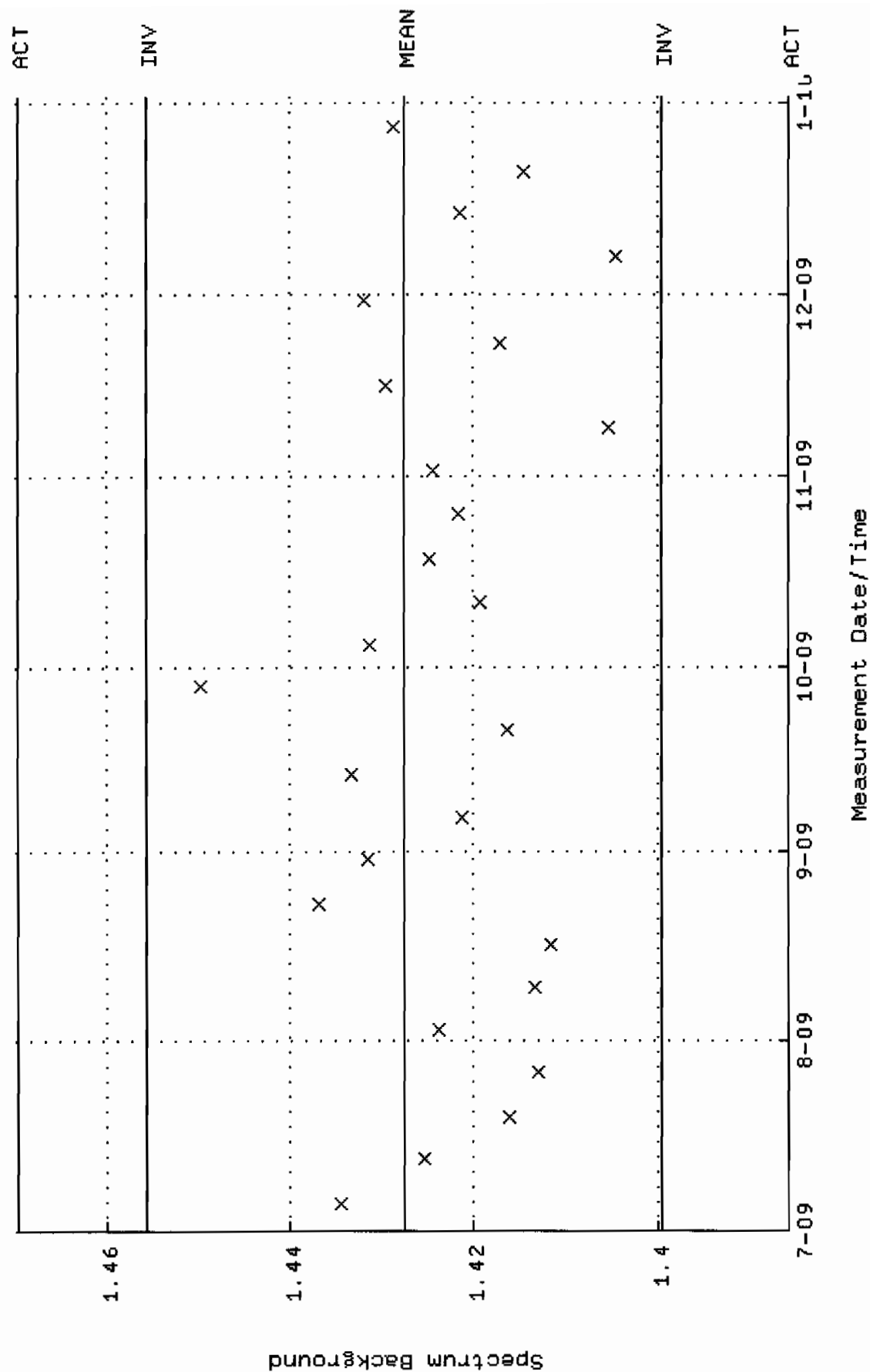
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM15.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:52:45 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC\_GAM17\_CAN.QAF;1  
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)  
 Start/End Dates : 2-JUL-2009 05:29:26 through 1-JAN-2010 12:00:00  
 Lower/Upper Lmts: 115.000 through 123.000



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC\_GAM17.QAF;1  
 Parameter Name : BACKRATE (Spectrum Background Rate)  
 Start/End Dates : 5-JUL-2009 13:53:11 through 1-JAN-2010 12:00:00  
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



# STANDARDS DATA

1032

 1380 Seaboard Industrial Blvd.  
 Atlanta, Georgia 30318  
 Tel 404-352-8677  
 Fax 404-352-2837  
 www.analytiscinc.com

## 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. Analytisc 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:

*W.M. [Signature]* 11-28-06

This standard will expire one year after the calibration date.

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		A Solution Material Info	
Parent Code:	1032	Isotope:	Mixed Gamma
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	4 M HCL	Prep Date:	11/30/2006
Reference Date:	10/01/2006	Verification Date:	12/02/2009
Ampoule Mass (g):	5.31725 g	Expiration Date:	12/02/2010
Uncertainty:	+/- 2.81 %	Primary Code:	1032-A
LogBook No:	RC-S-045-073	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

$(\text{Mass of parent(g)}) * (\text{Parent Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parent Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

## 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 - Ver. 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  
100.00  
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

pCi/L  
pCi/L  
pCi/L

M. Stamps  
12/2/09  
independent  
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.

# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Cs-137

Isotope	Result	pCi/L - Ver. Tab. 1
Mixed Gamma N1	854.2	pCi/L
Mixed Gamma N2	907.6	pCi/L
Mixed Gamma N3	898.9	pCi/L

Mean Value (Counting) =  
Stdev =

886.90  
28.651  
95.01  
Rule 3 (Pass/Fail)

Certificate Value =  
Lower Limit =  
Upper Limit =  
Rule 1 (Pass/Fail)  
Two sigma =  
10 % of Mean =  
Rule 2 (Pass/Fail)

933.44144  
829.597644  
944.202356  
Pass  
57.30235597  
88.69000000  
Pass

*Handwritten:*  
12/2/2009  
M. Stamps  
12/2/2009

## 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.

# Verification for Mixed Gamma Standard 1032-A

M. Stamps  
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - VER - JAG-5
Mixed Gamma N1	1572	pCi/L - VER - JAG-2
Mixed Gamma N2	1495	pCi/L - VER - JAG-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 1522.67  
Stdev = 42.829  
98.50 Pass  
Rule 3 (Pass/Fail)

Certificate Value = 1545.8378  
Lower Limit = 1437.008431  
Upper Limit = 1608.324902  
Rule 1 (Pass/Fail) Pass  
Two sigma = 85.65823564  
10 % of Mean = 152.26666667  
Rule 2 (Pass/Fail) Pass

U.S. Stamp issued 12/2/09  
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 DATE 4/11/2000 *lett c held 12/1/04*

*angela d. johnson 12/3/04*

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	

9911627-01-2021

SF 2001-COC (10-97)

**Internal Lab**

**Batch No.**

SARWR No. N/A

**Press F1 for instructions for each field.**

Page 1 of 1

AR/COC-602945

[illegible]

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)

### 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 DATA 4/14/2000

Amanda L. Fehr 4/30/04  
 Lott & Shale 5/1/04

## 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.





# CERTIFICATE OF CALIBRATION

## ALPHA STANDARD SOLUTION

Radionuclide Am-243  
Half Life: 7380  $\pm$  40 years  
Catalog No.: 7243  
Source No.: 445-96-2

Customer: GENERAL ENGINEERING LABS  
P.O.No.: 9290-RAD  
Reference Date: January 1 1994 12:00 PST.  
Contained Radioactivity: (Am-243) 101.2  $\mu$ Ci  
Contained Radioactivity: (Am-243) 3750 kBq

### Description of Solution

a. Mass of solution: 5.3739 g (in a 5 ml Flame Sealed Ampoule)  
b. Chemical form: Am(NO<sub>3</sub>)<sub>3</sub> in 2N HNO<sub>3</sub>  
c. Carrier content: None added  
d. Density: 1.0651 g/ml @ 20°C.

### Radioimpurities

None detected

### Radioactive Daughters

Np-239 (beta active) in equilibrium

### Radionuclide Concentration

(Am-243) 18.84  $\mu$ Ci/g

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry for Np-239:

Energy peak(s) intergrated under: 228, 278 keV.  
Branching ratio(s) used: 0.108, 0.1420 gamma rays per decay.

### Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:  $\pm 3.0\%$   
b. Random uncertainty in assay:  $\pm 0.4\%$   
c. Random uncertainty in weighing(s):  $\pm 0.0\%$   
d. Total uncertainty at the 99% confidence level:  $\pm 3.0\%$

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

*Anna H. Khan*  
QUALITY CONTROL

*Jan 3, 1994*  
Date Signed

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.

Henry J. Aders 5/15/09  
 Taharbi  
 07509





**Eckert & Ziegler**  
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**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

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12/15/08

2C-S-05

# 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

Analyst: A. Drochter  
Date: 12/10/09

Serial #	Value	Uncertainty
1283-H N1	2.020	0.238
1283-H N2	2.000	0.234
1283-H N3	2.060	0.242

Mean Value (Counting) =	2.027	pCi/L	99.66904	Pass
Stdev =	0.030550505	pCi/L	Rule 3 (Pass/Fail)	

Target =	2.033	pCi/L
Lower Limit =	1.965565657	pCi/L
Upper Limit =	2.087767676	pCi/L
Rule 1 Pass/Fail	Pass	
Two sigma =	0.061101009	
10 % of Mean =	0.202666667	
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 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 1 ml 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*

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  
JAN 17 2005

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, $u_c(y)/y$ , (%) [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  $y$ ,  $u_i(y) = |\partial y / \partial x_i| \cdot u(x_i)$ , 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:  
 $0.003 \text{ s}^{-1}\text{g}^{-1}$  for energies less than 3.1 MeV,  
 $0.03 \text{ s}^{-1}\text{g}^{-1}$  for energies between 3.1 and 4.4 MeV, and  
 $0.003 \text{ s}^{-1}\text{g}^{-1}$  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:  
 $5 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$  for energies between 19 and 39 keV,  
 $7 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$  for energies between 49 and 92 keV,  
 $2 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$  for energies between 106 and 507 keV,  
 $1 \times 10^{-5} \text{ s}^{-1}\text{g}^{-1}$  for energies between 515 and 1456 keV, and  
 $5 \times 10^{-6} \text{ s}^{-1}\text{g}^{-1}$  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  $u_i(y)/y \approx |\partial y / \partial x_i| \cdot u(x_i)/y = |\partial y / \partial x_i| \cdot (x_i / y) \cdot u(x_i)/x_i$ . 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  $\lambda \cdot t$  is determined by the relative standard uncertainty of  $\lambda$  (i.e., of the half life). The relative standard uncertainty of  $t$  is negligible.
- [q]  $|\partial y / \partial x_i| \cdot (x_i / y) = |\lambda \cdot t|$
- [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

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3616 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (250 \text{ mL}) = 33.8553 \text{ dpm/mL}$
$(5.3616 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0136 \text{ g/mL}) / (250 \text{ mL}) = 33.4010 \text{ dpm/g}$

## 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 1374-A 1374-A 1374-A	Value 1.610 1.580 1.530	Uncertainty 0.2480 0.2510 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:* Jot call 12/8/09 12/9/09

# RUNLOGS

# Instrument Run Log

**Instrument Type: GAMMA SPECTROMETER**

**Batch ID: 935341**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243273001	SAMPLE	MXR1	GAM15	30-DEC-09 22:47	DONE	CAN	16-FEB-09 00:00
243274001	SAMPLE	MXR1	GAM17	30-DEC-09 22:47	DONE	CAN	27-JAN-09 00:00
243274002	SAMPLE	MXR1	GAM12	30-DEC-09 22:52	DONE	CAN	10-FEB-09 00:00
243274003	SAMPLE	MXR1	GAM01	30-DEC-09 23:06	DONE	CAN	30-JAN-09 00:00
243274004	SAMPLE	MXR1	GAM25	30-DEC-09 23:06	DONE	CAN	07-OCT-09 00:00
243274005	SAMPLE	MXR1	GAM13	31-DEC-09 14:35	DONE	CAN	02-FEB-09 00:00
243274006	SAMPLE	MXR1	GAM17	31-DEC-09 14:35	DONE	CAN	27-JAN-09 00:00
243274007	SAMPLE	MXR1	GAM18	31-DEC-09 14:35	DONE	CAN	23-APR-09 00:00
243274008	SAMPLE	MXR1	GAM20	31-DEC-09 14:36	DONE	CAN	26-AUG-09 00:00
243274009	SAMPLE	MXR1	GAM21	31-DEC-09 14:36	DONE	CAN	28-JUL-09 00:00
243274010	SAMPLE	MXR1	GAM23	31-DEC-09 14:37	DONE	CAN	02-JUN-09 00:00
1202001375	MB	MXR1	GAM15	31-DEC-09 14:42	DONE	CAN	16-FEB-09 00:00
1202001376	DUP	MXR1	GAM05	31-DEC-09 15:32	DONE	CAN	11-JUN-09 00:00
1202001377	LCS	MXR1	GAM07	31-DEC-09 15:32	DONE	CAN	20-JUL-09 00:00

# Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 935836**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202002408	MB	KXM4	1072	30-DEC-09 10:44	DONE		
1202002409	DUP	KXM4	1073	30-DEC-09 10:44	DONE		
1202002410	LCS	KXM4	1074	30-DEC-09 10:44	DONE		
243273001	SAMPLE	KXM4	1083	30-DEC-09 10:44	DONE		
243274001	SAMPLE	KXM4	1084	30-DEC-09 10:44	DONE		
243274002	SAMPLE	KXM4	1085	30-DEC-09 10:44	DONE		
243274003	SAMPLE	KXM4	1086	30-DEC-09 10:44	DONE		
243274004	SAMPLE	KXM4	1087	30-DEC-09 10:44	DONE		
243274005	SAMPLE	KXM4	1088	30-DEC-09 10:44	DONE		
243274006	SAMPLE	KXM4	1089	30-DEC-09 10:44	DONE		
243274007	SAMPLE	KXM4	1090	30-DEC-09 10:44	DONE		
243274008	SAMPLE	KXM4	1091	30-DEC-09 10:44	DONE		
243274009	SAMPLE	KXM4	1092	30-DEC-09 10:44	DONE		
243274010	SAMPLE	KXM4	1093	30-DEC-09 10:44	DONE		

## Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 935838

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243274008	SAMPLE	KXM4	1107	29-DEC-09 11:04	DONE		
243274009	SAMPLE	KXM4	1108	29-DEC-09 11:04	DONE		
243274010	SAMPLE	KXM4	1109	29-DEC-09 11:04	DONE		
1202002411	MB	KXM4	1110	29-DEC-09 11:04	DONE		
1202002412	DUP	KXM4	1111	29-DEC-09 11:04	DONE		
1202002413	LCS	KXM4	1112	29-DEC-09 11:04	DONE		
243273001	SAMPLE	KXM4	1220	29-DEC-09 15:35	DONE		
243274001	SAMPLE	KXM4	1221	29-DEC-09 15:35	DONE		
243274002	SAMPLE	KXM4	1222	29-DEC-09 15:36	DONE		
243274003	SAMPLE	KXM4	1225	29-DEC-09 15:36	DONE		
243274004	SAMPLE	KXM4	1226	29-DEC-09 15:36	DONE		
243274005	SAMPLE	KXM4	1227	29-DEC-09 15:36	DONE		
243274006	SAMPLE	KXM4	1228	29-DEC-09 15:36	DONE		
243274007	SAMPLE	KXM4	1229	29-DEC-09 15:36	DONE		



## Instrument Run Log

**Instrument Type: ALPHA SPECTROMETER**

**Batch ID: 938206**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202007529	DUP	KXM4	1021	07-JAN-10 09:01	DONE		
1202007530	LCS	KXM4	1022	07-JAN-10 09:01	DONE		
1202007528	MB	KXM4	1125	07-JAN-10 09:01	DUSE		
243273001	SAMPLE	KXM4	1137	07-JAN-10 17:57	DONE		
243274001	SAMPLE	KXM4	1138	07-JAN-10 17:57	DONE		
243274002	SAMPLE	KXM4	1139	07-JAN-10 17:57	DONE		
243274003	SAMPLE	KXM4	1140	07-JAN-10 17:57	DONE		
243274004	SAMPLE	KXM4	1141	07-JAN-10 17:58	DONE		
243274005	SAMPLE	KXM4	1142	07-JAN-10 17:58	DONE		
243274006	SAMPLE	KXM4	1143	07-JAN-10 17:58	DONE		
243274007	SAMPLE	KXM4	1144	07-JAN-10 17:58	DONE		
243274008	SAMPLE	KXM4	1145	07-JAN-10 17:58	DONE		
243274009	SAMPLE	KXM4	1146	07-JAN-10 17:58	DONE		
243274010	SAMPLE	KXM4	1147	07-JAN-10 17:58	DONE		
1202007528	MB	KXM4	1123	08-JAN-10 12:40	DONE		