

Thursday, December 24, 2009

Page 1 of 3
REQUEST NUMBER: 10-1100

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: 10-1100
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 12/28/2009
TURNAROUND/REPORT DUE: 1/27/2010
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	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	

Thursday, December 24, 2009

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REQUEST NUMBER: 10-1100

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
EPA:901.1						
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
HASL-300:AM-241						
		1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
HASL-300:ISOPU						
		1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
HASL-300:ISOU						
		1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	

Thursday, December 24, 2009

REQUEST NUMBER: 10-1100

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
HASL-300:ISOU						
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
SW-846:8082						
		1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
SW-846:8321A_MOD						
		1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	

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Thursday, December 24, 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1100C

LOS ALAMOS

REQUEST NUMBER: 10-1100

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/27/2010

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
RE12-10-7841	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7841	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7840	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7840	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7839	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7839	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7838	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7838	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7858	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7846	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7846	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7844	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7844	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7845	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7845	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7842	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7842	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7843	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7843	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7847	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7847	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7858	1	AMBER GLASS	NMED Explosives list	Ice	R

Relinquished By:

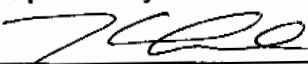
Date

Time

Received By:

Date

Time


 Printed Name Signature

12/24/09 3:00

 Printed Name Signature

 Printed Name Signature

 Printed Name Signature

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7844

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/22/2009		MEDIA:	QBT3		Allh
TIME COLLECTED(HH:MM)		1314		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(a)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	12-610696			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	0.75		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	B	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 74m 12/22/09	None	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Brown sandy silt, some clay, numerous rocks

FD RE12-10-7858

SAMPLE COMMENTS:

LOCATION DESC: 1a-4

74m 12/22/09
west of firing pit

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 22$ dpm $\beta \leq 2230$ dpmPID $\frac{\text{ambient reading}}{0.0}$ ppm

HE negative

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Lacey A. Lopez

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy 3-7	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) Jay W (Signature) Jay W	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7839

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/21/2009		MEDIA: OBT3		Allh	
TIME COLLECTED (HH:MM)		1515		SUB-MEDIA: TUFF 1		NA	
PRS ID:	12-001(a)	ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID:	12-610693	↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE:	GENERIC	↓		FIELD PREP: NA		↓	
TOP DEPTH:	0	2.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH:	0	2.7		SCREEN/PORT DESC: NA			
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

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

SAMPLE DESC: Brown sandy silt, slightly damp, few rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 12-001(a)-01
T3m 12/21/091a-3
south of structure 12-4

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 16 dpm
BY ≤ 2190 dpmPID ambient reading 0.0
0.0 PPM

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Daniel Byers

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy R. McFarland	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) [Signature]	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7847

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/22/2009		MEDIA:	QBT3		Alh
TIME COLLECTED (HH:MM)		14:45		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(a)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610697			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	1.4		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	1.8		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	N/A			COMPOSITE TIME INTERVAL:	N/A		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	N/A		
				BOREHOLE DIRECTION:	N/A		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 1m 12/22/09	None	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown sandy silt, moist

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-7
north of firing pit
05 73m 12/22/09

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 16$ dpm
 $\beta \leq 1990$ dpm
PID ambient reading 0.0 ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

LARRY A. LOPEZ

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy L. McFarland	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) [Signature]	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7845

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/22/2009		MEDIA:	OBT3		Alk
TIME COLLECTED (HH:MM)		1331		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(a)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	12-610696			FIELD QC TYPE:	NA		
LOCATION TYPE:	GENERIC			FIELD PREP:	NA		
TOP DEPTH:	0	2.0		SAMPLE USAGE:	INV		
BOTTOM DEPTH:	0	2.6		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 73m 12/22/09	None	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown dry silt

RE12-10-7860 FR

SAMPLE COMMENTS:

NA

LOCATION DESC:

1a-4

04 73m 12/22/09

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 77$ dpm $\text{BY} \leq 2260$ dpm

PID ambient reading 0.0 ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Lorey A Lopez

RELINQUISHED BY (Printed Name) TL McFarland (Signature) Tracy 2m7	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) Jeylen	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7858

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/22/2009		MEDIA:	QBT3		Alh
TIME COLLECTED (HH:MM)		1314		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(a)	ok		SAMPLE TECH CODE:	HA		ok
LOCATION ID:	UNK	12-G10696		FIELD QC TYPE:	FD		↓
LOCATION TYPE:	GENERIC	ok		FIELD PREP:	NA		
TOP DEPTH:	0	0.0		SAMPLE USAGE:	QC		
BOTTOM DEPTH:	0	0.75		SCREEN/PORT DESC:	NA		
FIELD MATRIX:	R	S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		WATER FLOWING: YES/NO/NA
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION:	NA	BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	93m 12/22/09 8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY	None	Y	
1		Met+U+CLO4+C N	93m 12/22/09 1 GAL POLY 1 L	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: QC Sample of RE12-10-7844

Brown sandy silt, some clay, numerous rocks

SAMPLE COMMENTS: NA

LOCATION DESC:

1a-4

FIELD SCREENING/MEASUREMENT RESULTS:

$\alpha \leq 22$ dpm PID $\frac{\text{ambient}}{\text{reading}}$ $\frac{0.0}{0.0}$ ppm
 $\beta \leq 2230$ dpm HE negative

COLLECTED BY (PRINT)

TL McFarlane

REVIEWED BY (PRINT)

Larry A. Lopez

RELINQUISHED BY (Printed Name) TLMcFarlane (Signature) Tracy A. McFarlane	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) [Signature]	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7843

WORK ORDER:

AS PLANNED		AS COLLECTED	AS PLANNED		AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		12/22/2009	MEDIA:		QBT3
TIME COLLECTED (HH:MM)		1214	SUB-MEDIA:		TUFF 1
PRS ID:	12-001(a)	OK	SAMPLE TECH CODE:		HA
LOCATION ID:	12-610695	↓	FIELD QC TYPE:		NA
LOCATION TYPE:	GENERIC	↓	FIELD PREP:		NA
TOP DEPTH:	0	2.0	SAMPLE USAGE:		INV
BOTTOM DEPTH:	0	2.4	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES NO / NA		
BOREHOLE: YES/ NO /NA		BOREHOLE DECLINATION: NA	BOREHOLE DIRECTION: NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Regular	AM241+GS+ISO PU+ISOU	1 LITER POLY 12/22/09	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Brown silty sand, some rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-6 12/22/09
west of firing siteFIELD SCREENING/MEASUREMENT RESULTS:
 $\alpha \leq 11$ dpm PID ambient reading 0.0
 $\text{BS} \leq 2100$ dpm 0.0 ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Daniel Byers

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy ZmT	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) [Signature]	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7841

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/22/2009		MEDIA: QBT3		Allh	
TIME COLLECTED (HH:MM)		1143		SUB-MEDIA: TUFF 1		NA	
PRS ID: 12-001(a)		ok		SAMPLE TECH CODE: HA		ok	
LOCATION ID: 12-610694		↓		FIELD QC TYPE: NA		↓	
LOCATION TYPE: GENERIC		↓		FIELD PREP: NA		↓	
TOP DEPTH: 0		3.0		SAMPLE USAGE: INV		↓	
BOTTOM DEPTH: 0		3.4		SCREEN/PORT DESC: NA			
FIELD MATRIX: B		S		EXCAVATED: YES/NO/NA			
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA		WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA		BOREHOLE DECLINATION: NA		BOREHOLE DIRECTION: NA			

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1	↓	AM241+GS+ISO PU+ISOU	1 LITER POLY 12/22/09	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1L	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty sand, some clay, some rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 12/22/09 12-001(a) 03 1a-5, southwest of pit

FIELD SCREENING/MEASUREMENT RESULTS:

α ≤ 33 dpm PID ambient 0.0 ppm
 BY ≤ 1886 dpm reading 0.0

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

Daniel Byers

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Ruiz	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) Jeylen	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7840

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		12/22/2009	MEDIA:	QBT3	AIH
TIME COLLECTED (HH:MM)		1127	SUB-MEDIA:	TUFF 1	NA
PRS ID:	12-001(a)	OK	SAMPLE TECH CODE:	HA	OK
LOCATION ID:	12-610694		FIELD QC TYPE:	NA	
LOCATION TYPE:	GENERIC		FIELD PREP:	NA	
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0	0.7	SCREEN/PORT DESC:		NA
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY 72m 12/22/09	None	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown sandy silt, some clay, rocks

SAMPLE COMMENTS:

NA

LOCATION DESC:

~~12-001(a)-03~~ 1a-5, southwest of pit
72m 12/22/09

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 11$ dpm
 $\beta \leq 2430$ dpmHE negative
PID $\frac{\text{ambient}}{\text{reading}} = \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

Daniel Byers

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) <i>TLMcFarland</i>	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) <i>Byers</i> (Signature) <i>Byers</i>	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7838

WORK ORDER:

AS PLANNED		AS COLLECTED		AS PLANNED		AS COLLECTED	
DATE COLLECTED(MM/DD/YYYY):		12/21/2009		MEDIA:	QBT3		AVH
TIME COLLECTED (HH:MM)		1508		SUB-MEDIA:	TUFF 1		NA
PRS ID:	12-001(a)	OK		SAMPLE TECH CODE:	HA		OK
LOCATION ID:	12-610693			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			
COMPOSITE TYPE:	NA			COMPOSITE TIME INTERVAL:	NA		
				WATER FLOWING: YES/NO/NA			
BOREHOLE: YES/NO/NA				BOREHOLE DECLINATION:	NA		
				BOREHOLE DIRECTION:	NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	8082+NMED-HEXP	250 ML AMBER GLASS	Ice	Y	
1		AM241+GS+ISO PU+ISOU	1 LITER POLY 72M 12/21/09	None	Y	
1		Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty clay

SAMPLE COMMENTS: NA

LOCATION DESC: 12-001(a)-01 72M 12/21/09

1a-3
south of structure 12-4

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 16$ dpm $\beta \leq 2050$ dpm

14E negative

PID ambient reading 0.0 ppm

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Darrel Byers

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Zutter	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) Jay Williams	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7842

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		12/22/2009	MEDIA:	QRT3	AKH
TIME COLLECTED (HH:MM)		1200	SUB-MEDIA:	TUFF 1	NA
PRS ID:	12-001(a)	OK	SAMPLE TECH CODE:	HA	OK
LOCATION ID:	12-610695	↓	FIELD QC TYPE:	NA	↓
LOCATION TYPE:	GENERIC	↓	FIELD PREP:	NA	↓
TOP DEPTH:	0	0.0	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	0	1.0	SCREEN/PORT DESC:	NA	
FIELD MATRIX:	R	S	EXCAVATED: YES/NO/NA		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA	NA		BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 12m 12/22/09	None	Y	
1	↓	Met+U+CLO4+C N	1 GAL POLY 1 L	Ice	Y	
1	↓	NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1	↓	RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC: Brown sandy silt, some rocks

SAMPLE COMMENTS: NA

LOCATION DESC: 1a-6 02-12m 12/22/09
West of firing pit

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \pm 55$ dpm $\beta \pm 2250$ dpmPID ambient reading 0.0
0.1 ppm

HE negative

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Daniel Byers

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy Zant	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) [Signature]	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7846

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		12/22/2009	MEDIA:	QBT3	Allh
TIME COLLECTED (HH:MM)		1348	SUB-MEDIA:	TUFF 1	NA
PRS ID:	12-001(a)	ok	SAMPLE TECH CODE:	HA	ok
LOCATION ID:	12-610697	↓	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		
COMPOSITE TYPE:	NA		COMPOSITE TIME INTERVAL:	NA	
			WATER FLOWING: YES/NO/NA		
BOREHOLE: YES/NO/NA			BOREHOLE DECLINATION:	NA	
			BOREHOLE DIRECTION:	NA	

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	AM241+GS+ISO PU+ISOU	1 LITER POLY 12m 12/22/09	None	Y	
1		Met+U+CLO4+C N	1 GAZ POLY 1L	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	
1		RADVANA+B+G	1 EA 8 IN RESEALABLE POLY BAG	None	Y	

SAMPLE DESC:

Brown silty sand, roots & rocks

SAMPLE COMMENTS:

NA

LOCATION DESC: 1a-7

05 12m 12/22/09 North of firing pit

FIELD SCREENING/MEASUREMENT RESULTS:

 $\alpha \leq 50$ dpm $\beta \leq 2080$ dpm

HE negative

PID $\frac{\text{ambient}}{\text{reading}}$ $\frac{0.0}{46}$ ppm

COLLECTED BY (PRINT)

ThMcFarland

REVIEWED BY (PRINT)

Lacey A. Lopez

RELINQUISHED BY (Printed Name) ThMcFarland (Signature) <i>ThMcFarland</i>	Date/Time 12/22/09 1607	RECEIVED BY (Printed Name) (Signature) <i>Lacey A. Lopez</i>	Date/Time 12/22/09 1607
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2498

EVENT NAME: 4th Qtr. FY09 - SWMU 12-001(a) of CU 12-001(a)-99 - Threemile Cyn

SAMPLE ID: RE12-10-7860

WORK ORDER:

<u>AS PLANNED</u>		<u>AS COLLECTED</u>	<u>AS PLANNED</u>		<u>AS COLLECTED</u>
DATE COLLECTED(MM/DD/YYYY):		12/22/2009	MEDIA:		NA
TIME COLLECTED (HH:MM)		1340	SUB-MEDIA:		OTHER
PRS ID:	12-001(a)	ok	SAMPLE TECH CODE:		DC
LOCATION ID:	UNK	12-C10696	FIELD QC TYPE:		FR
LOCATION TYPE:	GENERIC	ok	FIELD PREP:		UF
TOP DEPTH:	0	↓	SAMPLE USAGE:		QC
BOTTOM DEPTH:	0	↓	SCREEN/PORT DESC:		NA
FIELD MATRIX:	W	↓	EXCAVATED: YES / <input checked="" type="checkbox"/> / NA		
COMPOSITE TYPE: NA		COMPOSITE TIME INTERVAL: NA	WATER FLOWING: YES / <input checked="" type="checkbox"/> / NA		
BOREHOLE: YES / <input checked="" type="checkbox"/> / NA		BOREHOLE DECLINATION: NA	BOREHOLE DIRECTION: NA		

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
1	Normal	METALS+U-GEL	1 LITER POLY	Nitric Acid	Y	
1	↓	SW-846:6850	250 ML POLY	Ice	Y	
1	↓	TCN	500 ML POLY	Sodium Hydroxide	Y	

SAMPLE DESC: QC Sample of RE12-10-7845

SAMPLE COMMENTS:

Rinsate

LOCATION DESC:

1a-4

FIELD SCREENING/MEASUREMENT RESULTS:

NA

COLLECTED BY (PRINT)

TL McFarland

REVIEWED BY (PRINT)

Lacey A. Lopez

RELINQUISHED BY (Printed Name) TLMcFarland (Signature) Tracy L. McFarland	Date/Time 12/22/09 KOT	RECEIVED BY (Printed Name) (Signature) [Signature]	Date/Time 12/22/09 1602
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: AR62-09-00173

Request or PO Number:

Client Sample ID: RE12-10-7838

ARS Sample ID: ARS2-09-00173-001

Sample Collection Date: 12/21/09 15:08

Date Received: 12/29/09 00:00

Sample Matrix: Soil/Solid

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Client Recovery
GROSS ALPHA	57.92	26.54	27.29	27.47		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	60.78	12.93	13.42	14.88		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	15.95	6.83	1.63	6.85		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.00	10.64	0.11	10.64		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.14	0.12	0.08	0.12		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	-0.01	13.92	0.07	13.92		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.40	0.40	0.12	0.40		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	1.44	0.48	0.12	0.49		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-228	2.57	0.95	0.28	0.98		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	0.59	0.61	0.17	0.61		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	2.38	2.85	1.30	2.79		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.13	0.21	0.09	0.21		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 2.12

Matthew J. Eder
Quality Assurance Review

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NELAP Certificate # E87558



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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-09-00173

Client Sample ID: RE12-10-7839

Sample Collection Date: 12/21/09 15:15

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-09-00173-002

Date Received: 12/29/09 00:00

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Results +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analyst's Technician	Transfer/Chain Recovery
GROSS ALPHA	100.30	31.56	23.52	33.87		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	67.38	13.78	13.22	18.00		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.14	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	14.92	7.73	2.15	7.75		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.07	0.12	0.14	0.12		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.01	18.43	0.09	18.43		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.00	14.65	0.16	14.65		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	1.57	0.62	0.20	0.62		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-228	1.23	0.78	0.44	0.78		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	0.35	0.31	0.22	0.51		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	5.37	1.13	1.23	3.36		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.01	0.12	0.11	0.12		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 1.06

Matthew J. Eden
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-09-00173

Client Sample ID: RE12-10-7840

Sample Collection Date: 12/22/09 11:27

Sample Matrix: Soil/Solid

Request or PQ Number:

ARS Sample ID: ARS2-09-00173-003

Date Received: 12/29/09 00:00

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Error +/- %	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	77.15	28.64	23.69	30.15		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	50.03	12.90	14.19	15.71		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.09	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	17.25	6.92	2.07	6.94		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.05	0.12	0.10	0.12		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.19	0.16	0.07	0.15		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.31	0.12	0.06	0.22		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.51	0.49	0.11	0.49		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	2.04	0.53	0.12	0.54		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-228	1.96	0.81	0.30	0.81		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	1.72	1.05	0.24	1.05		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	2.82	1.49	1.17	2.82		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.09	0.16	0.08	0.17		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 1.71

Matthew J. Eden
Quality Assurance Review

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ARS Sample Delivery Group: ARS2-09-00173

Request or PO Number:

Client Sample ID: RE12-10-7841

ARS Sample ID: ARS2-09-00173-004

Sample Collection Date: 12/22/09 11:43

Date Received: 12/29/09 00:00

Sample Matrix: Soil/Solid

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Error +/- 1 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	67.60	26.96	25.32	28.20		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	61.78	10.11	13.13	19.14		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.12	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	1.63	1366.50	3.06	1366.50		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.07	0.15	0.12	0.15		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.00	0.00	0.09	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.04	0.09	0.08	0.09		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.56	0.43	0.14	0.43		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PM-212	1.17	0.54	0.20	0.54		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-226	1.36	0.83	0.32	0.83		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	0.79	0.56	0.23	0.56		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	5.51	5.52	0.44	2.02		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.00	0.02	0.05	0.02		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 1.70

Matthew J. Eder
Quality Assurance Review

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NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-09-00173

Client Sample ID: RE12-10-7842

Sample Collection Date: 12/22/09 12:00

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-09-00173-005

Date Received: 12/29/09 00:00

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	55.46	26.09	27.28	26.96		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	55.76	13.61	13.42	14.34		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA 22	0.00	0.00	0.12	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	15.86	7.51	1.94	7.53		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.00	12.72	0.13	12.71		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.00	0.00	0.09	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.01	0.04	0.08	0.04		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.00	13.23	0.15	13.23		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	1.79	0.59	0.15	0.60		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-228	-0.15	127.97	0.34	127.07		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	-0.08	113.42	0.25	113.42		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	7.19	4.68	1.67	4.96		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.18	0.18	0.06	0.18		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 1.28

Matthew A. Edou
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.

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NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-09-00173

Client Sample ID: RE12-10-7843

Sample Collection Date: 12/22/09 12:14

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-09-00173-006

Date Received: 12/29/09 00:00

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Error +/- %	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	49.56	23.37	23.52	24.14		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	44.88	11.70	13.22	13.01		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	22.03	9.03	2.07	9.05		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.00	13.55	0.14	13.55		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.04	0.10	0.09	0.10		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.45	0.49	0.18	0.49		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
FR-223	1.78	0.62	0.17	0.63		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-228	2.04	1.16	0.36	1.16		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	0.08	152.97	0.34	152.97		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	3.40	4.55	1.87	4.64		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.49	0.48	0.18	0.48		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 1.50

Matthew A. Edan
Quality Assurance Review

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LELAP Certificate# 30658

NELAP Certificate # E87558



133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-09-00173

Request or PO Number:

Client Sample ID: RE12-10-7844

ARS Sample ID: ARS2-09-00173-007

Sample Collection Date: 12/22/09 13:14

Date Received: 12/29/09 00:00

Sample Matrix: Soil/Solid

Report Date: 12/30/09 18:33

Analysis Description	Analysis Results	Analysis Error +/- %	MDC	TPU	Qual	Analysis Units	Analysis Ref Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	50.59	23.95	23.89	24.74		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	20.71	12.16	14.19	13.09		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.14	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	-1.95	1636.20	3.46	1636.20		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.00	14.23	0.14	14.23		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.04	0.10	0.11	0.10		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.32	0.27	0.09	0.27		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.00	75.22	0.17	75.22		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	0.55	0.38	0.12	0.35		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-226	1.90	0.97	0.38	0.97		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	3.40	1.37	0.22	1.37		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	8.11	4.50	1.59	4.67		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.27	0.33	0.13	0.33		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 0.87

Matthew J. Edan
Quality Assurance Review

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ARS Sample Delivery Group: AR52-09-00173
 Client Sample ID: RE12-10-7845
 Sample Collection Date: 12/22/09 13:31
 Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: AR52-09-00173-008

Date Received: 12/29/09 00:00

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Error +/- 2 %	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	58.42	25.41	25.32	26.40		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	52.21	12.39	13.13	13.94		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	15.54	6.79	1.16	6.80		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	-0.01	28.31	0.10	28.31		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.30	0.27	0.07	0.27		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.14	0.15	0.06	0.15		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
BU-152	0.67	0.66	0.34	0.66		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	1.80	0.61	0.23	0.62		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-228	2.47	0.92	0.32	0.93		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	1.72	1.24	0.47	1.24		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	4.25	4.45	1.06	4.36		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.32	0.29	0.12	0.30		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 2.56

Matthew J. Eden
 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.

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133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-09-00173
 Client Sample ID: RC12-10 7846
 Sample Collection Date: 12/22/09 13:48
 Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-09-00173-009

Data Received: 12/29/09 00:00

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	TPU	Qual	Analyte Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	57.95	26.53	27.29	27.47		pCi/g	EPA 909.0M	12/30/2009	ME	N/A
GROSS BETA	49.68	12.22	13.42	13.65		pCi/g	EPA 909.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	15.73	7.66	2.03	7.67		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.00	13.27	0.13	13.27		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.00	0.00	0.10	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.09	0.14	0.08	0.14		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.00	70.17	0.16	70.17		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	1.54	0.54	0.11	0.54		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-226	2.26	1.08	0.35	1.09		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	1.63	1.03	0.35	1.03		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	4.04	4.76	1.95	4.85		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM 241	0.02	0.16	0.12	0.16		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 1.06

Matthew J. Edger
 Quality Assurance Review

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505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-09-00173

Request or PO Number:

Client Sample ID: RE12-10-7847

ARS Sample ID: ARS2-09-00173-010

Sample Collection Date: 12/22/09 14:45

Date Received: 12/29/09 00:00

Sample Matrix: Soil/Solid

Report Date: 12/30/09 16:33

Analysis Description	Analysis Results	Analysis Error 1/2 =	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
GROSS ALPHA	51.87	23.80	23.52	24.63		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	40.40	11.50	15.44	12.52		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.14	0.20	0.12	0.21		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	21.41	8.76	2.66	8.78		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.22	0.26	0.12	0.26		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.15	0.18	0.10	0.18		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-137	0.12	0.16	0.08	0.16		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.75	0.65	0.14	0.65		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	2.26	0.67	0.20	0.68		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-228	2.13	1.33	0.39	1.33		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	2.19	1.06	0.62	1.06		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	4.62	4.21	2.21	4.23		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	0.52	0.71	0.27	0.71		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 0.94

Matthew J. Edler
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.

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133 State Road 4, White Rock, NM 87544

505-672-2770 FAX 505-672-9534

ARS Sample Delivery Group: ARS2-09-00173

Client Sample ID: RE12-10-7858

Sample Collection Date: 12/22/09 13:14

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS2-09-00173-011

Date Received: 12/29/09 00:00

Report Date: 12/30/09 16:33


Analysis Description	Analysis Results	Analysis Error +/- 2σ	MDC	TPU	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Transfer/Blank Recovery
GROSS ALPHA	40.93	22.00	23.69	22.56		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
GROSS BETA	47.15	12.36	14.19	14.82		pCi/g	EPA 900.0M	12/30/2009	ME	N/A
NA-22	0.00	0.00	0.13	0.00		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
K-40	21.98	8.82	1.99	8.85		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CO-60	0.00	13.01	0.13	13.01		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CS-134	0.23	0.16	0.10	0.16		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
CR-197	-0.01	17.02	0.08	17.02		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
EU-152	0.00	13.53	0.13	13.53		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
PB-212	0.86	0.53	0.23	0.53		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
RA-228	1.67	0.70	0.35	0.70		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-235	0.96	0.94	0.46	0.94		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
U-238	1.00	3.30	1.61	3.30		pCi/g	EPA 901.1M	12/30/2009	ME	N/A
AM-241	-0.01	27.14	0.06	27.14		pCi/g	EPA 901.1M	12/30/2009	ME	N/A

NOTES: % Moisture: 1.22

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	
5122-1 Data Validation Cover Sheet	Records Use only 


Section I.			
REQUEST NUMBER: <u>10-1100</u>	VALIDATION DATE: <u>02/09/10</u>	LAB CODE: <u>GEL</u>	
CONTRACT LABORATORY NAME: <u>GEL Laboratories LLC</u>			
VALIDATOR: <u>David Schwent</u>		ORGANIZATION: <u>Analytical Quality Associates, Inc.</u>	
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 PESTICIDES/POLYCHLORINATED BIPHENYLS
<input type="checkbox"/> GENERAL CHEMISTRY	<input type="checkbox"/> RADIOCHEMISTRY	<input checked="" type="checkbox"/> LCMSMS HIGH EXPLOSIVES	
<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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. Bracketing CCV %Ds of RDX; 4-amino-2,6-dinitrotoluene; and p-nitrotoluene were >20% with positive bias. All associated sample results were NDs and, thus, were not qualified. 2. The LCS %R of TATB was > the laboratory UAL. All associated sample results were NDs and, thus, were not qualified. 3. The MS/MSD RPD of tetryl was > the laboratory UAL. All associated sample results were NDs and, thus, were qualified UJ,HE12g.							
Reviewed by: <u>ETM</u>			Level: <u>1</u>		Date: <u>2/10/10</u>		


DATA VALIDATION COVER SHEET	
5122-1	Records Use only
Data Validation Cover Sheet	
VALIDATOR'S SIGNATURE: <u>David Schwant</u> DATE: <u>02/09/10</u>	
Form 5122-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project

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


Yes No N/A				Assign Qualifier Listed Below If Criterion = Yes	
(Check One)				Non-detected Analyte	Detected Analyte
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. The IS retention time has shifted by more than 30 seconds.	R, UJ, HE0	J, HE0
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Required IS retention time documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE0b	R, HE0b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. The quantitating IS area count is <25% of the expected value, which indicates increased potential for false negative results and other possible problems with sample quantitation. Follow the method-specific windows.	R, HE1a	J, HE1a
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. The IS area count for the quantitating IS is <70% but >25% of the average of that obtained from the calibration standards.	UJ, HE1b	J+, HE1b
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. The IS area count for the quantitating IS is >130% of the average of that obtained from the calibration standards.	UJ, HE1c	J-, HE1c
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Required IS information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, HE1d	R, HE1d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. The surrogate is <10%R. Follow the external laboratory limits.	R, HE3	J-, HE3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. The surrogate is < the Lower Acceptance Limit but ≥10% recovery. Follow the external laboratory limits.	UJ, HE3a	J-, HE3a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9. The surrogate %R value is > the Upper Acceptance Limit. Follow the external laboratory limits.	N/A	J+, HE3b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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	
5122-2 LC/MS/MS High Explosive Analytical Data Validation Checklist	Records Use only 

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

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

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

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

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624001

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118024a

Date Analyzed: 19-JAN-10 01:21

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624001

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130016.wiff

Date Analyzed: 13-JAN-10 18:12

Units: ug/kg

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

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7840

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624002

Sample Amount 2

Moisture: 16.2

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118027a

Date Analyzed: 19-JAN-10 02:50

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7840

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624002

Sample Amount 2

Moisture: 16.2

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130019.wiff

Date Analyzed: 13-JAN-10 18:59

Units: ug/kg

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

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7839

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624003

Sample Amount 2

Moisture: 11.7

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118028a

Date Analyzed: 19-JAN-10 03:19

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7839

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624003

Sample Amount 2

Moisture: 11.7

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130020.wiff

Date Analyzed: 13-JAN-10 19:15

Units: ug/kg

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

*Concentration =

Instrument				
Value	X	<u>Concentrated Extract Volume</u>	X	Dilution
		<u>Sample Amount</u>		Factor

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7838

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624004

Sample Amount 2

Moisture: 21.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118029a

Date Analyzed: 19-JAN-10 03:48

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7838

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624004

Sample Amount 2

Moisture: 21.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130021.wiff

Date Analyzed: 13-JAN-10 19:31

Units: ug/kg

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

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7858

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624005

Sample Amount 2

Moisture: 12.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118030a

Date Analyzed: 19-JAN-10 04:18

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7858

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624005

Sample Amount 2

Moisture: 12.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130022.wiff

Date Analyzed: 13-JAN-10 19:46

Units: ug/kg

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

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7846

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624006

Sample Amount 2

Moisture: 12.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118031a

Date Analyzed: 19-JAN-10 04:47

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7846

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624006

Sample Amount 2

Moisture: 12.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130023.wiff

Date Analyzed: 13-JAN-10 20:02

Units: ug/kg

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

*Concentration =

Instrument	X	<u>Concentrated Extract Volume</u>	X	Dilution
Value		<u>Sample Amount</u>		Factor

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7844

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624007

Sample Amount 2

Moisture: 13.3

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118035a

Date Analyzed: 19-JAN-10 06:46

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7844

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624007

Sample Amount 2

Moisture: 13.3

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130027.wiff

Date Analyzed: 13-JAN-10 21:05

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7845

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624008

Sample Amount 2

Moisture: 7.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118036a

Date Analyzed: 19-JAN-10 07:15

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7845

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624008

Sample Amount 2

Moisture: 7.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130028.wiff

Date Analyzed: 13-JAN-10 21:21

Units: ug/kg

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

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7842

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624009

Sample Amount 2

Moisture: 13.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118037a

Date Analyzed: 19-JAN-10 07:45

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7842

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624009

Sample Amount 2

Moisture: 13.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130029.wiff

Date Analyzed: 13-JAN-10 21:36

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7843

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624010

Sample Amount 2

Moisture: 10.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118038a

Date Analyzed: 19-JAN-10 08:14

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7843

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624010

Sample Amount 2

Moisture: 10.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130030.wiff

Date Analyzed: 13-JAN-10 21:52

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7847

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624011

Sample Amount 2

Moisture: 9.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118039a

Date Analyzed: 19-JAN-10 08:44

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 UJ,HE12g	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7847

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624011

Sample Amount 2

Moisture: 9.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130031.wiff


Date Analyzed: 13-JAN-10 22:08

Units: ug/kg


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

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		Sample Amount		

DATA VALIDATION COVER SHEET	
5116-1 <p style="text-align: center;">Data Validation Cover Sheet</p>	Records Use only 

Section I.							
REQUEST NUMBER: <u>10-1100</u>		VALIDATION DATE: <u>02/09/10</u>		LAB CODE: <u>GEL</u>			
CONTRACT LABORATORY NAME: <u>GEL Laboratories LLC</u>							
VALIDATOR: <u>David Schwent</u>		ORGANIZATION: <u>Analytical Quality Associates, Inc.</u>					
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 PESTICIDES/POLYCHLORINATED BIPHENYLS				
<input type="checkbox"/> GENERAL CHEMISTRY	<input type="checkbox"/> RADIOCHEMISTRY	<input type="checkbox"/> LCMSMS HIGH EXPLOSIVES					
<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):							
None.							
Reviewed by: <u>ETM</u>		Level: <u>1</u>		Date: <u>2/10/10</u>			
VALIDATOR'S SIGNATURE: <u>David Schwent</u>				DATE: <u>02/09/10</u>			
Form 5116-1, Revision 0.0				LOS ALAMOS Environmental Restoration Project			

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
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624004

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.09 g
Column: 1 CLP1
2 CLP2

Matrix: R
% Moisture: 21.8
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	4.25	ug/kg	1.41	4.25	1
11104-28-2	Aroclor-1221	U	4.25	ug/kg	1.41	4.25	1
11141-16-5	Aroclor-1232	U	4.25	ug/kg	1.41	4.25	1
53469-21-9	Aroclor-1242	U	4.25	ug/kg	1.41	4.25	1
12672-29-6	Aroclor-1248	U	4.25	ug/kg	1.41	4.25	1
11097-69-1	Aroclor-1254	U	4.25	ug/kg	1.41	4.25	1
11096-82-5	Aroclor-1260	U	4.25	ug/kg	1.41	4.25	1

PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624003

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.16 g
Column: 1 CLP1
2 CLP2

Matrix: R
% Moisture: 11.7
Project: LANL01004
SOP Ref: GL-OA-E-040
Dilution: 1
Inj. Vol: 1 uL
Final Volume: 1 mL
Level: LOW

Client ID: RE12-10-7839
Batch ID: 937679
Run Date: 12/31/2009 11:52
Prep Date: 12/30/2009 20:12
Data File: 024f2401.d
024b2401.d

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.76	ug/kg	1.25	3.76	1
11104-28-2	Aroclor-1221	U	3.76	ug/kg	1.25	3.76	1
11141-16-5	Aroclor-1232	U	3.76	ug/kg	1.25	3.76	1
53469-21-9	Aroclor-1242	U	3.76	ug/kg	1.25	3.76	1
12672-29-6	Aroclor-1248	U	3.76	ug/kg	1.25	3.76	1
11097-69-1	Aroclor-1254	U	3.76	ug/kg	1.25	3.76	1
11096-82-5	Aroclor-1260	U	3.76	ug/kg	1.25	3.76	1

PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624002

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.12 g
Column: 1 CLP1
2 CLP2

Matrix: R
% Moisture: 16.2
Project: LANL01004
SOP Ref: GL-OA-E-040
Dilution: 10
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	39.6	ug/kg	13.2	39.6	1
11104-28-2	Aroclor-1221	U	39.6	ug/kg	13.2	39.6	1
11141-16-5	Aroclor-1232	U	39.6	ug/kg	13.2	39.6	1
53469-21-9	Aroclor-1242	U	39.6	ug/kg	13.2	39.6	1
12672-29-6	Aroclor-1248	U	39.6	ug/kg	13.2	39.6	1
11097-69-1	Aroclor-1254	U	39.6	ug/kg	13.2	39.6	1
11096-82-5	Aroclor-1260	U	39.6	ug/kg	13.2	39.6	1


PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624001


Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.04 g
Column: 1 CLP1
2 CLP2


Matrix: R
%Moisture: 15.5
Project: LANL01004
SOP Ref: GL-OA-E-040
Dilution: 5
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	19.7	ug/kg	6.56	19.7	1
11104-28-2	Aroclor-1221	U	19.7	ug/kg	6.56	19.7	1
11141-16-5	Aroclor-1232	U	19.7	ug/kg	6.56	19.7	1
53469-21-9	Aroclor-1242	U	19.7	ug/kg	6.56	19.7	1
12672-29-6	Aroclor-1248	U	19.7	ug/kg	6.56	19.7	1
11097-69-1	Aroclor-1254	U	19.7	ug/kg	6.56	19.7	1
11096-82-5	Aroclor-1260	U	19.7	ug/kg	6.56	19.7	1


DATA VALIDATION COVER SHEET	
5119-1 <p style="text-align: center;">Data Validation Cover Sheet</p>	Records Use only 

Section I.							
REQUEST NUMBER: <u>10-1100</u>		VALIDATION DATE: <u>02/09/10</u>		LAB CODE: <u>GEL</u>			
CONTRACT LABORATORY NAME: <u>GEL Laboratories LLC</u>							
VALIDATOR: <u>David Schwent</u>		ORGANIZATION: <u>Analytical Quality Associates, Inc.</u>					
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 PESTICIDES/POLYCHLORINATED BIPHENYLS				
<input type="checkbox"/> GENERAL CHEMISTRY	<input checked="" type="checkbox"/> RADIOCHEMISTRY	<input type="checkbox"/> LCMSMS HIGH EXPLOSIVES					
<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. All reported sample 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.							
Reviewed by: <u>ETM</u>		Level: <u>1</u>		Date: <u>2/10/10</u>			


DATA VALIDATION COVER SHEET	
5119-1 Data Validation Cover Sheet	Records Use only  Los Alamos NATIONAL LABORATORY EST. 1942
VALIDATOR'S SIGNATURE: <u>David Schwartz</u> DATE: <u>02/09/10</u>	
Form 5119-1, Revision 0.0	LOS ALAMOS Environmental Restoration Project

RAD ANALYTICAL DATA VALIDATION CHECKLIST	
5119-2 Rad 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, 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 Rad 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"/>	12. The tracer is < the Lower Acceptance Level (LAL) but $\geq 10\%R$. Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	UJ, R3a	J-, R3a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. The Tracer%R value is > the Upper Acceptance Limit (UAL). Follow the external laboratory limits located within the associated data package. Tracer%R is not applicable for Gamma Spectroscopy.	N/A	J+, R3b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Required tracer information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. Tracer%R is not applicable for Gamma Spectroscopy.	R, R3d	R, R3d
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. The LCS percent recovery was <10%. Follow the external laboratory limits located within the associated data package.	R, R12	R, R12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. The LCS percent recovery was < the LAL but >10%. Follow the external laboratory limits located within the associated data package.	UJ, R12a	J-, R12a
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. The LCS percent recovery was > the UAL. Follow the external laboratory limits located within the associated data package.	N/A	J+, R12b
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. The LCS documentation is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R12c	R, R12c
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Associated duplicate sample has DER or RER > the analytical laboratory's acceptance limits.	R, R10	J, J10
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. The duplicate sample was not prepared and/or analyzed with the samples for unspecified reasons. The duplicate information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information.	R, R6	R, R6

RAD ANALYTICAL DATA VALIDATION CHECKLIST	
5119-2 Rad 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"/>	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

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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 18, 2010

Client Sample ID: RE12-10-7841
Sample ID: 243624001
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 15.5%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DI	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00322	0.0213	+/-0.00409	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00737	0.0152	+/-0.00263	0.050	pCi/g		HAKB	01/07/10	1137	938221	3
Plutonium-239/240	U	0.00552	0.0174	+/-0.00227	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.05	0.125	+/-0.101	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0599	0.0776	+/-0.0178	0.100	pCi/g						
Uranium-238		1.13	0.0725	+/-0.107	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0153	0.105	+/-0.0326	0.200	pCi/g		MXR1	01/07/10	1341	937704	5
Bismuth-211	UI	3.45	R,R5a	0.413	+/-0.266	pCi/g						
Bismuth-214		1.34		0.140	+/-0.104	pCi/g						
Cadmium-109	UI	3.18	R,R5a	0.972	+/-0.360	pCi/g						
Cerium-139	U	-0.0113	0.0539	+/-0.0165	0.050	pCi/g						
Cesium-134	U	0.0846	0.112	+/-0.0304	0.100	pCi/g						
Cesium-137	U	0.0305	0.0848	+/-0.0247	0.100	pCi/g						
Cobalt-60	U	0.00987	0.0813	+/-0.024	0.100	pCi/g						
Europium-152	U	-0.0931	0.175	+/-0.0636	0.200	pCi/g						
Lanthanum-140	U	0.0599	0.198	+/-0.057		pCi/g						
Lead-212		1.43	0.101	+/-0.0867	0.100	pCi/g						
Lead-214		1.20	0.142	+/-0.0978	0.100	pCi/g						
Mercury-203	U	0.0117	0.0783	+/-0.0227	0.100	pCi/g						
Potassium-40		19.7	0.626	+/-0.987	1.00	pCi/g						
Radium-223	U	-0.817	1.22	+/-0.391		pCi/g						
Radium-224	UI	4.40	R,R5a	1.15	+/-0.772	pCi/g						
Radium-226		1.34	0.140	+/-0.104		pCi/g						
Radium-228		1.49	0.253	+/-0.185	0.500	pCi/g						
Ruthenium-106	U	0.0162	0.651	+/-0.195	0.800	pCi/g						

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7841
Sample ID: 243624001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Sodium-22	U	0.00629	0.0928	+/-0.0275	0.080	pCi/g						
Strontium-85	U	0.066	0.0842	+/-0.0261		pCi/g						
Thallium-208		0.548	0.0728	+/-0.0558	0.080	pCi/g						
Thorium-227	U	-0.258	0.669	+/-0.202		pCi/g						
Thorium-231	U	-0.817	1.22	+/-0.391		pCi/g						
Thorium-234		1.60	1.02	+/-0.514	2.00	pCi/g						
Tin-113	U	-0.0117	0.0805	+/-0.0248	0.100	pCi/g						
Uranium-235	U	0.148	0.389	+/-0.116	0.500	pCi/g						
Yttrium-88	U	0.0066	0.0675	+/-0.0198	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	105	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	85.0	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7840
Sample ID: 243624002
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 16.2%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00298	0.0272	+/-0.00503	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00301	0.0166	+/-0.00174	0.050	pCi/g		HAKB	01/07/10	1137	938221	3
Plutonium-239/240	U	0.017	0.0189	+/-0.00445	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.46	0.131	+/-0.131	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0677	0.081	+/-0.0207	0.100	pCi/g						
Uranium-238		1.55	0.0757	+/-0.137	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00821	0.0797	+/-0.0247	0.200	pCi/g		MXR1	01/07/10	1352	937704	5
Bismuth-211	UI	3.85	R,R5a	0.359	+/-0.312	pCi/g						
Bismuth-214		1.12		0.128	+/-0.109	pCi/g						
Cadmium-109	UI	3.07	R,R5a	0.769	+/-0.347	pCi/g						
Cerium-139	U	-0.0102		0.0414	+/-0.0121	pCi/g						
Cesium-134	U	0.0503		0.0956	+/-0.0268	pCi/g						
Cesium-137		0.247		0.0709	+/-0.038	pCi/g						
Cobalt-60	U	0.00686		0.0707	+/-0.0205	pCi/g						
Europium-152	U	0.061		0.169	+/-0.0493	pCi/g						
Lanthanum-140	U	-0.152		0.155	+/-0.0637	pCi/g						
Lead-212		1.56		0.0838	+/-0.0956	pCi/g						
Lead-214		1.34		0.125	+/-0.114	pCi/g						
Mercury-203	U	0.00162		0.0602	+/-0.0201	pCi/g						
Potassium-40		23.5		0.712	+/-1.48	pCi/g						
Radium-223	U	-0.0979		1.11	+/-0.342	pCi/g						
Radium-224	UI	4.70	R,R5a	0.956	+/-0.597	pCi/g						
Radium-226		1.12		0.128	+/-0.109	pCi/g						
Radium-228		1.67		0.262	+/-0.187	pCi/g						
Ruthenium-106	U	0.0385		0.581	+/-0.174	pCi/g						
Sodium-22	U	-0.000547		0.0889	+/-0.0277	pCi/g						

Certificate of Analysis

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7840
Sample ID: 243624002
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	U	0.0239	0.0719	+/-0.0229		pCi/g					
Thallium-208		0.505	0.0653	+/-0.0519	0.080	pCi/g					
Thorium-227	U	-0.258	0.556	+/-0.176		pCi/g					
Thorium-231	U	-0.0979	1.11	+/-0.342		pCi/g					
Thorium-234		1.99	0.746	+/-0.447	2.00	pCi/g					
Tin-113	U	-0.0371	0.0733	+/-0.0246	0.100	pCi/g					
Uranium-235	U	0.112	0.297	+/-0.0901	0.500	pCi/g					
Yttrium-88	U	0.034	0.0968	+/-0.0261	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	73.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	95.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	80.2	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Certificate of Analysis

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7839
Sample ID: 243624003
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 11.7%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000174	0.017	+/-0.00148	0.050	pCi/g		HAKB	01/08/10	1411	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00885	0.0183	+/-0.00496	0.050	pCi/g		HAKB	01/07/10	1138	938221	4
Plutonium-239/240	U	0.00774	0.0209	+/-0.00295	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.03	0.128	+/-0.0995	0.100	pCi/g		HAKB	01/09/10	1101	938222	5
Uranium-235/236	U	0.051	0.0793	+/-0.0165	0.100	pCi/g						
Uranium-238		0.986	0.0741	+/-0.0966	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.104	0.369	+/-0.109	0.200	pCi/g		MXR1	01/07/10	1352	937704	6
Bismuth-211	UI	3.98	R,R5a	0.354	+/-0.296	pCi/g						
Bismuth-214		1.30		0.137	+/-0.102	pCi/g						
Cadmium-109	UI	3.78	R,R5a	1.61	+/-0.576	pCi/g						
Cerium-139	U	0.0209		0.059	+/-0.0173	pCi/g						
Cesium-134	U	0.0562		0.107	+/-0.0297	pCi/g						
Cesium-137	U	-0.0034		0.0796	+/-0.0246	pCi/g						
Cobalt-60	U	-0.00394		0.0748	+/-0.0233	pCi/g						
Europium-152	U	-0.0736		0.184	+/-0.0699	pCi/g						
Lanthanum-140	U	-0.105		0.129	+/-0.0486	pCi/g						
Lead-212		1.81		0.107	+/-0.0899	pCi/g						
Lead-214		1.38		0.123	+/-0.109	pCi/g						
Mercury-203	U	0.0113		0.0804	+/-0.0232	pCi/g						
Potassium-40		20.0		0.541	+/-1.15	pCi/g						
Radium-223	U	0.440		1.33	+/-0.435	pCi/g						
Radium-224	UI	5.22	R,R5a	1.21	+/-0.680	pCi/g						
Radium-226		1.30		0.137	+/-0.102	pCi/g						
Radium-228		1.87		0.231	+/-0.225	pCi/g						
Ruthenium-106	U	-0.275		0.562	+/-0.185	pCi/g						
Sodium-22	U	-0.0104		0.0816	+/-0.0257	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7839
Sample ID: 243624003
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0693	0.0748	+/-0.0226		pCi/g						
Thallium-208		0.509	0.0571	+/-0.0476	0.080	pCi/g						
Thorium-227	U	0.308	0.782	+/-0.234		pCi/g						
Thorium-231	U	0.440	1.33	+/-0.435		pCi/g						
Thorium-234	U	0.845	3.04	+/-0.881	2.00	pCi/g						
Tin-113	U	0.00651	0.0819	+/-0.0245	0.100	pCi/g						
Uranium-235	U	0.293	0.434	+/-0.129	0.500	pCi/g						
Yttrium-88	U	-0.00862	0.0502	+/-0.0164	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, Am-05-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	96.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	103	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	83.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7838
Sample ID: 243624004
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 21.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00493	0.0229	+/-0.0026	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00119	0.0197	+/-0.00206	0.050	pCi/g		HAKB	01/07/10	1138	938221	3
Plutonium-239/240	U	0.00714	0.0225	+/-0.00339	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.32	0.145	+/-0.124	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0867	0.090	+/-0.0233	0.100	pCi/g						
Uranium-238		1.47	0.0841	+/-0.135	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.205	0.350	+/-0.115	0.200	pCi/g		MXR1	01/07/10	1434	937704	5
Bismuth-211	UI	4.45	R,R5a	0.408	+/-0.338	pCi/g						
Bismuth-214		1.36		0.133	+/-0.109	pCi/g						
Cadmium-109	UI	2.38	R,R5a	1.54	+/-0.648	pCi/g						
Cerium-139	U	-0.00356		0.0594	+/-0.0176	pCi/g						
Cesium-134	UI	0.143	R,R5a	0.110	+/-0.0469	pCi/g						
Cesium-137		0.184		0.0843	+/-0.0334	pCi/g						
Cobalt-60	U	-0.00325		0.069	+/-0.0211	pCi/g						
Europium-152	U	-0.0652		0.191	+/-0.0661	pCi/g						
Lanthanum-140	U	-0.0708		0.165	+/-0.057	pCi/g						
Lead-212		1.78		0.123	+/-0.0958	pCi/g						
Lead-214		1.55		0.142	+/-0.124	pCi/g						
Mercury-203	U	0.0684		0.0927	+/-0.0263	pCi/g						
Potassium-40		21.2		0.686	+/-1.20	pCi/g						
Radium-223	U	0.610		1.33	+/-0.437	pCi/g						
Radium-224	UI	5.38	R,R5a	1.23	+/-0.773	pCi/g						
Radium-226		1.36		0.133	+/-0.109	pCi/g						
Radium-228		1.85		0.274	+/-0.205	pCi/g						
Ruthenium-106	U	-0.227		0.615	+/-0.195	pCi/g						
Sodium-22	U	-0.0187		0.0813	+/-0.0257	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7838
Sample ID: 243624004

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	UI	0.105	R,R5a	0.0913	+/-0.0276	pCi/g					
Thallium-208		0.563		0.074	+/-0.0575	pCi/g	0.080				
Thorium-227	U	-0.118		0.787	+/-0.241	pCi/g					
Thorium-231	U	0.610		1.33	+/-0.437	pCi/g					
Thorium-234	U	0.969		2.80	+/-1.21	pCi/g	2.00				
Tin-113	U	0.0139		0.0935	+/-0.0283	pCi/g	0.100				
Uranium-235	U	0.197		0.399	+/-0.165	pCi/g	0.500				
Yttrium-88	U	0.0263		0.0655	+/-0.0167	pCi/g	0.100				

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	98.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	74.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

A The TIC is a suspected aldol-condensation product

B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.

BD Results are either below the MDC or tracer recovery is low

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

E Organics--Concentration of the target analyte exceeds the instrument calibration range

F Estimated Value

H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7858
Sample ID: 243624005
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 12.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00182	0.0223	+/-0.00597	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00628	0.0207	+/-0.00378	0.050	pCi/g		HAKB	01/15/10	1323	941241	3
Plutonium-239/240	U	0.0138	0.0237	+/-0.00492	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.78	0.153	+/-0.162	0.100	pCi/g		HAKB	01/09/10	1101	938222	7
Uranium-235/236		0.0979	0.0952	+/-0.0255	0.100	pCi/g						
Uranium-238		1.99	0.089	+/-0.179	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0807	0.286	+/-0.0853	0.200	pCi/g		MXR1	01/07/10	1435	937704	8
Bismuth-211	UI	2.69	R,R5a	0.327	+/-0.283	pCi/g						
Bismuth-214		0.834		0.114	+/-0.0802	0.200	pCi/g					
Cadmium-109	UI	1.81	R,R5a	1.29	+/-0.487	pCi/g						
Cerium-139	U	-0.035		0.0468	+/-0.0148	0.050	pCi/g					
Cesium-134	U	0.0651		0.0835	+/-0.0225	0.100	pCi/g					
Cesium-137		0.335		0.0596	+/-0.0403	0.100	pCi/g					
Cobalt-60	U	-0.0135		0.0546	+/-0.0176	0.100	pCi/g					
Europium-152	U	-0.0902		0.146	+/-0.0534	0.200	pCi/g					
Lanthanum-140	U	-0.0145		0.111	+/-0.0408	pCi/g						
Lead-212		1.04		0.106	+/-0.0857	0.100	pCi/g					
Lead-214		0.934		0.114	+/-0.101	0.100	pCi/g					
Mercury-203	U	0.00473		0.0662	+/-0.0189	0.100	pCi/g					
Potassium-40		19.4		0.508	+/-1.19	1.00	pCi/g					
Radium-223	U	-0.328		1.14	+/-0.342	pCi/g						
Radium-224	UI	1.95	R,R5a	1.20	+/-0.430	pCi/g						
Radium-226		0.834		0.114	+/-0.0802	pCi/g						
Radium-228		1.02		0.177	+/-0.138	0.500	pCi/g					
Ruthenium-106	U	-0.225		0.464	+/-0.146	0.800	pCi/g					
Sodium-22	U	0.020		0.0724	+/-0.0208	0.080	pCi/g					

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Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7858
Sample ID: 243624005
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0507	0.0648	+/-0.018		pCi/g						
Thallium-208		0.369	0.0506	+/-0.0413	0.080	pCi/g						
Thorium-227	U	0.0364	0.627	+/-0.178		pCi/g						
Thorium-231	U	-0.328	1.14	+/-0.342		pCi/g						
Thorium-234		2.56	2.13	+/-1.05	2.00	pCi/g						
Tin-113	U	-0.00699	0.076	+/-0.0228	0.100	pCi/g						
Uranium-235	U	0.0558	0.348	+/-0.103	0.500	pCi/g						
Yttrium-88	U	0.0111	0.0561	+/-0.0159	0.100	pCi/g						

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	96.6	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	73.8	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7846
Sample ID: 243624006
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 12.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Gravimetric Solids											
<i>"As Received"</i>											
Rad Alpha Spec Analysis											
<i>AM241 "Dry Weight Corrected"</i>											
Americium-241	U	0.00455	0.0216	+/-0.00618	0.050	pCi/g		HAKB	01/07/10	1138 938210	2
<i>ISOPU "Dry Weight Corrected"</i>											
Plutonium-238	U	0.0093	0.0171	+/-0.00313	0.050	pCi/g		HAKB	01/07/10	1031 938221	3
Plutonium-239/240	U	0.00826	0.0195	+/-0.00389	0.050	pCi/g					
<i>ISOU "Dry Weight Corrected"</i>											
Uranium-233/234		1.63	0.133	+/-0.145	0.100	pCi/g		HAKB	01/09/10	1101 938222	4
Uranium-235/236		0.106	0.0827	+/-0.025	0.100	pCi/g					
Uranium-238		1.87	0.0773	+/-0.162	0.100	pCi/g					
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Americium-241	U	-0.358	0.470	+/-0.143	0.200	pCi/g		MXR1	01/07/10	1444 937704	5
Bismuth-211	UI	3.01	R,R5a	0.356	+/-0.250	pCi/g					
Bismuth-214		0.914		0.118	+/-0.0895	0.200					
Cadmium-109	U	0.644		1.91	+/-0.720	pCi/g					
Cerium-139	U	0.000646		0.0559	+/-0.0167	0.050					
Cesium-134	U	0.0758		0.091	+/-0.0241	0.100					
Cesium-137		0.286		0.0627	+/-0.0398	0.100					
Cobalt-60	U	0.0237		0.0698	+/-0.0199	0.100					
Europium-152	U	-0.0998		0.159	+/-0.0678	0.200					
Lanthanum-140	U	-0.0457		0.148	+/-0.0484	pCi/g					
Lead-212		1.14		0.108	+/-0.074	0.100					
Lead-214		1.05		0.124	+/-0.091	0.100					
Mercury-203	U	0.0356		0.0833	+/-0.0233	0.100					
Potassium-40		19.1		0.543	+/-1.10	1.00					
Radium-223	U	-0.98		1.27	+/-0.406	pCi/g					
Radium-224	UI	3.02	R,R5a	1.23	+/-0.723	pCi/g					
Radium-226		0.914		0.118	+/-0.0895	pCi/g					
Radium-228		1.29		0.219	+/-0.170	0.500					
Ruthenium-106	U	-0.157		0.556	+/-0.177	0.800					
Sodium-22	U	0.000757		0.0758	+/-0.0233	0.080					

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Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7846
Sample ID: 243624006
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	U	0.0454	0.0728	+/-0.0232		pCi/g					
Thallium-208		0.411	0.0623	+/-0.0451	0.080	pCi/g					
Thorium-227	U	0.183	0.770	+/-0.219		pCi/g					
Thorium-231	U	-0.98	1.27	+/-0.406		pCi/g					
Thorium-234	U	1.89	3.90	+/-1.10	2.00	pCi/g					
Tin-113	U	-0.034	0.0803	+/-0.0249	0.100	pCi/g					
Uranium-235	U	-0.0874	0.412	+/-0.127	0.500	pCi/g					
Yttrium-88	U	0.0187	0.0643	+/-0.0178	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	102	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	80.4	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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- 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 Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7844
Sample ID: 243624007
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 13.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000724	0.0217	+/-0.00487	0.050	pCi/g		HAKB	01/07/10	1031	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0195	+/-0.00167	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00708	0.0223	+/-0.00291	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.32	0.131	+/-0.122	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0575	0.0814	+/-0.0179	0.100	pCi/g						
Uranium-238		1.32	0.0761	+/-0.122	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.041	0.379	+/-0.108	0.200	pCi/g		MXR1	01/07/10	1550	937704	5
Bismuth-211	UI	4.50	R,R5a	0.296	+/-0.269	pCi/g						
Bismuth-214		1.15		0.109	+/-0.0902	0.200	pCi/g					
Cadmium-109	UI	2.97	R,R5a	1.52	+/-0.591	pCi/g						
Cerium-139	U	-0.0131		0.0457	+/-0.014	0.050	pCi/g					
Cesium-134	UI	0.0877	R,R5a	0.0844	+/-0.0332	0.100	pCi/g					
Cesium-137		0.123		0.0717	+/-0.0294	0.100	pCi/g					
Cobalt-60	U	0.00782		0.065	+/-0.0189	0.100	pCi/g					
Europium-152	U	-0.0141		0.151	+/-0.0483	0.200	pCi/g					
Lanthanum-140	U	-0.004		0.168	+/-0.0515	pCi/g						
Lead-212		1.55		0.0869	+/-0.0841	0.100	pCi/g					
Lead-214		1.57		0.103	+/-0.102	0.100	pCi/g					
Mercury-203	U	-0.012		0.063	+/-0.0186	0.100	pCi/g					
Potassium-40		19.5		0.519	+/-1.03	1.00	pCi/g					
Radium-223	U	0.428		1.10	+/-0.349	pCi/g						
Radium-224	UI	4.68	R,R5a	0.989	+/-0.764	pCi/g						
Radium-226		1.15		0.109	+/-0.0902	pCi/g						
Radium-228		1.50		0.202	+/-0.187	0.500	pCi/g					
Ruthenium-106	U	-0.146		0.435	+/-0.142	0.800	pCi/g					
Sodium-22	U	-0.028		0.0655	+/-0.0212	0.080	pCi/g					

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Certificate of Analysis

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7844
Sample ID: 243624007

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0433	0.0578	+/-0.0176		pCi/g						
Thallium-208		0.506	0.0559	+/-0.0457	0.080	pCi/g						
Thorium-227	U	0.368	0.658	+/-0.183		pCi/g						
Thorium-231	U	0.428	1.10	+/-0.349		pCi/g						
Thorium-234	U	0.516	2.99	+/-0.843	2.00	pCi/g						
Tin-113	U	-0.0193	0.0691	+/-0.0212	0.100	pCi/g						
Uranium-235	U	-0.0193	0.334	+/-0.102	0.500	pCi/g						
Yttrium-88	U	0.00573	0.0494	+/-0.0146	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	83.5	(50%-105%)

Notes:

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

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- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7845
Sample ID: 243624008
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 7.5%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00538	0.0202	+/-0.00435	0.050	pCi/g		HAKB	01/07/10	1031	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00117	0.0193	+/-0.00262	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	-0.00351	0.0221	+/-0.00309	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.05	0.134	+/-0.102	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236		0.129	0.0834	+/-0.0278	0.100	pCi/g						
Uranium-238		1.05	0.0779	+/-0.102	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0406	0.228	+/-0.0722	0.200	pCi/g		MXR1	01/07/10	1550	937704	5
Bismuth-211	UI	4.05	R,R5a	0.280	+/-0.266	pCi/g						
Bismuth-214		1.29		0.106	+/-0.0955	0.200	pCi/g					
Cadmium-109	UI	4.15	R,R5a	1.05	+/-0.534	pCi/g						
Cerium-139	U	-0.00274		0.0467	+/-0.0141	0.050	pCi/g					
Cesium-134	UI	0.0913	R,R5a	0.0884	+/-0.0257	0.100	pCi/g					
Cesium-137	U	-0.0291		0.0588	+/-0.0187	0.100	pCi/g					
Cobalt-60	U	0.00221		0.0617	+/-0.0186	0.100	pCi/g					
Europium-152	U	0.0187		0.143	+/-0.0472	0.200	pCi/g					
Lanthanum-140	U	-0.087		0.127	+/-0.0448	pCi/g						
Lead-212		1.52		0.0857	+/-0.0751	0.100	pCi/g					
Lead-214		1.41		0.0976	+/-0.0997	0.100	pCi/g					
Mercury-203	U	0.0204		0.0655	+/-0.0209	0.100	pCi/g					
Potassium-40		18.9		0.587	+/-0.979	1.00	pCi/g					
Radium-223	U	-0.534		0.960	+/-0.347	pCi/g						
Radium-224	UI	4.77	R,R5a	0.975	+/-0.654	pCi/g						
Radium-226		1.29		0.106	+/-0.0955	pCi/g						
Radium-228		1.52		0.225	+/-0.158	0.500	pCi/g					
Ruthenium-106	U	0.179		0.563	+/-0.160	0.800	pCi/g					
Sodium-22	U	-0.0381		0.0588	+/-0.0202	0.080	pCi/g					

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Report Date: January 18, 2010

Client Sample ID: RE12-10-7845
Sample ID: 243624008
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	U	0.0441	0.0596	+/-0.0186		pCi/g					
Thallium-208		0.517	0.0536	+/-0.042	0.080	pCi/g					
Thorium-227	U	-0.374	0.558	+/-0.174		pCi/g					
Thorium-231	U	-0.534	0.960	+/-0.347		pCi/g					
Thorium-234	U	1.29	1.95	+/-0.983	2.00	pCi/g					
Tin-113	U	-0.00245	0.072	+/-0.0216	0.100	pCi/g					
Uranium-235	U	0.0294	0.347	+/-0.102	0.500	pCi/g					
Yttrium-88	U	-0.0354	0.0437	+/-0.0171	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	94.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	104	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	77.4	(50%-105%)

Notes:

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

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- 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 Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7842
Sample ID: 243624009
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 13.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00666	0.0206	+/-0.00287	0.050	pCi/g		HAKB	01/07/10	1031	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00444	0.0183	+/-0.00351	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00555	0.021	+/-0.00485	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.26	0.120	+/-0.115	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236		0.0812	0.0743	+/-0.0206	0.100	pCi/g						
Uranium-238		1.48	0.0695	+/-0.132	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0373	0.340	+/-0.111	0.200	pCi/g		MXR1	01/07/10	1551	937704	5
Bismuth-211	UI	3.57	R,R5a	0.403	+/-0.248	pCi/g						
Bismuth-214		1.22		0.123	+/-0.0981	pCi/g						
Cadmium-109	UI	3.24	R,R5a	1.92	+/-0.769	pCi/g						
Cerium-139	U	-0.00532	0.0588	+/-0.0176	0.050	pCi/g						
Cesium-134	U	0.0365	0.0926	+/-0.0259	0.100	pCi/g						
Cesium-137		0.150	0.0772	+/-0.0397	0.100	pCi/g						
Cobalt-60	U	0.00163	0.0745	+/-0.0228	0.100	pCi/g						
Europium-152	U	-0.0646	0.186	+/-0.0654	0.200	pCi/g						
Lanthanum-140	U	-0.0827	0.138	+/-0.0487		pCi/g						
Lead-212		1.59	0.107	+/-0.0844	0.100	pCi/g						
Lead-214		1.24	0.142	+/-0.0923	0.100	pCi/g						
Mercury-203	U	0.0381	0.0852	+/-0.027	0.100	pCi/g						
Potassium-40		18.6	0.608	+/-1.05	1.00	pCi/g						
Radium-223	U	0.397	1.32	+/-0.430		pCi/g						
Radium-224	UI	4.30	R,R5a	1.22	+/-0.620	pCi/g						
Radium-226		1.22	0.123	+/-0.0981		pCi/g						
Radium-228		1.53	0.237	+/-0.162	0.500	pCi/g						
Ruthenium-106	U	-0.14	0.563	+/-0.178	0.800	pCi/g						
Sodium-22	U	0.045	0.0892	+/-0.0249	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7842
Sample ID: 243624009

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	UI	0.0966	R,R5a	0.0827	+/-0.0243	pCi/g					
Thallium-208		0.520		0.0768	+/-0.0486	pCi/g	0.080				
Thorium-227	U	0.222		0.799	+/-0.238	pCi/g					
Thorium-231	U	0.397		1.32	+/-0.430	pCi/g					
Thorium-234	U	2.72		2.92	+/-1.08	pCi/g	2.00				
Tin-113	U	-0.0403		0.0872	+/-0.027	pCi/g	0.100				
Uranium-235	U	0.243		0.423	+/-0.122	pCi/g	0.500				
Yttrium-88	U	7.90E-05		0.0669	+/-0.0203	pCi/g	0.100				

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.6	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	101	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	88.6	(50%-105%)

Notes:

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

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- 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 Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7843
 Sample ID: 243624010
 Matrix: R
 Collect Date: 22-DEC-09
 Receive Date: 29-DEC-09
 Collector: Client
 Moisture: 10.4%

Project: LANL01004
 Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00338	0.022	+/-0.0021	0.050	pCi/g		HAKB	01/07/10	1031	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00246	0.0203	+/-0.00628	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00862	0.0233	+/-0.00372	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.986	0.124	+/-0.0944	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0691	0.0768	+/-0.0191	0.100	pCi/g						
Uranium-238		0.986	0.0718	+/-0.0943	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0999	0.180	+/-0.0555	0.200	pCi/g		MXR1	01/07/10	1551	937704	5
Bismuth-211	UI	4.33	R,R5a	0.346	+/-0.302	pCi/g						
Bismuth-214		1.42		0.112	+/-0.107	pCi/g						
Cadmium-109	UI	4.46	R,R5a	1.08	+/-0.482	pCi/g						
Cerium-139	U	-0.0285		0.0468	+/-0.015	pCi/g						
Cesium-134	U	0.0687		0.0851	+/-0.023	pCi/g						
Cesium-137	U	0.0144		0.0703	+/-0.0206	pCi/g						
Cobalt-60	U	0.0142		0.0626	+/-0.0181	pCi/g						
Europium-152	U	0.0473		0.165	+/-0.0541	pCi/g						
Lanthanum-140	U	0.00908		0.143	+/-0.0433	pCi/g						
Lead-212		1.80		0.0895	+/-0.104	pCi/g						
Lead-214		1.51		0.121	+/-0.112	pCi/g						
Mercury-203	U	0.0298		0.0724	+/-0.0206	pCi/g						
Potassium-40		19.9		0.500	+/-1.13	pCi/g						
Radium-223	U	0.019		1.07	+/-0.362	pCi/g						
Radium-224	UI	4.99	R,R5a	1.02	+/-0.659	pCi/g						
Radium-226		1.42		0.112	+/-0.107	pCi/g						
Radium-228		1.74		0.204	+/-0.179	pCi/g						
Ruthenium-106	U	-0.304		0.492	+/-0.159	pCi/g						
Sodium-22	U	0.0232		0.0686	+/-0.0194	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID:
Sample ID:

RE12-10-7843
243624010

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0659	0.0665	+/-0.0194		pCi/g						
Thallium-208		0.522	0.0611	+/-0.0468	0.080	pCi/g						
Thorium-227	U	0.227	0.654	+/-0.187		pCi/g						
Thorium-231	U	0.019	1.07	+/-0.362		pCi/g						
Thorium-234	U	0.970	1.58	+/-0.662	2.00	pCi/g						
Tin-113	U	-0.0131	0.0784	+/-0.0241	0.100	pCi/g						
Uranium-235	U	0.0833	0.348	+/-0.105	0.500	pCi/g						
Yttrium-88	U	0.0107	0.0519	+/-0.0145	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	94.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	87.8	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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- 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 Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7847
Sample ID: 243624011
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 9.05%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	9.38E-05	0.0163	+/-0.000962	0.050	pCi/g		HAKB	01/07/10	1033	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00819	0.0169	+/-0.00326	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00307	0.0193	+/-0.0034	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.18	0.131	+/-0.110	0.100	pCi/g		HAKB	01/09/10	1100	938222	4
Uranium-235/236	U	0.0629	0.0816	+/-0.0201	0.100	pCi/g						
Uranium-238		1.33	0.0763	+/-0.121	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.062	0.410	+/-0.120	0.200	pCi/g		MXR1	01/07/10	1551	937704	5
Bismuth-211	UI	4.26	R,R5a	0.320	+/-0.277	pCi/g						
Bismuth-214		1.42		0.112	+/-0.0995	pCi/g						
Cadmium-109	UI	3.07	R,R5a	1.46	+/-0.618	pCi/g						
Cerium-139	U	0.0152		0.050	+/-0.0149	pCi/g						
Cesium-134	UI	0.104	R,R5a	0.0959	+/-0.0344	pCi/g						
Cesium-137	U	-0.0202		0.0593	+/-0.0184	pCi/g						
Cobalt-60	U	0.0067		0.0632	+/-0.0186	pCi/g						
Europium-152	U	-0.0444		0.143	+/-0.0507	pCi/g						
Lanthanum-140	U	-0.0612		0.132	+/-0.046	pCi/g						
Lead-212		1.64		0.0966	+/-0.0842	pCi/g						
Lead-214		1.48		0.112	+/-0.104	pCi/g						
Mercury-203	U	-0.00644		0.0683	+/-0.023	pCi/g						
Potassium-40		20.3		0.579	+/-1.20	pCi/g						
Radium-223	U	0.0522		1.07	+/-0.359	pCi/g						
Radium-224	UI	4.85	R,R5a	1.10	+/-0.651	pCi/g						
Radium-226		1.42		0.112	+/-0.0995	pCi/g						
Radium-228		1.57		0.196	+/-0.171	pCi/g						
Ruthenium-106	U	-0.197		0.496	+/-0.155	pCi/g						
Sodium-22	U	0.00225		0.068	+/-0.0203	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 18, 2010

Client Sample ID: RE12-10-7847
Sample ID: 243624011

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	U	0.0502	0.0657	+/-0.0207		pCi/g					
Thallium-208		0.482	0.0622	+/-0.044	0.080	pCi/g					
Thorium-227	U	-0.0481	0.631	+/-0.186		pCi/g					
Thorium-231	U	0.0522	1.07	+/-0.359		pCi/g					
Thorium-234	U	-0.315	3.22	+/-0.946	2.00	pCi/g					
Tin-113	U	0.00242	0.0772	+/-0.0232	0.100	pCi/g					
Uranium-235	U	0.266	0.385	+/-0.114	0.500	pCi/g					
Yttrium-88	U	-0.0207	0.0371	+/-0.0146	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	99.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	103	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	82.4	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

Thursday, December 24, 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1100C

LOS ALAMOS

REQUEST NUMBER: 10-1100

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/27/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

243624%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7841	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7841	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7840	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7840	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7839	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7839	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7838	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7838	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7858	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7846	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7846	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7844	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7844	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7845	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7845	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7842	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7842	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7843	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7843	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7847	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7847	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7858	1	AMBER GLASS	NMED Explosives list	Ice	R

Relinquished By:

Date Time

Received By:

Date Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

REQUEST NUMBER: 10-1100

Thursday, December 24, 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: 10-1100

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples according to the schedule indicated:

SHIP DATE: 12/28/2009

TURNAROUND/REPORT DUE: 1/27/2010

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	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	

Thursday, December 24, 2009

Page 2 of 3

REQUEST NUMBER: 10-1100

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
	HASL-300:AM-241	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
	HASL-300:ISOU	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
	HASL-300:ISOU	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	

REQUEST NUMBER: 10-1100

Thursday, December 24, 2009

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
	SW-846:8082	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
	SW-846:8321A_MOD	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	

Final Page of REQUEST NUMBER 10-1100



January 06, 2010

www.gel.com

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

Re: LANL ER Project
Work Order: 243624
SDG: 10-1100

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on December 29, 2009, and analyzed for Explosives by LCMSMS, GC Semivolatile PCB 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: 10-1100
Enclosures

Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Work Order #: 243624
SDG: 10-1100

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Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 243624
SDG # : 10-1100**

January 06, 2010

Laboratory Identification:

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

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on December 29, 2009 for analysis. The samples were prepared/analyzed within the required holding time. Shipping container temperatures were checked, documented, and within specifications. The samples were screened according to GEL Standard Operating Procedure. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. The containers for radiochemistry were received at 9/12C temperatures. Shipping container temperature was within specification (0 - 6C).

Sample Identification The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
243624001	RE12-10-7841
243624002	RE12-10-7840
243624003	RE12-10-7839
243624004	RE12-10-7838
243624005	RE12-10-7858
243624006	RE12-10-7846
243624007	RE12-10-7844
243624008	RE12-10-7845
243624009	RE12-10-7842
243624010	RE12-10-7843
243624011	RE12-10-7847

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 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.

A handwritten signature in black ink, appearing to read "Valerie Davis" with a stylized flourish.

Valerie Davis

Project Manager

List of current GEL Certifications as of 06 January 2010

State	Certification
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 24 2009

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1100C

LOS ALAMOS

REQUEST NUMBER: 10-1100

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 1/27/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

243624%

SAMPLE ID	CTNR	CTNR DESC	ORDER	PRESERV	MATRIX
RE12-10-7841	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7841	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7840	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7840	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7839	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7839	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7838	1	AMBER GLASS	8082+NMED-HEXP	Ice	R
RE12-10-7838	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7858	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7846	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7846	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7844	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7844	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7845	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7845	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7842	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7842	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7843	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7843	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7847	1	POLY	AM241+GS+ISOPU+ISO U	None	R
RE12-10-7847	1	AMBER GLASS	NMED Explosives list	Ice	R
RE12-10-7858	1	AMBER GLASS	NMED Explosives list	Ice	R

Relinquished By:

Date 12/28/09 Time 3:00

Received By:

Date 12/29/09 Time 0840

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Thursday, December 24, 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: 10-1100

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 12/28/2009

TURNAROUND/REPORT DUE: 1/27/2010

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	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	

Thursday, December 24, 2009

REQUEST NUMBER: 10-1100

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	EPA:901.1	1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
	HASL-300:AM-241	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
	HASL-300:ISOPU	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
	HASL-300:ISOU	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	

Thursday, December 24, 2009

REQUEST NUMBER: 10-1100

PRIORITY	METHOD CODE	CNTNR	SAMPLE ID	SAMPLE MATRIX	DATE SAMPLED	SPECIAL INSTRUCTIONS
	HASL-300:ISOU	1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	
	SW-846:8082	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
	SW-846:8321A_MOD	1	RE12-10-7838	R	12/22/2009	
		1	RE12-10-7839	R	12/22/2009	
		1	RE12-10-7840	R	12/22/2009	
		1	RE12-10-7841	R	12/22/2009	
		1	RE12-10-7842	R	12/22/2009	
		1	RE12-10-7843	R	12/22/2009	
		1	RE12-10-7844	R	12/22/2009	
		1	RE12-10-7845	R	12/22/2009	
		1	RE12-10-7846	R	12/22/2009	
		1	RE12-10-7847	R	12/22/2009	
		1	RE12-10-7858	R	12/22/2009	

Final Page of REQUEST NUMBER 10-1100



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: LANL		SDG/ARCO/Work Order: 10-1100	
Received By: Greg Tyler		Date Received: 12/29/09	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
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 $0 \leq 6$ deg. C?	X			Preservation Method: ice bags blue ice dry ice none other 2,3,5,6 C 9,12C
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 Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?		X		Sample ID's and containers affected:
7 Are Encore containers present?			X	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	X			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?		X		Sample ID's affected: No time on Chain of Custody.
11 Number of containers received match number indicated on COC?	X			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	X			

Comments:

Fed Ex Tracking Numbers:

7209 7849 3994 2C 7209 7849 3961 12C

7209 7849 3950 2C 7209 7849 3983 12C

7209 7849 3972 2C

7209 7849 3906 3C

7209 7849 3940 5C

7209 7849 3891 5C

7209 7849 3939 6C

7209 7849 3917 9C

ORIGIN ID: SAFA (505)665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TR00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

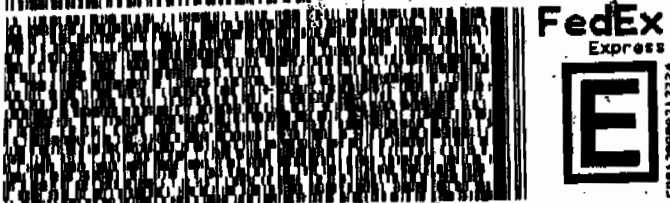
SHIP DATE: 28DEC09
ACTWGT: 58.0 LB MAN
CAD: 0014176/CAFE2434

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843)556-9171
REF: 68010AMR3A05529E00

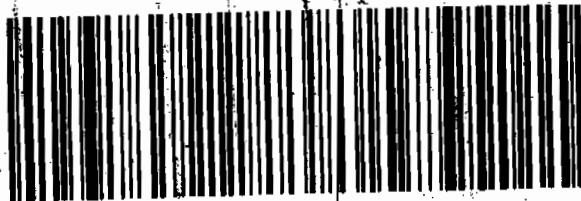


TRK# 7209 7849 3994

TUE - 29DEC A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA



ORIGIN ID: SAFA (505)665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TR00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 28DEC09
ACTWGT: 54.0 LB MAN
CAD: 0014176/CAFE2434

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843)556-9171
REF: 68010AMR3A05529E00



TRK# 7209 7849 3972

TUE - 29DEC A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

of 1381

ORIGIN ID: SAFA (505)665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TR00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 28DEC09
ACTWGT: 55.0 LB MAN
CAD: 0014176/CAFE2434

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843)556-9171
REF: 68010AMR3A0556AB800



TRK# 7209 7849 3950

TUE - 29DEC A1
PRIORITY OVERNIGHT

MASTER

29407
SC-US
CHS

XX CHSA



ORIGIN ID: SAFA (505)665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TR00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 28DEC09
ACTWGT: 47.0 LB MAN
CAD: 0014176/CAFE2434

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843)556-9171
REF: 68010AMR2A054196D0



TRK# 7209 7849 3906

TUE - 29DEC A1
PRIORITY OVERNIGHT

MASTER

29407
SC-US
CHS

XX CHSA

SHIP DATE: 28DEC09
ACTWGT: 54.0 LB MAN
CAD: 0014176/CAFE2434

BILL SENDER

120

(843) 558-8171
 REF: 6B010AMR3A056AB800

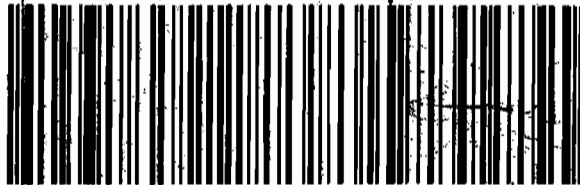


[REDACTED]

**TUE - 29DEC A1
PRIORITY OVERNIGHT**

XX CHSA

29407
SC-US
CHS

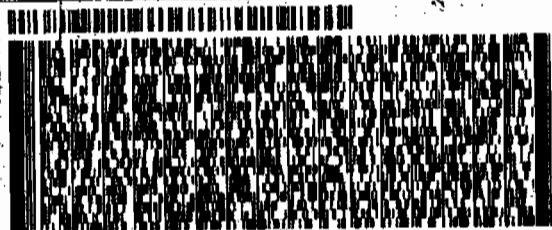


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CAD: 0014176/CAFE2434

BILL SENDER

120

REF: 6B010AMR3A05529E00

**E**

[REDACTED]

TUE - 29DEC A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA

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 EXPLOSIVES ANALYSIS

LC/MS/MS Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-1100

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: 937564

Prep Batch Number: 937562

Sample Analysis

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

Sample ID	Client ID
243624001	RE12-10-7841
243624002	RE12-10-7840
243624003	RE12-10-7839
243624004	RE12-10-7838
243624005	RE12-10-7858
243624006	RE12-10-7846
243624007	RE12-10-7844
243624008	RE12-10-7845
243624009	RE12-10-7842
243624010	RE12-10-7843
243624011	RE12-10-7847
1202006240	Method Blank (MB)
1202006241	Laboratory Control Sample (LCS)
1202006242	243624001(RE12-10-7841) Matrix Spike (MS)
1202006243	243624001(RE12-10-7841) Matrix Spike Duplicate (MSD)

10-1100-EXPLCMS

Page 1 of 5

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.

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

Sample 243624001 (RE12-10-7841) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS spike recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD spike recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The MS/MSD RPD for Tetryl was 33.1%. The acceptance limits are 0-30%. Since all other RPD recoveries met acceptance criteria, the noted exception is attributed to vagaries in the extraction process. The data are reported, Please see data exception report 781365.

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Page 2 of 5

Internal Standard (ISTD) Acceptance

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

Technical Information

Holding Time Specifications

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

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

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

Sample Re-extraction/Re-analysis

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

Secondary Analyte Analysis

Calibration Information

Initial Calibration

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

Calibration Verification Standard Requirements

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

Calibration Blank Requirements

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

CRI Requirements

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

Quality Control (QC) Information

Method Blank (MB) Statement

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

Surrogate Recoveries

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

Laboratory Control Sample (LCS) Recovery

The LCS recovered TATB at 332%. The recovery limits are 47-166%. While TATB exhibited a high bias, it was not detected in the associated samples. Both the matrix spike and matrix spike duplicate met acceptance limits for TATB. The data are reported. Please see data exception report 781365.

QC Sample Designation

Sample 243624001 (RE12-10-7841) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS spike recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD spike recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

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

Internal Standard (ISTD) Acceptance

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

Technical Information

Holding Time Specifications

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

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

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

Sample Re-extraction/Re-analysis

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

Miscellaneous Information

Data Exception (DER) Documentation

Data exception report 781365 was generated for this SDG.

The LCS recovered TATB at 332%. The recovery limits are 47-166%. While TATB exhibited a high bias, it was not detected in the associated samples. Both the matrix spike and matrix spike duplicate met acceptance limits for TATB. The data are reported.

The MS/MSD RPD for Tetryl was 33.1%. The acceptance limits are 0-30%. Since all other RPD recoveries met acceptance criteria, the noted exception is attributed to vagaries in the extraction process. The data are reported,

10-1100-EXPLCMS

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Manual Integrations

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

Flagging Convention

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

Additional Comments

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

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

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

System Configuration

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

Chromatographic Columns

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

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

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

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

Certification Statement

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

Review Validation:

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

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

Reviewer: *Heather M. Mave* Date: 01/20/10

10-1100-EXPLCMS

Page 5 of 5

SAMPLE DATA SUMMARY

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624001

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118024a

Date Analyzed: 19-JAN-10 01:21

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	X	Concentrated Extract Volume	X	Dilution
Value		Sample Amount		Factor

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624001

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130016.wiff

Date Analyzed: 13-JAN-10 18:12

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7840

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624002

Sample Amount 2

Moisture: 16.2

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118027a

Date Analyzed: 19-JAN-10 02:50

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: RE12-10-7840

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624002

Sample Amount 2

Moisture: 16.2

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130019.wiff

Date Analyzed: 13-JAN-10 18:59

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 Concentrated Extract Volume X Dilution Factor
Sample Amount

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7839

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624003

Sample Amount 2

Moisture: 11.7

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118028a

Date Analyzed: 19-JAN-10 03:19

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: RE12-10-7839

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624003

Sample Amount 2

Moisture: 11.7

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130020.wiff

Date Analyzed: 13-JAN-10 19:15

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7838

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624004

Sample Amount 2

Moisture: 21.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118029a

Date Analyzed: 19-JAN-10 03:48

Units: ug/kg

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

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		Sample Amount		

1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7838

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624004

Sample Amount 2

Moisture: 21.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130021.wiff

Date Analyzed: 13-JAN-10 19:31

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7858

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624005

Sample Amount 2

Moisture: 12.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118030a

Date Analyzed: 19-JAN-10 04:18

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	X	Concentrated Extract Volume	X	Dilution
Value		Sample Amount		Factor

1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7858

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624005

Sample Amount 2

Moisture: 12.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130022.wiff

Date Analyzed: 13-JAN-10 19:46

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7846

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624006

Sample Amount 2

Moisture: 12.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118031a

Date Analyzed: 19-JAN-10 04:47

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	X	Concentrated Extract Volume	X	Dilution
Value		Sample Amount		Factor

1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7846

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624006

Sample Amount 2

Moisture: 12.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130023.wiff

Date Analyzed: 13-JAN-10 20:02

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7844

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624007

Sample Amount 2

Moisture: 13.3

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118035a

Date Analyzed: 19-JAN-10 06:46

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	X	Concentrated Extract Volume	X	Dilution
Value		Sample Amount		Factor

1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7844

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624007

Sample Amount 2

Moisture: 13.3

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130027.wiff

Date Analyzed: 13-JAN-10 21:05

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7845

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624008

Sample Amount 2

Moisture: 7.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118036a

Date Analyzed: 19-JAN-10 07:15

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 Amoun		

1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7845

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624008

Sample Amount 2

Moisture: 7.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130028.wiff

Date Analyzed: 13-JAN-10 21:21

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7842

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624009

Sample Amount 2

Moisture: 13.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118037a

Date Analyzed: 19-JAN-10 07:45

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7842

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624009

Sample Amount 2

Moisture: 13.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130029.wiff

Date Analyzed: 13-JAN-10 21:36

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
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1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7843

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624010

Sample Amount 2

Moisture: 10.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118038a

Date Analyzed: 19-JAN-10 08:14

Units: ug/kg

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

*Concentration =

Instrument				
Value	X	<u>Concentrated Extract Volume</u>	X	Dilution
		Sample Amount		Factor

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7843

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624010

Sample Amount 2

Moisture: 10.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130030.wiff

Date Analyzed: 13-JAN-10 21:52

Units: ug/kg

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

*Concentration =

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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7847

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624011

Sample Amount 2

Moisture: 9.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118039a

Date Analyzed: 19-JAN-10 08:44

Units: ug/kg

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

*Concentration =

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

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7847

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624011

Sample Amount 2

Moisture: 9.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130031.wiff

Date Analyzed: 13-JAN-10 22:08

Units: ug/kg

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

*Concentration =

Instrument	X	<u>Concentrated Extract Volume</u>	X	Dilution
Value		<u>Sample Amount</u>		Factor

QUALITY CONTROL SUMMARY

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1100

Lab Code: GEL

HPLC Column: Phenomenex Ultracarb 5u ODS(20)

Lab Sample ID	Client Sample ID	DNT	QC Limits	Flg
243624001	RE12-10-7841	101	73.7 - 133.3	
243624001	RE12-10-7841	102	73.7 - 133.3	
243624002	RE12-10-7840	99.5	73.7 - 133.3	
243624002	RE12-10-7840	104	73.7 - 133.3	
243624003	RE12-10-7839	104	73.7 - 133.3	
243624003	RE12-10-7839	110	73.7 - 133.3	
243624004	RE12-10-7838	101	73.7 - 133.3	
243624004	RE12-10-7838	110	73.7 - 133.3	
243624005	RE12-10-7858	104	73.7 - 133.3	
243624005	RE12-10-7858	109	73.7 - 133.3	
243624006	RE12-10-7846	98.3	73.7 - 133.3	
243624006	RE12-10-7846	105	73.7 - 133.3	
243624007	RE12-10-7844	105	73.7 - 133.3	
243624007	RE12-10-7844	102	73.7 - 133.3	
243624008	RE12-10-7845	101	73.7 - 133.3	
243624008	RE12-10-7845	99.2	73.7 - 133.3	
243624009	RE12-10-7842	106	73.7 - 133.3	
243624009	RE12-10-7842	107	73.7 - 133.3	
243624010	RE12-10-7843	101	73.7 - 133.3	
243624010	RE12-10-7843	105	73.7 - 133.3	
243624011	RE12-10-7847	104	73.7 - 133.3	
243624011	RE12-10-7847	104	73.7 - 133.3	
1202006240	MB for batch 937562	103	73.7 - 133.3	
1202006240	MB for batch 937562	104	73.7 - 133.3	
1202006241	LCS for batch 937562	101	73.7 - 133.3	
1202006241	LCS for batch 937562	100	73.7 - 133.3	
1202006242	RE12-10-7841(243624001MS)	115	73.7 - 133.3	
1202006242	RE12-10-7841(243624001MS)	106	73.7 - 133.3	
1202006243	RE12-10-7841(243624001MSD)	102	73.7 - 133.3	
1202006243	RE12-10-7841(243624001MSD)	107	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) 10-1100

Extract Batch Code: 937562

Date Extracted: 05-JAN-10

GEL LCS ID: 1202006241

GEL LCSDUP ID:

Analysis Date/Time: 19-JAN-10 00:52

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
1,3,5-Trinitrobenzene	5000	5050	101					62.1 - 124
2,4,6-Trinitrotoluene	5000	5490	110					78.3 - 132
2,4-Dinitrotoluene	5000	5420	108					82.7 - 132
2,6-Dinitrotoluene	5000	5140	103					86.9 - 122
2-Amino-4,6-dinitrotoluene	5000	4690	93.7					84.2 - 149
4-Amino-2,6-dinitrotoluene	5000	5500	110					85.6 - 133
HMX	5000	4860	97.2					66.5 - 142
Nitrobenzene	5000	5010	100					71.8 - 126
PETN	5000	4660	93.1					64.6 - 147
RDX	5000	5310	106					78.7 - 144
Tetryl	5000	3570	71.5					31.2 - 119
m-Dinitrobenzene	5000	4850	96.9					80.9 - 127
m-Nitrotoluene	5000	5000	100					71.9 - 126
o-Nitrotoluene	5000	4320	86.4					75 - 123
p-Nitrotoluene	5000	5050	101					73.7 - 124

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

* Values outside of QC limits

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEI

GEL Job No (SDG) 10-1100

Extract Batch Code: 937562

Date Extracted: 05-JAN-10

GEL LCS ID: 1202006241

GEL LCSDUP ID:

Analysis Date/Time: 13-JAN-10 17:56

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	3560	71.2					64.8 - 128
2,6-Diamino-4-nitrotoluene	5000	4850	97					69.6 - 133
3,5-Dinitroaniline	5000	4870	97.4					77.3 - 123
tris(o-cresyl) phosphate	5000	5210	104					84.3 - 120
TATB	5000	16600	332 *					46.8 - 166

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

* Values outside of QC limits

High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: RE12-10-7841

Lab Code: GEL

GEL Job No (SDG) 10-1100

Extract Batch Code: 937562

Date Extracted:05-JAN-10

GEL Spike ID: 1202006242

GEL SpikeDup ID:1202006243

Analysis Date/Time: 19-JAN-10 01:51

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
o-Nitrotoluene	5000	0	4320	86.4	4410	88.1	1.99	30	71.2 - 131
2-Amino-4,6-dinitrotoluene	5000	0	4980	99.6	5020	100	.915	30	77.4 - 154
HMX	5000	0	4170	83.3	4590	91.7	9.56	30	66.7 - 144
PETN	5000	0	4990	99.9	4980	99.6	.231	30	61.9 - 153
m-Nitrotoluene	5000	0	4610	92.2	4700	94.1	1.98	30	68.6 - 135
m-Dinitrobenzene	5000	0	4820	96.5	4790	95.8	.68	30	83.5 - 126
Tetryl	5000	0	4290	85.9	3070	61.5	33.1 *	30	46.8 - 138
RDX	5000	0	4460	89.1	5110	102	13.7	30	73 - 140
Nitrobenzene	5000	0	4490	89.8	4490	89.7	.144	30	70.4 - 129
4-Amino-2,6-dinitrotoluene	5000	0	6480	130	5020	100	25.5	30	77.3 - 140
2,6-Dinitrotoluene	5000	0	4850	97	4860	97.3	.336	30	85.4 - 125
1,3,5-Trinitrobenzene	5000	0	4230	84.6	5100	102	18.7	30	70.7 - 130
2,4,6-Trinitrotoluene	5000	0	5830	117	4740	94.7	20.7	30	83.4 - 138
2,4-Dinitrotoluene	5000	0	4750	95	4900	98	3.13	30	79.1 - 137
p-Nitrotoluene	5000	0	4700	94	4840	96.8	2.95	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: RE12-10-7841

Lab Code: GEL

GEL Job No (SDG) 10-1100

Extract Batch Code: 937562

Date Extracted:05-JAN-10

GEL Spike ID: 1202006242

GEL SpikeDup ID:1202006243

Analysis Date/Time: 13-JAN-10 18:28

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	4380	87.6	4520	90.4	3.15	30	51.6 - 127
2,6-Diamino-4-nitrotoluene	5000	0	5470	109	4720	94.4	14.7	30	58.9 - 135
3,5-Dinitroaniline	5000	0	4760	95.2	4920	98.4	3.31	30	72.8 - 125
TATB	5000	0	6350	127	6660	133	4.77	30	43.9 - 166
tris(o-cresyl) phosphate	5000	0	5260	105	5200	104	1.15	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): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 18-JAN-10 14:03

GEL Data File: EXP0118001a

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	533.831
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	572.959
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Method: C:\MASSLYNX\New_Exp.PRO\MethDB\011810expa.mdb, Time: Tue Jan 19 09:10:36 2010

Calibration: Untitled, Time: Tue Jan 19 10:56:45 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118001a

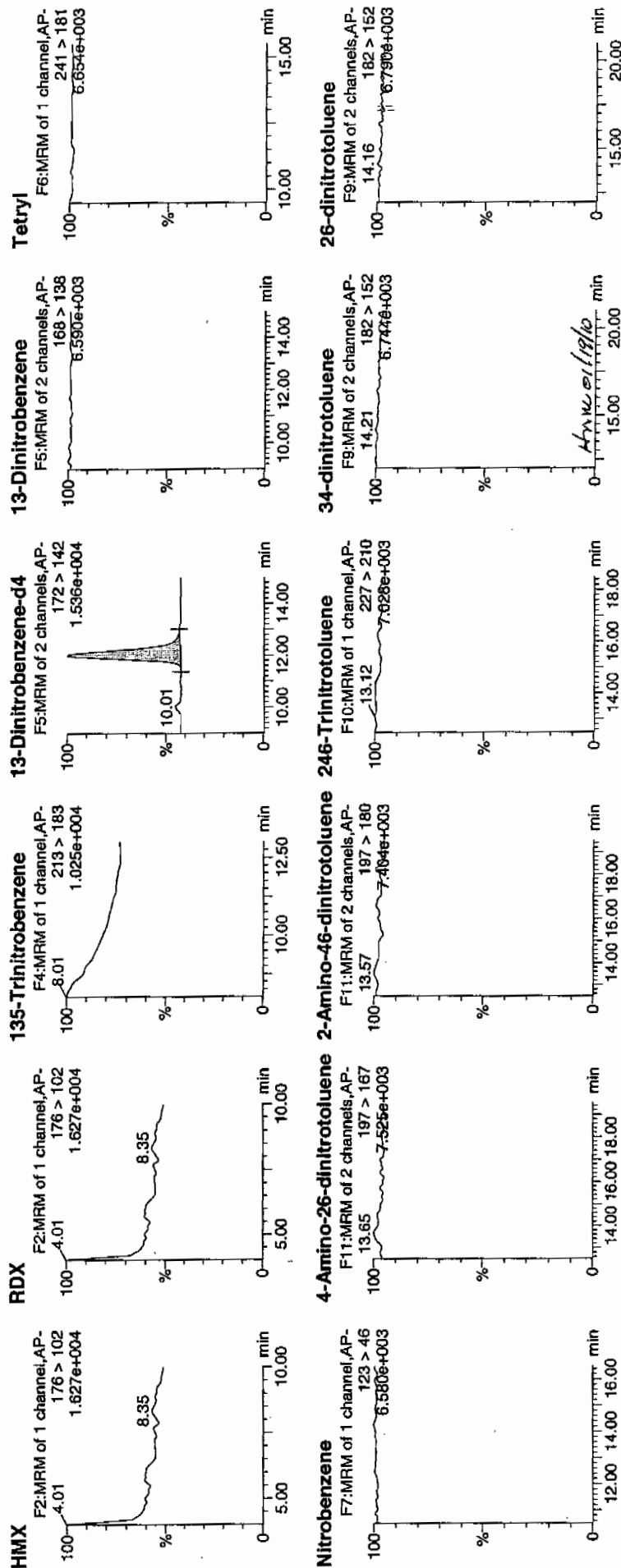
Date: 18-Jan-2010

Time: 14:03:34

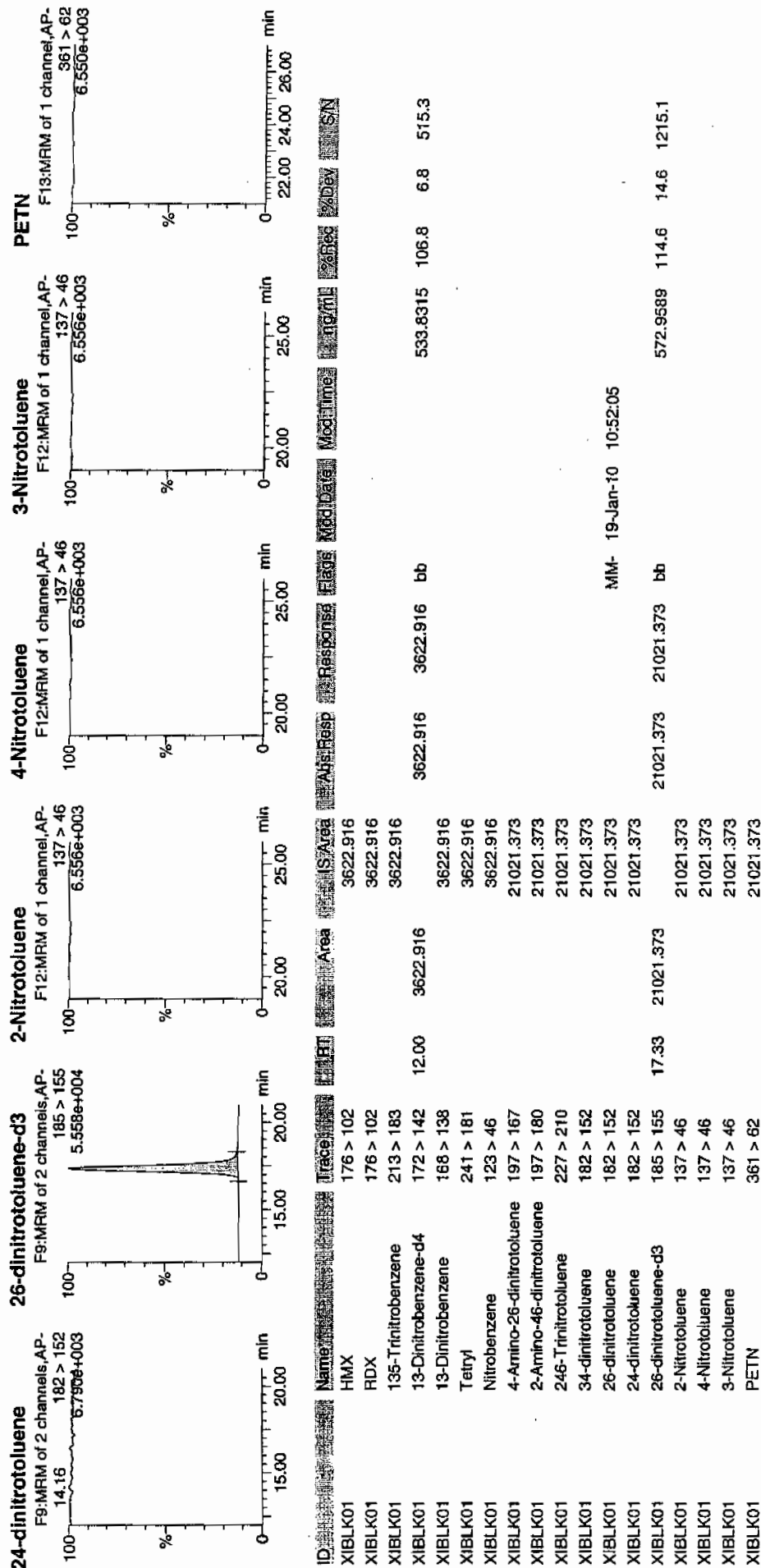
ID: XIBLK01

Vial: 1:1,A

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Dataset: C:\MASSLYN\New_Exp\PRO011810expA.qld, Time: Tue Jan 19 10:59:58 2010



Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 18-JAN-10 14:33

GEL Data File: EXP0118002a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	548.487
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	599.618
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

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

Dataset: C:\MASSLYNX\New_Exp\PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP\PRO\Data\EXP0118002a

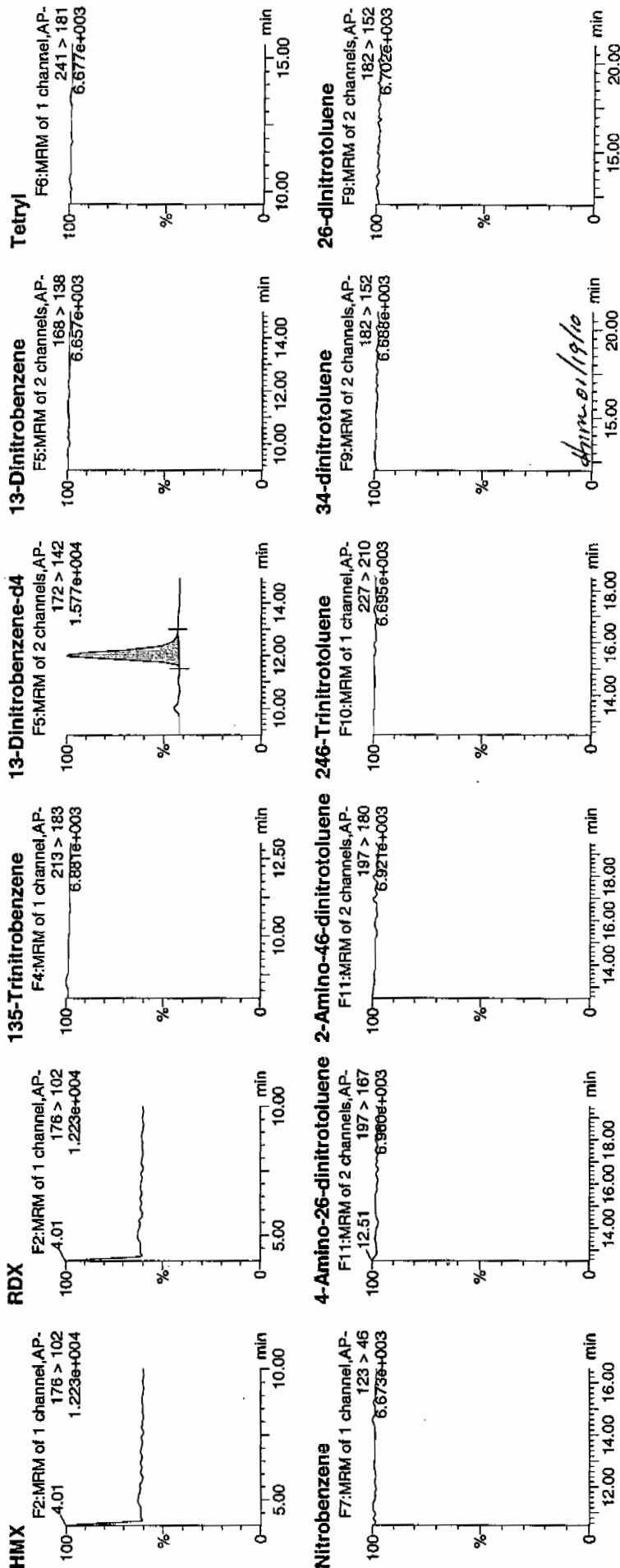
Date: 18-Jan-2010

Time: 14:33:05

ID: XIBLK01

Vial: 1:1,A

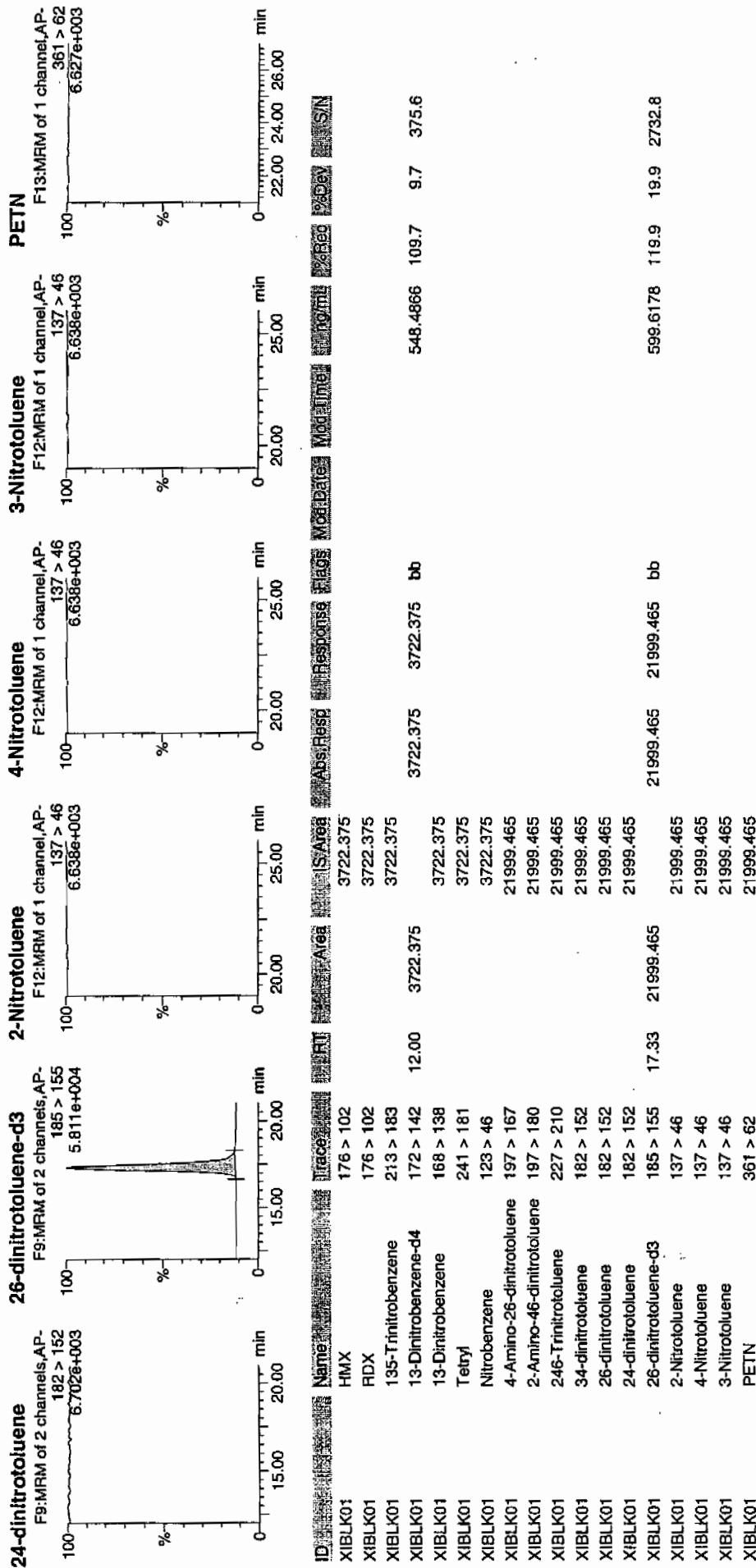
1/19/10



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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 13-JAN-10 14:17

GEL Data File: EXS01130001.wiff

Instrument ID: LCMSMS

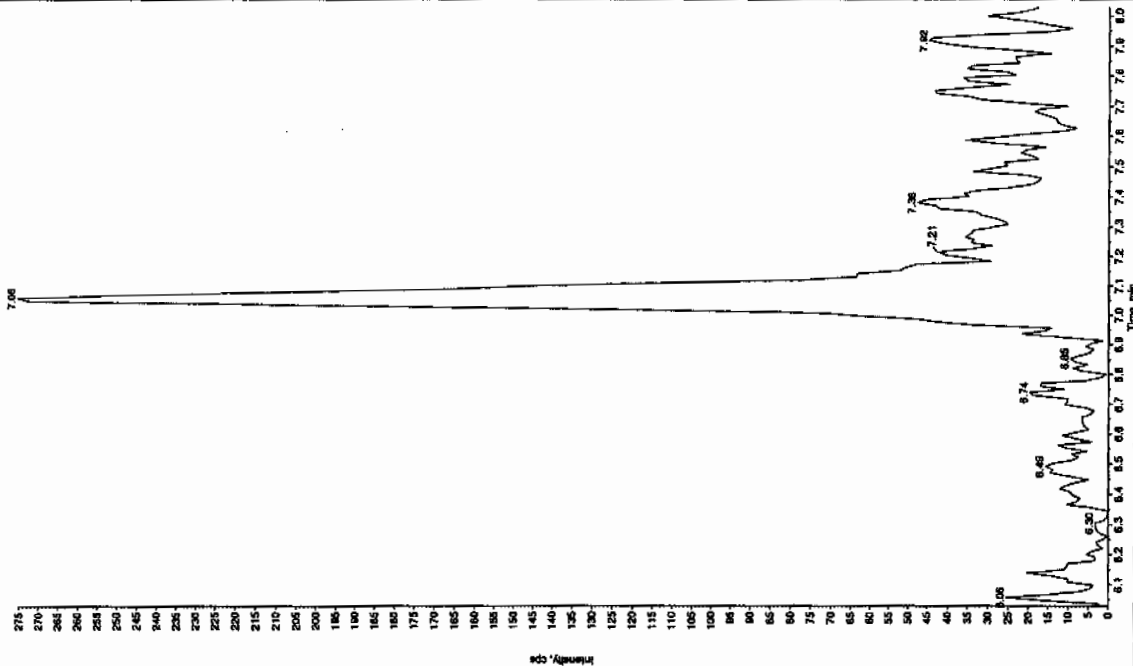
Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	.315
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

802
11/13/10

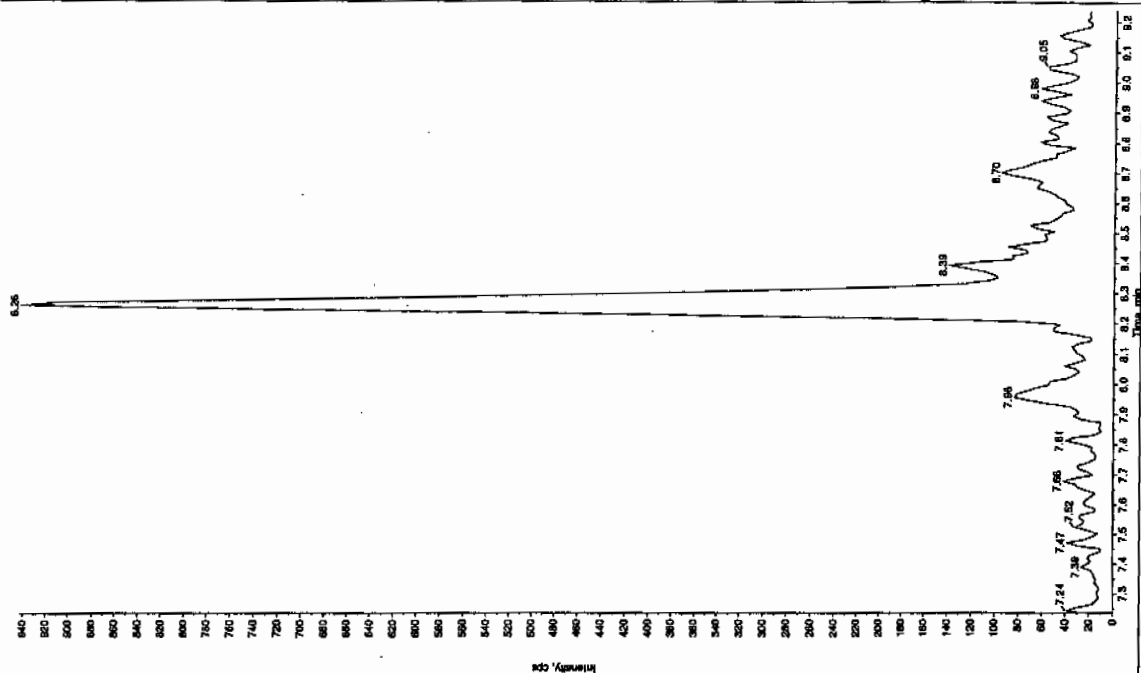
Sample Name: "XIELK01" Sample ID: "TILLER" File: "EXSD1130001.wif"
Peak Name: "TATB" Mass(es): "257.2204.9 amu"
Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.00 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 2:17:05 PM
Modified: No



Sample Name: "XIELK01" Sample ID: "TILLER" File: "EXSD1130001.wif"
Peak Name: "35-Dinitroaniline" Mass(es): "182.046.0 amu"
Comment: "LCMSEXP_B" Annotation: ""

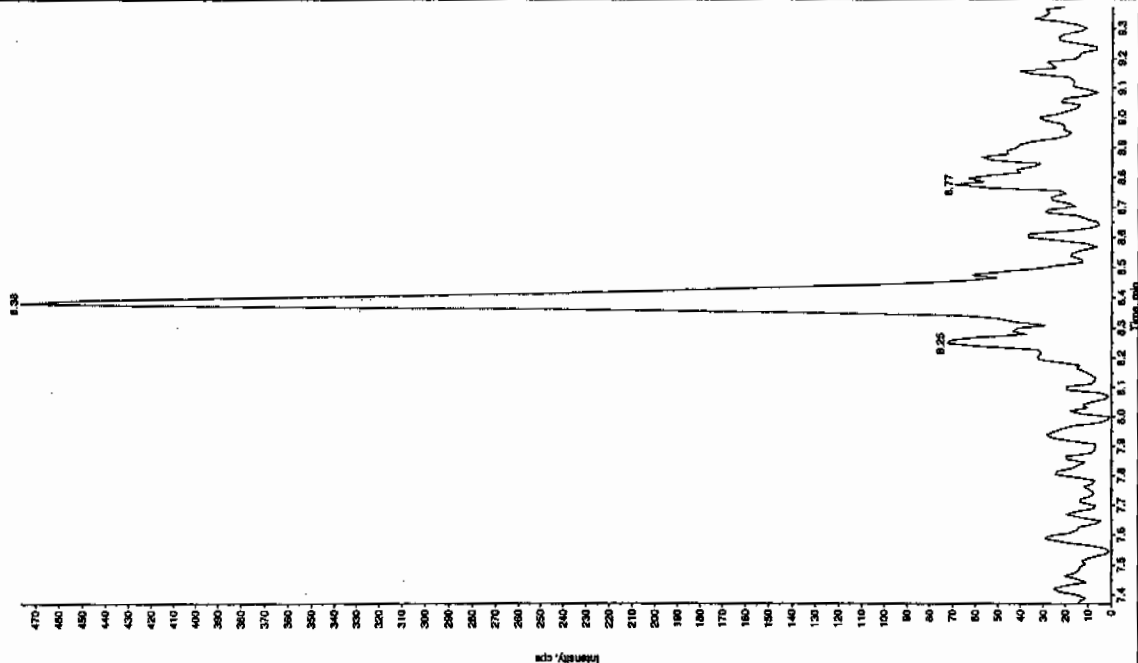
Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.00 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 2:17:05 PM
Modified: No



Amc 01/14/10

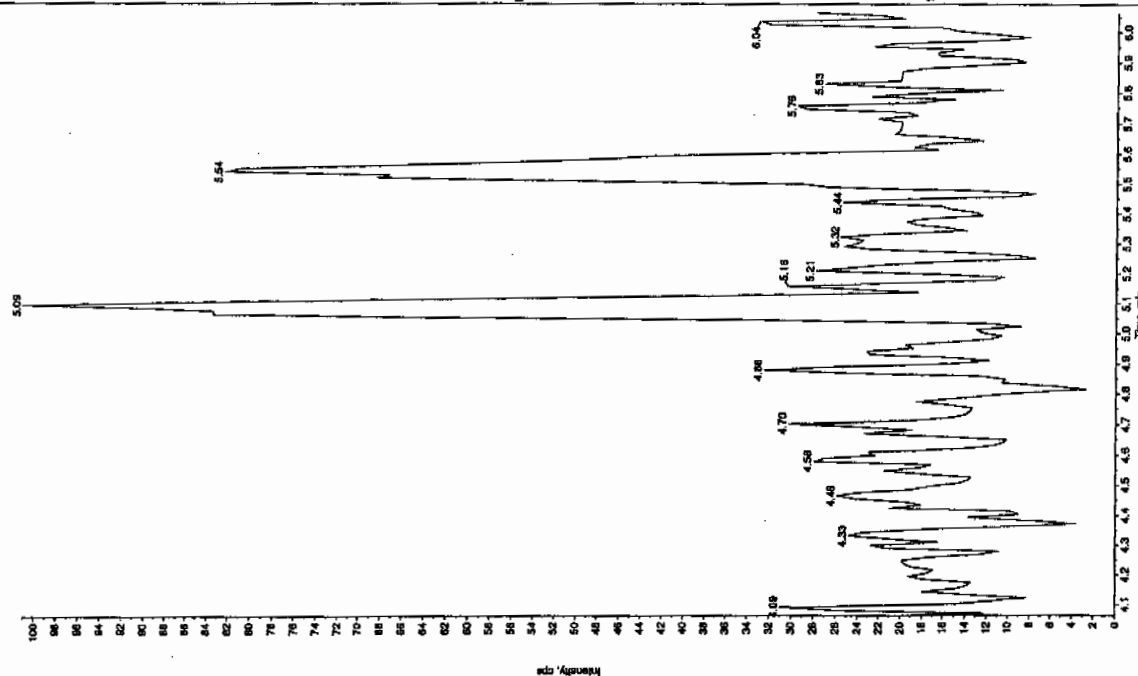
Sample Name: "XIBLK01" Sample ID: "TILLER" File: "EXS01130001.wif"
 Peak Name: "34-Dichlorobenzene" Mass(es): "182.1751.9 amu"
 Comment: "LCMSXP_E" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 2:17:05 PM
 Modified: No

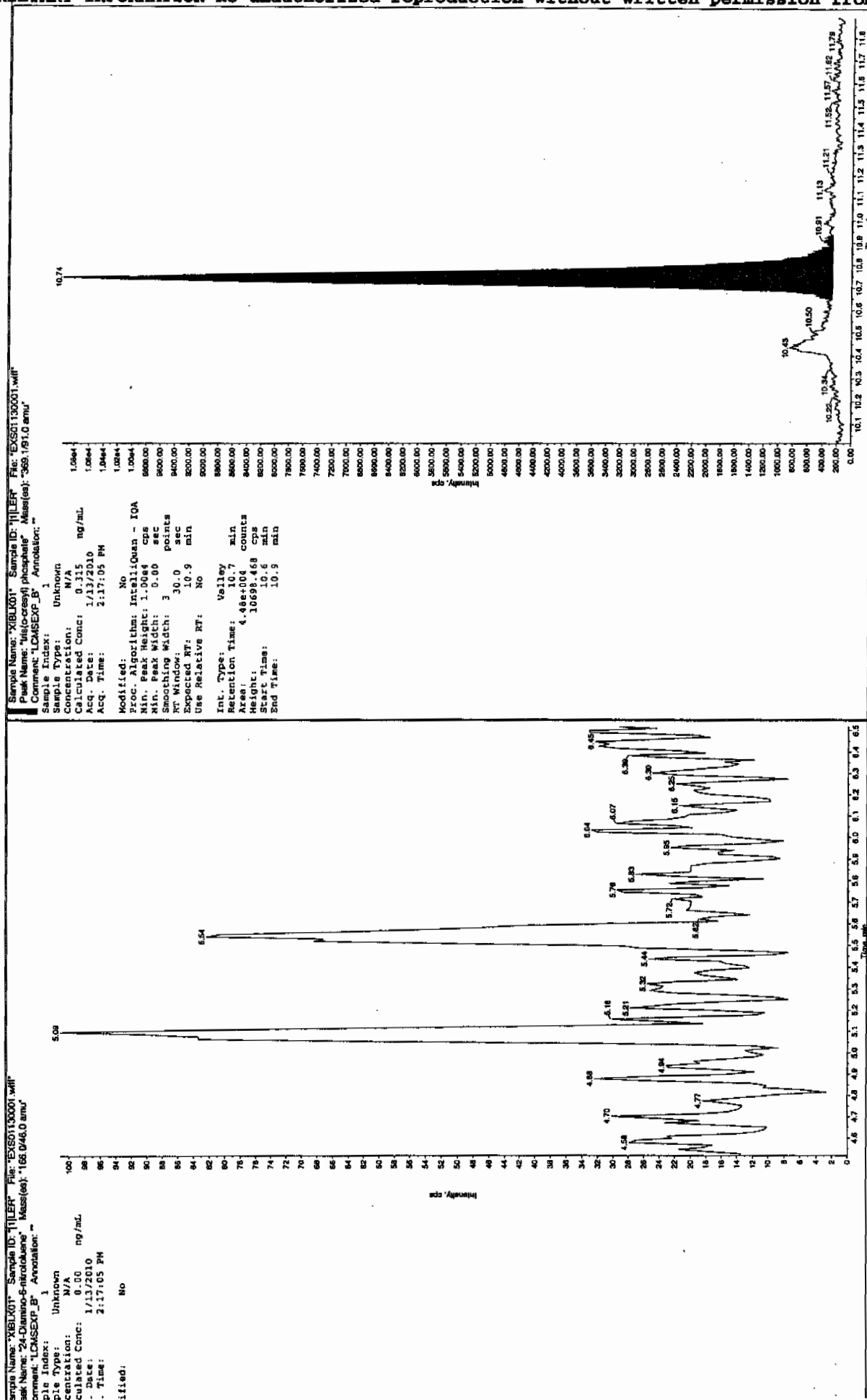


Sample Name: "XIBLK01" Sample ID: "TILLER" File: "EXS01130001.wif"
 Peak Name: "26-Diamino-4-nitrotoluene" Mass(es): "166.0461.0 amu"
 Comment: "LCMSXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 2:17:05 PM
 Modified: No



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



Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK01

Analysis Date: 13-JAN-10 14:32

GEL Data File: EXS01130002.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

08/11/10

Sample Name: "XBLU01" Sample ID: "TJLH" File: "EXS01130002.wif"

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

Comment: "LCMSEXP_B" Annotation: "

Sample Index: 1

Sample Type: Unknown

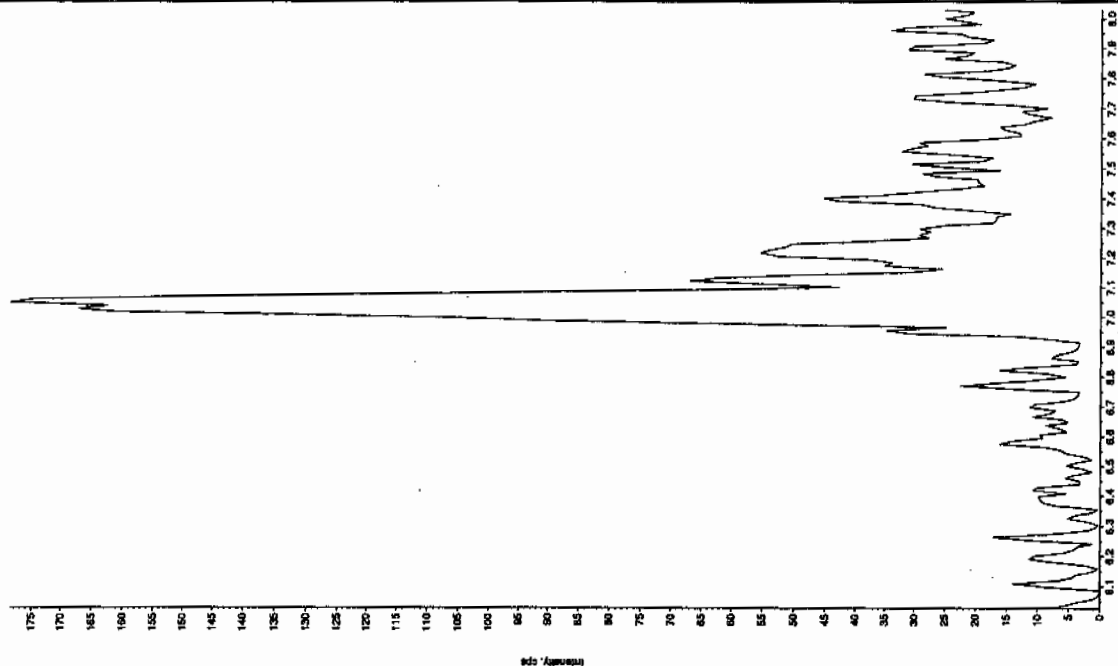
Concentration: 0.00 ng/mL

Calculated Conc: 1/13/2010

Acq. Date: 2:32:48 PM

Acq. Time: 2:32:48 PM

Modified: No



Sample Name: "XBLU01" Sample ID: "TJLH" File: "EXS01130002.wif"

Peak Name: "35-Dinitrophenol" Mass(es): "182.0460 amu"

Comment: "LCMSEXP_B" Annotation: "

Sample Index: 1

Sample Type: Unknown

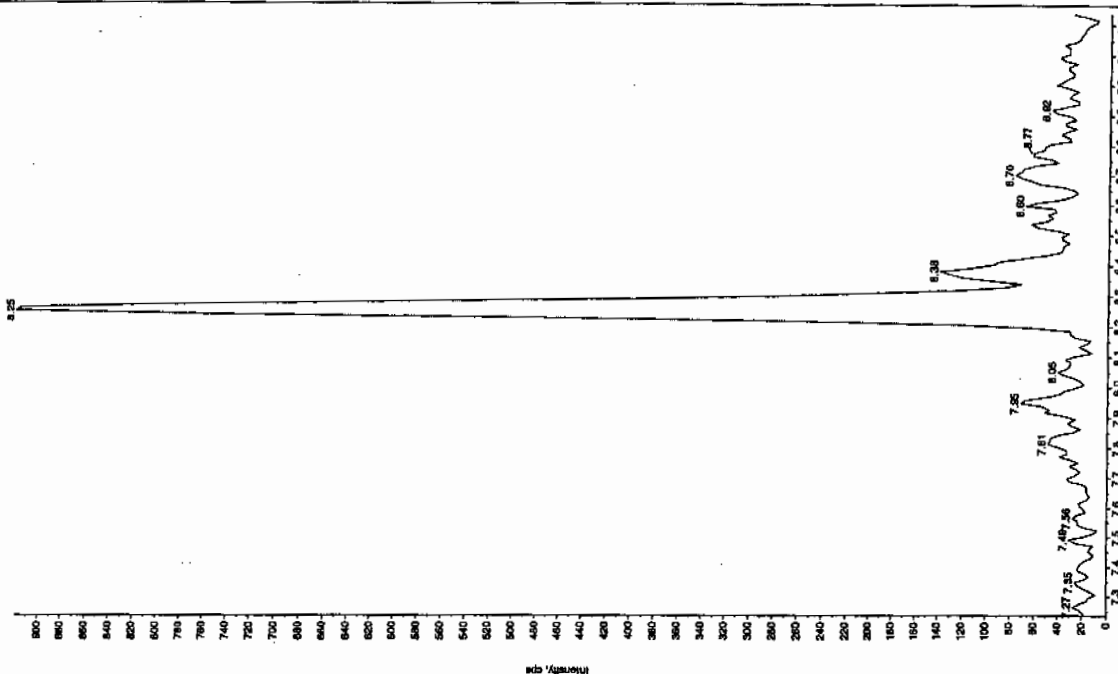
Concentration: 0.00 ng/mL

Calculated Conc: 1/13/2010

Acq. Date: 2:32:48 PM

Acq. Time: 2:32:48 PM

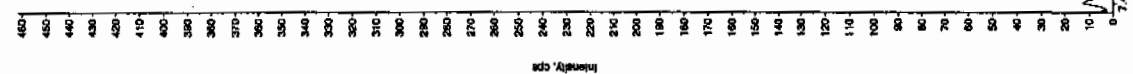
Modified: No



08/11/10

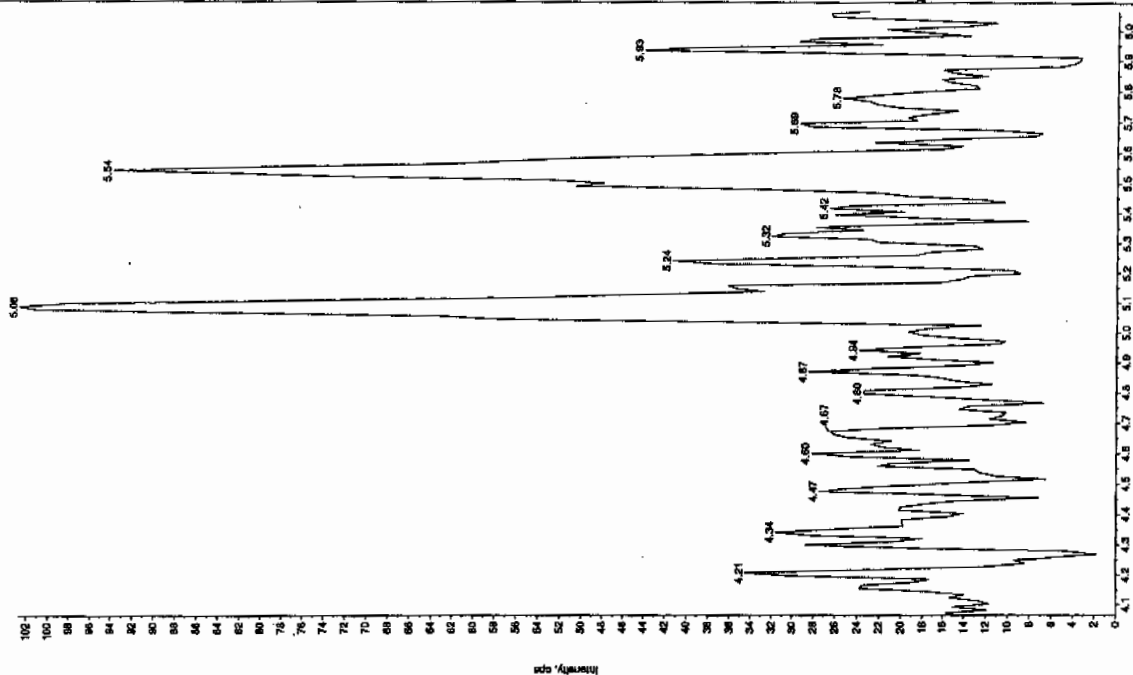
Sample Name: "XBLK01" Sample ID: "T1LER" File: "EXS0130002.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1/151.9 amu"
 Comment: "LCMS-EXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 2:32:48 PM
 Modified: No



Sample Name: "XBLK01" Sample ID: "T1LER" File: "EXS0130002.wif"
 Peak Name: "26-Dinitro-4-nitrofluorene" Mass(es): "166.0/46.0 amu"
 Comment: "LCMS-EXP_B" Annotation: ""

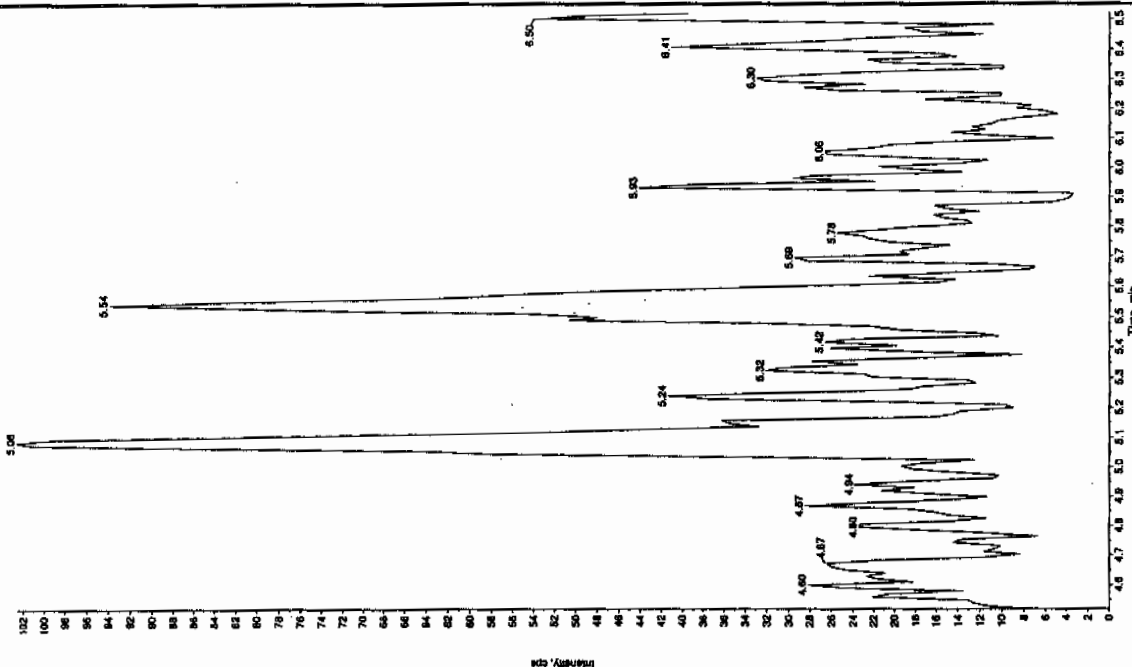
Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 2:32:48 PM
 Modified: No



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

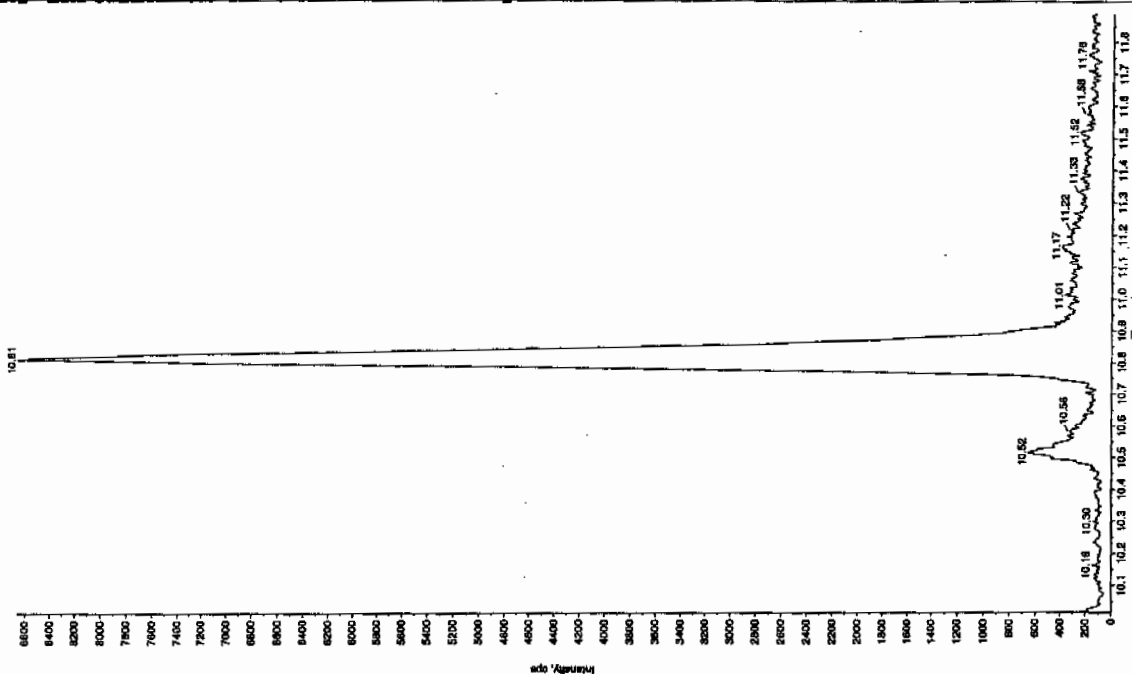
Sample Name: "XIBUK01" Sample ID: "TILER" File: "EXS01130002.wif"
 Peak Name: "24-Dinitro-6-nitrotoluene" Mass(es): "166.046.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 2:32:48 PM
 Modified: NO



Sample Name: "XIBUK01" Sample ID: "TILER" File: "EXS01130002.wif"
 Peak Name: "bis(o-cresyl) phosphate" Mass(es): "359.191.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 2:32:48 PM
 Modified: NO



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 18-JAN-10 17:59

GEL Data File: EXP0118009a

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	469.445
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	491.076
2-Amino-4,6-dinitrotoluene	0	0
4-Amino-2,6-dinitrotoluene	0	0
HMX	0	0
Nitrobenzene	0	0
PETN	0	0
RDX	0	0
Tetryl	0	0
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0

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

Dataset: C:\MASSLYNX\New_Exp\PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP\PRO\Data\EXP0118009a

Date: 18-Jan-2010

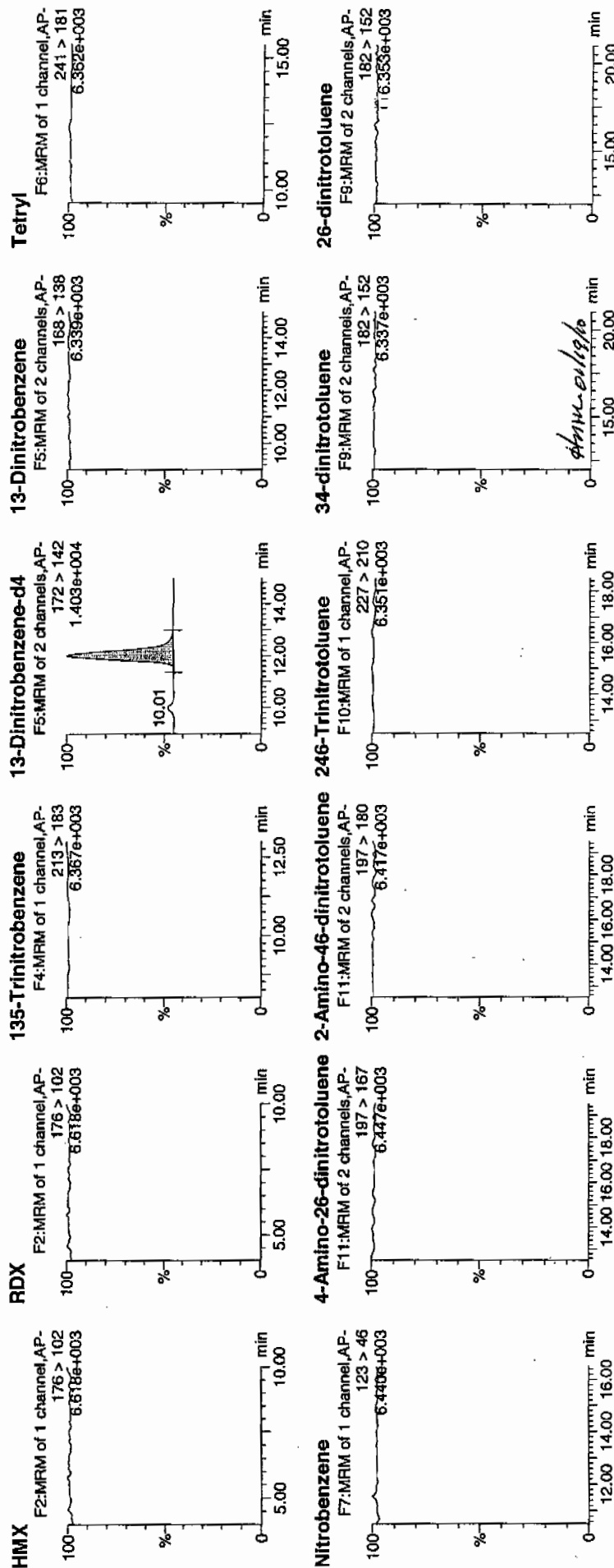
Time: 17:59:22

ID: XIBLK02

Vial: 1:1,A

1/19/10

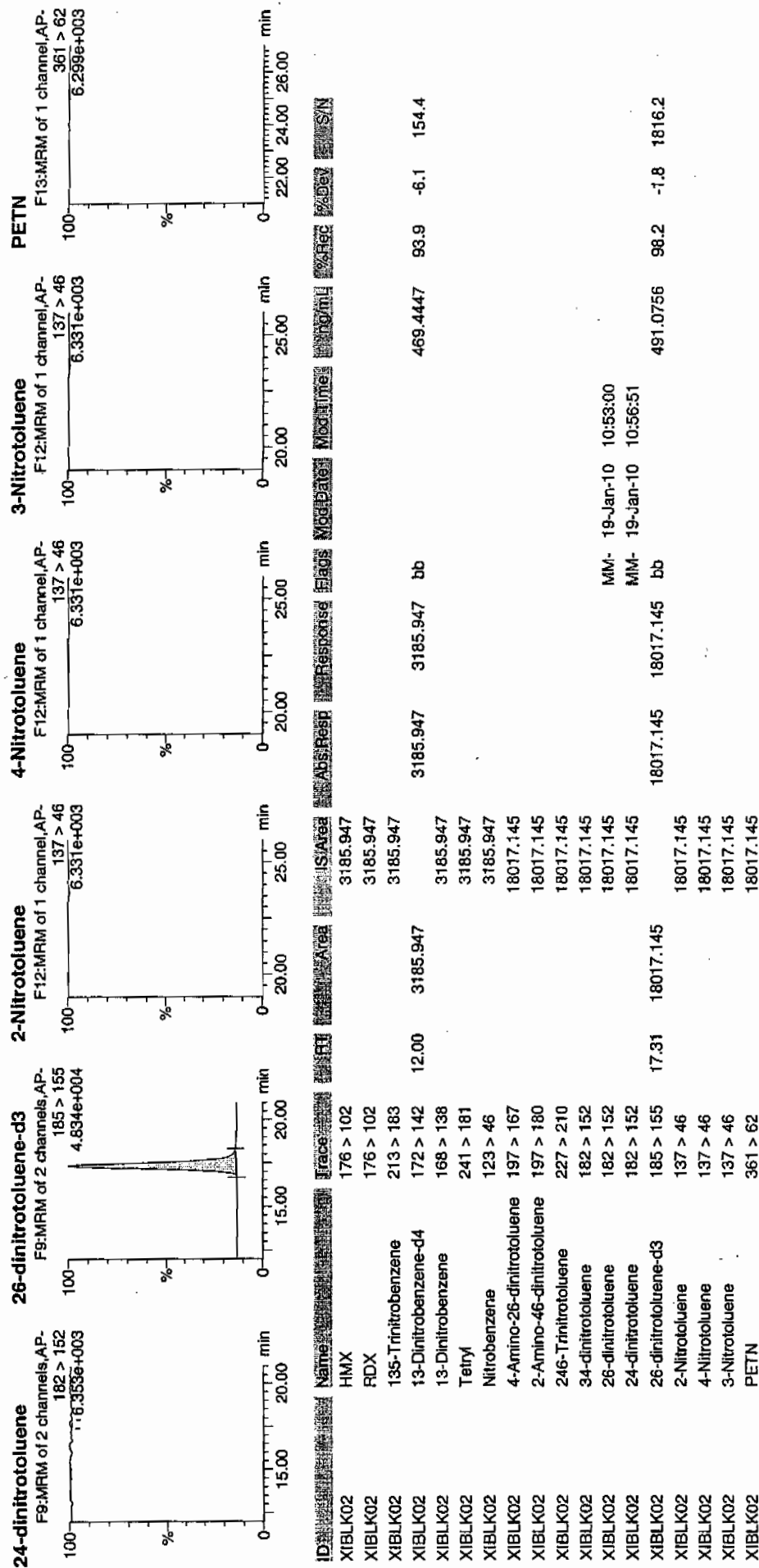
Page 66 of 1381



Printed: Tue Jan 19 11:02:03 2010, Page 18 of 85

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

Dataset: C:\MASSLYNX\New_Exp_PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 18-JAN-10 18:58

GEL Data File: EXP0118011a

Instrument ID: LCMSMS

Column: Phenomenex Ultra[®]carb 5u ODS(20)

Compound	True	Found (ug/L)
m-Dinitrobenzene	0	0
m-Nitrotoluene	0	0
o-Nitrotoluene	0	0
p-Nitrotoluene	0	0
Tetryl	0	0
3,4-Dinitrotoluene	0	0
1,3,5-Trinitrobenzene	0	0
1,3-Dinitrobenzene-d4	500	464.129
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	483.307
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

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

Dataset: C:\MASSLYNX\New_Exp_PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP_PRO\Data\EXP0118011a

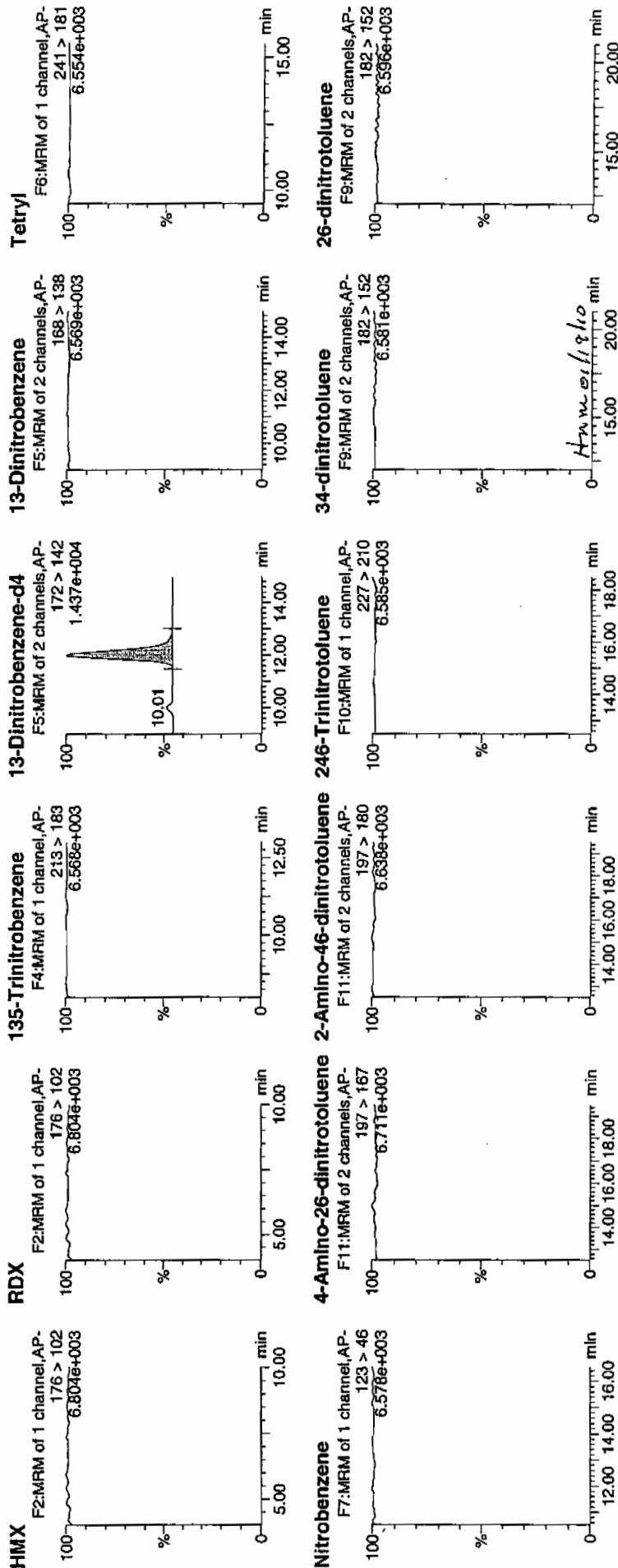
Date: 18-Jan-2010

Time: 18:58:20

ID: XIBLK03

Vial: 1:1,A

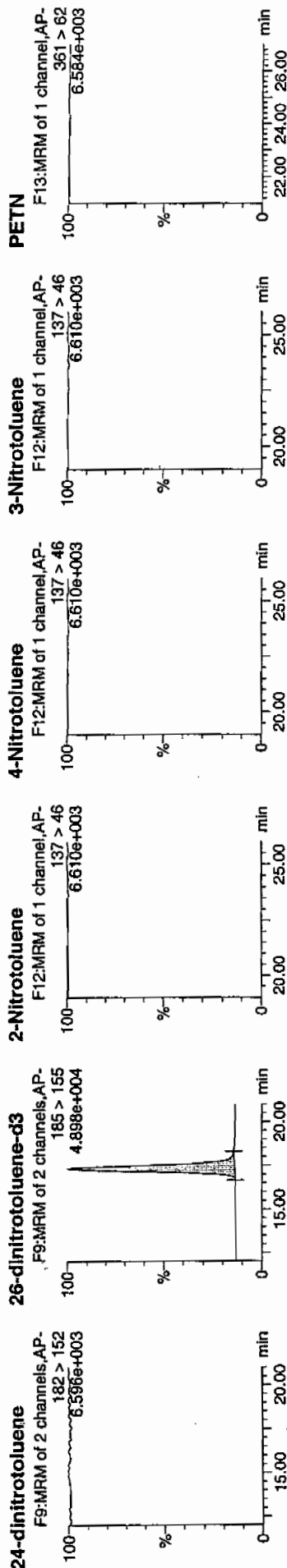
1/19/10



Printed: Tue Jan 19 11:02:03 2010, Page 22 of 85

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

Dataset: C:\MASSLYNX\New_Exp\PRO011810expA.qld, Time: Tue Jan 19 10:59:58 2010



ID#	Name	Trace	RT	Area	IS Area	Abs Resp	Response	Flags	Mod Date	Mod Time	% Rec	% Dev	ISN
XIBLK03	HMX	176 > 102				3149.868							
XIBLK03	RDX	176 > 102				3149.868							
XIBLK03	135-Trinitrobenzene	213 > 183				3149.868							
XIBLK03	13-Dinitrobenzene-d4	172 > 142	12.00	3149.868			3149.868	bb			464.1285	92.8	-7.2
XIBLK03	13-Dinitrobenzene	168 > 138											336.5
XIBLK03	Tetryl	241 > 181											
XIBLK03	Nitrobenzene	123 > 46				3149.868							
XIBLK03	4-Amino-26-dinitrotoluene	197 > 167				3149.868							
XIBLK03	2-Amino-46-dinitrotoluene	197 > 180				17732.127							
XIBLK03	246-Trinitrotoluene	227 > 210				17732.127							
XIBLK03	34-dinitrotoluene	182 > 152				17732.127							
XIBLK03	26-dinitrotoluene	182 > 152				17732.127							
XIBLK03	24-dinitrotoluene	182 > 152				17732.127							
XIBLK03	26-dinitrotoluene-d3	185 > 155	17.31	17732.127			17732.127	bb			483.3072	96.7	-3.3
XIBLK03	2-Nitrotoluene	137 > 46				17732.127							818.5
XIBLK03	4-Nitrotoluene	137 > 46				17732.127							
XIBLK03	3-Nitrotoluene	137 > 46				17732.127							
XIBLK03	PETN	361 > 82				17732.127							

4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 18-JAN-10 23:23

GEL Data File: EXP0118020a

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	472.082
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	530.135
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

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118020a

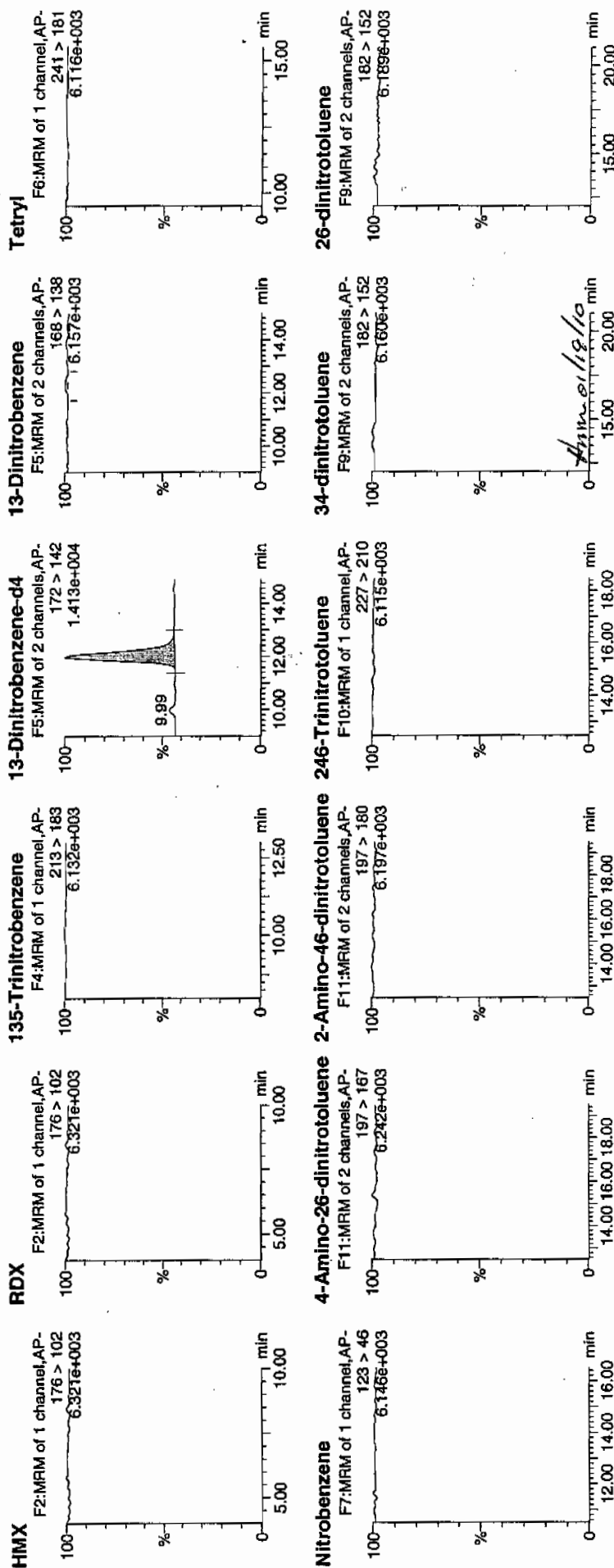
Date: 18-Jan-2010

Time: 23:23:38

ID: XIBLK04

Vial: 1:1,A

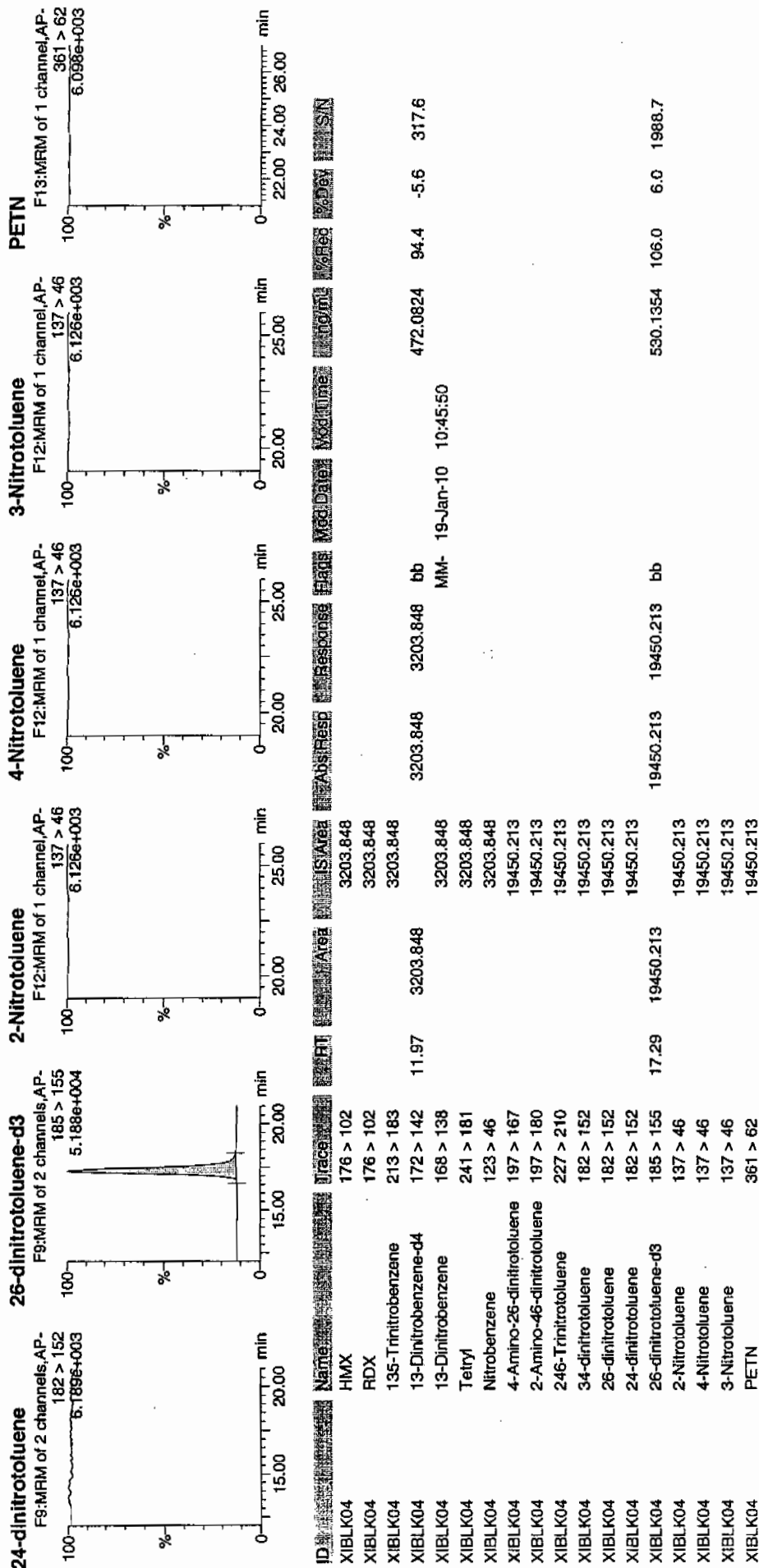
11A/P



Printed: Tue Jan 19 11:02:03 2010, Page 40 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 19-JAN-10 05:47

GEL Data File: EXP0118033a

Instrument ID: LCMSMS

Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
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	455.774
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	496.57
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\011810expA.qtd, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP\PRO\Data\EXP0118033a

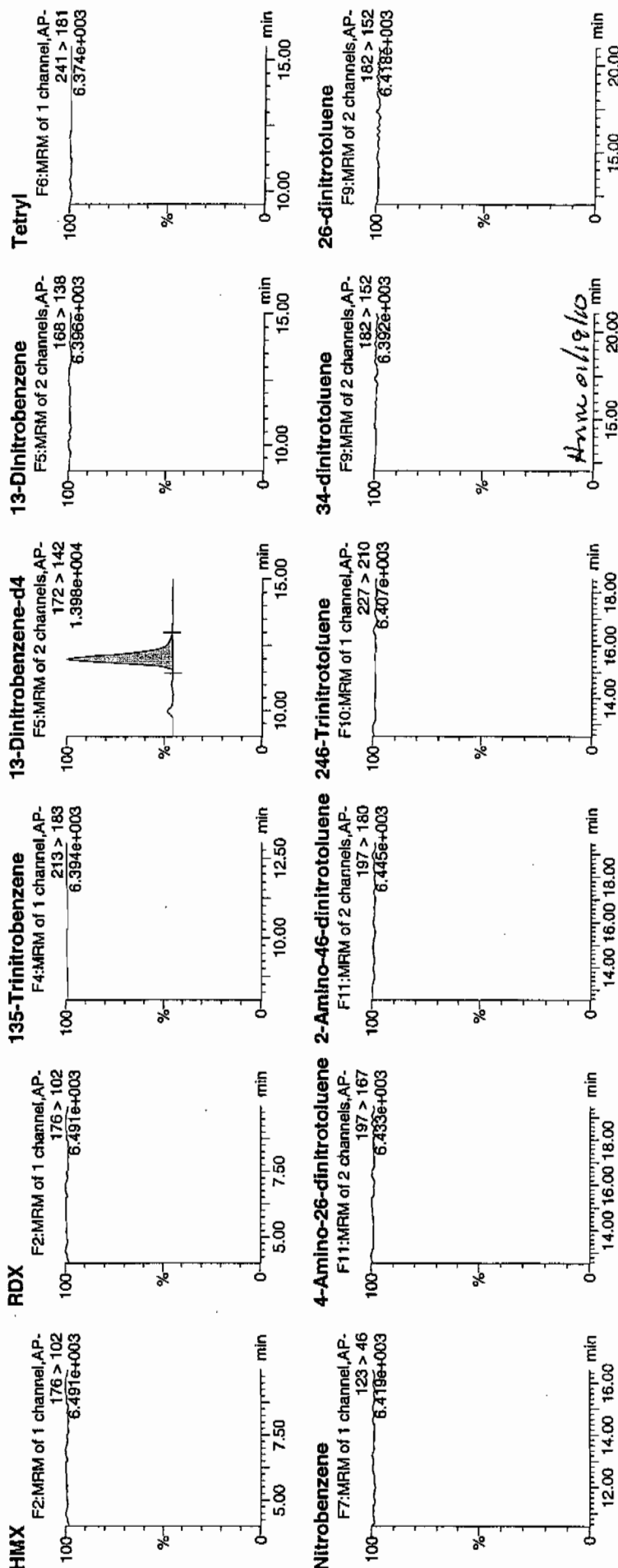
Date: 19-Jan-2010

Time: 05:47:12

ID: XIBLK05

Vial: 1:1,A

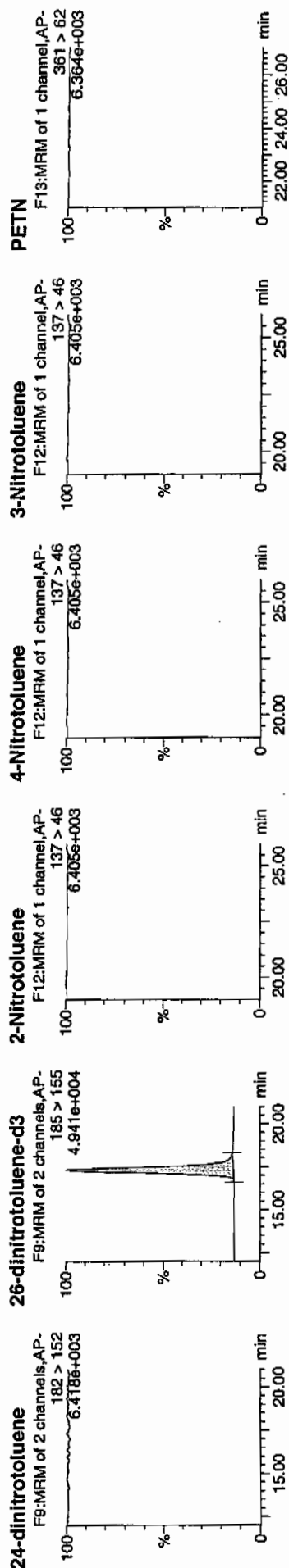
1/19/10



Quantify Sample Report

GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



ID	Name	Trace	RT	Area	S Area	Abs Resp	Response	Flags	Mod Date	Mod Time	%Inj/mL	%Rec	%Dev	SYN
XIBLK05	HMX	176 > 102			3093.171									
XIBLK05	RDX	176 > 102			3093.171									
XIBLK05	135-Trinitrobenzene	213 > 183			3093.171									
XIBLK05	13-Dinitrobenzene-d4	172 > 142	11.97	3093.171		3093.171	3093.171	bb			455.7743	91.2	-8.8	395.3
XIBLK05	13-Dinitrobenzene	168 > 138			3093.171									
XIBLK05	Tetryl	241 > 181			3093.171									
XIBLK05	Nitrobenzene	123 > 46			3093.171									
XIBLK05	4-Amino-26-dinitrotoluene	197 > 167			18218.725									
XIBLK05	2-Amino-46-dinitrotoluene	197 > 180			18218.725									
XIBLK05	246-Trinitrotoluene	227 > 210			18218.725									
XIBLK05	34-dinitrotoluene	182 > 152			18218.725									
XIBLK05	26-dinitrotoluene	182 > 152			18218.725									
XIBLK05	24-dinitrotoluene	182 > 152			18218.725									
XIBLK05	26-dinitrotoluene-d3	185 > 155	17.30	18218.725		18218.725	18218.725	bb			496.5699	99.3	-0.7	1078.6
XIBLK05	2-Nitrotoluene	137 > 46			18218.725									
XIBLK05	4-Nitrotoluene	137 > 46			18218.725									
XIBLK05	3-Nitrotoluene	137 > 46			18218.725									
XIBLK05	PETN	361 > 62			18218.725									

4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 19-JAN-10 09:43

GEL Data File: EXP0118041a

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	454.25
2,4,6-Trinitrotoluene	0	0
2,4-Dinitrotoluene	0	0
2,6-Dinitrotoluene	0	0
2,6-Dinitrotoluene-d3	500	439.42
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 19 11:02:03 2010, Page 81 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118041a

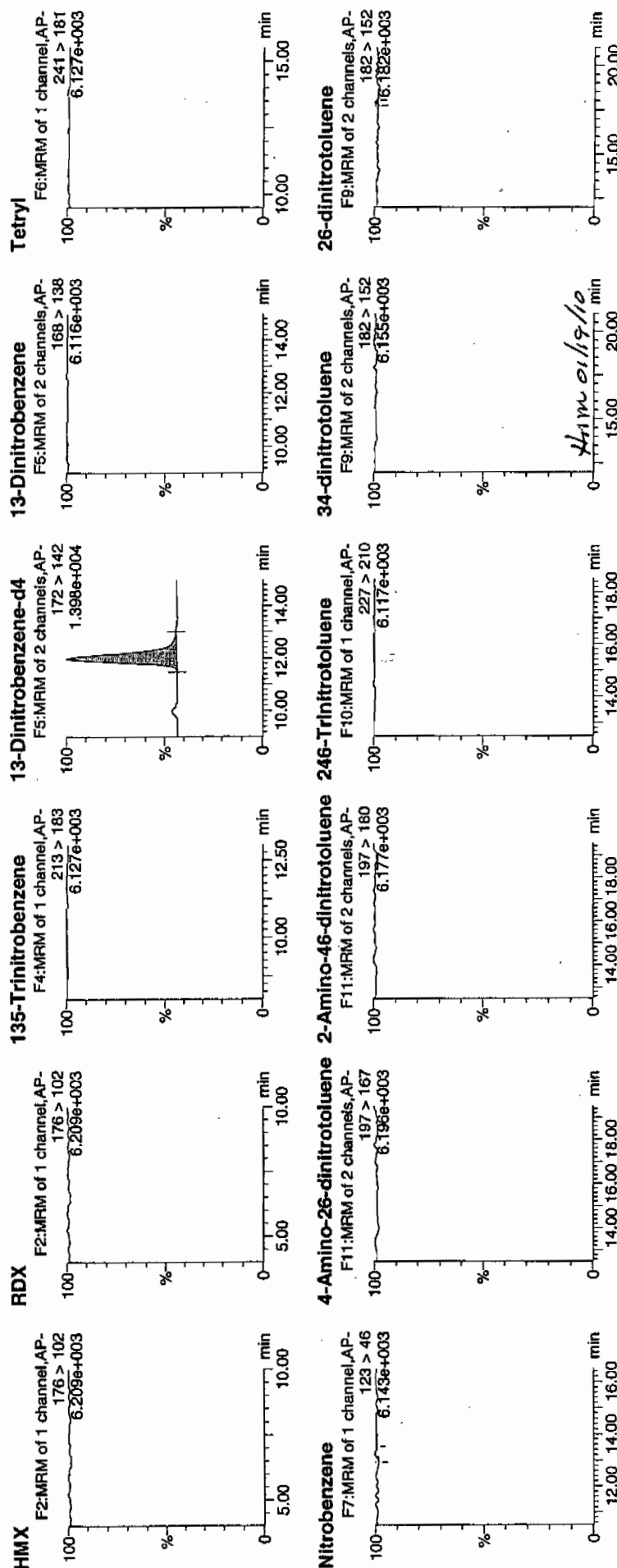
Date: 19-Jan-2010

Time: 09:43:25

ID: XIBLK06

Vial: 1:1,A

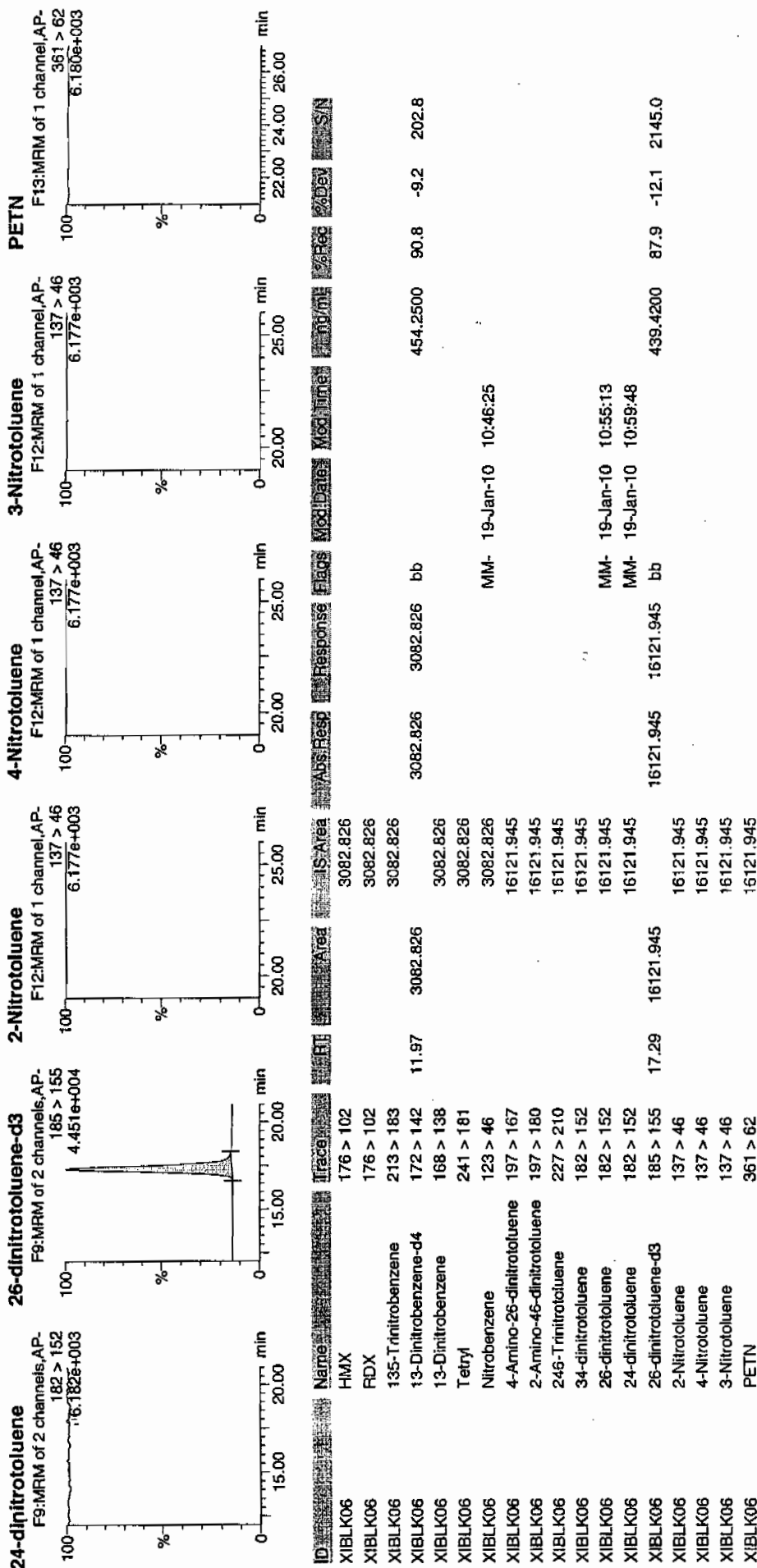
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Printed: Tue Jan 19 11:02:03 2010, Page 82 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 13-JAN-10 16:38

GEL Data File: EXS01130010.wiff

Instrument ID: LCMSMS

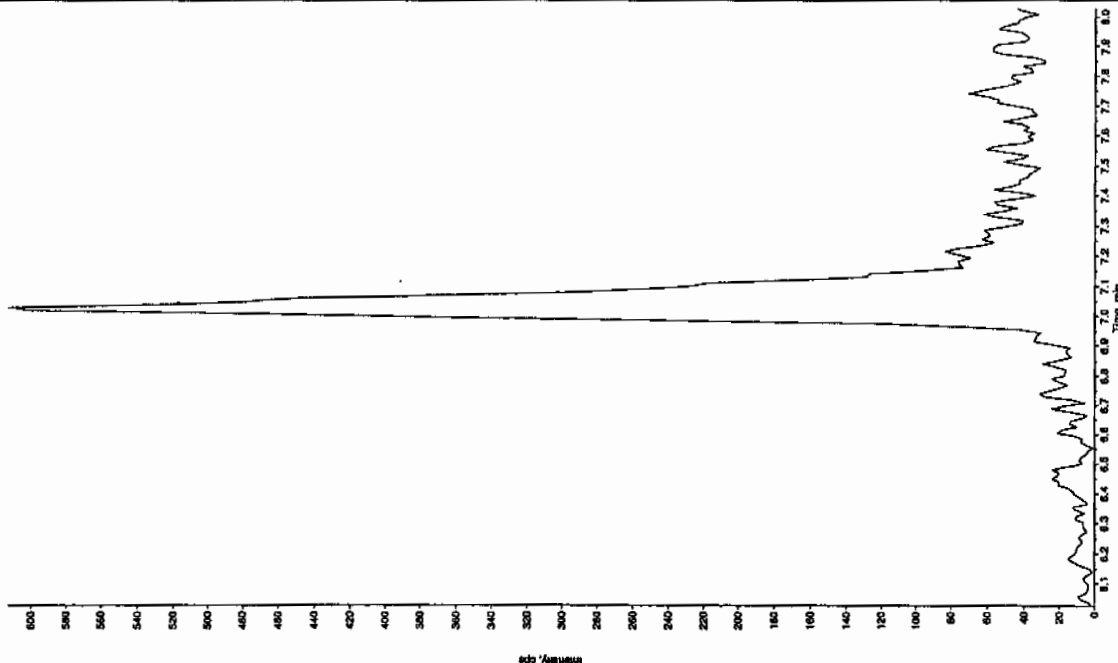
Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	4.93
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

1/13/10
Jag

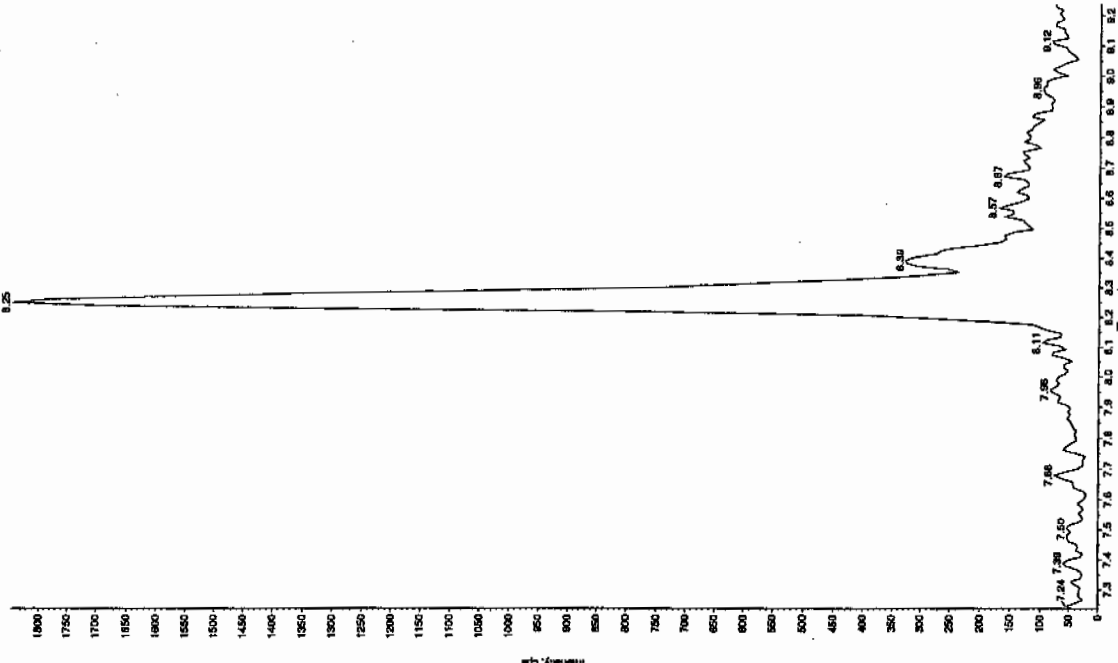
Sample Name: "XBLK02" Sample ID: "JILER" File: "EXSD1130010.will"
Peak Name: "TATB" Mass(es): "257.2204.9 amu"
Comment: "LCMSEXP_B" Annotation: "

Sample Index: 1
Sample Type: Unknown
Concentration: N/A ng/mL
Calculated Conc: 1/13/2010
Acq. Date: 4:38:21 PM
Acq. Time: 4:38:21 PM
Notified: No



Sample Name: "XBLK02" Sample ID: "JILER" File: "EXSD1130010.will"
Peak Name: "3S-Dinitroarsine" Mass(es): "182.046.0 amu"
Comment: "LCMSEXP_B" Annotation: "

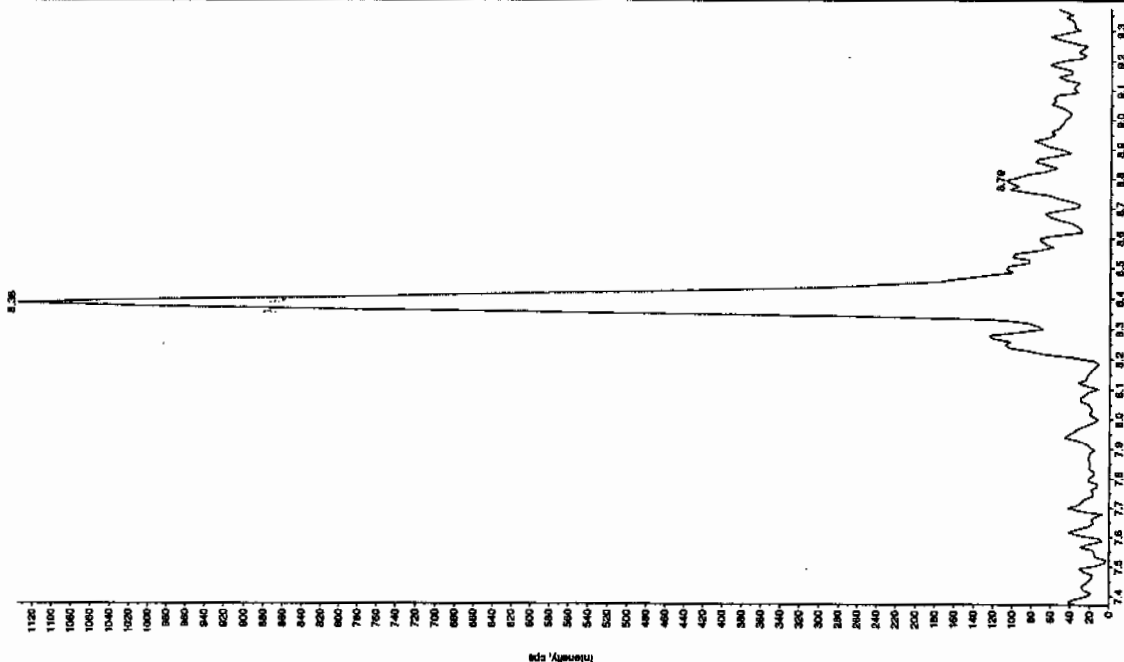
Sample Index: 1
Sample Type: Unknown
Concentration: N/A ng/mL
Calculated Conc: 1/13/2010
Acq. Date: 4:38:21 PM
Acq. Time: 4:38:21 PM
Notified: No



1/14/10
Jag

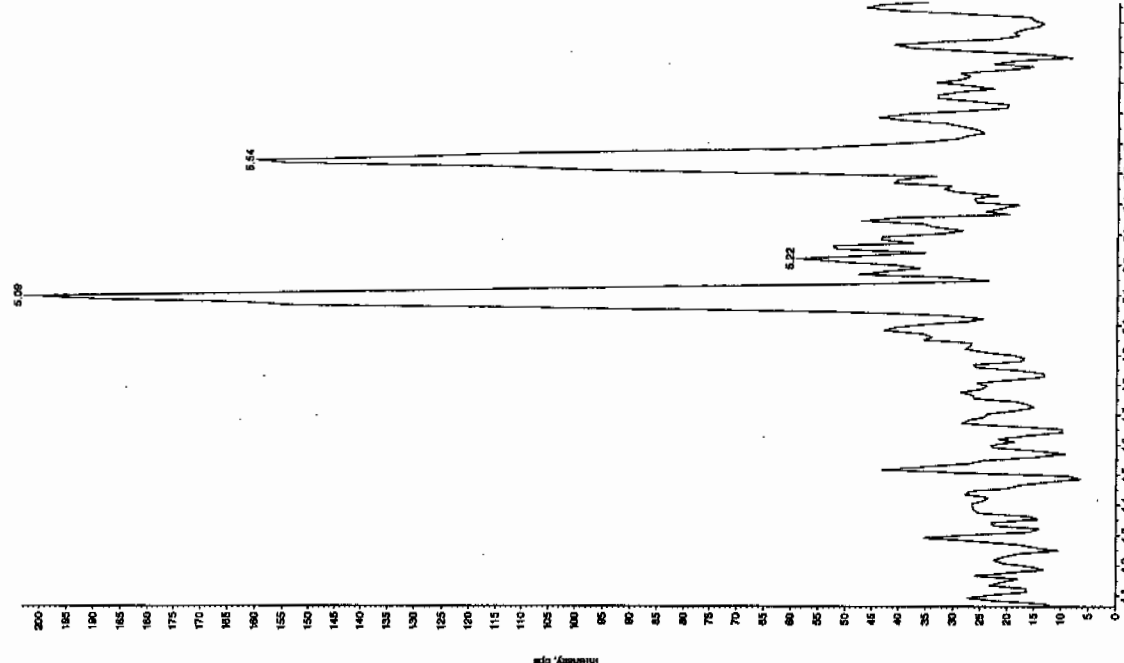
Sample Name: "XBLK02" Sample ID: "11LER" File: "EXS0130010.will"
 Peak Name: "34-Dinitrobenzene" Mass(es): "182.1715.9 amu"
 Comment: "LCMSXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Date: 1/13/2010
 Acq. Time: 4:38:21 PM
 Modified: No



Sample Name: "XBLK02" Sample ID: "11LER" File: "EXS0130010.will"
 Peak Name: "26-Diamino-4-nitroindole" Mass(es): "166.046.0 amu"
 Comment: "LCMSXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Date: 1/13/2010
 Acq. Time: 4:38:21 PM
 Modified: No

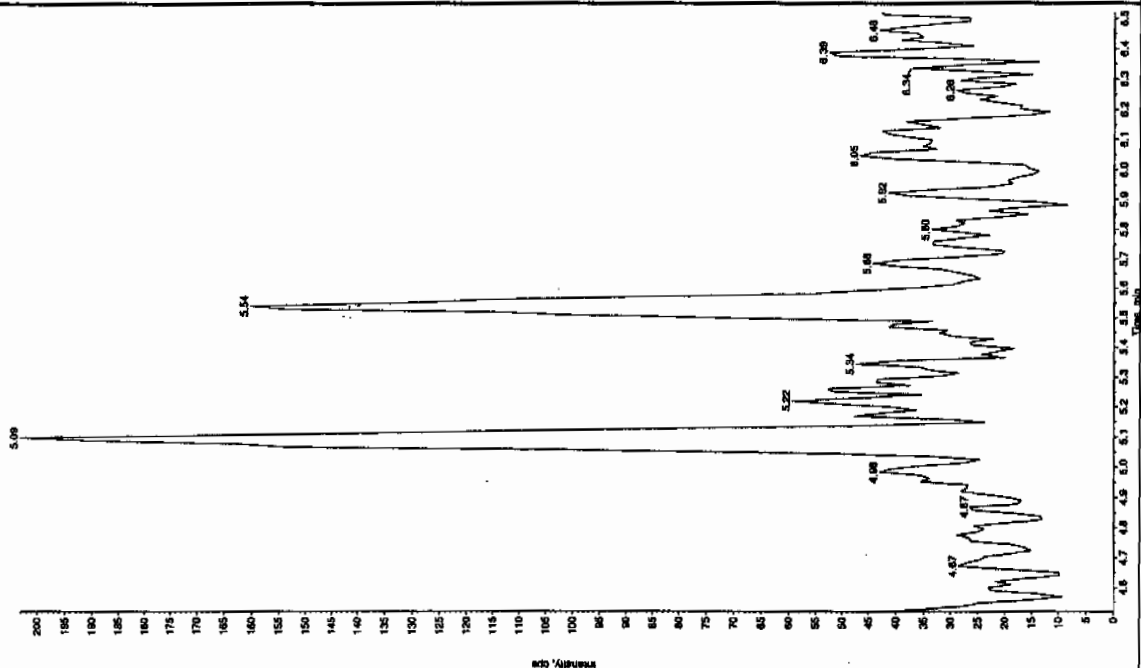


EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

Sample Name: "XBLK02" Sample ID: "HLLER" File: "EX01130010.wif"
 Peak Name: "2,4,6-tris(m-cyano)phenol" Mass(es): "168.046.0 amu"
 Comment: "LCMSXP_B", Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 4:38:21 PM
 Modified: No

Proc. Algorithm: IntelliQuan - IGA
 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: 11.0 min
 Area: 1.60e+005 counts
 Height: 37953.945 cps
 Start Time: 10.9 min
 End Time: 11.2 min



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 13-JAN-10 17:09

GEL Data File: EXS01130012.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	2.26
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

11/13/10
202

Sample Name: "XIBLX03" Sample ID: "JILLER" File: "EX501130012.wif"

Peak Name: "TA1B" Mass(es): "257.22049 amu"

Comment: "LCMSEXP_B" Annotation: "

Sample Index: 1

Sample Type: Unknown

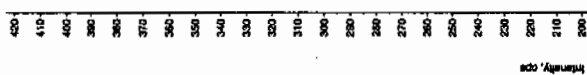
Concentration: 0.00 ng/mL

Calculated Conc: 0.00

Acq. Date: 1/13/2010

Acq. Time: 5:09:45 PM

Modified: No



Sample Name: "XIBLX03" Sample ID: "JILLER" File: "EX501130012.wif"

Peak Name: "35-Dinitroaniline" Mass(es): "182.0480 amu"

Comment: "LCMSEXP_B" Annotation: "

Sample Index: 1

Sample Type: Unknown

Concentration: 0.00 ng/mL

Calculated Conc: 0.00

Acq. Date: 1/13/2010

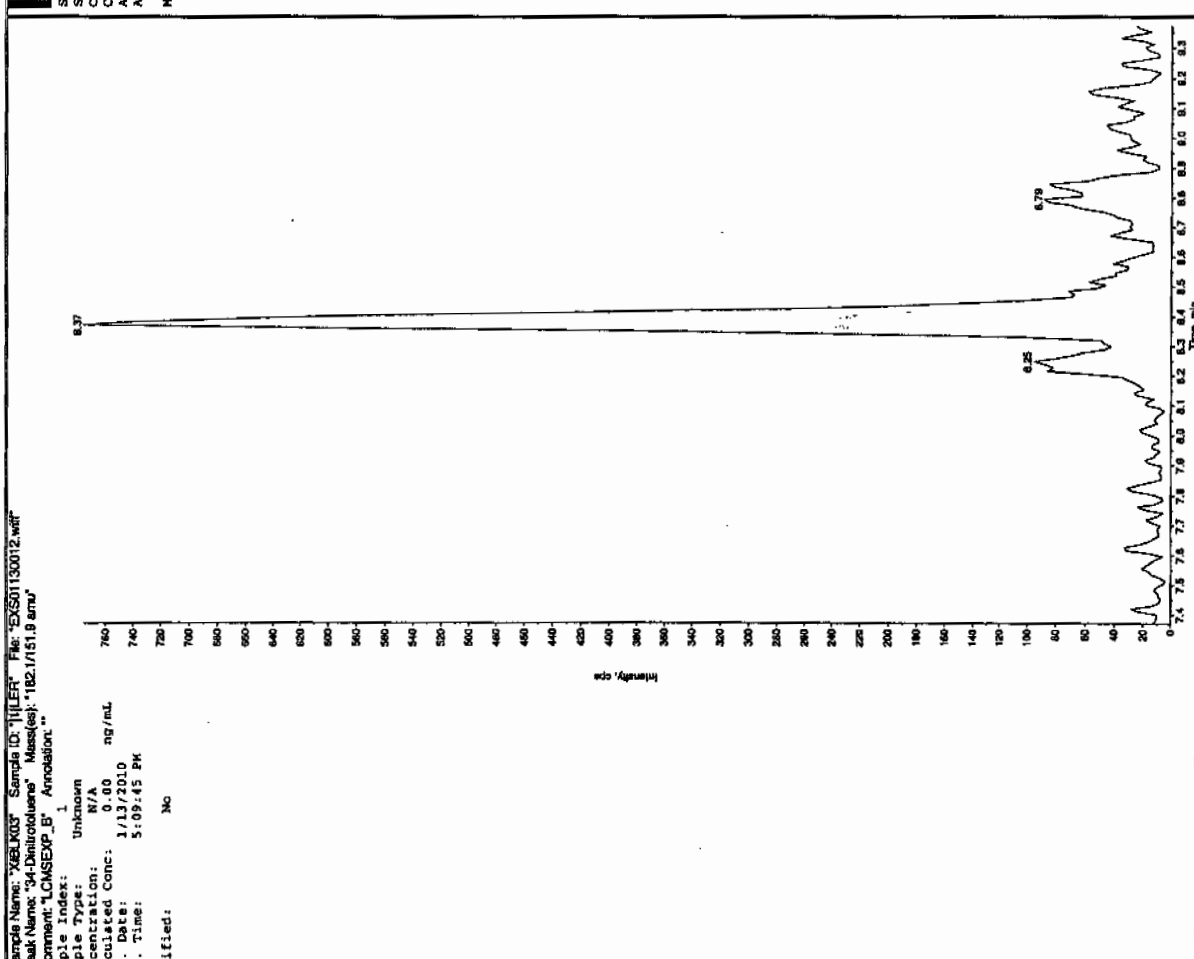
Acq. Time: 5:09:45 PM

Modified: No



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

11/14/10

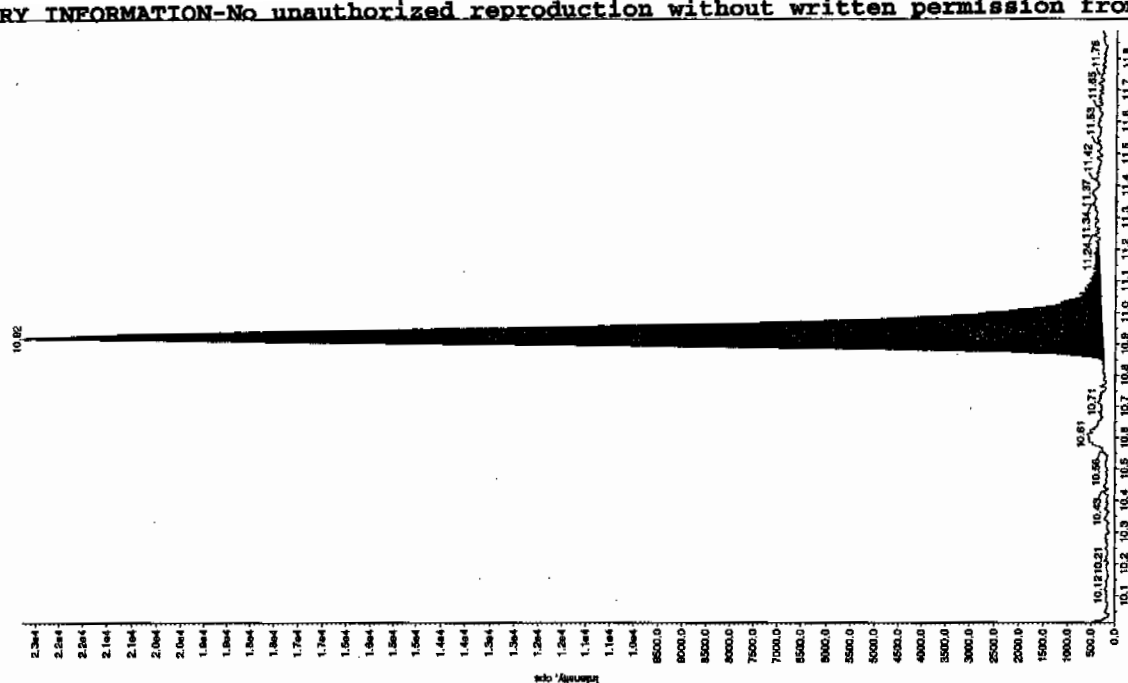
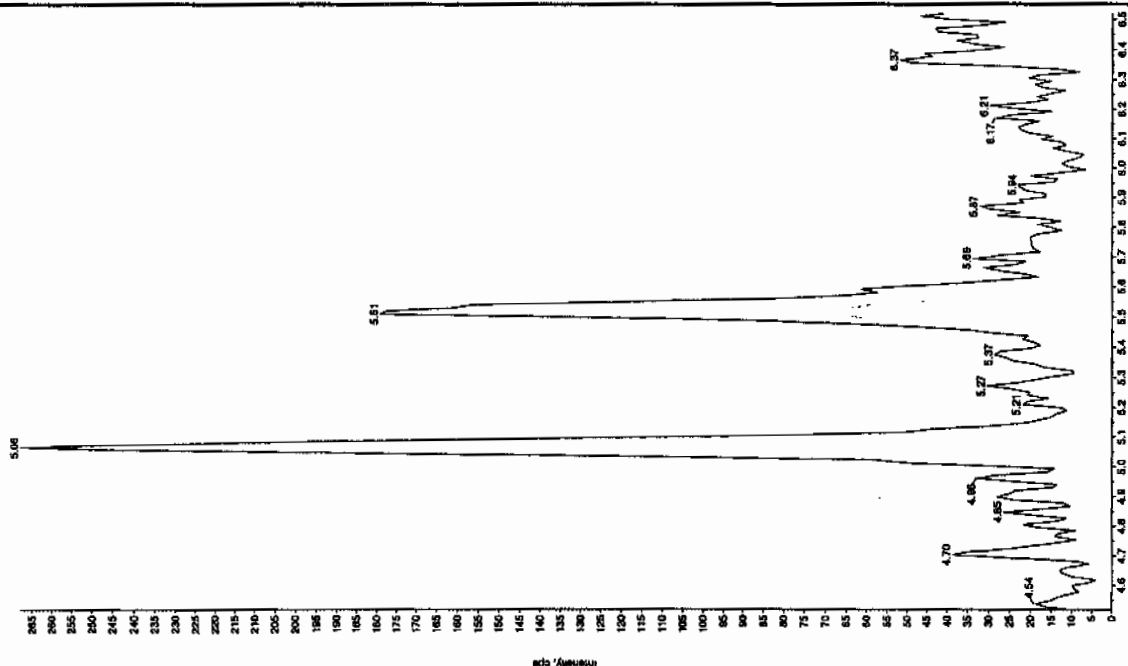


SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

Sample Name: "XIBUK3" Sample ID: "JILLER" File: "EX501130012.wif"
 Peak Name: "24-Diamino-6-nitrofluorene" Mass(es): "166.046.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 5:09:45 PM
 Modified: No

Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 1.00e4 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 30.0 pixels
 SR Window: 10.0 sec
 Expected RT: 10.9 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 10.9 min
 Area: 9.33e+004 counts
 Height: 22525.063 cps
 Start Time: 10.8 min
 End Time: 11.2 min



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 13-JAN-10 20:33

GEL Data File: EXS01130025.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	1.25
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

11/13/10
JMS

Sample Name: "XIBU04" Sample ID: "1111ER" File: "EXS01130025.wif"

Peak Name: "TATB" Mass(es): "257.2/204.9 amu"

Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1

Sample Type: Unknown

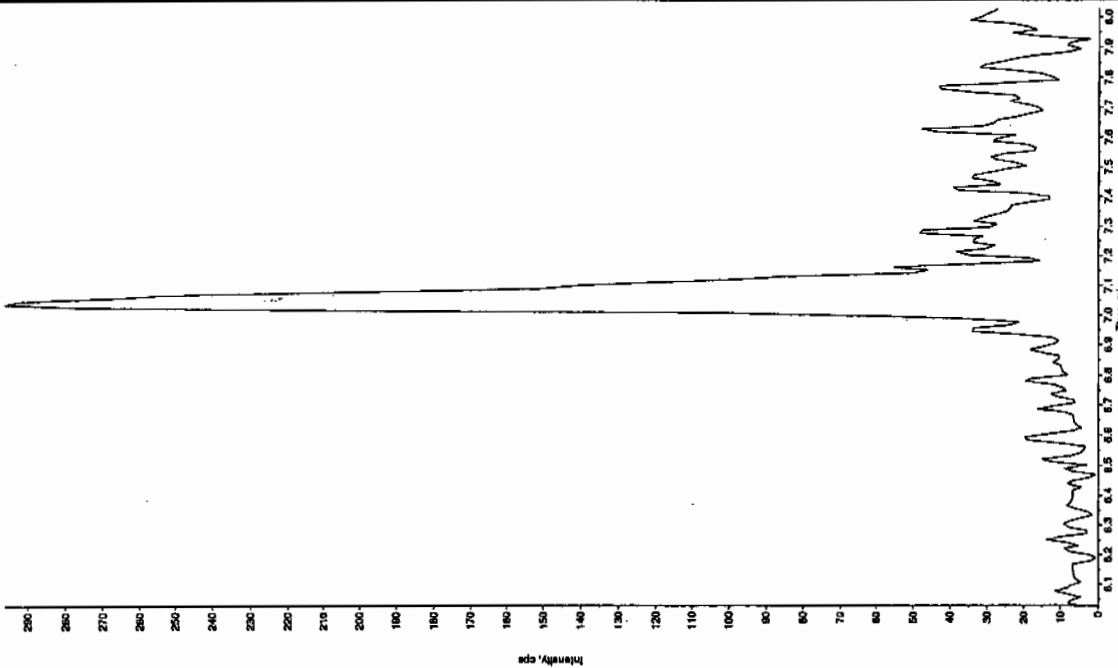
Concentration: 0.00 ng/mL

Calculated Conc: 1/13/2010

Acq. Date: 8:33:53 PM

Acq. Time: 8:33:53 PM

Modified: No



Sample Name: "XIBU04" Sample ID: "1111ER" File: "EXS01130025.wif"

Peak Name: "35-Dehydroline" Mass(es): "182.0/46.0 amu"

Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1

Sample Type: Unknown

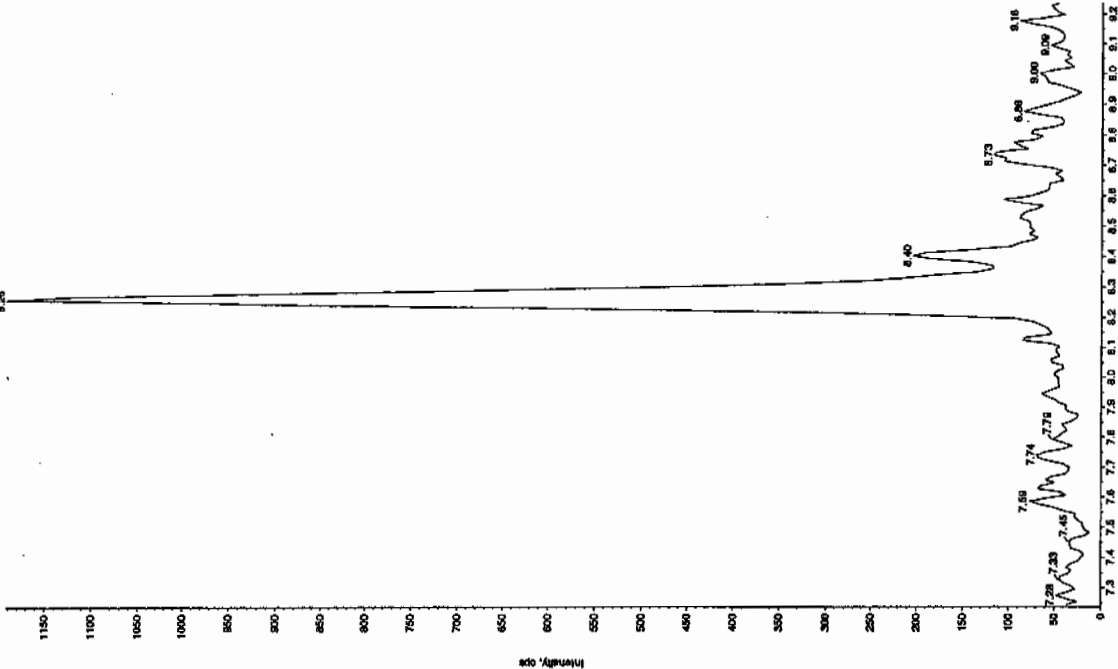
Concentration: 0.00 ng/mL

Calculated Conc: 1/13/2010

Acq. Date: 8:33:53 PM

Acq. Time: 8:33:53 PM

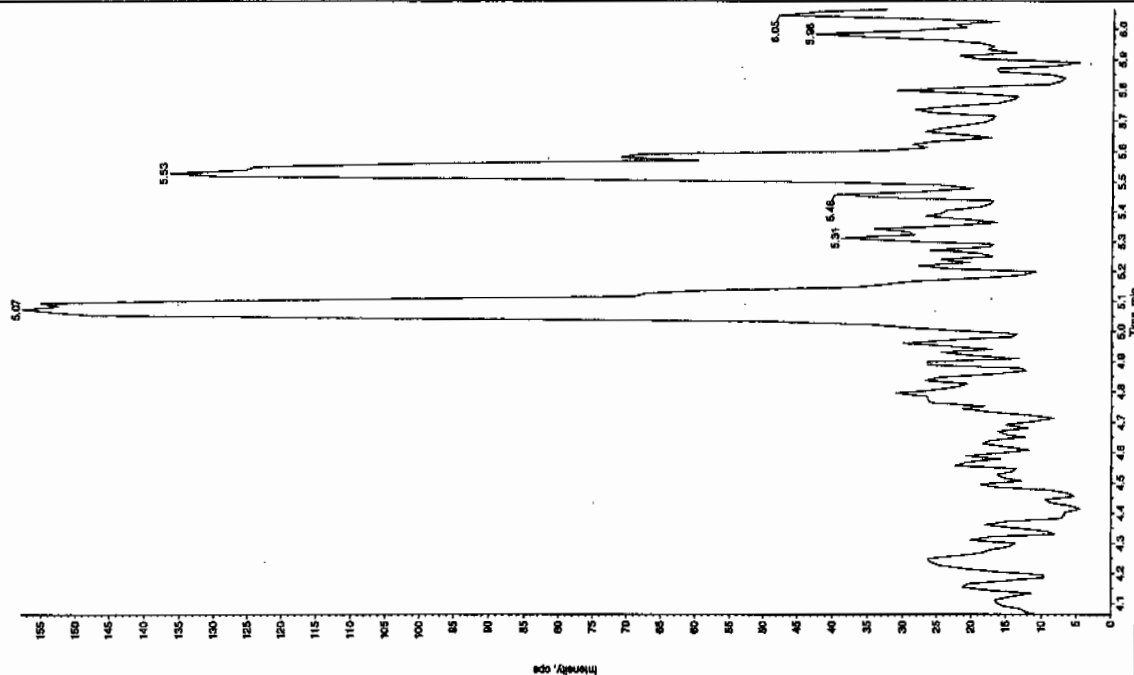
Modified: No



11/14/10

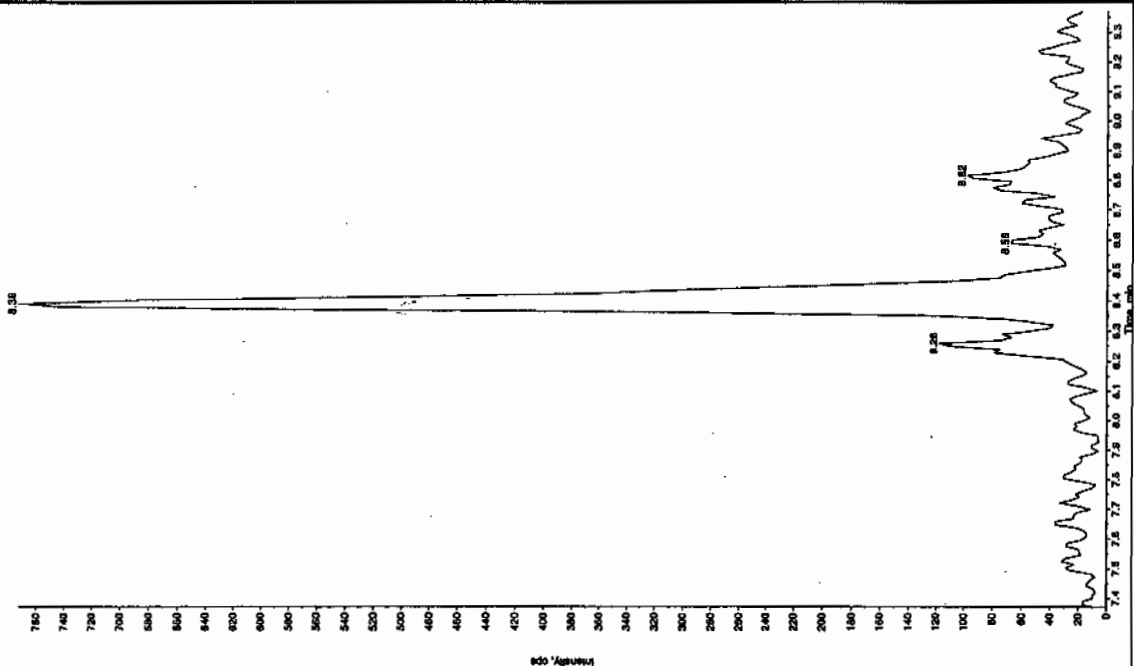
Sample Name: "XIBLJ04" Sample ID: "1111ER" File: "EXS01130025.wif"
 Peak Name: "26-Diamino-4-nitrofluorene" Mass(es): "168.046.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 8:33:53 PM
 Modified: No



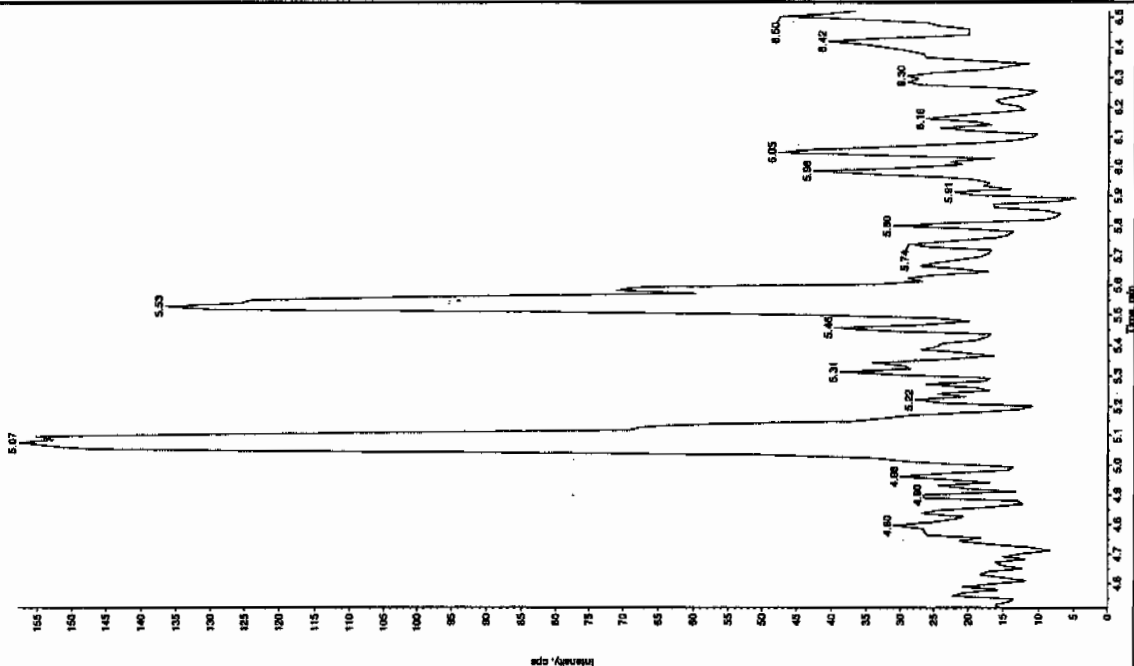
Sample Name: "XIBLJ04" Sample ID: "1111ER" File: "EXS01130025.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1751.9 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 8:33:53 PM
 Modified: No

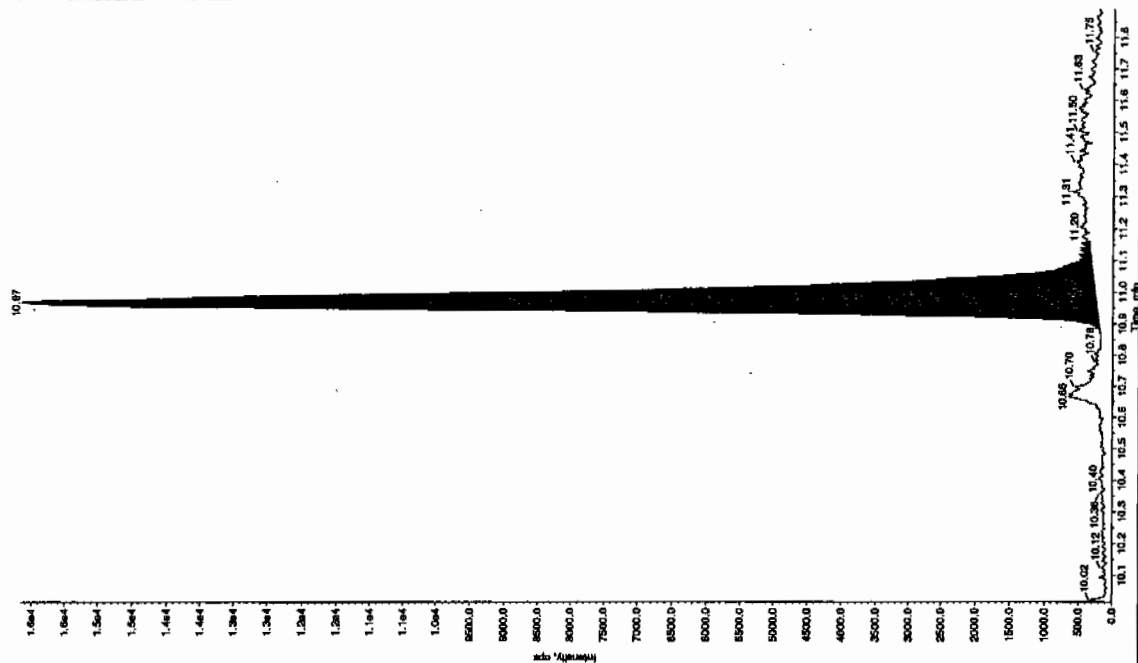


EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

Sample Name: "XIBLX04" Sample ID: "JILER" File: "EX501130025.wit"
 Peak Name: "24-Diamino-6-nitrotoluene" Mass(es): "166.046.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""
 Sample Index: 1
 Sample Type: Unknown
 Concentration: 0.00 ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 8:33:53 PM
 Acq. Time: 8:33:53 PM
 Modified: No



Sample Name: "XIBLX04" Sample ID: "JILER" File: "EX501130025.wit"
 Peak Name: "His(c-cryst) phosphate" Mass(es): "359.161.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""
 Sample Index: 1
 Sample Type: Unknown
 Concentration: 1.25 ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 8:33:53 PM
 Acq. Time: 8:33:53 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 1.00e4 cps
 Min. Peak Width: 0.80 sec
 Search Width: 30.0 points
 RT Window: 10.0 sec
 Expected RT: 10.9 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 11.0 min
 Area: 6.82e+004 counts
 Height: 15921.931 cps
 Start Time: 10.9 min
 End Time: 11.2 min



4A

Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 10-1100

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 13-JAN-10 22:39

GEL Data File: EXS01130033.wiff

Instrument ID: LCMSMS

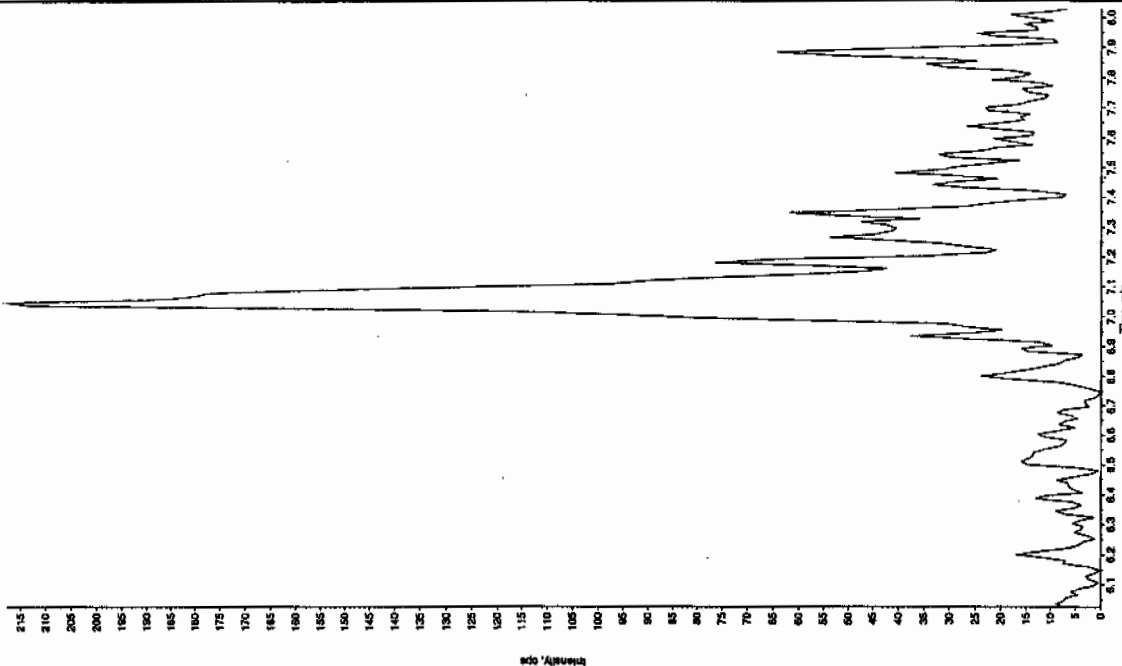
Column: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found (ug/L)
3,4-Dinitrotoluene	0	0
tris(o-cresyl) phosphate	0	1.07
TATB	0	0
3,5-Dinitroaniline	0	0
2,4-Diamino-6-nitrotoluene	0	0
2,6-Diamino-4-nitrotoluene	0	0

01/14/10
2002

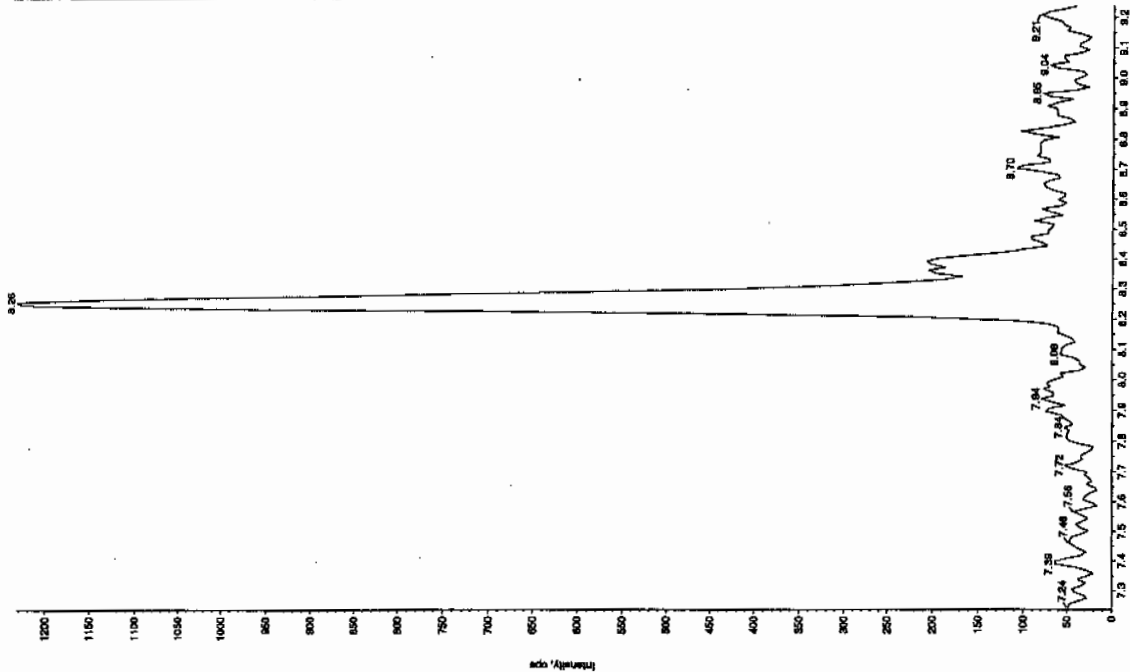
Sample Name: "XIELK05" Sample ID: "JILER" File: "EXSD1130033.wif"
Peak Name: "ATB" Mass(es): "257.2204.9 amu"
Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.00 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 10:39:33 PM
Modified: No



Sample Name: "XIELK05" Sample ID: "JILER" File: "EXSD1130033.wif"
Peak Name: "35-Dinitroanisole" Mass(es): "182.048.0 amu"
Comment: "LCMSEXP_B" Annotation: ""

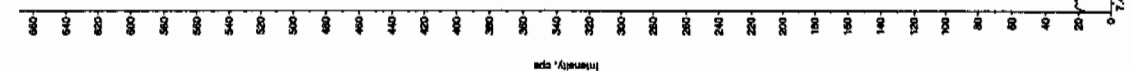
Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.00 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 10:39:33 PM
Modified: No



01/14/10

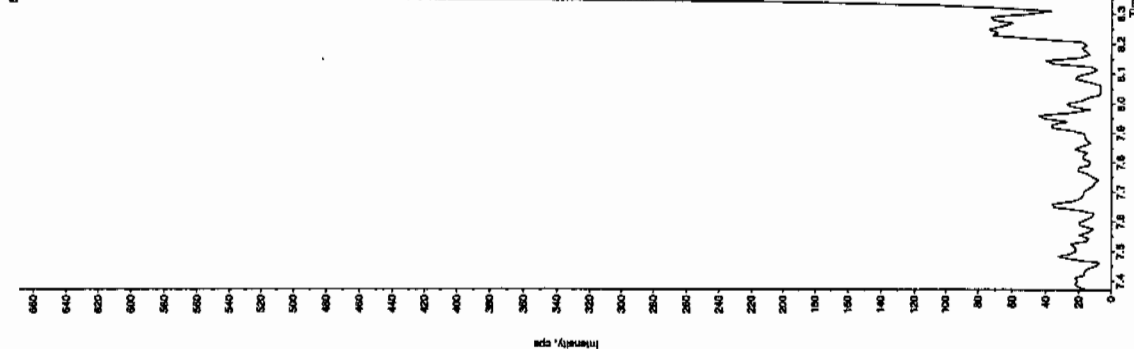
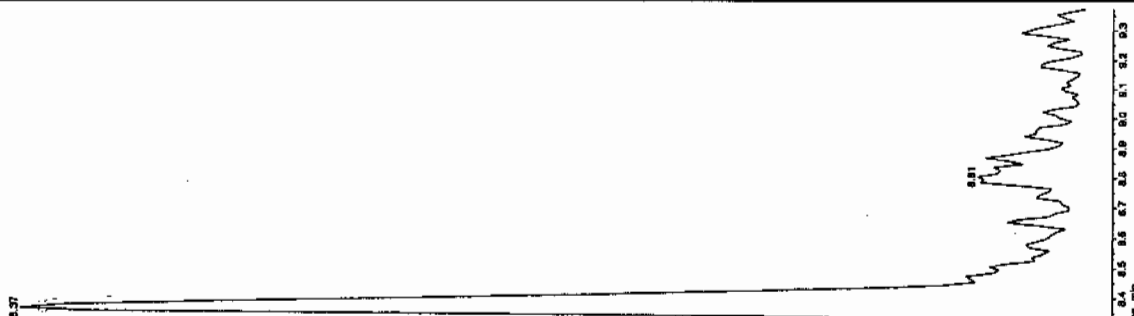
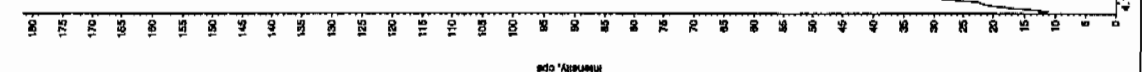
Sample Name: "XBLX05" Sample ID: "111ER" File: "EX501130033.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.17151.9 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Date: 1/13/2010
 Acq. Time: 10:39:33 PM
 Modified: No



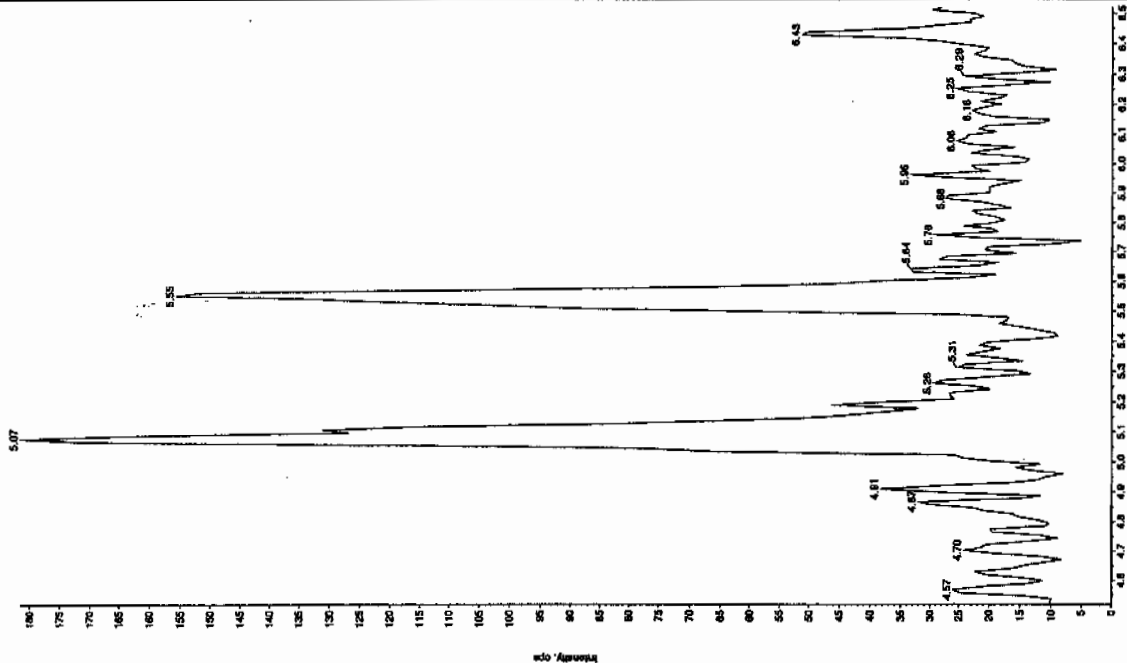
Sample Name: "XBLX05" Sample ID: "111ER" File: "EX501130033.wif"
 Peak Name: "25-Dinitro-4-nitrotoluene" Mass(es): "166.0466.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Date: 1/13/2010
 Acq. Time: 10:39:33 PM
 Modified: No



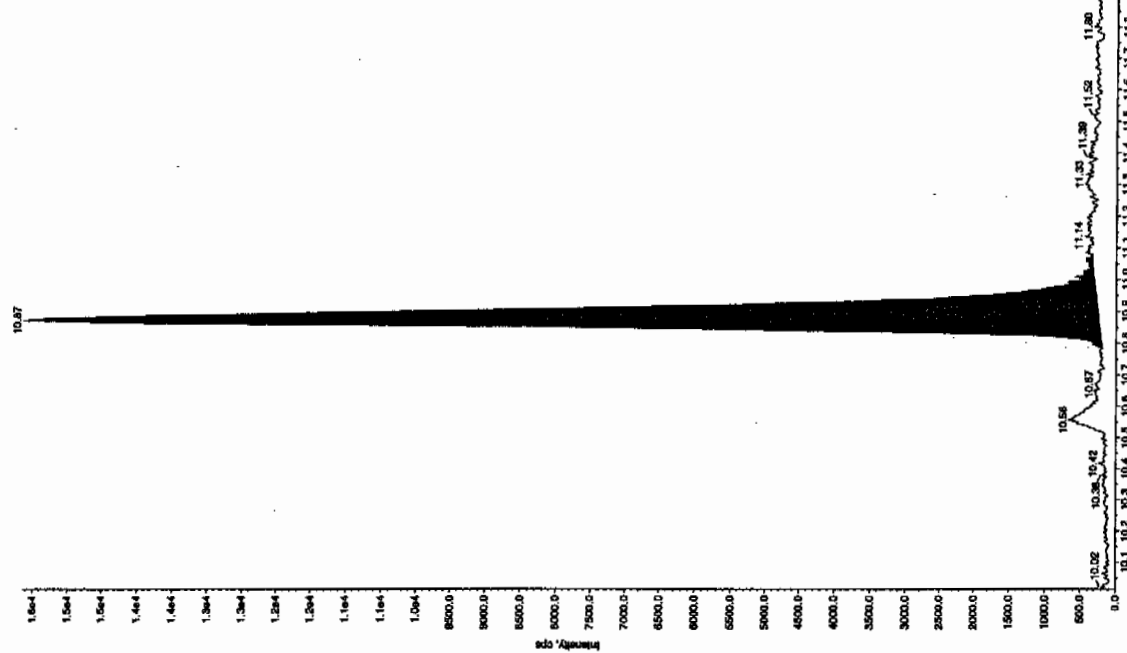
Sample Name: "XBLK05" Sample ID: "JILLER" File: "EXS01130033.wif"
 Peak Name: "24-Diamino-6-nitrothiophene" Mass(es): "166.0/46.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 10:39:33 PM
 Modified: No



Sample Name: "XBLK05" Sample ID: "JILLER" File: "EXS01130033.wif"
 Peak Name: "bis(o-allyl) phosphite" Mass(es): "358.1/91.0 amu"
 Comment: "LCMSEXP_B" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: 1.07 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 10:39:33 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IOA
 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: 10.9 min
 Area: 6.37e+004 counts
 Height: 15396.873 cps
 Start Time: 10.8 min
 End Time: 11.1 min



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

Nairb.ref

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

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

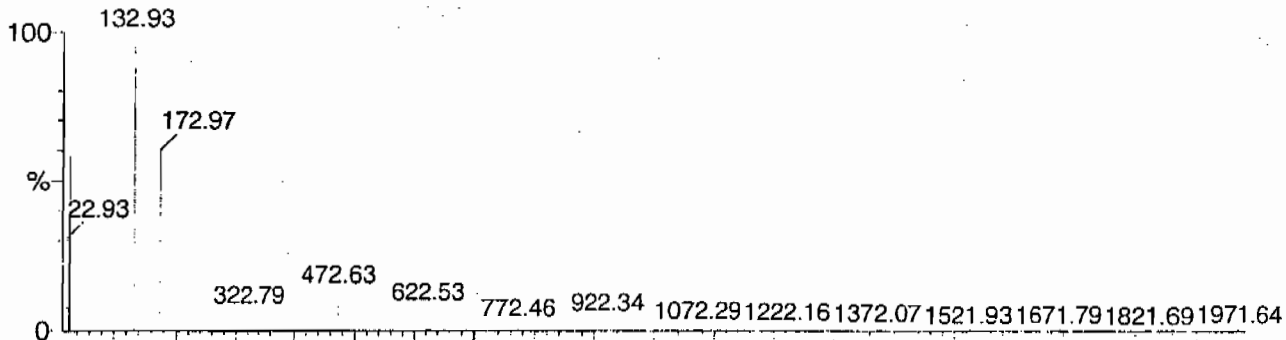
Calibration Report - MS1 Static

Page 1 of 1

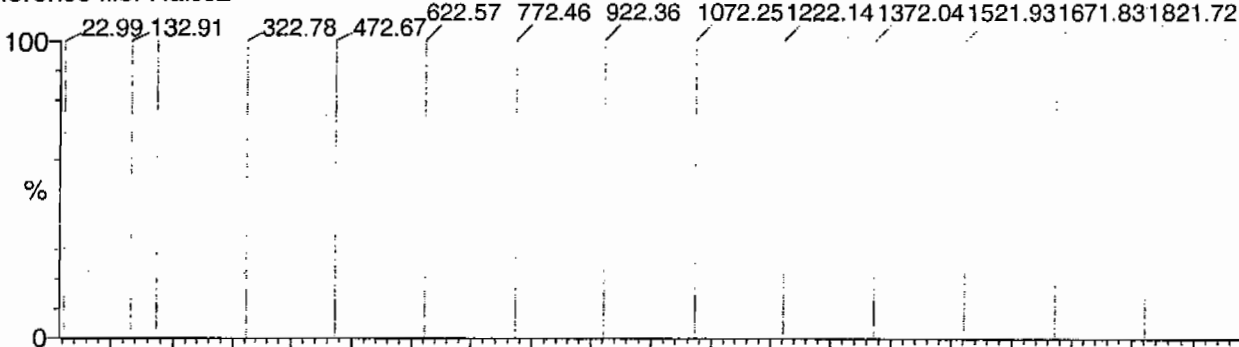
Printed: Fri Aug 25 10:50:01 2006

Data file: STATMS1 - Calibrated

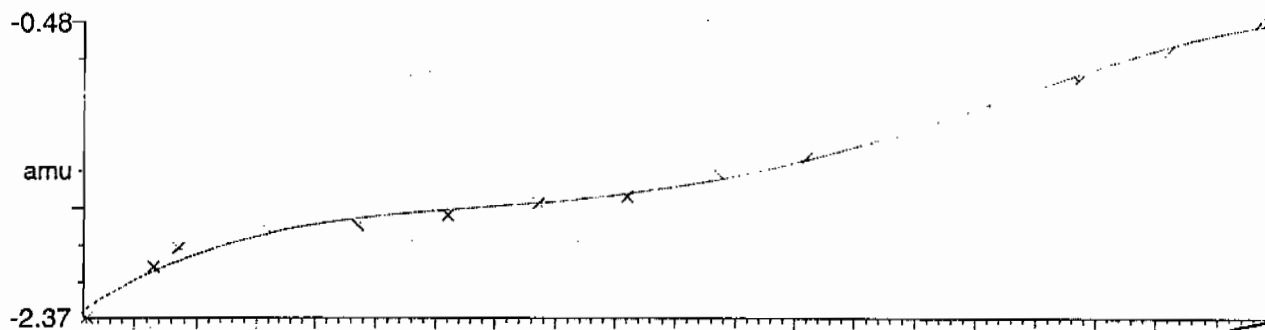
15 matches of 15 tested references



Reference file: Naics2

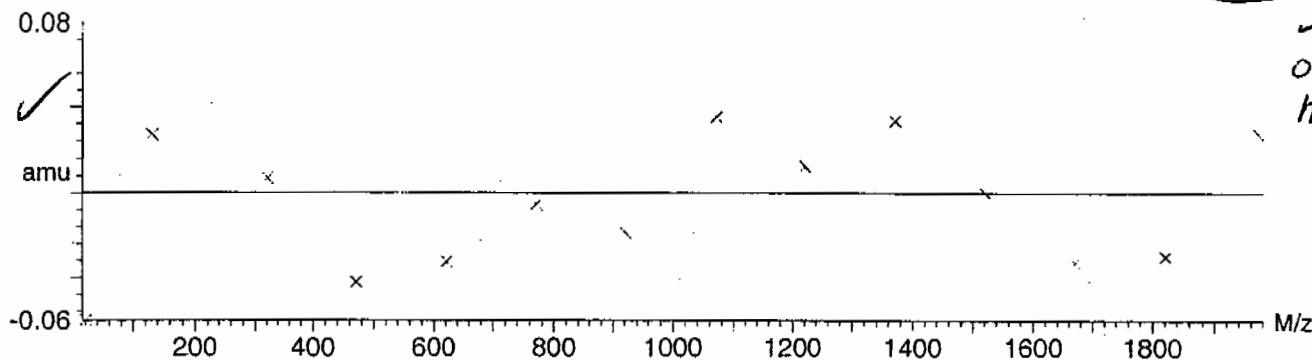


Mass difference (Raw - Ref mass)



Residuals

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

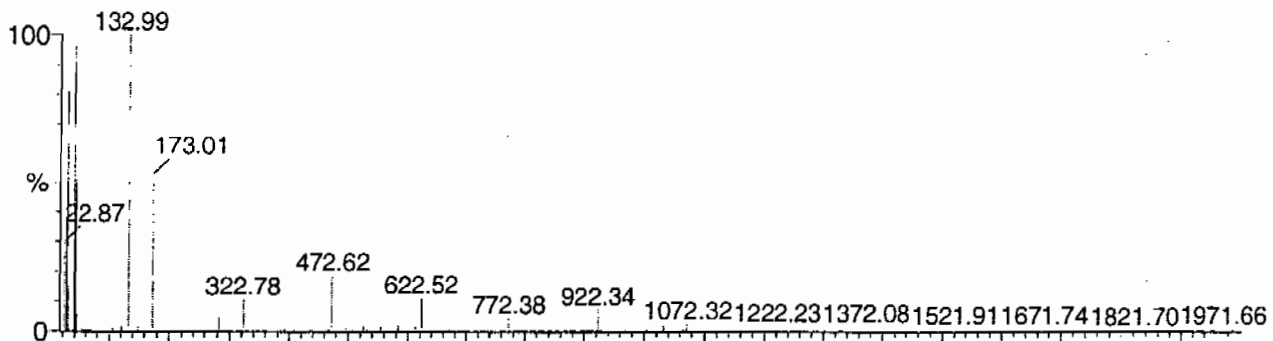


Calibration Report - MS1 Scanning

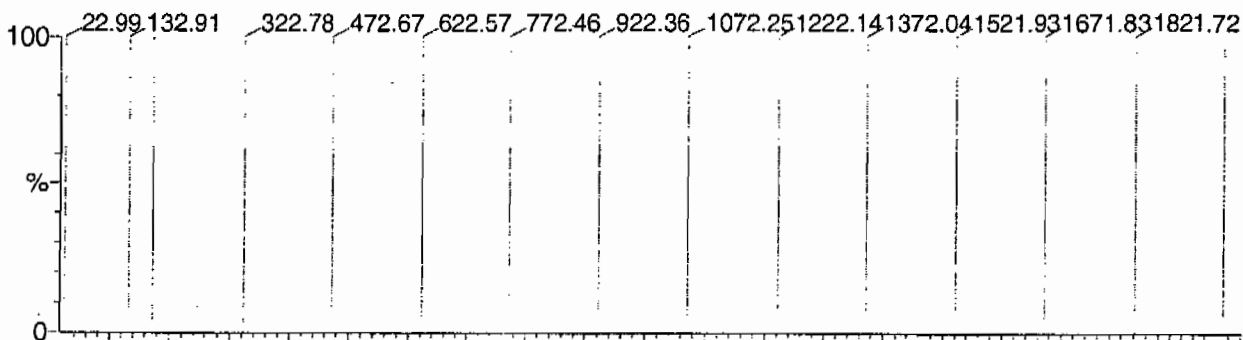
Page 1 of 1

Printed: Fri Aug 25 10:51:06 2006

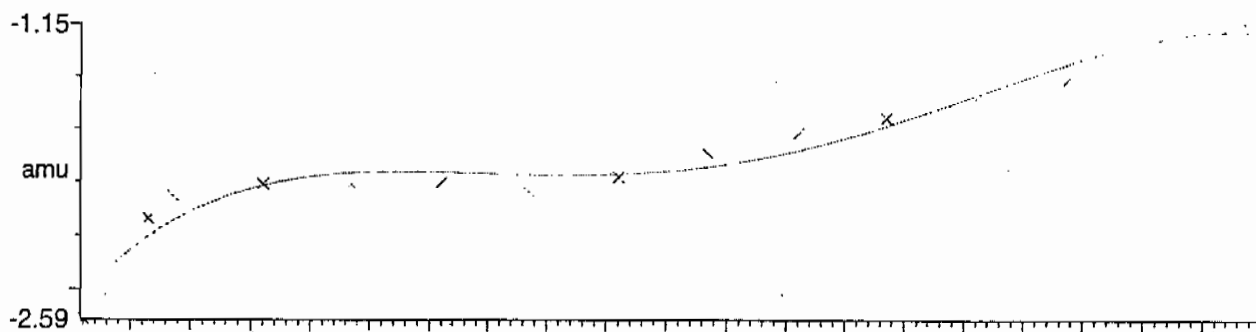
Data file: SCNMS1 - Calibrated 15 matches of 15 tested references



Reference file: Naics2

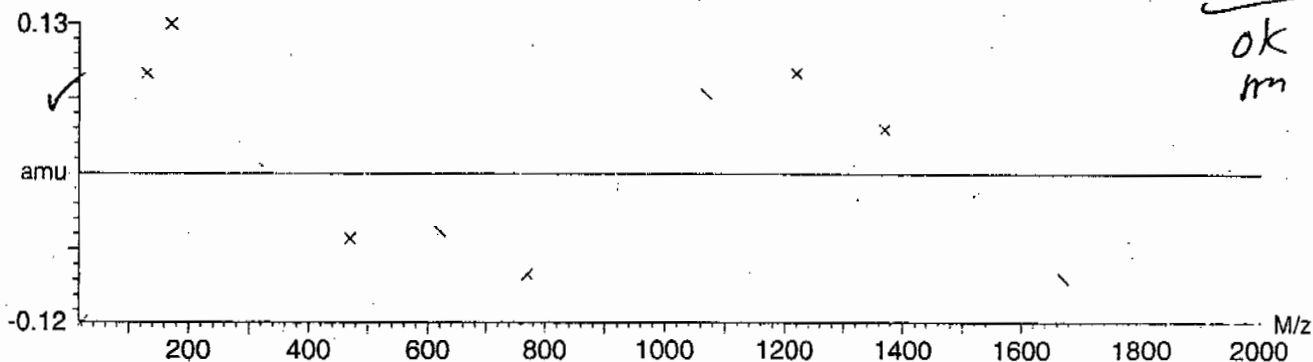


Mass difference (Raw - Ref mass)



Residuals

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



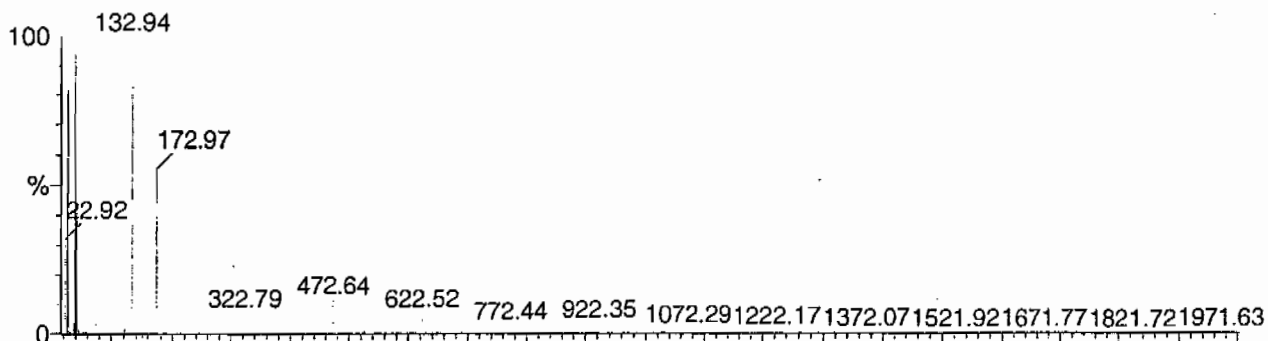
Calibration Report - MS1 Scan Speed Compensation

Page 1 of 1

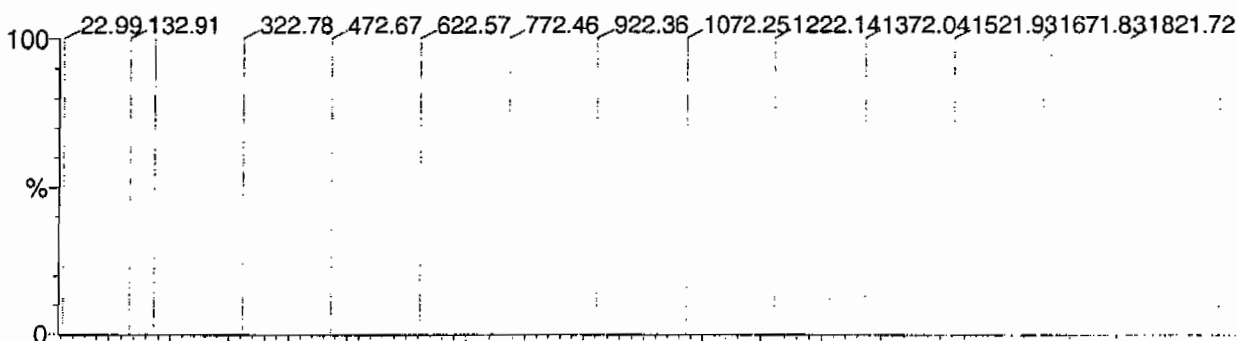
Printed: Fri Aug 25 10:52:01 2006

Data file: FASTMS1 - Calibrated

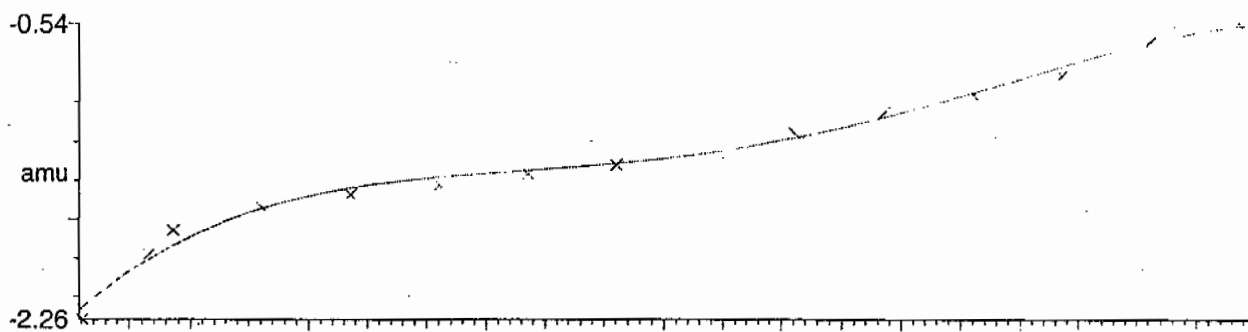
15 matches of 15 tested references



Reference file: Naics2

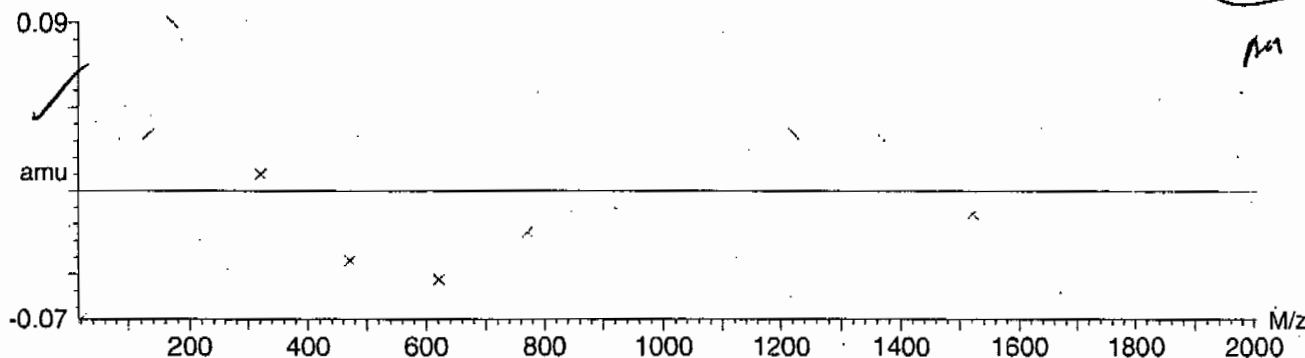


Mass difference (Raw - Ref mass)



Residuals

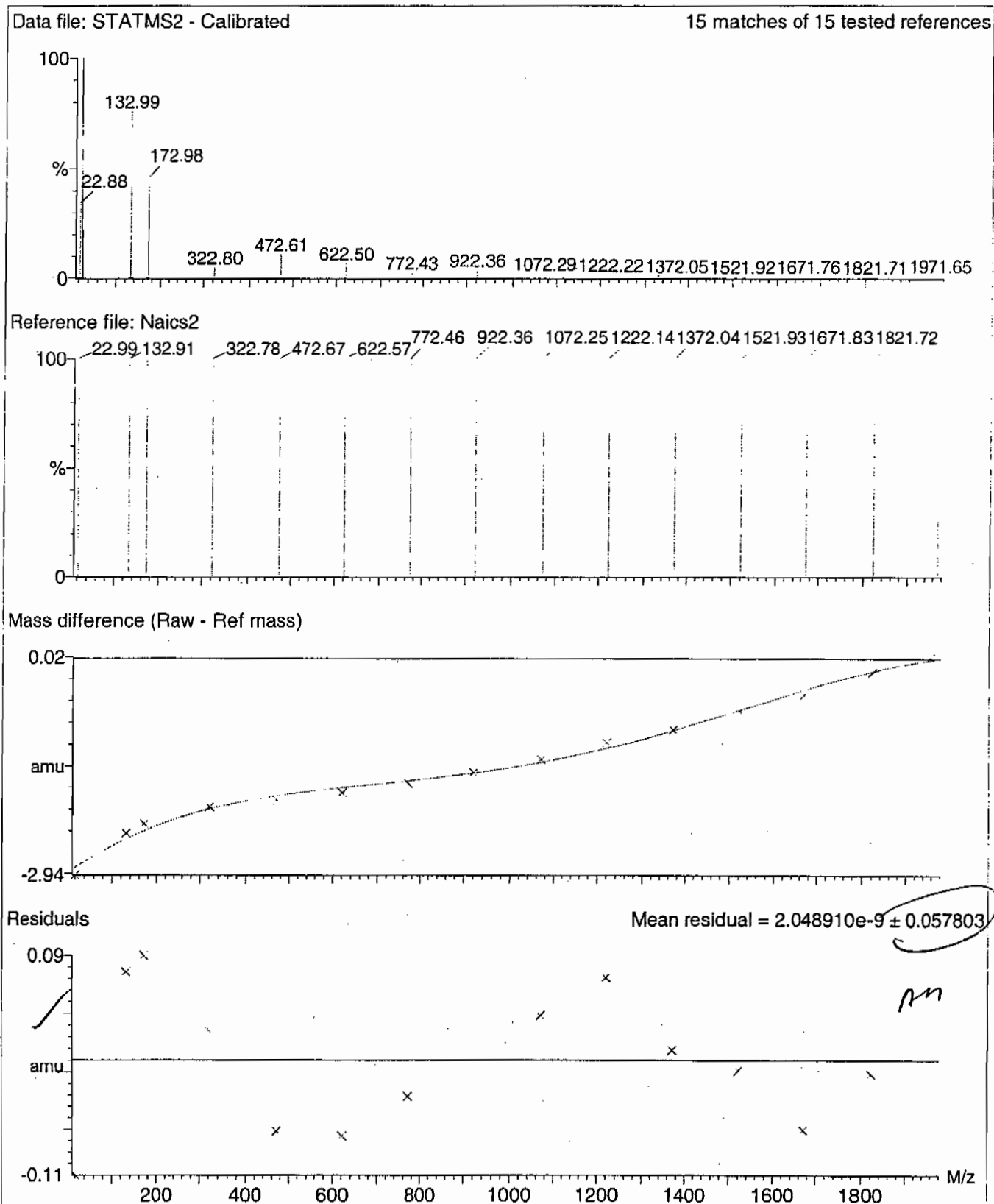
Mean residual = $3.486639e-9 \pm 0.040487$



Calibration Report - MS2 Static

Page 1 of 1

Printed: Fri Aug 25 10:52:54 2006



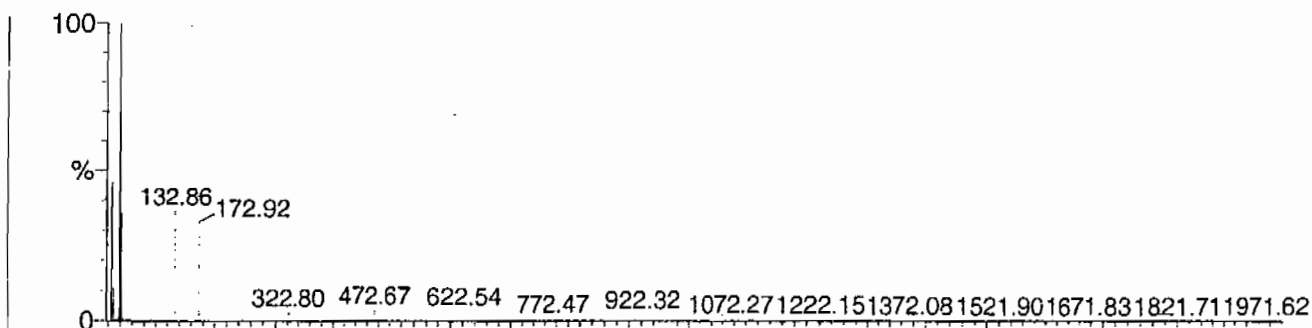
Calibration Report - MS2 Scanning

Page 1 of 1

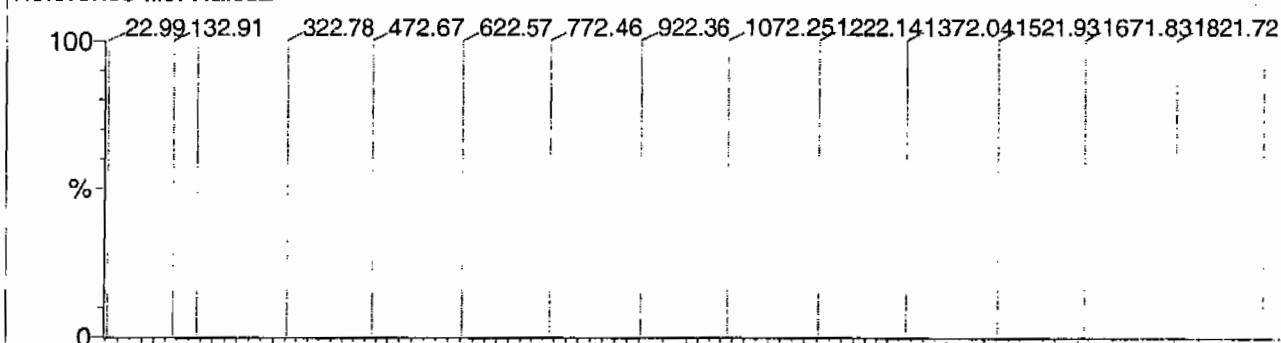
Printed: Fri Aug 25 10:54:00 2006

Data file: SCNMS2 - Calibrated

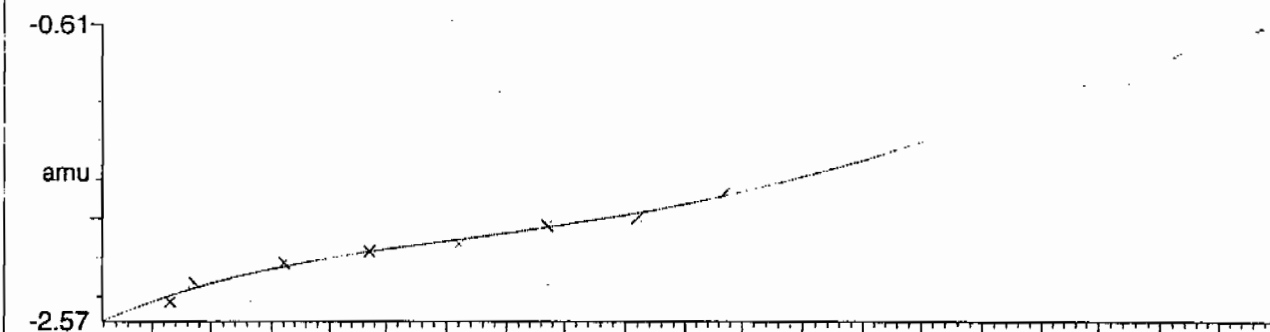
14 matches of 15 tested references



Reference file: Naics2

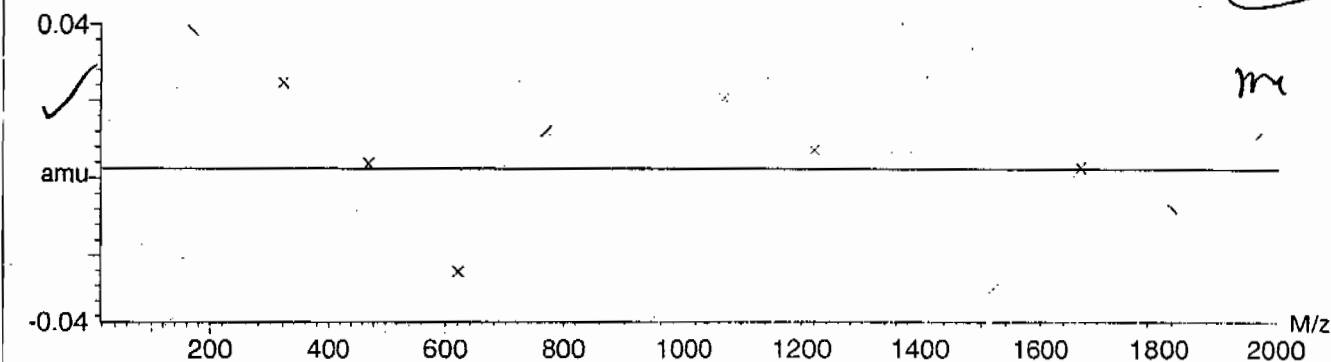


Mass difference (Raw - Ref mass)



Residuals

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



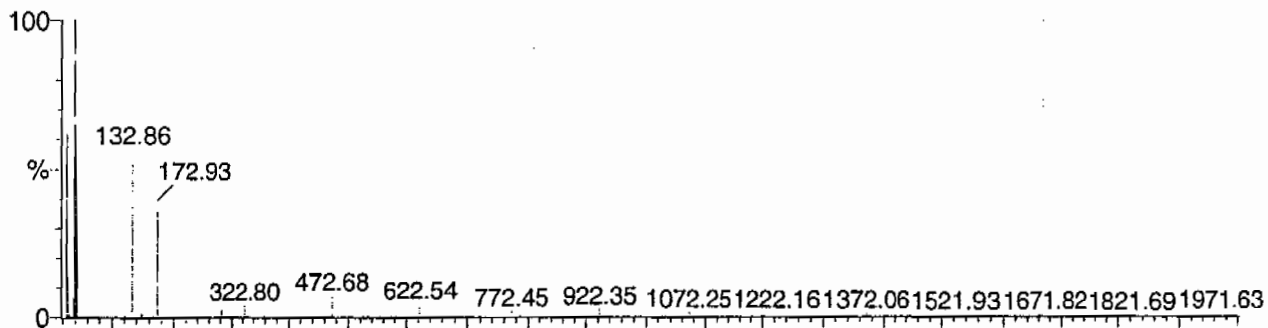
Calibration Report - MS2 Scan Speed Compensation

Page 1 of 1

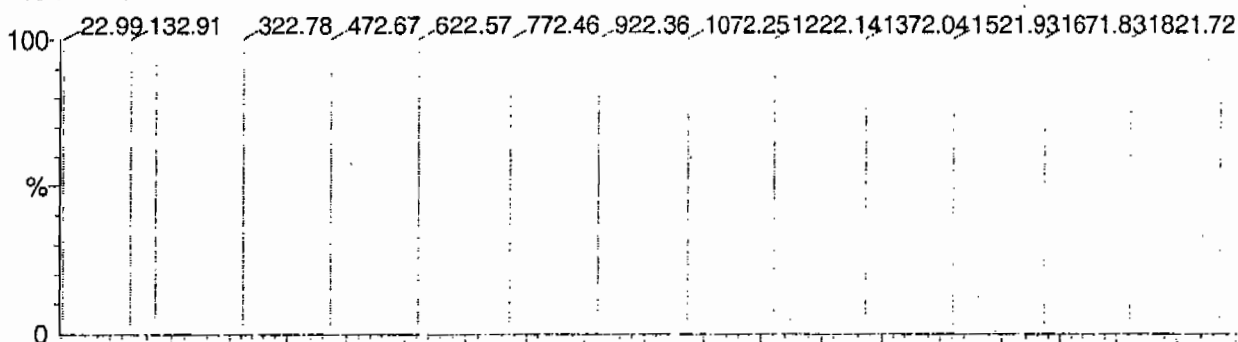
Printed: Fri Aug 25 10:54:54 2006

Data file: FASTMS2 - Calibrated

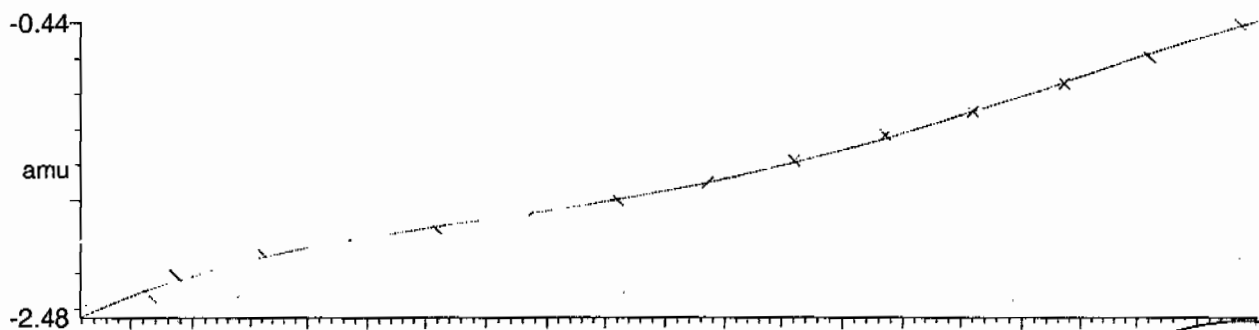
14 matches of 15 tested references



Reference file: Naics2

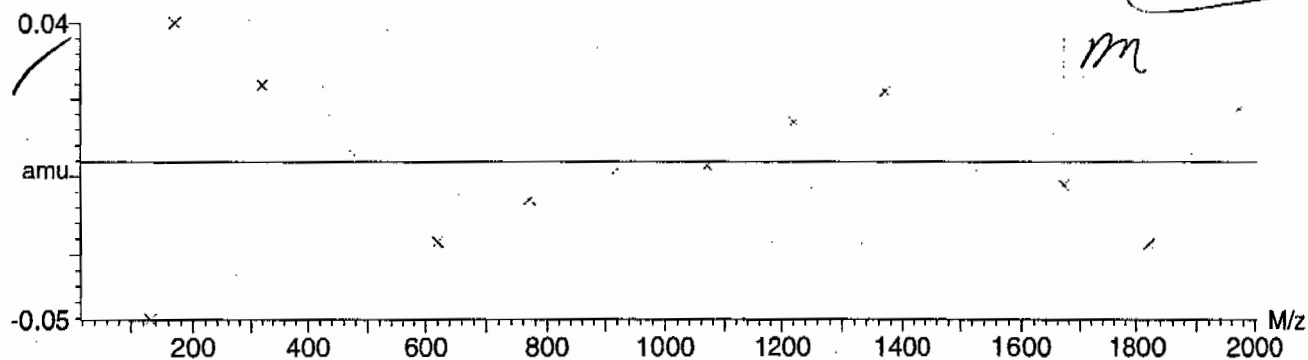


Mass difference (Raw - Ref mass)



Residuals

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

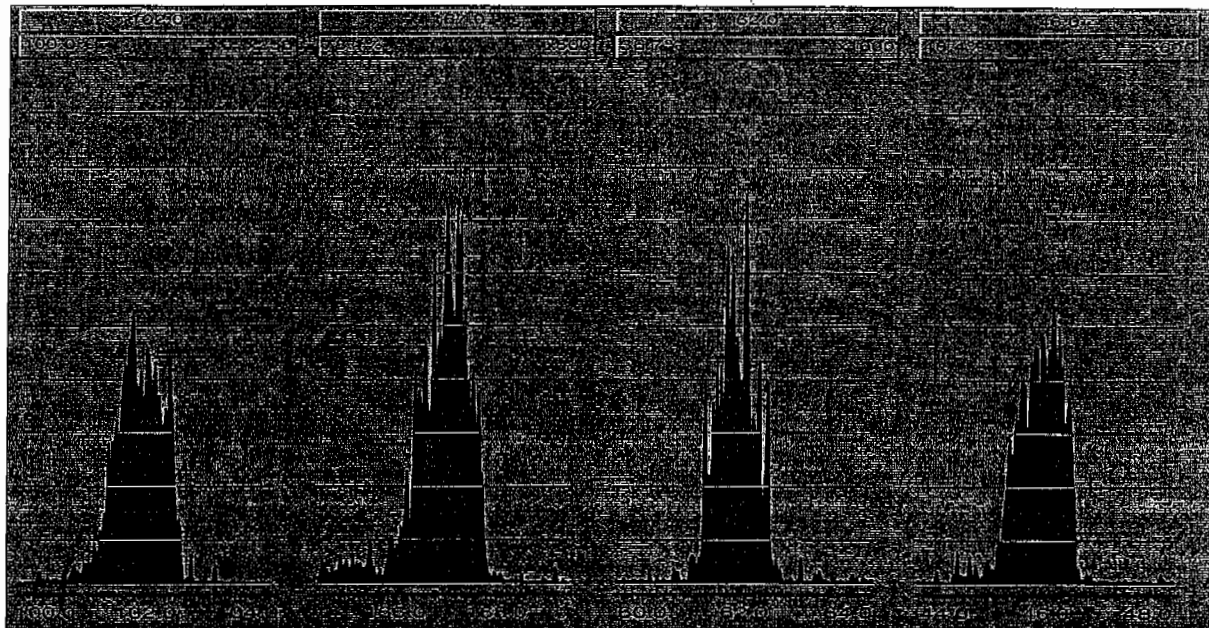


Quattro Micro Tune Parameters

Page 1

Parameter File: C:\MASSLYNX\NEW_EXP.PRO\ACQUDB\explosives04.ipr

Printed : Mon Jan 18 14:02:19 2010



High Explosives Internal Standard Summary

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1100

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) #
			3393.317	11.997	18344.583	17.32
Upper Limit			4411.3121	12.497	23847.9579	17.82
Lower Limit			2375.3219	11.497	12841.2081	16.82
MB for batch 937562	19-jan-10 00:22	EXP0118022a	3912.09	11.998	20308.7	17.291
LCS for batch 937562	19-jan-10 00:52	EXP0118023a	3493.45	11.998	22074.3	17.312
RE12-10-7841	19-jan-10 01:21	EXP0118024a	3744.2	11.998	20965.6	17.291
RE12-10-7841(243624001MS)	19-jan-10 01:51	EXP0118025a	4116.42	11.998	20995.2	17.313
RE12-10-7841(243624001MSD)	19-jan-10 02:20	EXP0118026a	3794.54	11.972	21275.7	17.313
RE12-10-7840	19-jan-10 02:50	EXP0118027a	3692.63	11.998	20749.1	17.313
RE12-10-7839	19-jan-10 03:19	EXP0118028a	3395.23	11.998	18646.6	17.313
RE12-10-7838	19-jan-10 03:48	EXP0118029a	3184.07	11.995	17761.3	17.302
RE12-10-7858	19-jan-10 04:18	EXP0118030a	3086.48	11.995	17177.6	17.302
RE12-10-7846	19-jan-10 04:47	EXP0118031a	3264.64	11.996	18918.7	17.302
RE12-10-7844	19-jan-10 06:46	EXP0118035a	3708.94	11.972	20571.9	17.291
RE12-10-7845	19-jan-10 07:15	EXP0118036a	3289.94	11.972	19164.7	17.291
RE12-10-7842	19-jan-10 07:45	EXP0118037a	3481.85	11.973	19091.7	17.292
RE12-10-7843	19-jan-10 08:14	EXP0118038a	3823.53	11.972	21800.6	17.291
RE12-10-7847	19-jan-10 08:44	EXP0118039a	3337.26	11.972	18973.2	17.291

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: RE12-10-7841

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624001

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118024a

Date Analyzed: 19-JAN-10 01:21

Units: ug/kg

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

*Concentration =

Instrument				
Value	X	<u>Concentrated Extract Volume</u>	X	<u>Dilution</u>
		<u>Sample Amount</u>		<u>Factor</u>

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

Dataset: C:\MASSLYNX\New_Exp\PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP\PRO\Data\EXP0118024a

Date: 19-Jan-2010

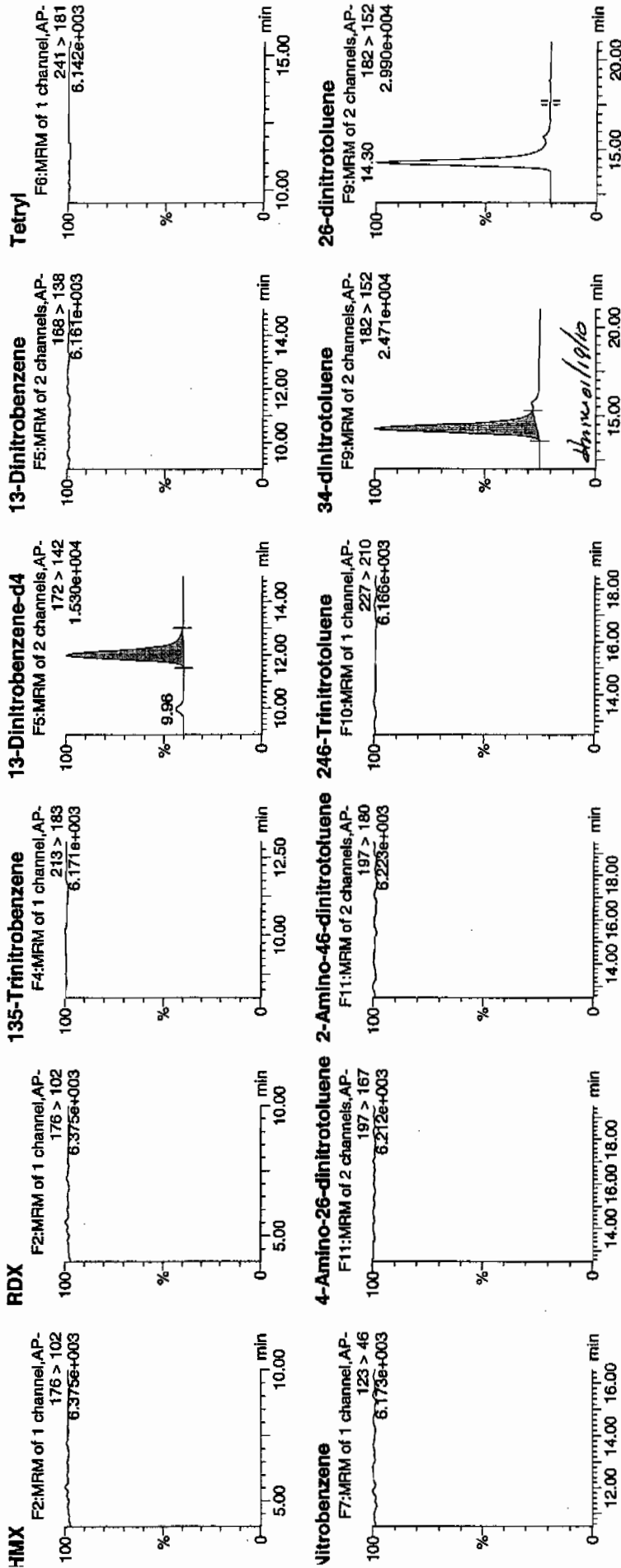
Time: 01:21:38

D: 243624001

Val: 2:1,C

not
1/19/10

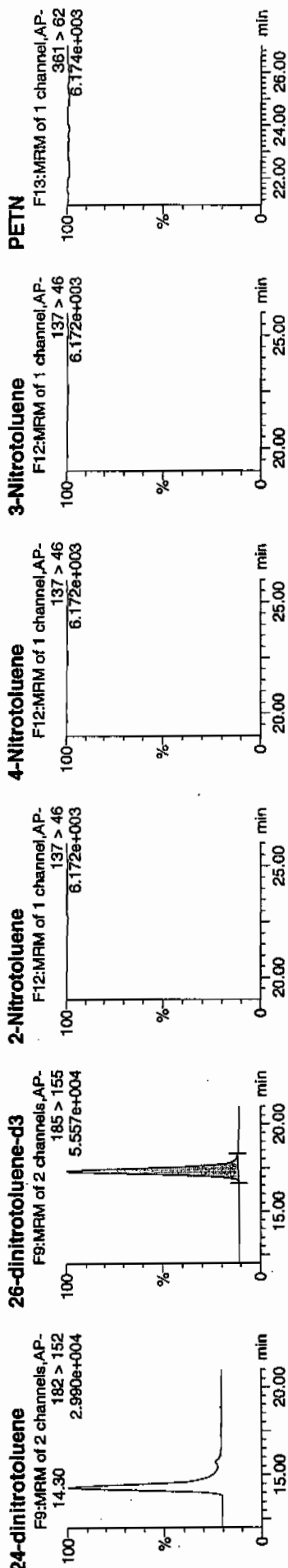
WAV 937564 / 8000 / 2



Printed: Tue Jan 19 11:02:03 2010, Page 48 of 85

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

Dataset: C:\MASSLYN\New_Exp\PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



24-dinitrotoluene	26-dinitrotoluene-d3	2-Nitrotoluene	4-Nitrotoluene	3-Nitrotoluene	PETN
243624001	243624001	243624001	243624001	243624001	243624001
14.30	17.29	20.965.643	20.965.643	20.965.643	361.0
182 > 152	185 > 155	137 > 46	137 > 46	137 > 46	361 > 62
2.980e+004	5.557e+004	6.172e+003	6.172e+003	6.172e+003	6.174e+003
100	100	100	100	100	100
0	0	0	0	0	0
15.00	15.00	20.00	20.00	20.00	22.00
20.00	20.00	25.00	25.00	25.00	26.00
min	min	min	min	min	min
%	%	%	%	%	%

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624001

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130016.wiff

Date Analyzed: 13-JAN-10 18:12

Units: ug/kg

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

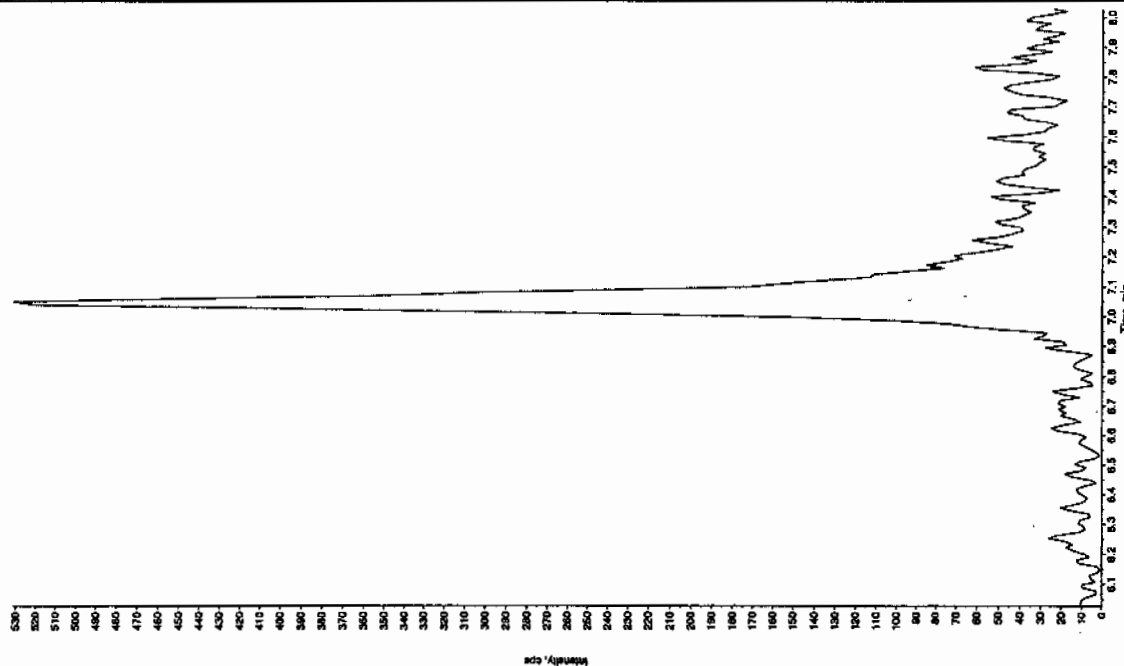
*Concentration =

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

11/13/10
2008

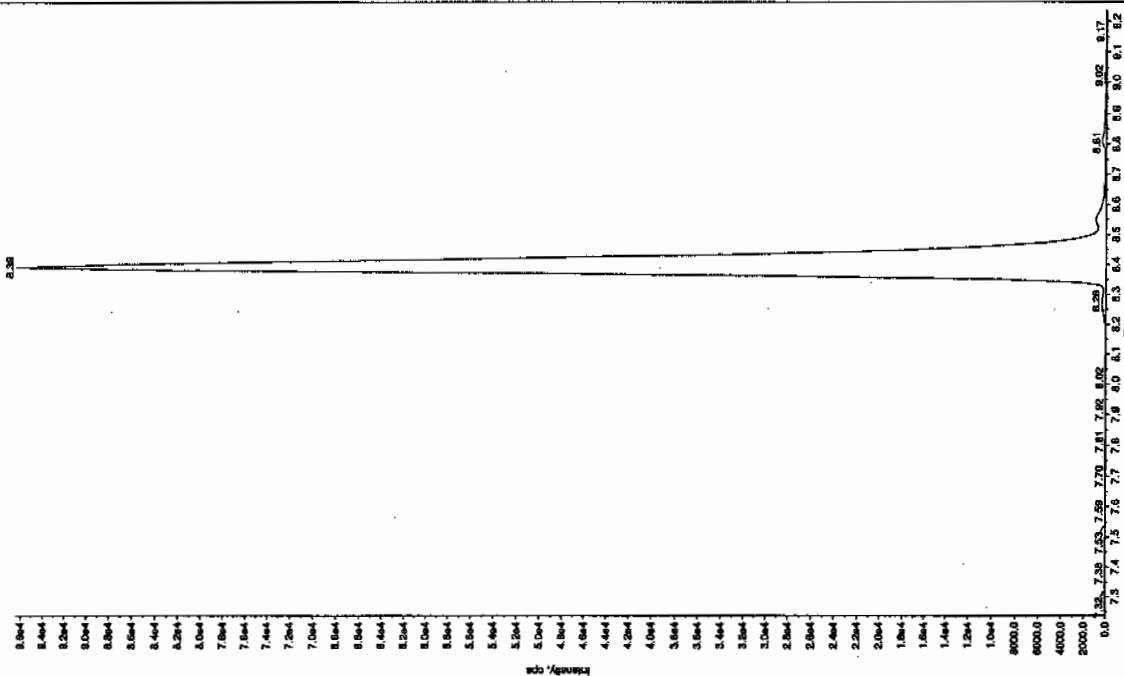
Sample Name: "243624001" Sample ID: "50756421.1" File: "EXS01130016.wiff"
Peak Name: "TATB" Mass(es): "257.2204.9 amu"
Comment: "LCX832125" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.00 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 6:12:35 PM
Modified: No

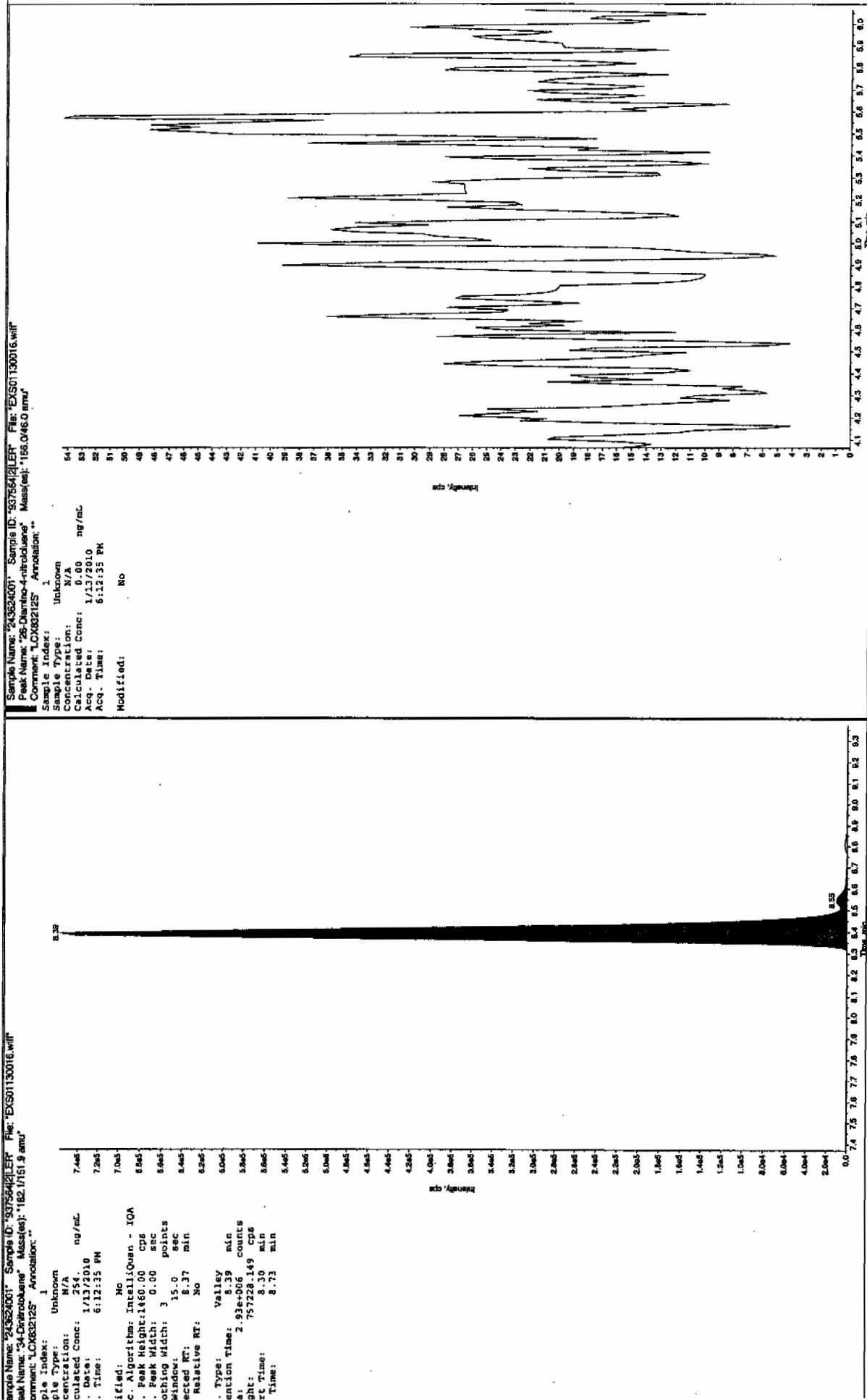


Sample Name: "243624001" Sample ID: "33756421.1" File: "EXS01130016.wiff"
Peak Name: "35-Dinitrocarbazole" Mass(es): "182.0465.0 amu"
Comment: "LCX832125" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.00 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 6:12:35 PM
Modified: No



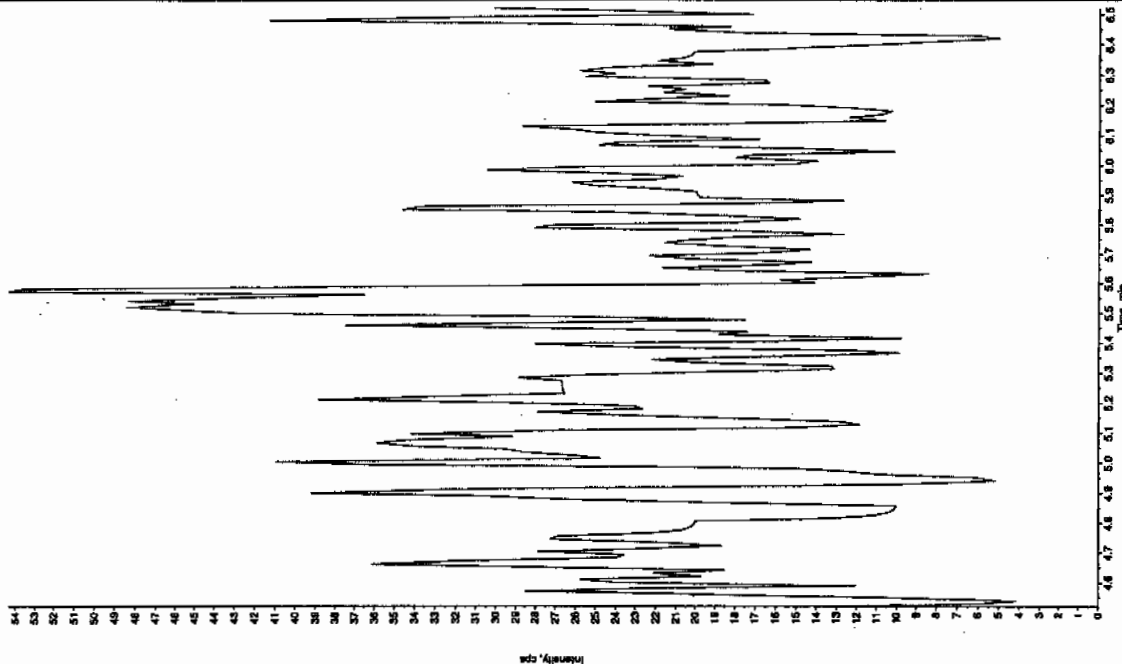
11/14/10



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

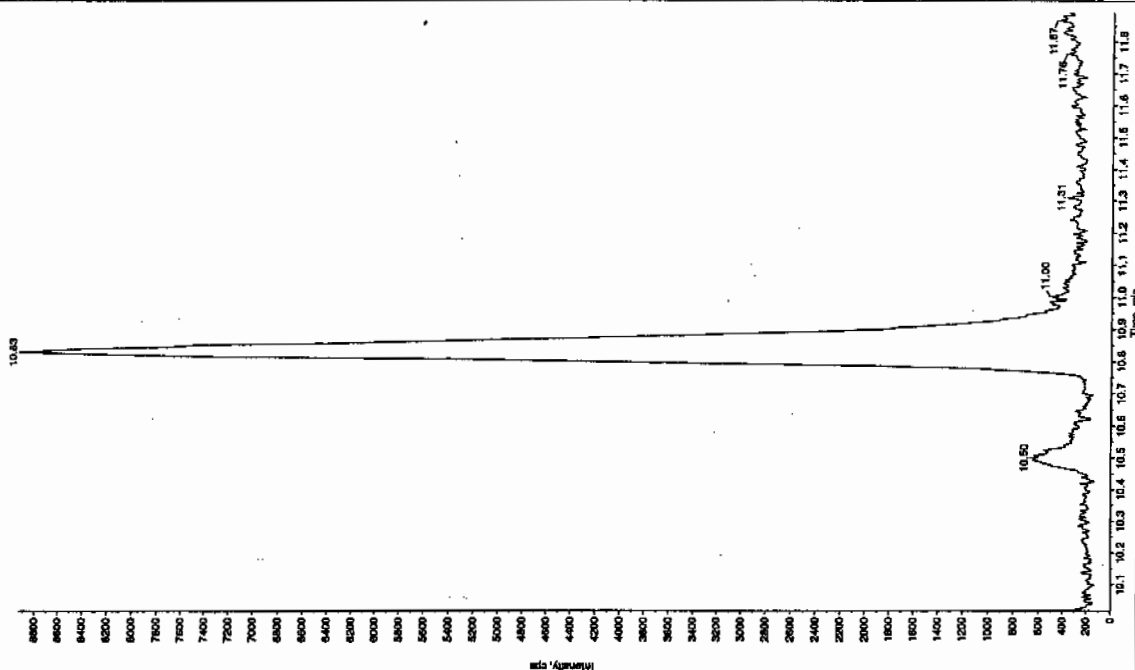
Sample Name: "243824001" Sample ID: "53756421ER" File: "EX501130015.wiff"
 Peak Name: "24-Diamino-6-phosphoribosyl" Mass(es): "166.046.0 bnu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 6:12:35 PM
 Modified: No



Sample Name: "243824001" Sample ID: "53756421ER" File: "EX501130015.wiff"
 Peak Name: "24-Diamino-6-phosphoribosyl" Mass(es): "369.191.0 bnu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 6:12:35 PM
 Modified: No



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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7840

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624002

Sample Amount 2

Moisture: 16.2

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118027a

Date Analyzed: 19-JAN-10 02:50

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	X	Concentrated Extract Volume	X	Dilution
Value		Sample Amount		Factor

Printed: Tue Jan 19 11:02:03 2010, Page 53 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118027a

Date: 19-Jan-2010

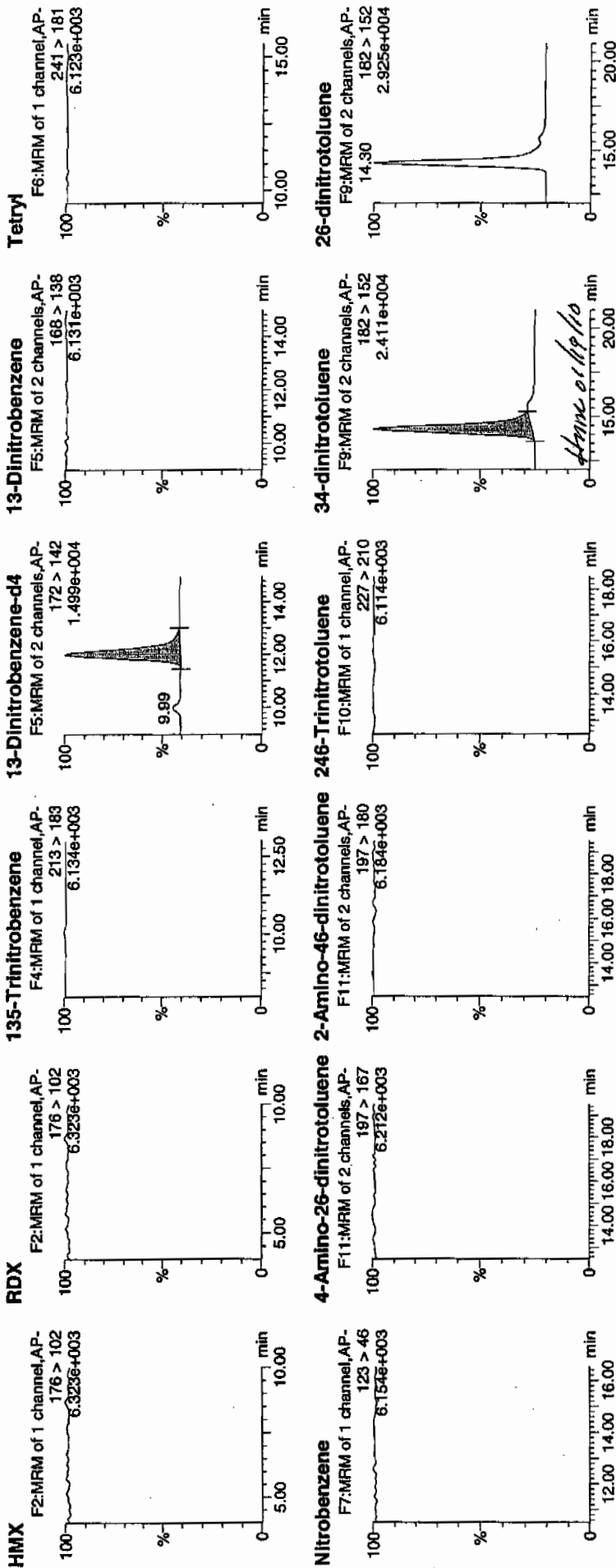
Time: 02:50:01

ID: 243624002

Vial: 2:1,F

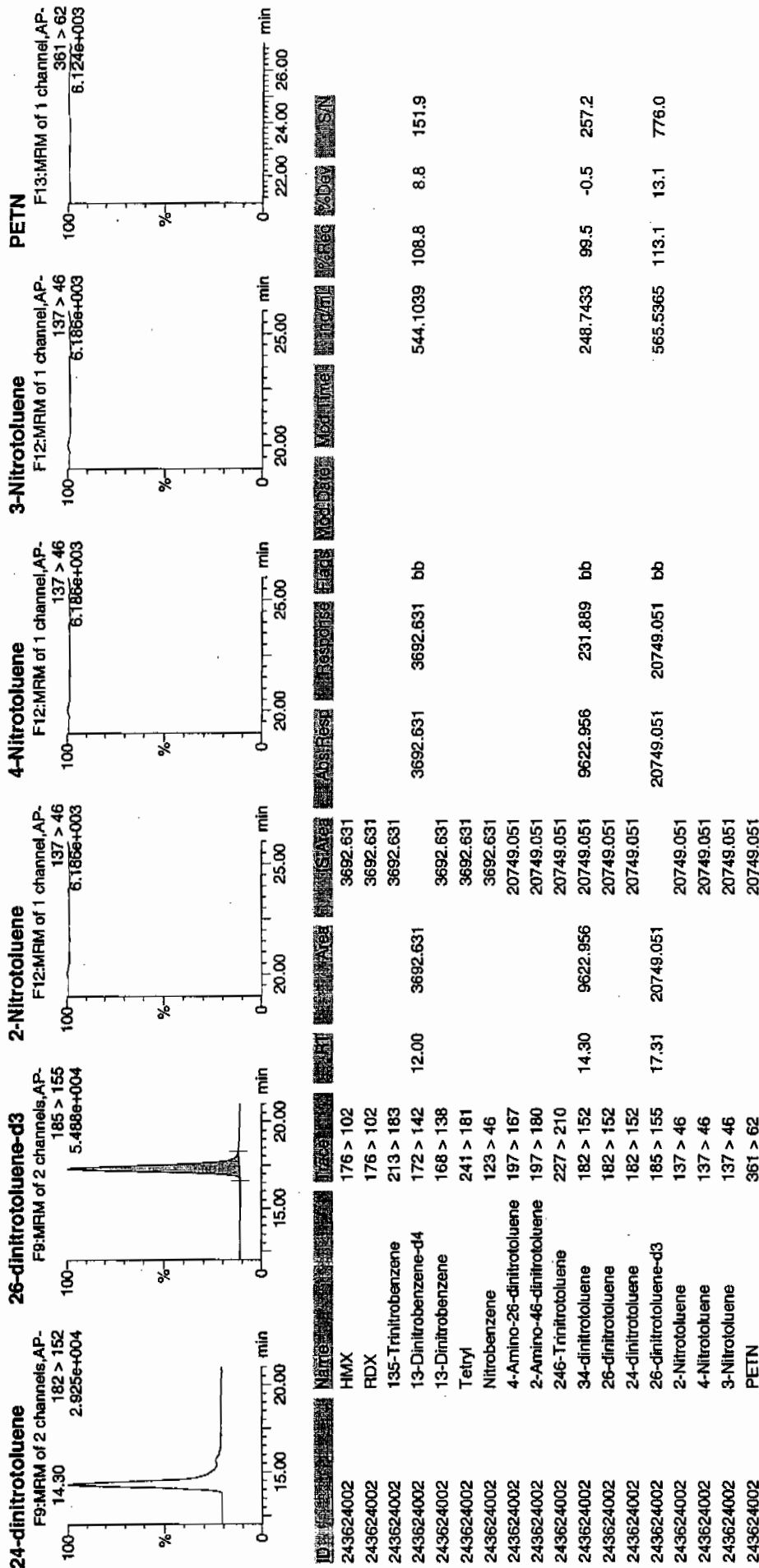
1/19/10

LANU 937564 / 80122 / 21



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

Dataset: C:\WASSLYN\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7840

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624002

Sample Amount 2

Moisture: 16.2

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130019.wiff

Date Analyzed: 13-JAN-10 18:59

Units: ug/kg

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

*Concentration =

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

01/13/10
220

Sample Name: "243524002" Sample ID: "937564121.ER" File: "EXS01130019.wif"

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

Comment: "LCX832125" Annotation: "

Sample Index: 1

Sample Type: Unknown

Concentration: 0.00 ng/mL

Calculated Conc: 1/13/2010

Acq. Date: 6:53:42 PM

Acq. Time: 6:53:42 PM

Modified: No

Sample Name: "243524002" Sample ID: "937564121.ER" File: "EXS01130019.wif"

Peak Name: "35-Dinitroaniline" Mass(es): "182.046.0 amu"

Comment: "LCX832125" Annotation: "

Sample Index: 1

Sample Type: Unknown

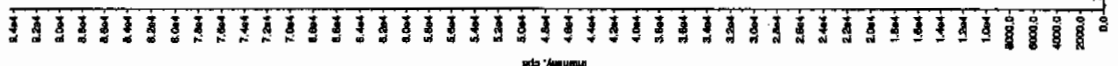
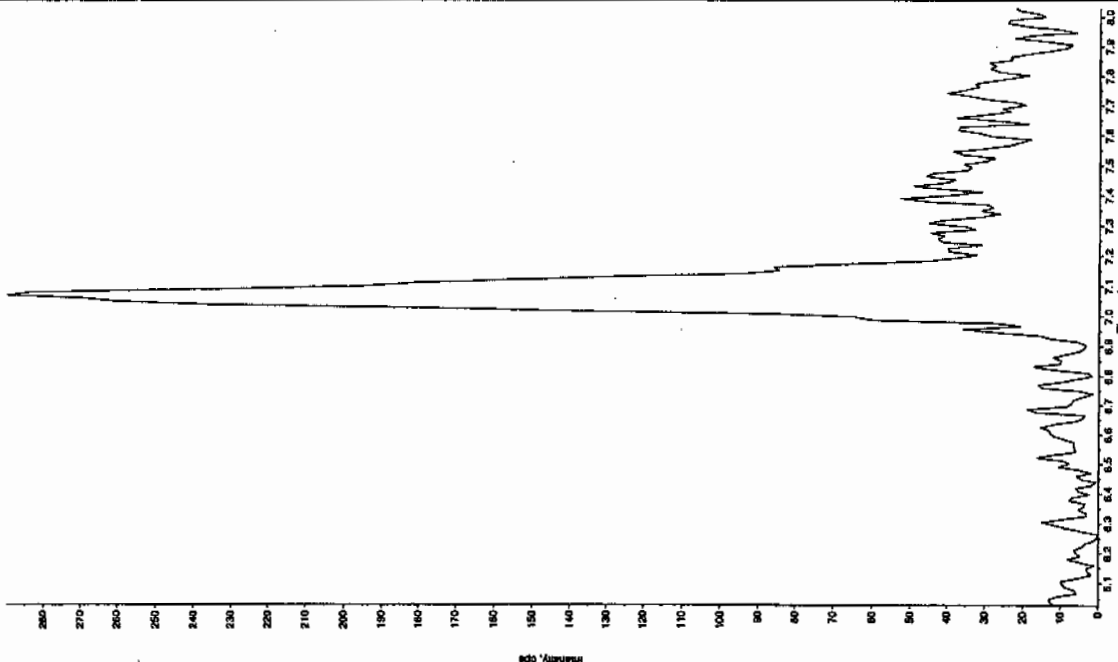
Concentration: 0.00 ng/mL

Calculated Conc: 1/13/2010

Acq. Date: 6:53:42 PM

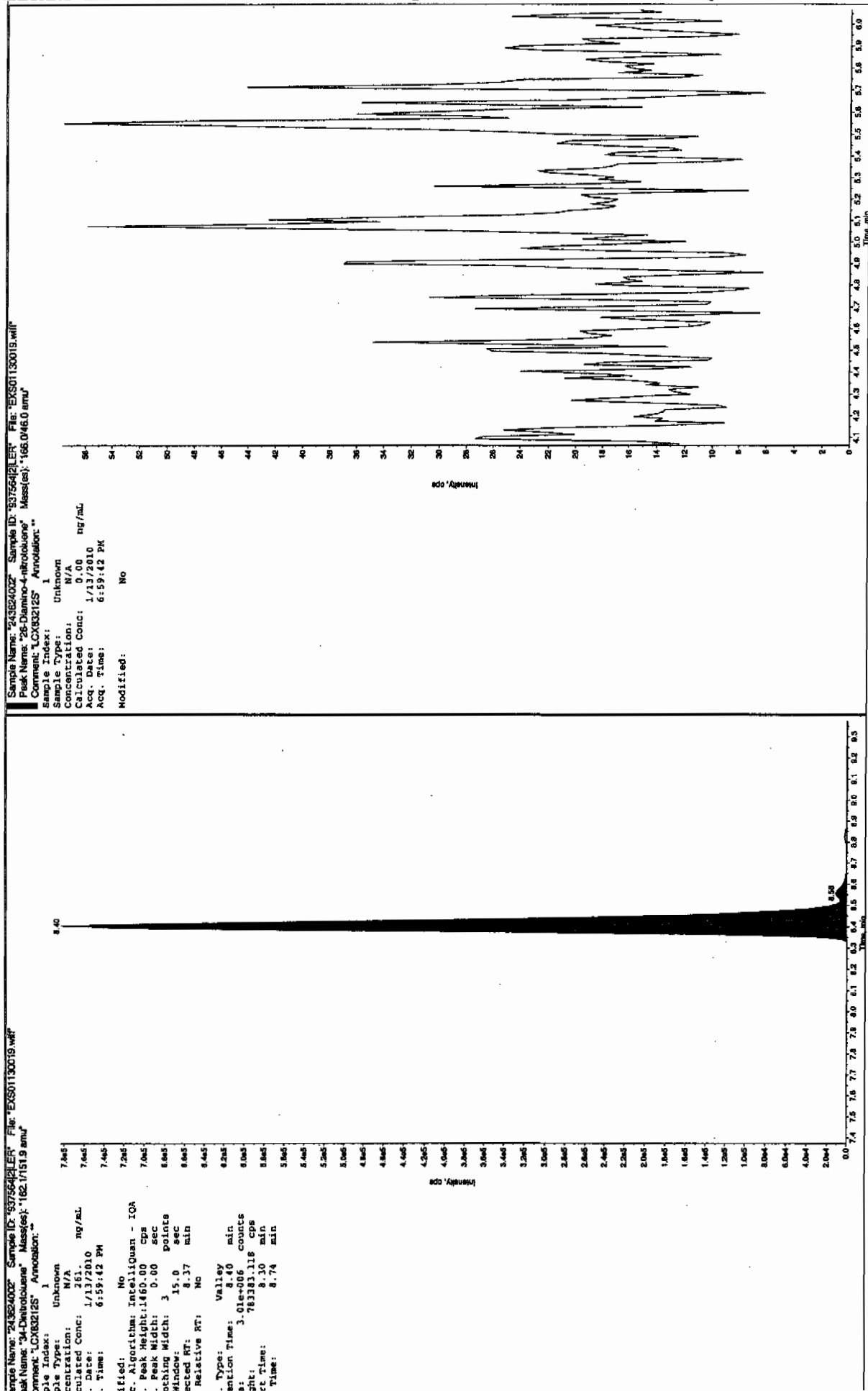
Acq. Time: 6:53:42 PM

Modified: No



01/14/10

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

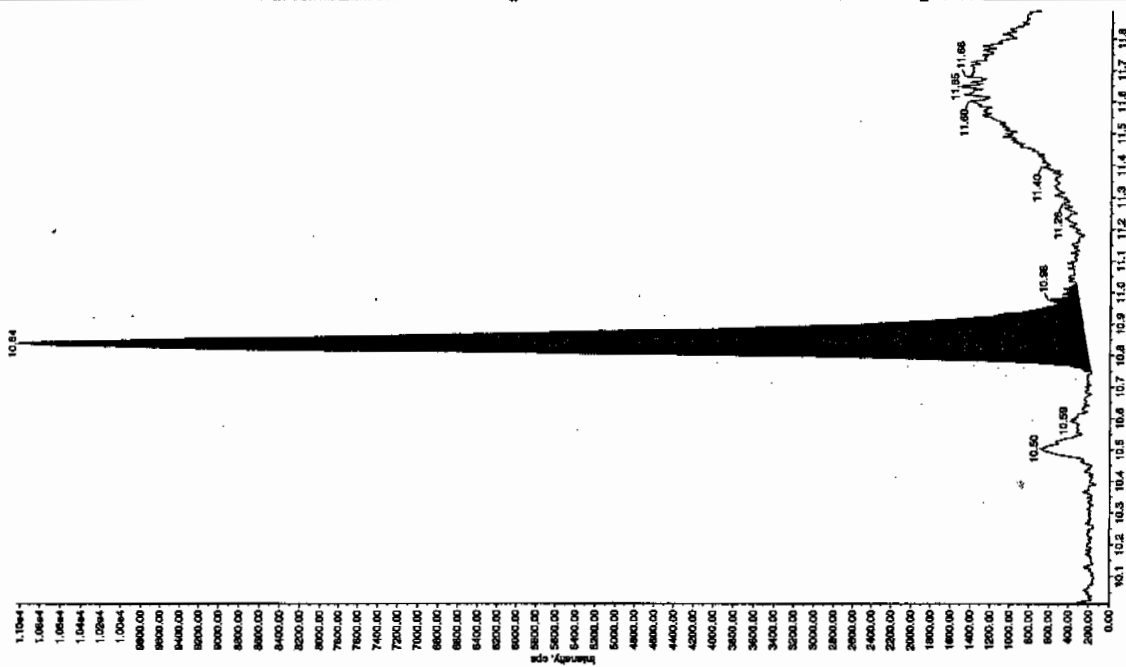
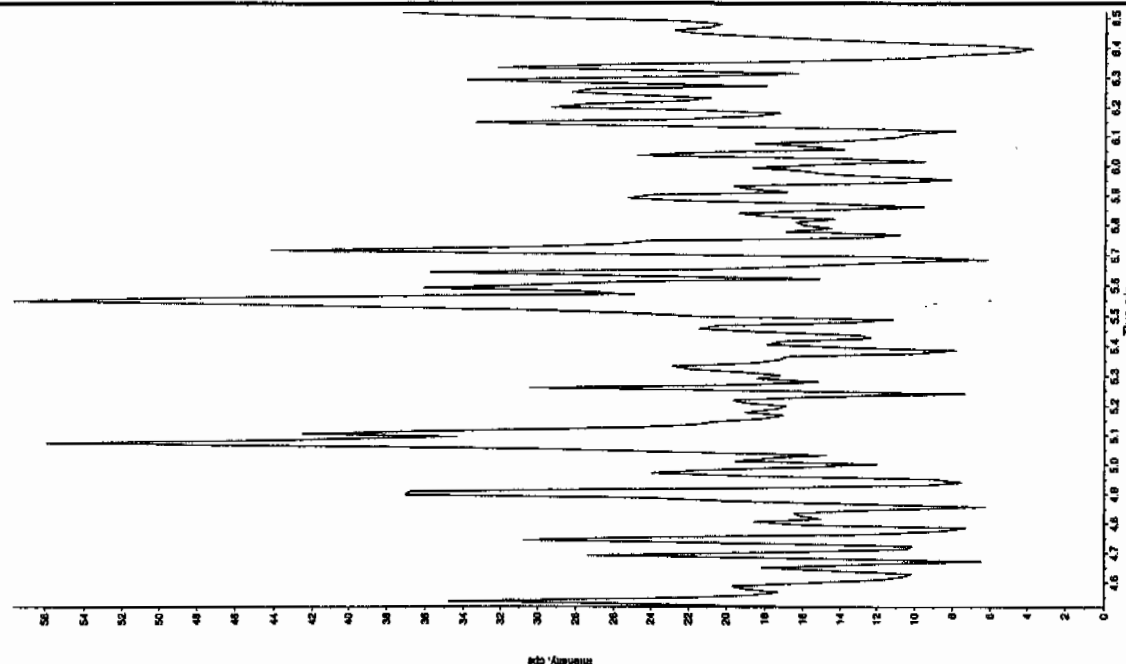


EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

Sample Name: "243524002" Sample ID: "83756421ER" File: "EXS01130019.wif"
 Peak Name: "24-Diamino-6-nitrotoluene" Mass(es): "168.046.0 amu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 6:59:42 PM
 Acq. Time: 6:59:42 PM
 Modified: No

Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 1.00e4 cps
 Min. Peak Width: 3.00 sec
 Smoothing Width: 30.0 points
 RT Window: 10.9 min
 Expected RT: 10.9 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 10.8 min
 Area: 4.96e+004 counts
 Height: 10801.514 cps
 Start Time: 10.7 min
 End Time: 11.0 min



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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7839

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624003

Sample Amount 2

Moisture: 11.7

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118028a

Date Analyzed: 19-JAN-10 03:19

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		

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qtd, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118028a

Date: 19-Jan-2010

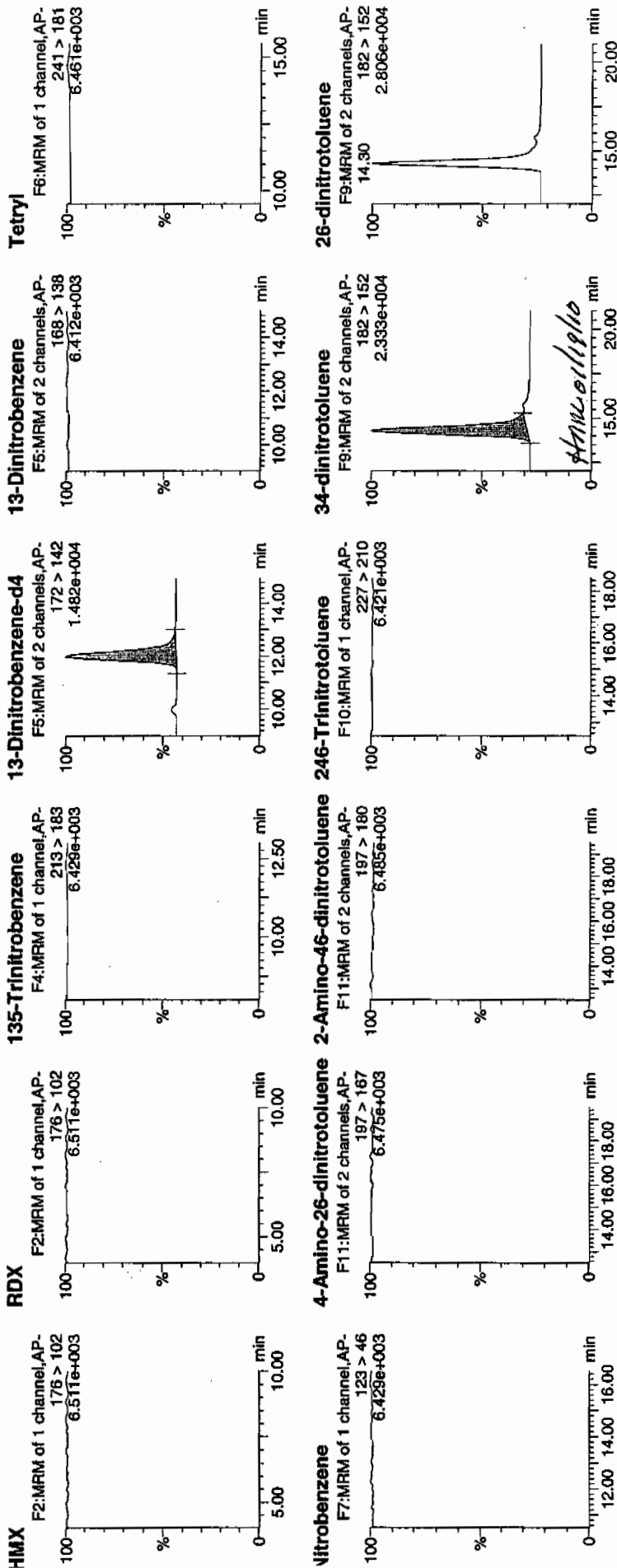
Time: 03:19:27

ID: 243624003

Vial: 2:2,A

1/19/10

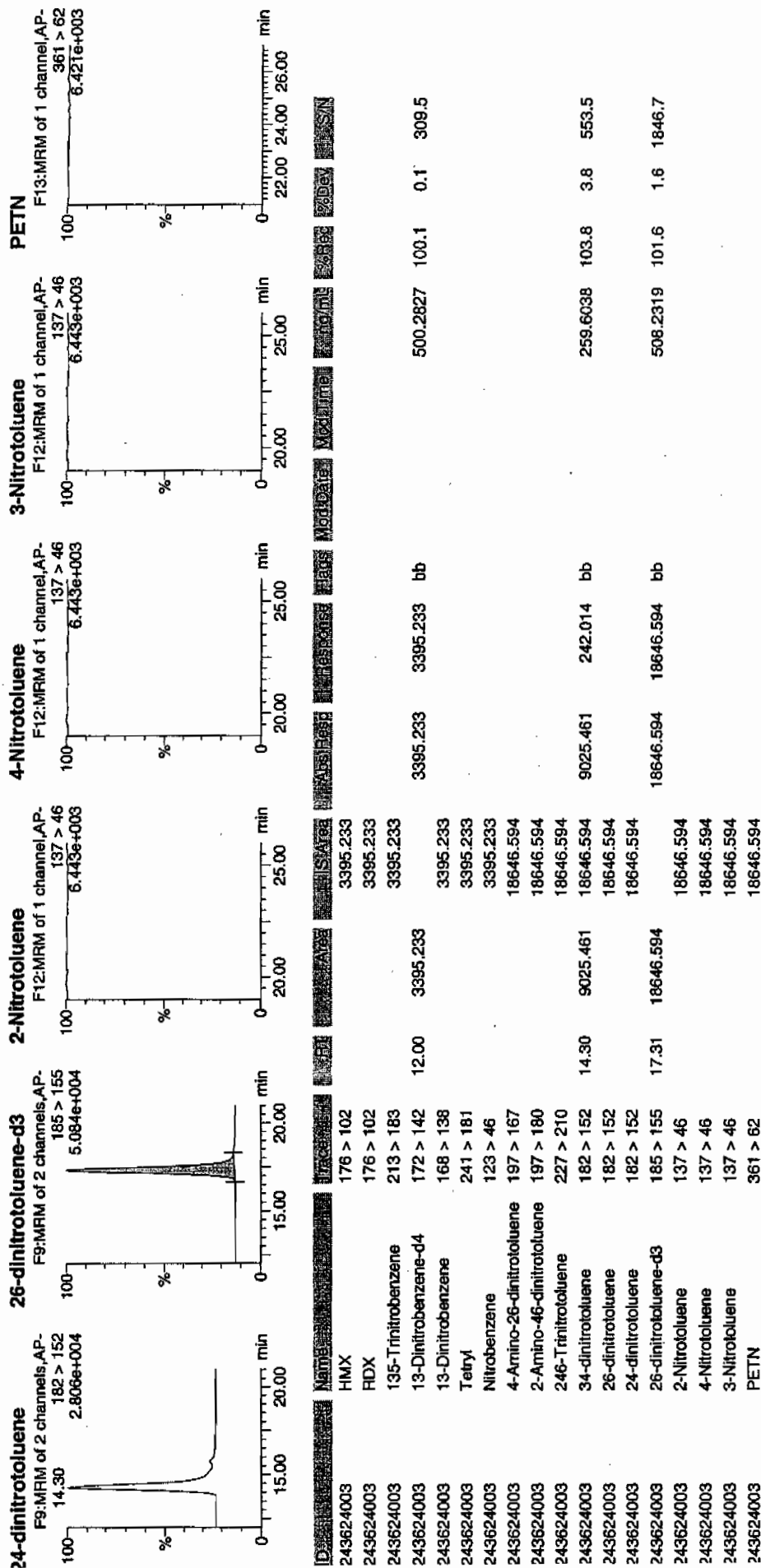
93754 / 8000 / 21



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

Dataset: C:\MASSLYNX\New_Exp\PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7839

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624003

Sample Amount 2

Moisture: 11.7

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130020.wiff

Date Analyzed: 13-JAN-10 19:15

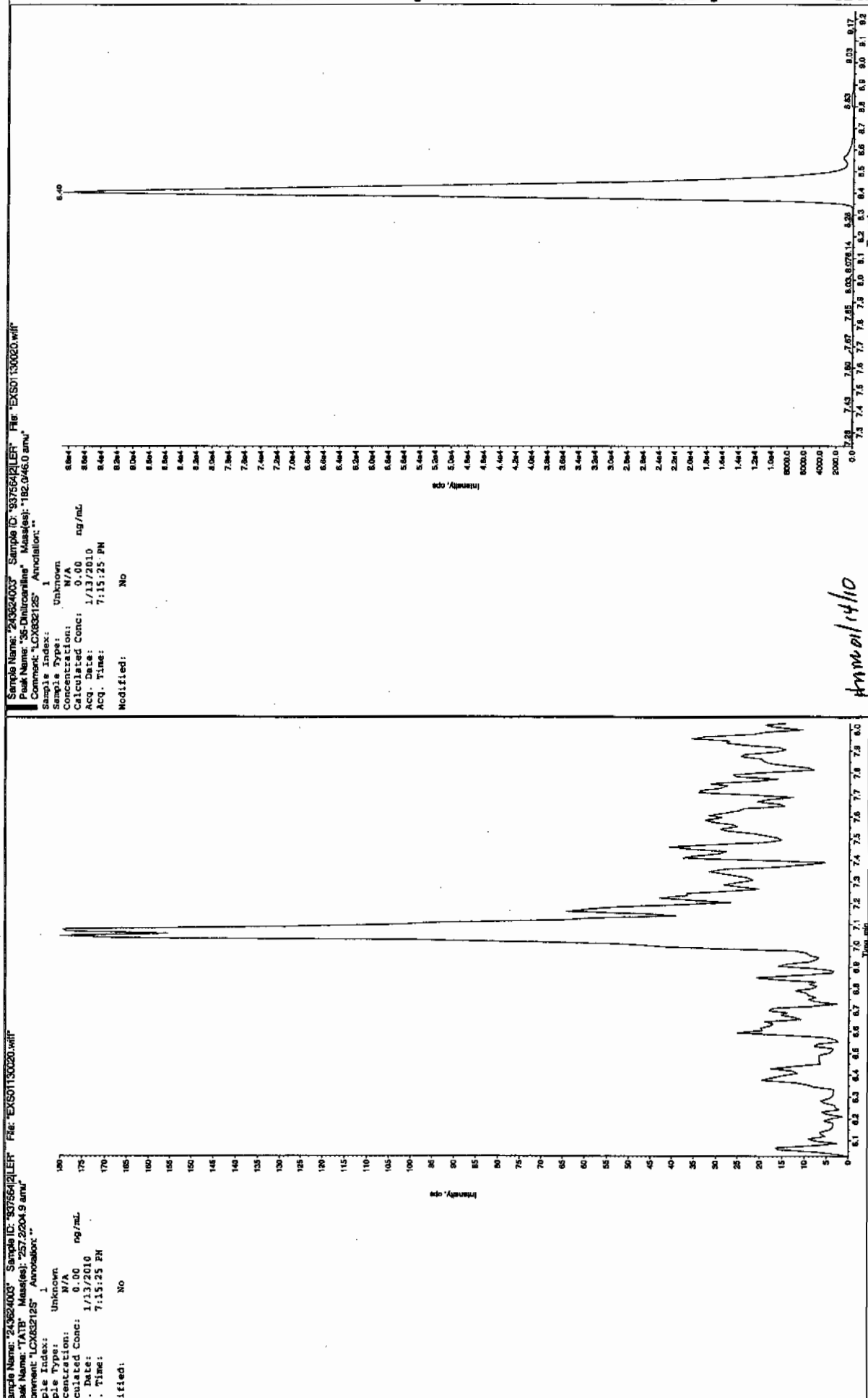
Units: ug/kg

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

*Concentration =

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

01/21/10
2010

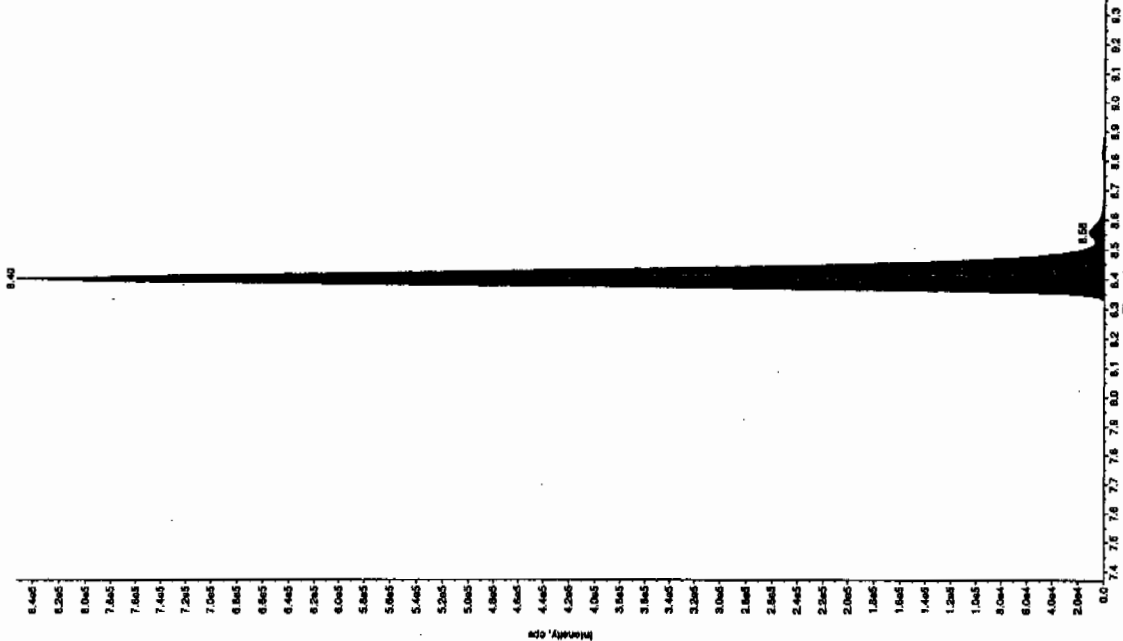


Ammonia 1410

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

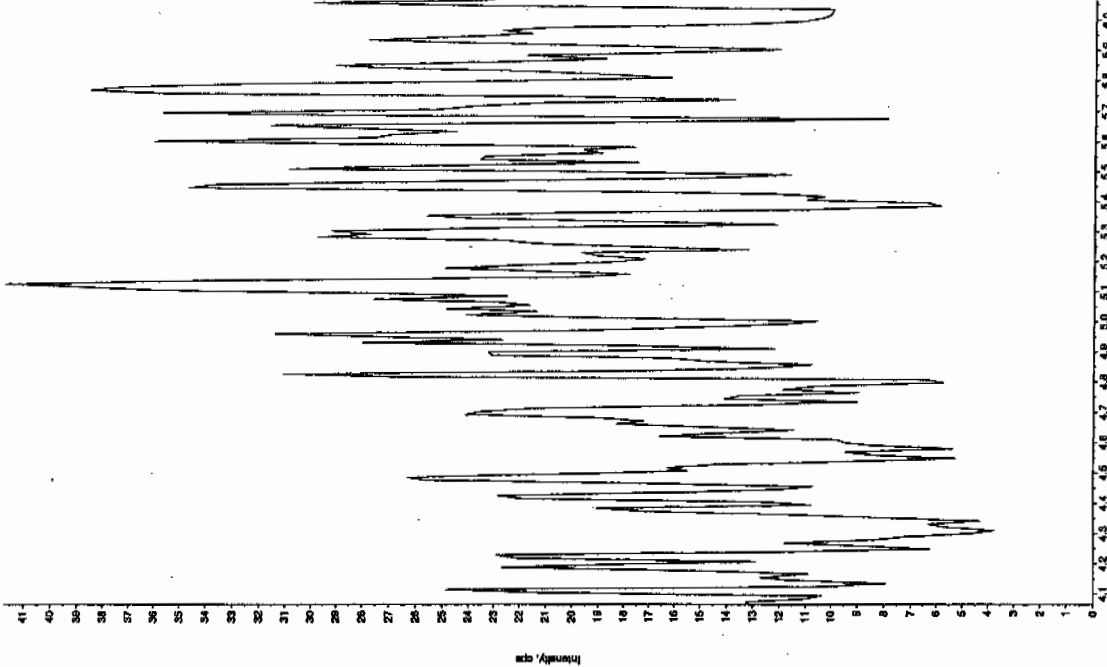
Sample Name: "243824003" Sample ID: "937564121" File: "EX501130020.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.171.9 amu"
 Comment: "LCX832125" Annotation: ""

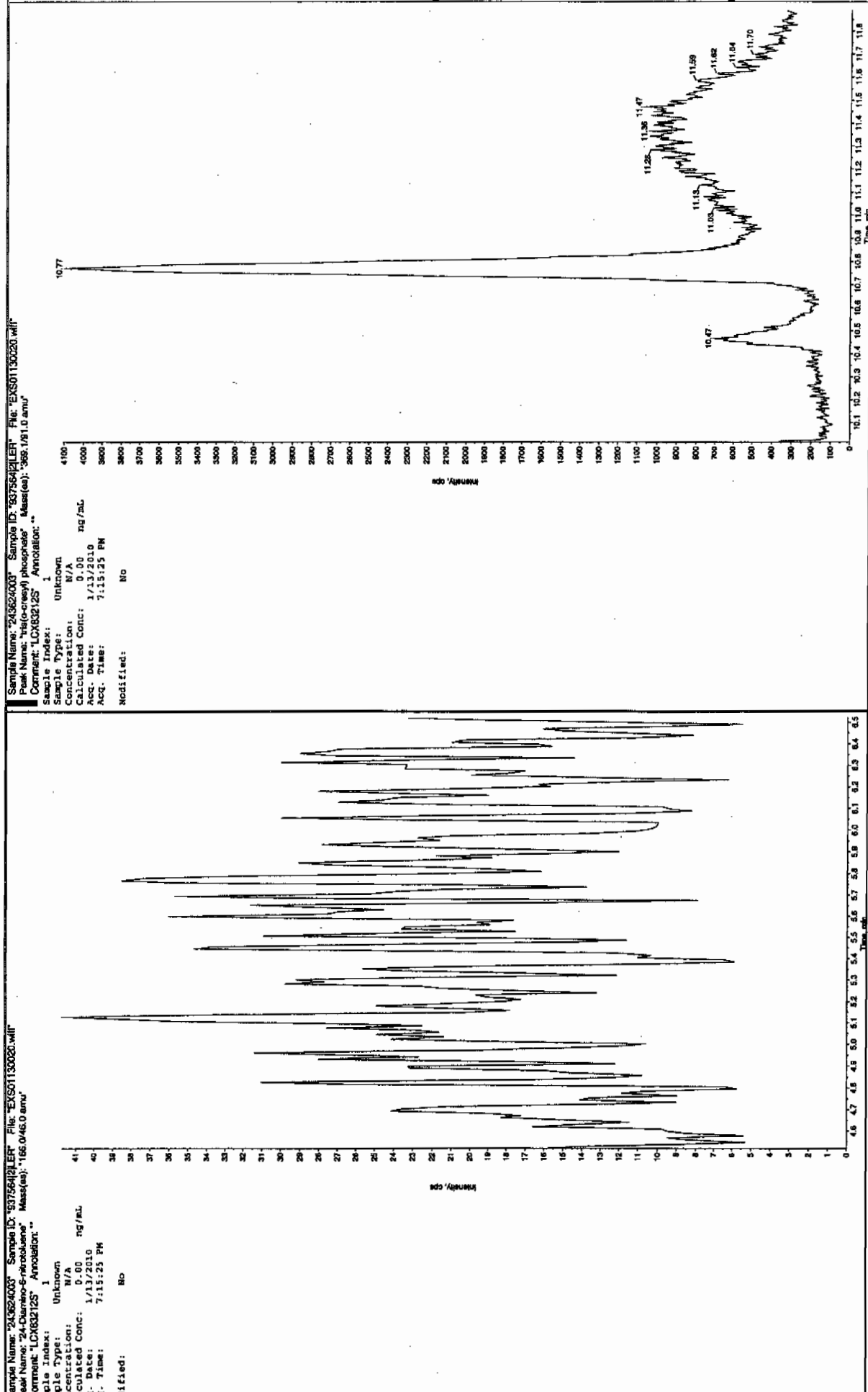
Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 7:15:25 PM
 Acq. Time: 7:15:25 PM
 Modified: No
 Type: Valley
 Retention Time: 8.40 min
 Area: 3.18e+006 counts
 Height: 852976.990 cps
 Width: 8.31 min
 Window: 15.0 sec
 Corrected RT: 8.37 min
 Relative RT: No
 Name: Alcohols: InceliQuan - IQA
 Peak Height: 1460.00 cps
 Peak Width: 0.00 sec
 Notching Width: 3 points
 Window: 15.0 sec
 Corrected RT: 8.37 min
 Relative RT: No



Sample Name: "243824003" Sample ID: "937564121" File: "EX501130020.wif"
 Peak Name: "28-Diamino-4-nitrofluorene" Mass(es): "188.046.0 amu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A ng/mL
 Calculated Conc: 0.00
 Acq. Date: 1/13/2010
 Acq. Time: 7:15:25 PM
 Modified: No





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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7838

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624004

Sample Amount 2

Moisture: 21.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118029a

Date Analyzed: 19-JAN-10 03:48

Units: ug/kg

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

*Concentration =

Instrument Value	X	<u>Concentrated Extract Volume</u>	X	Dilution Factor
		<u>Sample Amount</u>		

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118029a

Date: 19-Jan-2010

Time: 03:48:56

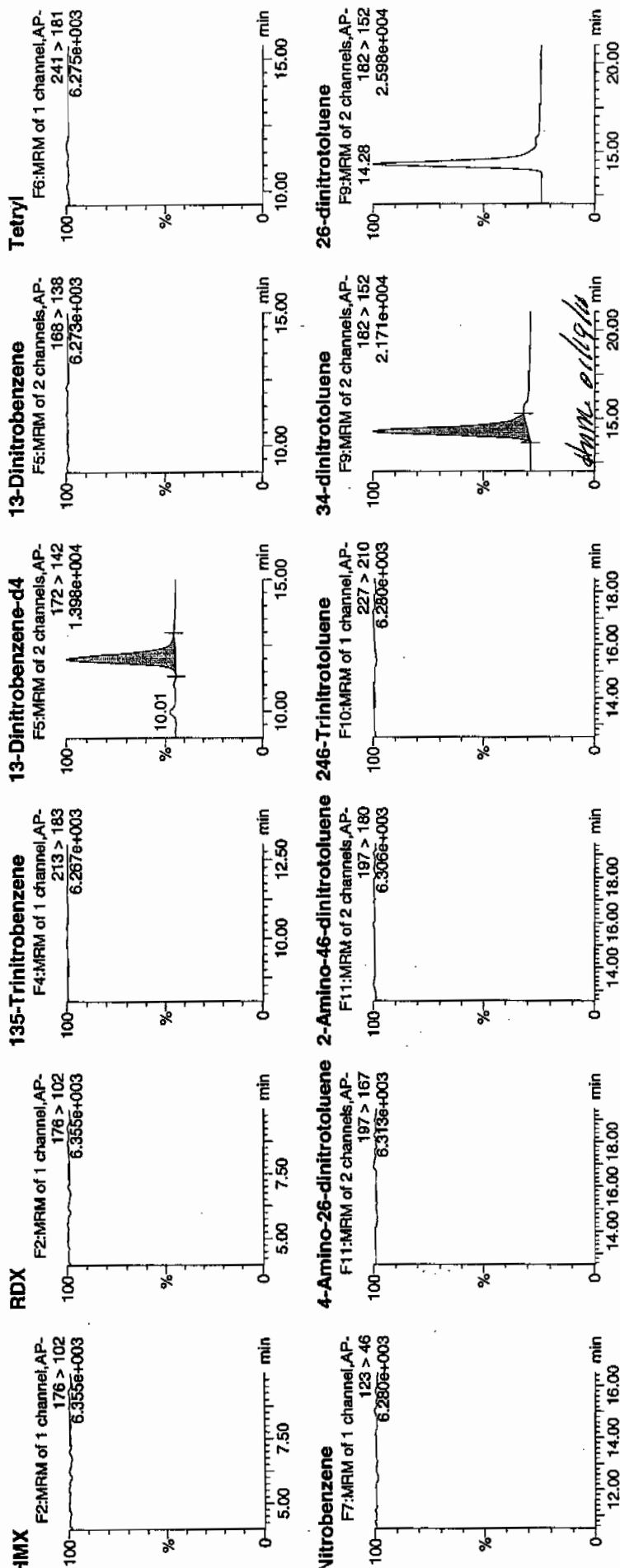
ID: 243624004

Val: 2:2,B

1/19/10

WAVE 937564 / 8012 / 21

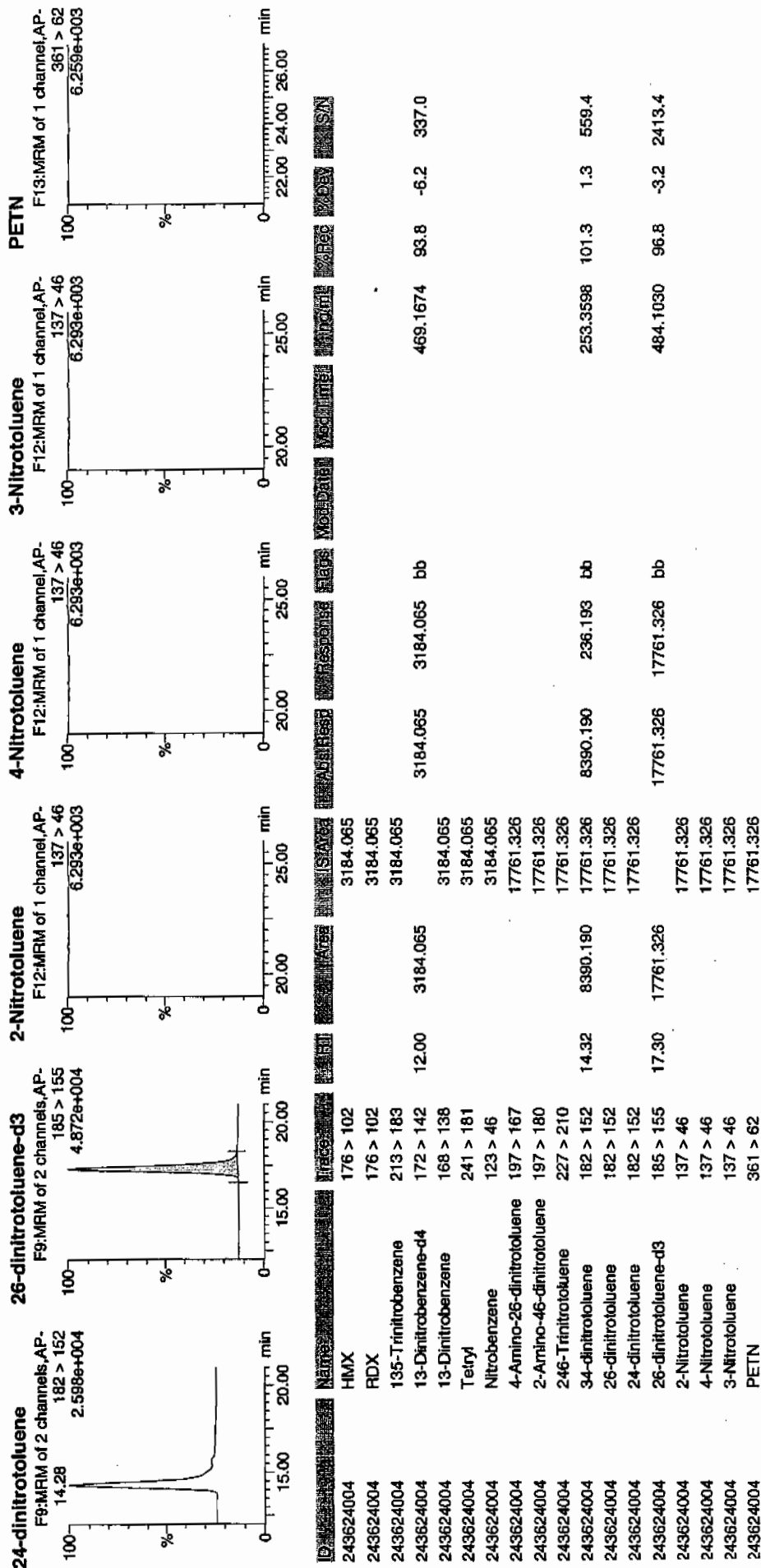
Page 128 of 1381



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

Dataset: C:\MASSLYNX\New_Exp\PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7838

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624004

Sample Amount 2

Moisture: 21.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130021.wiff

Date Analyzed: 13-JAN-10 19:31

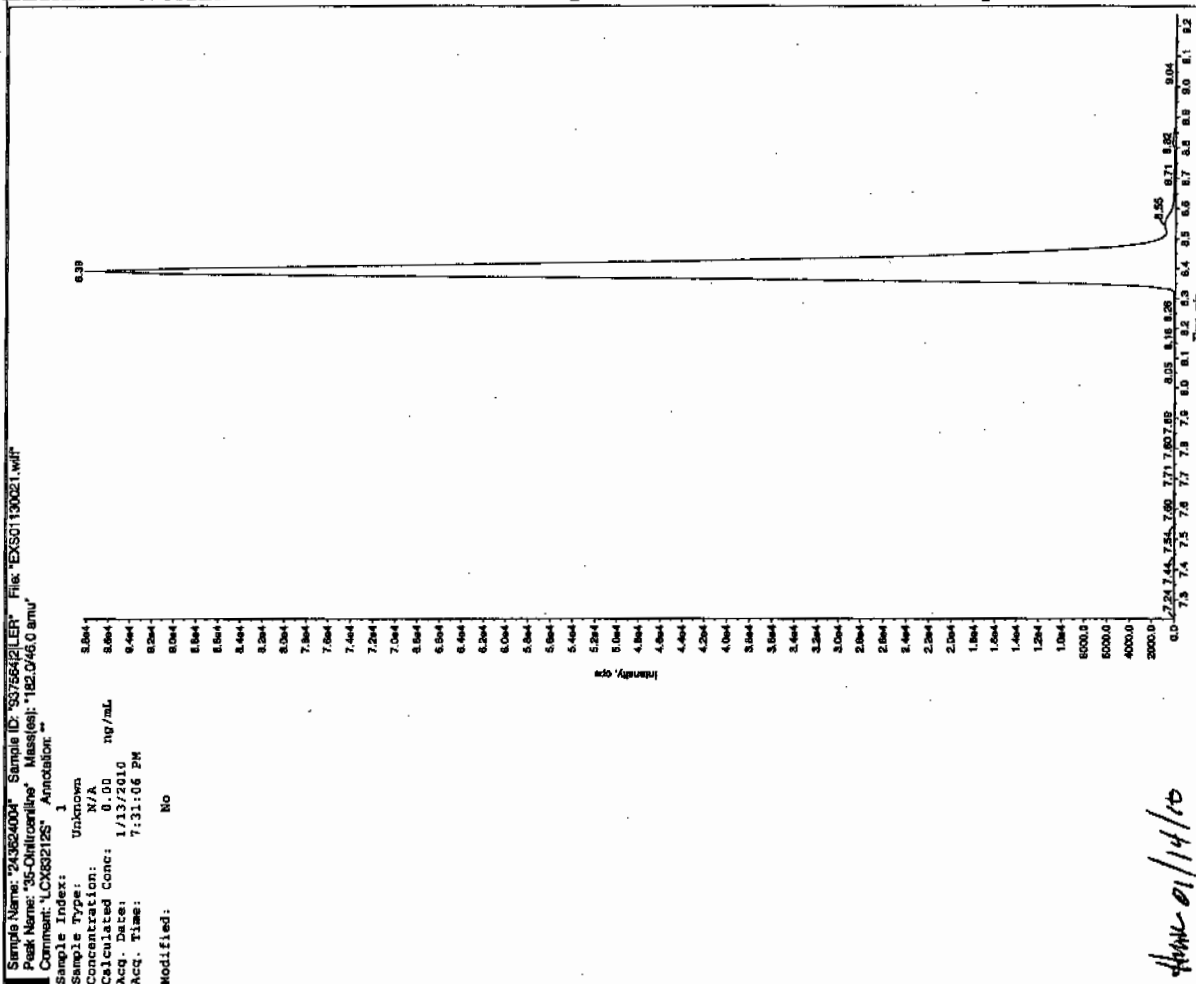
Units: ug/kg

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

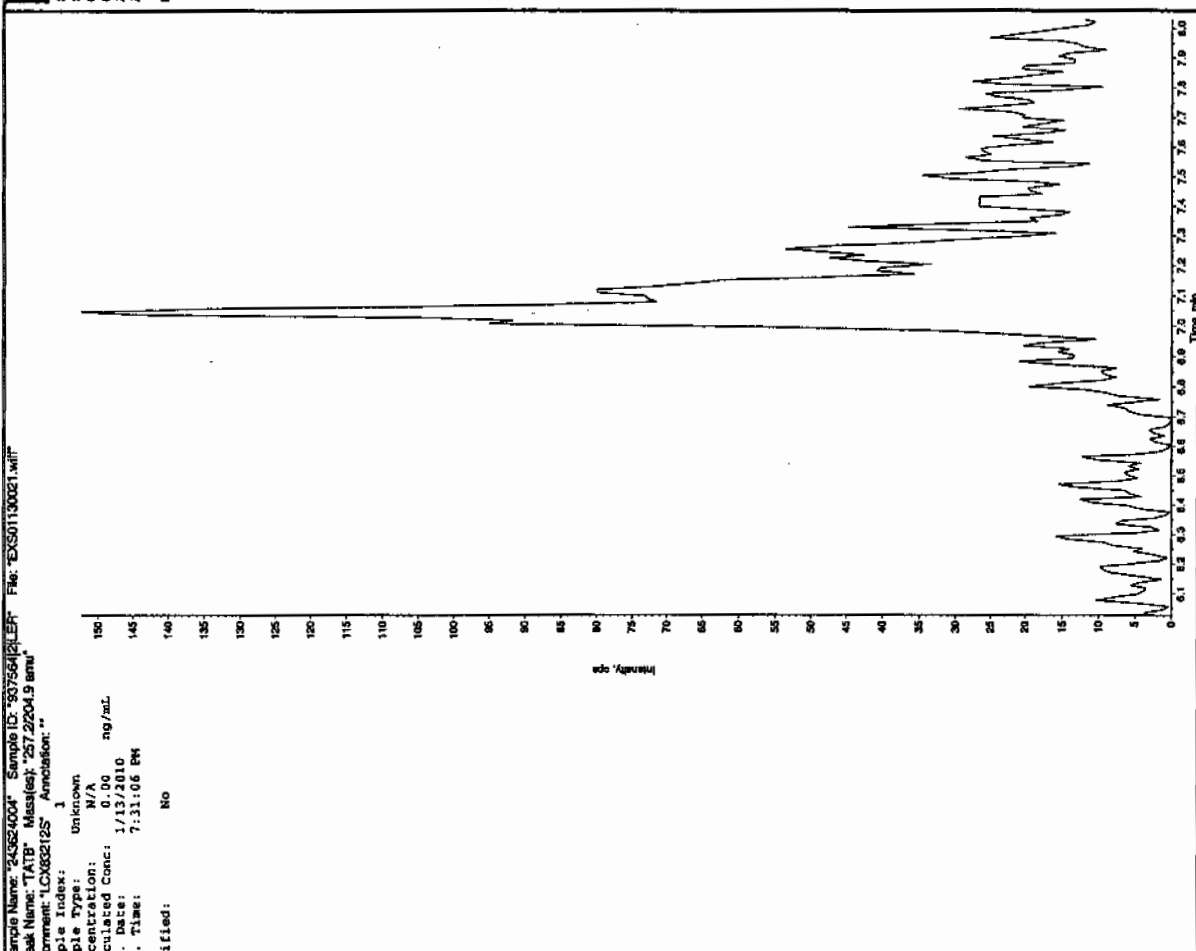
*Concentration =

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

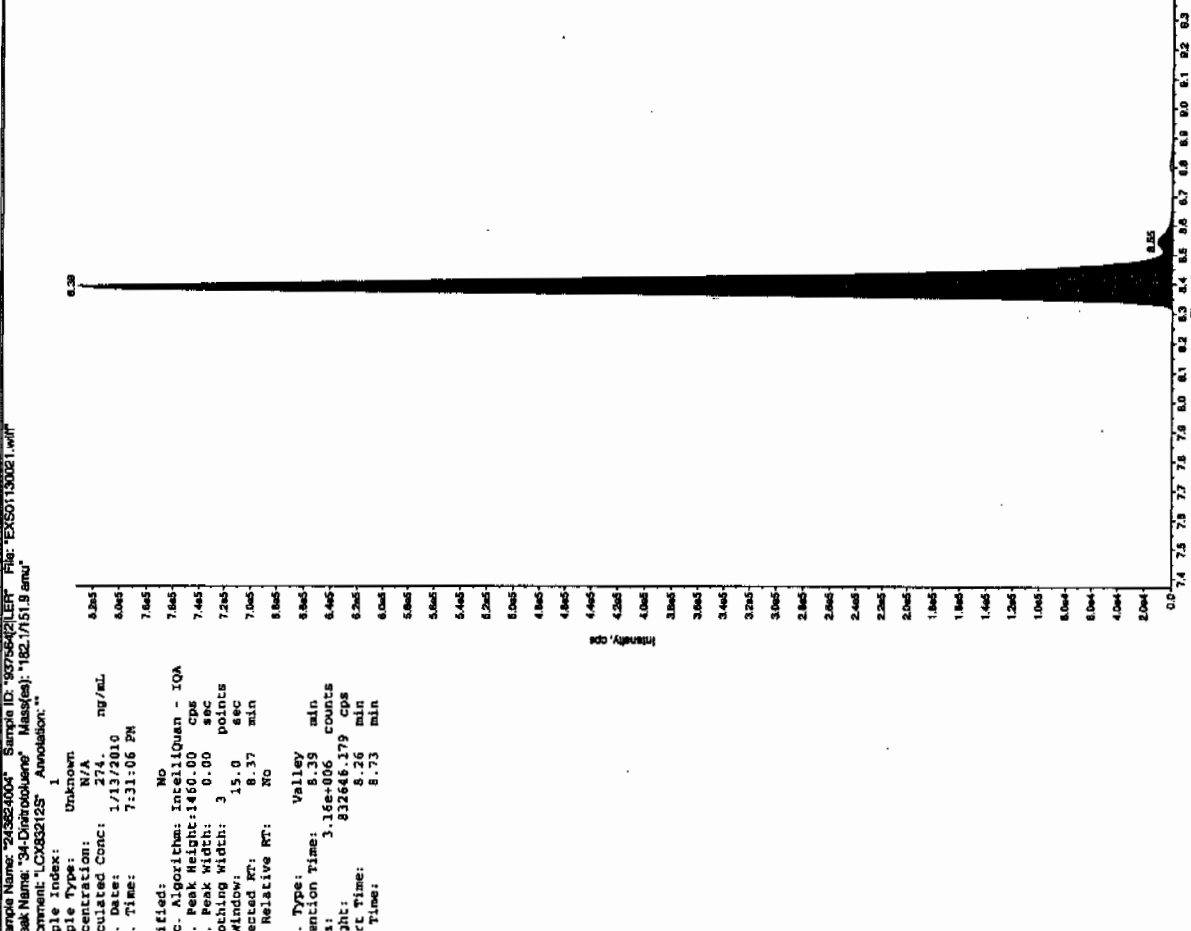
11/13/10
2008



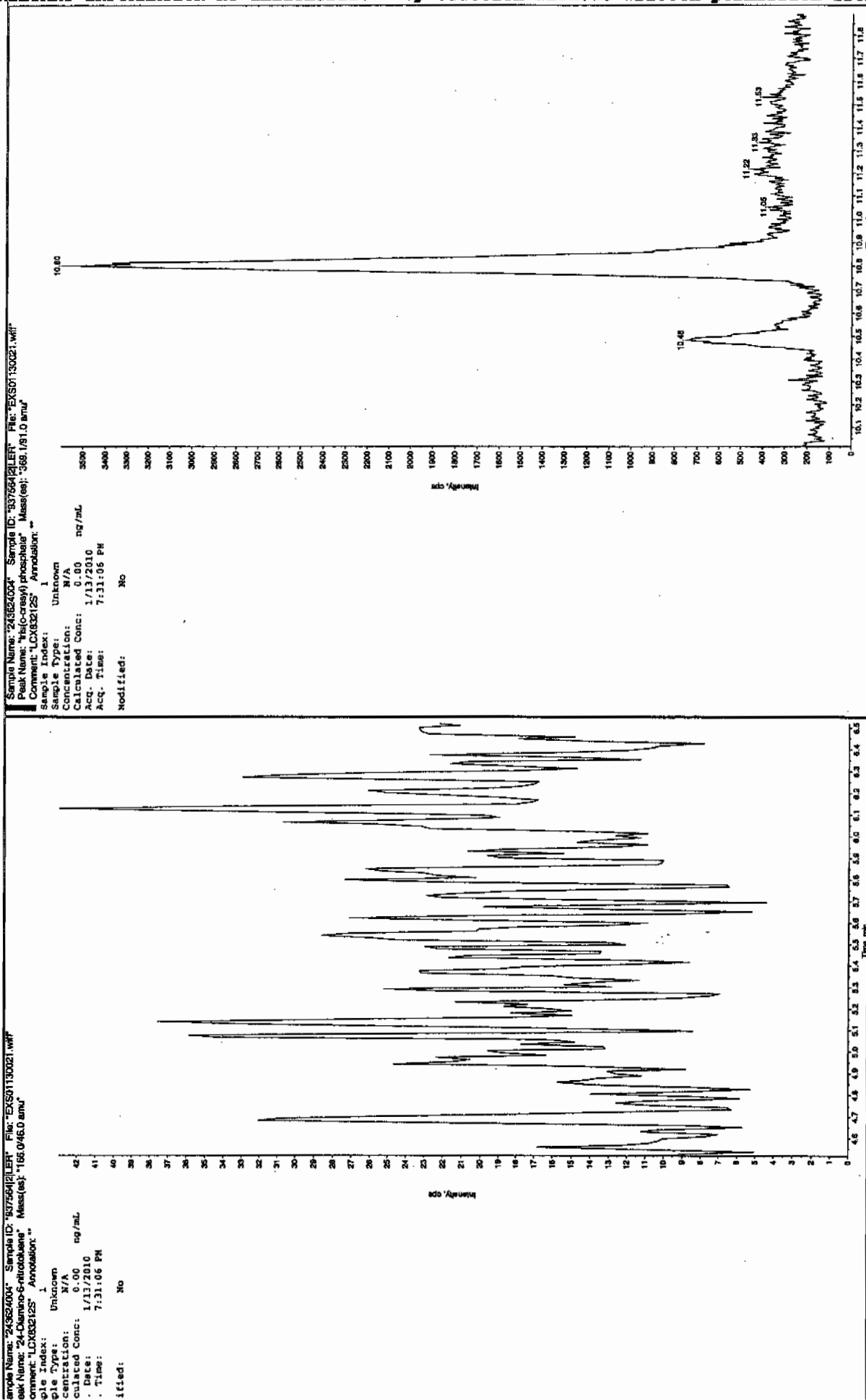
4/14/10



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



CEL 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: RE12-10-7858

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624005

Sample Amount 2

Moisture: 12.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118030a

Date Analyzed: 19-JAN-10 04:18

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		

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118030a

Date: 19-Jan-2010

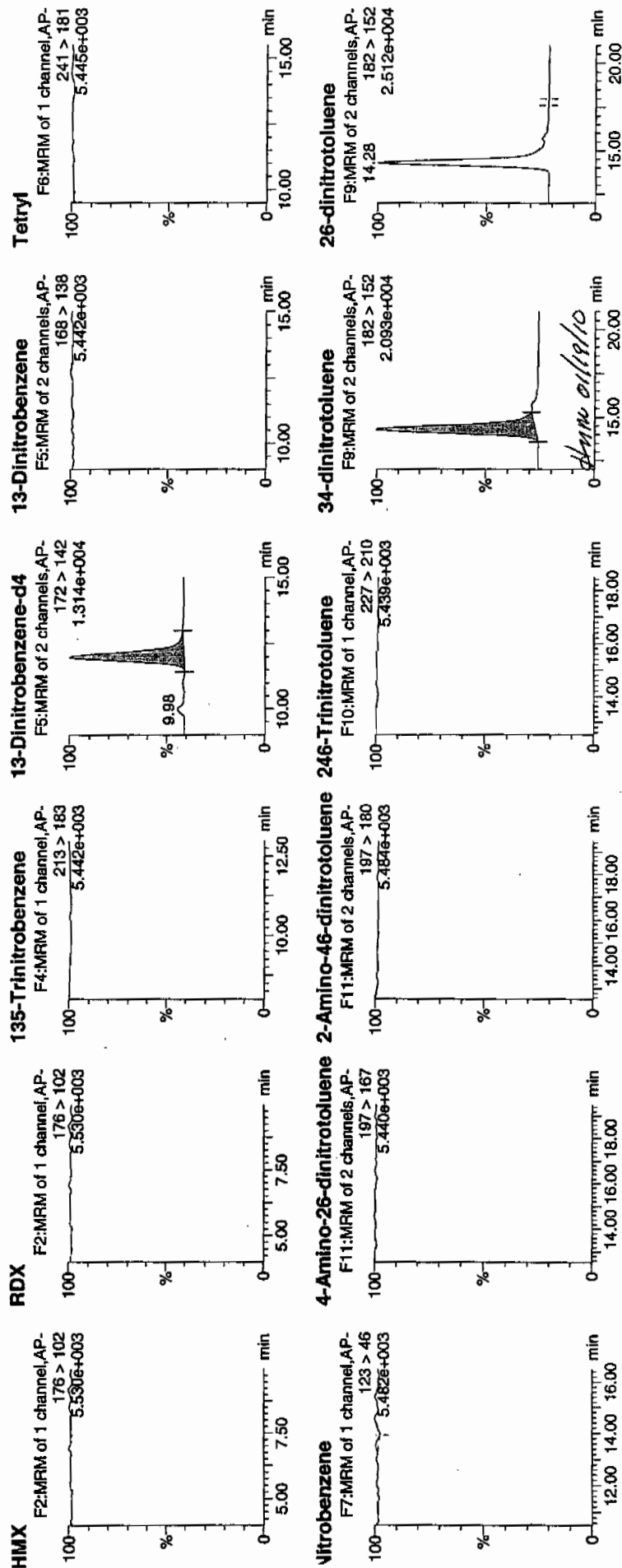
Time: 04:18:25

ID: 243624005

Vial: 2:2,C

1/19/10

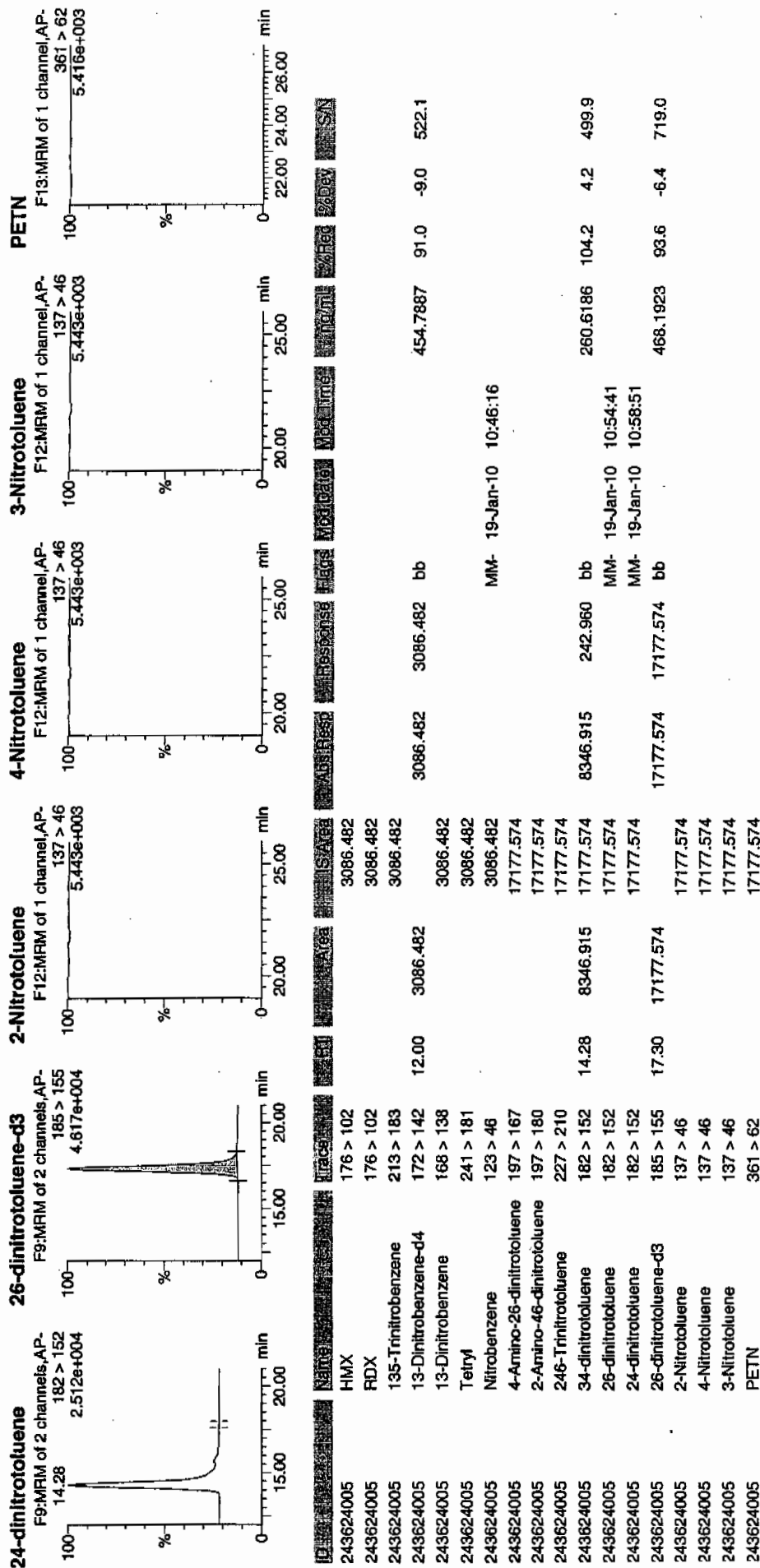
937564 | *8022* | *21*



Printed: Tue Jan 19 11:02:03 2010, Page 60 of 85

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

Dataset: C:\MASSLYNX\New_Exp\PROV011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7858

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624005

Sample Amount 2

Moisture: 12.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130022.wiff

Date Analyzed: 13-JAN-10 19:46

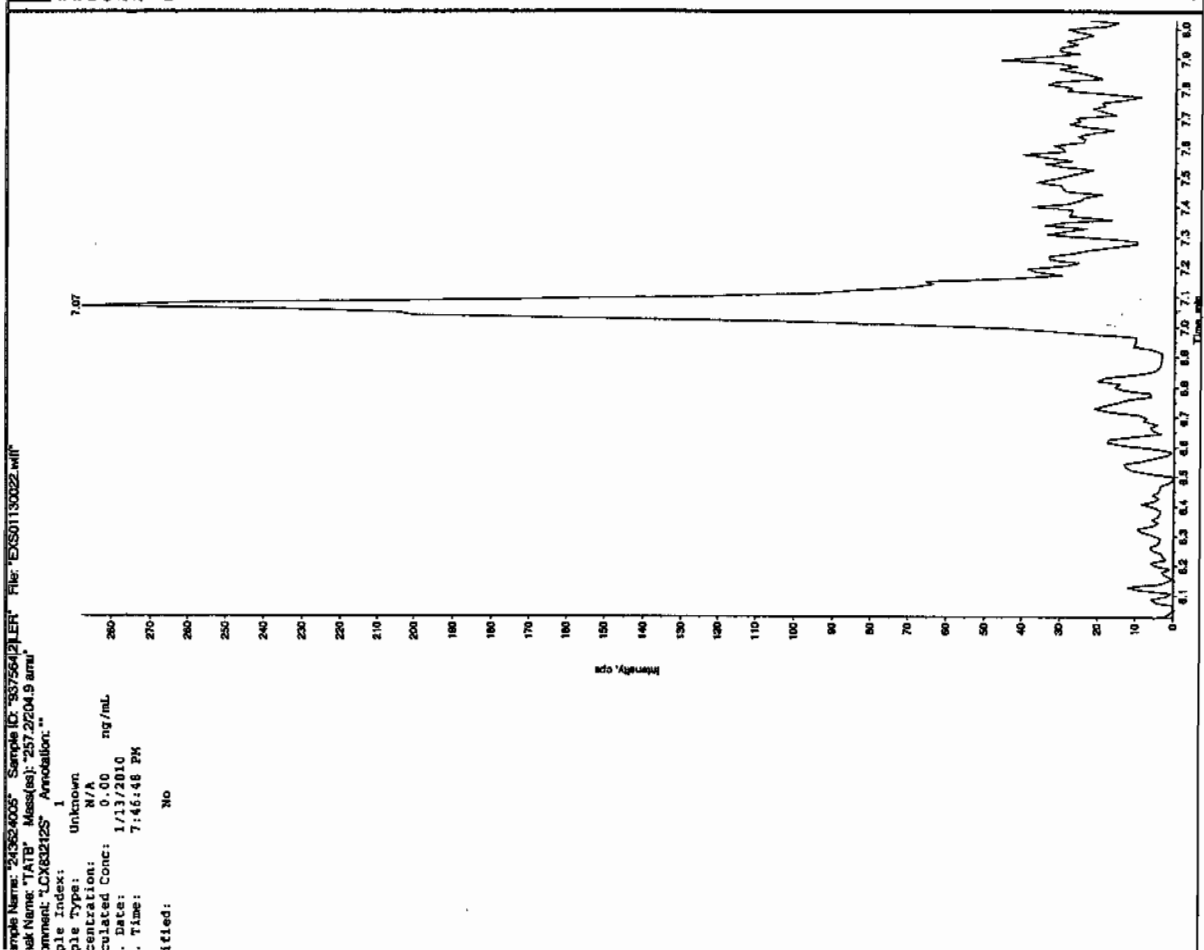
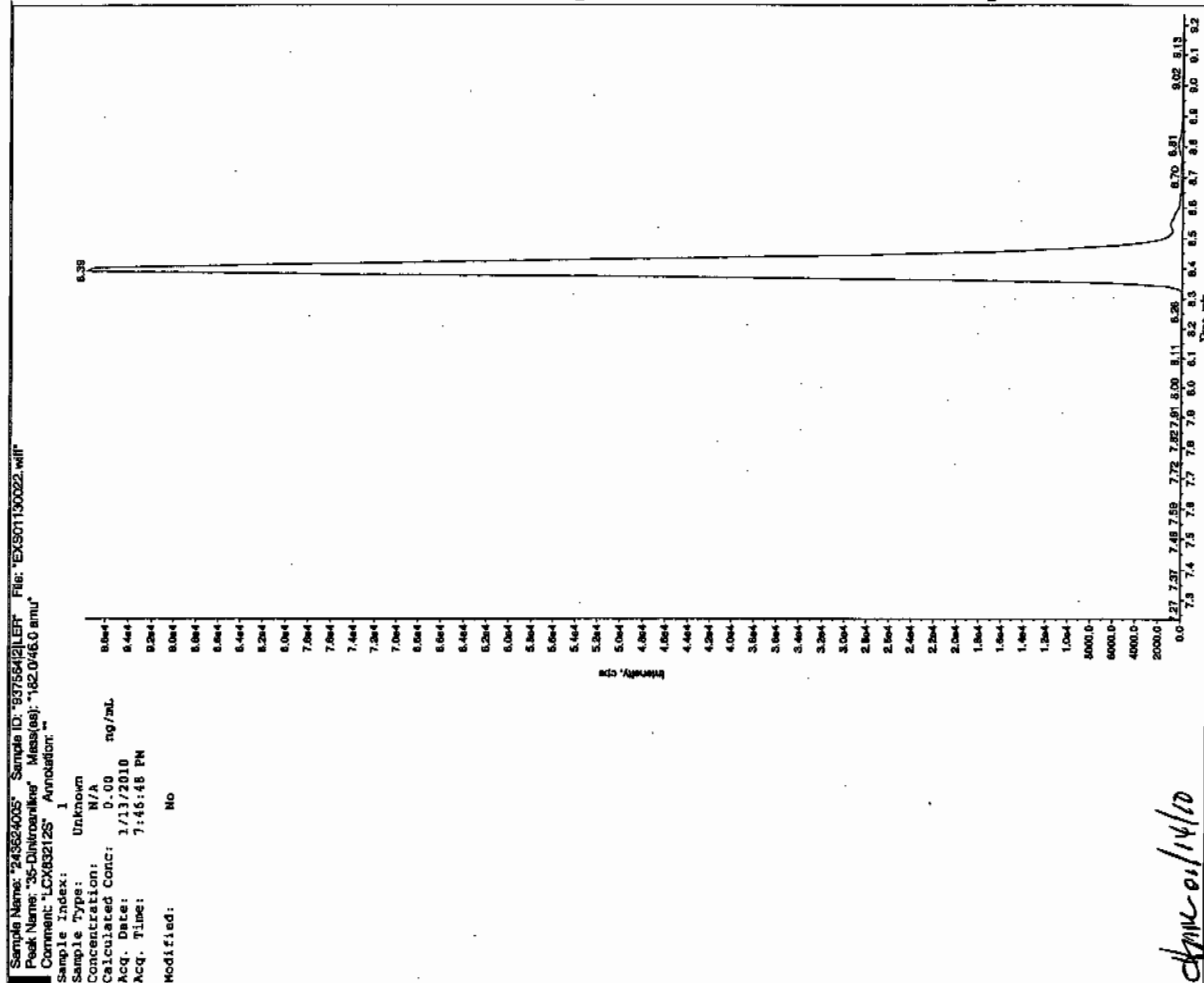
Units: ug/kg

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

*Concentration =

Instrument		X	<u>Concentrated Extract Volume</u>		X	Dilution
Value			<u>Sample Amount</u>			Factor

01/13/10
2002

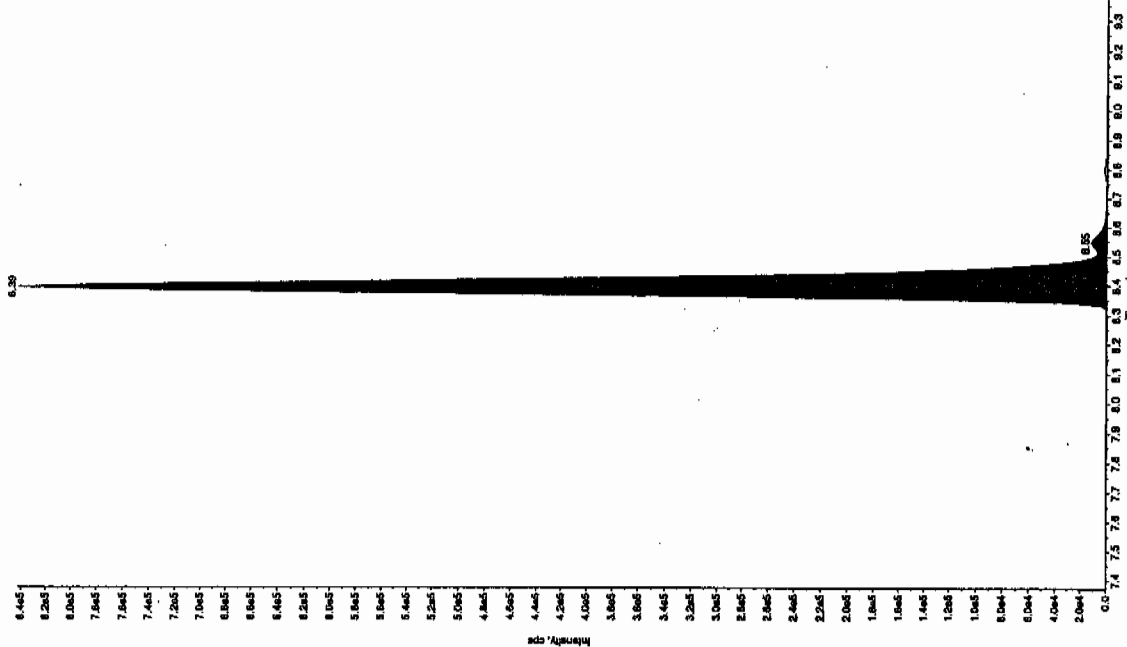


01/14/10

Sample Name: "243624005" Sample ID: "33756421.1" File: "EXS0113022.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1761.9 amu"
 Comment: "LCX832125" Annotation: ""

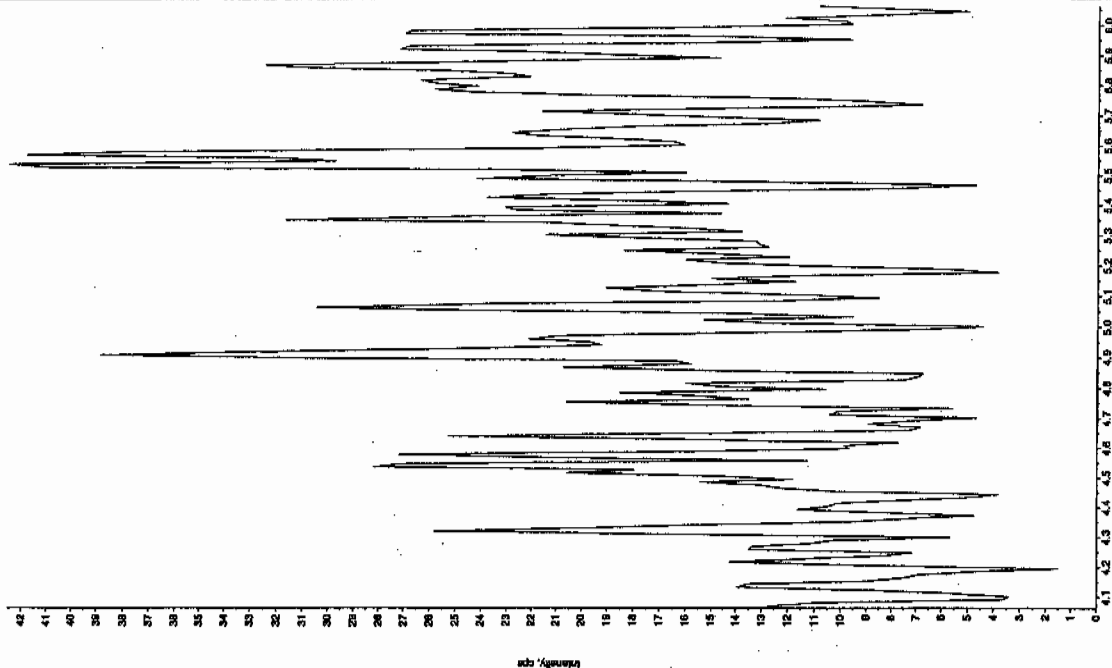
File Index: 1
 Sample Type: Unknown
 Concentration: 273. ng/mL
 Date: 1/13/2010
 Time: 7:46:48 PM

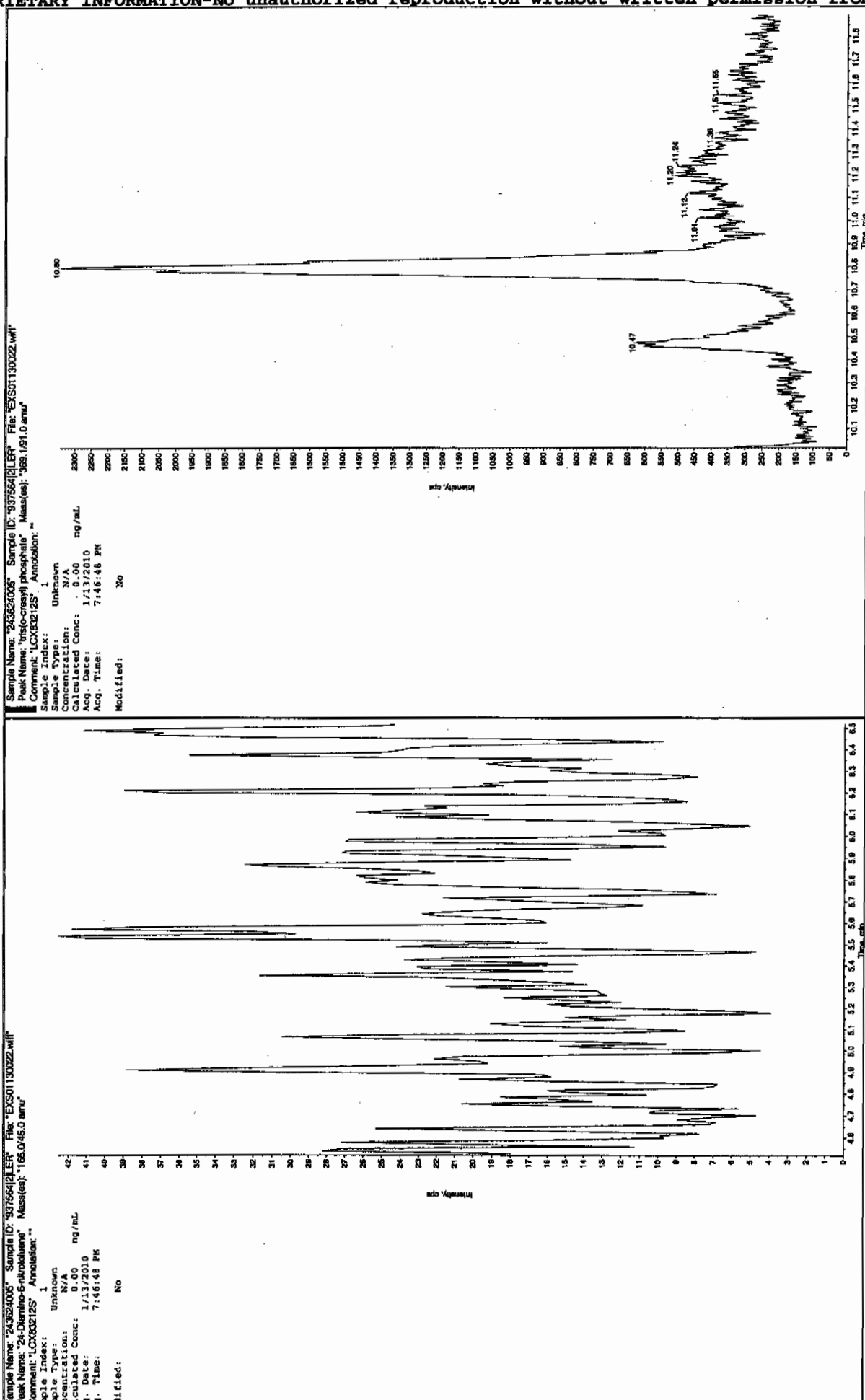
Modified: No
 c. Algorithm: IntelliQuan - IOA
 Peak Height: 1460.00 cps
 Peak Width: 3.00 sec
 Retention Time: 8.39 min
 Relative RT: No
 Type: Valley
 Retention Time: 8.39 min
 Counts: 3.14e+006 counts
 ght: 842279.968 cps
 rt Time: 8.30 min
 Time: 8.72 min



Sample Name: "243624005" Sample ID: "33756421.1" File: "EXS0113022.wif"
 Peak Name: "25-Dinitro-4-nitrofluorene" Mass(es): "186.046.0 amu"
 Comment: "LCX832125" Annotation: ""

File Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Date: 1/13/2010
 Time: 7:46:48 PM
 Modified: No





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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7846

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624006

Sample Amount 2

Moisture: 12.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118031a

Date Analyzed: 19-JAN-10 04:47

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

Name: C:\MASSLYNX\NEW_EXP_PRO\Data\EXP0118031a

Date: 19-Jan-2010

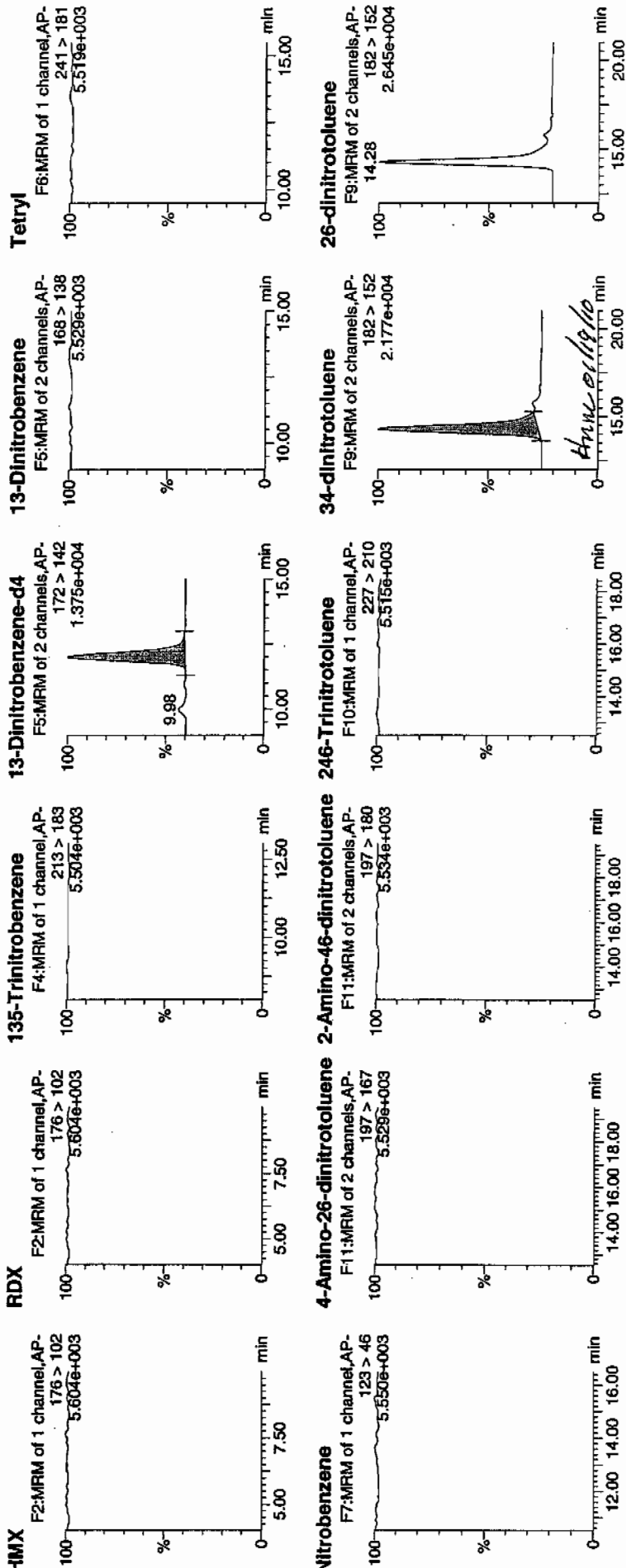
Time: 04:47:54

D: 243624006

/file: 2:2,D

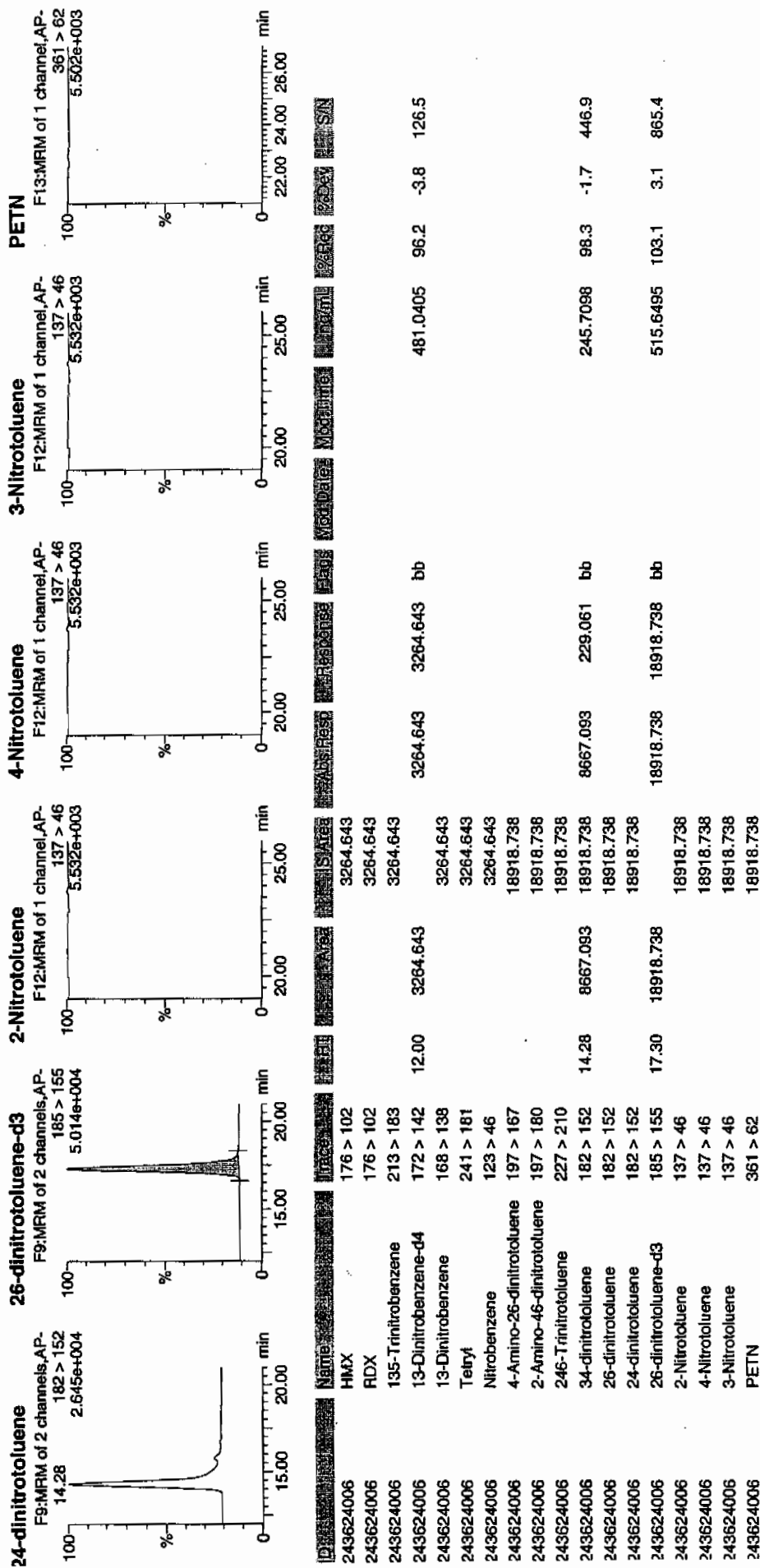
WTP
 1/19/10

WAV 937824 / 8225 / 21



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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7846

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624006

Sample Amount 2

Moisture: 12.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130023.wiff

Date Analyzed: 13-JAN-10 20:02

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

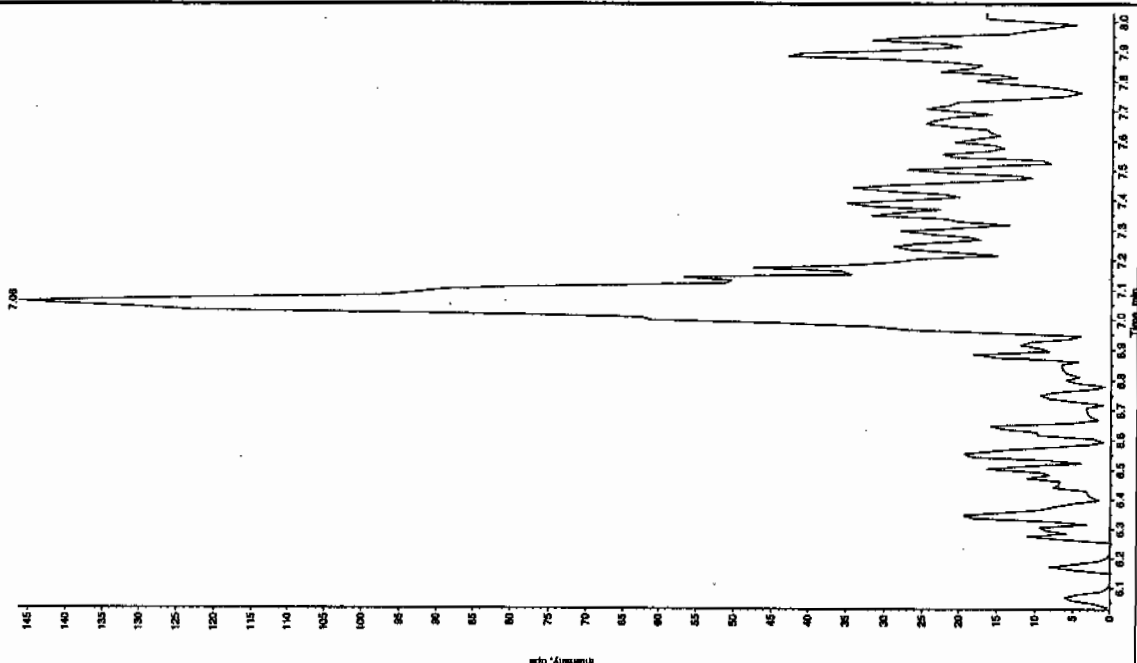
*Concentration =

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

8/24/10

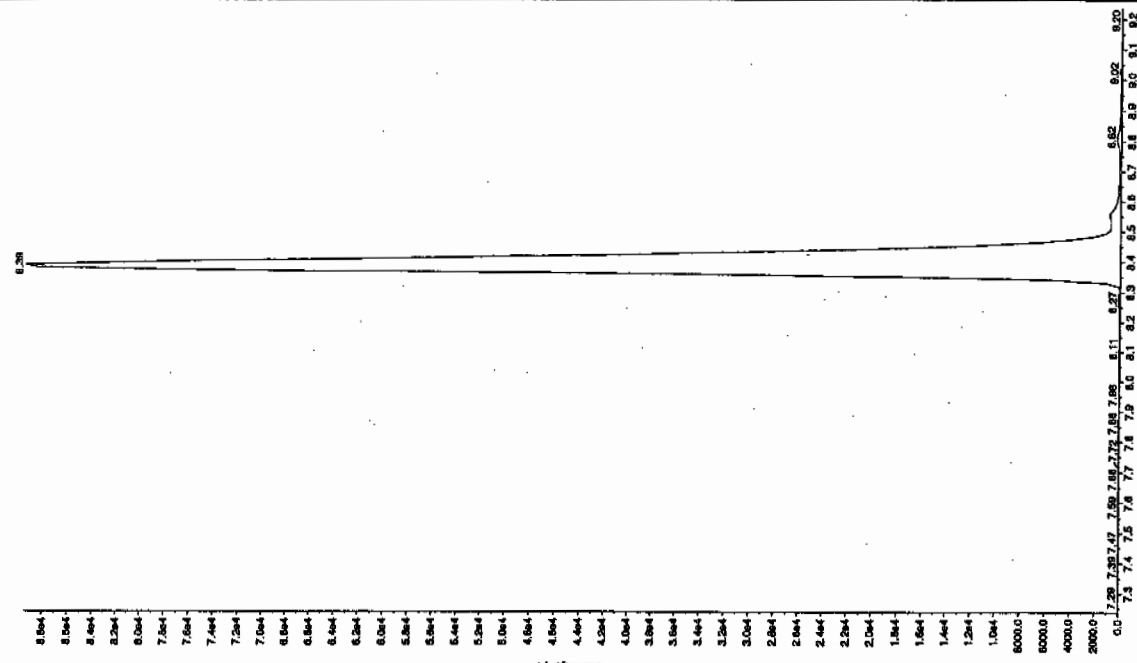
Sample Name: "243524008" Sample ID: "83756421ER" File: "EXS01130023.wif"
 Peak Name: "TATB" Mass(es): "257.2004.9 and
 Comment: "LCX83212S" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Date: 1/13/2010
 Time: 8:02:29 PM
 Modified: No

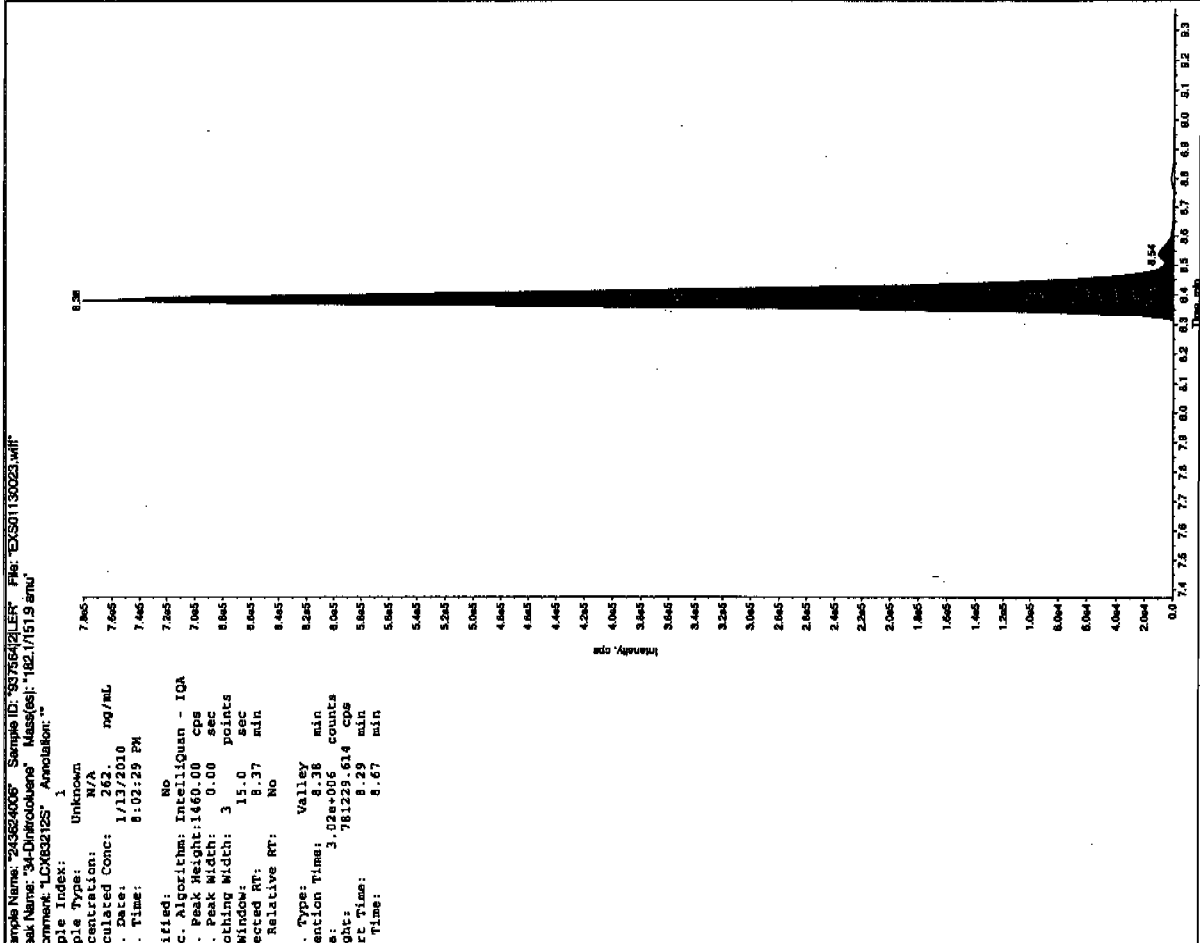
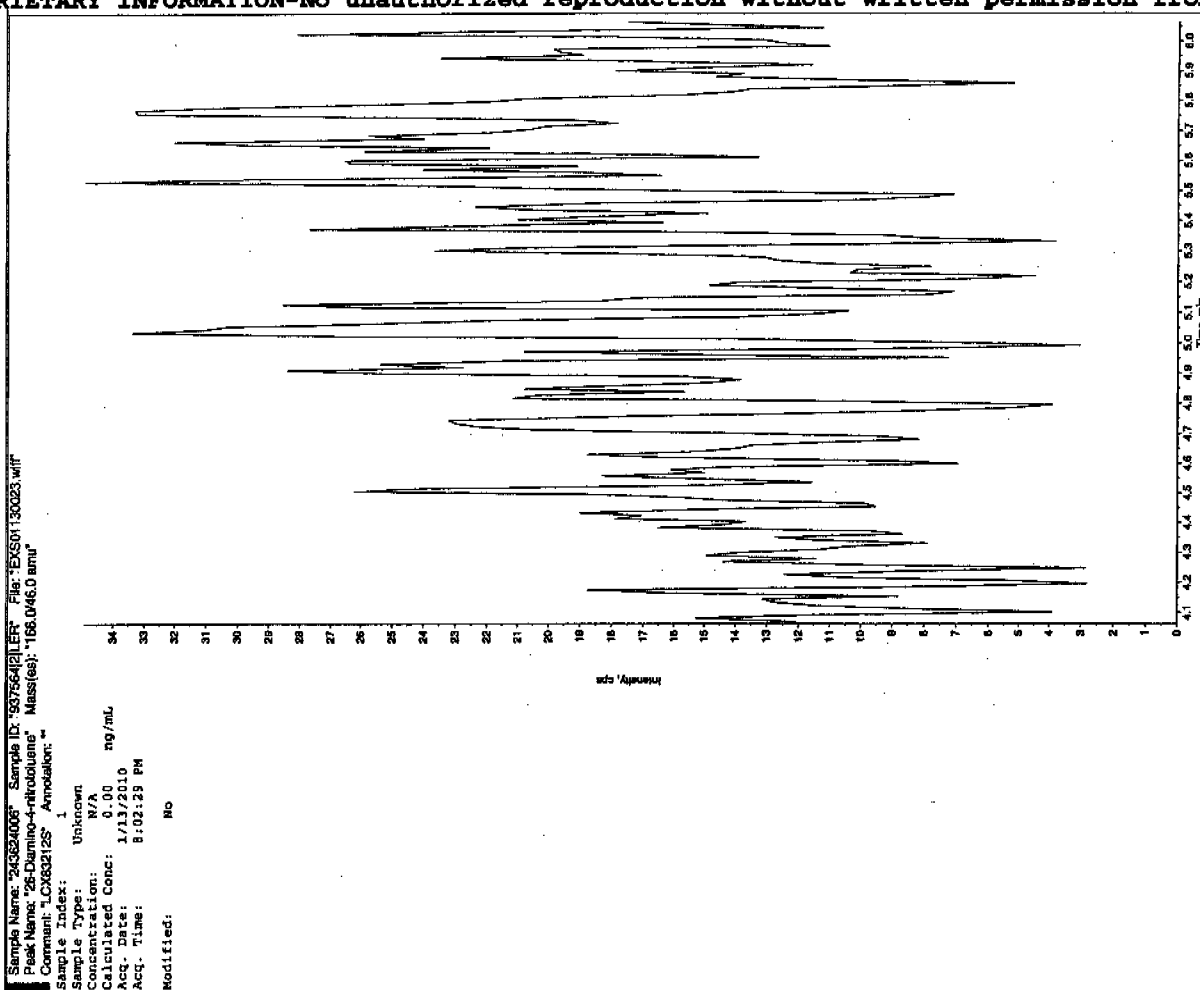


Sample Name: "243524008" Sample ID: "83756421ER" File: "EXS01130023.wif"
 Peak Name: "35-Dinitroaniline" Mass(es): "182.046.0 amu"
 Comment: "LCX83212S" Annotation: ""

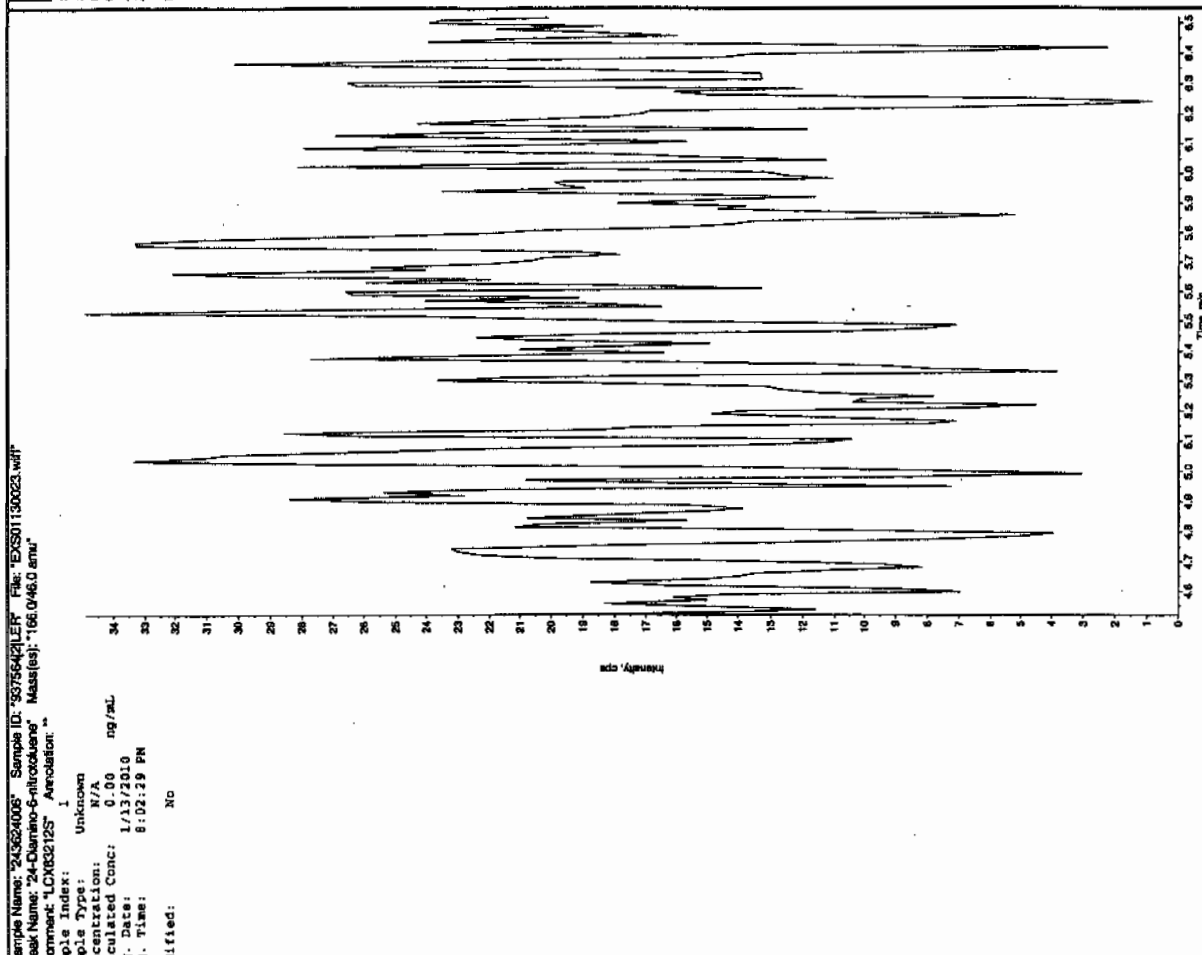
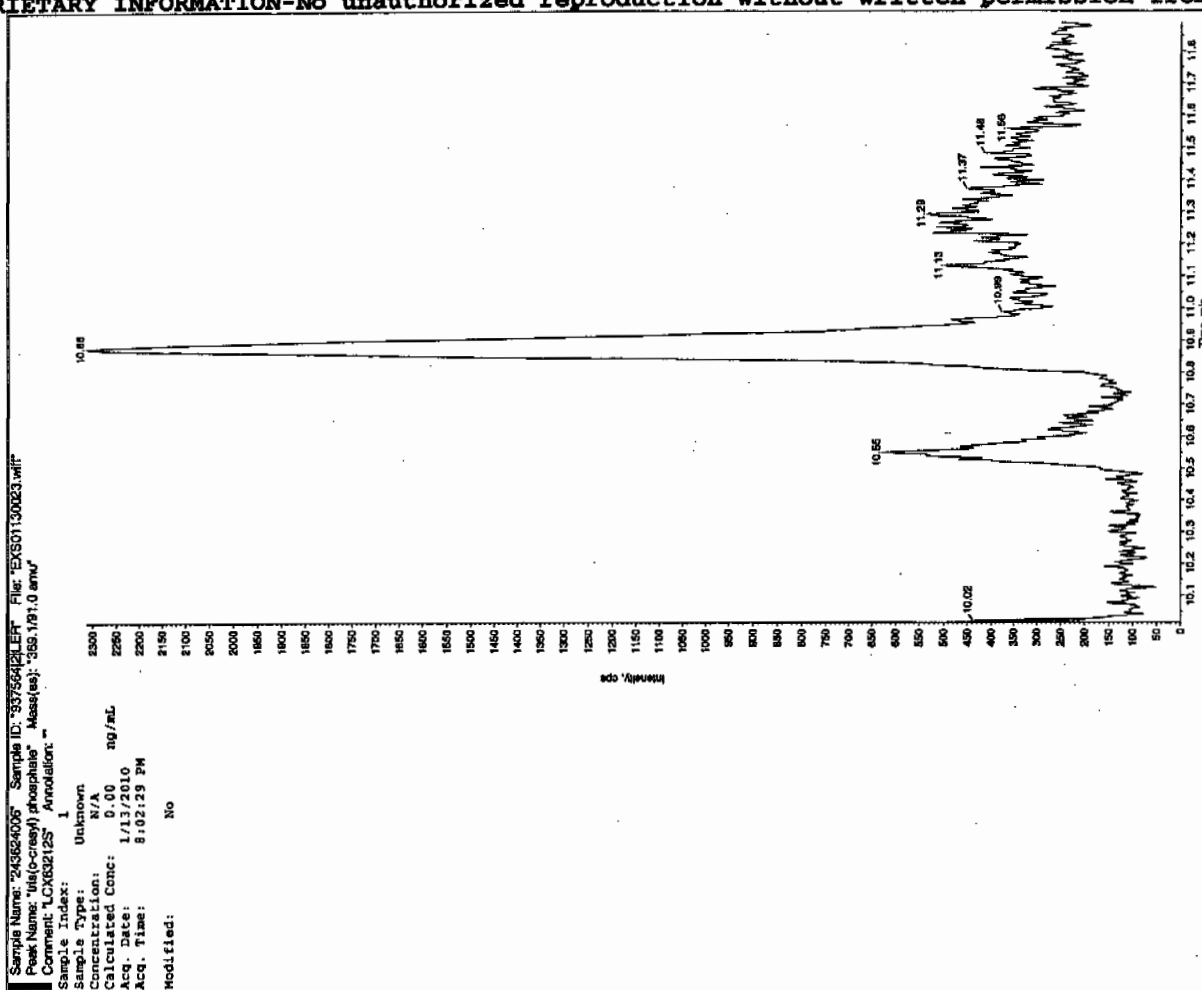
Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Date: 1/13/2010
 Time: 8:02:29 PM
 Modified: No



8/24/10



EL SOP GL-0A-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: RE12-10-7844

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624007

Sample Amount 2

Moisture: 13.3

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118035a

Date Analyzed: 19-JAN-10 06:46

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		

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118035a

Date: 19-Jan-2010

Time: 06:46:09

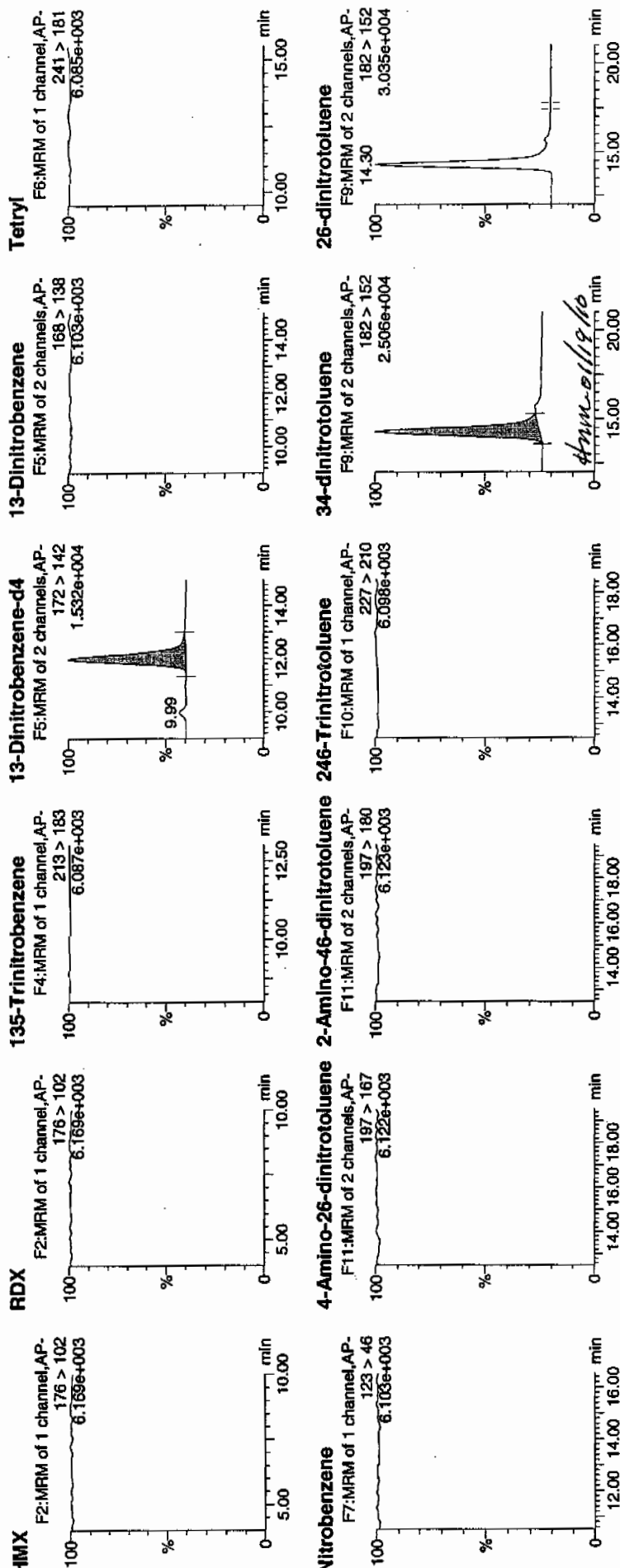
ID: 243624007

Vial: 2:2,E

1/19/10

937564 / 8035a / 21

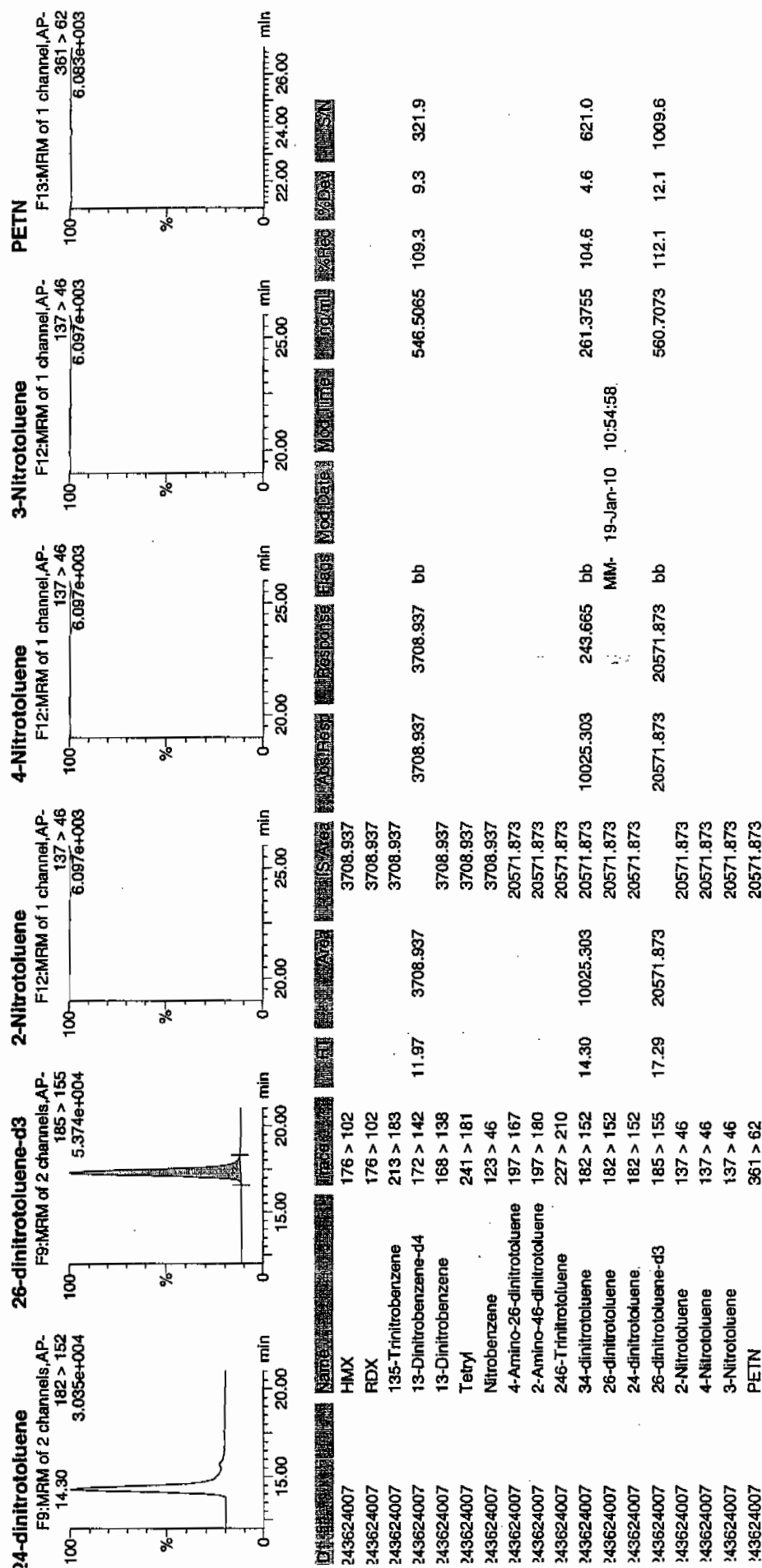
Page 149 of 1381



Quantify Sample Report

GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYN\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7844

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624007

Sample Amount 2

Moisture: 13.3

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130027.wiff

Date Analyzed: 13-JAN-10 21:05

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

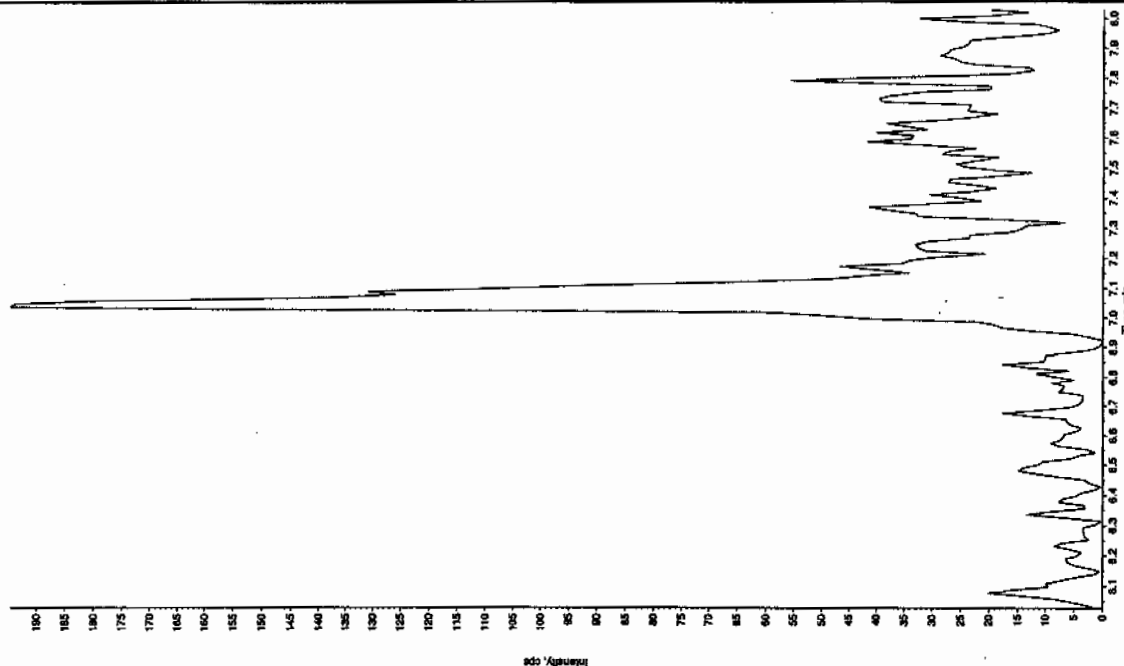
*Concentration =

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

80201111

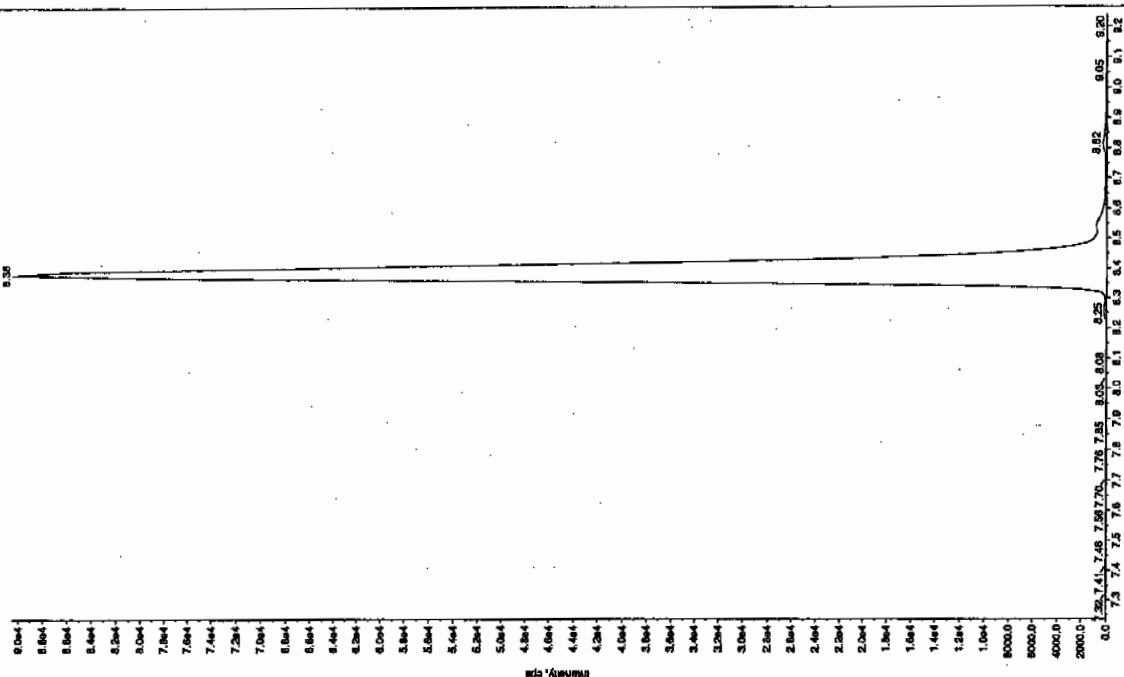
Sample Name: "243624007" Sample ID: "33756421ER" File: "EXS01130027.wif"
 Peak Name: "TAIB" Mass(es): "267.2/204.9 amu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 9:05:16 PM
 Modified: No



Sample Name: "243624007" Sample ID: "33756421ER" File: "EXS01130027.wif"
 Peak Name: "TAIB" Mass(es): "182.0/46.0 amu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 9:05:16 PM
 Modified: No

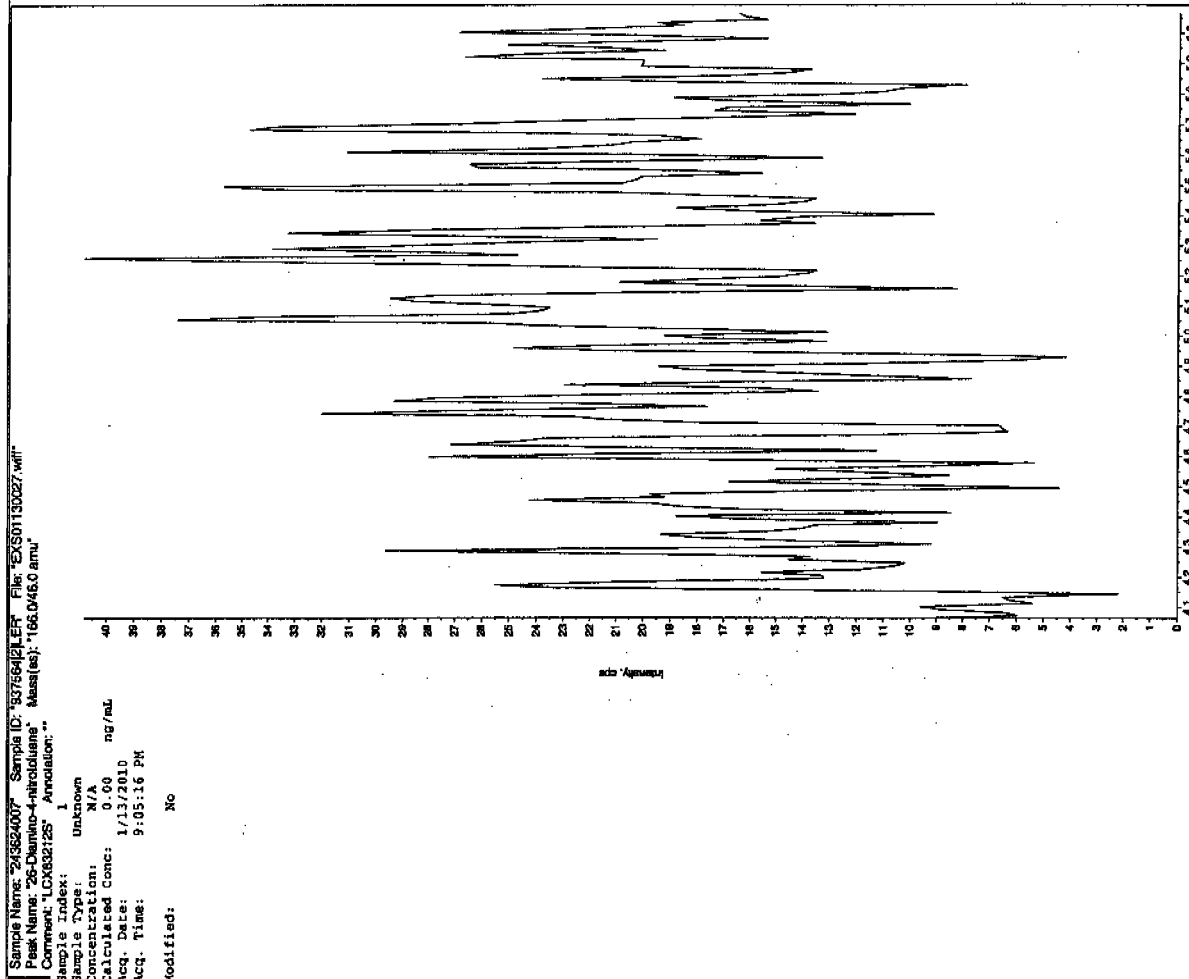
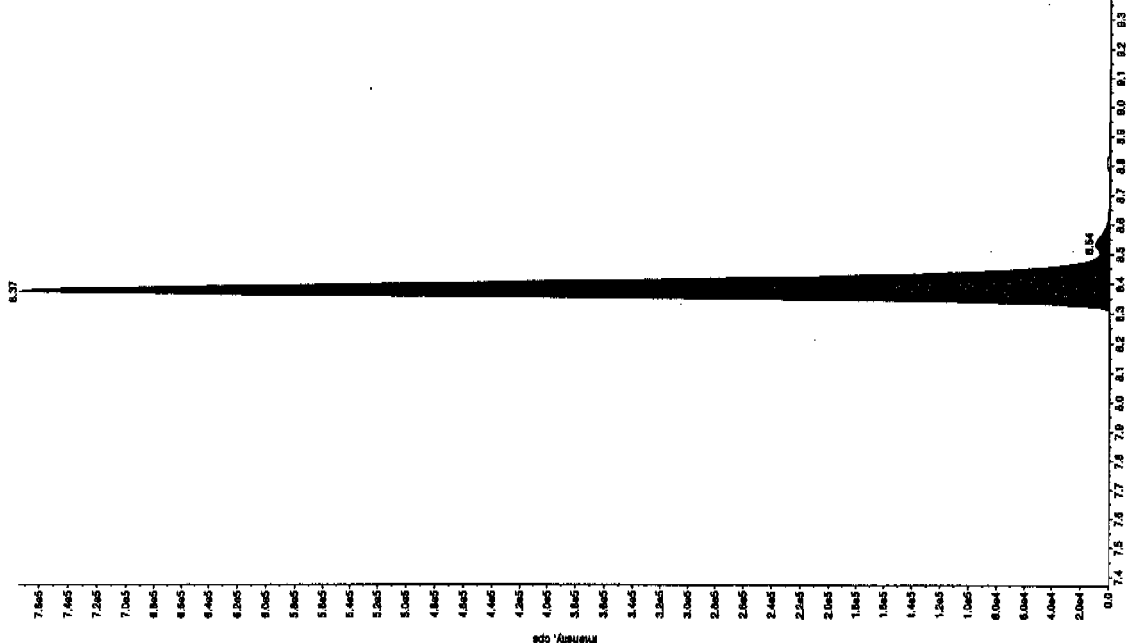


80201111

Sample Name: "243524007" Sample ID: "937564121" File: "EX501130027.wif"
 Peak Name: "34-Dinitrotoluene" Mass(es): "182.1/151.9 amu"
 Comment: "LCX832125" Annotation: ""

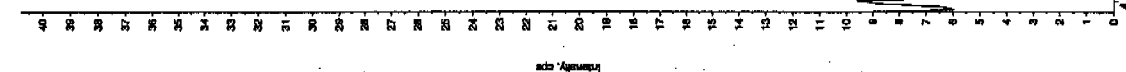
Sample Index: 1
 Sample Type: Unknown
 Concentration: 254. ng/mL
 Date: 1/13/2010
 Time: 9:05:16 PM
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 9:05:16 PM
 Modified: No

Algorithm: IntelliQuan - IOA
 Peak Height: 1460.00 cps
 Peak Width: 0.00 sec
 Retention: 6.37 min
 Window: 15.0 sec
 Relative RT: No
 Type: Valley
 Retention Time: 6.37 min
 Counts: 2.93e+006
 Height: 774530.090 cps
 Retention Time: 6.21 min
 Retention Time: 6.71 min



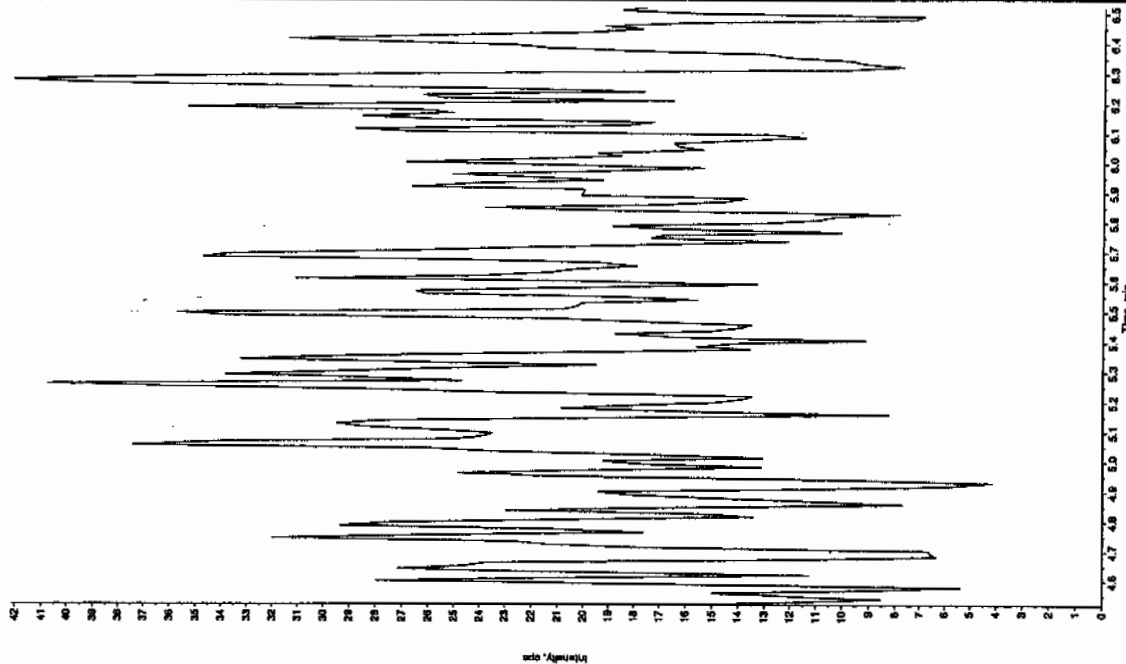
Sample Name: "243524007" Sample ID: "937564121" File: "EX501130027.wif"
 Peak Name: "26-Dinitro-4-nitrotoluene" Mass(es): "166.046.0 amu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 9:05:16 PM
 Modified: No



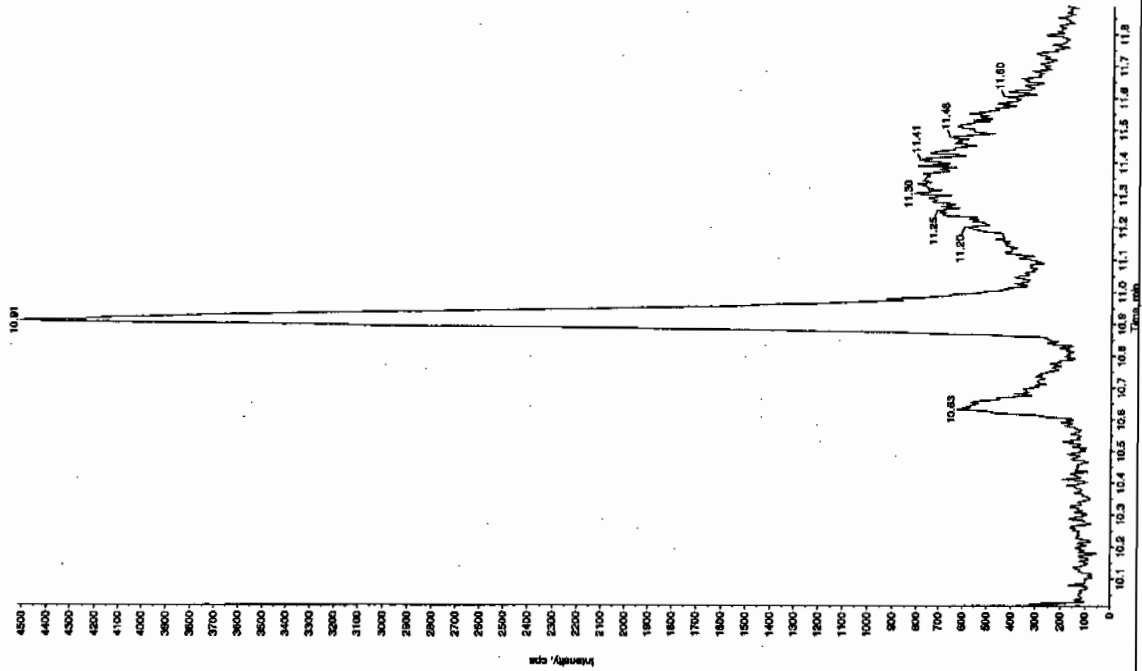
Sample Name: "243624007" Sample ID: "83756421ER" File: "EXS01130027.wif"
 Peak Name: "24-Diamino-6-phosphat" Mass(es): "166.046.0 amu"
 Comment: "LCX632125" Annotation: "

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 9:05:16 PM
 Modified: No



Sample Name: "243624007" Sample ID: "83756421ER" File: "EXS01130027.wif"
 Peak Name: "Adenosine(5') phosphate" Mass(es): "369.161.0 amu"
 Comment: "LCX632125" Annotation: "

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 9:05:16 PM
 Modified: No



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

1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7845

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624008

Sample Amount 2

Moisture: 7.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118036a

Date Analyzed: 19-JAN-10 07:15

Units: ug/kg

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

*Concentration =

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

Printed: Tue Jan 19 11:02:03 2010, Page 71 of 85

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

Dataset: C:\MASSLYNX\New_Exp\PRO1011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP\PRO1Data\EXP0118036a

Date: 19-Jan-2010

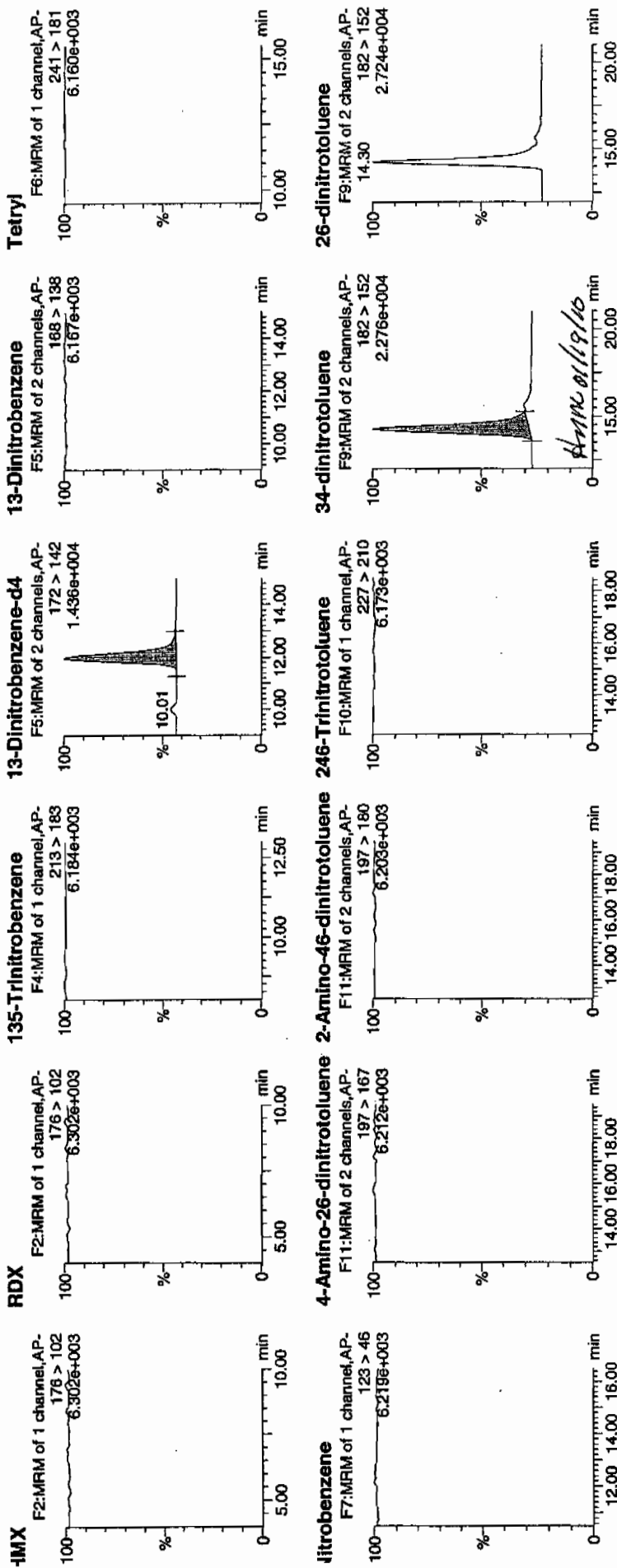
Time: 07:15:40

D: 243624008

/lal: 2:2,F

1/19/10

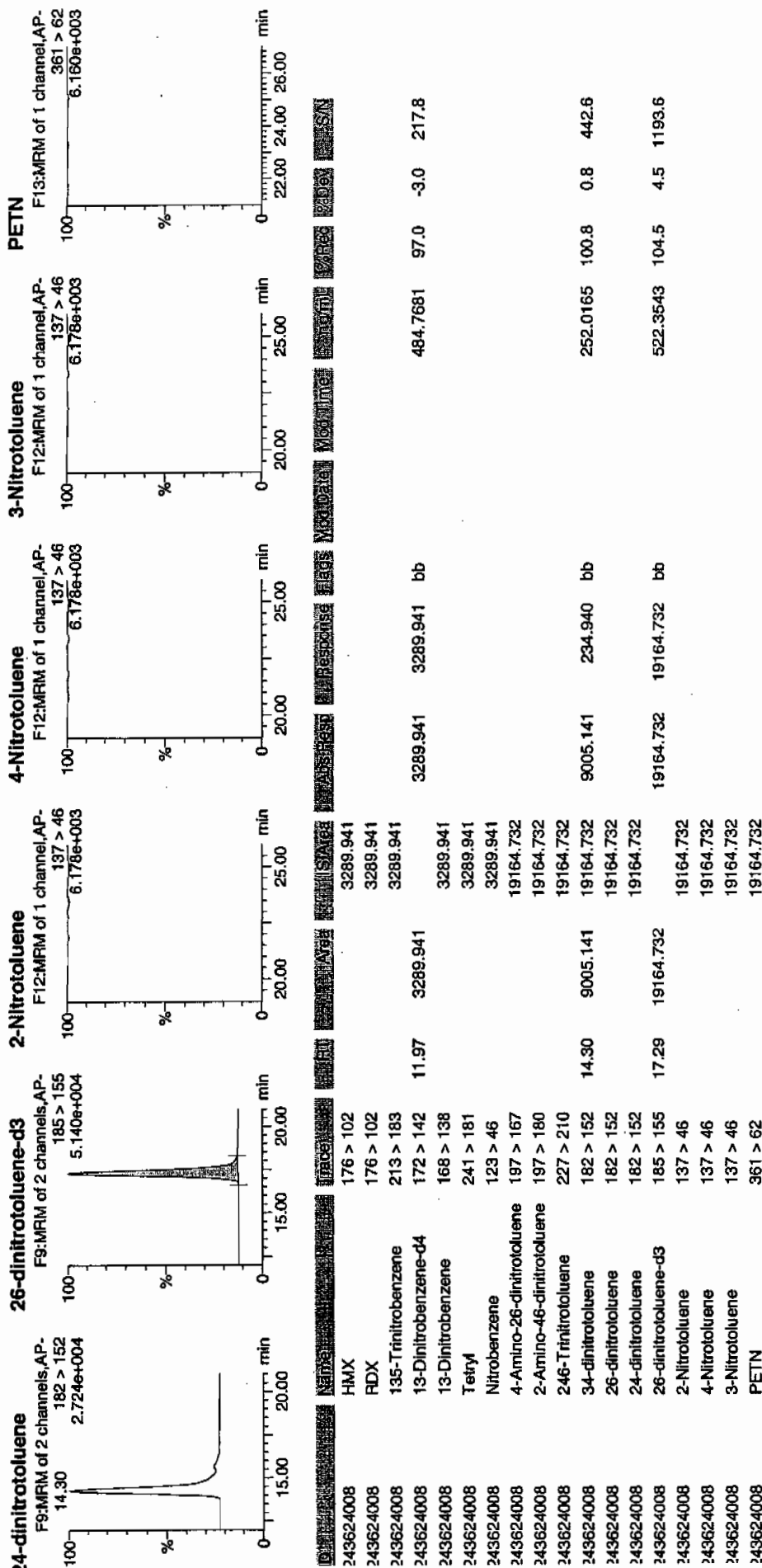
LAU 937564 / 8022 / 21



Printed: Tue Jan 19 11:02:03 2010, Page 72 of 85

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

Dataset: C:\MASSLYN\New_Exp_PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7845

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624008

Sample Amount 2

Moisture: 7.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130028.wiff

Date Analyzed: 13-JAN-10 21:21

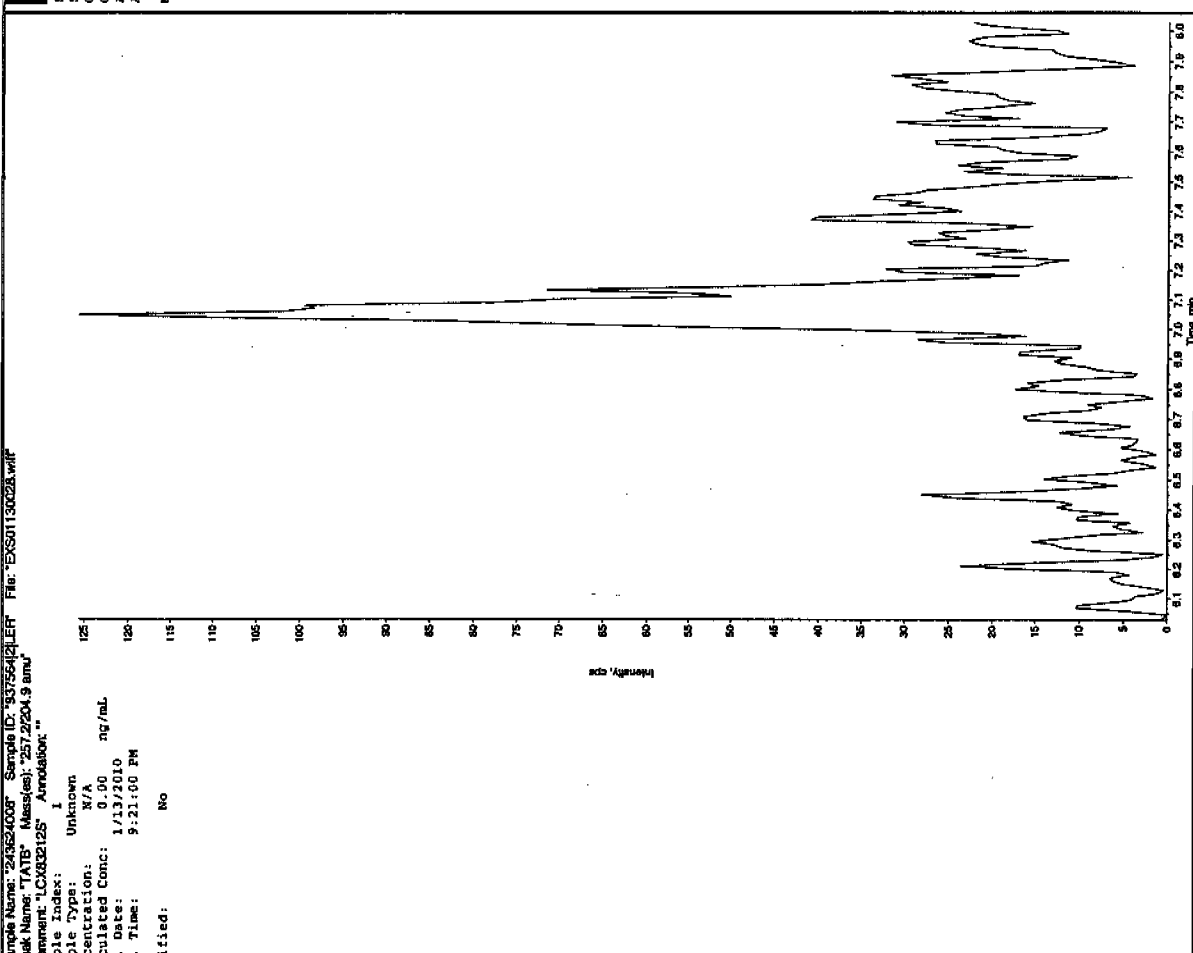
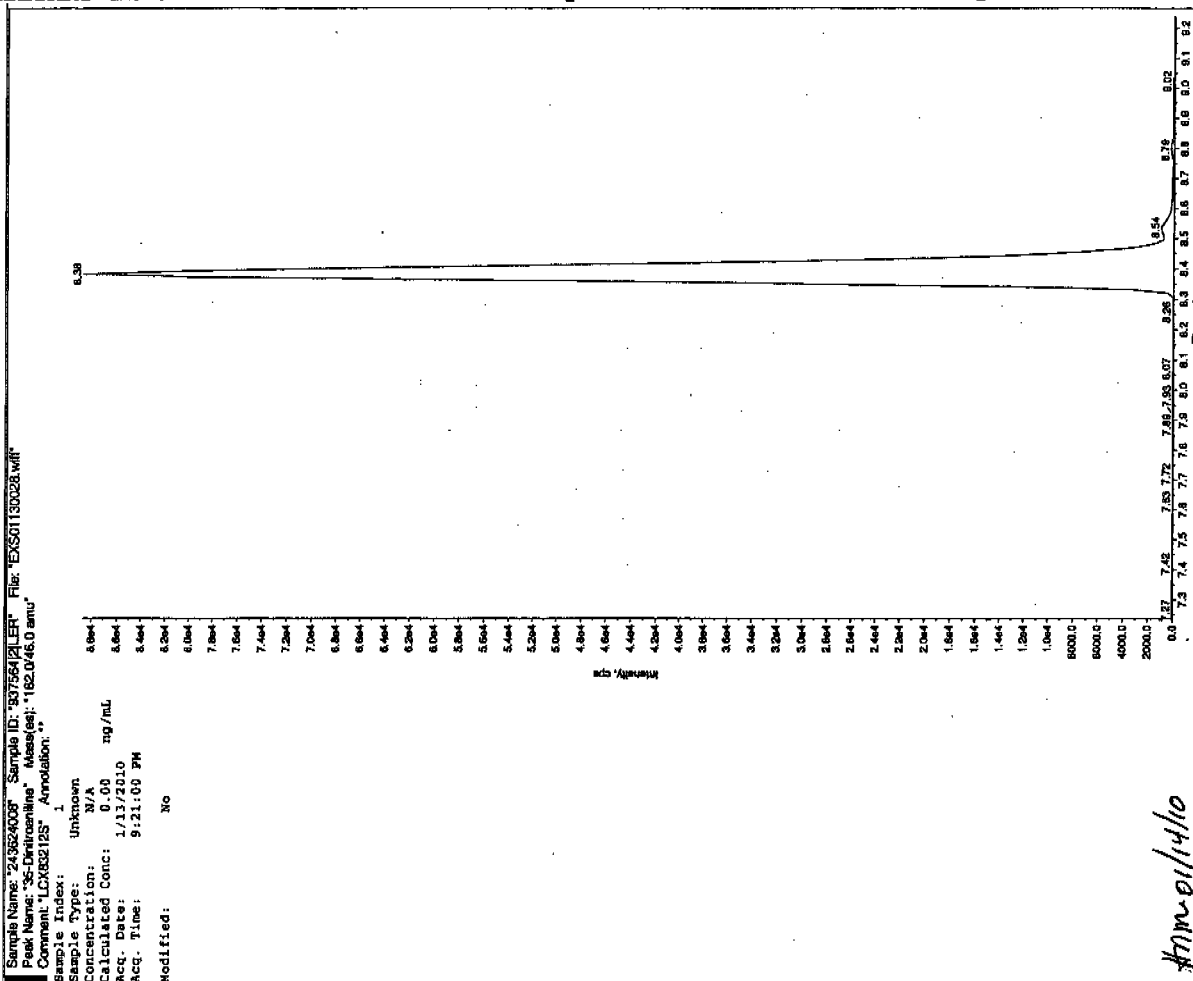
Units: ug/kg

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

*Concentration =

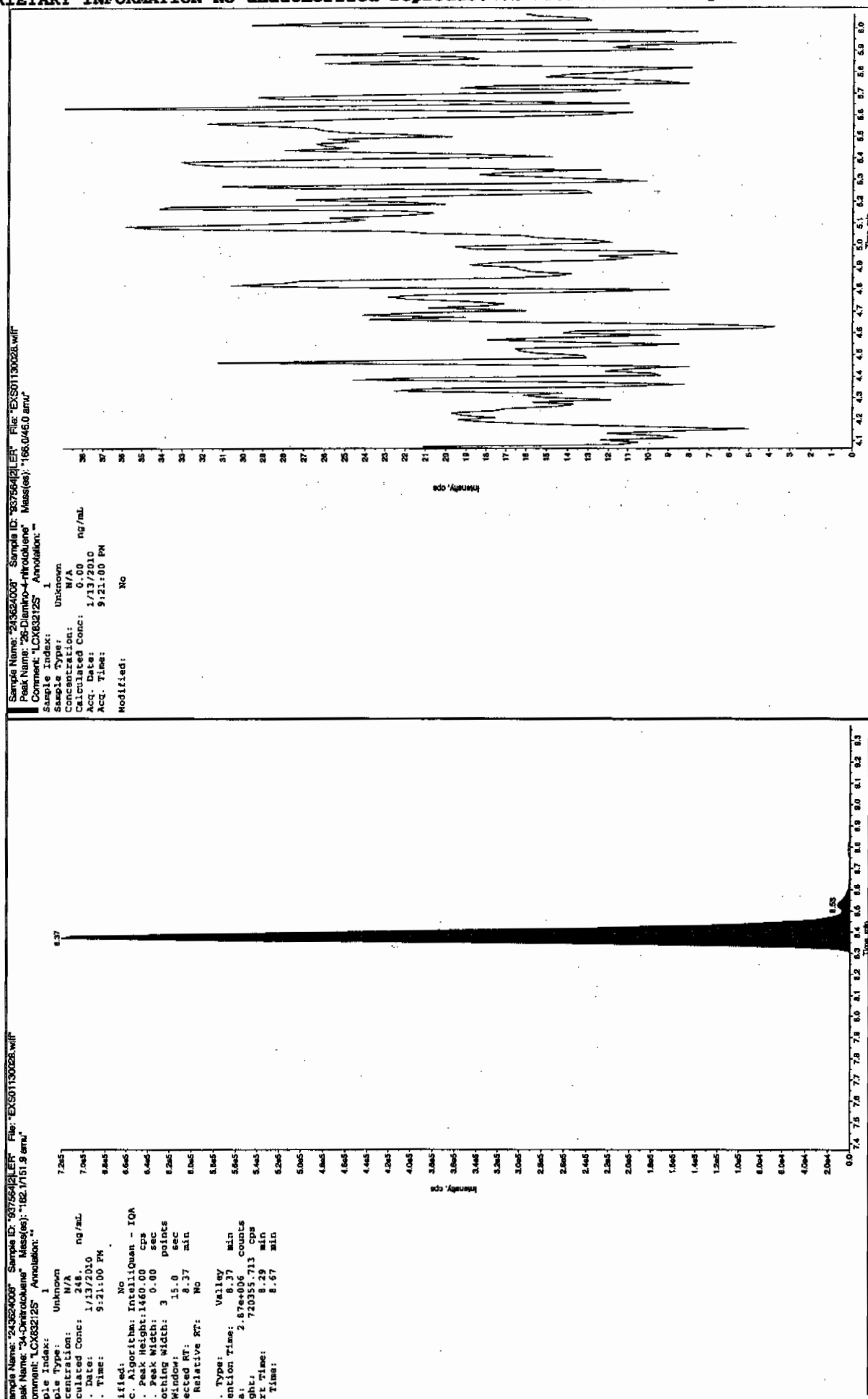
Instrument Value X $\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$ X Dilution Factor

822
11/13/10

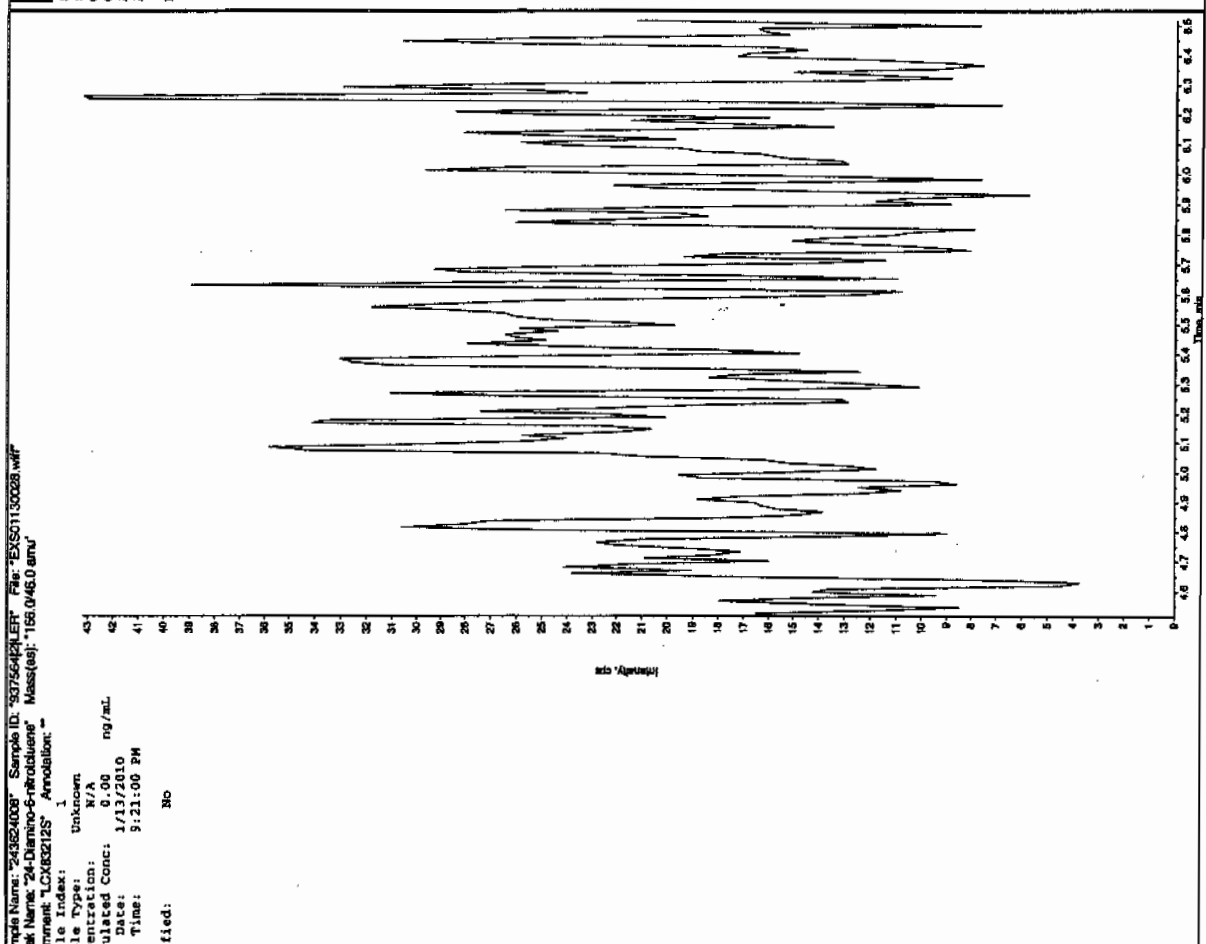
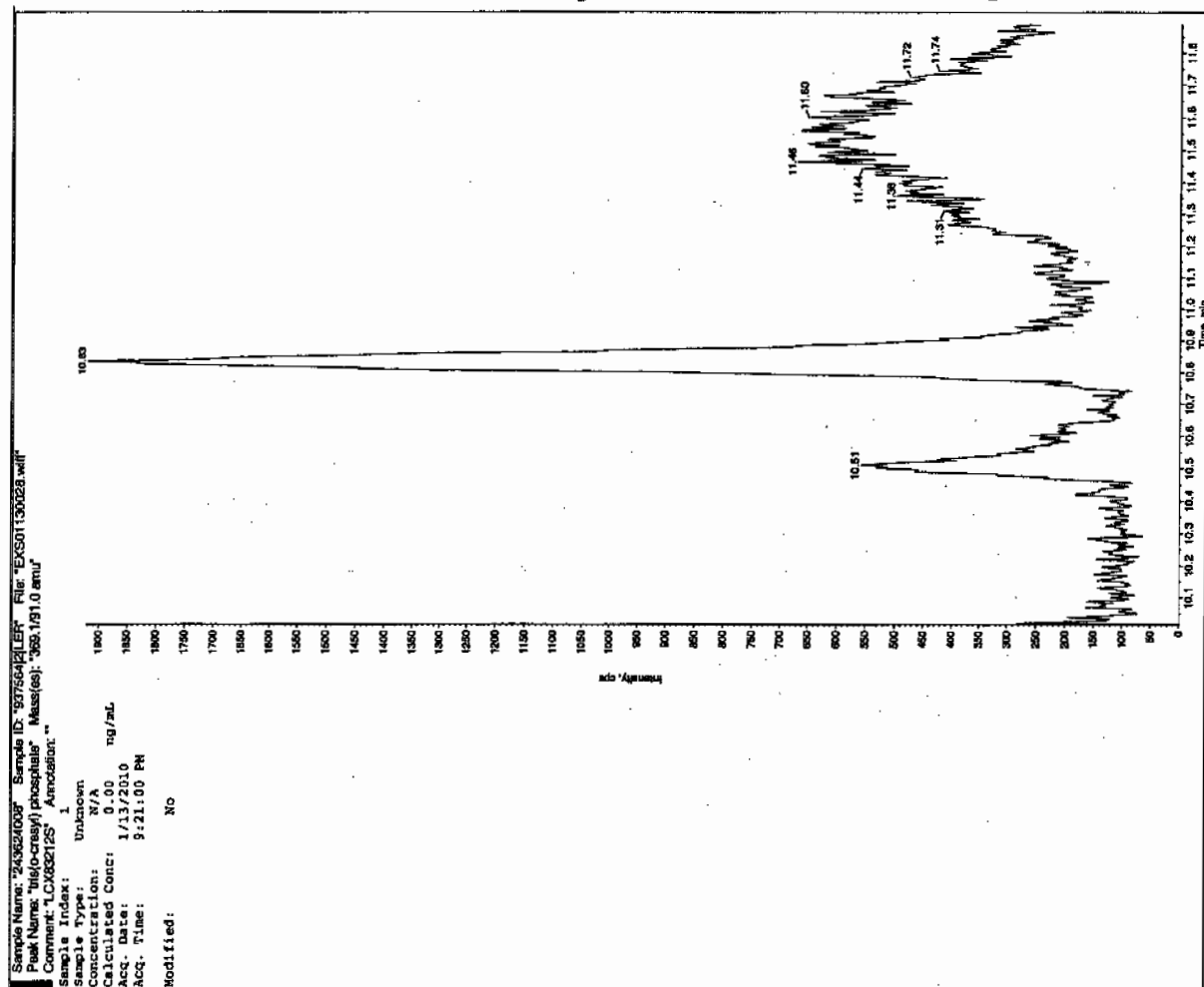


822 11/13/10

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



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



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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7842

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624009

Sample Amount 2

Moisture: 13.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118037a

Date Analyzed: 19-JAN-10 07:45

Units: ug/kg

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

*Concentration =

Instrument Value	X	$\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$	X	Dilution Factor
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Quantify Sample Report
GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118037a

Date: 19-Jan-2010

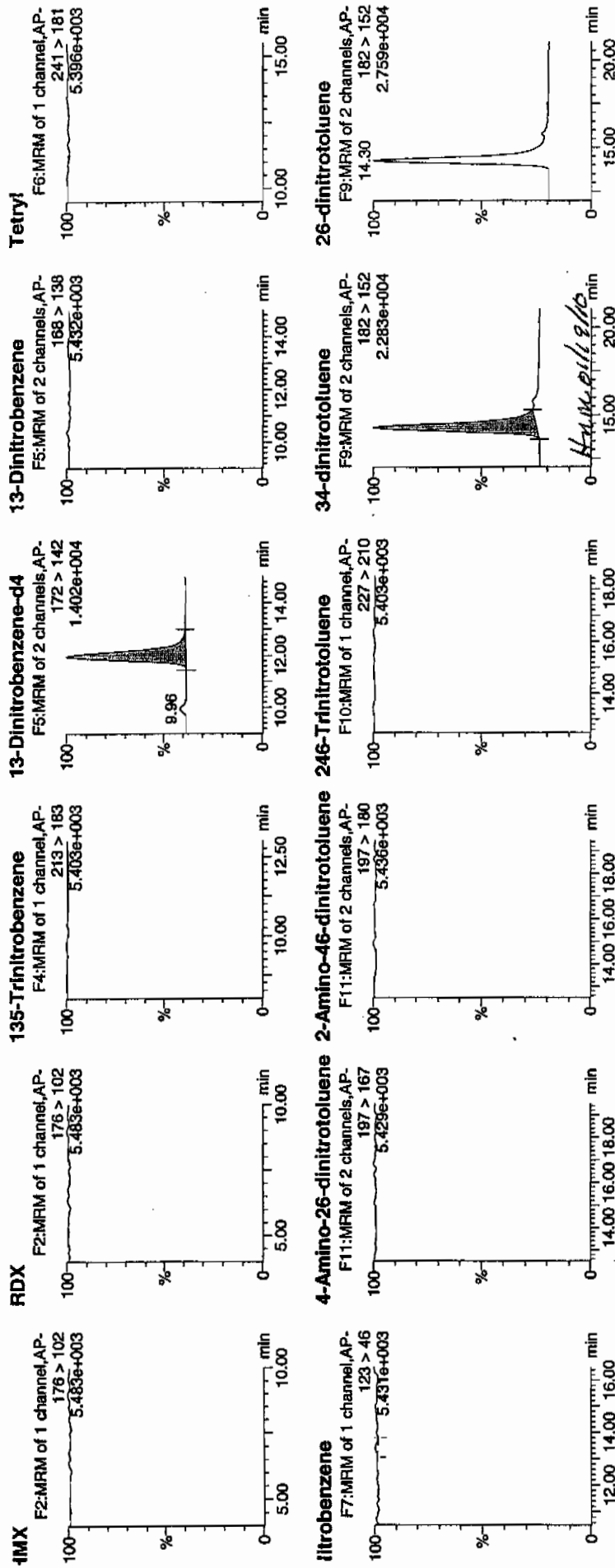
Time: 07:45:07

D: 243624009

/lal: 2:3,A

1/19/10

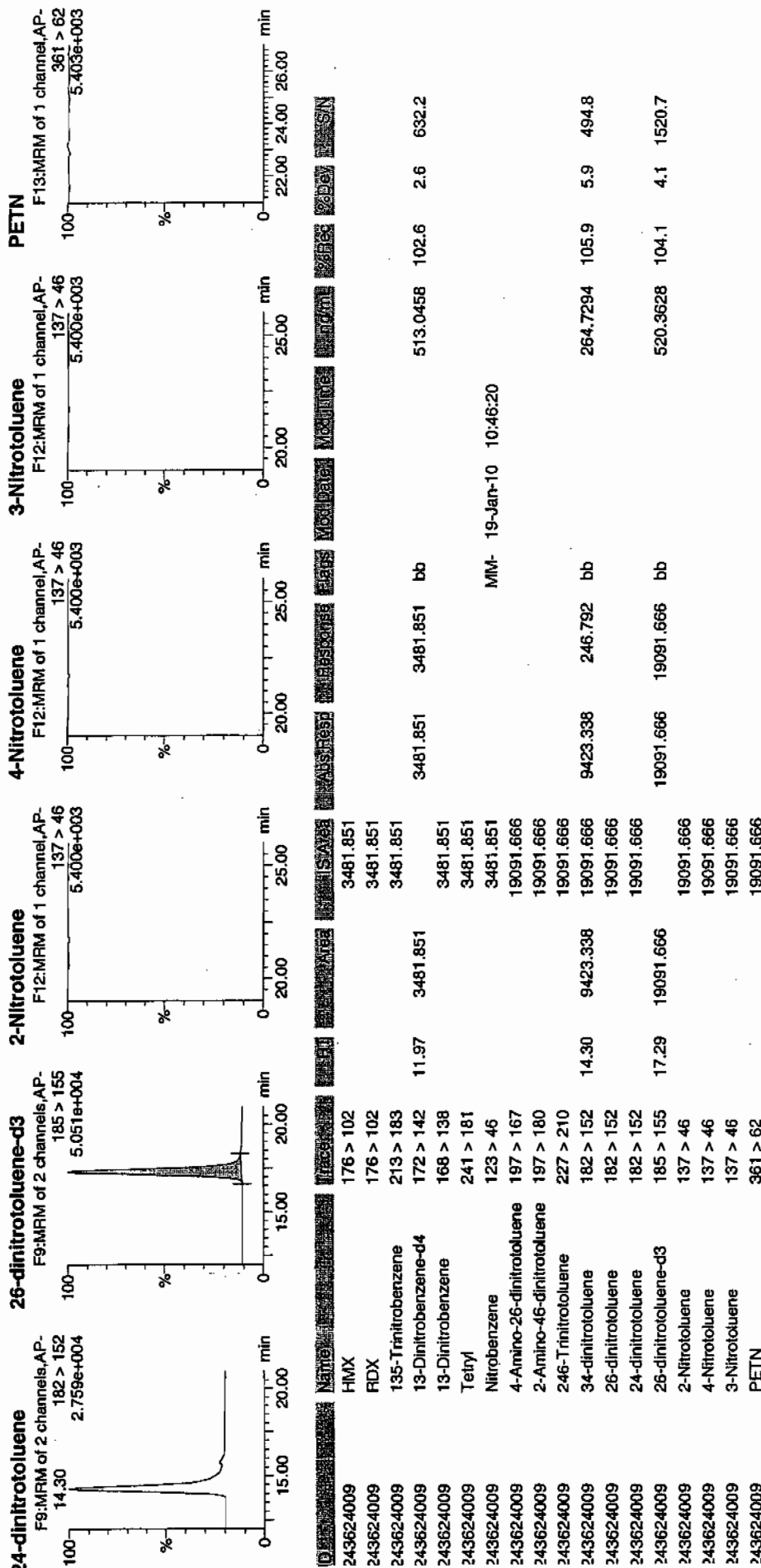
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Printed: Tue Jan 19 11:02:03 2010, Page 74 of 85

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

Dataset: C:\MASSLYNX\New_Exp_PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7842

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624009

Sample Amount 2

Moisture: 13.8

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130029.wiff

Date Analyzed: 13-JAN-10 21:36

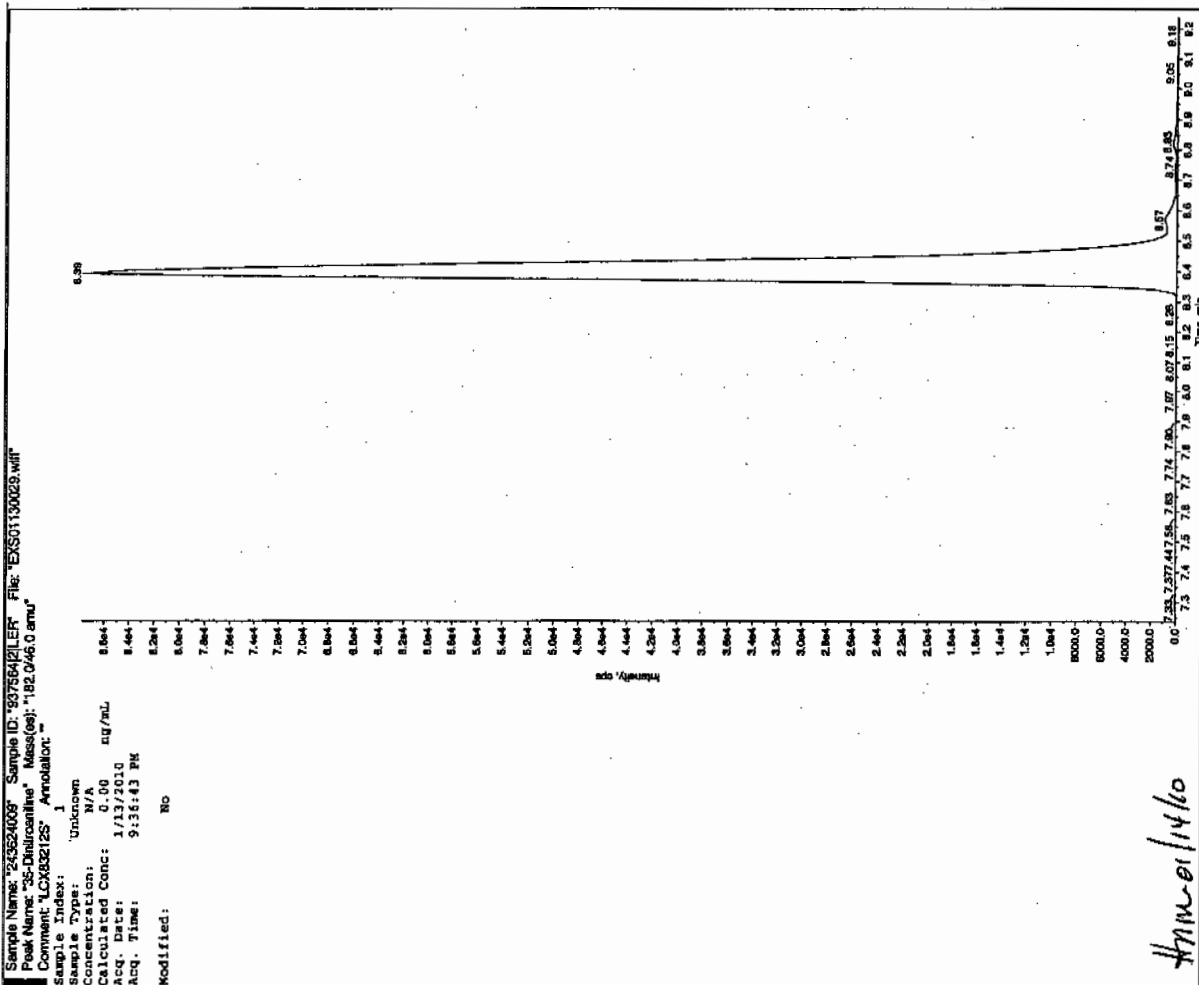
Units: ug/kg

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

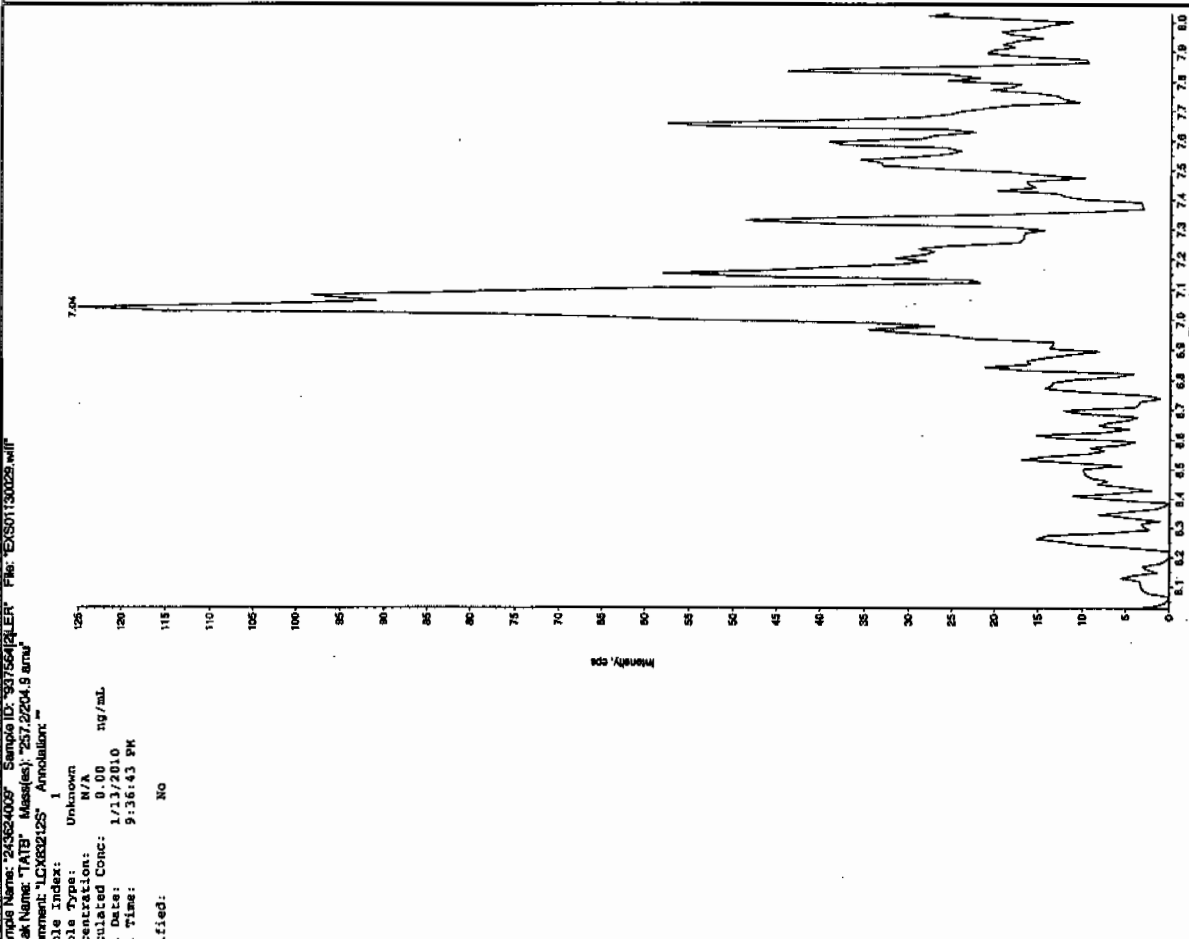
*Concentration =

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

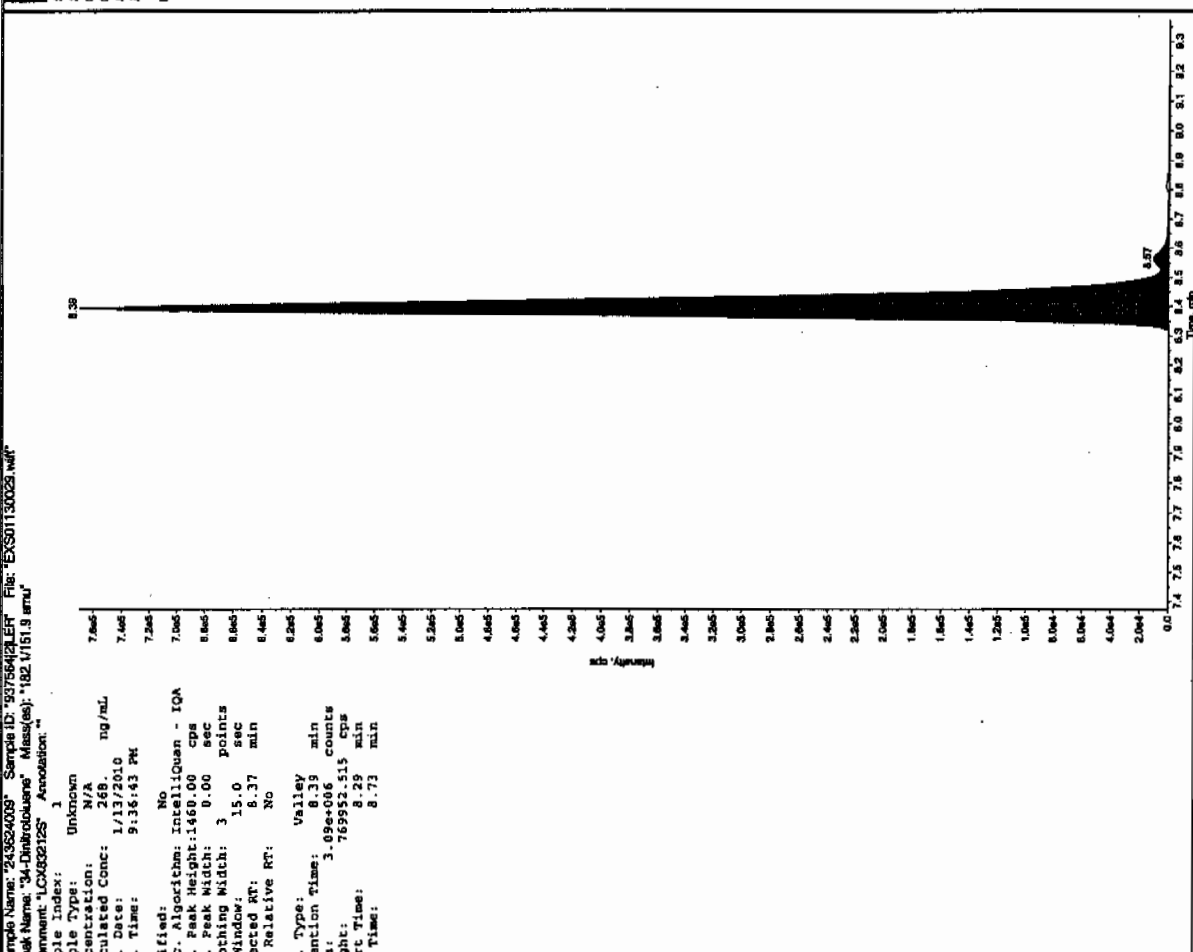
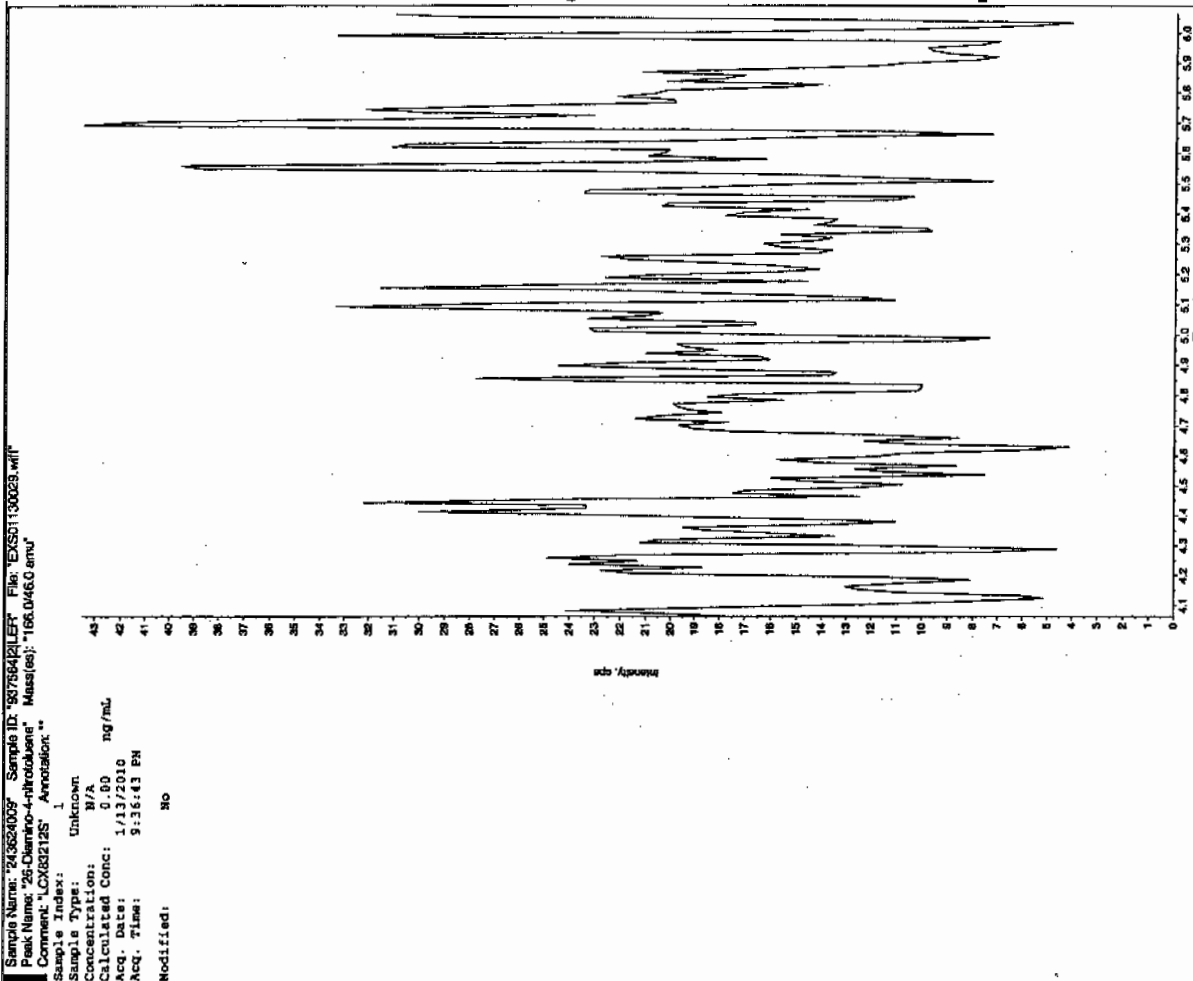
11/13/10
2008



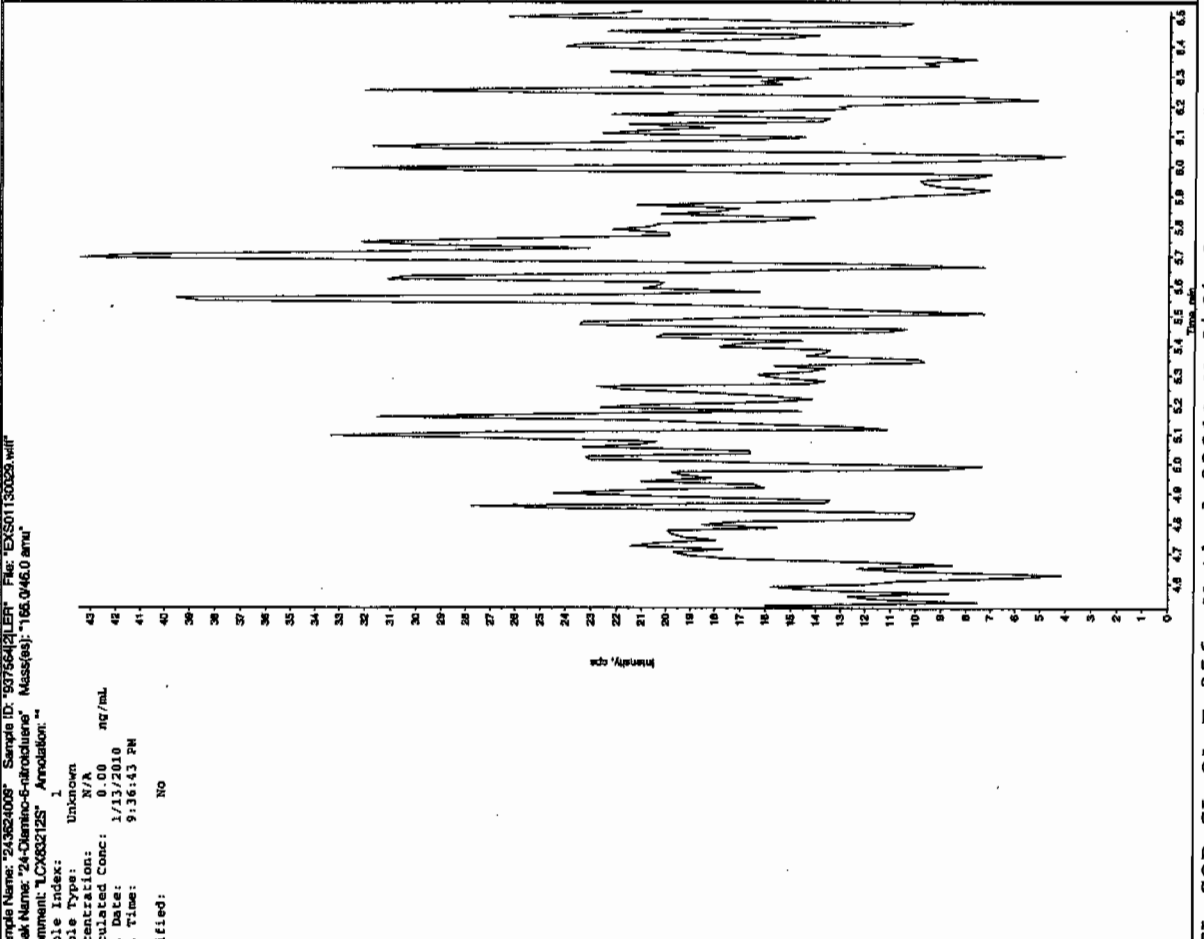
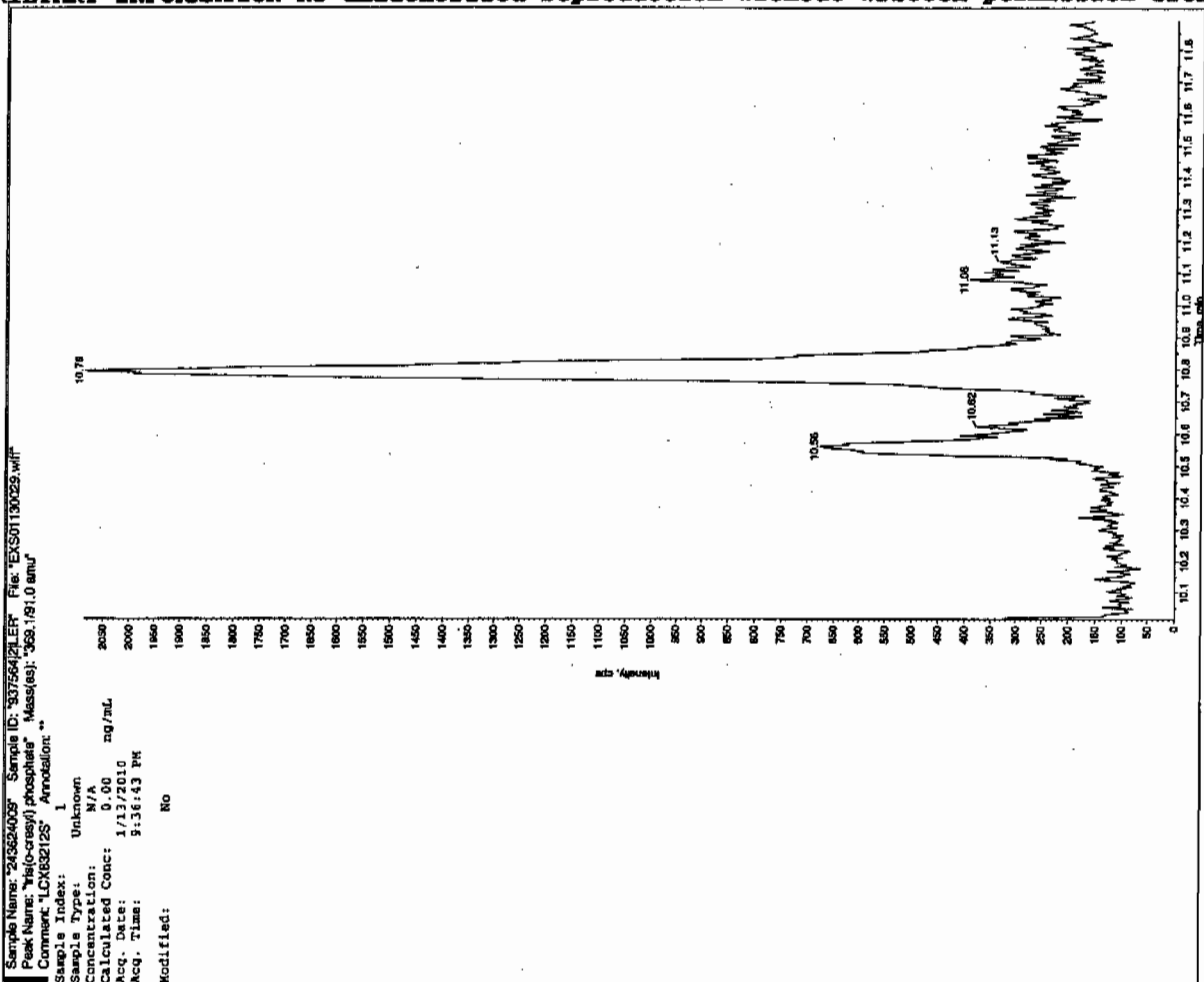
4/11/10



3L SOP GL-0A-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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7843

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624010

Sample Amount 2

Moisture: 10.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118038a

Date Analyzed: 19-JAN-10 08:14

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		

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118038a

Date: 19-Jan-2010

Time: 08:14:36

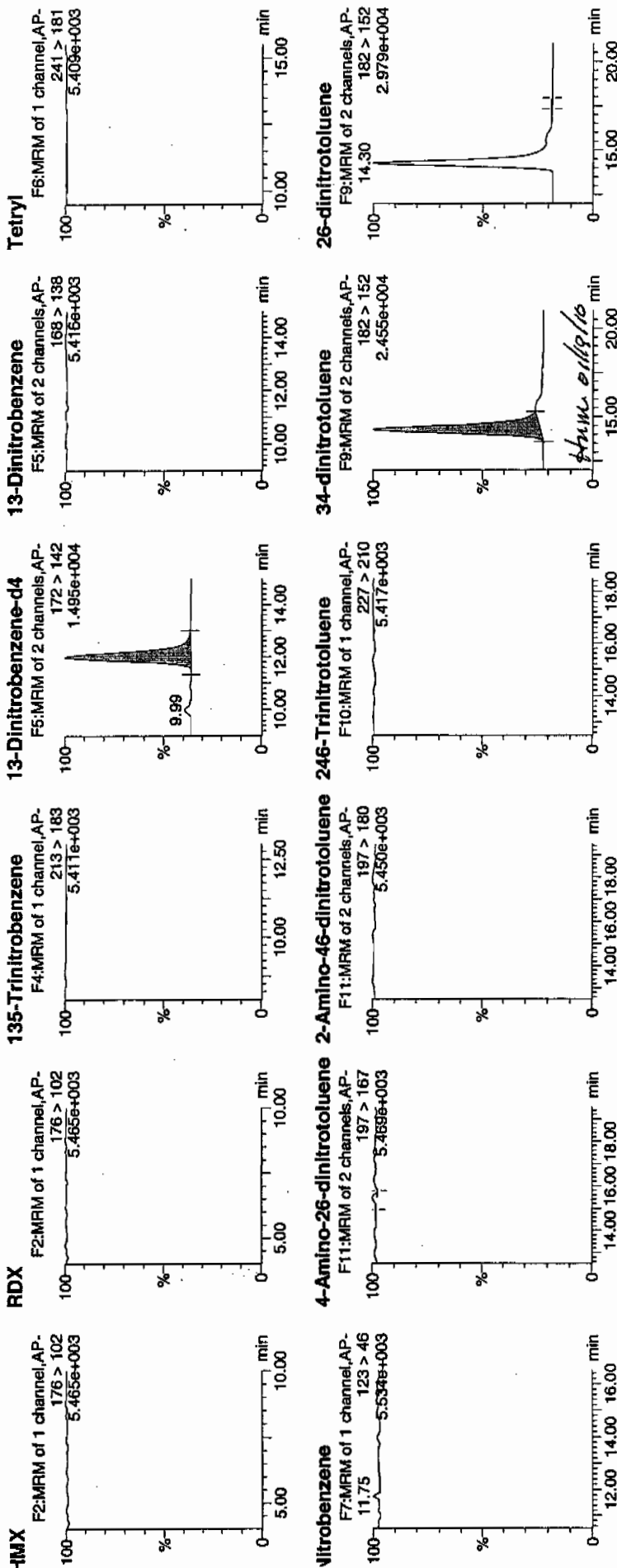
D: 243624010

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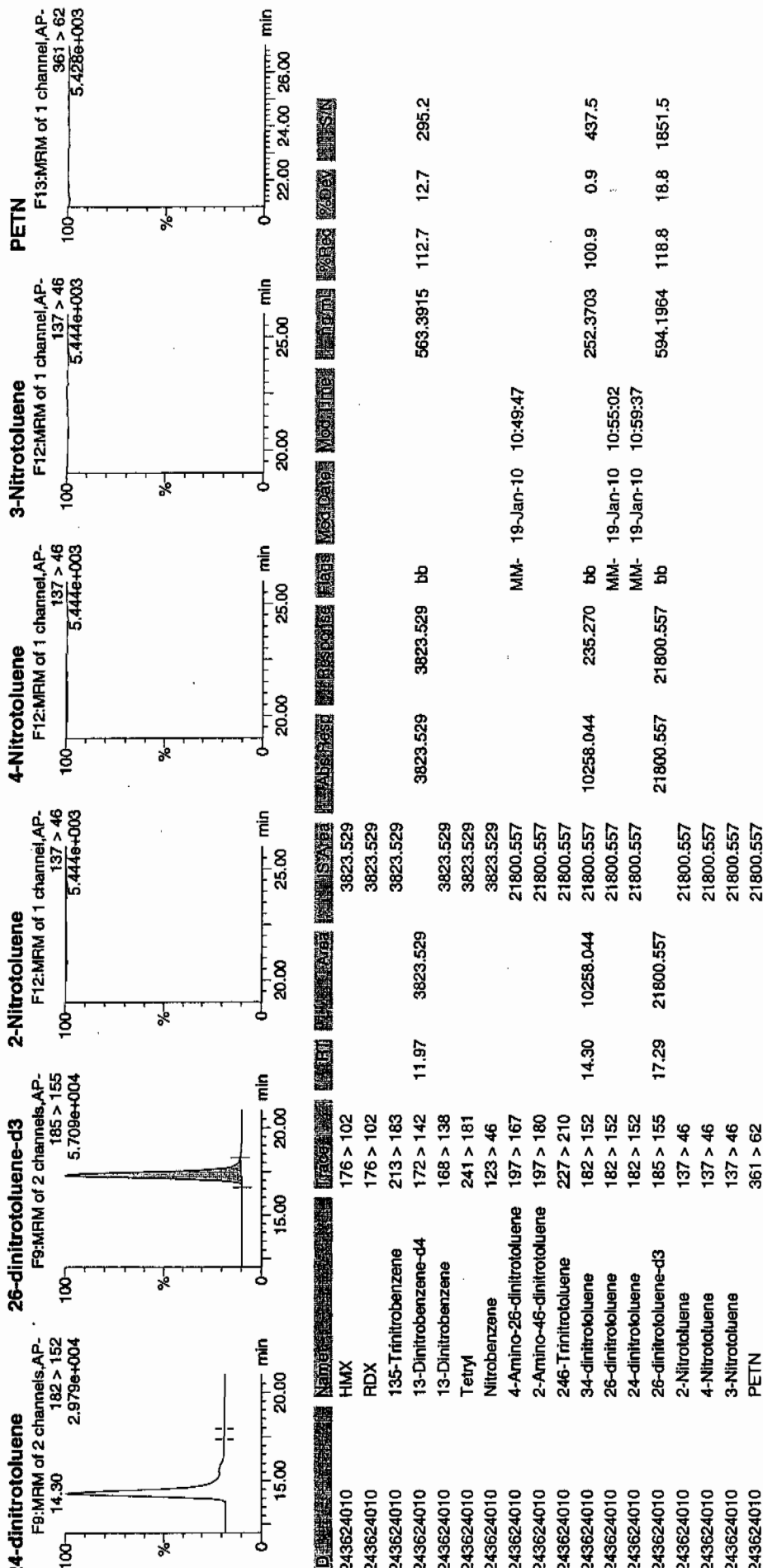
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Dataset: C:\MASSLYNX\New_Exp\PRO1011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7843

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624010

Sample Amount 2

Moisture: 10.4

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130030.wiff

Date Analyzed: 13-JAN-10 21:52

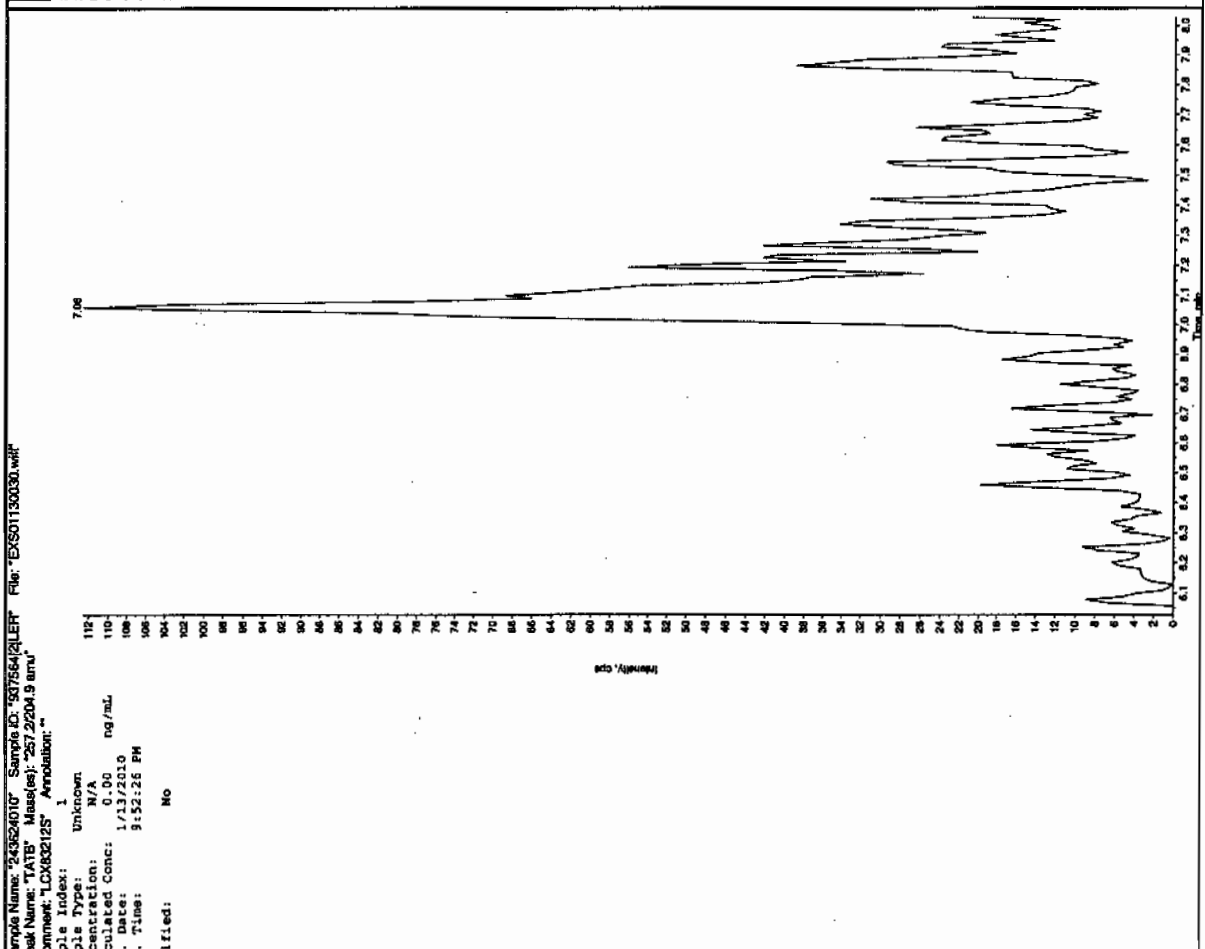
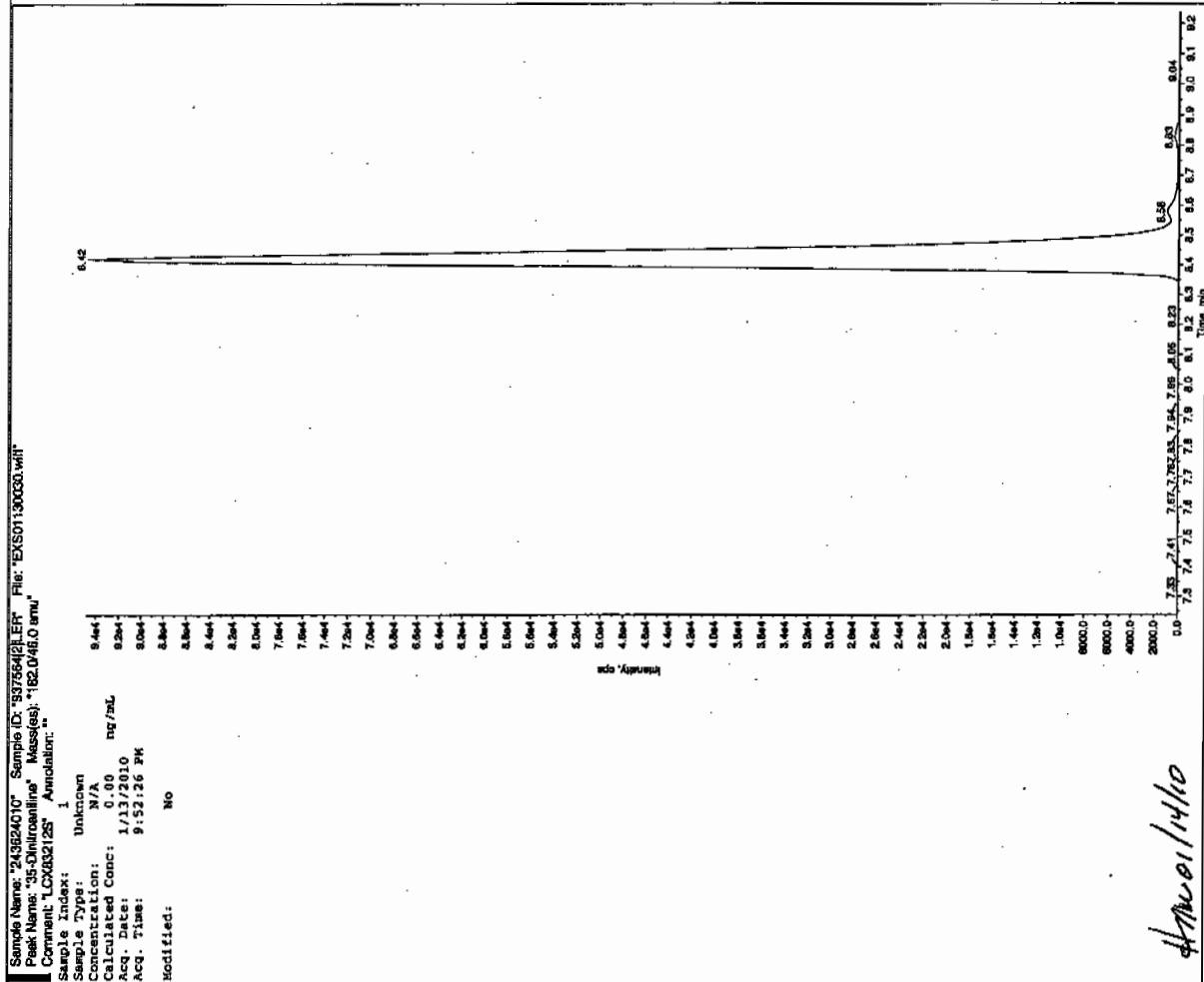
Units: ug/kg

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

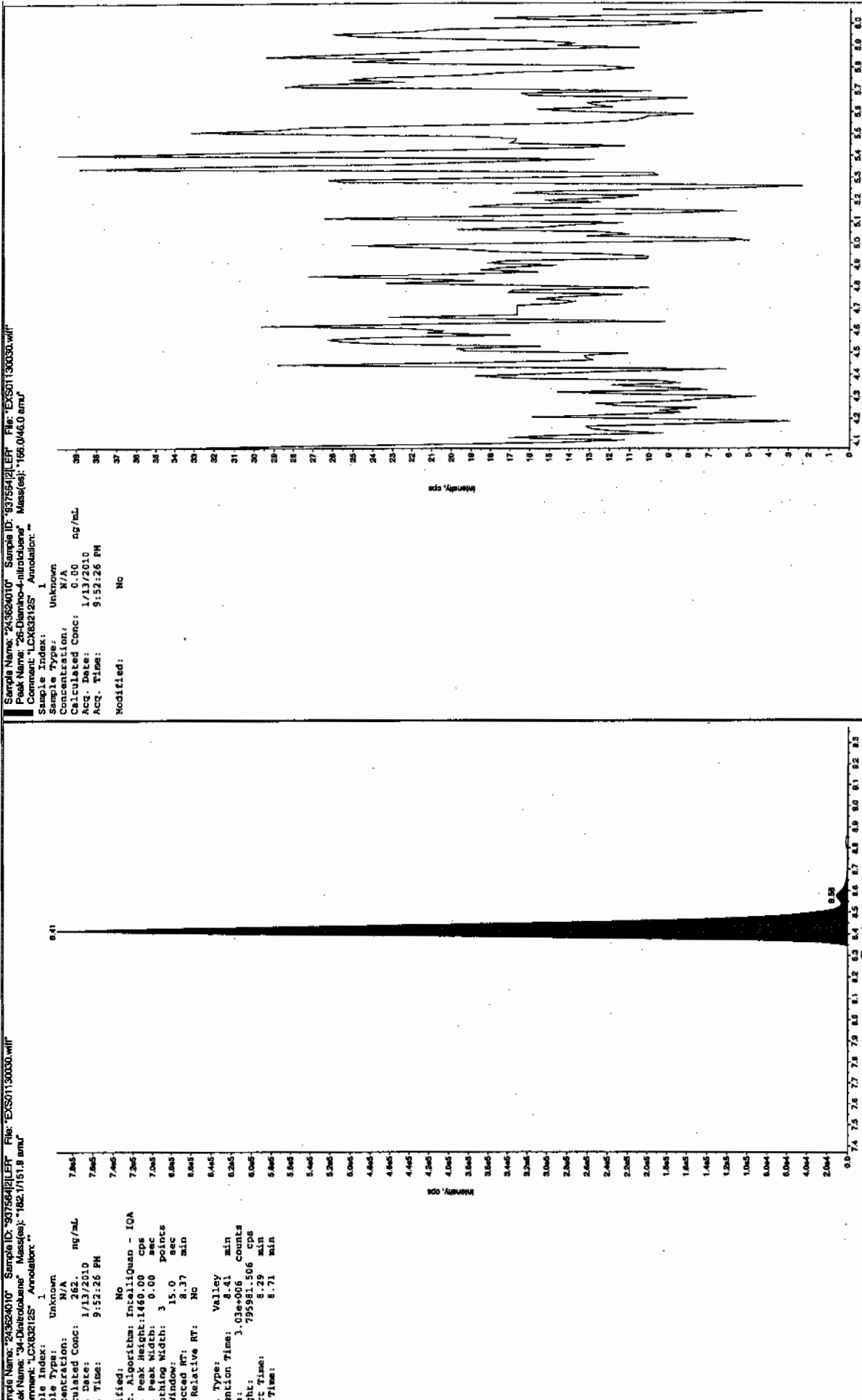
*Concentration =

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

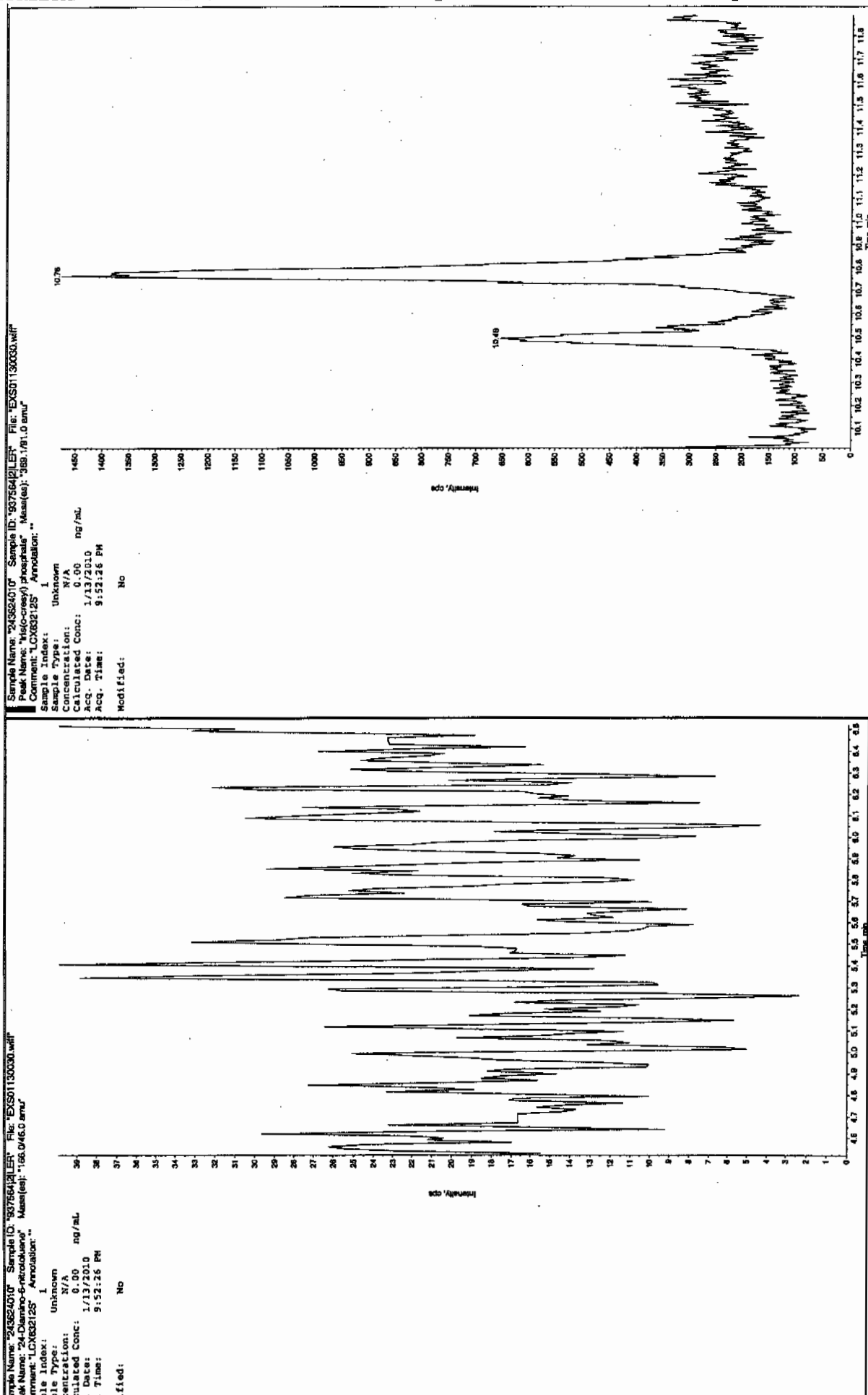
11/13/10
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EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



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



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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7847

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624011

Sample Amount 2

Moisture: 9.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118039a

Date Analyzed: 19-JAN-10 08:44

Units: ug/kg

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

*Concentration =

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

Printed: Tue Jan 19 11:02:03 2010, Page 77 of 85

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

Dataset: C:\MASSLYNX\New_Exp_PRO\011810expA.qtd, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP_PRO\011810expA\EXP0118039a

Date: 19-Jan-2010

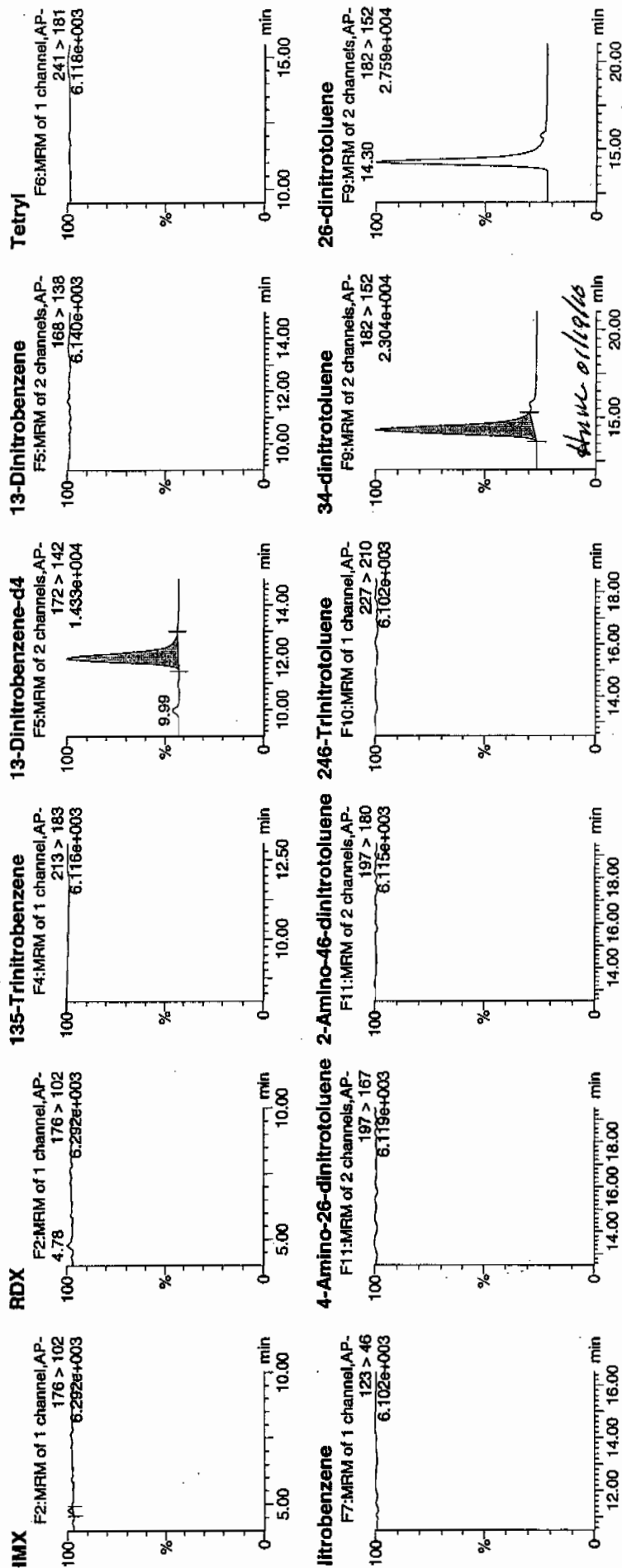
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ID: 243624011

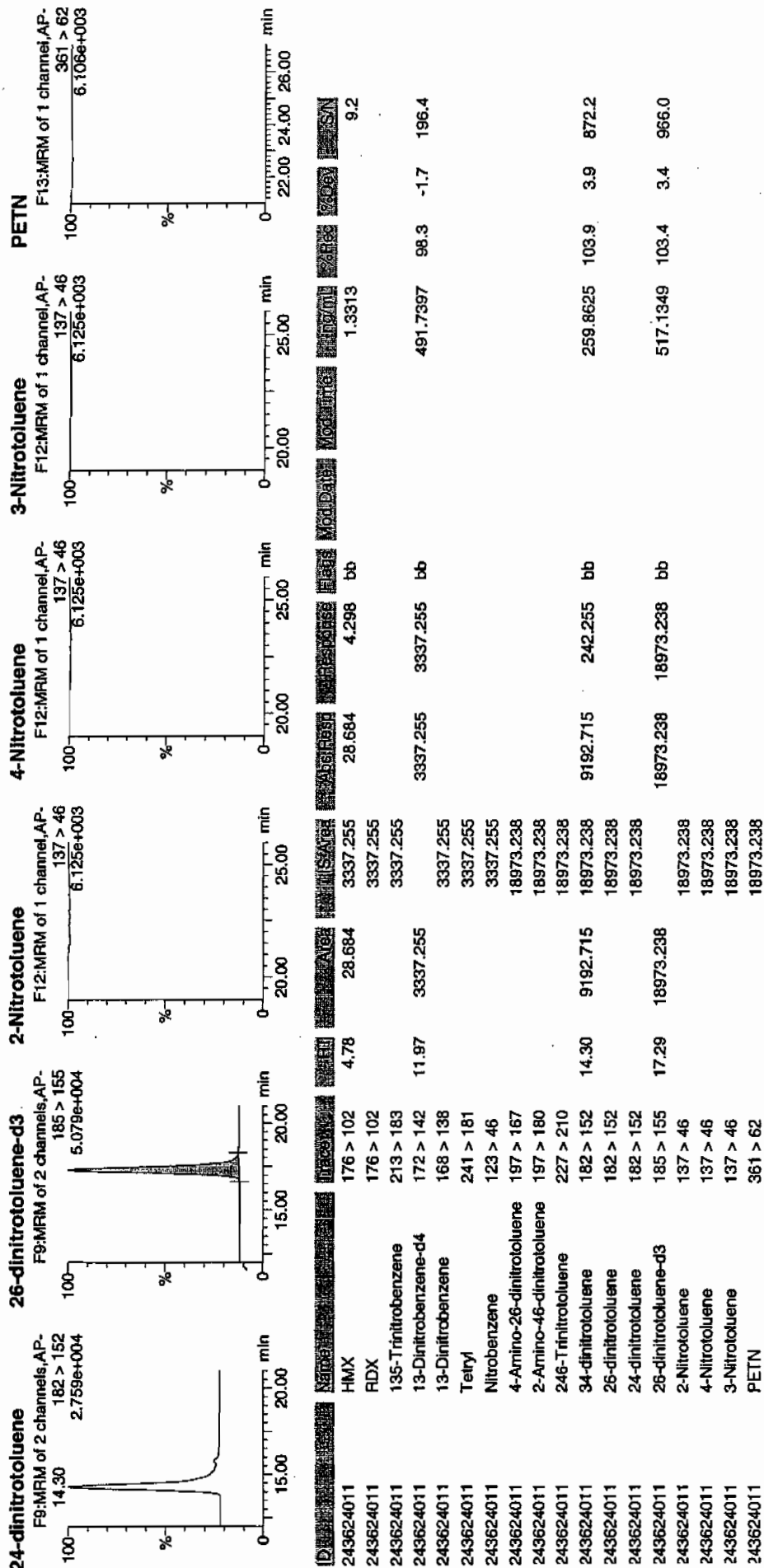
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SOUTHERN



Dataset: C:\MASSLYNX\New_Exp\PRO011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7847

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 243624011

Sample Amount 2

Moisture: 9.1

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130031.wiff

Date Analyzed: 13-JAN-10 22:08

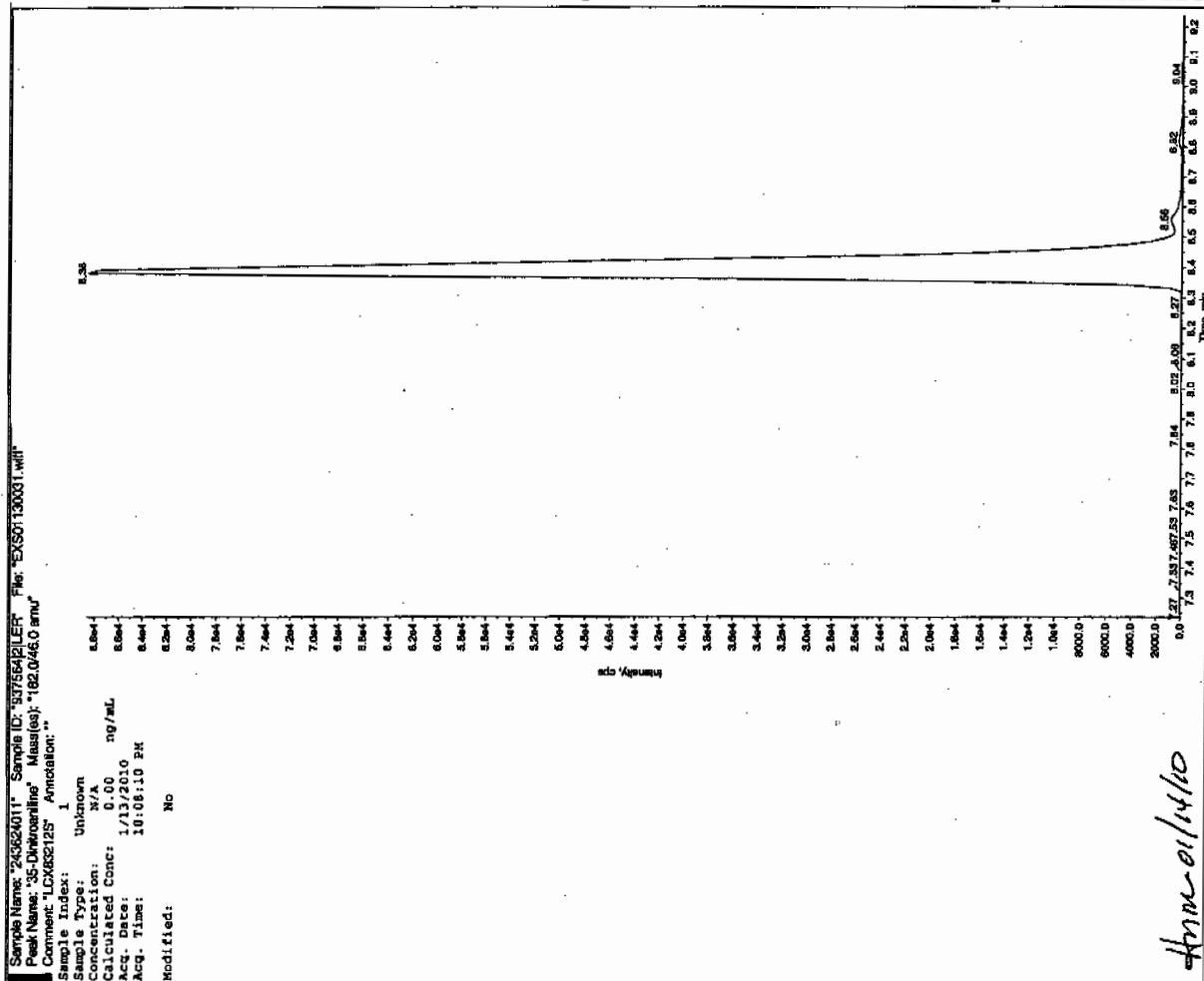
Units: ug/kg

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

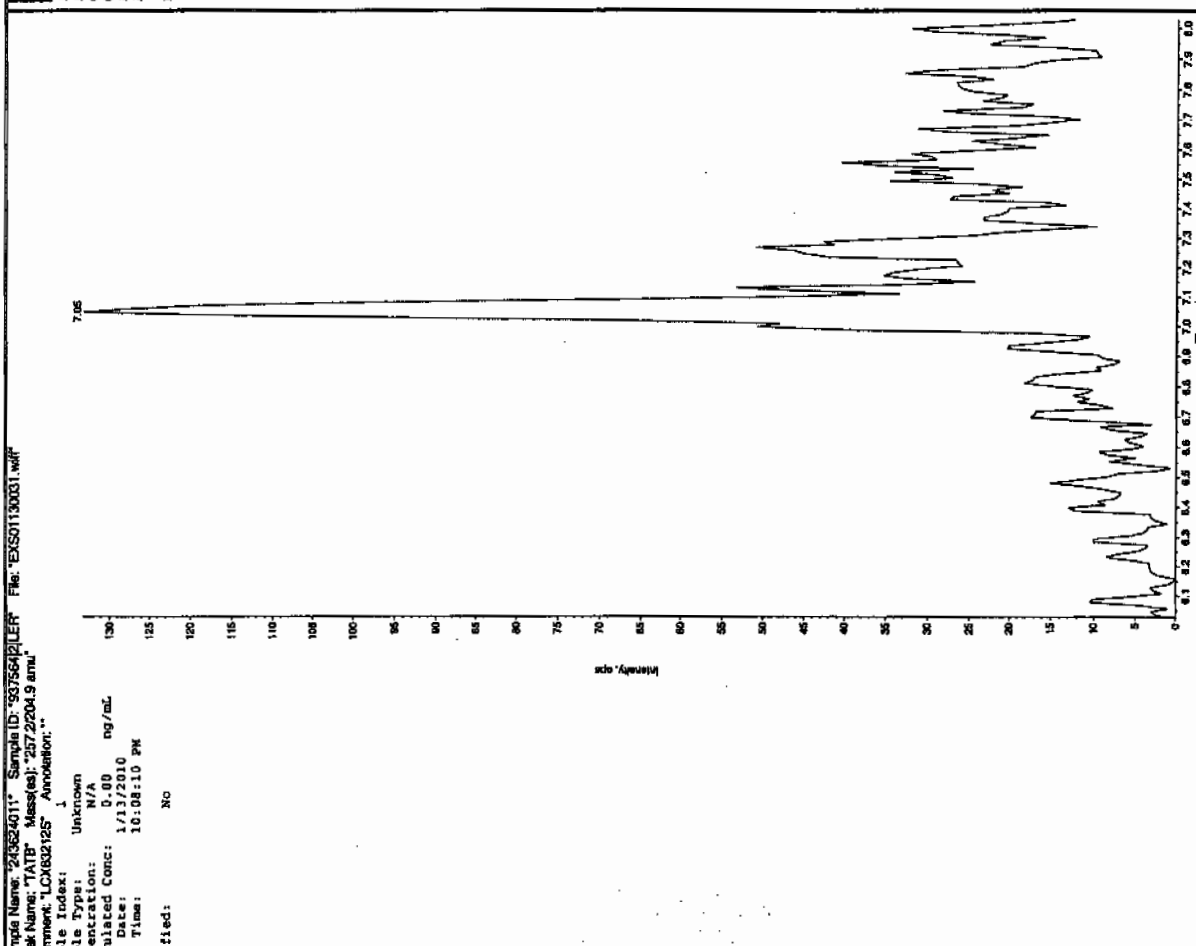
*Concentration =

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

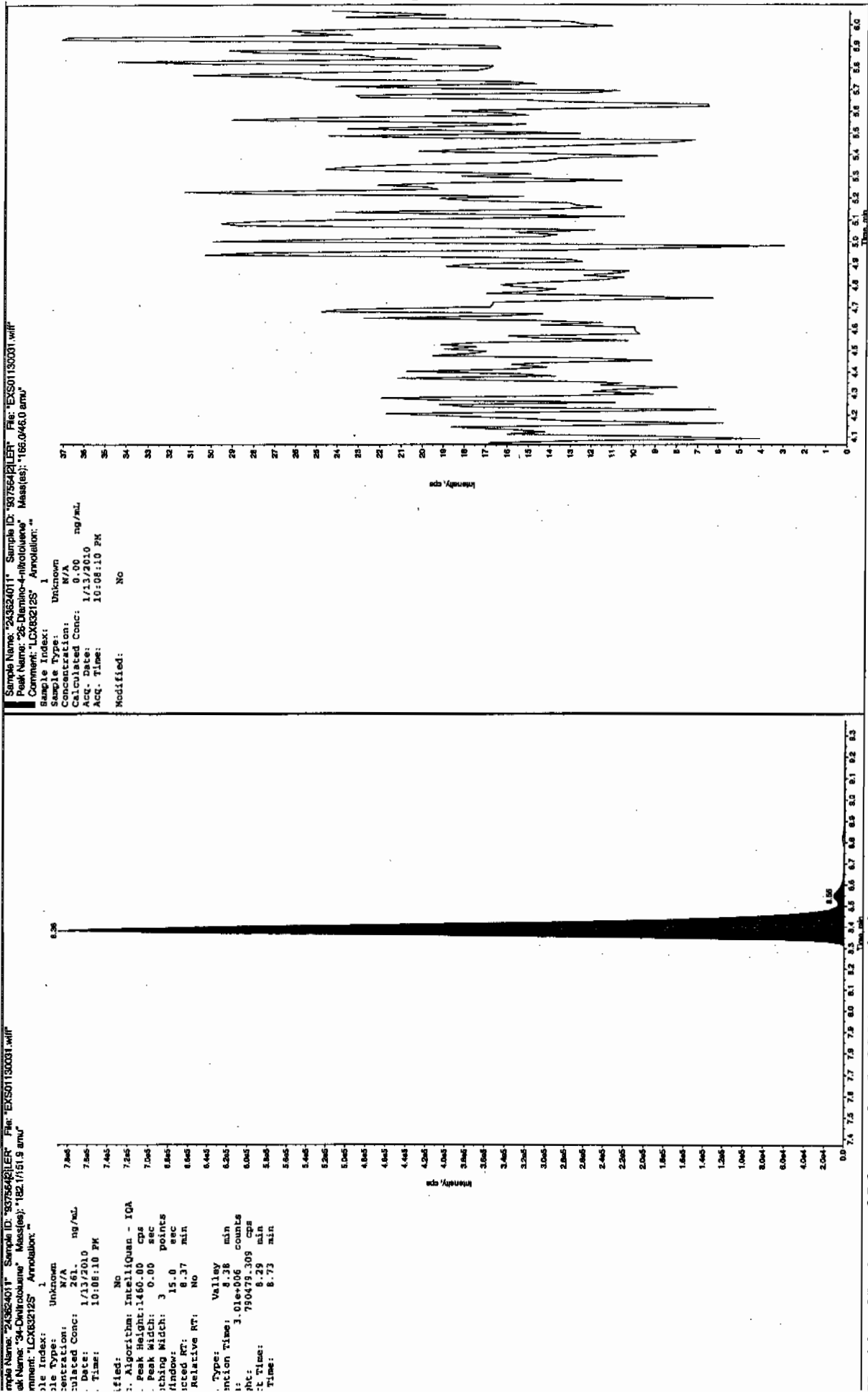
11/13/10
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Amc-01/14/10

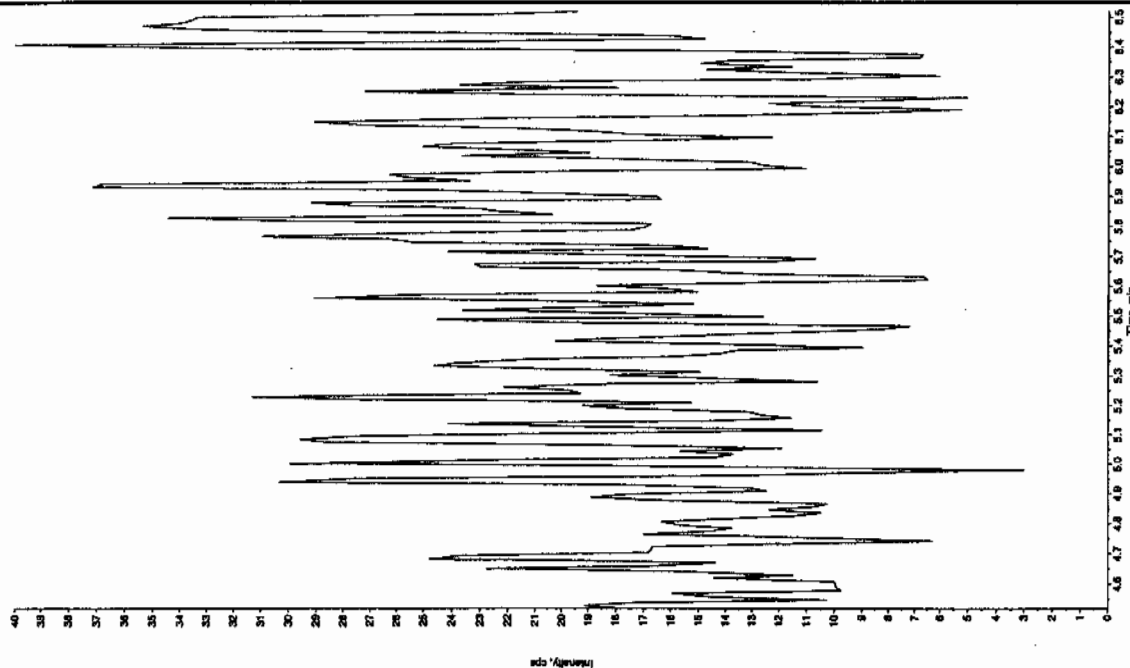


EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



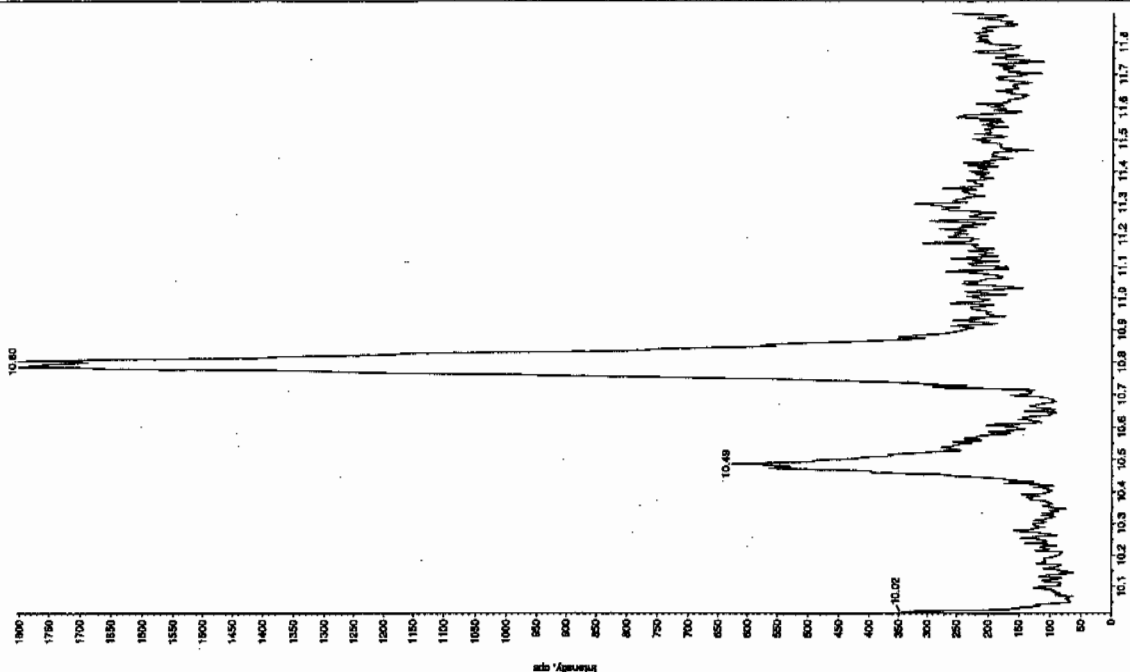
Sample Name: "243624011" Sample ID: "937654121" File: "EX501130031.wif"
 Peak Name: "24-Diamino-6-ethynylphenol" Mass(es): "166.046.0 amu"
 Comment: "LCX832125" Annotation: "

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 10:08:10 PM
 Modified: No



Sample Name: "243624011" Sample ID: "937654121" File: "EX501130031.wif"
 Peak Name: "10-(p-cresyl) phosphate" Mass(es): "359.191.0 amu"
 Comment: "LCX832125" Annotation: "

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 0.00 ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 10:08:10 PM
 Modified: No



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
Primary Analytes								
HMX	25	50	200	400	800	1000	na	600
RDX	25	50	200	400	800	1000	na	600
DNX	25	50	200	400	800	1000	na	600
MXN	25	50	200	400	800	1000	na	600
TNX	25	50	200	400	800	1000	na	600
1,3,5-Trinitrobenzene	25	50	200	400	800	1000	na	600
1,3-Dinitrobenzene	25	50	200	400	800	1000	na	600
Nitrobenzene	25	50	200	400	800	1000	na	600
Tetryl	25	50	200	400	800	1000	na	600
Nitroglycerin	50	100	200	400	800	1000	na	600
2,4,6-Trinitrotoluene	25	50	200	400	800	1000	na	600
2-Amino-4,6-dinitrotoluene	25	50	200	400	800	1000	na	600
4-Amino-2,6-dinitrotoluene	25	50	200	400	800	1000	na	600
2,4-Dinitrotoluene	25	50	200	400	800	1000	na	600
2,6-Dinitrotoluene	25	50	200	400	800	1000	na	600
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
Secondary Analytes								
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

Explosives Initial Calibration

Lab Name: GEL Laboratories LLC

GEL Job No: 10-1100

Lab Code: GEL

Run Date: 13-JAN-10,18-JAN-10

LCMSMS Instrument ID: LCMSMS

Method: 8321A Modified

HPLC Column: Phenomenex Ultracarb 5 ODS(20)

Calibration Type: Average RF

Parname	1	2	3	4	5	6	Ave RF	RSD	Q
Calibration Level:	EXP0118003a	EXP0118004a	EXP0118005a	EXP0118006a	EXP0118007a	EXP0118008a			
Data File:									
1,3,5-Trinitrobenzene	3.484	3.337	3.183	3.346	3.389	3.251	3.332	3.151	
1,3-Dinitrobenzene-d4	8.417	7.127	6.57	7.116	5.921	5.569	6.787	14.975	
2,4,6-Trinitrotoluene	.377	.396	.322	.334	.345	.339	0.352	7.994	
2,4-Dinitrotoluene	.243	.259	.246	.253	.265	.251	0.253	3.203	
2,6-Dinitrotoluene	1.153	1.028	1.057	1.111	1.097	1.108	1.092	4.045	
2,6-Dinitrotoluene-d3	39.096	38.049	37.926	39.55	34.278	31.235	36.689	8.867	
2-Amino-4,6-dinitrotoluene	.384	.362	.364	.408	.425	.393	0.389	6.304	
3,4-Dinitrotoluene	1.094	.866	.869	.913	.9	.951	0.932	9.132	
4-Amino-2,6-dinitrotoluene	.207	.279	.263	.272	.282	.281	0.264	10.877	
HMX	2.748	3.079	2.841	3.009	4.254	3.437	3.228	17.23	
Nitrobenzene	.948	.786	.819	.79	.837	.843	0.837	7.056	
PETN	1.934	1.886	1.782	1.556	1.494	1.373	1.671	13.671	
RDX	1.703	2.055	2.131	2.096	3.008	2.349	2.224	19.659	
Tetryl	1.014	1.261	1.006	.872	.832	.875	0.977	16.224	
m-Dinitrobenzene	1.102	1.271	1.177	1.173	1.202	1.167	1.182	4.639	
m-Nitrotoluene	.074	.088	.086	.096	.085	.083	0.085	8.24	
o-Nitrotoluene	.142	.174	.141	.15	.148	.145	0.150	8.071	
p-Nitrotoluene	.072	.076	.065	.075	.072	.069	0.072	5.54	

Q column used to flag RSD values outside of Limit (>20%)

* Values outside of QC Limit

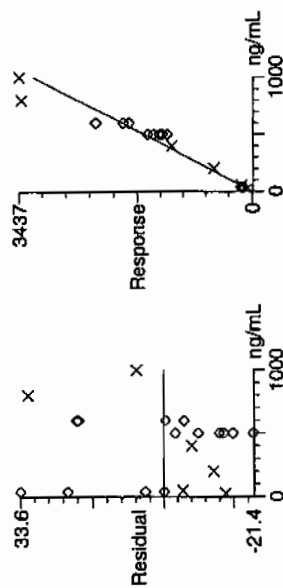
Quantify Calibration Report
GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

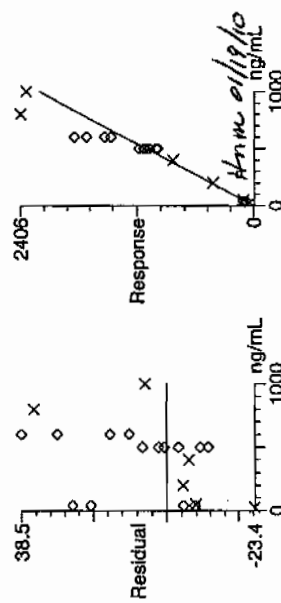
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Calibration: Untitled, Time: Tue Jan 19 10:56:45 2010

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Compound name: HMX
Response Factor: 3.22807
RF SD: 0.556189, % Relative SD: 17.2298
Response type: Internal Std (Ref 4), Area * (IS Conc. / IS Area)
Curve type: RF



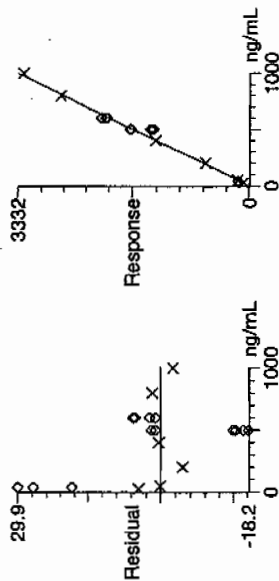
Compound name: RDX
Response Factor: 2.22353
RF SD: 0.437117, % Relative SD: 19.6587
Response type: Internal Std (Ref 4), Area * (IS Conc. / IS Area)
Curve type: RF



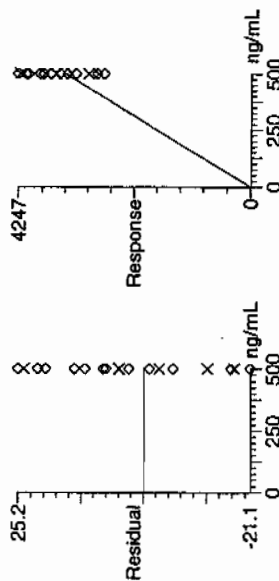
Quantify Calibration Report
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp_PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Compound name: 135-Trinitrobenzene
Response Factor: 3.33183
RF SD: 0.104974, % Relative SD: 3.15064
Response type: Internal Std (Ref 4), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13-Dinitrobenzene-d4
Response Factor: 6.78663
RF SD: 1.01627, % Relative SD: 14.9747
Response type: External Std, Area
Curve type: RF



Quantity Calibration Report

GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

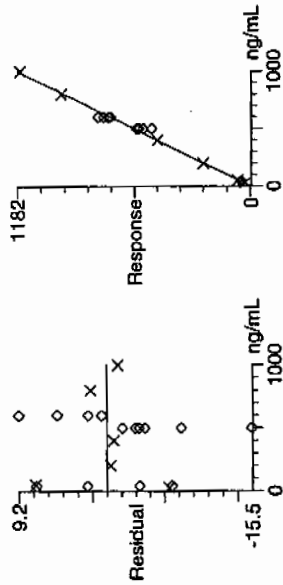
Compound name: 13-Dinitrobenzene

Response Factor: 1.18172

RRF SD: 0.0548147, % Relative SD: 4.63857

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

Curve type: RF



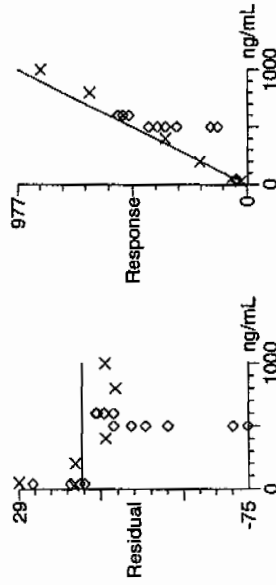
Compound name: Tetraol

Response Factor: 0.976612

RRF SD: 0.158443, % Relative SD: 16.2237

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

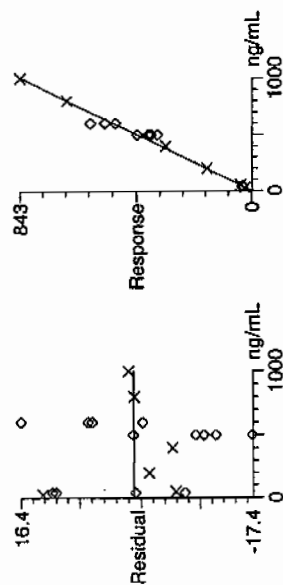
Curve type: RF



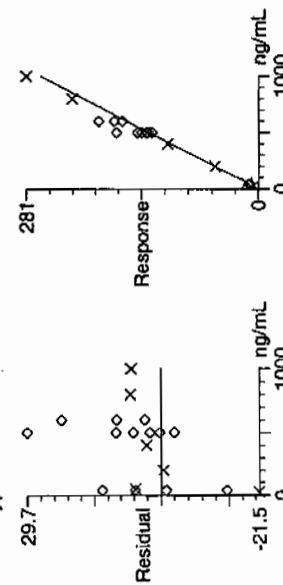
Quantify Calibration Report
 JEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp\PRO1011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Compound name: Nitrobenzene
 Response Factor: 0.837186
 RPF SD: 0.0590728, % Relative SD: 7.05612
 Response type: Internal Std (Ref 4), Area * (IS Conc. / IS Area)
 Curve type: RIF



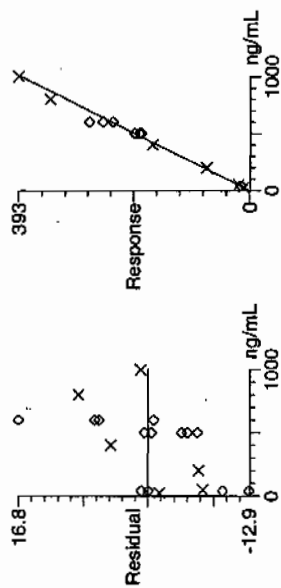
Compound name: 4-Amino-26-dinitrotoluene
 Response Factor: 0.263992
 RPF SD: 0.0287134, % Relative SD: 10.8766
 Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
 Curve type: RIF



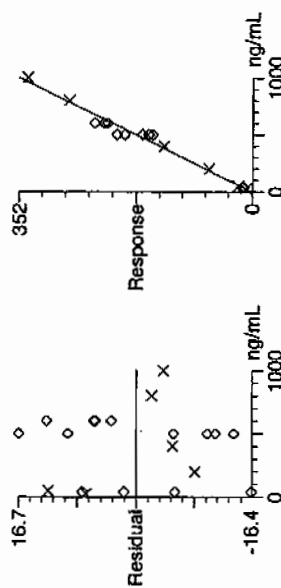
Quantify Calibration Report
GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp\PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Compound name: 2-Amino-46-dinitrotoluene
Response Factor: 0.389564
RRF SD: 0.0245563, % Relative SD: 6.30354
Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
Curve type: RF



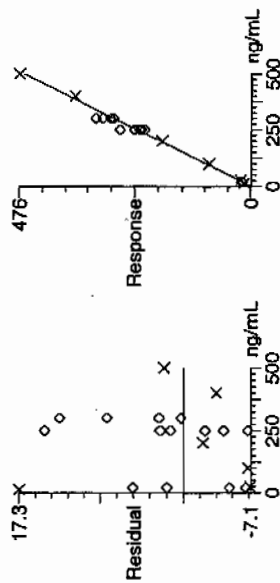
Compound name: 246-Trinitrotoluene
Response Factor: 0.352125
RRF SD: 0.0281482, % Relative SD: 7.99381
Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
Curve type: RF



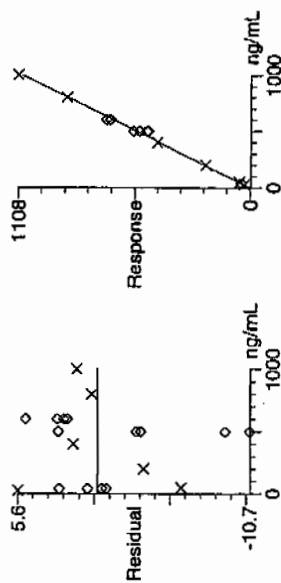
Quantify Calibration Report
GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp_PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Compound name: 34-dinitrotoluene
Response Factor: 0.932242
RF SD: 0.0851351, % Relative SD: 9.1323
Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
Curve type: RF



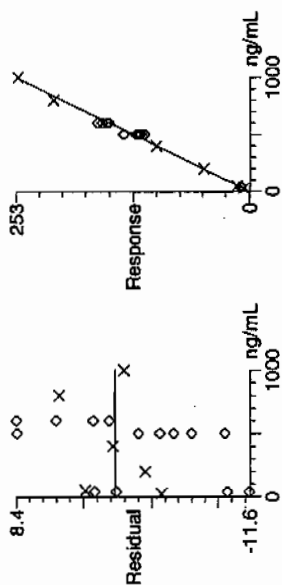
Compound name: 26-dinitrotoluene
Response Factor: 1.09228
RF SD: 0.0441813, % Relative SD: 4.04489
Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
Curve type: RF



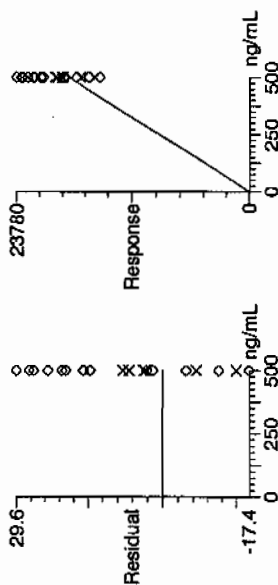
Quantify Calibration Report
 3EL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Compound name: 24-dinitrotoluene
 Response Factor: 0.252831
 RF SD: 0.00809816, % Relative SD: 3.20299
 Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
 Curve type: RF



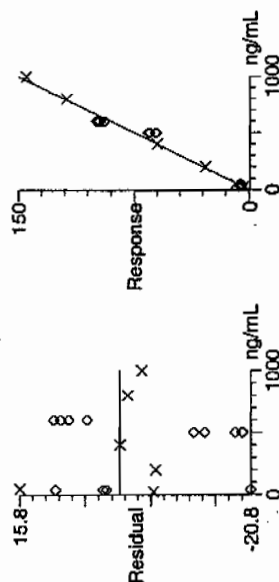
Compound name: 26-dinitrotoluene-d3
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 RF SD: 3.25316, % Relative SD: 8.86682
 Response type: External Std, Area
 Curve type: RF



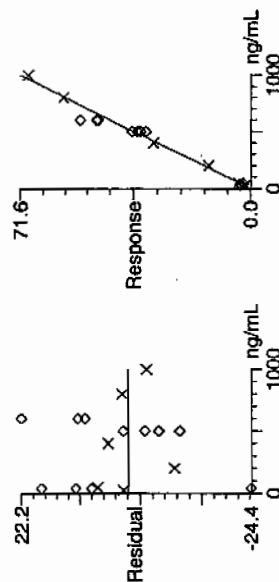
Quantify Calibration Report
 3EL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYN\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Compound name: 2-Nitrotoluene
 Response Factor: 0.150077
 RF SD: 0.0121131, % Relative SD: 8.07131
 Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
 Curve type: RF



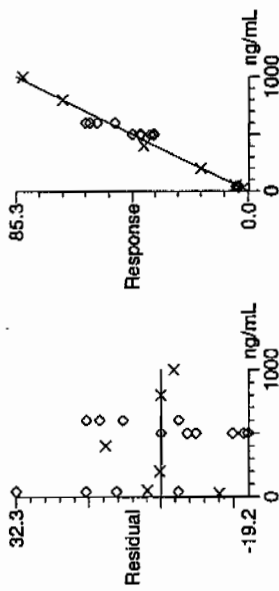
Compound name: 4-Nitrotoluene
 Response Factor: 0.0715991
 RF SD: 0.00396681, % Relative SD: 5.5403
 Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
 Curve type: RF



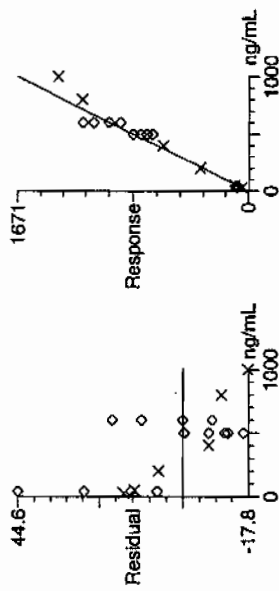
Quantify Calibration Report
 GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp\PROV011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Compound name: 3-Nitrotoluene
 Response Factor: 0.0852801
 RRF SD: 0.00702733, % Relative SD: 8.24029
 Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
 Curve type: RF



Compound name: PETN
 Response Factor: 1.67101
 RRF SD: 0.228436, % Relative SD: 13.6705
 Response type: Internal Std (Ref 14), Area * (IS Conc. / IS Area)
 Curve type: RF



Explosives Initial Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1100

Lab Code: GEL

GEL Sample ID: WXXICV

GEL Data File EXP0118010a

Analysis Date: 18-JAN-10 18:28

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	606.572	101	
1,3-Dinitrobenzene-d4	500	470.52	94	
2,4,6-Trinitrotoluene	600	621.487	104	
2,4-Dinitrotoluene	600	602.873	100	
2,6-Dinitrotoluene	600	630.14	105	
2,6-Dinitrotoluene-d3	500	515.861	103	
2-Amino-4,6-dinitrotoluene	600	595.43	99	
3,4-Dinitrotoluene	300	300.86	100	
4-Amino-2,6-dinitrotoluene	600	621.304	104	
HMX	600	570.4	95	
Nitrobenzene	600	639.033	107	
PETN	600	552.42	92	
RDX	600	658.602	110	
Tetryl	600	515.579	86	
m-Dinitrobenzene	600	611.69	102	
m-Nitrotoluene	600	682.223	114	
o-Nitrotoluene	600	662.222	110	
p-Nitrotoluene	600	732.953	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 70-130%

Other Target Analytes 80-120%

Column used to flag Recovery outside of Limits

* Value outside of Recovery Limits

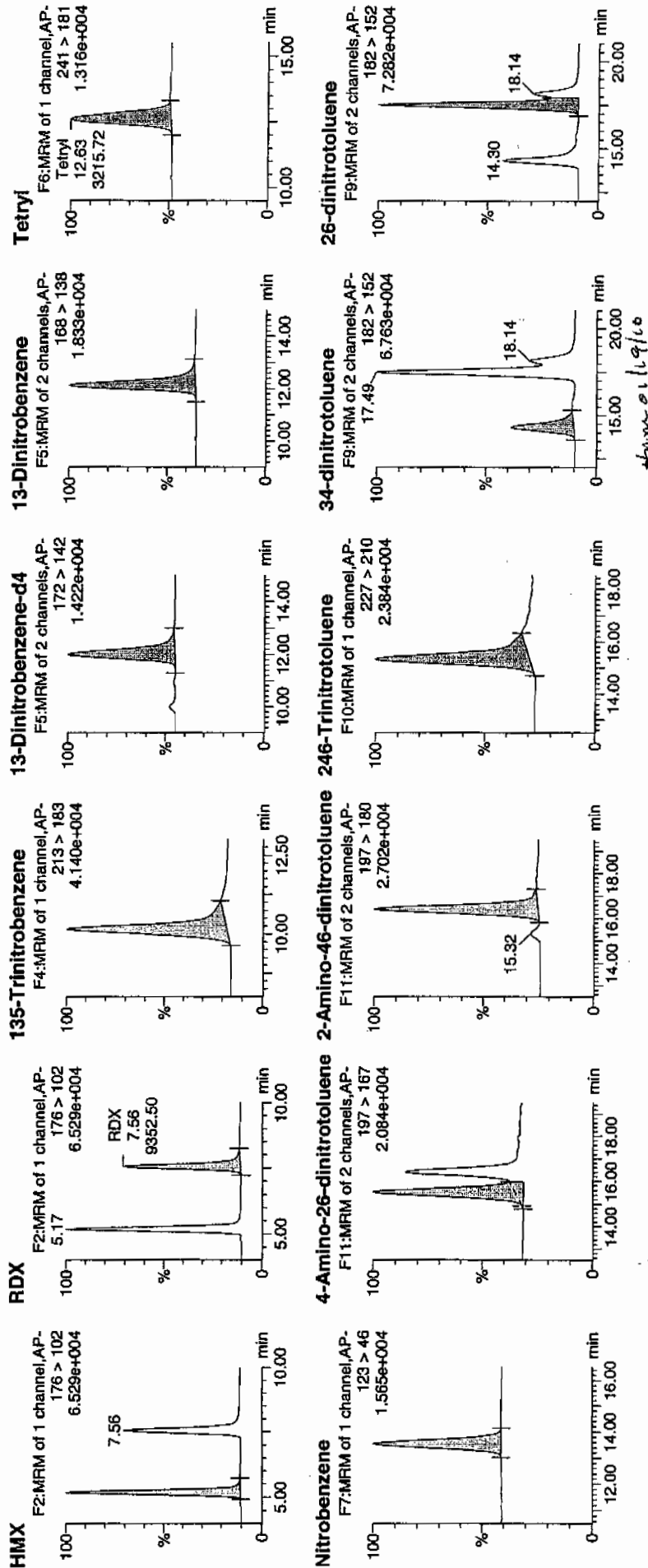
Name: C:\MASSLYNX\NEW_EXP\PRO\Data\EXP0118010a

Date: 18-Jan-2010

Time: 18:28:52

ID: WXX100118-07ICV

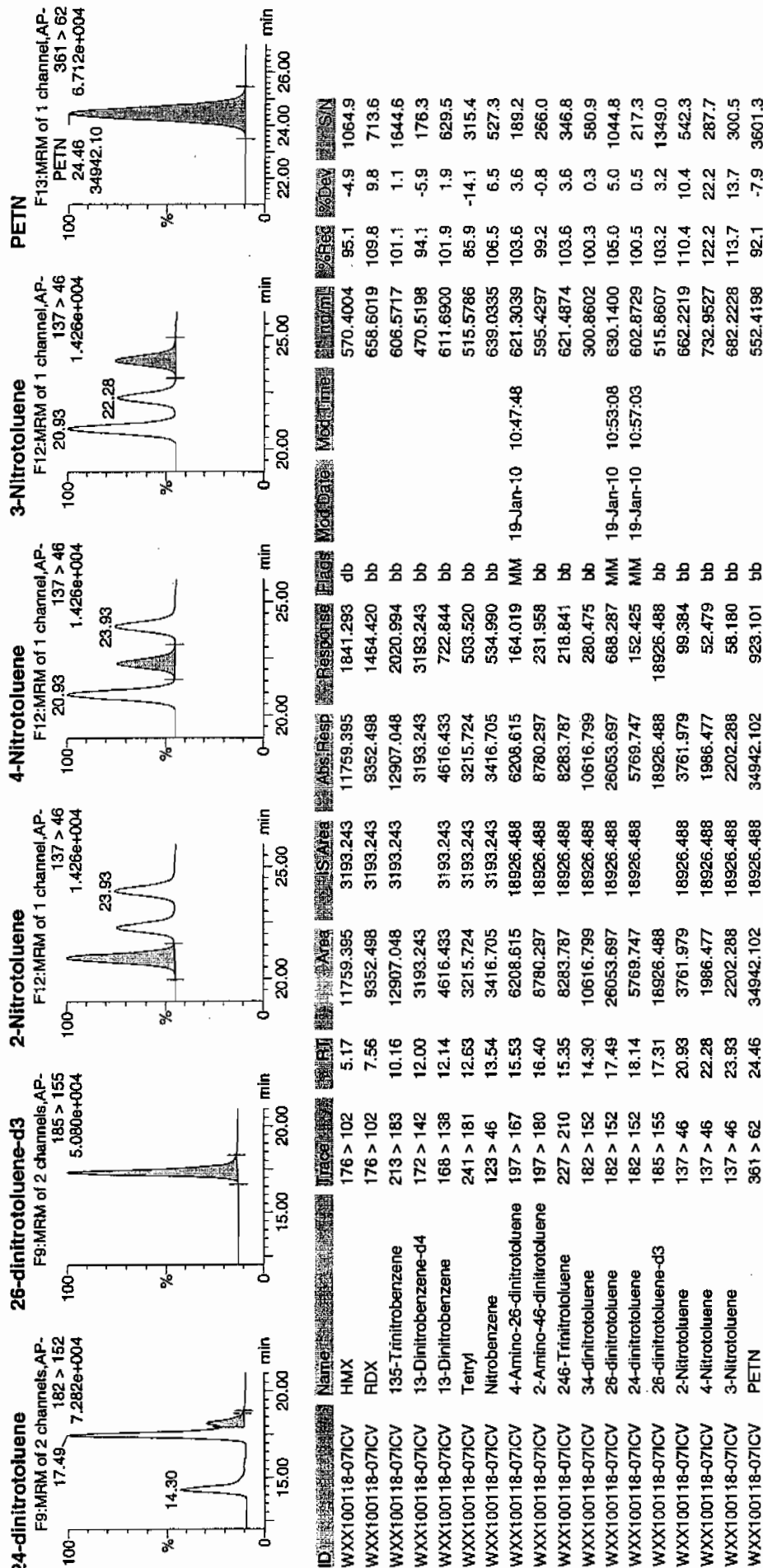
Vial: 1:1,B



Printed: Tue Jan 19 11:02:03 2010, Page 20 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



GRAND MEAN AVERAGE

Vendor: Restek
 Date of Analysis: 01/18/10
 Time of Injection: 1828
 Standard Number: WXX100118-07ICV
 Data File: EXP0118010a

HMX	95.1
RDX	109.8
135-TNB	101.1
13-DNB	101.9
Tetryl	85.9
Nitrobenzene	106.5
4A-26-DNT	103.6
2A-46-DNT	99.2
246-TNT	103.6
34-DNT(surr)	100.3
26-DNT	105.0
24-DNT	100.5
2-NT	110.4
4-NT	122.2
3-NT	113.7
PETN	92.1

*WTP
1/19/10*

Total 1650.9

WTP 01/19/10

Average 103.2

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: 10-1100

Lab Code: GEL

Run Date: 13-JAN-10.18-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:	EXS01130003.wiff	EXS01130004.wiff	EXS01130005.wiff	EXS01130006.wiff	EXS01130007.wiff	EXS01130008.wiff	EXS01130009.wiff					
Parname:												
2,4-Diamino-6-nitrotoluene	86000	168000	440000	939000	1520000	1840000	3710000	-27500	1990	-0.064	.9994	
2,6-Diamino-4-nitrotoluene	122000	241000	617000	1376000	1900000	2570000	5070000	-14000	2640	-0.053	.9998	
3,4-Dinitrotoluene	298000	521000	1460000	2720000	4210000	5220000	9890000	-18300	12200	-2.35	.9973	
3,5-Dinitroaniline	432000	855000	2150000	4050000	6390000	7650000	13300000	-32900	9040	-1.18	.9994	
TATB	86600	157000	391000	765000	1200000	1480000	2850000	2620	1590	-0.086	.9996	
tris(o-cresyl) phosphate	1300000	2500000	6050000	11000000	16100000	20100000	30000000	36900	25000	-5	.9999	

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

011310ICAL

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

Fit	Quadratic	Weighting	None	Iterate No
a0	2.62e+003			
a1	1.59e+003			
a2	-0.0858			
Correlation coefficient 0.9996				
Use Area				

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

Fit	Quadratic	Weighting	None	Iterate No
a0	-3.29e+004			
a1	9.04e+003			
a2	-1.18			
Correlation coefficient 0.9994				
Use Area				

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

Fit	Quadratic	Weighting	None	Iterate No
a0	-1.83e+004			
a1	1.22e+004			
a2	-2.35			
Correlation coefficient 0.9973				
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	-1.4e+004			
a1	2.64e+003			
a2	-0.0528			
Correlation coefficient 0.9998				
Use Area				

HNW
01/14/00

Page 1

01/14/00

011310ICAL

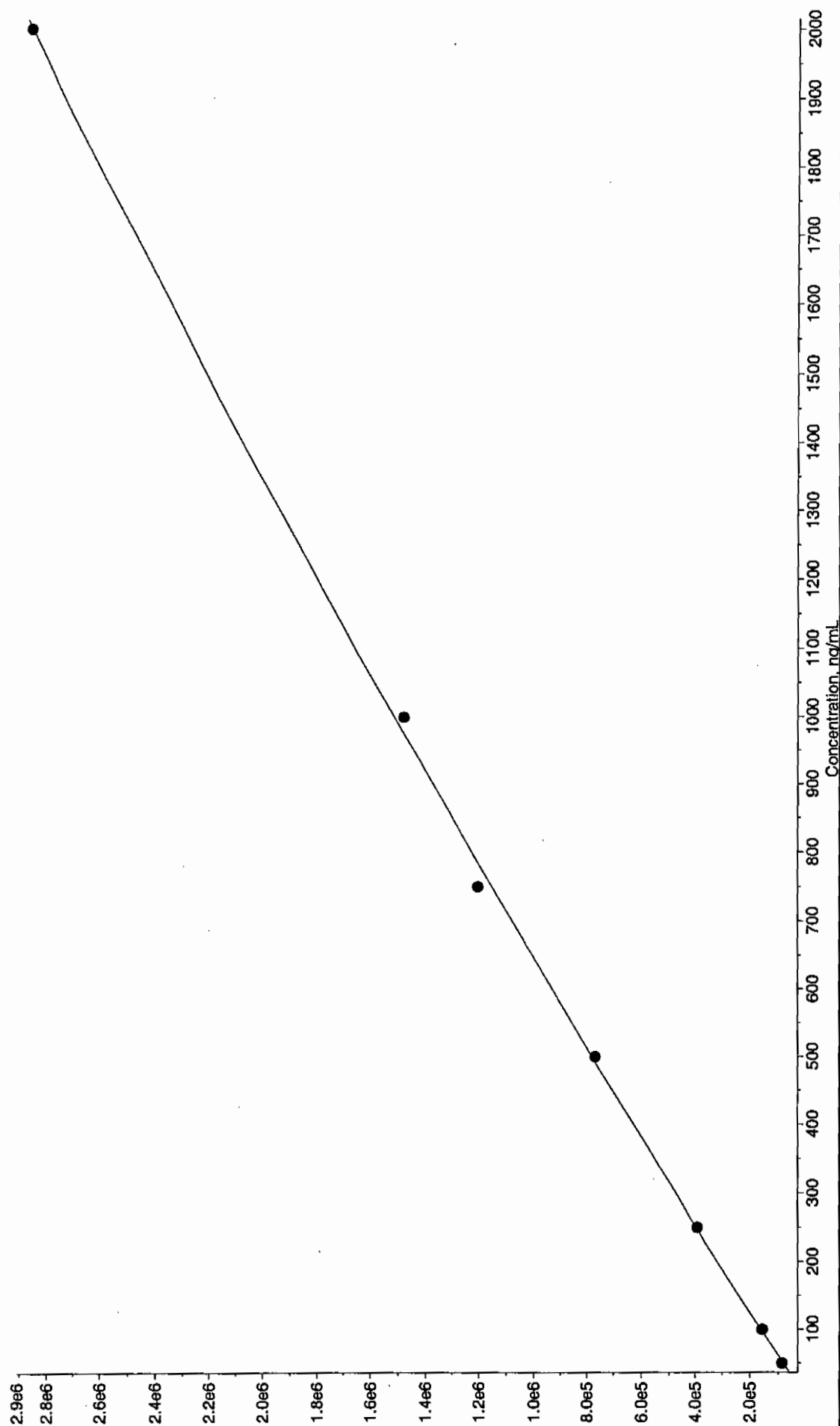
Peak Name: 24-Diamino-6-nitrotoluene
No Internal Standard
Q1/Q3 Masses: 165.97/46.00 amu

Fit	Quadratic	Weighting	None	Iterate No
a0	-2.75e+004			
a1	1.99e+003			
a2	-0.0638			
Correlation coefficient 0.9994				
Use Area				

Peak Name: tris(o-cresyl) phosphate
No Internal Standard
Q1/Q3 Masses: 369.15/91.00 amu

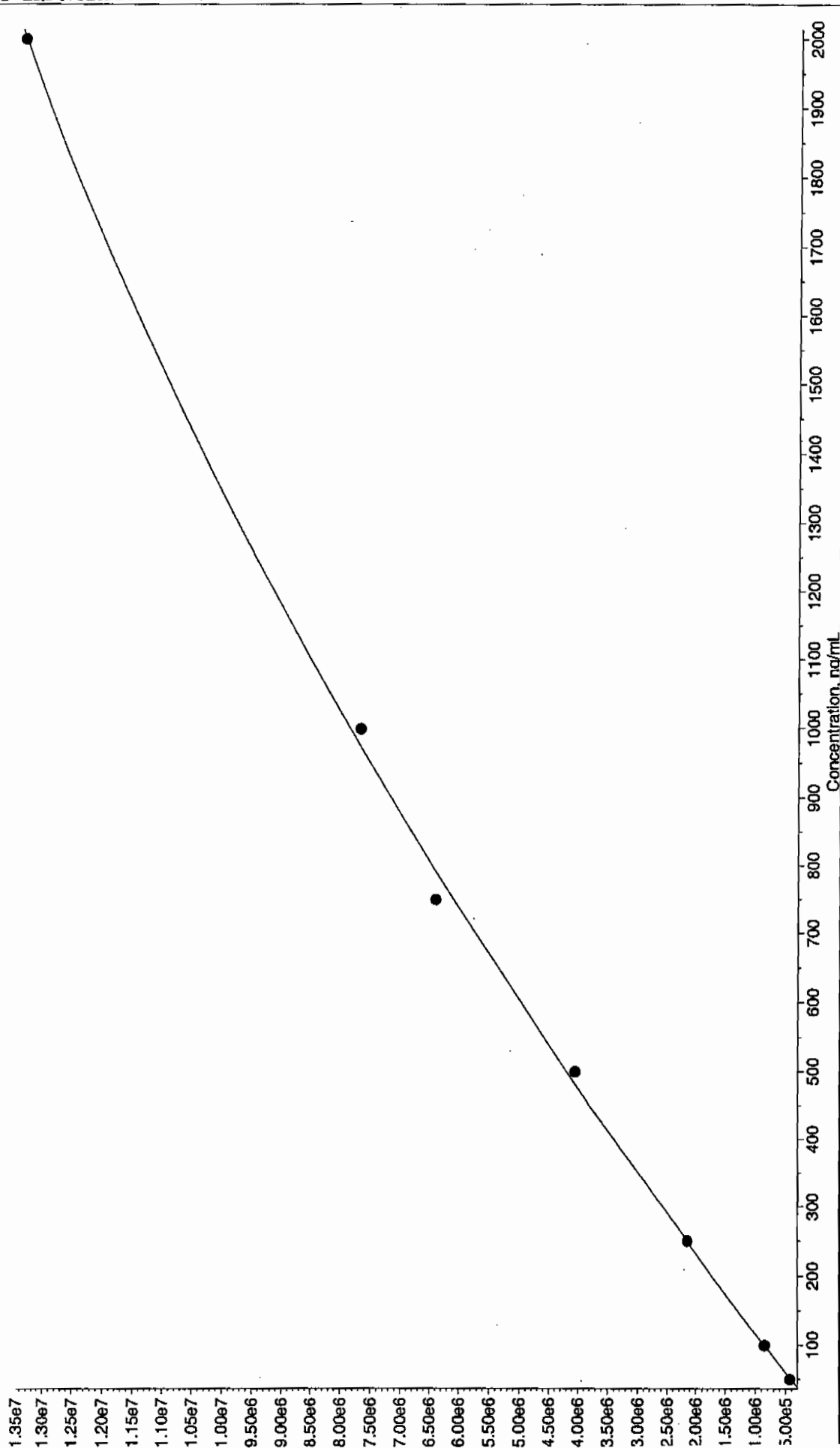
Fit	Quadratic	Weighting	None	Iterate No
a0	3.69e+004			
a1	2.5e+004			
a2	-5			
Correlation coefficient 0.9999				
Use Area				

011310.rdb (TATB): "Quadratic" Regression ("No" weighting): $y = -0.0858 x^2 + 1.59e+003 x + 2.62e+003$ ($r = 0.9996$)



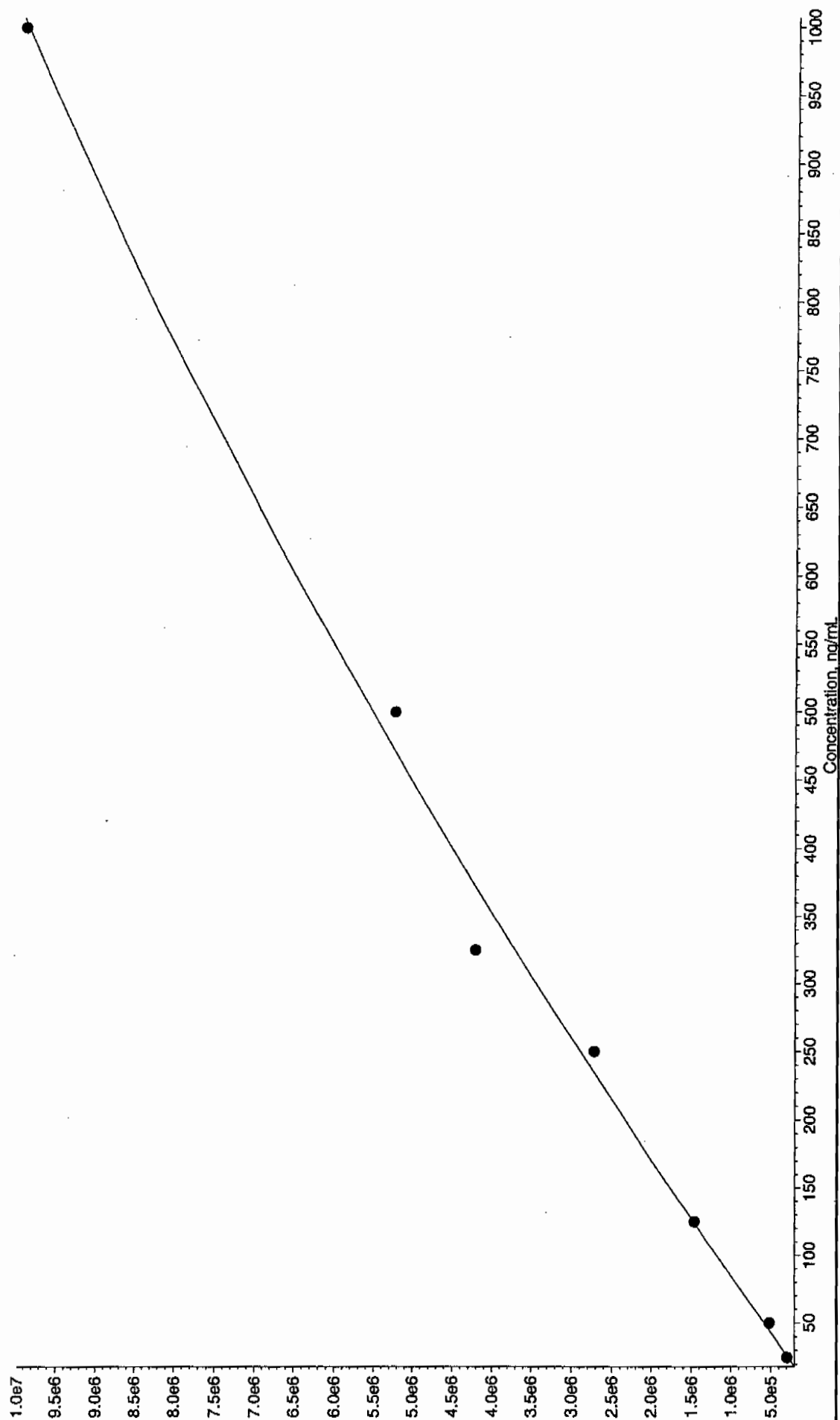
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

011310.rdb (35-Dinitroaniline): "Quadratic" Regression ("No" weighting): $y = -1.18 \times 10^{-4} x^2 + 9.04 \times 10^{-3} x + -3.29 \times 10^{-4}$ ($r = 0.9994$)



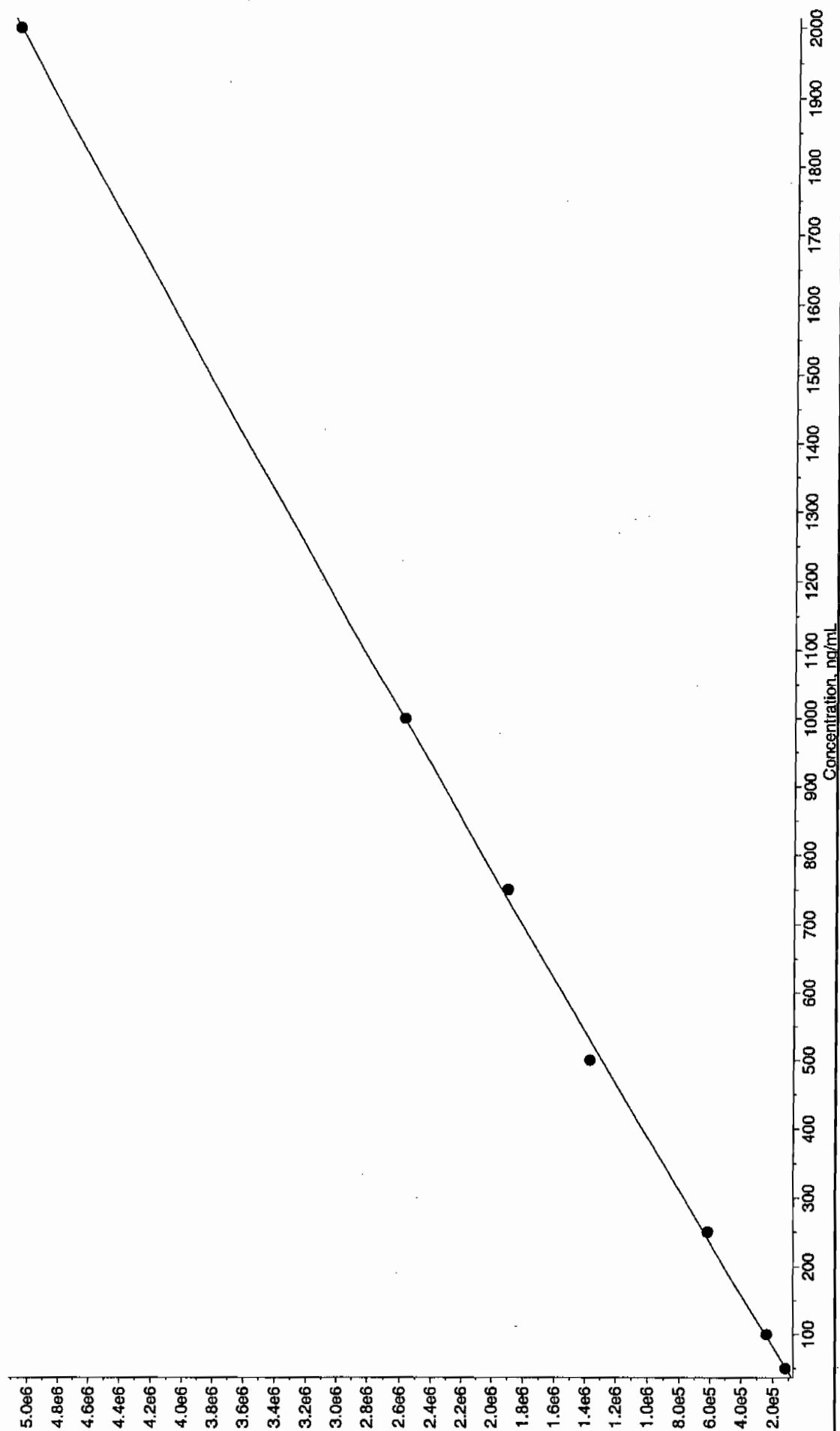
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

011310.rdb (34-Dinitrotoluene): "Quadratic" Regression ("No" weighting): $y = -2.35 x^2 + 1.22e+004 x + -1.83e+004$ ($r = 0.9973$)

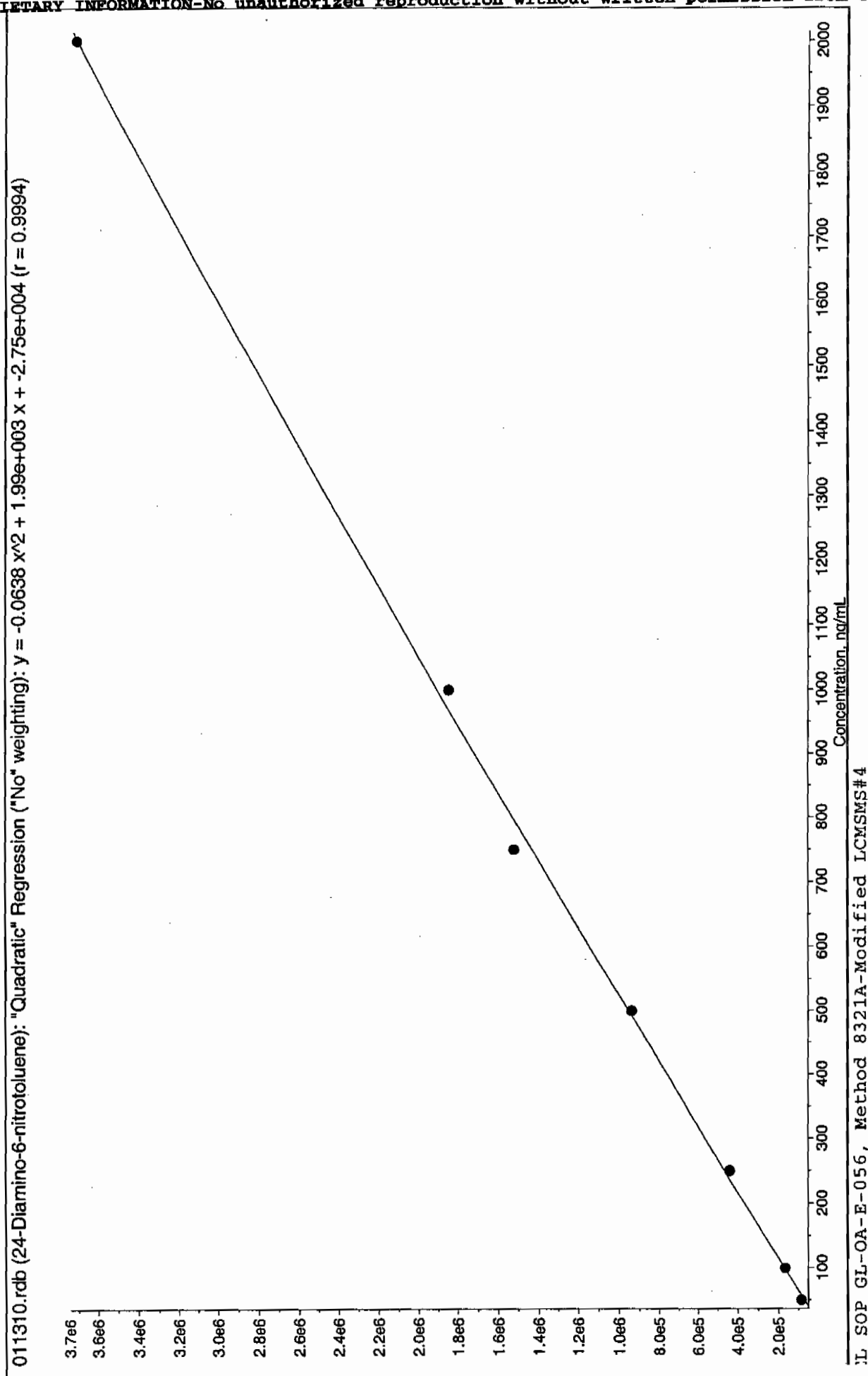


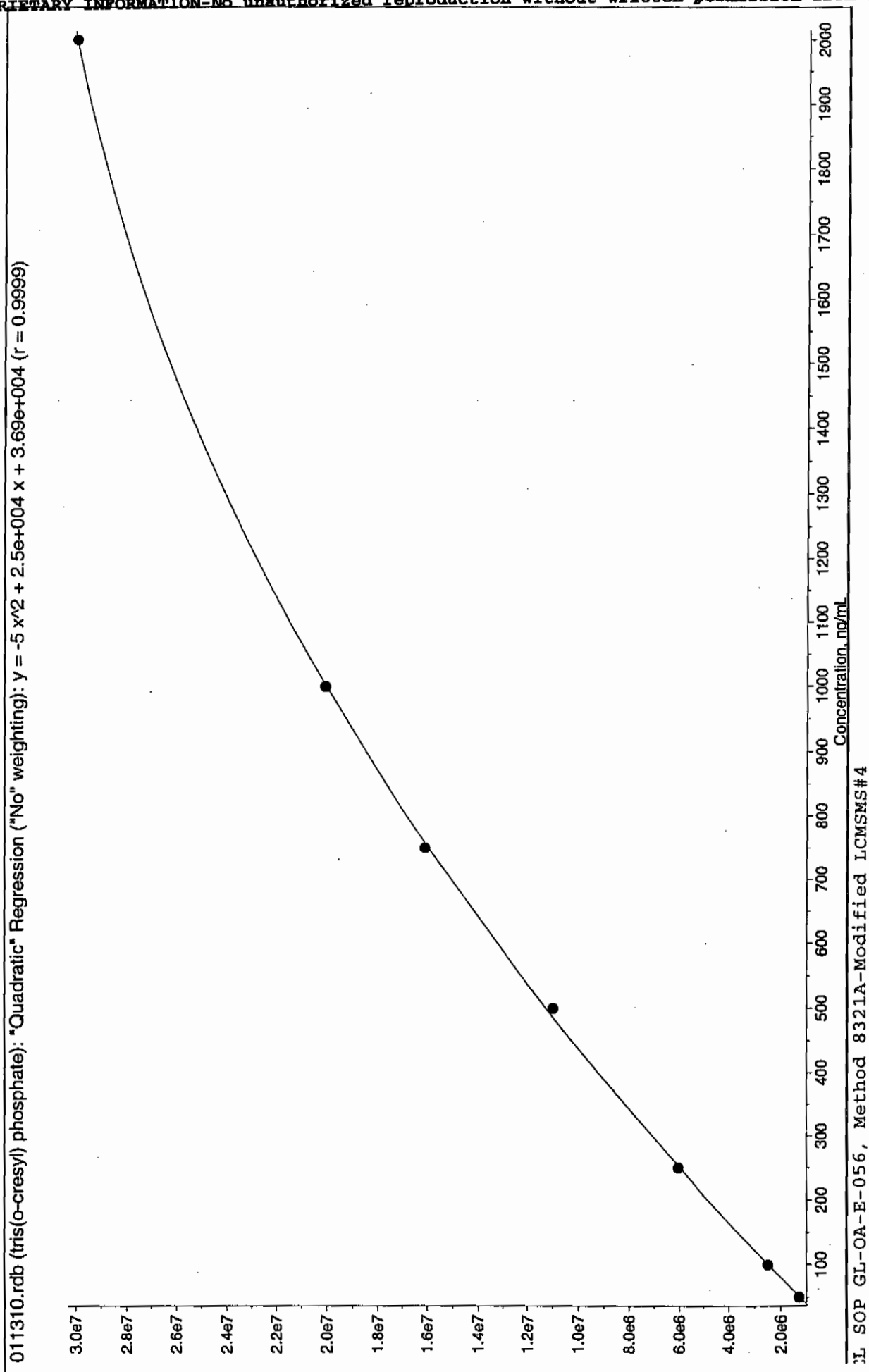
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

011310.rdb (26-Diamino-4-nitrotoluene): "Quadratic" Regression ("No" weighting): $y = -0.0528 x^2 + 2.64e+003 x - 1.4e+004$ ($r = 0.9998$)



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





Explosives Initial Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1100

Lab Code: GEL

GEL Sample ID: WXXICV

GEL Data File EXS01130011.wiff

Analysis Date: 13-JAN-10 16:54

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	494	99	
2,6-Diamino-4-nitrotoluene	500	493	99	
3,4-Dinitrotoluene	250	235	94	
3,5-Dinitroaniline	500	478	96	
TATB	500	491	98	
tris(o-cresyl) phosphate	500	491	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

Before
11/13/10

Sample Name: "WAX10013-28CV" Sample ID: "J1LER" File: "EXS01130011.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: 491. ng/mL
Acq. Date: 1/13/2010
Acq. Time: 4:54:04 PM

Modified: No

Proc. Algorithm: IntelliQuan - IOA

Min. Peak Height: 2500.00 cps

Min. Peak Width: 3.00 points

Smoothing Width: 30.0 sec

Expected RT: 7.03 min

Use Relative RT: No

Int. Type: Valley

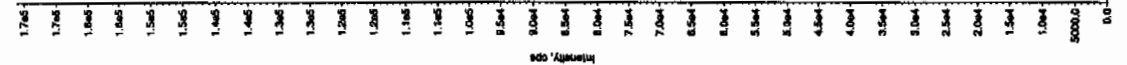
Retention Time: 7.03 min

Area: 7.65e+005 counts

Height: 170984.131 cps

Start Time: 6.89 min

End Time: 7.49 min



Sample Name: "WAX10013-28CV" Sample ID: "J1LER" File: "EXS01130011.wif"

Peak Name: "35-Dinitroaniline" Mass(es): "182.046.0 amu"

Comment: "LCMSEXP_C" Annotation: ""

Sample Index: 1
Sample Type: QC
Concentration: 500. ng/mL
Calculated Conc: 534. ng/mL
Acq. Date: 1/13/2010
Acq. Time: 4:54:04 PM

Modified: No

Proc. Algorithm: IntelliQuan - IOA

Min. Peak Height: 2000.00 cps

Min. Peak Width: 3.00 points

Smoothing Width: 15.0 sec

Expected RT: 8.24 min

Use Relative RT: No

Int. Type: Valley

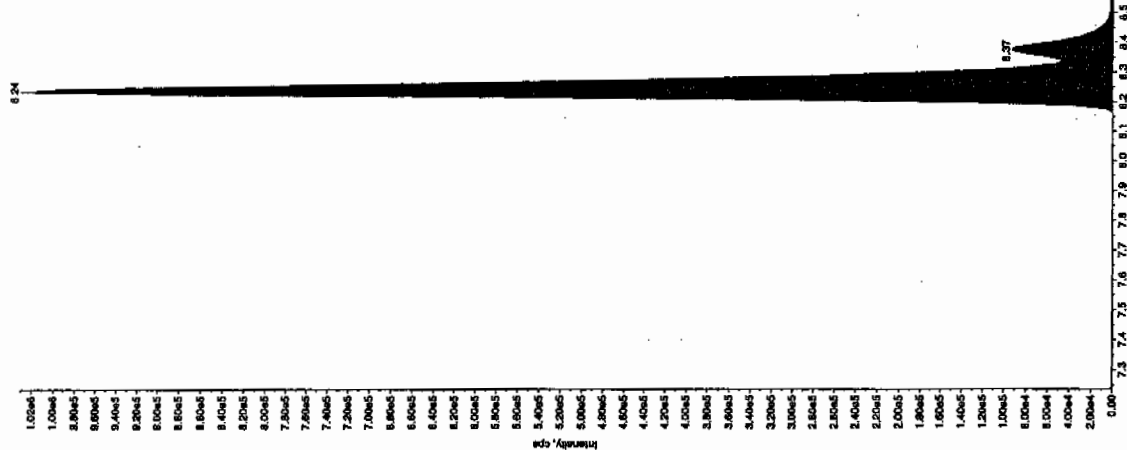
Retention Time: 8.24 min

Area: 4.46e+006 counts

Height: 1030505.615 cps

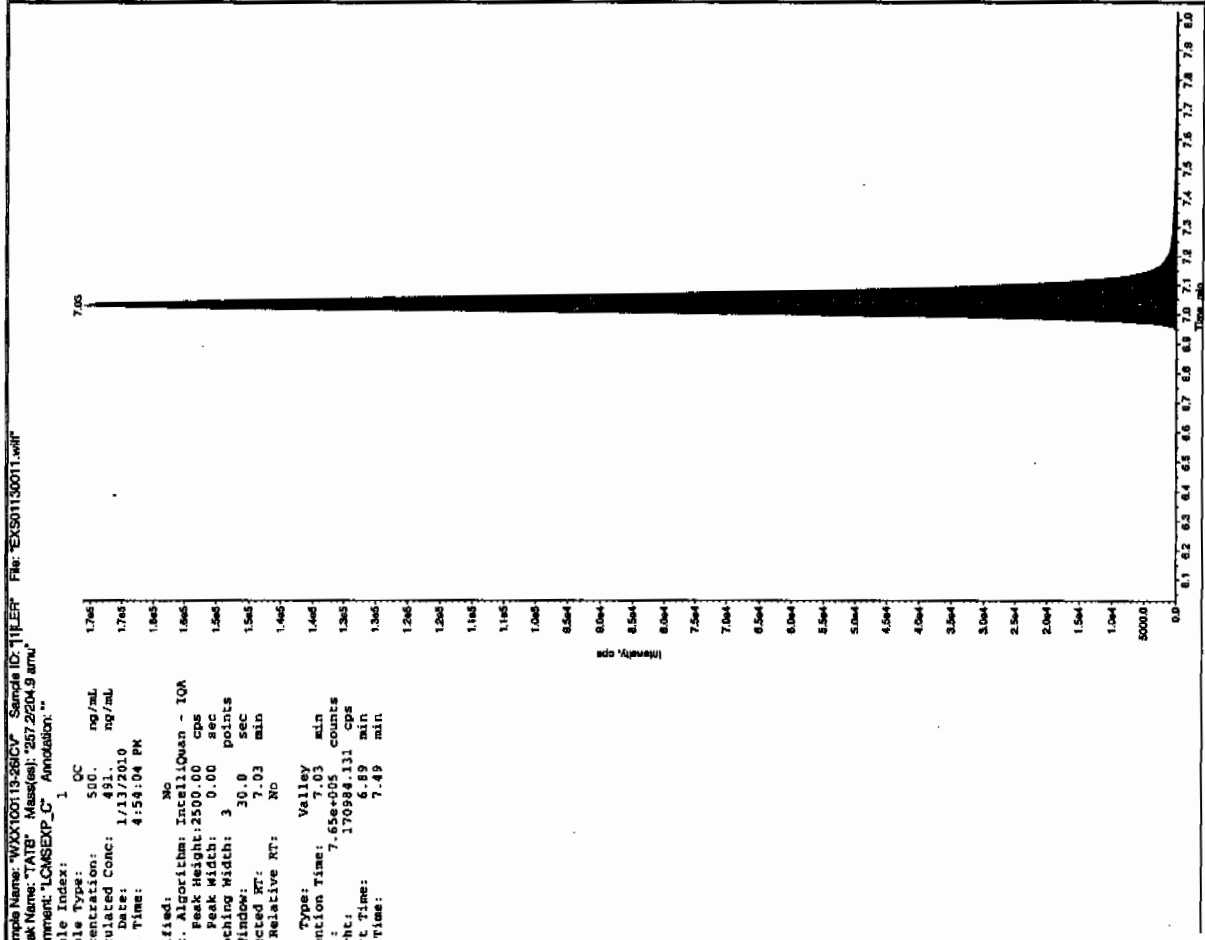
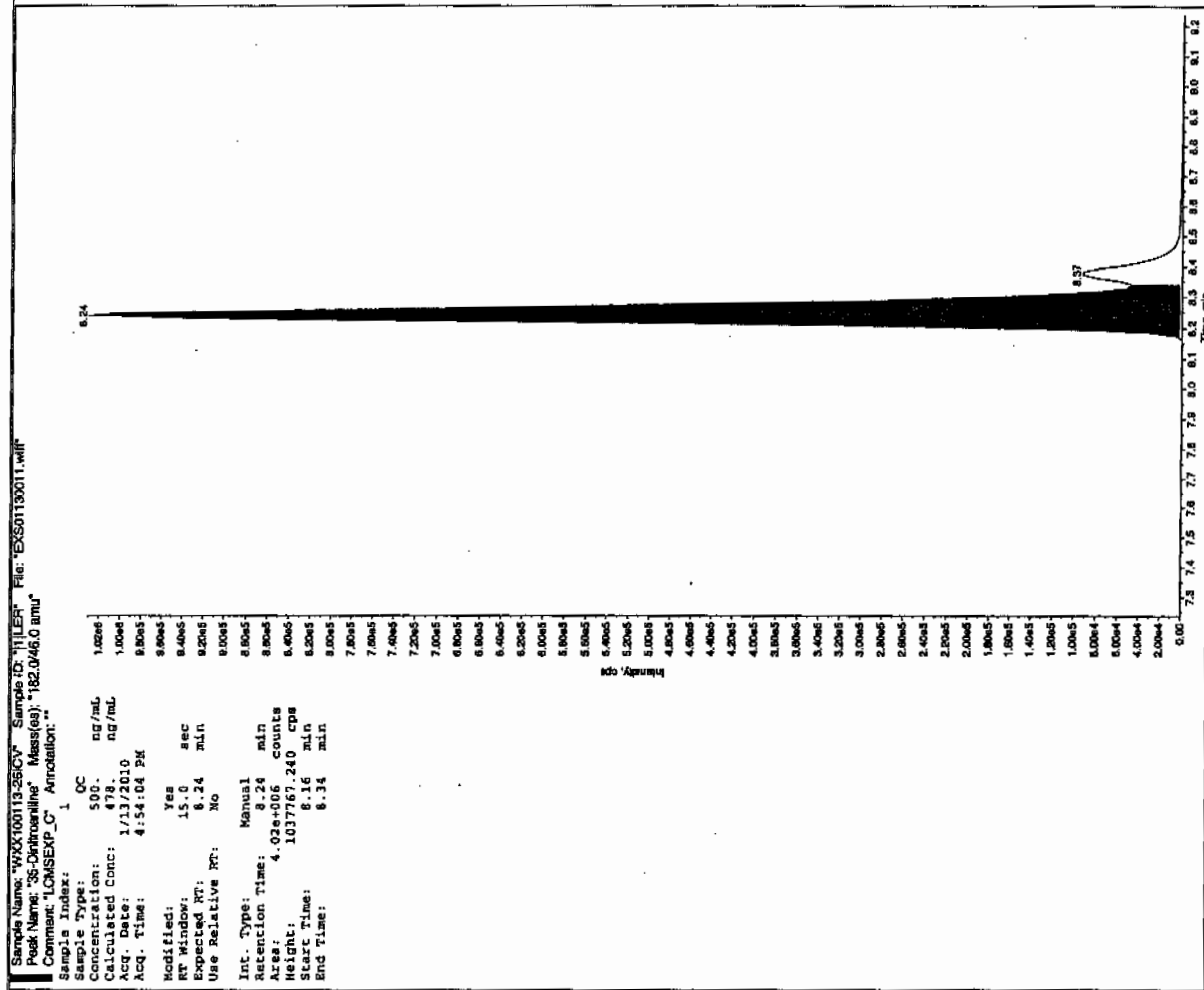
Start Time: 8.14 min

End Time: 8.71 min

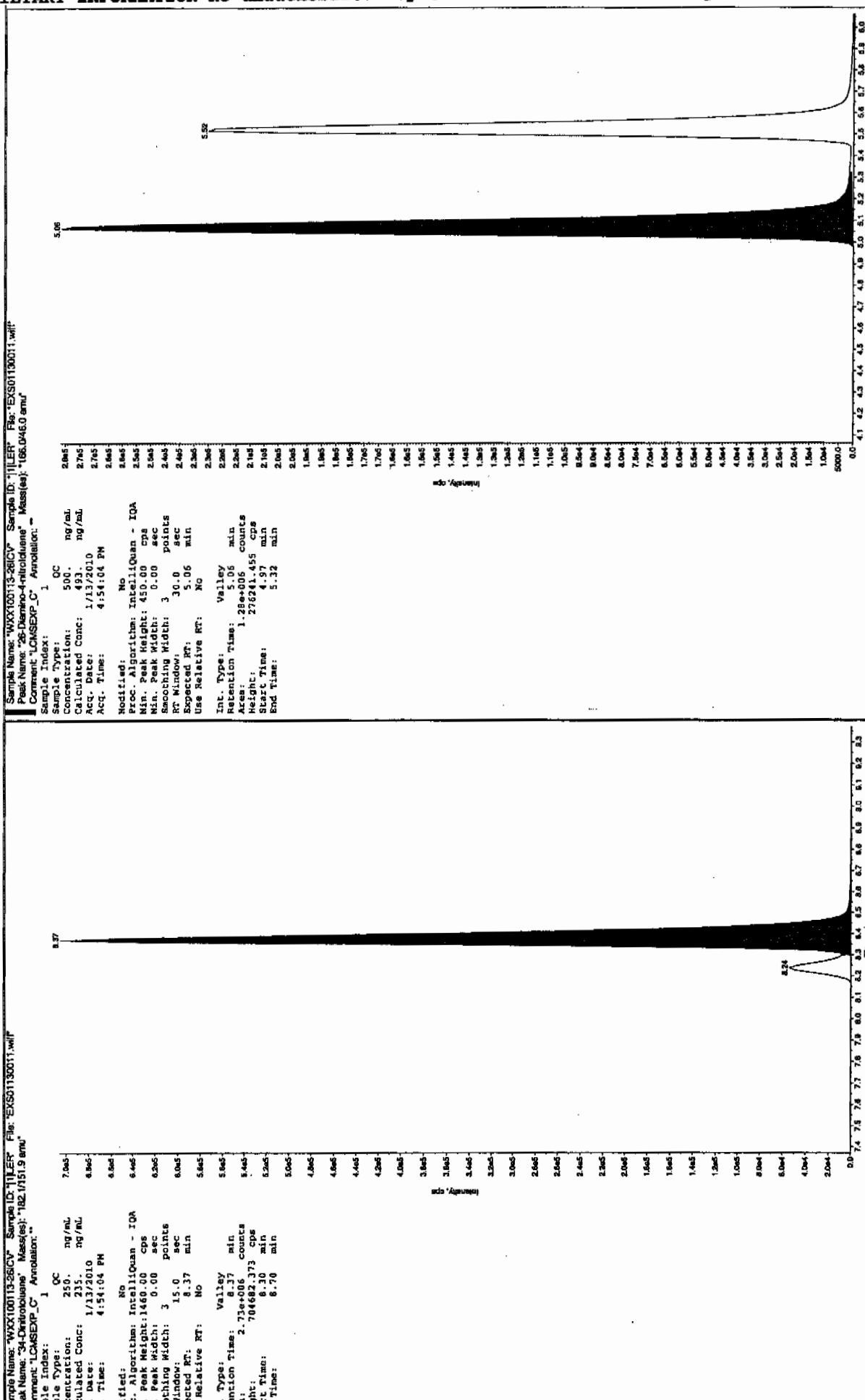


After 01/14/10

01/13/10
2020-04-09



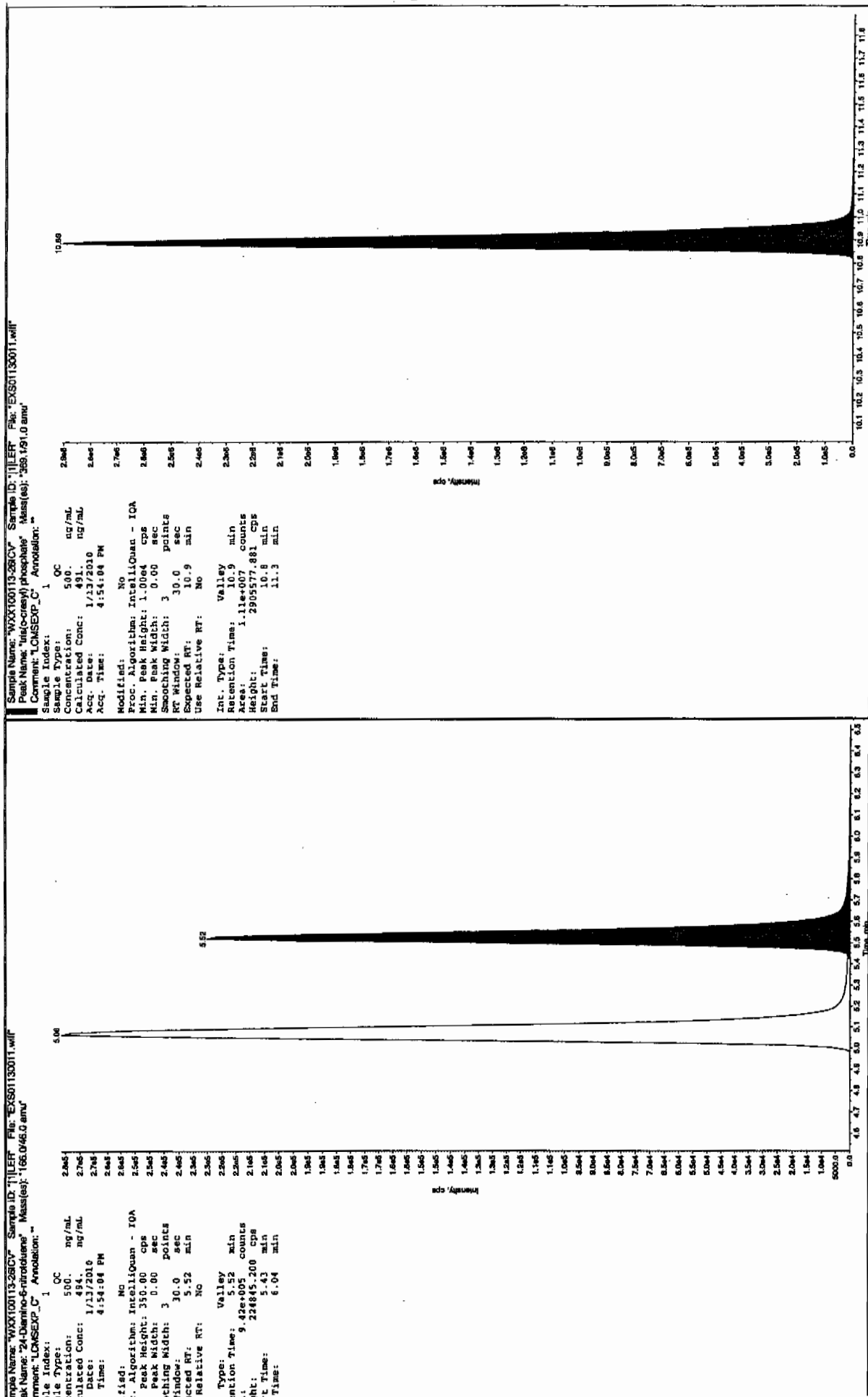
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



Sample Name: "WAX100113-261CV" Sample ID: "111ER" File: "EXS01130011.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1519 amu"
 Comment: "LCMSEXP_C" Annotation: ""
 Sample Index: 1
 Sample Type: QC
 Concentration: 500. ng/mL
 Calculated Conc: 493. ng/mL
 Date: 1/13/2010
 Acq. Time: 4:54:04 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IOA
 Min. Peak Height: 450.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 30.0 points
 RT Window: 30.0 sec
 Expected RT: 5.06 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 5.06 min
 Area: 1.28e+006 counts
 Height: 276241.455 cps
 Start Time: 4.97 min
 End Time: 5.32 min

Sample Name: "WAX100113-261CV" Sample ID: "111ER" File: "EXS01130011.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1519 amu"
 Comment: "LCMSEXP_C" Annotation: ""
 Sample Index: 1
 Sample Type: QC
 Concentration: 250. ng/mL
 Calculated Conc: 235. ng/mL
 Date: 1/13/2010
 Acq. Time: 4:54:04 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IOA
 Min. Peak Height: 1460.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 30.0 points
 RT Window: 15.0 sec
 Expected RT: 8.37 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 8.37 min
 Area: 2.73e+006 counts
 Height: 704682.373 cps
 Start Time: 8.30 min
 End Time: 8.70 min

IL SOP GL-OA-E-056, Method 8321A-Modified LCMMS#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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0118012a

Analysis Date: 18-JAN-10 19:27

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
HMX	40	39.982	100	
Nitrobenzene	40	44.51	111	
PETN	40	45.548	114	
RDX	40	37.064	93	
Tetryl	40	49.073	123	
m-Dinitrobenzene	40	40.812	102	
m-Nitrotoluene	40	46.72	117	
o-Nitrotoluene	40	41.066	103	
p-Nitrotoluene	40	43.026	108	
1,3,5-Trinitrobenzene	40	50.691	127	
1,3-Dinitrobenzene-d4	500	537.934	108	
2,4,6-Trinitrotoluene	40	43.056	108	
2,4-Dinitrotoluene	40	39.965	100	
2,6-Dinitrotoluene	40	39.88	100	
2,6-Dinitrotoluene-d3	500	597.351	119	
2-Amino-4,6-dinitrotoluene	40	39.987	100	
3,4-Dinitrotoluene	20	18.681	93	
4-Amino-2,6-dinitrotoluene	40	42.288	106	

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
 iEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

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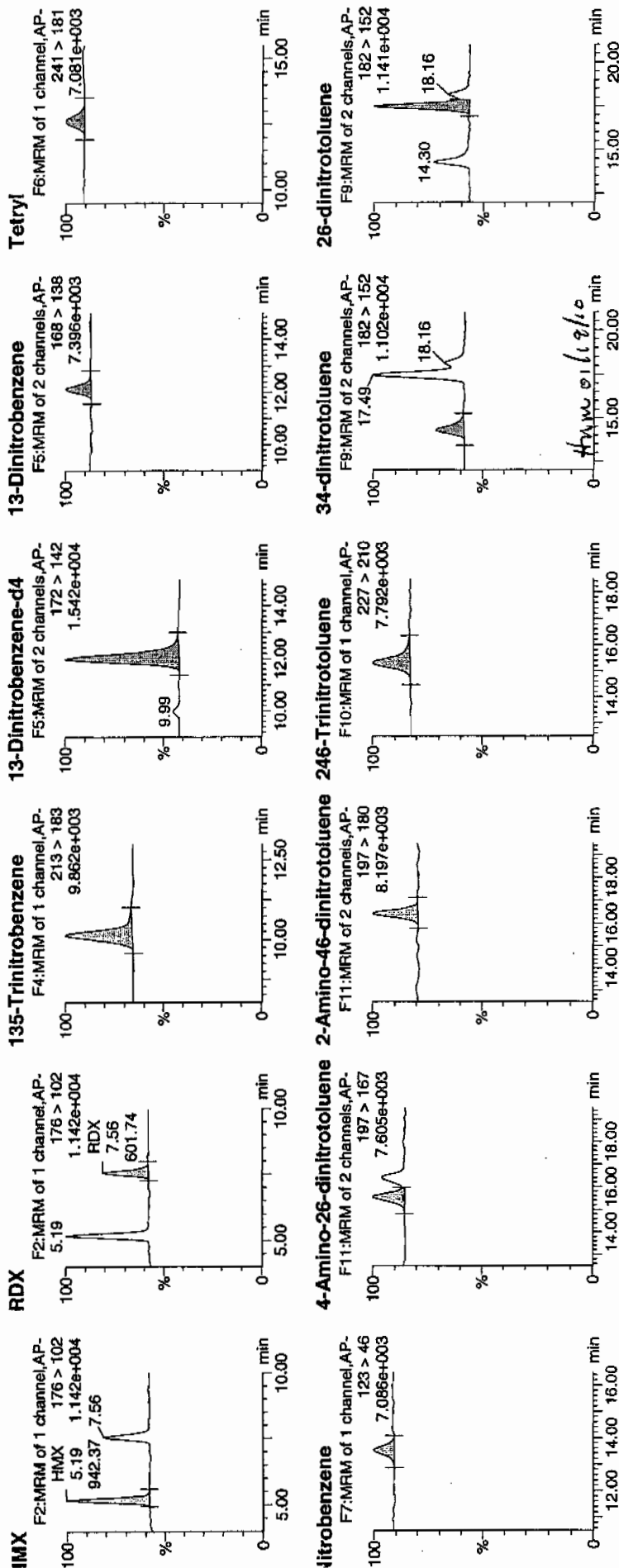
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ime: 19:27:49

D: WXX100118-08CRI

ial: 1:1,C

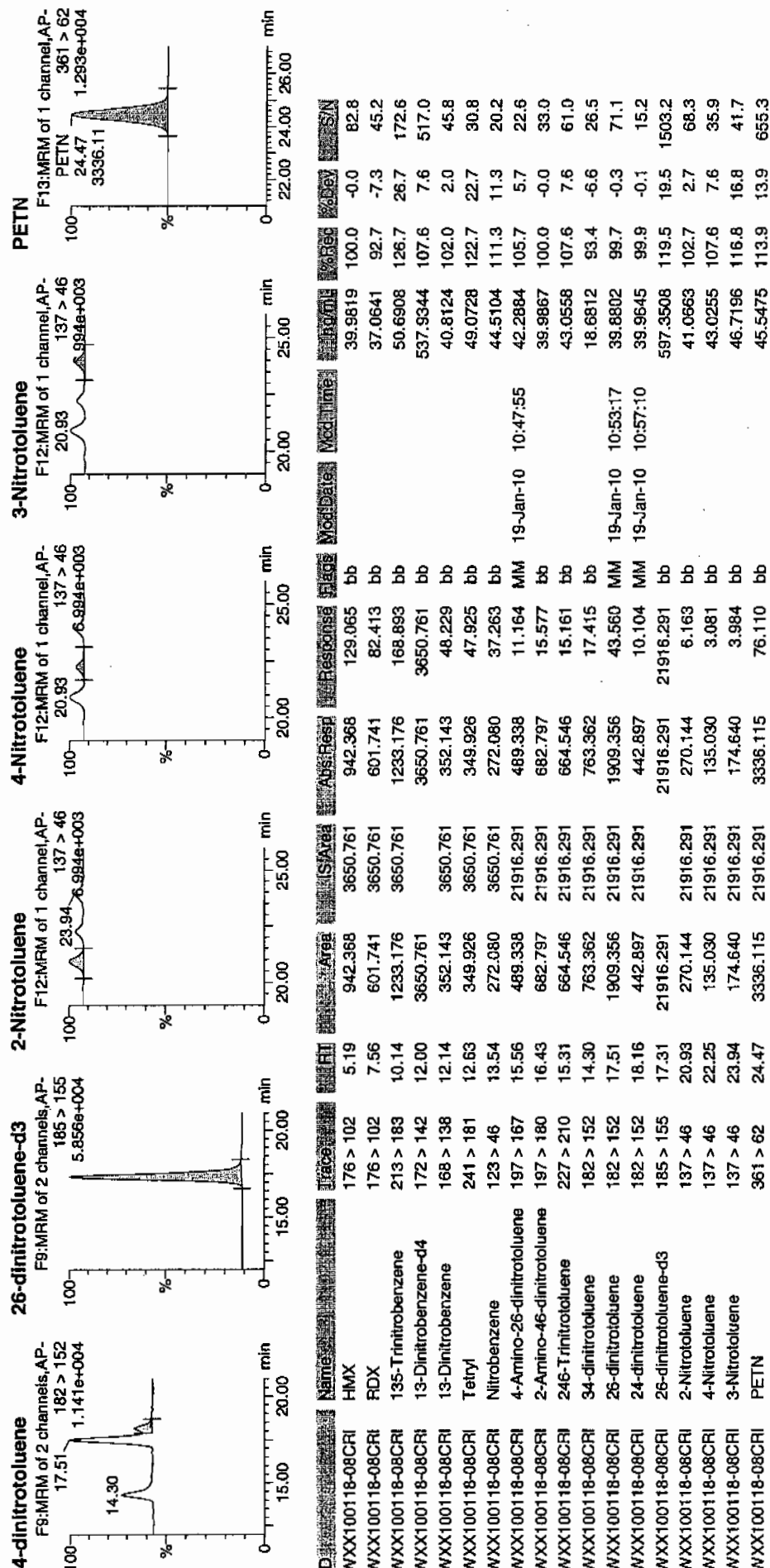
1/19/10



Printed: Tue Jan 19 11:02:03 2010, Page 24 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



GRAND MEAN AVERAGE

Vendor: UltraScientific
 Date of Analysis 01/18/10
 Time of Injection 1927
 Standard Number WXX100118-08CRI
 Data File EXP0118012a

HMX	100.0
RDX	92.7
135-TNB	126.7
13-DNB	102.0
Tetryl	122.7
Nitrobenzene	111.3
4A-26-DNT	105.7
2A-46-DNT	100.0
246-TNT	107.6
34-DNT(surr)	93.4
26-DNT	99.7
24-DNT	99.9
2-NT	102.7
4-NT	107.6
3-NT	116.8
PETN	113.9

*not
1/19/10*

Total 1702.7

Average 106.4

Ham 01/19/10

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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0118019a

Analysis Date: 18-JAN-10 22:54

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2-Amino-4,6-dinitrotoluene	600	641.375	107	
3,4-Dinitrotoluene	300	323.805	108	
4-Amino-2,6-dinitrotoluene	600	659.577	110	
HMX	600	597.765	100	
Nitrobenzene	600	592.53	99	
PETN	600	600.489	100	
RDX	600	688.562	115	
Tetryl	600	559.14	93	
m-Dinitrobenzene	600	603.025	101	
m-Nitrotoluene	600	651.691	109	
o-Nitrotoluene	600	630.709	105	
p-Nitrotoluene	600	662.108	110	
1,3,5-Trinitrobenzene	600	614.058	102	
1,3-Dinitrobenzene-d4	500	494.251	99	
2,4,6-Trinitrotoluene	600	636.232	106	
2,4-Dinitrotoluene	600	629.771	105	
2,6-Dinitrotoluene	600	614.102	102	
2,6-Dinitrotoluene-d3	500	477.476	95	

Recovery Limits:

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

Other Target Analytes 80-120%

Column used to flag Recovery outside of Limits

* Value outside of Recovery Limits

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118019a

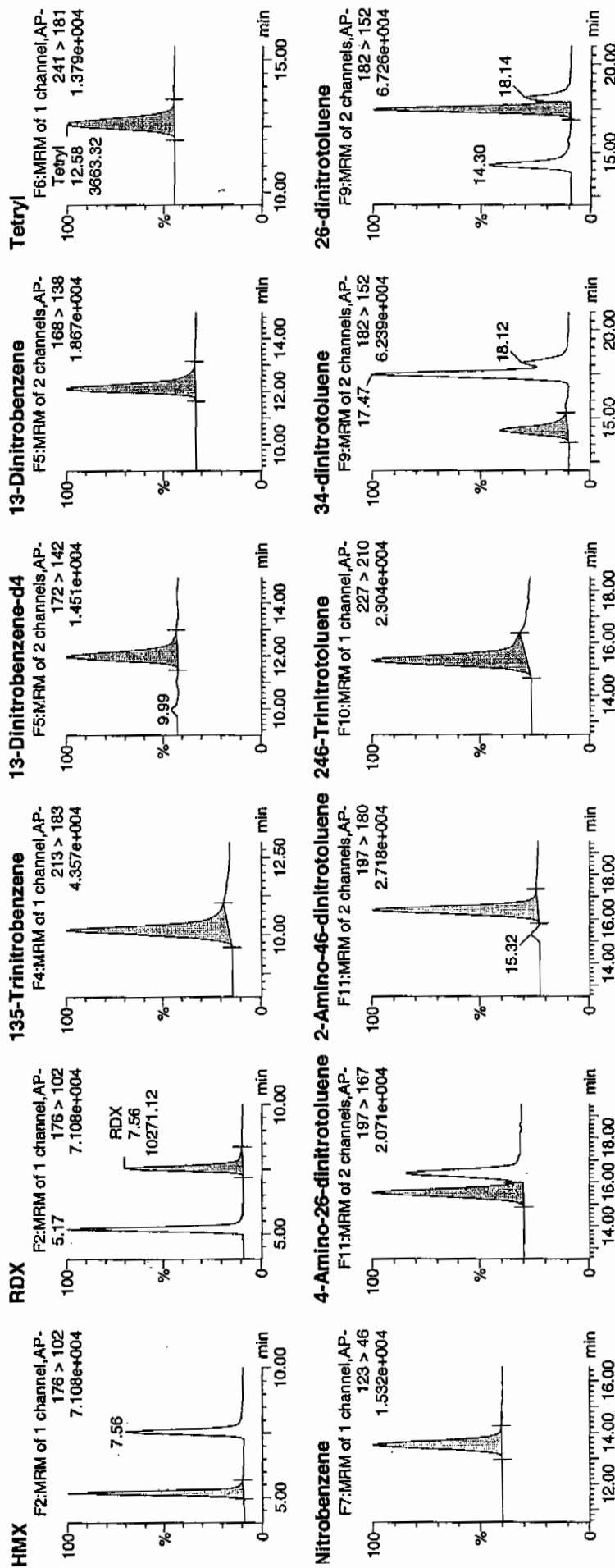
Date: 18-Jan-2010

Time: 22:54:11

ID: WXX100118-07CCV

Vial: 1:1,B

WXX
1/19/10

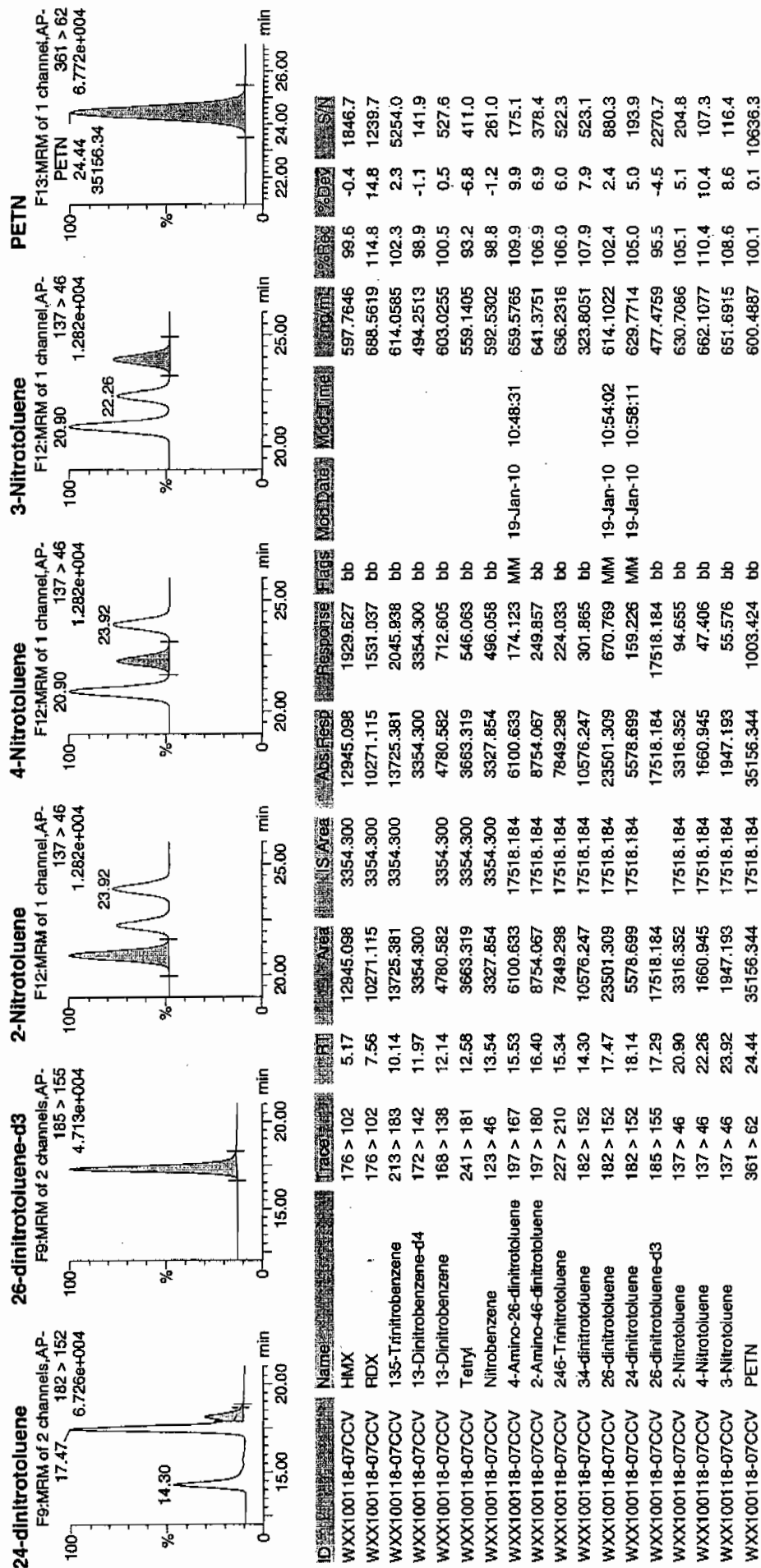


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Printed: Tue Jan 19 11:02:03 2010, Page 38 of 85

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

Dataset: C:\MASSLYNX\New_Exp\PROV011810expA.qld, Time: Tue Jan 19 10:59:58 2010



GRAND MEAN AVERAGE

Vendor: Restek
 Date of Analysis: 01/18/10
 Time of Injection: 2254
 Standard Number: WXX100118-07CCV
 Data File: EXP0118019a

HMX	99.6
RDX	114.8
135-TNB	102.3
13-DNB	100.5
Tetryl	93.2
Nitrobenzene	98.8
4A-26-DNT	109.9
2A-46-DNT	106.9
246-TNT	106.0
34-DNT(surr)	107.9
26-DNT	102.4
24-DNT	105.0
2-NT	105.1
4-NT	110.4
3-NT	108.6
PETN	100.1

Handwritten: 1/19/10

Total 1671.5

Handwritten: 01/19/10

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): 10-1100

Lab Code: GEI

GEL Sample ID: WXXCRI

GEL Data File EXP0118021a

Analysis Date: 18-JAN-10 23:53

LCMSMS ID: 903

Column ID Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	40	51.962	130	
1,3-Dinitrobenzene-d4	500	514.616	103	
2,4,6-Trinitrotoluene	40	33.453	84	
2,4-Dinitrotoluene	40	40.668	102	
2,6-Dinitrotoluene	40	41.074	103	
2,6-Dinitrotoluene-d3	500	616.151	123	
2-Amino-4,6-dinitrotoluene	40	34.84	87	
3,4-Dinitrotoluene	20	20.351	102	
4-Amino-2,6-dinitrotoluene	40	34.262	86	
HMX	40	41.795	104	
Nitrobenzene	40	37.04	93	
PETN	40	42.807	107	
RDX	40	38.304	96	
Tetryl	40	40.399	101	
m-Dinitrobenzene	40	37.182	93	
m-Nitrotoluene	40	38.459	96	
o-Nitrotoluene	40	31.698	79	
p-Nitrotoluene	40	30.243	76	

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\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118021a

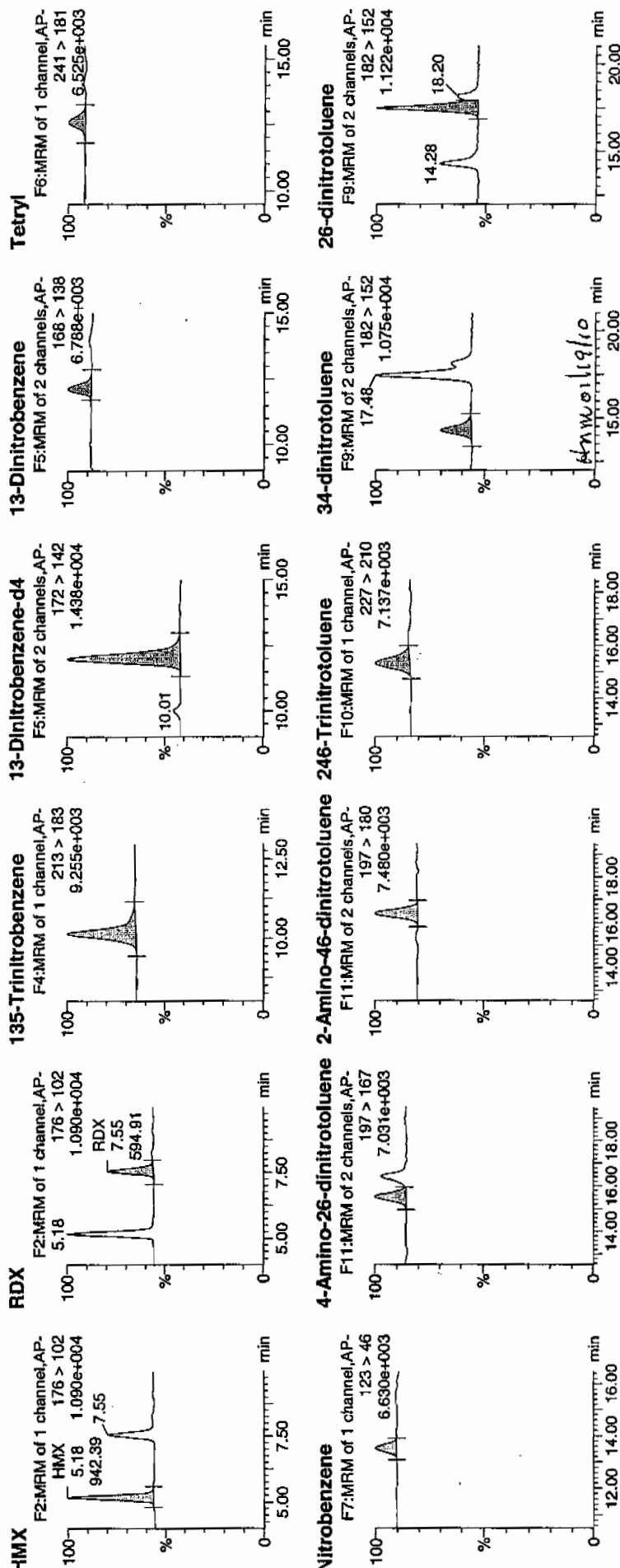
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Time: 23:53:08

D: WXX100118-08CRI

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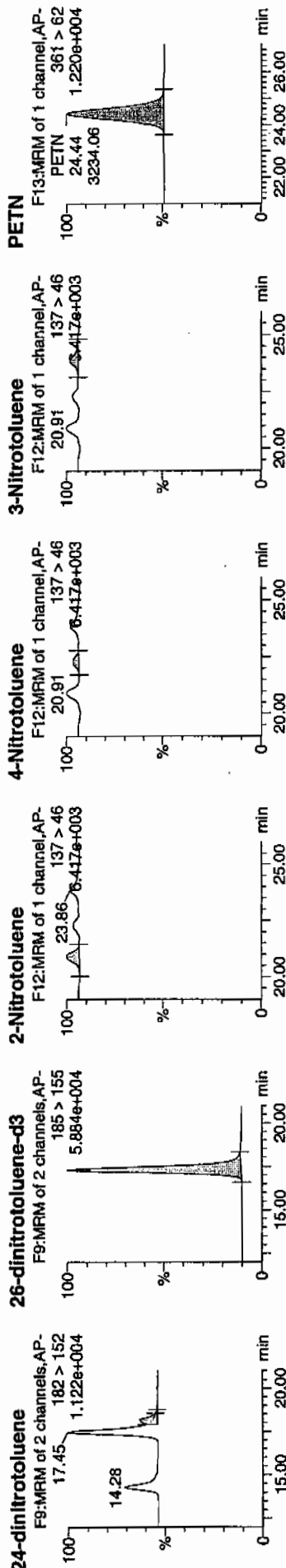
MMT
1/19/10



Printed: Tue Jan 19 11:02:03 2010, Page 42 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



ID	Name	Trace	RT	Area	IS Area	Abundance	Response	Flag	Mod	Date	Mod	Time	Area	%Area	Area	%Area
WXX100118-08CRI	HMX	176 > 102	5.18	942.393	3492.511	942.393	134.916	bb					41.7947	104.5	4.5	254.1
WXX100118-08CRI	RDX	176 > 102	7.55	594.913	3492.511	594.913	85.170	bb					38.3039	95.8	-4.2	134.6
WXX100118-08CRI	135-Trinitrobenzene	213 > 189	10.14	1209.311	3492.511	1209.311	173.129	bb					51.9622	129.9	29.9	190.4
WXX100118-08CRI	13-Dinitrobenzene-d4	172 > 142	12.00	3492.511	3492.511	3492.511	3492.511	bb					514.6165	102.9	2.9	318.5
WXX100118-08CRI	13-Dinitrobenzene	168 > 138	12.17	306.910	3492.511	306.910	43.938	bb					37.1818	93.0	-7.0	57.9
WXX100118-08CRI	Tetryl	241 > 181	12.61	275.585	3492.511	275.585	39.454	bb					40.3986	101.0	1.0	35.5
WXX100118-08CRI	Nitrobenzene	123 > 46	13.52	216.600	3492.511	216.600	31.009	bb					37.0398	92.6	-7.4	24.7
WXX100118-08CRI	4-Amino-26-dinitrotoluene	197 > 167	15.52	408.943	22606.063	408.943	9.045	MM	19-Jan-10	10:48:39			34.2624	85.7	-14.3	28.5
WXX100118-08CRI	2-Amino-46-dinitrotoluene	197 > 180	16.42	613.641	22606.063	613.641	13.572	bb					34.8402	87.1	-12.9	33.4
WXX100118-08CRI	246-Trinitrotoluene	227 > 210	15.33	532.583	22606.063	532.583	11.780	bb					33.4531	83.6	-16.4	68.4
WXX100118-08CRI	34-dinitrotoluene	182 > 152	14.28	857.752	22606.063	857.752	18.972	bb					20.3506	101.8	1.8	19.8
WXX100118-08CRI	26-dinitrotoluene	182 > 152	17.45	2028.394	22606.063	2028.394	44.864	MM	19-Jan-10	10:54:11			41.0738	102.7	2.7	55.3
WXX100118-08CRI	24-dinitrotoluene	182 > 152	18.20	464.880	22606.063	464.880	10.282	MM	19-Jan-10	10:58:21			40.6682	101.7	1.7	11.2
WXX100118-08CRI	26-dinitrotoluene-d3	185 > 155	17.30	22606.063	22606.063	22606.063	22606.063	bb					616.1513	123.2	23.2	1991.2
WXX100118-08CRI	2-Nitrotoluene	137 > 46	20.91	215.080	22606.063	215.080	4.757	bb					31.6980	79.2	-20.8	40.2
WXX100118-08CRI	4-Nitrotoluene	137 > 46	22.31	97.900	22606.063	97.900	2.165	bb					30.2427	75.6	-24.4	17.8
WXX100118-08CRI	3-Nitrotoluene	137 > 46	23.86	148.285	22606.063	148.285	3.280	bb					38.4587	96.1	-3.9	25.0
WXX100118-08CRI	PETN	361 > 62	24.44	3234.064	22606.063	3234.064	71.531	bb					42.8069	107.0	7.0	1225.9

✓

GRAND MEAN AVERAGE

Vendor: UltraScientific
 Date of Analysis 01/18/10
 Time of Injection 2353
 Standard Number WXX100118-08CRI
 Data File EXP0118021a

HMX	104.5
RDX	95.8
135-TNB	129.9
13-DNB	93.0
Tetryl	101.0
Nitrobenzene	92.6
4A-26-DNT	85.7
2A-46-DNT	87.1
246-TNT	83.6
34-DNT(surr)	101.8
26-DNT	102.7
24-DNT	101.7
2-NT	79.2
4-NT	75.6
3-NT	96.1
PETN	107.0

*mutd
1/19/10*

Total 1537.3

Average 96.1

check 01/19/10

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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0118032a

Analysis Date: 19-JAN-10 05:17

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
o-Nitrotoluene	600	655.642	109	
p-Nitrotoluene	600	732.167	122	*
1,3,5-Trinitrobenzene	600	634.051	106	
1,3-Dinitrobenzene-d4	500	394.416	79	*
2,4,6-Trinitrotoluene	600	675.704	113	
2,4-Dinitrotoluene	600	650.536	108	
2,6-Dinitrotoluene	600	616.93	103	
2,6-Dinitrotoluene-d3	500	412.842	83	
2-Amino-4,6-dinitrotoluene	600	700.536	117	
3,4-Dinitrotoluene	300	339.167	113	
4-Amino-2,6-dinitrotoluene	600	733.212	122	*
HMX	600	718.941	120	
Nitrobenzene	600	698.366	116	
PETN	600	712.727	119	
RDX	600	831.01	139	*
Tetryl	600	541.216	90	
m-Dinitrobenzene	600	655.489	109	
m-Nitrotoluene	600	699.981	117	

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 19 11:02:03 2010, Page 63 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\data\EXP0118032a

Date: 19-Jan-2010

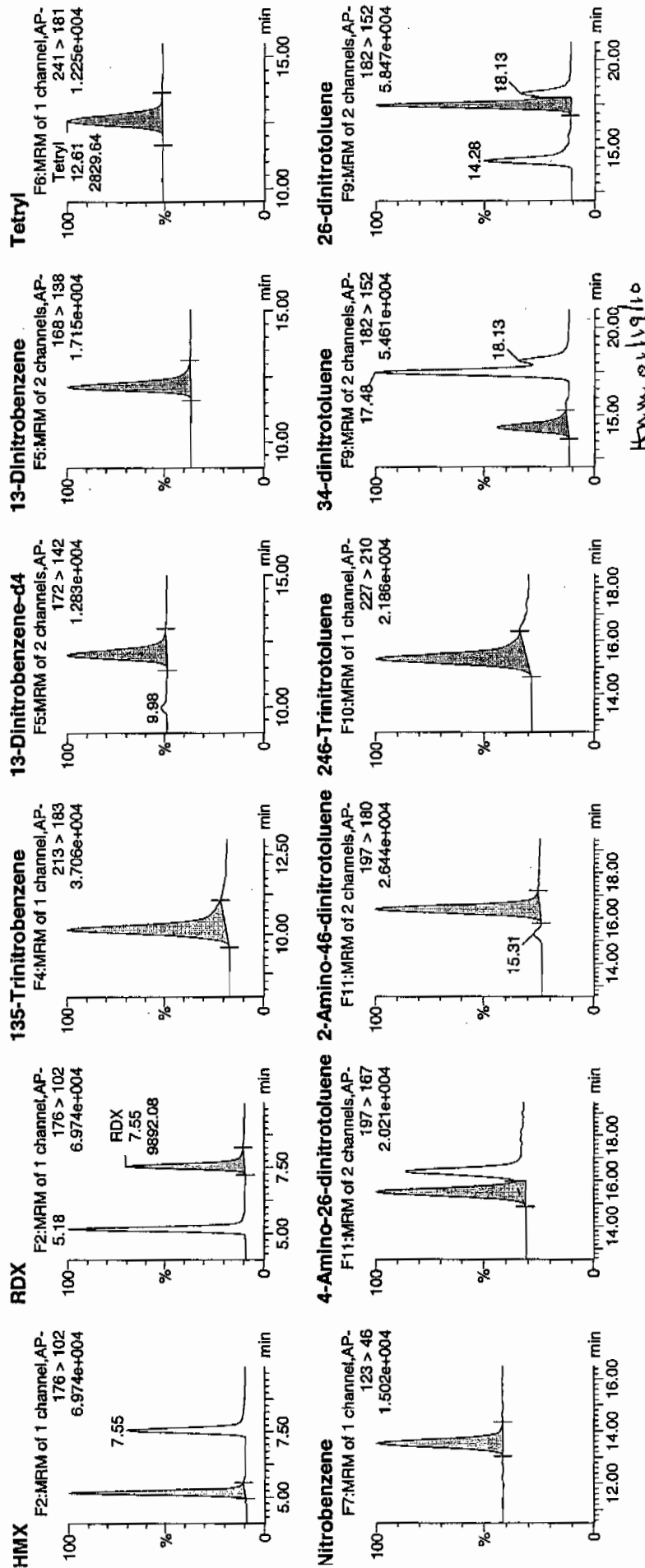
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ID: WXX100118-07CCV

Vial: 1:1,B

1/19/10

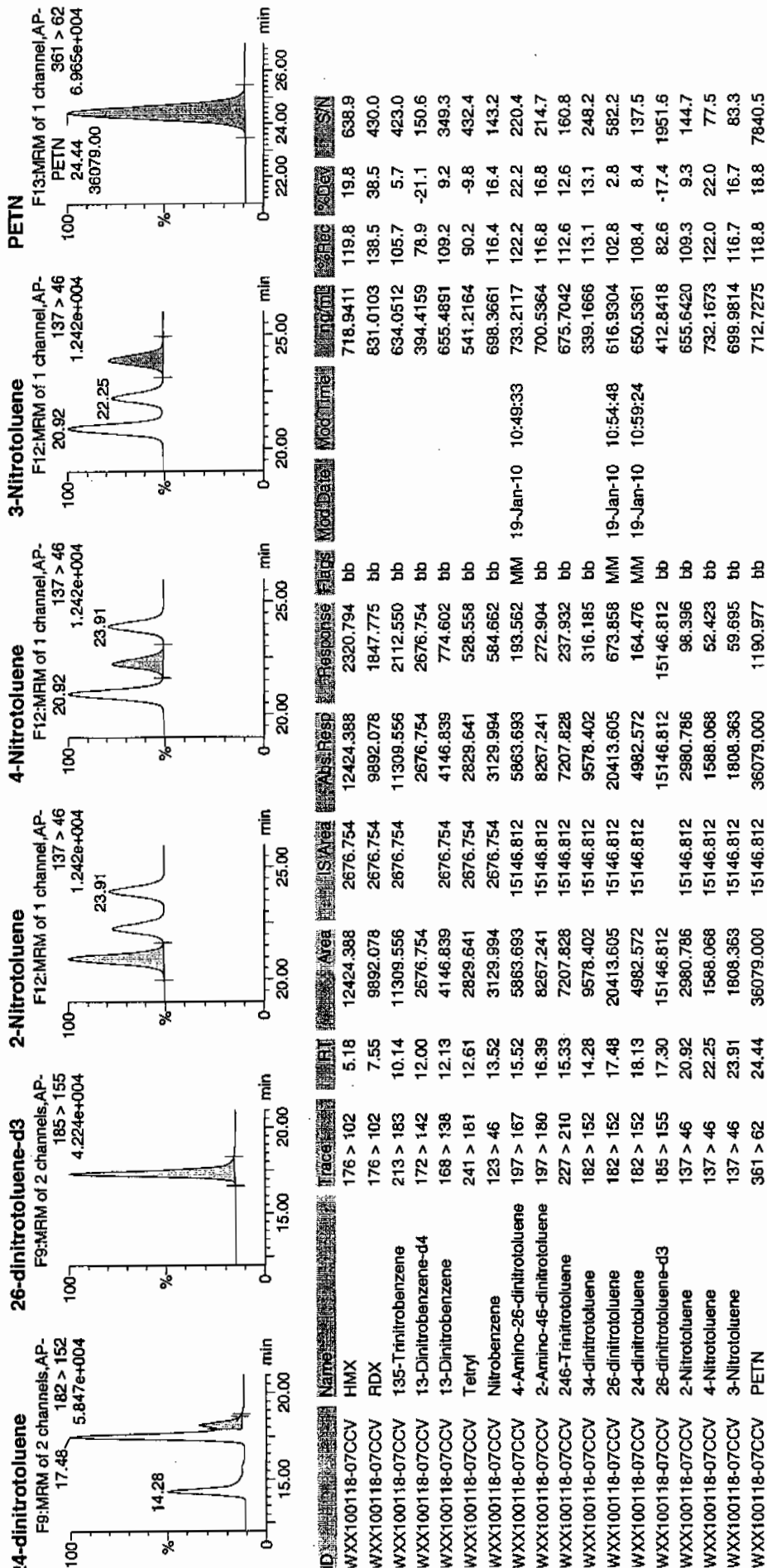
Page 226 of 1381



Printed: Tue Jan 19 11:02:03 2010, Page 64 of 85

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

Dataset: C:\MASSLYNX\New_Exp\PROX1810expA.qld, Time: Tue Jan 19 10:59:58 2010



GRAND MEAN AVERAGE

Vendor: Restek
 Date of Analysis: 01/19/10
 Time of Injection: 0517
 Standard Number: WXX100118-07CCV
 Data File: EXP0118032a

HMX	119.8
RDX	138.5
135-TNB	105.7
13-DNB	109.2
Tetryl	90.2
Nitrobenzene	116.4
4A-26-DNT	122.2
2A-46-DNT	116.8
246-TNT	112.6
34-DNT(surr)	113.1
26-DNT	102.8
24-DNT	108.4
2-NT	109.3
4-NT	122.0
3-NT	116.7
PETN	118.8

*MAF
1/19/10*

Total 1822.5

Average 113.9

Ham 01/19/10

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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0118034a

Analysis Date: 19-JAN-10 06:16

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
2,4,6-Trinitrotoluene	40	40.724	102	
2,4-Dinitrotoluene	40	36.114	90	
2,6-Dinitrotoluene	40	40.276	101	
2,6-Dinitrotoluene-d3	500	509.827	102	
2-Amino-4,6-dinitrotoluene	40	40.36	101	
3,4-Dinitrotoluene	20	21.051	105	
4-Amino-2,6-dinitrotoluene	40	45.261	113	
HMX	40	48.959	122	
Nitrobenzene	40	39.915	100	
PETN	40	57.829	145	*
RDX	40	47.995	120	
Tetryl	40	42.081	105	
m-Dinitrobenzene	40	38.582	96	
m-Nitrotoluene	40	52.934	132	*
o-Nitrotoluene	40	40.872	102	
p-Nitrotoluene	40	44.36	111	
1,3,5-Trinitrobenzene	40	47.44	119	
1,3-Dinitrobenzene-d4	500	540.81	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 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

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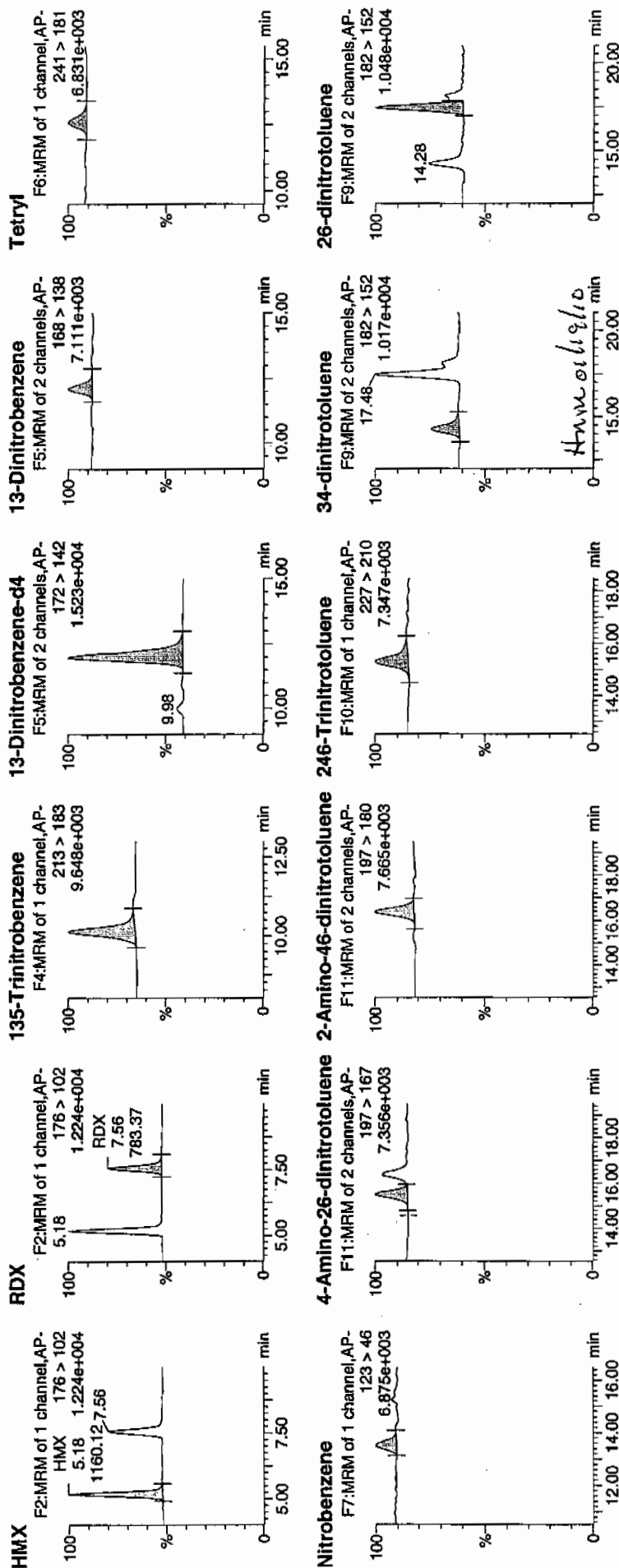
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ID: WXX100118-08CRI

Vial: 1:1,C

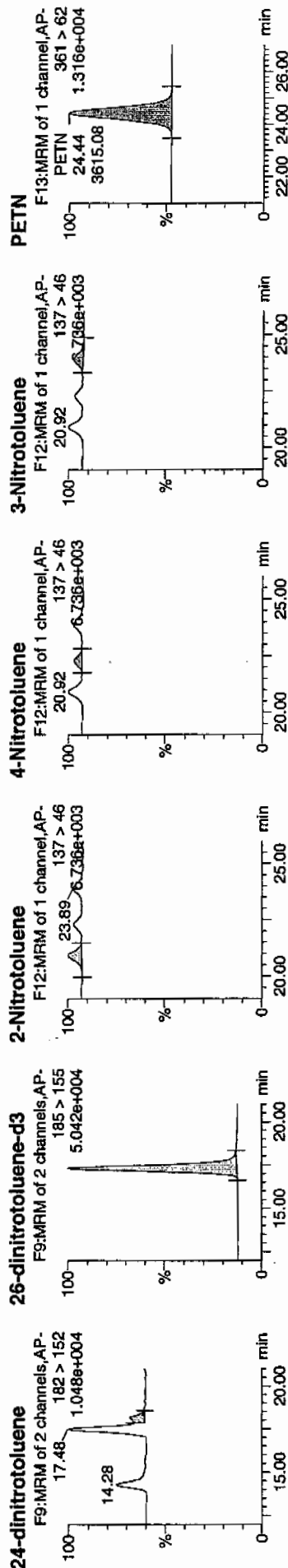
WXX
1/19/10



Quantify Sample Report

GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYN\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



ID	Name	Trace	RT	Area	S Area	Abs Resp	Response	Flags	Mod Date	Mod Time	Inj Time	%Rec	%OV	SN
WXX100118-08CRI	HMx	176 > 102	5.18	1160.117	3670.280	1160.117	158.042	bb			48.9586	122.4	22.4	287.5
WXX100118-08CRI	RDX	176 > 102	7.56	783.367	3670.280	783.367	106.718	bb			47.9947	120.0	20.0	164.9
WXX100118-08CRI	135-Trinitrobenzene	213 > 183	10.14	1160.259	3670.280	1160.259	158.061	bb			47.4398	118.6	18.6	165.9
WXX100118-08CRI	13-Dinitrobenzene-d4	172 > 142	11.97	3670.280		3670.280	3670.280	bb			540.8105	108.2	8.2	1095.7
WXX100118-08CRI	13-Dinitrobenzene	168 > 138	12.10	334.676	3670.280	334.676	45.593	bb			38.5818	96.5	-3.5	27.1
WXX100118-08CRI	Tetryl	241 > 181	12.56	301.671	3670.280	301.671	41.096	bb			42.0807	105.2	5.2	11.1
WXX100118-08CRI	Nitrobenzene	123 > 46	13.52	245.293	3670.280	245.293	33.416	bb			39.9148	99.8	-0.2	18.5
WXX100118-08CRI	4-Amino-2,6-dinitrotoluene	197 > 167	15.51	446.994	18705.123	446.994	11.948	MM	19-Jan-10	10:49:42	45.2606	113.2	13.2	35.4
WXX100118-08CRI	2-Amino-4,6-dinitrotoluene	197 > 180	16.39	588.199	18705.123	588.199	15.723	bb			40.3604	100.9	0.9	56.9
WXX100118-08CRI	2,4,6-Trinitrotoluene	227 > 210	15.30	536.462	18705.123	536.462	14.340	bb			40.7241	101.8	1.8	78.4
WXX100118-08CRI	3,4-dinitrotoluene	182 > 152	14.28	734.146	18705.123	734.146	19.624	bb			21.0505	105.3	5.3	37.4
WXX100118-08CRI	2,6-dinitrotoluene	182 > 152	17.48	1645.753	18705.123	1645.753	43.992	MM	19-Jan-10	10:54:54	40.2756	100.7	0.7	64.0
WXX100118-08CRI	2,4-dinitrotoluene	182 > 152	18.15	341.583	18705.123	341.583	9.131	MM	19-Jan-10	10:59:33	36.1139	90.3	-9.7	12.7
WXX100118-08CRI	2,6-dinitrotoluene-d3	185 > 155	17.30	18705.123		18705.123	18705.123	bb			509.8272	102.0	2.0	1813.3
WXX100118-08CRI	2-Nitrotoluene	137 > 46	20.92	229.474	18705.123	229.474	6.134	bb			40.8724	102.2	2.2	59.8
WXX100118-08CRI	4-Nitrotoluene	137 > 46	22.29	118.820	18705.123	118.820	3.176	bb			44.3600	110.9	10.9	32.6
WXX100118-08CRI	3-Nitrotoluene	137 > 46	23.89	168.877	18705.123	168.877	4.514	bb			52.9337	132.3	32.3	37.6
WXX100118-08CRI	PETN	361 > 62	24.44	3615.083	18705.123	3615.083	96.633	bb			57.8293	144.6	44.6	643.2

GRAND MEAN AVERAGE

Vendor: UltraScientific
 Date of Analysis 01/19/10
 Time of Injection 0616
 Standard Number WXX100118-08CRI
 Data File EXP0118034a

HMX	122.4
RDX	120.0
135-TNB	118.6
13-DNB	96.5
Tetryl	105.2
Nitrobenzene	99.8
4A-26-DNT	113.2
2A-46-DNT	100.9
246-TNT	101.8
34-DNT(surr)	105.3
26-DNT	100.7
24-DNT	90.3
2-NT	102.2
4-NT	110.9
3-NT	132.3
PETN	144.6

Handwritten: 1/19/10

Total 1764.7

Handwritten: HMX 01/19/10

Average 110.3

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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXP0118040a

Analysis Date: 19-JAN-10 09:13

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
1,3,5-Trinitrobenzene	600	631.181	105	
1,3-Dinitrobenzene-d4	500	413.146	83	
2,4,6-Trinitrotoluene	600	634.514	106	
2,4-Dinitrotoluene	600	610.908	102	
2,6-Dinitrotoluene	600	612.692	102	
2,6-Dinitrotoluene-d3	500	444.446	89	
2-Amino-4,6-dinitrotoluene	600	638.318	106	
3,4-Dinitrotoluene	300	307.641	103	
4-Amino-2,6-dinitrotoluene	600	658.172	110	
HMX	600	722.023	120	*
Nitrobenzene	600	635.366	106	
PETN	600	666.241	111	
RDX	600	774.185	129	*
Tetryl	600	563.562	94	
m-Dinitrobenzene	600	631.38	105	
m-Nitrotoluene	600	576.242	96	
o-Nitrotoluene	600	648.077	108	
p-Nitrotoluene	600	653.047	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
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

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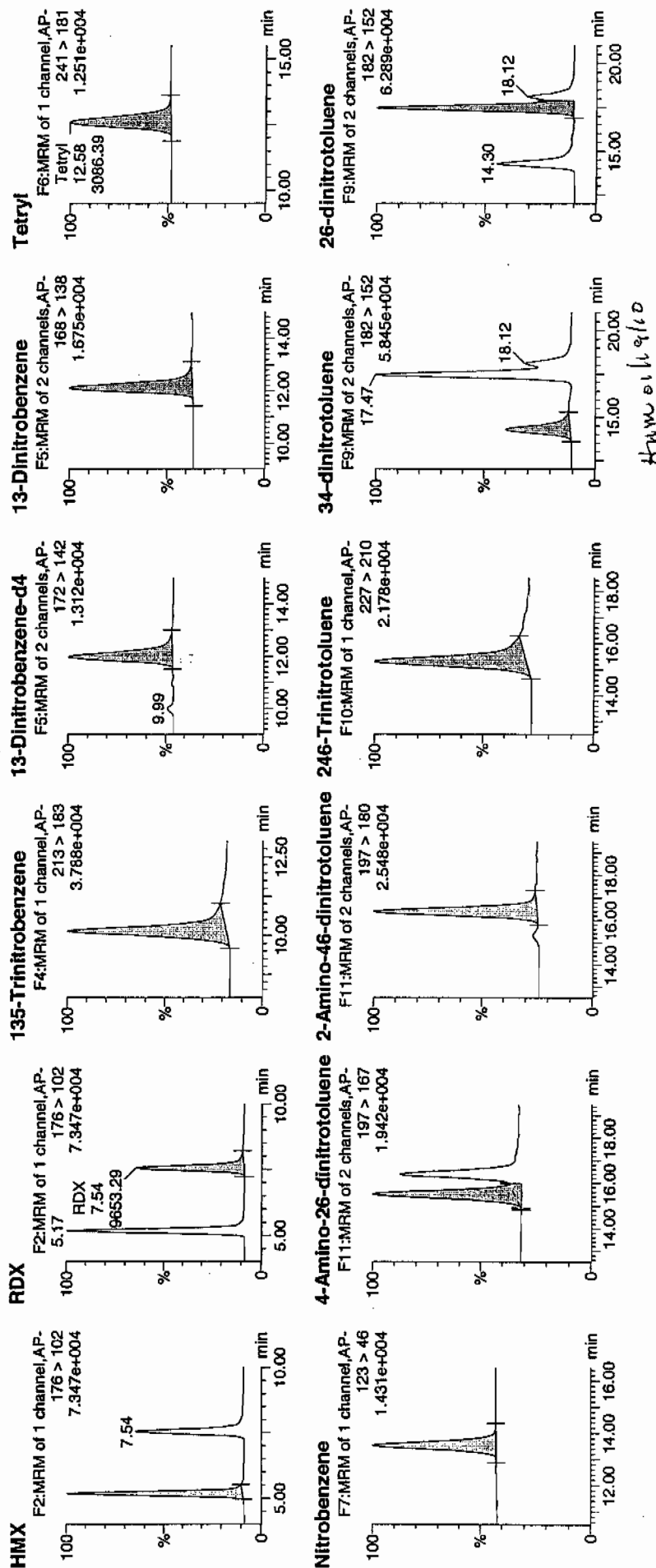
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ID: WXX100118-07CCV

Vial: 1:1,B

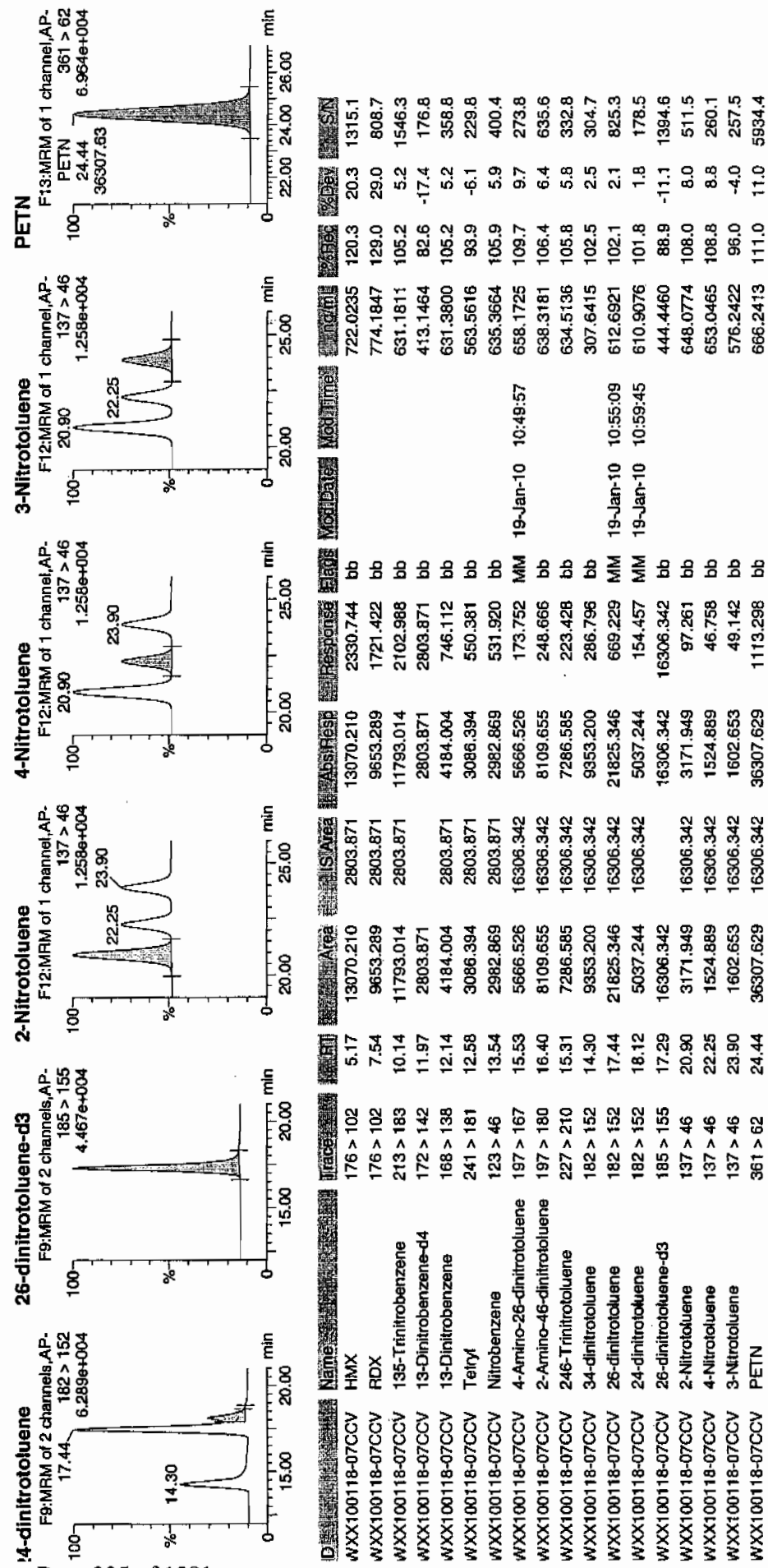
Report 1/19/10



Printed: Tue Jan 19 11:02:03 2010, Page 80 of 85

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

Dataset: C:\MASSLYNX\New_Exp\PROV011810expA.qld, Time: Tue Jan 19 10:59:58 2010



GRAND MEAN AVERAGE

Vendor: Restek
 Date of Analysis: 01/19/10
 Time of Injection: 0913
 Standard Number: WXX100118-07CCV
 Data File: EXP0118040a

HMX	120.3
RDX	129.0
135-TNB	105.2
13-DNB	105.2
Tetryl	93.9
Nitrobenzene	105.9
4A-26-DNT	109.7
2A-46-DNT	106.4
246-TNT	105.8
34-DNT(surr)	102.5
26-DNT	102.1
24-DNT	101.8
2-NT	108.0
4-NT	108.8
3-NT	96.0
PETN	111.0

*WAT
1/19/10*

Total 1711.6

Average 107.0

Sum 01/18/10

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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXP0118042a

Analysis Date: 19-JAN-10 10:12

LCMSMS ID: 903

Column ID: Phenomenex Ultracarb 5u ODS(20)

Compound	True	Found	Recovery	Q
Tetryl	40	39.539	99	
m-Dinitrobenzene	40	42.962	107	
m-Nitrotoluene	40	44.032	110	
o-Nitrotoluene	40	44.062	110	
p-Nitrotoluene	40	47.224	118	
1,3,5-Trinitrobenzene	40	47.396	118	
1,3-Dinitrobenzene-d4	500	569.733	114	
2,4,6-Trinitrotoluene	40	37.811	95	
2,4-Dinitrotoluene	40	35.368	88	
2,6-Dinitrotoluene	40	39.754	99	
2,6-Dinitrotoluene-d3	500	579.167	116	
2-Amino-4,6-dinitrotoluene	40	36.213	91	
3,4-Dinitrotoluene	20	19.032	95	
4-Amino-2,6-dinitrotoluene	40	39.56	99	
HMX	40	53.426	134	*
Nitrobenzene	40	44.713	112	
PETN	40	50.574	126	
RDX	40	49.946	125	

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\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118042a

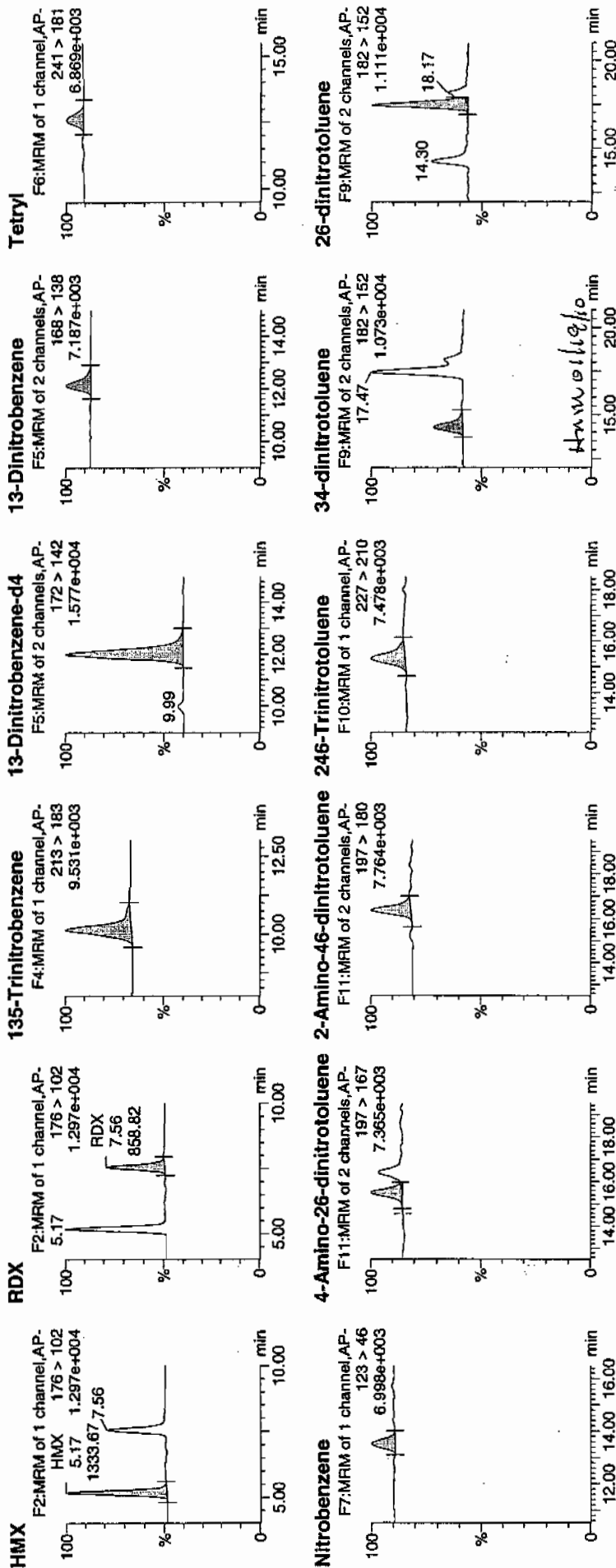
Date: 19-Jan-2010

Time: 10:12:54

ID: WXX100118-08CRI

Vial: 1:1,C

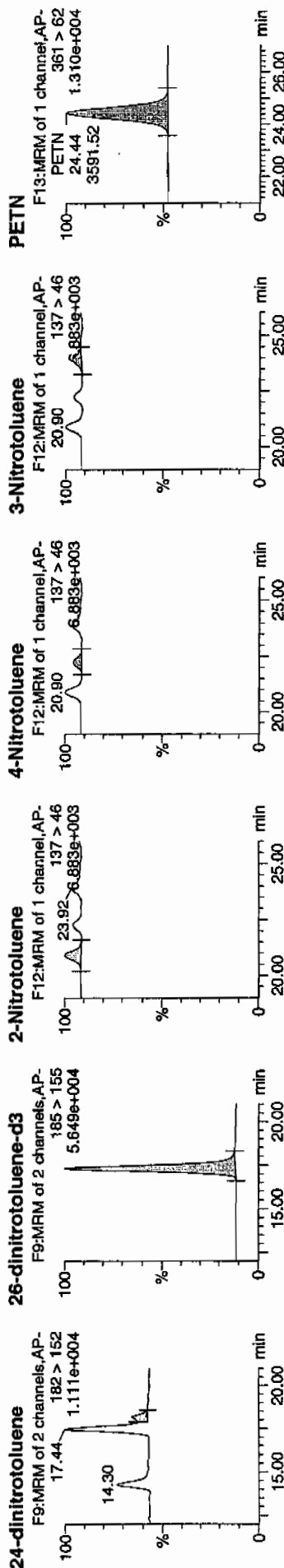
1/19/10



Quantify Sample Report

GEL Laboratories, LLC / Analyst : Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



Name	Trace	RT	Area	Staves	Tab5 Resp	Response	Mod Date	Mod Time	Intm	%Rec	%Dev	MSIN
HMx	176 > 102	5.17	1333.665	3866.563	1333.665	172.461	bb		53.4255	133.6	33.6	292.4
RDX	176 > 102	7.56	858.817	3866.563	858.817	111.057	bb		49.9462	124.9	24.9	166.5
135-Trinitrobenzene	213 > 183	10.14	1221.177	3866.563	1221.177	157.915	bb		47.3959	118.5	18.5	239.4
13-Dinitrobenzene-d4	172 > 142	12.00	3866.563		3866.563	3866.563	bb		569.7325	113.9	13.9	203.5
13-Dinitrobenzene	168 > 138	12.14	392.604	3866.563	392.604	50.769	bb		42.9622	107.4	7.4	51.7
Tetryl	241 > 181	12.58	298.612	3866.563	298.612	38.615	bb		39.5394	98.8	-1.2	27.5
Nitrobenzene	123 > 46	13.54	289.477	3866.563	289.477	37.433	bb		44.7133	111.8	11.8	25.4
4-Amino-26-dinitrotoluene	197 > 167	15.53	443.835	21249.145	443.835	10.444	MM	19-Jan-10 10:50:07	39.5603	98.9	-1.1	21.3
2-Amino-46-dinitrotoluene	197 > 180	16.40	599.542	21249.145	599.542	14.107	bb		36.2134	90.5	-9.5	46.5
246-Trinitrotoluene	227 > 210	15.35	565.831	21249.145	565.831	13.314	bb		37.8111	94.5	-5.5	47.9
34-dinitrotoluene	182 > 152	14.30	754.022	21249.145	754.022	17.742	bb		19.0320	95.2	-4.8	61.7
26-dinitrotoluene	182 > 152	17.44	1845.370	21249.145	1845.370	43.422	MM	19-Jan-10 10:55:26	39.7539	99.4	-0.6	71.0
24-dinitrotoluene	182 > 152	18.17	380.030	21249.145	380.030	8.942	MM	19-Jan-10 10:59:58	35.3684	88.4	-11.6	13.4
26-dinitrotoluene-d3	185 > 155	17.31	21249.145		21249.145	21249.145	bb		579.1671	115.8	15.8	2376.2
2-Nitrotoluene	137 > 46	20.90	281.027	21249.145	281.027	6.613	bb		44.0620	110.2	10.2	22.8
4-Nitrotoluene	137 > 46	22.26	143.694	21249.145	143.694	3.381	bb		47.2237	118.1	18.1	11.7
3-Nitrotoluene	137 > 46	23.92	159.584	21249.145	159.584	3.755	bb		44.0322	110.1	10.1	12.0
PETN	361 > 62	24.44	3591.523	21249.145	3591.523	84.510	bb		50.5740	126.4	26.4	1221.5

GRAND MEAN AVERAGE

Vendor: UltraScientific
 Date of Analysis 01/19/10
 Time of Injection 1012
 Standard Number WXX100118-08CRI
 Data File EXP0118042a

HMX	133.6
RDX	124.9
135-TNB	118.5
13-DNB	107.4
Tetryl	98.8
Nitrobenzene	111.8
4A-26-DNT	98.9
2A-46-DNT	90.5
246-TNT	94.5
34-DNT(surr)	95.2
26-DNT	99.4
24-DNT	88.4
2-NT	110.2
4-NT	118.1
3-NT	110.1
PETN	126.4

*mutt
1/19/10*

Total 1726.7

Average 107.9

Hyd 01/18/10

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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01130013.wiff

Analysis Date: 13-JAN-10 17:25

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	103	103	
2,6-Diamino-4-nitrotoluene	100	92.9	93	
3,4-Dinitrotoluene	50	46.8	94	
3,5-Dinitroaniline	100	100	100	
TATB	100	93.9	94	
tris(o-cresyl) phosphate	100	98.5	99	

Recovery Limits:

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

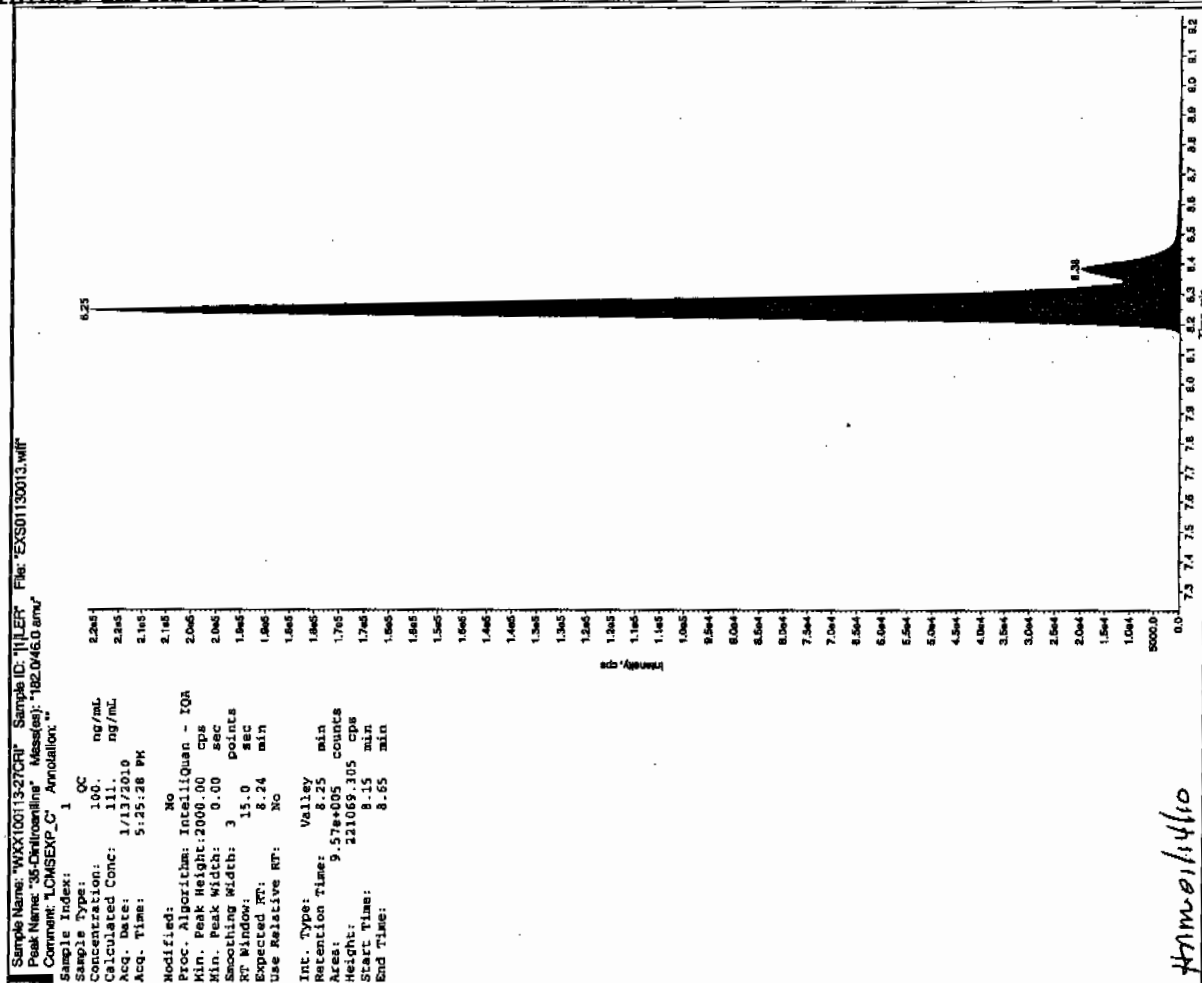
2,4-Diamino-6-nitrotoluene 50-150%

Other Target Analytes 70-130%

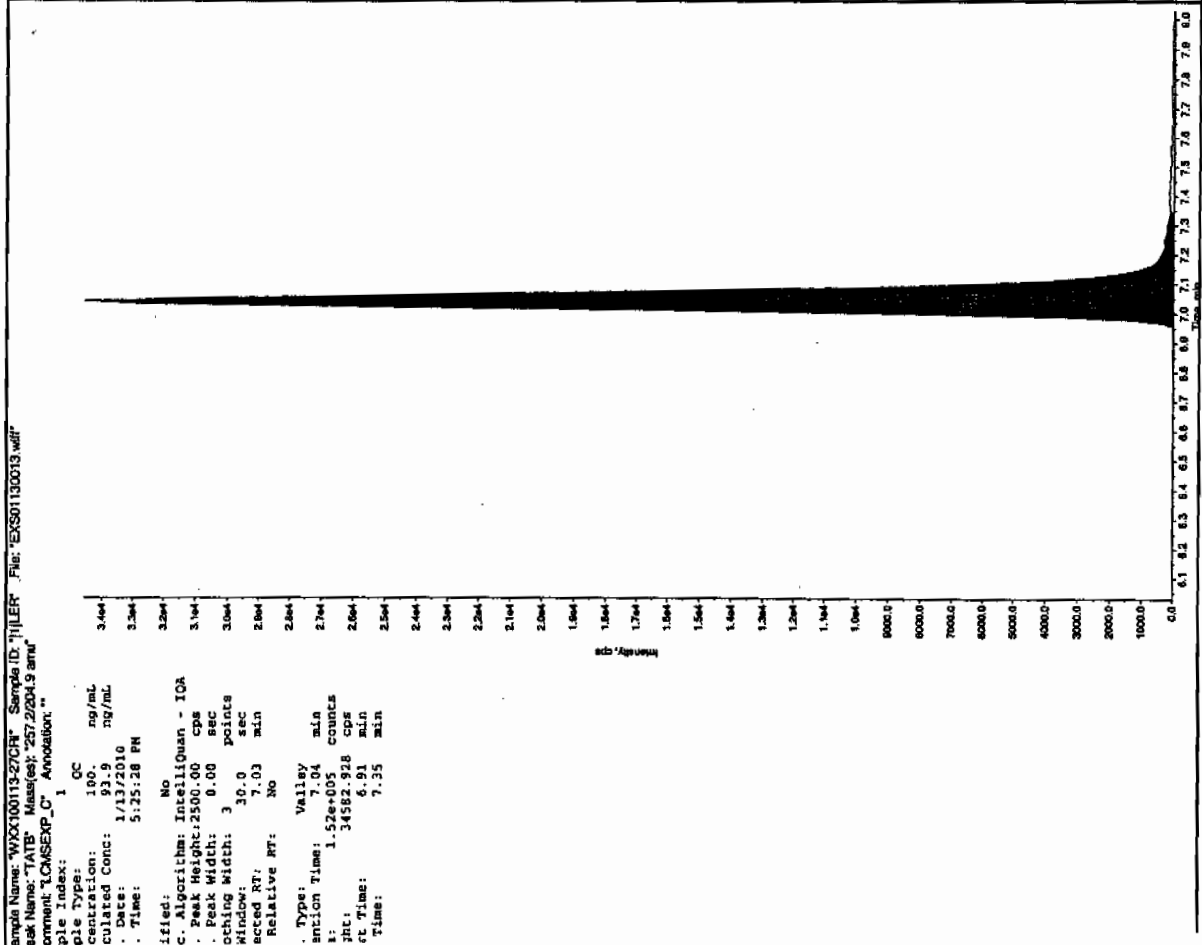
Column used to flag Recovery outside of Limits

* Value outside of Recovery Limits

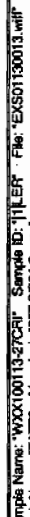
01/12/10
2009
2009



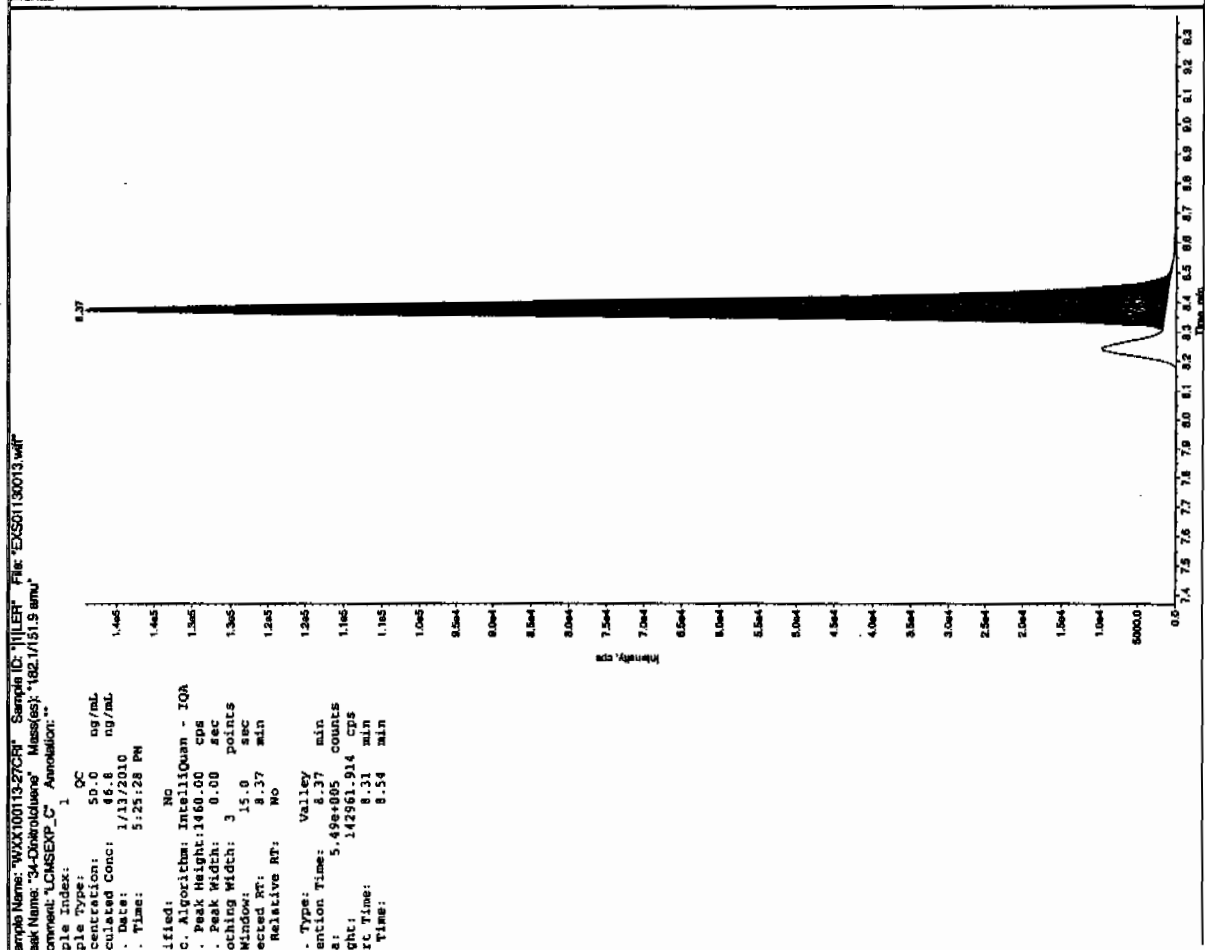
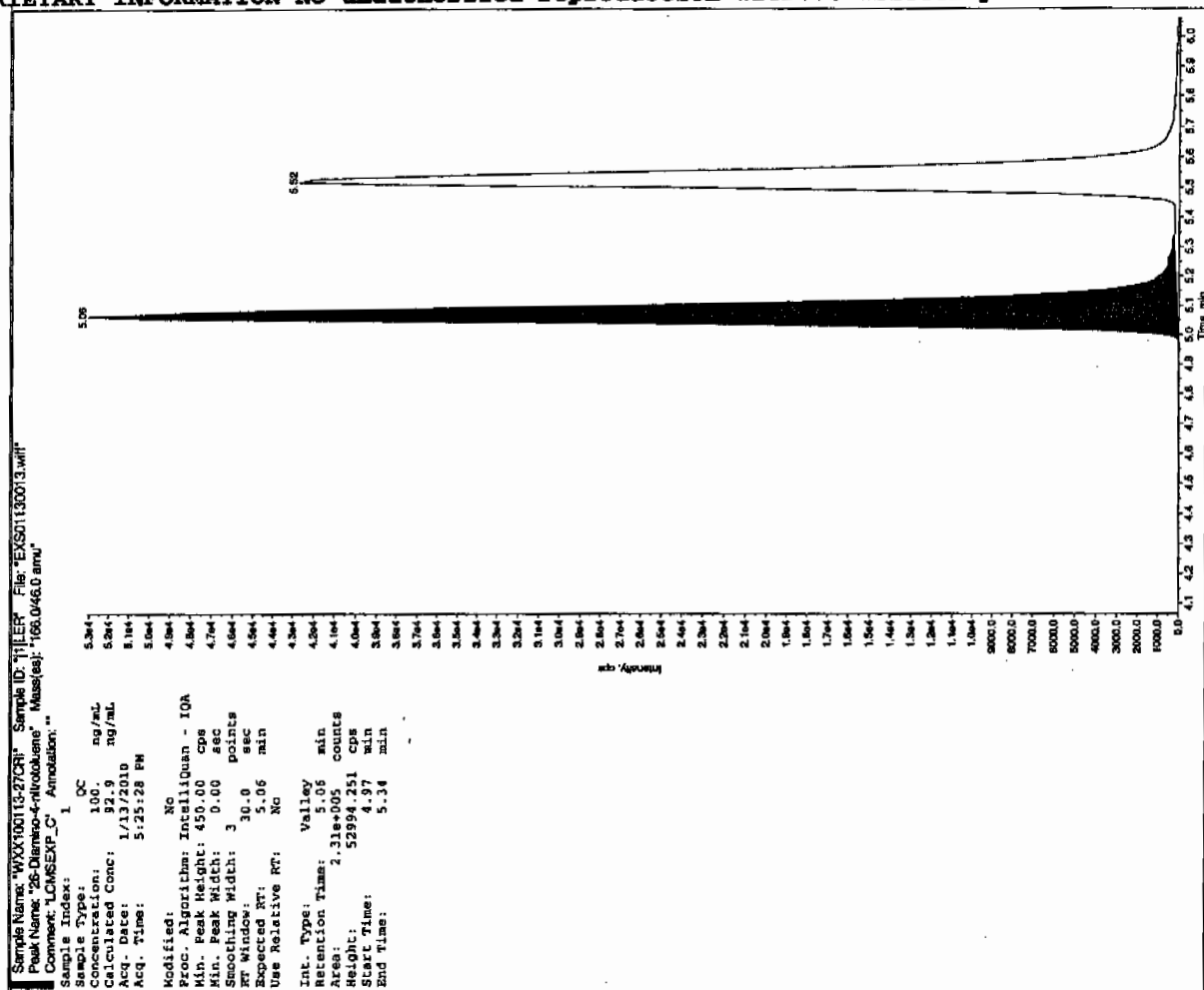
Hammer/410



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



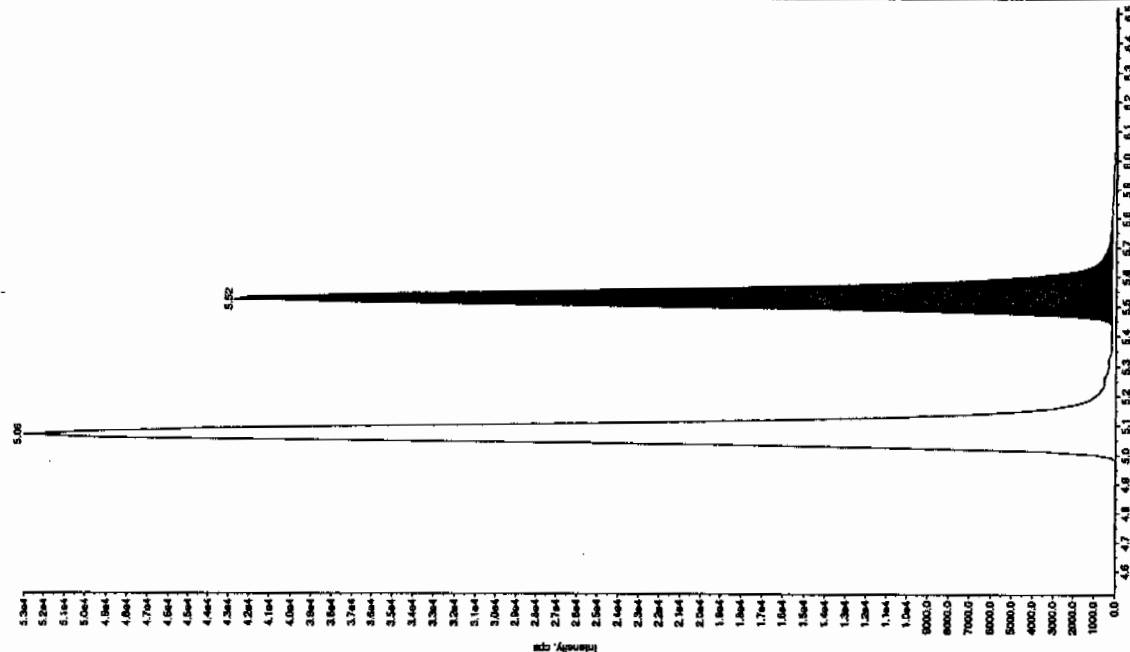
L SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4



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

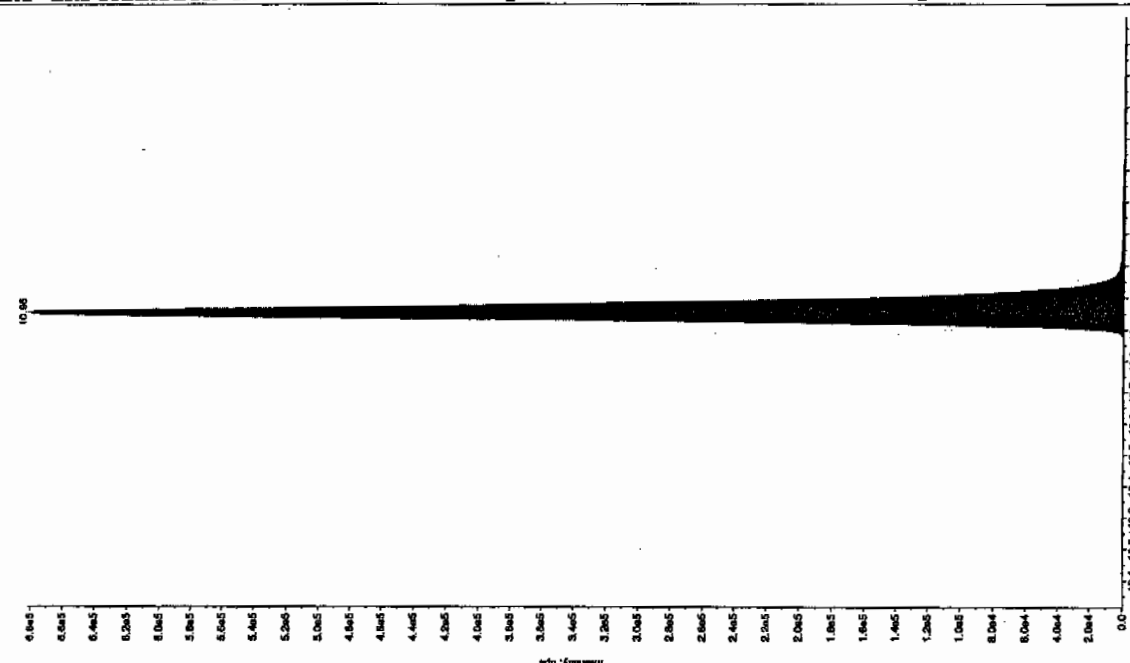
Sample Name: "WXX100113-2709" Sample ID: "JLLEF" File: "EXS01130013.wif"
 Peak Name: "24-Oxotetrahydro-2H-pyran-2-yl phosphate" Mass(es): "166.0/46.0 amu"
 Comment: "LCMS-EXP_C" Annotation: "

File Type: 1 OC
 Concentration: 100 ng/mL
 Calculated Conc: 103 ng/mL
 Date: 1/13/2010
 Time: 5:25:28 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 350.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 30.00 points
 RT Window: 30.0 sec
 Expected RT: 5.52 min
 Use Relative RT: No
 Inf. Type: Valley
 Retention Time: 5.52 min
 Area: 1.78e+005 counts
 Height: 42512.730 cps
 Start Time: 5.43 min
 End Time: 5.61 min



Sample Name: "WXX100113-2709" Sample ID: "JLLEF" File: "EXS01130013.wif"
 Peak Name: "1,3-bis(4-oxocyclohex-2-en-1-yl) phosphate" Mass(es): "360.1/91.0 amu"
 Comment: "LCMS-EXP_C" Annotation: "

File Type: 1 OC
 Concentration: 100 ng/mL
 Calculated Conc: 98.5 ng/mL
 Date: 1/13/2010
 Time: 5:25:28 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 1.00e4 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 30.00 points
 RT Window: 30.0 sec
 Expected RT: 10.9 min
 Use Relative RT: No
 Inf. Type: Valley
 Retention Time: 11.0 min
 Area: 2.45e+006 counts
 Height: 681437.744 cps
 Start Time: 10.9 min
 End Time: 11.2 min



7A
Explosives Continuing Calibration Verification

Lab Name: GEL Laboratories LLC

GEL Job No (SDG): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01130024.wiff

Analysis Date: 13-JAN-10 20:18

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	500	494	99	
2,6-Diamino-4-nitrotoluene	500	491	98	
3,4-Dinitrotoluene	250	236	95	
3,5-Dinitroaniline	500	466	93	
TATB	500	465	93	
tris(o-cresyl) phosphate	500	499	100	

Recovery Limits:

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

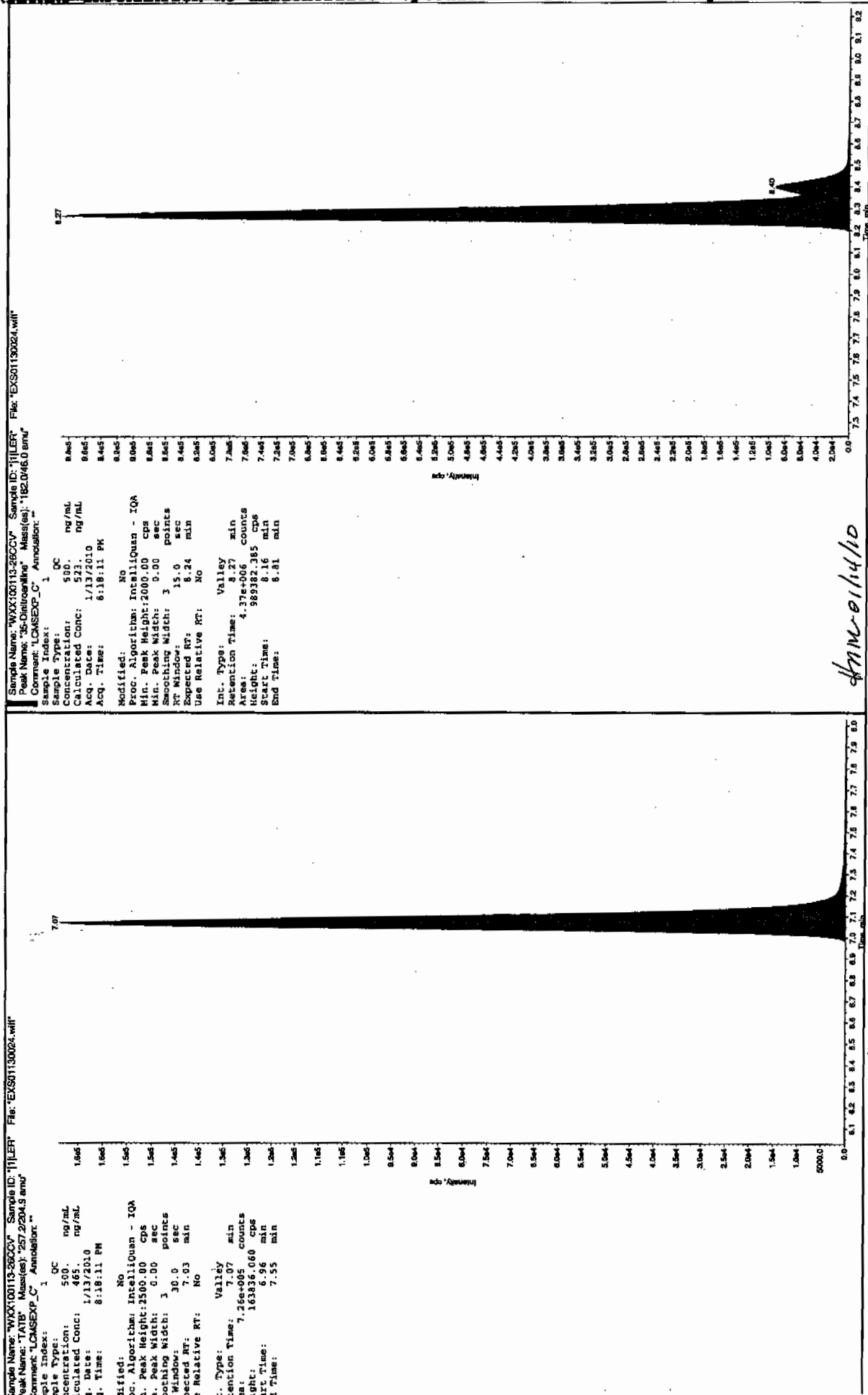
2,4-Diamino-6-nitrotoluene 70-130%

Other Target Analytes 80-120%

Column used to flag Recovery outside of Limits

* Value outside of Recovery Limits

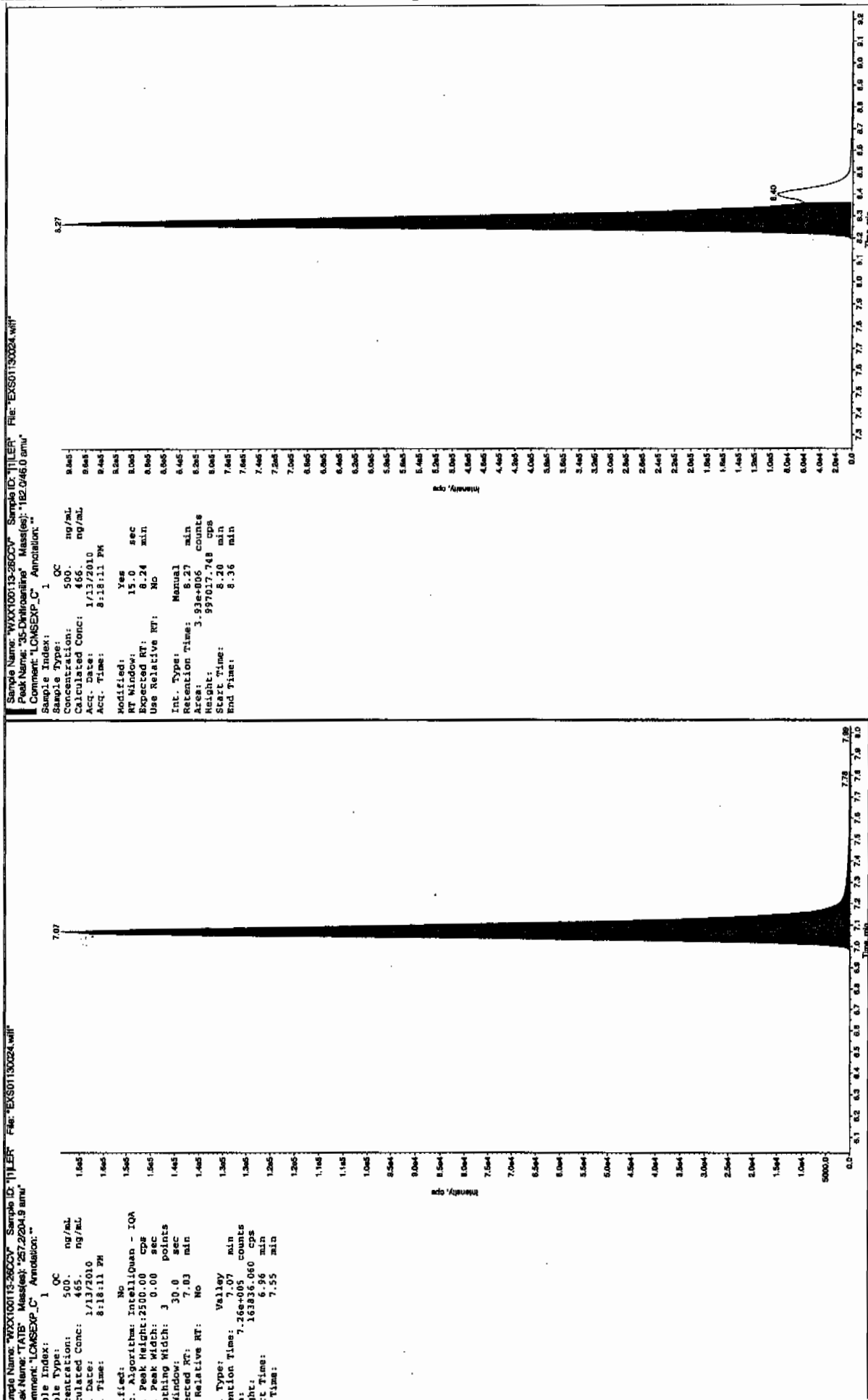
11/13/10
JLW



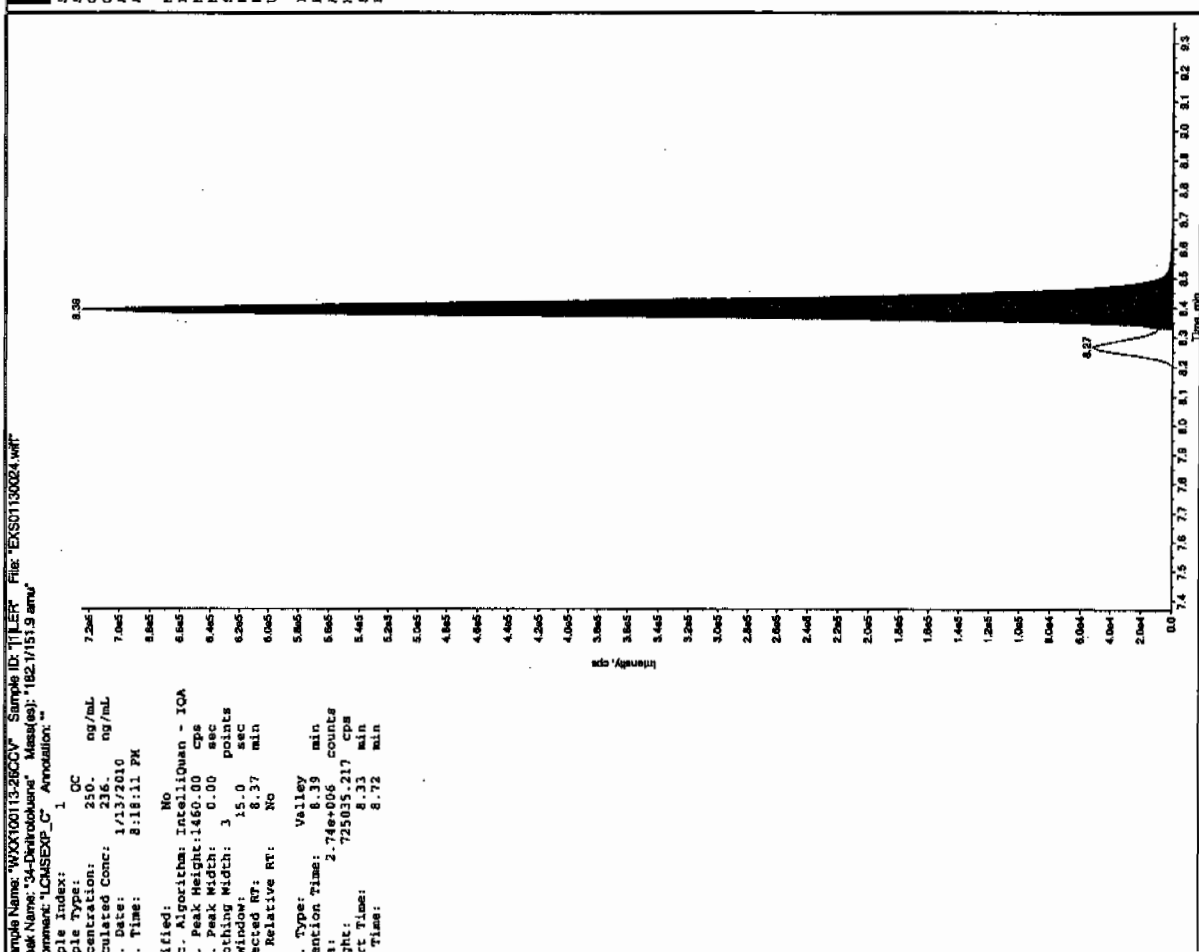
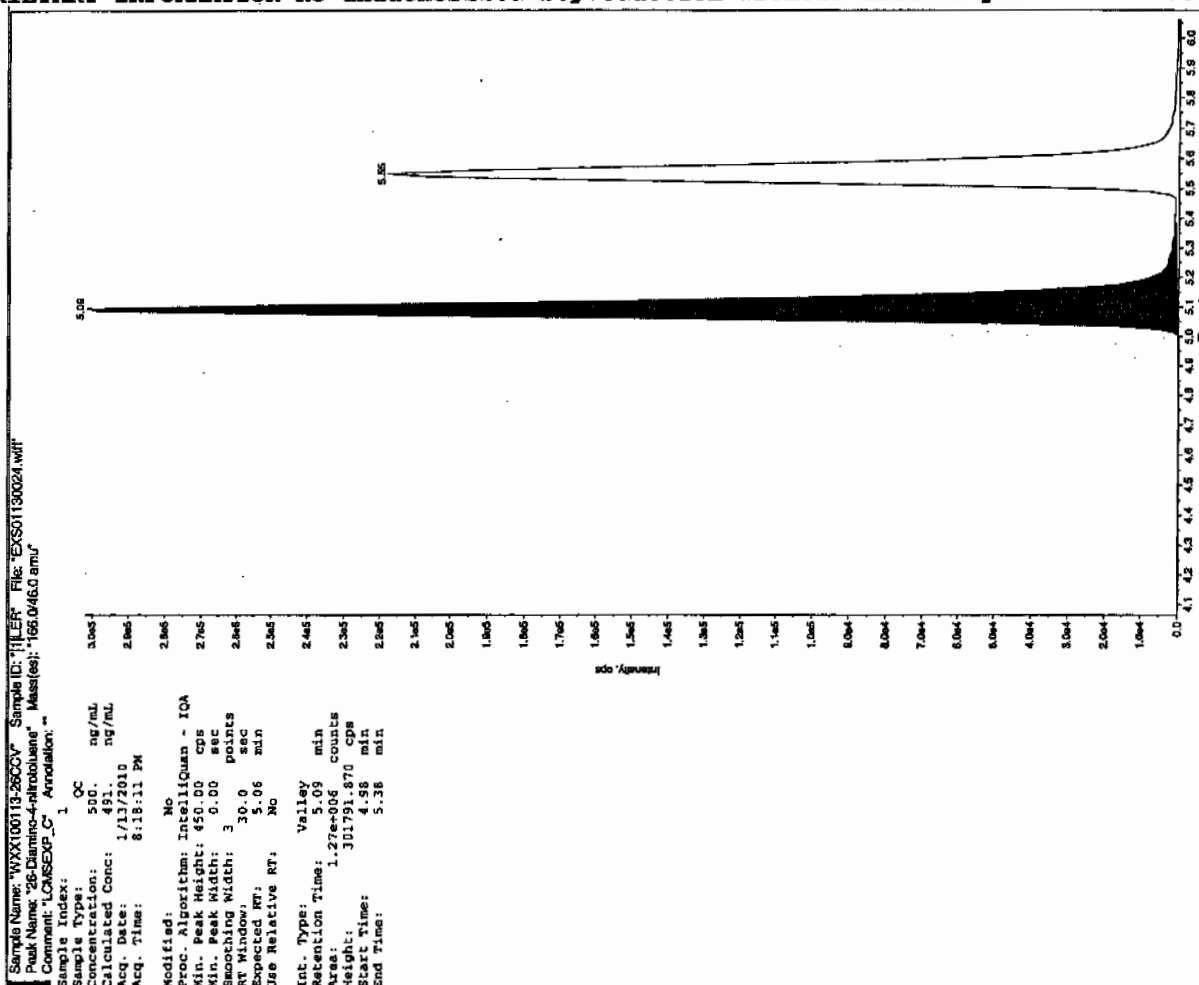
JLW-01/14/10

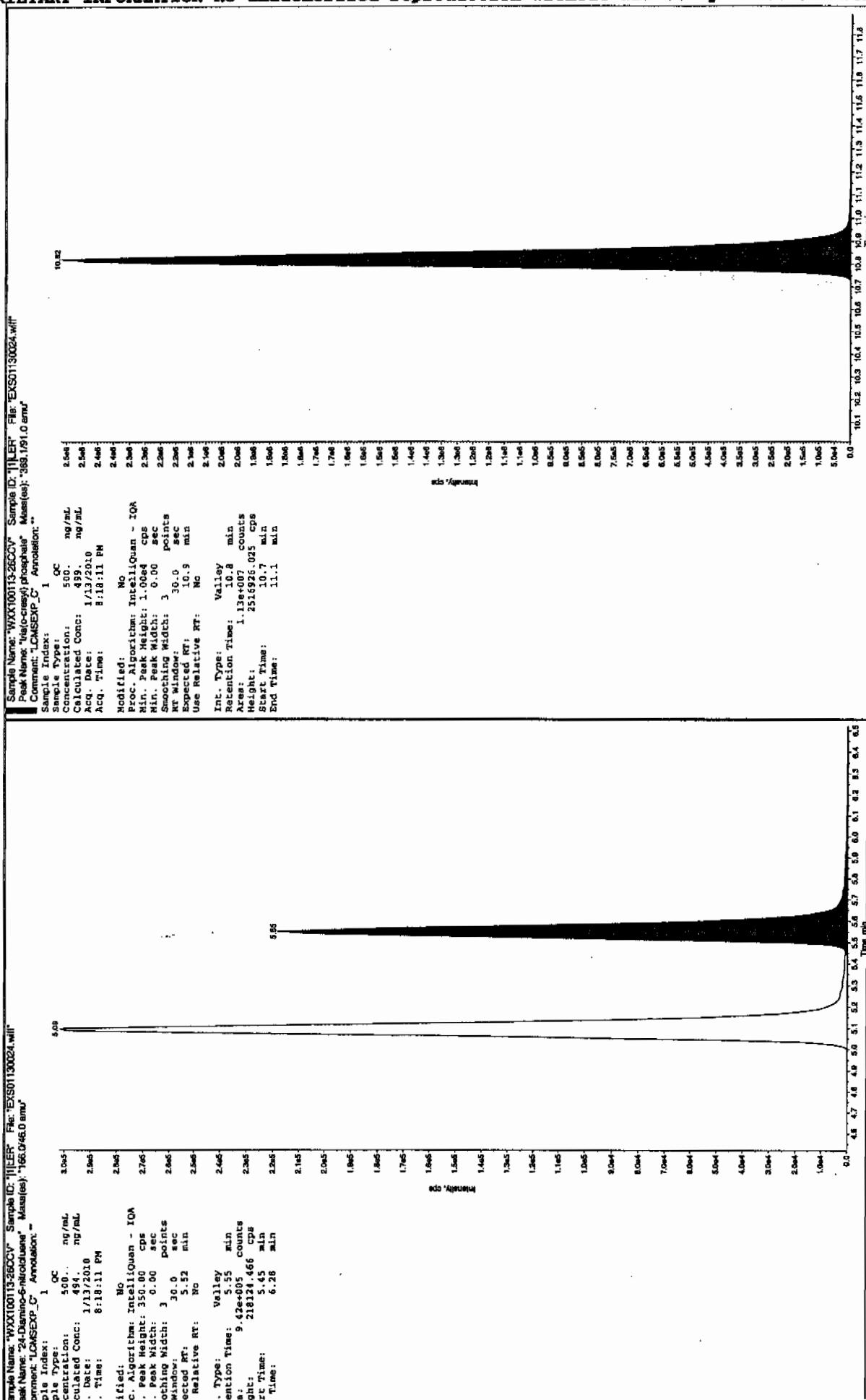
EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

01/13/2010
07:02:02



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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01130026.wiff

Analysis Date: 13-JAN-10 20:49

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	104	104	
2,6-Diamino-4-nitrotoluene	100	98.3	98	
3,4-Dinitrotoluene	50	48.8	98	
3,5-Dinitroaniline	100	97.8	98	
TATB	100	92.2	92	
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

11/13/10
2008-01/14/10

File: "EXS01130026.wif"

Sample Name: "WXX100113-27CR" Sample ID: "J1LER"

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

Comment: "LCMSEXP_C" Annotation: ""

File Index: 1

Sample Type: 100. ng/mL

Concentration: 32.2 ng/mL

Acq. Date: 1/13/2010

Acq. Time: 8:49:34 PM

Modified: No

Proc. Algorithm: IntelliQuan - TOA

Min. Peak Height: 2500.00 cps

Min. Peak Width: 0.00 sec

Sampling Width: 3 points

Window: 30.0 sec

Expected RT: 7.03 min

Use Relative RT: No

Int. Type: Valley

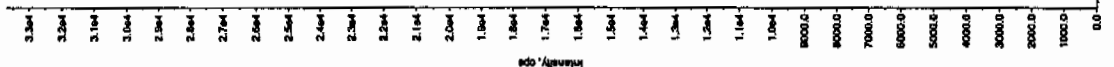
Retention Time: 7.06 min

Area: 1.49e+005 counts

Height: 33690.533 cps

Start Time: 6.89 min

End Time: 7.40 min



File: "EXS01130026.wif"

Sample Name: "WXX100113-27CR" Sample ID: "J1LER"

Peak Name: "35-Dinitroaniline" Mass(es): "182.046.0 amu"

Comment: "LCMSEXP_C" Annotation: ""

File Index: 1

Sample Type: 100. ng/mL

Concentration: 109. ng/mL

Acq. Date: 1/13/2010

Acq. Time: 8:49:38 PM

Modified: No

Proc. Algorithm: IntelliQuan - TOA

Min. Peak Height: 2000.00 cps

Min. Peak Width: 0.00 sec

Sampling Width: 3 points

Window: 15.0 sec

Expected RT: 8.24 min

Use Relative RT: No

Int. Type: Valley

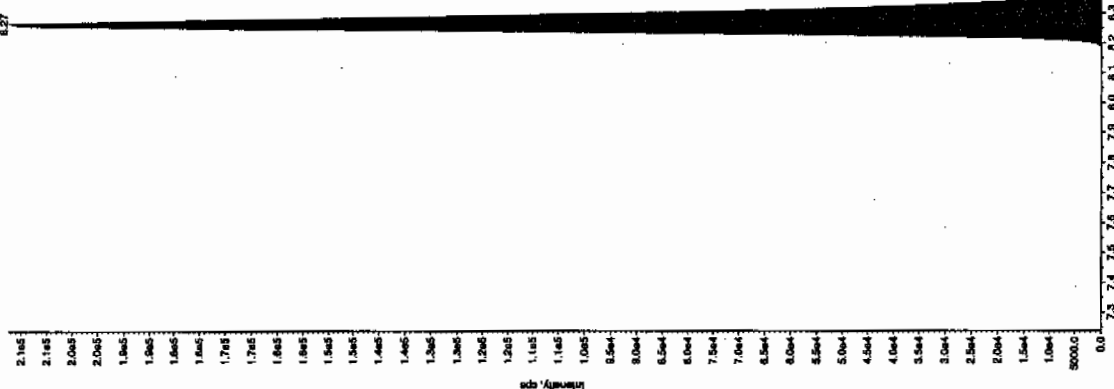
Retention Time: 8.27 min

Area: 9.37e+005 counts

Height: 212381.866 cps

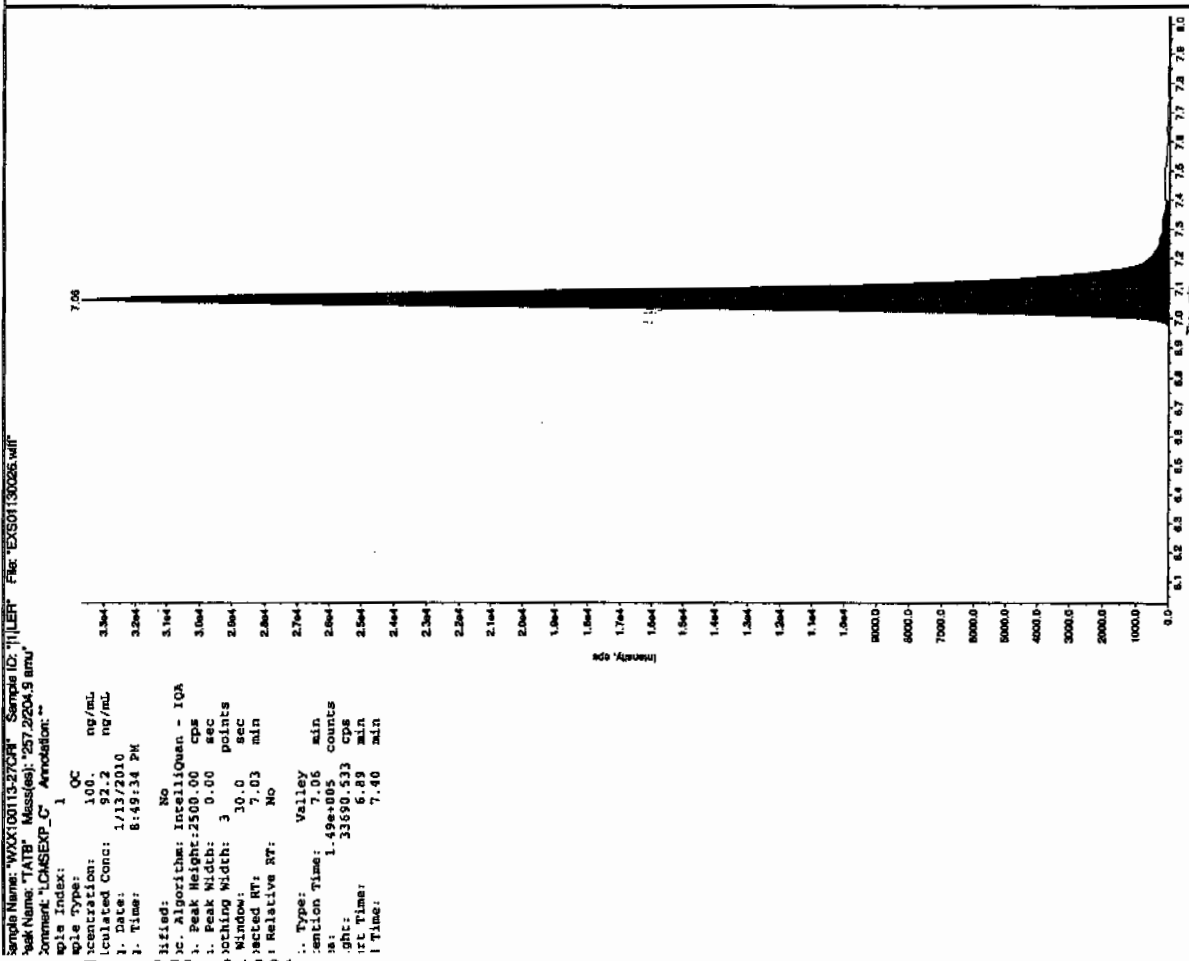
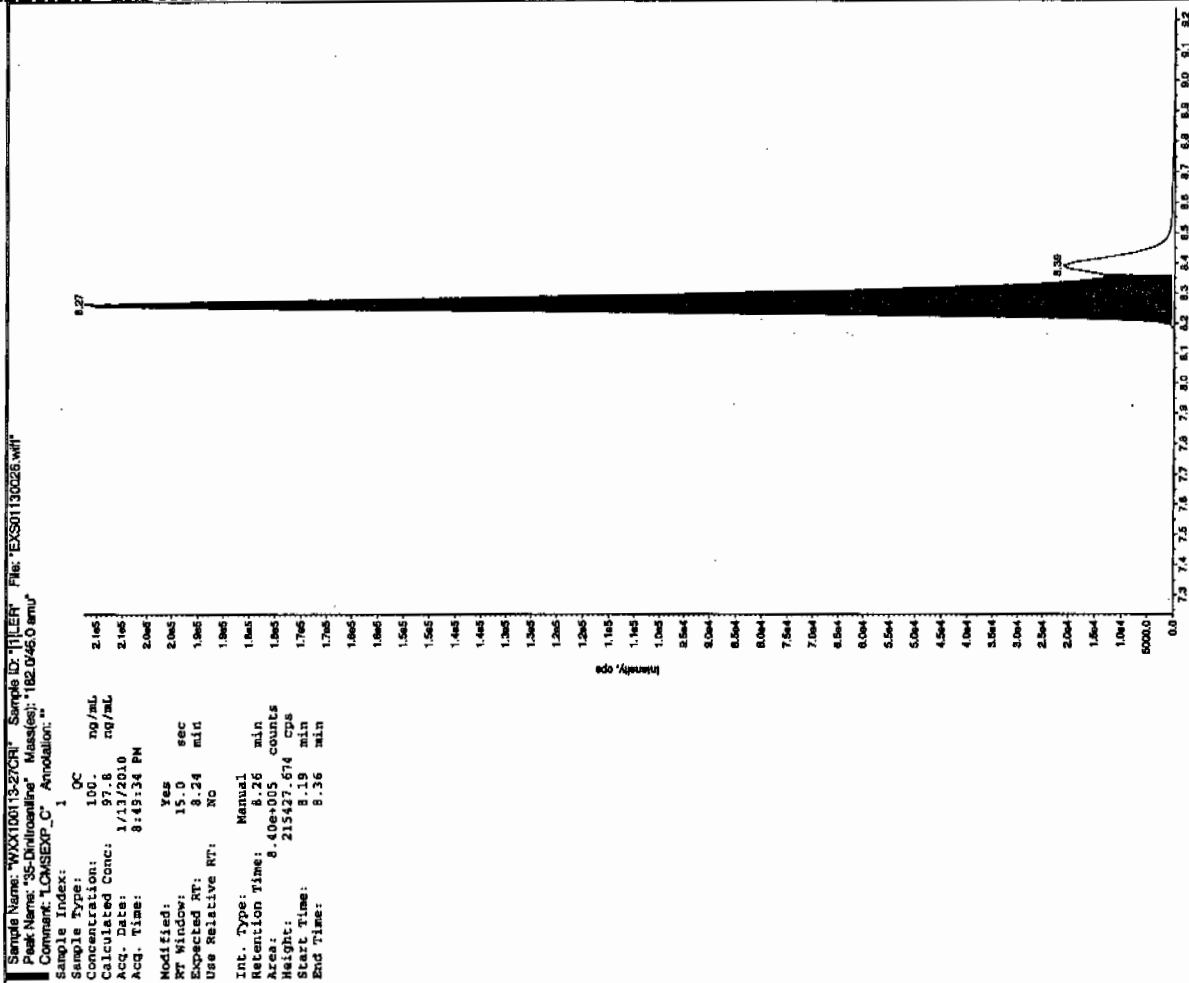
Start Time: 8.13 min

End Time: 8.82 min



2008-01/14/10

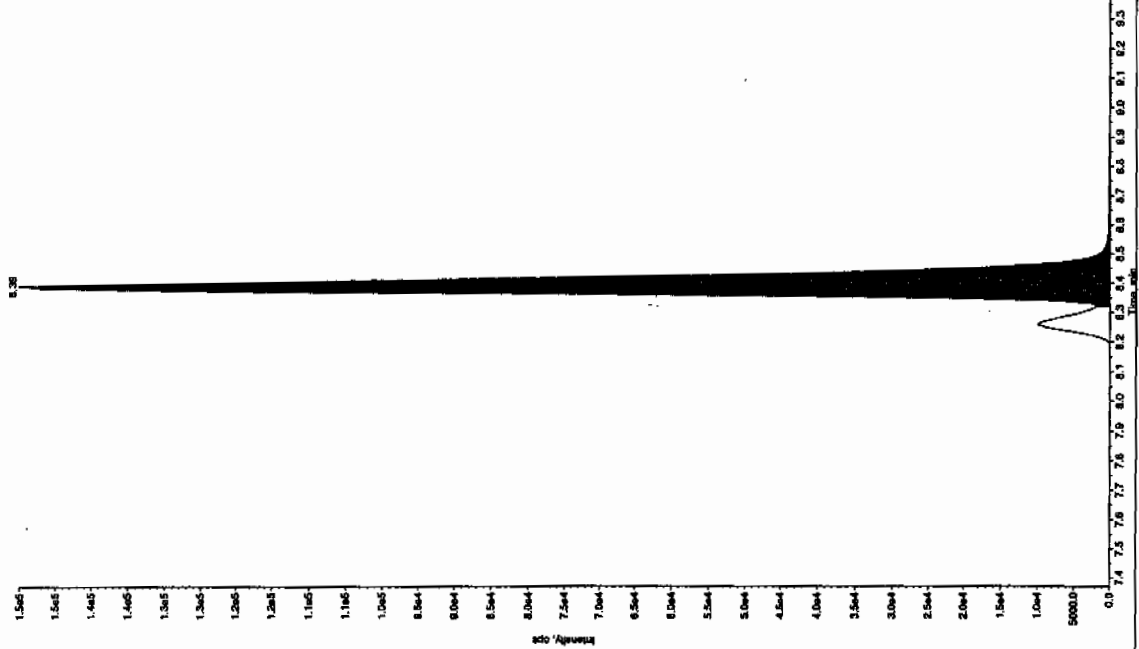
11/13/10
20202020



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

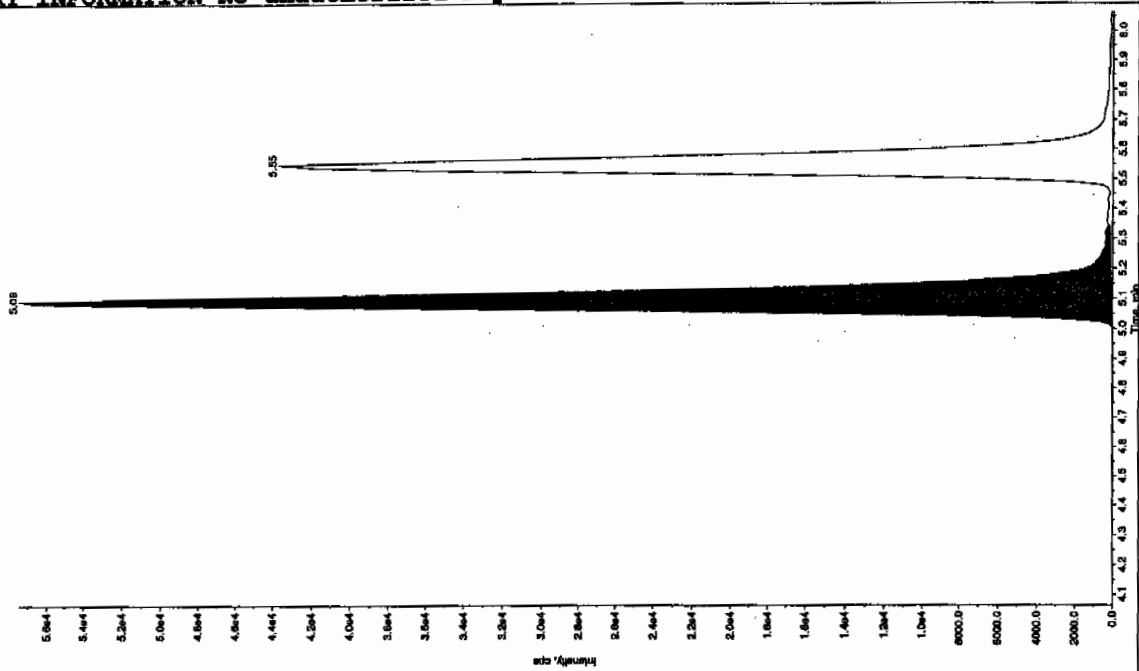
Sample Name: "WXX100115-27CR" Sample ID: "J1LER" File: "EXS01130226.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.151.9 amu"
 Comment: "LCMSEXP_C" Annotation: "

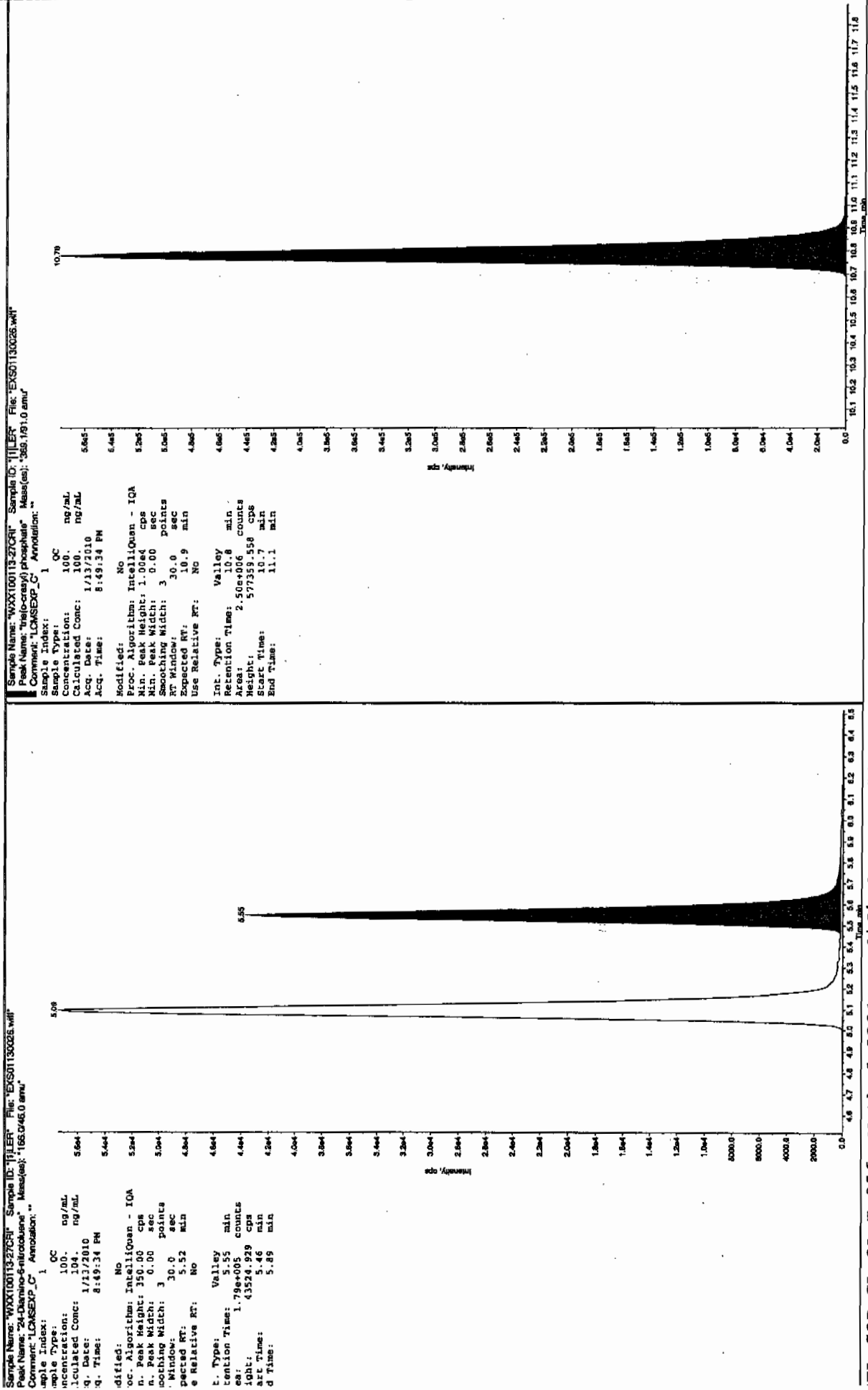
Sample Index: 1
 Sample Type: QC
 Concentration: 50.0 ng/mL
 Injected Conc: 49.1 ng/mL
 Date: 1/13/2010
 Acq. Time: 8:49:34 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 1460.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 3 points
 RT Window: 15.0 sec
 Expected RT: 8.37 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 8.32 min
 Peak Height: 150021.423 cps
 Start Time: 8.32 min
 End Time: 8.69 min



Sample Name: "WXX100115-27CR" Sample ID: "J1LER" File: "EXS01130226.wif"
 Peak Name: "25-Diamino-4-nitrofluorene" Mass(es): "166.046.0 amu"
 Comment: "LCMSEXP_C" Annotation: "

Sample Index: 1
 Sample Type: QC
 Concentration: 100.0 ng/mL
 Injected Conc: 99.1 ng/mL
 Date: 1/13/2010
 Acq. Time: 8:49:34 PM
 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: 5.06 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 5.05 min
 Peak Height: 2.46e+005 counts
 Start Time: 5.05 min
 End Time: 5.34 min





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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCCV

GEL Data File EXS01130032.wiff

Analysis Date: 13-JAN-10 22:23

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
3,5-Dinitroaniline	500	477	95	
TATB	500	468	94	
tris(o-cresyl) phosphate	500	478	96	
2,4-Diamino-6-nitrotoluene	500	457	91	
2,6-Diamino-4-nitrotoluene	500	510	102	
3,4-Dinitrotoluene	250	231	92	

Recovery Limits:

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

Other Target Analytes 80-120%

Column used to flag Recovery outside of Limits

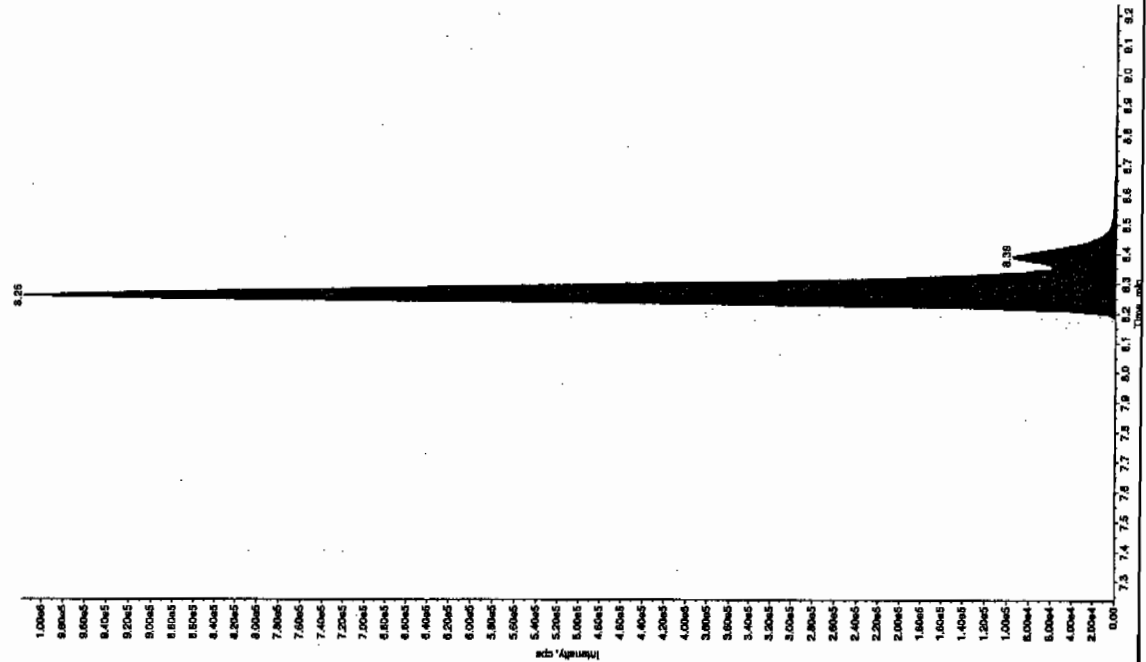
* Value outside of Recovery Limits

01/14/10
220000

Sample Name: "WXX100113-260CV" Sample ID: "111ER" File: "EXS01130032.wif"
Peak Name: "35-Dihydroaniline" Mass(es): "182.046.0 amu"
Comment: "LCMSEXP_C" Annotation: ""

Sample Index: 1
Sample Type: QC
Concentration: 500. ng/mL
Calculated Conc: 537. ng/mL
Acq. Date: 1/13/2010
Acq. Time: 10:23:52 PM

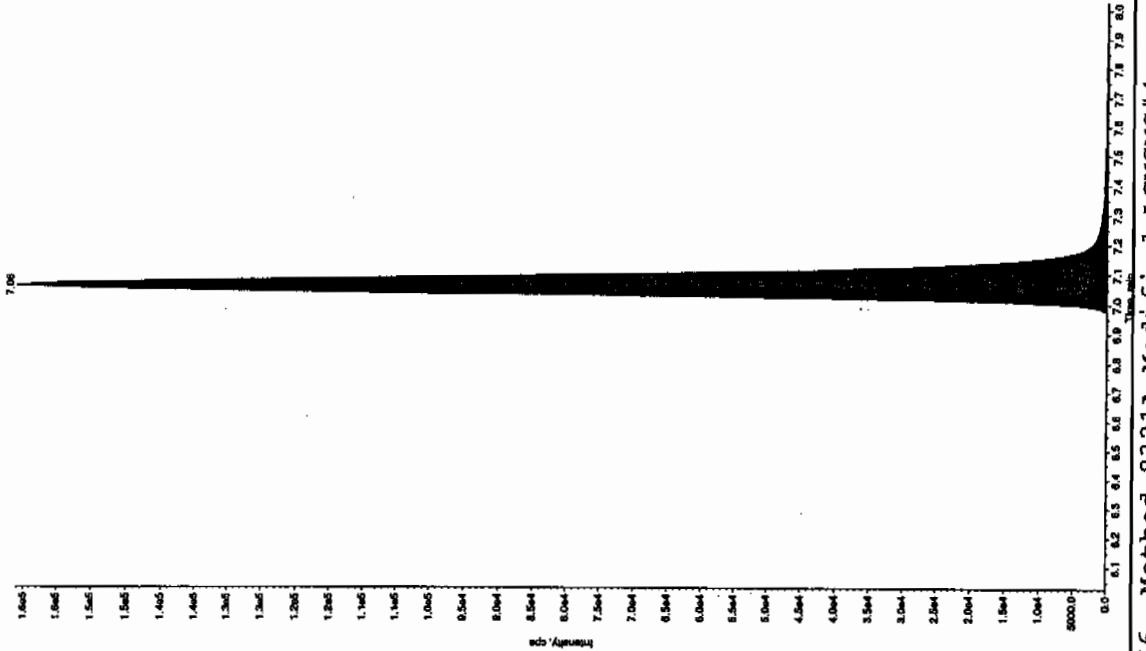
Modified: No
Proc. Algorithm: IntelliQuan - IQA
Min. Peak Height: 2000.00 cps
Min. Peak Width: 0.00 sec
Smoothing Width: 3.0 points
Window: 15.0 sec
Expected RT: 8.24 min
Use Relative RT: No
Int. Type: Valley
Retention Time: 8.26 min
Area: 4.48e+006 counts
Height: 1018610.229 cps
Start Time: 8.16 min
End Time: 8.92 min



Sample Name: "WXX100113-260CV" Sample ID: "111ER" File: "EXS01130032.wif"
Peak Name: "TATB" Mass(es): "257.2204.9 amu"
Comment: "LCMSEXP_C" Annotation: ""

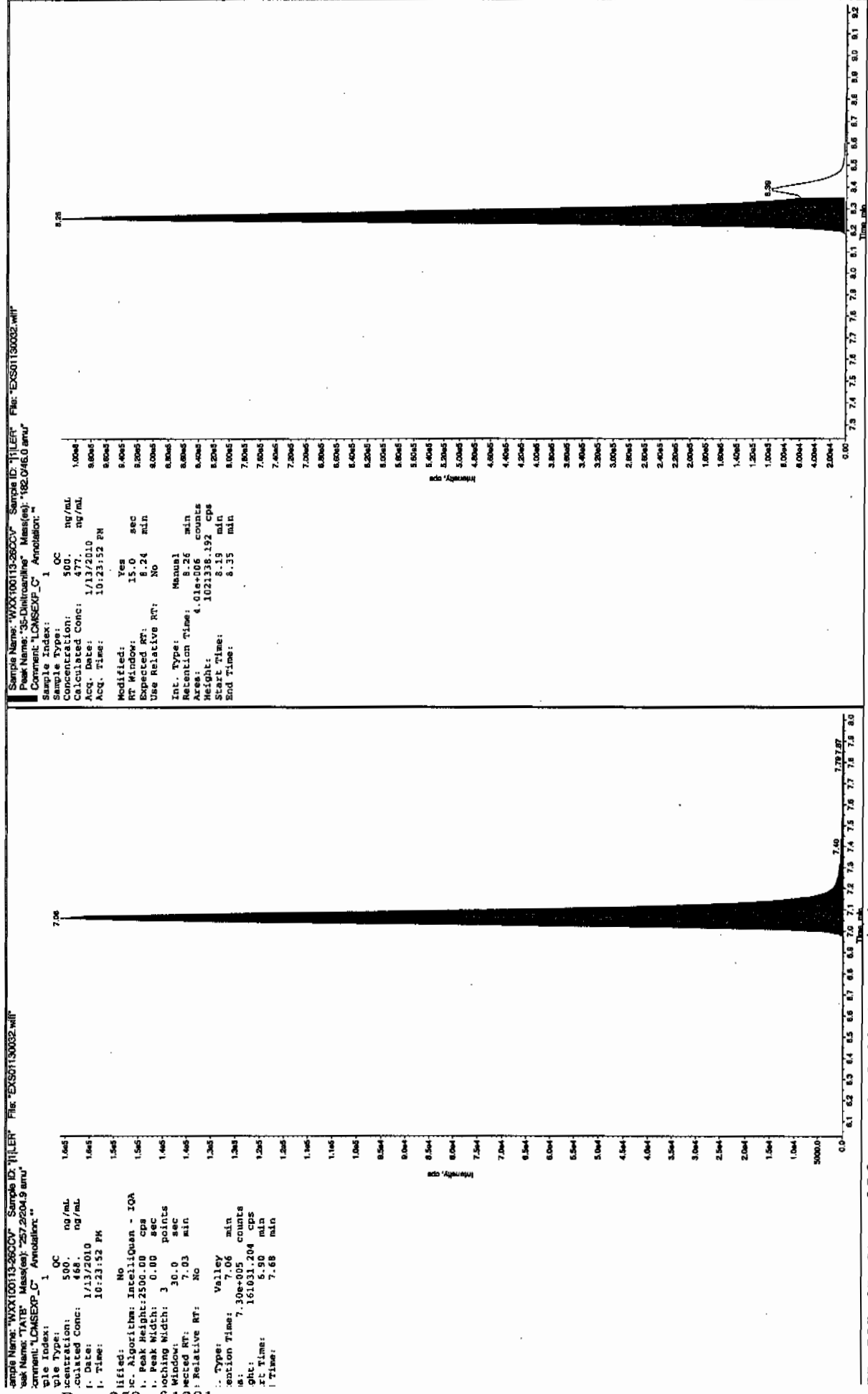
Sample Index: 1
Sample Type: QC
Concentration: 500. ng/mL
Calculated Conc: 453.018 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 10:23:52 PM

Modified: No
Proc. Algorithm: IntelliQuan - IQA
Min. Peak Height: 2500.00 cps
Min. Peak Width: 0.00 sec
Smoothing Width: 3.0 points
Window: 30.0 sec
Expected RT: 7.03 min
Use Relative RT: No
Int. Type: Valley
Retention Time: 7.06 min
Area: 7.30e+005 counts
Height: 161031.204 cps
Start Time: 6.90 min
End Time: 7.68 min



Handwritten: 01/14/10

11/11/11
2008



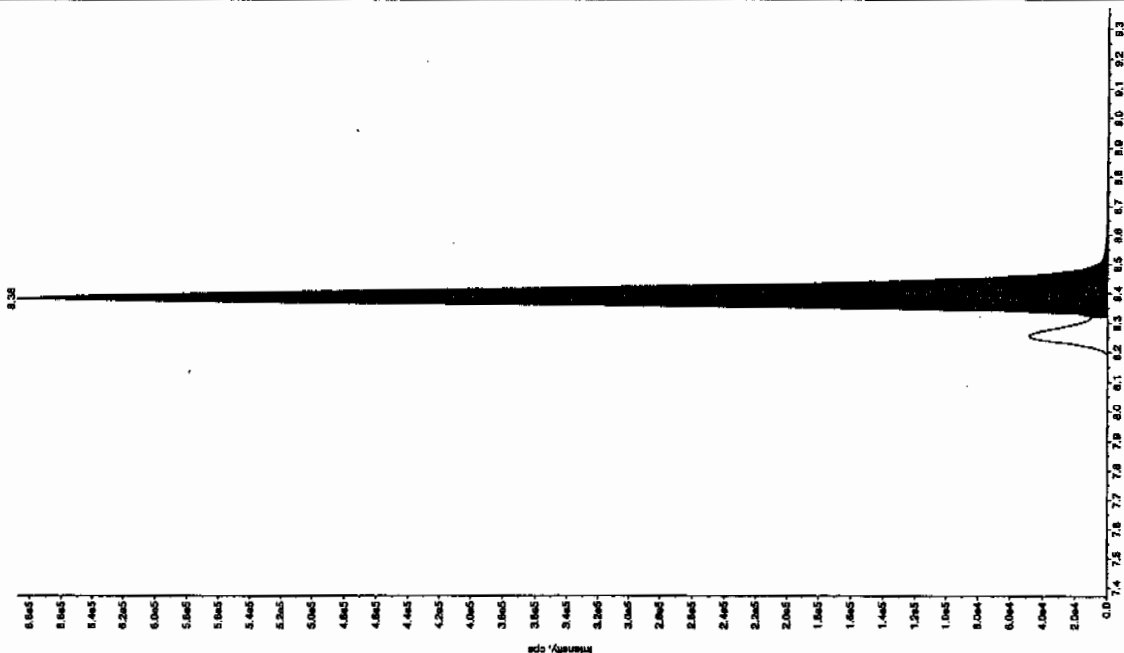
Sample Name: "WXX100113-2600V" Sample ID: "111ER" File: "EX501130032.wif"
 Peak Name: "TATB" Mass(es): "257.2/204.9 amu"
 Comment: "LCMSEXP_C" Annotation: ""
 Sample Index: 1
 Sample Type: OC
 Concentration: 500. ng/mL
 Calculated Conc: 468. ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 10:23:52 PM
 Modified: No
 RT Window: 7.06 sec
 Expected RT: 7.06 min
 Use Relative RT: No
 Int. Type: Manual
 Retention Time: 7.06 min
 Area: 4.01e+006 counts
 Height: 1021338.192 cps
 Start Time: 8.19 min
 End Time: 8.35 min

Sample Name: "WXX100113-2600V" Sample ID: "111ER" File: "EX501130032.wif"
 Peak Name: "3S-Dihydroquinone" Mass(es): "182.0/160.0 amu"
 Comment: "LCMSEXP_C" Annotation: ""
 Sample Index: 1
 Sample Type: OC
 Concentration: 500. ng/mL
 Calculated Conc: 477. ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 10:23:52 PM
 Modified: Yes
 RT Window: 15.0 sec
 Expected RT: 8.24 min
 Use Relative RT: No
 Int. Type: Manual
 Retention Time: 8.26 min
 Area: 4.01e+006 counts
 Height: 1021338.192 cps
 Start Time: 8.19 min
 End Time: 8.35 min

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

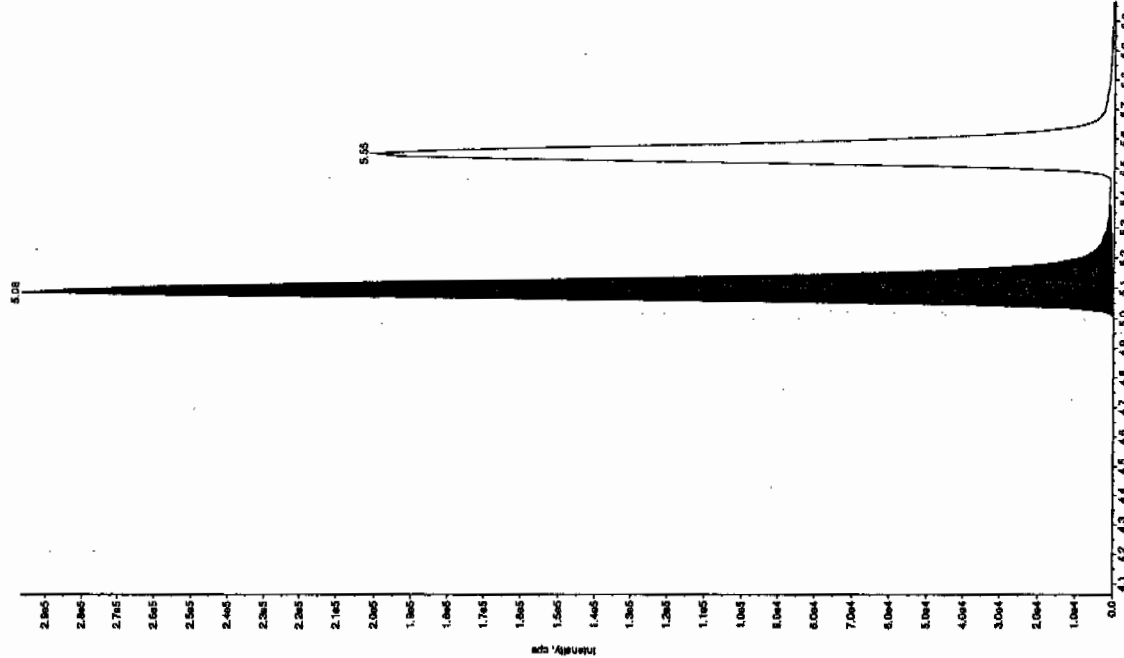
Sample Name: "WXX100113-2603" Sample ID: "111ER" File: "EX501130032.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1751.9 amu"
 Comment: "LCMSSEXP_C" Annotation: ""

Sample Index: 1 QC
 Sample Type: 250. ng/mL
 Concentration: 231. ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 10:23:52 PM
 Acq. Time: 10:23:52 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IOA
 Min. Peak Height: 1400.00 cps
 Min. Peak Width: 3.00 sec
 Smoothing Width: 3.00 points
 Filter Window: 15.0 sec
 Expected RT: 8.37 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 8.38 min
 Area: 2.68e+006 counts
 Height: 687397.827 cps
 Start Time: 8.32 min
 End Time: 8.71 min

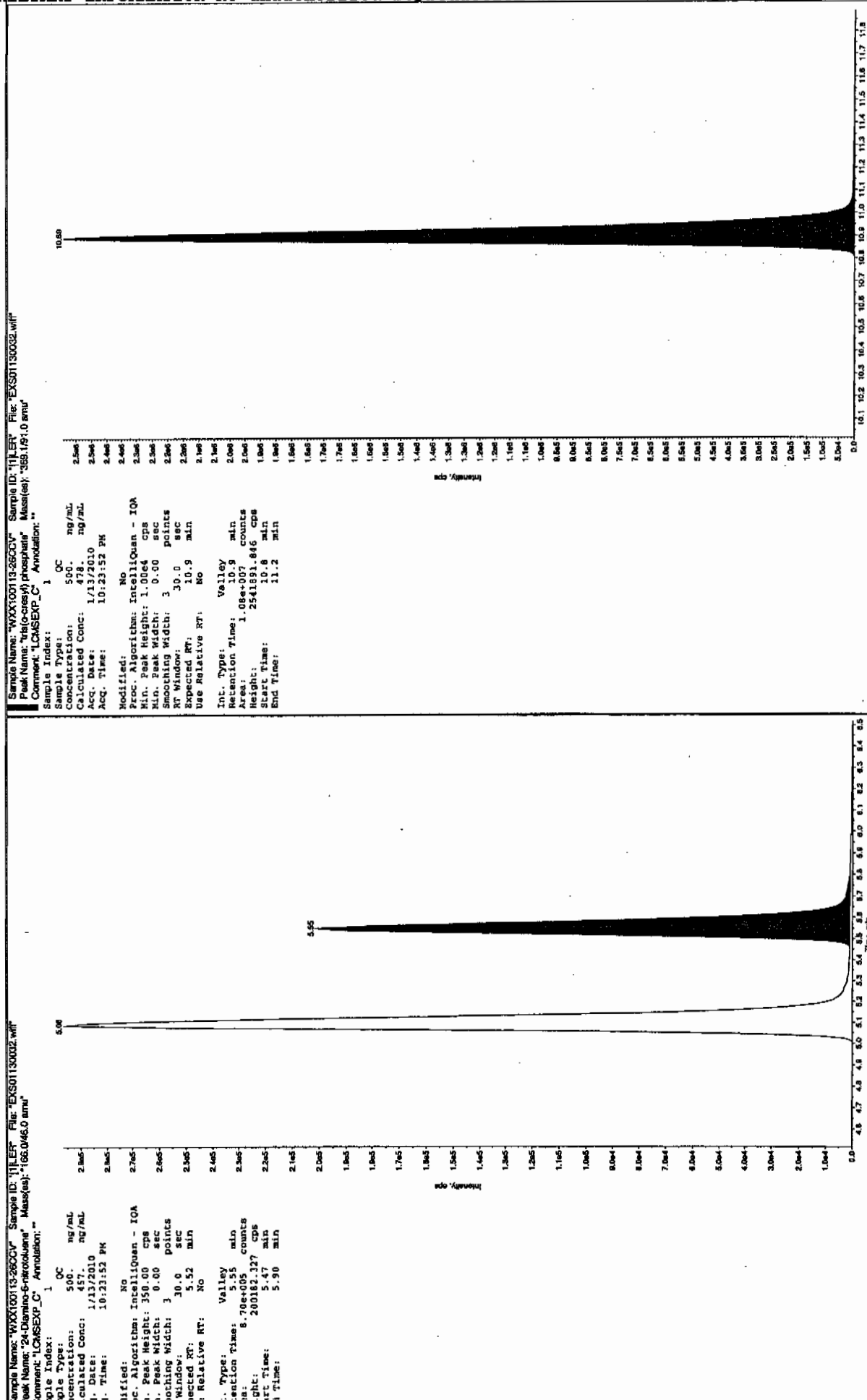


Sample Name: "WXX100113-2603" Sample ID: "111ER" File: "EX501130032.wif"
 Peak Name: "26-Diamino-4-nitrofluorene" Mass(es): "166.046.0 amu"
 Comment: "LCMSSEXP_C" Annotation: ""

Sample Index: 1 QC
 Sample Type: 500. ng/mL
 Concentration: 510. ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 10:23:52 PM
 Acq. Time: 10:23:52 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IOA
 Min. Peak Height: 450.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 3.00 points
 Filter Window: 30.0 sec
 Expected RT: 5.06 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 5.08 min
 Area: 1.32e+006 counts
 Height: 296448.669 cps
 Start Time: 4.99 min
 End Time: 5.37 min



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): 10-1100

Lab Code: GEL

GEL Sample ID: WXXCRI

GEL Data File EXS01130034.wiff

Analysis Date: 13-JAN-10 22:55

LCMSMS ID: 1358

Column ID: JSphere ODS-H80

Compound	True	Found	Recovery	Q
2,4-Diamino-6-nitrotoluene	100	101	101	
2,6-Diamino-4-nitrotoluene	100	107	107	
3,4-Dinitrotoluene	50	46.1	92	
3,5-Dinitroaniline	100	97.6	98	
TATB	100	93.4	93	
tris(o-cresyl) phosphate	100	98.2	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

11/15/2010
2002049

Sample Name: "WXX100113-270H" Sample ID: "111ER" File: "EXS01130034.wif"

Peak Name: "TATB" Mass(es): "257.22049 amu"

Comment: "LCMSXP_C" Annotation: "

File Index: 1

File Type: 100

Calculated Conc: 93.4 ng/mL

Date: 1/13/2010

Time: 10:55:16 PM

Modified: No

Proc. Algorithm: IntelliQuan - IQA

Min. Peak Height: 2500.00 cps

Min. Peak Width: 0.00 sec

Smoothing Width: 3 points

Window: 30.0 sec

Expected RT: 7.03 min

Use Relative RT: No

Int. Type: Valley

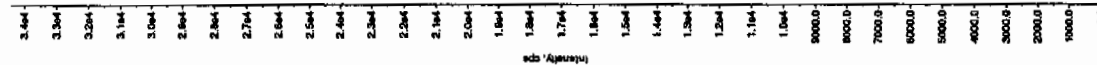
Retention Time: 7.07 min

Area: 1.51e09 counts

Height: 3440.278 cps

Start Time: 6.91 min

End Time: 7.53 min



Sample Name: "WXX100113-270H" Sample ID: "111ER" File: "EXS01130034.wif"

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

Comment: "LCMSXP_C" Annotation: "

File Index: 1

File Type: 100

Calculated Conc: 108. ng/mL

Date: 1/13/2010

Time: 10:55:16 PM

Modified: No

Proc. Algorithm: IntelliQuan - IQA

Min. Peak Height: 2000.00 cps

Min. Peak Width: 0.00 sec

Smoothing Width: 3 points

Window: 15.0 sec

Expected RT: 8.24 min

Use Relative RT: No

Int. Type: Valley

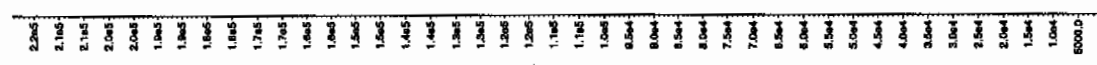
Retention Time: 8.28 min

Area: 9.33e09 counts

Height: 219400.091 cps

Start Time: 8.13 min

End Time: 8.84 min

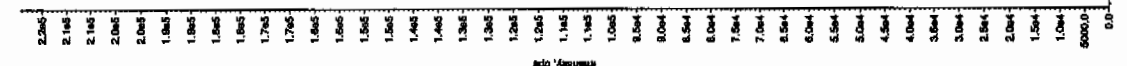


8/28/10

Sample Name: "WXX100113-2709" Sample ID: "111ER" File: "EXS01130034.wif"

Peak Name: "TAIB" Mass(es): 257.22049 amu
Comment: "LCMSEXP_C" Annotation: "

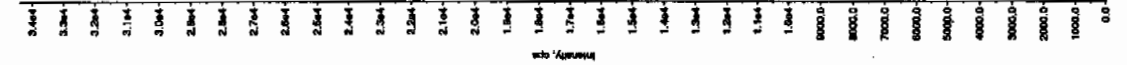
Sample Index: 1
Sample Type: 100
Acquisition: 100
Calculated Conc: 97.6 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 10:55:16 PM
Modified: Yes
RT Window: 15.0 sec
Expected RT: 8.24 min
Use Relative RT: No
Int. Type: Manual
Retention Time: 8.23 min
Area: 8.38e+005 counts
Height: 22043.247 cps
Start Time: 8.21 min
End Time: 8.27 min



Sample Name: "WXX100113-2709" Sample ID: "111ER" File: "EXS01130034.wif"

Peak Name: "TAIB" Mass(es): 257.22049 amu
Comment: "LCMSEXP_C" Annotation: "

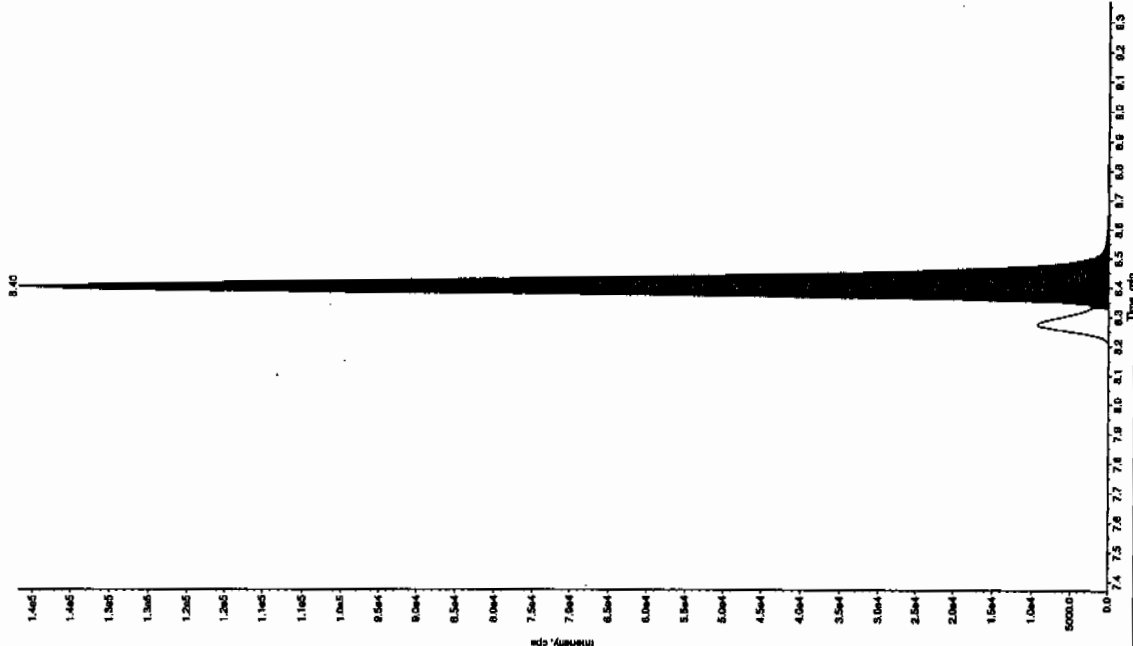
Sample Index: 1
Sample Type: 100
Acquisition: 100
Calculated Conc: 97.6 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 10:55:16 PM
Modified: No
oc. Algorithm: IntelliQuan - IOA
n. Peak Height: 2500.00 cps
n. Peak Width: 0.00 sec
oothing Width: 3 points
Window: 30.0 sec
Expected RT: 7.03 min
Use Relative RT: No
Int. Type: Valley
Retention Time: 7.07 min
Area: 1.51e+005 counts
Height: 3460.678 cps
Start Time: 6.91 min
End Time: 7.53 min



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

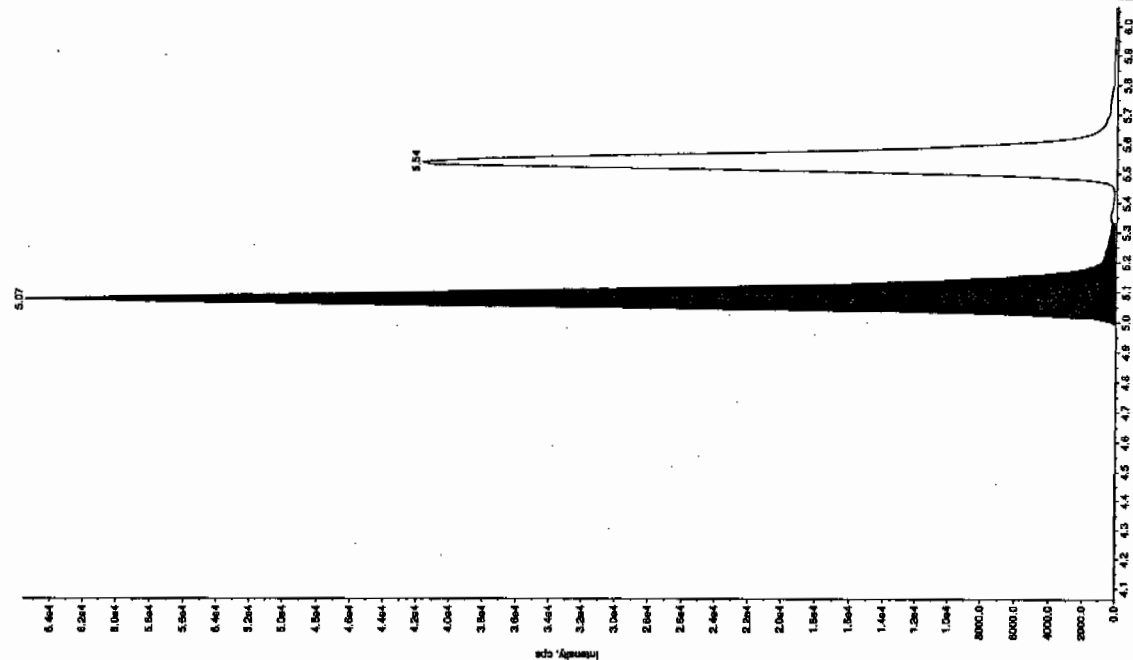
Sample Name: "WXX100132709" Sample ID: "JILLER" File: "EX501130034.wif"
 Peak Name: "34-Dinitrobenzene" Mass(es): "182.17(51.9 amu)"
 Comment: "LONSEXP.C" Annotation: "

Sample Index: 1
 Sample Type: QC
 Concentration: 50.0 ng/mL
 Calculated Conc: 46.1 ng/mL
 Date: 1/13/2010
 Time: 10:55:16 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IOA
 Min. Peak Height: 1460.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 3 points
 RT Window: 15.0 sec
 Expected RT: 8.37 min
 Use Relative RT: No
 Type: Valley
 Retention Time: 8.40 min
 Area: 5.41e+005 counts
 Height: 141844.310 cps
 Start Time: 8.31 min
 End Time: 8.69 min



Sample Name: "WXX100132709" Sample ID: "JILLER" File: "EX501130034.wif"
 Peak Name: "28-Dinitro-4-nitrofluorene" Mass(es): "186.04(50.0 amu)"
 Comment: "LONSEXP.C" Annotation: "

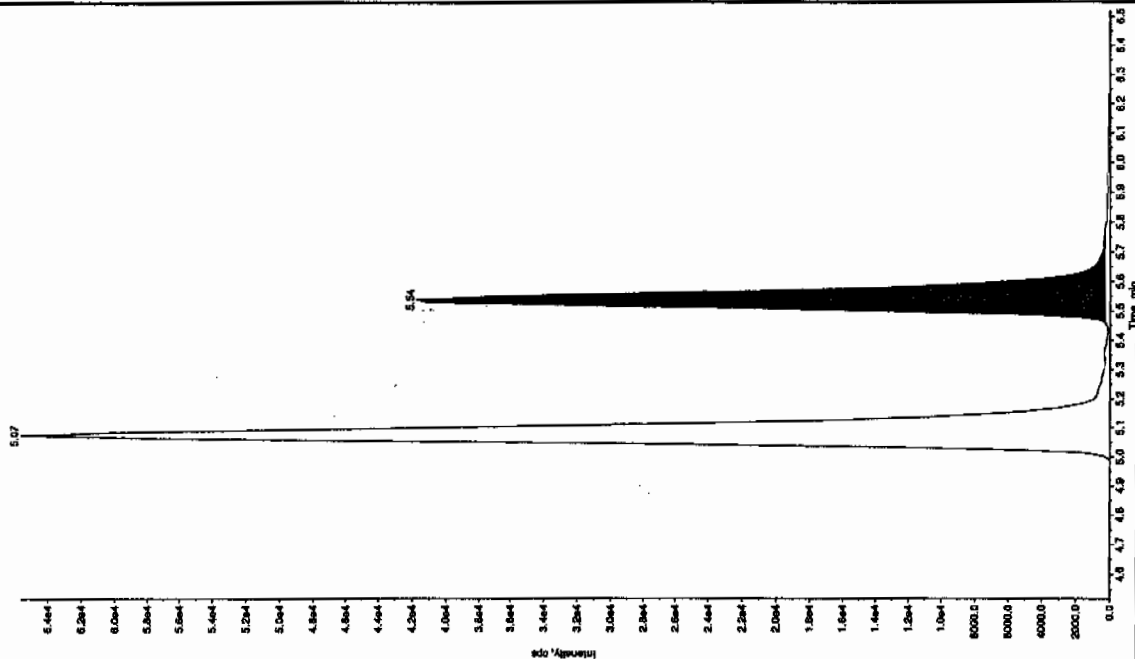
Sample Index: 1
 Sample Type: QC
 Concentration: 100 ng/mL
 Calculated Conc: 107 ng/mL
 Date: 1/13/2010
 Time: 10:55:16 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IOA
 Min. Peak Height: 450.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 3 points
 RT Window: 30.0 sec
 Expected RT: 5.06 min
 Use Relative RT: No
 Type: Valley
 Retention Time: 5.07 min
 Area: 2.68e+005 counts
 Height: 65595.871 cps
 Start Time: 4.97 min
 End Time: 5.33 min



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

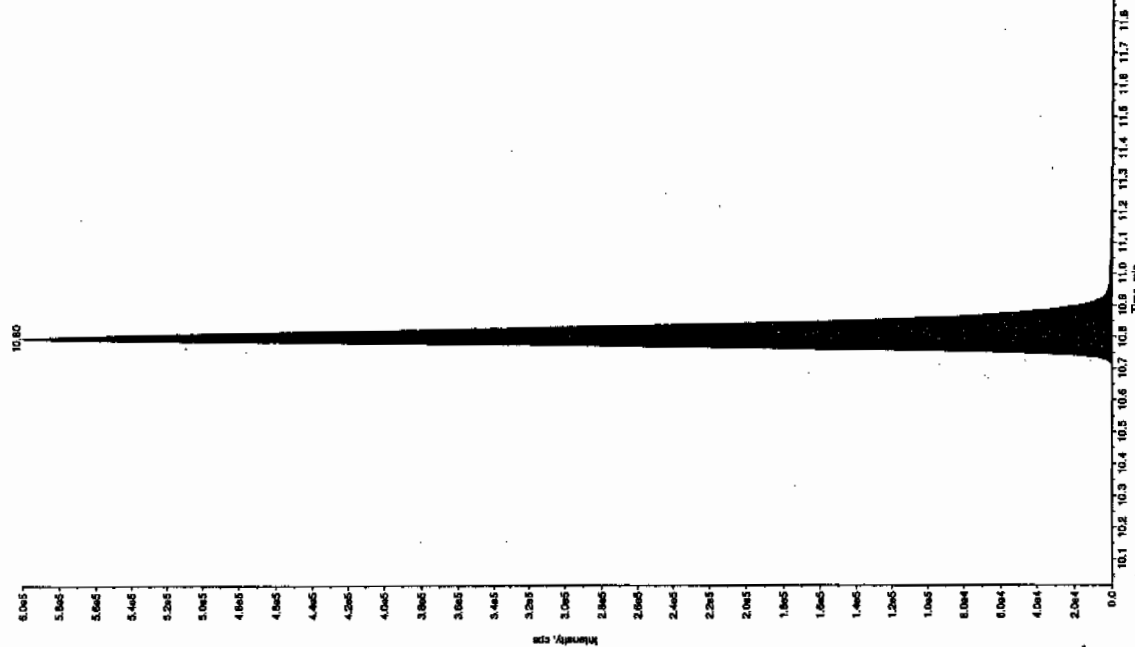
Sample Name: "WXX100113-27CR" Sample ID: "111ER" File: "EXS01130034.wif"
 Peak Name: "24-Dinitro-6-nitrofluorene" Mass(es): "186.046.0 amu"
 Comment: "LCMSEXP_C" Annotation: ""

Sample Index: 1
 Sample Type: QC
 Concentration: 100 ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 10:55:16 PM
 Acq. Time: 10:55:16 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - TOA
 n. Peak Height: 350.00 cps
 n. Peak Width: 0.00 sec
 Smoothing Width: 3 points
 Window: 30.0 sec
 Expected RT: 5.52 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 5.54 min
 Area: 1.72e+005 counts
 Height: 41474.724 cps
 Start Time: 5.16 min
 End Time: 5.76 min



Sample Name: "WXX100113-27CR" Sample ID: "111ER" File: "EXS01130034.wif"
 Peak Name: "bis(o-cresyl) phosphate" Mass(es): "386.191.0 amu"
 Comment: "LCMSEXP_C" Annotation: ""

Sample Index: 1
 Sample Type: QC
 Concentration: 100 ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 10:55:16 PM
 Acq. Time: 10:55:16 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - TOA
 n. Peak Height: 1.00e4 cps
 n. Peak Width: 0.00 sec
 Smoothing Width: 3 points
 Window: 30.0 sec
 Expected RT: 10.9 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 10.8 min
 Area: 2.44e+006 counts
 Height: 60073.315 cps
 Start Time: 10.7 min
 End Time: 11.1 min



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 937562

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 1202006240

Sample Amount 2

Moisture:

Amount Units g

Date Received: 30-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118022a

Date Analyzed: 19-JAN-10 00:22

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		

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

Dataset: C:\MASSLYNX\New_Exp_PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP_PRO\011810expA.qld

Date: 19-Jan-2010

Time: 00:22:37

ID: 1202006240

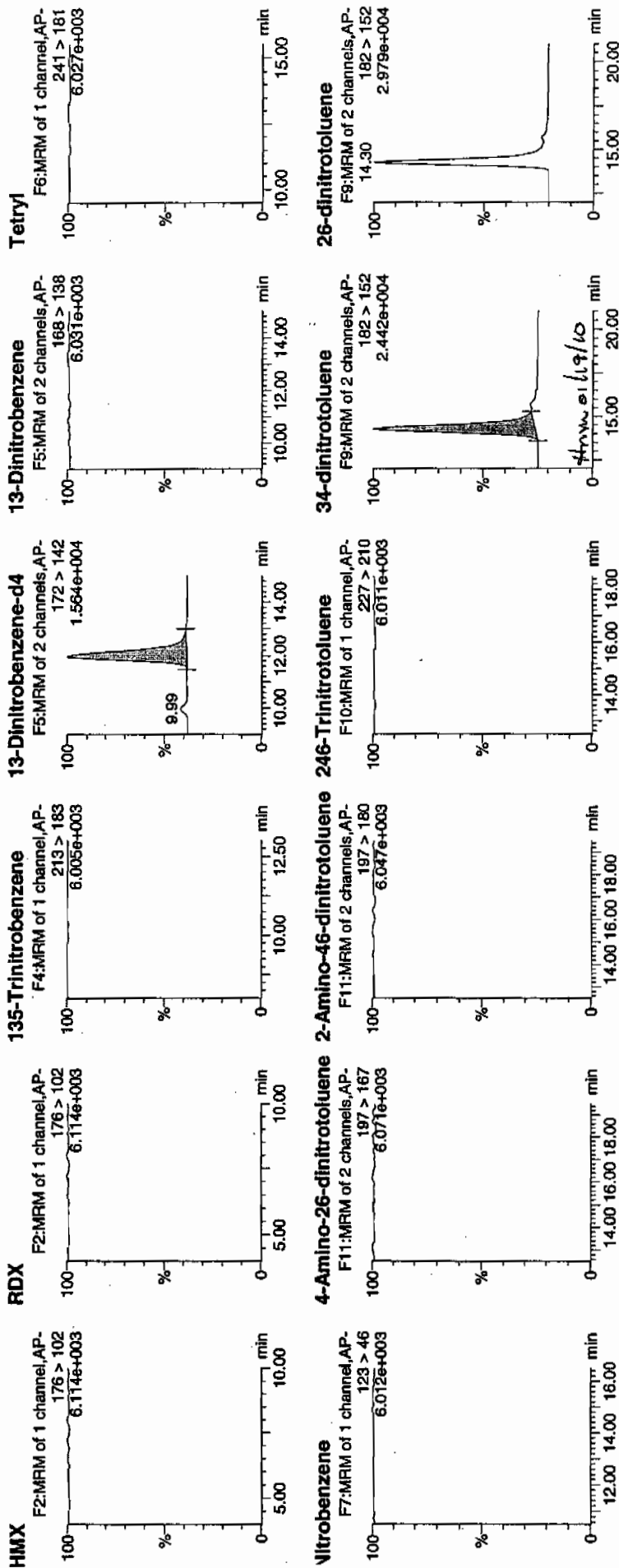
Vial: 2:1,A

1/19/10

WAV 937564 / 8000 / 121

121

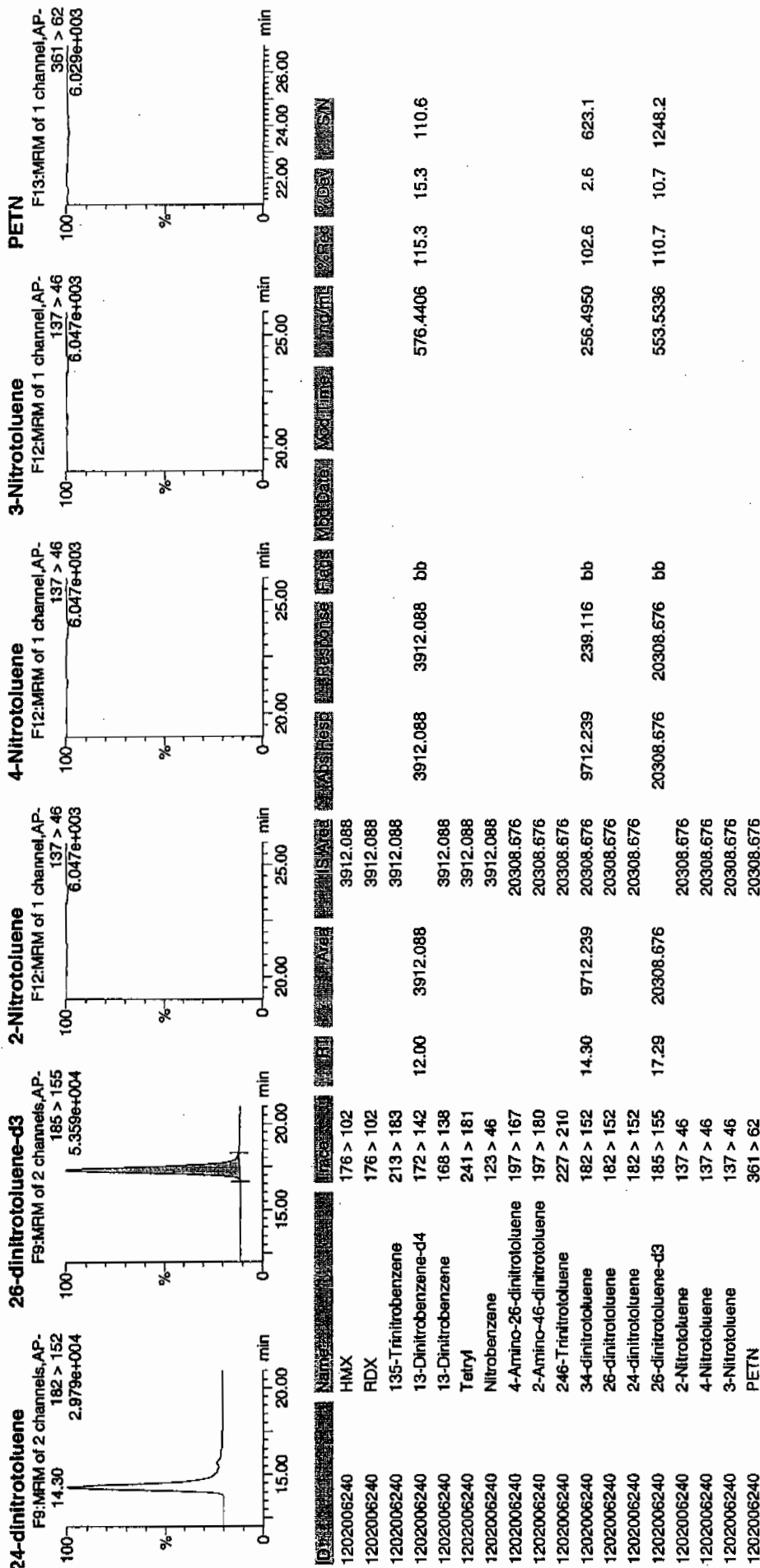
121



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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 937562

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 1202006240

Sample Amount 2

Moisture:

Amount Units g

Date Received: 30-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130014.wiff

Date Analyzed: 13-JAN-10 17:41

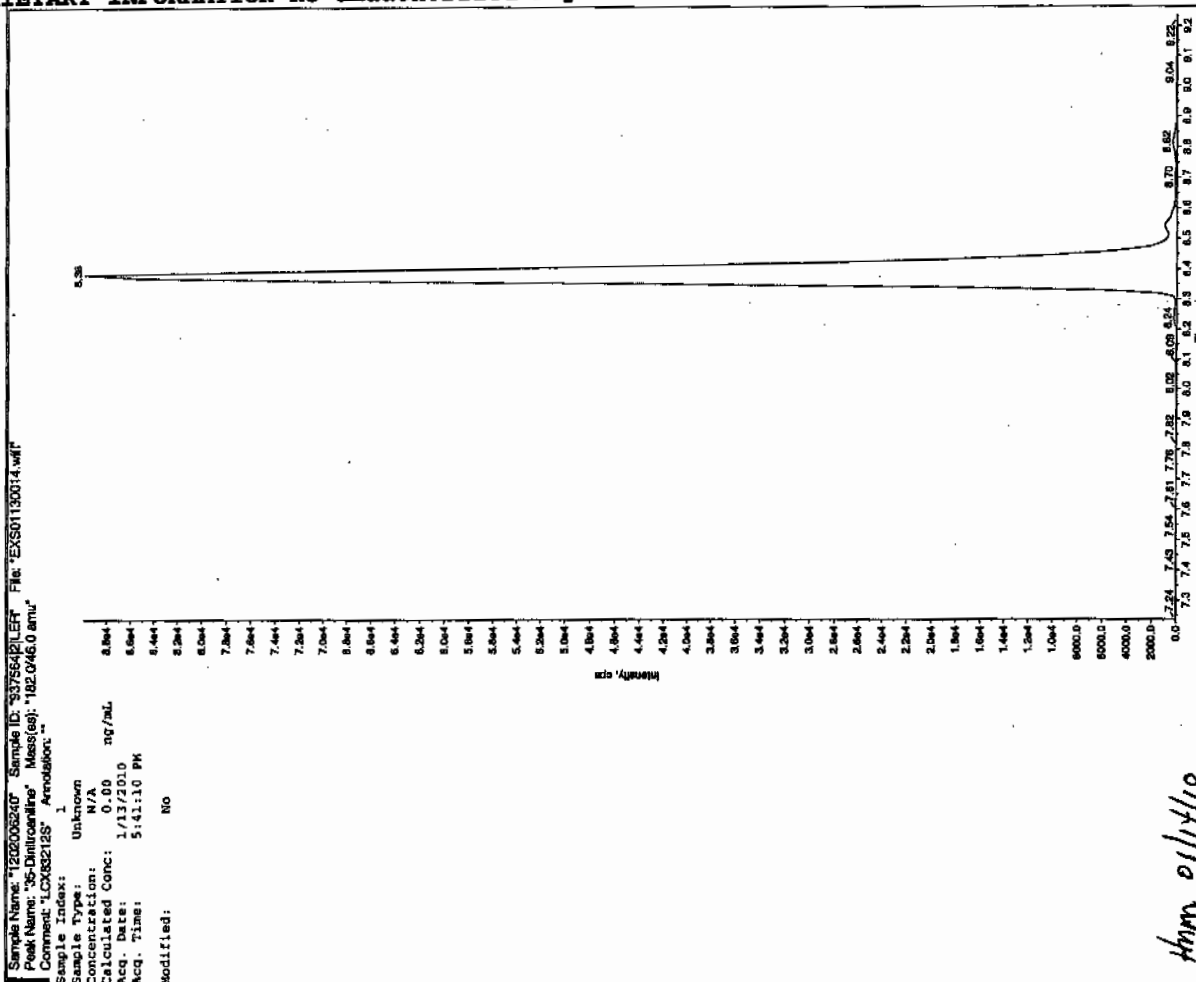
Units: ug/kg

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

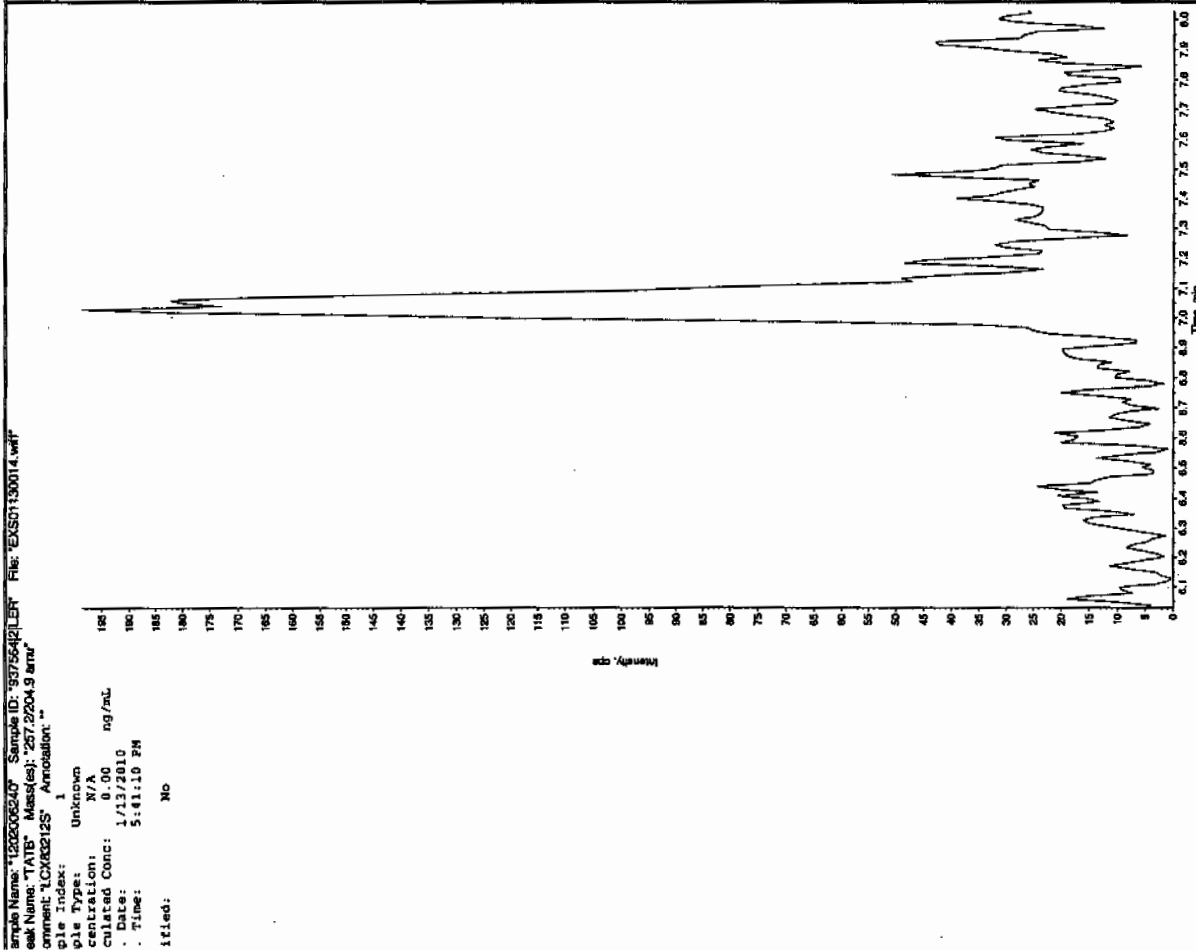
*Concentration =

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

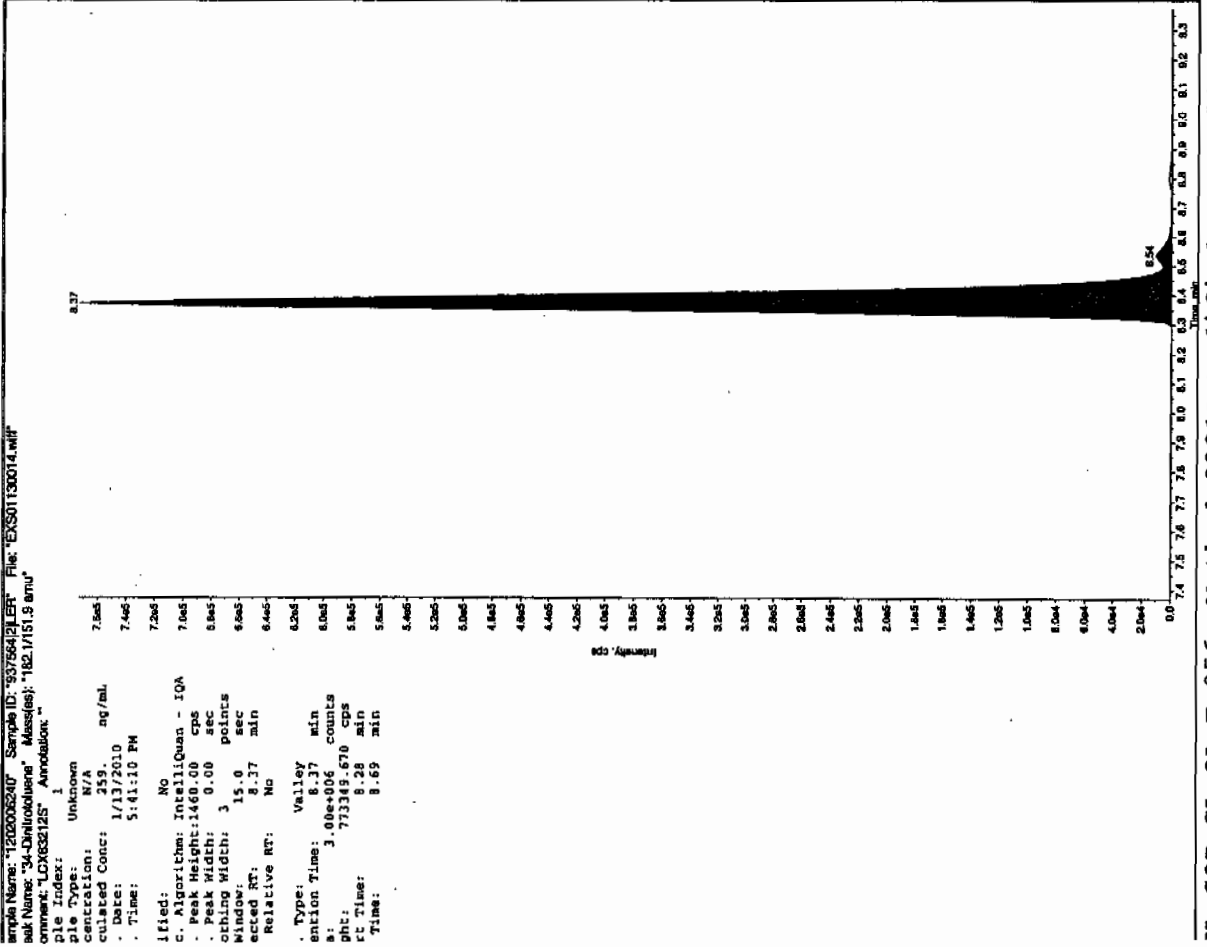
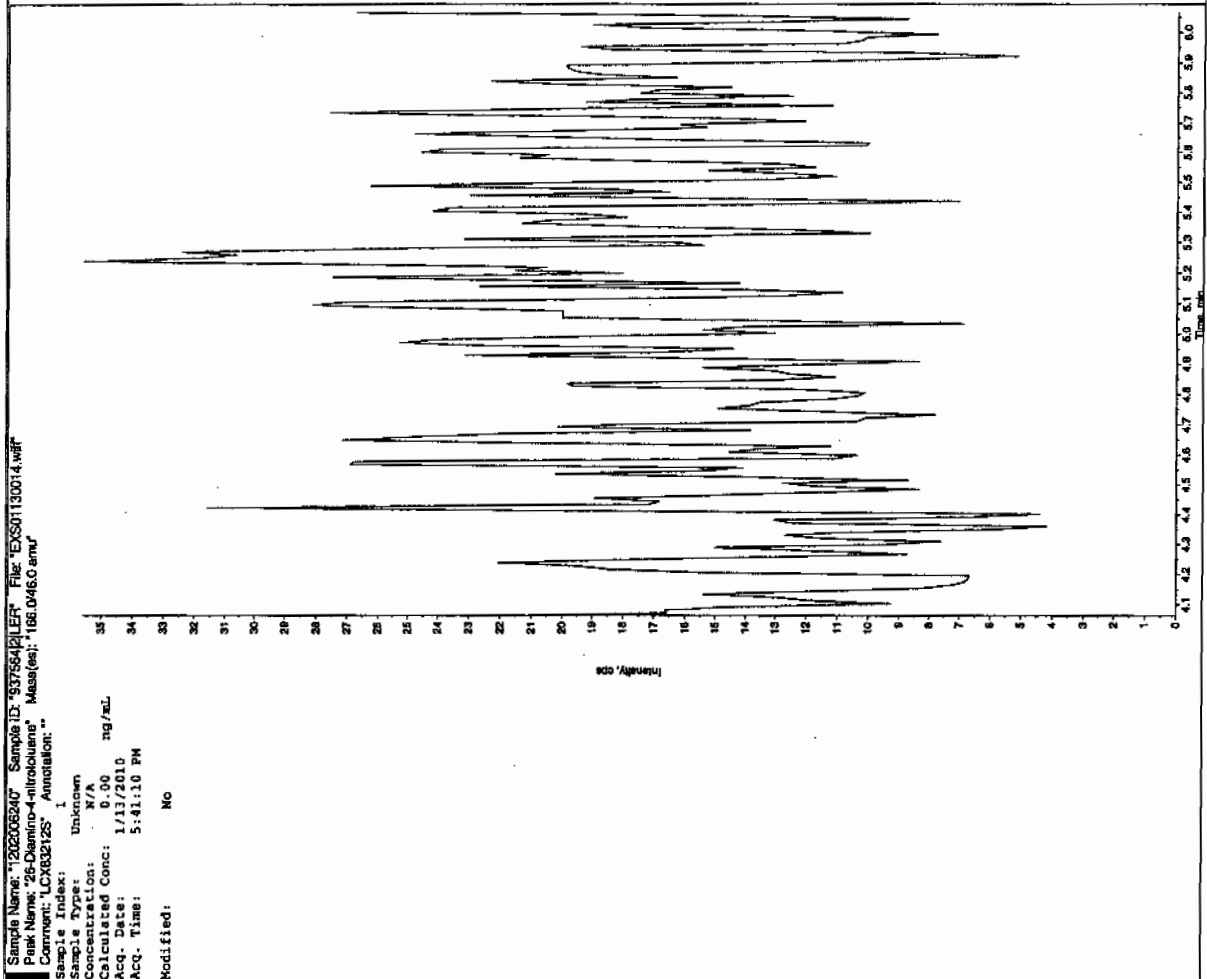
11/11/10
JCP



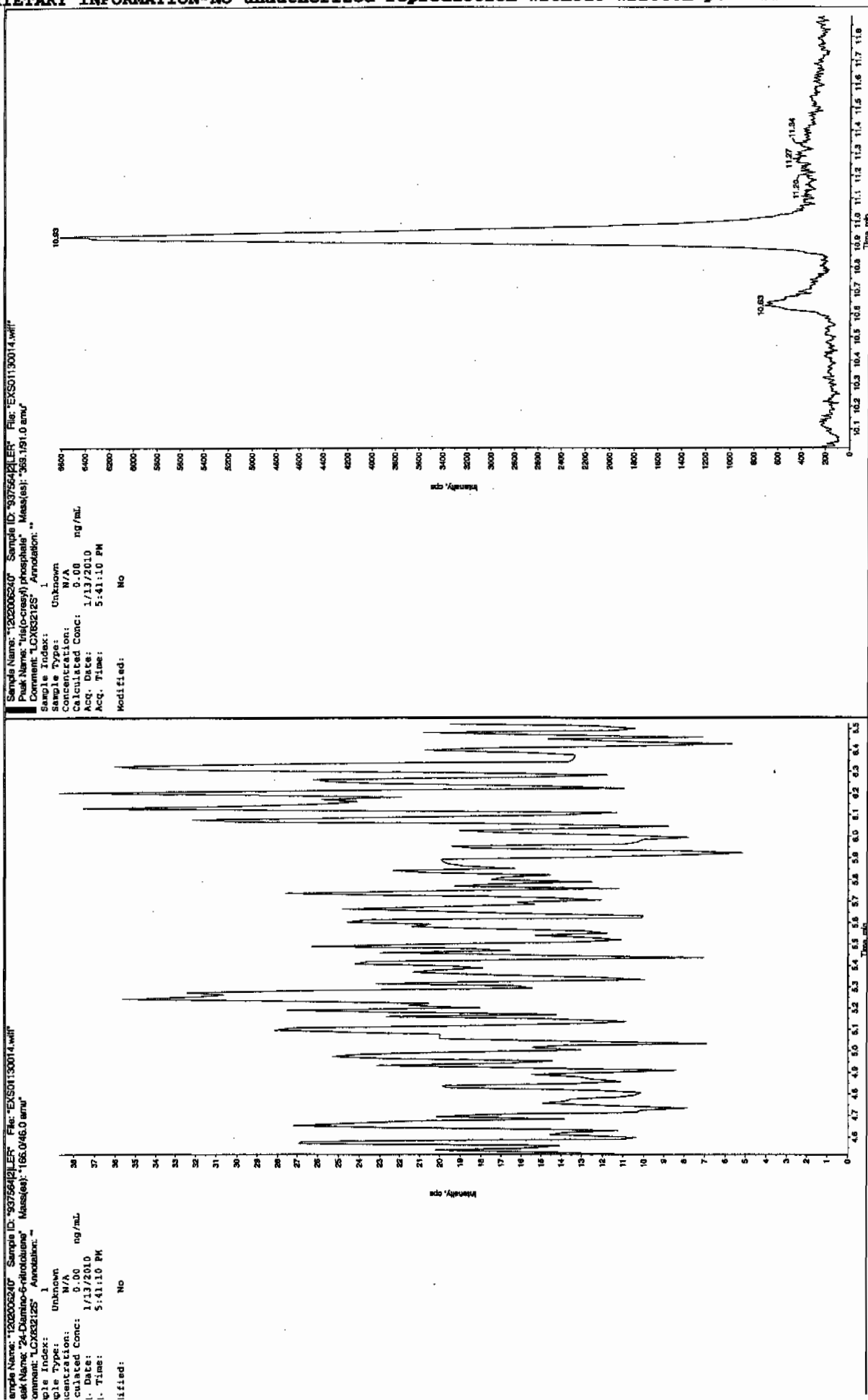
11/11/10



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 937562

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 1202006241

Sample Amount 2

Moisture:

Amount Units g

Date Received: 30-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118023a

Date Analyzed: 19-JAN-10 00:52

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	5490	
121-14-2	2,4-Dinitrotoluene	5420	
121-82-4	RDX	5310	
19406-51-0	4-Amino-2,6-dinitrotoluene	5500	
2691-41-0	HMX	4860	
35572-78-2	2-Amino-4,6-dinitrotoluene	4690	
479-45-8	Tetryl	3570	
606-20-2	2,6-Dinitrotoluene	5140	
78-11-5	PETN	4660	
88-72-2	o-Nitrotoluene	4320	
98-95-3	Nitrobenzene	5010	
99-08-1	m-Nitrotoluene	5000	
99-35-4	1,3,5-Trinitrobenzene	5050	
99-65-0	m-Dinitrobenzene	4850	
99-99-0	p-Nitrotoluene	5050	

*Concentration =

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

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118023a

Date: 19-Jan-2010

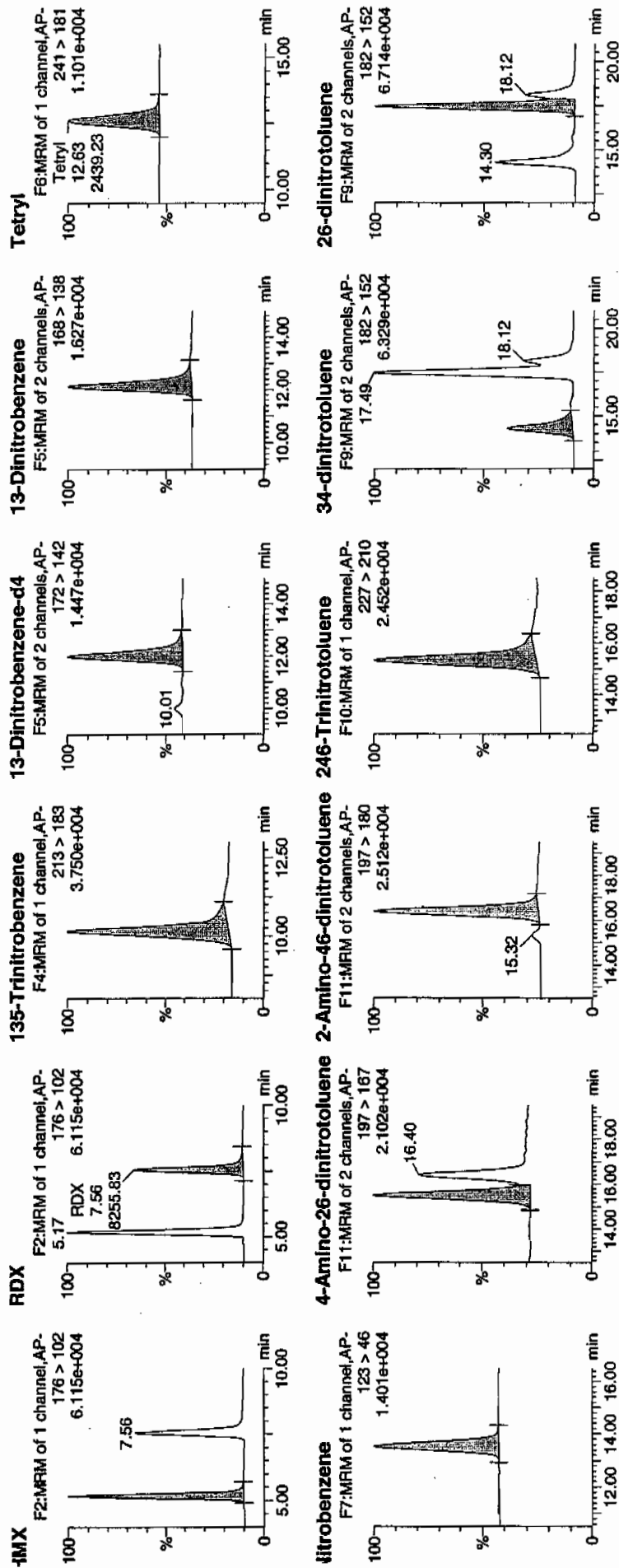
Time: 00:52:09

D: 1202006241

/Inl: 2:1,B

1/18/10

WAV 937524 / 8033 / WS / 21

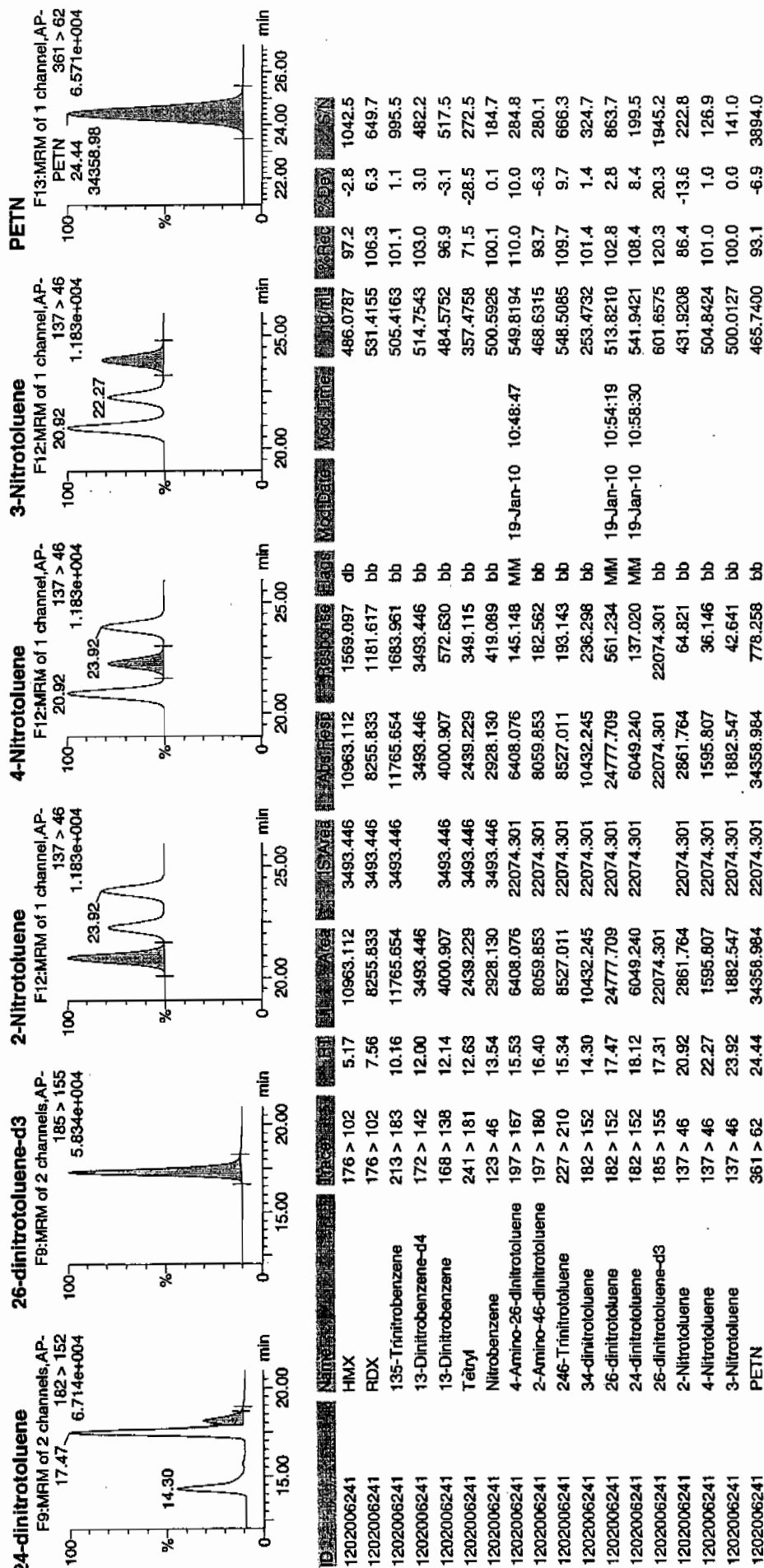


Amr 01/19/10

Printed: Tue Jan 19 11:02:03 2010, Page 46 of 85

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

Dataset: C:\MASSLYNX\New_Exp_PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 937562

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 1202006241

Sample Amount 2

Moisture:

Amount Units g

Date Received: 30-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130015.wiff

Date Analyzed: 13-JAN-10 17:56

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	16600	
59229-75-3	2,6-Diamino-4-nitrotoluene	4850	
618-87-1	3,5-Dinitroaniline	4870	
6629-29-4	2,4-Diamino-6-nitrotoluene	3560	
78-30-8	tris(o-cresyl) phosphate	5210	

*Concentration =

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

Sample Name: "1202006241" Sample ID: "93756419.ER" File: "EXS01130015.wif"

Peak Name: "TAIB" Mass(es): "257.2204.9 amu" Annotation: ""

Sample Index: 1

Concentration: 1660 ng/mL

Acq. Date: 1/13/2010

Acq. Time: 5:56:52 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: 7.03 min

Use Relative RT: No

Int. Type: Valley

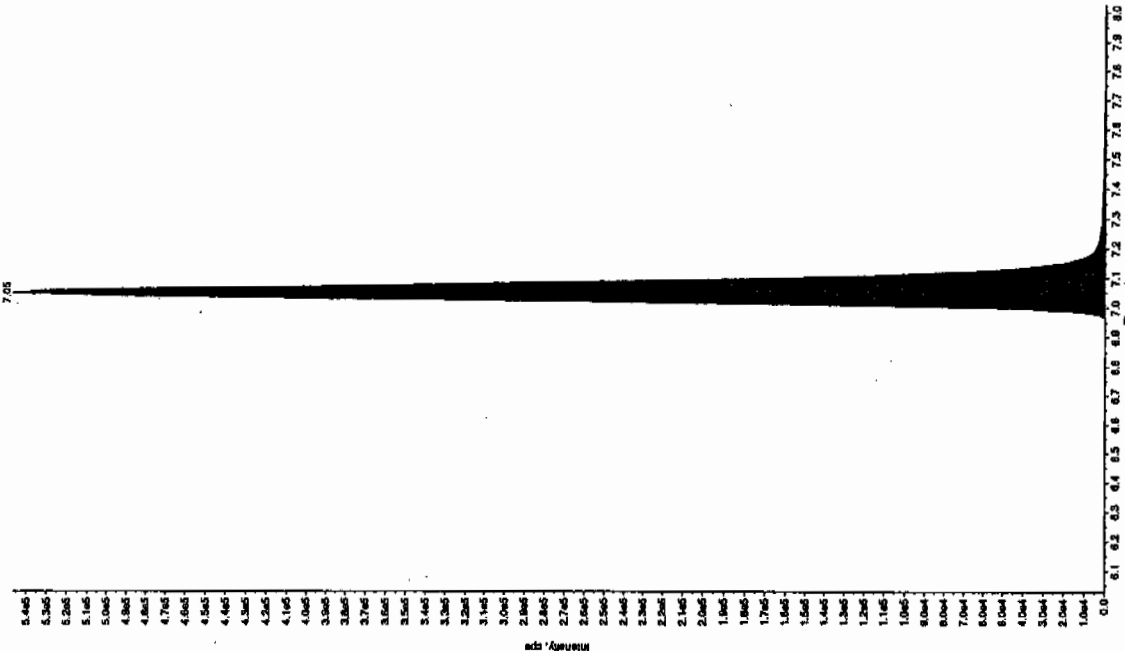
Retention Time: 7.05 min

Area: 2.42e+006 counts

Height: 546718.872 cps

Start Time: 6.94 min

End Time: 7.30 min



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

Sample Name: "1202006241" Sample ID: "93756419.ER" File: "EXS01130015.wif"

Peak Name: "35-Dinitroaniline" Mass(es): "182.046.0 amu" Annotation: ""

Sample Index: 1

Concentration: N/A

Acq. Date: 1/13/2010

Acq. Time: 5:56:52 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: 8.24 min

Use Relative RT: No

Int. Type: Valley

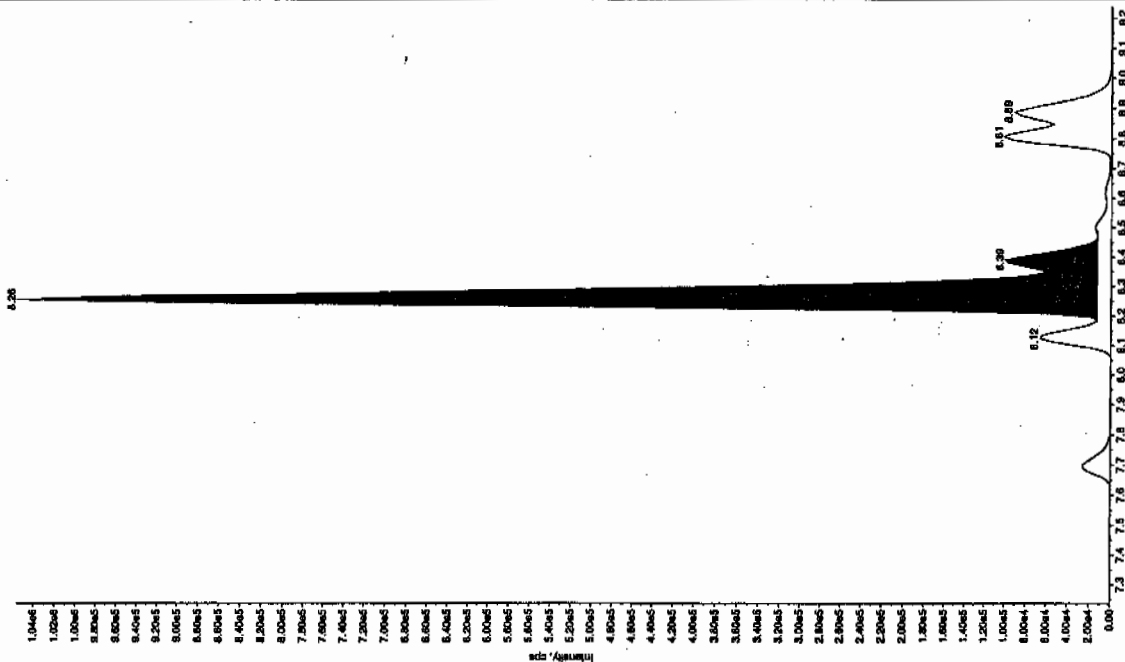
Retention Time: 8.26 min

Area: 4.31e+006 counts

Height: 1043199.585 cps

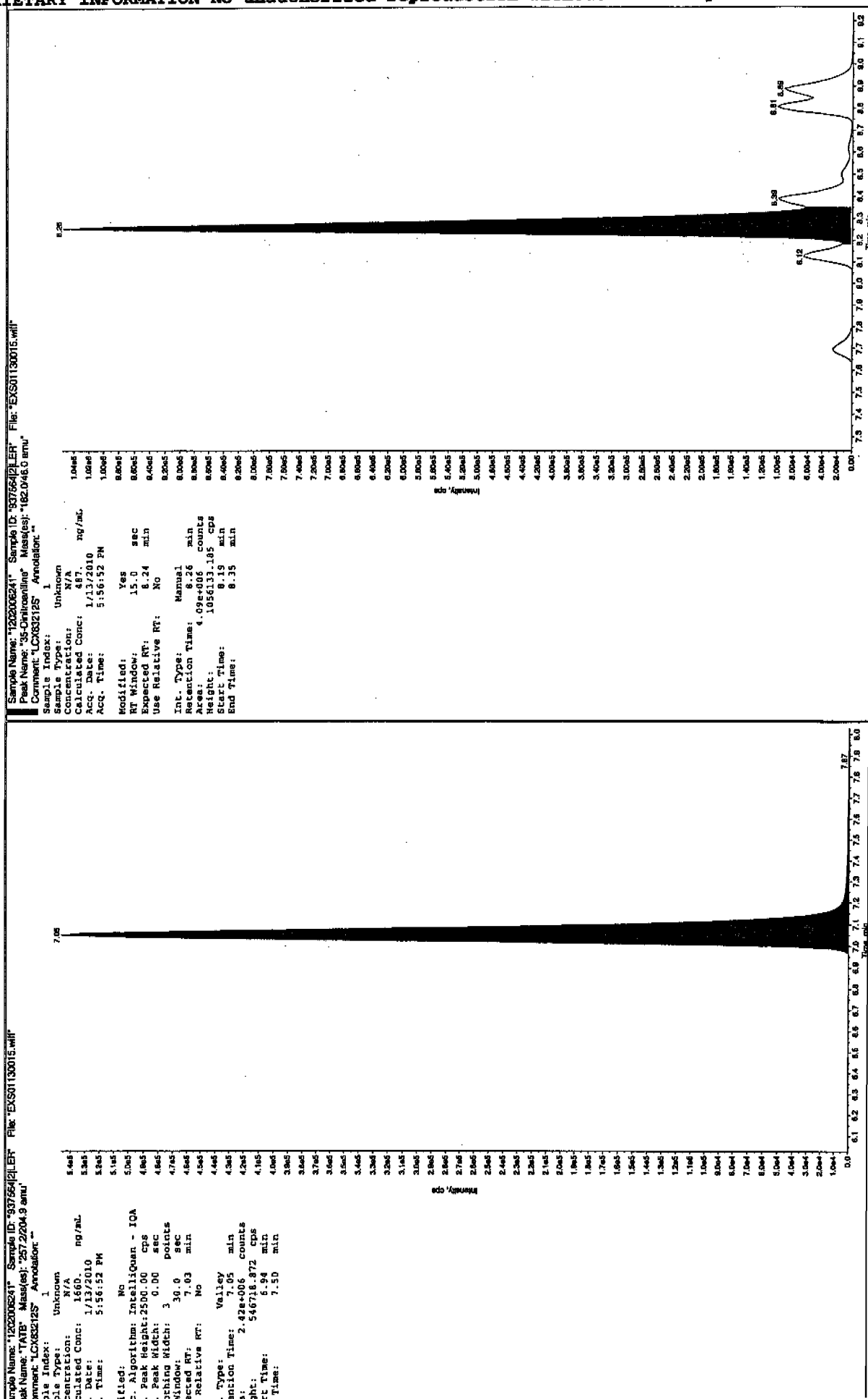
Start Time: 8.18 min

End Time: 8.46 min



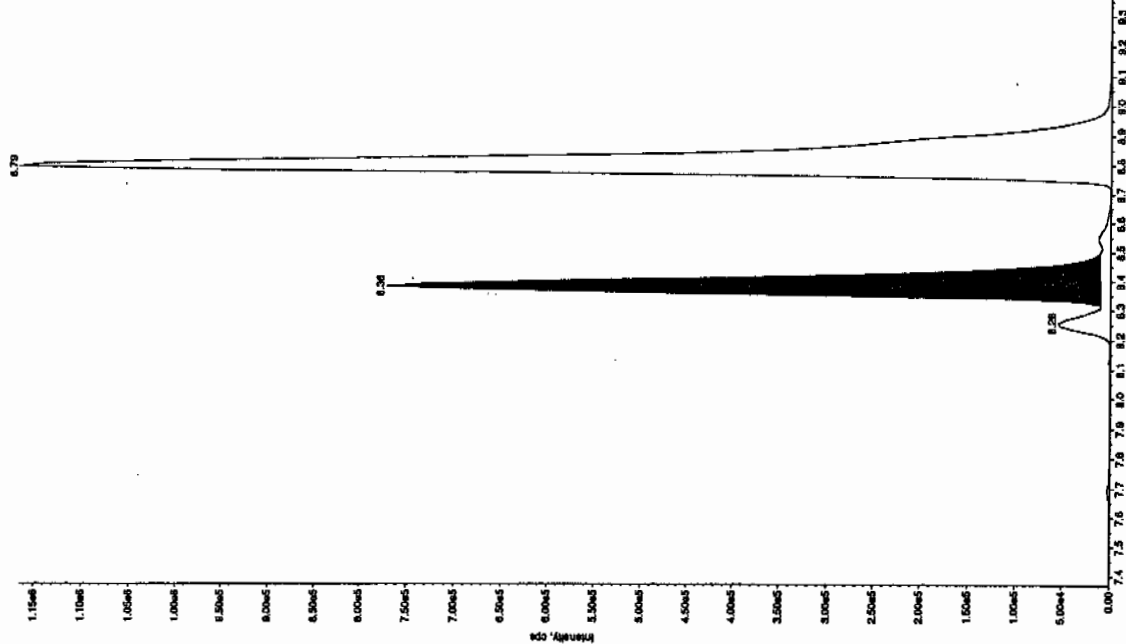
4/11/10

01/12/2010



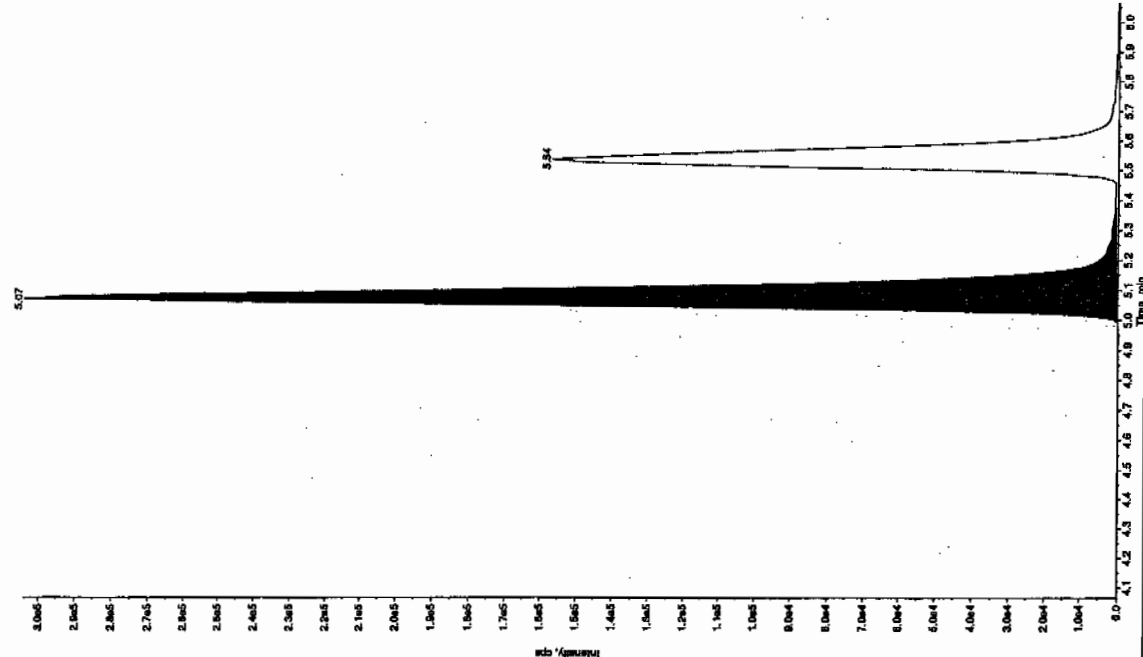
Sample Name: "120206241" Sample ID: "337564211" File: "EXS01130015.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1151.9 amu"
 Comment: "LCX8212S" Annotation: "

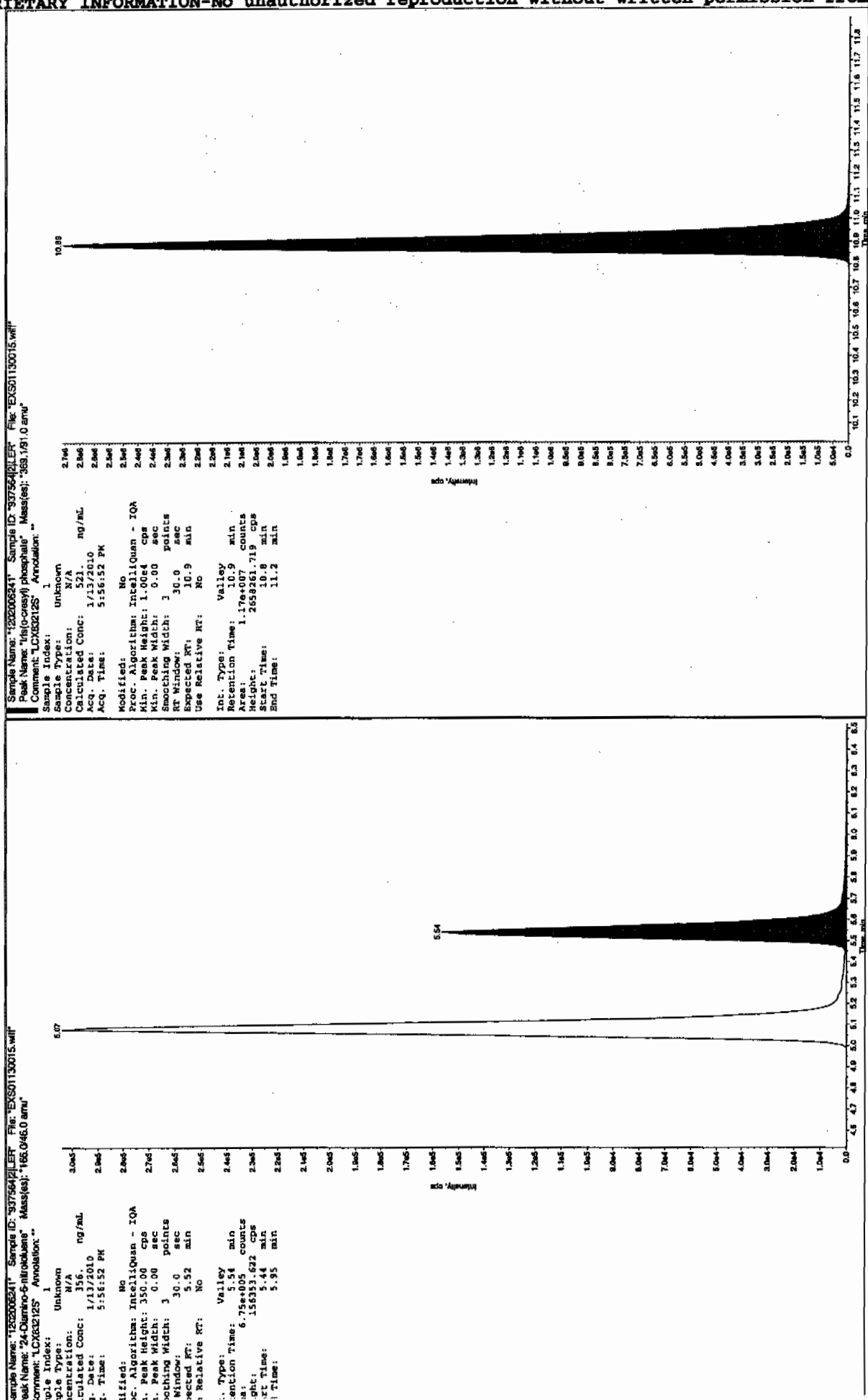
Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 250. ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 5:56:52 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 160.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 3 points
 RT Window: 15.0 sec
 Expected RT: 8.37 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 8.38 min
 Area: 2.89e+006 counts
 Height: 759673.889 cps
 Start Time: 8.31 min
 End Time: 8.50 min



Sample Name: "120206241" Sample ID: "337564211" File: "EXS01130015.wif"
 Peak Name: "28-Dinitro-4-nitrofluorene" Mass(es): "186.046.0 amu"
 Comment: "LCX8212S" Annotation: "

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 485. ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 5:56:52 PM
 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: 5.06 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 5.07 min
 Area: 1.26e+006 counts
 Height: 303900.452 cps
 Start Time: 4.98 min
 End Time: 5.38 min





1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841(243624001MS)

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 1202006242

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118025a

Date Analyzed: 19-JAN-10 01:51

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	5830	
121-14-2	2,4-Dinitrotoluene	4750	
121-82-4	RDX	4460	
19406-51-0	4-Amino-2,6-dinitrotoluene	6480	
2691-41-0	HMX	4170	
35572-78-2	2-Amino-4,6-dinitrotoluene	4980	
479-45-8	Tetryl	4290	
606-20-2	2,6-Dinitrotoluene	4850	
78-11-5	PETN	4990	
88-72-2	o-Nitrotoluene	4320	
98-95-3	Nitrobenzene	4490	
99-08-1	m-Nitrotoluene	4610	
99-35-4	1,3,5-Trinitrobenzene	4230	
99-65-0	m-Dinitrobenzene	4820	
99-99-0	p-Nitrotoluene	4700	

*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\PROV011810expA.qtd, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP\PROVData\EXP0118025a

Date: 19-Jan-2010

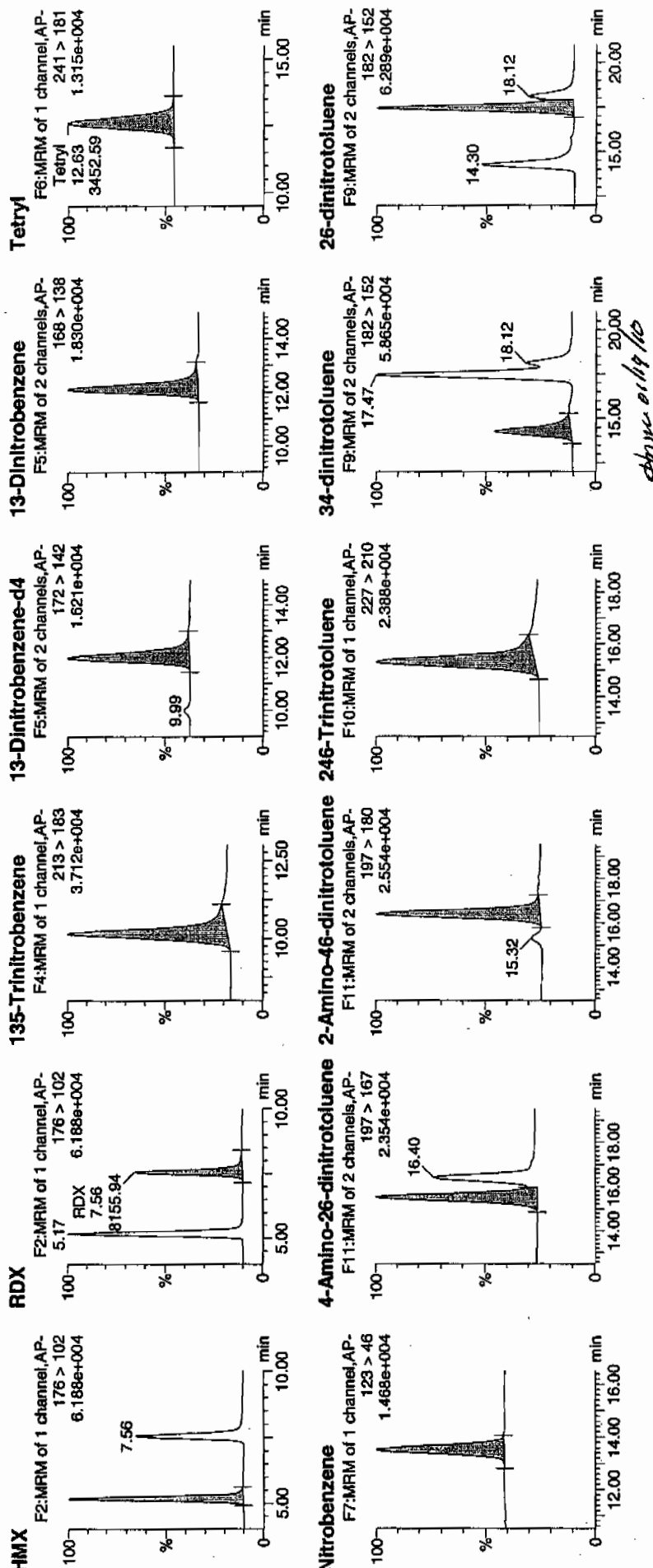
Time: 01:51:06

ID: 1202006242

Vial: 2:1,D

WAV/937564 / Savas / 243624001 us / 21

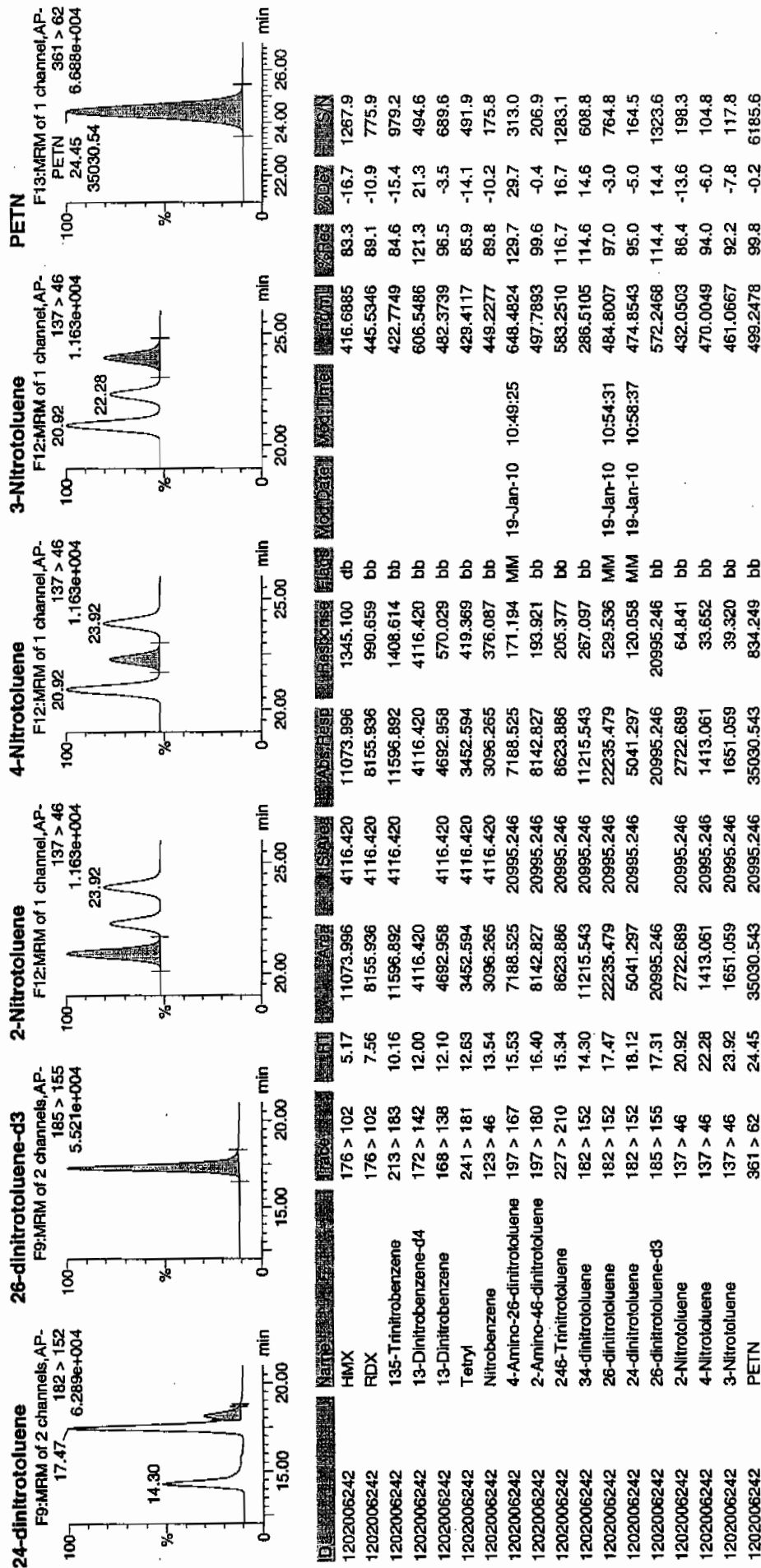
1/19/10



Printed: Tue Jan 19 11:02:03 2010, Page 50 of 85

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

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841(243624001MS)

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 1202006242

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130017.wiff

Date Analyzed: 13-JAN-10 18:28

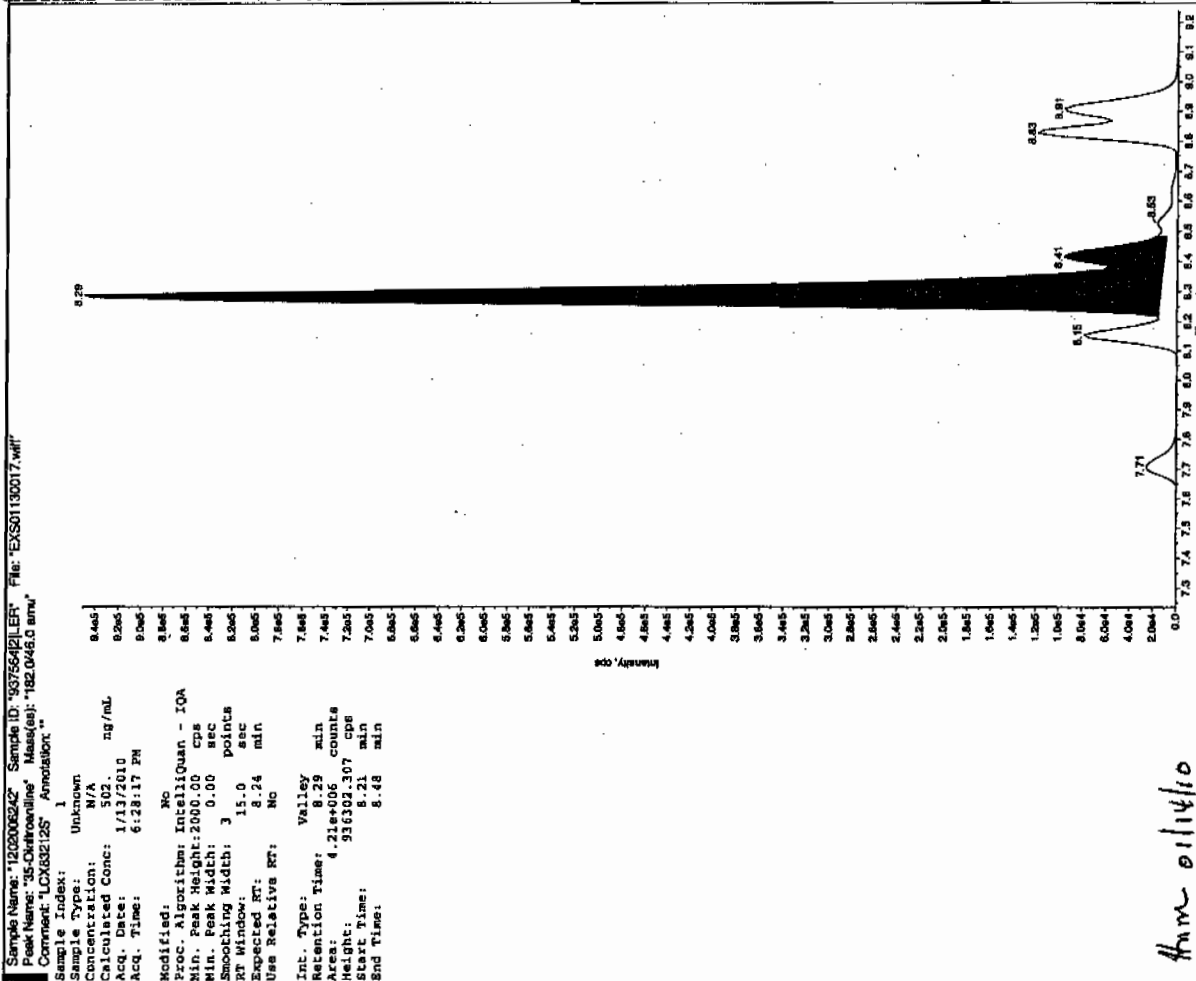
Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	6350	
59229-75-3	2,6-Diamino-4-nitrotoluene	5470	
618-87-1	3,5-Dinitroaniline	4760	
6629-29-4	2,4-Diamino-6-nitrotoluene	4380	
78-30-8	tris(o-cresyl) phosphate	5260	

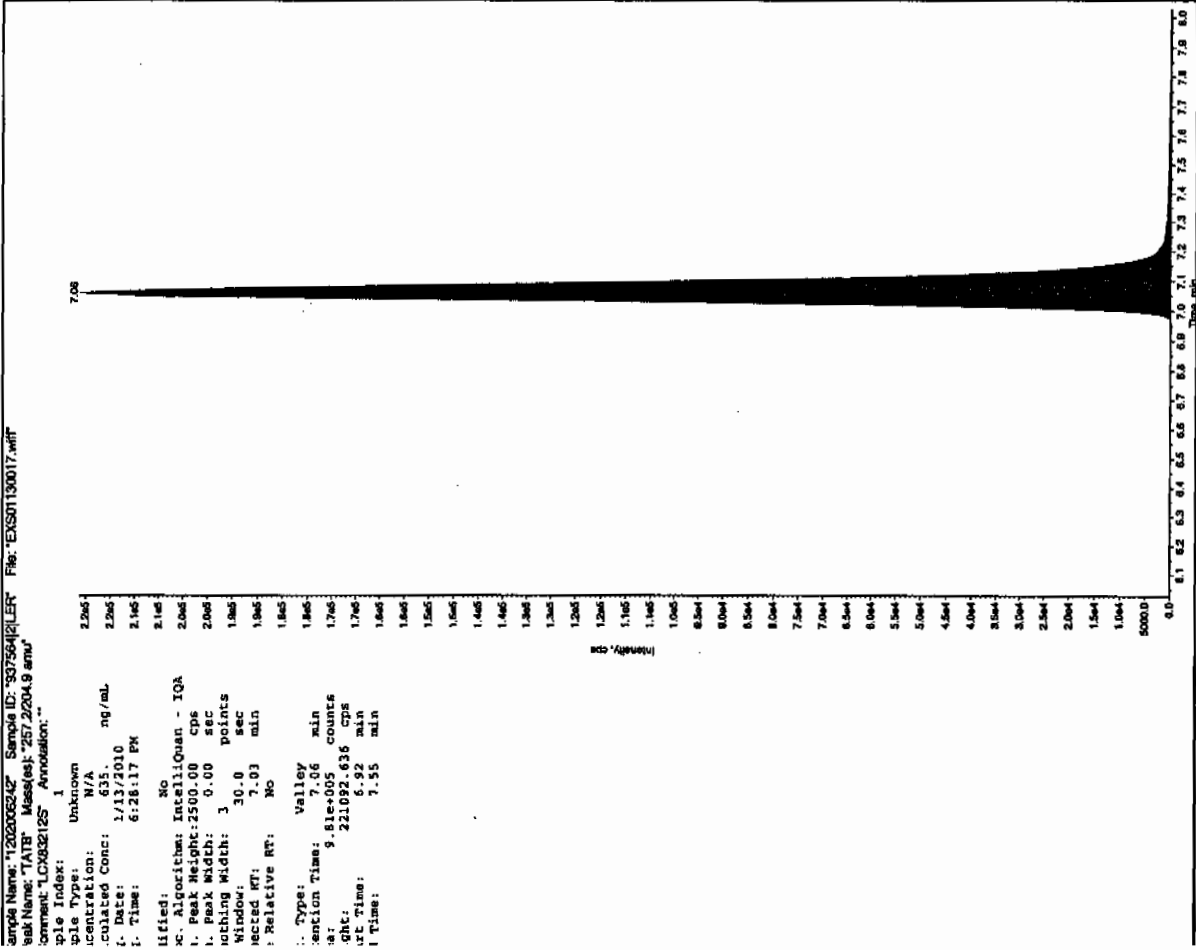
*Concentration =

Instrument	X	<u>Concentrated Extract Volume</u>	X	Dilution
Value		<u>Sample Amount</u>		Factor

11/10
Bayer



11/10

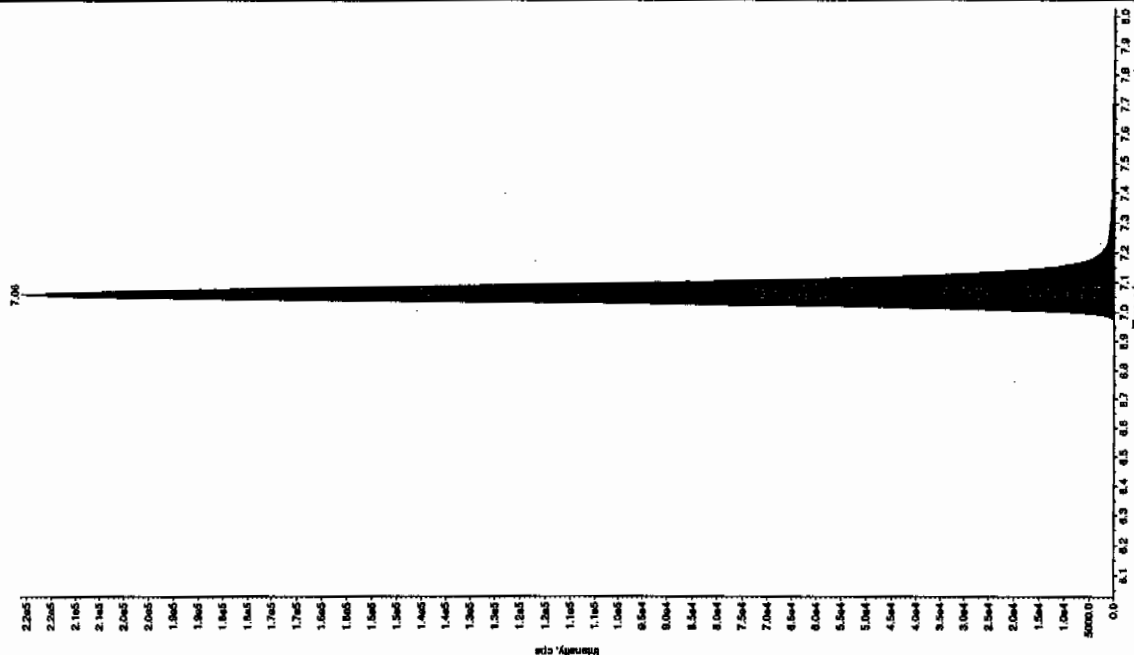


EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

01/13/10
2007

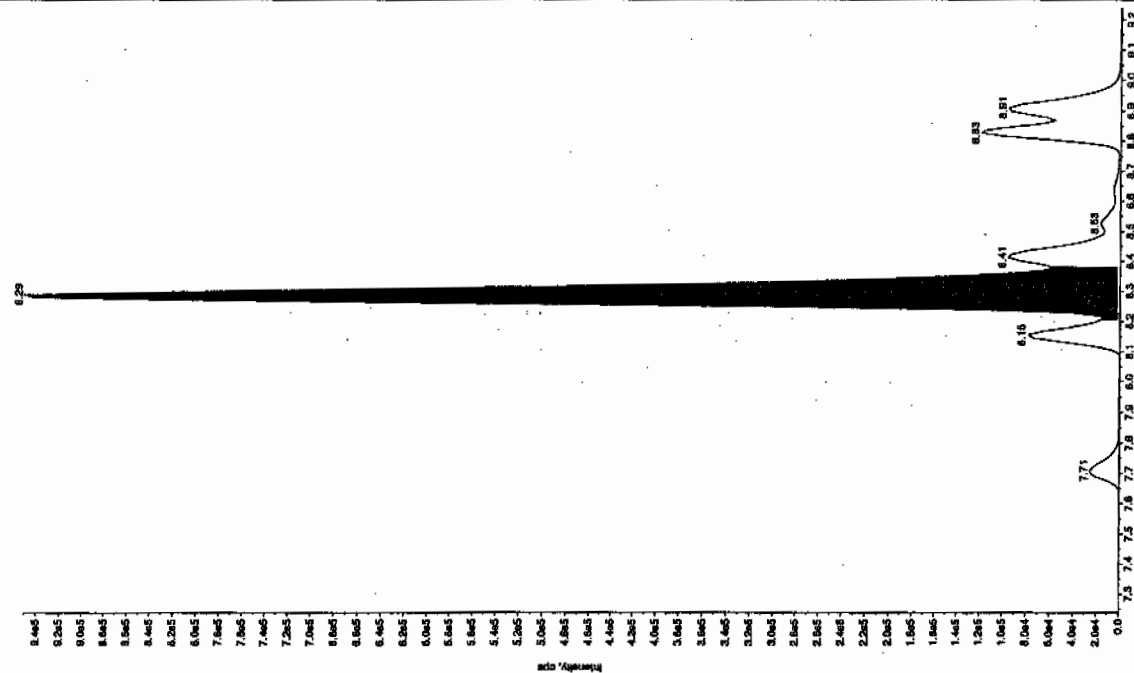
Sample Name: "120200242" Sample ID: "83756421L1" File: "EX501130017.wif"
Peak Name: "1A1B" Mass(es): "257.2204.9 amu"
Comment: "LCX832125" Annotation: ""

File Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 635 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 6:28:17 PM
Modified: No
c. Algorithm: IntelliQuan - TOA
Peak Height: 2500.00 cps
Peak Width: 0.00 sec
Acquisition Width: 3 points
Window: 30.0 sec
Expected RT: 7.03 min
Detected RT: 7.03 min
Relative RT: No
Type: Valley
Retention Time: 7.03 min
Area: 9.31e+005 counts
Height: 221092.636 cps
Start Time: 6.92 min
End Time: 7.55 min



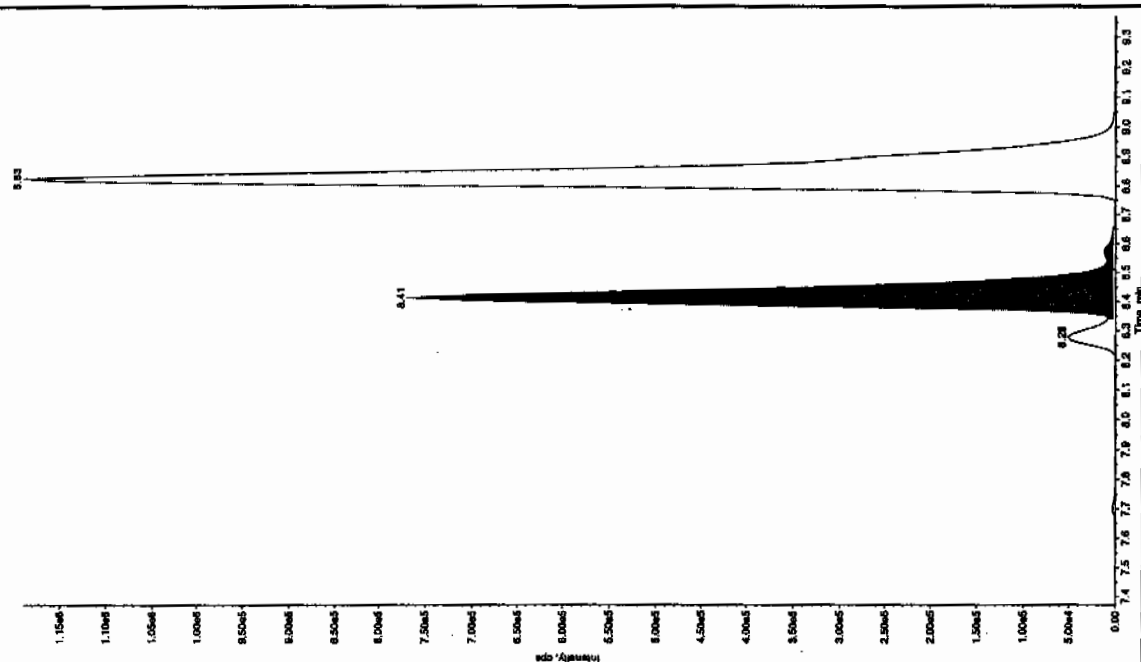
Sample Name: "120200242" Sample ID: "83756421L1" File: "EX501130017.wif"
Peak Name: "35-Dehydrocort" Mass(es): "182.0460 amu"
Comment: "LCX832125" Annotation: ""

File Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 476 ng/mL
Acq. Date: 1/13/2010
Acq. Time: 6:28:17 PM
Modified: Yes
RT Window: 15.0 sec
Expected RT: 8.24 min
Use Relative RT: No
Int. Type: Manual
Retention Time: 8.28 min
Area: 4.00e+006 counts
Height: 962293.274 cps
Start Time: 8.21 min
End Time: 8.38 min



Sample Name: "120206242" Sample ID: "93786421ER" File: "EXS01130017.wif"
 Peak Name: "34-Dinitrofluorene" Mass(es): "182.1151.9 amu"
 Comment: "LCX832125" Annotation: ""

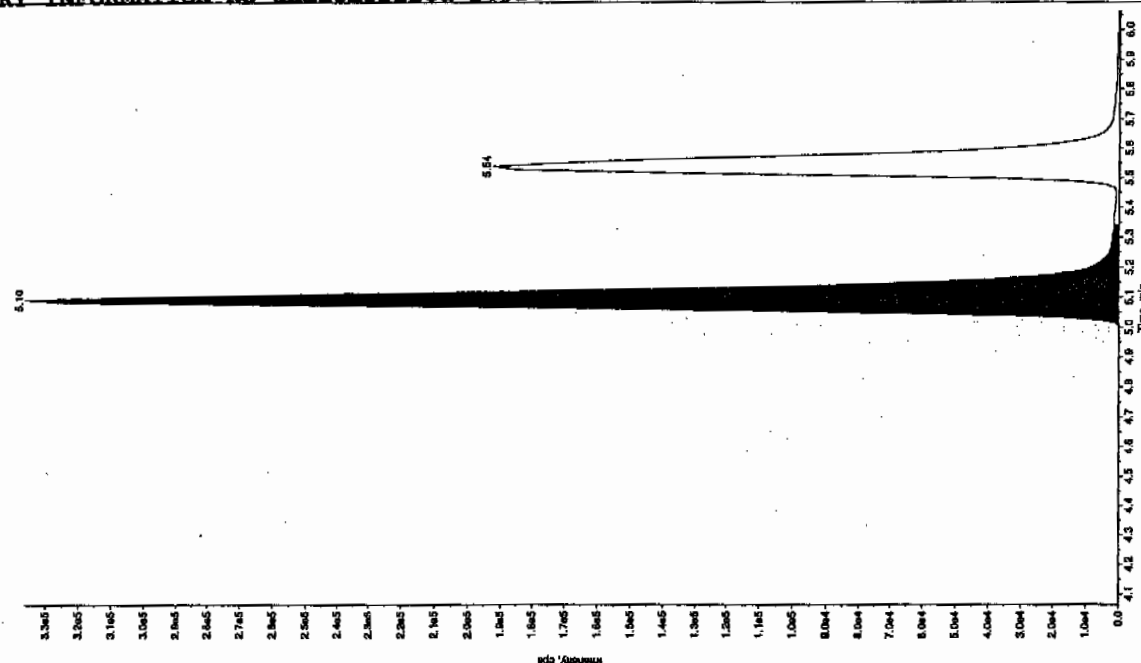
Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 6:28:17 PM
 Acq. Time: 6:28:17 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 1460.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 3 points
 RT Window: 15.0 sec
 Expected RT: 8.37 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 8.41 min
 Area: 3.07e+006 counts
 Height: 766815.430 cps
 Start Time: 8.34 min
 End Time: 8.55 min

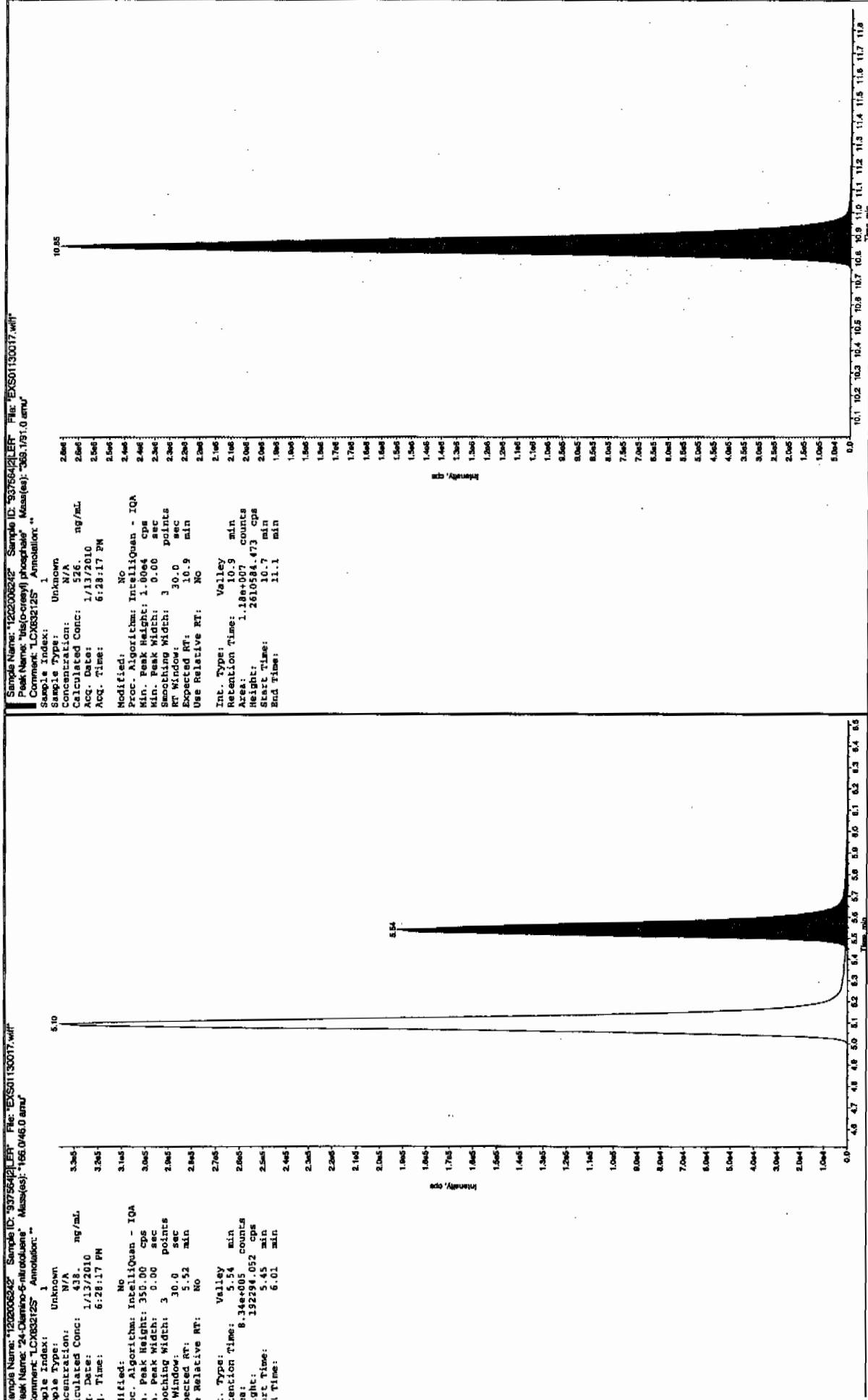


EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

Sample Name: "120206242" Sample ID: "93786421ER" File: "EXS01130017.wif"
 Peak Name: "26-Dinitro-4-nitrofluorene" Mass(es): "186.0465.0 amu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A ng/mL
 Calculated Conc: 1/13/2010
 Acq. Date: 6:28:17 PM
 Acq. Time: 6:28:17 PM
 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: 5.06 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 5.10 min
 Area: 1.42e+006 counts
 Height: 336263.794 cps
 Start Time: 4.99 min
 End Time: 5.34 min





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

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841(243624001MSD)

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 1202006243

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0118026a

Date Analyzed: 19-JAN-10 02:20

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	4740	
121-14-2	2,4-Dinitrotoluene	4900	
121-82-4	RDX	5110	
19406-51-0	4-Amino-2,6-dinitrotoluene	5020	
2691-41-0	HMX	4590	
35572-78-2	2-Amino-4,6-dinitrotoluene	5020	
479-45-8	Tetryl	3070	
606-20-2	2,6-Dinitrotoluene	4860	
78-11-5	PETN	4980	
88-72-2	o-Nitrotoluene	4410	
98-95-3	Nitrobenzene	4490	
99-08-1	m-Nitrotoluene	4700	
99-35-4	1,3,5-Trinitrobenzene	5100	
99-65-0	m-Dinitrobenzene	4790	
99-99-0	p-Nitrotoluene	4840	

*Concentration =

Instrument Value	X	$\frac{\text{Concentrated Extract Volume}}{\text{Sample Amount}}$	X	Dilution Factor
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Quantify Sample Report
GEL Laboratories, LLC / Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010

Name: C:\MASSLYNX\NEW_EXP.PRO\Data\EXP0118026a

Date: 19-Jan-2010

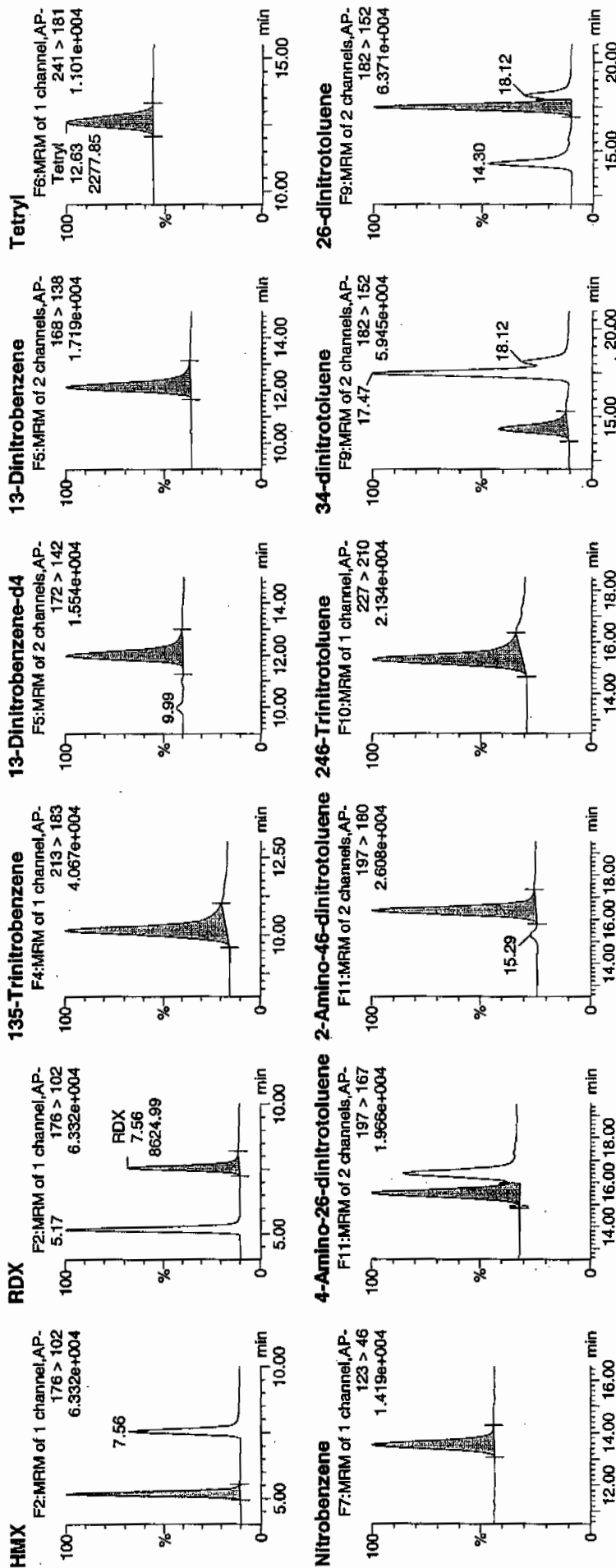
Time: 02:20:34

ID: 1202006243

Vial: 2:1,E

not
1/19/10

WAV 937564 | 243624001MSD | 21

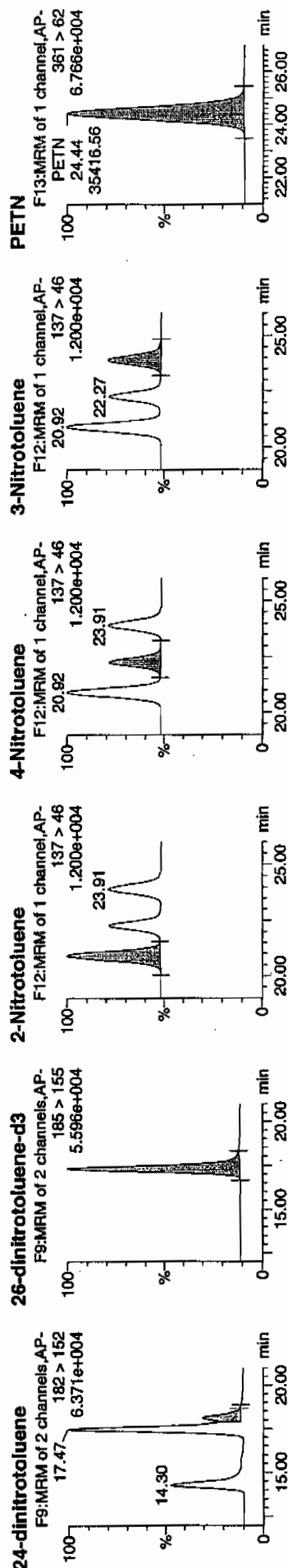


done 1/19/10

Quantify Sample Report

Analyst: Michael A. Penny

Dataset: C:\MASSLYNX\New_Exp.PRO\011810expA.qld, Time: Tue Jan 19 10:59:58 2010



Name	Usage	WtFrac	Initial State	AbsFrac0	Response	Date	ModTime	Pcount	%Rec	%Dev	SIN	
HMx	176 > 102	5.17	11233.400	3794.540	11233.400	bb	1480.206	bb	458.5417	91.7	-8.3	1519.8
RDX	178 > 102	7.56	8624.986	3794.540	8624.986	bb	1136.500	bb	511.1244	102.2	2.2	981.9
135-Trinitrobenzene	213 > 183	10.14	12892.165	3794.540	12892.165	bb	1698.778	bb	509.8635	102.0	2.0	632.7
13-Dinitrobenzene-d4	172 > 142	11.97	3794.540		3794.540	bb	3794.540	bb	559.1200	111.8	11.8	211.4
13-Dinitrobenzene	168 > 138	12.14	4296.669	3794.540	4296.669	bb	566.165	bb	479.1037	95.8	-4.2	545.8
Tetryl	241 > 181	12.69	2277.852	3794.540	2277.852	bb	300.149	bb	307.3367	61.5	-38.5	158.9
Nitrobenzene	123 > 46	13.54	2850.047	3794.540	2850.047	bb	375.546	bb	448.5811	89.7	-10.3	196.8
4-Amino-26-dinitrotoluene	197 > 167	15.53	5634.541	21275.689	5634.541	MM	132.417	MM	501.5963	100.3	0.3	213.1
2-Amino-46-dinitrotoluene	197 > 180	16.40	8327.479	21275.689	8327.479	bb	195.704	bb	502.3672	100.5	0.5	143.2
246-Trinitrotoluene	227 > 210	15.34	7096.496	21275.689	7096.496	bb	166.775	bb	473.6241	94.7	-5.3	210.9
34-dinitrotoluene	182 > 152	14.30	10157.570	21275.689	10157.570	bb	238.713	bb	256.0693	102.4	2.4	312.1
26-dinitrotoluene	182 > 152	17.47	22608.387	21275.689	22608.387	MM	531.320	MM	486.4337	97.3	-2.7	690.0
24-dinitrotoluene	182 > 152	18.12	5270.839	21275.689	5270.839	MM	123.870	MM	489.9313	98.0	-2.0	149.0
26-dinitrotoluene-d3	185 > 155	17.31	21275.689		21275.689	bb	21275.689	bb	579.8906	116.0	16.0	1314.5
2-Nitrotoluene	137 > 46	20.92	2814.581	21275.689	2814.581	bb	66.145	bb	440.7449	88.1	-11.9	335.6
4-Nitrotoluene	137 > 46	22.27	1474.854	21275.689	1474.854	bb	34.661	bb	484.0919	96.8	-3.2	185.8
3-Nitrotoluene	137 > 46	23.91	1706.541	21275.689	1706.541	bb	40.105	bb	470.2786	94.1	-5.9	191.3
PETN	361 > 62	24.44	35416.555	21275.689	35416.555	bb	832.325	bb	498.0958	99.6	-0.4	9625.2

1

High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: RE12-10-7841(243624001MSD)

Lab Code: GEL

GEL Job No (SDG) 10-1100

Matrix: SOIL

GEL Sample ID: 1202006243

Sample Amount 2

Moisture: 15.5

Amount Units g

Date Received: 29-DEC-09

Extraction Type Sonication

Extraction Batch ID: 937562

Concentrated Extract Volume (mL) 10

Date Extracted: 05-JAN-10

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS01130018.wiff

Date Analyzed: 13-JAN-10 18:43

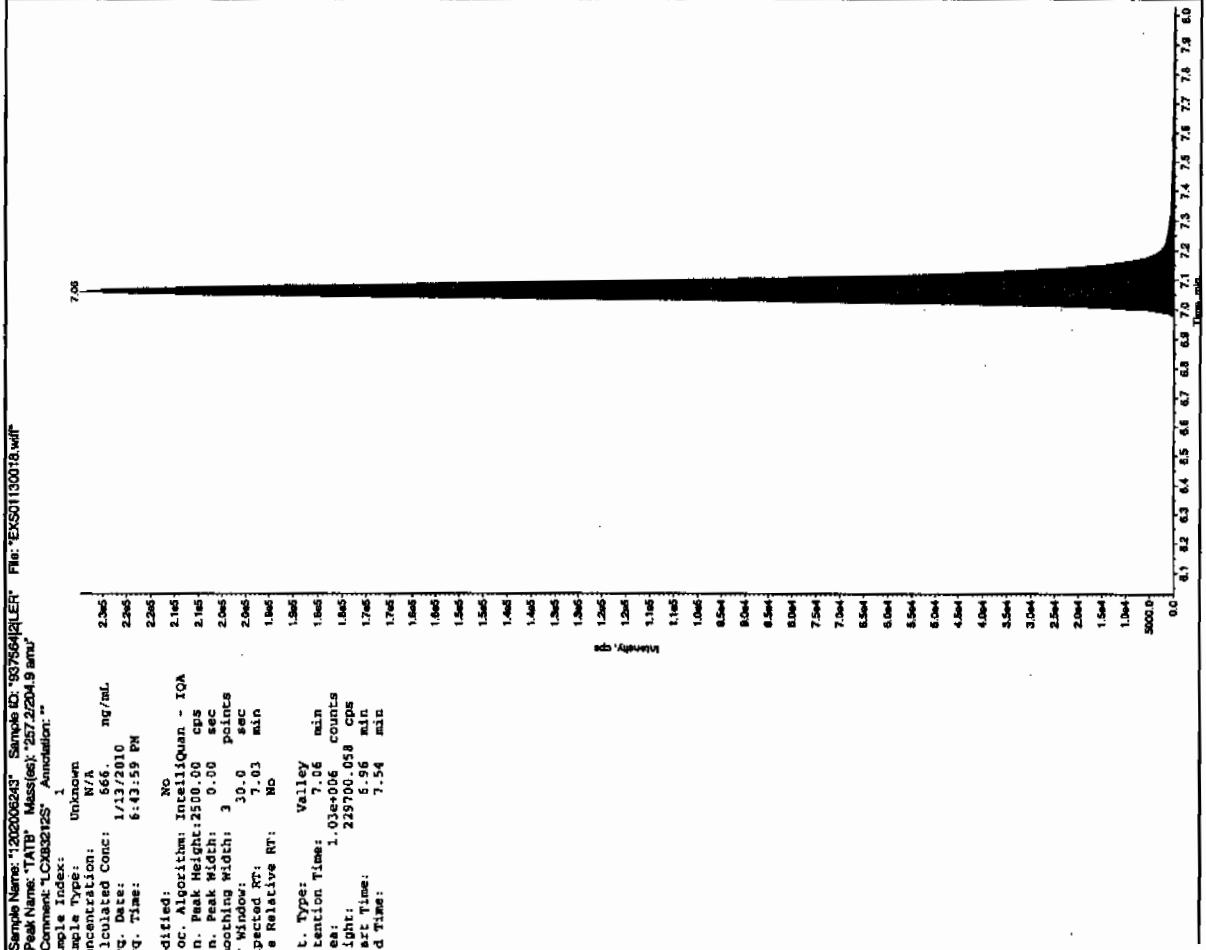
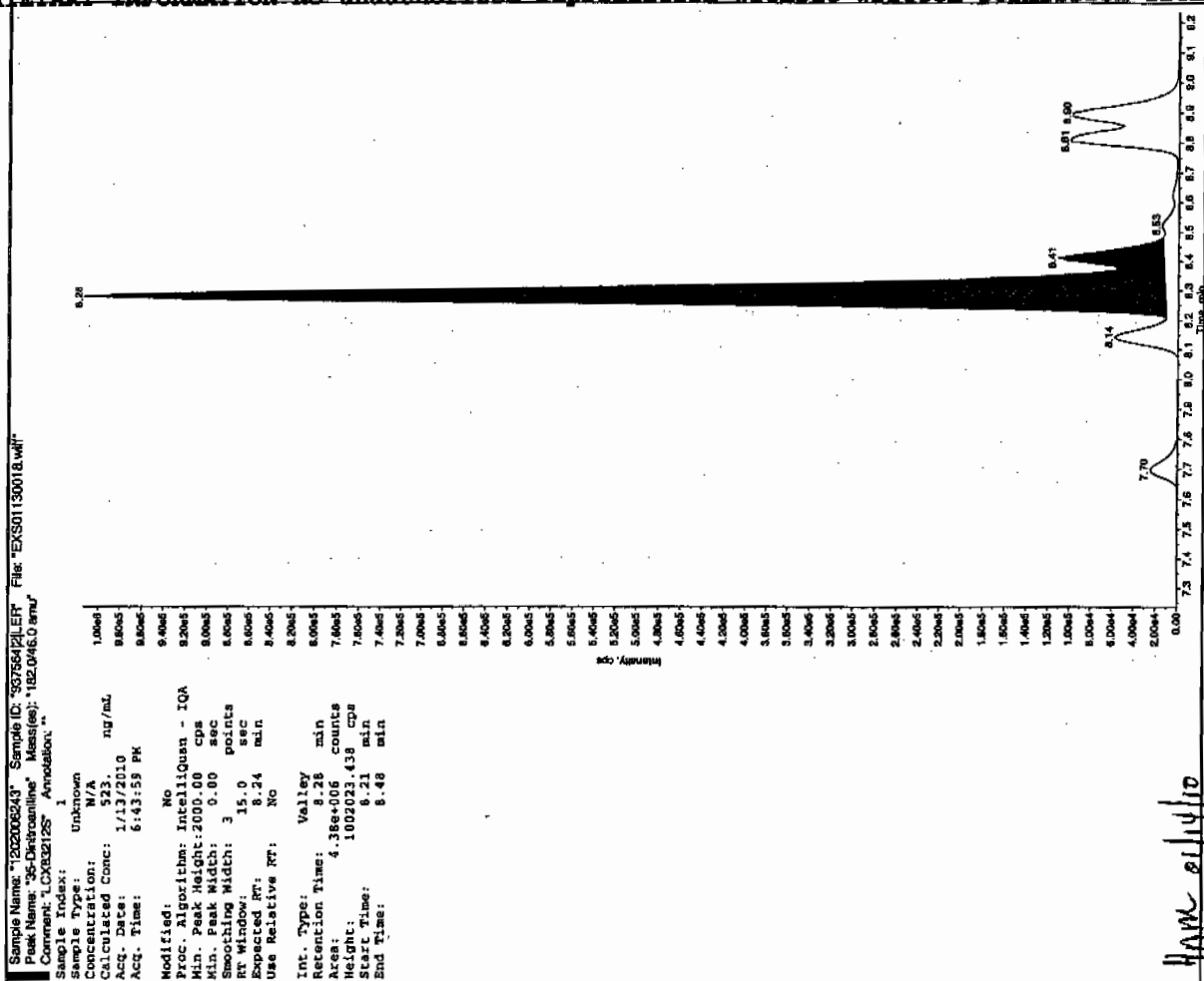
Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	6660	
59229-75-3	2,6-Diamino-4-nitrotoluene	4720	
618-87-1	3,5-Dinitroaniline	4920	
6629-29-4	2,4-Diamino-6-nitrotoluene	4520	
78-30-8	tris(o-cresyl) phosphate	5200	

*Concentration =

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

11/13/10
20880820



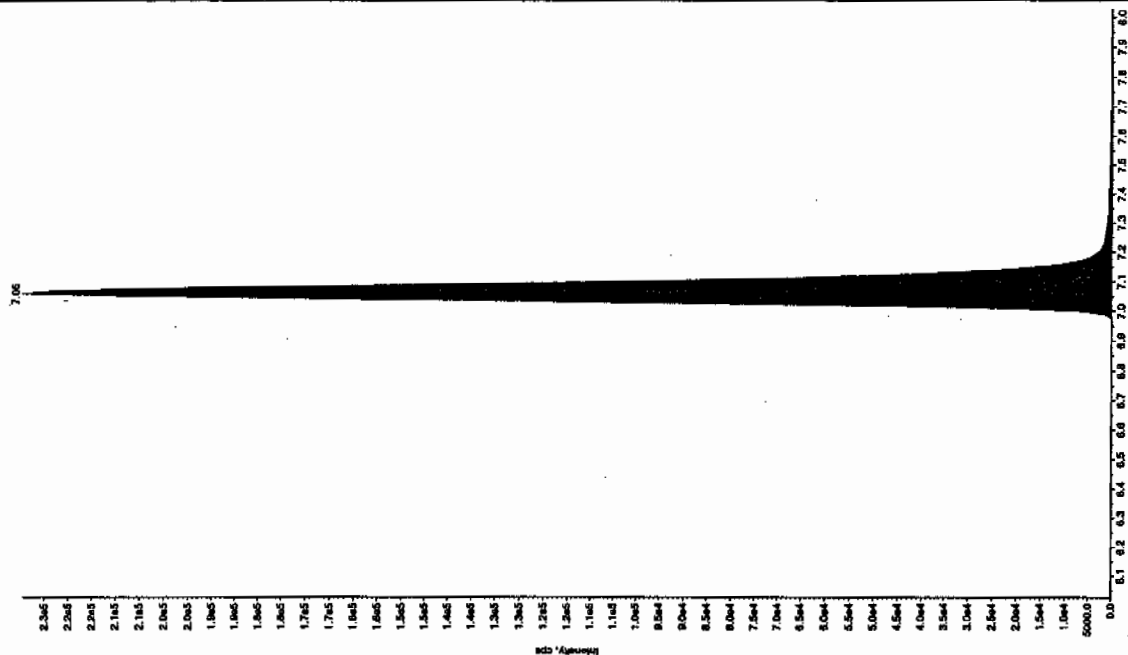
EL SOP GL-OA-E-056, Method 8321A-Modified LCMSMS#4

11/13/10

01/10/11
J. J. J.

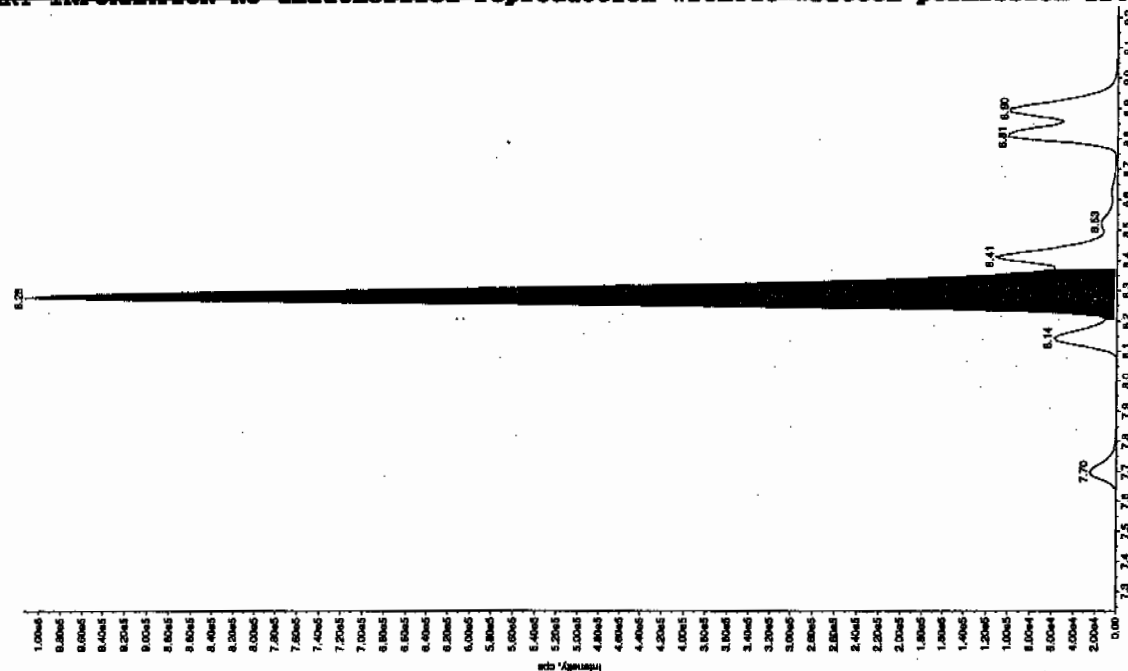
Sample Name: "120006243" Sample ID: "93756421ER" File: "EXS01130018.wif"
Peak Name: "TATB" Mass(es): "257.2204.9 amu"
Comment: "LCX83212S" Annotation: "

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 666. ng/mL
Acq. Date: 1/13/2010
Acq. Time: 6:43:59 PM
Modified: No
Ac. Algorithm: IntelliQuan - IOA
n. Peak Height: 2500.00 cps
n. Peak Width: 0.00 sec
Sweeping Width: 3 points
Window: 30.0 sec
Expected RT: 7.03 min
Use Relative RT: No
Int. Type: Valley
Retention Time: 7.06 min
Peak: 1.03e+006 counts
Height: 1865
Start Time: 6.96 min
End Time: 7.54 min



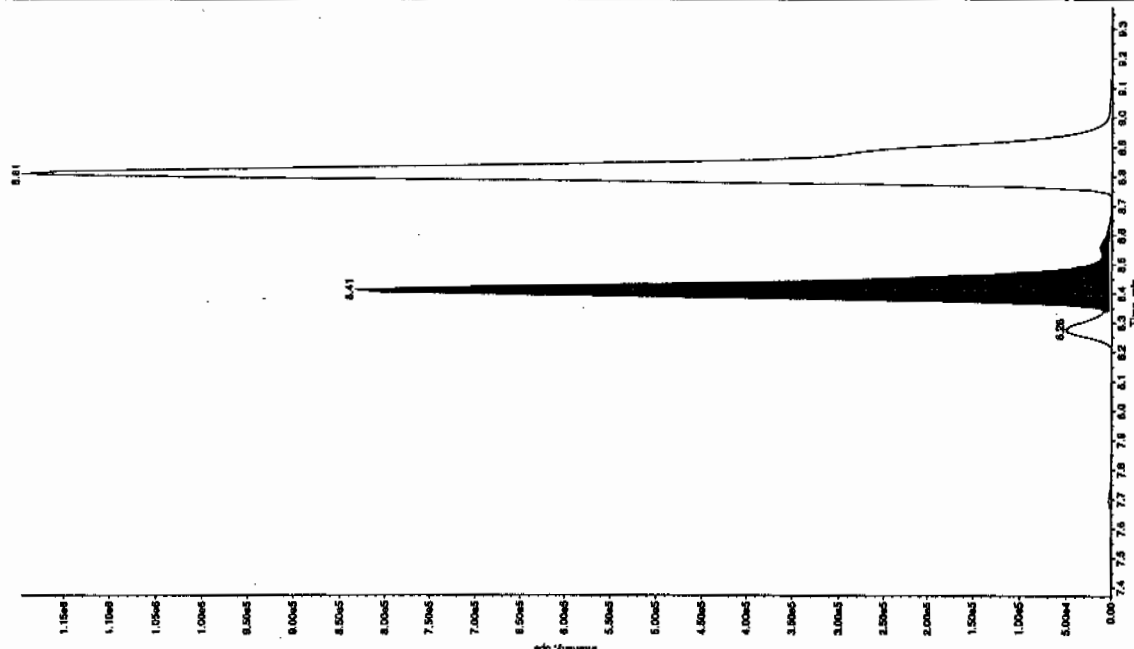
Sample Name: "120006243" Sample ID: "93756421ER" File: "EXS01130018.wif"
Peak Name: "3a-Diolciproline" Mass(es): "182.0463.0 amu"
Comment: "LCX83212S" Annotation: "

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 492. ng/mL
Acq. Date: 1/13/2010
Acq. Time: 6:43:59 PM
Modified: Yes
RT Window: 15.0 sec
Expected RT: 8.28 min
Use Relative RT: No
Int. Type: Manual
Retention Time: 8.28 min
Peak: 4.13e+006 counts
Height: 10179.00 cps
Start Time: 8.21 min
End Time: 8.37 min



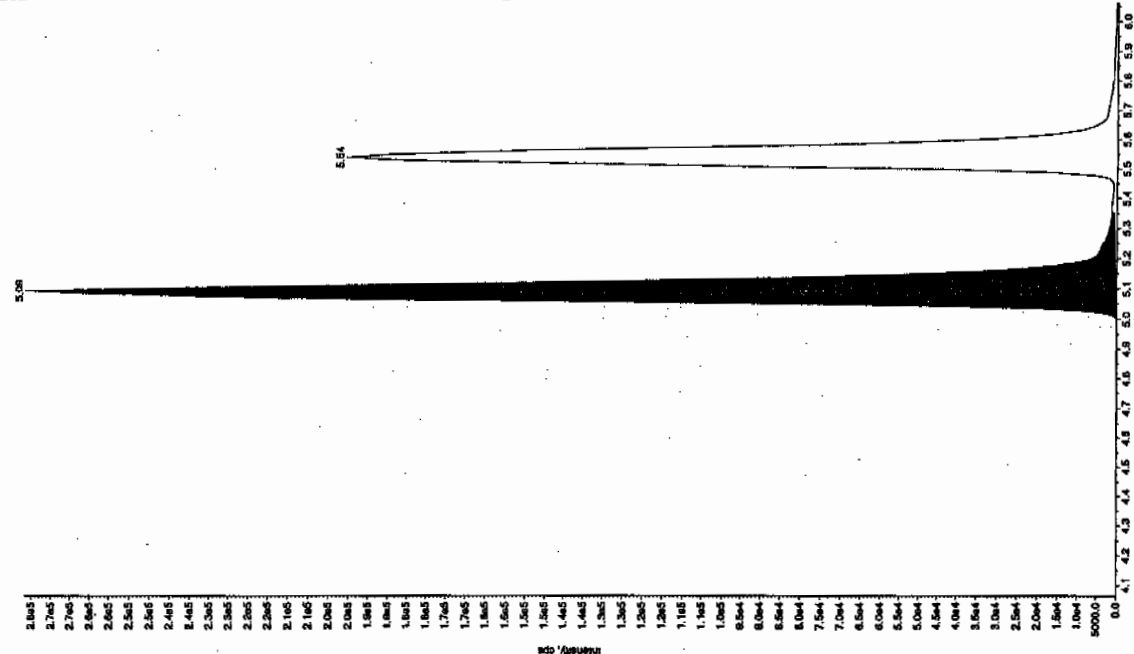
Sample Name: "120000243" Sample ID: "93756412L EP" File: "EXS01130018.wif"
 Peak Name: "34-Dehydro-4-nitrophenol" Mass(es): "182.1515.9 amu"
 Comment: "LCX832125" Annotation: ""

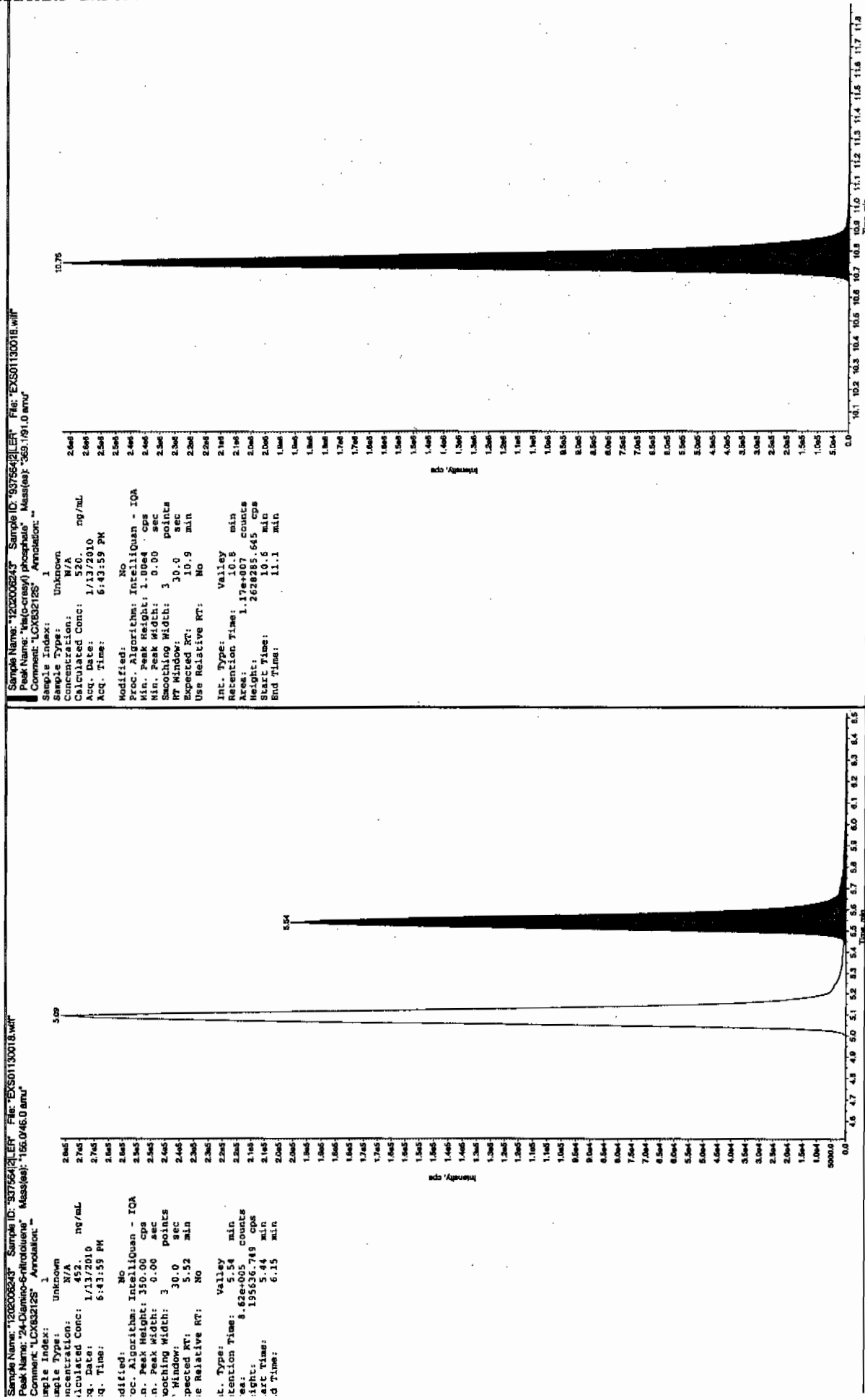
Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 1/13/2010 ng/mL
 Acq. Date: 6:43:59 PM
 Acq. Time: 6:43:59 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IQA
 Min. Peak Height: 1460.00 cps
 Min. Peak Width: 0.00 sec
 Smoothing Width: 3 points
 RT Window: 15.0 sec
 Expected RT: 8.37 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 8.41 min
 Area: 3.08e+006 counts
 Height: 829506.531 cps
 Start Time: 8.34 min
 End Time: 8.63 min



Sample Name: "120000243" Sample ID: "93756412L EP" File: "EXS01130018.wif"
 Peak Name: "26-Diamide-4-nitrophenol" Mass(es): "166.0465.0 amu"
 Comment: "LCX832125" Annotation: ""

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 1/13/2010 ng/mL
 Acq. Date: 6:43:59 PM
 Acq. Time: 6:43:59 PM
 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: 5.06 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 5.09 min
 Area: 1.22e+006 counts
 Height: 276557.068 cps
 Start Time: 4.98 min
 End Time: 5.35 min





Sample Name: "1202006243" Sample ID: "33756421.ER" File: "EX501130018.wif"
 Peak Name: "24-Diamino-6-phenylidene" Mass(es): "156.046.0 amu"
 Comment: "LCX832125" Annotation: "

Sample Index: 1
 Sample Type: Unknown
 Concentration: N/A
 Calculated Conc: 520. ng/mL
 Acq. Date: 1/13/2010
 Acq. Time: 6:43:59 PM
 Modified: No
 Proc. Algorithm: IntelliQuan - IQA
 n. Peak Height: 1.00e4 cps
 min. Peak Width: 0.00 sec
 Smoothing Width: 30.0 points
 n. Window: 30.0 sec
 Expected RT: 10.9 min
 Use Relative RT: No
 Int. Type: Valley
 Retention Time: 10.8 min
 Area: 1.17e+007 counts
 Height: 2628285.645 cps
 Start Time: 10.6 min
 End Time: 11.1 min

MISCELLANEOUS DATA

Prep Logbook Nitroaromatics and Nitramines by High Performance Liquid Chromatography (HPLC)

Batch ID: 937562 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)
1202006240 MB	05-JAN-2010 14:43:28	2	10	5
1202006241 LCS	05-JAN-2010 14:43:28	2	10	5
243624001	05-JAN-2010 14:43:28	2	10	5
1202006242 MS (243624001)	05-JAN-2010 14:43:28	2	10	5
1202006243 MSD (243624001)	05-JAN-2010 14:43:28	2	10	5
243624002	05-JAN-2010 14:43:28	2	10	5
243624003	05-JAN-2010 14:43:28	2	10	5
243624004	05-JAN-2010 14:43:28	2	10	5
243624005	05-JAN-2010 14:43:28	2	10	5
243624006	05-JAN-2010 14:43:28	2	10	5
243624007	05-JAN-2010 14:43:28	2	10	5
243624008	05-JAN-2010 14:43:28	2	10	5
243624009	05-JAN-2010 14:43:28	2	10	5
243624010	05-JAN-2010 14:43:28	2	10	5
243624011	05-JAN-2010 14:43:28	2	10	5

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1202006241	8321 Explosives LCS	DX091230-03	.1	mL	Final Solvent: ACN
LCS	1202006241	8321 LANL Explosives Mix 10mg/L	UXX091229-02.1	1	mL	
MS	1202006242	8321 Explosives LCS	DX091230-03	.1	mL	
MS	1202006242	8321 LANL Explosives Mix 10mg/L	UXX091229-02.1	1	mL	
MSD	1202006243	8321 Explosives LCS	DX091230-03	.1	mL	
MSD	1202006243	8321 LANL Explosives Mix 10mg/L	UXX091229-02.1	1	mL	
SURR	All	3,4-Dinitrotoluene (8330 Sur.) 100ppm	DX091230-02	.05	mL	

GEL ORGANIC RUN LOG

INSTRUMENT ID: LCMSMS #1

Date: 01/18/10
 Extr. Injection Volume: 50ul
 Sequence Number: 011810expA
 Initial Calibration Date: 01/18/10
 Method: SW846 8321A-Modified
 Int. Std.: UXX091230-01.2
 Mobile Phase Lot#: 1255172, 1236350
 Standard-Samp Reagent Lot#: 1253092, 1246195
 Reviewed By: *hnm*
 Date: 01/19/10
 SOP: GL-OA-E-056 Rev.12
 Alt Check Std. ID: WXX100118-07

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC_Flag
EXP0118001a	XIBLK01	MAP	1/18/10 14:03			1		USE	B
EXP0118002a	XIBLK01	MAP	1/18/10 14:33			1		USE	B
EXP0118003a	WXXICAL-01	MAP	1/18/10 15:02			1		USE	I
EXP0118004a	WXXICAL-02	MAP	1/18/10 15:32			1		USE	I
EXP0118005a	WXXICAL-03	MAP	1/18/10 16:01			1		USE	I
EXP0118006a	WXXICAL-04	MAP	1/18/10 16:31			1		USE	I
EXP0118007a	WXXICAL-05	MAP	1/18/10 17:00			1		USE	I
EXP0118008a	WXXICAL-06	MAP	1/18/10 17:29			1		USE	I
EXP0118009a	XIBLK02	MAP	1/18/10 17:59			1		USE	B
EXP0118010a	WXXICV	MAP	1/18/10 18:28			1		USE	C
EXP0118011a	XIBLK03	MAP	1/18/10 18:58			1		USE	B
EXP0118012a	WXXCRI	MAP	1/18/10 19:27			1		USE	C
EXP0118013a	1202003473	MAP	1/18/10 19:57	936340	10-1020	2	LANL	USE	S
EXP0118014a	1202003474	MAP	1/18/10 20:26	936340	10-1020	2	LANL	USE	S
EXP0118015a	243401006	MAP	1/18/10 20:56	936340	10-1020	2	LANL	USE	S
EXP0118016a	1202003475	MAP	1/18/10 21:25	936340	10-1020	2	LANL	USE	S
EXP0118017a	1202003476	MAP	1/18/10 21:55	936340	10-1020	2	LANL	USE	S
EXP0118018a	243401010	MAP	1/18/10 22:24	936340	10-1020	2	LANL	USE	S
EXP0118019a	WXXCCV	MAP	1/18/10 22:54			1		USE	C
EXP0118020a	XIBLK04	MAP	1/18/10 23:23			1		USE	B
EXP0118021a	WXXCRI	MAP	1/18/10 23:53			1		USE	C
EXP0118022a	1202006240	MAP	1/19/10 0:22	937564	10-1100	2	LANL	USE	S
EXP0118023a	1202006241	MAP	1/19/10 0:52	937564	10-1100	2	LANL	USE	S
EXP0118024a	243624001	MAP	1/19/10 1:21	937564	10-1100	2	LANL	USE	S
EXP0118025a	1202006242	MAP	1/19/10 1:51	937564	10-1100	2	LANL	USE	S
EXP0118026a	1202006243	MAP	1/19/10 2:20	937564	10-1100	2	LANL	USE	S
EXP0118027a	243624002	MAP	1/19/10 2:50	937564	10-1100	2	LANL	USE	S
EXP0118028a	243624003	MAP	1/19/10 3:19	937564	10-1100	2	LANL	USE	S
EXP0118029a	243624004	MAP	1/19/10 3:48	937564	10-1100	2	LANL	USE	S

EXP0118030a	243624005	MAP	1/19/10 4:18	937564	10-1100	2	LANL	USE	S
EXP0118031a	243624006	MAP	1/19/10 4:47	937564	10-1100	2	LANL	USE	S
EXP0118032a	WXXCVC	MAP	1/19/10 5:17			1		USE	C
EXP0118033a	XIBLK05	MAP	1/19/10 5:47			1		USE	B
EXP0118034a	WXXCRI	MAP	1/19/10 6:16			1		USE	C
EXP0118035a	243624007	MAP	1/19/10 6:46	937564	10-1100	2	LANL	USE	S
EXP0118036a	243624008	MAP	1/19/10 7:15	937564	10-1100	2	LANL	USE	S
EXP0118037a	243624009	MAP	1/19/10 7:45	937564	10-1100	2	LANL	USE	S
EXP0118038a	243624010	MAP	1/19/10 8:14	937564	10-1100	2	LANL	USE	S
EXP0118039a	243624011	MAP	1/19/10 8:44	937564	10-1100	2	LANL	USE	S
EXP0118040a	WXXCVC	MAP	1/19/10 9:13			1		USE	C
EXP0118041a	XIBLK06	MAP	1/19/10 9:43			1		USE	B
EXP0118042a	WXXCRI	MAP	1/19/10 10:12			1		USE	C

GEL ORGANIC RUN LOG INSTRUMENT ID: LCMSMS4

Date: 01/13/10
 Extr. Injection Volume: 10uL
 Sequence Number: 011310
 Initial Calibration Date: 011310
 Method: 8321A-Modified
 Int. Std.: N/A
 Mobile Phase Lot#: 1236350, 1246467
 Standard-Samp Reagent Lot#: 1246195, 1253092
 Reviewed By: *Hawc*
 Date: *01/14/10*
 SOP: GL-OA-E-056 Rev.12
 Alt Check Std. ID: WXX100113-26

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC Flag
EXS01130001.wiff	XIBLK01	LER	1/13/2010 14:17			1		USE	B
EXS01130002.wiff	XIBLK01	LER	1/13/2010 14:32			1		USE	B
EXS01130003.wiff	WXXICAL-19	LER	1/13/2010 14:48			1		USE	I
EXS01130004.wiff	WXXICAL-20	LER	1/13/2010 15:04			1		USE	I
EXS01130005.wiff	WXXICAL-21	LER	1/13/2010 15:19			1		USE	I
EXS01130006.wiff	WXXICAL-22	LER	1/13/2010 15:35			1		USE	I
EXS01130007.wiff	WXXICAL-23	LER	1/13/2010 15:51			1		USE	I
EXS01130008.wiff	WXXICAL-24	LER	1/13/2010 16:06			1		USE	I
EXS01130009.wiff	WXXICAL-25	LER	1/13/2010 16:22			1		USE	I
EXS01130010.wiff	XIBLK02	LER	1/13/2010 16:38			1		USE	B
EXS01130011.wiff	WXXICV	LER	1/13/2010 16:54			1		USE	C
EXS01130012.wiff	XIBLK03	LER	1/13/2010 17:09			1		USE	B
EXS01130013.wiff	WXXCRI	LER	1/13/2010 17:25			1		USE	C
EXS01130014.wiff	1202006240	LER	1/13/2010 17:41	937564	10-1100	2	LANL	USE	S
EXS01130015.wiff	1202006241	LER	1/13/2010 17:56	937564	10-1100	2	LANL	USE	S
EXS01130016.wiff	243624001	LER	1/13/2010 18:12	937564	10-1100	2	LANL	USE	S
EXS01130017.wiff	1202006242	LER	1/13/2010 18:28	937564	10-1100	2	LANL	USE	S
EXS01130018.wiff	1202006243	LER	1/13/2010 18:43	937564	10-1100	2	LANL	USE	S
EXS01130019.wiff	243624002	LER	1/13/2010 18:59	937564	10-1100	2	LANL	USE	S
EXS01130020.wiff	243624003	LER	1/13/2010 19:15	937564	10-1100	2	LANL	USE	S
EXS01130021.wiff	243624004	LER	1/13/2010 19:31	937564	10-1100	2	LANL	USE	S
EXS01130022.wiff	243624005	LER	1/13/2010 19:46	937564	10-1100	2	LANL	USE	S
EXS01130023.wiff	243624006	LER	1/13/2010 20:02	937564	10-1100	2	LANL	USE	S
EXS01130024.wiff	WXXCCV	LER	1/13/2010 20:18			1		USE	C
EXS01130025.wiff	XIBLK04	LER	1/13/2010 20:33			1		USE	B
EXS01130026.wiff	WXXCRI	LER	1/13/2010 20:49			1		USE	C
EXS01130027.wiff	243624007	LER	1/13/2010 21:05	937564	10-1100	2	LANL	USE	S
EXS01130028.wiff	243624008	LER	1/13/2010 21:21	937564	10-1100	2	LANL	USE	S
EXS01130029.wiff	243624009	LER	1/13/2010 21:36	937564	10-1100	2	LANL	USE	S

EXS01130030.wiff	LER	243624010	1/13/2010 21:52	937564	10-1100	2	LANL	USE	S
EXS01130031.wiff	LER	243624011	1/13/2010 22:08	937564	10-1100	2	LANL	USE	S
EXS01130032.wiff	LER	WXXCCV	1/13/2010 22:23			1		USE	C
EXS01130033.wiff	LER	XIBLK05	1/13/2010 22:39			1		USE	B
EXS01130034.wiff	LER	WXXCRI	1/13/2010 22:55			1		USE	C
EXS01130035.wiff	LER	1202011616	1/13/2010 23:10	940042	VARIOUS	2	LANL	USE	S
EXS01130036.wiff	LER	1202011617	1/13/2010 23:26	940042	VARIOUS	2	LANL	USE	S
EXS01130037.wiff	LER	244234005	1/13/2010 23:42	940042	10-1168	2	LANL	USE	S
EXS01130038.wiff	LER	1202011618	1/13/2010 23:58	940042	10-1168	2	LANL	USE	S
EXS01130039.wiff	LER	1202011619	1/14/2010 0:13	940042	10-1168	2	LANL	USE	S
EXS01130040.wiff	LER	244234012	1/14/2010 0:29	940042	10-1168	2	LANL	USE	S
EXS01130041.wiff	LER	244234016	1/14/2010 0:45	940042	10-1168	2	LANL	USE	S
EXS01130042.wiff	LER	244239006	1/14/2010 1:00	940042	10-1171	2	LANL	USE	S
EXS01130043.wiff	LER	WXXCCV	1/14/2010 1:16			1		USE	C
EXS01130044.wiff	LER	XIBLK06	1/14/2010 1:32			1		USE	B
EXS01130045.wiff	LER	WXXCRI	1/14/2010 1:47			1		USE	C

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 781365

Revision No.:

DATA EXCEPTION REPORT

Mo. Day Yr. 19-JAN-10	Division: Industrial	Quality Criteria: Specifications	Type: Process
Instrument Type: LC-MS/MS	Test / Method: SW846 8321A Modified	Matrix Type: Solid	Client Code: LANL
Batch ID: 937564	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 243624(10-1100) Application Issues: Failed Recovery for LCS/LCSD Failed RPD for MS/MSD, or PS/PSD			
Specification and Requirements		DER Disposition:	
Exception Description: 1. The Laboratory Control Sample (1202006241) did not meet spike recovery limits for TATB at 332%. The recovery limits are 47-166%. 2. The MS/MSD pair (1202006242/3) did not meet RPD acceptance limits for Tetra at 33.1%. The acceptance limits are 0-30%.		1. While TATB exhibited a high bias, it was not detected in the associated samples. Both the Matrix Spike and Matrix Spike Duplicate met acceptance limits for TATB. Therefore, the data are reported with the appropriate DER. The discrepancy is noted in the case narrative. 2. Since all other RPD recoveries met acceptance criteria, the noted exception is attributed to vagaries in the extraction process. The data are reported with the appropriate DER. The discrepancy is noted in the case narrative.	

Originator's Name:

Michael Penny 19-JAN-10

Data Validator/Group Leader:

Herbert Maier 19-JAN-10

GC
SEMIVOLATILE
PCB
ANALYSIS

**PCB Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-1100**

Method/Analysis Information

Procedure: Analysis of Polychlorinated Biphenyls by ECD
Analytical Method: SW846 8082
Prep Method: SW846 3550B
Analytical Batch Number: 937679
Prep Batch Number: 937678

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8082:

Sample ID	Client ID
243624001	RE12-10-7841
243624002	RE12-10-7840
243624003	RE12-10-7839
243624004	RE12-10-7838
1202006551	Method Blank (MB)
1202006552	Laboratory Control Sample (LCS)
1202006553	243630003(RE12-10-7664) Matrix Spike (MS)
1202006554	243630003(RE12-10-7664) 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(s) 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 (#10-1102) 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 for this SDG were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recoveries for this SDG 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.

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.

Sample Dilutions

Samples 243624001 (RE12-10-7841) (1:5) and 243624002 (RE12-10-7840) (1:10) were diluted due to the oily matrix of the extracts.

Sample Re-extraction/Re-analysis

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

Miscellaneous Information**Electronic Package Comment**

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the analyst, reviewer, and report specialist names associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation

Data exception reports (DERs) are for documentation of any procedural anomalies that may deviate from referenced SOP or contractual document. A DER was not required for this SDG.

Manual Integrations

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 VIIs 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:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD2A.I_1	HP Gas Chromatograph	HP6890 Series ECD	Rtx-CLP I	30m x 0.25mm, 0.25um (Rtx-CLPesticide)
ECD2A.I_2	HP Gas Chromatograph	HP6890 Series ECD	Rtx-CLP II	30m x 0.25mm, 0.20um (Rtx-CLPesticide II)

Certification Statement

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

Review Validation

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

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

Reviewer: Andy Whitlock

Date: 1-21-2010

Roadmap for LANL 10-1100 PCB

This roadmap was analyzed by jen01212 on 01-04-2010, 09:14.

This roadmap was reviewed by rob01090 on 01-07-2010, 16:12.

This roadmap was packaged by yml on 01-20-2010, 15:57.

Front Sample Column

exclude	manual	datafile	smpid	sampletype	injdte	injtime	sublist	clientid	dilution	prebatchid	comment
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/022f2201.d	243624001	sample	31-DEC-2009	11:30	10-1100.sub	RE12-10-7841	5.00000	937679	UPLOAD BOTH, USE HIGHER
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/023f2301.d	243624002	sample	31-DEC-2009	11:41	10-1100.sub	RE12-10-7840	10.00000	937679	UPLOAD BOTH, USE HIGHER
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/024f2401.d	243624003	sample	31-DEC-2009	11:52	10-1100.sub	RE12-10-7839	1.00000	937679	UPLOAD BOTH, USE HIGHER
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/025f2501.d	243624004	sample	31-DEC-2009	12:03	10-1100.sub	RE12-10-7838	1.00000	937679	UPLOAD BOTH, USE HIGHER

Back Sample Column

exclude	manual	datafile	smpid	sampletype	injdte	injtime	sublist	clientid	dilution	prebatchid	comment
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/022b2201.d	243624001	sample	31-DEC-2009	11:30	10-1100.sub	RE12-10-7841	5.00000	937679	UPLOAD BOTH, USE HIGHER
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/023b2301.d	243624002	sample	31-DEC-2009	11:41	10-1100.sub	RE12-10-7840	10.00000	937679	UPLOAD BOTH, USE HIGHER
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/024b2401.d	243624003	sample	31-DEC-2009	11:52	10-1100.sub	RE12-10-7839	1.00000	937679	UPLOAD BOTH, USE HIGHER
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/025b2501.d	243624004	sample	31-DEC-2009	12:03	10-1100.sub	RE12-10-7838	1.00000	937679	UPLOAD BOTH, USE HIGHER

Front QC Sample Column

exclude	manual	datafile	smpid	sampletype	injdte	injtime	sublist	clientid	dilution	prebatchid	comment
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/013f1301-1.d	1202006551	mb	31-DEC-2009	09:50	10-1100.sub	PBLK01	1.00000	937679	
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/014f1401-1.d	1202006552	lcs	31-DEC-2009	10:01	10-1100.sub	PBLK01LCS	1.00000	937679	

Back QC Sample Column

exclude	manual	datafile	smpid	sampletype	injdte	injtime	sublist	clientid	dilution	prebatchid	comment
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/013b1301-1.d	1202006551	mb	31-DEC-2009	09:50	10-1100.sub	PBLK01	1.00000	937679	
<input type="checkbox"/>	N	/chem/ecd2a.i/123109.b/014b1401-1.d	1202006552	lcs	31-DEC-2009	10:01	10-1100.sub	PBLK01LCS	1.00000	937679	

SAMPLE DATA SUMMARY

PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624004

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.J
Analyst: JAOC
Aliquot: 30.09 g
Column: 1 CLP1
2 CLP2

Matrix: R
% Moisture: 21.8
Project: LANL01004
SOP Ref: GL-OA-F-040
Dilution: 1
Inj. Vol: 1 uL
Final Volume: 1 mL
Level: LOW

Client ID: RE12-10-7838
Batch ID: 937679
Run Date: 12/31/2009 12:03
Prep Date: 12/30/2009 20:12
Data File: 025f2501.d
025b2501.d

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	4.25	ug/kg	1.41	4.25	1
11104-28-2	Aroclor-1221	U	4.25	ug/kg	1.41	4.25	1
11141-16-5	Aroclor-1232	U	4.25	ug/kg	1.41	4.25	1
53469-21-9	Aroclor-1242	U	4.25	ug/kg	1.41	4.25	1
12672-29-6	Aroclor-1248	U	4.25	ug/kg	1.41	4.25	1
11097-69-1	Aroclor-1254	U	4.25	ug/kg	1.41	4.25	1
11096-82-5	Aroclor-1260	U	4.25	ug/kg	1.41	4.25	1

PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624003

Client ID: RE12-10-7839
Batch ID: 937679
Run Date: 12/31/2009 11:52
Prep Date: 12/30/2009 20:12
Data File: 024f2401.d
024b2401.d

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.16 g
Column: 1 CLP1
2 CLP2

Matrix: R
%Moisture: 11.7
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	3.76	ug/kg	1.25	3.76	1
11104-28-2	Aroclor-1221	U	3.76	ug/kg	1.25	3.76	1
11141-16-5	Aroclor-1232	U	3.76	ug/kg	1.25	3.76	1
53469-21-9	Aroclor-1242	U	3.76	ug/kg	1.25	3.76	1
12672-29-6	Aroclor-1248	U	3.76	ug/kg	1.25	3.76	1
11097-69-1	Aroclor-1254	U	3.76	ug/kg	1.25	3.76	1
11096-82-5	Aroclor-1260	U	3.76	ug/kg	1.25	3.76	1

PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624002

Client ID: RE12-10-7840
Batch ID: 937679
Run Date: 12/31/2009 11:41
Prep Date: 12/30/2009 20:12
Data File: 023f2301.d
023b2301.d

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.12 g
Column: 1 CLP1
2 CLP2

Matrix: R
% Moisture: 16.2
Project: LANL01004
SOP Ref: GL-OA-E-040
Dilution: 10
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	39.6	ug/kg	13.2	39.6	1
11104-28-2	Aroclor-1221	U	39.6	ug/kg	13.2	39.6	1
11141-16-5	Aroclor-1232	U	39.6	ug/kg	13.2	39.6	1
53469-21-9	Aroclor-1242	U	39.6	ug/kg	13.2	39.6	1
12672-29-6	Aroclor-1248	U	39.6	ug/kg	13.2	39.6	1
11097-69-1	Aroclor-1254	U	39.6	ug/kg	13.2	39.6	1
11096-82-5	Aroclor-1260	U	39.6	ug/kg	13.2	39.6	1

PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100	Date Collected: 12/22/2009 12:00	Matrix: R
Lab Sample ID: 243624001	Date Received: 12/29/2009 08:40	%Moisture: 15.5
Client ID: RE12-10-7841	Client: LANL010	Project: LANL01004
Batch ID: 937679	Method: SW846 8082	SOP Ref: GL-OA-E-040
Run Date: 12/31/2009 11:30	Inst: ECD2A.1	Dilution: 5
Prep Date: 12/30/2009 20:12	Analyst: JAOC	Inj. Vol: 1 uL
Data File: 022f2201.d	Aliquot: 30.04 g	Final Volume: 1 mL
022b2201.d	Column: 1 CLP1	Level: LOW
	2 CLP2	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	19.7	ug/kg	6.56	19.7	1
11104-28-2	Aroclor-1221	U	19.7	ug/kg	6.56	19.7	1
11141-16-5	Aroclor-1232	U	19.7	ug/kg	6.56	19.7	1
53469-21-9	Aroclor-1242	U	19.7	ug/kg	6.56	19.7	1
12672-29-6	Aroclor-1248	U	19.7	ug/kg	6.56	19.7	1
11097-69-1	Aroclor-1254	U	19.7	ug/kg	6.56	19.7	1
11096-82-5	Aroclor-1260	U	19.7	ug/kg	6.56	19.7	1

QUALITY CONTROL SUMMARY

PCB
Surrogate Recovery Report

Page 1 of 1

SDG Number: 10-1100

Matrix Type: SOLID

CAP Column (1) : CLP1

CAP Column (2) : CLP2

Sample ID	Client ID	4CMX 1 %REC #	4CMX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #
1202006551	MB for batch 937678	70	74	79	86
1202006552	LCS for batch 937678	67	70	70	80
243624001	RE12-10-7841	67 D	65 D	78 D	76 D
243624002	RE12-10-7840	70 D	63 D	75 D	65 D
243624003	RE12-10-7839	54	58	66	67
243624004	RE12-10-7838	63	66	77	77

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

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**Quality Control Summary
Spike Recovery Report**

SDG Number: 10-1100

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 937678

Matrix: SOIL

Lab Sample ID:1202006552

Instrument: ECD2A.I

Analysis Date: 12/31/2009 10:01

Dilution: 1

Analyst: JAOC

Pre Batch II 937678

Inj. Vol: 1 uL

Batch ID: 937679

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	21.1	63	41-110
11096-82-5	LCS Aroclor-1260	33.3	0.0	27.0	81	48-110

PCB

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Quality Control Summary
Spike Recovery Report

SDG Number: 10-1102

Sample Type: Matrix Spike

Client ID: RE12-10-7664RE12-10-
7663(243630002MS)

Matrix: R

%Moisture: 10.8

Lab Sample ID:1202006553

Instrument: ECD2A.I

Analysis Date: 12/31/2009 12:25

Dilution: 10

Analyst: JAOC

Preo Batch II 937678

Inj. Vol: 1 uL

Batch ID: 937679

CAS No	Parname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits
12674-11-2	MS Aroclor-1016	37.3	0.00	U 30.0	80	23-117
11096-82-5	MS Aroclor-1260	37.3	0.00	U 34.6	93	27-116

PCB

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Quality Control Summary
Spike Recovery Report

SDG Number: 10-1102

Sample Type: Matrix Spike Duplicate

Client ID: RE12-10-7664RE12-10-
7663(243630002MSD)

Matrix: R

%Moisture: 10.8

Lab Sample ID:1202006554

Instrument: ECD2A.I

Analysis Date: 12/31/2009 12:36

Dilution: 10

Analyst: JAOC

Prep Batch ID: 937678

Inj. Vol: 1 uL

Batch ID: 937679

CAS No	Parmname	Amount Added ug/kg	Sample Conc. ug/kg	Spike Conc. ug/kg	Recovery %	Acceptance Limits	RPD	Acceptance Limits
12674-11-2	MSD Aroclor-1016	37.3	0.00 U	29.2	78	23-117	3	0-30
11096-82-5	MSD Aroclor-1260	37.3	0.00 U	33.7	90	27-116	3	0-30

Method Blank Summary

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SDG Number:	10-1100	Client:	LANL010	Matrix:	SOIL
Client ID:	MB for batch 937678	Instrument ID:	ECD2A.I_2	Data File:	013b1301-1.d
Lab Sample ID:	1202006551		ECD2A.I_1		013f1301-1.d
Column:	CLP2	Prep Date:	12/30/2009 20:12	Analyzed:	12/31/09 09:50
	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 937678	1202006552	014f1401-1.d 014b1401-1.d	12/31/09	1001
02 RE12-10-7841	243624001	022f2201.d 022b2201.d	12/31/09	1130
03 RE12-10-7840	243624002	023f2301.d 023b2301.d	12/31/09	1141
04 RE12-10-7839	243624003	024f2401.d 024b2401.d	12/31/09	1152
05 RE12-10-7838	243624004	025f2501.d 025b2501.d	12/31/09	1203

SAMPLE DATA

PCB
Certificate of Analysis
Sample Summary

Page 1 of 1

SDG Number: 10-1100
Lab Sample ID: 243624004

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.09 g
Column: 1 CLP1
2 CLP2

Matrix: R
%Moisture: 21.8
Project: LANL01004
SOP Ref: GL-OA-E-040
Dilution: 1
Inj. Vol: 1 uL
Final Volume: 1 mL
Level: LOW

Client ID: RE12-10-7838
Batch ID: 937679
Run Date: 12/31/2009 12:03
Prep Date: 12/30/2009 20:12
Data File: 025f2501.d
025b2501.d

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	4.25	ug/kg	1.41	4.25	1
11104-28-2	Aroclor-1221	U	4.25	ug/kg	1.41	4.25	1
11141-16-5	Aroclor-1232	U	4.25	ug/kg	1.41	4.25	1
53469-21-9	Aroclor-1242	U	4.25	ug/kg	1.41	4.25	1
12672-29-6	Aroclor-1248	U	4.25	ug/kg	1.41	4.25	1
11097-69-1	Aroclor-1254	U	4.25	ug/kg	1.41	4.25	1
11096-82-5	Aroclor-1260	U	4.25	ug/kg	1.41	4.25	1

Data File: /chem/ecd2a.i/123109.b/025f2501.d
Report Date: 04-Jan-2010 08:17

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/025f2501.d

Lab Smp Id: 243624004

Client Smp ID: RE12-10-7838

Inj Date : 31-DEC-2009 12:03

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |243624004|1|

Misc Info : |ECD82P_1S|937679|SVA|LANL|SOIL|RE12-10-7838|||

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 25

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: 10-1100.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	30.09000	Weight of sample extracted (g)
M	21.76470	% Moisture

Cpnd Variable

Local Compound Variable

CONCENTRATIONS

ON-COL FINAL

RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO
11	1.772	1.772	0.000	7811642 125.404	5.3 80.00- 120.00	100.00

12	5.608	5.608	0.000	8303889 153.459	6.5 80.00- 120.00	100.00

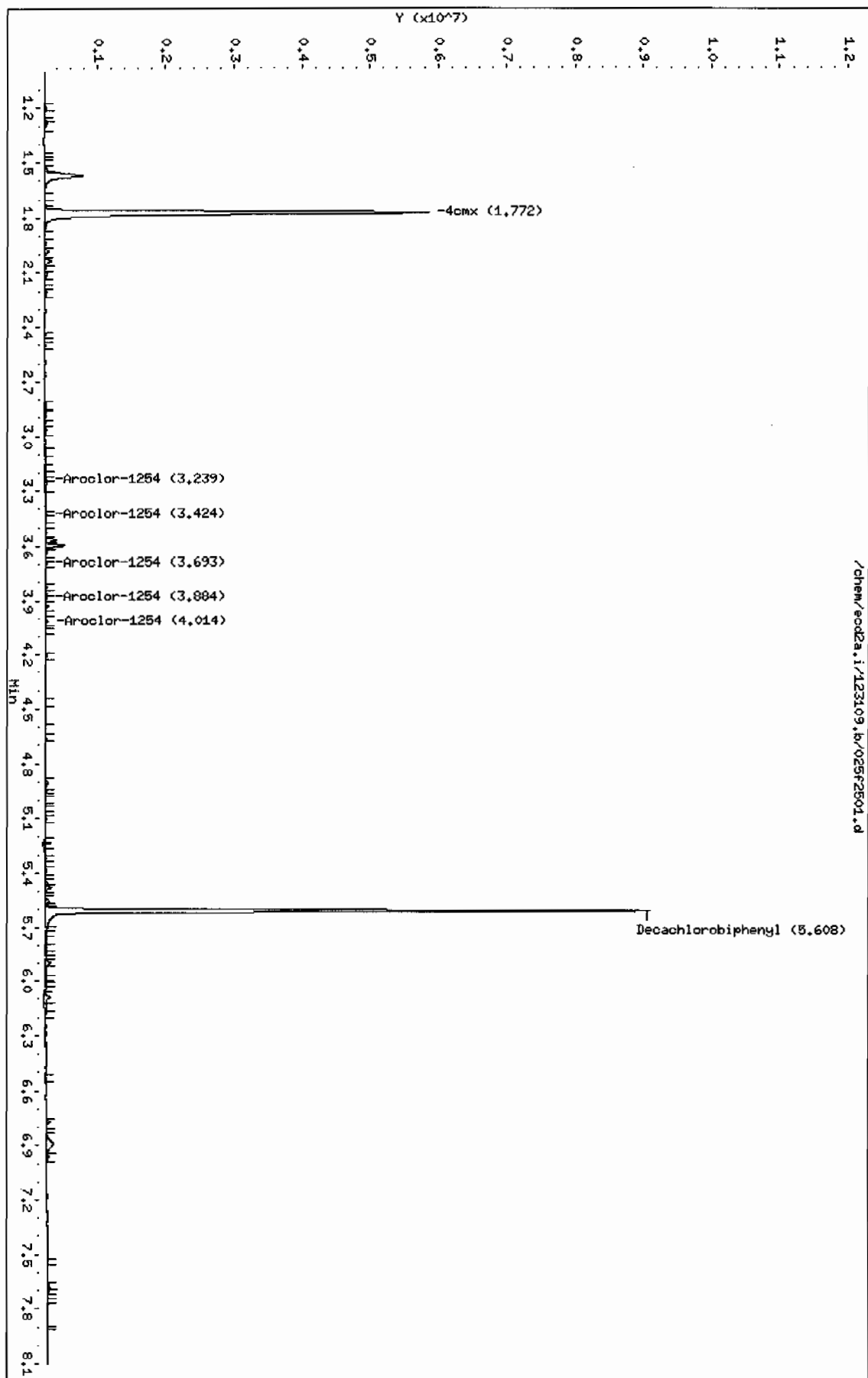
\$ 11 4cmx CAS #: 877-09-8

\$ 12 Decachlorobiphenyl CAS #: 2051-24-3

Data File: /chem/eod2a.i/123109.b/025f2501.d
Date: 31-DEC-2009 12:03
Client ID: RE12-10-7838
Sample Info: 124362400411
Volume Injected (uL): 1.0
Column phase: CLP1

Instrument: eod2a.i
Operator: JHOC
Column diameter: 0.25

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Data File: /chem/ecd2a.i/123109.b/025b2501.d
Report Date: 04-Jan-2010 08:17

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/025b2501.d
Lab Smp Id: 243624004 Client Smp ID: RE12-10-7838
Inj Date : 31-DEC-2009 12:03
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |243624004|1|
Misc Info : |ECD82P_1S|937679|SVA|LANL|SOIL|RE12-10-7838|||
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
Als bottle: 25
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 10-1100.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	30.09000	Weight of sample extracted (g)
M	21.76470	% Moisture

Cpnd Variable Local Compound Variable

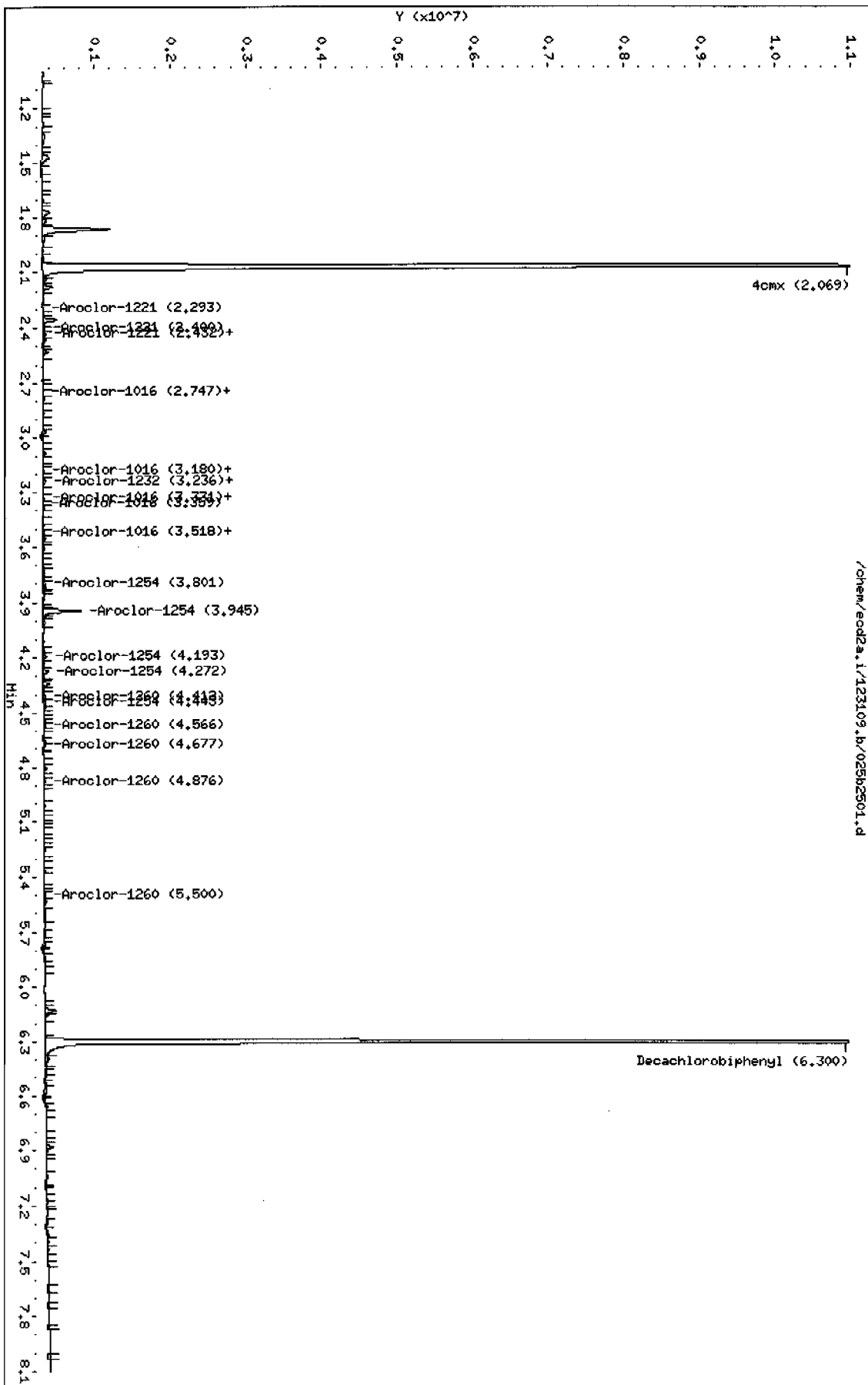
CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx CAS #: 877-09-8						
2.069	2.069	0.000	17109182 132.303	5.6	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl CAS #: 2051-24-3						
6.300	6.300	0.000	17371933 154.030	6.5	80.00- 120.00	100.00

Data File: /chem/ecod2a.i/123109.b/025b2501.d
Date: 31-DEC-2009 12:03
Client ID: REL2-10-7838
Sample Info: 124362400411
Volume Injected (uL): 1.0
Column phase: CLP2

Instrument: ecod2a.i
Operator: JHOC
Column diameter: 0.25

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PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624003

Client ID: RE12-10-7839
Batch ID: 937679
Run Date: 12/31/2009 11:52
Prep Date: 12/30/2009 20:12
Data File: 024f2401.d
024b2401.d

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.16 g
Column: 1 CLP1
2 CLP2

Matrix: R
%Moisture: 11.7
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	3.76	ug/kg	1.25	3.76	1
11104-28-2	Aroclor-1221	U	3.76	ug/kg	1.25	3.76	1
11141-16-5	Aroclor-1232	U	3.76	ug/kg	1.25	3.76	1
53469-21-9	Aroclor-1242	U	3.76	ug/kg	1.25	3.76	1
12672-29-6	Aroclor-1248	U	3.76	ug/kg	1.25	3.76	1
11097-69-1	Aroclor-1254	U	3.76	ug/kg	1.25	3.76	1
11096-82-5	Aroclor-1260	U	3.76	ug/kg	1.25	3.76	1

Data File: /chem/ecd2a.i/123109.b/024f2401.d
Report Date: 04-Jan-2010 08:17

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL
Data file : /chem/ecd2a.i/123109.b/024f2401.d
Lab Smp Id: 243624003 Client Smp ID: RE12-10-7839
Inj Date : 31-DEC-2009 11:52
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |243624003|1|
Misc Info : |ECD82P_1S|937679|SVA|LANL|SOIL|RE12-10-7839|||
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d
Als bottle: 24
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 10-1100.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	30.16000	Weight of sample extracted (g)
M	11.72520	% Moisture

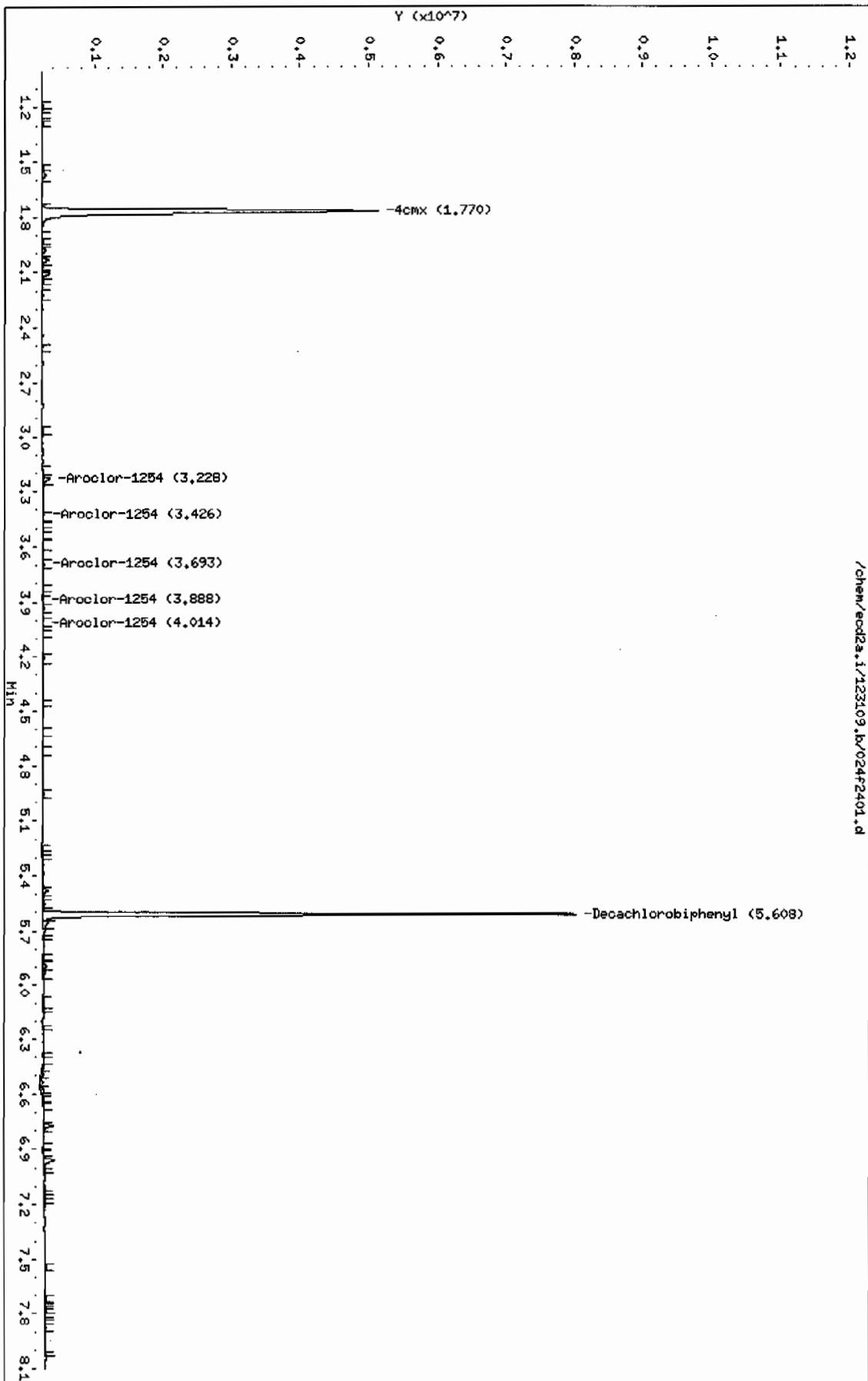
Cpnd Variable Local Compound Variable

CONCENTRATIONS							
			ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO	
==	=====	=====	=====	=====	=====	=====	
CAS #: 877-09-8							
\$ 11 4cmx	1.770	1.772	-0.002	6784555 108.916	4.1 80.00- 120.00	100.00	

CAS #: 2051-24-3							
\$ 12 Decachlorobiphenyl	5.608	5.608	0.000	7099799 131.207	4.9 80.00- 120.00	100.00	

Data File: /chem/eod2a.i/123109.b/024f2401.d
Date : 31-DEC-2009 11:52
Client ID: REL2-10-7839
Sample Info: 124362400311
Volume Injected (uL): 1.0
Column phase: CLP1

Instrument: eod2a.i
Operator: JADC
Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/024b2401.d
Report Date: 04-Jan-2010 08:26

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/024b2401.d
Lab Smp Id: 243624003 Client Smp ID: RE12-10-7839
Inj Date : 31-DEC-2009 11:52
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |243624003|1|
Misc Info : |ECD82P_1S|937679|SVA|LANL|SOIL|RE12-10-7839|||
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
Als bottle: 24
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 10-1100.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	30.16000	Weight of sample extracted (g)
M	11.72520	% Moisture

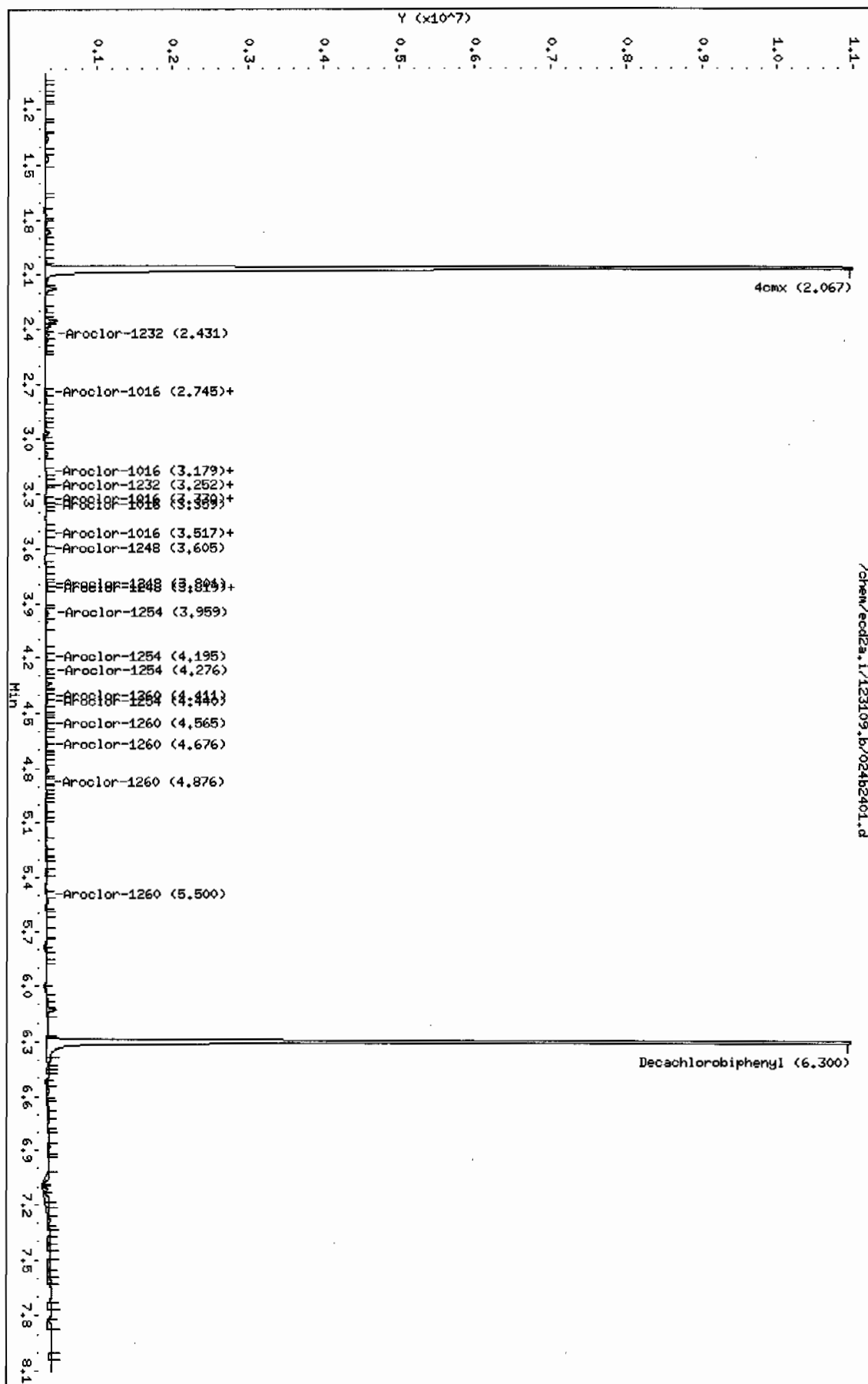
Cpnd Variable Local Compound Variable

CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx CAS #: 877-09-8						
2.067	2.069	-0.002	14899971	115.220	4.3 80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl CAS #: 2051-24-3						
6.300	6.300	0.000	15089388	133.791	5.0 80.00- 120.00	100.00

Data File: /chem/eod2a.i/123109.b/024b2401.d
 Date : 31-DEC-2009 11:52
 Client ID: REL2-10-7839
 Sample Info: 124362400311
 Volume Injected (uL): 1.0
 Column phase: CLP2

Instrument: eod2a.i
 Operator: JROC
 Column diameter: 0.25



PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100
Lab Sample ID: 243624002

Client ID: RE12-10-7840
Batch ID: 937679
Run Date: 12/31/2009 11:41
Prep Date: 12/30/2009 20:12
Data File: 023f2301.d
023b2301.d

Date Collected: 12/22/2009 12:00
Date Received: 12/29/2009 08:40
Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30.12 g
Column: 1 CLP1
2 CLP2

Matrix: R
%Moisture: 16.2
Project: LANL01004
SOP Ref: GL-OA-E-040
Dilution: 10
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	39.6	ug/kg	13.2	39.6	1
11104-28-2	Aroclor-1221	U	39.6	ug/kg	13.2	39.6	1
11141-16-5	Aroclor-1232	U	39.6	ug/kg	13.2	39.6	1
53469-21-9	Aroclor-1242	U	39.6	ug/kg	13.2	39.6	1
12672-29-6	Aroclor-1248	U	39.6	ug/kg	13.2	39.6	1
11097-69-1	Aroclor-1254	U	39.6	ug/kg	13.2	39.6	1
11096-82-5	Aroclor-1260	U	39.6	ug/kg	13.2	39.6	1

Data File: /chem/ecd2a.i/123109.b/023f2301.d
Report Date: 04-Jan-2010 08:17

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/023f2301.d

Lab Smp Id: 243624002

Client Smp ID: RE12-10-7840

Inj Date : 31-DEC-2009 11:41

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |243624002|10|

Misc Info : |ECD82P_1S|937679|SVA|LANL|SOIL|RE12-10-7840|||

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 23

Dil Factor: 10.00000

Integrator: Falcon

Compound Sublist: 10-1100.sub

Target Version: 3.50

Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt / (Vi * Ws * (100 - M) / 100) * CpndVariable

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.12000	Weight of sample extracted (g)
M	16.17920	% Moisture

Cpnd Variable

Local Compound Variable

CONCENTRATIONS

ON-COL FINAL

RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO
\$ 11 4cmx					CAS #: 877-09-8	
1.772	1.772	0.000	871106 13.9843	5.5	80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
5.607	5.608	-0.001	815122 15.0637	6.0	80.00- 120.00	100.00

Data File: /chem/eod2a.i/123109.b/023F2301.d

Date : 31-DEC-2009 11:41

Client ID: RE12-10-7840

Sample Info: 12436240021101

Volume Injected (uL): 1.0

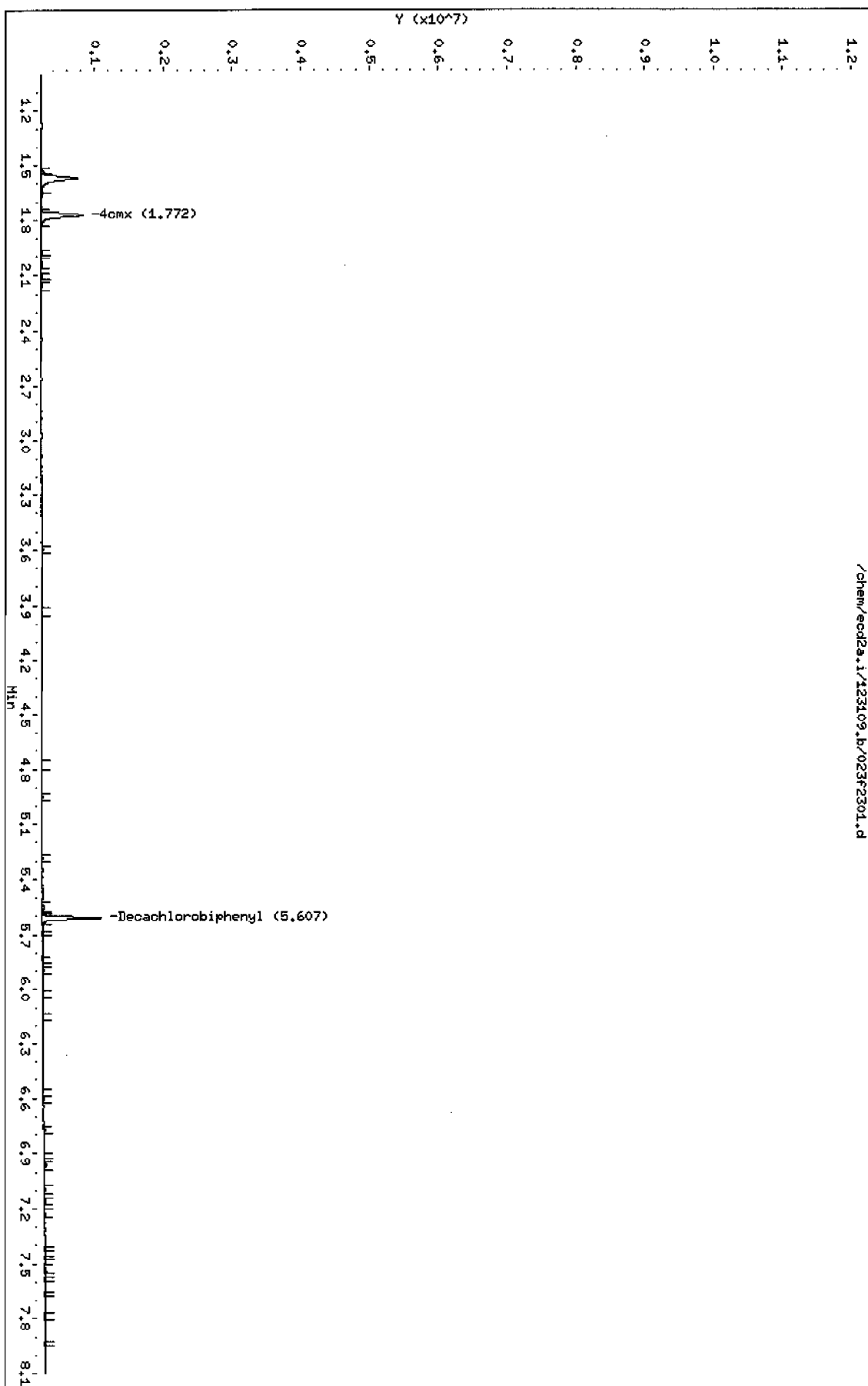
Column phase: CLP1

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Instrument: eod2a.i

Operator: JROC

Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/023b2301.d

Lab Smp Id: 243624002

Client Smp ID: RE12-10-7840

Inj Date : 31-DEC-2009 11:41

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |243624002|10|

Misc Info : |ECD82P_1S|937679|SVA|LANL|SOIL|RE12-10-7840|||

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m

Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012b1201.d

Als bottle: 23

Dil Factor: 10.00000

Integrator: Falcon

Compound Sublist: 10-1100.sub

Target Version: 3.50

Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.12000	Weight of sample extracted (g)
M	16.17920	% Moisture

Cpnd Variable

Local Compound Variable

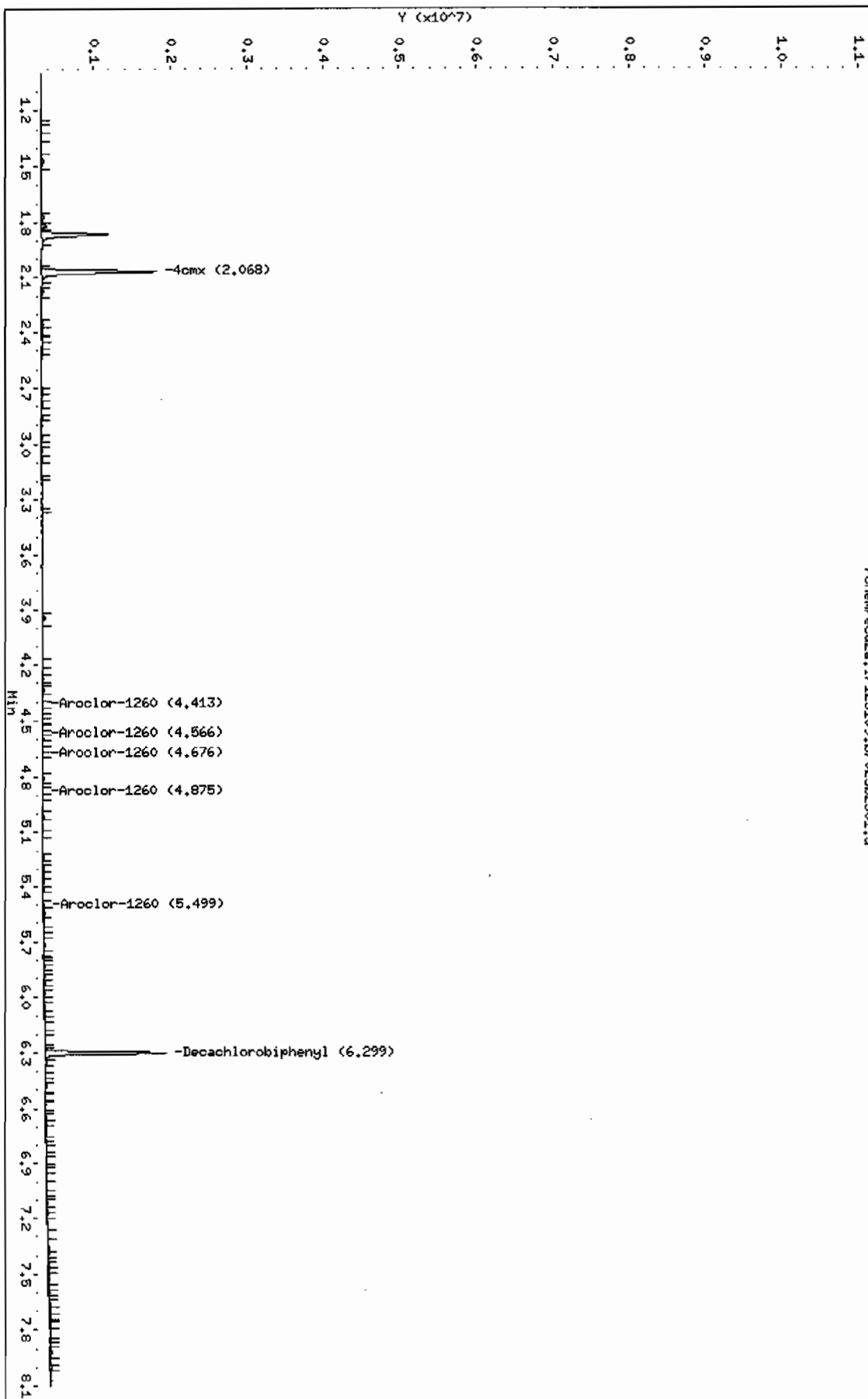
CONCENTRATIONS

RT	EXP RT	DLT RT	ON-COL	FINAL	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8	
2.068	2.069	-0.001	1642149 12.6985	5.0	80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
6.299	6.300	-0.001	1456822 12.9170	5.1	80.00- 120.00	100.00

Data File: /chem/ecod2a.i/123109.b/023b2301.d
 Date : 31-DEC-2009 11:41
 Client ID: REL2-10-7840
 Sample Info: 1243624002/101
 Volume Injected (uL): 1.0
 Column Phase: CLP2

Instrument: ecod2a.i
 Operator: JAC
 Column diameter: 0.25

/chem/ecod2a.i/123109.b/023b2301.d



PCB

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Certificate of Analysis

Sample Summary

SDG Number: 10-1100	Date Collected: 12/22/2009 12:00	Matrix: R
Lab Sample ID: 243624001	Date Received: 12/29/2009 08:40	%Moisture: 15.5
	Client: LANL010	Project: LANL01004
Client ID: RE12-10-7841	Method: SW846 8082	SOP Ref: GL-OA-E-040
Batch ID: 937679	Inst: ECD2A.J	Dilution: 5
Run Date: 12/31/2009 11:30	Analyst: JAOC	Inj. Vol: 1 uL
Prep Date: 12/30/2009 20:12	Aliquot: 30.04 g	Final Volume: 1 mL
Data File: 022f2201.d	Column: 1 CLP1	Level: LOW
022b2201.d	2 CLP2	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	19.7	ug/kg	6.56	19.7	1
11104-28-2	Aroclor-1221	U	19.7	ug/kg	6.56	19.7	1
11141-16-5	Aroclor-1232	U	19.7	ug/kg	6.56	19.7	1
53469-21-9	Aroclor-1242	U	19.7	ug/kg	6.56	19.7	1
12672-29-6	Aroclor-1248	U	19.7	ug/kg	6.56	19.7	1
11097-69-1	Aroclor-1254	U	19.7	ug/kg	6.56	19.7	1
11096-82-5	Aroclor-1260	U	19.7	ug/kg	6.56	19.7	1

Data File: /chem/ecd2a.i/123109.b/022f2201.d
Report Date: 04-Jan-2010 08:16

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/022f2201.d

Lab Smp Id: 243624001

Client Smp ID: RE12-10-7841

Inj Date : 31-DEC-2009 11:30

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |243624001|5|

Misc Info : |ECD82P_1S|937679|SVA|LANL|SOIL|RE12-10-7841|||

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 22

Dil Factor: 5.00000

Integrator: Falcon

Compound Sublist: 10-1100.sub

Target Version: 3.50

Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	5.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.04000	Weight of sample extracted (g)
M	15.48280	% Moisture

Cpnd Variable

Local Compound Variable

CONCENTRATIONS

RT	EXP RT	DLT RT	ON-COL	FINAL	TARGET RANGE	RATIO
=====	=====	=====	RESPONSE (ug/L)	(ug/Kg)	=====	=====
\$ 11 4cmx			CAS #: 877-09-8			
1.773	1.772	0.001	1664874	26.7271	5.3 80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
5.607	5.608	-0.001	1680362	31.0537	6.1 80.00- 120.00	100.00

Data File: /chem/eod2a.i/123109.b/022f2201.d

Date : 31-DEC-2009 11:30

Client ID: RE12-10-7841

Sample Info: 1243624001|51

Volume Injected (uL): 1.0

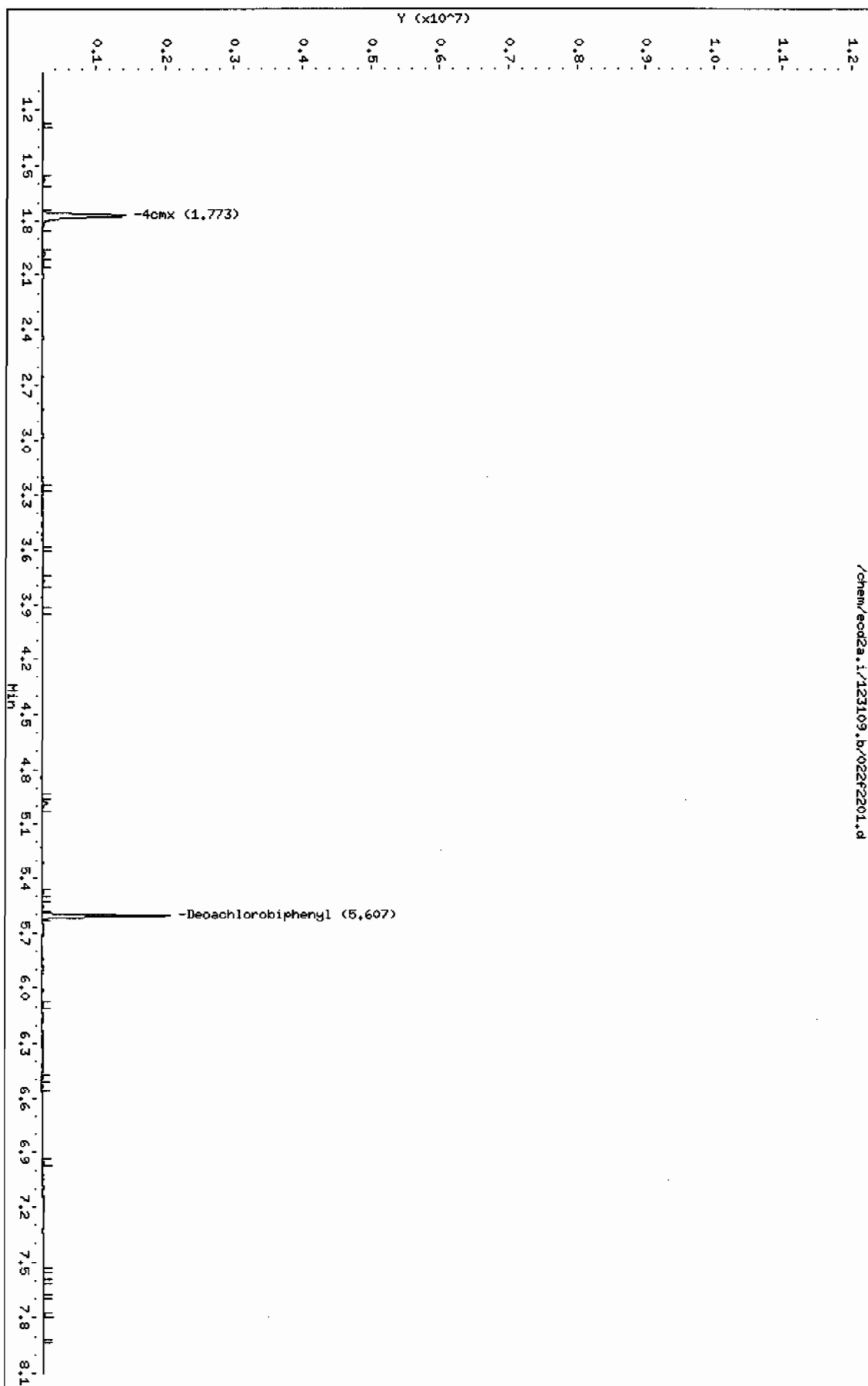
Column phase: CLP1

Instrument: eod2a.i

Operator: J90C

Column diameter: 0.25

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Data File: /chem/ecd2a.i/123109.b/022b2201.d
Report Date: 04-Jan-2010 08:16

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/022b2201.d
Lab Smp Id: 243624001 Client Smp ID: RE12-10-7841
Inj Date : 31-DEC-2009 11:30
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |243624001|5|
Misc Info : |ECD82P_1S|937679|SVA|LANL|SOIL|RE12-10-7841|||
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
Als bottle: 22
Dil Factor: 5.00000
Integrator: Falcon Compound Sublist: 10-1100.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	5.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.04000	Weight of sample extracted (g)
M,	15.48280	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO

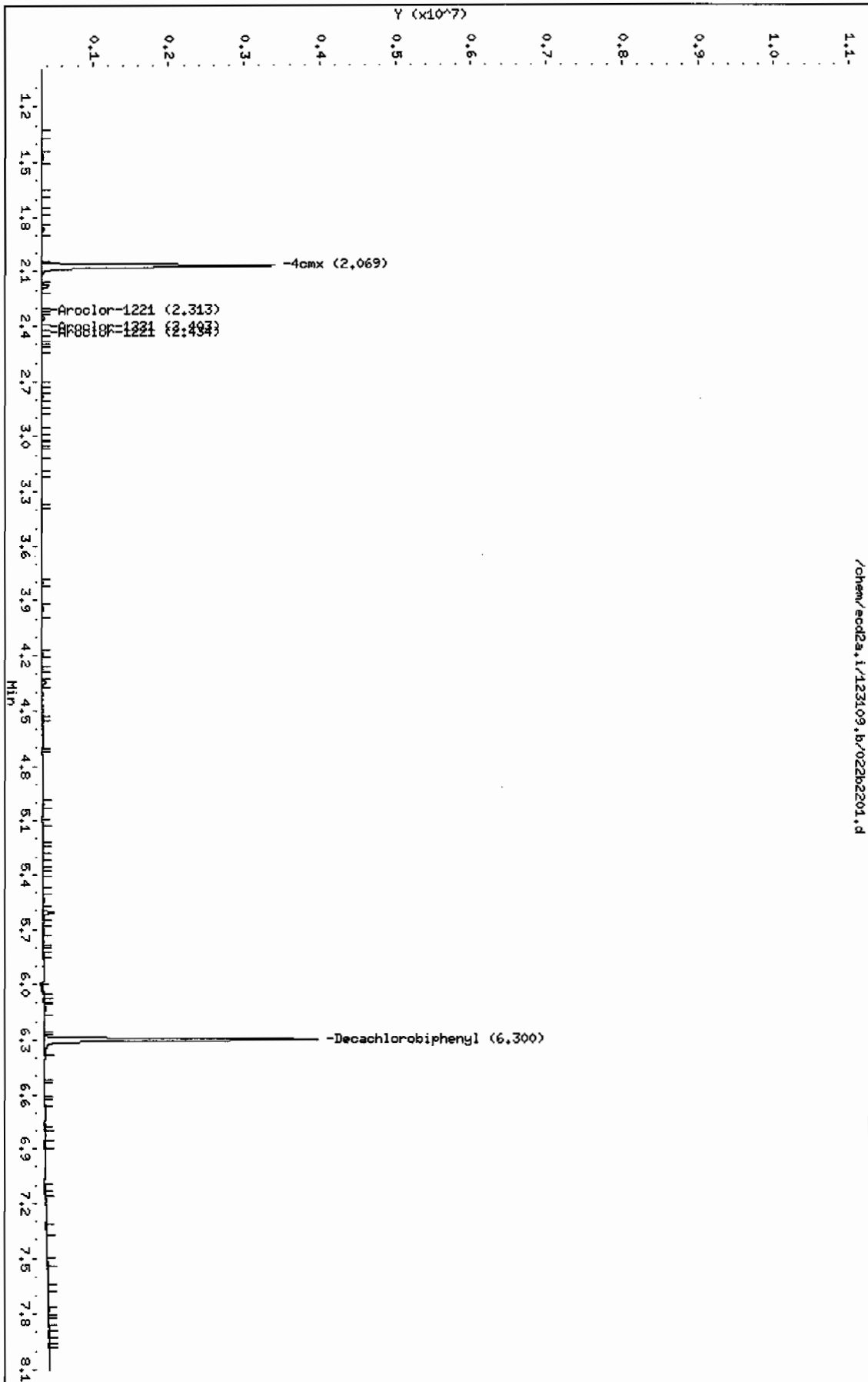
\$ 11 4cmx					CAS #: 877-09-8	
2.069	2.069	0.000	3387109 26.1921	5.2	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
6.300	6.300	0.000	3406520 30.2042	5.9	80.00- 120.00	100.00

Data File: /chem/ecod2a.i/123109.b/022b2201.d
Date: 31-DEC-2009 11:30
Client ID: RE12-10-7841
Sample Info: 124362400151
Volume Injected (uL): 1.0
Column phase: CLP2

Instrument: ecod2a.i
Operator: JHOC
Column diameter: 0.25

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STANDARDS DATA

Report Date: 04-Jan-2010 08:44

Calibration History

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
Start Cal Date: 12-NOV-2009 11:00
End Cal Date : 14-DEC-2009 09:35

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
02-DEC-2009 07:05	AR1262	/chem/ecd2a.i/120209.b/008f0801.d
12-NOV-2009 16:22	AR1268	/chem/ecd2a.i/111209a.b/035f3501.d
30-NOV-2009 10:12	AR1248	/chem/ecd2a.i/113009a.b/011f1101.d
12-NOV-2009 14:09	AR1242	/chem/ecd2a.i/111209a.b/023f2301.d
30-NOV-2009 08:43	AR1254	/chem/ecd2a.i/113009a.b/003f0301.d
14-DEC-2009 08:51	AR1660	/chem/ecd2a.i/121409.b/011f1101.d

Cal Level: 2 , Cal Amount: 250.00000		
02-DEC-2009 07:16	AR1262	/chem/ecd2a.i/120209.b/009f0901.d
12-NOV-2009 16:33	AR1268	/chem/ecd2a.i/111209a.b/036f3601.d
30-NOV-2009 10:23	AR1248	/chem/ecd2a.i/113009a.b/012f1201.d
12-NOV-2009 14:20	AR1242	/chem/ecd2a.i/111209a.b/024f2401.d
30-NOV-2009 08:54	AR1254	/chem/ecd2a.i/113009a.b/004f0401.d
14-DEC-2009 09:02	AR1660	/chem/ecd2a.i/121409.b/012f1201.d

Cal Level: 3 , Cal Amount: 500.00000		
02-DEC-2009 07:27	AR1262	/chem/ecd2a.i/120209.b/010f1001.d
12-NOV-2009 16:44	AR1268	/chem/ecd2a.i/111209a.b/037f3701.d
30-NOV-2009 10:34	AR1248	/chem/ecd2a.i/113009a.b/013f1301.d
12-NOV-2009 14:31	AR1242	/chem/ecd2a.i/111209a.b/025f2501.d
30-NOV-2009 09:05	AR1254	/chem/ecd2a.i/113009a.b/005f0501.d
14-DEC-2009 09:13	AR1660	/chem/ecd2a.i/121409.b/013f1301.d

Cal Level: 4 , Cal Amount: 1000.00000		
30-NOV-2009 10:45	AR1248	/chem/ecd2a.i/113009a.b/014f1401.d
12-NOV-2009 14:42	AR1242	/chem/ecd2a.i/111209a.b/026f2601.d
30-NOV-2009 09:16	AR1254	/chem/ecd2a.i/113009a.b/006f0601.d
14-DEC-2009 09:24	AR1660	/chem/ecd2a.i/121409.b/014f1401.d
12-NOV-2009 11:45	DDTANALOGSTD	/chem/ecd2a.i/111209a.b/010f1001.d
12-NOV-2009 16:55	AR1268	/chem/ecd2a.i/111209a.b/038f3801.d
02-DEC-2009 07:38	AR1262	/chem/ecd2a.i/120209.b/011f1101.d
12-NOV-2009 11:11	AR1221	/chem/ecd2a.i/111209a.b/007f0701.d
12-NOV-2009 11:00	AR1232	/chem/ecd2a.i/111209a.b/006f0601.d

Cal Level: 5 , Cal Amount: 4000.00000		
02-DEC-2009 07:50	AR1262	/chem/ecd2a.i/120209.b/012f1201.d
12-NOV-2009 17:07	AR1268	/chem/ecd2a.i/111209a.b/039f3901.d
30-NOV-2009 10:56	AR1248	/chem/ecd2a.i/113009a.b/015f1501.d

12-NOV-2009 14:53	AR1242	/chem/ecd2a.i/111209a.b/027f2701.d
30-NOV-2009 09:27	AR1254	/chem/ecd2a.i/113009a.b/007f0701.d
14-DEC-2009 09:35	AR1660	/chem/ecd2a.i/121409.b/015f1501.d

Continuing Calibration

Ccal Level Mode: GLOBAL LEVEL 4

Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 14:16	AR1660	/chem/ecd2a.i/123109.b/037f3701.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 12:58	AR1660	/chem/ecd2a.i/123109.b/030f3001.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 11:08	AR1660	/chem/ecd2a.i/123109.b/020f2001.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 09:11	AR1268	/chem/ecd2a.i/123109.b/010f1001.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 09:00	AR1262	/chem/ecd2a.i/123109.b/009f0901.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:49	AR1221	/chem/ecd2a.i/123109.b/008f0801.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:38	AR1232	/chem/ecd2a.i/123109.b/007f0701.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:15	AR1248	/chem/ecd2a.i/123109.b/005f0501.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:04	AR1242	/chem/ecd2a.i/123109.b/004f0401.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 07:53	AR1254	/chem/ecd2a.i/123109.b/003f0301.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:26	AR1660	/chem/ecd2a.i/123109.b/006f0601.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 07:42	AR1660	/chem/ecd2a.i/123109.b/002f0201.d

Report Date: 04-Jan-2010 08:44

Calibration History

Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Start Cal Date: 12-NOV-2009 11:00
End Cal Date : 14-DEC-2009 09:35

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
02-DEC-2009 07:05	AR1262	/chem/ecd2a.i/120209.b/008b0801.d
12-NOV-2009 16:22	AR1268	/chem/ecd2a.i/111209a.b/035b3501.d
30-NOV-2009 10:12	AR1248	/chem/ecd2a.i/113009a.b/011b1101.d
12-NOV-2009 14:09	AR1242	/chem/ecd2a.i/111209a.b/023b2301.d
30-NOV-2009 08:43	AR1254	/chem/ecd2a.i/113009a.b/003b0301.d
14-DEC-2009 08:51	AR1660	/chem/ecd2a.i/121409.b/011b1101.d
Cal Level: 2 , Cal Amount: 250.00000		
02-DEC-2009 07:16	AR1262	/chem/ecd2a.i/120209.b/009b0901.d
12-NOV-2009 16:33	AR1268	/chem/ecd2a.i/111209a.b/036b3601.d
30-NOV-2009 10:23	AR1248	/chem/ecd2a.i/113009a.b/012b1201.d
12-NOV-2009 14:20	AR1242	/chem/ecd2a.i/111209a.b/024b2401.d
30-NOV-2009 08:54	AR1254	/chem/ecd2a.i/113009a.b/004b0401.d
14-DEC-2009 09:02	AR1660	/chem/ecd2a.i/121409.b/012b1201.d
Cal Level: 3 , Cal Amount: 500.00000		
02-DEC-2009 07:27	AR1262	/chem/ecd2a.i/120209.b/010b1001.d
12-NOV-2009 16:44	AR1268	/chem/ecd2a.i/111209a.b/037b3701.d
30-NOV-2009 10:34	AR1248	/chem/ecd2a.i/113009a.b/013b1301.d
12-NOV-2009 14:31	AR1242	/chem/ecd2a.i/111209a.b/025b2501.d
30-NOV-2009 09:05	AR1254	/chem/ecd2a.i/113009a.b/005b0501.d
14-DEC-2009 09:13	AR1660	/chem/ecd2a.i/121409.b/013b1301.d
Cal Level: 4 , Cal Amount: 1000.00000		
30-NOV-2009 10:45	AR1248	/chem/ecd2a.i/113009a.b/014b1401.d
12-NOV-2009 14:42	AR1242	/chem/ecd2a.i/111209a.b/026b2601.d
30-NOV-2009 09:16	AR1254	/chem/ecd2a.i/113009a.b/006b0601.d
14-DEC-2009 09:24	AR1660	/chem/ecd2a.i/121409.b/014b1401.d
12-NOV-2009 11:45	DDTANALOGSTD	/chem/ecd2a.i/111209a.b/010b1001.d
12-NOV-2009 16:55	AR1268	/chem/ecd2a.i/111209a.b/038b3801.d
02-DEC-2009 07:38	AR1262	/chem/ecd2a.i/120209.b/011b1101.d
12-NOV-2009 11:11	AR1221	/chem/ecd2a.i/111209a.b/007b0701.d
12-NOV-2009 11:00	AR1232	/chem/ecd2a.i/111209a.b/006b0601.d
Cal Level: 5 , Cal Amount: 4000.00000		
02-DEC-2009 07:50	AR1262	/chem/ecd2a.i/120209.b/012b1201.d
12-NOV-2009 17:07	AR1268	/chem/ecd2a.i/111209a.b/039b3901.d
30-NOV-2009 10:56	AR1248	/chem/ecd2a.i/113009a.b/015b1501.d
12-NOV-2009 14:53	AR1242	/chem/ecd2a.i/111209a.b/027b2701.d
30-NOV-2009 09:27	AR1254	/chem/ecd2a.i/113009a.b/007b0701.d
14-DEC-2009 09:35	AR1660	/chem/ecd2a.i/121409.b/015b1501.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 4

Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 14:16	AR1660	/chem/ecd2a.i/123109.b/037b3701.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 12:58	AR1660	/chem/ecd2a.i/123109.b/030b3001.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 11:08	AR1660	/chem/ecd2a.i/123109.b/020b2001.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 09:11	AR1268	/chem/ecd2a.i/123109.b/010b1001.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:49	AR1221	/chem/ecd2a.i/123109.b/008b0801.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:38	AR1232	/chem/ecd2a.i/123109.b/007b0701.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:15	AR1248	/chem/ecd2a.i/123109.b/005b0501.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:04	AR1242	/chem/ecd2a.i/123109.b/004b0401.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 07:53	AR1254	/chem/ecd2a.i/123109.b/003b0301.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 08:26	AR1660	/chem/ecd2a.i/123109.b/006b0601.d
Ccal Level: 4 , Ccal Amount: 1000		
31-DEC-2009 07:42	AR1660	/chem/ecd2a.i/123109.b/002b0201.d

GEL Laboratories LLC

COMPOUND LISTING

Method file : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
 Quant Method : ESTD Target Version : 3.50
 Last Update : 04-Jan-2010 08:01 Number of Cpnds : 15
 Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events	Values
Initial:Start Threshold	500.000000
Initial:End Threshold	250.000000
Initial:Area Threshold	10000.000000
Initial:P-P Resolution	1.000000
Initial:Bunch Factor	2.000000
Initial:Negative Peaks	OFF
Initial:Tension	1.100000
8.500:Bunch Factor	2.000000

Compound	RT	RT Window	RF
1 Aroclor-1016	2.274	2.244-2.304	2.238e+03
	2.598	2.568-2.628	4.685e+03
	2.689	2.659-2.719	1.901e+03
	2.824	2.794-2.854	9.760e+02
	2.975	2.945-3.005	1.458e+03
2 Aroclor-1221	1.439	1.409-1.469	4.641e+02
	1.900	1.870-1.930	6.570e+02
	1.999	1.969-2.029	3.467e+02
3 Aroclor-1232	2.025	1.995-2.055	1.165e+03
	2.273	2.243-2.303	9.314e+02
	2.688	2.658-2.718	8.004e+02
	2.731	2.701-2.761	5.102e+02
4 Aroclor-1242	2.974	2.944-3.004	5.840e+02
	2.275	2.245-2.305	1.733e+03
	2.689	2.659-2.719	1.484e+03
	2.732	2.702-2.762	9.058e+02
	2.824	2.794-2.854	7.269e+02
5 Aroclor-1248	2.975	2.945-3.005	1.120e+03
	2.824	2.794-2.854	1.527e+03
	2.975	2.945-3.005	2.027e+03
	3.035	3.005-3.065	1.571e+03
	3.269	3.239-3.299	2.218e+03
	3.422	3.392-3.452	1.913e+03

GEL Laboratories LLC

COMPOUND LISTING

Method file : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Compound	RT	RT Window	RF
6 Aroclor-1254	3.241	3.211-3.271	2.080e+03
	3.424	3.394-3.454	2.772e+03
	3.694	3.664-3.724	3.742e+03
	3.885	3.855-3.915	2.783e+03
	4.014	3.984-4.044	2.760e+03
7 Aroclor-1260	4.015	3.985-4.045	4.165e+03
	4.287	4.257-4.317	2.591e+03
	4.452	4.422-4.482	2.631e+03
	4.664	4.634-4.694	6.088e+03
	4.854	4.824-4.884	2.942e+03
8 Aroclor-1262	3.823	3.793-3.853	2.273e+03
	4.015	3.985-4.045	3.072e+03
	4.286	4.256-4.316	4.004e+03
	4.452	4.422-4.482	3.573e+03
	4.854	4.824-4.884	2.501e+03
9 Aroclor-1268	4.884	4.854-4.914	9.392e+03
	4.909	4.879-4.939	9.361e+03
	5.043	5.013-5.073	7.073e+03
	5.281	5.251-5.311	3.056e+03
	5.478	5.448-5.508	2.201e+04
M 10 Aroclor-Total	1.000	0.980-1.020	
\$ 11 4cmx	1.772	1.742-1.802	6.229e+04
\$ 12 Decachlorobiphenyl	5.608	5.578-5.638	5.411e+04
13 4,4'-DDT	4.229	4.209-4.249	5.006e+04
14 4,4'-DDD	4.036	4.016-4.056	7.298e+04
15 4,4'-DDE	3.632	3.612-3.652	7.426e+04

GEL Laboratories LLC

COMPOUND LISTING

Method file : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
 Quant Method : ESTD Target Version : 3.50
 Last Update : 04-Jan-2010 08:00 Number of Cpnds : 15
 Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events Values

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Initial:Start Threshold 1000.000000
Initial:End Threshold   500.000000
Initial:Area Threshold  500.000000
Initial:P-P Resolution  0.000000
Initial:Bunch Factor    3.000000
Initial:Negative Peaks  OFF
Initial:Tension         4.000000
   4.200:Tension       1.000000
  
```

Compound	RT	RT Window	RF
1 Aroclor-1016	2.745	2.715-2.775	4.538e+03
	3.179	3.149-3.209	3.602e+03
	3.331	3.301-3.361	2.053e+03
	3.359	3.329-3.389	2.137e+03
	3.518	3.488-3.548	2.871e+03
2 Aroclor-1221	2.292	2.262-2.322	1.263e+03
	2.397	2.367-2.427	7.739e+02
	2.442	2.412-2.472	3.051e+03
3 Aroclor-1232	2.441	2.411-2.471	2.061e+03
	2.744	2.715-2.775	1.960e+03
	3.180	3.150-3.209	1.498e+03
	3.251	3.221-3.281	9.309e+02
4 Aroclor-1242	3.517	3.487-3.547	1.107e+03
	2.745	2.715-2.775	3.445e+03
	3.180	3.150-3.210	2.681e+03
	3.252	3.222-3.282	1.637e+03
5 Aroclor-1248	3.331	3.301-3.361	1.508e+03
	3.518	3.488-3.548	2.145e+03
	3.330	3.300-3.360	3.282e+03
	3.518	3.488-3.548	4.187e+03
	3.603	3.573-3.633	4.451e+03
	3.793	3.763-3.823	4.697e+03
	3.823	3.793-3.853	5.389e+03

GEL Laboratories LLC

COMPOUND LISTING

Method file : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m

Compound	RT	RT Window	RF
6 Aroclor-1254	3.817	3.787-3.847	4.985e+03
	3.958	3.928-3.988	5.799e+03
	4.195	4.165-4.225	4.023e+03
	4.276	4.246-4.306	7.731e+03
7 Aroclor-1260	4.439	4.409-4.469	5.608e+03
	4.414	4.384-4.444	5.767e+03
	4.565	4.535-4.595	7.124e+03
	4.677	4.647-4.707	4.819e+03
8 Aroclor-1262	4.874	4.844-4.904	5.632e+03
	5.500	5.470-5.530	9.038e+03
	4.415	4.385-4.445	4.703e+03
	4.566	4.536-4.596	5.853e+03
9 Aroclor-1268	4.875	4.845-4.905	8.946e+03
	5.075	5.045-5.105	7.772e+03
	5.253	5.223-5.283	1.672e+04
	5.498	5.468-5.528	2.032e+04
M 10 Aroclor-Total	5.531	5.501-5.561	2.018e+04
	5.702	5.672-5.732	1.496e+04
	5.902	5.872-5.932	6.438e+03
	6.126	6.096-6.156	4.409e+04
\$ 11 4cmx	1.000	0.980-1.020	
\$ 12 Decachlorobiphenyl	2.069	2.039-2.099	1.293e+05
13 4,4'-DDT	6.300	6.270-6.330	1.128e+05
14 4,4'-DDD	4.814	4.794-4.834	8.705e+04
15 4,4'-DDE	4.600	4.580-4.620	1.499e+05
	4.195	4.175-4.215	1.504e+05

GEL Laboratories LLC
INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2009 11:00
 End Cal Date : 14-DEC-2009 09:35
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
 Cal Date : 04-Jan-2010 08:01 jen01212
 Curve Type : Average

Calibration File Names:

Level 1: /chem/ecd2a.i/120209.b/008f0801.d
 Level 2: /chem/ecd2a.i/120209.b/009f0901.d
 Level 3: /chem/ecd2a.i/120209.b/010f1001.d
 Level 4: /chem/ecd2a.i/113009a.b/014f1401.d
 Level 5: /chem/ecd2a.i/120209.b/012f1201.d

Compound	100.000 Level 1	250.000 Level 2	500.000 Level 3	1000.000 Level 4	4000.000 Level 5	RRF	% RSD
1 Aroclor-1016(1)	2466	2335	2250	2152	1986	2238	8.133
(2)	4869	4683	4664	4616	4594	4685	2.323
(3)	2072	1962	1892	1818	1764	1901	6.365
(4)	1061	990	984	930	915	976	5.885
(5)	1595	1490	1441	1389	1375	1458	6.121
2 Aroclor-1221(1)	++++	++++	++++	464	++++	464	0.000
(2)	++++	++++	++++	657	++++	657	0.000
(3)	++++	++++	++++	347	++++	347	0.000
3 Aroclor-1232(1)	++++	++++	++++	1165	++++	1165	0.000
(2)	++++	++++	++++	931	++++	931	0.000
(3)	++++	++++	++++	800	++++	800	0.000
(4)	++++	++++	++++	510	++++	510	0.000
(5)	++++	++++	++++	584	++++	584	0.000
4 Aroclor-1242(1)	1990	1799	1692	1619	1566	1733	9.686
(2)	1678	1536	1439	1387	1381	1484	8.410
(3)	1015	931	874	843	866	906	7.639
(4)	817	761	714	669	673	727	8.615
(5)	1272	1143	1059	1036	1087	1120	8.434
5 Aroclor-1248(1)	1738	1529	1527	1515	1325	1527	9.560
(2)	2238	2070	1990	2006	1832	2027	7.247
(3)	1706	1611	1571	1551	1415	1571	6.718
(4)	2322	2198	2161	2230	2178	2218	2.874
(5)	2083	1922	1902	1885	1770	1913	5.861
6 Aroclor-1254(1)	2304	2118	2048	2007	1924	2080	6.888
(2)	2981	2797	2739	2702	2642	2772	4.677
(3)	3870	3712	3711	3744	3675	3742	2.011
(4)	2886	2776	2725	2760	2767	2783	2.186
(5)	2994	2820	2741	2711	2533	2760	6.080

GEL Laboratories LLC
INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2009 11:00
 End Cal Date : 14-DEC-2009 09:35
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
 Cal Date : 04-Jan-2010 08:01 jen01212
 Curve Type : Average

Compound	100.000 Level 1	250.000 Level 2	500.000 Level 3	1000.000 Level 4	4000.000 Level 5	RRF	% RSD
7 Aroclor-1260(1)	4187	4145	4185	4134	4175	4165	0.584
(2)	2696	2603	2589	2529	2536	2591	2.593
(3)	2699	2626	2625	2591	2614	2631	1.539
(4)	5867	6003	6142	6129	6296	6088	2.650
(5)	2925	2904	2929	2920	3034	2942	1.769
8 Aroclor-1262(1)	2530	2266	2239	2239	2092	2273	6.993
(2)	3295	3066	3031	3051	2917	3072	4.482
(3)	4237	3997	3977	3997	3815	4004	3.763
(4)	3754	3532	3556	3594	3430	3573	3.295
(5)	2578	2453	2481	2538	2454	2501	2.217
9 Aroclor-1268(1)	9077	9136	9272	9373	10103	9392	4.409
(2)	9332	9272	9238	9197	9765	9361	2.470
(3)	6985	6923	6953	6984	7523	7073	3.568
(4)	3112	3015	2984	2964	3207	3056	3.331
(5)	21397	21592	21760	21851	23464	22013	3.767
M 10 Aroclor-Total	++++	++++	++++	++++	++++	++++	++++
13 4,4'-DDT	++++	++++	++++	50063	++++	50063	0.000
14 4,4'-DDD	++++	++++	++++	72978	++++	72978	0.000
15 4,4'-DDE	++++	++++	++++	74262	++++	74262	0.000
11 4cmx	61300	61246	62868	63075	62969	62292	1.498
12 Decachlorobiphenyl	55102	53352	54400	53360	54345	54112	1.389

GEL Laboratories LLC
INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2009 11:00
 End Cal Date : 14-DEC-2009 09:35
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
 Cal Date : 04-Jan-2010 08:00 jen01212
 Curve Type : Average

Calibration File Names:

Level 1: /chem/ecd2a.i/120209.b/008b0801.d
 Level 2: /chem/ecd2a.i/120209.b/009b0901.d
 Level 3: /chem/ecd2a.i/120209.b/010b1001.d
 Level 4: /chem/ecd2a.i/113009a.b/014b1401.d
 Level 5: /chem/ecd2a.i/120209.b/012b1201.d

Compound	100.000 Level 1	250.000 Level 2	500.000 Level 3	1000.000 Level 4	4000.000 Level 5	RRF	% RSD
1 Aroclor-1016(1)	4662	4582	4609	4551	4285	4538	3.244
(2)	3647	3696	3564	3575	3528	3602	1.886
(3)	2078	2044	2044	2059	2041	2053	0.760
(4)	2149	2125	2133	2140	2138	2137	0.428
(5)	2852	2832	2882	2908	2879	2871	1.025
2 Aroclor-1221(1)	++++	++++	++++	1263	++++	1263	0.000
(2)	++++	++++	++++	774	++++	774	0.000
(3)	++++	++++	++++	3051	++++	3051	0.000
3 Aroclor-1232(1)	++++	++++	++++	2061	++++	2061	0.000
(2)	++++	++++	++++	1960	++++	1960	0.000
(3)	++++	++++	++++	1498	++++	1498	0.000
(4)	++++	++++	++++	931	++++	931	0.000
(5)	++++	++++	++++	1107	++++	1107	0.000
4 Aroclor-1242(1)	3674	3489	3409	3384	3271	3445	4.346
(2)	2815	2677	2634	2637	2644	2681	2.863
(3)	1696	1624	1594	1606	1663	1637	2.599
(4)	1601	1513	1471	1467	1487	1508	3.655
(5)	2235	2100	2068	2141	2180	2145	3.068
5 Aroclor-1248(1)	3439	3315	3263	3296	3099	3282	3.723
(2)	4291	4205	4192	4250	3996	4187	2.717
(3)	4601	4495	4377	4484	4299	4451	2.609
(4)	4665	4612	4696	4831	4682	4697	1.733
(5)	5471	5399	5390	5477	5208	5389	2.022
6 Aroclor-1254(1)	5121	4955	4998	5025	4928	4985	2.145
(2)	5885	5693	5812	5852	5753	5799	1.330
(3)	4010	3906	3992	4126	4082	4023	2.109
(4)	7559	7611	7766	7925	7797	7731	1.909
(5)	5659	5569	5439	5821	5553	5608	2.538

GEL Laboratories LLC
INITIAL CALIBRATION DATA

Start Cal Date : 12-NOV-2009 11:00
 End Cal Date : 14-DEC-2009 09:35
 Quant Method : ESTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : Falcon
 Method file : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
 Cal Date : 04-Jan-2010 08:00 jen01212
 Curve Type : Average

Compound	100.000 Level 1	250.000 Level 2	500.000 Level 3	1000.000 Level 4	4000.000 Level 5	RRF	% RSD
7 Aroclor-1260(1)	5735	5627	5779	5816	5877	5767	1.626
(2)	6687	7031	7243	7286	7372	7124	3.855
(3)	4572	4701	4890	4942	4988	4819	3.647
(4)	5377	5518	5714	5746	5803	5632	3.163
(5)	8369	8607	9231	9252	9728	9038	6.039
8 Aroclor-1262(1)	4855	4536	4634	4812	4677	4703	2.776
(2)	5760	5648	5834	6083	5942	5853	2.859
(3)	8687	8674	9001	9349	9021	8946	3.121
(4)	7559	7507	7790	8124	7880	7772	3.221
(5)	15890	16154	16824	17584	17141	16719	4.167
9 Aroclor-1268(1)	18829	19584	20101	20533	22559	20321	6.904
(2)	18822	19343	20333	20389	22025	20182	6.077
(3)	13874	14365	14864	15141	16565	14962	6.808
(4)	5734	6115	6404	6840	7097	6438	8.497
(5)	40707	42777	43856	44408	48724	44094	6.689
10 Aroclor-Total	+++++	+++++	+++++	+++++	+++++	+++++	+++++
13 4,4'-DDT	+++++	+++++	+++++	87046	+++++	87046	0.000
14 4,4'-DDD	+++++	+++++	+++++	149858	+++++	149858	0.000
15 4,4'-DDE	+++++	+++++	+++++	150414	+++++	150414	0.000
11 4cmx	118604	126358	131414	133891	136323	129318	5.440
12 Decachlorobiphenyl	109662	108705	113295	113170	119083	112783	3.614

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A
 Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1100
 Instrument ID: ECD2A Calibration Date: 12/31/09 Time: 0826
 Lab File ID: 006F0601 Init. Calib. Date(s): 12/14/09 12/14/09
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	2237.690	2177.053	0.01	-2.7	15.0
(2)	4685.268	4534.889	0.01	-3.2	15.0
(3)	1901.482	1825.958	0.01	-4.0	15.0
(4)	975.978	927.756	0.01	-4.9	15.0
(5)	1457.866	1379.679	0.01	-5.4	15.0
Aroclor-1260	4165.097	4244.333	0.01	1.9	15.0
(2)	2590.571	2715.866	0.01	4.8	15.0
(3)	2631.205	2774.898	0.01	5.5	15.0
(4)	6087.596	6495.701	0.01	6.7	15.0
(5)	2942.150	3147.238	0.01	7.0	15.0
4cmx	62291.660	62464.280	0.01	0.3	15.0
Decachlorobiphenyl	54111.563	58891.210	0.01	8.8	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.: 10-1100
 Instrument ID: ECD2A Calibration Date: 12/31/09 Time: 0826
 Lab File ID: 006B0601 Init. Calib. Date(s): 12/14/09 12/14/09
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	4537.819	4541.640	0.01	0.1	15.0
(2)	3602.166	3527.116	0.01	-2.1	15.0
(3)	2053.230	2038.452	0.01	-0.7	15.0
(4)	2137.091	2126.014	0.01	-0.5	15.0
(5)	2870.516	2863.486	0.01	-0.2	15.0
Aroclor-1260	5766.921	5884.927	0.01	2.0	15.0
(2)	7123.891	7417.007	0.01	4.1	15.0
(3)	4818.707	5102.019	0.01	5.9	15.0
(4)	5631.757	5906.686	0.01	4.9	15.0
(5)	9037.511	9822.315	0.01	8.7	15.0
4cmx	129318.03	134216.47	0.01	3.8	15.0
Decachlorobiphenyl	112782.99	124910.28	0.01	10.8	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.: 10-1100
 Instrument ID: ECD2A Calibration Date: 12/31/09 Time: 1108
 Lab File ID: 020F2001 Init. Calib. Date(s): 12/14/09 12/14/09
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	2237.690	2175.451	0.01	-2.8	15.0
(2)	4685.268	4599.112	0.01	-1.8	15.0
(3)	1901.482	1847.342	0.01	-2.8	15.0
(4)	975.978	914.721	0.01	-6.3	15.0
(5)	1457.866	1416.002	0.01	-2.9	15.0
Aroclor-1260	4165.097	4368.887	0.01	4.9	15.0
(2)	2590.571	2760.398	0.01	6.6	15.0
(3)	2631.205	2847.299	0.01	8.2	15.0
(4)	6087.596	6735.182	0.01	10.6	15.0
(5)	2942.150	3254.477	0.01	10.6	15.0
4cmx	62291.660	62627.220	0.01	0.5	15.0
Decachlorobiphenyl	54111.563	59084.990	0.01	9.2	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.: 10-1100
 Instrument ID: ECD2A Calibration Date: 12/31/09 Time: 1108
 Lab File ID: 020B2001 Init. Calib. Date(s): 12/14/09 12/14/09
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	4537.819	4581.582	0.01	1.0	15.0
(2)	3602.166	3580.992	0.01	-0.6	15.0
(3)	2053.230	2060.693	0.01	0.4	15.0
(4)	2137.091	2147.150	0.01	0.5	15.0
(5)	2870.516	2908.199	0.01	1.3	15.0
Aroclor-1260	5766.921	6057.192	0.01	5.0	15.0
(2)	7123.891	7683.112	0.01	7.8	15.0
(3)	4818.707	5216.240	0.01	8.2	15.0
(4)	5631.757	6055.012	0.01	7.5	15.0
(5)	9037.511	10141.107	0.01	12.2	15.0
4cmx	129318.03	135329.97	0.01	4.6	15.0
Decachlorobiphenyl	112782.99	124305.71	0.01	10.2	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.: 10-1100
 Instrument ID: ECD2A Calibration Date: 12/31/09 Time: 1258
 Lab File ID: 030F3001 Init. Calib. Date(s): 12/14/09 12/14/09
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935
 GC Column: CLP1 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	2237.690	2167.551	0.01	-3.1	15.0
(2)	4685.268	4604.554	0.01	-1.7	15.0
(3)	1901.482	1844.440	0.01	-3.0	15.0
(4)	975.978	954.673	0.01	-2.2	15.0
(5)	1457.866	1403.800	0.01	-3.7	15.0
Aroclor-1260	4165.097	4346.586	0.01	4.4	15.0
(2)	2590.571	2729.682	0.01	5.4	15.0
(3)	2631.205	2799.018	0.01	6.4	15.0
(4)	6087.596	6645.024	0.01	9.2	15.0
(5)	2942.150	3211.558	0.01	9.2	15.0
4cmx	62291.660	62627.190	0.01	0.5	15.0
Decachlorobiphenyl	54111.563	57715.650	0.01	6.7	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.: 10-1100
 Instrument ID: ECD2A Calibration Date: 12/31/09 Time: 1258
 Lab File ID: 030B3001 Init. Calib. Date(s): 12/14/09 12/14/09
 Heated Purge: (Y/N) N Init. Calib. Times: 0851 0935
 GC Column: CLP2 ID: 0.25 (mm)

COMPOUND	RRF	RRF 1000	MIN RRF	%D	MAX %D
Aroclor-1016	4537.819	4568.406	0.01	0.7	15.0
(2)	3602.166	3587.799	0.01	-0.4	15.0
(3)	2053.230	2073.127	0.01	1.0	15.0
(4)	2137.091	2160.907	0.01	1.1	15.0
(5)	2870.516	2909.755	0.01	1.4	15.0
Aroclor-1260	5766.921	6041.414	0.01	4.8	15.0
(2)	7123.891	7695.382	0.01	8.0	15.0
(3)	4818.707	5222.809	0.01	8.4	15.0
(4)	5631.757	5973.222	0.01	6.1	15.0
(5)	9037.511	9899.434	0.01	9.5	15.0
4cmx	129318.03	135195.80	0.01	4.5	15.0
Decachlorobiphenyl	112782.99	116751.52	0.01	3.5	15.0

FORM VII PEST

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/003f0301.d

Lab Smp Id: WAR091216-54

Client Smp ID: AR125401

Inj Date : 31-DEC-2009 07:53

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091216-54

Misc Info : |PCB_CVS|1254|CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212

Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 3

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1254.sub

Target Version: 3.50

Sample Matrix: None

AMOUNTS

			CAL-AMT		ON-COL			
RT	EXP RT	DLT RT	RESPONSE (ug/L)		(ug/L)	TARGET RANGE		RATIO
==	=====	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx						CAS #: 877-09-8		
1.773	1.772	0.001	6854959	100.000	110	80.00-	120.00	100.00

\$ 12 Decachlorobiphenyl						CAS #: 2051-24-3		
5.607	5.608	-0.001	6470501	100.000	120	80.00-	120.00	100.00

6 Aroclor-1254						CAS #: 11097-69-1		
3.241	3.241	0.000	1992086	1000.00	958	80.00-	120.00	100.00
3.424	3.424	0.000	2639738	1000.00	952	112.51-	152.51	132.51
3.694	3.694	0.000	3653581	1000.00	976	163.40-	203.40	183.40
3.885	3.885	0.000	2701508	1000.00	971	115.61-	155.61	135.61
4.014	4.014	0.000	2783549	1000.00	1010	119.73-	159.73	139.73
Average of Peak Amounts ~					973			

Data File: /chem/eod2a.i/123109.b/003f0301.d
Date : 31-DEC-2009 07:53
Client ID: AR125401
Sample Info: INR091216-54

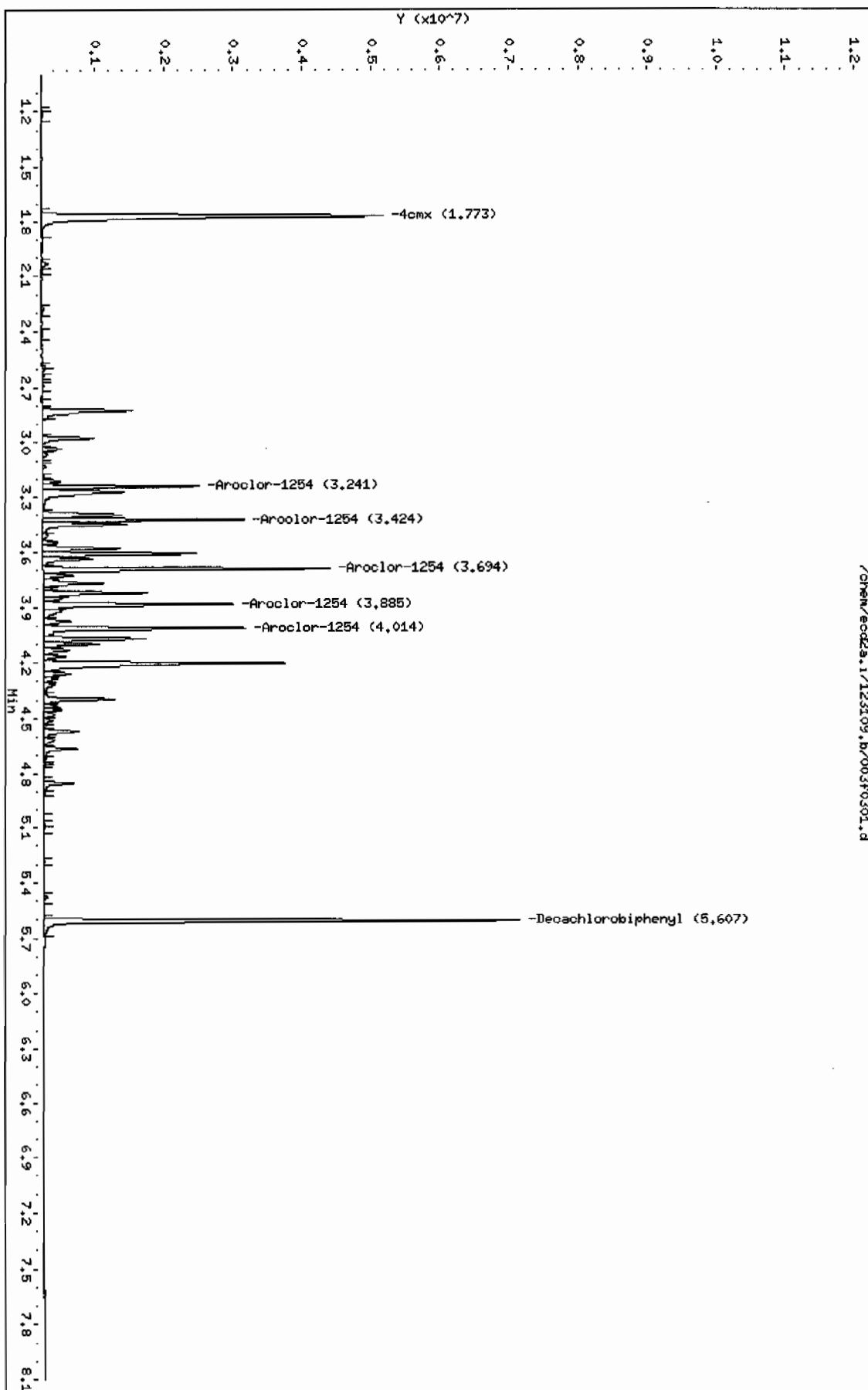
Instrument: eod2a.i

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Column phase: CLP1

Operator: JROC
Column diameter: 0.25

/chem/eod2a.i/123109.b/003f0301.d



Data File: /chem/ecd2a.i/123109.b/003b0301.d
Report Date: 04-Jan-2010 08:14

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/003b0301.d

Lab Smp Id: WAR091216-54

Client Smp ID: AR125401

Inj Date : 31-DEC-2009 07:53

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091216-54

Misc Info : |PCB_CVS|1254||CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m

Meth Date : 04-Jan-2010 08:00 jen01212

Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012b1201.d

Als bottle: 3

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1254.sub

Target Version: 3.50

Sample Matrix: None

AMOUNTS

			CAL-AMT	ON-COL		
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/L)	TARGET RANGE	RATIO
			=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8	
2.069	2.069	0.000	14923306 100.000	115	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
6.300	6.300	0.000	13835961 100.000	123	80.00- 120.00	100.00

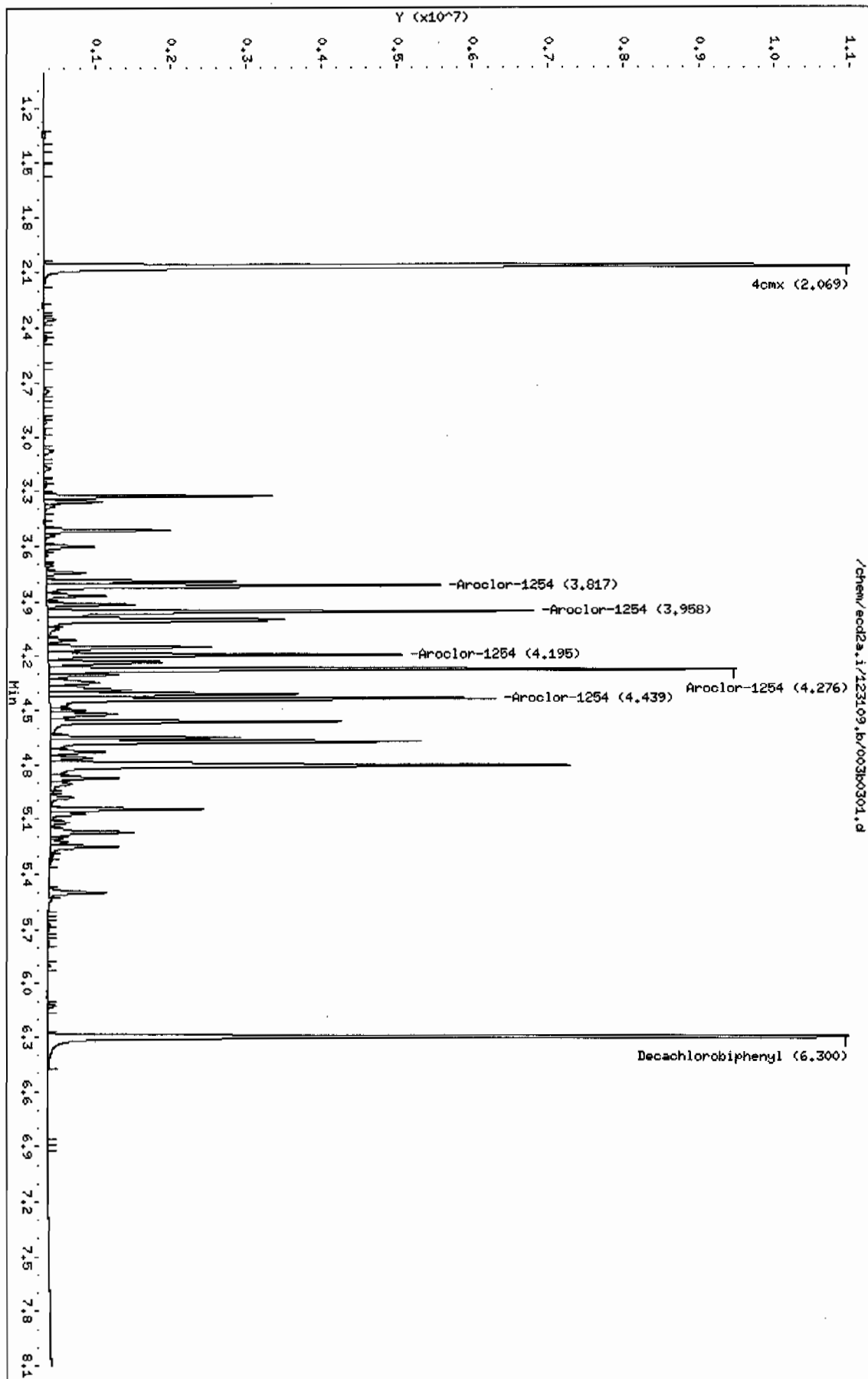
6 Aroclor-1254					CAS #: 11097-69-1	
3.817	3.817	0.000	4938469 1000.00	991	80.00- 120.00	100.00
3.958	3.958	0.000	5626923 1000.00	970	93.94- 133.94	113.94
4.195	4.195	0.000	4024489 1000.00	1000	61.49- 101.49	81.49
4.276	4.276	0.000	7708238 1000.00	997	136.09- 176.09	156.09
4.439	4.439	0.000	5503412 1000.00	981	91.44- 131.44	111.44
Average of Peak Amounts =				988		

Data File: /chem/ecod2a.i/123109.b/003b0301.d
Date: 31-DEC-2009 07:53
Client ID: AR125401
Sample Info: IWR091216-54

Column phase: CLP2

Instrument: ecod2a.i
Operator: JPOC
Column diameter: 0.25

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Data File: /chem/ecd2a.i/123109.b/004f0401.d
 Report Date: 04-Jan-2010 08:14

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/004f0401.d

Lab Smp Id: WAR091217-42

Client Smp ID: AR124201

Inj Date : 31-DEC-2009 08:04

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091217-42

Misc Info : |PCB_CVS|1242||CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212

Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 4

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1242.sub

Target Version: 3.50

Sample Matrix: None

AMOUNTS

			CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/L)	TARGET RANGE	RATIO	
----	-----	-----	-----	-----	-----	-----	-----
\$ 11 4cmx				CAS #: 877-09-8			
1.773	1.772	0.001	6933955 100.000	111	80.00- 120.00	100.00	

\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3			
5.608	5.608	0.000	6549118 100.000	121	80.00- 120.00	100.00	

4 Aroclor-1242				CAS #: 53469-21-9			
2.275	2.275	0.000	1822573 1000.00	1050	80.00- 120.00	100.00	
2.689	2.689	0.000	1517681 1000.00	1020	63.27- 103.27	83.27	
2.732	2.732	0.000	935418 1000.00	1030	31.32- 71.32	51.32	
2.824	2.824	0.000	759872 1000.00	1040	21.69- 61.69	41.69	
2.975	2.975	0.000	1158382 1000.00	1030	43.56- 83.56	63.56	
Average of Peak Amounts =				1.04e+03			

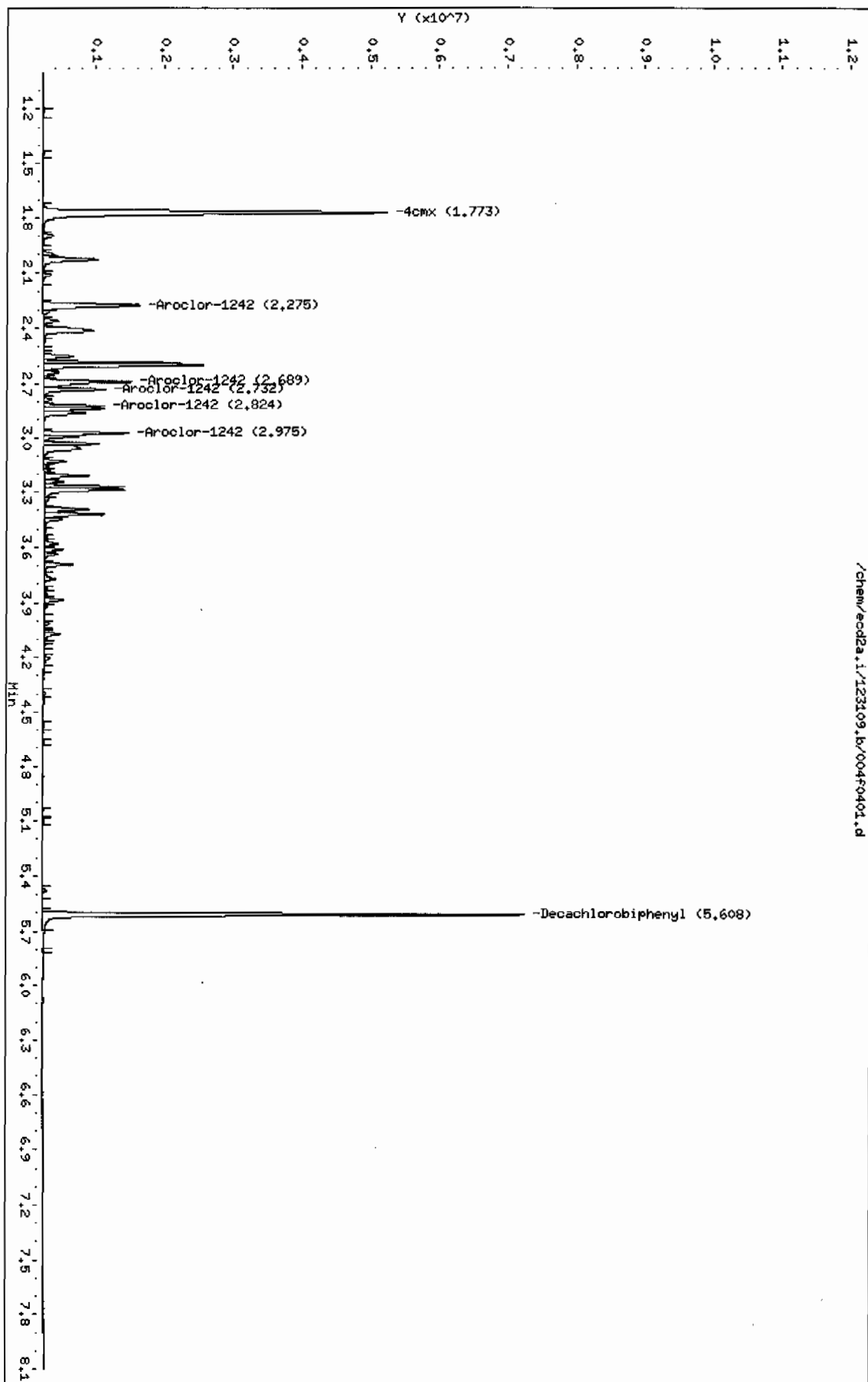
Data File: /chem/ecod2a.i/123109.b/004f0401.d
Date : 31-DEC-2009 08:04
Client ID: AR124201
Sample Info: MAR091217-42

Instrument: ecod2a.i

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Column phase: CLP1

Operator: JHOC
Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/004b0401.d
Report Date: 04-Jan-2010 08:14

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/004b0401.d
Lab Smp Id: WAR091217-42 Client Smp ID: AR124201
Inj Date : 31-DEC-2009 08:04
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |WAR091217-42
Misc Info : |PCB_CVS|1242||CVS|
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1242.sub
Target Version: 3.50 Sample Matrix: None

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE (ug/L)	ON-COL (ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx CAS #: 877-09-8						
2.070	2.069	0.001	15022819 100.000	116	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl CAS #: 2051-24-3						
6.300	6.300	0.000	14003896 100.000	124	80.00- 120.00	100.00

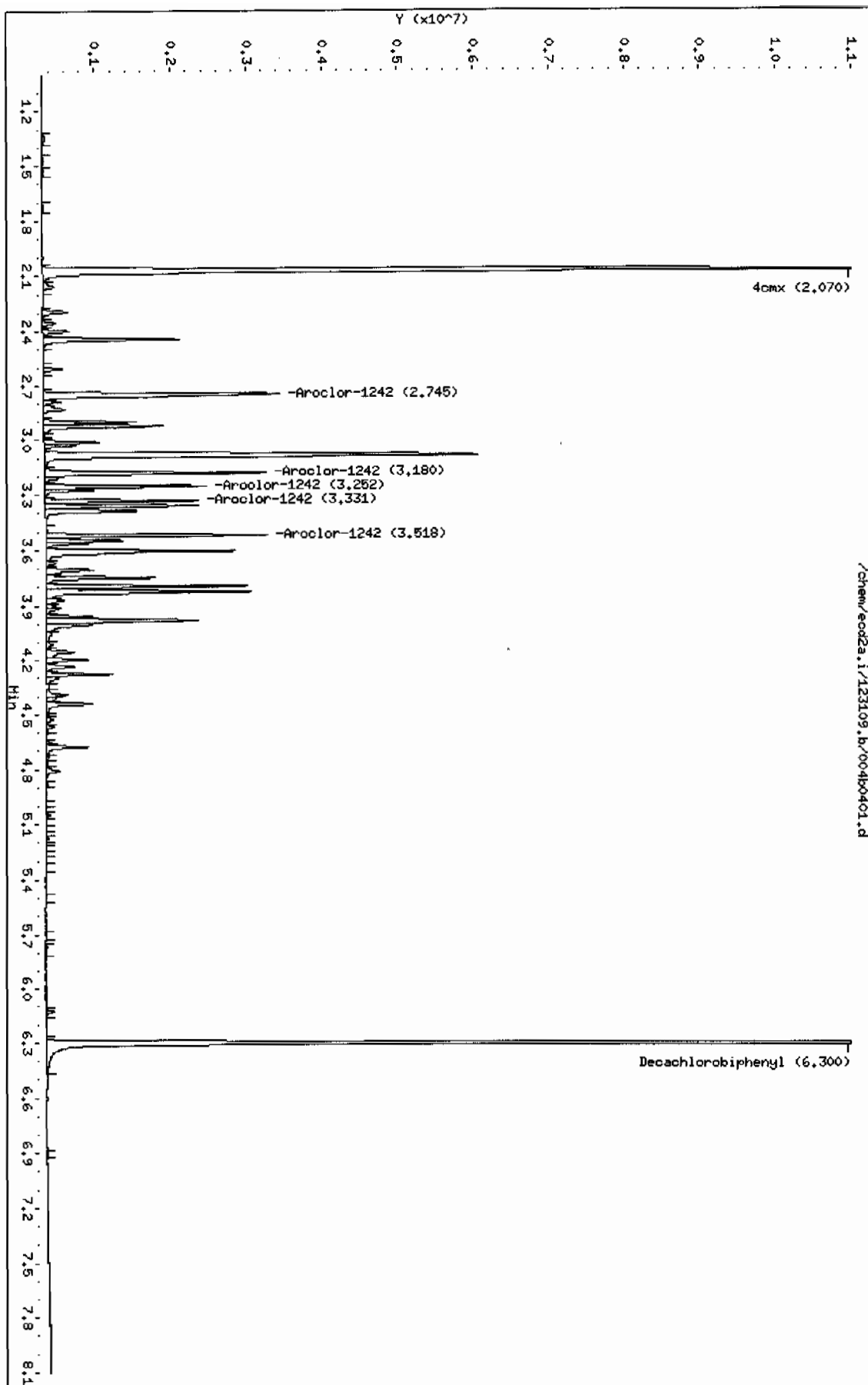
4 Aroclor-1242 CAS #: 53469-21-9						
2.745	2.745	0.000	3823027 1000.00	1110	80.00- 120.00	100.00
3.180	3.180	0.000	2891050 1000.00	1080	55.62- 95.62	75.62
3.252	3.252	0.000	1726613 1000.00	1060	25.16- 65.16	45.16
3.331	3.331	0.000	1630369 1000.00	1080	22.65- 62.65	42.65
3.518	3.518	0.000	2379103 1000.00	1110	42.23- 82.23	62.23
Average of Peak Amounts = 1.09e+03						

Data File: /chem/eod2a.i/123109.b/004b0401.d
Date: 31-DEC-2009 08:04
Client ID: AR124201
Sample Info: 148091217-42

Column phase: CLP2

Instrument: eod2a.i
Operator: JAC
Column diameter: 0.25

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/005f0501.d

Lab Smp Id: WAR091217-48

Client Smp ID: AR124801

Inj Date : 31-DEC-2009 08:15

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091217-48

Misc Info : |PCB_CVS|1248|CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 09:25 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d

Als bottle: 5 Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1248.sub

Target Version: 3.50

Sample Matrix: None

AMOUNTS

			CAL-AMT		ON-COL			
RT	EXP RT	DLT RT	RESPONSE (ug/L)		(ug/L)	TARGET RANGE		RATIO
==	=====	=====	=====	=====	=====	=====	=====	=====
<hr/>								
\$ 11 4cmx					CAS #: 877-09-8			
1.773	1.772	0.001	7658899	100.000	123	80.00-	120.00	100.00
<hr/>								
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
5.608	5.608	0.000	7261271	100.000	134	80.00-	120.00	100.00
<hr/>								
5 Aroclor-1248					CAS #: 12672-29-6			
2.824	2.824	0.000	1574202	1000.00	1030	80.00-	120.00	100.00 (M)
2.975	2.975	0.000	2102325	1000.00	1040	113.55-	153.55	133.55
3.035	3.035	0.000	1657408	1000.00	1060	85.29-	125.29	105.29
3.269	3.269	0.000	2306614	1000.00	1040	126.53-	166.53	146.53
3.422	3.422	0.000	1958216	1000.00	1020	104.39-	144.39	124.39
Average of Peak Amounts =					1.04e+03			

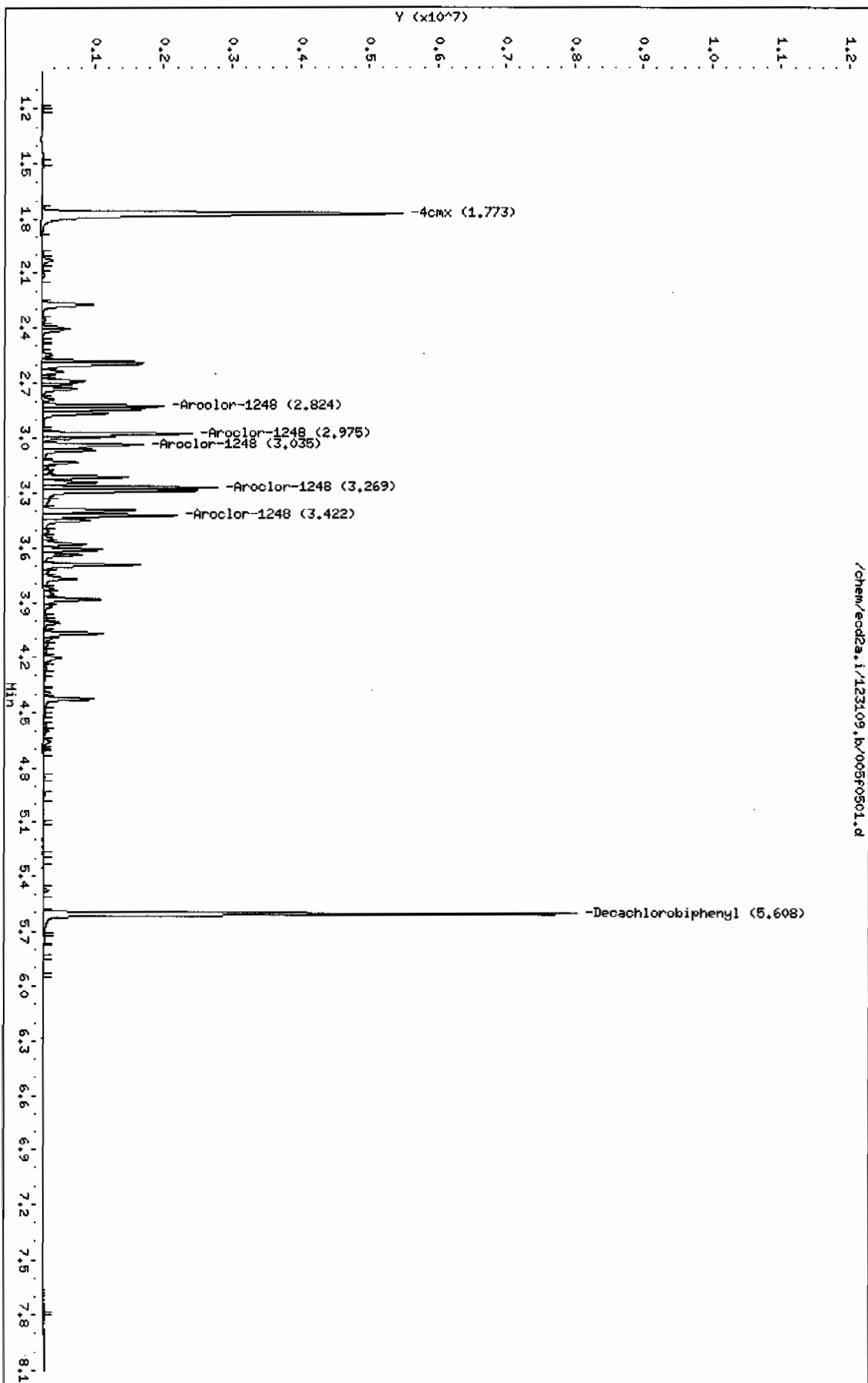
QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/eod2a.i/123109.b/005f0501.d
Date: 31-DEC-2009 08:15
Client ID: 6R124801
Sample Info: 1MR091217-48

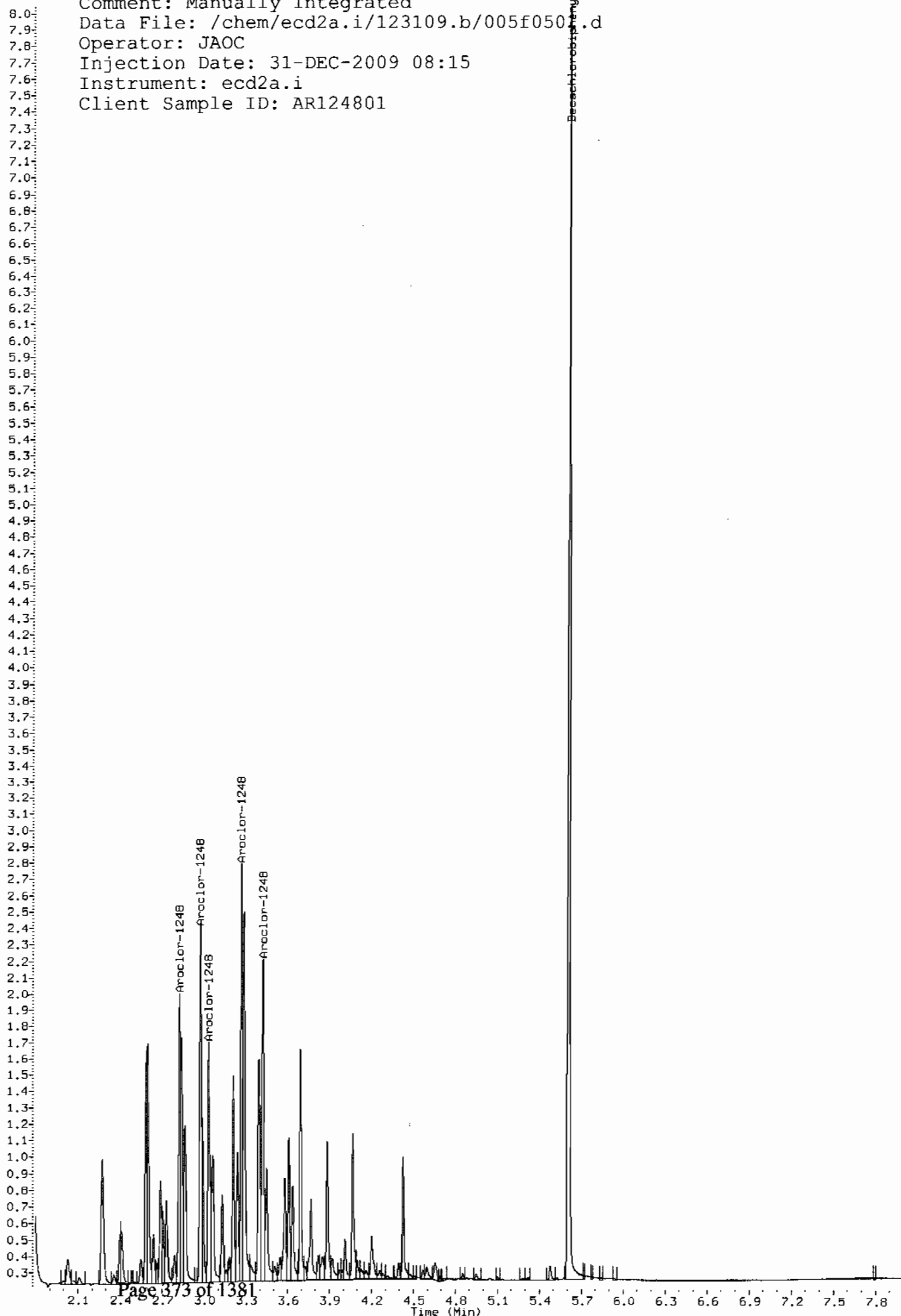
Column phase: CLP1

Instrument: eod2a.i
Operator: JAC
Column diameter: 0.25



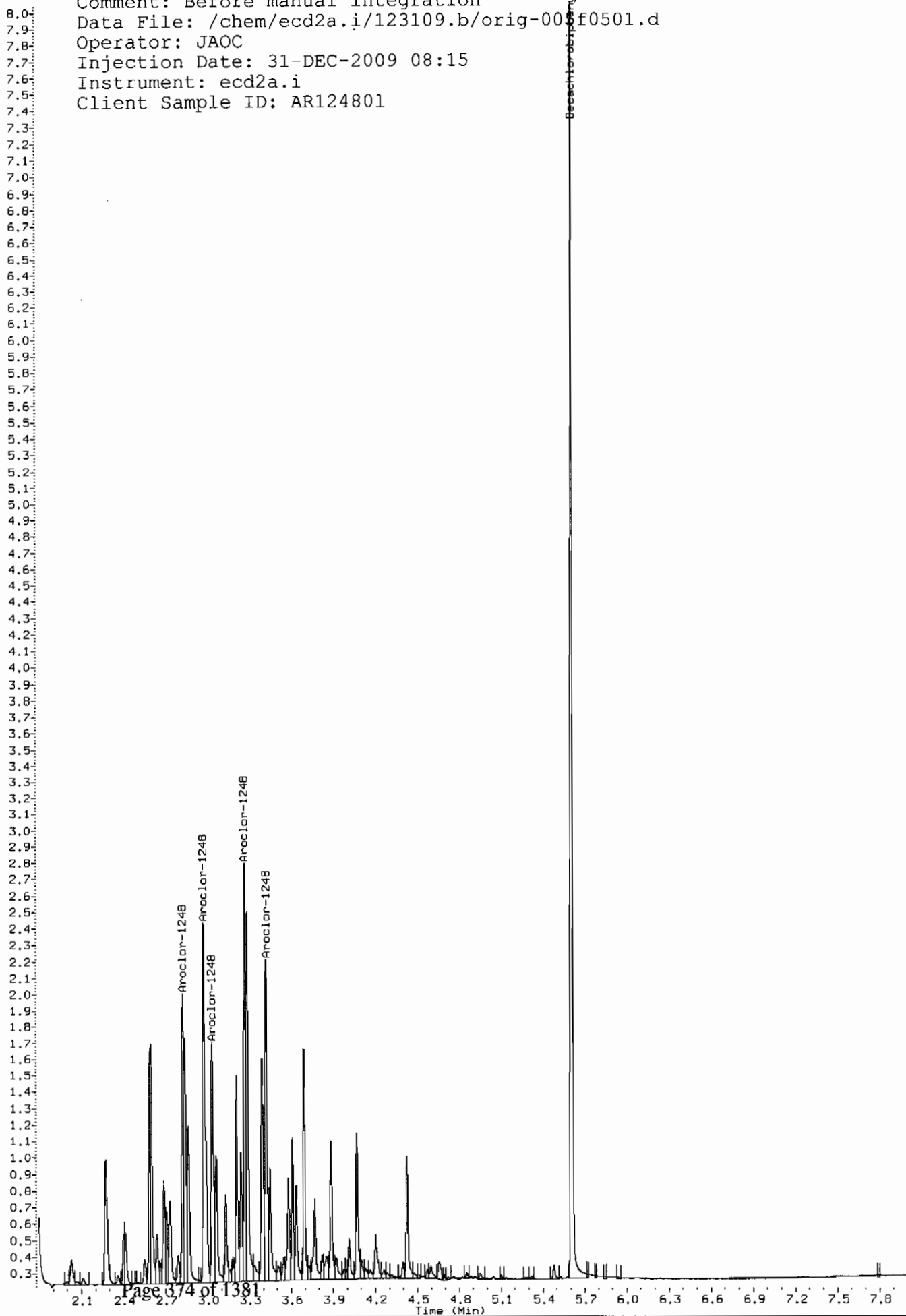
Comment: Manually Integrated
Data File: /chem/ecd2a.i/123109.b/005f0501.d
Operator: JAOC
Injection Date: 31-DEC-2009 08:15
Instrument: ecd2a.i
Client Sample ID: AR124801

Y (x10⁶)



Comment: Before manual integration
Data File: /chem/ecd2a.i/123109.b/orig-00f0501.d
Operator: JAOC
Injection Date: 31-DEC-2009 08:15
Instrument: ecd2a.i
Client Sample ID: AR124801

Y (x10⁶)



Data File: /chem/ecd2a.i/123109.b/005b0501.d
Report Date: 04-Jan-2010 08:14

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/005b0501.d
Lab Smp Id: WAR091217-48 Client Smp ID: AR124801
Inj Date : 31-DEC-2009 08:15
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |WAR091217-48
Misc Info : |PCB_CVS|1248||CVS|
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
Als bottle: 5 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1248.sub
Target Version: 3.50 Sample Matrix: None

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT RESPONSE (ug/L)	ON-COL (ug/L)	TARGET RANGE	RATIO

\$ 11 4cmx				CAS #: 877-09-8		
2.069	2.069	0.000	15354811 100.000	119	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3		
6.300	6.300	0.000	15414376 100.000	137	80.00- 120.00	100.00

5 Aroclor-1248				CAS #: 12672-29-6		
3.330	3.330	0.000	3396578 1000.00	1030	80.00- 120.00	100.00
3.518	3.518	0.000	4364397 1000.00	1040	108.49- 148.49	128.49
3.603	3.603	0.000	4574852 1000.00	1030	114.69- 154.69	134.69
3.793	3.793	0.000	4810706 1000.00	1020	121.63- 161.63	141.63
3.823	3.823	0.000	5689167 1000.00	1060	147.50- 187.50	167.50
Average of Peak Amounts =			1.04e+03			

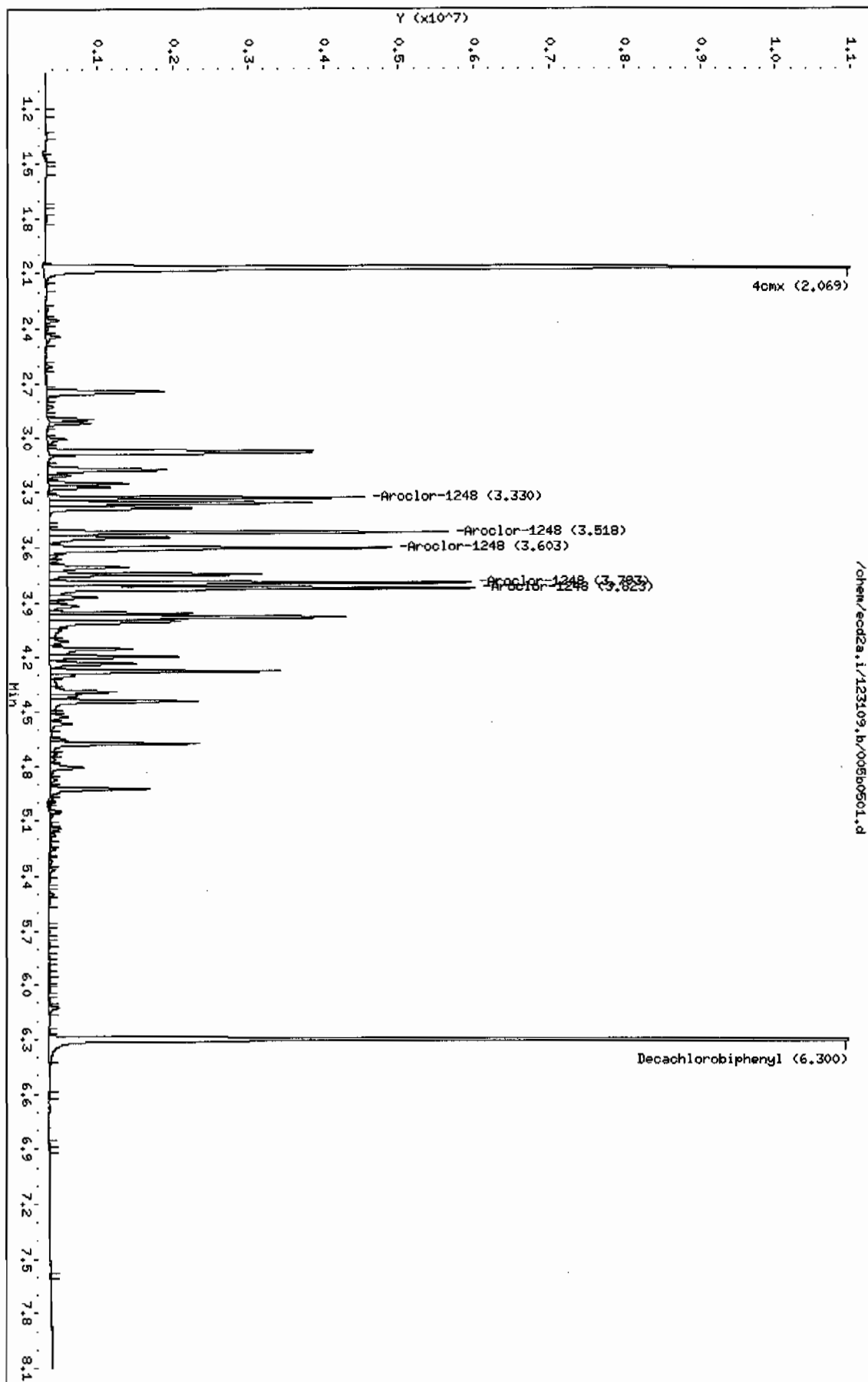
Data File: /chem/eod2a.i/123109.b/00500501.d
Date: 31-DEC-2009 08:15
Client ID: AR124801
Sample Info: 1MAR091217-48

Instrument: eod2a.i

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Column phase: CLP2

Operator: JROC
Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/006f0601.d
Report Date: 04-Jan-2010 08:15

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/006f0601.d

Lab Smp Id: WAR091231-60 01 Client Smp ID: AR166001

Inj Date : 31-DEC-2009 08:26

Operator : JAOC Inst ID: ecd2a.i

Smp Info : |WAR091231-60 01

Misc Info : |PCB_CVS|1660||CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d

Als bottle: 6 Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon Compound Sublist: 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			
1.772	1.772	0.000	6246428	100.000	100	80.00-	120.00	100.00

\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3			
5.608	5.608	0.000	5889121	100.000	109	80.00-	120.00	100.00

1 Aroclor-1016					CAS #: 12674-11-2			
2.274	2.274	0.000	2177053	1000.00	973	80.00-	120.00	100.00
2.598	2.598	0.000	4534889	1000.00	968	192.27-	232.27	208.30
2.689	2.689	0.000	1825958	1000.00	960	65.25-	105.25	83.87
2.824	2.824	0.000	927756	1000.00	950	22.83-	62.83	42.62
2.975	2.975	0.000	1379679	1000.00	946	44.32-	84.32	63.37
Average of Peak Amounts =					960			

7 Aroclor-1260					CAS #: 11096-82-5			
4.015	4.015	0.000	4244333	1000.00	1020	80.00-	120.00	100.00
4.287	4.287	0.000	2715866	1000.00	1050	42.76-	82.76	63.99
4.452	4.452	0.000	2774898	1000.00	1050	44.99-	84.99	65.38
4.664	4.664	0.000	6495701	1000.00	1070	134.44-	174.44	153.04
4.854	4.854	0.000	3147238	1000.00	1070	55.22-	95.22	74.15
Average of Peak Amounts =					1.05e+03			

Data File: /chem/ecd2a.i/123109.b/006f0601.d

Date: 31-DEC-2009 08:26

Client ID: AR160001

Sample Info: 114R091231-60 01

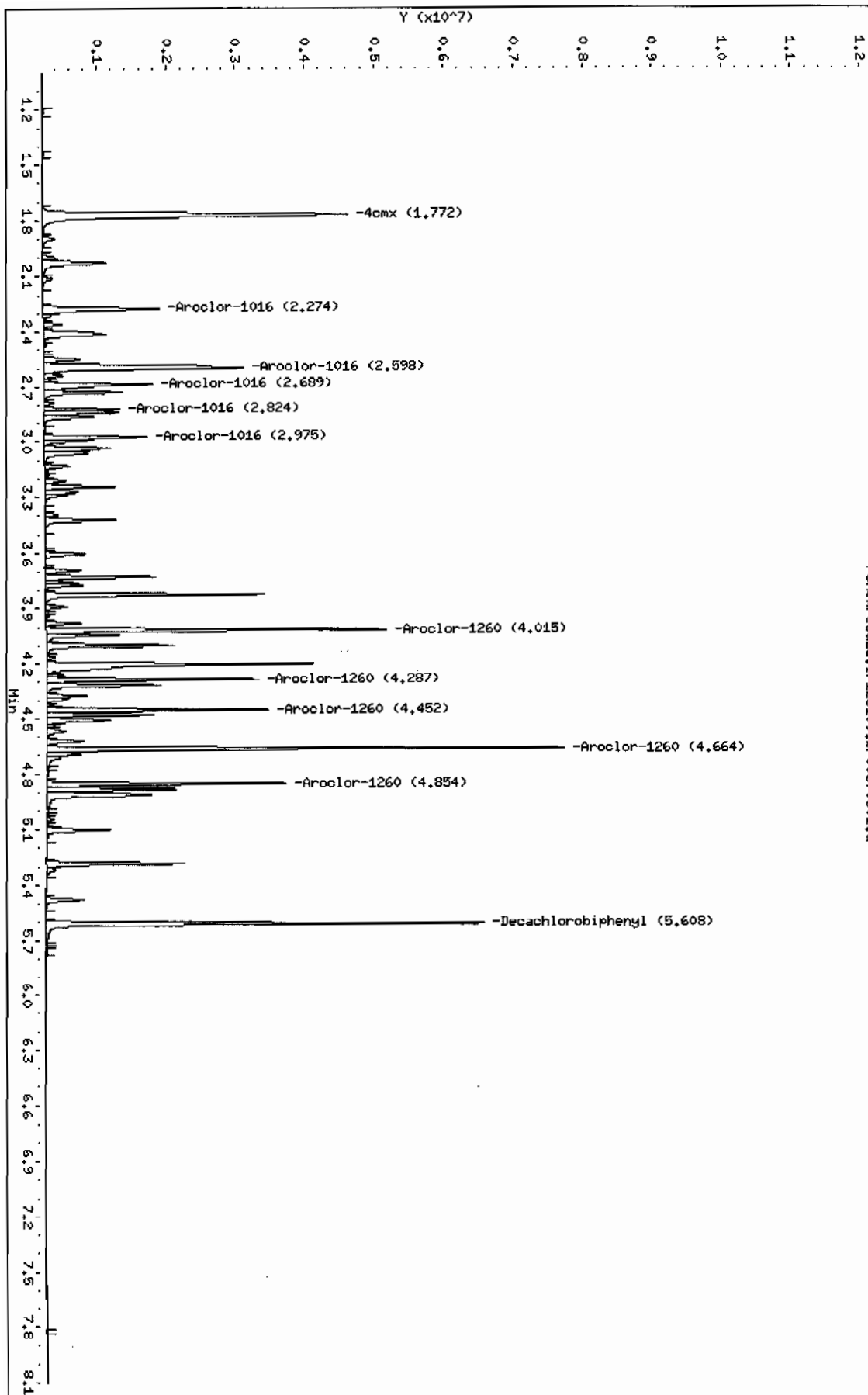
Column phase: CLP1

Instrument: ecd2a.i

Operator: JHOC

Column diameter: 0.25

/chem/ecd2a.i/123109.b/006f0601.d



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/006b0601.d

Lab Smp Id: WAR091231-60 01

Client Smp ID: AR166001

Inj Date : 31-DEC-2009 08:26

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091231-60 01

Misc Info : |PCB_CVS|1660||CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m

Meth Date : 04-Jan-2010 08:00 jen01212

Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012b1201.d

Als bottle: 6

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: 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	
2.069	2.069	0.000	13421647 100.000	104	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3	
6.300	6.300	0.000	12491028 100.000	111	80.00- 120.00	100.00

1 Aroclor-1016					CAS #: 12674-11-2	
2.745	2.745	0.000	4541640 1000.00	1000	80.00- 120.00	100.00
3.179	3.179	0.000	3527116 1000.00	979	58.40- 98.40	77.66
3.331	3.331	0.000	2038452 1000.00	993	25.06- 65.06	44.88
3.359	3.359	0.000	2126014 1000.00	995	27.01- 67.01	46.81
3.518	3.518	0.000	2863486 1000.00	998	43.68- 83.68	63.05
Average of Peak Amounts =				993		

7 Aroclor-1260					CAS #: 11096-82-5	
4.414	4.414	0.000	5884927 1000.00	1020	80.00- 120.00	100.00
4.565	4.565	0.000	7417007 1000.00	1040	107.43- 147.43	126.03
4.677	4.677	0.000	5102019 1000.00	1060	66.66- 106.66	86.70
4.874	4.874	0.000	5906686 1000.00	1050	79.77- 119.77	100.37
5.500	5.500	0.000	9822315 1000.00	1090	145.98- 185.98	166.91
Average of Peak Amounts =				1.05e+03		

Data File: /chem/ecod2a.i/123109.b/006b0601.d
Date: 31-DEC-2009 08:26

Client ID: AR166001

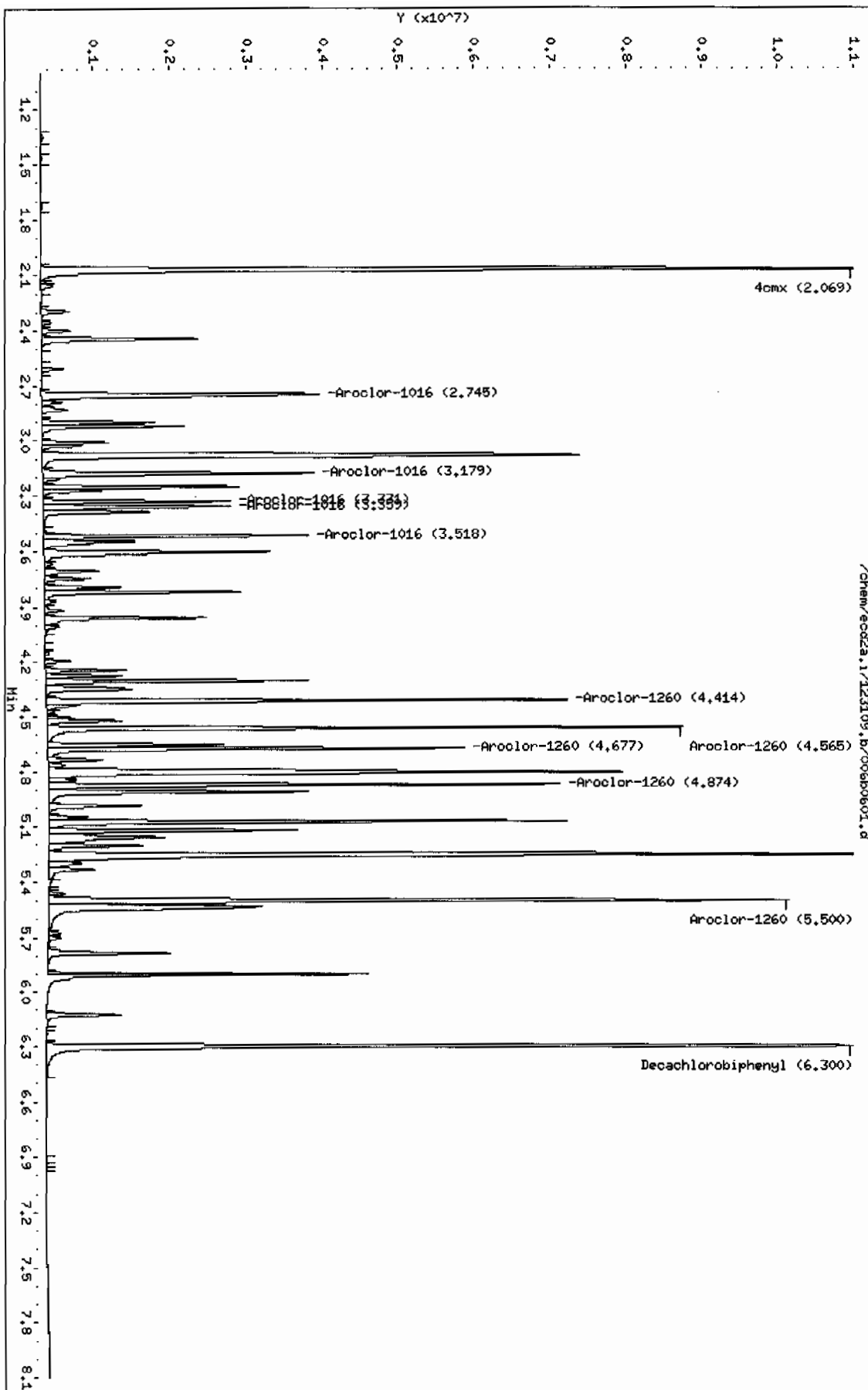
Sample Info: 14AR091231-60 01

Column phase: CLP2

Instrument: ecod2a.i

Operator: JADC

Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/007f0701.d

Lab Smp Id: WAR090930-32

Client Smp ID: AR123201

Inj Date : 31-DEC-2009 08:38

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR090930-32

Misc Info : |PCB_CVS|1232||CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 7

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1232.sub

Target Version: 3.50

Sample Matrix: None

AMOUNTS

			CAL-AMT		ON-COL		
RT	EXP RT	DLT RT	RESPONSE (ug/L)		(ug/L)	TARGET RANGE	RATIO
--	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8		
1.771	1.772	-0.001	10626702	100.000	170	80.00- 120.00	100.00

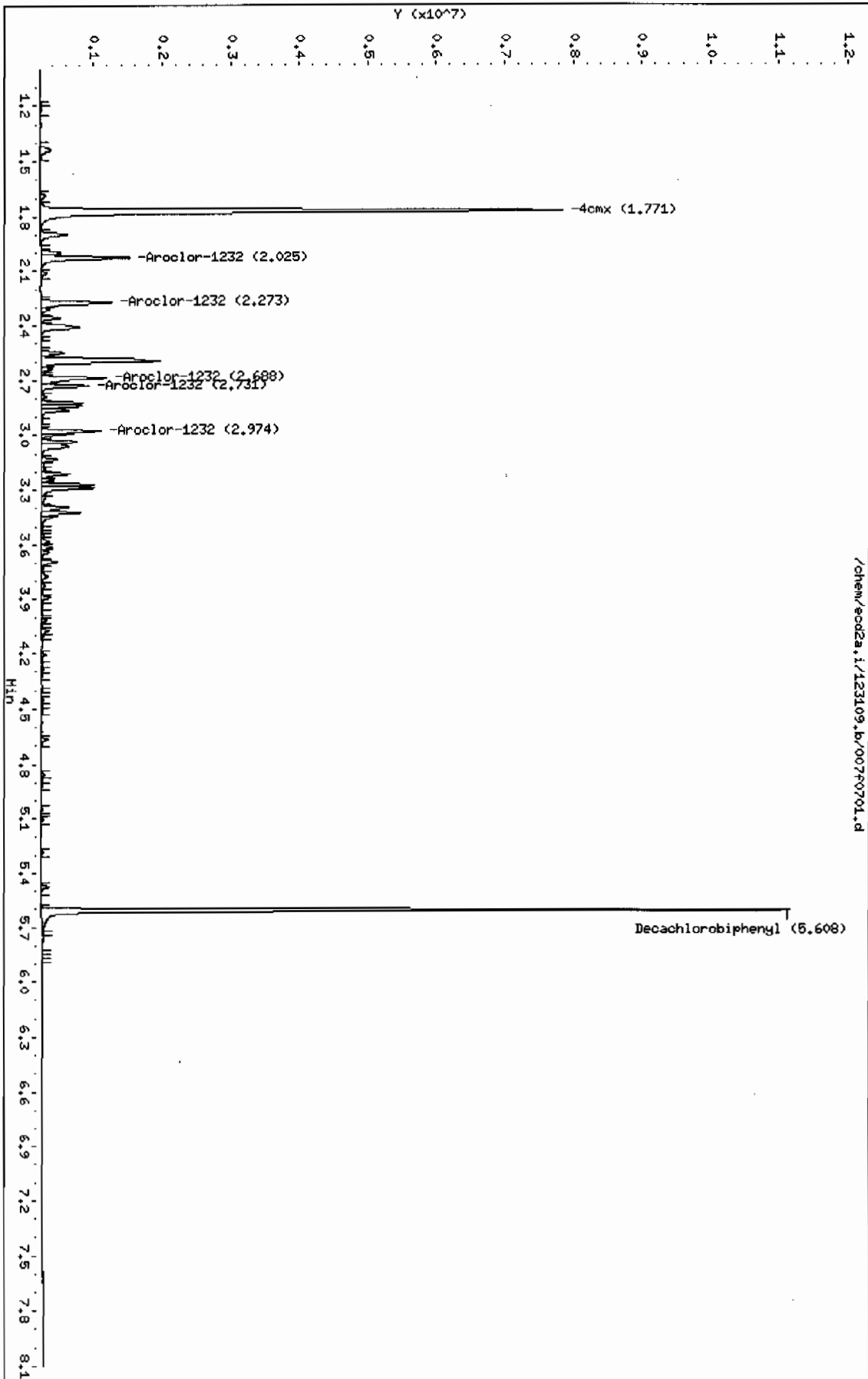
\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.608	5.608	0.000	10092016	100.000	186	80.00- 120.00	100.00

3 Aroclor-1232					CAS #: 11141-16-5		
2.025	2.025	0.000	1699921	1000.00	1460	80.00- 120.00	100.00
2.273	2.273	0.000	1349696	1000.00	1450	59.40- 99.40	79.40
2.688	2.688	0.000	1120523	1000.00	1400	45.92- 85.92	65.92
2.731	2.731	0.000	713746	1000.00	1400	21.99- 61.99	41.99
2.974	2.974	0.000	820961	1000.00	1400	28.29- 68.29	48.29
Average of Peak Amounts =					1.42e+03		

Data File: /chem/ecd2a.i/123109.b/007f0701.d
Date: 31-DEC-2009 08:38
Client ID: AR123201
Sample Info: IMA090930-32

Column phase: CLP1

Instrument: ecd2a.i
Operator: JADC
Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/007b0701.d
Report Date: 04-Jan-2010 08:15

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/007b0701.d

Lab Smp Id: WAR090930-32

Client Smp ID: AR123201

Inj Date : 31-DEC-2009 08:38

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR090930-32

Misc Info : |PCB_CVS|1232||CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m

Meth Date : 04-Jan-2010 08:00 jen01212

Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012b1201.d

Als bottle: 7

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: 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			
2.068	2.069	-0.001	23386438 100.000	181	80.00- 120.00	100.00
<hr/>						
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
6.300	6.300	0.000	21801541 100.000	193	80.00- 120.00	100.00
<hr/>						
3 Aroclor-1232			CAS #: 11141-16-5			
2.441	2.441	0.000	2997006 1000.00	1450	80.00- 120.00	100.00
2.744	2.744	0.000	2831263 1000.00	1440	74.47- 114.47	94.47
3.180	3.180	0.000	2209020 1000.00	1470	53.71- 93.71	73.71
3.251	3.251	0.000	1284017 1000.00	1380	22.84- 62.84	42.84
3.517	3.517	0.000	1573638 1000.00	1420	32.51- 72.51	52.51
Average of Peak Amounts =			1.43e+03			

Data File: /chem/eod2a.i/123109.b/007b0701.d

Date: 31-DEC-2009 08:38

Client ID: AR123201

Sample Info: IWR090930-32

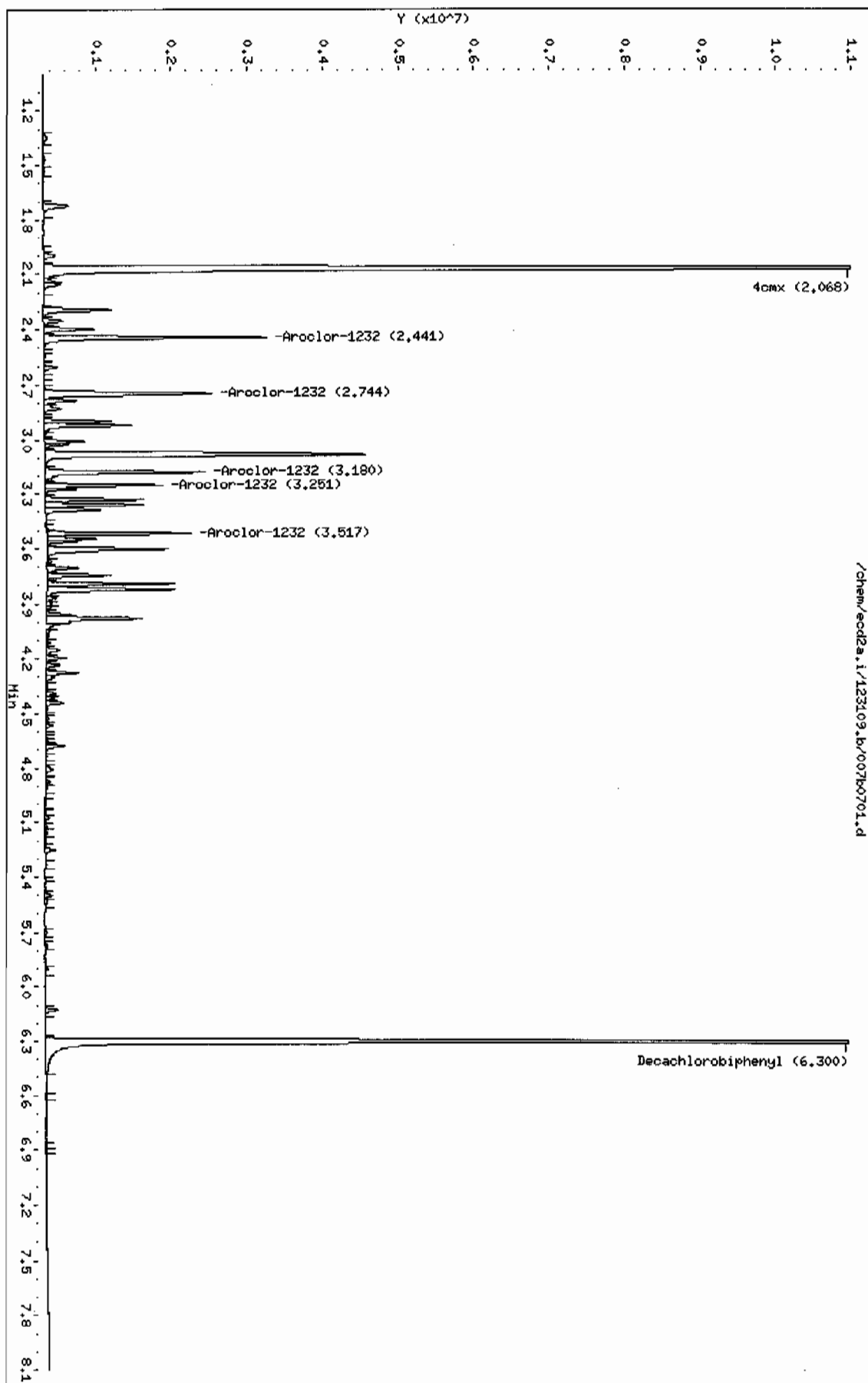
Page 1

Column phase: CLP2

Instrument: eod2a.i

Operator: JHDC

Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/008f0801.d
Report Date: 15-Jan-2010 15:44

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL
Data file : /chem/ecd2a.i/123109.b/008f0801.d
Lab Smp Id: WAR091111-21 Client Smp ID: AR122101
Inj Date : 31-DEC-2009 08:49
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |WAR091111-21
Misc Info : |PCB_CVS|1221||CVS|
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
Meth Date : 04-Jan-2010 09:26 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d
Als bottle: 8 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			
1.773	1.772	0.001	7088080 100.000	114	80.00- 120.00	100.00	

\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3			
5.608	5.608	0.000	6832011 100.000	126	80.00- 120.00	100.00	

2 Aroclor-1221				CAS #: 11104-28-2			
1.439	1.439	0.000	570990 1000.00	1230	80.00- 120.00	100.00	
1.900	1.900	0.000	831234 1000.00	1260	125.58- 165.58	145.58	
1.999	1.999	0.000	452263 1000.00	1300	59.21- 99.21	79.21	
Average of Peak Amounts =				1.27e+03			

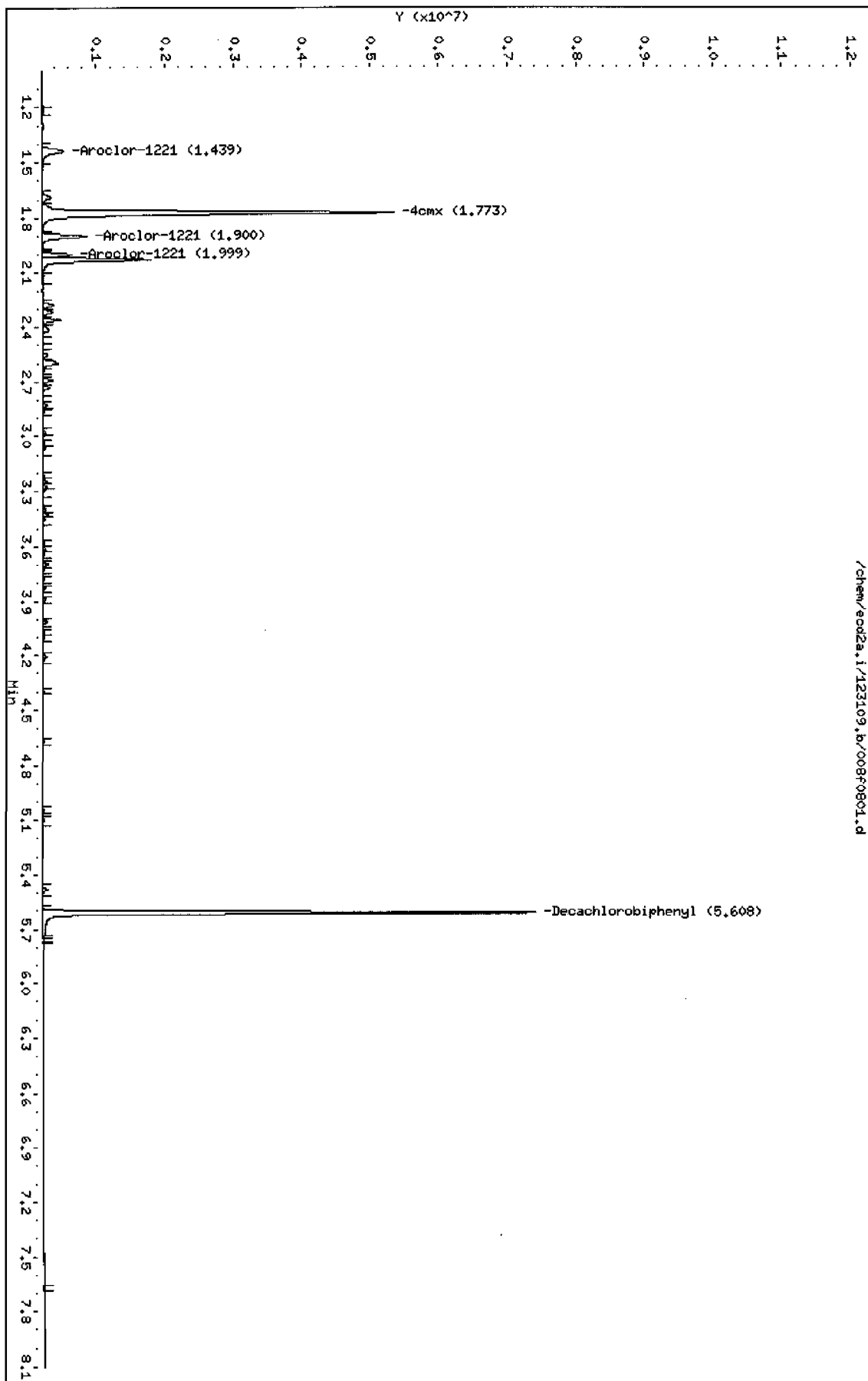
Data File: /chem/eod2a.i/123109.b/008f0801.d
Date : 31-DEC-2009 08:49
Client ID: AR122101
Sample Info: 1MAR091111-21

Instrument: eod2a.i

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Column phase: CLP1

Operator: JROC
Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/008b0801.d
Report Date: 15-Jan-2010 15:44

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/008b0801.d
Lab Smp Id: WAR091111-21 Client Smp ID: AR122101
Inj Date : 31-DEC-2009 08:49
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |WAR091111-21
Misc Info : |PCB_CVS|1221||CVS|
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Meth Date : 04-Jan-2010 09:28 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
Als bottle: 8 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1221.sub
Target Version: 3.50 Sample Matrix: None

AMOUNTS

RT	EXP RT	DLT RT	CAL-AMT	ON-COL	RESPONSE (ug/L)	(ug/L)	TARGET RANGE	RATIO
=====								

CAS #: 877-09-8								
2.069	2.069	0.000	15167268	100.000	117	80.00- 120.00	100.00	

CAS #: 2051-24-3								
6.300	6.300	0.000	14454788	100.000	128	80.00- 120.00	100.00	

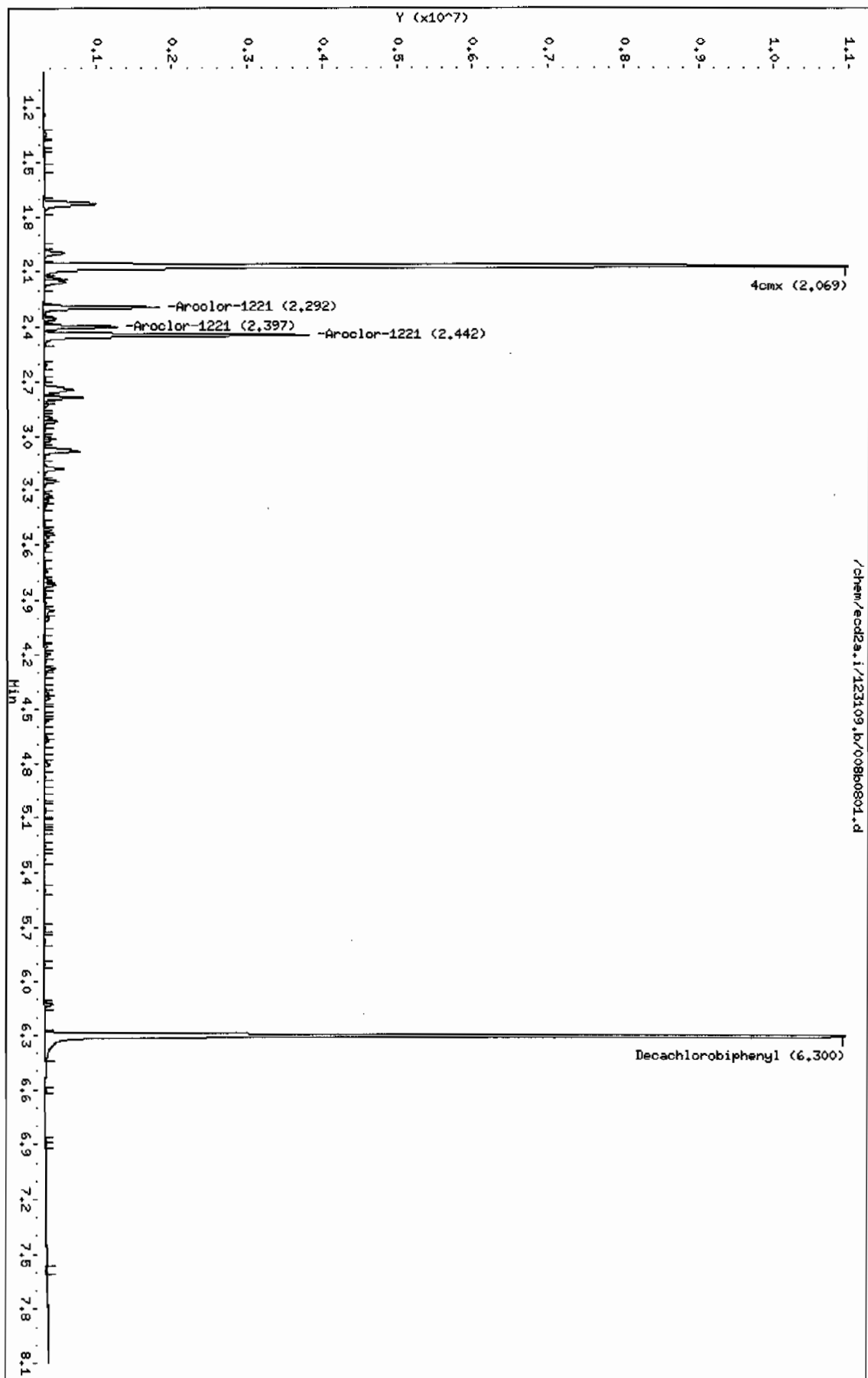
CAS #: 11104-28-2								
2.292	2.292	0.000	1502493	1000.00	1190	80.00- 120.00	100.00	
2.397	2.397	0.000	925530	1000.00	1200	41.60- 81.60	61.60	
2.442	2.442	0.000	3628613	1000.00	1190	221.51- 261.51	241.51	
Average of Peak Amounts = 1.19e+03								

Data File: /chem/ecd2a.i/123109.b/0080801.d
Date: 31-DEC-2009 08:49
Client ID: AR122101
Sample Info: 1MAR091111-21

Column phase: CLP2

Instrument: ecd2a.i
Operator: JPOC
Column diameter: 0.25

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Data File: /chem/ecd2a.i/123109.b/020f2001.d
 Report Date: 04-Jan-2010 08:16

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/020f2001.d
 Lab Smp Id: WAR091231-60 02 Client Smp ID: AR166002
 Inj Date : 31-DEC-2009 11:08
 Operator : JAOC Inst ID: ecd2a.i
 Smp Info : |WAR091231-60 02
 Misc Info : |PCB_CVS|1660||CVS|
 Comment :
 Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
 Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD
 Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d
 Als bottle: 20 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		
1.773	1.772	0.001	6262722	100.000	100	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.609	5.608	0.001	5908499	100.000	109	80.00- 120.00	100.00

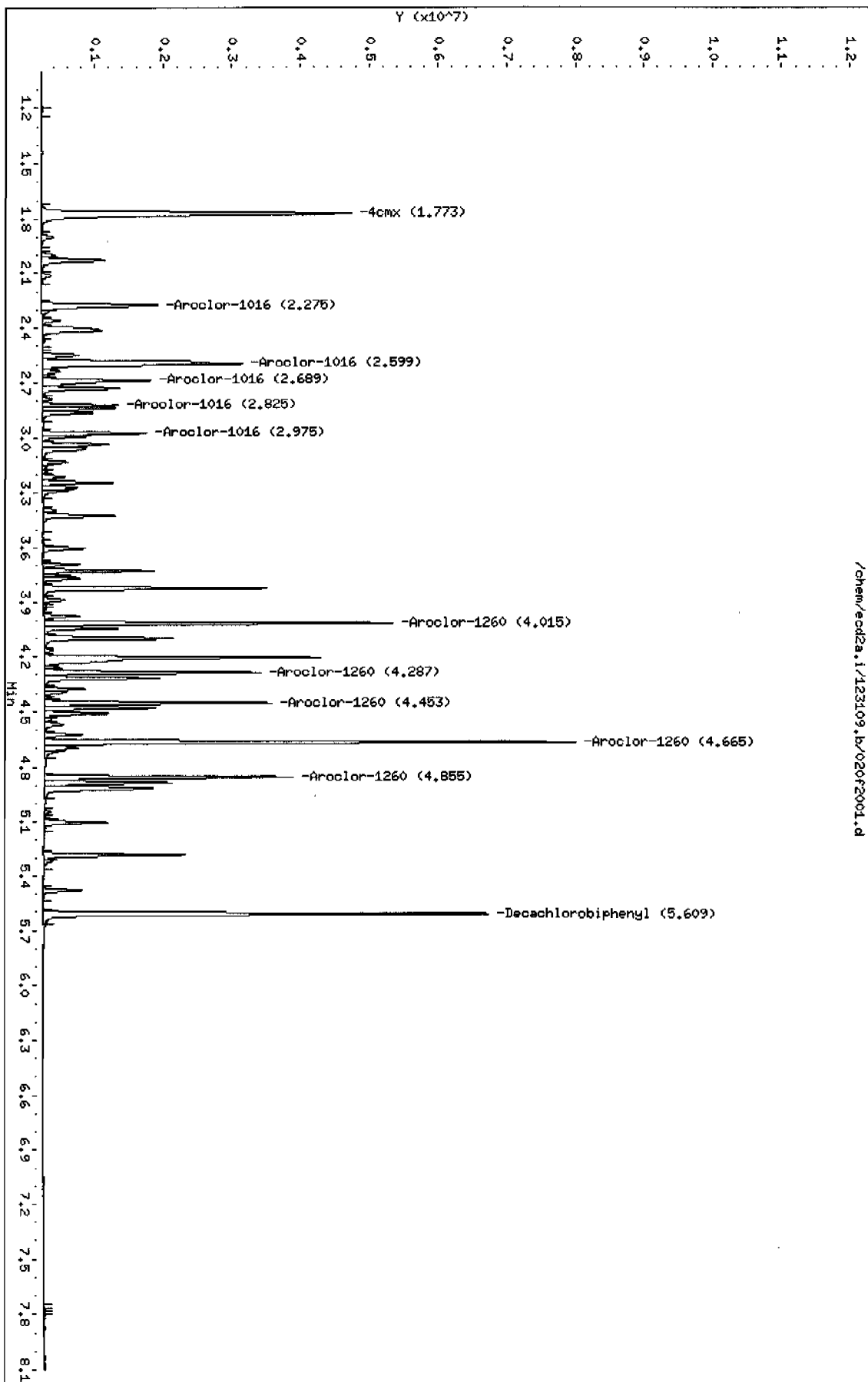
1 Aroclor-1016					CAS #: 12674-11-2		
2.275	2.274	0.001	2175451	1000.00	972	80.00- 120.00	100.00
2.599	2.598	0.001	4599111	1000.00	982	192.27- 232.27	211.41
2.689	2.689	0.000	1847341	1000.00	972	65.25- 105.25	84.92
2.825	2.824	0.001	914720	1000.00	937	22.83- 62.83	42.05
2.975	2.975	0.000	1416002	1000.00	971	44.32- 84.32	65.09
Average of Peak Amounts =					967		

7 Aroclor-1260					CAS #: 11096-82-5		
4.015	4.015	0.000	4368886	1000.00	1050	80.00- 120.00	100.00
4.287	4.287	0.000	2760398	1000.00	1060	42.76- 82.76	63.18
4.453	4.452	0.001	2847299	1000.00	1080	44.99- 84.99	65.17
4.665	4.664	0.001	6735181	1000.00	1110	134.44- 174.44	154.16
4.855	4.854	0.001	3254477	1000.00	1110	55.22- 95.22	74.49
Average of Peak Amounts =					1.08e+03		

Data File: /chem/ecd2a.i/123109.b/020f2001.d
Date: 31-DEC-2009 11:08
Client ID: AR16002
Sample Info: 11AR091231-60 02

Column phase: CLP1

Instrument: ecd2a.i
Operator: JADC
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/020b2001.d
 Lab Smp Id: WAR091231-60 02 Client Smp ID: AR166002
 Inj Date : 31-DEC-2009 11:08
 Operator : JAOC Inst ID: ecd2a.i
 Smp Info : |WAR091231-60 02
 Misc Info : |PCB_CVS|1660||CVS|
 Comment :
 Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
 Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
 Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
 Als bottle: 20 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		
2.069	2.069	0.000	13532997	100.000	105	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
6.300	6.300	0.000	12430571	100.000	110	80.00- 120.00	100.00

1 Aroclor-1016					CAS #: 12674-11-2		
2.746	2.745	0.001	4581581	1000.00	1010	80.00- 120.00	100.00
3.180	3.179	0.001	3580992	1000.00	994	58.40- 98.40	78.16
3.331	3.331	0.000	2060692	1000.00	1000	25.06- 65.06	44.98
3.359	3.359	0.000	2147149	1000.00	1000	27.01- 67.01	46.86
3.518	3.518	0.000	2908199	1000.00	1010	43.68- 83.68	63.48
Average of Peak Amounts =					1.01e+03		

7 Aroclor-1260					CAS #: 11096-82-5		
4.413	4.414	-0.001	6057191	1000.00	1050	80.00- 120.00	100.00
4.566	4.565	0.001	7683112	1000.00	1080	107.43- 147.43	126.84
4.677	4.677	0.000	5216240	1000.00	1080	66.66- 106.66	86.12
4.875	4.874	0.001	6055011	1000.00	1080	79.77- 119.77	99.96
5.500	5.500	0.000	10141107	1000.00	1120	145.98- 185.98	167.42
Average of Peak Amounts =					1.08e+03		

Data File: /chem/ecod2a.i/123109.b/020b2001.d

Date : 31-DEC-2009 11:08

Client ID: AR166002

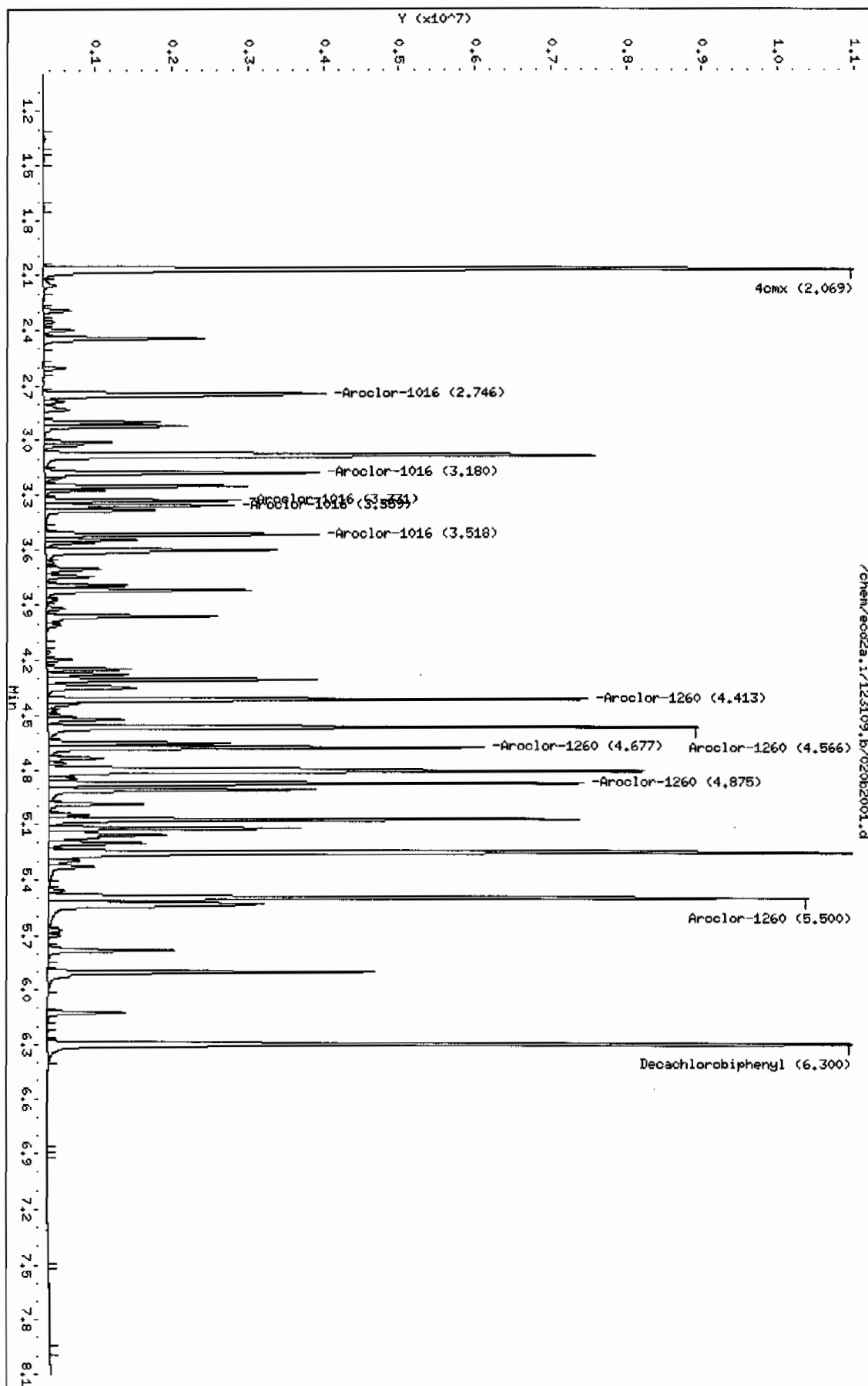
Sample Info: 144091231-60 02

Column phase: CLP2

Instrument: ecod2a.i

Operator: J90C

Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/030f3001.d
Report Date: 04-Jan-2010 08:17

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/030f3001.d

Lab Smp Id: WAR091231-60 03

Client Smp ID: AR166003

Inj Date : 31-DEC-2009 12:58

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091231-60 03

Misc Info : |PCB_CVS|1660||CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212

Quant. Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 30

Continuing Calibration Sample

Dil Factor: 1.00000

Integrator: Falcon

Compound Sublist: AR1660.sub

Target Version: 3.50

Sample Matrix: None

AMOUNTS

			CAL-AMT	ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx					CAS #: 877-09-8		
1.771	1.772	-0.001	6262719	100.000	100	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl					CAS #: 2051-24-3		
5.609	5.608	0.001	5771565	100.000	107	80.00- 120.00	100.00

1 Aroclor-1016					CAS #: 12674-11-2		
2.274	2.274	0.000	2167551	1000.00	969	80.00- 120.00	100.00
2.597	2.598	-0.001	4604554	1000.00	983	192.27- 232.27	212.43
2.688	2.689	-0.001	1844439	1000.00	970	65.25- 105.25	85.09
2.823	2.824	-0.001	954672	1000.00	978	22.83- 62.83	44.04
2.975	2.975	0.000	1403799	1000.00	963	44.32- 84.32	64.76
Average of Peak Amounts =					973		

7 Aroclor-1260					CAS #: 11096-82-5		
4.015	4.015	0.000	4346586	1000.00	1040	80.00- 120.00	100.00
4.286	4.287	-0.001	2729681	1000.00	1050	42.76- 82.76	62.80
4.453	4.452	0.001	2799018	1000.00	1060	44.99- 84.99	64.40
4.665	4.664	0.001	6645024	1000.00	1090	134.44- 174.44	152.88
4.855	4.854	0.001	3211558	1000.00	1090	55.22- 95.22	73.89
Average of Peak Amounts =					1.07e+03		

Data File: /chem/eod2a.i/123109.b/030f3001.d
Date: 31-DEC-2009 12:38
Client ID: AR166003
Sample Info: (MR091231-60 03

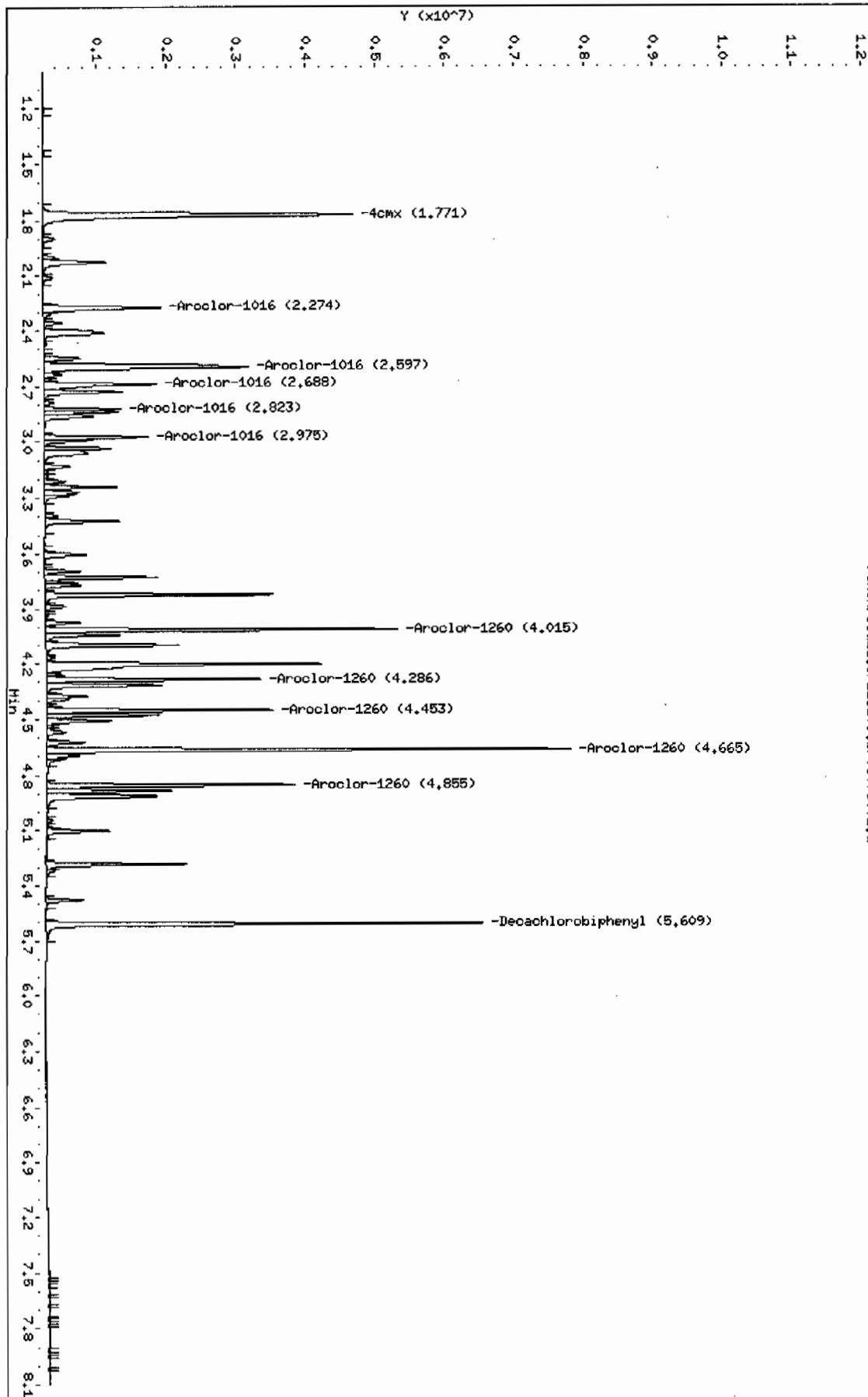
Instrument: eod2a.i

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Column phase: CLP1

Operator: JROC
Column diameter: 0.25

/chem/eod2a.i/123109.b/030f3001.d



Data File: /chem/ecd2a.i/123109.b/030b3001.d
Report Date: 04-Jan-2010 08:17

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/030b3001.d

Lab Smp Id: WAR091231-60 03

Client Smp ID: AR166003

Inj Date : 31-DEC-2009 12:58

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |WAR091231-60 03

Misc Info : |PCB_CVS|1660||CVS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m

Meth Date : 04-Jan-2010 08:00 jen01212

Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012b1201.d

Als bottle: 30

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			
2.068	2.069	-0.001		13519580	100.000	104	80.00- 120.00	100.00	

\$ 12 Decachlorobiphenyl						CAS #: 2051-24-3			
6.300	6.300	0.000		11675152	100.000	104	80.00- 120.00	100.00	

1 Aroclor-1016						CAS #: 12674-11-2			
2.744	2.745	-0.001		4568406	1000.00	1010	80.00- 120.00	100.00	
3.179	3.179	0.000		3587798	1000.00	996	58.40- 98.40	78.54	
3.330	3.331	-0.001		2073127	1000.00	1010	25.06- 65.06	45.38	
3.359	3.359	0.000		2160907	1000.00	1010	27.01- 67.01	47.30	
3.517	3.518	-0.001		2909754	1000.00	1010	43.68- 83.68	63.69	
Average of Peak Amounts =						1.01e+03			

7 Aroclor-1260						CAS #: 11096-82-5			
4.413	4.414	-0.001		6041413	1000.00	1050	80.00- 120.00	100.00	
4.566	4.565	0.001		7695382	1000.00	1080	107.43- 147.43	127.38	
4.677	4.677	0.000		5222809	1000.00	1080	66.66- 106.66	86.45	
4.875	4.874	0.001		5973222	1000.00	1060	79.77- 119.77	98.87	
5.500	5.500	0.000		9899433	1000.00	1100	145.98- 185.98	163.86	
Average of Peak Amounts =						1.07e+03			

Data File: /chem/ecd2a.i/123109.b/03063001.d

Date : 31-DEC-2009 12:58

Client ID: AR166003

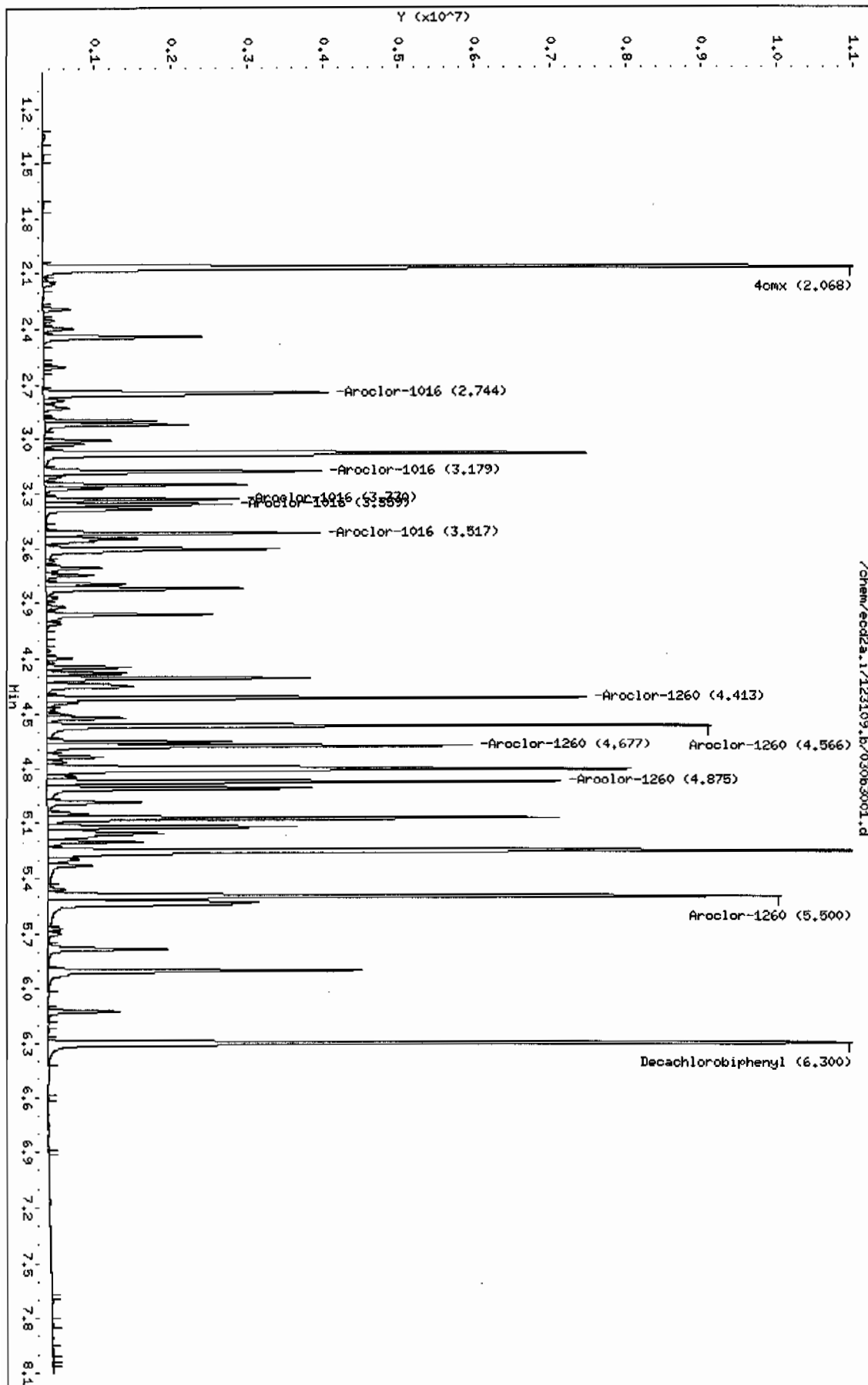
Sample Info: IWAR091231-60 03

Column phase: CLP2

Instrument: ecd2a.i

Operator: JADC

Column diameter: 0.25



8D
PCB ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1100

GC Column: CLP1 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD2A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION						
S1 : 1.77			DCB: 5.61			
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	#	DCB RT
01	PIBLK01	WAR091130-99	12/14/09	0700	1.77	5.61
02	ZZZZZ	ZZZZZ	12/14/09	0711	1.77	5.61
03	AR125401	WAR091102-54	12/14/09	0722	1.77	5.61
04	AR124201	WAR091102-42	12/14/09	0733	1.77	5.61
05	AR124801	WAR091027-48	12/14/09	0744	1.77	5.61
06	AR123201	WAR090930-32	12/14/09	0755	1.77	5.61
07	AR122101	WAR091111-21	12/14/09	0807	1.77	5.61
08	ZZZZZ	ZZZZZ	12/14/09	0818	1.77	5.61
09	AR126201	WAR091111-62	12/14/09	0829	1.77	5.61
10	AR126801	WAR091106-68	12/14/09	0840	1.77	5.61
11	AR166001	WAR091214-01	12/14/09	0851	1.77	5.61
12	AR166002	WAR091214-02	12/14/09	0902	1.77	5.61
13	AR166003	WAR091214-03	12/14/09	0913	1.77	5.61
14	AR166004	WAR091214-04	12/14/09	0924	1.77	5.61
15	AR166005	IAR091102-01	12/14/09	0935	1.77	5.61
16	AR166001	WAR091211-60	12/14/09	0946	1.77	5.61
17	DDTANALOGSTD	WAR091020-DD	12/14/09	0958		
18	PIBLK02	WAR091130-99	12/14/09	1009	1.77	5.61
19	ZZZZZ	ZZZZZ	12/14/09	1020	1.77	5.61
20	ZZZZZ	ZZZZZ	12/14/09	1031	1.77	5.61
21	ZZZZZ	ZZZZZ	12/14/09	1042	1.77	
22	ZZZZZ	ZZZZZ	12/14/09	1053	1.76	
23	ZZZZZ	ZZZZZ	12/14/09	1104	1.76	
24	ZZZZZ	ZZZZZ	12/14/09	1115	1.77	5.61
25	ZZZZZ	ZZZZZ	12/14/09	1126	1.77	5.61
26	ZZZZZ	ZZZZZ	12/14/09	1137	1.76	
27	ZZZZZ	ZZZZZ	12/14/09	1148	1.77	5.61
28	ZZZZZ	ZZZZZ	12/14/09	1159	1.76	5.62
29	AR166002	WAR091211-60	12/14/09	1211	1.77	5.61
30	PIBLK03	WAR091130-99	12/14/09	1222	1.77	5.61
31	ZZZZZ	ZZZZZ	12/14/09	1233	1.77	5.61
32	ZZZZZ	ZZZZZ	12/14/09	1244	1.76	

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.: 10-1100

GC Column: CLP2 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD2A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION						
S1 : 2.07			DCB: 6.30			
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	#	DCB RT
01	PIBLK01	WAR091130-99	12/14/09	0700	2.07	6.31
02	ZZZZZ	ZZZZZ	12/14/09	0711	2.07	6.30
03	AR125401	WAR091102-54	12/14/09	0722	2.07	6.30
04	AR124201	WAR091102-42	12/14/09	0733	2.07	6.30
05	AR124801	WAR091027-48	12/14/09	0744	2.07	6.30
06	AR123201	WAR090930-32	12/14/09	0755	2.07	6.30
07	AR122101	WAR091111-21	12/14/09	0807	2.07	6.30
08	ZZZZZ	ZZZZZ	12/14/09	0818	2.07	6.30
09	AR166201	WAR091111-62	12/14/09	0829	2.07	6.30
10	AR126801	WAR091106-68	12/14/09	0840	2.07	6.30
11	AR166001	WAR091214-01	12/14/09	0851	2.07	6.30
12	AR166002	WAR091214-02	12/14/09	0902	2.07	6.30
13	AR166003	WAR091214-03	12/14/09	0913	2.07	6.30
14	AR166004	WAR091214-04	12/14/09	0924	2.07	6.30
15	AR166005	WAR091102-01	12/14/09	0935	2.07	6.30
16	AR166001	WAR091211-60	12/14/09	0946	2.07	6.30
17	DDTANALOGSTD	WAR091020-DD	12/14/09	0958		
18	PIBLK02	WAR091130-99	12/14/09	1009	2.07	6.30
19	ZZZZZ	ZZZZZ	12/14/09	1020	2.07	6.30
20	ZZZZZ	ZZZZZ	12/14/09	1031	2.07	6.30
21	ZZZZZ	ZZZZZ	12/14/09	1042	2.07	
22	ZZZZZ	ZZZZZ	12/14/09	1053	2.07	
23	ZZZZZ	ZZZZZ	12/14/09	1104	2.06	
24	ZZZZZ	ZZZZZ	12/14/09	1115	2.07	6.30
25	ZZZZZ	ZZZZZ	12/14/09	1126	2.07	6.31
26	ZZZZZ	ZZZZZ	12/14/09	1137	2.07	
27	ZZZZZ	ZZZZZ	12/14/09	1148	2.07	6.30
28	ZZZZZ	ZZZZZ	12/14/09	1159	2.06	6.30
29	AR166002	WAR091211-60	12/14/09	1211	2.07	6.30
30	PIBLK03	WAR091130-99	12/14/09	1222	2.07	6.30
31	ZZZZZ	ZZZZZ	12/14/09	1233	2.07	6.31
32	ZZZZZ	ZZZZZ	12/14/09	1244	2.07	

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.: 10-1100

GC Column: CLP1 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD2A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION							
S1 : 1.77				DCB: 5.61			
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #		
01	PIBLK01	WAR091130-99	12/31/09 0731	1.77	5.61		
02	ZZZZZ	ZZZZZ	12/31/09 0742	1.77	5.61		
03	AR125401	WAR091216-54	12/31/09 0753	1.77	5.61		
04	AR124201	WAR091217-42	12/31/09 0804	1.77	5.61		
05	AR124801	WAR091217-48	12/31/09 0815	1.77	5.61		
06	AR166001	WAR091231-60	12/31/09 0826	1.77	5.61		
07	AR123201	WAR090930-32	12/31/09 0838	1.77	5.61		
08	AR122101	WAR091111-21	12/31/09 0849	1.77	5.61		
09	AR126201	WAR091111-62	12/31/09 0900	1.77	5.61		
10	AR126801	WAR091106-68	12/31/09 0911	1.77	5.61		
11	DDTANALOGSTD	WAR091219-DD	12/31/09 0922				
12	PIBLK02	WAR091130-99	12/31/09 0939	1.77	5.61		
13	PBLK01	1202006551	12/31/09 0950	1.77	5.61		
14	PBLK01LCS	1202006552	12/31/09 1001	1.77	5.61		
15	ZZZZZ	ZZZZZ	12/31/09 1012	1.77	5.61		
16	ZZZZZ	ZZZZZ	12/31/09 1023	1.77	5.61		
17	ZZZZZ	ZZZZZ	12/31/09 1034	1.77	5.61		
18	ZZZZZ	ZZZZZ	12/31/09 1045	1.77	5.61		
19	ZZZZZ	ZZZZZ	12/31/09 1057	1.77	5.61		
20	AR166002	WAR091231-60	12/31/09 1108	1.77	5.61		
21	PIBLK03	WAR091130-99	12/31/09 1119	1.77	5.61		
22	RE12-10-7841	243624001	12/31/09 1130	1.77	5.61		
23	RE12-10-7840	243624002	12/31/09 1141	1.77	5.61		
24	RE12-10-7839	243624003	12/31/09 1152	1.77	5.61		
25	RE12-10-7838	243624004	12/31/09 1203	1.77	5.61		
26	ZZZZZ	ZZZZZ	12/31/09 1214	1.77	5.61		
27	ZZZZZ	ZZZZZ	12/31/09 1225	1.77	5.61		
28	ZZZZZ	ZZZZZ	12/31/09 1236	1.77	5.61		
29	ZZZZZ	ZZZZZ	12/31/09 1247	1.77	5.61		
30	AR166003	WAR091231-60	12/31/09 1258	1.77	5.61		
31	PIBLK04	WAR091130-99	12/31/09 1310	1.77	5.61		
32	ZZZZZ	ZZZZZ	12/31/09 1321	1.77	5.61		

QC LIMITS
S1 = 4cmx (+/- 0.03 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PCB ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LAB, Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 10-1100

GC Column: CLP2 ID: 0.25 (mm) Init. Calib. Date(s): 12/14/09 12/14/09

Instrument ID: ECD2A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS,
SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION						
S1 : 2.07			DCB: 6.30			
EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	#	DCB RT
01	PIBLK01	WAR091130-99	12/31/09	0731	2.07	6.30
02	ZZZZZ	ZZZZZ	12/31/09	0742	2.07	6.30
03	AR125401	WAR091216-54	12/31/09	0753	2.07	6.30
04	AR124201	WAR091217-42	12/31/09	0804	2.07	6.30
05	AR124801	WAR091217-48	12/31/09	0815	2.07	6.30
06	AR166001	WAR091231-60	12/31/09	0826	2.07	6.30
07	AR123201	WAR090930-32	12/31/09	0838	2.07	6.30
08	AR122101	WAR091111-21	12/31/09	0849	2.07	6.30
09	AR126201	WAR091111-62	12/31/09	0900	2.07	6.30
10	AR126801	WAR091106-68	12/31/09	0911	2.07	6.30
11	DDTANALOGSTD	WAR091219-DD	12/31/09	0922		
12	PIBLK02	WAR091130-99	12/31/09	0939	2.07	6.30
13	PBLK01	1202006551	12/31/09	0950	2.07	6.30
14	PBLK01LCS	1202006552	12/31/09	1001	2.07	6.30
15	ZZZZZ	ZZZZZ	12/31/09	1012	2.07	6.30
16	ZZZZZ	ZZZZZ	12/31/09	1023	2.07	6.30
17	ZZZZZ	ZZZZZ	12/31/09	1034	2.07	6.30
18	ZZZZZ	ZZZZZ	12/31/09	1045	2.07	6.30
19	ZZZZZ	ZZZZZ	12/31/09	1057	2.07	6.30
20	AR166002	WAR091231-60	12/31/09	1108	2.07	6.30
21	PIBLK03	WAR091130-99	12/31/09	1119	2.07	6.30
22	RE12-10-7841	243624001	12/31/09	1130	2.07	6.30
23	RE12-10-7840	243624002	12/31/09	1141	2.07	6.30
24	RE12-10-7839	243624003	12/31/09	1152	2.07	6.30
25	RE12-10-7838	243624004	12/31/09	1203	2.07	6.30
26	ZZZZZ	ZZZZZ	12/31/09	1214	2.07	6.30
27	ZZZZZ	ZZZZZ	12/31/09	1225	2.07	6.30
28	ZZZZZ	ZZZZZ	12/31/09	1236	2.07	6.30
29	ZZZZZ	ZZZZZ	12/31/09	1247	2.07	6.30
30	AR166003	WAR091231-60	12/31/09	1258	2.07	6.30
31	PIBLK04	WAR091130-99	12/31/09	1310	2.07	6.30
32	ZZZZZ	ZZZZZ	12/31/09	1321	2.07	6.30

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 1 of 1

FORM VIII PEST

OLM03.0

Identification Summary

Page 1 of 1

SDG Number: 10-1100

Client ID: LCS for batch 937678

Lab Sample ID: 1202006552

Data File: 014f1401.d

Data File: 014b1401.d

Inst: ECD2A.I_1

Inst: ECD2A.I_2

Column: CLP1

Column: CLP2

Analyzed: 31-DEC-09 10:01

Analyzed: 31-DEC-09 10:01

Analyte	Peak	RT	RT Window	Conc.	Ave Conc.	Units	RPD
Aroclor-1016							.211
Column 1	1	2.28	2.24 – 2.3	21		ug/kg	
	2	2.6	2.57 – 2.63	21.1		ug/kg	
	3	2.69	2.66 – 2.72	20.9		ug/kg	
	4	2.82	2.79 – 2.85	21.2		ug/kg	
	5	2.98	2.94 – 3	21.3		ug/kg	
					21.1		
Column 2	1	2.75	2.72 – 2.78	21		ug/kg	
	2	3.18	3.15 – 3.21	20.6		ug/kg	
	3	3.33	3.3 – 3.36	21.6		ug/kg	
	4	3.36	3.33 – 3.39	20.9		ug/kg	
	5	3.52	3.49 – 3.55	21.3		ug/kg	
					21.1		
Aroclor-1260							.164
Column 1	1	4.02	3.98 – 4.04	26.4		ug/kg	
	2	4.29	4.26 – 4.32	27.1		ug/kg	
	3	4.45	4.42 – 4.48	27.3		ug/kg	
	4	4.66	4.63 – 4.69	28.5		ug/kg	
	5	4.85	4.82 – 4.88	25.7		ug/kg	
					27		
Column 2	1	4.41	4.38 – 4.44	25.7		ug/kg	
	2	4.57	4.54 – 4.6	27.3		ug/kg	
	3	4.68	4.65 – 4.71	26.8		ug/kg	
	4	4.87	4.84 – 4.9	26.9		ug/kg	
	5	5.5	5.47 – 5.53	28.1		ug/kg	
					27		

QUALITY CONTROL DATA

PCB
Certificate of Analysis
Sample Summary

SDG Number: 10-1100

Matrix: SOIL

Lab Sample ID: 1202006551

Client Sample: QC for batch 937678

Client: LANL010

Project: QC

Client ID: MB for batch 937678

Method: SW846 8082

SOP Ref: GL-OA-E-040

Batch ID: 937679

Inst: ECD2A.I

Dilution: 1

Run Date: 12/31/2009 09:50

Analyst: JAOC

Inj. Vol: 1 uL

Prep Date: 12/30/2009 20:12

Aliquot: 30 g

Final Volume: 1 mL

Data File: 013f1301-1.d

Column: 1 CLP1

Level: LOW

013b1301-1.d

2 CLP2

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	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

Data File: /chem/ecd2a.i/123109.b/013f1301-1.d
Report Date: 04-Jan-2010 08:55

Page 1

GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/013f1301-1.d
Lab Smp Id: 1202006551 Client Smp ID: PBLK01
Inj Date : 31-DEC-2009 09:50
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |1202006551|1|
Misc Info : |ECD82P_1S|937679|SVA|QC A|SOIL|MB|||
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d
Als bottle: 13 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 10-1100.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

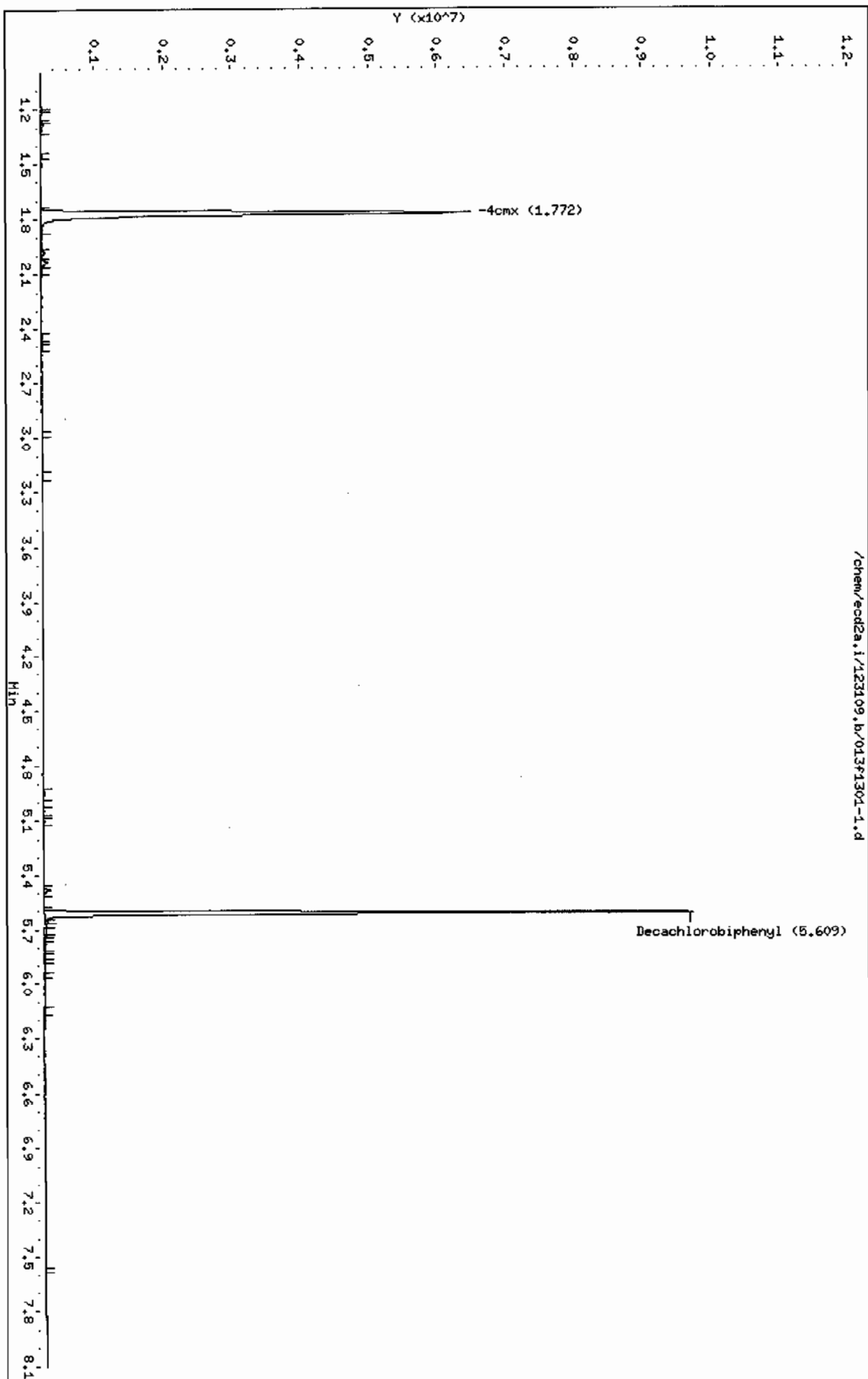
		CONCENTRATIONS							
		ON-COL	FINAL						
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO			
==	=====	=====	=====	=====	=====	=====		=====	
\$ 11 4cmx CAS #: 877-09-8									
1.772	1.772	0.000	8677840	139.310	4.6	80.00- 120.00	100.00		

\$ 12 Decachlorobiphenyl CAS #: 2051-24-3									
5.609	5.608	0.001	8533232	157.697	5.2	80.00- 120.00	100.00		

Data File: /chem/eod2a.i/123109.b/013f1301-1.d
Date: 31-DEC-2009 09:50
Client ID: PBLK01
Sample Info: 1120200655111
Volume Injected (uL): 1.0
Column phase: CLP1

Instrument: eod2a.i
Operator: JPOC
Column diameter: 0.25

Page 1



Data File: /chem/ecd2a.i/123109.b/013b1301-1.d
Report Date: 04-Jan-2010 08:54

Page 1

GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL
Data file : /chem/ecd2a.i/123109.b/013b1301-1.d
Lab Smp Id: 1202006551 Client Smp ID: PBLK01
Inj Date : 31-DEC-2009 09:50
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |1202006551|1|
Misc Info : |ECD82P_1S|937679|SVA|QC A|SOIL|MB|||
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
Als bottle: 13 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 10-1100.sub
Target Version: 3.50 Sample Matrix: Soil
Processing Host: hpclp1

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

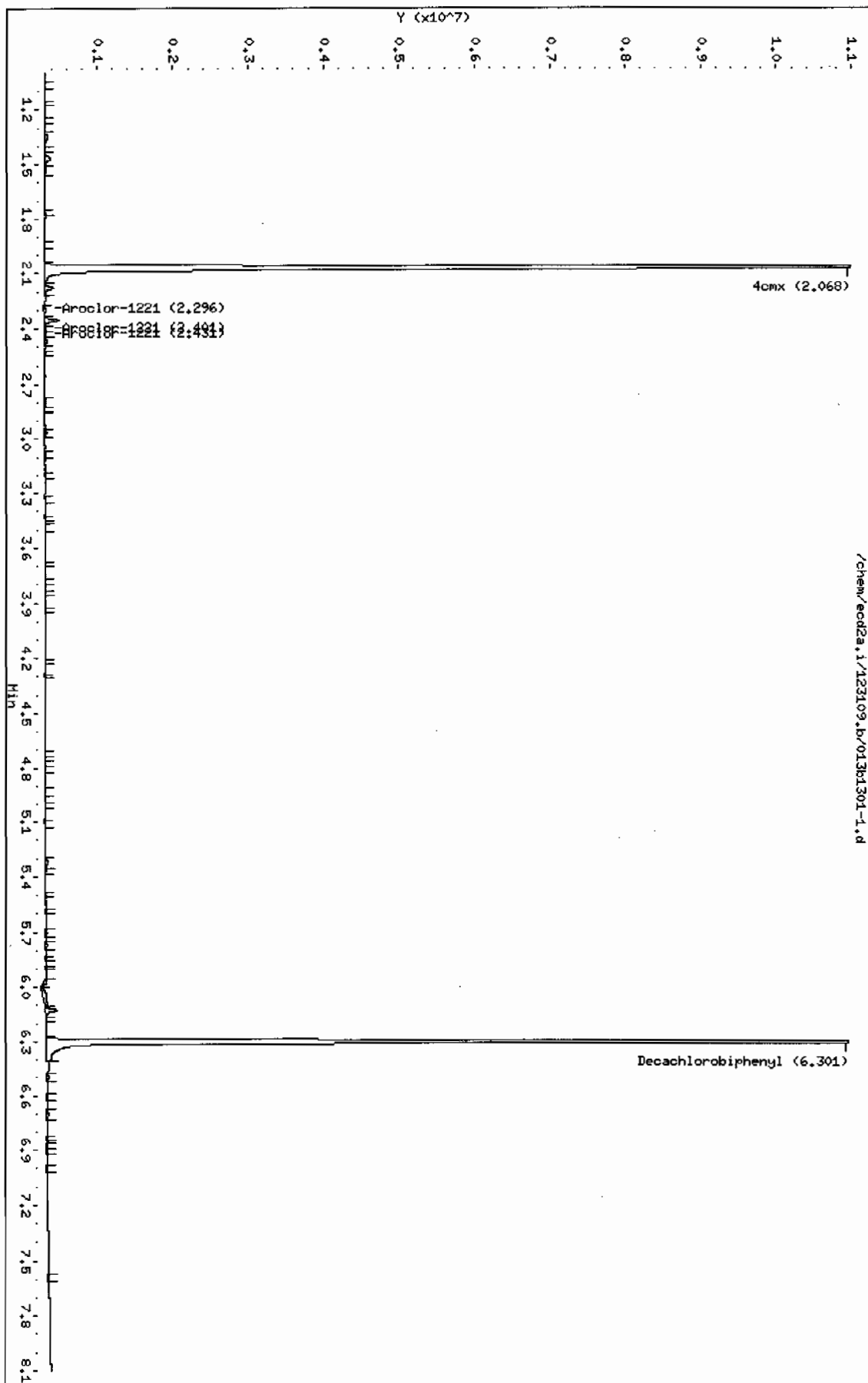
CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
CAS #: 877-09-8						
\$ 11 4cmx	2.068	2.069	-0.001	19258560 148.924	5.0 80.00~ 120.00	100.00

CAS #: 2051-24-3						
\$ 12 Decachlorobiphenyl	6.301	6.300	0.001	19385436 171.883	5.7 80.00~ 120.00	100.00

Data File: /chem/ecd2a.i/123109.b/013b1301-1.d
Date: 31-DEC-2009 09:50
Client ID: PRLK01
Sample Info: 1120200655111
Volume Injected (uL): 1.0
Column phase: CLP2

Instrument: ecd2a.i
Operator: JHOC
Column diameter: 0.25

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PCB
Certificate of Analysis
Sample Summary

Page 1 of 1

SDG Number: 10-1100

Lab Sample ID: 1202006552

Client Sample: QC for batch 937678

Client ID: LCS for batch 937678

Batch ID: 937679

Run Date: 12/31/2009 10:01

Prep Date: 12/30/2009 20:12

Data File: 014f1401-1.d

014b1401-1.d

Client: LANL010
Method: SW846 8082
Inst: ECD2A.I
Analyst: JAOC
Aliquot: 30 g
Column: 1 CLP1
2 CLP2

Matrix: SOIL

Project: QC
SOP Ref: GL-OA-E-040
Dilution: 1
Inj. Vol: 1 uL
Final Volume: 1 mL
Level: LOW

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016		21.1	ug/kg	1.11	3.33	1
11104-28-2	Aroclor-1221	U	3.33	ug/kg	1.11	3.33	1
11141-16-5	Aroclor-1232	U	3.33	ug/kg	1.11	3.33	1
53469-21-9	Aroclor-1242	U	3.33	ug/kg	1.11	3.33	1
12672-29-6	Aroclor-1248	U	3.33	ug/kg	1.11	3.33	1
11097-69-1	Aroclor-1254	U	3.33	ug/kg	1.11	3.33	1
11096-82-5	Aroclor-1260		27.0	ug/kg	1.11	3.33	1

Data File: /chem/ecd2a.i/123109.b/014f1401-1.d
Report Date: 04-Jan-2010 08:55

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/014f1401-1.d
Lab Smp Id: 1202006552 Client Smp ID: PBLK01LCS
Inj Date : 31-DEC-2009 10:01
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |1202006552|1|
Misc Info : |ECD82P_1S|937679|SVA|QC A|SOIL|LCS|||
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m
Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012f1201.d
Als bottle: 14 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 10-1100.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							
1.773	1.772	0.001	8286147	133.022	4.4	80.00- 120.00	100.00

\$ 12 Decachlorobiphenyl CAS #: 2051-24-3							
5.607	5.608	-0.001	7524026	139.047	4.6	80.00- 120.00	100.00

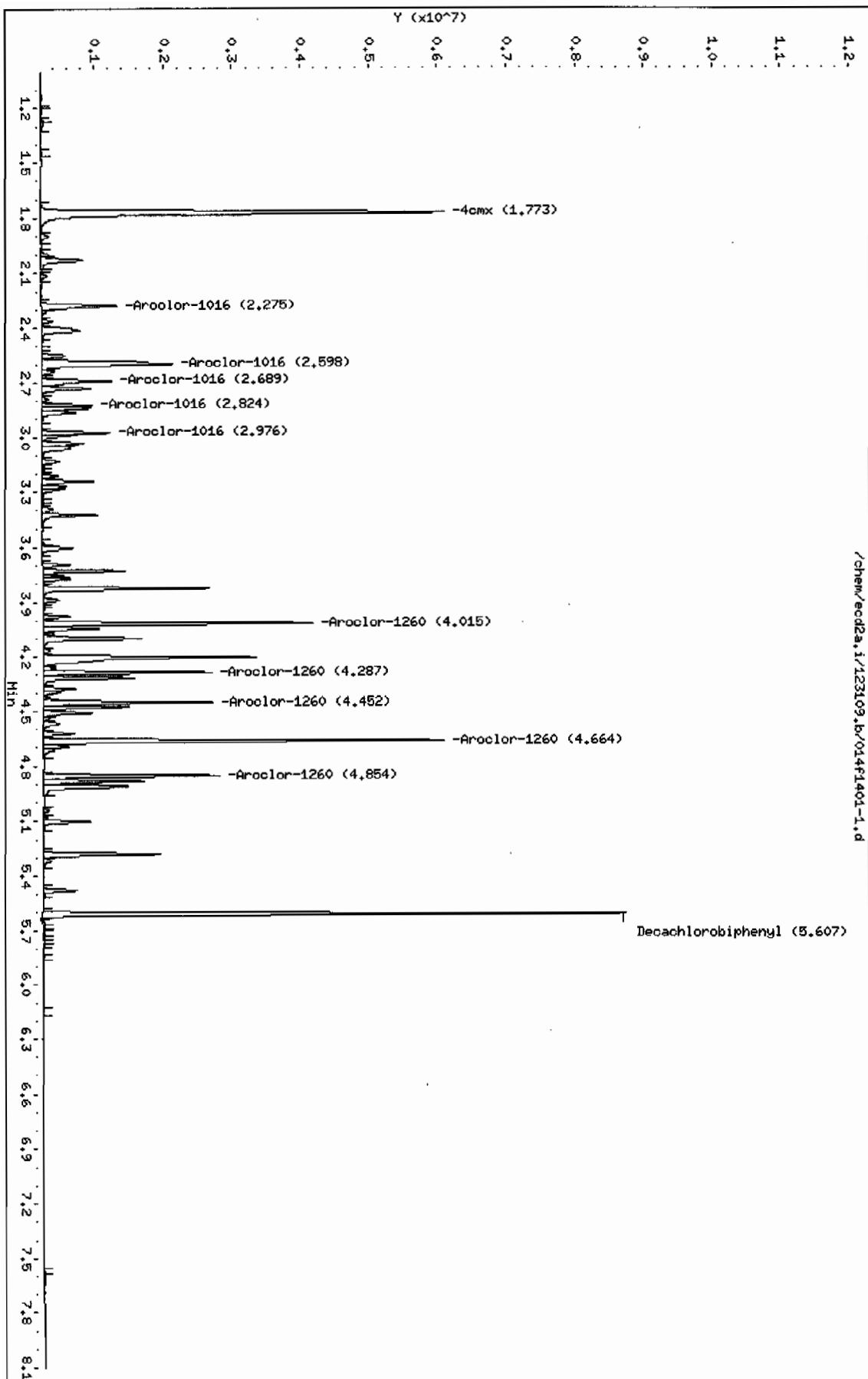
1 Aroclor-1016 CAS #: 12674-11-2							
2.275	2.274	0.001	1413137	631.516	21.0	80.00- 120.00	100.00
2.598	2.598	0.000	2972902	634.521	21.2	192.27- 232.27	210.38
2.689	2.689	0.000	1194428	628.156	20.9	65.25- 105.25	84.52
2.824	2.824	0.000	620041	635.302	21.2	22.83- 62.83	43.88

CONCENTRATIONS									
			ON-COL		FINAL				
RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/Kg)	TARGET	RANGE	RATIO	
==	=====	=====	=====	=====	=====	=====	=====	=====	
1 Aroclor-1016 (continued)									
2.976	2.975	0.001	931240	638.769	21.3	44.32-	84.32	65.90	
Average of Peak Concentrations =					21.1				

7 Aroclor-1260					CAS #: 11096-82-5				
4.015	4.015	0.000	3298011	791.821	26.4	80.00-	120.00	100.00	
4.287	4.287	0.000	2104731	812.458	27.1	42.76-	82.76	63.82	
4.452	4.452	0.000	2158738	820.437	27.3	44.99-	84.99	65.46	
4.664	4.664	0.000	5212595	856.265	28.5	134.44-	174.44	158.05	
4.854	4.854	0.000	2264713	769.748	25.6	55.22-	95.22	68.67	
Average of Peak Concentrations =					27.0				

Data File: /chem/eod2a.i/123109.b/014f1401-1.d
Date: 31-DEC-2009 10:04
Client ID: PRLK01LCS
Sample Info: 1120200655211
Volume Injected (uL): 1.0
Column phase: CLP1

Instrument: eod2a.i
Operator: JHOC
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/014b1401-1.d
Lab Smp Id: 1202006552 Client Smp ID: PBLK01LCS
Inj Date : 31-DEC-2009 10:01
Operator : JAOC Inst ID: ecd2a.i
Smp Info : |1202006552|1|
Misc Info : |ECD82P_1S|937679|SVA|QC A|SOIL|LCS|||
Comment :
Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
Als bottle: 14 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 10-1100.sub
Target Version: 3.50 Sample Matrix: Soil
Processing Host: hpclp1

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

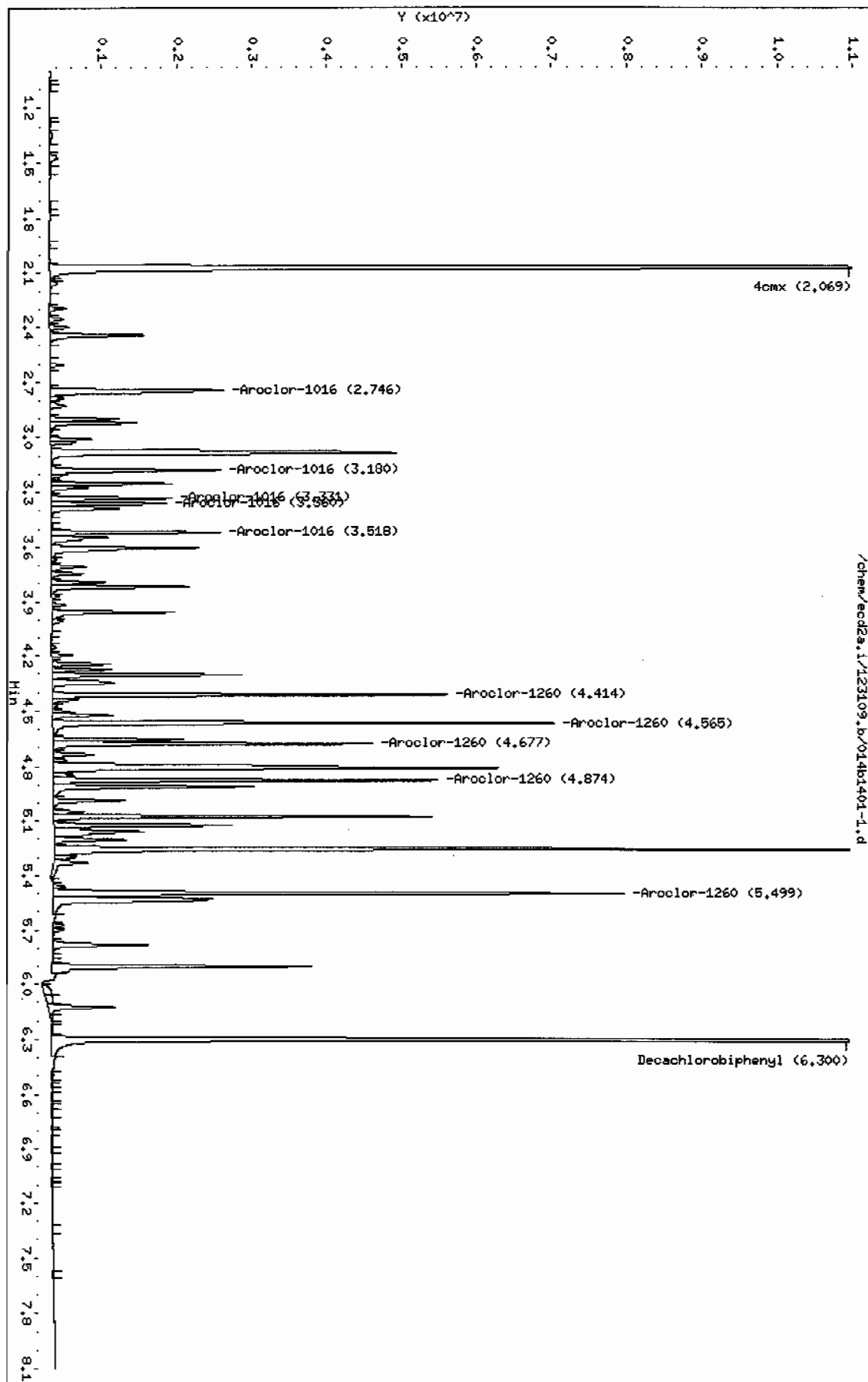
CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
\$ 11 4cmx			CAS #: 877-09-8			
2.069	2.069	0.000	18209109	140.809	4.7 80.00- 120.00	100.00
\$ 12 Decachlorobiphenyl			CAS #: 2051-24-3			
6.300	6.300	0.000	17957536	159.222	5.3 80.00- 120.00	100.00
1 Aroclor-1016			CAS #: 12674-11-2			
2.746	2.745	0.001	2856804	629.554	21.0 80.00- 120.00	100.00
3.180	3.179	0.001	2231023	619.356	20.6 58.40- 98.40	78.10
3.331	3.331	0.000	1330120	647.818	21.6 25.06- 65.06	46.56
3.360	3.359	0.001	1339910	626.979	20.9 27.01- 67.01	46.90

CONCENTRATIONS								
			ON-COL	FINAL				
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO		
==	=====	=====	=====	=====	=====	=====		
1 Aroclor-1016 (continued)								
3.518	3.518	0.000	1831025	637.873	21.3 43.68-	83.68	64.09	
Average of Peak Concentrations =				21.1				

7 Aroclor-1260				CAS #: 11096-82-5				
4.414	4.414	0.000	4438352	769.622	25.6 80.00-	120.00	100.00	
4.565	4.565	0.000	5830711	818.473	27.3 107.43-	147.43	131.37	
4.677	4.677	0.000	3876307	804.429	26.8 66.66-	106.66	87.34	
4.874	4.874	0.000	4548050	807.572	26.9 79.77-	119.77	102.47	
5.499	5.500	-0.001	7627587	843.992	28.1 145.98-	185.98	171.86	
Average of Peak Concentrations =				26.9				

Data File: /chem/eod2a.i/123109.b/014b1401-1.d
Date: 31-DEC-2009 10:01
Client ID: PBLK01LCS
Sample Info: 1120200655211
Volume Injected (uL): 1.0
Column phase: CLP2

Instrument: eod2a.i
Operator: J9DC
Column diameter: 0.25



MISCELLANEOUS DATA

GEL ORGANIC RUN LOG

INSTRUMENT ID: ECD2

DATE: 12/14/2009 METHOD: ECD2-F-8082-111209A.m OPERATOR: YS1 REVIEWED BY: _____
DATE: _____
HARDWARE CONFIGURATION & 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 Standards Log
Initial Calibration Std ID's: See Calibration History and Standards Log
GEL SOP GL-OA-E-040
EPA Method: 8082 Polychlorinated Biphenyls PCBs by Gas Chromatography
Sequence Number: Injection Volume: 1.0 uL

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
1001f101.d	WAR091130-99 IB	YS1	14-DEC-2009 07:00		121409	1.01	ICLEAN	
1002f0201.d	WAR091211-60 01	YS1	14-DEC-2009 07:11		121409	1.01	IDUSE RE-I-CAL	
1003f0301.d	WAR091102-54	YS1	14-DEC-2009 07:22		121409	1.01	PASSED ON BOTH COLUMNS	
1004f0401.d	WAR091102-42	YS1	14-DEC-2009 07:33		121409	1.01	PASSED ON BOTH COLUMNS	
1005f0501.d	WAR091027-48	YS1	14-DEC-2009 07:44		121409	1.01	PASSED ON BOTH COLUMNS	
1006f0601.d	WAR090930-32	YS1	14-DEC-2009 07:55		121409	1.01	PATTERN ONLY	
1007f0701.d	WAR091111-21	YS1	14-DEC-2009 08:07		121409	1.01	PATTERN ONLY	
1008f0801.d	ARI1660-4	YS1	14-DEC-2009 08:18		121409	1.01	IDUSE SCREEN	
1009f0901.d	WAR091111-62	YS1	14-DEC-2009 08:29		121409	1.01	PATTERN ONLY	
1010f1001.d	WAR091106-68	YS1	14-DEC-2009 08:40		121409	1.01	PATTERN ONLY	
1011f1101.d	WAR091214-01 60	YS1	14-DEC-2009 08:51		121409	1.01	ARI1660 I-CAL LEVEL 1	
1012f1201.d	WAR091214-02 60	YS1	14-DEC-2009 09:02		121409	1.01	ARI1660 I-CAL LEVEL 2	
1013f1301.d	WAR091214-03 60	YS1	14-DEC-2009 09:13		121409	1.01	ARI1660 I-CAL LEVEL 3	
1014f1401.d	WAR091214-04 60	YS1	14-DEC-2009 09:24		121409	1.01	ARI1660 I-CAL LEVEL 4	
1015f1501.d	WAR091102-01	YS1	14-DEC-2009 09:35		121409	1.01	ARI1660 I-CAL LEVEL 5	

Instrument Batch: /chem/ecd2a.i/121409.b

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Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
1016f1601.d	WAR091211-60 01	YS1	14-DEC-2009 09:46		121409	1.01	PASSED ON BOTH COLUMNS	

017f1701.d	WAR091020-DDT	YS1	14-DEC-2009 09:58		121409		1.0	DDT ANALOG STANDARD
018f1801.d	WAR091130-99 C2	YS1	14-DEC-2009 10:09		121409		1.0 IB	CLEAN
019f1901.d	1201992205	YS1	14-DEC-2009 10:20		931371		1.0 QC A	UPLOAD BOTH COLUMNS, USE HIGHER
020f2001.d	1201992206	YS1	14-DEC-2009 10:31		931371		1.0 QC A	UPLOAD BOTH COLUMNS, USE HIGHER
021f2101.d	1241934001	YS1	14-DEC-2009 10:42		931371		10.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
022f2201.d	1201992207	YS1	14-DEC-2009 10:53		931371		10.0 QC A	UPLOAD BOTH COLUMNS, USE HIGHER
023f2301.d	1201992208	YS1	14-DEC-2009 11:04		931371		10.0 QC A	UPLOAD BOTH COLUMNS, USE HIGHER
024f2401.d	1241934002	YS1	14-DEC-2009 11:15		931371		1.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
025f2501.d	1241934003	YS1	14-DEC-2009 11:26		931371		1.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
026f2601.d	1241934004	YS1	14-DEC-2009 11:37		931371		10.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
027f2701.d	1241934005	YS1	14-DEC-2009 11:48		931371		1.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
028f2801.d	1241934006	YS1	14-DEC-2009 11:59		931371		20.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
029f2901.d	WAR091211-60 02	YS1	14-DEC-2009 12:11		1660		1.0 CVS	PASSED ON BOTH COLUMNS
030f3001.d	WAR091130-99 03	YS1	14-DEC-2009 12:22		SOLV		1.0 IB	CLEAN
031f3101.d	1241934007	YS1	14-DEC-2009 12:33		931371		1.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
032f3201.d	1241934008	YS1	14-DEC-2009 12:44		931371		10.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
033f3301.d	1241934009	YS1	14-DEC-2009 13:00		931371		1.0 NREA	DUSE RR5X AFTER MORE SULFUR CLEANED
034f3401.d	1241934010	YS1	14-DEC-2009 13:11		931371		10.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
035f3501.d	1241934011	YS1	14-DEC-2009 13:27		931371		5.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
036f3601.d	1241935001	YS1	14-DEC-2009 13:43		931371		1.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
037f3701.d	1241935004	YS1	14-DEC-2009 13:54		931371		5.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
038f3801.d	1241935005	YS1	14-DEC-2009 14:05		931371		5.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
039f3901.d	1241935006	YS1	14-DEC-2009 14:21		931371		50.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
040f4001.d	1241935007	YS1	14-DEC-2009 14:36		931371		5.0 NREA	UPLOAD BOTH COLUMNS, USE HIGHER
041f4101.d	WAR091211-60 03	YS1	14-DEC-2009 14:52		121409		1.0	PASSED ON BOTH COLUMNS

Instrument Batch: /chem/ecd2a.i/121409.b

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1042f420.d	WAR091130-99 04	YS1	14-DEC-2009 15:03	SOLV	121409	1.0	IB	CLEAN	
1043f430.d	1241934009	YS1	14-DEC-2009 15:14	931371	1241934	5.0	NREA	UPLOAD BOTH COLUMNS, USE HIGHER	
1044f4401.d	1241935008	YS1	14-DEC-2009 15:30	931371	1241935	20000.0	NREA	UPLOAD BOTH COLUMNS, USE HIGHER	
1045f4501.d	WAR091211-60 04	YS1	14-DEC-2009 15:45		121409	1.0		PASSED ON BOTH COLUMNS	

Instrument Batch: /chem/ecd2a.i/121409.b

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GEL ORGANIC RUN LOG

INSTRUMENT ID: ECD2

DATE: 01/04/2010 METHOD: ECD2-F-8082-111209A.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 Standards Log
Initial Calibration Std ID's: See Calibration History and Standards Log
GEL SOP GL-OA-E-040
EPA Method: 8082 Polychlorinated Biphenyls PCBs by Gas Chromatography
Sequence Number: 123109 Injection Volume: 1.0 uL

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
001f0101.d	WAR091130-99 IB	JAOC	31-DEC-2009 07:31		123109	1.0l	CLEAN	
002f0201.d	WAR091211-60 01	JAOC	31-DEC-2009 07:42		123109	1.0l	DUSE	
003f0301.d	WAR091216-54	JAOC	31-DEC-2009 07:53		123109	1.0l	PASSES BOTH COLUMNS	
004f0401.d	WAR091217-42	JAOC	31-DEC-2009 08:04		123109	1.0l	PASSES BOTH COLUMNS	
005f0501.d	WAR091217-48	JAOC	31-DEC-2009 08:15		123109	1.0l	PASSES BOTH COLUMNS	
006f0601.d	WAR091231-60 01	JAOC	31-DEC-2009 08:26		123109	1.0l	PASSES BOTH COLUMNS	
007f0701.d	WAR090930-32	JAOC	31-DEC-2009 08:38		123109	1.0l	PATTERN ONLY	
008f0801.d	WAR091111-21	JAOC	31-DEC-2009 08:49		123109	1.0l	PATTERN ONLY	
009f0901.d	WAR091111-62	JAOC	31-DEC-2009 09:00		123109	1.0l	PATTERN ONLY	
010f1001.d	WAR091106-68	JAOC	31-DEC-2009 09:11		123109	1.0l	PATTERN ONLY	
011f1101.d	WAR091219-DDT	JAOC	31-DEC-2009 09:22		123109	1.0l	DDT	
012f1201.d	WAR091130-99 02	JAOC	31-DEC-2009 09:39		123109	1.0l	CLEAN	
013f1301.d	1202006551	JAOC	31-DEC-2009 09:50	937679	10-1090-1	1.0l QC A	UPLOAD BOTH, USE HIGHER	
014f1401.d	1202006552	JAOC	31-DEC-2009 10:01	937679	10-1090-1	1.0l QC A	UPLOAD BOTH, USE HIGHER	
015f1501.d	1243596002	JAOC	31-DEC-2009 10:12	937679	10-1090-1	5.0l LANL	UPLOAD BOTH, USE HIGHER	

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Instrument Batch: /chem/ecd2a.i/123109.b

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
016f1601.d	1243596003	JAOC	31-DEC-2009 10:23	937679	10-1090-1	5.0l LANL	UPLOAD BOTH, USE HIGHER	

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1017f1701.d	243596004	JAO	31-DEC-2009 10:34	937679	10-1090-1	5.0	LANL	UPLOAD BOTH, USE HIGHER
1018f1801.d	243596005	JAO	31-DEC-2009 10:45	937679	10-1090-1	1.0	LANL	UPLOAD BOTH, USE HIGHER
1019f1901.d	243596006	JAO	31-DEC-2009 10:57	937679	10-1090-1	1.0	LANL	UPLOAD BOTH, USE HIGHER
1020f2001.d	WAR091231-60 02	JAO	31-DEC-2009 11:08		123109	1.0		PASSES BOTH COLUMNS
1021f2101.d	WAR091130-99 03	JAO	31-DEC-2009 11:19		123109	1.0		CLEAN
1022f2201.d	243624001	JAO	31-DEC-2009 11:30	937679	10-1100	5.0	LANL	UPLOAD BOTH, USE HIGHER
1023f2301.d	243624002	JAO	31-DEC-2009 11:41	937679	10-1100	10.0	LANL	UPLOAD BOTH, USE HIGHER
1024f2401.d	243624003	JAO	31-DEC-2009 11:52	937679	10-1100	1.0	LANL	UPLOAD BOTH, USE HIGHER
1025f2501.d	243624004	JAO	31-DEC-2009 12:03	937679	10-1100	1.0	LANL	UPLOAD BOTH, USE HIGHER
1026f2601.d	243630002	JAO	31-DEC-2009 12:14	937679	10-1102	10.0	LANL	UPLOAD BOTH, USE HIGHER
1027f2701.d	11202006553	JAO	31-DEC-2009 12:25	937679	10-1102	10.0	QC A	UPLOAD BOTH, USE HIGHER
1028f2801.d	11202006554	JAO	31-DEC-2009 12:36	937679	10-1102	10.0	QC A	UPLOAD BOTH, USE HIGHER
1029f2901.d	243630003	JAO	31-DEC-2009 12:47	937679	10-1102	1.0	LANL	UPLOAD BOTH, USE HIGHER
1030f3001.d	WAR091231-60 03	JAO	31-DEC-2009 12:58		123109	1.0		PASSES BOTH COLUMNS
1031f3101.d	WAR091130-99 04	JAO	31-DEC-2009 13:10		123109	1.0		CLEAN
1032f3201.d	11202006786	JAO	31-DEC-2009 13:21	937791	10-1036	1.0	QC A	UPLOAD BOTH, USE HIGHER
1033f3301.d	11202006787	JAO	31-DEC-2009 13:32	937791	10-1036	1.0	QC A	UPLOAD BOTH, USE HIGHER
1034f3401.d	243490007	JAO	31-DEC-2009 13:43	937791	10-1036	1.0	LANL	UPLOAD BOTH, USE HIGHER
1035f3501.d	11202006788	JAO	31-DEC-2009 13:54	937791	10-1036	1.0	QC A	UPLOAD BOTH, USE HIGHER

Instrument Batch: /chem/ecd2a.i/123109.b

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Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
1036f3601.d	11202006789	JAO	31-DEC-2009 14:05	937791	10-1036	1.0	QC A	UPLOAD BOTH, USE HIGHER
1037f3701.d	WAR091231-60 04	JAO	31-DEC-2009 14:16		123109	1.0		PASSES BOTH COLUMNS
1038f3801.d	WAR091130-99 05	JAO	31-DEC-2009 14:27		123109	1.0		CLEAN

Data File: /chem/ecd2a.i/123109.b/027b2701.d
 Report Date: 04-Jan-2010 08:27

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL
 Data file : /chem/ecd2a.i/123109.b/027b2701.d
 Lab Smp Id: 1202006553 Client Smp ID: RE12-10-7663MS
 Inj Date : 31-DEC-2009 12:25
 Operator : JAOC Inst ID: ecd2a.i
 Smp Info : |1202006553|10|
 Misc Info : |ECD82P_1S|937679|SVA|QC A|SOIL|MS|||
 Comment :
 Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
 Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
 Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
 Als bottle: 27 QC Sample: MS
 Dil Factor: 10.00000
 Integrator: Falcon Compound Sublist: 10-1102.sub
 Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt / (Vi * Ws * (100 - M) / 100) * CpndVariable

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.03000	Weight of sample extracted (g)
M	10.78660	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS						
RT	EXP RT	DLT RT	ON-COL	FINAL	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
CAS #: 877-09-8						
2.068	2.069	-0.001	1552308	12.0038	4.5 80.00- 120.00	100.00
CAS #: 2051-24-3						
6.300	6.300	0.000	1526997	13.5392	5.0 80.00- 120.00	100.00
CAS #: 12674-11-2						
2.746	2.745	0.001	310378	68.3981	25.5 80.00- 120.00	100.00(a)
3.179	3.179	0.000	265902	73.8172	27.6 58.40- 98.40	85.67
3.331	3.331	0.000	152372	74.2109	27.7 25.06- 65.06	49.09
3.360	3.359	0.001	157305	73.6071	27.5 27.01- 67.01	50.68
3.518	3.518	0.000	203697	70.9618	26.5 43.68- 83.68	65.63
Average of Peak Concentrations =				27.0		

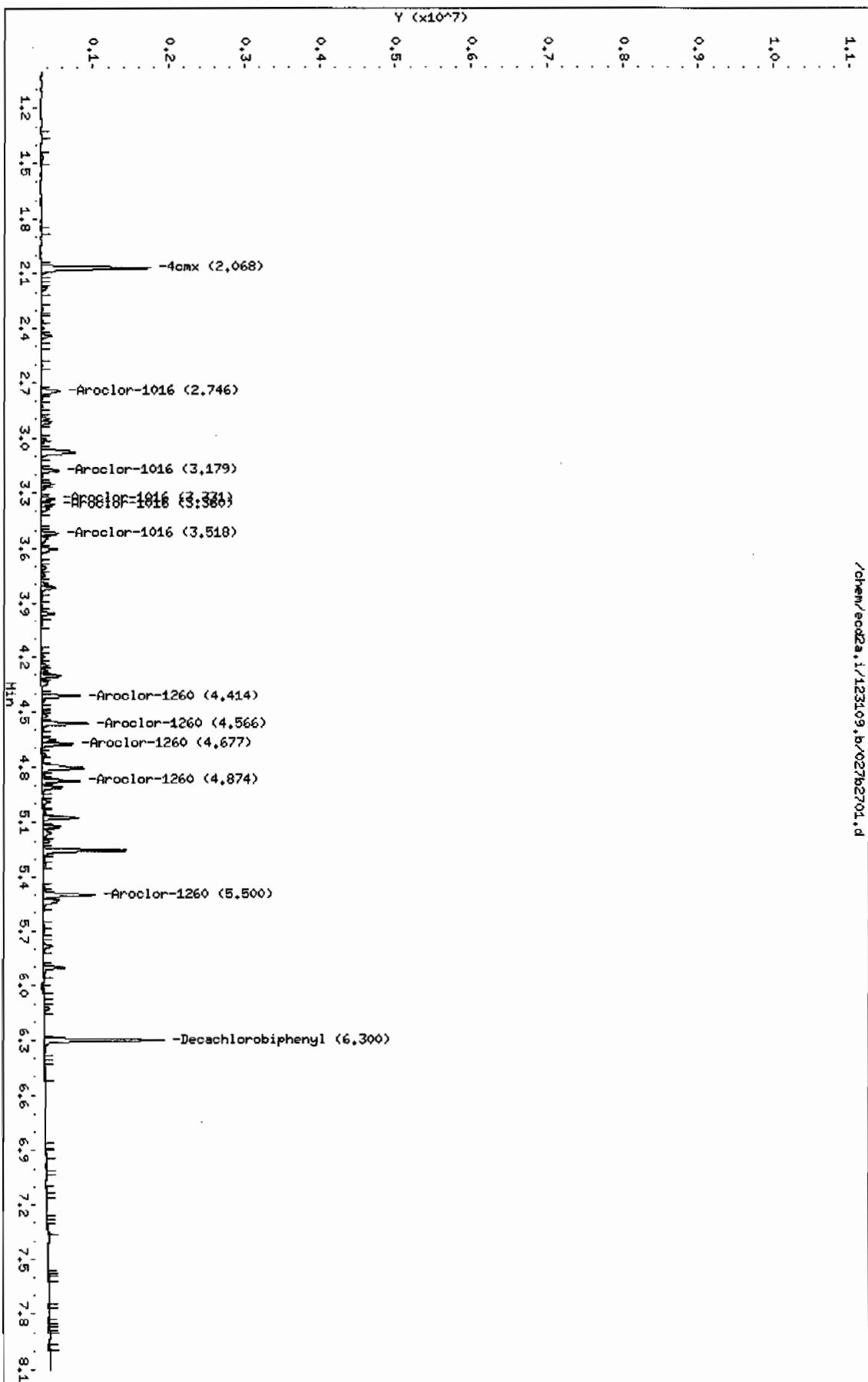
CONCENTRATIONS						
			ON-COL		FINAL	
RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/Kg)	TARGET RANGE RATIO
==	=====	=====	=====	=====	=====	=====
7 Aroclor-1260			CAS #: 11096-82-5			
4.414	4.414	0.000	483898	83.9092	31.3 80.00- 120.00	100.00 (a)
4.566	4.565	0.001	541563	76.0207	28.4 107.43- 147.43	111.92
4.677	4.677	0.000	385003	79.8976	29.8 66.66- 106.66	79.56
4.874	4.874	0.000	442145	78.5092	29.3 79.77- 119.77	91.37
5.500	5.500	0.000	705123	78.0218	29.1 145.98- 185.98	145.72
Average of Peak Concentrations =			29.6			

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation (BLOQ).

Data File: /chem/eod2a.i/123109.b/027b2701.d
Date: 31-DEC-2009 12:25
Client ID: REL2-10-7663MS
Sample Info: 112020065531101
Volume Injected (uL): 1.0
Column phase: CLP2

Instrument: eod2a.i
Operator: JHOC
Column diameter: 0.25



GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/027f2701.d

Lab Smp Id: 1202006553

Client Smp ID: RE12-10-7663MS

Inj Date : 31-DEC-2009 12:25

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |1202006553|10|

Misc Info : |ECD82P_1S|937679|SVA|QC A|SOIL|MS|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212

Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 27

QC Sample: MS

Dil Factor: 10.00000

Integrator: Falcon

Compound Sublist: 10-1102.sub

Target Version: 3.50

Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.03000	Weight of sample extracted (g)
M	10.78660	% 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						
\$ 11 4cmx	1.772	1.772	0.000	814038 13.0682	4.9 80.00- 120.00	100.00
CAS #: 2051-24-3						
\$ 12 Decachlorobiphenyl	5.608	5.608	0.000	832224 15.3798	5.7 80.00- 120.00	100.00
CAS #: 12674-11-2						
1 Aroclor-1016	2.275	2.274	0.001	175072 78.2378	29.2 80.00- 120.00	100.00(a)
	2.599	2.598	0.001	360519 76.9474	28.7 192.27- 232.27	205.93
	2.689	2.689	0.000	152672 80.2911	30.0 65.25- 105.25	87.21
	2.824	2.824	0.000	81995 84.0132	31.4 22.83- 62.83	46.84
	2.976	2.975	0.001	120306 82.5220	30.8 44.32- 84.32	68.72
Average of Peak Concentrations =				30.0		

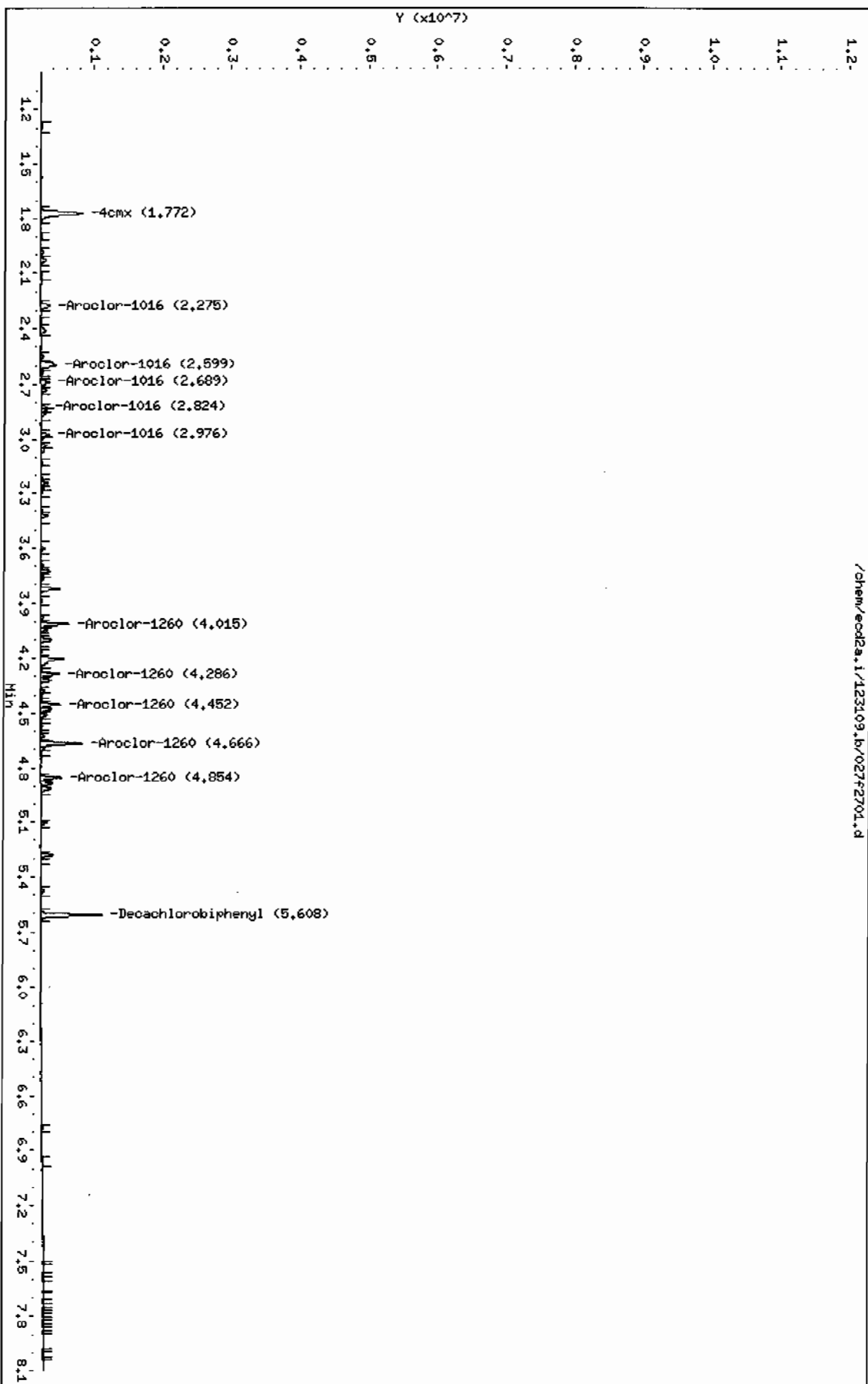
CONCENTRATIONS							
		ON-COL		FINAL			
RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/Kg)	TARGET RANGE	RATIO
=====							
7 Aroclor-1260				CAS #: 11096-82-5			
4.015	4.015	0.000	371809	89.2678	33.3	80.00- 120.00	100.00 (a)
4.286	4.287	-0.001	246102	94.9991	35.4	42.76- 82.76	66.19
4.452	4.452	0.000	253463	96.3296	36.0	44.99- 84.99	68.17
4.666	4.664	0.002	553184	90.8707	33.9	134.44- 174.44	148.78
4.854	4.854	0.000	269622	91.6411	34.2	55.22- 95.22	72.52
Average of Peak Concentrations =					34.6		

QC Flag Legend

a - Target compound detected but, quantitated amount
 Below Limit Of Quantitation (BLOQ).

Data File: /chem/ecod2a.i/123109.b/027f2701.d
Date : 31-DEC-2009 12:25
Client ID: RE12-10-7663MS
Sample Info: 11202065531101
Volume Injected (uL): 1.0
Column phase: CLP1

Instrument: ecod2a.i
Operator: JROC
Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/028b2801.d
 Report Date: 04-Jan-2010 08:27

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GEL Laboratories LLC

RTX-CLPEST2 30m/0.25 mm 1.0 INJ VOL
 Data file : /chem/ecd2a.i/123109.b/028b2801.d
 Lab Smp Id: 1202006554 Client Smp ID: RE12-10-7663MSD
 Inj Date : 31-DEC-2009 12:36
 Operator : JAOC Inst ID: ecd2a.i
 Smp Info : |1202006554|10|
 Misc Info : |ECD82P_1S|937679|SVA|QC A|SOIL|MSD|||
 Comment :
 Method : /chem/ecd2a.i/123109.b/ECD2-B-8082-111209A.m
 Meth Date : 04-Jan-2010 08:00 jen01212 Quant Type: ESTD
 Cal Date : 02-DEC-2009 07:50 Cal File: 012b1201.d
 Als bottle: 28 QC Sample: MSD
 Dil Factor: 10.00000
 Integrator: Falcon Compound Sublist: 10-1102.sub
 Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	10.00000	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	10.78660	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS									
		ON-COL		FINAL					
RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/Kg)	TARGET	RANGE	RATIO	
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
\$ 11 4cmx CAS #: 877-09-8									
2.069	2.069	0.000	1470359	11.3701	4.2	80.00-	120.00	100.00	

\$ 12 Decachlorobiphenyl CAS #: 2051-24-3									
6.300	6.300	0.000	1500587	13.3051	5.0	80.00-	120.00	100.00	

1 Aroclor-1016 CAS #: 12674-11-2									
2.746	2.745	0.001	301879	66.5251	24.8	80.00-	120.00	100.00 (a)	
3.180	3.179	0.001	257505	71.4861	26.7	58.40-	98.40	85.30	
3.331	3.331	0.000	150578	73.3371	27.4	25.06-	65.06	49.88	
3.360	3.359	0.001	153815	71.9740	26.9	27.01-	67.01	50.95	
3.518	3.518	0.000	195243	68.0167	25.4	43.68-	83.68	64.68	
Average of Peak Concentrations =					26.2				

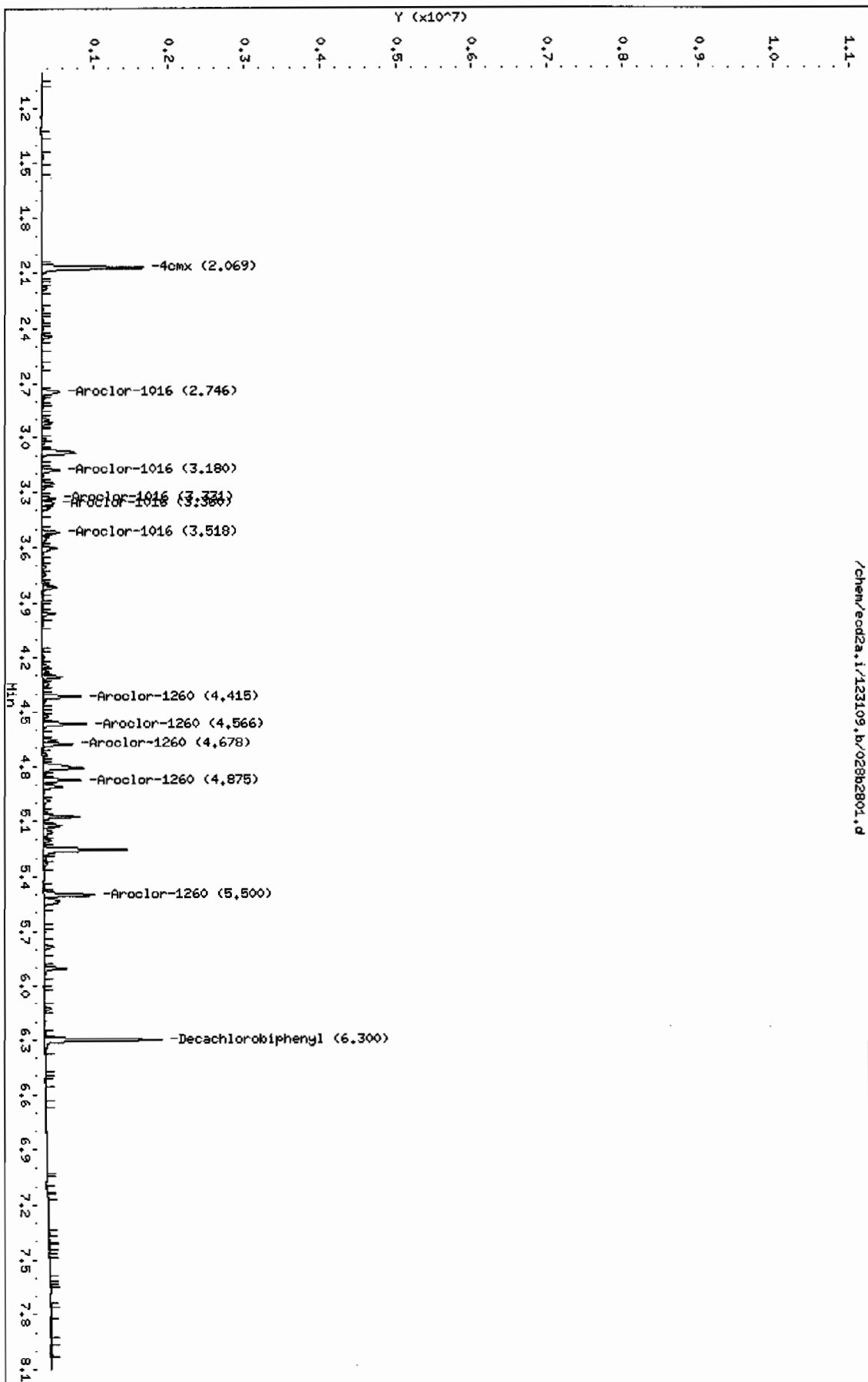
CONCENTRATIONS						
		ON-COL		FINAL		
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====
7 Aroclor-1260			CAS #: 11096-82-5			
4.415	4.414	0.001	474142	82.2175	30.7 80.00- 120.00	100.00(a)
4.566	4.565	0.001	537960	75.5149	28.2 107.43- 147.43	113.46
4.678	4.677	0.001	382485	79.3750	29.6 66.66- 106.66	80.67
4.875	4.874	0.001	437710	77.7217	29.0 79.77- 119.77	92.32
5.500	5.500	0.000	702510	77.7327	29.0 145.98- 185.98	148.16
Average of Peak Concentrations =			29.3			

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/eod2a.i/123109.b/028b2801.d
Date: 31-DEC-2009 12:36
Client ID: REL2-10-7663MSD
Sample Info: 11202006554101
Volume Injected (uL): 1.0
Column phase: CLP2

Instrument: eod2a.i
Operator: JHOC
Column diameter: 0.25



Data File: /chem/ecd2a.i/123109.b/028f2801.d
Report Date: 04-Jan-2010 08:27

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GEL Laboratories LLC

RTX-CLPEST1 30m/0.25 mm 1.0 INJ VOL

Data file : /chem/ecd2a.i/123109.b/028f2801.d

Lab Smp Id: 1202006554

Client Smp ID: RE12-10-7663MSD

Inj Date : 31-DEC-2009 12:36

Operator : JAOC

Inst ID: ecd2a.i

Smp Info : |1202006554|10|

Misc Info : |ECD82P_1S|937679|SVA|QC A|SOIL|MSD|

Comment :

Method : /chem/ecd2a.i/123109.b/ECD2-F-8082-111209A.m

Meth Date : 04-Jan-2010 08:01 jen01212 Quant Type: ESTD

Cal Date : 02-DEC-2009 07:50

Cal File: 012f1201.d

Als bottle: 28

QC Sample: MSD

Dil Factor: 10.00000

Integrator: Falcon

Compound Sublist: 10-1102.sub

Target Version: 3.50

Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	10.00000	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	10.78660	% Moisture

Cpnd Variable Local Compound Variable

CONCENTRATIONS							
			ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/Kg)	TARGET RANGE	RATIO	
12.56	=====	=====	=====	=====	=====	=====	=====
\$ 11 4cmx				CAS #: 877-09-8			
1.772	1.772	0.000	775811 12.4545	4.6	80.00- 120.00	100.00	

\$ 12 Decachlorobiphenyl				CAS #: 2051-24-3			
5.609	5.608	0.001	809543 14.9606	5.6	80.00- 120.00	100.00	

1 Aroclor-1016				CAS #: 12674-11-2			
2.276	2.274	0.002	177852 79.4802	29.7	80.00- 120.00	100.00 (aM)	
2.598	2.598	0.000	351918 75.1116	28.0	192.27- 232.27	197.87	
2.689	2.689	0.000	148456 78.0739	29.2	65.25- 105.25	83.47	
2.823	2.824	-0.001	78949 80.8922	30.2	22.83- 62.83	44.39	
2.976	2.975	0.001	112258 77.0016	28.8	44.32- 84.32	63.12	
Average of Peak Concentrations =				29.2			

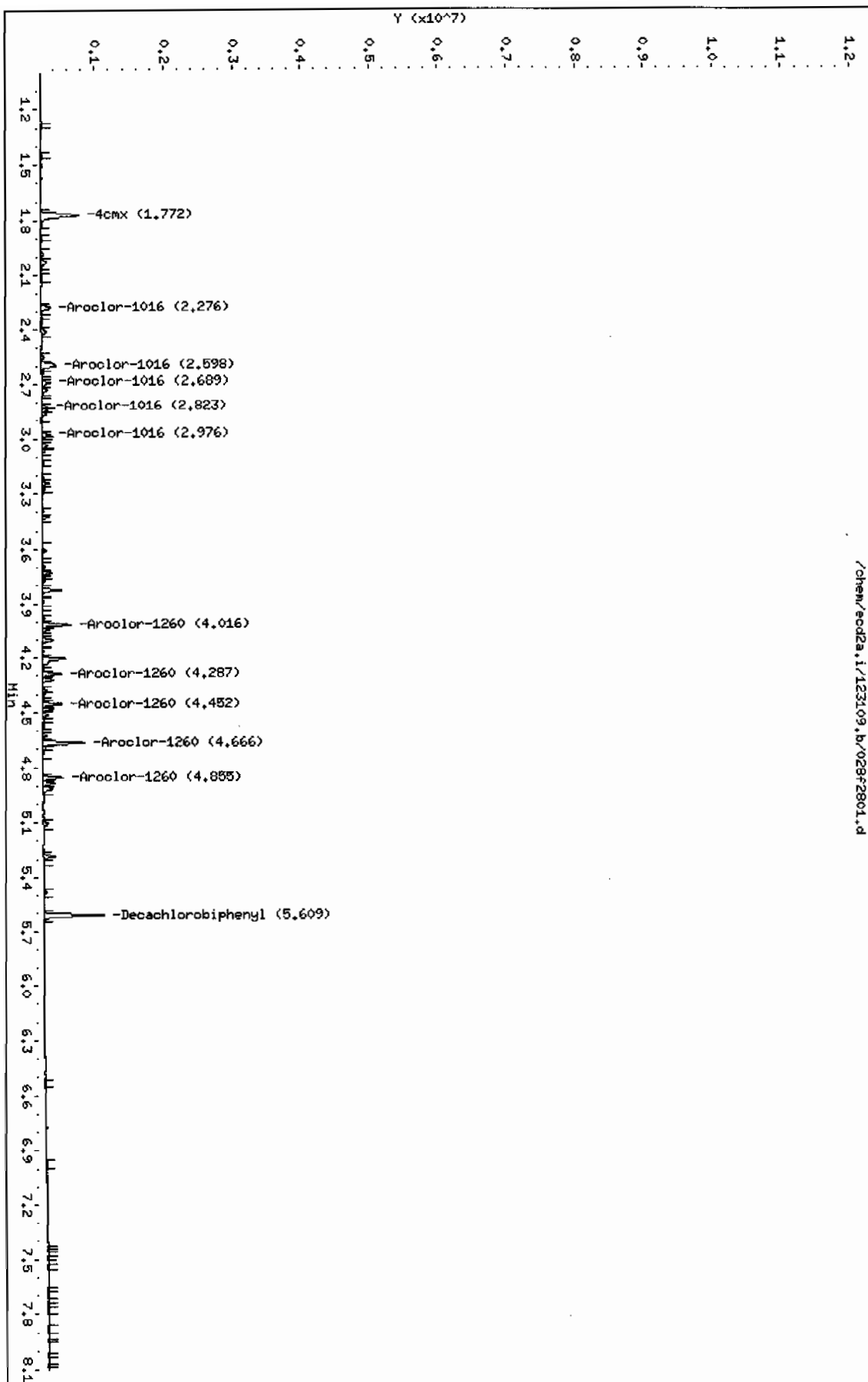
CONCENTRATIONS						
			ON-COL		FINAL	
RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/Kg)	TARGET RANGE RATIO
=====	=====	=====	=====	=====	=====	=====
7 Aroclor-1260			CAS #: 11096-82-5			
4.016	4.015	0.001	363525	87.2789	32.6 80.00- 120.00	100.00 (a)
4.287	4.287	0.000	242390	93.5663	34.9 42.76- 82.76	66.68
4.452	4.452	0.000	244186	92.8039	34.6 44.99- 84.99	67.17
4.666	4.664	0.002	535099	87.8999	32.8 134.44- 174.44	147.20
4.855	4.854	0.001	266197	90.4770	33.8 55.22- 95.22	73.23
Average of Peak Concentrations =			33.7			

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation (BLOQ).
- M - Compound response manually integrated.

Data File: /chem/ecod2a.i/123109.b/028f2801.d
Date : 31-DEC-2009 12:36
Client ID: REL2-10-7663MSD
Sample Info: 112020065541101
Volume Injected (uL): 1.0
Column phase: CLP1

Instrument: ecod2a.i
Operator: JHOC
Column diameter: 0.25



Prep Logbook

Extraction of Semivolatile and Nonvolatile Organic Compounds from Soil, Sludge, and Other Miscellaneous Solid Samples

Batch ID: 937678 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)
1202006551 MB	30-DEC-2009 20:12:56	30	H2SO4/KM2	2	9	1	0.03333	
1202006552 LCS	30-DEC-2009 20:12:56	30	H2SO4/KM2	2	9	1	0.03333	
243596002	30-DEC-2009 20:12:56	30.1	H2SO4/KM2	2	9	1	0.03322	
243596003	30-DEC-2009 20:12:56	30.08	H2SO4/KM2	2	9	1	0.03324	
243596004	30-DEC-2009 20:12:56	30.11	H2SO4/KM2	2	9	1	0.03321	
243596005	30-DEC-2009 20:12:56	30.15	H2SO4/KM2	2	9	1	0.03317	
243596006	30-DEC-2009 20:12:56	30.06	H2SO4/KM2	2	9	1	0.03327	
243624001	30-DEC-2009 20:12:56	30.04	H2SO4/KM2	2	9	1	0.03329	
243624002	30-DEC-2009 20:12:56	30.12	H2SO4/KM2	2	9	1	0.0332	
243624003	30-DEC-2009 20:12:56	30.16	H2SO4/KM2	2	9	1	0.03316	
243624004	30-DEC-2009 20:12:56	30.09	H2SO4/KM2	2	9	1	0.03323	
243630002	30-DEC-2009 20:12:56	30.07	H2SO4/KM2	2	9	1	0.03326	
243630003	30-DEC-2009 20:12:56	30.05	H2SO4/KM2	2	9	1	0.03328	
1202006553 MS (243630003)	30-DEC-2009 20:12:56	30.03	H2SO4/KM2	2	9	1	0.0333	
1202006554 MSD (243630003)	30-DEC-2009 20:12:56	30.02	H2SO4/KM2	2	9	1	0.03331	
Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:		
LCS	1202006552	PCB Laboratory Control	WE091210-07	1	nL	Clean up Date: 12/30/09		
MS	1202006553	PCB Laboratory Control	WE091210-07	1	nL	Clean up Initials: AJS		
MSD	1202006554	PCB Laboratory Control	WE091210-07	1	nL	Verified By: AV		
SURR	All	PEST LOW LEVEL SURROGATE 200 UGL	UE091130-15	1	nL	Final Solvent: Hexane		
REGNT	All	1:1 sulfuric acid	1133264a	5	nL	Clean Up SOP: GL-OA-E-037		
REGNT	All	Acetone	1233927	150	nL			
REGNT	All	Hexane	1241300-B2	150	nL			
REGNT	All	5% Potassium Permanganate	B1202457-F	5	nL			
SOURC	All	SODIUM SULFATE	1248200	30	g			

RADIOLOGICAL ANALYSIS

**Radiochemistry Case Narrative
Los Alamos National Laboratory (LANL)
SDG 10-1100**

Method/Analysis Information

Procedure: **Dry Weight-Percent Moisture**

Analytical Method:

Analytical Batch Number: 937641

Sample ID	Client ID
243624001	RE12-10-7841
243624002	RE12-10-7840
243624003	RE12-10-7839
243624004	RE12-10-7838
243624005	RE12-10-7858
243624006	RE12-10-7846
243624007	RE12-10-7844
243624008	RE12-10-7845
243624009	RE12-10-7842
243624010	RE12-10-7843
243624011	RE12-10-7847
1202006464	243624001(RE12-10-7841) 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: 243624001 (RE12-10-7841). The QC was from LANL work order 243624.

QC Information

All of the QC samples met the required acceptance limits.

CSU

Not Applicable. The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:**Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Data transferred from batch 937665.

Blank Decision Level

Not Applicable. The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	AM241
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	938210
Prep Batch Number:	937665

Sample ID	Client ID
243624001	RE12-10-7841
243624002	RE12-10-7840
243624003	RE12-10-7839
243624004	RE12-10-7838
243624005	RE12-10-7858
243624006	RE12-10-7846
243624007	RE12-10-7844
243624008	RE12-10-7845
243624009	RE12-10-7842
243624010	RE12-10-7843
243624011	RE12-10-7847
1202007550	Method Blank (MB)
1202007551	243624008(RE12-10-7845) Sample Duplicate (DUP)
1202007552	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 1202007550 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 243624008 (RE12-10-7845). The QC was from LANL work order 243624.

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 243624003 (RE12-10-7839) was recounted due to a suspected false positive.

Miscellaneous Information:**Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOPU
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	938221
Prep Batch Number:	937665

Sample ID	Client ID
243624001	RE12-10-7841
243624002	RE12-10-7840
243624003	RE12-10-7839
243624004	RE12-10-7838
243624006	RE12-10-7846
243624007	RE12-10-7844
243624008	RE12-10-7845
243624009	RE12-10-7842
243624010	RE12-10-7843
243624011	RE12-10-7847
1202007553	Method Blank (MB)
1202007554	243624008(RE12-10-7845) Sample Duplicate (DUP)
1202007555	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 1202007553 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 243624008 (RE12-10-7845). The QC was from LANL work order 243624.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Pu239/240 blank result is 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 reprep or reanalysis.

Miscellaneous Information:

Data Exception (DER) Documentation

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration

Manual integration of alpha spectroscopy spectra 1202007555 (LCS) was performed to fully separate counts in Regions of Interest which would have been biased.

Additional Comments

The MDCs are calculated using a blank population. Sample, 1202007555 (LCS), did not meet the client tracer yield requirements, however it is less than 110 percent and does meet the GEL standard tracer yield requirements.

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:	941241
Prep Batch Number:	937665

Sample ID	Client ID
243624005	RE12-10-7858
1202014510	Method Blank (MB)
1202014511	243624005(RE12-10-7858) Sample Duplicate (DUP)
1202014512	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 1202014510 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 243624005 (RE12-10-7858). The QC was from LANL work order 243624.

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 243624005 (RE12-10-7858) was reprep'd due to suspected interference.

Miscellaneous Information:**Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	ISOU
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	938222
Prep Batch Number:	937665

Sample ID	Client ID
243624001	RE12-10-7841
243624002	RE12-10-7840
243624003	RE12-10-7839
243624004	RE12-10-7838
243624005	RE12-10-7858
243624006	RE12-10-7846
243624007	RE12-10-7844
243624008	RE12-10-7845
243624009	RE12-10-7842
243624010	RE12-10-7843
243624011	RE12-10-7847
1202007556	Method Blank (MB)
1202007557	243624008(RE12-10-7845) Sample Duplicate (DUP)
1202007558	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 1202007556 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 243624008 (RE12-10-7845). The QC was from LANL work order 243624.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:**Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration

No manual integrations were performed on data in this batch.

Additional Comments

The MDCs are calculated using a blank population.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product: GAMMA SPEC
Analytical Method: DOE HASL 300, 4.5.2.3/Ga-01-R
Prep Method: Dry Soil Prep
Analytical Batch Number: 937704
Prep Batch Number: 937665

Sample ID	Client ID
243624001	RE12-10-7841
243624002	RE12-10-7840
243624003	RE12-10-7839
243624004	RE12-10-7838
243624005	RE12-10-7858
243624006	RE12-10-7846
243624007	RE12-10-7844
243624008	RE12-10-7845
243624009	RE12-10-7842
243624010	RE12-10-7843
243624011	RE12-10-7847
1202006617	Method Blank (MB)
1202006618	243624001(RE12-10-7841) Sample Duplicate (DUP)
1202006619	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, March 2009, April 2009, May 2009, June 2009, July 2009, October 2009 and November 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: 243624001 (RE12-10-7841). The QC was from LANL work order 243624.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The Method Blank, 1202006617 (MB), results for Ra-223, Th-227 and Th-231 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 reprep or reanalysis.

Miscellaneous Information:

Data Exception (DER) Documentation

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Blank Decision Level

The Method Blank, 1202006618 (RE12-10-7841), results for Ra-223, Th-227 and Th-231 are greater than the decision level, but less than the MDC.

Qualifier information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to a short half-life.	Bismuth-211	243624002	RE12-10-7840

UI	Data rejected due to interference.	243624001	RE12-10-7841
		243624003	RE12-10-7839
		243624004	RE12-10-7838
		243624005	RE12-10-7858
		243624006	RE12-10-7846
		243624007	RE12-10-7844
		243624008	RE12-10-7845
		243624009	RE12-10-7842
		243624010	RE12-10-7843
		243624011	RE12-10-7847
		1202006618	RE12-10-7841(243624001DUP)
	Cadmium-109	243624001	RE12-10-7841
		243624002	RE12-10-7840
		243624003	RE12-10-7839
		243624004	RE12-10-7838
		243624005	RE12-10-7858
		243624007	RE12-10-7844
		243624008	RE12-10-7845
		243624010	RE12-10-7843
		243624011	RE12-10-7847
		1202006618	RE12-10-7841(243624001DUP)
	Radium-224	243624001	RE12-10-7841
		243624002	RE12-10-7840
		243624003	RE12-10-7839
		243624004	RE12-10-7838
		243624005	RE12-10-7858
		243624006	RE12-10-7846
		243624007	RE12-10-7844
		243624008	RE12-10-7845

			243624009	RE12-10-7842
			243624010	RE12-10-7843
			243624011	RE12-10-7847
			1202006618	RE12-10-7841(243624001DUP)
UI	Data rejected due to low abundance.	Cadmium-109	243624009	RE12-10-7842
		Cesium-134	243624004	RE12-10-7838
			243624007	RE12-10-7844
			243624008	RE12-10-7845
			243624011	RE12-10-7847
			1202006618	RE12-10-7841(243624001DUP)
		Strontium-85	243624004	RE12-10-7838
			243624009	RE12-10-7842
			1202006618	RE12-10-7841(243624001DUP)

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:  1/18/10

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

LANL010 Los Alamos National Laboratory (72733-001-09)

Client SDG: 10-1100 GEL Work Order: 243624

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



11/18/10

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7841
Sample ID: 243624001
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 15.5%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00322	0.0213	+/-0.00409	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00737	0.0152	+/-0.00263	0.050	pCi/g		HAKB	01/07/10	1137	938221	3
Plutonium-239/240	U	0.00552	0.0174	+/-0.00227	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.05	0.125	+/-0.101	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0599	0.0776	+/-0.0178	0.100	pCi/g						
Uranium-238		1.13	0.0725	+/-0.107	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0153	0.105	+/-0.0326	0.200	pCi/g		MXR1	01/07/10	1341	937704	5
Bismuth-211	UI	3.45	0.413	+/-0.266		pCi/g						
Bismuth-214		1.34	0.140	+/-0.104	0.200	pCi/g						
Cadmium-109	UI	3.18	0.972	+/-0.360		pCi/g						
Cerium-139	U	-0.0113	0.0539	+/-0.0165	0.050	pCi/g						
Cesium-134	U	0.0846	0.112	+/-0.0304	0.100	pCi/g						
Cesium-137	U	0.0305	0.0848	+/-0.0247	0.100	pCi/g						
Cobalt-60	U	0.00987	0.0813	+/-0.024	0.100	pCi/g						
Europium-152	U	-0.0931	0.175	+/-0.0636	0.200	pCi/g						
Lanthanum-140	U	0.0599	0.198	+/-0.057		pCi/g						
Lead-212		1.43	0.101	+/-0.0867	0.100	pCi/g						
Lead-214		1.20	0.142	+/-0.0978	0.100	pCi/g						
Mercury-203	U	0.0117	0.0783	+/-0.0227	0.100	pCi/g						
Potassium-40		19.7	0.626	+/-0.987	1.00	pCi/g						
Radium-223	U	-0.817	1.22	+/-0.391		pCi/g						
Radium-224	UI	4.40	1.15	+/-0.772		pCi/g						
Radium-226		1.34	0.140	+/-0.104		pCi/g						
Radium-228		1.49	0.253	+/-0.185	0.500	pCi/g						
Ruthenium-106	U	0.0162	0.651	+/-0.195	0.800	pCi/g						

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7841
Sample ID: 243624001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Sodium-22	U	0.00629	0.0928	+/-0.0275	0.080	pCi/g					
Strontium-85	U	0.066	0.0842	+/-0.0261		pCi/g					
Thallium-208		0.548	0.0728	+/-0.0558	0.080	pCi/g					
Thorium-227	U	-0.258	0.669	+/-0.202		pCi/g					
Thorium-231	U	-0.817	1.22	+/-0.391		pCi/g					
Thorium-234		1.60	1.02	+/-0.514	2.00	pCi/g					
Tin-113	U	-0.0117	0.0805	+/-0.0248	0.100	pCi/g					
Uranium-235	U	0.148	0.389	+/-0.116	0.500	pCi/g					
Yttrium-88	U	0.0066	0.0675	+/-0.0198	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	105	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	85.0	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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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 18, 2010

Client Sample ID: RE12-10-7841
Sample ID: 243624001

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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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

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

GEL LABORATORIES LLC

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Certificate of Analysis

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7840
Sample ID: 243624002
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 16.2%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00298	0.0272	+/-0.00503	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00301	0.0166	+/-0.00174	0.050	pCi/g		HAKB	01/07/10	1137	938221	3
Plutonium-239/240	U	0.017	0.0189	+/-0.00445	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.46	0.131	+/-0.131	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0677	0.081	+/-0.0207	0.100	pCi/g						
Uranium-238		1.55	0.0757	+/-0.137	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.00821	0.0797	+/-0.0247	0.200	pCi/g		MXR1	01/07/10	1352	937704	5
Bismuth-211	UI	3.85	0.359	+/-0.312		pCi/g						
Bismuth-214		1.12	0.128	+/-0.109	0.200	pCi/g						
Cadmium-109	UI	3.07	0.769	+/-0.347		pCi/g						
Cerium-139	U	-0.0102	0.0414	+/-0.0121	0.050	pCi/g						
Cesium-134	U	0.0503	0.0956	+/-0.0268	0.100	pCi/g						
Cesium-137		0.247	0.0709	+/-0.038	0.100	pCi/g						
Cobalt-60	U	0.00686	0.0707	+/-0.0205	0.100	pCi/g						
Europium-152	U	0.061	0.169	+/-0.0493	0.200	pCi/g						
Lanthanum-140	U	-0.152	0.155	+/-0.0637		pCi/g						
Lead-212		1.56	0.0838	+/-0.0956	0.100	pCi/g						
Lead-214		1.34	0.125	+/-0.114	0.100	pCi/g						
Mercury-203	U	0.00162	0.0602	+/-0.0201	0.100	pCi/g						
Potassium-40		23.5	0.712	+/-1.48	1.00	pCi/g						
Radium-223	U	-0.0979	1.11	+/-0.342		pCi/g						
Radium-224	UI	4.70	0.956	+/-0.597		pCi/g						
Radium-226		1.12	0.128	+/-0.109		pCi/g						
Radium-228		1.67	0.262	+/-0.187	0.500	pCi/g						
Ruthenium-106	U	0.0385	0.581	+/-0.174	0.800	pCi/g						
Sodium-22	U	-0.000547	0.0889	+/-0.0277	0.080	pCi/g						

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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 18, 2010

Client Sample ID: RE12-10-7840
Sample ID: 243624002

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0239	0.0719	+/-0.0229		pCi/g						
Thallium-208		0.505	0.0653	+/-0.0519	0.080	pCi/g						
Thorium-227	U	-0.258	0.556	+/-0.176		pCi/g						
Thorium-231	U	-0.0979	1.11	+/-0.342		pCi/g						
Thorium-234		1.99	0.746	+/-0.447	2.00	pCi/g						
Tin-113	U	-0.0371	0.0733	+/-0.0246	0.100	pCi/g						
Uranium-235	U	0.112	0.297	+/-0.0901	0.500	pCi/g						
Yttrium-88	U	0.034	0.0968	+/-0.0261	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	73.1	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	95.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	80.2	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Company : Los Alamos National Laboratory
Address : PO Box 1663
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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7840
Sample ID: 243624002

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7839
Sample ID: 243624003
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 11.7%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000174	0.017	+/-0.00148	0.050	pCi/g		HAKB	01/08/10	1411	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00885	0.0183	+/-0.00496	0.050	pCi/g		HAKB	01/07/10	1138	938221	4
Plutonium-239/240	U	0.00774	0.0209	+/-0.00295	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.03	0.128	+/-0.0995	0.100	pCi/g		HAKB	01/09/10	1101	938222	5
Uranium-235/236	U	0.051	0.0793	+/-0.0165	0.100	pCi/g						
Uranium-238		0.986	0.0741	+/-0.0966	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.104	0.369	+/-0.109	0.200	pCi/g		MXR1	01/07/10	1352	937704	6
Bismuth-211	UI	3.98	0.354	+/-0.296		pCi/g						
Bismuth-214		1.30	0.137	+/-0.102	0.200	pCi/g						
Cadmium-109	UI	3.78	1.61	+/-0.576		pCi/g						
Cerium-139	U	0.0209	0.059	+/-0.0173	0.050	pCi/g						
Cesium-134	U	0.0562	0.107	+/-0.0297	0.100	pCi/g						
Cesium-137	U	-0.0034	0.0796	+/-0.0246	0.100	pCi/g						
Cobalt-60	U	-0.00394	0.0748	+/-0.0233	0.100	pCi/g						
Europium-152	U	-0.0736	0.184	+/-0.0699	0.200	pCi/g						
Lanthanum-140	U	-0.105	0.129	+/-0.0486		pCi/g						
Lead-212		1.81	0.107	+/-0.0899	0.100	pCi/g						
Lead-214		1.38	0.123	+/-0.109	0.100	pCi/g						
Mercury-203	U	0.0113	0.0804	+/-0.0232	0.100	pCi/g						
Potassium-40		20.0	0.541	+/-1.15	1.00	pCi/g						
Radium-223	U	0.440	1.33	+/-0.435		pCi/g						
Radium-224	UI	5.22	1.21	+/-0.680		pCi/g						
Radium-226		1.30	0.137	+/-0.102		pCi/g						
Radium-228		1.87	0.231	+/-0.225	0.500	pCi/g						
Ruthenium-106	U	-0.275	0.562	+/-0.185	0.800	pCi/g						
Sodium-22	U	-0.0104	0.0816	+/-0.0257	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7839
Sample ID: 243624003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	U	0.0693	0.0748	+/-0.0226		pCi/g					
Thallium-208		0.509	0.0571	+/-0.0476	0.080	pCi/g					
Thorium-227	U	0.308	0.782	+/-0.234		pCi/g					
Thorium-231	U	0.440	1.33	+/-0.435		pCi/g					
Thorium-234	U	0.845	3.04	+/-0.881	2.00	pCi/g					
Tin-113	U	0.00651	0.0819	+/-0.0245	0.100	pCi/g					
Uranium-235	U	0.293	0.434	+/-0.129	0.500	pCi/g					
Yttrium-88	U	-0.00862	0.0502	+/-0.0164	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, Am-05-RC Modified
4	DOE EML HASL-300, Pu-11-RC Modified
5	DOE EML HASL-300, U-02-RC Modified
6	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	96.8	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	103	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	83.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7839
Sample ID: 243624003

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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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

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7838
Sample ID: 243624004
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 21.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00493	0.0229	+/-0.0026	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00119	0.0197	+/-0.00206	0.050	pCi/g		HAKB	01/07/10	1138	938221	3
Plutonium-239/240	U	0.00714	0.0225	+/-0.00339	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.32	0.145	+/-0.124	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0867	0.090	+/-0.0233	0.100	pCi/g						
Uranium-238		1.47	0.0841	+/-0.135	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.205	0.350	+/-0.115	0.200	pCi/g		MXR1	01/07/10	1434	937704	5
Bismuth-211	UI	4.45	0.408	+/-0.338		pCi/g						
Bismuth-214		1.36	0.133	+/-0.109	0.200	pCi/g						
Cadmium-109	UI	2.38	1.54	+/-0.648		pCi/g						
Cerium-139	U	-0.00356	0.0594	+/-0.0176	0.050	pCi/g						
Cesium-134	UI	0.143	0.110	+/-0.0469	0.100	pCi/g						
Cesium-137		0.184	0.0843	+/-0.0334	0.100	pCi/g						
Cobalt-60	U	-0.00325	0.069	+/-0.0211	0.100	pCi/g						
Europium-152	U	-0.0652	0.191	+/-0.0661	0.200	pCi/g						
Lanthanum-140	U	-0.0708	0.165	+/-0.057		pCi/g						
Lead-212		1.78	0.123	+/-0.0958	0.100	pCi/g						
Lead-214		1.55	0.142	+/-0.124	0.100	pCi/g						
Mercury-203	U	0.0684	0.0927	+/-0.0263	0.100	pCi/g						
Potassium-40		21.2	0.686	+/-1.20	1.00	pCi/g						
Radium-223	U	0.610	1.33	+/-0.437		pCi/g						
Radium-224	UI	5.38	1.23	+/-0.773		pCi/g						
Radium-226		1.36	0.133	+/-0.109		pCi/g						
Radium-228		1.85	0.274	+/-0.205	0.500	pCi/g						
Ruthenium-106	U	-0.227	0.615	+/-0.195	0.800	pCi/g						
Sodium-22	U	-0.0187	0.0813	+/-0.0257	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7838
Sample ID: 243624004
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	UI	0.105	0.0913	+/-0.0276		pCi/g					
Thallium-208		0.563	0.074	+/-0.0575	0.080	pCi/g					
Thorium-227	U	-0.118	0.787	+/-0.241		pCi/g					
Thorium-231	U	0.610	1.33	+/-0.437		pCi/g					
Thorium-234	U	0.969	2.80	+/-1.21	2.00	pCi/g					
Tin-113	U	0.0139	0.0935	+/-0.0283	0.100	pCi/g					
Uranium-235	U	0.197	0.399	+/-0.165	0.500	pCi/g					
Yttrium-88	U	0.0263	0.0655	+/-0.0167	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	86.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	98.4	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	74.3	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7838
Sample ID: 243624004

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7858
Sample ID: 243624005
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 12.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00182	0.0223	+/-0.00597	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00628	0.0207	+/-0.00378	0.050	pCi/g		HAKB	01/15/10	1323	941241	3
Plutonium-239/240	U	0.0138	0.0237	+/-0.00492	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.78	0.153	+/-0.162	0.100	pCi/g		HAKB	01/09/10	1101	938222	7
Uranium-235/236		0.0979	0.0952	+/-0.0255	0.100	pCi/g						
Uranium-238		1.99	0.089	+/-0.179	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0807	0.286	+/-0.0853	0.200	pCi/g		MXR1	01/07/10	1435	937704	8
Bismuth-211	UI	2.69	0.327	+/-0.283		pCi/g						
Bismuth-214		0.834	0.114	+/-0.0802	0.200	pCi/g						
Cadmium-109	UI	1.81	1.29	+/-0.487		pCi/g						
Cerium-139	U	-0.035	0.0468	+/-0.0148	0.050	pCi/g						
Cesium-134	U	0.0651	0.0835	+/-0.0225	0.100	pCi/g						
Cesium-137		0.335	0.0596	+/-0.0403	0.100	pCi/g						
Cobalt-60	U	-0.0135	0.0546	+/-0.0176	0.100	pCi/g						
Europium-152	U	-0.0902	0.146	+/-0.0534	0.200	pCi/g						
Lanthanum-140	U	-0.0145	0.111	+/-0.0408		pCi/g						
Lead-212		1.04	0.106	+/-0.0857	0.100	pCi/g						
Lead-214		0.934	0.114	+/-0.101	0.100	pCi/g						
Mercury-203	U	0.00473	0.0662	+/-0.0189	0.100	pCi/g						
Potassium-40		19.4	0.508	+/-1.19	1.00	pCi/g						
Radium-223	U	-0.328	1.14	+/-0.342		pCi/g						
Radium-224	UI	1.95	1.20	+/-0.430		pCi/g						
Radium-226		0.834	0.114	+/-0.0802		pCi/g						
Radium-228		1.02	0.177	+/-0.138	0.500	pCi/g						
Ruthenium-106	U	-0.225	0.464	+/-0.146	0.800	pCi/g						
Sodium-22	U	0.020	0.0724	+/-0.0208	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7858
Sample ID: 243624005

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0507	0.0648	+/-0.018		pCi/g						
Thallium-208		0.369	0.0506	+/-0.0413	0.080	pCi/g						
Thorium-227	U	0.0364	0.627	+/-0.178		pCi/g						
Thorium-231	U	-0.328	1.14	+/-0.342		pCi/g						
Thorium-234		2.56	2.13	+/-1.05	2.00	pCi/g						
Tin-113	U	-0.00699	0.076	+/-0.0228	0.100	pCi/g						
Uranium-235	U	0.0558	0.348	+/-0.103	0.500	pCi/g						
Yttrium-88	U	0.0111	0.0561	+/-0.0159	0.100	pCi/g						

The following Analytical Methods were performed

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

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	96.6	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.7	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	73.8	(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

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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 18, 2010

Client Sample ID: RE12-10-7858
Sample ID: 243624005

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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D Results are reported from a diluted aliquot of the sample
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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7846
Sample ID: 243624006
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 12.1%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00455	0.0216	+/-0.00618	0.050	pCi/g		HAKB	01/07/10	1138	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.0093	0.0171	+/-0.00313	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00826	0.0195	+/-0.00389	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.63	0.133	+/-0.145	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236		0.106	0.0827	+/-0.025	0.100	pCi/g						
Uranium-238		1.87	0.0773	+/-0.162	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.358	0.470	+/-0.143	0.200	pCi/g		MXR1	01/07/10	1444	937704	5
Bismuth-211	UI	3.01	0.356	+/-0.250		pCi/g						
Bismuth-214		0.914	0.118	+/-0.0895	0.200	pCi/g						
Cadmium-109	U	0.644	1.91	+/-0.720		pCi/g						
Cerium-139	U	0.000646	0.0559	+/-0.0167	0.050	pCi/g						
Cesium-134	U	0.0758	0.091	+/-0.0241	0.100	pCi/g						
Cesium-137		0.286	0.0627	+/-0.0398	0.100	pCi/g						
Cobalt-60	U	0.0237	0.0698	+/-0.0199	0.100	pCi/g						
Europium-152	U	-0.0998	0.159	+/-0.0678	0.200	pCi/g						
Lanthanum-140	U	-0.0457	0.148	+/-0.0484		pCi/g						
Lead-212		1.14	0.108	+/-0.074	0.100	pCi/g						
Lead-214		1.05	0.124	+/-0.091	0.100	pCi/g						
Mercury-203	U	0.0356	0.0833	+/-0.0233	0.100	pCi/g						
Potassium-40		19.1	0.543	+/-1.10	1.00	pCi/g						
Radium-223	U	-0.98	1.27	+/-0.406		pCi/g						
Radium-224	UI	3.02	1.23	+/-0.723		pCi/g						
Radium-226		0.914	0.118	+/-0.0895		pCi/g						
Radium-228		1.29	0.219	+/-0.170	0.500	pCi/g						
Ruthenium-106	U	-0.157	0.556	+/-0.177	0.800	pCi/g						
Sodium-22	U	0.000757	0.0758	+/-0.0233	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7846
Sample ID: 243624006

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	U	0.0454	0.0728	+/-0.0232		pCi/g						
Thallium-208		0.411	0.0623	+/-0.0451	0.080	pCi/g						
Thorium-227	U	0.183	0.770	+/-0.219		pCi/g						
Thorium-231	U	-0.98	1.27	+/-0.406		pCi/g						
Thorium-234	U	1.89	3.90	+/-1.10	2.00	pCi/g						
Tin-113	U	-0.034	0.0803	+/-0.0249	0.100	pCi/g						
Uranium-235	U	-0.0874	0.412	+/-0.127	0.500	pCi/g						
Yttrium-88	U	0.0187	0.0643	+/-0.0178	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	88.7	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	102	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	80.4	(50%-105%)

Notes:

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

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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7846
Sample ID: 243624006

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
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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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7844
Sample ID: 243624007
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 13.3%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.000724	0.0217	+/-0.00487	0.050	pCi/g		HAKB	01/07/10	1031	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00	0.0195	+/-0.00167	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00708	0.0223	+/-0.00291	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.32	0.131	+/-0.122	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0575	0.0814	+/-0.0179	0.100	pCi/g						
Uranium-238		1.32	0.0761	+/-0.122	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.041	0.379	+/-0.108	0.200	pCi/g		MXR1	01/07/10	1550	937704	5
Bismuth-211	UI	4.50	0.296	+/-0.269		pCi/g						
Bismuth-214		1.15	0.109	+/-0.0902	0.200	pCi/g						
Cadmium-109	UI	2.97	1.52	+/-0.591		pCi/g						
Cerium-139	U	-0.0131	0.0457	+/-0.014	0.050	pCi/g						
Cesium-134	UI	0.0877	0.0844	+/-0.0332	0.100	pCi/g						
Cesium-137		0.123	0.0717	+/-0.0294	0.100	pCi/g						
Cobalt-60	U	0.00782	0.065	+/-0.0189	0.100	pCi/g						
Europium-152	U	-0.0141	0.151	+/-0.0483	0.200	pCi/g						
Lanthanum-140	U	-0.004	0.168	+/-0.0515		pCi/g						
Lead-212		1.55	0.0869	+/-0.0841	0.100	pCi/g						
Lead-214		1.57	0.103	+/-0.102	0.100	pCi/g						
Mercury-203	U	-0.012	0.063	+/-0.0186	0.100	pCi/g						
Potassium-40		19.5	0.519	+/-1.03	1.00	pCi/g						
Radium-223	U	0.428	1.10	+/-0.349		pCi/g						
Radium-224	UI	4.68	0.989	+/-0.764		pCi/g						
Radium-226		1.15	0.109	+/-0.0902		pCi/g						
Radium-228		1.50	0.202	+/-0.187	0.500	pCi/g						
Ruthenium-106	U	-0.146	0.435	+/-0.142	0.800	pCi/g						
Sodium-22	U	-0.028	0.0655	+/-0.0212	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7844
Sample ID: 243624007

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

Rad Gamma Spec Analysis

GAMMA SPEC "Dry Weight Corrected"

Strontium-85	U	0.0433	0.0578	+/-0.0176		pCi/g						
Thallium-208		0.506	0.0559	+/-0.0457	0.080	pCi/g						
Thorium-227	U	0.368	0.658	+/-0.183		pCi/g						
Thorium-231	U	0.428	1.10	+/-0.349		pCi/g						
Thorium-234	U	0.516	2.99	+/-0.843	2.00	pCi/g						
Tin-113	U	-0.0193	0.0691	+/-0.0212	0.100	pCi/g						
Uranium-235	U	-0.0193	0.334	+/-0.102	0.500	pCi/g						
Yttrium-88	U	0.00573	0.0494	+/-0.0146	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	85.9	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	93.3	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	83.5	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Report Date: January 18, 2010

Client Sample ID: RE12-10-7844
Sample ID: 243624007

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7845
Sample ID: 243624008
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 7.5%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	-0.00538	0.0202	+/-0.00435	0.050	pCi/g		HAKB	01/07/10	1031	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00117	0.0193	+/-0.00262	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	-0.00351	0.0221	+/-0.00309	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.05	0.134	+/-0.102	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236		0.129	0.0834	+/-0.0278	0.100	pCi/g						
Uranium-238		1.05	0.0779	+/-0.102	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0406	0.228	+/-0.0722	0.200	pCi/g		MXR1	01/07/10	1550	937704	5
Bismuth-211	UI	4.05	0.280	+/-0.266		pCi/g						
Bismuth-214		1.29	0.106	+/-0.0955	0.200	pCi/g						
Cadmium-109	UI	4.15	1.05	+/-0.534		pCi/g						
Cerium-139	U	-0.00274	0.0467	+/-0.0141	0.050	pCi/g						
Cesium-134	UI	0.0913	0.0884	+/-0.0257	0.100	pCi/g						
Cesium-137	U	-0.0291	0.0588	+/-0.0187	0.100	pCi/g						
Cobalt-60	U	0.00221	0.0617	+/-0.0186	0.100	pCi/g						
Europium-152	U	0.0187	0.143	+/-0.0472	0.200	pCi/g						
Lanthanum-140	U	-0.087	0.127	+/-0.0448		pCi/g						
Lead-212		1.52	0.0857	+/-0.0751	0.100	pCi/g						
Lead-214		1.41	0.0976	+/-0.0997	0.100	pCi/g						
Mercury-203	U	0.0204	0.0655	+/-0.0209	0.100	pCi/g						
Potassium-40		18.9	0.587	+/-0.979	1.00	pCi/g						
Radium-223	U	-0.534	0.960	+/-0.347		pCi/g						
Radium-224	UI	4.77	0.975	+/-0.654		pCi/g						
Radium-226		1.29	0.106	+/-0.0955		pCi/g						
Radium-228		1.52	0.225	+/-0.158	0.500	pCi/g						
Ruthenium-106	U	0.179	0.563	+/-0.160	0.800	pCi/g						
Sodium-22	U	-0.0381	0.0588	+/-0.0202	0.080	pCi/g						

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Report Date: January 18, 2010

Client Sample ID:
Sample ID:

RE12-10-7845
243624008

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	U	0.0441	0.0596	+/-0.0186		pCi/g					
Thallium-208		0.517	0.0536	+/-0.042	0.080	pCi/g					
Thorium-227	U	-0.374	0.558	+/-0.174		pCi/g					
Thorium-231	U	-0.534	0.960	+/-0.347		pCi/g					
Thorium-234	U	1.29	1.95	+/-0.983	2.00	pCi/g					
Tin-113	U	-0.00245	0.072	+/-0.0216	0.100	pCi/g					
Uranium-235	U	0.0294	0.347	+/-0.102	0.500	pCi/g					
Yttrium-88	U	-0.0354	0.0437	+/-0.0171	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	94.5	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	104	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	77.4	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7845
Sample ID: 243624008

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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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 18, 2010

Client Sample ID: RE12-10-7842
Sample ID: 243624009
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 13.8%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00666	0.0206	+/-0.00287	0.050	pCi/g		HAKB	01/07/10	1031	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	-0.00444	0.0183	+/-0.00351	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00555	0.021	+/-0.00485	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.26	0.120	+/-0.115	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236		0.0812	0.0743	+/-0.0206	0.100	pCi/g						
Uranium-238		1.48	0.0695	+/-0.132	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.0373	0.340	+/-0.111	0.200	pCi/g		MXRJ	01/07/10	1551	937704	5
Bismuth-211	UI	3.57	0.403	+/-0.248		pCi/g						
Bismuth-214		1.22	0.123	+/-0.0981	0.200	pCi/g						
Cadmium-109	UI	3.24	1.92	+/-0.769		pCi/g						
Cerium-139	U	-0.00532	0.0588	+/-0.0176	0.050	pCi/g						
Cesium-134	U	0.0365	0.0926	+/-0.0259	0.100	pCi/g						
Cesium-137		0.150	0.0772	+/-0.0397	0.100	pCi/g						
Cobalt-60	U	0.00163	0.0745	+/-0.0228	0.100	pCi/g						
Europium-152	U	-0.0646	0.186	+/-0.0654	0.200	pCi/g						
Lanthanum-140	U	-0.0827	0.138	+/-0.0487		pCi/g						
Lead-212		1.59	0.107	+/-0.0844	0.100	pCi/g						
Lead-214		1.24	0.142	+/-0.0923	0.100	pCi/g						
Mercury-203	U	0.0381	0.0852	+/-0.027	0.100	pCi/g						
Potassium-40		18.6	0.608	+/-1.05	1.00	pCi/g						
Radium-223	U	0.397	1.32	+/-0.430		pCi/g						
Radium-224	UI	4.30	1.22	+/-0.620		pCi/g						
Radium-226		1.22	0.123	+/-0.0981		pCi/g						
Radium-228		1.53	0.237	+/-0.162	0.500	pCi/g						
Ruthenium-106	U	-0.14	0.563	+/-0.178	0.800	pCi/g						
Sodium-22	U	0.045	0.0892	+/-0.0249	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7842
Sample ID: 243624009

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Strontium-85	UI	0.0966	0.0827	+/-0.0243		pCi/g						
Thallium-208		0.520	0.0768	+/-0.0486	0.080	pCi/g						
Thorium-227	U	0.222	0.799	+/-0.238		pCi/g						
Thorium-231	U	0.397	1.32	+/-0.430		pCi/g						
Thorium-234	U	2.72	2.92	+/-1.08	2.00	pCi/g						
Tin-113	U	-0.0403	0.0872	+/-0.027	0.100	pCi/g						
Uranium-235	U	0.243	0.423	+/-0.122	0.500	pCi/g						
Yttrium-88	U	7.90E-05	0.0669	+/-0.0203	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	91.6	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	101	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	88.6	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7842
Sample ID: 243624009
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------------	------

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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7843
Sample ID: 243624010
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 10.4%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	0.00338	0.022	+/-0.0021	0.050	pCi/g		HAKB	01/07/10	1031	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00246	0.0203	+/-0.00628	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00862	0.0233	+/-0.00372	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		0.986	0.124	+/-0.0944	0.100	pCi/g		HAKB	01/09/10	1101	938222	4
Uranium-235/236	U	0.0691	0.0768	+/-0.0191	0.100	pCi/g						
Uranium-238		0.986	0.0718	+/-0.0943	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	0.0999	0.180	+/-0.0555	0.200	pCi/g		MXR1	01/07/10	1551	937704	5
Bismuth-211	UI	4.33	0.346	+/-0.302		pCi/g						
Bismuth-214		1.42	0.112	+/-0.107	0.200	pCi/g						
Cadmium-109	UI	4.46	1.08	+/-0.482		pCi/g						
Cerium-139	U	-0.0285	0.0468	+/-0.015	0.050	pCi/g						
Cesium-134	U	0.0687	0.0851	+/-0.023	0.100	pCi/g						
Cesium-137	U	0.0144	0.0703	+/-0.0206	0.100	pCi/g						
Cobalt-60	U	0.0142	0.0626	+/-0.0181	0.100	pCi/g						
Europium-152	U	0.0473	0.165	+/-0.0541	0.200	pCi/g						
Lanthanum-140	U	0.00908	0.143	+/-0.0433		pCi/g						
Lead-212		1.80	0.0895	+/-0.104	0.100	pCi/g						
Lead-214		1.51	0.121	+/-0.112	0.100	pCi/g						
Mercury-203	U	0.0298	0.0724	+/-0.0206	0.100	pCi/g						
Potassium-40		19.9	0.500	+/-1.13	1.00	pCi/g						
Radium-223	U	0.019	1.07	+/-0.362		pCi/g						
Radium-224	UI	4.99	1.02	+/-0.659		pCi/g						
Radium-226		1.42	0.112	+/-0.107		pCi/g						
Radium-228		1.74	0.204	+/-0.179	0.500	pCi/g						
Ruthenium-106	U	-0.304	0.492	+/-0.159	0.800	pCi/g						
Sodium-22	U	0.0232	0.0686	+/-0.0194	0.080	pCi/g						

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7843
Sample ID: 243624010

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
GAMMA SPEC "Dry Weight Corrected"											
Strontium-85	U	0.0659	0.0665	+/-0.0194		pCi/g					
Thallium-208		0.522	0.0611	+/-0.0468	0.080	pCi/g					
Thorium-227	U	0.227	0.654	+/-0.187		pCi/g					
Thorium-231	U	0.019	1.07	+/-0.362		pCi/g					
Thorium-234	U	0.970	1.58	+/-0.662	2.00	pCi/g					
Tin-113	U	-0.0131	0.0784	+/-0.0241	0.100	pCi/g					
Uranium-235	U	0.0833	0.348	+/-0.105	0.500	pCi/g					
Yttrium-88	U	0.0107	0.0519	+/-0.0145	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	82.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	94.6	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	87.8	(50%-105%)

Notes:

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

The Qualifiers in this report are defined as follows :

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7843
Sample ID: 243624010
Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h Preparation or preservation holding time was exceeded
The above sample is reported on a dry weight basis.

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

Report Date: January 18, 2010

Client Sample ID: RE12-10-7847
Sample ID: 243624011
Matrix: R
Collect Date: 22-DEC-09
Receive Date: 29-DEC-09
Collector: Client
Moisture: 9.05%

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids												
<i>"As Received"</i>												
Rad Alpha Spec Analysis												
<i>AM241 "Dry Weight Corrected"</i>												
Americium-241	U	9.38E-05	0.0163	+/-0.000962	0.050	pCi/g		HAKB	01/07/10	1033	938210	2
<i>ISOPU "Dry Weight Corrected"</i>												
Plutonium-238	U	0.00819	0.0169	+/-0.00326	0.050	pCi/g		HAKB	01/07/10	1031	938221	3
Plutonium-239/240	U	0.00307	0.0193	+/-0.0034	0.050	pCi/g						
<i>ISOU "Dry Weight Corrected"</i>												
Uranium-233/234		1.18	0.131	+/-0.110	0.100	pCi/g		HAKB	01/09/10	1100	938222	4
Uranium-235/236	U	0.0629	0.0816	+/-0.0201	0.100	pCi/g						
Uranium-238		1.33	0.0763	+/-0.121	0.100	pCi/g						
Rad Gamma Spec Analysis												
<i>GAMMA SPEC "Dry Weight Corrected"</i>												
Americium-241	U	-0.062	0.410	+/-0.120	0.200	pCi/g		MXR1	01/07/10	1551	937704	5
Bismuth-211	UI	4.26	0.320	+/-0.277		pCi/g						
Bismuth-214		1.42	0.112	+/-0.0995	0.200	pCi/g						
Cadmium-109	UI	3.07	1.46	+/-0.618		pCi/g						
Cerium-139	U	0.0152	0.050	+/-0.0149	0.050	pCi/g						
Cesium-134	UI	0.104	0.0959	+/-0.0344	0.100	pCi/g						
Cesium-137	U	-0.0202	0.0593	+/-0.0184	0.100	pCi/g						
Cobalt-60	U	0.0067	0.0632	+/-0.0186	0.100	pCi/g						
Europium-152	U	-0.0444	0.143	+/-0.0507	0.200	pCi/g						
Lanthanum-140	U	-0.0612	0.132	+/-0.046		pCi/g						
Lead-212		1.64	0.0966	+/-0.0842	0.100	pCi/g						
Lead-214		1.48	0.112	+/-0.104	0.100	pCi/g						
Mercury-203	U	-0.00644	0.0683	+/-0.023	0.100	pCi/g						
Potassium-40		20.3	0.579	+/-1.20	1.00	pCi/g						
Radium-223	U	0.0522	1.07	+/-0.359		pCi/g						
Radium-224	UI	4.85	1.10	+/-0.651		pCi/g						
Radium-226		1.42	0.112	+/-0.0995		pCi/g						
Radium-228		1.57	0.196	+/-0.171	0.500	pCi/g						
Ruthenium-106	U	-0.197	0.496	+/-0.155	0.800	pCi/g						
Sodium-22	U	0.00225	0.068	+/-0.0203	0.080	pCi/g						

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Report Date: January 18, 2010

Client Sample ID: RE12-10-7847
Sample ID: 243624011

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time Batch	Mtd.
Rad Gamma Spec Analysis											
<i>GAMMA SPEC "Dry Weight Corrected"</i>											
Strontium-85	U	0.0502	0.0657	+/-0.0207		pCi/g					
Thallium-208		0.482	0.0622	+/-0.044	0.080	pCi/g					
Thorium-227	U	-0.0481	0.631	+/-0.186		pCi/g					
Thorium-231	U	0.0522	1.07	+/-0.359		pCi/g					
Thorium-234	U	-0.315	3.22	+/-0.946	2.00	pCi/g					
Tin-113	U	0.00242	0.0772	+/-0.0232	0.100	pCi/g					
Uranium-235	U	0.266	0.385	+/-0.114	0.500	pCi/g					
Yttrium-88	U	-0.0207	0.0371	+/-0.0146	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 HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Americium-243 Tracer	AM241 "Dry Weight Corrected"	99.2	(50%-105%)
Plutonium-242 Tracer	ISOPU "Dry Weight Corrected"	103	(50%-105%)
Uranium-232 Tracer	ISOU "Dry Weight Corrected"	82.4	(50%-105%)

Notes:

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

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- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E Organics--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: January 18, 2010

Client Sample ID: RE12-10-7847
Sample ID: 243624011

Project: LANL01004
Client ID: LANL010

Parameter	Qualifier	Result	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	----	-----	----	-------	----	---------	------	------	-------	------

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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
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 18, 2010

Page 1 of 7

Client : Los Alamos National Laboratory
 PO Box 1663
 TA-03, SM271, Drop Pt. 02U, Rm
 Los Alamos, New Mexico
 Contact: Ms. Joylene Valdez
 Workorder: 243624

Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	938210										
QC1202007551	243624008	DUP									
Americium-241		U	-0.00538	U	0.00223	pCi/g	0.548	(0-1) HAKB		01/07/1010:31	
		TPU:	+/-0.00435		+/-0.00259						
		Yield:	94.5		76.4						
QC1202007552	LCS										
Americium-241	33.2				33.5	pCi/g		101 (75%-125%)			
		TPU:			+/-2.35						
		Yield:			94.6						
QC1202007550	MB										
Americium-241		U	-0.00367		pCi/g						
		TPU:	+/-0.00321								
		Yield:			95.9						
Batch	938221										
QC1202007554	243624008	DUP									
Plutonium-238		U	0.00117	U	0.0034	pCi/g	0.131	(0-1) HAKB		01/07/1010:31	
		TPU:	+/-0.00262		+/-0.0059						
		Yield:	104		101						
Plutonium-239/240		U	-0.00351	U	0.00113	pCi/g	0.412	(0-1)			
		TPU:	+/-0.00309		+/-0.00254						
		Yield:	104		101						
QC1202007555	LCS										
Plutonium-238					6.95	pCi/g		(75%-125%)		01/07/1010:33	
		TPU:			+/-0.485						
		Yield:			107						
Plutonium-239/240	41.8				36.2	pCi/g		86.6 (75%-125%)			
		TPU:			+/-2.17						
		Yield:			107						
QC1202007553	MB										
Plutonium-238		U	0.0085		pCi/g					01/07/1010:31	
		TPU:	+/-0.00569								
		Yield:			92.2						
Plutonium-239/240		U	0.0085		pCi/g						
		TPU:	+/-0.00493								
		Yield:			92.2						
Batch	938222										
QC1202007557	243624008	DUP									
Uranium-233/234			1.05		1.03	pCi/g	0.0458	(0-1) HAKB		01/09/1011:01	
		TPU:	+/-0.102		+/-0.0999						
		Yield:	77.4		79.2						
Uranium-235/236		0.129	U	0.0786	pCi/g	0.510		(0-1)			
		TPU:	+/-0.0278		+/-0.0211						
		Yield:	77.4		79.2						
Uranium-238			1.05		1.01	pCi/g	0.0991	(0-1)			
		TPU:	+/-0.102		+/-0.0978						

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QC Summary

Workorder: 243624

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Parname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	938222										
QC1202007558	LCS	Yield:	77.4	79.2							
Uranium-233/234				5.61	pCi/g			(75%-125%)		01/09/10	11:01
		TPU:		+/-0.539							
		Yield:		92.5							
Uranium-235/236			U	0.295	pCi/g			(75%-125%)			
		TPU:		+/-0.106							
		Yield:		92.5							
Uranium-238	5.75			5.65	pCi/g		98.2	(75%-125%)			
		TPU:		+/-0.542							
		Yield:		92.5							
QC1202007556	MB										
Uranium-233/234			U	0.00509	pCi/g					01/09/10	11:01
		TPU:		+/-0.00395							
		Yield:		101							
Uranium-235/236			U	0.00221	pCi/g						
		TPU:		+/-0.00221							
		Yield:		101							
Uranium-238			U	0.00535	pCi/g						
		TPU:		+/-0.00537							
		Yield:		101							
Batch	941241										
QC1202014511	243624005	DUP									
Plutonium-238			U	0.00628	U	0.0104	pCi/g	0.180	(0-1) HAKB	01/15/10	13:23
		TPU:		+/-0.00378		+/-0.00758					
		Yield:		93.7		96.5					
Plutonium-239/240			U	0.0138	U	0.00692	pCi/g	0.420	(0-1)		
		TPU:		+/-0.00492		+/-0.00328					
		Yield:		93.7		96.5					
QC1202014512	LCS										
Plutonium-238				7.65	pCi/g			(75%-125%)		01/15/10	13:23
		TPU:		+/-0.540							
		Yield:		91.5							
Plutonium-239/240	41.8			39.9	pCi/g		95.5	(75%-125%)			
		TPU:		+/-2.40							
		Yield:		91.5							
QC1202014510	MB										
Plutonium-238			U	-0.00942	pCi/g					01/15/10	13:23
		TPU:		+/-0.00628							
		Yield:		92.0							
Plutonium-239/240			U	-0.00157	pCi/g						
		TPU:		+/-0.00272							
		Yield:		92.0							
Rad Gamma Spec											
Batch	937704										
QC1202006618	243624001	DUP									
Americium-241			U	-0.0153	U	-0.176	pCi/g	0.723	(0-1) MXR1	01/07/10	16:06
		TPU:		+/-0.0326		+/-0.0787					
Bismuth-211			UI	3.45	UI	3.74	pCi/g	0.305	(0-1)		

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QC Summary

Workorder: 243624

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	937704										
Bismuth-214	TPU:	+/-0.266		+/-0.212							
		1.34		1.19	pCi/g	0.402		(0-1)			
Cadmium-109	TPU:	+/-0.104		+/-0.084							
	UI	3.18	UI	1.67	pCi/g	0.891		(0-1)			
Cerium-139	TPU:	+/-0.360		+/-0.489							
	U	-0.0113	U	0.000147	pCi/g	0.206		(0-1)			
Cesium-134	TPU:	+/-0.0165		+/-0.0113							
	U	0.0846	UI	0.0859	pCi/g	0.0112		(0-1)			
Cesium-137	TPU:	+/-0.0304		+/-0.026							
	U	0.0305	U	0.00222	pCi/g	0.354		(0-1)			
Cobalt-60	TPU:	+/-0.0247		+/-0.0153							
	U	0.00987	U	0.0141	pCi/g	0.0563		(0-1)			
Europium-152	TPU:	+/-0.024		+/-0.0131							
	U	-0.0931	U	-0.0161	pCi/g	0.361		(0-1)			
Lanthanum-140	TPU:	+/-0.0636		+/-0.043							
	U	0.0599	U	-0.0235	pCi/g	0.457		(0-1)			
Lead-212	TPU:	+/-0.057		+/-0.0343							
		1.43		1.56	pCi/g	0.418		(0-1)			
Lead-214	TPU:	+/-0.0867		+/-0.071							
		1.20		1.30	pCi/g	0.282		(0-1)			
Mercury-203	TPU:	+/-0.0978		+/-0.081							
	U	0.0117	U	0.0302	pCi/g	0.241		(0-1)			
Potassium-40	TPU:	+/-0.0227		+/-0.0156							
		19.7		20.4	pCi/g	0.188		(0-1)			
Radium-223	TPU:	+/-0.987		+/-0.979							
	U	-0.817	U	0.316	pCi/g	0.858		(0-1)			
Radium-224	TPU:	+/-0.391		+/-0.269							
	UI	4.40	UI	4.18	pCi/g	0.0818		(0-1)			
Radium-226	TPU:	+/-0.772		+/-0.542							
		1.34		1.19	pCi/g	0.402		(0-1)			
Radium-228	TPU:	+/-0.104		+/-0.084							
		1.49		1.41	pCi/g	0.125		(0-1)			
Ruthenium-106	TPU:	+/-0.185		+/-0.136							
	U	0.0162	U	0.0428	pCi/g	0.0425		(0-1)			
Sodium-22	TPU:	+/-0.195		+/-0.118							
	U	0.00629	U	-0.00902	pCi/g	0.174		(0-1)			
Strontium-85	TPU:	+/-0.0275		+/-0.0165							
	U	0.066	UI	0.127	pCi/g	0.694		(0-1)			
Thallium-208	TPU:	+/-0.0261		+/-0.0175							
		0.548		0.449	pCi/g	0.545		(0-1)			
Thorium-227	TPU:	+/-0.0558		+/-0.0354							
	U	-0.258	U	0.325	pCi/g	0.829		(0-1)			
Thorium-231	TPU:	+/-0.202		+/-0.149							
	U	-0.817	U	0.316	pCi/g	0.858		(0-1)			
Thorium-234	TPU:	+/-0.391		+/-0.269							
		1.60	U	0.946	pCi/g	0.276		(0-1)			
Tin-113	TPU:	+/-0.514		+/-0.666							
	U	-0.0117	U	-0.0374	pCi/g	0.311		(0-1)			
Uranium-235	TPU:	+/-0.0248		+/-0.0166							
	U	0.148	U	0.0399	pCi/g	0.266		(0-1)			
	TPU:	+/-0.116		+/-0.0869							

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QC Summary

Workorder: 243624

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch	937704									
Yttrium-88	U	0.0066	U	0.00893	pCi/g	0.0364		(0-1)		
	TPU:	+/-0.0198		+/-0.0121						
QC1202006619 LCS										
Americium-241	15.9			12.7	pCi/g		79.7	(75%-125%)		01/07/1016:06
	TPU:			+/-0.667						
Bismuth-211				1.74	pCi/g					
	TPU:			+/-0.316						
Bismuth-214				0.602	pCi/g					
	TPU:			+/-0.131						
Cadmium-109				32.5	pCi/g					
	TPU:			+/-1.58						
Cerium-139			U	0.0195	pCi/g					
	TPU:			+/-0.0236						
Cesium-134			U	0.109	pCi/g					
	TPU:			+/-0.0505						
Cesium-137	5.57			5.71	pCi/g		102	(75%-125%)		
	TPU:			+/-0.276						
Cobalt-60	6.49			6.28	pCi/g		96.9	(75%-125%)		
	TPU:			+/-0.250						
Europium-152			U	0.0147	pCi/g					
	TPU:			+/-0.116						
Lanthanum-140			U	0.0136	pCi/g					
	TPU:			+/-0.0473						
Lead-212				0.795	pCi/g					
	TPU:			+/-0.0964						
Lead-214				0.604	pCi/g					
	TPU:			+/-0.111						
Mercury-203			U	-0.0302	pCi/g					
	TPU:			+/-0.0326						
Potassium-40			U	0.428	pCi/g					
	TPU:			+/-0.315						
Radium-223			U	-1.55	pCi/g					
	TPU:			+/-0.660						
Radium-224				4.44	pCi/g					
	TPU:			+/-0.724						
Radium-226				0.602	pCi/g					
	TPU:			+/-0.131						
Radium-228				0.916	pCi/g					
	TPU:			+/-0.306						
Ruthenium-106			U	0.672	pCi/g					
	TPU:			+/-0.352						
Sodium-22			U	-0.032	pCi/g					
	TPU:			+/-0.0324						
Strontium-85			U	0.0818	pCi/g					
	TPU:			+/-0.0404						
Thallium-208				0.254	pCi/g					
	TPU:			+/-0.0665						
Thorium-227			U	0.360	pCi/g					
	TPU:			+/-0.332						
Thorium-231			U	-1.55	pCi/g					
	TPU:			+/-0.660						

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	937704										
Thorium-234			U	0.336	pCi/g						
	TPU:			+/-0.651							
Tin-113			U	0.0367	pCi/g						
	TPU:			+/-0.0451							
Uranium-235			U	-0.07	pCi/g						
	TPU:			+/-0.166							
Yttrium-88			U	0.00101	pCi/g						
	TPU:			+/-0.0244							
QC1202006617	MB										
Americium-241			U	0.0273	pCi/g					01/07/1015:52	
	TPU:			+/-0.0216							
Bismuth-211			U	-0.0771	pCi/g						
	TPU:			+/-0.0507							
Bismuth-214			U	-0.0122	pCi/g						
	TPU:			+/-0.0202							
Cadmium-109			U	0.0951	pCi/g						
	TPU:			+/-0.138							
Cerium-139			U	-0.00223	pCi/g						
	TPU:			+/-0.00545							
Cesium-134			U	0.0105	pCi/g						
	TPU:			+/-0.0102							
Cesium-137			U	-0.0141	pCi/g						
	TPU:			+/-0.00946							
Cobalt-60			U	-0.00654	pCi/g						
	TPU:			+/-0.0112							
Europium-152			U	-0.023	pCi/g						
	TPU:			+/-0.0221							
Lanthanum-140			U	0.00126	pCi/g						
	TPU:			+/-0.0129							
Lead-212			U	0.00294	pCi/g						
	TPU:			+/-0.0185							
Lead-214			U	-0.00747	pCi/g						
	TPU:			+/-0.0171							
Mercury-203			U	-4.13E-05	pCi/g						
	TPU:			+/-0.00819							
Potassium-40			U	0.101	pCi/g						
	TPU:			+/-0.126							
Radium-223			U	0.388	pCi/g						
	TPU:			+/-0.177							
Radium-224			U	0.0608	pCi/g						
	TPU:			+/-0.144							
Radium-226			U	-0.0122	pCi/g						
	TPU:			+/-0.0202							
Radium-228			U	-0.00623	pCi/g						
	TPU:			+/-0.0354							
Ruthenium-106			U	0.0539	pCi/g						
	TPU:			+/-0.0831							
Sodium-22			U	-0.0235	pCi/g						
	TPU:			+/-0.00869							
Strontium-85			U	-0.0946	pCi/g						
	TPU:			+/-0.014							

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	937704										
Thallium-208			U	-0.0134	pCi/g						
	TPU:			+/-0.0108							
Thorium-227			U	0.205	pCi/g						
	TPU:			+/-0.0873							
Thorium-231			U	0.388	pCi/g						
	TPU:			+/-0.177							
Thorium-234			U	-0.314	pCi/g						
	TPU:			+/-0.246							
Tin-113			U	-0.00228	pCi/g						
	TPU:			+/-0.0091							
Uranium-235			U	-0.00534	pCi/g						
	TPU:			+/-0.047							
Yttrium-88			U	-0.00533	pCi/g						
	TPU:			+/-0.0104							

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E 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
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

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Parmname	NOM	Sample Qual	QC	Units	RER	REC%	Range	Anlst	Date	Time
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, Rev10

Batch# 938210 Product: AM Date: 1/14/10

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.			NA
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 Data Exception Reports (DER) completed, if applicable.			NA
Batch Data Exception Reports (DER) 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

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [Signature] 1/14/10

Secondary Review Performed By: [Signature] 1/14/10

Am/Cm Que Sheet

04-JAN-10

Batch #: 938210

Analyst: HAKB

First Client Due Date: 21-JAN-10

Internal Due Date: 04-JAN-10

Tracer(s): Am241/Cm244

Expiration Date: 05/11/10

Tracer Code: 445-16-2-SS

Comments: Vol: 0.1

LCS Isotope(s): Am241/Cm244

Expiration Date: 05/11/10

LCS Code(s):

Vol(s):

Spike Isotope(s): Am241/Cm244

Expiration Date: 05/11/10

Spike Code(s):

Vol(s):

Prep Date: 01/05/10

Initials: QW

Pipet ID: 2371059

Balance ID: 50410272

Wet/Dry

Aliquot

Label #

Pos.

Collection Date

Client

Matrix

Hazard Min Code CRDL

Type

Sample ID Client Description

Am/Cm

Det #

24357014-1	RE03-10-9872	SOIL	LANL010	22-DEC-09	1	1.275	1
24357015-1	RE03-10-9874	SOIL	LANL010	22-DEC-09	2	1.263	2
243624001-1	RE12-10-7841	SOIL	LANL010	22-DEC-09	3	1.263	3
243624002-1	RE12-10-7840	SOIL	LANL010	22-DEC-09	4	1.252	4
243624003-1	RE12-10-7839	SOIL	LANL010	22-DEC-09	5	1.251	243 5 11/10
243624004-1	RE12-10-7838	SOIL	LANL010	22-DEC-09	6	1.260	6
243624005-1	RE12-10-7858	SOIL	LANL010	22-DEC-09	7	1.255	17
243624006-1	RE12-10-7846	SOIL	LANL010	22-DEC-09	8	1.261	18
243624007-1	RE12-10-7844	SOIL	LANL010	22-DEC-09	9	1.250	77
243624008-1	RE12-10-7845	SOIL	LANL010	22-DEC-09	10	1.255	78
243624009-1	RE12-10-7842	SOIL	LANL010	22-DEC-09	11	1.258	79
243624010-1	RE12-10-7843	SOIL	LANL010	22-DEC-09	12	1.278	80
243624011-1	RE12-10-7847	SOIL	LANL010	22-DEC-09	13	1.250	250
1202007550-1	MB for batch 938210	QC ACCOUNT	QC ACCOUNT	22-DEC-09	14	1.00	250 46
1202007551-1	RE12-10-7845(243624008DUP)	SOIL	QC ACCOUNT	22-DEC-09	15	1.254	44
1202007552-1	LCS for batch 938210	SOIL	QC ACCOUNT	22-DEC-09	16	0.102	45

* SAM: 0244-B exp 04/30/10 c. 102g

Choose SOP Used: GL-RAD-A-011
GL-RAD-A-036

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By:

QW 1/14/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

Blank Correction Report

Batch ID 938210

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202007551	DUP	Americium-241	1.25 g	0.00223	0.00259	0.023	-.002936	pCi/g	NO
1202007552	LCS	Americium-241	0.102 g	33.5	2.35	0.236	-.03598039	pCi/g	NO
1202007550	MB	Americium-241	1.00 g	-0.00367	0.00321	0.0238	-.00367	pCi/g	NO
243557014	RE03-10-9872	Americium-241	1.28 g	0.00148	0.002	0.0185	-.00286719	pCi/g	NO
243557015	RE03-10-9874	Americium-241	1.26 g	-0.000432	0.00195	0.0234	-.00291270	pCi/g	NO
243624001	RE12-10-7841	Americium-241	1.26 g	0.00322	0.00409	0.0213	-.00291270	pCi/g	NO
243624002	RE12-10-7840	Americium-241	1.25 g	0.00298	0.00503	0.0272	-.002936	pCi/g	NO
243624003	RE12-10-7839	Americium-241	1.25 g	0.000174	0.00148	0.017	-.002936	pCi/g	NO
243624004	RE12-10-7838	Americium-241	1.26 g	0.00493	0.0026	0.0229	-.00291270	pCi/g	NO
243624005	RE12-10-7858	Americium-241	1.26 g	-0.00182	0.00597	0.0223	-.00291270	pCi/g	NO
243624006	RE12-10-7846	Americium-241	1.26 g	0.00455	0.00618	0.0216	-.00291270	pCi/g	NO
243624007	RE12-10-7844	Americium-241	1.25 g	0.000724	0.00487	0.0217	-.002936	pCi/g	NO
243624008	RE12-10-7845	Americium-241	1.26 g	-0.00538	0.00435	0.0202	-.00291270	pCi/g	NO
243624009	RE12-10-7842	Americium-241	1.26 g	0.00666	0.00287	0.0206	-.00291270	pCi/g	NO
243624010	RE12-10-7843	Americium-241	1.28 g	0.00338	0.0021	0.022	-.00286719	pCi/g	NO
243624011	RE12-10-7847	Americium-241	1.25 g	9.38E-05	0.000962	0.0163	-.002936	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210 SAMPLE DATE : 22-DEC-2009 00:00:00		SAMPLE ID : S0243624001_AM SAMPLE QTY: 1.263 G	
DETECTOR NUMBER :79453 AVERAGE %EFFICIENCY :31.1793 % YIELD : 91.143		COUNT DATE: 7-JAN-2010 11:38:41 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :HAKB	
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 : 2.65826 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B003.CNF;1096 BKG DATE : 3-JAN-2010 EFF FILE : W003.CNF;339 CAL DATE : 4-JAN-2010

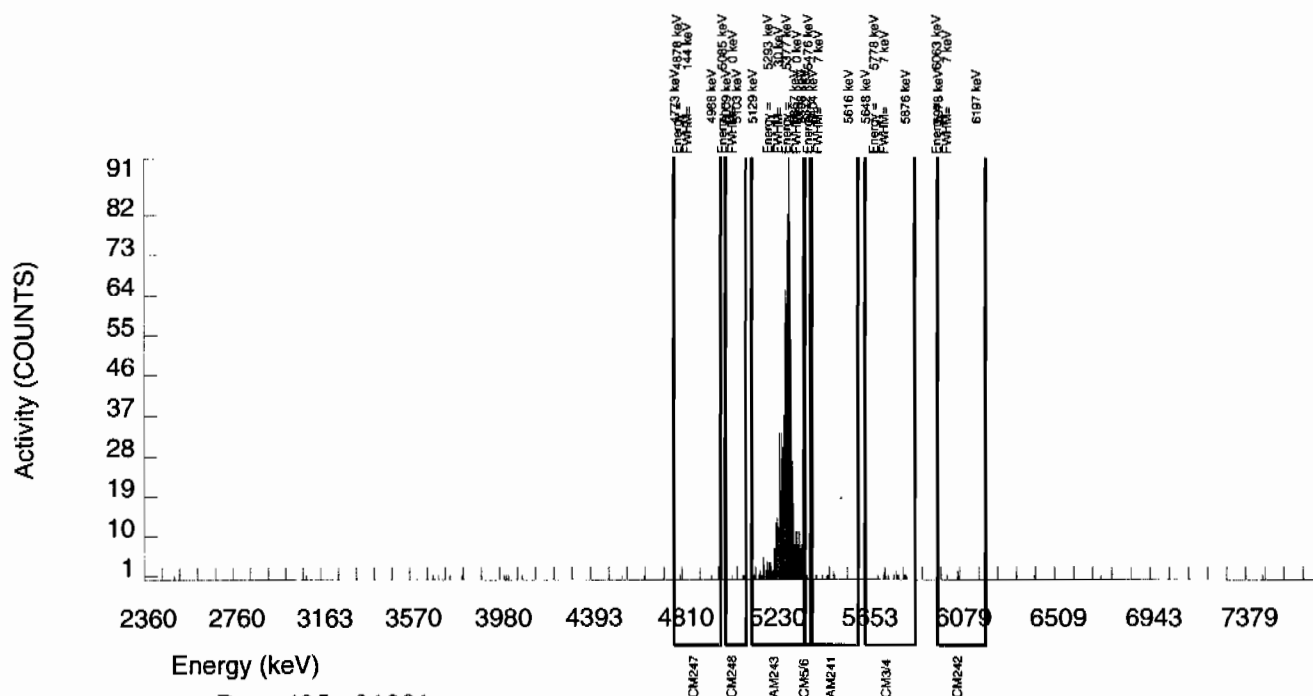
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	13.000	10.000	3.000	5.2338	100.0000	1.26E-02	5.09E-03	1.53E-02	3.40E-02	5.03E-03
CM-5/6	5386.000	7.000	7.000	0.000	19.8463	86.09000	1.02E-02	3.91E-03	6.73E-02	1.39E-01	3.86E-03
AM-241	5479.150	8.000	2.561	4.000	3.0704	99.94000	3.22E-03	4.09E-03	8.97E-03	2.13E-02	4.08E-03
CM-242	6102.000	4.000	4.000	0.000	4.3186	100.0000	5.39E-03	2.72E-03	1.26E-02	2.86E-02	2.70E-03
AM243	5270.000	827.000	827.000	0.000	0.0000	99.78000	1.04E+00	7.24E-02	0.00E+00	3.41E-03	3.62E-02
CM-247	4946.000	2.000	0.000	2.000	15.3366	79.30000	0.00E+00	3.17E-03	5.65E-02	1.17E-01	3.17E-03
CM-248	5078.600	4.000	3.000	1.000	22.1555	91.00000	4.14E-03	3.09E-03	7.11E-02	1.46E-01	3.08E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624002_AM
SAMPLE QTY: 1.252 G

DETECTOR NUMBER :68548
AVERAGE %EFFICIENCY :30.7853
% YIELD : 73.110

COUNT DATE: 7-JAN-2010 11:38:41
ELAPSED LIVE TIME(SEC): 59999.99
ANALYST :HAKB

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 : 2.13234 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B004.CNF;1105
BKG DATE : 3-JAN-2010
EFF FILE : W004.CNF;328
CAL DATE : 4-JAN-2010

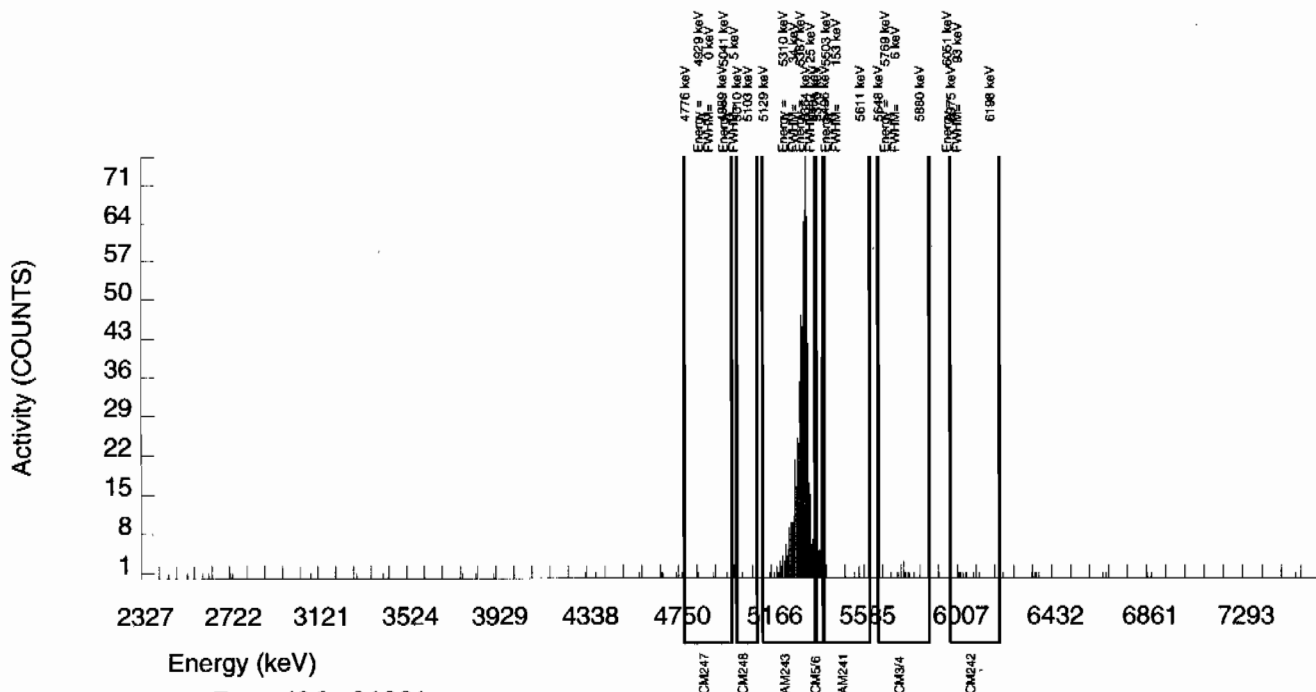
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	11.000	7.000	4.000	5.2338	100.0000	1.12E-02	6.24E-03	1.95E-02	4.33E-02	6.20E-03
CM-5/6	5386.000	35.000	35.000	0.000	19.8463	86.09000	6.50E-02	1.17E-02	8.57E-02	1.76E-01	1.10E-02
AM-241	5479.150	7.000	1.860	4.000	3.0704	99.94000	2.98E-03	5.03E-03	1.14E-02	2.72E-02	5.02E-03
CM-242	6102.000	8.000	5.000	3.000	4.3186	100.0000	8.59E-03	5.72E-03	1.61E-02	3.65E-02	5.70E-03
AM243	5270.000	657.000	655.000	2.000	1.4142	99.78000	1.05E+00	7.78E-02	5.27E-03	1.49E-02	4.11E-02
CM-247	4946.000	4.000	4.000	0.000	15.3366	79.30000	8.06E-03	4.06E-03	7.19E-02	1.49E-01	4.03E-03
CM-248	5078.600	1.000	1.000	0.000	22.1555	91.00000	1.76E-03	1.76E-03	9.05E-02	1.86E-01	1.76E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624003_AM
SAMPLE QTY: 1.251 G

DETECTOR NUMBER :79436
AVERAGE %EFFICIENCY :37.2411
% YIELD : 96.791

COUNT DATE: 8-JAN-2010 14:11:31
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 2.82300 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B243.CNF;66
BKG DATE : 3-JAN-2010
EFF FILE : W243.CNF;24
CAL DATE : 28-DEC-2009

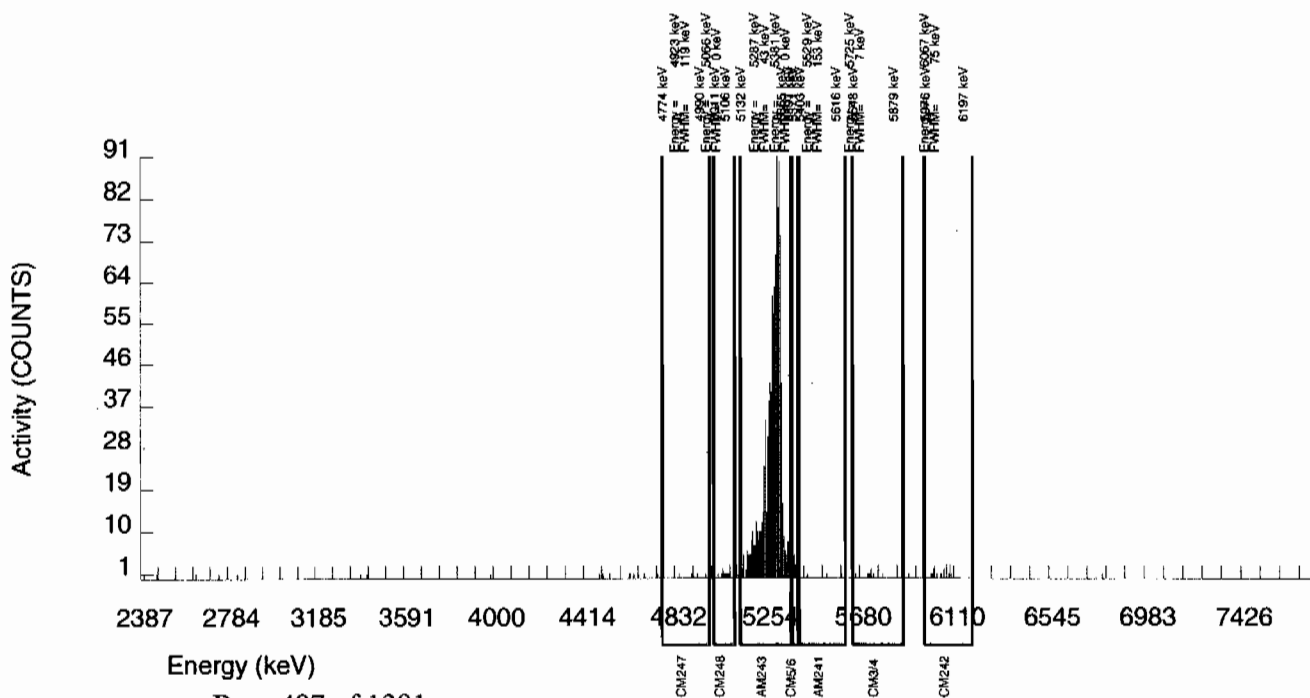
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	9.000	8.000	1.000	5.2338	100.0000	8.01E-03	3.20E-03	1.22E-02	2.70E-02	3.16E-03
CM-5/6	5386.000	27.000	27.000	0.000	19.8463	86.09000	3.13E-02	6.31E-03	5.36E-02	1.10E-01	6.03E-03
AM-241	5479.150	3.000	0.174	1.000	3.0704	99.94000	1.74E-04	1.48E-03	7.14E-03	1.70E-02	1.47E-03
CM-242	6102.000	17.000	17.000	0.000	4.3186	100.0000	1.83E-02	4.58E-03	1.00E-02	2.28E-02	4.45E-03
AM243	5270.000	1051.000	1049.000	2.000	1.4142	99.78000	1.05E+00	7.07E-02	3.29E-03	9.30E-03	3.25E-02
CM-247	4946.000	5.000	3.000	2.000	15.3366	79.30000	3.78E-03	3.34E-03	4.49E-02	9.33E-02	3.33E-03
CM-248	5078.600	14.000	14.000	0.000	22.1555	91.00000	1.54E-02	4.21E-03	5.66E-02	1.16E-01	4.11E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210 SAMPLE DATE : 22-DEC-2009 00:00:00			SAMPLE ID : S0243624004_AM SAMPLE QTY: 1.260 G		
DETECTOR NUMBER :79455 AVERAGE %EFFICIENCY :30.5320 % YIELD : 86.885			COUNT DATE: 7-JAN-2010 11:38:41 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :HAKB		
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 : 2.53408 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B006.CNF;1104 BKG DATE : 3-JAN-2010 EFF FILE : W006.CNF;359 CAL DATE : 4-JAN-2010		

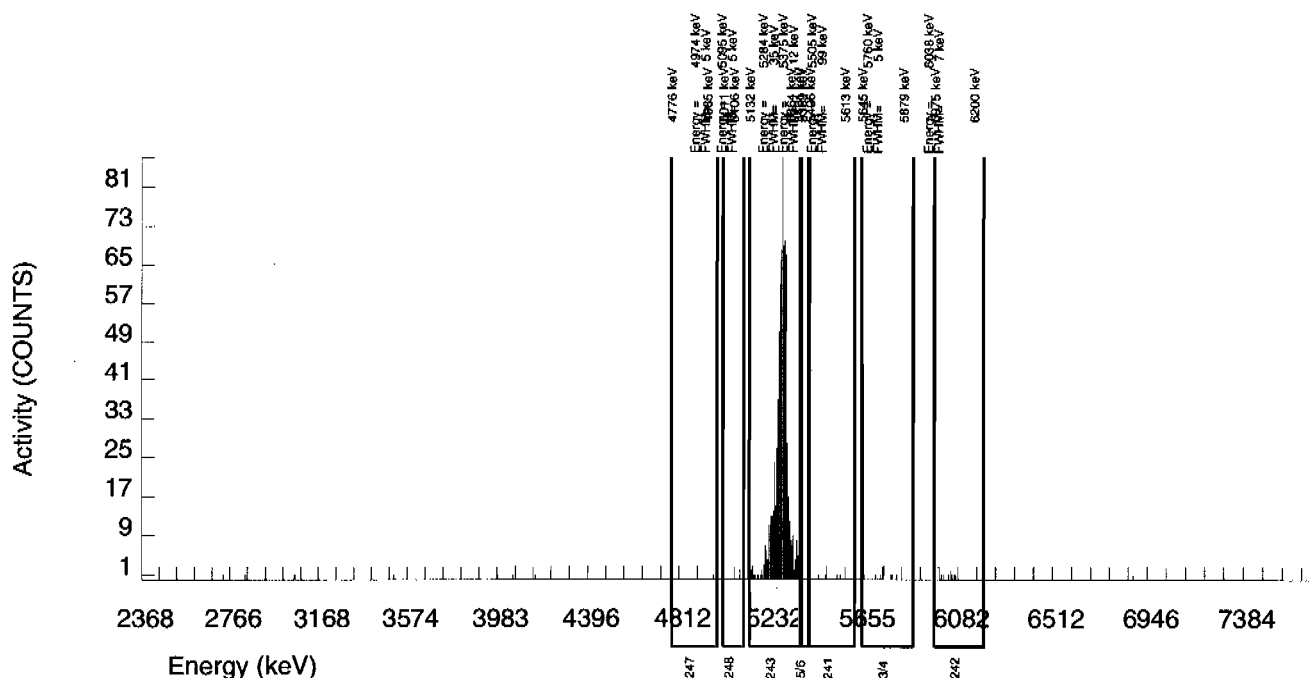
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	8.000	8.000	0.000	5.2338	100.0000	1.08E-02	3.88E-03	1.64E-02	3.65E-02	3.82E-03
CM-5/6	5386.000	5.000	5.000	0.000	19.8463	86.09000	7.83E-03	3.53E-03	7.23E-02	1.49E-01	3.50E-03
AM-241	5479.150	5.000	3.656	0.000	3.0704	99.94000	4.93E-03	2.60E-03	9.63E-03	2.29E-02	2.58E-03
CM-242	6102.000	10.000	9.000	1.000	4.3186	100.0000	1.30E-02	4.87E-03	1.35E-02	3.07E-02	4.80E-03
AM243	5270.000	774.000	772.000	2.000	1.4142	99.78000	1.04E+00	7.40E-02	4.44E-03	1.25E-02	3.76E-02
CM-247	4946.000	1.000	1.000	0.000	15.3366	79.30000	1.70E-03	1.70E-03	6.06E-02	1.26E-01	1.70E-03
CM-248	5078.600	2.000	2.000	0.000	22.1555	91.00000	2.96E-03	2.10E-03	7.63E-02	1.57E-01	2.09E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624005_AM
SAMPLE QTY: 1.255 G

DETECTOR NUMBER :78791
AVERAGE %EFFICIENCY :28.2764
% YIELD : 96.611

COUNT DATE: 7-JAN-2010 11:38:42
ELAPSED LIVE TIME(SEC): 59999.99
ANALYST :HAKB

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 : 2.81774 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B017.CNF;1924
BKG DATE : 3-JAN-2010
EFF FILE : W017.CNF;1260
CAL DATE : 4-JAN-2010

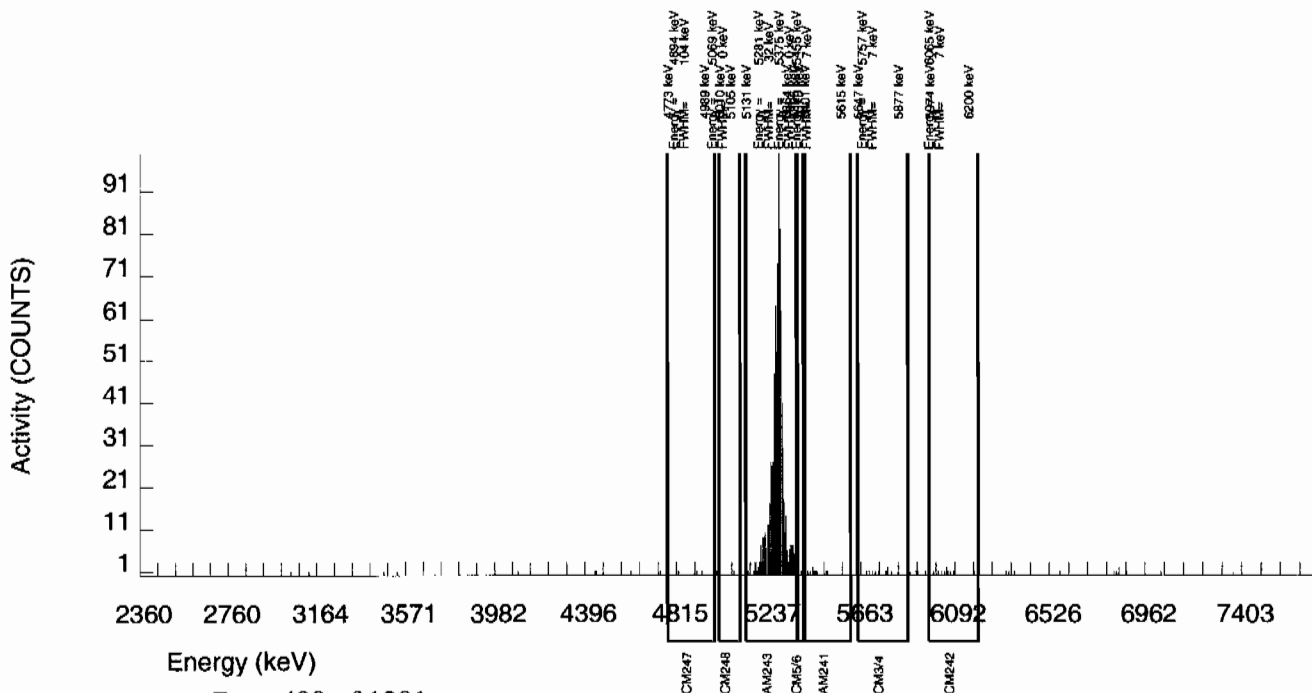
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	13.000	6.000	7.000	5.2338	100.0000	7.90E-03	5.91E-03	1.60E-02	3.56E-02	5.89E-03
CM-5/6	5386.000	6.000	5.000	1.000	19.8463	86.09000	7.63E-03	4.06E-03	7.05E-02	1.45E-01	4.04E-03
AM-241	5479.150	11.000	-1.384	11.000	3.0704	99.94000	-1.82E-03	5.97E-03	9.39E-03	2.23E-02	5.97E-03
CM-242	6102.000	10.000	9.000	1.000	4.3186	100.0000	1.27E-02	4.74E-03	1.32E-02	3.00E-02	4.68E-03
AM243	5270.000	796.000	795.000	1.000	1.0000	99.78000	1.05E+00	7.37E-02	3.06E-03	9.70E-03	3.72E-02
CM-247	4946.000	3.000	2.000	1.000	15.3366	79.30000	3.31E-03	3.32E-03	5.91E-02	1.23E-01	3.31E-03
CM-248	5078.600	4.000	3.000	1.000	22.1555	91.00000	4.33E-03	3.24E-03	7.44E-02	1.53E-01	3.23E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624006_AM
SAMPLE QTY: 1.261 G

DETECTOR NUMBER :78782
AVERAGE %EFFICIENCY :31.6882
% YIELD : 88.703

COUNT DATE: 7-JAN-2010 11:38:42
ELAPSED LIVE TIME(SEC): 59999.99
ANALYST :HAKB

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 : 2.58710 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B018.CNF;1076
BKG DATE : 3-JAN-2010
EFF FILE : W018.CNF;304
CAL DATE : 4-JAN-2010

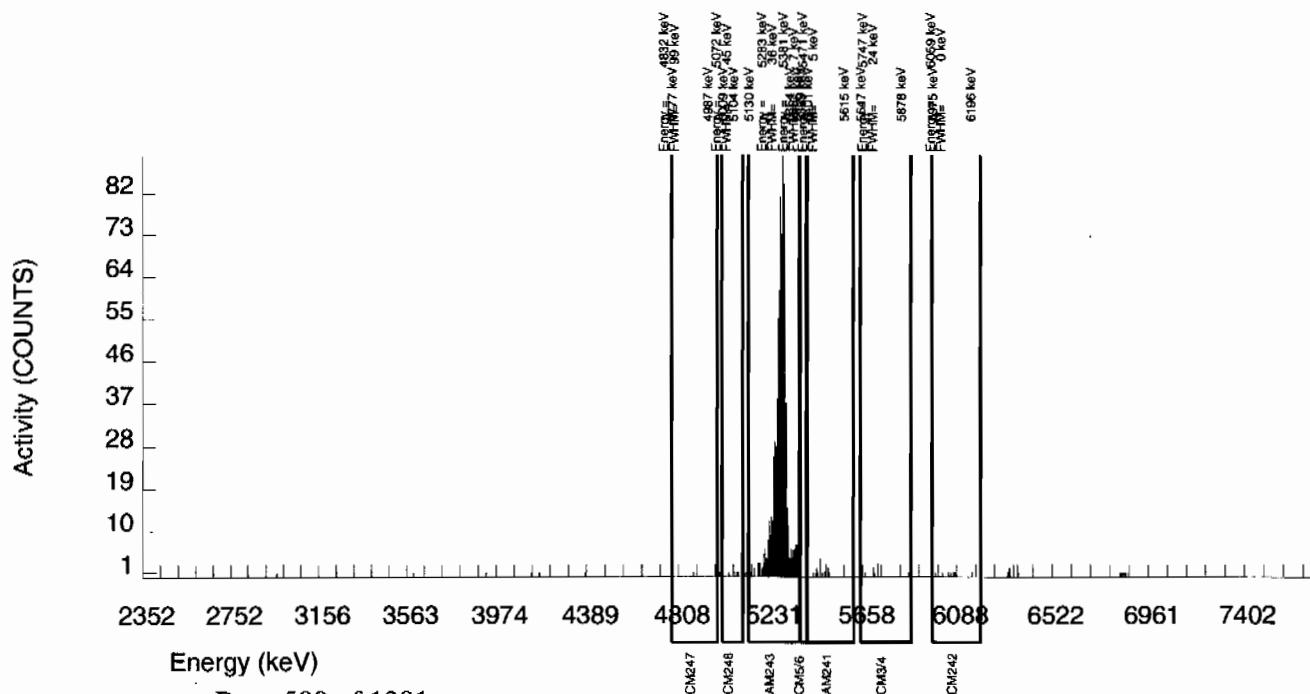
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	10.000	1.000	9.000	5.2338	100.0000	1.27E-03	5.55E-03	1.55E-02	3.44E-02	5.55E-03
CM-5/6	5386.000	4.000	3.000	1.000	19.8463	86.09000	4.43E-03	3.31E-03	6.82E-02	1.40E-01	3.30E-03
AM-241	5479.150	15.000	3.576	10.000	3.0704	99.94000	4.55E-03	6.18E-03	9.08E-03	2.16E-02	6.17E-03
CM-242	6102.000	9.000	4.000	5.000	4.3186	100.0000	5.46E-03	5.12E-03	1.28E-02	2.90E-02	5.11E-03
AM243	5270.000	820.000	818.000	2.000	1.4142	99.78000	1.04E+00	7.28E-02	4.19E-03	1.18E-02	3.65E-02
CM-247	4946.000	2.000	1.000	1.000	15.3366	79.30000	1.60E-03	2.78E-03	5.72E-02	1.19E-01	2.78E-03
CM-248	5078.600	4.000	0.000	4.000	22.1555	91.00000	0.00E+00	3.95E-03	7.20E-02	1.48E-01	3.95E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624007_AM
SAMPLE QTY: 1.250 G

DETECTOR NUMBER :67576
AVERAGE %EFFICIENCY :32.9403
% YIELD : 85.853

COUNT DATE: 7-JAN-2010 10:31:19
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 2.50398 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B077.CNF;1004
BKG DATE : 5-JAN-2010
EFF FILE : W077.CNF;259
CAL DATE : 10-DEC-2009

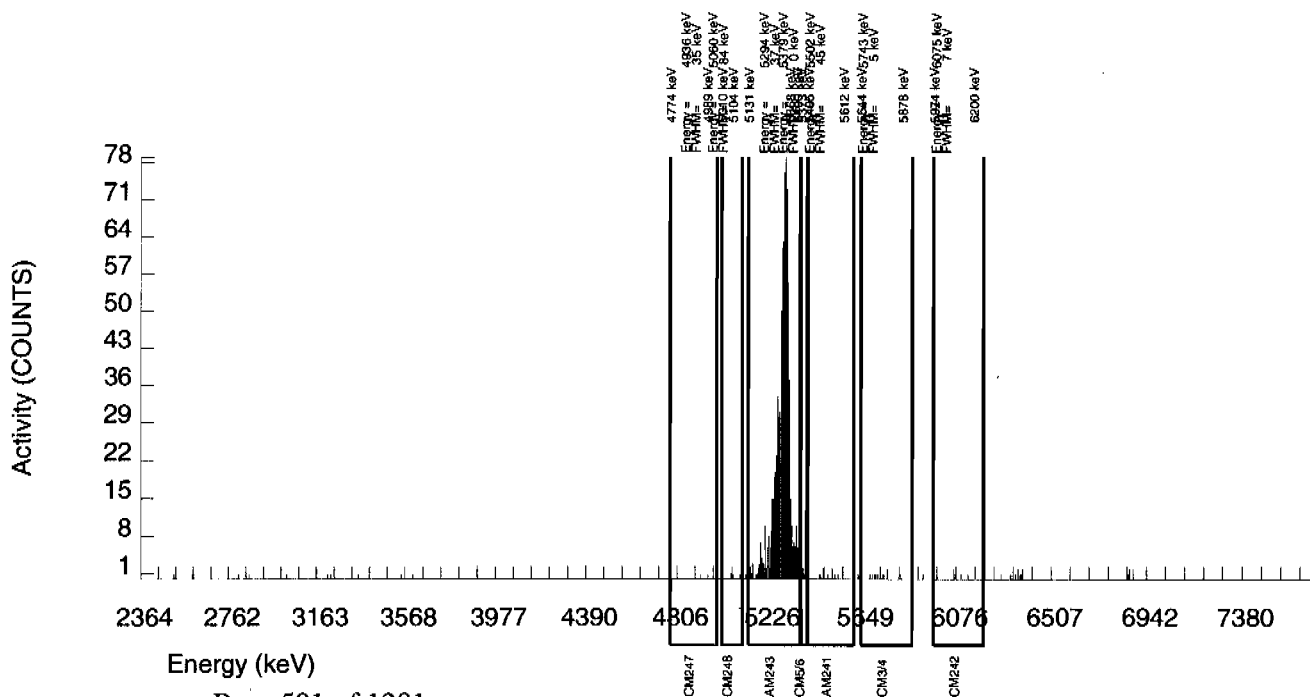
NUCLIDE ACTIVITY SUMMARY

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	11.000	8.000	3.000	5.2338	100.0000	1.02E-02	4.82E-03	1.55E-02	3.45E-02	4.78E-03
CM-5/6	5386.000	10.000	10.000	0.000	19.8463	86.09000	1.48E-02	4.77E-03	6.83E-02	1.41E-01	4.68E-03
AM-241	5479.150	9.000	0.568	7.000	3.0704	99.94000	7.24E-04	4.87E-03	9.11E-03	2.17E-02	4.87E-03
CM-242	6102.000	6.000	4.000	2.000	4.3186	100.0000	5.47E-03	3.88E-03	1.28E-02	2.91E-02	3.87E-03
AM243	5270.000	825.000	823.000	2.000	1.4142	99.78000	1.05E+00	7.33E-02	4.20E-03	1.19E-02	3.67E-02
CM-247	4946.000	2.000	0.000	2.000	15.3366	79.30000	0.00E+00	3.22E-03	5.73E-02	1.19E-01	3.21E-03
CM-248	5078.600	4.000	4.000	0.000	22.1555	91.00000	5.60E-03	2.82E-03	7.22E-02	1.48E-01	2.80E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624008_AM
SAMPLE QTY: 1.255 G

DETECTOR NUMBER :67577
AVERAGE %EFFICIENCY :32.0370
% YIELD : 94.494

COUNT DATE: 7-JAN-2010 10:31:19
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 2.75602 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B078.CNF;1004
BKG DATE : 5-JAN-2010
EFF FILE : W078.CNF;249
CAL DATE : 10-DEC-2009

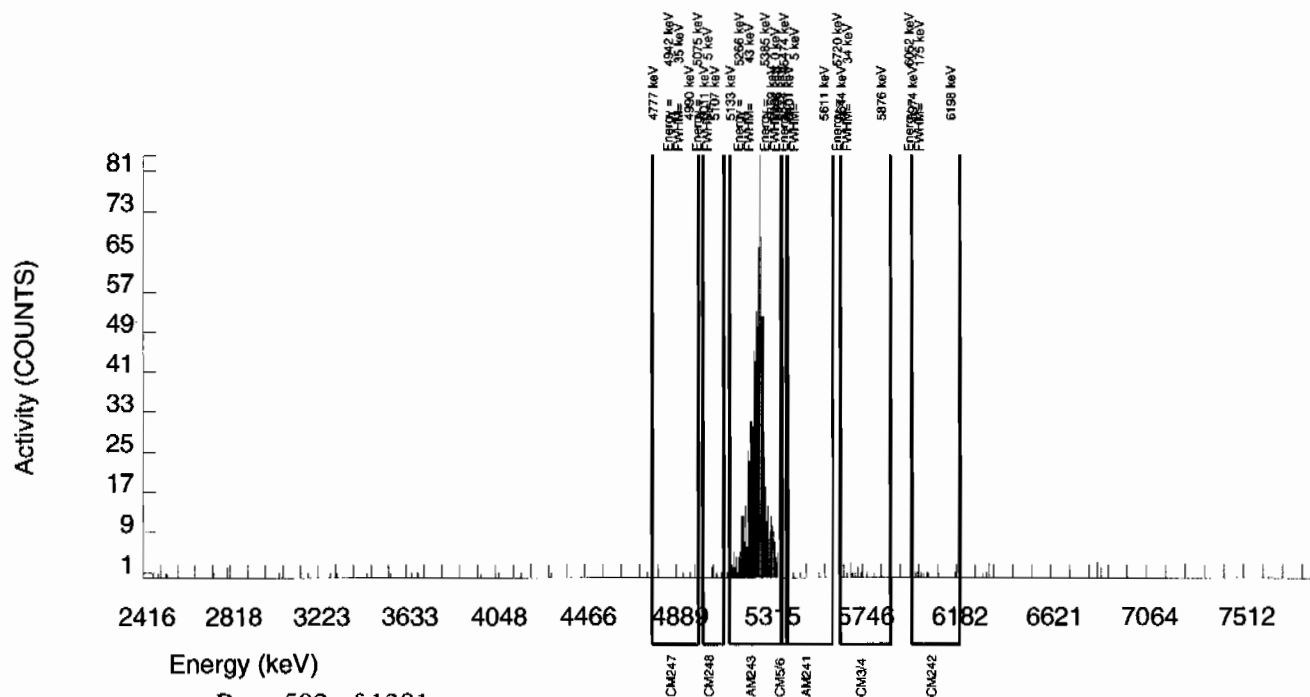
NUCLIDE ACTIVITY SUMMARY

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	13.000	9.000	4.000	5.2338	100.0000	1.07E-02	4.94E-03	1.44E-02	3.21E-02	4.90E-03
CM-5/6	5386.000	0.000	-1.000	1.000	19.8463	86.09000	-1.38E-03	1.95E-03	6.36E-02	1.31E-01	1.95E-03
AM-241	5479.150	6.000	-4.533	9.000	3.0704	99.94000	-5.38E-03	4.35E-03	8.47E-03	2.02E-02	4.35E-03
CM-242	6102.000	9.000	4.000	5.000	4.3186	100.0000	5.09E-03	4.77E-03	1.19E-02	2.70E-02	4.76E-03
AM243	5270.000	881.000	881.000	0.000	0.0000	99.78000	1.05E+00	7.17E-02	0.00E+00	3.22E-03	3.53E-02
CM-247	4946.000	2.000	1.000	1.000	15.3366	79.30000	1.50E-03	2.59E-03	5.33E-02	1.11E-01	2.59E-03
CM-248	5078.600	4.000	3.000	1.000	22.1555	91.00000	3.91E-03	2.92E-03	6.72E-02	1.38E-01	2.91E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210 SAMPLE DATE : 22-DEC-2009 00:00:00		SAMPLE ID : S0243624009_AM SAMPLE QTY: 1.258 G	
DETECTOR NUMBER :79466 AVERAGE %EFFICIENCY :32.3021 % YIELD : 91.591		COUNT DATE: 7-JAN-2010 10:31:19 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB	
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 : 2.67135 dpm	LIB FILE : ENV_ALPHA_AM.N BKG FILE : B079.CNF;1006 BKG DATE : 5-JAN-2010 EFF FILE : W079.CNF;264 CAL DATE : 10-DEC-2009

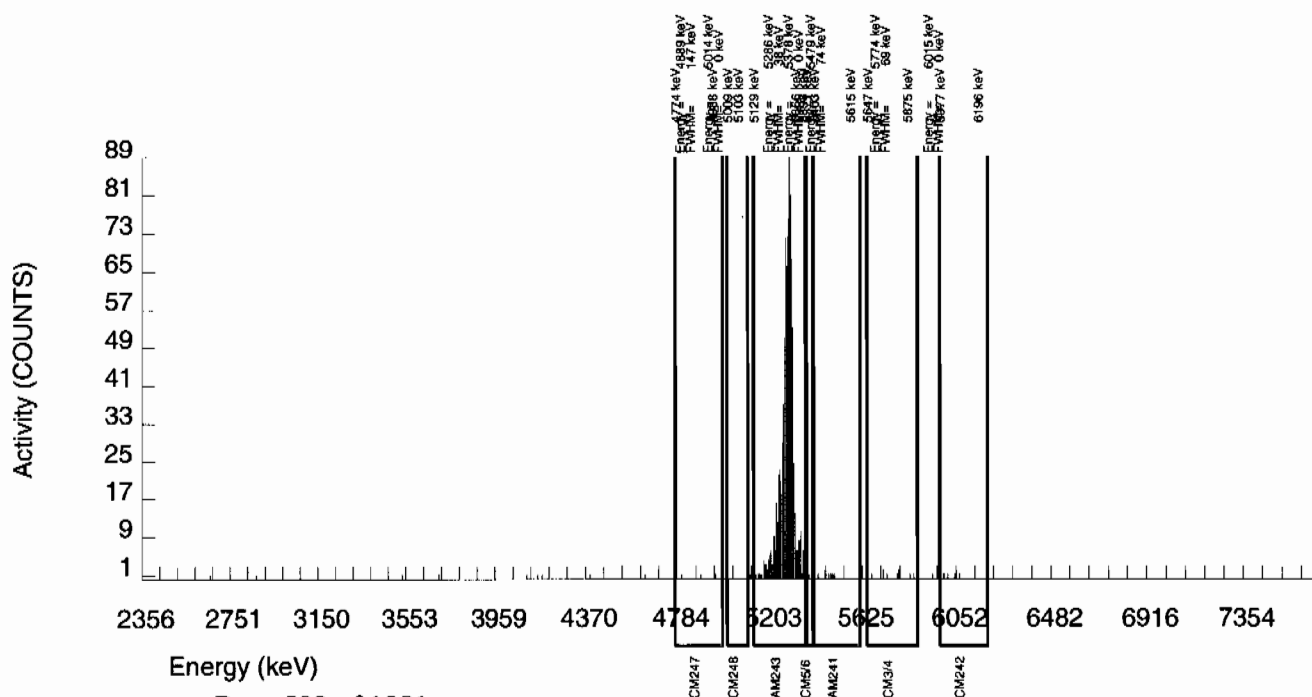
NUCLIDE ACTIVITY SUMMARY

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	9.000	9.000	0.000	5.2338	100.0000	1.09E-02	3.70E-03	1.47E-02	3.28E-02	3.64E-03
CM-5/6	5386.000	6.000	5.000	1.000	19.8463	86.09000	7.03E-03	3.74E-03	6.49E-02	1.34E-01	3.72E-03
AM-241	5479.150	7.000	5.501	0.000	3.0704	99.94000	6.66E-03	2.87E-03	8.65E-03	2.06E-02	2.84E-03
CM-242	6102.000	7.000	7.000	0.000	4.3186	100.0000	9.10E-03	3.48E-03	1.22E-02	2.76E-02	3.44E-03
AM243	5270.000	862.000	861.000	1.000	1.0000	99.78000	1.04E+00	7.20E-02	2.82E-03	8.93E-03	3.56E-02
CM-247	4946.000	3.000	3.000	0.000	15.3366	79.30000	4.58E-03	2.66E-03	5.45E-02	1.13E-01	2.64E-03
CM-248	5078.600	2.000	1.000	1.000	22.1555	91.00000	1.33E-03	2.30E-03	6.85E-02	1.41E-01	2.30E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210 SAMPLE DATE : 22-DEC-2009 00:00:00				SAMPLE ID : S0243624010_AM SAMPLE QTY: 1.278 G			
DETECTOR NUMBER :78197 AVERAGE %EFFICIENCY :33.1826 % YIELD : 82.223				COUNT DATE: 7-JAN-2010 10:31:19 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB			
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 : 2.39810 dpm		LIB FILE : ENV_ALPHA_AM.N BKG FILE : B080.CNF;1007 BKG DATE : 5-JAN-2010 EFF FILE : W080.CNF;272 CAL DATE : 10-DEC-2009	

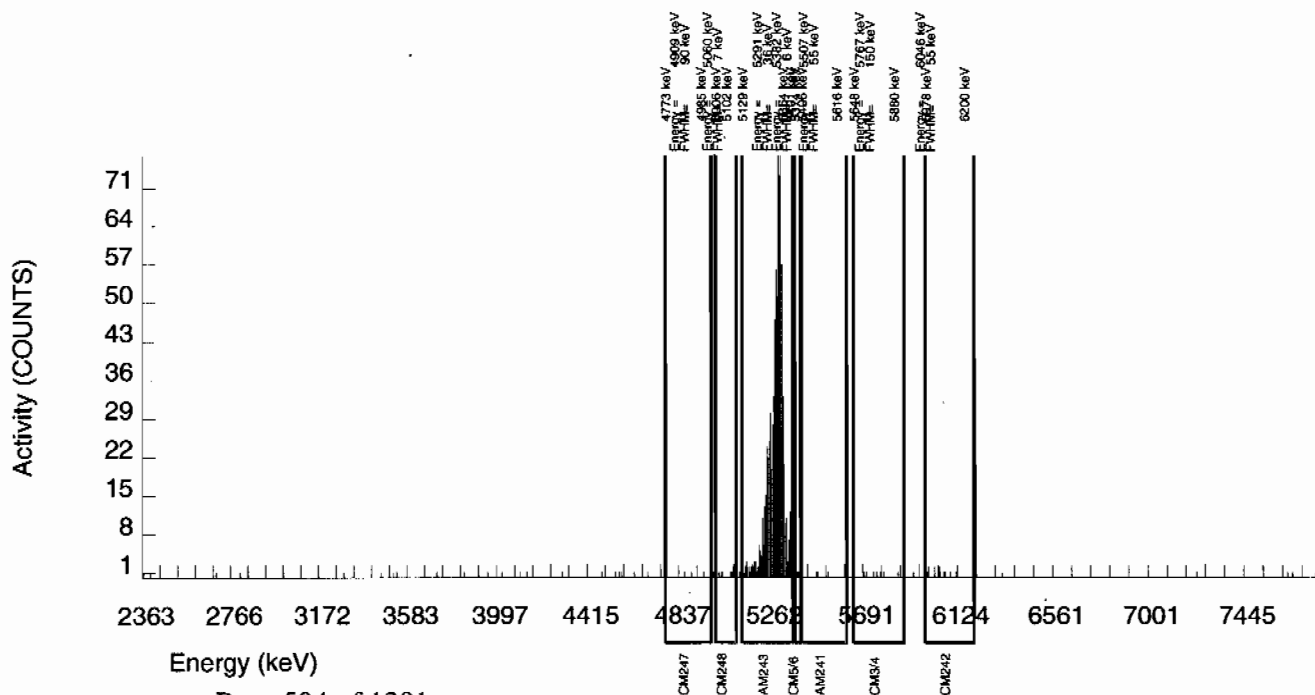
NUCLIDE ACTIVITY SUMMARY

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	8.000	6.000	2.000	5.2338	100.0000	7.76E-03	4.12E-03	1.57E-02	3.50E-02	4.09E-03
CM-5/6	5386.000	8.000	8.000	0.000	19.8463	86.09000	1.20E-02	4.31E-03	6.93E-02	1.43E-01	4.24E-03
AM-241	5479.150	4.000	2.618	0.000	3.0704	99.94000	3.38E-03	2.10E-03	9.23E-03	2.20E-02	2.09E-03
CM-242	6102.000	13.000	13.000	0.000	4.3186	100.0000	1.80E-02	5.12E-03	1.30E-02	2.95E-02	5.00E-03
AM243	5270.000	796.000	794.000	2.000	1.4142	99.78000	1.03E+00	7.24E-02	4.26E-03	1.20E-02	3.66E-02
CM-247	4946.000	3.000	3.000	0.000	15.3366	79.30000	4.89E-03	2.84E-03	5.81E-02	1.21E-01	2.82E-03
CM-248	5078.600	8.000	7.000	1.000	22.1555	91.00000	9.94E-03	4.30E-03	7.32E-02	1.50E-01	4.26E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624011_AM
SAMPLE QTY: 1.250 G

DETECTOR NUMBER :79449
AVERAGE %EFFICIENCY :37.8660
% YIELD : 99.186

COUNT DATE: 7-JAN-2010 10:33:55
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 2.89286 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B256.CNF;68
BKG DATE : 3-JAN-2010
EFF FILE : W256.CNF;24
CAL DATE : 28-DEC-2009

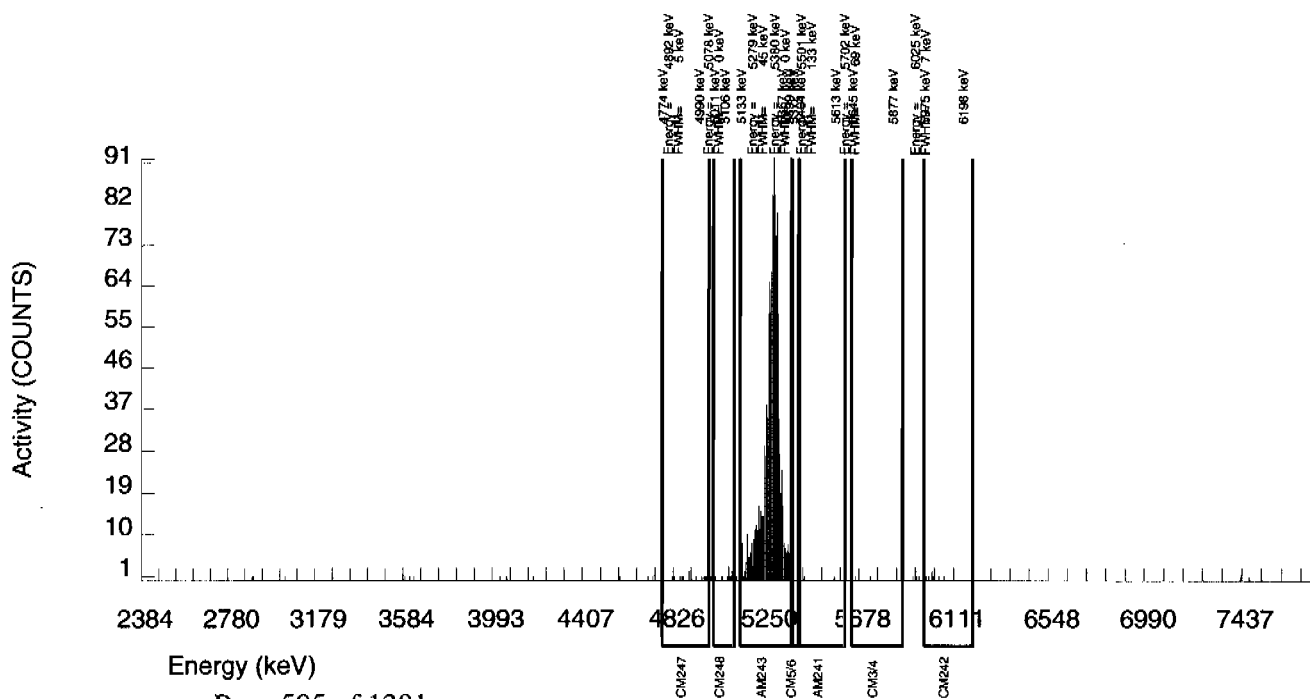
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	2.000	1.000	1.000	5.2338	100.0000	9.61E-04	1.67E-03	1.17E-02	2.60E-02	1.66E-03
CM-5/6	5386.000	9.000	8.000	1.000	19.8463	86.09000	8.92E-03	3.56E-03	5.15E-02	1.06E-01	3.52E-03
AM-241	5479.150	2.000	0.098	0.000	3.0704	99.94000	9.38E-05	9.62E-04	6.86E-03	1.63E-02	9.60E-04
CM-242	6102.000	7.000	6.000	1.000	4.3186	100.0000	6.18E-03	2.94E-03	9.64E-03	2.19E-02	2.91E-03
AM243	5270.000	1095.000	1093.000	2.000	1.4142	99.78000	1.05E+00	6.86E-02	3.16E-03	8.93E-03	3.18E-02
CM-247	4946.000	14.000	13.000	1.000	15.3366	79.30000	1.57E-02	4.77E-03	4.32E-02	8.96E-02	4.69E-03
CM-248	5078.600	14.000	14.000	0.000	22.1555	91.00000	1.48E-02	4.04E-03	5.43E-02	1.12E-01	3.95E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S1202007550_AM
SAMPLE QTY: 1.000 G

DETECTOR NUMBER :76544
AVERAGE %EFFICIENCY :33.8926
% YIELD : 95.911

COUNT DATE: 7-JAN-2010 10:31:18
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 2.79732 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B046.CNF;1104
BKG DATE : 3-JAN-2010
EFF FILE : W046.CNF;287
CAL DATE : 4-JAN-2010

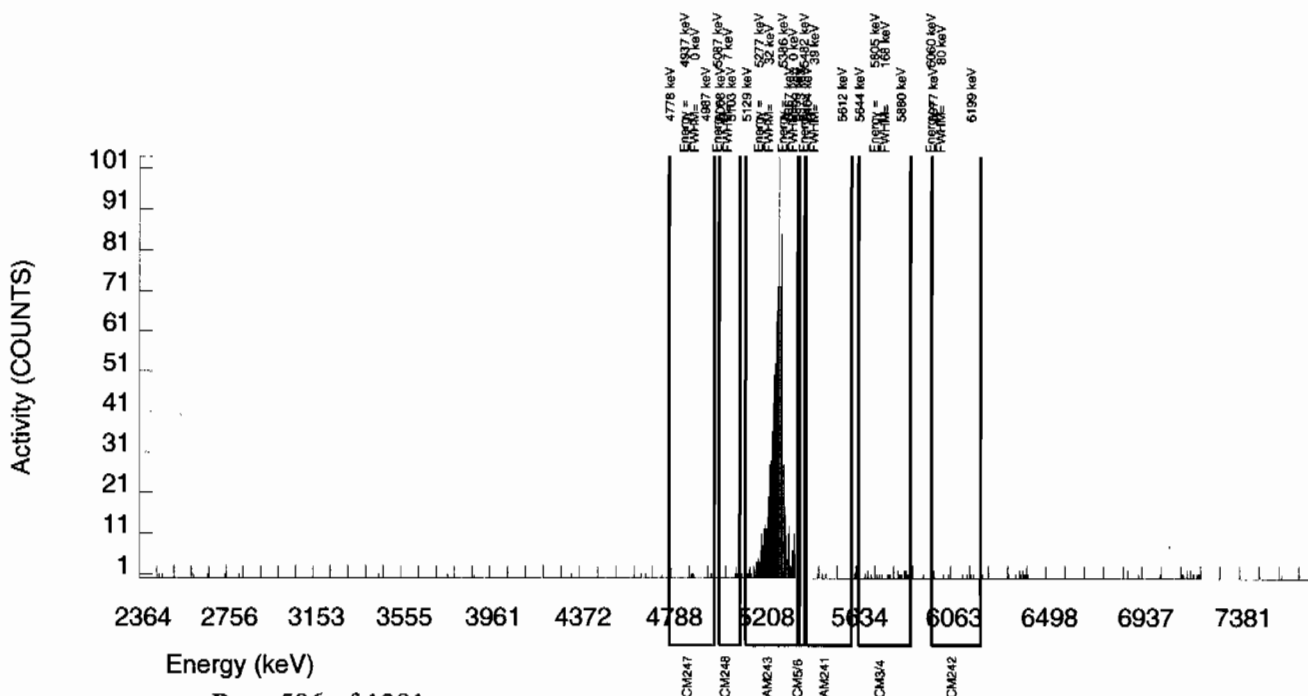
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	23.000	5.000	18.000	5.2338	100.0000	6.93E-03	8.88E-03	1.69E-02	3.75E-02	8.88E-03
CM-5/6	5386.000	2.000	2.000	0.000	19.8463	86.09000	3.22E-03	2.28E-03	7.43E-02	1.53E-01	2.28E-03
AM-241	5479.150	3.000	-2.646	4.000	3.0704	99.94000	-3.67E-03	3.21E-03	9.90E-03	2.36E-02	3.21E-03
CM-242	6102.000	13.000	8.000	5.000	4.3186	100.0000	1.12E-02	5.99E-03	1.39E-02	3.16E-02	5.95E-03
AM243	5270.000	949.000	946.000	3.000	1.7321	99.78000	1.31E+00	8.87E-02	5.60E-03	1.50E-02	4.28E-02
CM-247	4946.000	6.000	5.000	1.000	15.3366	79.30000	8.74E-03	4.65E-03	6.23E-02	1.29E-01	4.62E-03
CM-248	5078.600	7.000	7.000	0.000	22.1555	91.00000	1.07E-02	4.08E-03	7.85E-02	1.61E-01	4.03E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S1202007551_AM
SAMPLE QTY: 1.254 G

DETECTOR NUMBER :79459
AVERAGE %EFFICIENCY :34.8103
% YIELD : 76.404

COUNT DATE: 7-JAN-2010 10:31:18
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 2.22839 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B044.CNF;1104
BKG DATE : 3-JAN-2010
EFF FILE : W044.CNF;305
CAL DATE : 4-JAN-2010

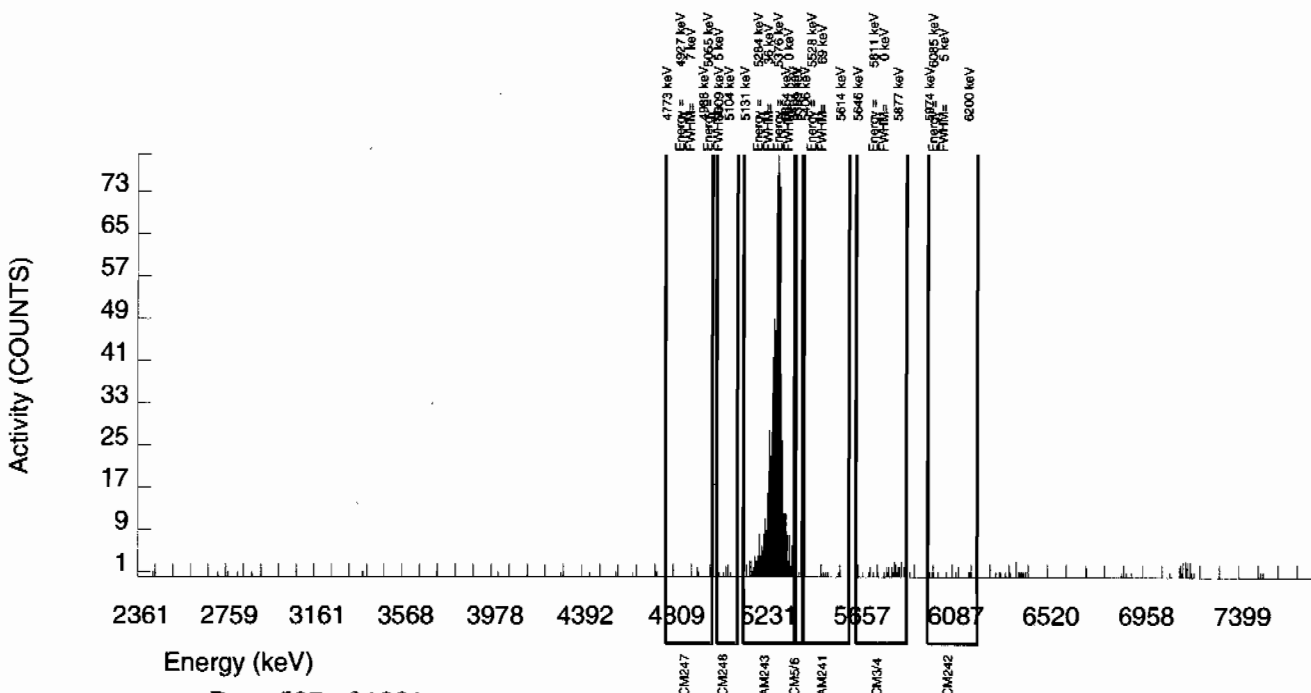
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
CM-3/4	5795.020	31.000	9.000	22.000	5.2338	100.0000	1.22E-02	9.88E-03	1.64E-02	3.65E-02	9.85E-03
CM-5/6	5386.000	10.000	10.000	0.000	19.8463	86.09000	1.57E-02	5.05E-03	7.24E-02	1.49E-01	4.96E-03
AM-241	5479.150	4.000	1.653	1.000	3.0704	99.94000	2.23E-03	2.59E-03	9.65E-03	2.30E-02	2.58E-03
CM-242	6102.000	9.000	5.000	4.000	4.3186	100.0000	7.25E-03	5.25E-03	1.36E-02	3.08E-02	5.23E-03
AM243	5270.000	775.000	774.000	1.000	1.0000	99.78000	1.05E+00	7.42E-02	3.15E-03	9.97E-03	3.77E-02
CM-247	4946.000	3.000	-1.000	4.000	15.3366	79.30000	-1.70E-03	4.51E-03	6.08E-02	1.26E-01	4.51E-03
CM-248	5078.600	7.000	7.000	0.000	22.1555	91.00000	1.04E-02	3.98E-03	7.65E-02	1.57E-01	3.93E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938210
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S1202007552_AM
SAMPLE QTY: 0.102 G

DETECTOR NUMBER :78783
AVERAGE %EFFICIENCY :33.6899
% YIELD : 94.550

COUNT DATE: 7-JAN-2010 10:31:18
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 2.75763 dpm

LIB FILE : ENV_ALPHA_AM.N
BKG FILE : B045.CNF;1093
BKG DATE : 3-JAN-2010
EFF FILE : W045.CNF;296
CAL DATE : 4-JAN-2010

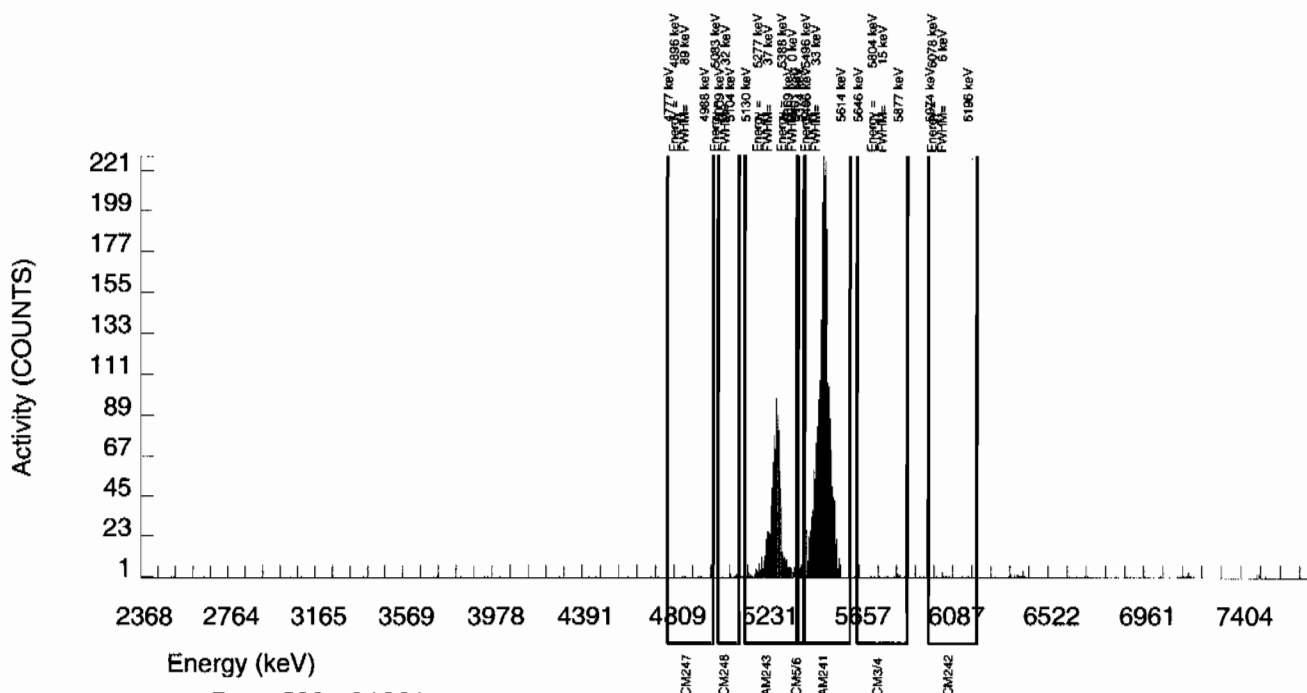
NUCLIDE ACTIVITY SUMMARY

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
CM-3/4	5795.020	16.000	-8.000	24.000	5.2338	100.0000	-1.11E-01	8.77E-02	1.69E-01	3.75E-01	8.77E-02
CM-5/6	5386.000	39.000	39.000	0.000	19.8463	86.09000	6.28E-01	1.09E-01	7.44E-01	1.53E+00	1.01E-01
AM-241	5479.150	2417.000	2414.387	1.000	3.0704	99.94000	3.35E+01	2.35E+00	9.91E-02	2.36E-01	6.82E-01
CM-242	6102.000	11.000	10.000	1.000	4.3186	100.0000	1.40E-01	4.95E-02	1.39E-01	3.16E-01	4.86E-02
AM243	5270.000	928.000	927.000	1.000	1.0000	99.78000	1.29E+01	9.63E-01	3.23E-02	1.02E-01	4.23E-01
CM-247	4946.000	6.000	5.000	1.000	15.3366	79.30000	8.74E-02	4.66E-02	6.24E-01	1.29E+00	4.63E-02
CM-248	5078.600	8.000	8.000	0.000	22.1555	91.00000	1.22E-01	4.39E-02	7.85E-01	1.61E+00	4.31E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)

NOTE: Sg of AM243 calculated as sqrt(BKG AREA)

NOTE: Corrections made to AM-241 net area due to tracer impurity



Radiochemistry Batch Checklist, Rev 9

Batch# 938221 Product: Pv Date: 1/13/10

Critera:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10" MDA/ MDC, error is 150% or less of sample activity. If greater 10" MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are less 5" MDA/ MDC, then RPD is 100% or less. If greater 5" MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%.	✓		
Or meets the client's required RER acceptance criteria.			
Tracer yield is 15-125% . Carrier yield 25-125%.	✓		Case Narrative
Or meets the client's contract acceptance criteria.			
Method blank is less than the RDL/ LLD.	✓		Case Narrative
(If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
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 apoarent.			
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:

Jop L. McInt- 1/13/10

Secondary Review Performed By:

E. [Signature] 1/14/10

1/21

LANL

Plutonium Que Sheet

04-JAN-10

Batch #: 938221 Analyst: HAKB First Client Due Date: 21-JAN-10 Internal Due Date: 10-JAN-10

Tracer Isotope(s): Pu-239/Pu-238 Tracer Code: 134-A Expiration Date: 12/08/10 Vol: 0.1
 LCS Isotope(s): Pu-239/Pu-238 LCS Code: Spike Code: Expiration Date: Vol: ---
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: Expiration Date: Vol: ---

Prep Date: 01/05/10 Initials: JVO Pipet ID: 2971058 Balance ID: 50410272 Witness: 1/5/10 CMM

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot	Pu Det #
243557014-1	RE03-10-9872	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	1	1	1.275	209-
243557015-1	RE03-10-9874	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	2	2	1.263	240
243624001-1	RE12-10-7841	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	3	3	1.263	223
243624002-1	RE12-10-7840	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	4	4	1.252	224
243624003-1	RE12-10-7839	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	5	5	1.251	71
243624004-1	RE12-10-7838	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	6	6	1.260	76
243624005-1	RE12-10-7848	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	7	7	1.255	23-210
243624006-1	RE12-10-7846	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	8	8	1.261	84
243624007-1	RE12-10-7844	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	9	9	1.250	85
243624008-1	RE12-10-7845	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	10	10	1.255	86
243624009-1	RE12-10-7842	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	11	11	1.258	87
243624010-1	RE12-10-7843	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	12	12	1.278	88 07/11/10
243624011-1	RE12-10-7847	SAMPLE	.05 pCi/g		SOIL	LANL010	22-DEC-09	13	13	1.250	255 43
1202007553-1	MB for batch 938221	MB	.05 pCi/g		SOIL	QC ACCOUNT		14	14	1.00	47
1202007554-1	RE12-10-7845(243624008DUP)	DUP	.05 pCi/g		SOIL	QC ACCOUNT	22-DEC-09	15	15	1.254	48
1202007555-1	LCS for batch 938221	LCS	.05 pCi/g		SOIL	QC ACCOUNT		16	16	0.102	43 255

* SRM: 0244-8 exp 01/30/20 0.102g

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]

GEL Laboratories LLC, Radiochemistry Division

Page: 1 of 1

20M 1/12/10

Blank Correction Report

Batch ID 938221

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202007554	DUP	Plutonium-238	1.25 g	0.0034	0.0059	0.0187	.0068	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00113	0.00254	0.0214	.0068	pCi/g	YES
1202007555	LCS	Plutonium-238	0.102 g	6.95	0.485	0.180	.083333333	pCi/g	NO
		Plutonium-239/240	0.102 g	36.2	2.17	0.206	.083333333	pCi/g	NO
1202007553	MB	Plutonium-238	1.00 g	0.0085	0.00569	0.0234	.0085	pCi/g	YES
		Plutonium-239/240	1.00 g	0.0085	0.00493	0.0268	.0085	pCi/g	YES
243557014	RE03-10-9872	Plutonium-238	1.28 g	0.00202	0.00143	0.0166	.006640625	pCi/g	YES
		Plutonium-239/240	1.28 g	0.00101	0.00101	0.019	.006640625	pCi/g	YES
243557015	RE03-10-9874	Plutonium-238	1.26 g	0.00186	0.00132	0.0153	.006746032	pCi/g	YES
		Plutonium-239/240	1.26 g	0.000928	0.000929	0.0175	.006746032	pCi/g	YES
243624001	RE12-10-7841	Plutonium-238	1.26 g	0.00737	0.00263	0.0152	.006746032	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00552	0.00227	0.0174	.006746032	pCi/g	YES
243624002	RE12-10-7840	Plutonium-238	1.25 g	0.00301	0.00174	0.0166	.0068	pCi/g	YES
		Plutonium-239/240	1.25 g	0.017	0.00445	0.0189	.0068	pCi/g	YES
243624003	RE12-10-7839	Plutonium-238	1.25 g	0.00885	0.00496	0.0183	.0068	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00774	0.00295	0.0209	.0068	pCi/g	YES
243624004	RE12-10-7838	Plutonium-238	1.26 g	0.00119	0.00206	0.0197	.006746032	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00714	0.00339	0.0225	.006746032	pCi/g	YES
243624006	RE12-10-7846	Plutonium-238	1.26 g	0.0093	0.00313	0.0171	.006746032	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00826	0.00389	0.0195	.006746032	pCi/g	YES
243624007	RE12-10-7844	Plutonium-238	1.25 g	0.00	0.00167	0.0195	.0068	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00708	0.00291	0.0223	.0068	pCi/g	YES
243624008	RE12-10-7845	Plutonium-238	1.26 g	0.00117	0.00262	0.0193	.006746032	pCi/g	YES
		Plutonium-239/240	1.26 g	-0.00351	0.00309	0.0221	.006746032	pCi/g	YES
243624009	RE12-10-7842	Plutonium-238	1.26 g	-0.00444	0.00351	0.0183	.006746032	pCi/g	YES
		Plutonium-239/240	1.26 g	0.00555	0.00485	0.021	.006746032	pCi/g	YES
243624010	RE12-10-7843	Plutonium-238	1.28 g	0.00246	0.00628	0.0203	.006640625	pCi/g	YES
		Plutonium-239/240	1.28 g	0.00862	0.00372	0.0233	.006640625	pCi/g	YES
243624011	RE12-10-7847	Plutonium-238	1.25 g	0.00819	0.00326	0.0169	.0068	pCi/g	YES
		Plutonium-239/240	1.25 g	0.00307	0.0034	0.0193	.0068	pCi/g	YES

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S1202007555_PU
SAMPLE QTY: 0.102 G

DETECTOR NUMBER :79448
AVERAGE %EFFICIENCY :37.8834
% YIELD : 109.472

COUNT DATE: 7-JAN-2010 10:33:54
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 3.70610 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B255.CNF;66
BKG DATE : 3-JAN-2010
EFF FILE : W255.CNF;24
CAL DATE : 28-DEC-2009

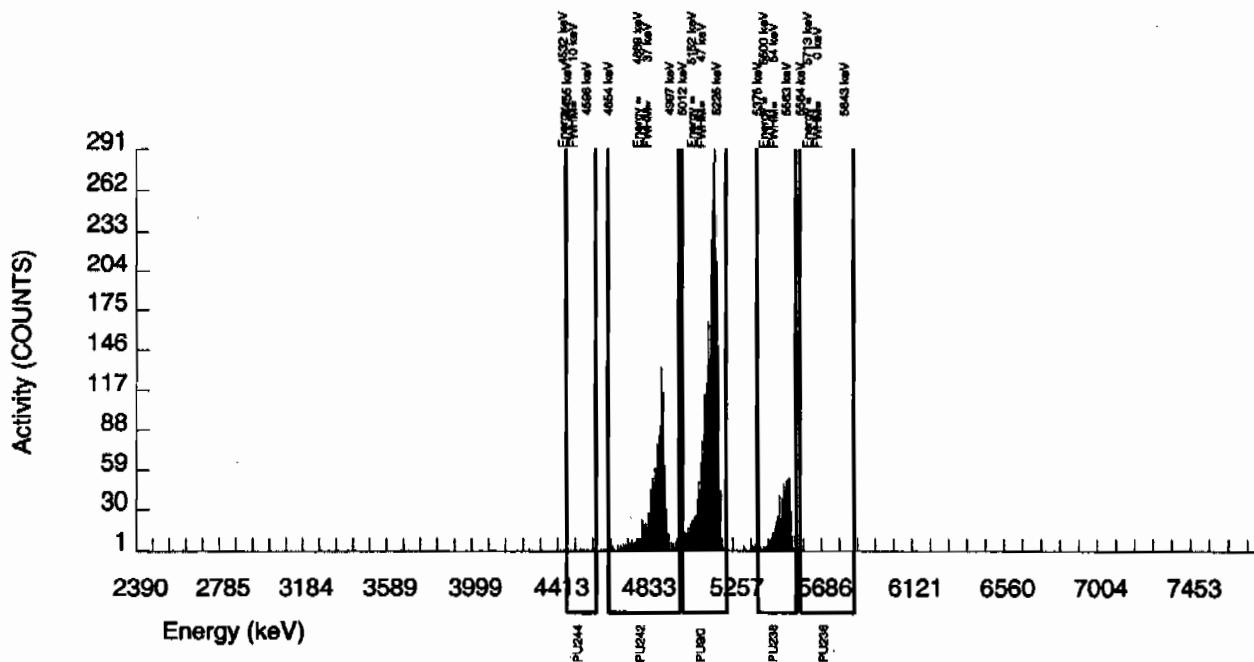
NUCLIDE ACTIVITY SUMMARY

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	3286.000	3286.000	0.000	3.4797	99.90000	3.50E+01	2.10E+00	8.63E-02	2.01E-01	6.11E-01
PU-238	5749.000	0.000	0.000	0.000	2.1286	100.0000	0.00E+00	1.07E-02	5.27E-02	1.34E-01	1.07E-02
PU-238	5499.000	638.000	638.000	0.000	2.9680	99.90000	6.80E+00	4.73E-01	7.36E-02	1.76E-01	2.69E-01
PU242	4890.000	1405.000	1404.000	1.000	1.0000	100.0000	1.50E+01	9.44E-01	2.48E-02	7.84E-02	3.99E-01
PU-244	4589.000	16.000	15.000	1.000	5.2050	99.90000	1.60E-01	4.49E-02	1.29E-01	2.87E-01	4.39E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)

Integrated

DO NOT REPORT



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624001_PU
SAMPLE QTY: 1.263 G

DETECTOR NUMBER :79416
AVERAGE %EFFICIENCY :37.0261
% YIELD : 104.747

COUNT DATE: 7-JAN-2010 11:37:33
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

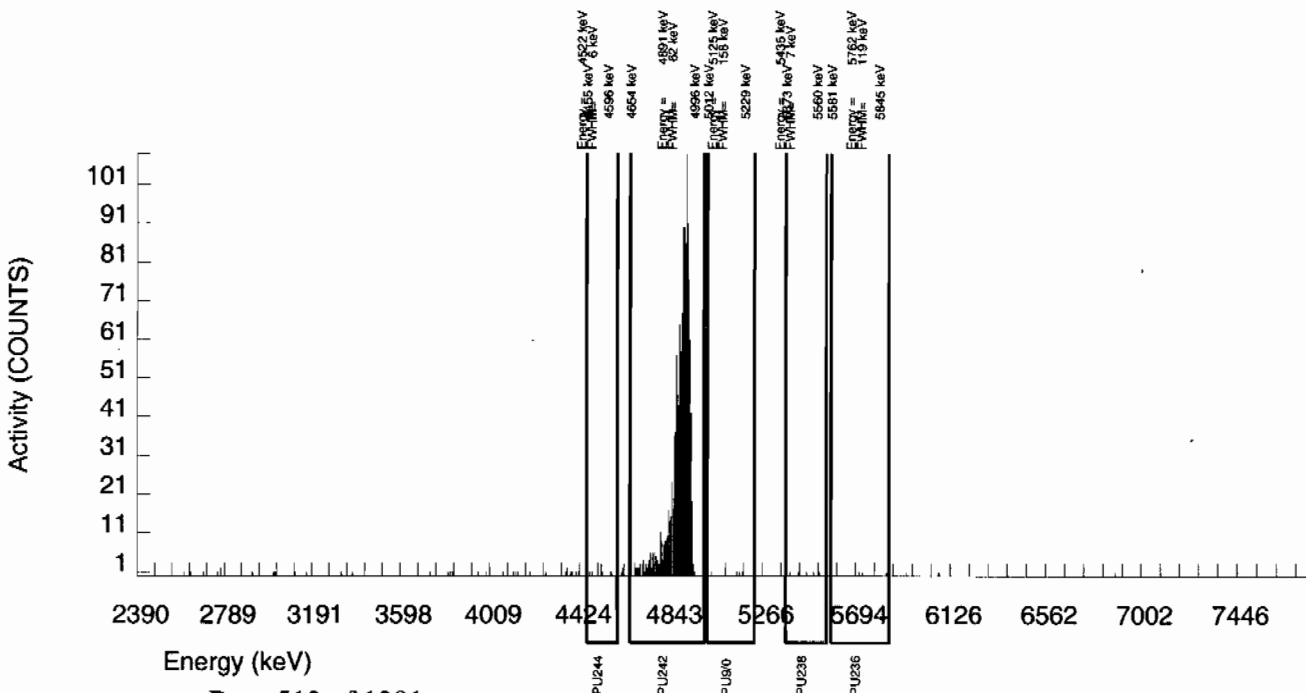
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.54615 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B223.CNF;68
BKG DATE : 3-JAN-2010
EFF FILE : W223.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	6.000	6.000	0.000	3.4797	99.90000	5.52E-03	2.27E-03	7.45E-03	1.74E-02	2.25E-03
PU-236	5749.000	3.000	3.000	0.000	2.1286	100.0000	2.79E-03	1.62E-03	4.55E-03	1.16E-02	1.61E-03
PU-238	5499.000	8.000	8.000	0.000	2.9680	99.90000	7.37E-03	2.63E-03	6.36E-03	1.52E-02	2.60E-03
PU242	4890.000	1313.000	1313.000	0.000	0.0000	100.0000	1.21E+00	6.71E-02	0.00E+00	2.49E-03	3.33E-02
PU-244	4589.000	11.000	10.000	1.000	5.2050	99.90000	9.21E-03	3.22E-03	1.11E-02	2.48E-02	3.19E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624002_PU
SAMPLE QTY: 1.252 G

DETECTOR NUMBER :79417
AVERAGE %EFFICIENCY :37.6848
% YIELD : 95.391

COUNT DATE: 7-JAN-2010 11:37:36
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

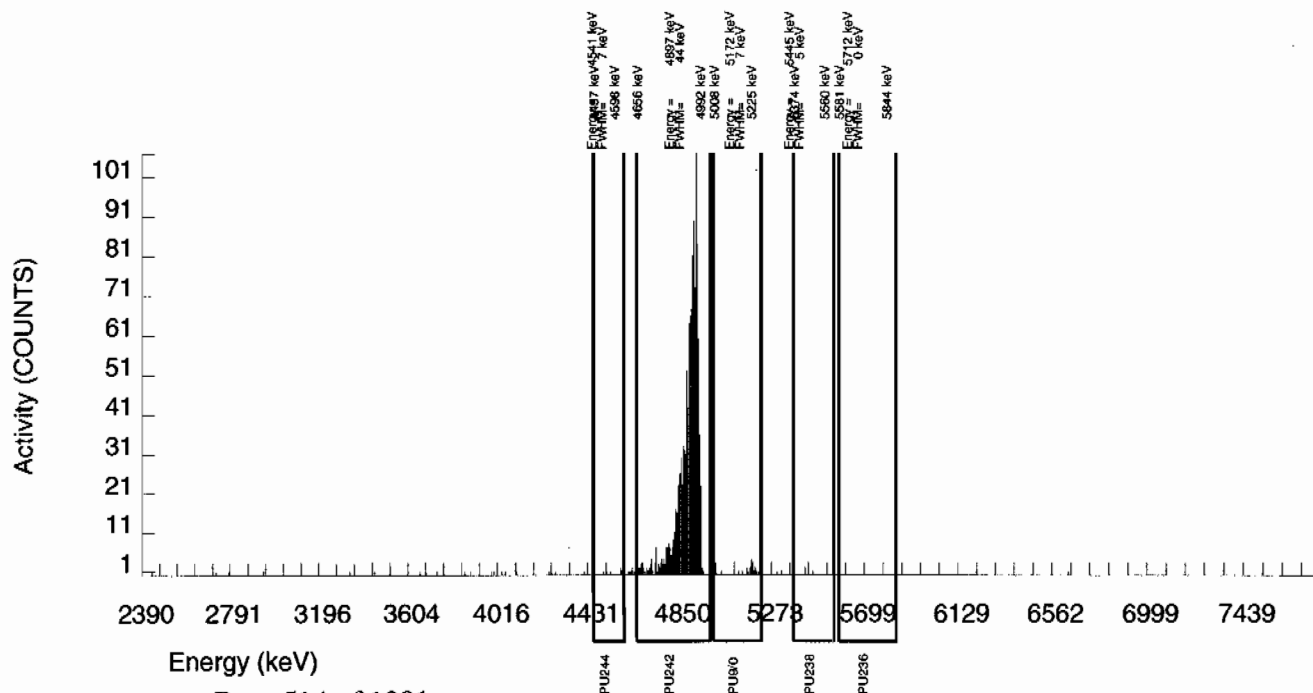
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.22941 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B224.CNF;66
BKG DATE : 3-JAN-2010
EFF FILE : W224.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	18.000	17.000	1.000	3.4797	99.90000	1.70E-02	4.45E-03	8.11E-03	1.89E-02	4.37E-03
PU-236	5749.000	0.000	0.000	0.000	2.1286	100.0000	0.00E+00	1.01E-03	4.96E-03	1.26E-02	1.01E-03
PU-238	5499.000	3.000	3.000	0.000	2.9680	99.90000	3.01E-03	1.74E-03	6.92E-03	1.65E-02	1.74E-03
PU242	4890.000	1219.000	1217.000	2.000	1.4142	100.0000	1.22E+00	6.90E-02	3.29E-03	9.30E-03	3.50E-02
PU-244	4589.000	8.000	7.000	1.000	5.2050	99.90000	7.01E-03	3.03E-03	1.21E-02	2.70E-02	3.01E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624003_PU
SAMPLE QTY: 1.251 G

DETECTOR NUMBER :64259
AVERAGE %EFFICIENCY :31.7421
% YIELD :102.735

COUNT DATE: 7-JAN-2010 11:38:43
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

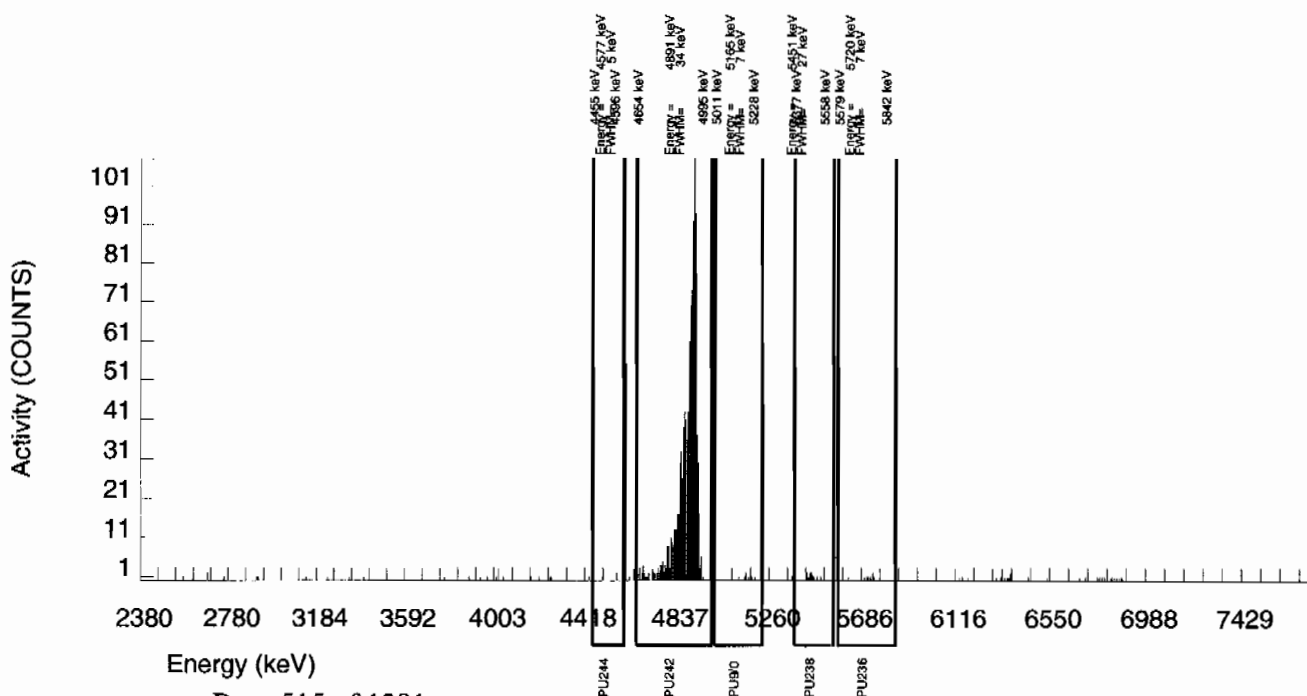
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.47803 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B071.CNF;1089
BKG DATE : 5-JAN-2010
EFF FILE : W071.CNF;282
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	7.000	7.000	0.000	3.4797	99.90000	7.74E-03	2.95E-03	8.95E-03	2.09E-02	2.92E-03
PU-236	5749.000	8.000	-2.000	10.000	2.1286	100.0000	-2.23E-03	4.74E-03	5.47E-03	1.39E-02	4.74E-03
PU-238	5499.000	14.000	8.000	6.000	2.9680	99.90000	8.85E-03	4.96E-03	7.63E-03	1.83E-02	4.94E-03
PU242	4890.000	1108.000	1104.000	4.000	2.0000	100.0000	1.22E+00	7.11E-02	5.14E-03	1.33E-02	3.68E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	2.21E-03	2.21E-03	1.34E-02	2.98E-02	2.21E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



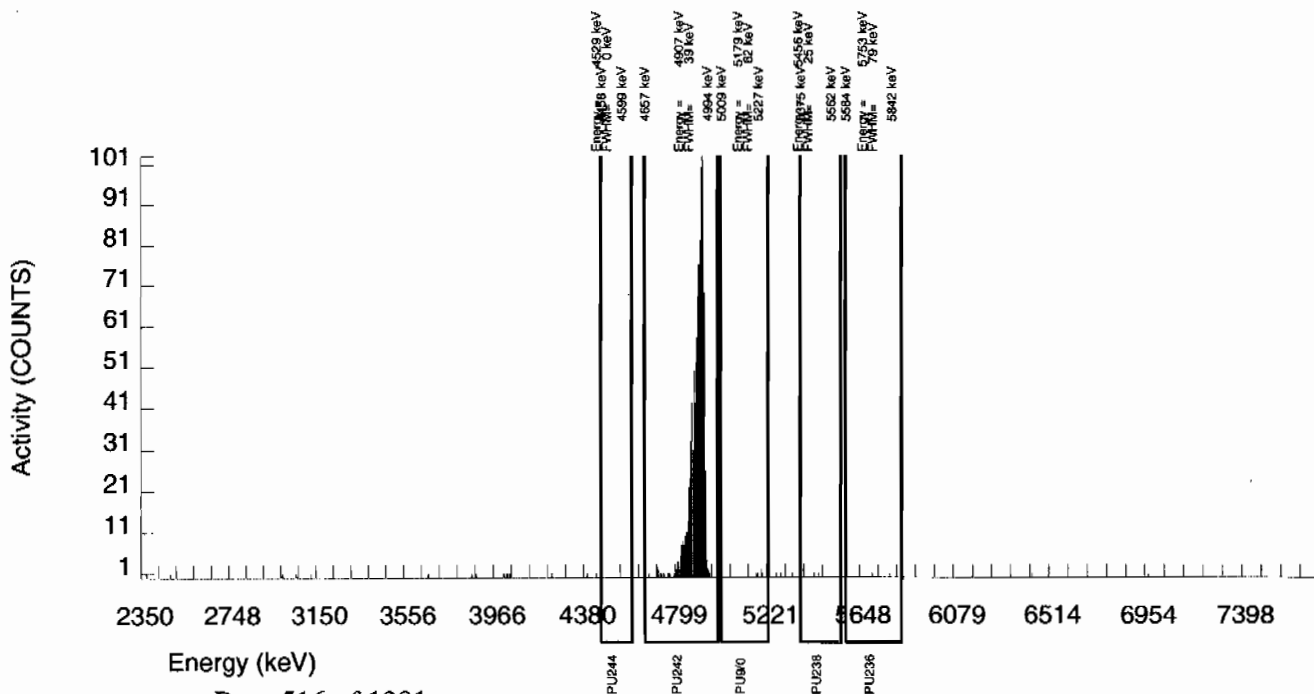
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221 SAMPLE DATE : 22-DEC-2009 00:00:00			SAMPLE ID : S0243624004_PU SAMPLE QTY: 1.260 G		
DETECTOR NUMBER :78779 AVERAGE %EFFICIENCY :30.5630 % YIELD : 98.387			COUNT DATE: 7-JAN-2010 11:38:43 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB		
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 : 3.33082 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B076.CNF;1095 BKG DATE : 5-JAN-2010 EFF FILE : W076.CNF;291 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	7.000	6.000	1.000	3.4797	99.90000	7.14E-03	3.39E-03	9.63E-03	2.25E-02	3.37E-03
PU-236	5749.000	2.000	2.000	0.000	2.1286	100.0000	2.40E-03	1.70E-03	5.89E-03	1.50E-02	1.70E-03
PU-238	5499.000	2.000	1.000	1.000	2.9680	99.90000	1.19E-03	2.06E-03	8.22E-03	1.97E-02	2.06E-03
PU242	4890.000	1022.000	1018.000	4.000	2.0000	100.0000	1.21E+00	7.22E-02	5.53E-03	1.43E-02	3.81E-02
PU-244	4589.000	0.000	0.000	0.000	5.2050	99.90000	0.00E+00	1.19E-03	1.44E-02	3.20E-02	1.19E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624006_PU
SAMPLE QTY: 1.261 G

DETECTOR NUMBER :78265
AVERAGE %EFFICIENCY :33.9057
% YIELD : 102.103

COUNT DATE: 7-JAN-2010 10:31:20
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

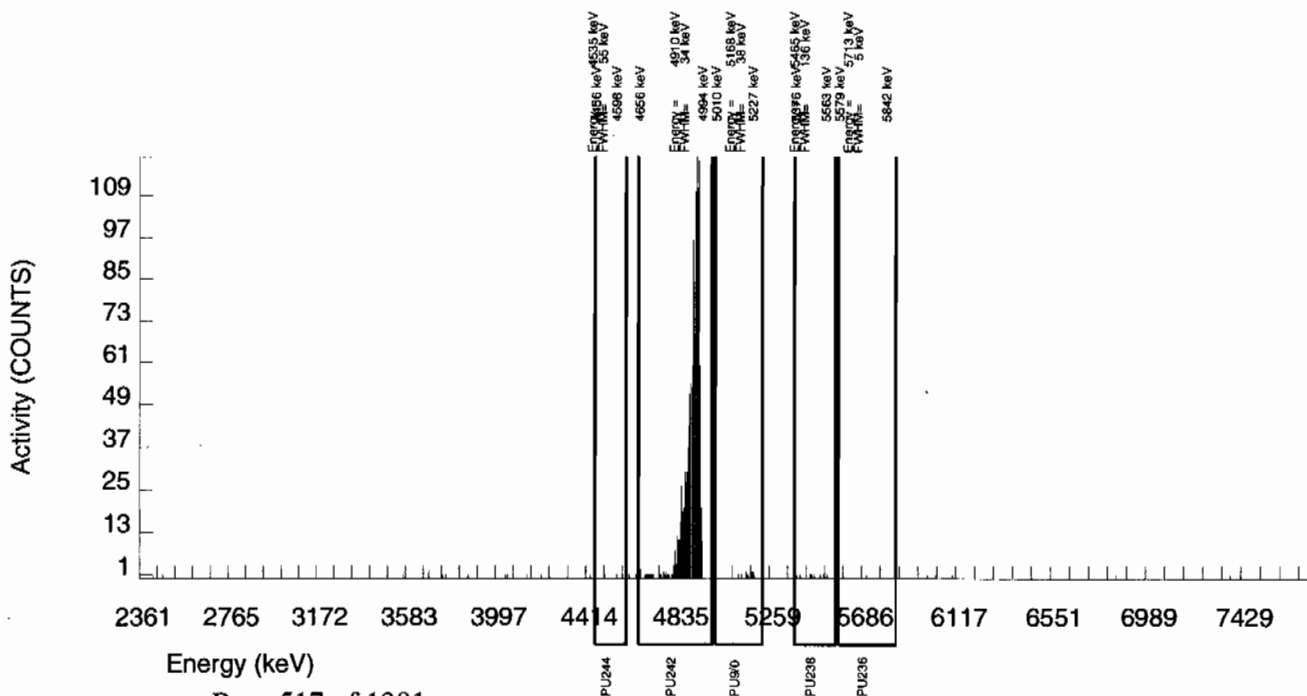
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.45664 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B084.CNF;1009
BKG DATE : 5-JAN-2010
EFF FILE : W084.CNF;291
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	11.000	8.000	3.000	3.4797	99.90000	8.26E-03	3.89E-03	8.36E-03	1.95E-02	3.86E-03
PU-236	5749.000	1.000	1.000	0.000	2.1286	100.0000	1.04E-03	1.04E-03	5.11E-03	1.30E-02	1.04E-03
PU-238	5499.000	9.000	9.000	0.000	2.9680	99.90000	9.30E-03	3.13E-03	7.13E-03	1.71E-02	3.10E-03
PU242	4890.000	1172.000	1172.000	0.000	0.0000	100.0000	1.21E+00	6.93E-02	0.00E+00	2.80E-03	3.53E-02
PU-244	4589.000	2.000	2.000	0.000	5.2050	99.90000	2.07E-03	1.46E-03	1.25E-02	2.78E-02	1.46E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



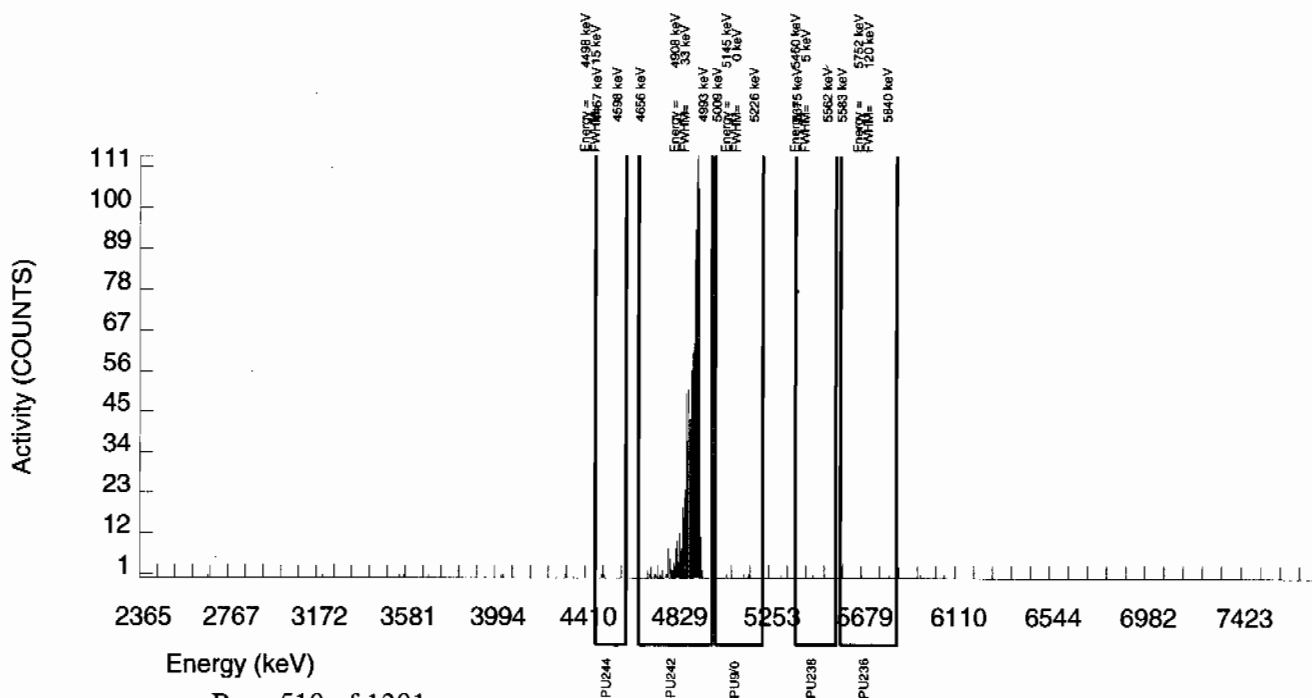
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221 SAMPLE DATE : 22-DEC-2009 00:00:00		SAMPLE ID : S0243624007_PU SAMPLE QTY: 1.250 G	
DETECTOR NUMBER : 78776 AVERAGE %EFFICIENCY : 32.7690 % YIELD : 93.296		COUNT DATE: 7-JAN-2010 10:31:20 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST : HAKB	
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 : 3.15847 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B085.CNF;1010 BKG DATE : 5-JAN-2010 EFF FILE : W085.CNF;298 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	6.000	6.000	0.000	3.4797	99.90000	7.08E-03	2.91E-03	9.55E-03	2.23E-02	2.89E-03
PU-236	5749.000	2.000	2.000	0.000	2.1286	100.0000	2.38E-03	1.69E-03	5.84E-03	1.49E-02	1.69E-03
PU-238	5499.000	1.000	0.000	1.000	2.9680	99.90000	0.00E+00	1.67E-03	8.15E-03	1.95E-02	1.67E-03
PU242	4890.000	1035.000	1035.000	0.000	0.0000	100.0000	1.22E+00	7.23E-02	0.00E+00	3.19E-03	3.79E-02
PU-244	4589.000	2.000	2.000	0.000	5.2050	99.90000	2.36E-03	1.67E-03	1.43E-02	3.18E-02	1.67E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624008_PU
SAMPLE QTY: 1.255 G

DETECTOR NUMBER :78198
AVERAGE %EFFICIENCY :29.5330
% YIELD : 104.019

COUNT DATE: 7-JAN-2010 10:31:20
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

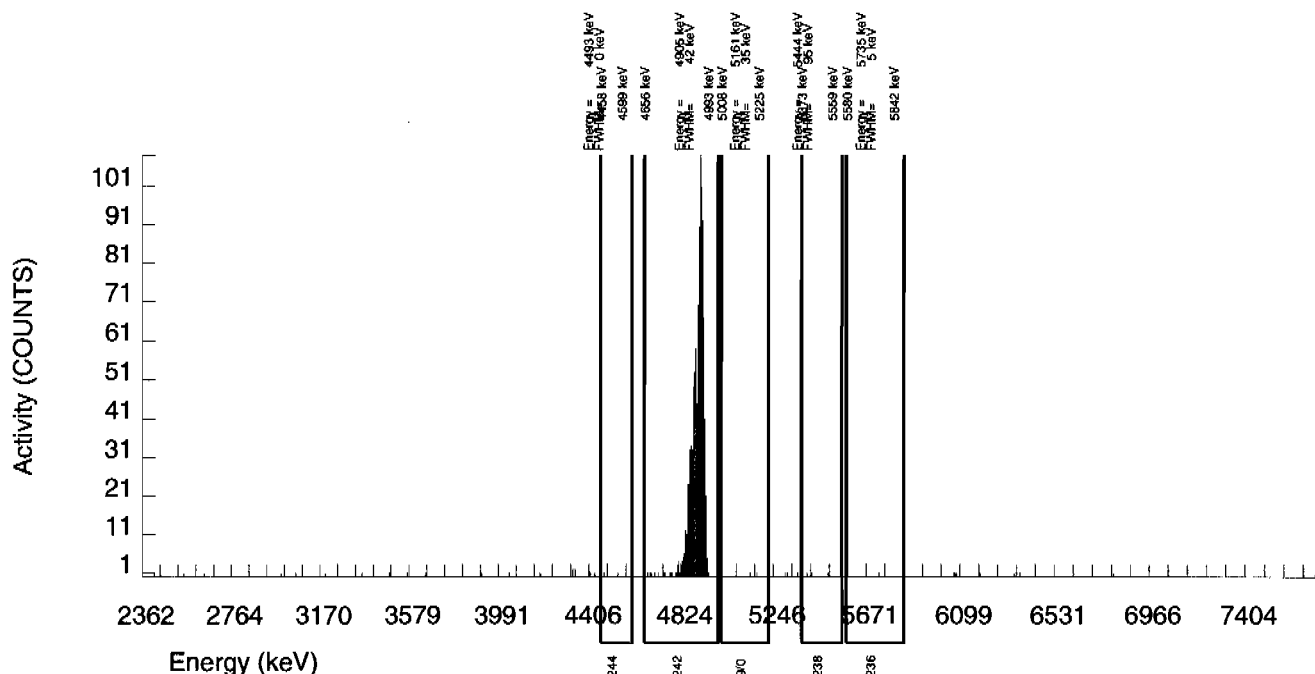
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.52148 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B086.CNF;1011
BKG DATE : 5-JAN-2010
EFF FILE : W086.CNF;279
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	-3.000	5.000	3.4797	99.90000	-3.51E-03	3.09E-03	9.47E-03	2.21E-02	3.09E-03
PU-236	5749.000	1.000	0.000	1.000	2.1286	100.0000	0.00E+00	1.67E-03	5.79E-03	1.47E-02	1.67E-03
PU-238	5499.000	3.000	1.000	2.000	2.9680	99.90000	1.17E-03	2.62E-03	8.08E-03	1.93E-02	2.62E-03
PU242	4890.000	1041.000	1040.000	1.000	1.0000	100.0000	1.22E+00	7.20E-02	2.72E-03	8.60E-03	3.77E-02
PU-244	4589.000	3.000	3.000	0.000	5.2050	99.90000	3.51E-03	2.03E-03	1.42E-02	3.15E-02	2.03E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624009_PU
SAMPLE QTY: 1.258 G

DETECTOR NUMBER :78199
AVERAGE %EFFICIENCY :31.9208
% YIELD : 101.142

COUNT DATE: 7-JAN-2010 10:31:20
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

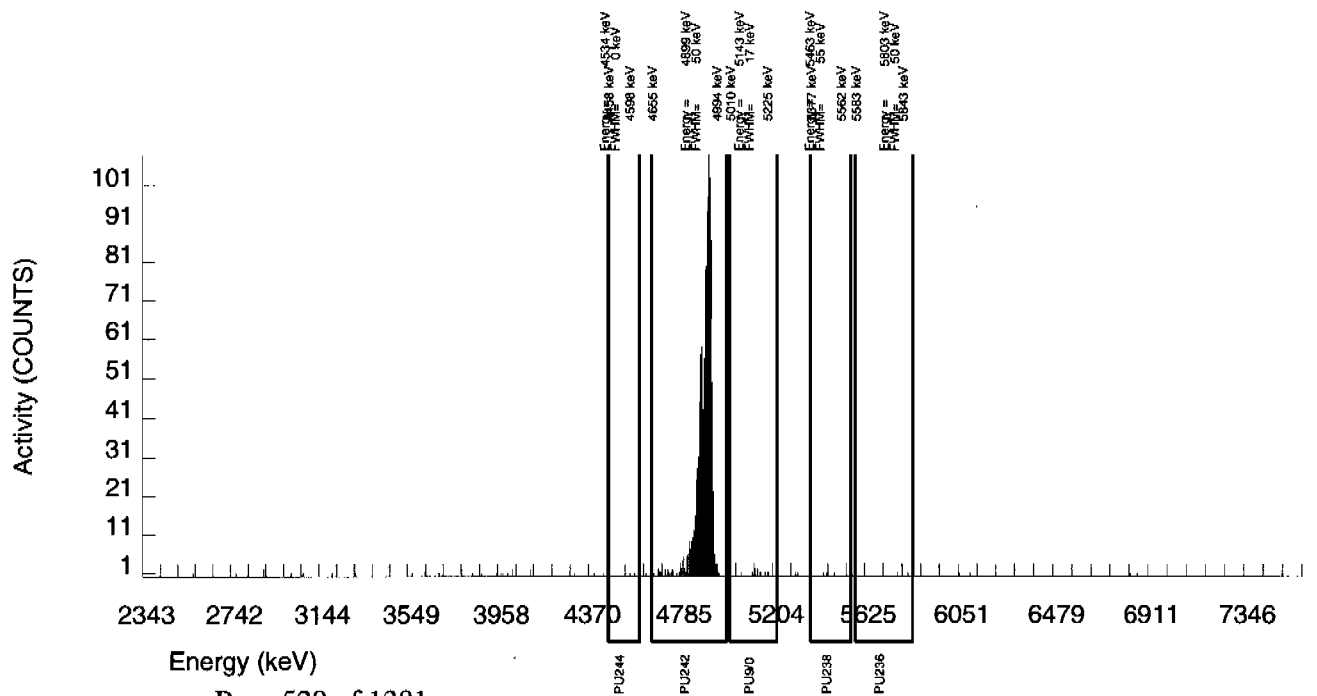
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.42410 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B087.CNF;1018
BKG DATE : 5-JAN-2010
EFF FILE : W087.CNF;272
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	12.000	5.000	7.000	3.4797	99.90000	5.55E-03	4.85E-03	8.99E-03	2.10E-02	4.84E-03
PU-236	5749.000	2.000	0.000	2.000	2.1286	100.0000	0.00E+00	2.24E-03	5.49E-03	1.40E-02	2.24E-03
PU-238	5499.000	3.000	-4.000	7.000	2.9680	99.90000	-4.44E-03	3.51E-03	7.67E-03	1.83E-02	3.51E-03
PU242	4890.000	1095.000	1093.000	2.000	1.4142	100.0000	1.21E+00	7.08E-02	3.65E-03	1.03E-02	3.67E-02
PU-244	4589.000	3.000	2.000	1.000	5.2050	99.90000	2.22E-03	2.22E-03	1.34E-02	2.99E-02	2.22E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624010_PU
SAMPLE QTY: 1.278 G

DETECTOR NUMBER :33452
AVERAGE %EFFICIENCY :30.2890
% YIELD : 94.596

COUNT DATE: 7-JAN-2010 10:31:20
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

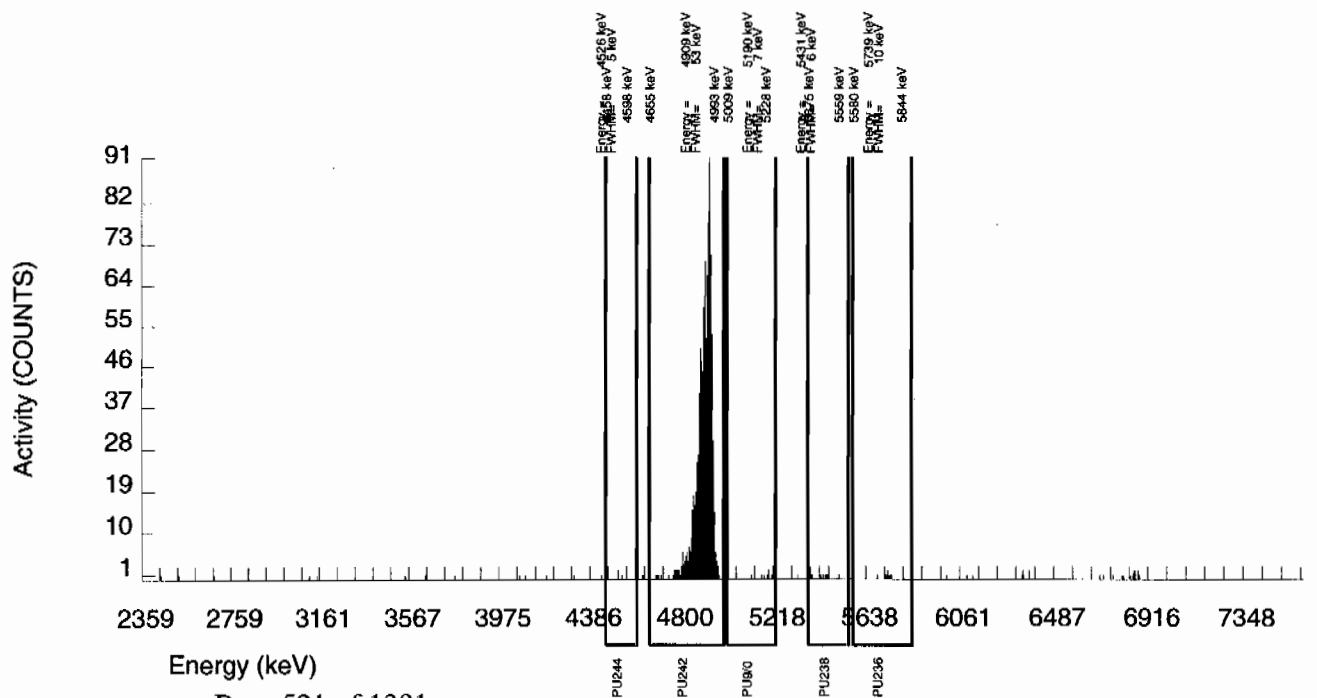
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.20248 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B088.CNF;1006
BKG DATE : 5-JAN-2010
EFF FILE : W088.CNF;282
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	8.000	7.000	1.000	3.4797	99.90000	8.62E-03	3.72E-03	9.97E-03	2.33E-02	3.69E-03
PU-236	5749.000	8.000	0.000	8.000	2.1286	100.0000	0.00E+00	4.98E-03	6.09E-03	1.55E-02	4.98E-03
PU-238	5499.000	14.000	2.000	12.000	2.9680	99.90000	2.46E-03	6.28E-03	8.50E-03	2.03E-02	6.28E-03
PU242	4890.000	972.000	970.000	2.000	1.4142	100.0000	1.19E+00	7.21E-02	4.05E-03	1.14E-02	3.84E-02
PU-244	4589.000	3.000	3.000	0.000	5.2050	99.90000	3.69E-03	2.14E-03	1.49E-02	3.32E-02	2.13E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624011_PU
SAMPLE QTY: 1.250 G

DETECTOR NUMBER :76543
AVERAGE %EFFICIENCY :34.3031
% YIELD : 102.815

COUNT DATE: 7-JAN-2010 10:31:18
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

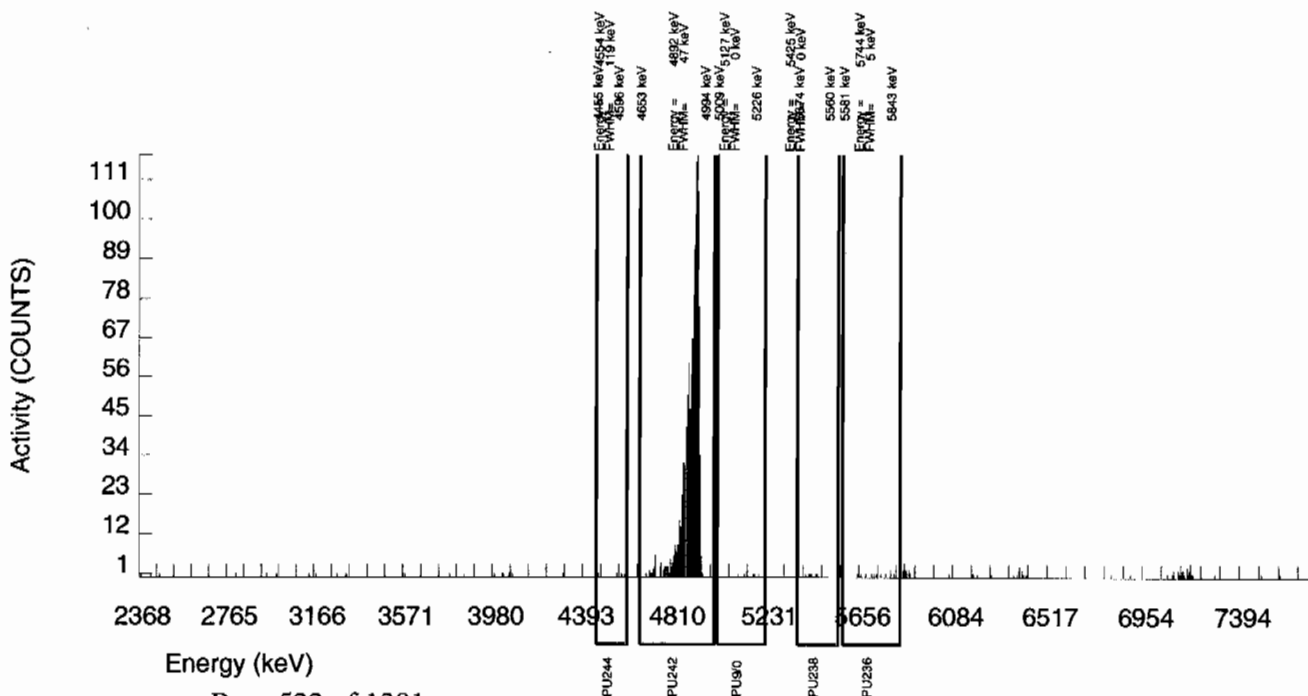
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.48073 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B043.CNF;1094
BKG DATE : 3-JAN-2010
EFF FILE : W043.CNF;284
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	7.000	3.000	4.000	3.4797	99.90000	3.07E-03	3.40E-03	8.28E-03	1.93E-02	3.39E-03
PU-236	5749.000	11.000	3.000	8.000	2.1286	100.0000	3.10E-03	4.51E-03	5.06E-03	1.29E-02	4.50E-03
PU-238	5499.000	9.000	8.000	1.000	2.9680	99.90000	8.19E-03	3.26E-03	7.06E-03	1.69E-02	3.24E-03
PU242	4890.000	1195.000	1194.000	1.000	1.0000	100.0000	1.22E+00	6.96E-02	2.38E-03	7.52E-03	3.53E-02
PU-244	4589.000	5.000	2.000	3.000	5.2050	99.90000	2.05E-03	2.89E-03	1.24E-02	2.75E-02	2.89E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



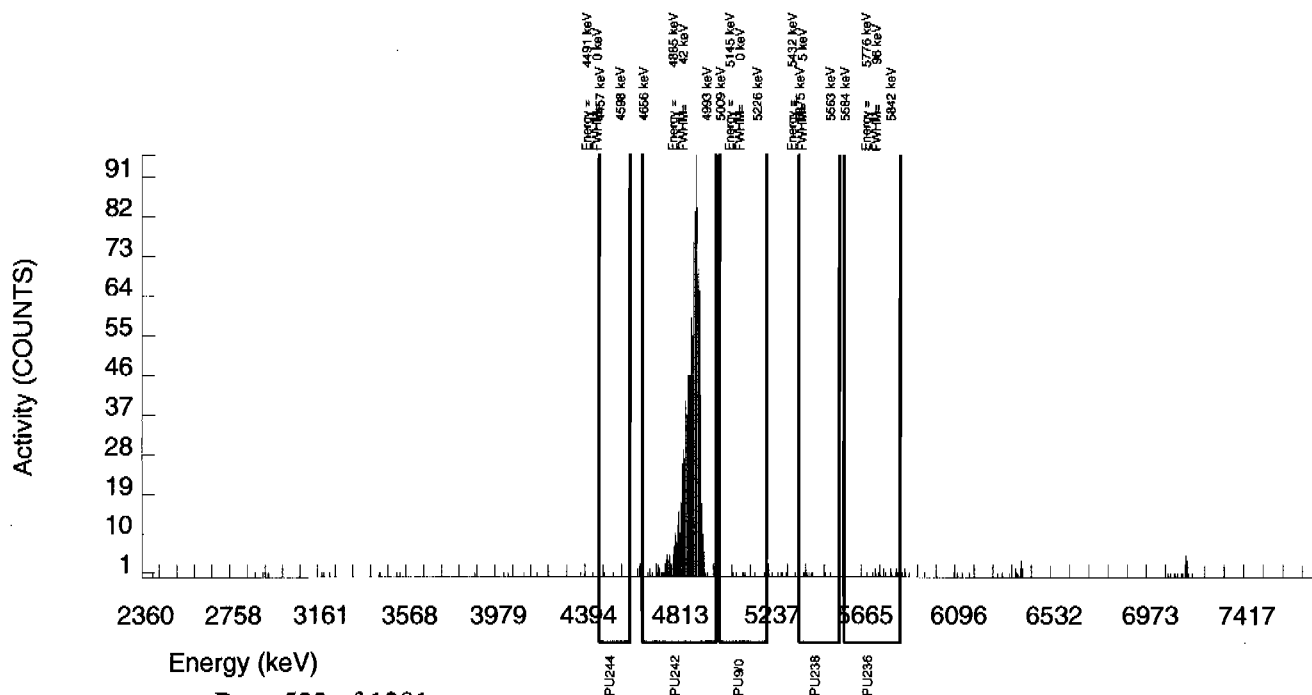
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S1202007553_PU SAMPLE QTY: 1.000 G	
DETECTOR NUMBER :46-089B1 AVERAGE %EFFICIENCY :34.5024 % YIELD : 92.204		COUNT DATE: 7-JAN-2010 10:31:18 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB	
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 : 3.12152 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B047.CNF;1099 BKG DATE : 3-JAN-2010 EFF FILE : W047.CNF;301 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	9.000	6.000	3.000	3.4797	99.90000	8.50E-03	4.93E-03	1.15E-02	2.68E-02	4.91E-03
PU-236	5749.000	18.000	3.000	15.000	2.1286	100.0000	4.26E-03	8.15E-03	7.01E-03	1.79E-02	8.15E-03
PU-238	5499.000	11.000	6.000	5.000	2.9680	99.90000	8.50E-03	5.69E-03	9.79E-03	2.34E-02	5.67E-03
PU242	4890.000	1080.000	1077.000	3.000	1.7321	100.0000	1.52E+00	8.96E-02	5.71E-03	1.52E-02	4.66E-02
PU-244	4589.000	3.000	3.000	0.000	5.2050	99.90000	4.25E-03	2.46E-03	1.72E-02	3.82E-02	2.45E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S1202007554_PU
SAMPLE QTY: 1.254 G

DETECTOR NUMBER :42483
AVERAGE %EFFICIENCY :31.2622
% YIELD : 101.383

COUNT DATE: 7-JAN-2010 10:31:18
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

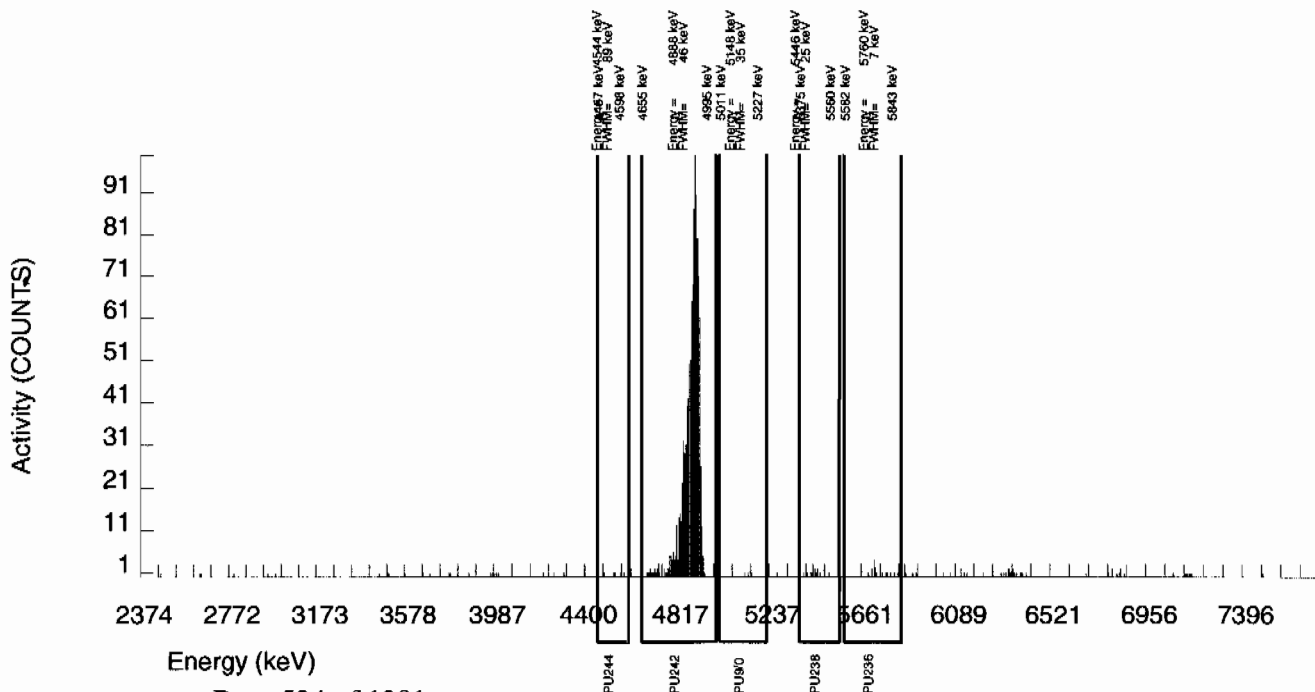
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.43226 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B048.CNF;1100
BKG DATE : 3-JAN-2010
EFF FILE : W048.CNF;314
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	3.000	1.000	2.000	3.4797	99.90000	1.13E-03	2.54E-03	9.18E-03	2.14E-02	2.54E-03
PU-236	5749.000	19.000	3.000	16.000	2.1286	100.0000	3.44E-03	6.78E-03	5.61E-03	1.43E-02	6.78E-03
PU-238	5499.000	15.000	3.000	12.000	2.9680	99.90000	3.40E-03	5.90E-03	7.83E-03	1.87E-02	5.90E-03
PU242	4890.000	1076.000	1073.000	3.000	1.7321	100.0000	1.22E+00	7.15E-02	4.57E-03	1.22E-02	3.72E-02
PU-244	4589.000	5.000	3.000	2.000	5.2050	99.90000	3.40E-03	3.01E-03	1.37E-02	3.05E-02	3.00E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938221
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S1202007555_PU
SAMPLE QTY: 0.102 G

DETECTOR NUMBER :79448
AVERAGE %EFFICIENCY :37.8834
% YIELD : 107.055

COUNT DATE: 7-JAN-2010 10:33:54
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

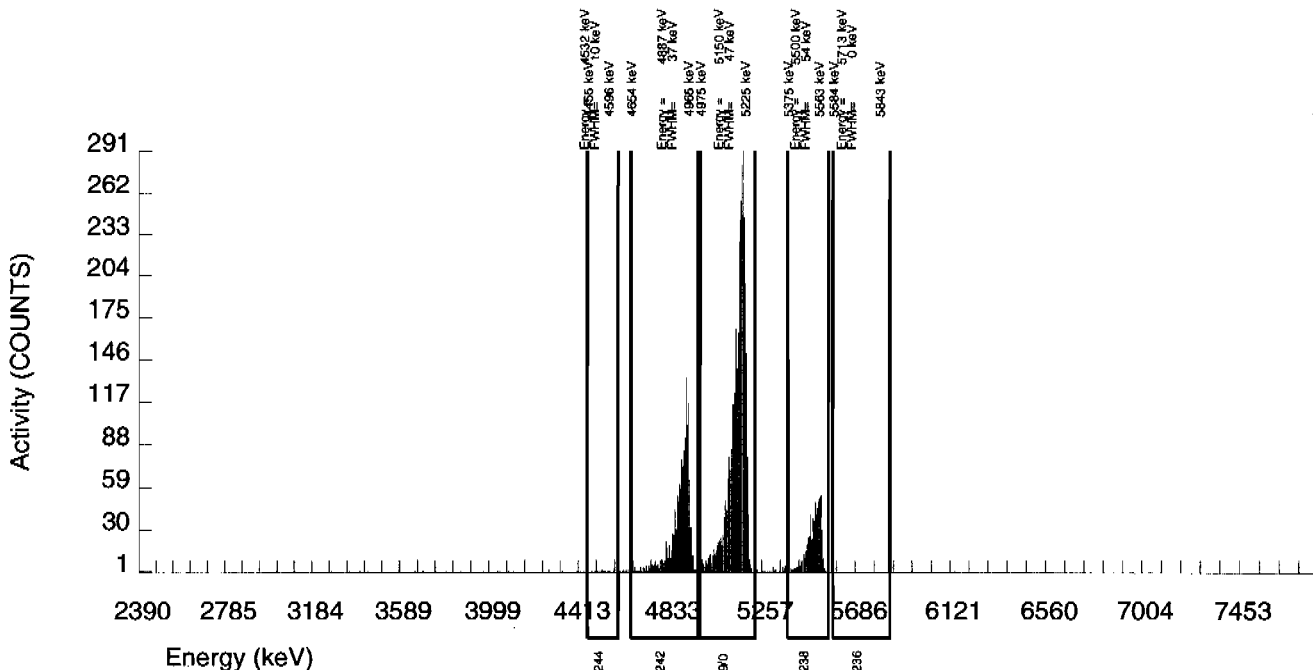
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.62427 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B255.CNF;66
BKG DATE : 3-JAN-2010
EFF FILE : W255.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	3321.000	3321.000	0.000	3.4797	99.90000	3.62E+01	2.17E+00	8.82E-02	2.06E-01	6.28E-01
PU-236	5749.000	0.000	0.000	0.000	2.1286	100.0000	0.00E+00	1.09E-02	5.39E-02	1.37E-01	1.09E-02
PU-238	5499.000	638.000	638.000	0.000	2.9680	99.90000	6.95E+00	4.85E-01	7.53E-02	1.80E-01	2.75E-01
PU242	4890.000	1374.000	1373.000	1.000	1.0000	100.0000	1.50E+01	9.48E-01	2.53E-02	8.02E-02	4.04E-01
PU-244	4589.000	16.000	15.000	1.000	5.2050	99.90000	1.63E-01	4.59E-02	1.32E-01	2.94E-01	4.49E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



Radiochemistry Batch Checklist, Rev 9

Batch# 938222 Product: U Date: 1/12/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10" MDA/ MDC, error is 150% or less of sample activity. If greater 10" MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method 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.	✓		
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	✓		
Htl notification complete (if necessary)			N/A
Batch entered into Case Narrative.	✓		
Batch non-conformances completed, if applicable.			N/A
Batch non-conformances second reviewed and disposition verified to be completed.			N/A
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If 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:

SopLM-L- 1/12/10

Secondary Review Performed By:

E. [Signature] 1/12/10

1/21

LANL

Uranium Que Sheet

✓P

04-JAN-10

Batch #: 938222 Analyst: HAKB First Client Due Date: 21-JAN-10 Internal Due Date: 10-JAN-10
 Tracer Isotope: U-232(20-236) Tracer Code: 1283-44 Expiration Date: 12/09/10 Vol: 0.1
 LCS Isotope: U-238 LCS Code: Expiration Date: Vol:
 Spike Isotope: U-238 Spike Code: Expiration Date: Vol:
 Prep Date: 01/05/10 Initials: JKO Pipet ID: 2371058 Balance ID: 50410272
 Witness: 1/5/10 CAM

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g) (1/1)	U Det #
243557014-1	RE03-10-9872	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	1	1	0.532	130
243557015-1	RE03-10-9874	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	2	2	0.530	132
243624001-1	RE12-10-7841	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	3	3	0.528	139
243624002-1	RE12-10-7840	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	4	4	0.519	140
243624003-1	RE12-10-7839	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	5	5	0.514	141
243624004-1	RE12-10-7838	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	6	6	0.502	142
243624005-1	RE12-10-7858	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	7	7	0.506	143
243624006-1	RE12-10-7846	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	8	8	0.518	144
243624007-1	RE12-10-7844	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	9	9	0.511	145
243624008-1	RE12-10-7845	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	10	10	0.540	146
243624009-1	RE12-10-7842	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	11	11	0.533	147
243624010-1	RE12-10-7843	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	12	12	0.517	148
243624011-1	RE12-10-7847	SAMPLE		.1 pCi/g	SOIL	LANL010	22-DEC-09	13	13	0.506	114
1202007556-1	MB for batch 938222	MB		.1 pCi/g	SOIL	QC ACCOUNT		14	14	1	136
1202007557-1	RE12-10-7845(243624008DUP)	DUP		.1 pCi/g	SOIL	QC ACCOUNT	22-DEC-09	15	15	0.537	137
1202007558-1	LCS for batch 938222	LCS		.1 pCi/g	SOIL	QC ACCOUNT		16	16	0.104	138

*SRM: 0244-A exp 10/31/20 0.104g

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

Data Reviewed By: J. L. ALI - 1/2/10

Blank Correction Report

Batch ID 938222

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202007557	DUP	Uranium-233/234	0.537 g	1.03	0.0999	0.131	.008478585	pCi/g	NO
		Uranium-235/236	0.537 g	0.0786	0.0211	0.0816	.004115456	pCi/g	NO
		Uranium-238	0.537 g	1.01	0.0978	0.0762	.009962756	pCi/g	NO
1202007558	LCS	Uranium-233/234	0.104 g	5.61	0.539	0.568	.048942308	pCi/g	NO
		Uranium-235/236	0.104 g	0.295	0.106	0.353	.02125	pCi/g	NO
		Uranium-238	0.104 g	5.65	0.542	0.330	.051442308	pCi/g	NO
1202007556	MB	Uranium-233/234	1.00 g	0.00509	0.00395	0.0553	.00509	pCi/g	YES
		Uranium-235/236	1.00 g	0.00221	0.00221	0.0343	.00221	pCi/g	YES
		Uranium-238	1.00 g	0.00535	0.00537	0.0321	.00535	pCi/g	YES
243557014	RE03-10-9672	Uranium-233/234	0.532 g	1.27	0.115	0.122	.009567669	pCi/g	NO
		Uranium-235/236	0.532 g	0.0922	0.0222	0.0756	.004154135	pCi/g	NO
		Uranium-238	0.532 g	1.10	0.103	0.0706	.010056391	pCi/g	NO
243557015	RE03-10-9874	Uranium-233/234	0.530 g	0.858	0.0806	0.104	.009603774	pCi/g	NO
		Uranium-235/236	0.530 g	0.0537	0.0154	0.0643	.004169811	pCi/g	NO
		Uranium-238	0.530 g	0.932	0.0863	0.060	.010094340	pCi/g	NO
243624001	RE12-10-7841	Uranium-233/234	0.528 g	1.05	0.101	0.125	.009640152	pCi/g	NO
		Uranium-235/236	0.528 g	0.0599	0.0178	0.0776	.004185606	pCi/g	NO
		Uranium-238	0.528 g	1.13	0.107	0.0725	.010132576	pCi/g	NO
243624002	RE12-10-7840	Uranium-233/234	0.519 g	1.46	0.131	0.131	.009807322	pCi/g	NO
		Uranium-235/236	0.519 g	0.0677	0.0207	0.081	.004258189	pCi/g	NO
		Uranium-238	0.519 g	1.55	0.137	0.0757	.010308285	pCi/g	NO
243624003	RE12-10-7839	Uranium-233/234	0.514 g	1.03	0.0995	0.128	.009902724	pCi/g	NO
		Uranium-235/236	0.514 g	0.051	0.0165	0.0793	.004299611	pCi/g	NO
		Uranium-238	0.514 g	0.986	0.0966	0.0741	.010408560	pCi/g	NO
243624004	RE12-10-7838	Uranium-233/234	0.502 g	1.32	0.124	0.145	.010139442	pCi/g	NO
		Uranium-235/236	0.502 g	0.0867	0.0233	0.090	.004402390	pCi/g	NO
		Uranium-238	0.502 g	1.47	0.135	0.0841	.010657371	pCi/g	NO
243624005	RE12-10-7858	Uranium-233/234	0.506 g	1.78	0.162	0.153	.010059289	pCi/g	NO
		Uranium-235/236	0.506 g	0.0979	0.0255	0.0952	.004367589	pCi/g	NO
		Uranium-238	0.506 g	1.99	0.179	0.089	.010573123	pCi/g	NO
243624006	RE12-10-7846	Uranium-233/234	0.518 g	1.63	0.145	0.133	.009826255	pCi/g	NO
		Uranium-235/236	0.518 g	0.106	0.025	0.0827	.004266409	pCi/g	NO
		Uranium-238	0.518 g	1.87	0.162	0.0773	.010328185	pCi/g	NO
243624007	RE12-10-7844	Uranium-233/234	0.511 g	1.32	0.122	0.131	.009960861	pCi/g	NO
		Uranium-235/236	0.511 g	0.0575	0.0179	0.0814	.004324853	pCi/g	NO
		Uranium-238	0.511 g	1.32	0.122	0.0761	.010469667	pCi/g	NO
243624008	RE12-10-7845	Uranium-233/234	0.540 g	1.05	0.102	0.134	.009425926	pCi/g	NO
		Uranium-235/236	0.540 g	0.129	0.0278	0.0834	.004092593	pCi/g	NO
		Uranium-238	0.540 g	1.05	0.102	0.0779	.009907407	pCi/g	NO
243624009	RE12-10-7842	Uranium-233/234	0.533 g	1.26	0.115	0.120	.009549719	pCi/g	NO
		Uranium-235/236	0.533 g	0.0812	0.0206	0.0743	.004146341	pCi/g	NO

Blank Correction Report

GEL Sample ID	Client sample ID	Parameter	Aliquot	Result	TPU	MDA	Aliquot Corrected Blank Result	Units	Activity <5X Corrected Blank
243624009	RE12-10-7842	Uranium-238	0.533 g	1.48	0.132	0.0695	.010037523	pCi/g	NO
243624010	RE12-10-7843	Uranium-233/234	0.517 g	0.986	0.0944	0.124	.009845261	pCi/g	NO
		Uranium-235/236	0.517 g	0.0691	0.0191	0.0768	.004274662	pCi/g	NO
		Uranium-238	0.517 g	0.986	0.0943	0.0718	.010348162	pCi/g	NO
243624011	RE12-10-7847	Uranium-233/234	0.506 g	1.18	0.110	0.131	.010059289	pCi/g	NO
		Uranium-235/236	0.506 g	0.0629	0.0201	0.0816	.004367589	pCi/g	NO
		Uranium-238	0.506 g	1.33	0.121	0.0763	.010573123	pCi/g	NO

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624001_UU
SAMPLE QTY: 0.528 G

DETECTOR NUMBER :76231
AVERAGE %EFFICIENCY :24.8776
% YIELD : 84.969

COUNT DATE: 9-JAN-2010 11:01:21
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

MS/MSD	LCS/LCSD	TRACER	LIB FILE : ENV_ALPHA_UU.N
ID : 0244-A	ID : 0244-A	ID : 1283-H	BKG FILE : B139.CNF;382
ISOTOPE : U-238	ISOTOPE : U-238	ISOTOPE : U232	BKG DATE : 3-JAN-2010
PCI/G : 5.750E+00	PCI/G : 5.750E+00	NOMINAL : 4.51076 dpm	EFF FILE : W139.CNF;100
		RESULTS : 3.83274 dpm	CAL DATE : 15-DEC-2009

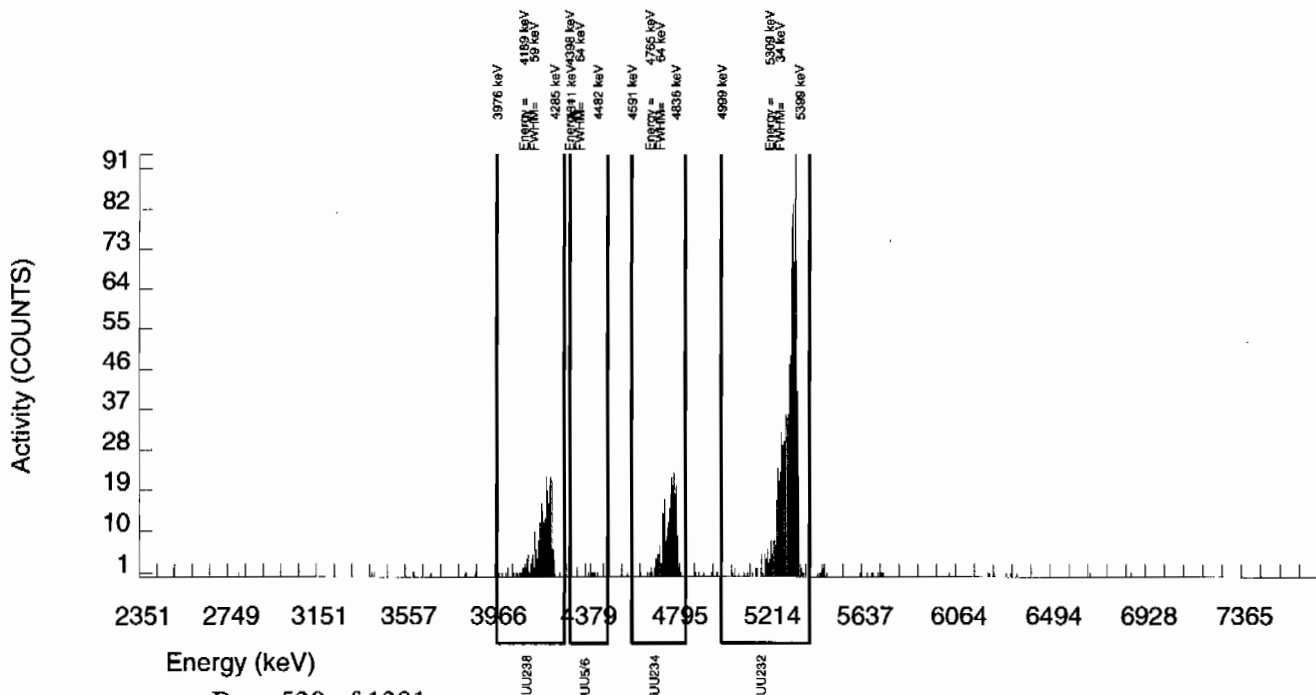
NUCLIDE ACTIVITY SUMMARY

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	263.000	261.037	1.000	6.0782	100.0000	1.05E+00	1.01E-01	5.71E-02	1.25E-01	6.55E-02
U232	5302.100	960.000	953.000	7.000	2.6458	100.0000	3.85E+00	3.08E-01	2.48E-02	6.06E-02	1.26E-01
U-235	4391.000	12.000	12.000	0.000	2.7628	80.90000	5.99E-02	1.78E-02	3.21E-02	7.76E-02	1.73E-02
U-238	4184.730	282.000	281.000	1.000	3.2810	100.0000	1.13E+00	1.07E-01	3.08E-02	7.25E-02	6.79E-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: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624002_UU
SAMPLE QTY: 0.519 G

DETECTOR NUMBER :78771
AVERAGE %EFFICIENCY :25.6838
% YIELD : 80.229

COUNT DATE: 9-JAN-2010 11:01:25
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.51076 dpm
RESULTS : 3.61894 dpm

LIB FILE : ENV_ALPHA_UU.N
BKG FILE : B140.CNF;382
BKG DATE : 3-JAN-2010
EFF FILE : W140.CNF;105
CAL DATE : 15-DEC-2009

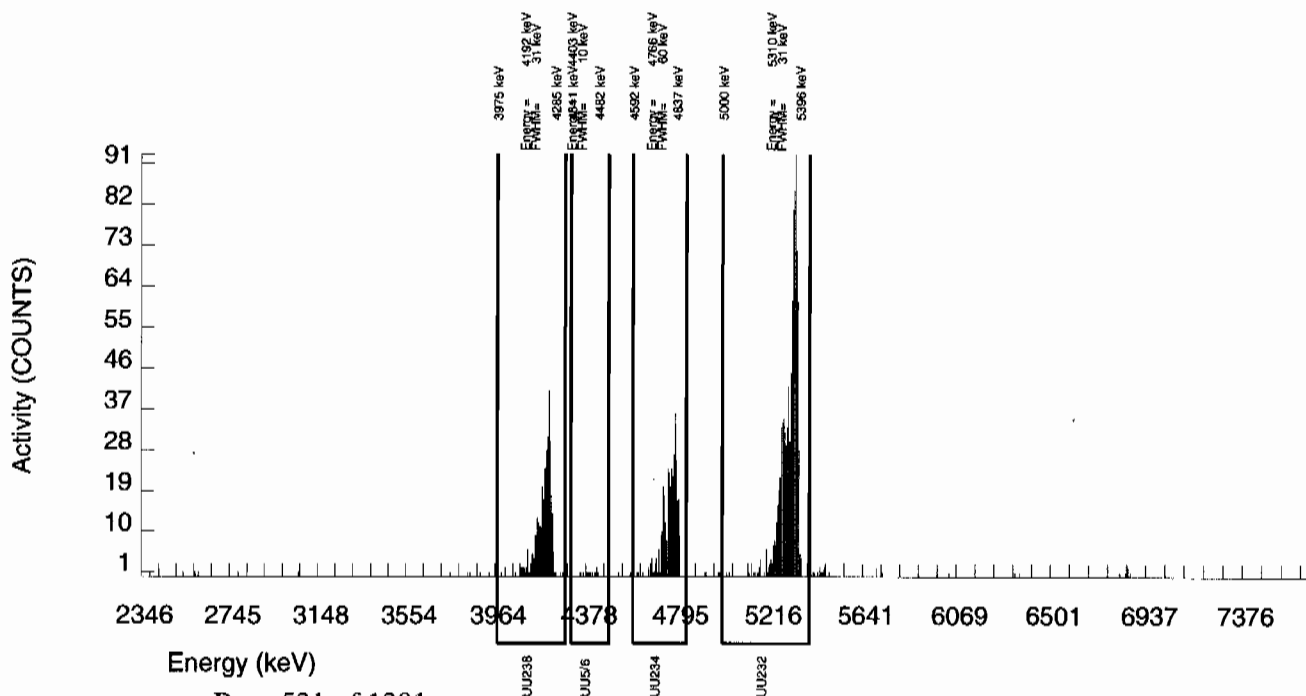
NUCLIDE ACTIVITY SUMMARY

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	349.000	347.061	1.000	6.0782	100.0000	1.46E+00	1.31E-01	5.96E-02	1.31E-01	7.87E-02
U232	5302.100	934.000	929.000	5.000	2.2361	100.0000	3.91E+00	3.09E-01	2.19E-02	5.52E-02	1.29E-01
U-235	4391.000	14.000	13.000	1.000	2.7628	80.90000	6.77E-02	2.07E-02	3.35E-02	8.10E-02	2.02E-02
U-238	4184.730	368.000	367.000	1.000	3.2810	100.0000	1.55E+00	1.37E-01	3.21E-02	7.57E-02	8.09E-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: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624003_UU
SAMPLE QTY: 0.514 G

DETECTOR NUMBER :76232
AVERAGE %EFFICIENCY :25.4146
% YIELD : 83.610

COUNT DATE: 9-JAN-2010 11:01:27
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.51076 dpm
RESULTS : 3.77145 dpm

LIB FILE : ENV_ALPHA_UU.N
BKG FILE : B141.CNF;385
BKG DATE : 3-JAN-2010
EFF FILE : W141.CNF;103
CAL DATE : 15-DEC-2009

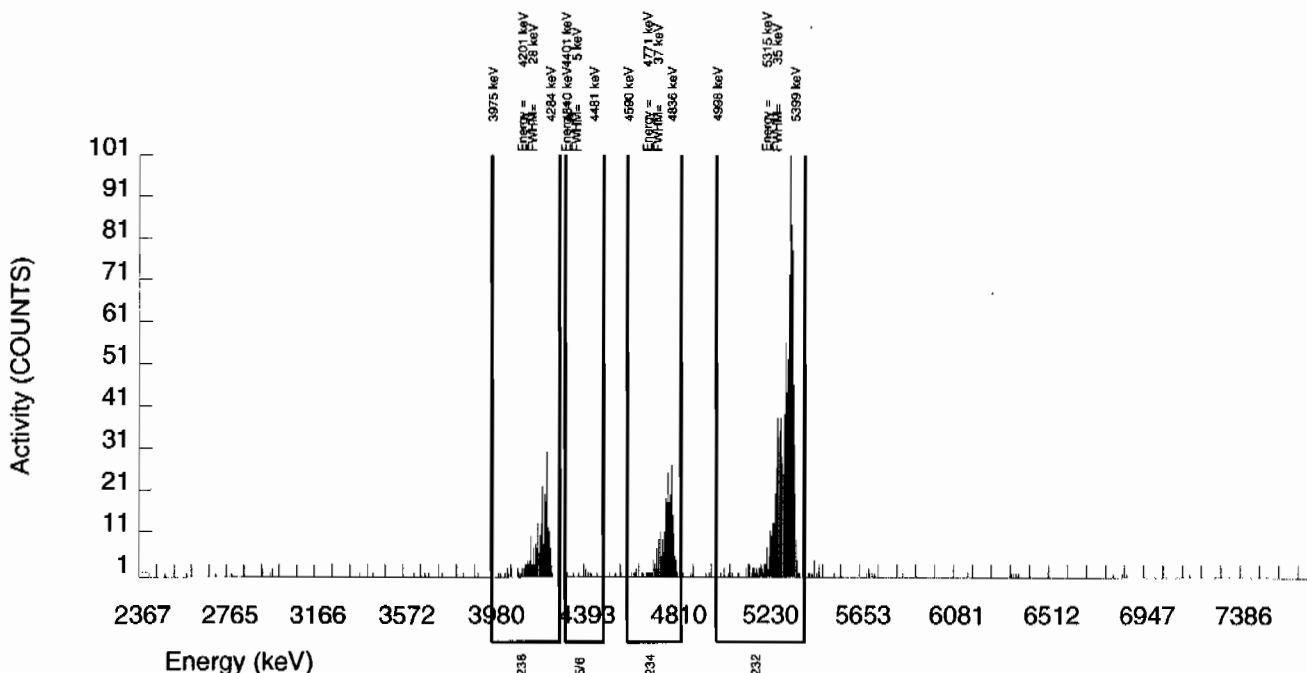
NUCLIDE ACTIVITY SUMMARY

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	251.000	250.031	0.000	6.0782	100.0000	1.03E+00	9.95E-02	5.83E-02	1.28E-01	6.52E-02
U232	5302.100	962.000	958.000	4.000	2.0000	100.0000	3.95E+00	3.16E-01	1.92E-02	4.96E-02	1.28E-01
U-235	4391.000	10.000	10.000	0.000	2.7628	80.90000	5.10E-02	1.65E-02	3.28E-02	7.93E-02	1.61E-02
U-238	4184.730	242.000	239.000	3.000	3.2810	100.0000	9.86E-01	9.66E-02	3.15E-02	7.41E-02	6.46E-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: 938222 SAMPLE DATE : 22-DEC-2009 00:00:00		SAMPLE ID : S0243624004_UU SAMPLE QTY: 0.502 G	
DETECTOR NUMBER :64261 AVERAGE %EFFICIENCY :25.8181 % YIELD : 74.314		COUNT DATE: 9-JAN-2010 11:01:30 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB	
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 : 4.51076 dpm RESULTS : 3.35211 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B142.CNF;379 BKG DATE : 3-JAN-2010 EFF FILE : W142.CNF;107 CAL DATE : 15-DEC-2009

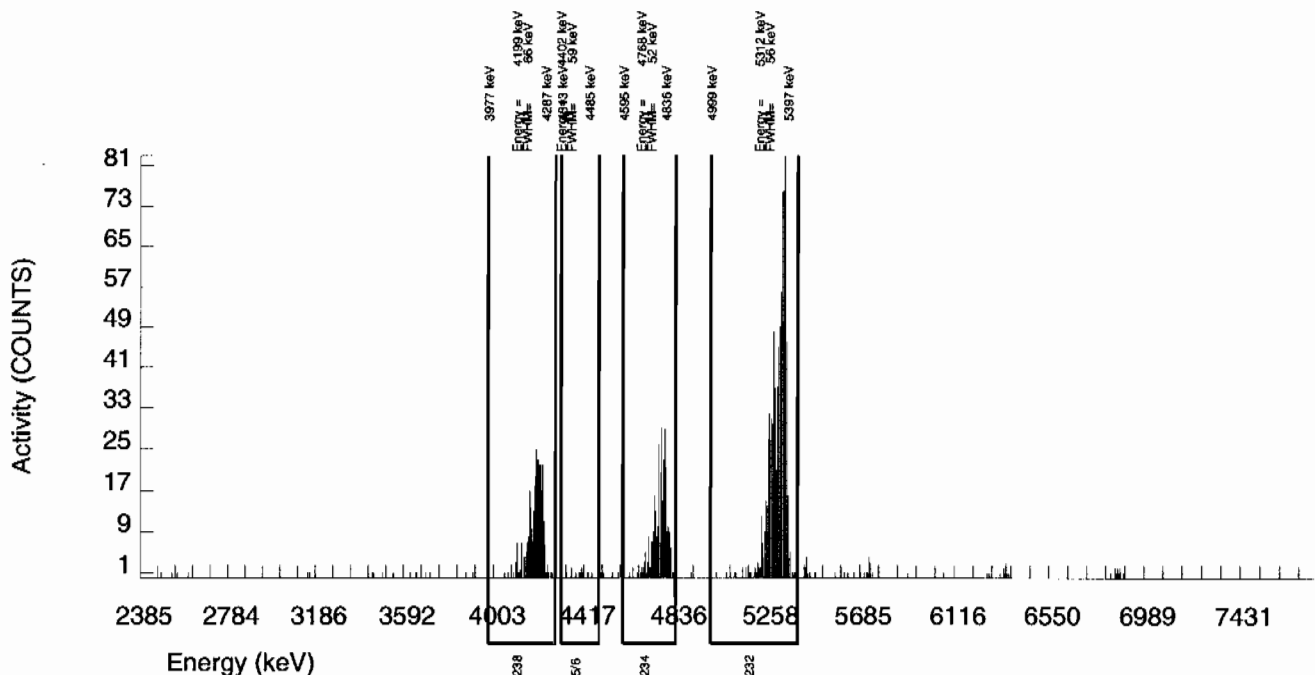
NUCLIDE ACTIVITY SUMMARY

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	285.000	283.125	1.000	6.0782	100.0000	1.32E+00	1.24E-01	6.61E-02	1.45E-01	7.90E-02
U232	5302.100	877.000	865.000	12.000	3.4641	100.0000	4.05E+00	3.25E-01	3.77E-02	8.81E-02	1.40E-01
U-235	4391.000	15.000	15.000	0.000	2.7628	80.90000	8.67E-02	2.33E-02	3.72E-02	9.00E-02	2.24E-02
U-238	4184.730	315.000	314.000	1.000	3.2810	100.0000	1.47E+00	1.35E-01	3.57E-02	8.41E-02	8.31E-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: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624005_UU
SAMPLE QTY: 0.506 G

DETECTOR NUMBER :65882
AVERAGE %EFFICIENCY :24.3752
% YIELD : 73.799

COUNT DATE: 9-JAN-2010 11:01:32
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.51076 dpm
RESULTS : 3.32888 dpm

LIB FILE : ENV_ALPHA_UU.N
BKG FILE : B143.CNF;382
BKG DATE : 3-JAN-2010
EFF FILE : W143.CNF;110
CAL DATE : 15-DEC-2009

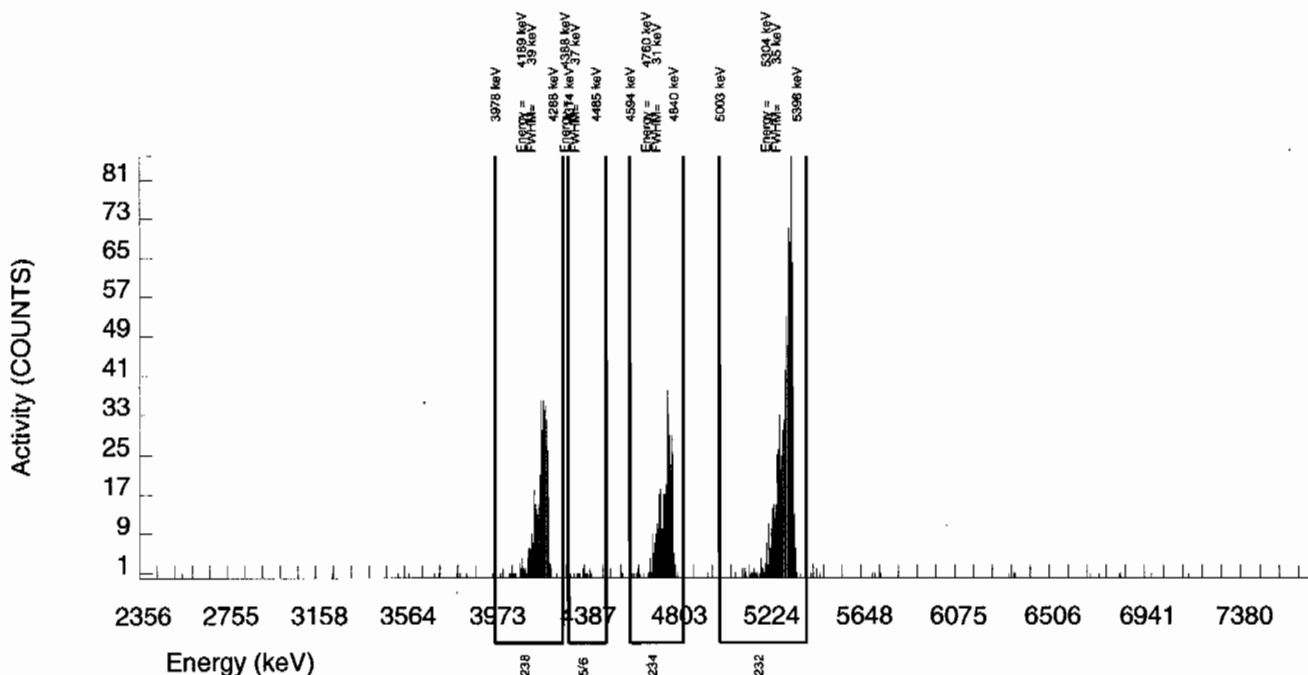
NUCLIDE ACTIVITY SUMMARY

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	361.000	360.180	0.000	6.0782	100.0000	1.78E+00	1.62E-01	7.00E-02	1.53E-01	9.39E-02
U232	5302.100	813.000	811.000	2.000	1.4142	100.0000	4.02E+00	3.30E-01	1.63E-02	4.60E-02	1.41E-01
U-235	4391.000	16.000	16.000	0.000	2.7628	80.90000	9.79E-02	2.55E-02	3.93E-02	9.52E-02	2.45E-02
U-238	4184.730	406.000	403.000	3.000	3.2810	100.0000	1.99E+00	1.79E-01	3.78E-02	8.90E-02	1.00E-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



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 938222 SAMPLE DATE : 22-DEC-2009 00:00:00		SAMPLE ID : S0243624006_UU SAMPLE QTY: 0.518 G	
DETECTOR NUMBER :75551 AVERAGE %EFFICIENCY :25.1537 % YIELD : 80.421		COUNT DATE: 9-JAN-2010 11:01:36 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB	
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 : 4.51076 dpm RESULTS : 3.62758 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B144.CNF;381 BKG DATE : 3-JAN-2010 EFF FILE : W144.CNF;104 CAL DATE : 15-DEC-2009

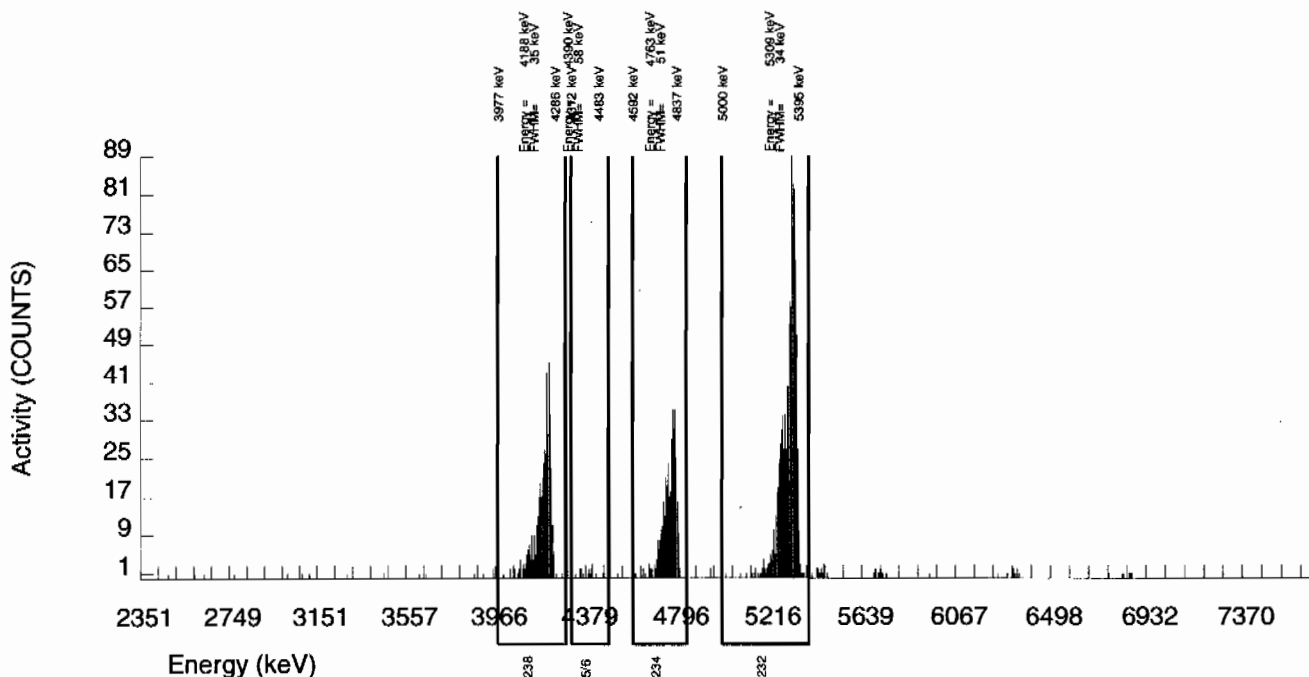
NUCLIDE ACTIVITY SUMMARY

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	385.000	380.078	4.000	6.0782	100.0000	1.63E+00	1.45E-01	6.08E-02	1.33E-01	8.47E-02
U232	5302.100	916.000	912.000	4.000	2.0000	100.0000	3.92E+00	3.11E-01	2.00E-02	5.17E-02	1.30E-01
U-235	4391.000	20.000	20.000	0.000	2.7628	80.90000	1.06E-01	2.50E-02	3.42E-02	8.27E-02	2.38E-02
U-238	4184.730	437.000	435.000	2.000	3.2810	100.0000	1.87E+00	1.62E-01	3.28E-02	7.73E-02	9.01E-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: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624007_UU
SAMPLE QTY: 0.511 G

DETECTOR NUMBER :72526
AVERAGE %EFFICIENCY :24.9446
% YIELD : 83.496

COUNT DATE: 9-JAN-2010 11:01:38
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.51076 dpm
RESULTS : 3.76630 dpm

LIB FILE : ENV_ALPHA_UU.N
BKG FILE : B145.CNF;379
BKG DATE : 3-JAN-2010
EFF FILE : W145.CNF;109
CAL DATE : 15-DEC-2009

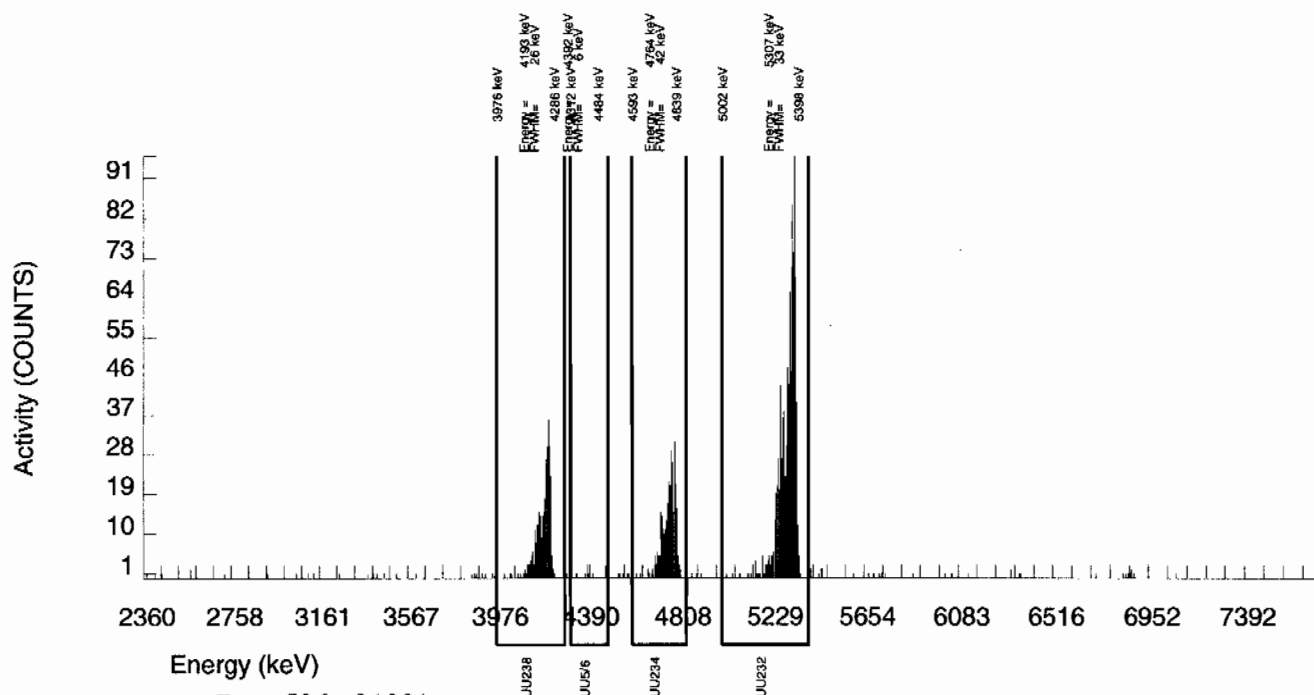
NUCLIDE ACTIVITY SUMMARY

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	312.000	311.051	0.000	6.0782	100.0000	1.32E+00	1.22E-01	5.98E-02	1.31E-01	7.46E-02
U232	5302.100	948.000	939.000	9.000	3.0000	100.0000	3.98E+00	3.19E-01	2.95E-02	7.05E-02	1.31E-01
U-235	4391.000	11.000	11.000	0.000	2.7628	80.90000	5.75E-02	1.79E-02	3.36E-02	8.14E-02	1.74E-02
U-238	4184.730	314.000	312.000	2.000	3.2810	100.0000	1.32E+00	1.22E-01	3.23E-02	7.61E-02	7.52E-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: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624008_UU
SAMPLE QTY: 0.540 G

DETECTOR NUMBER :72527
AVERAGE %EFFICIENCY :24.8694
% YIELD : 77.416

COUNT DATE: 9-JAN-2010 11:01:42
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.51076 dpm
RESULTS : 3.49204 dpm

LIB FILE : ENV_ALPHA_UU.N
BKG FILE : B146.CNF;384
BKG DATE : 3-JAN-2010
EFF FILE : W146.CNF;111
CAL DATE : 15-DEC-2009

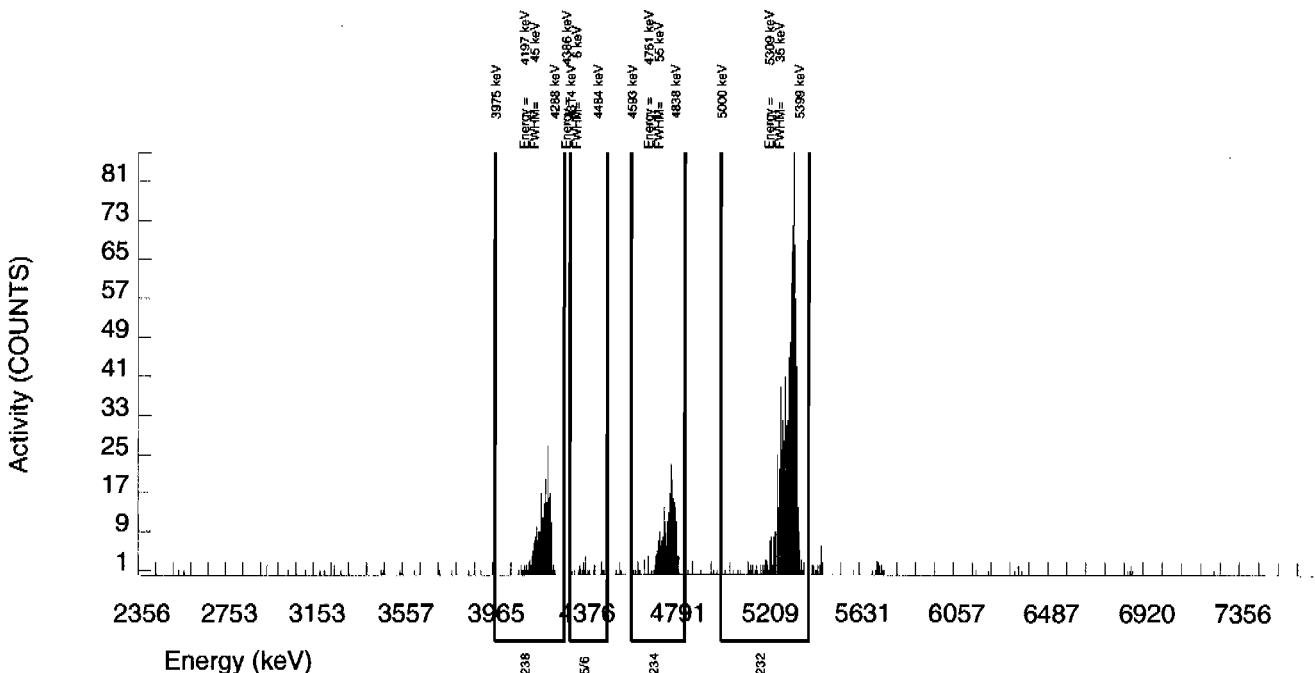
NUCLIDE ACTIVITY SUMMARY

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	245.000	243.122	1.000	6.0782	100.0000	1.05E+00	1.02E-01	6.13E-02	1.34E-01	6.78E-02
U232	5302.100	871.000	868.000	3.000	1.7321	100.0000	3.76E+00	3.01E-01	1.75E-02	4.67E-02	1.28E-01
U-235	4391.000	24.000	24.000	0.000	2.7628	80.90000	1.29E-01	2.78E-02	3.44E-02	8.34E-02	2.62E-02
U-238	4184.730	243.000	242.000	1.000	3.2810	100.0000	1.05E+00	1.02E-01	3.31E-02	7.79E-02	6.77E-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: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624009_UU
SAMPLE QTY: 0.533 G

DETECTOR NUMBER :75550
AVERAGE %EFFICIENCY :24.6783
% YIELD : 88.621

COUNT DATE: 9-JAN-2010 11:01:44
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.51076 dpm
RESULTS : 3.99749 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

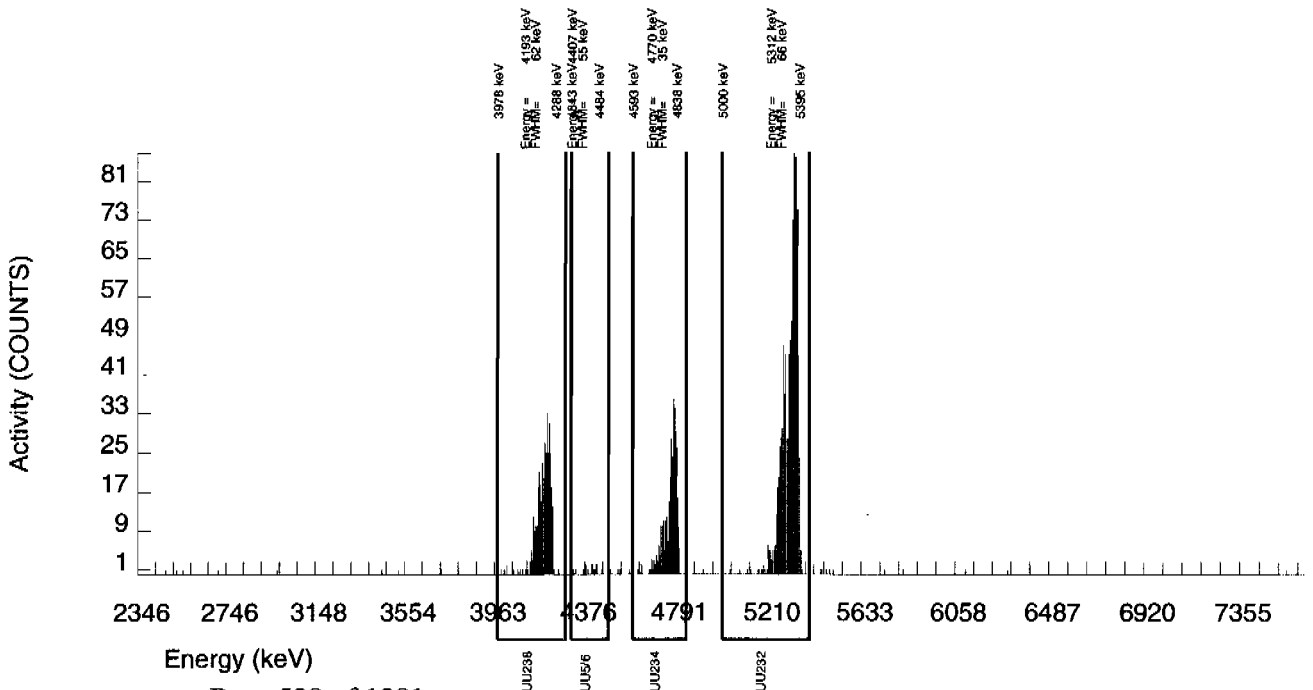
NUCLIDE ACTIVITY SUMMARY

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	328.000	325.003	2.000	6.0782	100.0000	1.26E+00	1.15E-01	5.46E-02	1.20E-01	7.01E-02
U232	5302.100	994.000	986.000	8.000	2.8284	100.0000	3.81E+00	3.03E-01	2.54E-02	6.13E-02	1.22E-01
U-235	4391.000	17.000	17.000	0.000	2.7628	80.90000	8.12E-02	2.06E-02	3.07E-02	7.43E-02	1.97E-02
U-238	4184.730	383.000	383.000	0.000	3.2810	100.0000	1.48E+00	1.32E-01	2.95E-02	6.95E-02	7.56E-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: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S0243624010_UU
SAMPLE QTY: 0.517 G

DETECTOR NUMBER :74429
AVERAGE %EFFICIENCY :24.8504
% YIELD : 87.829

COUNT DATE: 9-JAN-2010 11:01:46
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.51076 dpm
RESULTS : 3.96174 dpm

LIB FILE : ENV_ALPHA_UU.N
BKG FILE : B148.CNF;383
BKG DATE : 3-JAN-2010
EFF FILE : W148.CNF;125
CAL DATE : 15-DEC-2009

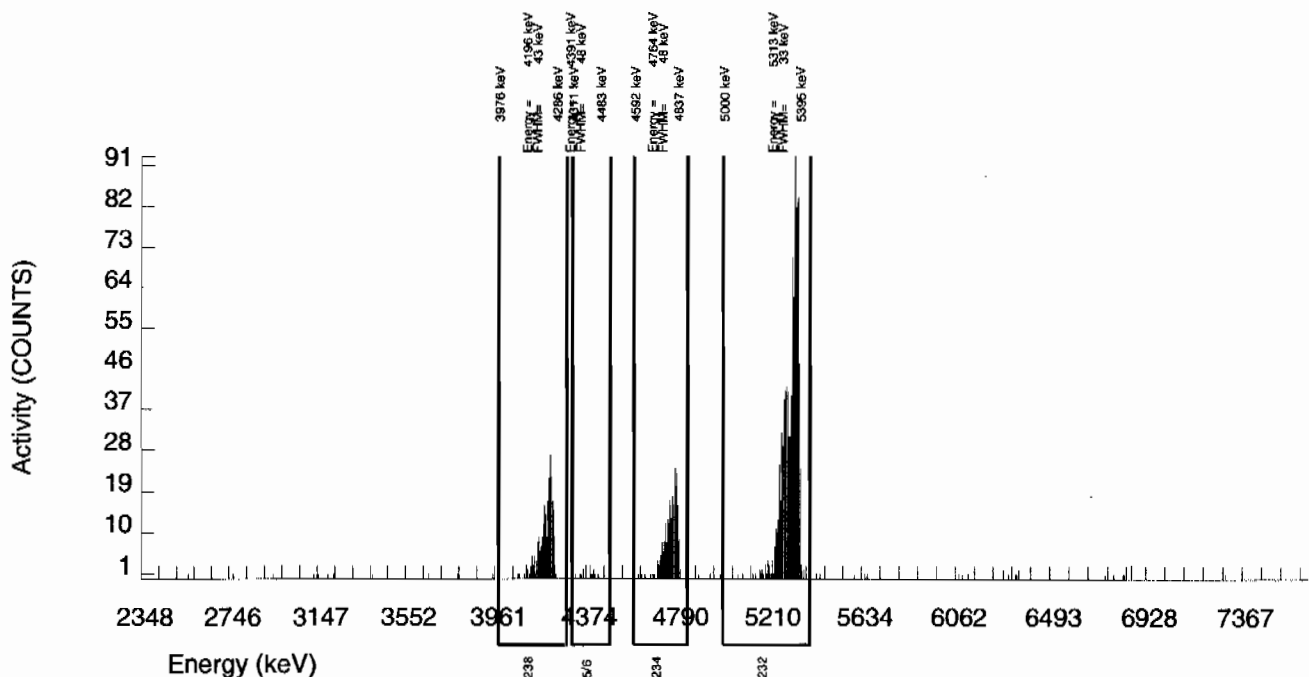
NUCLIDE ACTIVITY SUMMARY

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	249.000	247.005	1.000	6.0782	100.0000	9.86E-01	9.44E-02	5.64E-02	1.24E-01	6.30E-02
U232	5302.100	987.000	984.000	3.000	1.7321	100.0000	3.93E+00	3.07E-01	1.61E-02	4.30E-02	1.26E-01
U-235	4391.000	14.000	14.000	0.000	2.7628	80.90000	6.91E-02	1.91E-02	3.17E-02	7.68E-02	1.85E-02
U-238	4184.730	247.000	247.000	0.000	3.2810	100.0000	9.86E-01	9.42E-02	3.05E-02	7.18E-02	6.27E-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: 938222 SAMPLE DATE : 22-DEC-2009 00:00:00		SAMPLE ID : S0243624011_UU SAMPLE QTY: 0.506 G	
DETECTOR NUMBER :78258 AVERAGE %EFFICIENCY :25.4498 % YIELD : 82.448		COUNT DATE: 9-JAN-2010 11:00:18 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB	
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 : 4.51077 dpm RESULTS : 3.71905 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B114.CNF;428 BKG DATE : 3-JAN-2010 EFF FILE : W114.CNF;117 CAL DATE : 15-DEC-2009

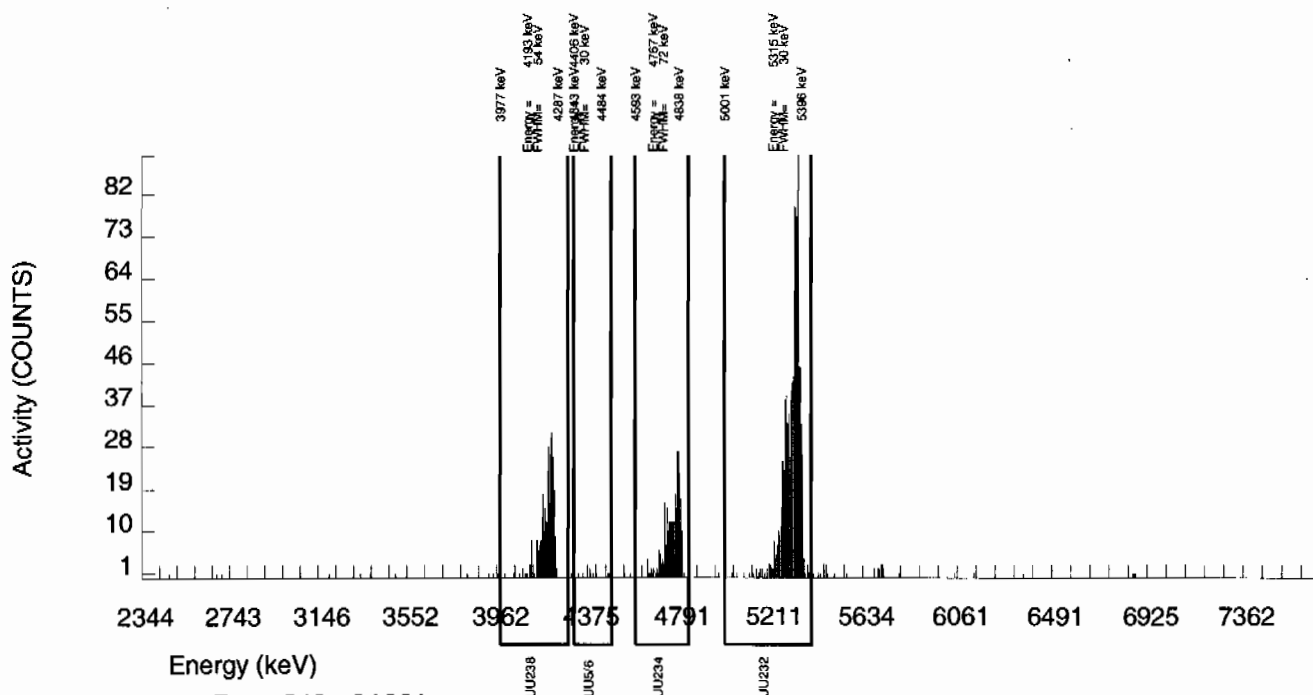
NUCLIDE ACTIVITY SUMMARY

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	279.000	277.044	1.000	6.0782	100.0000	1.18E+00	1.10E-01	6.00E-02	1.31E-01	7.09E-02
U232	5302.100	947.000	946.000	1.000	1.0000	100.0000	4.02E+00	3.16E-01	9.87E-03	3.12E-02	1.31E-01
U-235	4391.000	13.000	12.000	1.000	2.7628	80.90000	6.29E-02	2.01E-02	3.37E-02	8.16E-02	1.96E-02
U-238	4184.730	314.000	313.000	1.000	3.2810	100.0000	1.33E+00	1.21E-01	3.24E-02	7.63E-02	7.53E-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: 938222
SAMPLE DATE : 5-JAN-2010 00:00:00.

SAMPLE ID : S1202007556_UU
SAMPLE QTY: 1.000 G

DETECTOR NUMBER :68549
AVERAGE %EFFICIENCY :24.9797
% YIELD : 101.048

COUNT DATE: 9-JAN-2010 11:01:14
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.50902 dpm
RESULTS : 4.55629 dpm

LIB FILE : ENV_ALPHA_UU.N
BKG FILE : B136.CNF;425
BKG DATE : 3-JAN-2010
EFF FILE : W136.CNF;135
CAL DATE : 15-DEC-2009

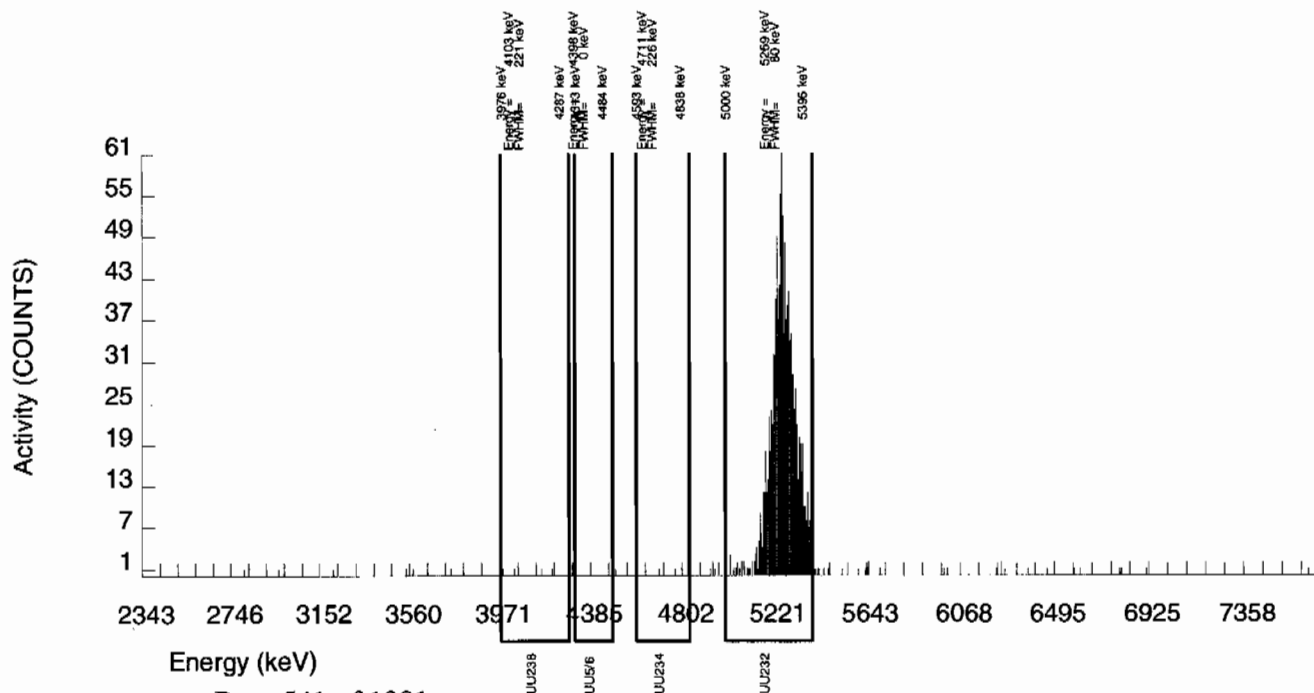
NUCLIDE ACTIVITY SUMMARY

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	5.000	2.849	1.000	6.0782	100.0000	5.09E-03	3.95E-03	2.52E-02	5.53E-02	3.93E-03
U232	5302.100	1149.000	1138.000	11.000	3.3166	100.0000	2.03E+00	1.55E-01	1.38E-02	3.24E-02	6.08E-02
U-235	4391.000	1.000	1.000	0.000	2.7628	80.90000	2.21E-03	2.21E-03	1.42E-02	3.43E-02	2.21E-03
U-238	4184.730	6.000	3.000	3.000	3.2810	100.0000	5.35E-03	5.37E-03	1.36E-02	3.21E-02	5.35E-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: 938222
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S1202007557_UU
SAMPLE QTY: 0.537 G

DETECTOR NUMBER :79467
AVERAGE %EFFICIENCY :24.9930
% YIELD : 79.163

COUNT DATE: 9-JAN-2010 11:01:17
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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 : 4.51076 dpm
RESULTS : 3.57085 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

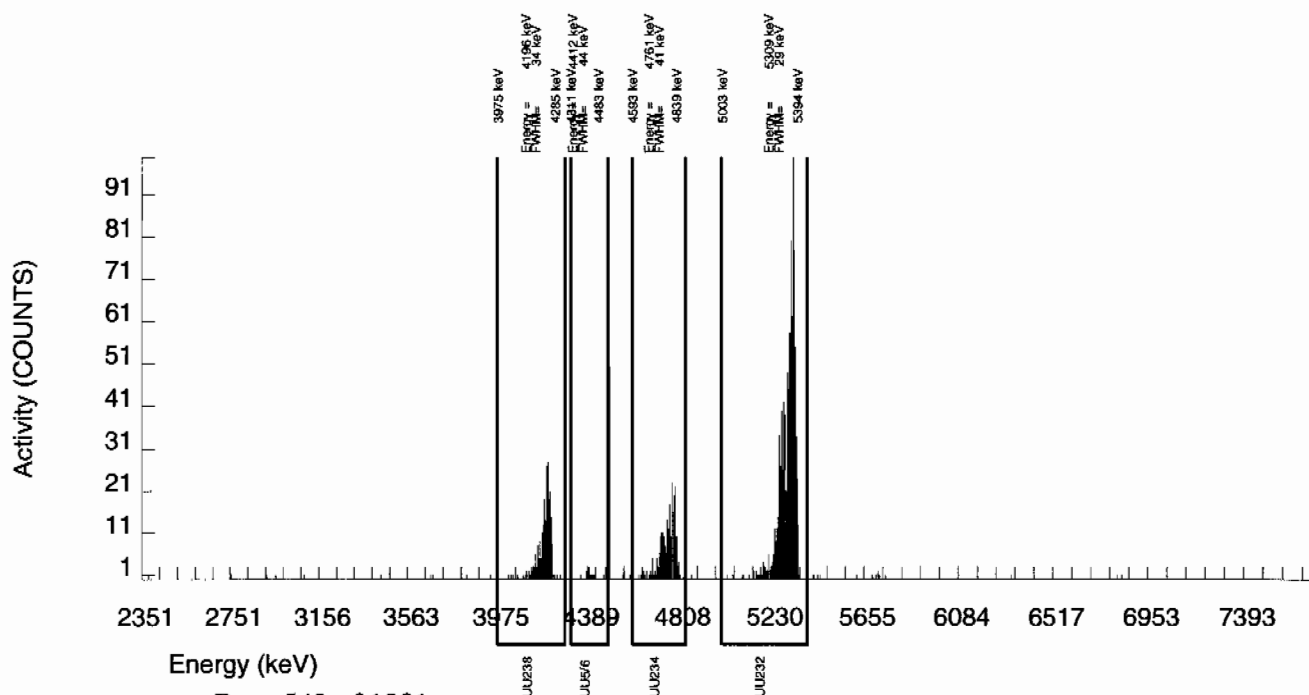
NUCLIDE ACTIVITY SUMMARY

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	246.000	244.098	1.000	6.0782	100.0000	1.03E+00	9.99E-02	5.99E-02	1.31E-01	6.65E-02
U232	5302.100	893.000	892.000	1.000	1.0000	100.0000	3.78E+00	3.01E-01	9.86E-03	3.12E-02	1.27E-01
U-235	4391.000	15.000	15.000	0.000	2.7628	80.90000	7.86E-02	2.11E-02	3.37E-02	8.16E-02	2.03E-02
U-238	4184.730	238.000	238.000	0.000	3.2810	100.0000	1.01E+00	9.78E-02	3.24E-02	7.62E-02	6.54E-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: 938222 SAMPLE DATE : 5-JAN-2010 00:00:00.		SAMPLE ID : S1202007558_UU SAMPLE QTY: 0.104 G	
DETECTOR NUMBER :65877 AVERAGE %EFFICIENCY :25.5394 % YIELD : 92.494		COUNT DATE: 9-JAN-2010 11:01:19 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB	
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 : 4.50902 dpm RESULTS : 4.17057 dpm	LIB FILE : ENV_ALPHA_UU.N BKG FILE : B138.CNF;385 BKG DATE : 3-JAN-2010 EFF FILE : W138.CNF;100 CAL DATE : 15-DEC-2009

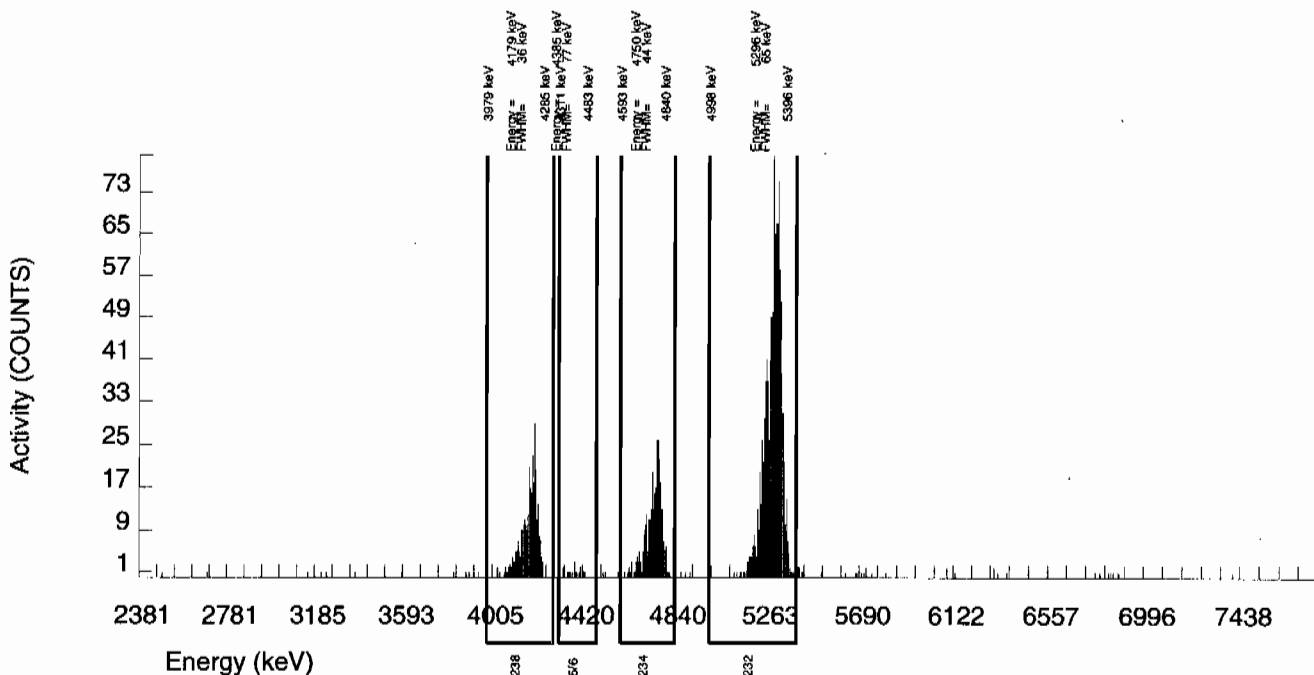
NUCLIDE ACTIVITY SUMMARY

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	309.000	305.923	2.000	6.0782	100.0000	5.61E+00	5.39E-01	2.59E-01	5.68E-01	3.23E-01
U232	5302.100	1067.000	1065.000	2.000	1.4142	100.0000	1.95E+01	1.62E+00	6.03E-02	1.70E-01	6.00E-01
U-235	4391.000	17.000	13.000	4.000	2.7628	80.90000	2.95E-01	1.06E-01	1.46E-01	3.53E-01	1.04E-01
U-238	4184.730	309.000	308.000	1.000	3.2810	100.0000	5.65E+00	5.42E-01	1.40E-01	3.30E-01	3.23E-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, Rev10

Batch# 941241 Product: Ph Date: 1/16/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)	✓		
If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method 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.	✓		
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 Data Exception Reports (DER) completed, if applicable.			N/A
Batch Data Exception Reports (DER) 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

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [Signature] 1/16/10

Secondary Review Performed By: [Signature] 1/18/10

LANL

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Plutonium Que Sheet

13-JAN-10

Batch #: 941241 Analyst: HAKB First Client Due Date: 26-JAN-10 Internal Due Date: 20-JAN-10
 Tracer Isotope(s): Pu-242/Pu-238 Tracer Code: 1374-A Expiration Date: 12/8/10 Vol: 0.1
 LCS Isotope(s): Pu-239/Pu-238 *LCS Code: SPWA 0244-B Expiration Date: 9/30/20 Vol: 0.
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: N/A Expiration Date: N/A Vol: N/A
 Prep Date: 1/14/10 Initials: AKB Pipet ID: 2571058 Balance ID: 8040272 Witness: KM 1-14-10

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/d)	Pu Det #
243624005-4	RE12-10-7858	SAMPLE	.05 pCi/g	SOIL	LANL010	QC ACCOUNT	22-DEC-09	1	1	1.256	28
1202014510-1	MB for batch 941241	MB	UCF pCi/g to pCi/g SOIL	SOIL	QC ACCOUNT	QC ACCOUNT	22-DEC-09	2	2	1.0	29
1202014511-4	RE12-10-7858(243624005DUP)	DUP	.05 pCi/g	SOIL	QC ACCOUNT	QC ACCOUNT	22-DEC-09	3	3	1.262	30
1202014512-1	LCS for batch 941241	* LCS	UCF pCi/g to pCi/g SOIL	SOIL	QC ACCOUNT	QC ACCOUNT	22-DEC-09	4	4	0.116	31

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] 1/16/10

Blank Correction Report

Batch ID 941241

GEL Sample ID	Client sample ID	Parameter	Allquot	Result	TPU	MDA	Allquot Corrected Blank Result	Units	Activity <5X Corrected Blank
1202014511	DUP	Plutonium-238	1.26 g	0.0104	0.00758	0.019	-.00747619	pCi/g	NO
		Plutonium-239/240	1.26 g	0.00692	0.00328	0.0218	-.00124603	pCi/g	NO
1202014512	LCS	Plutonium-238	0.116 g	7.65	0.540	0.209	-.08120690	pCi/g	NO
		Plutonium-239/240	0.116 g	39.9	2.40	0.239	-.01353448	pCi/g	NO
1202014510	MB	Plutonium-238	1.00 g	-0.00942	0.00628	0.0259	-.00942	pCi/g	NO
		Plutonium-239/240	1.00 g	-0.00157	0.00272	0.0297	-.00157	pCi/g	NO
243624005	RE12-10-7858	Plutonium-238	1.26 g	0.00628	0.00378	0.0207	-.00747619	pCi/g	NO
		Plutonium-239/240	1.26 g	0.0138	0.00492	0.0237	-.00124603	pCi/g	NO

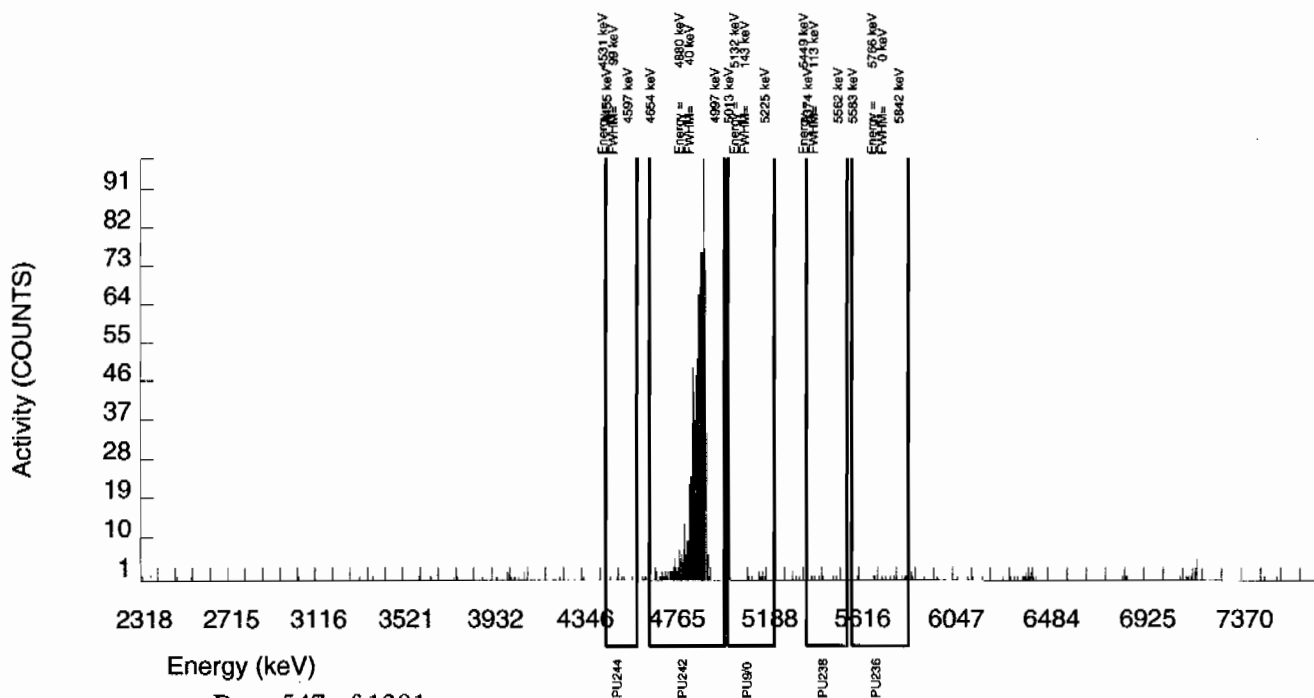
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 941241 SAMPLE DATE : 22-DEC-2009 00:00:00		SAMPLE ID : S0243624005_PU SAMPLE QTY: 1.256 G	
DETECTOR NUMBER :78792 AVERAGE %EFFICIENCY :30.5070 % YIELD : 93.726		COUNT DATE:15-JAN-2010 13:23:58 ELAPSED LIVE TIME(SEC): 60000.00 ANALYST :HAKB	
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 : 3.17305 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B028.CNF;1113 BKG DATE : 10-JAN-2010 EFF FILE : W028.CNF;319 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	13.000	11.000	2.000	3.4797	99.90000	1.38E-02	4.92E-03	1.02E-02	2.37E-02	4.86E-03
PU-236	5749.000	12.000	2.000	10.000	2.1286	100.0000	2.55E-03	5.98E-03	6.21E-03	1.58E-02	5.98E-03
PU-238	5499.000	7.000	5.000	2.000	2.9680	99.90000	6.28E-03	3.78E-03	8.67E-03	2.07E-02	3.77E-03
PU242	4890.000	975.000	968.000	7.000	2.6458	100.0000	1.21E+00	7.56E-02	7.72E-03	1.88E-02	3.93E-02
PU-244	4589.000	5.000	4.000	1.000	5.2050	99.90000	5.02E-03	3.09E-03	1.52E-02	3.38E-02	3.08E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 941241
SAMPLE DATE : 14-JAN-2010 00:00:00

SAMPLE ID : S1202014510_PU
SAMPLE QTY: 1.000 G

DETECTOR NUMBER :33454
AVERAGE %EFFICIENCY :31.1998
% YIELD : 92.024

COUNT DATE:15-JAN-2010 13:23:58
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

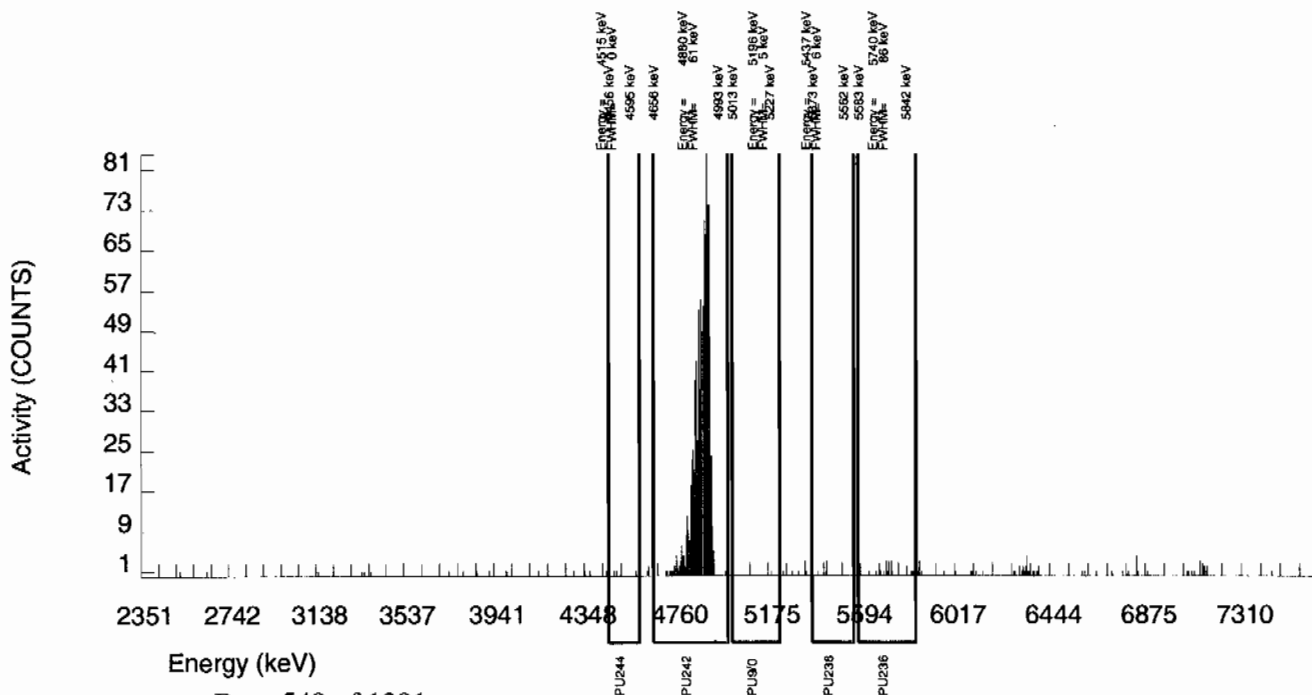
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.11540 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B029.CNF;1104
BKG DATE : 10-JAN-2010
EFF FILE : W029.CNF;318
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	1.000	-1.000	2.000	3.4797	99.90000	-1.57E-03	2.72E-03	1.27E-02	2.97E-02	2.72E-03
PU-236	5749.000	20.000	-10.000	30.000	2.1286	100.0000	-1.57E-02	1.11E-02	7.77E-03	1.98E-02	1.11E-02
PU-238	5499.000	5.000	-6.000	11.000	2.9680	99.90000	-9.42E-03	6.28E-03	1.08E-02	2.59E-02	6.28E-03
PU242	4890.000	979.000	972.000	7.000	2.6458	100.0000	1.52E+00	9.49E-02	9.66E-03	2.36E-02	4.93E-02
PU-244	4589.000	6.000	5.000	1.000	5.2050	99.90000	7.85E-03	4.18E-03	1.90E-02	4.23E-02	4.16E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 941241
SAMPLE DATE : 22-DEC-2009 00:00:00

SAMPLE ID : S1202014511_PU
SAMPLE QTY: 1.262 G

DETECTOR NUMBER :33447
AVERAGE %EFFICIENCY :32.1103
% YIELD : 96.498

COUNT DATE:15-JAN-2010 13:23:58
ELAPSED LIVE TIME(SEC): 60000.00
ANALYST :HAKB

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

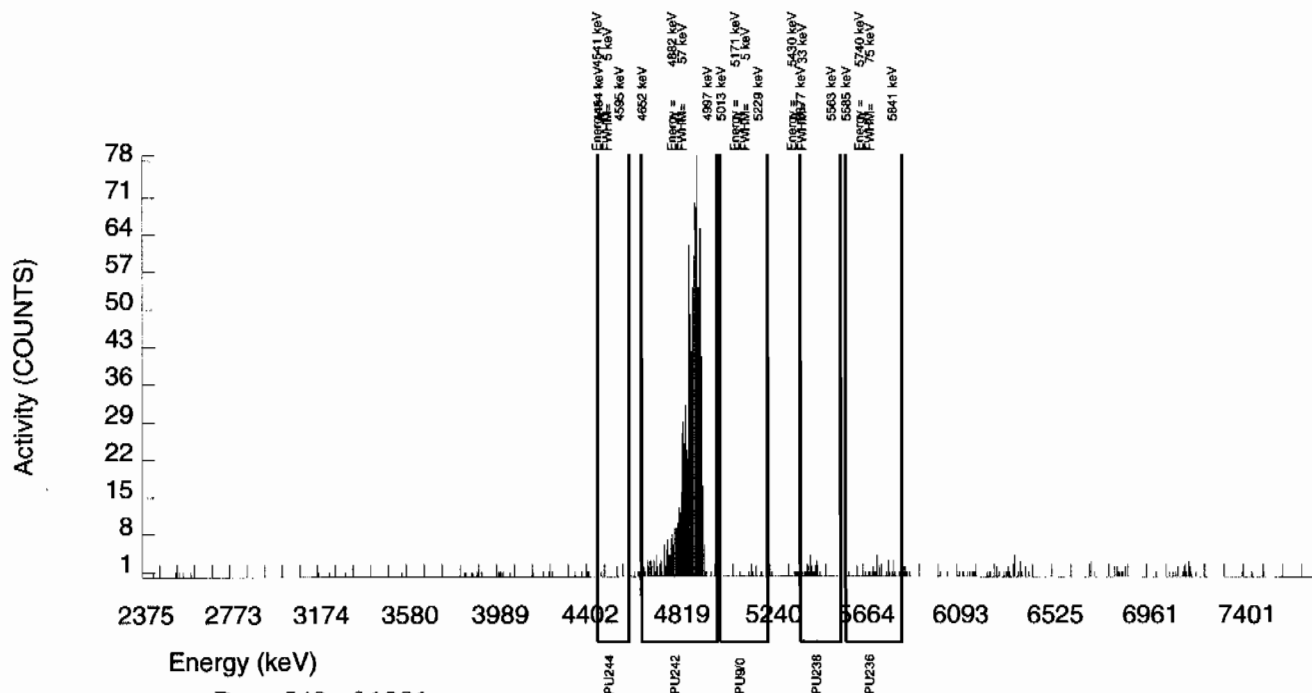
TRACER
ID : 1374-A
ISOTOPE : PU242
NOMINAL : 3.38543 dpm
RESULTS : 3.26686 dpm

LIB FILE : ENV_ALPHA_PU.N
BKG FILE : B030.CNF;1101
BKG DATE : 10-JAN-2010
EFF FILE : W030.CNF;303
CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	7.000	6.000	1.000	3.4797	99.90000	6.92E-03	3.28E-03	9.33E-03	2.18E-02	3.26E-03
PU-236	5749.000	29.000	10.000	19.000	2.1286	100.0000	1.17E-02	8.14E-03	5.70E-03	1.45E-02	8.11E-03
PU-238	5499.000	26.000	9.000	17.000	2.9680	99.90000	1.04E-02	7.58E-03	7.96E-03	1.90E-02	7.57E-03
PU242	4890.000	1054.000	1049.000	5.000	2.2361	100.0000	1.21E+00	7.36E-02	5.99E-03	1.51E-02	3.75E-02
PU-244	4589.000	4.000	4.000	0.000	5.2050	99.90000	4.61E-03	2.32E-03	1.40E-02	3.10E-02	2.31E-03

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



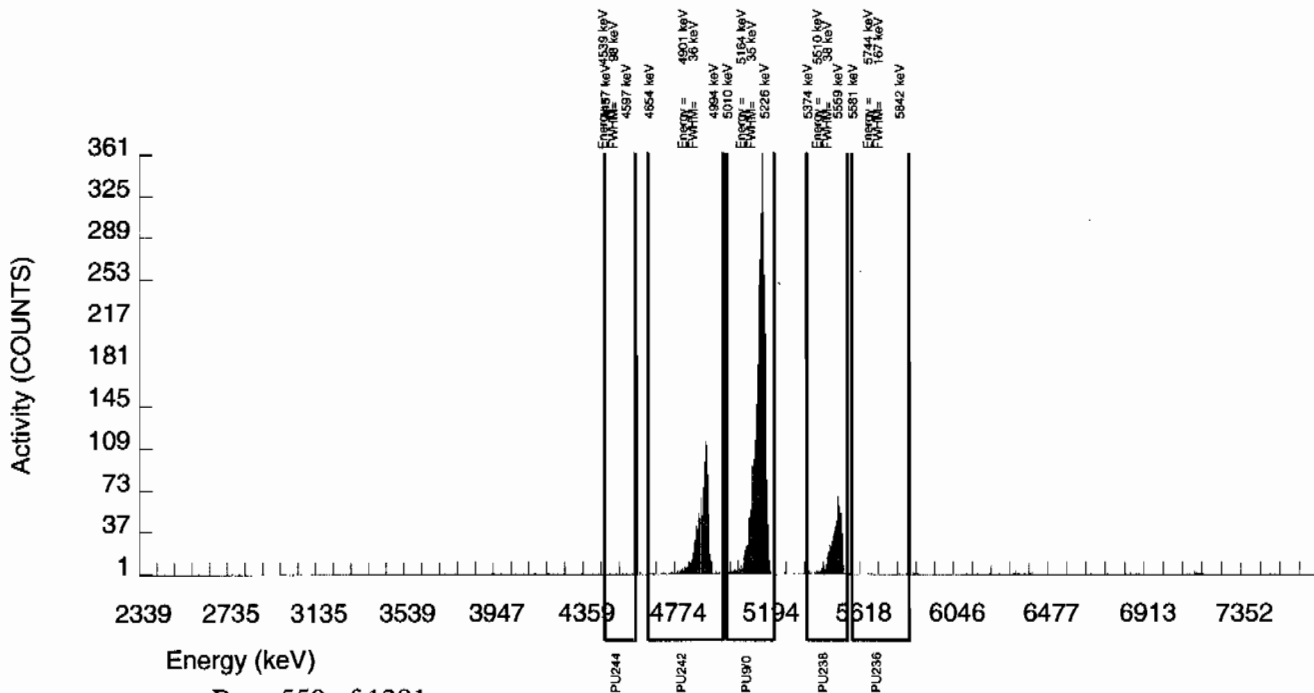
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 941241 SAMPLE DATE : 14-JAN-2010 00:00:00		SAMPLE ID : S1202014512_PU SAMPLE QTY: 0.116 G	
DETECTOR NUMBER :79988 AVERAGE %EFFICIENCY :33.5512 % YIELD : 91.473		COUNT DATE:15-JAN-2010 13:23:59 ELAPSED LIVE TIME(SEC): 59999.99 ANALYST :HAKB	
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 : 3.09676 dpm	LIB FILE : ENV_ALPHA_PU.N BKG FILE : B031.CNF;1099 BKG DATE : 10-JAN-2010 EFF FILE : W031.CNF;343 CAL DATE : 4-JAN-2010

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	GROSS AREA	NET AREA	BKG AREA	BKG Sg	%ABUN	ACTIVITY pCi/G	TPU 1-SIGMA	DLC pCi/G	MDC pCi/G	UNC pCi/G
PU-9/0	5155.000	3153.000	3147.000	6.000	3.4797	99.90000	3.99E+01	2.40E+00	1.03E-01	2.39E-01	7.12E-01
PU-236	5749.000	4.000	-13.000	17.000	2.1286	100.0000	-1.65E-01	5.81E-02	6.27E-02	1.60E-01	5.81E-02
PU-238	5499.000	606.000	604.000	2.000	2.9680	99.90000	7.65E+00	5.40E-01	8.75E-02	2.09E-01	3.12E-01
PU242	4890.000	1041.000	1039.000	2.000	1.4142	100.0000	1.31E+01	8.60E-01	4.16E-02	1.18E-01	4.09E-01
PU-244	4589.000	5.000	4.000	1.000	5.2050	99.90000	5.07E-02	3.12E-02	1.53E-01	3.41E-01	3.10E-02

NOTE: Sg calculated via blank population (updated 5-JAN-2010)
NOTE: Sg of PU242 calculated as sqrt(BKG AREA)



Radiochemistry Batch Checklist, Rev 9

Batch# 937704

Product: Gamma Solid
LANL

Date: 01/11/10

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required)			N/A
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%.			N/A
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.			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.	✓		
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: for Harold 1/11/10

Secondary Review Performed By: (Signature) 1/12/10

Gamma Spec Que Sheet

1.6-117/10

12/30/2009

Batch #: 937704

Analyst: MXRI

First Client Due Date: 01/26/2010

Internal Due Date: 01/15/2010

Gamma Spike Isotope: Mixed Gamma

Spike Code: n/a

Expiration Date: n/a

Vol: n/a Nominal Concentration: n/a

Gamma LCS Isotope: Mixed Gamma

LCS Code: 1032-A

Expiration Date: 12/2/10

Vol: 1.0 ml Nominal Concentration: Cs137-5.573

Initials: MS

Prep Date: 12/31/09

Library: SOLID

Witness: n/a

Co60-6.488

Am241-15.91

Wet/Dry

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Detector	Sealing Date/Time (if Applicable)
243624001-1	RE12-10-7841	SAMPLE	LANL010	SOIL	133.62	RF	C4M	13	12/31/09
243624002-1	RE12-10-7840	SAMPLE	LANL010	SOIL	120.59	RF		21	
243624003-1	RE12-10-7839	SAMPLE	LANL010	SOIL	117.31	RF		23	
243624004-1	RE12-10-7838	SAMPLE	LANL010	SOIL	105.89	RF		1	
243624005-1	RE12-10-7858	SAMPLE	LANL010	SOIL	136.45	RF		2	
243624006-1	RE12-10-7846	SAMPLE	LANL010	SOIL	131.15	RF		15	
243624007-1	RE12-10-7844	SAMPLE	LANL010	SOIL	126.05	RF		4	
243624008-1	RE12-10-7845	SAMPLE	LANL010	SOIL	130.58	RF		12	RF 11/10
243624009-1	RE12-10-7842	SAMPLE	LANL010	SOIL	126.30	RF		6	
243624010-1	RE12-10-7843	SAMPLE	LANL010	SOIL	127.90	RF		7	
243624011-1	RE12-10-7847	SAMPLE	LANL010	SOIL	121.91	RF		10	
1202006017-1	MB	MB	QC ACCOUNT	QC ACCOUNT	136.45	RF		11	
1202006018-1	DUP RE12-10-7841(243624001)	DUP	QC ACCOUNT	QC ACCOUNT	133.62	RF		18	
1202006019-1	LCS	LCS	QC ACCOUNT	QC ACCOUNT	155.44	RF		13	

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: By Hand 1146

Farlow 1/12/09 Page 1 of 1

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	YIELD	Parmname	Result	MDA	RDL
937704	243624001	SAMPLE	07-JAN-10		Cerium-139	-0.01127	0.05385	0.050
					Cesium-134	0.08462	0.1116	0.100
					Sodium-22	0.00629	0.09279	0.080
937704	243624002	SAMPLE	07-JAN-10		Sodium-22	-0.00055	0.08885	0.080
937704	243624003	SAMPLE	07-JAN-10		Americium-241	-0.1041	0.3685	0.200
					Cerium-139	0.02087	0.05897	0.050
					Cesium-134	0.05622	0.1067	0.100
					Sodium-22	-0.01035	0.08156	0.080
					Thorium-234	0.8453	3.042	2.00
937704	243624004	SAMPLE	07-JAN-10		Americium-241	0.2045	0.3495	0.200
					Cerium-139	-0.00356	0.05937	0.050
					Sodium-22	-0.01866	0.08125	0.080
					Thorium-234	0.9694	2.8	2.00
937704	243624005	SAMPLE	07-JAN-10		Americium-241	0.08069	0.2861	0.200
937704	243624006	SAMPLE	07-JAN-10		Americium-241	-0.3575	0.4703	0.200
					Cerium-139	0.00065	0.05591	0.050
					Thorium-234	1.891	3.899	2.00
937704	243624007	SAMPLE	07-JAN-10		Americium-241	-0.04097	0.3787	0.200
					Thorium-234	0.5158	2.987	2.00
937704	243624008	SAMPLE	07-JAN-10		Americium-241	-0.04062	0.2283	0.200
937704	243624009	SAMPLE	07-JAN-10		Americium-241	-0.0373	0.3401	0.200
					Cerium-139	-0.00532	0.05877	0.050
					Sodium-22	0.04503	0.08922	0.080
					Thorium-234	2.717	2.922	2.00
937704	243624010	SAMPLE	07-JAN-10					
937704	243624011	SAMPLE	07-JAN-10		Americium-241	-0.062	0.4098	0.200
					Thorium-234	-0.3148	3.223	2.00
937704	1202006617	MB	07-JAN-10					
937704	1202006618	DUP	07-JAN-10		Americium-241	-0.1762	0.2655	0.200
					Thorium-234	0.9457	2.347	2.00
937704	1202006619	LCS	07-JAN-10		Cerium-139	0.01951	0.08206	0.050
					Cesium-134	0.1091	0.185	0.100
					Europium-152	0.01468	0.3224	0.200
					Mercury-203	-0.03024	0.1108	0.100
					Potassium-40	0.4277	1.135	1.00
					Ruthenium-106	0.6715	1.259	0.800
					Sodium-22	-0.03204	0.1021	0.080
					Tin-113	0.03672	0.1552	0.100
					Uranium-235	-0.06995	0.5705	0.500

GEL QUALS

Batch ID: 937704

Report run on: January 11, 2010 12:44 PM

Samp Id	Parname	Coef	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
243624001-1 07-JAN-2010 13:41	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.446			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.179			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.397			
243624002-1 07-JAN-2010 13:52	Bismuth-211	UI	UI	UI	Data rejected due to a short half-life.		3.85			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.066			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.701			
243624003-1 07-JAN-2010 13:52	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.977			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.781			
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.223			
243624004-1 07-JAN-2010 14:34	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.446			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.375			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1428		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		5.382			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1048			
243624005-1 07-JAN-2010 14:35	Bismuth-211	UI	UI	UI	Data rejected due to interference.		2.686			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		1.809			
	Radium-224	UI	UI	UI	Data rejected due to interference.		1.945			
243624006-1 07-JAN-2010 14:44	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.013			
	Radium-224	UI	UI	UI	Data rejected due to interference.		3.019			

GEL QUALS

Batch ID: 937704

Report run on: January 11, 2010 12:44 PM

Samp Id	Parname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
243624007-1 07-JAN-2010 15:50	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.498			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		2.968			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.08773		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.679			
243624008-1 07-JAN-2010 15:50	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.05			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.151			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.09127		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.772			
243624009-1 07-JAN-2010 15:51	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.569			
	Cadmium-109	UI	UI	UI	Data rejected due to low abundance.		3.241			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.299			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.09655			
243624010-1 07-JAN-2010 15:51	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.326			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		4.458			
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.991			
243624011-1 07-JAN-2010 15:51	Bismuth-211	UI	UI	UI	Data rejected due to interference.		4.26			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		3.065			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.1039		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.854			

GEL QUALS

Batch ID: 937704

Report run on: January 11, 2010 12:44 PM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
1202006818-1 DUP 07-JAN-2010 16:06	Bismuth-211	UI	UI	UI	Data rejected due to interference.		3.737			
	Cadmium-109	UI	UI	UI	Data rejected due to interference.		1.666			
	Cesium-134	UI	UI	UI	Data rejected due to low abundance.		.08589		.1	.1
	Radium-224	UI	UI	UI	Data rejected due to interference.		4.182			
	Strontium-85	UI	UI	UI	Data rejected due to low abundance.		.1265			

Gamma Review Report based on Result > MDA for Batch:937704

Sample ID	Collect Date	Run Date	Days Past	Sample Type	Status	Instance	Client	Project	Quals	Zero?	queue	
243624001	22-DEC-09 12:00	07-JAN-10 13:41	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL		N	RGSP	
Name	Result	Uncert.	Units	MDA	RDL	Energy	FWHM	Comb Act	Rpt Err(%)	Qual	Qual Comment	
Actinium-228	nr	1.487	0.1853	pCi/g	0.2526	N	911.2	3	1.319	IDENTIFIED	11.33	☐
Americium-243	int nr	0.3084	0.03041	pCi/g	0.0637	N	74.76	1	1.175	IDENTIFIED	8.863	☐
Annihilation Rad.	HE	0.1338	0.04765	pCi/g	0.05704	N	510.4	1	2.227	IDENTIFIED	35.45	☐
Bismuth-210	HE	1.191	0.4131	pCi/g	0.7707	N	46.47	3	1.112	IDENTIFIED	34.43	☐
Bismuth-211	int	3.446	0.2663	pCi/g	0.4125	Y	351.9	4	1.356	IDENTIFIED	6.818	☐ ui
Bismuth-212	la nr	1.463	0.2834	pCi/g	0.7836	N	0	8	0	FAIL_ABUND	0	☐
Bismuth-214 ✓		1.336	0.104	pCi/g	0.1399	0.200	609.1	4	1.427	IDENTIFIED	6.226	☐
Cadmium-109	int	3.179	0.3596	pCi/g	0.9722	Y	87.02	3	1.155	IDENTIFIED	10.59	☐ ui
Cerium-143		1414	220.6	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Gross Gamma		7.739	1.213	pCi/g	2.611	N	0					☐
Iodine-123	HE	1.33E+07	1.01E+07	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Iodine-135		6.22E+15	0	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Lead-210	HE	1.191	0.4131	pCi/g	0.7707	N	46.47	3	1.112	IDENTIFIED	34.43	☐
Lead-212 ✓		1.426	0.08674	pCi/g	0.1012	0.100	238.6	4	1.146	IDENTIFIED	4.047	☐
Lead-214 ✓		1.199	0.09778	pCi/g	0.1423	0.100	351.9	4	1.356	IDENTIFIED	6.818	☐
Neptunium-237	int nr	0.9161	0.1403	pCi/g	0.266	N	87.02	3	1.155	IDENTIFIED	10.59	☐
Niobium-97	HE	2.58E+05	1.65E+05	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Polonium-210	HE	1.191	0.4124	pCi/g	0.7707	N	46.47	3	1.112	IDENTIFIED	34.43	☐
Polonium-212	nr	1.426	0.08674	pCi/g	0.1012	N	238.6	4	1.146	IDENTIFIED	4.047	☐
Polonium-214	nr	1.199	0.09778	pCi/g	0.1423	N	351.9	4	1.356	IDENTIFIED	6.818	☐
Polonium-216	nr	1.426	0.08674	pCi/g	0.1012	N	238.6	4	1.146	IDENTIFIED	4.047	☐
Polonium-218	nr	1.199	0.09778	pCi/g	0.1423	N	351.9	4	1.356	IDENTIFIED	6.818	☐
Potassium-40 ✓		19.67	0.9866	pCi/g	0.6259	1.00	1461	1	2.047	IDENTIFIED	3.975	☐
Radium-224	int	4.397	0.7715	pCi/g	1.152	Y	241.5	1	1.831	IDENTIFIED	17.1	☐ ui
Radium-226 ✓		1.336	0.104	pCi/g	0.1399	Y	609.1	4	1.427	IDENTIFIED	6.226	☐
Radium-228 ✓		1.487	0.1853	pCi/g	0.2526	0.500	911.2	3	1.319	IDENTIFIED	11.33	☐
Thallium-200	HE	26.46	464.8	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Thallium-208 ✓		0.548	0.05579	pCi/g	0.07283	0.080	583	1	1.808	IDENTIFIED	9.302	☐
Thorium-228	nr	1.449	0.08814	pCi/g	0.1028	N	238.6	4	1.146	IDENTIFIED	4.047	☐
Thorium-230	nr	1.336	0.104	pCi/g	0.1399	N	609.1	4	1.427	IDENTIFIED	6.226	☐
Thorium-232	nr	1.487	0.1853	pCi/g	0.2526	N	911.2	3	1.319	IDENTIFIED	11.33	☐
Thorium-234 ✓		1.596	0.5139	pCi/g	1.022	2.00	63.18	2	1.297	IDENTIFIED	30.86	☐
Tin-126	int nr	0.312	0.03529	pCi/g	0.0953	N	87.02	3	1.155	IDENTIFIED	10.59	☐
Titanium-44	la nr	0.3849	0.02574	pCi/g	0.05865	N	0	8	0	FAIL_ABUND	0	☐
Total Uranium		4.8174	1.53E-06	ug/g	1.5243	N	0					☐
Uranium-234	nr	1.336	0.104	pCi/g	0.1399	N	609.1	4	1.427	IDENTIFIED	6.226	☐
Uranium-238	HE	1.596	0.5139	pCi/g	1.022	N	63.18	2	1.297	IDENTIFIED	30.86	☐
Zirconium-97		1.09E+07	3.07E+06	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐

*** = Number of isotopes identified with a keyline at this energy.

*** = 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
243624002	22-DEC-09 12:00	07-JAN-10 13:52	16.1	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.669	0.1867	pCi/g	0.262	N	910.7	3	1.54 IDENTIFIED	9.64	
Americium-243 int nr	0.3477	0.02557	pCi/g	0.04495	N	74.82	1	0.7939 IDENTIFIED	6.007	
Annihilation Rad.	0.1398	0.03955	pCi/g	0.05588	N	510.8	1	1.459 IDENTIFIED	27.88	
Barium-137m	0.2339	0.03597	pCi/g	0.06711	N	661.3	2	1.581 IDENTIFIED	14.35	
Bismuth-210 HE	1.331	0.3432	pCi/g	0.673	N	46.7	3	0.6174 IDENTIFIED	25.34	
Bismuth-211 int	3.85	0.3118	pCi/g	0.359	Y	351.7	4	0.9233 IDENTIFIED	6.726	ui
Bismuth-212 la nr	1.75	0.3356	pCi/g	0.8478	N	0	7	0 FAIL_ABUND	0	
Bismuth-214 ✓	1.117	0.1091	pCi/g	0.1279	0.200	609	4	1.134 IDENTIFIED	7.782	
Cadmium-109 int	3.066	0.3468	pCi/g	0.7689	Y	87.28	3	0.9059 IDENTIFIED	10.3	ui
Cerium-143	518.3	140.9	pCi/g	0	N	0	7	0 SHORT_HLIF	0	
Cesium-135 HE	0.4751	0.1442	pCi/g	0.2312	N	269.5	1	0.9983 IDENTIFIED	29.92	
Cesium-137 ✓	0.2473	0.03802	pCi/g	0.07094	0.100	661.3	2	1.581 IDENTIFIED	14.35	
Gross Gamma	8.358	1.099	pCi/g	2.834	N	0				
Iodine-133 HE	5954	6975	pCi/g	0	N	0	7	0 SHORT_HLIF	0	
Lead-210 HE	1.331	0.3432	pCi/g	0.673	N	46.7	3	0.6174 IDENTIFIED	25.34	
Lead-212 ✓	1.558	0.09562	pCi/g	0.08376	0.100	238.4	4	0.8743 IDENTIFIED	3.597	
Lead-214 ✓	1.339	0.114	pCi/g	0.1253	0.100	351.7	4	0.9233 IDENTIFIED	6.726	
Lutetium-177 HE	2.483	0.764	pCi/g	2.046	N	0	7	0 FAIL_ABUND	0	
Neptunium-237 int nr	0.8836	0.1353	pCi/g	0.2204	N	87.28	3	0.9059 IDENTIFIED	10.3	
Polonium-210 HE	1.331	0.3422	pCi/g	0.673	N	46.7	3	0.6174 IDENTIFIED	25.34	
Polonium-212 nr	1.558	0.09562	pCi/g	0.08376	N	238.4	4	0.8743 IDENTIFIED	3.597	
Polonium-214 nr	1.339	0.114	pCi/g	0.1253	N	351.7	4	0.9233 IDENTIFIED	6.726	
Polonium-216 nr	1.558	0.09562	pCi/g	0.08376	N	238.4	4	0.8743 IDENTIFIED	3.597	
Polonium-218 nr	1.339	0.114	pCi/g	0.1253	N	351.7	4	0.9233 IDENTIFIED	6.726	
Potassium-40 ✓	23.46	1.479	pCi/g	0.7121	1.00	1460	1	2.077 IDENTIFIED	4.636	
Radium-224 int	4.701	0.5969	pCi/g	0.9558	Y	241.4	1	1.515 IDENTIFIED	11.89	ui
Radium-226 ✓	1.117	0.1091	pCi/g	0.1279	Y	609	4	1.134 IDENTIFIED	7.782	
Radium-228 ✓	1.669	0.1867	pCi/g	0.262	0.500	910.7	3	1.54 IDENTIFIED	9.64	
Technetium-99m	1.64E+17	0	pCi/g	0	N	0	7	0 SHORT_HLIF	0	
Thallium-208 ✓	0.505	0.05194	pCi/g	0.06529	0.080	582.9	1	1.156 IDENTIFIED	8.725	
Thorium-228 nr	1.583	0.09716	pCi/g	0.08511	N	238.4	4	0.8743 IDENTIFIED	3.597	
Thorium-230 nr	1.117	0.1091	pCi/g	0.1279	N	609	4	1.134 IDENTIFIED	7.782	
Thorium-232 nr	1.669	0.1867	pCi/g	0.262	N	910.7	3	1.54 IDENTIFIED	9.64	
Thorium-234 ✓	1.985	0.4467	pCi/g	0.746	2.00	63.23	2	0.8017 IDENTIFIED	20.71	
Tin-126 int nr	0.3009	0.03404	pCi/g	0.07534	N	87.28	3	0.9059 IDENTIFIED	10.3	
Titanium-44 la nr	0.3383	0.0205	pCi/g	0.03878	N	0	7	0 FAIL_ABUND	0	
Total Uranium	5.956	1.33E-06	ug/g	1.1125	N	0				
Uranium-234 nr	1.117	0.1091	pCi/g	0.1279	N	609	4	1.134 IDENTIFIED	7.782	
Uranium-238 nr	1.985	0.4467	pCi/g	0.746	N	63.23	2	0.8017 IDENTIFIED	20.71	
Zirconium-97	1.00E+07	2.81E+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
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243624003	22-DEC-09 12:00	07-JAN-10 13:52	16.1	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	nr	1.868	0.2252	pCi/g	0.231	N	910.8	3	1.853	IDENTIFIED	10.58	☐
Americium-243	int nr	0.3936	0.05224	pCi/g	0.1167	N	74.62	1	1.376	IDENTIFIED	12.51	☐
Annihilation Rad.		0.1332	0.03941	pCi/g	0.05192	N	510.8	1	1.91	IDENTIFIED	29.45	☐
Bismuth-211	int	3.977	0.2959	pCi/g	0.3537	Y	351.6	4	1.274	IDENTIFIED	6.689	☐ ui
Bismuth-212	HE	1.17	0.2356	pCi/g	0.755	N	0	9	0	FAIL_ABUND	0	☐
Bismuth-214 ✓		1.3	0.1016	pCi/g	0.1373	0.200	608.8	4	1.235	IDENTIFIED	6.857	☐
Cadmium-109	int	3.781	0.5758	pCi/g	1.608	Y	87.16	3	1.18	IDENTIFIED	14.44	☐ ui
Cerium-143		1885	269	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Cesium-135	HE	0.3879	0.1377	pCi/g	0.2836	N	269.6	1	1.606	IDENTIFIED	35.28	☐
Gross Gamma		8.342	1.165	pCi/g	2.941	N	0					☐
Iodine-135		5.43E+15	0	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Lead-212 ✓		1.805	0.08991	pCi/g	0.1065	0.100	238.4	4	1.185	IDENTIFIED	3.449	☐
Lead-214 ✓		1.383	0.1091	pCi/g	0.1233	0.100	351.6	4	1.274	IDENTIFIED	6.689	☐
Lutetium-177	HE	2.494	0.7818	pCi/g	2.444	N	0	9	0	FAIL_ABUND	0	☐
Neptunium-237	int nr	1.09	0.2005	pCi/g	0.5073	N	87.16	3	1.18	IDENTIFIED	14.44	☐
Niobium-95m	la nr	0.5833	0.09741	pCi/g	0.3166	N	0	9	0	NOT_IDENTI	0	☐
Niobium-97	HE	1.17E+05	1.58E+05	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Polonium-212	nr	1.805	0.08991	pCi/g	0.1065	N	238.4	4	1.185	IDENTIFIED	3.449	☐
Polonium-214	nr	1.383	0.1091	pCi/g	0.1233	N	351.6	4	1.274	IDENTIFIED	6.689	☐
Polonium-216	nr	1.805	0.08991	pCi/g	0.1065	N	238.4	4	1.185	IDENTIFIED	3.449	☐
Polonium-218	nr	1.383	0.1091	pCi/g	0.1233	N	351.6	4	1.274	IDENTIFIED	6.689	☐
Potassium-40 ✓		19.99	1.154	pCi/g	0.5406	1.00	1460	1	2.399	IDENTIFIED	4.394	☐
Radium-224	int	5.223	0.6803	pCi/g	1.212	Y	241.7	1	1.774	IDENTIFIED	12.72	☐ ui
Radium-226 ✓		1.3	0.1016	pCi/g	0.1373	Y	608.8	4	1.235	IDENTIFIED	6.857	☐
Radium-228 ✓		1.868	0.2252	pCi/g	0.231	0.500	910.8	3	1.853	IDENTIFIED	10.58	☐
Thallium-200	HE	164.4	469	pCi/g	0	N	0	9	0	SHORT_HLIF	0	☐
Thallium-208 ✓		0.5093	0.04761	pCi/g	0.05714	0.080	582.6	1	1.211	IDENTIFIED	8.766	☐
Thorium-228	nr	1.834	0.09136	pCi/g	0.1082	N	238.4	4	1.185	IDENTIFIED	3.449	☐
Thorium-230	nr	1.3	0.1016	pCi/g	0.1373	N	608.8	4	1.235	IDENTIFIED	6.857	☐
Thorium-232	nr	1.868	0.2252	pCi/g	0.231	N	910.8	3	1.853	IDENTIFIED	10.58	☐
Tin-126	int nr	0.3711	0.05652	pCi/g	0.1588	N	87.16	3	1.18	IDENTIFIED	14.44	☐
Titanium-44	la nr	0.454	0.03518	pCi/g	0.1037	N	0	9	0	FAIL_ABUND	0	☐
Uranium-234	nr	1.3	0.1016	pCi/g	0.1373	N	608.8	4	1.235	IDENTIFIED	6.857	☐
Zirconium-97		1.66E+07	3.29E+06	pCi/g	0	N	0	9	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	
243624004	22-DEC-09 12:00	07-JAN-10 14:34	16.1	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	nr	1.845	0.2045	pCi/g	0.2739	N	910.7	3	1.772	IDENTIFIED	9.867	☐
Americium-243	int nr	0.4444	0.05179	pCi/g	0.1136	N	74.72	1	1.186	IDENTIFIED	10.86	☐
Annihilation Rad.	HE	0.1279	0.04389	pCi/g	0.05937	N	510.8	1	1.457	IDENTIFIED	34.2	☐
Barium-137m		0.174	0.03158	pCi/g	0.07972	N	661.4	2	0.9638	IDENTIFIED	17.98	☐
Bismuth-211	int	4.446	0.3378	pCi/g	0.4077	Y	352.2	4	1.551	IDENTIFIED	6.908	☐ ui

Bismuth-212	HE	1.219	0.3372	pCi/g	0.8056	N	0	8	0	FAIL_ABUND	0	
Bismuth-214	✓	1.356	0.109	pCi/g	0.1325	0.200	609.3	4	1.687	IDENTIFIED	7.128	
Cadmium-109	int	2.375	0.6482	pCi/g	1.544	Y	87.15	3	1.162	IDENTIFIED	26.91	ui
Cerium-143		786.5	181.2	pCi/g	0	N	0	8	0	SHORT_HLIF	0	
Cesium-134	la	0.1428	0.04689	pCi/g	0.1095	0.100	0	8	0	FAIL_ABUND	0	UI Data rejected due to low abundance.
Cesium-137	✓	0.1839	0.03339	pCi/g	0.08428	0.100	661.4	2	0.9638	IDENTIFIED	17.98	
Gross Gamma		9.244	1.813	pCi/g	4.084	N	0					
Krypton-85	HE	20.23	5.318	pCi/g	17.62	N	0	8	0	NOT_IDENTI	0	
Lead-212	✓	1.78	0.09575	pCi/g	0.1226	0.100	238.9	4	1.293	IDENTIFIED	3.957	
Lead-214	✓	1.547	0.1242	pCi/g	0.1421	0.100	352.2	4	1.551	IDENTIFIED	6.908	
Lutetium-177	HE	3.26	0.8975	pCi/g	2.682	N	0	8	0	FAIL_ABUND	0	
Neptunium-237	HE	0.6845	0.1997	pCi/g	0.4534	N	87.15	3	1.162	IDENTIFIED	26.91	
Polonium-212	nr	1.78	0.09575	pCi/g	0.1226	N	238.9	4	1.293	IDENTIFIED	3.957	
Polonium-214	nr	1.547	0.1242	pCi/g	0.1421	N	352.2	4	1.551	IDENTIFIED	6.908	
Polonium-216	nr	1.78	0.09575	pCi/g	0.1226	N	238.9	4	1.293	IDENTIFIED	3.957	
Polonium-218	nr	1.547	0.1242	pCi/g	0.1421	N	352.2	4	1.551	IDENTIFIED	6.908	
Potassium-40	✓	21.16	1.203	pCi/g	0.6858	1.00	1460	1	1.94	IDENTIFIED	4.434	
Radium-224	int	5.382	0.7728	pCi/g	1.226	Y	241.8	1	1.708	IDENTIFIED	14.07	ui
Radium-226	✓	1.356	0.109	pCi/g	0.1325	Y	609.3	4	1.687	IDENTIFIED	7.128	
Radium-228	✓	1.845	0.2045	pCi/g	0.2739	0.500	910.7	3	1.772	IDENTIFIED	9.867	
Strontium-85	la	0.1048	0.02755	pCi/g	0.09131	Y	0	8	0	NOT_IDENTI	0	UI Data rejected due to low abundance.
Thallium-208	✓	0.5632	0.05754	pCi/g	0.07399	0.080	583.2	1	1.219	IDENTIFIED	9.712	
Thorium-228	nr	1.809	0.0973	pCi/g	0.1246	N	238.9	4	1.293	IDENTIFIED	3.957	
Thorium-230	nr	1.356	0.109	pCi/g	0.1325	N	609.3	4	1.687	IDENTIFIED	7.128	
Thorium-232	nr	1.845	0.2045	pCi/g	0.2739	N	910.7	3	1.772	IDENTIFIED	9.867	
Tin-126	HE	0.2331	0.06362	pCi/g	0.1524	N	87.15	3	1.162	IDENTIFIED	26.91	
Titanium-44	la nr	0.3949	0.03765	pCi/g	0.09898	N	0	8	0	FAIL_ABUND	0	
Uranium-234	nr	1.356	0.109	pCi/g	0.1325	N	609.3	4	1.687	IDENTIFIED	7.128	
Zirconium-97	HE	2.20E+06	3.59E+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
243624005	22-DEC-09 12:00	07-JAN-10 14:35	16.1	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	nr	1.017	0.1383	pCi/g	0.1773	N	911.3	3	1.879	IDENTIFIED	12.09
Americium-243	int nr	0.2651	0.03739	pCi/g	0.08322	N	74.52	1	1.084	IDENTIFIED	13.41
Annihilation Rad.		0.1372	0.03522	pCi/g	0.04323	N	511.1	1	2.148	IDENTIFIED	25.18
Barium-137m		0.3167	0.0381	pCi/g	0.0564	N	661.5	2	1.386	IDENTIFIED	11.23
Bismuth-211	int	2.686	0.2829	pCi/g	0.3265	Y	351.7	4	1.217	IDENTIFIED	8.819
Bismuth-212	la nr	1.135	0.2099	pCi/g	0.6551	N	0	10	0	FAIL_ABUND	0
Bismuth-214		0.8341	0.08023	pCi/g	0.1143	0.200	609.1	4	1.503	IDENTIFIED	8.036
Cadmium-109	int	1.809	0.4865	pCi/g	1.287	Y	87.03	3	0.8749	IDENTIFIED	26.43
Cerium-143		1031	174.6	pCi/g	0	N	0	10	0	SHORT_HLIF	0
Cesium-137	✓	0.3348	0.04028	pCi/g	0.05963	0.100	661.5	2	1.386	IDENTIFIED	11.23
Gross Gamma		6.485	1.139	pCi/g	2.52	N	0				
Iodine-123	HE	1.62E+07	8.99E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0
Iodine-133	HE	5547	6862	pCi/g	0	N	0	10	0	SHORT_HLIF	0

Lead-212	✓	1.038	0.08572	pCi/g	0.1056	0.100	238.4	4	1.194	IDENTIFIED	5.353	□
Lead-214	✓	0.9342	0.1014	pCi/g	0.1138	0.100	351.7	4	1.217	IDENTIFIED	8.819	□
Lutetium-177	HE	3.553	1.014	pCi/g	2.192	N	0	10	0	FAIL_ABUND	0	□
Neptunium-237	HE	0.5214	0.1502	pCi/g	0.4041	N	87.03	3	0.8749	IDENTIFIED	26.43	□
Niobium-97	HE	23030	1.38E+05	pCi/g	0	N	0	10	0	SHORT_HLIF	0	□
Polonium-212	nr	1.038	0.08572	pCi/g	0.1056	N	238.4	4	1.194	IDENTIFIED	5.353	□
Polonium-214	nr	0.9342	0.1014	pCi/g	0.1138	N	351.7	4	1.217	IDENTIFIED	8.819	□
Polonium-216	nr	1.038	0.08572	pCi/g	0.1056	N	238.4	4	1.194	IDENTIFIED	5.353	□
Polonium-218	nr	0.9342	0.1014	pCi/g	0.1138	N	351.7	4	1.217	IDENTIFIED	8.819	□
Potassium-40	✓	19.42	1.187	pCi/g	0.5083	1.00	1461	1	2.313	IDENTIFIED	3.84	□
Radium-224	int	1.945	0.4304	pCi/g	1.203	Y	241.5	1	1.674	IDENTIFIED	21.33	□ ui
Radium-226	✓	0.8341	0.08023	pCi/g	0.1143	Y	609.1	4	1.503	IDENTIFIED	8.036	□
Radium-228	✓	1.017	0.1383	pCi/g	0.1773	0.500	911.3	3	1.879	IDENTIFIED	12.09	□
Sodium-24	HE	86200	1.06E+06	pCi/g	0	N	0	10	0	SHORT_HLIF	0	□
Technetium-99m		2.30E+17	0	pCi/g	0	N	0	10	0	SHORT_HLIF	0	□
Thallium-200	HE	648.2	418.3	pCi/g	0	N	0	10	0	SHORT_HLIF	0	□
Thallium-208	✓	0.3688	0.04126	pCi/g	0.05059	0.080	582.9	1	1.374	IDENTIFIED	10	□
Thorium-228	nr	1.055	0.08711	pCi/g	0.1074	N	238.4	4	1.194	IDENTIFIED	5.353	□
Thorium-230	nr	0.8341	0.08022	pCi/g	0.1143	N	609.1	4	1.503	IDENTIFIED	8.036	□
Thorium-232	nr	1.017	0.1383	pCi/g	0.1773	N	911.3	3	1.879	IDENTIFIED	12.09	□
Thorium-234	✓	2.564	1.054	pCi/g	2.133	2.00	63.16	2	1.144	IDENTIFIED	40.16	□
Tin-126	HE	0.1776	0.04775	pCi/g	0.1279	N	87.03	3	0.8749	IDENTIFIED	26.43	□
Total Uranium		7.6541	3.14E-06	ug/g	3.1761	N	0					□
Uranium-234	nr	0.8341	0.08022	pCi/g	0.1143	N	609.1	4	1.503	IDENTIFIED	8.036	□
Uranium-238	HE	2.564	1.054	pCi/g	2.133	N	63.16	2	1.144	IDENTIFIED	40.16	□
Zirconium-97		9.09E+06	2.56E+06	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		
243624006	22-DEC-09 12:00	07-JAN-10 14:44	16.1	SAMPLE	LOAD	1	LANL	LANL010041	GEL	N	RGSP		
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb	Act	Rpt	Err(%)	Qual	Qual Comment
Actinium-228	nr	1.291	0.1698	pCi/g	0.2192	N	911.1	3	2.014	IDENTIFIED	11.93	□	
Americium-243	int nr	0.2531	0.05372	pCi/g	0.1179	N	74.03	1	1.581	IDENTIFIED	20.49	□	
Barium-137m		0.2708	0.0376	pCi/g	0.05927	N	661.4	2	1.279	IDENTIFIED	13.65	□	
Bismuth-211	int	3.013	0.2496	pCi/g	0.3556	Y	351.4	4	1.418	IDENTIFIED	7.54	□	ui
Bismuth-212	HE	0.6638	0.2571	pCi/g	0.6434	N	0	8	0	FAIL_ABUND	0	□	
Bismuth-214	✓	0.9139	0.08947	pCi/g	0.1176	0.200	608.9	4	1.716	IDENTIFIED	9.058	□	
Cerium-143		1621	270.6	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□	
Cesium-137	✓	0.2863	0.03975	pCi/g	0.06265	0.100	661.4	2	1.279	IDENTIFIED	13.65	□	
Gross Gamma		6.066	1.283	pCi/g	2.43	N	0					□	
Lead-212	✓	1.138	0.07395	pCi/g	0.1081	0.100	238.1	4	1.387	IDENTIFIED	5.013	□	
Lead-214	✓	1.048	0.09104	pCi/g	0.1239	0.100	351.4	4	1.418	IDENTIFIED	7.54	□	
Niobium-95m		1.065	0.1057	pCi/g	0.3623	N	0	8	0	NOT_IDENTI	0	□	
Niobium-97	HE	2276	1.75E+05	pCi/g	0	N	0	8	0	SHORT_HLIF	0	□	
Polonium-212	nr	1.138	0.07395	pCi/g	0.1081	N	238.1	4	1.387	IDENTIFIED	5.013	□	
Polonium-214	nr	1.048	0.09104	pCi/g	0.1239	N	351.4	4	1.418	IDENTIFIED	7.54	□	
Polonium-216	nr	1.138	0.07395	pCi/g	0.1081	N	238.1	4	1.387	IDENTIFIED	5.013	□	

Polonium-218	nr	1.048	0.09104	pCi/g	0.1239	N	351.4	4	1.418	IDENTIFIED	7.54	☐
Potassium-40	✓	19.12	1.096	pCi/g	0.5428	1.00	1461	1	2.03	IDENTIFIED	4.272	☐
Radium-224	int	3.019	0.7226	pCi/g	1.229	Y	241.4	1	2.019	IDENTIFIED	23.68	☐ ui
Radium-226	✓	0.9139	0.08947	pCi/g	0.1176	Y	608.9	4	1.716	IDENTIFIED	9.058	☐
Radium-228	✓	1.291	0.1698	pCi/g	0.2192	0.500	911.1	3	2.014	IDENTIFIED	11.93	☐
Technetium-99m		2.61E+17	0	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Thallium-200	HE	582.3	483.6	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Thallium-208	✓	0.4106	0.0451	pCi/g	0.06226	0.080	582.7	1	1.574	IDENTIFIED	10.51	☐
Thorium-228	nr	1.156	0.07515	pCi/g	0.1098	N	238.1	4	1.387	IDENTIFIED	5.013	☐
Thorium-230	nr	0.9139	0.08946	pCi/g	0.1176	N	608.9	4	1.716	IDENTIFIED	9.058	☐
Thorium-232	nr	1.291	0.1698	pCi/g	0.2192	N	911.1	3	2.014	IDENTIFIED	11.93	☐
Titanium-44	la nr	0.1548	0.02737	pCi/g	0.0899	N	0	8	0	NOT_IDENTI	0	☐
Uranium-234	nr	0.9139	0.08946	pCi/g	0.1176	N	608.9	4	1.716	IDENTIFIED	9.058	☐
Zirconium-97		1.46E+07	3.35E+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	
243624007	22-DEC-09 12:00	07-JAN-10 15:50	16.2	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	nr	1.503	0.1865	pCi/g	0.2021	N	910.5	3	1.77	IDENTIFIED	11.14	☐
Americium-243	int nr	0.406	0.04973	pCi/g	0.09685	N	74.73	1	1.106	IDENTIFIED	10.83	☐
Annihilation Rad.	HE	0.1049	0.0309	pCi/g	0.04636	N	510.4	1	1.388	IDENTIFIED	29.32	☐
Barium-137m	HE	0.116	0.02782	pCi/g	0.06778	N	661.2	2	1.294	IDENTIFIED	23.86	☐
Bismuth-211	int	4.498	0.2691	pCi/g	0.2962	Y	351.6	4	1.263	IDENTIFIED	4.94	☐ ui
Bismuth-212	HE	0.949	0.2331	pCi/g	0.6844	N	0	8	0	FAIL_ABUND	0	☐
Bismuth-214 ✓		1.151	0.09019	pCi/g	0.1085	0.200	608.9	4	1.445	IDENTIFIED	6.924	☐
Cadmium-109	int	2.968	0.5912	pCi/g	1.519	Y	86.98	3	1.072	IDENTIFIED	19	☐ ui
Cerium-143		1257	199.5	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Cesium-134 la		0.08773	0.03322	pCi/g	0.08442	0.100	0	8	0	FAIL_ABUND	0	☐ UI Data rejected due to low abundance.
Cesium-137 ✓		0.1226	0.02941	pCi/g	0.07165	0.100	661.2	2	1.294	IDENTIFIED	23.86	☐
Gross Gamma		8.201	1.241	pCi/g	2.906	N	0					☐
Lead-212 ✓		1.545	0.08412	pCi/g	0.08688	0.100	238.4	4	1.136	IDENTIFIED	3.679	☐
Lead-214 ✓		1.565	0.1021	pCi/g	0.1033	0.100	351.6	4	1.263	IDENTIFIED	4.94	☐
Lutetium-177	HE	3.126	0.8473	pCi/g	2.225	N	0	8	0	FAIL_ABUND	0	☐
Neptunium-237	int nr	0.8553	0.1919	pCi/g	0.4331	N	86.98	3	1.072	IDENTIFIED	19	☐
Niobium-97		3.60E+05	1.56E+05	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Polonium-212	nr	1.545	0.08412	pCi/g	0.08688	N	238.4	4	1.136	IDENTIFIED	3.679	☐
Polonium-214	nr	1.565	0.1021	pCi/g	0.1033	N	351.6	4	1.263	IDENTIFIED	4.94	☐
Polonium-216	nr	1.545	0.08412	pCi/g	0.08688	N	238.4	4	1.136	IDENTIFIED	3.679	☐
Polonium-218	nr	1.565	0.1021	pCi/g	0.1033	N	351.6	4	1.263	IDENTIFIED	4.94	☐
Potassium-40 ✓		19.49	1.028	pCi/g	0.5194	1.00	1460	1	2.138	IDENTIFIED	3.902	☐
Radium-224	int	4.679	0.7636	pCi/g	0.9889	Y	241.3	1	1.972	IDENTIFIED	15.97	☐ ui
Radium-226 ✓		1.151	0.09019	pCi/g	0.1085	Y	608.9	4	1.445	IDENTIFIED	6.924	☐
Radium-228 ✓		1.503	0.1865	pCi/g	0.2021	0.500	910.5	3	1.77	IDENTIFIED	11.14	☐
Thallium-200	HE	32.04	440.9	pCi/g	0	N	0	8	0	SHORT_HLIF	0	☐
Thallium-208 ✓		0.5058	0.04572	pCi/g	0.05588	0.080	582.8	1	1.401	IDENTIFIED	8.474	☐
Thorium-228	nr	1.57	0.08548	pCi/g	0.08829	N	238.4	4	1.136	IDENTIFIED	3.679	☐

Thorium-230	nr	1.15	0.09019	pCi/g	0.1085	N	608.9	4	1.445	IDENTIFIED	6.924	
Thorium-232	nr	1.503	0.1865	pCi/g	0.2021	N	910.5	3	1.77	IDENTIFIED	11.14	
Tin-126	int nr	0.2913	0.05802	pCi/g	0.1623	N	86.98	3	1.072	IDENTIFIED	19	
Titanium-44	la nr	0.4127	0.03638	pCi/g	0.08221	N	0	8	0	FAIL_ABUND	0	
Uranium-234	nr	1.15	0.09019	pCi/g	0.1085	N	608.9	4	1.445	IDENTIFIED	6.924	
Zirconium-97		1.13E+07	2.73E+06	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
243624008	22-DEC-09 12:00	07-JAN-10 15:50	16.2	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.517	0.158	pCi/g	0.2252	N	910.5	3	1.679	IDENTIFIED	8.847
Americium-243 int nr	0.3609	0.03479	pCi/g	0.08839	N	74.72	1	0.8951	IDENTIFIED	9.019
Annihilation Rad.	0.1522	0.03535	pCi/g	0.04561	N	510.9	1	1.689	IDENTIFIED	23.02
Bismuth-211 int	4.05	0.2664	pCi/g	0.2799	Y	351.5	4	1.235	IDENTIFIED	5.78
Bismuth-212 HE	0.9282	0.2287	pCi/g	0.6685	N	0	9	0	FAIL_ABUND	0
Bismuth-214 ✓	1.291	0.09551	pCi/g	0.1064	0.200	609	4	1.455	IDENTIFIED	6.148
Cadmium-109 int	4.151	0.5339	pCi/g	1.054	Y	86.98	3	1.355	IDENTIFIED	12.29
Cerium-143	1465	213.3	pCi/g	0	N	0	9	0	SHORT_HLIF	0
Cesium-134 la	0.09127	0.02568	pCi/g	0.08835	0.100	0	9	0	NOT_IDENTI	0
Cesium-135 int nr	0.5367	0.1266	pCi/g	0.2262	N	269.4	1	1.055	IDENTIFIED	23.29
Gross Gamma	8.356	1.345	pCi/g	3.071	N	0				
Iodine-135	1.40E+16	0	pCi/g	0	N	0	9	0	SHORT_HLIF	0
Lead-212 ✓	1.517	0.0751	pCi/g	0.08565	0.100	238.4	4	1.041	IDENTIFIED	3.448
Lead-214 ✓	1.409	0.09971	pCi/g	0.09757	0.100	351.5	4	1.235	IDENTIFIED	5.78
Lutetium-177 HE	2.795	0.8334	pCi/g	2.111	N	0	9	0	FAIL_ABUND	0
Neptunium-237 int nr	1.196	0.1972	pCi/g	0.3087	N	86.98	3	1.355	IDENTIFIED	12.29
Niobium-97 HE	78790	1.33E+05	pCi/g	0	N	0	9	0	SHORT_HLIF	0
Polonium-212 nr	1.517	0.0751	pCi/g	0.08565	N	238.4	4	1.041	IDENTIFIED	3.448
Polonium-214 nr	1.409	0.09971	pCi/g	0.09757	N	351.5	4	1.235	IDENTIFIED	5.78
Polonium-216 nr	1.517	0.0751	pCi/g	0.08565	N	238.4	4	1.041	IDENTIFIED	3.448
Polonium-218 nr	1.409	0.09971	pCi/g	0.09757	N	351.5	4	1.235	IDENTIFIED	5.78
Potassium-40 ✓	18.86	0.9791	pCi/g	0.5874	1.00	1460	1	2.017	IDENTIFIED	3.775
Radium-224 int	4.772	0.6536	pCi/g	0.9747	Y	241.2	1	1.843	IDENTIFIED	13.42
Radium-226 ✓	1.291	0.09551	pCi/g	0.1064	Y	609	4	1.455	IDENTIFIED	6.148
Radium-228 ✓	1.517	0.158	pCi/g	0.2252	0.500	910.5	3	1.679	IDENTIFIED	8.847
Sodium-24 HE	1.47E+05	1.17E+06	pCi/g	0	N	0	9	0	SHORT_HLIF	0
Thallium-208 ✓	0.5167	0.04198	pCi/g	0.05362	0.080	582.7	1	1.395	IDENTIFIED	7.295
Thorium-228 nr	1.542	0.07632	pCi/g	0.08704	N	238.4	4	1.041	IDENTIFIED	3.448
Thorium-230 nr	1.291	0.09551	pCi/g	0.1064	N	609	4	1.455	IDENTIFIED	6.148
Thorium-232 nr	1.517	0.158	pCi/g	0.2252	N	910.5	3	1.679	IDENTIFIED	8.847
Tin-126 int nr	0.4073	0.05239	pCi/g	0.1039	N	86.98	3	1.355	IDENTIFIED	12.29
Titanium-44 la nr	0.3766	0.0275	pCi/g	0.07275	N	0	9	0	FAIL_ABUND	0
Total Uranium	3.8435	2.92E-06	ug/g	2.9064	N	0				
Uranium-234 nr	1.291	0.09551	pCi/g	0.1064	N	609	4	1.455	IDENTIFIED	6.148
Zirconium-97	1.06E+07	2.89E+06	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
243624009	22-DEC-09 12:00	07-JAN-10 15:51	16.2	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	nr	1.531	0.1621	pCi/g	0.2365	N	910.8 3 1.51	IDENTIFIED 9.27	☐	
Americium-243	int nr	0.3864	0.04451	pCi/g	0.1137	N	74.61 1 1.241	IDENTIFIED 10.6	☐	
Annihilation Rad.		0.1951	0.04008	pCi/g	0.05331	N	510.6 1 2.055	IDENTIFIED 20.36	☐	
Barium-137m	HE	0.1423	0.0375	pCi/g	0.07303	N	662 2 1.105	IDENTIFIED 26.24	☐	
Bismuth-211	int	3.569	0.2484	pCi/g	0.4034	Y	351.7 4 1.264	IDENTIFIED 6.167	☐	ui
Bismuth-212	HE	0.7428	0.2732	pCi/g	0.7205	N	0 13 0	FAIL_ABUND 0	☐	
Bismuth-214	✓	1.215	0.09806	pCi/g	0.1225	0.200	609 4 1.452	IDENTIFIED 7.177	☐	
Cadmium-109	la	3.241	0.769	pCi/g	1.919	Y	0 13 0	NOT_IDENTI 0	☐	UI Data rejected due to low abundance.
Cerium-143		1562	246.4	pCi/g	0	N	0 13 0	SHORT_HLIF 0	☐	
Cesium-135	HE	0.4938	0.1062	pCi/g	0.3496	N	0 13 0	NOT_IDENTI 0	☐	
Cesium-137	✓	0.1504	0.03965	pCi/g	0.0772	0.100	662 2 1.105	IDENTIFIED 26.24	☐	
Gross Gamma		8.479	1.415	pCi/g	3.821	N	0		☐	
Iodine-135		4.71E+15	0	pCi/g	0	N	0 13 0	SHORT_HLIF 0	☐	
Krypton-85	HE	18.63	4.681	pCi/g	15.95	N	0 13 0	NOT_IDENTI 0	☐	
Lead-212	✓	1.588	0.08436	pCi/g	0.1074	0.100	238.4 4 1.123	IDENTIFIED 3.826	☐	
Lead-214	✓	1.241	0.09227	pCi/g	0.142	0.100	351.7 4 1.264	IDENTIFIED 6.167	☐	
Lutetium-177	HE	4.736	1.066	pCi/g	2.748	N	0 13 0	FAIL_ABUND 0	☐	
Neptunium-237	int nr	1.611	0.3814	pCi/g	0.5043	N	85.28 1 4.093	IDENTIFIED 20.75	☐	
Niobium-95m	HE	0.4945	0.09477	pCi/g	0.3075	N	0 13 0	NOT_IDENTI 0	☐	
Niobium-97		4.07E+05	1.83E+05	pCi/g	0	N	0 13 0	SHORT_HLIF 0	☐	
Polonium-212	nr	1.588	0.08436	pCi/g	0.1074	N	238.4 4 1.123	IDENTIFIED 3.826	☐	
Polonium-214	nr	1.241	0.09227	pCi/g	0.142	N	351.7 4 1.264	IDENTIFIED 6.167	☐	
Polonium-216	nr	1.588	0.08436	pCi/g	0.1074	N	238.4 4 1.123	IDENTIFIED 3.826	☐	
Polonium-218	nr	1.241	0.09227	pCi/g	0.142	N	351.7 4 1.264	IDENTIFIED 6.167	☐	
Potassium-40	✓	18.56	1.054	pCi/g	0.6075	1.00	1461 1 2.002	IDENTIFIED 4.616	☐	
Radium-224	int	4.299	0.6203	pCi/g	1.223	Y	241.5 1 1.507	IDENTIFIED 14.13	☐	ui
Radium-226	✓	1.215	0.09806	pCi/g	0.1225	Y	609 4 1.452	IDENTIFIED 7.177	☐	
Radium-228	✓	1.531	0.1621	pCi/g	0.2365	0.500	910.8 3 1.51	IDENTIFIED 9.27	☐	
Strontium-85	la	0.09655	0.02427	pCi/g	0.0827	Y	0 13 0	NOT_IDENTI 0	☐	UI Data rejected due to low abundance.
Thallium-200	HE	430.7	515.9	pCi/g	0	N	0 13 0	SHORT_HLIF 0	☐	
Thallium-208	✓	0.5199	0.04861	pCi/g	0.07683	0.080	582.9 1 1.355	IDENTIFIED 8.798	☐	
Thorium-228	nr	1.614	0.08573	pCi/g	0.1092	N	238.4 4 1.123	IDENTIFIED 3.826	☐	
Thorium-230	nr	1.215	0.09806	pCi/g	0.1225	N	609 4 1.452	IDENTIFIED 7.177	☐	
Thorium-232	nr	1.531	0.1621	pCi/g	0.2365	N	910.8 3 1.51	IDENTIFIED 9.27	☐	
Titanium-44	la nr	0.2886	0.03382	pCi/g	0.09166	N	0 13 0	NOT_IDENTI 0	☐	
Total Uranium		8.1956	3.21E-06	ug/g	4.3507	N	0		☐	
Uranium-234	nr	1.215	0.09806	pCi/g	0.1225	N	609 4 1.452	IDENTIFIED 7.177	☐	
Zirconium-97		1.13E+07	3.55E+06	pCi/g	0	N	0 13 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
243624010	22-DEC-09 12:00	07-JAN-10 15:51	16.2	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP

Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.739	0.1791	pCi/g	0.2042	N	911.5 3	1.72	IDENTIFIED 8.498	☐	
Americium-243 int nr	0.3737	0.03634	pCi/g	0.07557	N	74.78 1	1.106	IDENTIFIED 8.853	☐	
Annihilation Rad.	0.1515	0.03387	pCi/g	0.04497	N	510.8 1	1.78	IDENTIFIED 21.91	☐	
Bismuth-211 int	4.326	0.3019	pCi/g	0.3457	Y	351.9 4	1.263	IDENTIFIED 5.348	☐ ui	
Bismuth-212 la nr	1.723	0.3131	pCi/g	0.7566	N	0 8 0		FAIL_ABUND 0	☐	
Bismuth-214 ✓	1.42	0.1069	pCi/g	0.1119	0.200	609.4 4	1.479	IDENTIFIED 5.471	☐	
Cadmium-109 int	4.458	0.4822	pCi/g	1.08	Y	87.12 3	1.203	IDENTIFIED 9.763	☐ ui	
Cerium-143	1158	194.7	pCi/g	0	N	0 8 0		SHORT_HLIF 0	☐	
Gross Gamma	8.776	1.243	pCi/g	3.233	N	0			☐	
Iodine-133 HE	6159	6227	pCi/g	0	N	0 8 0		SHORT_HLIF 0	☐	
Iodine-135	2.78E+16 0		pCi/g	0	N	0 8 0		SHORT_HLIF 0	☐	
Lead-212 ✓	1.8	0.1043	pCi/g	0.08953	0.100	238.7 4	1.088	IDENTIFIED 3.271	☐	
Lead-214 ✓	1.505	0.1121	pCi/g	0.1205	0.100	351.9 4	1.263	IDENTIFIED 5.348	☐	
Neptunium-237 int nr	1.285	0.1921	pCi/g	0.3138	N	87.12 3	1.203	IDENTIFIED 9.763	☐	
Niobium-95 HE	0.08189	0.0217	pCi/g	0.07603	N	0 8 0		NOT_IDENTI 0	☐	
Polonium-212 nr	1.8	0.1043	pCi/g	0.08953	N	238.7 4	1.088	IDENTIFIED 3.271	☐	
Polonium-214 nr	1.505	0.1121	pCi/g	0.1205	N	351.9 4	1.263	IDENTIFIED 5.348	☐	
Polonium-216 nr	1.8	0.1043	pCi/g	0.08953	N	238.7 4	1.088	IDENTIFIED 3.271	☐	
Polonium-218 nr	1.505	0.1121	pCi/g	0.1205	N	351.9 4	1.263	IDENTIFIED 5.348	☐	
Potassium-40 ✓	19.91	1.129	pCi/g	0.4995	1.00	1461 1	2.076	IDENTIFIED 3.703	☐	
Radium-224 int	4.991	0.659	pCi/g	1.019	Y	241.8 1	1.829	IDENTIFIED 12.51	☐ ui	
Radium-226 ✓	1.42	0.1069	pCi/g	0.1119	Y	609.4 4	1.479	IDENTIFIED 5.471	☐	
Radium-228 ✓	1.739	0.1791	pCi/g	0.2042	0.500	911.5 3	1.72	IDENTIFIED 8.498	☐	
Technetium-99m	1.69E+16 0		pCi/g	0	N	0 8 0		SHORT_HLIF 0	☐	
Thallium-208 ✓	0.5223	0.04675	pCi/g	0.06111	0.080	583.2 1	1.417	IDENTIFIED 7.565	☐	
Thorium-228 nr	1.829	0.106	pCi/g	0.09098	N	238.7 4	1.088	IDENTIFIED 3.271	☐	
Thorium-230 nr	1.42	0.1069	pCi/g	0.1119	N	609.4 4	1.479	IDENTIFIED 5.471	☐	
Thorium-232 nr	1.739	0.1791	pCi/g	0.2042	N	911.5 3	1.72	IDENTIFIED 8.498	☐	
Tin-126 int nr	0.4375	0.04733	pCi/g	0.1063	N	87.12 3	1.203	IDENTIFIED 9.763	☐	
Titanium-44 la nr	0.399	0.02713	pCi/g	0.07184	N	0 8 0		FAIL_ABUND 0	☐	
Total Uranium	2.923	1.97E-06	ug/g	2.3589	N	0			☐	
Uranium-234 nr	1.42	0.1069	pCi/g	0.1119	N	609.4 4	1.479	IDENTIFIED 5.471	☐	
Zirconium-97 HE	4.55E+06 2.87E+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
243624011	22-DEC-09 12:00	07-JAN-10 15:51	16.2	SAMPLE	LOAD	1	LANL	LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228 nr	1.566	0.1707	pCi/g	0.1962	N	911.5 3	1.241	IDENTIFIED 8.988	☐	
Americium-243 int nr	0.4952	0.05435	pCi/g	0.1079	N	74.58 1	1.167	IDENTIFIED 9.512	☐	
Annihilation Rad.	0.09082	0.03124	pCi/g	0.04737	N	510.7 1	1.244	IDENTIFIED 34.25	☐	
Bismuth-211 int	4.26	0.2774	pCi/g	0.3204	Y	352 4	1.286	IDENTIFIED 5.393	☐ ui	
Bismuth-212 nr	1.177	0.3058	pCi/g	0.444	N	727.8 1	2.14	IDENTIFIED 25.66	☐	
Bismuth-214 ✓	1.424	0.09948	pCi/g	0.112	0.200	609.5 4	1.388	IDENTIFIED 5.861	☐	
Cadmium-109 int	3.065	0.6184	pCi/g	1.46	Y	87.03 3	1.337	IDENTIFIED 19.37	☐ ui	

Cerium-143		1137	189.6	pCi/g 0	N	0	6	0	SHORT_HLIF 0		
Cesium-134	la	0.1039	0.03443	pCi/g 0.09588	0.100	0	6	0	FAIL_ABUND 0	UI	Data rejected due to low abundance.
Gross Gamma		8.809	1.354	pCi/g 3.818	N		0				
Iodine-133	HE	649.9	7093	pCi/g 0	N	0	6	0	SHORT_HLIF 0		
Lead-212	✓	1.641	0.08419	pCi/g 0.09658	0.100	238.6	4	1.043	IDENTIFIED 3.454		
Lead-214	✓	1.482	0.1039	pCi/g 0.1117	0.100	352	4	1.286	IDENTIFIED 5.393		
Neptunium-237	HE	0.8832	0.2002	pCi/g 0.4933	N	87.03	3	1.337	IDENTIFIED 19.37		
Niobium-97	HE	1.04E+05	1.27E+05	pCi/g 0	N	0	6	0	SHORT_HLIF 0		
Polonium-212	nr	1.641	0.08419	pCi/g 0.09658	N	238.6	4	1.043	IDENTIFIED 3.454		
Polonium-214	nr	1.482	0.1039	pCi/g 0.1117	N	352	4	1.286	IDENTIFIED 5.393		
Polonium-216	nr	1.641	0.08419	pCi/g 0.09658	N	238.6	4	1.043	IDENTIFIED 3.454		
Polonium-218	nr	1.482	0.1039	pCi/g 0.1117	N	352	4	1.286	IDENTIFIED 5.393		
Potassium-40	✓	20.27	1.202	pCi/g 0.5792	1.00	1461	1	2.103	IDENTIFIED 4.078		
Radium-224	int	4.854	0.6508	pCi/g 1.099	Y	241.6	1	1.724	IDENTIFIED 13.05	ui	
Radium-226	✓	1.424	0.09948	pCi/g 0.112	Y	609.5	4	1.388	IDENTIFIED 5.861		
Radium-228	✓	1.566	0.1707	pCi/g 0.1962	0.500	911.5	3	1.241	IDENTIFIED 8.988		
Thallium-208	✓	0.4817	0.04398	pCi/g 0.0622	0.080	583.4	1	1.45	IDENTIFIED 8.489		
Thorium-228	nr	1.668	0.08556	pCi/g 0.09815	N	238.6	4	1.043	IDENTIFIED 3.454		
Thorium-230	nr	1.424	0.09948	pCi/g 0.112	N	609.5	4	1.388	IDENTIFIED 5.861		
Thorium-232	nr	1.566	0.1707	pCi/g 0.1962	N	911.5	3	1.241	IDENTIFIED 8.988		
Tin-126	int nr	0.3008	0.06069	pCi/g 0.1443	N	87.03	3	1.337	IDENTIFIED 19.37		
Titanium-44	la nr	0.1628	0.02373	pCi/g 0.08377	N	0	6	0	NOT_IDENTI 0		
Uranium-234	nr	1.424	0.09948	pCi/g 0.112	N	609.5	4	1.388	IDENTIFIED 5.861		
Zirconium-97		8.52E+06	2.58E+06	pCi/g 0	N	0	6	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
1202006617		07-JAN-10 15:52	0	MB	LOAD	1		GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Iodine-135	HE	4.01E+06	6.53E+06	pCi/g 0	N	0	3	0	SHORT_HLIF 0	
Niobium-97	HE	12.58	15.8	pCi/g 0	N	0	3	0	SHORT_HLIF 0	
Sodium-24	HE	22.63	51.32	pCi/g 0	N	0	3	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
1202006618	22-DEC-09 12:00	07-JAN-10 16:06	16.2	DUP	LOAD	1		LANL010041GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	nr	1.407	0.1358	pCi/g 0.1568	N	911.4	3	1.867	IDENTIFIED 7.016	
Americium-243	int nr	0.3959	0.03893	pCi/g 0.08198	N	75.13	1	1.211	IDENTIFIED 8.896	
Annihilation Rad.		0.1347	0.02749	pCi/g 0.0335	N	511.1	1	1.753	IDENTIFIED 20.13	
Bismuth-211	int	3.737	0.2115	pCi/g 0.2358	Y	352.2	4	1.291	IDENTIFIED 4.66	ui
Bismuth-212	la nr	1.002	0.1747	pCi/g 0.4971	N	0	8	0	FAIL_ABUND 0	
Bismuth-214	✓	1.185	0.08398	pCi/g 0.08584	0.200	609.5	4	1.399	IDENTIFIED 5.498	
Cadmium-109	int	1.666	0.4892	pCi/g 1.274	Y	87.04	3	1.026	IDENTIFIED 29	ui
Cerium-143		652.2	128.6	pCi/g 0	N	0	8	0	SHORT_HLIF 0	
Cesium-134	la	0.08589	0.02603	pCi/g 0.06788	0.100	0	8	0	FAIL_ABUND 0	UI Data rejected due to low abundance.
Gross Gamma		8.043	1.05	pCi/g 2.181	N		0			

Krypton-85	la nr	24.4	3.375	pCi/g	11.93	N	0	8	0	NOT_IDENTI	0	
Lead-212	✓	1.558	0.07101	pCi/g	0.07008	0.100	238.9	4	1.21	IDENTIFIED	2.832	
Lead-214	✓	1.3	0.08101	pCi/g	0.08219	0.100	352.2	4	1.291	IDENTIFIED	4.66	
Neptunium-237	HE	0.4801	0.1494	pCi/g	0.3257	N	87.04	3	1.026	IDENTIFIED	29	
Polonium-212	nr	1.558	0.07101	pCi/g	0.07008	N	238.9	4	1.21	IDENTIFIED	2.832	
Polonium-214	nr	1.3	0.08101	pCi/g	0.08219	N	352.2	4	1.291	IDENTIFIED	4.66	
Polonium-216	nr	1.558	0.07101	pCi/g	0.07008	N	238.9	4	1.21	IDENTIFIED	2.832	
Polonium-218	nr	1.3	0.08101	pCi/g	0.08219	N	352.2	4	1.291	IDENTIFIED	4.66	
Potassium-40	✓	20.41	0.9786	pCi/g	0.4057	1.00	1461	1	2.348	IDENTIFIED	2.931	
Radium-224	int	4.182	0.5423	pCi/g	0.7964	Y	241.9	1	1.898	IDENTIFIED	12.66	ui
Radium-226	✓	1.185	0.08398	pCi/g	0.08584	Y	609.5	4	1.399	IDENTIFIED	5.498	
Radium-228	✓	1.407	0.1358	pCi/g	0.1568	0.500	911.4	3	1.867	IDENTIFIED	7.016	
Strontium-85	la	0.1265	0.0175	pCi/g	0.06184	Y	0	8	0	NOT_IDENTI	0	ui Data rejected due to low abundance.
Thallium-200	HE	9.12	322.5	pCi/g	0	N	0	8	0	SHORT_HLIF	0	
Thallium-208	✓	0.4487	0.03538	pCi/g	0.04429	0.080	583.5	1	1.534	IDENTIFIED	6.842	
Thorium-228	nr	1.583	0.07217	pCi/g	0.07122	N	238.9	4	1.21	IDENTIFIED	2.832	
Thorium-230	nr	1.185	0.08398	pCi/g	0.08584	N	609.5	4	1.399	IDENTIFIED	5.498	
Thorium-232	nr	1.407	0.1358	pCi/g	0.1568	N	911.4	3	1.867	IDENTIFIED	7.016	
Tin-126	HE	0.1635	0.048	pCi/g	0.1074	N	87.04	3	1.026	IDENTIFIED	29	
Titanium-44	la nr	0.3472	0.02617	pCi/g	0.07936	N	0	8	0	FAIL_ABUND	0	
Uranium-234	nr	1.185	0.08398	pCi/g	0.08584	N	609.5	4	1.399	IDENTIFIED	5.498	
Zirconium-97		7.34E+06	2.16E+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
1202006619		07-JAN-10 16:06	0	LCS	LOAD	1		GEL	N	RGSP
Name	Result	Uncert.	Units	MDA	RDL	Energy ***	FWHM	Comb Act Rpt Err(%)	Qual	Qual Comment
Actinium-228	HE	0.9158	0.3055	pCi/g	0.6258	N	911.3	3	1.45	IDENTIFIED 32.95
Americium-241	✓	12.68	0.667	pCi/g	0.2593	0.200	59.47	1	1.029	IDENTIFIED 1.348
Americium-243		0.1792	0.04	pCi/g	0.09851	N	74.72	1	1.108	IDENTIFIED 21.91
Barium-137m		5.402	0.2605	pCi/g	0.1357	N	661.4	2	1.683	IDENTIFIED 2.574
Bismuth-211		1.736	0.3162	pCi/g	0.6422	Y	352	4	1.375	IDENTIFIED 17.85
Bismuth-214		0.6021	0.1314	pCi/g	0.3602	0.200	0	14	0	FAIL_ABUND 0
Cadmium-109		32.48	1.577	pCi/g	1.614	Y	87.94	3	1.078	IDENTIFIED 2.832
Cesium-137	✓	5.711	0.2758	pCi/g	0.1434	0.100	661.4	2	1.683	IDENTIFIED 2.574
Cobalt-57		0.2253	0.03764	pCi/g	0.06447	N	121.7	1	1.134	IDENTIFIED 15.47
Cobalt-60	✓	6.284	0.2497	pCi/g	0.1117	0.100	1332	1	2.147	IDENTIFIED 2.776
Gross Gamma		25.68	3.247	pCi/g	4.7	N	0			
Iodine-123	HE	292.7	347.8	pCi/g	0	N	0	14	0	SHORT_HLIF 0
Iodine-133	HE	9.091	16.29	pCi/g	0	N	0	14	0	SHORT_HLIF 0
Iodine-135	HE	2.42E+07	2.87E+07	pCi/g	0	N	0	14	0	SHORT_HLIF 0
Lead-212		0.7952	0.09641	pCi/g	0.1948	0.100	238.7	4	1.242	IDENTIFIED 11.24
Lead-214		0.6039	0.1111	pCi/g	0.2376	0.100	352	4	1.375	IDENTIFIED 17.85
Neptunium-237		9.479	1.081	pCi/g	0.4691	N	87.94	3	1.078	IDENTIFIED 2.832
Niobium-97		885.2	110.3	pCi/g	0	N	0	14	0	SHORT_HLIF 0
Polonium-212		0.7952	0.09641	pCi/g	0.1948	N	238.7	4	1.242	IDENTIFIED 11.24
Polonium-214		0.6039	0.1111	pCi/g	0.2376	N	352	4	1.375	IDENTIFIED 17.85

Polonium-216		0.7952	0.09641	pCi/g	0.1948	N	238.7	4	1.242	IDENTIFIED	11.24	☐
Polonium-218		0.6039	0.1111	pCi/g	0.2376	N	352	4	1.375	IDENTIFIED	17.85	☐
Radium-224		4.436	0.7236	pCi/g	2.544	Y	0	14	0	NOT_IDENTI	0	☐
Radium-226		0.6021	0.1314	pCi/g	0.3602	Y	0	14	0	FAIL_ABUND	0	☐
Radium-228		0.9158	0.3055	pCi/g	0.6258	0.500	911.3	3	1.45	IDENTIFIED	32.95	☐
Silver-110m		0.3503	0.05438	pCi/g	0.1902	N	0	14	0	NOT_IDENTI	0	☐
Sodium-24	HE	187.8	140.7	pCi/g	0	N	0	14	0	SHORT_HLIF	0	☐
Technetium-99m	HE	4.44E+07	3.24E+07	pCi/g	0	N	0	14	0	SHORT_HLIF	0	☐
Thallium-208		0.2542	0.06645	pCi/g	0.1205	0.080	583.1	1	1.853	IDENTIFIED	25.81	☐
Thorium-228		0.8013	0.09715	pCi/g	0.1962	N	238.7	4	1.242	IDENTIFIED	11.24	☐
Thorium-230	HE	0.6021	0.1314	pCi/g	0.3602	N	0	14	0	FAIL_ABUND	0	☐
Thorium-232	HE	0.9158	0.3055	pCi/g	0.6258	N	911.3	3	1.45	IDENTIFIED	32.95	☐
Tin-126		3.228	0.1568	pCi/g	0.1602	N	87.94	3	1.078	IDENTIFIED	2.832	☐
Titanium-44		0.2041	0.02636	pCi/g	0.07844	N	0	14	0	FAIL_ABUND	0	☐
Uranium-234	HE	0.6021	0.1314	pCi/g	0.3602	N	0	14	0	FAIL_ABUND	0	☐
Zirconium-97	HE	2110	1304	pCi/g	0	N	0	14	0	SHORT_HLIF	0	☐

*** = Number of isotopes identified with a keyline at this energy.

Batch Id	Sample Id	Sample Type	Run Date	Paramname	Result	Uncertainty	Units	DL	RDL	# of data
937704	243624011	SAMPLE	07-JAN-10	Niobium-97	1.04E+05	1.27E+05	pCi/g	0	N	
				Potassium-40	20.27	1.202	pCi/g	0.2898	1.00E+00	
				Radium-224	4.854	0.6508	pCi/g	0.5497	Y	
				Radium-226	1.424	0.09948	pCi/g	0.05604	Y	
				Radium-228	1.566	0.1707	pCi/g	0.09817	5.00E-01	
				Strontium-85	0.05018	0.02069	pCi/g	0.03288	Y	
				Thallium-208	0.4817	0.04398	pCi/g	0.03112	8.00E-02	
				Uranium-235	0.2658	0.1135	pCi/g	0.1924	5.00E-01	
				Zirconium-97	8.52E+06	2.58E+06	pCi/g	0	N	
937704	1202006617	MB	07-JAN-10	Iodine-135	4.01E+06	6.53E+06	pCi/g	0	N	
				Niobium-97	12.58	15.8	pCi/g	0	N	
				Radium-223	0.3875	0.1774	pCi/g	0.3182	Y	
				Sodium-24	22.63	51.32	pCi/g	0	N	
				Thorium-227	0.2052	0.08732	pCi/g	0.1602	Y	
				Thorium-231	0.3875	0.1774	pCi/g	0.3182	Y	
937704	1202006618	DUP	07-JAN-10	Bismuth-211	3.737	0.2115	pCi/g	0.118	Y	
				Bismuth-214	1.185	0.08398	pCi/g	0.04284	2.00E-01	
				Cadmium-109	1.666	0.4892	pCi/g	0.6374	Y	
				Cerium-143	652.2	128.6	pCi/g	0	N	
				Cesium-134	0.08589	0.02603	pCi/g	0.03396	1.00E-01	
				Gross Gamma	8.043	1.05	pCi/g	1.056	N	
				Krypton-85	24.4	3.375	pCi/g	5.968	N	
				Lead-212	1.558	0.07101	pCi/g	0.03506	1.00E-01	
				Lead-214	1.3	0.08101	pCi/g	0.04112	1.00E-01	
				Mercury-203	0.03022	0.01561	pCi/g	0.02742	1.00E-01	
				Potassium-40	20.41	0.9786	pCi/g	0.203	1.00E+00	
				Radium-224	4.182	0.5423	pCi/g	0.3985	Y	
				Radium-226	1.185	0.08398	pCi/g	0.04284	Y	
				Radium-228	1.407	0.1358	pCi/g	0.07846	5.00E-01	
				Strontium-85	0.1265	0.0175	pCi/g	0.03094	Y	
				Thallium-200	9.12	322.5	pCi/g	0	N	
				Thallium-208	0.4487	0.03538	pCi/g	0.02216	8.00E-02	
				Thorium-227	0.3246	0.149	pCi/g	0.2608	Y	
				Zirconium-97	7.34E+06	2.16E+06	pCi/g	0	N	
937704	1202006619	LCS	07-JAN-10	Americium-241	12.68	0.667	pCi/g	0.1297	2.00E-01	
				Barium-137m	5.402	0.2605	pCi/g	0.06787	N	
				Bismuth-211	1.736	0.3162	pCi/g	0.3213	Y	

VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 15:42:16.59

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624001.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 13:41:52.
Sample ID          : G243624001 Sample quantity : 1.33620E+02 GRAM
Detector name      : GAM13 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.65 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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*	125	468	1.11	92.70	89	9	1.74E-02	34.4	
2	0	63.18*	160	599	1.30	126.12	122	8	2.22E-02	30.9	
3	4	74.76*	533	600	1.18	149.29	146	12	7.41E-02	8.9	2.24E+00
4	4	77.03*	981	505	1.10	153.83	146	12	1.36E-01	5.2	
5	0	83.80*	89	503	1.41	167.38	165	7	1.23E-02	44.7	
6	3	87.02	298	331	1.16	173.82	171	21	4.14E-02	10.6	1.81E+00
7	3	89.89	200	446	1.13	179.56	171	21	2.77E-02	18.8	
8	3	92.64*	249	427	1.22	185.06	171	21	3.46E-02	18.6	
9	0	185.72*	221	422	1.20	371.26	365	12	3.06E-02	21.2	
10	0	209.16	90	375	1.21	418.16	413	10	1.26E-02	41.4	
11	4	238.57*	1067	252	1.15	476.99	472	19	1.48E-01	4.0	1.65E+00
12	4	241.46*	289	303	1.83	482.78	472	19	4.01E-02	17.1	
13	0	270.34	79	230	1.06	540.55	537	9	1.10E-02	36.5	
14	0	295.20*	385	241	1.31	590.28	585	11	5.35E-02	9.5	
15	0	300.59	136	203	1.24	601.07	596	12	1.90E-02	22.6	
16	0	337.94*	214	231	1.36	675.80	672	12	2.97E-02	15.9	
17	0	351.86*	555	210	1.36	703.64	699	11	7.71E-02	6.8	
18	0	462.86	103	148	1.41	925.71	918	16	1.42E-02	28.6	
19	0	510.42*	121	244	2.23	1020.86	1013	20	1.68E-02	35.4	
20	0	583.00*	371	150	1.81	1166.05	1158	16	5.15E-02	9.3	
21	0	609.12*	478	87	1.43	1218.31	1212	12	6.64E-02	6.2	
22	0	727.41	114	75	1.64	1454.97	1449	14	1.58E-02	18.8	
23	0	767.85	55	87	1.28	1535.88	1529	12	7.68E-03	36.3	
24	0	911.18*	224	81	1.32	1822.64	1816	15	3.11E-02	11.3	
25	0	969.67*	48	153	2.08	1939.69	1931	11	6.61E-03	48.9	
26	0	1120.36	108	89	2.12	2241.18	2235	17	1.51E-02	21.8	
27	0	1460.53	778	27	2.05	2921.85	2911	22	1.08E-01	4.0	
28	0	1764.55	99	21	1.96	3530.20	3521	17	1.37E-02	14.7	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624001.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 12:00:00 Acquisition date : 7-JAN-2010 13:41:52
Sample ID        : G243624001 Sample quantity : 133.62 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.65 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.967E+01	1.973E+00	6.248E-01	3.820E-02	31.487
CD-109	+	88.03	*	3.179E+00	7.192E-01	9.239E-01	7.290E-02	3.440
SN-126	+	64.28		6.319E-01	4.023E-01	3.930E-01	6.119E-02	1.608
	+	86.94		1.297E+00	6.011E-01	3.812E-01	1.571E-01	3.403
	+	87.57	*	3.120E-01	7.059E-02	9.056E-02	7.163E-03	3.445
TL-208		277.35		2.472E-01	4.412E-01	7.191E-01	8.422E-02	0.344
	+	510.84		6.193E-01	4.442E-01	2.586E-01	2.810E-02	2.395
	+	583.14	*	5.480E-01	1.116E-01	7.150E-02	5.919E-03	7.664
		860.37		2.994E-01	3.790E-01	6.625E-01	5.586E-02	0.452
BI-210	+	46.50	*	1.191E+00	8.262E-01	7.247E-01	5.908E-02	1.644
PB-210	+	46.50	*	1.191E+00	8.262E-01	7.247E-01	5.908E-02	1.644
PO-210	+	46.50	*	1.191E+00	8.249E-01	7.247E-01	5.167E-02	1.644
BI-211		72.87		1.986E+00	2.183E+00	3.401E+00	2.974E-01	0.584
	+	351.07	*	3.446E+00	5.326E-01	4.014E-01	2.926E-02	8.586
PB-212	+	74.81		1.902E+00	4.151E-01	3.725E-01	4.738E-02	5.108
	+	77.11		2.086E+00	2.789E-01	2.227E-01	1.892E-02	9.368
	+	87.30		1.443E+00	3.569E-01	4.185E-01	5.340E-02	3.448
	+	238.63	*	1.426E+00	1.735E-01	9.780E-02	8.885E-03	14.578
	+	300.09		2.832E+00	1.308E+00	1.239E+00	1.178E-01	2.286
PO-212	+	74.81		1.902E+00	4.151E-01	3.725E-01	4.738E-02	5.108
	+	77.11		2.086E+00	2.789E-01	2.227E-01	1.892E-02	9.368
	+	87.30		1.443E+00	3.569E-01	4.185E-01	5.340E-02	3.448
		115.19		4.253E-01	3.463E+00	5.695E+00	6.605E-01	0.075
	+	238.63	*	1.426E+00	1.735E-01	9.780E-02	8.885E-03	14.578
	+	300.09		2.832E+00	1.308E+00	1.239E+00	1.178E-01	2.286
BI-214	+	609.31	*	1.336E+00	2.080E-01	1.375E-01	1.286E-02	9.717
	+	1120.29		1.567E+00	6.973E-01	5.538E-01	4.954E-02	2.830
	+	1764.49		1.955E+00	5.845E-01	3.967E-01	2.253E-02	4.927
PB-214	+	74.81		3.278E+00	6.904E-01	6.418E-01	7.299E-02	5.108
	+	77.11		3.576E+00	5.503E-01	3.817E-01	4.356E-02	9.368
	+	87.30		2.472E+00	5.908E-01	7.169E-01	7.926E-02	3.448
	+	241.98		2.319E+00	8.241E-01	5.893E-01	5.705E-02	3.935
	+	295.21		1.400E+00	3.002E-01	2.229E-01	2.183E-02	6.283
	+	351.92	*	1.199E+00	1.956E-01	1.384E-01	1.239E-02	8.660

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		3.278E+00	6.904E-01	6.418E-01	7.299E-02	5.108
	+	77.11		3.576E+00	5.503E-01	3.817E-01	4.356E-02	9.368
	+	87.30		2.472E+00	5.908E-01	7.169E-01	7.926E-02	3.448
	+	241.98		2.319E+00	8.241E-01	5.893E-01	5.705E-02	3.935
	+	295.21		1.400E+00	3.002E-01	2.229E-01	2.183E-02	6.283
	+	351.92	*	1.199E+00	1.956E-01	1.384E-01	1.239E-02	8.660
PO-216	+	74.81		1.902E+00	4.151E-01	3.725E-01	4.738E-02	5.108
	+	77.11		2.086E+00	2.789E-01	2.227E-01	1.892E-02	9.368
	+	87.30		1.443E+00	3.569E-01	4.185E-01	5.340E-02	3.448
	+	238.63	*	1.426E+00	1.735E-01	9.780E-02	8.885E-03	14.578
	+	300.09		2.832E+00	1.308E+00	1.239E+00	1.178E-01	2.286
	+	74.81		3.278E+00	6.904E-01	6.418E-01	7.299E-02	5.108
PO-218	+	77.11		3.576E+00	5.503E-01	3.817E-01	4.356E-02	9.368
	+	87.30		2.472E+00	5.908E-01	7.169E-01	7.926E-02	3.448
	+	241.98		2.319E+00	8.241E-01	5.893E-01	5.705E-02	3.935
	+	295.21		1.400E+00	3.002E-01	2.229E-01	2.183E-02	6.283
	+	351.92	*	1.199E+00	1.956E-01	1.384E-01	1.239E-02	8.660
	+	240.98	*	4.397E+00	1.543E+00	1.114E+00	8.790E-02	3.949
RA-224	+	609.31	*	1.336E+00	2.080E-01	1.375E-01	1.286E-02	9.717
RA-226	+	1120.29		1.567E+00	6.973E-01	5.538E-01	4.954E-02	2.830
	+	1764.49		1.955E+00	5.845E-01	3.967E-01	2.253E-02	4.927
AC-228	+	338.32		1.455E+00	7.541E-01	4.045E-01	1.656E-01	3.598
	+	911.07	*	1.487E+00	3.706E-01	2.500E-01	2.596E-02	5.948
	+	969.11		5.553E-01	5.577E-01	5.178E-01	1.182E-01	1.073
RA-228	+	338.32		1.455E+00	7.541E-01	4.045E-01	1.656E-01	3.598
	+	911.07	*	1.487E+00	3.706E-01	2.500E-01	2.596E-02	5.948
	+	969.11		5.553E-01	5.577E-01	5.178E-01	1.182E-01	1.073
TH-228	+	74.81		1.933E+00	3.818E-01	3.785E-01	3.294E-02	5.108
	+	77.11		2.119E+00	2.834E-01	2.262E-01	1.922E-02	9.368
	+	87.30		1.466E+00	3.317E-01	4.252E-01	3.370E-02	3.448
	+	238.63	*	1.449E+00	1.763E-01	9.938E-02	9.028E-03	14.578
	+	300.09		2.878E+00	2.141E+00	1.259E+00	7.442E-01	2.286
TH-230	+	609.31	*	1.336E+00	2.080E-01	1.375E-01	1.286E-02	9.717
	+	1120.29		1.567E+00	6.973E-01	5.537E-01	4.954E-02	2.830
	+	1764.49		1.954E+00	5.845E-01	3.967E-01	2.253E-02	4.927
TH-232	+	338.32		1.455E+00	4.730E-01	4.045E-01	2.817E-02	3.598
	+	911.07	*	1.487E+00	3.706E-01	2.500E-01	2.596E-02	5.948
	+	969.11		5.553E-01	5.577E-01	5.178E-01	1.182E-01	1.073
TH-234	+	63.29	*	1.596E+00	1.028E+00	9.663E-01	1.773E-01	1.652
	+	92.38		1.803E+00	7.445E-01	6.285E-01	1.131E-01	2.868
U-234	+	609.31	*	1.336E+00	2.080E-01	1.375E-01	1.286E-02	9.717
	+	1120.29		1.567E+00	6.973E-01	5.537E-01	4.954E-02	2.830
	+	1764.49		1.954E+00	5.845E-01	3.967E-01	2.253E-02	4.927
NP-237	+	86.50	*	9.161E-01	2.805E-01	2.527E-01	5.591E-02	3.625
	+	95.87		-7.551E-01	9.184E-01	1.278E+00	3.159E-01	-0.591
U-238	+	63.29	*	1.596E+00	1.028E+00	9.663E-01	1.773E-01	1.652
	+	92.38		1.803E+00	6.872E-01	6.285E-01	5.306E-02	2.868
AM-243	+	74.67	*	3.084E-01	6.081E-02	6.037E-02	5.214E-03	5.109
	+	86.72		3.436E+01	7.773E+00	9.484E+00	7.546E-01	3.622

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		117.66		-1.633E+00	3.686E+00	5.905E+00	7.067E-01	-0.277
		142.18		-2.918E+00	1.973E+01	3.096E+01	3.280E+00	-0.094
ANH-511	+	511.00	*	1.338E-01	9.530E-02	5.587E-02	3.899E-03	2.394

---- 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	*	-2.134E-01	3.881E-01	6.266E-01	4.711E-02	-0.341
NA-22		1274.54	*	6.288E-03	5.504E-02	9.239E-02	5.215E-03	0.068
NA-24		1368.53	*	-4.349E-01	5.504E-02	Half-Life too short		
AL-26		1129.67		7.029E-01	2.445E+00	3.508E+00	2.079E-01	0.200
		1808.65	*	1.326E-02	3.418E-02	6.058E-02	3.418E-03	0.219
TI-44		67.85		-1.677E-02	2.483E-02	4.099E-02	3.711E-03	-0.409
	+	78.38	*	3.849E-01	5.148E-02	5.563E-02	4.685E-03	6.919
SC-46		889.25	*	-3.864E-02	4.642E-02	7.097E-02	5.374E-03	-0.544
	+	1120.51		2.704E-01	1.190E-01	1.521E-01	9.145E-03	1.777
V-48		944.10		1.512E-01	1.225E+00	2.037E+00	1.487E-01	0.074
		983.50	*	-4.985E-02	9.321E-02	1.456E-01	1.030E-02	-0.342
		1312.09		1.750E-02	1.063E-01	1.790E-01	1.015E-02	0.098
CR-51		320.08	*	2.110E-02	4.121E-01	6.754E-01	5.257E-02	0.031
MN-52		744.21		2.289E-01	3.379E-01	5.716E-01	4.640E-02	0.400
		848.13		5.507E+00	9.717E+00	1.682E+01	1.310E+00	0.327
		935.52		1.069E-01	3.582E-01	6.042E-01	4.438E-02	0.177
		1246.25		1.228E+00	9.372E+00	1.579E+01	8.836E-01	0.078
		1333.61		1.308E+00	6.999E+00	1.180E+01	6.714E-01	0.111
		1434.06	*	3.386E-01	3.363E-01	6.135E-01	3.526E-02	0.552
MN-54		834.83	*	1.426E-02	5.008E-02	8.494E-02	6.666E-03	0.168
CO-56		846.75	*	4.245E-02	5.208E-02	9.144E-02	7.127E-03	0.464
		977.42		1.581E+00	3.843E+00	6.516E+00	4.634E-01	0.243
		1037.82		-3.314E-02	4.133E-01	6.698E-01	4.879E-02	-0.049
		1175.09		8.451E-01	2.714E+00	4.497E+00	2.473E-01	0.188
		1238.25		1.200E-01	1.123E-01	2.001E-01	1.193E-02	0.600
		1360.21		2.406E-01	1.143E+00	1.934E+00	1.104E-01	0.124
		1771.40		1.135E-01	2.996E-01	4.648E-01	2.638E-02	0.244
CO-57		122.06	*	-3.238E-03	2.583E-02	4.189E-02	5.299E-03	-0.077
		136.48		5.676E-02	2.138E-01	3.498E-01	4.094E-02	0.162
CO-58		810.76	*	-8.566E-02	4.806E-02	6.747E-02	5.374E-03	-1.270
FE-59		142.65		6.941E-01	3.038E+00	4.836E+00	5.100E-01	0.144
		192.34		1.302E-01	9.903E-01	1.689E+00	2.191E-01	0.077
		1099.22	*	3.298E-02	1.141E-01	1.899E-01	1.357E-02	0.174
		1291.56		-6.419E-02	1.500E-01	2.388E-01	1.744E-02	-0.269
CO-60		1173.22		1.548E-02	5.380E-02	8.899E-02	4.891E-03	0.174
		1332.49	*	9.871E-03	4.795E-02	8.104E-02	4.610E-03	0.122
ZN-65		1115.52	*	-3.603E-02	1.224E-01	1.628E-01	9.887E-03	-0.221
GE-68		1077.35	*	4.882E-02	1.590E+00	2.593E+00	1.657E-01	0.019
AS-73		53.44	*	1.426E-01	2.310E-01	3.856E-01	3.257E-02	0.370
AS-74		595.88	*	5.610E-02	1.126E-01	1.910E-01	1.467E-02	0.294
		634.78		-2.770E-01	4.288E-01	6.619E-01	5.274E-02	-0.418

---- 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		9.059E-01	2.633E+00	4.058E+00	4.421E-01	0.223
		96.73		-2.576E-01	7.504E-01	1.092E+00	1.515E-01	-0.236
		121.11		-4.081E-02	1.367E-01	2.201E-01	3.173E-02	-0.185
		136.00		1.424E-02	3.997E-02	6.564E-02	7.415E-03	0.217
		198.60		-5.045E-01	1.925E+00	3.133E+00	2.799E-01	-0.161
		264.65	*	-2.001E-02	4.812E-02	7.537E-02	5.905E-03	-0.266
		279.53		-4.288E-02	1.204E-01	1.954E-01	1.572E-02	-0.219
		303.91		-8.847E-01	2.642E+00	3.620E+00	3.846E-01	-0.244
		400.65		6.208E-03	3.282E-01	5.270E-01	4.844E-02	0.012
BR-77	+	87.88		9.057E+02	2.049E+02	3.555E+02	2.806E+01	2.548
		200.40		-2.616E+01	2.177E+02	3.667E+02	2.905E+01	-0.071
	+	239.00		3.024E+02	3.420E+01	4.999E+01	3.949E+00	6.049
		249.79		-7.230E+01	9.158E+01	1.465E+02	1.152E+01	-0.494
		281.68		-9.795E+01	1.310E+02	2.079E+02	1.594E+01	-0.471
		297.23		3.271E+02	1.136E+02	1.542E+02	1.160E+01	2.121
		303.76		-4.520E+01	2.915E+02	4.051E+02	3.018E+01	-0.112
		439.47		-7.776E+01	2.230E+02	3.679E+02	2.324E+01	-0.211
		484.57		2.804E+01	3.495E+02	5.864E+02	3.953E+01	0.048
		520.65	*	-1.291E+01	1.783E+01	2.736E+01	1.933E+00	-0.472
		574.64		-1.449E+02	3.784E+02	5.699E+02	4.282E+01	-0.254
		578.91		1.979E+01	1.707E+02	2.457E+02	1.854E+01	0.081
		585.48		1.504E+03	3.859E+02	6.729E+02	5.113E+01	2.235
		755.35		5.584E+01	3.113E+02	5.061E+02	4.098E+01	0.110
		817.79		1.010E+01	2.241E+02	3.750E+02	2.969E+01	0.027
SR-82		698.33		1.467E+01	4.439E+01	7.347E+01	5.998E+00	0.200
		776.49	*	4.198E-02	4.778E-01	8.058E-01	6.486E-02	0.052
		1395.20		-5.052E-01	1.428E+01	2.345E+01	1.343E+00	-0.022
RB-83		520.41	*	-7.727E-02	9.378E-02	1.377E-01	9.724E-03	-0.561
		529.64		-2.289E-02	1.228E-01	2.009E-01	1.435E-02	-0.114
		552.65		-1.087E-02	2.394E-01	3.941E-01	2.891E-02	-0.028
RB-84		881.50	*	1.684E-02	9.360E-02	1.419E-01	1.081E-02	0.119
KR-85		513.99	*	1.273E+01	1.009E+01	1.593E+01	1.116E+00	0.799
SR-85		513.99	*	6.595E-02	5.225E-02	8.250E-02	5.779E-03	0.799
RB-86		1076.63	*	1.017E-01	1.056E+00	1.731E+00	1.107E-01	0.059
Y-88		898.02		-8.145E-03	5.293E-02	8.646E-02	6.545E-03	-0.094
		1836.01	*	6.602E-03	3.967E-02	6.767E-02	3.811E-03	0.098
ZR-88		392.90	*	-2.524E-02	3.540E-02	5.417E-02	3.173E-03	-0.466
Y-91		1204.90	*	5.222E+00	2.291E+01	3.895E+01	2.159E+00	0.134
NB-94		702.63	*	1.098E-02	4.267E-02	7.024E-02	5.733E-03	0.156
		871.10		2.107E-02	4.171E-02	7.194E-02	5.520E-03	0.293
NB-95		765.79	*	6.479E-02	6.674E-02	1.044E-01	8.433E-03	0.620
NB-95M		235.69	*	8.962E-02	1.515E-01	2.300E-01	2.128E-02	0.390
ZR-95		724.18		1.472E-01	1.389E-01	2.128E-01	1.900E-02	0.692
		756.15	*	7.300E-02	9.859E-02	1.665E-01	1.501E-02	0.439
NB-97		657.90	*	2.581E-01	9.859E-02	Half-Life	too short	
		1024.50		1.854E+01	9.859E-02	Half-Life	too short	
ZR-97		254.15		5.875E+00	9.859E-02	Half-Life	too short	
		355.39		5.498E+00	9.859E-02	Half-Life	too short	
		507.63	*	1.093E+01	9.859E-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			-1.074E+01	9.859E-02	Half-Life too short		
	1021.30			-1.374E+01	9.859E-02	Half-Life too short		
	1147.95			-1.073E+01	9.859E-02	Half-Life too short		
	1362.66			-3.201E+00	9.859E-02	Half-Life too short		
	1750.46			2.017E+00	9.859E-02	Half-Life too short		
MO-99	140.51			-2.046E+01	3.566E+01	5.546E+01	1.577E+01	-0.369
	181.06			1.192E+01	2.523E+01	3.647E+01	6.547E+00	0.327
	366.43			1.749E+01	1.189E+02	1.940E+02	1.248E+01	0.090
	739.58	*		5.158E+00	1.846E+01	3.034E+01	4.523E+00	0.170
	778.00			2.021E+01	5.336E+01	9.177E+01	7.384E+00	0.220
TC-99M	140.51	*		-3.263E+11	5.336E+01	Half-Life too short		
RH-101	127.23			-3.822E-02	3.336E-02	5.118E-02	6.215E-03	-0.747
	198.01	*		2.428E-03	3.483E-02	5.745E-02	4.549E-03	0.042
	325.23			-3.201E-01	2.605E-01	3.959E-01	2.838E-02	-0.809
RH-102	418.52			-6.091E-03	3.367E-01	5.373E-01	3.285E-02	-0.011
	475.06	*		-3.734E-03	3.463E-02	5.754E-02	3.829E-03	-0.065
	631.29			2.548E-02	6.506E-02	1.092E-01	8.678E-03	0.233
	697.49			1.075E-02	9.872E-02	1.609E-01	1.314E-02	0.067
	766.84			2.605E-01	1.904E-01	2.557E-01	2.064E-02	1.019
	1046.59			-3.361E-02	1.492E-01	2.386E-01	1.583E-02	-0.141
	1112.84			-4.979E-02	3.030E-01	4.292E-01	2.611E-02	-0.116
RU-103	497.08	*		3.269E-02	4.740E-02	8.209E-02	1.081E-02	0.398
	610.33			1.467E+01	3.005E+00	3.396E+00	5.526E-01	4.320
RH-106	511.85			6.694E-01	4.768E-01	4.972E-01	3.474E-02	1.346
	621.84	*		1.618E-02	3.902E-01	6.396E-01	8.244E-02	0.025
	1050.47			5.369E-01	2.932E+00	4.854E+00	3.207E-01	0.111
RU-106	511.85			6.694E-01	4.768E-01	4.972E-01	3.474E-02	1.346
	621.84	*		1.618E-02	3.902E-01	6.396E-01	5.037E-02	0.025
	1050.47			5.369E-01	2.932E+00	4.854E+00	3.207E-01	0.111
AG-108M	433.93	*		1.175E-02	3.822E-02	6.547E-02	4.404E-03	0.179
	614.37			3.587E-02	5.283E-02	7.968E-02	6.526E-03	0.450
	722.95			1.522E-02	5.865E-02	8.380E-02	7.126E-03	0.182
AG-110M	657.75	*		3.718E-02	4.614E-02	7.894E-02	6.632E-03	0.471
	677.61			3.433E-02	4.344E-01	7.081E-01	5.963E-02	0.048
	706.67			6.529E-04	2.702E-01	4.364E-01	3.671E-02	0.001
	763.93			1.944E-01	2.384E-01	3.712E-01	3.096E-02	0.524
	884.67			1.016E-02	5.756E-02	9.679E-02	7.658E-03	0.105
	937.48			-1.168E-01	1.474E-01	2.269E-01	1.747E-02	-0.515
	1384.27			-1.973E-01	2.027E-01	2.962E-01	1.802E-02	-0.666
IN-111	171.28			2.161E-01	1.353E+00	2.170E+00	1.704E-01	0.100
	245.39	*		4.631E-01	1.436E+00	2.155E+00	1.698E-01	0.215
IN-113M	391.69	*		-1.167E-02	4.958E-02	7.843E-02	4.887E-03	-0.149
SN-113	391.69	*		-1.167E-02	4.958E-02	7.843E-02	4.887E-03	-0.149
IN-114M	190.27	*		1.752E-01	2.199E-01	3.233E-01	2.555E-02	0.542
CD-115	260.90			1.579E+00	1.793E+02	2.978E+02	2.326E+01	0.005
	492.35			-1.100E+01	5.792E+01	9.544E+01	6.502E+00	-0.115
	527.90	*		-7.121E+00	1.672E+01	2.689E+01	1.916E+00	-0.265
SN-117M	156.02			-1.218E+00	2.607E+00	4.093E+00	3.697E-01	-0.298
	158.56	*		2.932E-02	6.027E-02	9.854E-02	8.605E-03	0.298

---- 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	*	-1.117E+00	3.371E+00	5.439E+00	4.039E-01	-0.205	
	692.80		1.123E+01	7.014E+01	1.148E+02	9.376E+00	0.098	
I-123	159.00	*	1.332E+01	7.014E+01	Half-Life too short			
	528.96		-3.436E+02	7.014E+01	Half-Life too short			
TE-123M	159.00	*	1.975E-02	2.990E-02	4.921E-02	4.297E-03	0.401	
I-124	602.71	*	-3.626E-01	1.084E+00	1.485E+00	1.148E-01	-0.244	
	722.78		-7.586E-01	7.431E+00	1.021E+01	8.316E-01	-0.074	
	1325.50		-6.136E+01	5.526E+01	7.868E+01	4.470E+00	-0.780	
	1376.25		4.934E+01	4.175E+01	7.709E+01	4.408E+00	0.640	
	1509.49		3.123E+00	2.441E+01	4.051E+01	2.335E+00	0.077	
	1691.02		-9.674E-01	5.309E+00	8.305E+00	4.756E-01	-0.116	
SB-124	602.71		-1.819E-02	5.438E-02	7.451E-02	5.763E-03	-0.244	
	645.85		6.467E-01	6.382E-01	1.110E+00	9.548E-02	0.582	
	709.31		1.289E+00	3.682E+00	6.092E+00	4.971E-01	0.212	
	713.82		-3.873E-01	2.167E+00	3.449E+00	4.039E-01	-0.112	
	722.78		-5.517E-02	5.404E-01	7.423E-01	6.194E-02	-0.074	
+	968.20		5.780E+00	5.668E+00	8.182E+00	5.863E-01	0.706	
	1045.16		1.147E-01	3.290E+00	5.381E+00	3.577E-01	0.021	
	1325.50		-4.766E+00	4.292E+00	6.111E+00	3.472E-01	-0.780	
	1368.21		-2.861E-01	2.053E+00	3.334E+00	3.944E-01	-0.086	
	1436.60		-1.546E-01	5.082E+00	8.324E+00	4.784E-01	-0.019	
	1691.02	*	-1.659E-02	9.106E-02	1.424E-01	8.872E-03	-0.116	
SB-125	427.89	*	-7.218E-02	1.045E-01	1.691E-01	1.088E-02	-0.427	
+	463.38		1.018E+00	5.864E-01	6.157E-01	4.564E-02	1.653	
	600.56		-5.389E-02	2.156E-01	3.473E-01	2.924E-02	-0.155	
	635.90		-1.181E-01	3.196E-01	5.057E-01	4.412E-02	-0.233	
TE-125M	109.28	*	4.571E+00	8.879E+00	1.485E+01	1.804E+00	0.308	
I-126	388.63		7.672E-03	2.464E-01	3.970E-01	2.351E-02	0.019	
	666.33	*	-9.998E-02	2.479E-01	3.908E-01	3.189E-02	-0.256	
	753.82		1.250E+00	2.155E+00	3.601E+00	2.917E-01	0.347	
SB-126	223.80		-7.960E-01	4.340E+00	7.231E+00	5.732E-01	-0.110	
	278.60		1.395E+00	2.890E+00	4.877E+00	3.752E-01	0.286	
+	296.50		1.470E+01	3.016E+00	3.999E+00	3.011E-01	3.677	
	414.70		-1.534E-02	9.566E-02	1.514E-01	9.198E-03	-0.101	
	415.30		-1.252E+00	7.983E+00	1.264E+01	7.684E-01	-0.099	
	555.20		-7.142E-01	4.922E+00	8.042E+00	5.915E-01	-0.089	
	573.80		-1.106E+00	1.488E+00	2.258E+00	1.695E-01	-0.490	
	593.00		-1.449E+00	1.194E+00	1.777E+00	1.361E-01	-0.815	
	656.30		9.738E-01	4.560E+00	7.527E+00	6.111E-01	0.129	
	666.33		-4.187E-02	1.038E-01	1.637E-01	1.335E-02	-0.256	
	675.00		-5.343E-01	2.968E+00	4.755E+00	3.882E-01	-0.112	
	695.00		-3.658E-02	1.063E-01	1.676E-01	1.368E-02	-0.218	
	697.00		-4.493E-03	3.633E-01	5.871E-01	4.793E-02	-0.008	
	720.50	*	3.572E-02	2.244E-01	3.172E-01	2.585E-02	0.113	
	856.80		3.259E-01	6.522E-01	1.121E+00	8.682E-02	0.291	
	989.30		6.796E-02	1.778E+00	2.924E+00	2.058E-01	0.023	
	1034.80		1.619E+00	1.177E+01	1.945E+01	1.308E+00	0.083	
	1213.00		2.866E-01	6.084E+00	1.020E+01	5.664E-01	0.028	
SB-127	61.10		1.130E+01	3.030E+01	4.699E+01	5.697E+00	0.240	

---- Non-Identified Nuclides ----

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	252.40			4.971E+00	5.829E+00	9.442E+00	3.962E+00	0.526
	290.80			-6.435E+00	3.085E+01	4.390E+01	4.694E+00	-0.147
	411.60			2.026E+00	1.836E+01	2.956E+01	4.345E+00	0.069
	444.90			7.005E+00	1.315E+01	2.276E+01	2.593E+00	0.308
	473.00			2.372E+00	2.394E+00	4.205E+00	5.006E-01	0.564
	543.00			1.022E+01	2.410E+01	4.088E+01	5.664E+00	0.250
	603.60			-4.393E+00	1.848E+01	2.556E+01	3.115E+00	-0.172
	685.20	*		-4.991E-01	2.151E+00	3.424E+00	3.881E-01	-0.146
	698.50			1.506E+00	2.315E+01	3.760E+01	5.935E+00	0.040
	722.20			4.703E+00	4.993E+01	7.010E+01	7.779E+00	0.067
	783.80			1.609E+00	5.466E+00	9.329E+00	1.146E+00	0.173
XE-127	57.60			2.280E+00	2.134E+00	3.738E+00	3.454E-01	0.610
	145.22			-6.686E-01	7.418E-01	1.144E+00	1.174E-01	-0.584
	172.10			9.602E-02	1.276E-01	2.100E-01	1.649E-02	0.457
	202.84	*		6.946E-03	5.008E-02	8.244E-02	6.534E-03	0.084
	374.96			-9.530E-02	2.340E-01	3.678E-01	2.297E-02	-0.259
I-131	80.18			3.214E+00	4.816E+00	5.995E+00	5.026E-01	0.536
	284.30			6.813E-01	1.724E+00	2.900E+00	2.365E-01	0.235
	364.48	*		4.702E-02	1.423E-01	2.346E-01	1.664E-02	0.200
	636.97			3.902E-02	1.943E+00	3.174E+00	2.701E-01	0.012
	722.89			2.703E+00	1.072E+01	1.530E+01	1.257E+00	0.177
TE-132	49.72			-3.136E+00	4.815E+00	7.199E+00	7.519E-01	-0.436
	111.76			-2.922E+00	3.645E+01	5.745E+01	7.539E+00	-0.051
	116.30			2.022E+01	3.299E+01	5.510E+01	7.546E+00	0.367
	228.16	*		2.609E-01	8.325E-01	1.414E+00	2.195E-01	0.185
BA-133	53.15			6.605E-01	9.725E-01	1.627E+00	1.365E-01	0.406
	79.62			7.925E-02	1.092E+00	1.497E+00	2.257E-01	0.053
	81.00			5.274E-02	9.582E-02	1.181E-01	1.853E-02	0.447
	276.40			5.156E-01	4.539E-01	7.319E-01	1.019E-01	0.704
	302.84			3.089E-02	1.770E-01	2.524E-01	3.172E-02	0.122
	356.01	*		3.082E-02	5.583E-02	8.271E-02	9.930E-03	0.373
	383.85			-1.919E-02	3.433E-01	5.508E-01	6.059E-02	-0.035
I-133	510.53	+		2.918E+00	3.433E-01	Half-Life	too short	
	529.87	*		-4.826E-03	3.433E-01	Half-Life	too short	
	706.58			-4.334E-03	3.433E-01	Half-Life	too short	
	856.28			1.956E-01	3.433E-01	Half-Life	too short	
	875.33			-6.715E-02	3.433E-01	Half-Life	too short	
	1236.41			2.679E+00	3.433E-01	Half-Life	too short	
	1298.22			3.340E-01	3.433E-01	Half-Life	too short	
CS-134	475.35			-4.133E-01	2.295E+00	3.797E+00	2.528E-01	-0.109
	563.23			-4.080E-02	4.542E-01	7.445E-01	5.596E-02	-0.055
	569.32			2.313E-01	2.564E-01	4.443E-01	3.379E-02	0.520
	604.70			2.643E-02	4.285E-02	6.451E-02	5.013E-03	0.410
	795.84	*		8.462E-02	6.088E-02	1.102E-01	8.882E-03	0.768
	801.93			1.599E-01	5.093E-01	8.694E-01	6.977E-02	0.184
	1038.57			-1.092E+00	5.091E+00	8.155E+00	5.462E-01	-0.134
	1167.94			-1.198E+00	2.996E+00	4.651E+00	2.581E-01	-0.258
	1365.15			2.944E-01	1.425E+00	2.410E+00	1.516E-01	0.122
CS-135	268.24	*		2.983E-01	1.903E-01	3.018E-01	2.788E-02	0.988

---- Non-Identified Nuclides ----

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I-135	288.45			-1.440E+11	1.903E-01	Half-Life	too short	
	417.63			1.440E+11	1.903E-01	Half-Life	too short	
	546.56			9.385E+10	1.903E-01	Half-Life	too short	
	836.80			1.846E+10	1.903E-01	Half-Life	too short	
	1038.76			-1.453E+11	1.903E-01	Half-Life	too short	
	1124.00			1.109E+12	1.903E-01	Half-Life	too short	
	1131.51			-2.683E+10	1.903E-01	Half-Life	too short	
	1260.41	*		6.221E+09	1.903E-01	Half-Life	too short	
	1457.56			6.904E+12	1.903E-01	Half-Life	too short	
	1678.03			4.224E+10	1.903E-01	Half-Life	too short	
	1706.46			-1.117E+11	1.903E-01	Half-Life	too short	
	1791.20			5.640E+10	1.903E-01	Half-Life	too short	
CS-136	66.91			-5.462E-03	4.667E-01	7.090E-01	1.114E-01	-0.008
	86.29		+	4.281E+00	1.051E+00	1.697E+00	2.110E-01	2.522
	153.22			8.263E-01	7.546E-01	1.258E+00	1.297E-01	0.657
	163.89			7.977E-01	1.274E+00	2.032E+00	1.865E-01	0.393
	176.55			-1.364E-01	4.143E-01	6.478E-01	5.449E-02	-0.211
	273.65			-5.613E-01	6.184E-01	8.446E-01	7.061E-02	-0.665
	340.57			2.683E-01	1.754E-01	2.742E-01	1.984E-02	0.979
	818.51			2.749E-02	9.794E-02	1.668E-01	1.321E-02	0.165
	1048.07	*		-1.340E-01	1.490E-01	2.233E-01	1.585E-02	-0.600
	1235.34			6.270E-01	7.548E-01	1.326E+00	1.308E-01	0.473
BA-137M	661.65	*		2.886E-02	4.668E-02	7.896E-02	6.440E-03	0.365
CS-137	661.65	*		3.050E-02	4.935E-02	8.346E-02	6.822E-03	0.365
CE-139	165.85	*		-1.127E-02	3.291E-02	5.172E-02	4.055E-03	-0.218
BA-140	162.64			-3.513E-01	8.987E-01	1.373E+00	1.203E-01	-0.256
	304.84			-6.394E-01	1.649E+00	2.288E+00	6.333E-01	-0.280
LA-140	423.70			-2.322E-01	2.336E+00	3.701E+00	1.179E+00	-0.063
	537.32	*		-2.029E-02	3.269E-01	5.387E-01	1.767E-01	-0.038
	328.77			5.711E-01	3.513E-01	6.154E-01	4.735E-02	0.928
	432.53			2.578E+00	2.496E+00	4.435E+00	3.023E-01	0.581
	487.03			2.185E-02	1.729E-01	2.908E-01	2.161E-02	0.075
	751.79			9.260E-01	2.476E+00	4.084E+00	3.708E-01	0.227
	815.85			1.593E-01	4.301E-01	7.369E-01	6.627E-02	0.216
	867.82			-6.191E-01	1.758E+00	2.830E+00	2.320E-01	-0.219
	919.63			1.419E+00	3.946E+00	6.247E+00	6.063E-01	0.227
	925.24			8.432E-02	1.469E+00	2.435E+00	1.954E-01	0.035
CE-141	1596.49	*		5.991E-02	1.139E-01	1.977E-01	1.139E-02	0.303
	145.44	*		-7.733E-02	6.738E-02	1.024E-01	1.062E-02	-0.755
CE-143	57.37			6.488E-04	6.738E-02	Half-Life	too short	
	231.56			-5.459E-05	6.738E-02	Half-Life	too short	
	293.26	*		1.414E-03	6.738E-02	Half-Life	too short	
	350.59		+	4.418E-02	6.738E-02	Half-Life	too short	
	490.36			2.563E-04	6.738E-02	Half-Life	too short	
	664.57			-7.134E-04	6.738E-02	Half-Life	too short	
CE-144	721.93			3.419E-04	6.738E-02	Half-Life	too short	
	80.11			1.249E+00	2.041E+00	2.533E+00	2.108E-01	0.493
PM-144	133.54	*		-8.405E-02	2.023E-01	3.210E-01	5.563E-02	-0.262
	476.78			-2.088E-02	8.037E-02	1.322E-01	1.016E-02	-0.158

---- Non-Identified Nuclides ----

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		618.01		1.433E-03	4.067E-02	6.667E-02	5.405E-03	0.022
		696.49	*	-1.695E-02	4.482E-02	7.046E-02	5.756E-03	-0.241
		778.57		2.299E-01	2.825E+00	4.761E+00	3.831E-01	0.048
PR-144		696.49	*	-1.149E+00	3.039E+00	4.777E+00	3.901E-01	-0.241
		1489.15		-6.679E+00	1.732E+01	2.710E+01	1.562E+00	-0.246
PM-146		453.90	*	3.789E-02	4.976E-02	8.702E-02	7.898E-03	0.435
		633.02		9.217E-01	1.670E+00	2.780E+00	1.035E+00	0.332
		735.90		-8.256E-03	1.958E-01	3.052E-01	8.686E-02	-0.027
		747.13		-5.624E-02	1.201E-01	1.854E-01	2.546E-02	-0.303
ND-147	+	91.11		7.677E-01	2.962E-01	5.066E-01	4.569E-02	1.515
		319.41		-1.077E+00	3.801E+00	6.112E+00	4.434E-01	-0.176
		439.89		-1.071E+00	7.276E+00	1.214E+01	7.680E-01	-0.088
		531.02	*	-1.391E-01	6.818E-01	1.113E+00	1.576E-01	-0.125
PM-149		285.90	*	-1.470E+01	1.333E+02	2.185E+02	3.282E+01	-0.067
EU-152		121.78		-3.596E-02	7.465E-02	1.191E-01	1.611E-02	-0.302
		244.69		7.743E-02	3.508E-01	5.228E-01	4.121E-02	0.148
		344.27	*	-9.309E-02	1.273E-01	1.699E-01	1.273E-02	-0.548
		443.98		2.604E-01	1.104E+00	1.881E+00	1.197E-01	0.138
		778.89		-4.742E-02	3.251E-01	5.390E-01	4.334E-02	-0.088
		867.32		-4.705E-01	1.006E+00	1.603E+00	1.233E-01	-0.294
		964.01		4.463E-01	4.314E-01	6.708E-01	4.824E-02	0.665
		1085.78		-1.367E-02	4.745E-01	7.688E-01	4.860E-02	-0.018
		1112.02		1.386E-01	4.066E-01	6.320E-01	3.849E-02	0.219
		1407.95		1.465E-01	2.523E-01	4.388E-01	2.516E-02	0.334
GD-153		69.67		-6.754E-02	9.520E-01	1.602E+00	1.432E-01	-0.042
	+	83.37		1.631E+01	1.463E+01	1.967E+01	1.602E+00	0.829
		97.43	*	-1.596E-02	8.105E-02	1.165E-01	1.060E-02	-0.137
		103.18		-9.101E-02	9.696E-02	1.532E-01	1.513E-02	-0.594
EU-154		123.07		3.271E-02	5.277E-02	8.781E-02	1.280E-02	0.373
		247.94		-2.239E-01	4.236E-01	5.980E-01	6.532E-02	-0.374
		591.81		-3.805E-01	7.341E-01	1.157E+00	1.270E-01	-0.329
		723.30		1.046E-01	2.480E-01	3.600E-01	3.277E-02	0.291
		756.87		6.574E-01	1.054E+00	1.765E+00	2.048E-01	0.372
		873.19		3.045E-02	3.665E-01	6.120E-01	7.092E-02	0.050
		996.32		-4.345E-01	5.140E-01	7.764E-01	1.323E-01	-0.560
		1004.76		-1.662E-01	2.921E-01	4.555E-01	4.762E-02	-0.365
		1274.45	*	1.633E-02	1.535E-01	2.576E-01	2.380E-02	0.063
EU-155		48.70		-1.130E-01	4.347E-01	6.647E-01	5.016E-02	-0.170
		60.01		-9.111E-01	2.140E+00	3.213E+00	3.075E-01	-0.284
	+	86.54		3.759E-01	8.517E-02	1.505E-01	1.213E-02	2.498
		105.31	*	1.325E-01	1.000E-01	1.714E-01	1.759E-02	0.773
TB-160	+	86.79		1.013E+00	2.292E-01	4.050E-01	3.221E-02	2.501
		197.04		-8.482E-02	6.020E-01	9.854E-01	7.801E-02	-0.086
		215.65		3.794E-01	7.355E-01	1.265E+00	1.003E-01	0.300
		298.57		2.929E-01	1.748E-01	2.187E-01	1.642E-02	1.339
		879.36	*	-6.779E-03	1.899E-01	2.841E-01	2.167E-02	-0.024
		962.29		1.446E-01	7.713E-01	1.110E+00	7.996E-02	0.130
		966.15		9.292E-01	3.602E-01	6.062E-01	4.351E-02	1.533
		1177.93		-2.284E-01	4.643E-01	7.157E-01	3.939E-02	-0.319

----- 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			2.375E-01	9.096E-01	1.546E+00	8.697E-02	0.154
	80.57			3.306E-01	2.554E-01	3.296E-01	2.735E-02	1.003
	184.41		+	1.556E-01	6.710E-02	7.728E-02	6.097E-03	2.014
	280.46			-1.122E-01	9.422E-02	1.458E-01	1.120E-02	-0.770
	410.95			2.852E-01	3.131E-01	5.262E-01	3.177E-02	0.542
TM-171	711.68		*	2.841E-02	8.035E-02	1.299E-01	1.060E-02	0.219
	752.31			4.207E-01	3.745E-01	6.480E-01	5.251E-02	0.649
	810.29			-1.097E-01	7.076E-02	1.019E-01	8.098E-03	-1.076
	51.35			-2.711E+00	7.015E+00	1.132E+01	9.110E-01	-0.240
	52.39			2.373E+00	4.030E+00	6.725E+00	5.547E-01	0.353
LU-176	59.40			-2.165E+00	1.116E+01	1.695E+01	1.625E+00	-0.128
	66.72		*	2.812E-01	1.606E+01	2.443E+01	2.230E+00	0.012
	88.36		+	7.400E-01	1.674E-01	2.840E-01	2.253E-02	2.605
	201.83			-2.557E-02	2.939E-02	4.787E-02	3.793E-03	-0.534
	306.84		*	8.035E-03	2.933E-02	4.530E-02	3.358E-03	0.177
LU-177	401.10			3.721E+00	8.503E+00	1.398E+01	8.301E-01	0.266
	112.95			-2.413E+00	1.869E+00	2.770E+00	3.121E-01	-0.871
	208.36		+	2.370E+00	1.973E+00	2.293E+00	1.819E-01	1.033
	52.97		*	3.600E-01	4.361E-01	7.323E-01	6.121E-02	0.492
	54.07			3.652E-03	2.477E-01	4.057E-01	3.476E-02	0.009
LU-177M	61.30			7.486E-01	6.826E-01	1.084E+00	1.028E-01	0.691
	121.62			-1.899E-01	3.839E-01	6.121E-01	7.697E-02	-0.310
	147.16			-2.608E-01	6.713E-01	1.062E+00	1.067E-01	-0.246
	171.86			2.976E-01	5.097E-01	8.327E-01	6.538E-02	0.357
	218.09			-8.150E-01	8.750E-01	1.410E+00	1.118E-01	-0.578
HF-181	268.79			1.468E+00	9.914E-01	1.565E+00	1.215E-01	0.938
	319.02			-2.969E-01	2.881E-01	4.422E-01	3.209E-02	-0.671
	367.43			1.356E-01	1.007E+00	1.641E+00	1.052E-01	0.083
	413.65		*	-1.159E-01	2.239E-01	3.466E-01	2.102E-02	-0.334
	56.28			-1.832E-01	3.035E-01	5.063E-01	4.550E-02	-0.362
W-181	57.53			2.025E-01	1.780E-01	3.123E-01	2.882E-02	0.648
	65.20			-8.685E-02	5.102E-01	7.711E-01	7.112E-02	-0.113
	133.02			-5.755E-02	6.588E-02	1.021E-01	1.181E-02	-0.563
	136.25			1.774E-01	4.716E-01	7.750E-01	8.700E-02	0.229
	345.85			-7.354E-02	2.596E-01	3.605E-01	2.463E-02	-0.204
TA-182	482.03		*	-2.112E-02	5.104E-02	8.304E-02	5.579E-03	-0.254
	56.28			-7.078E-02	1.176E-01	1.962E-01	1.764E-02	-0.361
	57.53			7.850E-02	6.901E-02	1.211E-01	1.117E-02	0.648
	65.20		*	-3.341E-02	1.963E-01	2.966E-01	2.736E-02	-0.113
	67.75			-3.933E-02	5.944E-02	9.818E-02	8.895E-03	-0.401
RE-183	100.10			2.341E-02	1.607E-01	2.668E-01	2.523E-02	0.088
	152.43			1.391E-01	3.704E-01	6.038E-01	5.708E-02	0.230
	222.10			5.662E-01	3.558E-01	6.323E-01	5.013E-02	0.896
	1001.68			1.999E+00	2.855E+00	4.863E+00	3.383E-01	0.411
	1121.28		+	7.451E-01	3.279E-01	4.246E-01	2.550E-02	1.755
RE-183	1189.05			-5.797E-02	3.848E-01	6.367E-01	3.514E-02	-0.091
	1221.42		*	-2.551E-01	2.421E-01	3.705E-01	2.062E-02	-0.689
	1230.97			-1.741E-01	6.075E-01	9.927E-01	5.537E-02	-0.175
	57.98			6.954E-02	7.041E-02	1.231E-01	1.146E-02	0.565

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	59.32		-7.869E-03	4.616E-02	7.016E-02	6.716E-03	-0.112
		67.20		-1.306E-02	1.158E-01	1.752E-01	1.593E-02	-0.075
		162.32	*	-9.742E-02	1.272E-01	1.909E-01	1.580E-02	-0.510
		208.81		1.949E+00	1.622E+00	1.892E+00	1.500E-01	1.030
		291.72		-1.199E-01	1.132E+00	1.623E+00	1.230E-01	-0.074
		57.98		2.548E-01	2.580E-01	4.510E-01	4.201E-02	0.565
		59.32		-2.881E-02	1.690E-01	2.569E-01	2.459E-02	-0.112
		67.20		-4.785E-02	4.244E-01	6.418E-01	5.837E-02	-0.075
		161.27		-3.818E-01	3.950E-01	6.029E-01	5.067E-02	-0.633
		216.55		1.779E-01	2.633E-01	4.553E-01	3.611E-02	0.391
		252.85	*	8.558E-02	2.497E-01	4.220E-01	3.313E-02	0.203
		318.01		-6.935E-01	4.955E-01	7.404E-01	5.383E-02	-0.937
		792.07		-3.695E-02	1.290E+00	2.155E+00	1.725E-01	-0.017
		903.28		7.603E-01	1.347E+00	2.114E+00	1.585E-01	0.360
OS-185	+	920.93		6.512E-01	5.731E-01	1.012E+00	7.506E-02	0.644
		59.72		-5.858E-02	1.265E-01	1.895E-01	1.818E-02	-0.309
		61.14		3.659E-02	7.353E-02	1.146E-01	1.088E-02	0.319
		69.30		-1.925E-02	1.675E-01	2.816E-01	2.524E-02	-0.068
		592.07		-1.676E+00	3.007E+00	4.729E+00	3.618E-01	-0.354
		646.12	*	5.067E-02	5.432E-02	9.408E-02	7.572E-03	0.539
		717.42		-4.510E-01	1.174E+00	1.836E+00	1.497E-01	-0.246
		874.81		5.049E-02	7.194E-01	1.200E+00	9.182E-02	0.042
		880.27		1.766E-02	1.055E+00	1.585E+00	1.209E-01	0.011
		155.03	*	4.706E-02	1.911E-01	3.096E-01	2.834E-02	0.152
		477.96		-1.415E+00	3.720E+00	6.074E+00	4.058E-01	-0.233
		633.10		1.880E+00	3.337E+00	5.671E+00	4.512E-01	0.332
		63.58		6.477E+01	4.043E+01	5.630E+01	5.253E+00	1.151
		227.08		-8.346E+00	1.266E+01	2.057E+01	1.630E+00	-0.406
IR-192	+	290.67	*	2.059E+00	8.845E+00	1.299E+01	9.859E-01	0.158
		295.96		1.077E+00	2.212E-01	3.087E-01	2.348E-02	3.489
		308.46		8.591E-02	1.060E-01	1.809E-01	1.347E-02	0.475
		316.51	*	-8.169E-03	3.770E-02	6.092E-02	4.456E-03	-0.134
		468.07		-8.236E-02	8.744E-02	1.161E-01	8.567E-03	-0.710
		604.41		3.065E-01	5.813E-01	8.671E-01	1.080E-01	0.353
		612.46		1.990E+00	1.075E+00	1.736E+00	1.597E-01	1.146
		65.12		2.132E-02	9.163E-02	1.408E-01	1.299E-02	0.151
		66.83		2.514E-05	5.341E-02	8.118E-02	7.402E-03	0.000
		75.70	+	1.002E+00	1.975E-01	3.279E-01	2.812E-02	3.055
		98.88	*	2.613E-01	2.134E-01	3.550E-01	3.299E-02	0.736
		129.76		5.215E+00	2.933E+00	4.992E+00	5.936E-01	1.045
		367.94	*	2.646E-05	2.933E+00	Half-Life	too short	
		579.30		6.770E-03	2.933E+00	Half-Life	too short	
		828.27		5.025E-03	2.933E+00	Half-Life	too short	
TL-200	+	1205.75		6.683E-04	2.933E+00	Half-Life	too short	
		68.90		-2.532E+00	3.307E+00	5.438E+00	4.887E-01	-0.466
		70.82		1.809E+00	2.193E+00	3.419E+00	3.032E-01	0.529
		80.30		9.575E+00	5.715E+00	7.536E+00	6.265E-01	1.271
TL-201	+	135.34		-6.549E-01	3.128E+01	5.061E+01	5.729E+00	-0.013
		167.43	*	-2.524E+00	9.460E+00	1.490E+01	1.168E+00	-0.169

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		68.90		-1.934E-01	2.527E-01	4.155E-01	3.734E-02	-0.466
		70.82		1.378E-01	1.671E-01	2.605E-01	2.310E-02	0.529
		80.30		7.298E-01	4.356E-01	5.744E-01	4.775E-02	1.271
		439.56	*	-1.785E-02	8.561E-02	1.424E-01	8.996E-03	-0.125
HG-203		70.83		5.708E-01	6.984E-01	1.085E+00	1.493E-01	0.526
		72.87		4.006E-01	4.423E-01	6.860E-01	9.114E-02	0.584
	+	82.60		1.226E+00	1.108E+00	1.416E+00	1.908E-01	0.866
		279.20	*	1.174E-02	4.538E-02	7.587E-02	6.041E-03	0.155
BI-207		72.80		9.559E-02	1.266E-01	1.963E-01	1.718E-02	0.487
	+	74.97		5.537E-01	1.092E-01	1.588E-01	1.369E-02	3.486
	+	84.90		2.104E-01	1.887E-01	2.509E-01	2.021E-02	0.838
		569.67		3.167E-02	3.965E-02	6.837E-02	5.110E-03	0.463
		1063.62	*	4.624E-02	6.196E-02	1.076E-01	6.997E-03	0.430
		1770.23		1.810E-01	6.455E-01	9.742E-01	5.528E-02	0.186
TL-207		81.07		1.104E-01	2.109E-01	2.601E-01	2.151E-02	0.424
	+	83.78		1.387E-01	1.244E-01	1.696E-01	1.377E-02	0.818
		94.90		3.648E-01	2.121E-01	3.365E-01	2.950E-02	1.084
		122.32		5.209E-01	1.790E+00	2.951E+00	3.855E-01	0.177
		144.24		-9.018E-02	7.473E-01	1.171E+00	1.316E-01	-0.077
		154.21		4.358E-01	4.294E-01	7.146E-01	7.183E-02	0.610
	+	269.46		3.786E-01	2.780E-01	3.716E-01	2.957E-02	1.019
		323.87	*	-8.167E-01	7.818E-01	1.185E+00	2.021E-01	-0.689
	+	338.28		6.078E+00	2.046E+00	2.601E+00	2.918E-01	2.336
		445.03		9.188E-01	2.576E+00	4.419E+00	4.685E-01	0.208
PO-209		260.50		1.399E-01	9.980E+00	1.659E+01	1.296E+00	0.008
		262.80		3.253E+00	2.763E+01	4.611E+01	3.597E+00	0.071
		896.60	*	-4.161E+00	9.362E+00	1.492E+01	1.123E+00	-0.279
PB-211		404.84	*	-7.898E-01	1.328E+00	1.904E+00	1.187E+00	-0.415
		427.08		-1.857E+00	2.733E+00	3.756E+00	2.323E+00	-0.494
		831.96		-9.180E-01	1.811E+00	2.712E+00	1.697E+00	-0.338
BI-212	+	727.18	*	1.463E+00	5.668E-01	7.723E-01	7.414E-02	1.895
		785.46		2.595E+00	2.203E+00	3.963E+00	3.180E-01	0.655
		1620.62		1.019E-01	1.833E+00	2.996E+00	1.724E-01	0.034
PO-215		81.07		1.104E-01	2.109E-01	2.601E-01	2.151E-02	0.424
	+	83.78		1.387E-01	1.244E-01	1.696E-01	1.377E-02	0.818
		94.90		3.648E-01	2.121E-01	3.365E-01	2.950E-02	1.084
		122.32		5.209E-01	1.790E+00	2.951E+00	3.855E-01	0.177
		144.24		-9.018E-02	7.473E-01	1.171E+00	1.316E-01	-0.077
		154.21		4.358E-01	4.294E-01	7.146E-01	7.183E-02	0.610
	+	269.46		3.786E-01	2.780E-01	3.716E-01	2.957E-02	1.019
		323.87	*	-8.167E-01	7.818E-01	1.185E+00	2.021E-01	-0.689
	+	338.28		6.078E+00	2.046E+00	2.601E+00	2.918E-01	2.336
		445.03		9.188E-01	2.576E+00	4.419E+00	4.685E-01	0.208
RN-219	+	271.23		4.857E-01	3.577E-01	4.820E-01	4.625E-02	1.008
		401.81	*	5.942E-01	5.226E-01	8.824E-01	1.206E-01	0.673
RN-220		549.76	*	-4.469E+00	3.153E+01	5.160E+01	3.772E+00	-0.087
RA-223		81.07		1.104E-01	2.109E-01	2.601E-01	2.151E-02	0.424
	+	83.78		1.387E-01	1.244E-01	1.696E-01	1.377E-02	0.818
		94.90		3.648E-01	2.121E-01	3.365E-01	2.950E-02	1.084

---- 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		5.209E-01	1.790E+00	2.951E+00	3.855E-01	0.177
		144.24		-9.018E-02	7.473E-01	1.171E+00	1.316E-01	-0.077
		154.21		4.358E-01	4.294E-01	7.146E-01	7.183E-02	0.610
	+	269.46		3.786E-01	2.780E-01	3.716E-01	2.957E-02	1.019
		323.87	*	-8.167E-01	7.818E-01	1.185E+00	2.021E-01	-0.689
	+	338.28		6.078E+00	2.046E+00	2.601E+00	2.918E-01	2.336
		445.03		9.188E-01	2.576E+00	4.419E+00	4.685E-01	0.208
		79.80		1.364E-01	1.391E+00	1.908E+00	4.082E-01	0.071
		236.00		4.561E-01	2.921E-01	4.575E-01	5.377E-02	0.997
		256.20	*	-2.576E-01	4.035E-01	6.473E-01	9.659E-02	-0.398
TH-227		286.10		-3.191E-01	1.650E+00	2.693E+00	3.387E-01	-0.118
	+	299.80		5.248E+00	2.533E+00	2.824E+00	4.789E-01	1.859
		304.40		-1.422E+00	2.410E+00	3.223E+00	5.774E-01	-0.441
		334.20		-1.778E+00	2.735E+00	3.656E+00	6.858E-01	-0.486
		79.80		1.364E-01	1.391E+00	1.908E+00	4.135E-01	0.071
	+	94.00		6.967E+00	2.999E+00	3.684E+00	8.027E-01	1.891
		236.00		4.561E-01	2.911E-01	4.575E-01	4.818E-02	0.997
		256.20	*	-2.576E-01	4.043E-01	6.473E-01	1.146E-01	-0.398
		286.10		-3.191E-01	1.680E+00	2.693E+00	2.700E+00	-0.118
	+	299.80		5.248E+00	2.533E+00	2.824E+00	4.789E-01	1.859
TH-229		304.40		-1.422E+00	2.410E+00	3.223E+00	5.774E-01	-0.441
		334.20		-1.778E+00	2.735E+00	3.656E+00	6.858E-01	-0.486
		85.43		5.894E-01	1.845E-01	2.586E-01	2.076E-02	2.279
	+	88.47		2.868E-01	1.102E-01	1.623E-01	1.290E-02	1.767
		100.00		3.478E-02	1.661E-01	2.765E-01	2.611E-02	0.126
		193.63	*	-2.374E-01	5.244E-01	8.735E-01	6.910E-02	-0.272
		210.97		1.428E+00	8.404E-01	1.357E+00	1.076E-01	1.053
	PA-231	283.67	*	3.856E-01	1.638E+00	2.734E+00	4.007E-01	0.141
	+	301.29		2.099E+00	9.786E-01	1.163E+00	1.334E-01	1.805
	TH-231	81.07		1.104E-01	2.109E-01	2.601E-01	2.151E-02	0.424
U-231	+	83.78		1.387E-01	1.244E-01	1.696E-01	1.377E-02	0.818
		94.90		3.648E-01	2.121E-01	3.365E-01	2.950E-02	1.084
		122.32		5.209E-01	1.790E+00	2.951E+00	3.855E-01	0.177
		144.24		-9.018E-02	7.473E-01	1.171E+00	1.316E-01	-0.077
		154.21		4.358E-01	4.294E-01	7.146E-01	7.183E-02	0.610
	+	269.46		3.786E-01	2.780E-01	3.716E-01	2.957E-02	1.019
		323.87	*	-8.167E-01	7.818E-01	1.185E+00	2.021E-01	-0.689
	+	338.28		6.078E+00	2.046E+00	2.601E+00	2.918E-01	2.336
		445.03		9.188E-01	2.576E+00	4.419E+00	4.685E-01	0.208
	+	84.21		6.991E+00	6.271E+00	8.467E+00	6.854E-01	0.826
PA-233	+	92.29		8.053E+00	3.069E+00	4.922E+00	4.149E-01	1.636
		95.87	*	-1.001E+00	1.196E+00	1.694E+00	1.507E-01	-0.591
		108.00		-2.396E+00	2.301E+00	3.605E+00	3.803E-01	-0.665
	+	75.28		1.616E+01	3.789E+00	4.895E+00	7.508E-01	3.301
	+	86.59		6.108E+00	2.077E+00	2.445E+00	6.507E-01	2.498
	+	300.12		1.463E+00	6.932E-01	7.927E-01	1.129E-01	1.846
		311.98	*	-4.448E-02	7.242E-02	1.146E-01	8.749E-03	-0.388
		340.50		1.424E+00	8.771E-01	1.292E+00	3.007E-01	1.103
		398.62		-1.056E+00	2.563E+00	3.985E+00	1.031E+00	-0.265

----- 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		-2.040E-01	2.004E+00	3.182E+00	6.577E-01	-0.064
		63.00		1.861E+00	1.186E+00	1.635E+00	2.605E-01	1.138
		94.67		4.272E-01	1.638E-01	2.580E-01	3.221E-02	1.656
		98.44		9.784E-02	1.034E-01	1.410E-01	7.881E-02	0.694
		99.86		-2.807E-02	4.416E-01	7.043E-01	6.638E-02	-0.040
		111.00		1.963E-02	1.760E-01	2.900E-01	4.022E-02	0.068
		131.20		-9.701E-02	1.076E-01	1.669E-01	1.961E-02	-0.581
		152.70		1.680E-01	3.565E-01	5.817E-01	1.016E-01	0.289
		186.00		5.602E+00	2.943E+00	3.005E+00	9.322E-01	1.864
		226.40		-3.503E-01	4.007E-01	6.415E-01	8.185E-02	-0.546
		227.20		-2.591E-01	4.218E-01	6.869E-01	5.442E-02	-0.377
		248.90		-6.716E-01	8.929E-01	1.361E+00	3.013E-01	-0.493
		293.70		6.720E+00	1.708E+00	1.862E+00	3.128E-01	3.608
		369.80		-4.289E-01	9.388E-01	1.464E+00	3.073E-01	-0.293
		568.70		1.928E+00	1.274E+00	2.279E+00	1.701E-01	0.846
		569.50		2.998E-01	3.531E-01	6.104E-01	4.561E-02	0.491
		574.00		-1.458E+00	2.029E+00	3.085E+00	2.316E-01	-0.473
		699.00		1.713E-01	9.221E-01	1.510E+00	2.850E-01	0.113
		706.10		-6.486E-01	1.394E+00	2.125E+00	9.459E-01	-0.305
		733.00		2.817E-01	5.287E-01	7.733E-01	1.702E-01	0.364
		742.81		-3.610E-01	1.769E+00	2.770E+00	1.860E+00	-0.130
		796.30		1.496E+00	1.237E+00	2.118E+00	5.688E-01	0.706
		805.60		1.196E+00	1.272E+00	2.181E+00	6.645E-01	0.548
		819.60		-7.043E-01	1.599E+00	2.541E+00	9.625E-01	-0.277
		826.30		7.915E-02	1.056E+00	1.769E+00	7.890E-01	0.045
		831.60		-3.177E-01	8.815E-01	1.400E+00	4.150E-01	-0.227
		876.40		-1.330E-01	1.040E+00	1.692E+00	1.738E+00	-0.079
		880.51		6.307E-03	3.787E-01	5.692E-01	4.338E-02	0.011
		883.24		2.536E-01	3.776E-01	5.934E-01	3.982E-01	0.427
		899.00		-7.361E-01	1.083E+00	1.609E+00	6.999E-01	-0.458
		925.00		4.160E-01	1.447E+00	2.444E+00	1.808E-01	0.170
		926.50		-2.470E-01	2.267E-01	3.242E-01	8.068E-02	-0.762
		946.00	*	-1.151E-01	3.870E-01	6.206E-01	1.129E-01	-0.185
		949.00		-3.897E-01	5.942E-01	9.253E-01	6.731E-02	-0.421
		980.50		-5.967E-01	9.544E-01	1.481E+00	1.051E-01	-0.403
		1394.10		1.207E-02	1.472E+00	2.429E+00	1.573E+00	0.005
PA-234M	+	766.42		2.739E+01	2.426E+01	2.678E+01	1.356E+01	1.023
		1001.03	*	2.522E+00	6.539E+00	1.090E+01	9.341E-01	0.231
U-235	+	89.95		2.879E+00	1.397E+00	1.576E+00	4.842E-01	1.827
	+	93.35		2.167E+00	1.008E+00	1.322E+00	3.702E-01	1.640
		105.00		1.178E+00	1.029E+00	1.663E+00	5.042E-01	0.708
		143.76	*	1.478E-01	2.322E-01	3.730E-01	6.886E-02	0.396
		163.35		-3.268E-03	5.422E-01	8.439E-01	1.593E-01	-0.004
	+	185.71		2.075E-01	8.946E-02	1.107E-01	8.736E-03	1.875
		205.31		-3.929E-02	6.154E-01	8.976E-01	1.685E-01	-0.044
NP-236		94.67		3.276E-01	1.211E-01	1.961E-01	1.713E-02	1.671
		98.44		7.393E-02	6.667E-02	1.066E-01	9.844E-03	0.693
		111.00		1.485E-02	1.331E-01	2.193E-01	2.409E-02	0.068
		160.31	*	-6.709E-02	8.662E-02	1.335E-01	1.138E-02	-0.502

---- 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		1.103E-01	1.468E-01	2.408E-01	2.259E-02	0.458
		117.00	*	-6.823E-02	1.861E-01	2.994E-01	3.553E-02	-0.228
	+	209.75		1.523E+00	1.268E+00	1.478E+00	1.172E-01	1.030
		228.18		1.120E-01	2.206E-01	3.779E-01	2.994E-02	0.296
		277.60		7.514E-02	2.118E-01	3.426E-01	2.638E-02	0.219
AM-241		334.30		-1.011E+00	1.540E+00	2.071E+00	1.456E-01	-0.488
		59.54	*	-1.530E-02	6.514E-02	9.869E-02	1.004E-02	-0.155
CM-243		99.55		1.135E-01	1.510E-01	2.478E-01	2.325E-02	0.458
		103.76	*	1.465E-03	8.846E-02	1.459E-01	1.452E-02	0.010
		117.00		-7.020E-02	1.914E-01	3.080E-01	3.656E-02	-0.228
	+	209.75		1.501E+00	1.250E+00	1.457E+00	1.156E-01	1.030
		228.18		1.132E-01	2.229E-01	3.819E-01	3.026E-02	0.296
AM-246		277.60		7.576E-02	2.136E-01	3.454E-01	2.660E-02	0.219
		798.80		-2.652E-01	1.885E-01	2.824E-01	2.254E-02	-0.939
		1036.00		-4.485E-02	3.775E-01	6.096E-01	4.094E-02	-0.074
		1062.04		1.902E-01	2.719E-01	4.704E-01	3.065E-02	0.404
		1078.86	*	9.965E-02	1.784E-01	3.039E-01	1.939E-02	0.328
CM-247		278.00		3.476E-01	8.626E-01	1.396E+00	1.075E-01	0.249
		287.40		-1.772E-01	1.312E+00	2.148E+00	1.636E-01	-0.083
		402.60	*	4.856E-02	4.692E-02	7.951E-02	4.735E-03	0.611
CF-249		252.85		3.199E-01	9.334E-01	1.577E+00	1.238E-01	0.203
		333.44		4.824E-02	1.968E-01	2.863E-01	2.016E-02	0.169
		387.95	*	3.685E-02	4.432E-02	7.495E-02	4.451E-03	0.492
CF-251		176.60	*	-4.056E-02	1.358E-01	2.126E-01	1.673E-02	-0.191
		227.00		-2.406E-01	3.765E-01	6.125E-01	4.853E-02	-0.393
		285.00		8.741E-01	1.854E+00	3.130E+00	2.391E-01	0.279

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]G243624001      *
* Acquisition date   : 7-JAN-2010 13:41:52 Detector SN#      :              *
* Detector ID        : GAM13                      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 02:00:01.65             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624001             Analyst initials: MXR1          *
* Batch Number       : 937704                 Sample Quantity : 1.3362E+02 GRAM  *
* Recovery           : 1.00000                Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22 MS Isotope      :                  *
* MSD DPM             : 0.000                      MSD Isotope :                  *
* LCS DPM             : 0.000                      LCS Isotope  :                  *
* LCSD DPM            : 0.000                      LCSD Isotope :                  *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	1.967E+01	1.934E+00	6.259E-01	0.000E+00
CD-109	3.179E+00	7.048E-01	9.722E-01	0.000E+00
SN-126	3.120E-01	6.918E-02	9.530E-02	0.000E+00
TL-208	5.480E-01	1.093E-01	7.283E-02	0.000E+00
BI-210	1.191E+00	8.097E-01	7.707E-01	0.000E+00
PB-210	1.191E+00	8.097E-01	7.707E-01	0.000E+00
PO-210	1.191E+00	8.084E-01	7.707E-01	0.000E+00
BI-211	3.446E+00	5.220E-01	4.125E-01	0.000E+00
PB-212	1.426E+00	1.700E-01	1.012E-01	0.000E+00
PO-212	1.426E+00	1.700E-01	1.012E-01	0.000E+00
BI-214	1.336E+00	2.039E-01	1.399E-01	0.000E+00
PB-214	1.199E+00	1.916E-01	1.423E-01	0.000E+00
PO-214	1.199E+00	1.916E-01	1.423E-01	0.000E+00
PO-216	1.426E+00	1.700E-01	1.012E-01	0.000E+00
PO-218	1.199E+00	1.916E-01	1.423E-01	0.000E+00
RA-224	4.397E+00	1.512E+00	1.152E+00	0.000E+00
RA-226	1.336E+00	2.039E-01	1.399E-01	0.000E+00
AC-228	1.487E+00	3.632E-01	2.526E-01	0.000E+00
RA-228	1.487E+00	3.632E-01	2.526E-01	0.000E+00
TH-228	1.449E+00	1.727E-01	1.028E-01	0.000E+00
TH-230	1.336E+00	2.039E-01	1.399E-01	0.000E+00
TH-232	1.487E+00	3.632E-01	2.526E-01	0.000E+00
TH-234	1.596E+00	1.007E+00	1.022E+00	0.000E+00
U-234	1.336E+00	2.039E-01	1.399E-01	0.000E+00
NP-237	9.161E-01	2.749E-01	2.660E-01	0.000E+00
U-238	1.596E+00	1.007E+00	1.022E+00	0.000E+00
AM-243	3.084E-01	5.959E-02	6.370E-02	0.000E+00
ANH-511	1.338E-01	9.339E-02	5.704E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)
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BE-7	-2.134E-01	3.803E-01	6.405E-01	0.000E+00	NOT IDENT.
NA-22	6.288E-03	5.394E-02	9.279E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.440E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.326E-02	3.350E-02	6.045E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.045E-02	5.865E-02	0.000E+00	FAIL ABUN
SC-46	-3.864E-02	4.549E-02	7.175E-02	0.000E+00	FAIL ABUN
V-48	-4.985E-02	9.134E-02	1.469E-01	0.000E+00	NOT IDENT.
CR-51	2.110E-02	4.039E-01	6.953E-01	0.000E+00	NOT IDENT.
MN-52	3.386E-01	3.296E-01	6.148E-01	0.000E+00	NOT IDENT.
MN-54	1.426E-02	4.908E-02	8.597E-02	0.000E+00	NOT IDENT.
CO-56	4.245E-02	5.103E-02	9.252E-02	0.000E+00	NOT IDENT.
CO-57	-3.238E-03	2.531E-02	4.384E-02	0.000E+00	NOT IDENT.
CO-58	-8.566E-02	4.710E-02	6.832E-02	0.000E+00	NOT IDENT.
FE-59	3.298E-02	1.119E-01	1.913E-01	0.000E+00	NOT IDENT.
CO-60	9.871E-03	4.700E-02	8.133E-02	0.000E+00	NOT IDENT.
ZN-65	-3.603E-02	1.200E-01	1.639E-01	0.000E+00	NOT IDENT.
GE-68	4.882E-02	1.558E+00	2.612E+00	0.000E+00	NOT IDENT.
AS-73	1.426E-01	2.264E-01	4.091E-01	0.000E+00	NOT IDENT.
AS-74	5.610E-02	1.103E-01	1.945E-01	0.000E+00	NOT IDENT.
SE-75	-2.001E-02	4.716E-02	7.784E-02	0.000E+00	NOT IDENT.
BR-77	-1.291E+01	1.747E+01	2.793E+01	0.000E+00	FAIL ABUN
SR-82	4.198E-02	4.683E-01	8.166E-01	0.000E+00	NOT IDENT.
RB-83	-7.727E-02	9.190E-02	1.406E-01	0.000E+00	NOT IDENT.
RB-84	1.684E-02	9.173E-02	1.435E-01	0.000E+00	NOT IDENT.
KR-85	1.273E+01	9.886E+00	1.626E+01	0.000E+00	NOT IDENT.
SR-85	6.595E-02	5.120E-02	8.422E-02	0.000E+00	NOT IDENT.
RB-86	1.017E-01	1.035E+00	1.744E+00	0.000E+00	NOT IDENT.
Y-88	6.602E-03	3.888E-02	6.751E-02	0.000E+00	NOT IDENT.
ZR-88	-2.524E-02	3.470E-02	5.557E-02	0.000E+00	NOT IDENT.
Y-91	5.222E+00	2.245E+01	3.916E+01	0.000E+00	NOT IDENT.
NB-94	1.098E-02	4.182E-02	7.130E-02	0.000E+00	NOT IDENT.
NB-95	6.479E-02	6.541E-02	1.058E-01	0.000E+00	NOT IDENT.
NB-95M	8.962E-02	1.484E-01	2.380E-01	0.000E+00	NOT IDENT.
ZR-95	7.300E-02	9.661E-02	1.688E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.226E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.021E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	5.158E+00	1.809E+01	3.077E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.590E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.428E-03	3.414E-02	5.963E-02	0.000E+00	NOT IDENT.
RH-102	-3.734E-03	3.393E-02	5.882E-02	0.000E+00	FAIL ABUN
RU-103	3.269E-02	4.645E-02	8.386E-02	0.000E+00	FAIL ABUN
RH-106	1.618E-02	3.824E-01	6.508E-01	0.000E+00	FAIL ABUN
RU-106	1.618E-02	3.824E-01	6.508E-01	0.000E+00	FAIL ABUN
AG-108M	1.175E-02	3.746E-02	6.704E-02	0.000E+00	NOT IDENT.
AG-110M	3.718E-02	4.521E-02	8.023E-02	0.000E+00	NOT IDENT.
IN-111	4.631E-01	1.407E+00	2.229E+00	0.000E+00	NOT IDENT.
IN-113M	-1.167E-02	4.859E-02	8.045E-02	0.000E+00	NOT IDENT.
SN-113	-1.167E-02	4.859E-02	8.045E-02	0.000E+00	NOT IDENT.
IN-114M	1.752E-01	2.155E-01	3.358E-01	0.000E+00	NOT IDENT.
CD-115	-7.121E+00	1.639E+01	2.744E+01	0.000E+00	NOT IDENT.
SN-117M	2.932E-02	5.907E-02	1.027E-01	0.000E+00	NOT IDENT.
SB-122	-1.117E+00	3.304E+00	5.543E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.975E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.975E-02	2.931E-02	5.127E-02	0.000E+00	NOT IDENT.
I-124	-3.626E-01	1.062E+00	1.512E+00	0.000E+00	NOT IDENT.
SB-124	-1.659E-02	8.924E-02	1.423E-01	0.000E+00	FAIL ABUN
SB-125	-7.218E-02	1.025E-01	1.732E-01	0.000E+00	FAIL ABUN
TE-125M	4.571E+00	8.701E+00	1.557E+01	0.000E+00	NOT IDENT.
I-126	-9.998E-02	2.429E-01	3.971E-01	0.000E+00	NOT IDENT.
SB-126	3.572E-02	2.199E-01	3.219E-01	0.000E+00	FAIL ABUN
SB-127	-4.991E-01	2.108E+00	3.477E+00	0.000E+00	NOT IDENT.
XE-127	6.946E-03	4.907E-02	8.554E-02	0.000E+00	NOT IDENT.
I-131	4.702E-02	1.394E-01	2.409E-01	0.000E+00	NOT IDENT.
TE-132	2.609E-01	8.159E-01	1.464E+00	0.000E+00	NOT IDENT.
BA-133	3.082E-02	5.471E-02	8.498E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.461E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	8.462E-02	5.967E-02	1.116E-01	0.000E+00	NOT IDENT.
CS-135	2.983E-01	1.865E-01	3.116E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.364E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.340E-01	1.461E-01	2.251E-01	0.000E+00	FAIL ABUN
BA-137M	2.886E-02	4.575E-02	8.024E-02	0.000E+00	NOT IDENT.
CS-137	3.050E-02	4.836E-02	8.482E-02	0.000E+00	NOT IDENT.
CE-139	-1.127E-02	3.225E-02	5.385E-02	0.000E+00	NOT IDENT.
BA-140	-2.029E-02	3.204E-01	5.496E-01	0.000E+00	NOT IDENT.
LA-140	5.991E-02	1.116E-01	1.977E-01	0.000E+00	NOT IDENT.
CE-141	-7.733E-02	6.603E-02	1.068E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.324E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	-8.405E-02	1.982E-01	3.354E-01	0.000E+00	NOT IDENT.
PM-144	-1.695E-02	4.393E-02	7.155E-02	0.000E+00	NOT IDENT.
PR-144	-1.149E+00	2.978E+00	4.851E+00	0.000E+00	NOT IDENT.
PM-146	3.789E-02	4.877E-02	8.903E-02	0.000E+00	NOT IDENT.
ND-147	-1.391E-01	6.682E-01	1.136E+00	0.000E+00	FAIL ABUN
PM-149	-1.470E+01	1.306E+02	2.254E+02	0.000E+00	NOT IDENT.
EU-152	-9.309E-02	1.247E-01	1.746E-01	0.000E+00	NOT IDENT.
GD-153	-1.596E-02	7.943E-02	1.224E-01	0.000E+00	FAIL ABUN
EU-154	1.633E-02	1.505E-01	2.587E-01	0.000E+00	NOT IDENT.
EU-155	1.325E-01	9.801E-02	1.799E-01	0.000E+00	FAIL ABUN
TB-160	-6.779E-03	1.861E-01	2.873E-01	0.000E+00	FAIL ABUN
HO-166M	2.841E-02	7.874E-02	1.319E-01	0.000E+00	FAIL ABUN
TM-171	2.812E-01	1.574E+01	2.583E+01	0.000E+00	NOT IDENT.
LU-176	8.035E-03	2.874E-02	4.666E-02	0.000E+00	FAIL ABUN
LU-177	2.370E+00	1.933E+00	2.378E+00	0.000E+00	FAIL ABUN
LU-177M	-1.159E-01	2.194E-01	3.552E-01	0.000E+00	NOT IDENT.
HF-181	-2.112E-02	5.001E-02	8.487E-02	0.000E+00	NOT IDENT.
W-181	-3.341E-02	1.923E-01	3.137E-01	0.000E+00	NOT IDENT.
TA-182	-2.551E-01	2.372E-01	3.724E-01	0.000E+00	FAIL ABUN
RE-183	-9.742E-02	1.246E-01	1.988E-01	0.000E+00	FAIL ABUN
RE-184	8.558E-02	2.447E-01	4.362E-01	0.000E+00	NOT IDENT.
OS-185	5.067E-02	5.324E-02	9.565E-02	0.000E+00	NOT IDENT.
RE-188	4.706E-02	1.873E-01	3.227E-01	0.000E+00	NOT IDENT.
W-188	2.059E+00	8.668E+00	1.340E+01	0.000E+00	FAIL ABUN
IR-192	-8.169E-03	3.695E-02	6.272E-02	0.000E+00	FAIL ABUN
AU-195	2.613E-01	2.092E-01	3.728E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.111E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-2.524E+00	9.270E+00	1.551E+01	0.000E+00	NOT IDENT.
TL-202	-1.785E-02	8.390E-02	1.457E-01	0.000E+00	NOT IDENT.
HG-203	1.174E-02	4.447E-02	7.828E-02	0.000E+00	FAIL ABUN
BI-207	4.624E-02	6.072E-02	1.084E-01	0.000E+00	FAIL ABUN
TL-207	-8.167E-01	7.662E-01	1.220E+00	0.000E+00	FAIL ABUN
PO-209	-4.161E+00	9.175E+00	1.508E+01	0.000E+00	NOT IDENT.
PB-211	-7.898E-01	1.301E+00	1.952E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.554E-01	7.836E-01	0.000E+00	FAIL ABUN
PO-215	-8.167E-01	7.662E-01	1.220E+00	0.000E+00	FAIL ABUN
RN-219	5.942E-01	5.122E-01	9.047E-01	0.000E+00	FAIL ABUN
RN-220	-4.469E+00	3.090E+01	5.261E+01	0.000E+00	NOT IDENT.
RA-223	-8.167E-01	7.662E-01	1.220E+00	0.000E+00	FAIL ABUN
AC-227	-2.576E-01	3.954E-01	6.689E-01	0.000E+00	FAIL ABUN
TH-227	-2.576E-01	3.962E-01	6.689E-01	0.000E+00	FAIL ABUN
TH-229	-2.374E-01	5.140E-01	9.070E-01	0.000E+00	FAIL ABUN
PA-231	3.856E-01	1.606E+00	2.820E+00	0.000E+00	FAIL ABUN
TH-231	-8.167E-01	7.662E-01	1.220E+00	0.000E+00	FAIL ABUN
U-231	-1.001E+00	1.172E+00	1.780E+00	0.000E+00	FAIL ABUN
PA-233	-4.448E-02	7.097E-02	1.180E-01	0.000E+00	FAIL ABUN
PA-234	-1.151E-01	3.793E-01	6.266E-01	0.000E+00	FAIL ABUN
PA-234M	2.522E+00	6.408E+00	1.099E+01	0.000E+00	FAIL ABUN
U-235	1.478E-01	2.276E-01	3.893E-01	0.000E+00	FAIL ABUN
NP-236	-6.709E-02	8.489E-02	1.391E-01	0.000E+00	NOT IDENT.
NP-239	-6.823E-02	1.824E-01	3.135E-01	0.000E+00	FAIL ABUN
AM-241	-1.530E-02	6.383E-02	1.045E-01	0.000E+00	NOT IDENT.
CM-243	1.465E-03	8.669E-02	1.531E-01	0.000E+00	FAIL ABUN
AM-246	9.965E-02	1.748E-01	3.062E-01	0.000E+00	NOT IDENT.
CM-247	4.856E-02	4.599E-02	8.152E-02	0.000E+00	NOT IDENT.
CF-249	3.685E-02	4.343E-02	7.689E-02	0.000E+00	NOT IDENT.
CF-251	-4.056E-02	1.331E-01	2.211E-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]G243624001.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 13:41:52.
Sample ID          : G243624001 Sample quantity : 1.33620E+02 GRAM
Detector name      : GAM13 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.65 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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	778	10.67*	1.041E+00	1.967E+01	1.967E+01	10.03
CD-109	88.03	298	3.72*	7.249E+00	3.103E+00	3.179E+00	22.63
SN-126	64.28	160	9.60	7.391E+00	6.319E-01	6.319E-01	63.66
	86.94	298	8.90	7.249E+00	1.297E+00	1.297E+00	46.35
	87.57	298	37.00*	7.249E+00	3.120E-01	3.120E-01	22.63
TL-208	277.35	-----	6.80	4.225E+00	-----	Line Not Found	-----
	510.84	121	21.60	2.538E+00	6.193E-01	6.193E-01	71.72
	583.14	371	84.20*	2.257E+00	5.480E-01	5.480E-01	20.36
	860.37	-----	12.46	1.606E+00	-----	Line Not Found	-----
BI-210	46.50	125	4.05*	7.297E+00	1.190E+00	1.191E+00	69.35
PB-210	46.50	125	4.05*	7.297E+00	1.190E+00	1.191E+00	69.35
PO-210	46.50	125	4.05*	7.297E+00	1.190E+00	1.191E+00	69.23
BI-211	72.87	-----	1.27	7.369E+00	-----	Line Not Found	-----
	351.07	555	12.94*	3.497E+00	3.446E+00	3.446E+00	15.46
PB-212	74.81	533	10.70	7.358E+00	1.902E+00	1.902E+00	21.82
	77.11	981	18.00	7.343E+00	2.086E+00	2.086E+00	13.37
	87.30	298	8.00	7.249E+00	1.443E+00	1.443E+00	24.74
	238.63	1067	44.60*	4.714E+00	1.426E+00	1.426E+00	12.17
	300.09	136	3.41	3.971E+00	2.832E+00	2.832E+00	46.17
PO-212	74.81	533	10.70	7.358E+00	1.902E+00	1.902E+00	21.82
	77.11	981	18.00	7.343E+00	2.086E+00	2.086E+00	13.37
	87.30	298	8.00	7.249E+00	1.443E+00	1.443E+00	24.74
	115.19	-----	0.60	6.822E+00	-----	Line Not Found	-----
	238.63	1067	44.60*	4.714E+00	1.426E+00	1.426E+00	12.17
	300.09	136	3.41	3.971E+00	2.832E+00	2.832E+00	46.17
BI-214	609.31	478	46.30*	2.171E+00	1.336E+00	1.336E+00	15.57
	1120.29	108	15.10	1.287E+00	1.567E+00	1.567E+00	44.50
	1764.49	99	15.80	8.987E-01	1.954E+00	1.955E+00	29.90
PB-214	74.81	533	6.21	7.358E+00	3.278E+00	3.278E+00	21.06
	77.11	981	10.50	7.343E+00	3.576E+00	3.576E+00	15.39
	87.30	298	4.67	7.249E+00	2.472E+00	2.472E+00	23.90
	241.98	289	7.49	4.675E+00	2.319E+00	2.319E+00	35.54

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	385	19.20	4.028E+00	1.400E+00	1.400E+00	21.44
	351.92	555	37.20*	3.497E+00	1.199E+00	1.199E+00	16.31
	74.81	533	6.21	7.358E+00	3.278E+00	3.278E+00	21.06
	77.11	981	10.50	7.343E+00	3.576E+00	3.576E+00	15.39
	87.30	298	4.67	7.249E+00	2.472E+00	2.472E+00	23.90
PO-216	241.98	289	7.49	4.675E+00	2.319E+00	2.319E+00	35.54
	295.21	385	19.20	4.028E+00	1.400E+00	1.400E+00	21.44
	351.92	555	37.20*	3.497E+00	1.199E+00	1.199E+00	16.31
	74.81	533	10.70	7.358E+00	1.902E+00	1.902E+00	21.82
	77.11	981	18.00	7.343E+00	2.086E+00	2.086E+00	13.37
PO-218	87.30	298	8.00	7.249E+00	1.443E+00	1.443E+00	24.74
	238.63	1067	44.60*	4.714E+00	1.426E+00	1.426E+00	12.17
	300.09	136	3.41	3.971E+00	2.832E+00	2.832E+00	46.17
	74.81	533	6.21	7.358E+00	3.278E+00	3.278E+00	21.06
	77.11	981	10.50	7.343E+00	3.576E+00	3.576E+00	15.39
RA-224	87.30	298	4.67	7.249E+00	2.472E+00	2.472E+00	23.90
	241.98	289	7.49	4.675E+00	2.319E+00	2.319E+00	35.54
	295.21	385	19.20	4.028E+00	1.400E+00	1.400E+00	21.44
	351.92	555	37.20*	3.497E+00	1.199E+00	1.199E+00	16.31
	240.98	289	3.95*	4.675E+00	4.397E+00	4.397E+00	35.09
RA-226	609.31	478	46.30*	2.171E+00	1.336E+00	1.336E+00	15.57
	1120.29	108	15.10	1.287E+00	1.567E+00	1.567E+00	44.50
	1764.49	99	15.80	8.987E-01	1.954E+00	1.955E+00	29.90
	338.32	214	11.40	3.615E+00	1.455E+00	1.455E+00	51.81
	911.07	224	27.70*	1.529E+00	1.487E+00	1.487E+00	24.93
RA-228	969.11	48	16.60	1.451E+00	5.553E-01	5.553E-01	100.44
	338.32	214	11.40	3.615E+00	1.455E+00	1.455E+00	51.81
	911.07	224	27.70*	1.529E+00	1.487E+00	1.487E+00	24.93
	969.11	48	16.60	1.451E+00	5.553E-01	5.553E-01	100.44
	74.81	533	10.70	7.358E+00	1.902E+00	1.902E+00	19.75
TH-228	77.11	981	18.00	7.343E+00	2.086E+00	2.119E+00	13.37
	87.30	298	8.00	7.249E+00	1.443E+00	1.466E+00	22.63
	238.63	1067	44.60*	4.714E+00	1.426E+00	1.449E+00	12.17
	300.09	136	3.41	3.971E+00	2.832E+00	2.878E+00	74.42
	609.31	478	46.30*	2.171E+00	1.336E+00	1.336E+00	15.57
TH-230	1120.29	108	15.10	1.287E+00	1.567E+00	1.567E+00	44.50
	1764.49	99	15.80	8.987E-01	1.954E+00	1.954E+00	29.90
	338.32	214	11.40	3.615E+00	1.455E+00	1.455E+00	32.50
	911.07	224	27.70*	1.529E+00	1.487E+00	1.487E+00	24.93
	969.11	48	16.60	1.451E+00	5.553E-01	5.553E-01	100.44
TH-234	63.29	160	3.80*	7.391E+00	1.596E+00	1.596E+00	64.39
	92.38	249	5.41	7.179E+00	1.803E+00	1.803E+00	41.30
	609.31	478	46.30*	2.171E+00	1.336E+00	1.336E+00	15.57
	1120.29	108	15.10	1.287E+00	1.567E+00	1.567E+00	44.50
	1764.49	99	15.80	8.987E-01	1.954E+00	1.954E+00	29.90
NP-237	86.50	298	12.60*	7.249E+00	9.161E-01	9.161E-01	30.62
	95.87	-----	2.60	7.135E+00	-----	Line Not Found	-----
	63.29	160	3.80*	7.391E+00	1.596E+00	1.596E+00	64.39
	92.38	249	5.41	7.179E+00	1.803E+00	1.803E+00	38.12

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AM-243	74.67	533	66.00*	7.358E+00	3.084E-01	3.084E-01	19.72
	86.72	298	0.34	7.249E+00	3.436E+01	3.436E+01	22.63
	117.66	-----	0.55	6.778E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.323E+00	-----	Line Not Found	-----
ANH-511	511.00	121	100.00*	2.538E+00	1.338E-01	1.338E-01	71.24

Flag: "*" = Keyline

Total number of lines in spectrum 28
Number of unidentified lines 0
Number of lines tentatively identified by NID 28 100.00%

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	1.967E+01	1.967E+01	0.197E+01	10.03	
CD-109	464.00D	1.02	3.103E+00	3.179E+00	0.719E+00	22.63	
SN-126	1.00E+05Y	1.00	3.120E-01	3.120E-01	0.706E-01	22.63	
TL-208	1.41E+10Y	1.00	5.480E-01	5.480E-01	1.116E-01	20.36	
BI-210	22.26Y	1.00	1.190E+00	1.191E+00	0.826E+00	69.35	
PB-210	22.26Y	1.00	1.190E+00	1.191E+00	0.826E+00	69.35	
PO-210	22.26Y	1.00	1.190E+00	1.191E+00	0.825E+00	69.23	
BI-211	7.04E+08Y	1.00	3.446E+00	3.446E+00	0.533E+00	15.46	
PB-212	1.41E+10Y	1.00	1.426E+00	1.426E+00	0.173E+00	12.17	
PO-212	1.41E+10Y	1.00	1.426E+00	1.426E+00	0.173E+00	12.17	
BI-214	1600.00Y	1.00	1.336E+00	1.336E+00	0.208E+00	15.57	
PB-214	1600.00Y	1.00	1.199E+00	1.199E+00	0.196E+00	16.31	
PO-214	1600.00Y	1.00	1.199E+00	1.199E+00	0.196E+00	16.31	
PO-216	1.41E+10Y	1.00	1.426E+00	1.426E+00	0.173E+00	12.17	
PO-218	1600.00Y	1.00	1.199E+00	1.199E+00	0.196E+00	16.31	
RA-224	1.41E+10Y	1.00	4.397E+00	4.397E+00	1.543E+00	35.09	
RA-226	1600.00Y	1.00	1.336E+00	1.336E+00	0.208E+00	15.57	
AC-228	1.41E+10Y	1.00	1.487E+00	1.487E+00	0.371E+00	24.93	
RA-228	1.41E+10Y	1.00	1.487E+00	1.487E+00	0.371E+00	24.93	
TH-228	1.91Y	1.02	1.426E+00	1.449E+00	0.176E+00	12.17	
TH-230	4.47E+09Y	1.00	1.336E+00	1.336E+00	0.208E+00	15.57	
TH-232	1.41E+10Y	1.00	1.487E+00	1.487E+00	0.371E+00	24.93	
TH-234	4.47E+09Y	1.00	1.596E+00	1.596E+00	1.028E+00	64.39	
U-234	4.47E+09Y	1.00	1.336E+00	1.336E+00	0.208E+00	15.57	
NP-237	2.14E+06Y	1.00	9.161E-01	9.161E-01	2.805E-01	30.62	
U-238	4.47E+09Y	1.00	1.596E+00	1.596E+00	1.028E+00	64.39	
AM-243	7380.00Y	1.00	3.084E-01	3.084E-01	0.608E-01	19.72	
ANH-511	1.00E+09Y	1.00	1.338E-01	1.338E-01	0.953E-01	71.24	

Total Activity : 5.870E+01 5.881E+01

Grand Total Activity : 5.870E+01 5.881E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G243624001

Page : 5
Acquisition date : 7-JAN-2010 13:41:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	83.80	89	503	1.41	167.38	165	7	1.23E-02	89.3	7.28E+00	T
3	89.89	200	446	1.13	179.56	171	21	2.77E-02	37.5	7.21E+00	T
0	185.72	221	422	1.20	371.26	365	12	3.06E-02	42.4	5.53E+00	T
0	209.16	90	375	1.21	418.16	413	10	1.26E-02	82.9	5.15E+00	T
0	270.34	79	230	1.06	540.55	537	9	1.10E-02	73.0	4.31E+00	T
0	462.86	103	148	1.41	925.71	918	16	1.42E-02	57.1	2.77E+00	T
0	727.41	114	75	1.64	1454.97	1449	14	1.58E-02	37.5	1.86E+00	T
0	767.85	55	87	1.28	1535.88	1529	12	7.68E-03	72.7	1.77E+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]G243624001.CNF;1
* Acquisition date   : 7-JAN-2010 13:41:52.  Detector SN#      :
* Detector ID        : GAM13                      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 02:00:01.65             Half life ratio : 8.00000
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G243624001           Analyst initials: MXR1
* Batch Number       : 937704              Sample Quantity : 1.33620E+02 GRAM
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22.03MS 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	1.967E+01	1.973E+00	6.248E-01	3.820E-02	31.488
CD-109	3.179E+00	7.192E-01	9.239E-01	7.290E-02	3.440
SN-126	3.120E-01	7.059E-02	9.056E-02	7.163E-03	3.445
TL-208	5.480E-01	1.116E-01	7.150E-02	5.919E-03	7.664
BI-210	1.191E+00	8.262E-01	7.247E-01	5.908E-02	1.644
PB-210	1.191E+00	8.262E-01	7.247E-01	5.908E-02	1.644
PO-210	1.191E+00	8.249E-01	7.247E-01	5.167E-02	1.644
BI-211	3.446E+00	5.326E-01	4.014E-01	2.926E-02	8.586
PB-212	1.426E+00	1.735E-01	9.780E-02	8.885E-03	14.578
PO-212	1.426E+00	1.735E-01	9.780E-02	8.885E-03	14.578
BI-214	1.336E+00	2.080E-01	1.375E-01	1.286E-02	9.717
PB-214	1.199E+00	1.956E-01	1.384E-01	1.239E-02	8.660
PO-214	1.199E+00	1.956E-01	1.384E-01	1.239E-02	8.660
PO-216	1.426E+00	1.735E-01	9.780E-02	8.885E-03	14.578
PO-218	1.199E+00	1.956E-01	1.384E-01	1.239E-02	8.660
RA-224	4.397E+00	1.543E+00	1.114E+00	8.790E-02	3.949
RA-226	1.336E+00	2.080E-01	1.375E-01	1.286E-02	9.717
AC-228	1.487E+00	3.706E-01	2.500E-01	2.596E-02	5.948

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.487E+00	3.706E-01	2.500E-01	2.596E-02	5.948
TH-228	1.449E+00	1.763E-01	9.938E-02	9.028E-03	14.578
TH-230	1.336E+00	2.080E-01	1.375E-01	1.286E-02	9.717
TH-232	1.487E+00	3.706E-01	2.500E-01	2.596E-02	5.948
TH-234	1.596E+00	1.028E+00	9.663E-01	1.773E-01	1.652
U-234	1.336E+00	2.080E-01	1.375E-01	1.286E-02	9.717
NP-237	9.161E-01	2.805E-01	2.527E-01	5.591E-02	3.625
U-238	1.596E+00	1.028E+00	9.663E-01	1.773E-01	1.652
AM-243	3.084E-01	6.081E-02	6.037E-02	5.214E-03	5.109
ANH-511	1.338E-01	9.530E-02	5.587E-02	3.899E-03	2.394

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.134E-01		3.881E-01	6.266E-01	4.711E-02	-0.341
NA-22	6.288E-03		5.504E-02	9.239E-02	5.215E-03	0.068
NA-24	-4.349E-01		1.245E+00	Half-Life too short		
AL-26	1.326E-02		3.418E-02	6.058E-02	3.418E-03	0.219
TI-44	3.849E-01	+	5.148E-02	5.563E-02	4.685E-03	6.919
SC-46	-3.864E-02		4.642E-02	7.097E-02	5.374E-03	-0.544
V-48	-4.985E-02		9.321E-02	1.456E-01	1.030E-02	-0.342
CR-51	2.110E-02		4.121E-01	6.754E-01	5.257E-02	0.031
MN-52	3.386E-01		3.363E-01	6.135E-01	3.526E-02	0.552
MN-54	1.426E-02		5.008E-02	8.494E-02	6.666E-03	0.168
CO-56	4.245E-02		5.208E-02	9.144E-02	7.127E-03	0.464
CO-57	-3.238E-03		2.583E-02	4.189E-02	5.299E-03	-0.077
CO-58	-8.566E-02		4.806E-02	6.747E-02	5.374E-03	-1.270
FE-59	3.298E-02		1.141E-01	1.899E-01	1.357E-02	0.174
CO-60	9.871E-03		4.795E-02	8.104E-02	4.610E-03	0.122
ZN-65	-3.603E-02		1.224E-01	1.628E-01	9.887E-03	-0.221
GE-68	4.882E-02		1.590E+00	2.593E+00	1.657E-01	0.019
AS-73	1.426E-01		2.310E-01	3.856E-01	3.257E-02	0.370
AS-74	5.610E-02		1.126E-01	1.910E-01	1.467E-02	0.294
SE-75	-2.001E-02		4.812E-02	7.537E-02	5.905E-03	-0.266
BR-77	-1.291E+01		1.783E+01	2.736E+01	1.933E+00	-0.472
SR-82	4.198E-02		4.778E-01	8.058E-01	6.486E-02	0.052
RB-83	-7.727E-02		9.378E-02	1.377E-01	9.724E-03	-0.561
RB-84	1.684E-02		9.360E-02	1.419E-01	1.081E-02	0.119
KR-85	1.273E+01		1.009E+01	1.593E+01	1.116E+00	0.799
SR-85	6.595E-02		5.225E-02	8.250E-02	5.779E-03	0.799
RB-86	1.017E-01		1.056E+00	1.731E+00	1.107E-01	0.059
Y-88	6.602E-03		3.967E-02	6.767E-02	3.811E-03	0.098
ZR-88	-2.524E-02		3.540E-02	5.417E-02	3.173E-03	-0.466
Y-91	5.222E+00		2.291E+01	3.895E+01	2.159E+00	0.134
NB-94	1.098E-02		4.267E-02	7.024E-02	5.733E-03	0.156
NB-95	6.479E-02		6.674E-02	1.044E-01	8.433E-03	0.620
NB-95M	8.962E-02		1.515E-01	2.300E-01	2.128E-02	0.390

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	7.300E-02		9.859E-02	1.665E-01	1.501E-02	0.439
NB-97	2.581E-01		1.646E-01	Half-Life too short		
ZR-97	1.093E+01		3.072E+00	Half-Life too short		
MO-99	5.158E+00		1.846E+01	3.034E+01	4.523E+00	0.170
TC-99M	-3.263E+11		2.852E+11	Half-Life too short		
RH-101	2.428E-03		3.483E-02	5.745E-02	4.549E-03	0.042
RH-102	-3.734E-03		3.463E-02	5.754E-02	3.829E-03	-0.065
RU-103	3.269E-02		4.740E-02	8.209E-02	1.081E-02	0.398
RH-106	1.618E-02		3.902E-01	6.396E-01	8.244E-02	0.025
RU-106	1.618E-02		3.902E-01	6.396E-01	5.037E-02	0.025
AG-108M	1.175E-02		3.822E-02	6.547E-02	4.404E-03	0.179
AG-110M	3.718E-02		4.614E-02	7.894E-02	6.632E-03	0.471
IN-111	4.631E-01		1.436E+00	2.155E+00	1.698E-01	0.215
IN-113M	-1.167E-02		4.958E-02	7.843E-02	4.887E-03	-0.149
SN-113	-1.167E-02		4.958E-02	7.843E-02	4.887E-03	-0.149
IN-114M	1.752E-01		2.199E-01	3.233E-01	2.555E-02	0.542
CD-115	-7.121E+00		1.672E+01	2.689E+01	1.916E+00	-0.265
SN-117M	2.932E-02		6.027E-02	9.854E-02	8.605E-03	0.298
SB-122	-1.117E+00		3.371E+00	5.439E+00	4.039E-01	-0.205
I-123	1.332E+01		1.008E+01	Half-Life too short		
TE-123M	1.975E-02		2.990E-02	4.921E-02	4.297E-03	0.401
I-124	-3.626E-01		1.084E+00	1.485E+00	1.148E-01	-0.244
SB-124	-1.659E-02		9.106E-02	1.424E-01	8.872E-03	-0.116
SB-125	-7.218E-02		1.045E-01	1.691E-01	1.088E-02	-0.427
TE-125M	4.571E+00		8.879E+00	1.485E+01	1.804E+00	0.308
I-126	-9.998E-02		2.479E-01	3.908E-01	3.189E-02	-0.256
SB-126	3.572E-02		2.244E-01	3.172E-01	2.585E-02	0.113
SB-127	-4.991E-01		2.151E+00	3.424E+00	3.881E-01	-0.146
XE-127	6.946E-03		5.008E-02	8.244E-02	6.534E-03	0.084
I-131	4.702E-02		1.423E-01	2.346E-01	1.664E-02	0.200
TE-132	2.609E-01		8.325E-01	1.414E+00	2.195E-01	0.185
BA-133	3.082E-02		5.583E-02	8.271E-02	9.930E-03	0.373
I-133	-4.826E-03		7.453E-03	Half-Life too short		
CS-134	8.462E-02		6.088E-02	1.102E-01	8.882E-03	0.768
CS-135	2.983E-01		1.903E-01	3.018E-01	2.788E-02	0.988
I-135	6.221E+09		3.757E+10	Half-Life too short		
CS-136	-1.340E-01		1.490E-01	2.233E-01	1.585E-02	-0.600
BA-137M	2.886E-02		4.668E-02	7.896E-02	6.440E-03	0.365
CS-137	3.050E-02		4.935E-02	8.346E-02	6.822E-03	0.365
CE-139	-1.127E-02		3.291E-02	5.172E-02	4.055E-03	-0.218
BA-140	-2.029E-02		3.269E-01	5.387E-01	1.767E-01	-0.038
LA-140	5.991E-02		1.139E-01	1.977E-01	1.139E-02	0.303
CE-141	-7.733E-02		6.738E-02	1.024E-01	1.062E-02	-0.755
CE-143	1.414E-03		2.206E-04	Half-Life too short		
CE-144	-8.405E-02		2.023E-01	3.210E-01	5.563E-02	-0.262
PM-144	-1.695E-02		4.482E-02	7.046E-02	5.756E-03	-0.241
PR-144	-1.149E+00		3.039E+00	4.777E+00	3.901E-01	-0.241
PM-146	3.789E-02		4.976E-02	8.702E-02	7.898E-03	0.435

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	-1.391E-01		6.818E-01	1.113E+00	1.576E-01	-0.125
PM-149	-1.470E+01		1.333E+02	2.185E+02	3.282E+01	-0.067
EU-152	-9.309E-02		1.273E-01	1.699E-01	1.273E-02	-0.548
GD-153	-1.596E-02		8.105E-02	1.165E-01	1.060E-02	-0.137
EU-154	1.633E-02		1.535E-01	2.576E-01	2.380E-02	0.063
EU-155	1.325E-01		1.000E-01	1.714E-01	1.759E-02	0.773
TB-160	-6.779E-03		1.899E-01	2.841E-01	2.167E-02	-0.024
HO-166M	2.841E-02		8.035E-02	1.299E-01	1.060E-02	0.219
TM-171	2.812E-01		1.606E+01	2.443E+01	2.230E+00	0.012
LU-176	8.035E-03		2.933E-02	4.530E-02	3.358E-03	0.177
LU-177	2.370E+00	+	1.973E+00	2.293E+00	1.819E-01	1.033
LU-177M	-1.159E-01		2.239E-01	3.466E-01	2.102E-02	-0.334
HF-181	-2.112E-02		5.104E-02	8.304E-02	5.579E-03	-0.254
W-181	-3.341E-02		1.963E-01	2.966E-01	2.736E-02	-0.113
TA-182	-2.551E-01		2.421E-01	3.705E-01	2.062E-02	-0.689
RE-183	-9.742E-02		1.272E-01	1.909E-01	1.580E-02	-0.510
RE-184	8.558E-02		2.497E-01	4.220E-01	3.313E-02	0.203
OS-185	5.067E-02		5.432E-02	9.408E-02	7.572E-03	0.539
RE-188	4.706E-02		1.911E-01	3.096E-01	2.834E-02	0.152
W-188	2.059E+00		8.845E+00	1.299E+01	9.859E-01	0.158
IR-192	-8.169E-03		3.770E-02	6.092E-02	4.456E-03	-0.134
AU-195	2.613E-01		2.134E-01	3.550E-01	3.299E-02	0.736
TL-200	2.646E-05		4.648E-04	Half-Life	too short	
TL-201	-2.524E+00		9.460E+00	1.490E+01	1.168E+00	-0.169
TL-202	-1.785E-02		8.561E-02	1.424E-01	8.996E-03	-0.125
HG-203	1.174E-02		4.538E-02	7.587E-02	6.041E-03	0.155
BI-207	4.624E-02		6.196E-02	1.076E-01	6.997E-03	0.430
TL-207	-8.167E-01		7.818E-01	1.185E+00	2.021E-01	-0.689
PO-209	-4.161E+00		9.362E+00	1.492E+01	1.123E+00	-0.279
PB-211	-7.898E-01		1.328E+00	1.904E+00	1.187E+00	-0.415
BI-212	1.463E+00	+	5.668E-01	7.723E-01	7.414E-02	1.895
PO-215	-8.167E-01		7.818E-01	1.185E+00	2.021E-01	-0.689
RN-219	5.942E-01		5.226E-01	8.824E-01	1.206E-01	0.673
RN-220	-4.469E+00		3.153E+01	5.160E+01	3.772E+00	-0.087
RA-223	-8.167E-01		7.818E-01	1.185E+00	2.021E-01	-0.689
AC-227	-2.576E-01		4.035E-01	6.473E-01	9.659E-02	-0.398
TH-227	-2.576E-01		4.043E-01	6.473E-01	1.146E-01	-0.398
TH-229	-2.374E-01		5.244E-01	8.735E-01	6.910E-02	-0.272
PA-231	3.856E-01		1.638E+00	2.734E+00	4.007E-01	0.141
TH-231	-8.167E-01		7.818E-01	1.185E+00	2.021E-01	-0.689
U-231	-1.001E+00		1.196E+00	1.694E+00	1.507E-01	-0.591
PA-233	-4.448E-02		7.242E-02	1.146E-01	8.749E-03	-0.388
PA-234	-1.151E-01		3.870E-01	6.206E-01	1.129E-01	-0.185
PA-234M	2.522E+00		6.539E+00	1.090E+01	9.341E-01	0.231
U-235	1.478E-01		2.322E-01	3.730E-01	6.886E-02	0.396
NP-236	-6.709E-02		8.662E-02	1.335E-01	1.138E-02	-0.502
NP-239	-6.823E-02		1.861E-01	2.994E-01	3.553E-02	-0.228
AM-241	-1.530E-02		6.514E-02	9.869E-02	1.004E-02	-0.155

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.465E-03		8.846E-02	1.459E-01	1.452E-02	0.010
AM-246	9.965E-02		1.784E-01	3.039E-01	1.939E-02	0.328
CM-247	4.856E-02		4.692E-02	7.951E-02	4.735E-03	0.611
CF-249	3.685E-02		4.432E-02	7.495E-02	4.451E-03	0.492
CF-251	-4.056E-02		1.358E-01	2.126E-01	1.673E-02	-0.191

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]G243624001          *
* Acquisition date   : 7-JAN-2010 13:41:52 Detector SN#      :              *
* Detector ID        : GAM13                      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 02:00:01.65             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624001             Analyst initials: MXR1          *
* Batch Number       : 937704                 Sample Quantity : 1.3362E+02 GRAM  *
* Recovery           : 1.00000                Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22 MS Isotope         :              *
* MSD DPM             : 0.000                      MSD Isotope   :              *
* LCS DPM             : 0.000                      LCS Isotope    :              *
* LCSD DPM            : 0.000                      LCSD Isotope   :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	1.967E+01	1.934E+00	3.132E-01	9.866E-01
CD-109	3.179E+00	7.048E-01	4.864E-01	3.596E-01
SN-126	3.120E-01	6.918E-02	4.768E-02	3.529E-02
TL-208	5.480E-01	1.093E-01	3.644E-02	5.579E-02
BI-210	1.191E+00	8.097E-01	3.856E-01	4.131E-01
PB-210	1.191E+00	8.097E-01	3.856E-01	4.131E-01
PO-210	1.191E+00	8.084E-01	3.856E-01	4.124E-01
BI-211	3.446E+00	5.220E-01	2.064E-01	2.663E-01
PB-212	1.426E+00	1.700E-01	5.063E-02	8.674E-02
PO-212	1.426E+00	1.700E-01	5.063E-02	8.674E-02
BI-214	1.336E+00	2.039E-01	7.001E-02	1.040E-01
PB-214	1.199E+00	1.916E-01	7.117E-02	9.778E-02
PO-214	1.199E+00	1.916E-01	7.117E-02	9.778E-02
PO-216	1.426E+00	1.700E-01	5.063E-02	8.674E-02
PO-218	1.199E+00	1.916E-01	7.117E-02	9.778E-02
RA-224	4.397E+00	1.512E+00	5.763E-01	7.715E-01
RA-226	1.336E+00	2.039E-01	7.001E-02	1.040E-01
AC-228	1.487E+00	3.632E-01	1.264E-01	1.853E-01
RA-228	1.487E+00	3.632E-01	1.264E-01	1.853E-01
TH-228	1.449E+00	1.727E-01	5.144E-02	8.814E-02
TH-230	1.336E+00	2.039E-01	7.001E-02	1.040E-01
TH-232	1.487E+00	3.632E-01	1.264E-01	1.853E-01
TH-234	1.596E+00	1.007E+00	5.115E-01	5.139E-01
U-234	1.336E+00	2.039E-01	7.001E-02	1.040E-01
NP-237	9.161E-01	2.749E-01	1.331E-01	1.403E-01
U-238	1.596E+00	1.007E+00	5.115E-01	5.139E-01
AM-243	3.084E-01	5.959E-02	3.187E-02	3.041E-02
ANH-511	1.338E-01	9.339E-02	2.854E-02	4.765E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
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BE-7	-2.134E-01	3.803E-01	3.204E-01	1.940E-01	NOT IDENT.
NA-22	6.288E-03	5.394E-02	4.642E-02	2.752E-02	NOT IDENT.
NA-24	-4.349E+05	2.440E+06	0.000E+00	1.245E+06	SHORT HLIF
AL-26	1.326E-02	3.350E-02	3.024E-02	1.709E-02	NOT IDENT.
TI-44	3.849E-01	5.045E-02	2.934E-02	2.574E-02	FAIL ABUN
SC-46	-3.864E-02	4.549E-02	3.589E-02	2.321E-02	FAIL ABUN
V-48	-4.985E-02	9.134E-02	7.351E-02	4.660E-02	NOT IDENT.
CR-51	2.110E-02	4.039E-01	3.479E-01	2.060E-01	NOT IDENT.
MN-52	3.386E-01	3.296E-01	3.076E-01	1.682E-01	NOT IDENT.
MN-54	1.426E-02	4.908E-02	4.301E-02	2.504E-02	NOT IDENT.
CO-56	4.245E-02	5.103E-02	4.629E-02	2.604E-02	NOT IDENT.
CO-57	-3.238E-03	2.531E-02	2.193E-02	1.291E-02	NOT IDENT.
CO-58	-8.566E-02	4.710E-02	3.418E-02	2.403E-02	NOT IDENT.
FE-59	3.298E-02	1.119E-01	9.569E-02	5.707E-02	NOT IDENT.
CO-60	9.871E-03	4.700E-02	4.069E-02	2.398E-02	NOT IDENT.
ZN-65	-3.603E-02	1.200E-01	8.202E-02	6.122E-02	NOT IDENT.
GE-68	4.882E-02	1.558E+00	1.307E+00	7.951E-01	NOT IDENT.
AS-73	1.426E-01	2.264E-01	2.047E-01	1.155E-01	NOT IDENT.
AS-74	5.610E-02	1.103E-01	9.730E-02	5.630E-02	NOT IDENT.
SE-75	-2.001E-02	4.716E-02	3.895E-02	2.406E-02	NOT IDENT.
BR-77	-1.291E+01	1.747E+01	1.397E+01	8.916E+00	FAIL ABUN
SR-82	4.198E-02	4.683E-01	4.085E-01	2.389E-01	NOT IDENT.
RB-83	-7.727E-02	9.190E-02	7.032E-02	4.689E-02	NOT IDENT.
RB-84	1.684E-02	9.173E-02	7.178E-02	4.680E-02	NOT IDENT.
KR-85	1.273E+01	9.886E+00	8.136E+00	5.044E+00	NOT IDENT.
SR-85	6.595E-02	5.120E-02	4.213E-02	2.612E-02	NOT IDENT.
RB-86	1.017E-01	1.035E+00	8.724E-01	5.279E-01	NOT IDENT.
Y-88	6.602E-03	3.888E-02	3.377E-02	1.984E-02	NOT IDENT.
ZR-88	-2.524E-02	3.470E-02	2.780E-02	1.770E-02	NOT IDENT.
Y-91	5.222E+00	2.245E+01	1.959E+01	1.145E+01	NOT IDENT.
NB-94	1.098E-02	4.182E-02	3.567E-02	2.134E-02	NOT IDENT.
NB-95	6.479E-02	6.541E-02	5.296E-02	3.337E-02	NOT IDENT.
NB-95M	8.962E-02	1.484E-01	1.191E-01	7.573E-02	NOT IDENT.
ZR-95	7.300E-02	9.661E-02	8.443E-02	4.929E-02	NOT IDENT.
NB-97	2.581E+05	3.226E+05	0.000E+00	1.646E+05	SHORT HLIF
ZR-97	1.093E+07	6.021E+06	0.000E+00	3.072E+06	SHORT HLIF
MO-99	5.158E+00	1.809E+01	1.539E+01	9.231E+00	NOT IDENT.
TC-99M	-3.263E+17	5.590E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.428E-03	3.414E-02	2.983E-02	1.742E-02	NOT IDENT.
RH-102	-3.734E-03	3.393E-02	2.943E-02	1.731E-02	FAIL ABUN
RU-103	3.269E-02	4.645E-02	4.195E-02	2.370E-02	FAIL ABUN
RH-106	1.618E-02	3.824E-01	3.256E-01	1.951E-01	FAIL ABUN
RU-106	1.618E-02	3.824E-01	3.256E-01	1.951E-01	FAIL ABUN
AG-108M	1.175E-02	3.746E-02	3.354E-02	1.911E-02	NOT IDENT.
AG-110M	3.718E-02	4.521E-02	4.014E-02	2.307E-02	NOT IDENT.
IN-111	4.631E-01	1.407E+00	1.115E+00	7.181E-01	NOT IDENT.
IN-113M	-1.167E-02	4.859E-02	4.025E-02	2.479E-02	NOT IDENT.
SN-113	-1.167E-02	4.859E-02	4.025E-02	2.479E-02	NOT IDENT.
IN-114M	1.752E-01	2.155E-01	1.680E-01	1.100E-01	NOT IDENT.
CD-115	-7.121E+00	1.639E+01	1.373E+01	8.362E+00	NOT IDENT.
SN-117M	2.932E-02	5.907E-02	5.136E-02	3.014E-02	NOT IDENT.
SB-122	-1.117E+00	3.304E+00	2.773E+00	1.686E+00	NOT IDENT.
I-123	1.332E+07	1.975E+07	0.000E+00	1.008E+07	SHORT HLIF
TE-123M	1.975E-02	2.931E-02	2.565E-02	1.495E-02	NOT IDENT.
I-124	-3.626E-01	1.062E+00	7.565E-01	5.420E-01	NOT IDENT.
SB-124	-1.659E-02	8.924E-02	7.120E-02	4.553E-02	FAIL ABUN
SB-125	-7.218E-02	1.025E-01	8.667E-02	5.227E-02	FAIL ABUN
TE-125M	4.571E+00	8.701E+00	7.788E+00	4.439E+00	NOT IDENT.
I-126	-9.998E-02	2.429E-01	1.987E-01	1.239E-01	NOT IDENT.
SB-126	3.572E-02	2.199E-01	1.610E-01	1.122E-01	FAIL ABUN
SB-127	-4.991E-01	2.108E+00	1.740E+00	1.075E+00	NOT IDENT.
XE-127	6.946E-03	4.907E-02	4.279E-02	2.504E-02	NOT IDENT.
I-131	4.702E-02	1.394E-01	1.205E-01	7.113E-02	NOT IDENT.
TE-132	2.609E-01	8.159E-01	7.325E-01	4.163E-01	NOT IDENT.
BA-133	3.082E-02	5.471E-02	4.252E-02	2.792E-02	NOT IDENT.
I-133	-4.826E+03	1.461E+04	0.000E+00	7.453E+03	SHORT HLIF
CS-134	8.462E-02	5.967E-02	5.585E-02	3.044E-02	NOT IDENT.
CS-135	2.983E-01	1.865E-01	1.559E-01	9.517E-02	NOT IDENT.
I-135	6.221E+15	7.364E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.340E-01	1.461E-01	1.126E-01	7.452E-02	FAIL ABUN
BA-137M	2.886E-02	4.575E-02	4.014E-02	2.334E-02	NOT IDENT.
CS-137	3.050E-02	4.836E-02	4.244E-02	2.467E-02	NOT IDENT.
CE-139	-1.127E-02	3.225E-02	2.694E-02	1.646E-02	NOT IDENT.
BA-140	-2.029E-02	3.204E-01	2.749E-01	1.634E-01	NOT IDENT.
LA-140	5.991E-02	1.116E-01	9.893E-02	5.696E-02	NOT IDENT.
CE-141	-7.733E-02	6.603E-02	5.346E-02	3.369E-02	NOT IDENT.
CE-143	1.414E+03	4.324E+02	0.000E+00	2.206E+02	SHORT HLIF

CE-144	-8.405E-02	1.982E-01	1.678E-01	1.011E-01	NOT IDENT.
PM-144	-1.695E-02	4.393E-02	3.579E-02	2.241E-02	NOT IDENT.
PR-144	-1.149E+00	2.978E+00	2.427E+00	1.520E+00	NOT IDENT.
PM-146	3.789E-02	4.877E-02	4.454E-02	2.488E-02	NOT IDENT.
ND-147	-1.391E-01	6.682E-01	5.683E-01	3.409E-01	FAIL ABUN
PM-149	-1.470E+01	1.306E+02	1.127E+02	6.663E+01	NOT IDENT.
EU-152	-9.309E-02	1.247E-01	8.737E-02	6.364E-02	NOT IDENT.
GD-153	-1.596E-02	7.943E-02	6.123E-02	4.052E-02	FAIL ABUN
EU-154	1.633E-02	1.505E-01	1.294E-01	7.677E-02	NOT IDENT.
EU-155	1.325E-01	9.801E-02	8.999E-02	5.000E-02	FAIL ABUN
TB-160	-6.779E-03	1.861E-01	1.437E-01	9.493E-02	FAIL ABUN
HO-166M	2.841E-02	7.874E-02	6.598E-02	4.017E-02	FAIL ABUN
TM-171	2.812E-01	1.574E+01	1.292E+01	8.031E+00	NOT IDENT.
LU-176	8.035E-03	2.874E-02	2.335E-02	1.466E-02	FAIL ABUN
LU-177	2.370E+00	1.933E+00	1.190E+00	9.863E-01	FAIL ABUN
LU-177M	-1.159E-01	2.194E-01	1.777E-01	1.119E-01	NOT IDENT.
HF-181	-2.112E-02	5.001E-02	4.246E-02	2.552E-02	NOT IDENT.
W-181	-3.341E-02	1.923E-01	1.570E-01	9.813E-02	NOT IDENT.
TA-182	-2.551E-01	2.372E-01	1.863E-01	1.210E-01	FAIL ABUN
RE-183	-9.742E-02	1.246E-01	9.945E-02	6.359E-02	FAIL ABUN
RE-184	8.558E-02	2.447E-01	2.182E-01	1.249E-01	NOT IDENT.
OS-185	5.067E-02	5.324E-02	4.786E-02	2.716E-02	NOT IDENT.
RE-188	4.706E-02	1.873E-01	1.615E-01	9.557E-02	NOT IDENT.
W-188	2.059E+00	8.668E+00	6.703E+00	4.422E+00	FAIL ABUN
IR-192	-8.169E-03	3.695E-02	3.138E-02	1.885E-02	FAIL ABUN
AU-195	2.613E-01	2.092E-01	1.865E-01	1.067E-01	FAIL ABUN
TL-200	2.646E+01	9.111E+02	0.000E+00	4.648E+02	SHORT HLIF
TL-201	-2.524E+00	9.270E+00	7.762E+00	4.730E+00	NOT IDENT.
TL-202	-1.785E-02	8.390E-02	7.291E-02	4.280E-02	NOT IDENT.
HG-203	1.174E-02	4.447E-02	3.917E-02	2.269E-02	FAIL ABUN
BI-207	4.624E-02	6.072E-02	5.424E-02	3.098E-02	FAIL ABUN
TL-207	-8.167E-01	7.662E-01	6.103E-01	3.909E-01	FAIL ABUN
PO-209	-4.161E+00	9.175E+00	7.543E+00	4.681E+00	NOT IDENT.
PB-211	-7.898E-01	1.301E+00	9.765E-01	6.639E-01	NOT IDENT.
BI-212	1.463E+00	5.554E-01	3.920E-01	2.834E-01	FAIL ABUN
PO-215	-8.167E-01	7.662E-01	6.103E-01	3.909E-01	FAIL ABUN
RN-219	5.942E-01	5.122E-01	4.526E-01	2.613E-01	FAIL ABUN
RN-220	-4.469E+00	3.090E+01	2.632E+01	1.577E+01	NOT IDENT.
RA-223	-8.167E-01	7.662E-01	6.103E-01	3.909E-01	FAIL ABUN
AC-227	-2.576E-01	3.954E-01	3.347E-01	2.018E-01	FAIL ABUN
TH-227	-2.576E-01	3.962E-01	3.347E-01	2.021E-01	FAIL ABUN
TH-229	-2.374E-01	5.140E-01	4.538E-01	2.622E-01	FAIL ABUN
PA-231	3.856E-01	1.606E+00	1.411E+00	8.192E-01	FAIL ABUN
TH-231	-8.167E-01	7.662E-01	6.103E-01	3.909E-01	FAIL ABUN
U-231	-1.001E+00	1.172E+00	8.908E-01	5.980E-01	FAIL ABUN
PA-233	-4.448E-02	7.097E-02	5.902E-02	3.621E-02	FAIL ABUN
PA-234	-1.151E-01	3.793E-01	3.135E-01	1.935E-01	FAIL ABUN
PA-234M	2.522E+00	6.408E+00	5.500E+00	3.269E+00	FAIL ABUN
U-235	1.478E-01	2.276E-01	1.947E-01	1.161E-01	FAIL ABUN
NP-236	-6.709E-02	8.489E-02	6.960E-02	4.331E-02	NOT IDENT.
NP-239	-6.823E-02	1.824E-01	1.569E-01	9.304E-02	FAIL ABUN
AM-241	-1.530E-02	6.383E-02	5.229E-02	3.257E-02	NOT IDENT.
CM-243	1.465E-03	8.669E-02	7.658E-02	4.423E-02	FAIL ABUN
AM-246	9.965E-02	1.748E-01	1.532E-01	8.919E-02	NOT IDENT.
CM-247	4.856E-02	4.599E-02	4.078E-02	2.346E-02	NOT IDENT.
CF-249	3.685E-02	4.343E-02	3.847E-02	2.216E-02	NOT IDENT.
CF-251	-4.056E-02	1.331E-01	1.106E-01	6.788E-02	NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON, SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
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46.50	268.1032
46.50	268.1032
46.50	268.1032
48.70	303.1850
49.72	329.6278
51.35	349.5462
52.39	308.6061
52.97	305.0627
53.15	310.3803
53.44	310.7321
54.07	332.8285
56.28	388.1390
56.28	388.1436
57.37	0.0000
57.53	351.9124
57.53	351.9154
57.60	356.3278
57.98	357.6937
57.98	357.6937
59.32	415.1490
59.32	415.1490
59.40	415.2691
59.54	415.4790
59.72	427.5160
60.01	427.9626
61.10	407.2936
61.14	407.3516
61.30	402.3231
63.00	431.1786
63.29	431.6114
63.29	431.6114
63.58	443.9717
64.28	455.6673
65.12	456.9705
65.20	457.0941
65.20	457.0941
66.05	433.0118
66.72	460.7672
66.83	460.9404
66.91	461.0611
67.20	464.1878
67.20	464.1878
67.75	493.7023
67.85	493.8676
68.90	508.1574
68.90	508.1574
69.30	486.3016
69.67	497.7077
70.82	468.3211
70.82	468.3211
70.83	468.3369
72.80	527.2603
72.87	527.3751
72.87	527.3751
74.67	503.7582
74.81	503.9736
74.81	503.9736
74.81	503.9736
74.81	503.9736
74.81	503.9736
74.81	503.9736
74.81	503.9736
74.97	504.2226
75.28	504.6982
75.70	505.3444
77.11	507.4984
77.11	507.4984

77.11	507.4984
77.11	507.4984
77.11	507.4984
77.11	507.4984
77.11	507.4984
78.38	473.7609
79.62	431.3372
79.80	431.5638
79.80	431.5638
80.11	407.7489
80.18	407.8336
80.30	338.1154
80.30	338.1154
80.57	366.3466
81.00	408.8027
81.07	408.8862
81.07	408.8862
81.07	408.8862
81.07	408.8862
82.60	485.2273
83.37	467.9591
83.78	454.3946
83.78	454.3946
83.78	454.3946
83.78	454.3946
84.21	454.9449
84.90	311.4328
85.43	311.8927
86.29	312.6363
86.50	312.8175
86.54	312.8511
86.59	312.8947
86.72	313.0055
86.79	354.3318
86.94	354.4800
87.30	344.8544
87.30	344.8544
87.30	344.8544
87.30	344.8544
87.30	344.8544
87.30	344.8544
87.57	345.1092
87.88	345.4009
88.03	345.5413
88.36	345.8514
88.47	345.9548
89.95	347.3340
91.11	348.4086
92.29	349.4942
92.38	349.5773
92.38	349.5773
93.35	350.4635
94.00	351.0544
94.67	321.1423
94.67	321.1474
94.90	321.3362
94.90	321.3362
94.90	321.3362
94.90	321.3362
95.87	378.9828
95.87	378.9828
96.73	362.2860
97.43	351.2164
98.44	295.7708
98.44	295.7708
98.88	302.5594
99.55	306.9870
99.55	306.9870
99.86	332.7427
100.00	333.8401
100.10	333.9249
103.18	353.2649
103.76	323.0403
105.00	288.2226
105.31	288.4350
108.00	363.3360
109.28	311.2109

111.00	320.5070
111.00	320.5070
111.76	305.9174
112.95	353.3117
115.19	314.3908
116.30	295.7850
117.00	316.6712
117.00	316.6712
117.66	309.9690
121.11	311.2608
121.62	323.9818
121.78	324.0920
122.06	317.0560
122.32	308.9642
122.32	308.9642
122.32	308.9642
122.32	308.9642
123.07	297.0358
127.23	364.3538
129.76	271.7967
131.20	335.7379
133.02	307.3877
133.54	293.9582
135.34	286.5179
136.00	286.8887
136.25	287.0288
136.48	293.5392
140.51	342.9948
140.51	0.0000
142.18	320.4294
142.65	300.2661
143.76	282.5620
144.24	301.1658
144.24	301.1658
144.24	301.1658
144.24	301.1658
145.22	339.5662
145.44	342.9523
147.16	308.2300
152.43	319.9661
152.70	319.0243
153.22	296.2766
154.21	293.5006
154.21	293.5006
154.21	293.5006
154.21	293.5006
155.03	325.8547
156.02	335.2461
158.56	273.6036
159.00	0.0000
159.00	268.2693
160.31	324.4306
161.27	339.4360
162.32	314.4043
162.64	298.9592
163.35	297.0853
163.89	269.4113
165.85	315.1674
167.43	303.6319
171.28	272.7504
171.86	254.8851
172.10	248.1840
176.55	284.2183
176.60	283.0995
181.06	255.2173
184.41	279.6648
185.71	280.2261
186.00	280.3516
190.27	250.1147
192.34	281.5975
193.63	295.3253
197.04	274.7326
198.01	265.3908
198.60	278.0153
200.40	272.5295
201.83	298.0016
202.84	268.7810
205.31	270.3448

208.36	263.9702
208.81	264.1361
209.75	228.8595
209.75	228.8595
210.97	216.2732
215.65	219.4861
216.55	219.7556
218.09	269.3566
222.10	204.0248
223.80	244.8328
226.40	243.8359
227.00	233.8985
227.08	233.9237
227.20	231.1953
228.16	213.0412
228.18	205.6683
228.18	205.6683
231.56	0.0000
235.69	277.1427
236.00	277.2517
236.00	277.2517
238.63	247.7036
238.63	247.7036
238.63	247.7036
238.63	247.7036
239.00	247.8188
240.98	248.4365
241.98	248.7468
241.98	248.7468
241.98	248.7468
244.69	182.3390
245.39	177.9709
247.94	214.8409
248.90	222.8823
249.79	224.6123
252.40	191.0966
252.85	208.3233
252.85	208.3233
254.15	0.0000
256.20	221.5755
256.20	221.5755
260.50	196.7889
260.90	190.1569
262.80	190.5798
264.65	206.1487
268.24	182.8712
268.79	198.4969
269.46	195.5430
269.46	195.5430
269.46	195.5430
269.46	195.5430
271.23	231.7066
273.65	269.7676
276.40	205.5753
277.35	217.2576
277.60	220.2553
277.60	220.2553
278.00	209.5819
278.60	214.6224
279.20	209.8628
279.53	222.6911
280.46	237.6538
281.68	222.2377
283.67	184.2921
284.30	177.5143
285.00	174.6908
285.90	192.6434
286.10	192.6851
286.10	192.6851
287.40	188.0112
288.45	0.0000
290.67	179.5392
290.80	197.0453
291.72	190.8779
293.26	0.0000
293.70	189.6882
295.21	174.0274
295.21	174.0274

295.21	174.0274
295.96	143.8066
296.50	143.8879
297.23	144.0000
298.57	144.2043
299.80	144.3889
299.80	144.3889
300.09	165.2954
300.09	165.2954
300.09	165.2954
300.09	165.2954
300.12	165.3004
301.29	165.5041
302.84	162.5518
303.76	165.9291
303.91	174.0103
304.40	185.3842
304.40	185.3842
304.84	183.8556
306.84	172.3854
308.46	158.8446
311.98	193.9377
316.51	168.3057
318.01	193.0750
319.02	190.2033
319.41	167.7712
320.08	162.7630
323.87	215.7806
323.87	215.7806
323.87	215.7806
323.87	215.7806
325.23	224.3002
328.77	157.9657
333.44	144.3678
334.20	164.4014
334.20	164.4014
334.30	164.4183
338.28	162.5413
338.28	162.5413
338.28	162.5413
338.28	162.5413
338.32	162.5484
338.32	162.5484
338.32	162.5484
340.50	173.7430
340.57	173.7557
344.27	181.0661
345.85	179.6560
350.59	0.0000
351.07	194.0232
351.92	189.9536
351.92	189.9536
351.92	189.9536
355.39	0.0000
356.01	125.4170
364.48	140.8945
366.43	135.7940
367.43	135.9142
367.94	0.0000
369.80	142.6337
374.96	157.2859
383.85	143.3015
387.95	120.9252
388.63	142.7955
391.69	135.5153
391.69	135.5153
392.90	150.9691
398.62	163.7827
400.65	171.7628
401.10	163.0166
401.81	145.4788
402.60	151.0876
404.84	197.7697
410.95	156.5617
411.60	166.6420
413.65	172.4805
414.70	148.1253
415.30	148.1963

415.76	147.1364
417.63	0.0000
418.52	134.0552
423.70	131.2412
427.08	148.4617
427.89	145.8534
432.53	116.5630
433.93	132.9711
439.47	145.3496
439.56	140.8169
439.89	140.8528
443.98	126.7068
444.90	116.7609
445.03	119.5087
445.03	119.5087
445.03	119.5087
445.03	119.5087
453.90	112.9597
463.38	110.0532
468.07	134.5587
473.00	112.6872
475.06	128.7096
475.35	133.3992
476.78	131.6694
477.59	136.4170
477.96	134.5834
482.03	129.3497
484.57	115.4972
487.03	121.3406
490.36	0.0000
492.35	122.7351
497.08	99.4578
507.63	0.0000
510.53	0.0000
510.84	117.6052
511.00	117.6180
511.85	117.6863
511.85	117.6863
513.99	127.7563
513.99	127.7563
520.41	140.7335
520.65	136.8785
527.90	108.3086
528.96	0.0000
529.64	106.4954
529.87	0.0000
531.02	103.6850
537.32	110.9218
543.00	106.4426
546.56	0.0000
549.76	110.8261
552.65	107.0973
555.20	103.3337
563.23	122.6468
563.90	129.6216
568.70	98.2507
569.32	113.1790
569.50	113.1929
569.67	113.2040
573.80	140.4807
574.00	140.4979
574.64	129.4858
578.91	128.1579
579.30	0.0000
583.14	108.1292
585.48	101.9298
591.81	104.6652
592.07	104.6805
593.00	119.8454
595.88	92.8131
600.56	113.3016
602.52	0.0000
602.71	114.7943
602.71	114.7943
603.60	108.0990
604.41	87.8706
604.70	87.8854
609.31	111.8477

609.31	111.8477
609.31	111.8477
609.31	111.8477
610.33	103.4364
612.46	103.5630
614.37	93.4794
618.01	108.3213
621.84	97.2938
621.84	97.2938
631.29	84.4304
633.02	80.3899
633.10	80.3937
634.78	92.8499
635.90	91.8769
636.97	83.6677
645.85	83.0430
646.12	85.1311
656.30	102.3114
657.75	98.2135
657.90	0.0000
661.65	101.5635
661.65	101.5635
664.57	0.0000
666.33	115.4651
666.33	115.4651
675.00	123.3842
677.61	117.2167
685.20	108.1459
692.80	96.8675
695.00	110.8301
696.49	111.9829
696.49	111.9829
697.00	104.5461
697.49	103.5053
698.33	98.2127
698.50	104.6251
699.00	103.5859
702.63	98.4306
706.10	112.5392
706.58	0.0000
706.67	102.9211
709.31	98.7652
711.68	90.2877
713.82	102.2201
717.42	102.4080
720.50	93.5687
721.93	0.0000
722.20	90.0472
722.78	99.0810
722.78	99.0810
722.89	88.2762
722.95	88.2802
723.30	88.2941
724.18	88.3340
727.18	94.2429
733.00	76.0481
735.90	89.4548
739.58	80.6539
742.81	91.6986
744.21	76.4685
747.13	98.4551
751.79	96.4863
752.31	84.4462
753.82	96.5809
755.35	106.5366
756.15	91.1967
756.87	91.2271
763.93	89.8040
765.79	107.2295
766.42	116.7271
766.84	116.7503
776.49	85.0577
778.00	81.4168
778.57	85.1401
778.89	87.9299
783.80	92.7714
785.46	76.1309
792.07	101.5111

795.84	81.1642
796.30	82.1133
798.80	124.2464
801.93	87.0040
805.60	68.4078
810.29	93.9107
810.76	98.6276
815.85	77.2003
817.79	81.9802
818.51	76.3511
819.60	88.6471
826.30	83.2394
828.27	0.0000
831.60	100.5007
831.96	106.2077
834.83	98.7463
836.80	0.0000
846.75	76.3574
848.13	74.4945
856.28	0.0000
856.80	84.3620
860.37	81.6105
867.32	77.0394
867.82	74.1676
871.10	64.6255
873.19	70.4752
874.81	69.5581
875.33	0.0000
876.40	73.4719
879.36	68.7249
880.27	67.7826
880.51	67.7897
881.50	61.0351
883.24	56.2323
884.67	61.1171
889.25	73.8708
896.60	79.9480
898.02	78.0436
899.00	81.0023
903.28	64.5256
911.07	65.7146
911.07	65.7146
911.07	65.7146
919.63	66.9278
920.93	55.8628
925.00	65.1017
925.24	68.0679
926.50	83.8932
935.52	71.3218
937.48	92.1959
944.10	76.5363
946.00	78.5821
949.00	89.6320
962.29	85.8102
964.01	82.4330
966.15	96.2520
968.20	107.3657
969.11	91.2010
969.11	91.2010
969.11	91.2010
977.42	68.4773
980.50	81.6641
983.50	75.7034
989.30	76.8829
996.32	97.3750
1001.03	71.1279
1001.68	64.0318
1004.76	91.5802
1021.30	0.0000
1024.50	0.0000
1034.80	65.8542
1036.00	68.9711
1037.82	75.1981
1038.57	76.2493
1038.76	0.0000
1045.16	74.3672
1046.59	75.4387
1048.07	84.7861

1050.47	67.2666
1050.47	67.2666
1062.04	52.9984
1063.62	51.9877
1076.63	69.9880
1077.35	68.9595
1078.86	60.6338
1085.78	60.7825
1099.22	63.1738
1112.02	60.6344
1112.84	68.2321
1115.52	68.9757
1120.29	67.8776
1120.29	67.8776
1120.29	67.8776
1120.29	67.8776
1120.51	67.8828
1121.28	67.9010
1124.00	0.0000
1129.67	65.6618
1131.51	0.0000
1147.95	0.0000
1167.94	71.1267
1173.22	63.6934
1175.09	63.7318
1177.93	82.1725
1189.05	81.8493
1204.90	74.7907
1205.75	0.0000
1213.00	82.4816
1221.42	96.7996
1230.97	97.0942
1235.34	81.1799
1236.41	0.0000
1238.25	82.1997
1246.25	63.4598
1260.41	0.0000
1271.85	62.0529
1274.45	63.0582
1274.54	63.0605
1291.56	58.5853
1298.22	0.0000
1312.09	53.1470
1325.50	55.2983
1325.50	55.2983
1332.49	43.7476
1333.61	44.7342
1360.21	33.3205
1362.66	0.0000
1365.15	33.3680
1368.21	36.3432
1368.53	0.0000
1376.25	30.5199
1384.27	50.3259
1394.10	38.5906
1395.20	40.5825
1407.95	43.7084
1434.06	28.0156
1436.60	41.0515
1457.56	0.0000
1460.81	28.2207
1489.15	44.6844
1509.49	37.7781
1596.49	26.0995
1620.62	35.7076
1678.03	0.0000
1691.02	19.2280
1691.02	19.2280
1706.46	0.0000
1750.46	0.0000
1764.49	18.5935
1764.49	18.5935
1764.49	18.5935
1764.49	18.5935
1770.23	16.9249
1771.40	13.5438
1791.20	0.0000
1808.65	12.4839

1836.01

14.4919

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624001

Total Uranium Activity	4.8174E+00	ug/g
Total Uranium Counting Unc.	2.9985E+00	ug/g
Total Uranium Tpu	1.5299E-06	ug/g
Total Uranium Mda	1.5243E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 937704                      SAMPLE ID   : G243624001
*  ANALYST       : MXR1                        DETECTOR    : GAM13
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00    COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 7-JAN-2010 13:41:52.16    SAMPLE ALQT  : 133.620 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 7.739E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.213E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.611E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.267E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 15:52:58.98

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624002.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 13:52:07.
Sample ID          : G243624002 Sample quantity : 1.20590E+02 GRAM
Detector name      : GAM21 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:26.21 0.4%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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	46.70	127	330	0.62	93.38	90	7	1.77E-02	25.3	
2	0	63.23	198	498	0.80	126.43	123	8	2.75E-02	20.7	
3	3	74.82*	610	331	0.79	149.60	145	13	8.47E-02	6.0	6.23E-01
4	3	77.11*	876	236	0.72	154.18	145	13	1.22E-01	4.3	
5	4	87.28*	291	279	0.91	174.51	163	28	4.04E-02	10.3	5.44E+00
6	4	89.98	210	305	1.04	179.89	163	28	2.92E-02	14.6	
7	4	92.86*	327	271	1.05	185.66	163	28	4.54E-02	10.4	
8	0	128.58	93	210	0.85	257.07	254	7	1.30E-02	27.7	
9	0	185.46*	230	318	1.20	370.78	365	13	3.19E-02	17.4	
10	0	208.88	82	182	0.66	417.59	414	8	1.14E-02	30.5	
11	7	238.43*	980	120	0.87	476.68	472	22	1.36E-01	3.6	2.32E+00
12	7	241.40	259	145	1.52	482.62	472	22	3.59E-02	11.9	
13	0	269.46	95	181	1.00	538.71	533	12	1.33E-02	29.9	
14	0	277.08	38	113	0.81	553.94	551	8	5.26E-03	51.1	
15	0	295.02*	259	137	0.99	589.82	585	10	3.60E-02	10.6	
16	0	299.88	57	93	0.89	599.54	595	8	7.85E-03	32.5	
17	0	337.96	193	96	1.11	675.67	671	10	2.68E-02	11.9	
18	0	351.69*	480	153	0.92	703.14	699	10	6.66E-02	6.7	
19	0	463.15	32	62	0.75	926.00	922	8	4.41E-03	46.1	
20	0	510.81*	92	91	1.46	1021.32	1015	14	1.27E-02	27.9	
21	0	582.94*	243	58	1.16	1165.57	1160	11	3.37E-02	8.7	
22	0	609.01*	282	53	1.13	1217.71	1212	11	3.92E-02	7.8	
23	0	661.27	106	36	1.58	1322.23	1318	10	1.47E-02	14.3	
24	0	727.60	94	38	2.13	1454.91	1447	17	1.31E-02	18.2	
25	0	910.74	169	22	1.54	1821.26	1815	14	2.34E-02	9.6	
26	0	968.53*	82	25	1.51	1936.87	1932	10	1.14E-02	16.3	
27	0	1120.17*	46	39	1.40	2240.27	2233	13	6.46E-03	31.7	
28	0	1460.10	580	21	2.08	2920.57	2910	22	8.05E-02	4.6	
29	0	1763.71	52	2	1.99	3528.37	3522	11	7.18E-03	15.2	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624002.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 12:00:00 Acquisition date : 7-JAN-2010 13:52:07
Sample ID        : G243624002 Sample quantity : 120.59 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA21 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:26.21 0.4%
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	*	2.346E+01	2.957E+00	7.137E-01	6.093E-02	32.877
CD-109	+	88.03	*	3.066E+00	6.936E-01	7.452E-01	7.012E-02	4.114
SN-126	+	64.28		7.856E-01	3.455E-01	2.850E-01	4.223E-02	2.757
	+	86.94		1.251E+00	5.798E-01	3.028E-01	1.257E-01	4.131
	+	87.57	*	3.009E-01	6.807E-02	7.301E-02	6.844E-03	4.121
CS-135	+	268.24	*	4.751E-01	2.885E-01	2.270E-01	2.325E-02	2.093
BA-137M	+	661.65	*	2.339E-01	7.193E-02	6.661E-02	7.357E-03	3.512
CS-137	+	661.65	*	2.473E-01	7.605E-02	7.042E-02	7.786E-03	3.512
TL-208	+	277.35		4.556E-01	4.694E-01	5.225E-01	6.556E-02	0.872
	+	510.84		6.472E-01	3.702E-01	2.559E-01	3.250E-02	2.529
	+	583.14	*	5.050E-01	1.039E-01	6.471E-02	7.049E-03	7.804
		860.37		3.168E-01	3.678E-01	6.674E-01	6.627E-02	0.475
BI-210	+	46.50	*	1.331E+00	6.865E-01	6.475E-01	6.174E-02	2.056
PB-210	+	46.50	*	1.331E+00	6.865E-01	6.475E-01	6.174E-02	2.056
PO-210	+	46.50	*	1.331E+00	6.844E-01	6.475E-01	5.619E-02	2.056
BI-211		72.87		9.310E-01	1.548E+00	2.419E+00	2.025E-01	0.385
	+	351.07	*	3.850E+00	6.236E-01	3.537E-01	3.192E-02	10.887
PB-212	+	74.81		2.145E+00	3.737E-01	2.683E-01	3.386E-02	7.994
	+	77.11		1.833E+00	2.222E-01	1.603E-01	1.383E-02	11.433
	+	87.30		1.392E+00	3.442E-01	3.373E-01	4.619E-02	4.125
	+	238.63	*	1.558E+00	1.912E-01	8.213E-02	8.167E-03	18.974
	+	300.09		1.465E+00	9.662E-01	1.128E+00	1.204E-01	1.299
PO-212	+	74.81		2.145E+00	3.737E-01	2.683E-01	3.386E-02	7.994
	+	77.11		1.833E+00	2.222E-01	1.603E-01	1.383E-02	11.433
	+	87.30		1.392E+00	3.442E-01	3.373E-01	4.619E-02	4.125
		115.19		5.961E-01	2.665E+00	4.284E+00	4.707E-01	0.139
	+	238.63	*	1.558E+00	1.912E-01	8.213E-02	8.167E-03	18.974
	+	300.09		1.465E+00	9.662E-01	1.128E+00	1.204E-01	1.299
BI-214	+	609.31	*	1.117E+00	2.182E-01	1.269E-01	1.499E-02	8.804
	+	1120.29		1.031E+00	6.627E-01	6.336E-01	6.803E-02	1.627
	+	1764.49		1.701E+00	5.356E-01	4.082E-01	3.394E-02	4.166
PB-214	+	74.81		3.696E+00	6.086E-01	4.623E-01	5.206E-02	7.994
	+	77.11		3.143E+00	4.499E-01	2.749E-01	3.164E-02	11.433
	+	87.30		2.384E+00	5.698E-01	5.779E-01	7.004E-02	4.125

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	241.98		2.479E+00	6.447E-01	4.966E-01	5.220E-02	4.993
	+	295.21		1.175E+00	2.805E-01	2.117E-01	2.307E-02	5.548
	+	351.92	*	1.339E+00	2.279E-01	1.234E-01	1.285E-02	10.855
	+	74.81		3.696E+00	6.086E-01	4.623E-01	5.206E-02	7.994
	+	77.11		3.143E+00	4.499E-01	2.749E-01	3.164E-02	11.433
	+	87.30		2.384E+00	5.698E-01	5.779E-01	7.004E-02	4.125
PO-216	+	241.98		2.479E+00	6.447E-01	4.966E-01	5.220E-02	4.993
	+	295.21		1.175E+00	2.805E-01	2.117E-01	2.307E-02	5.548
	+	351.92	*	1.339E+00	2.279E-01	1.234E-01	1.285E-02	10.855
	+	74.81		2.145E+00	3.737E-01	2.683E-01	3.386E-02	7.994
	+	77.11		1.833E+00	2.222E-01	1.603E-01	1.383E-02	11.433
	+	87.30		1.392E+00	3.442E-01	3.373E-01	4.619E-02	4.125
PO-218	+	238.63	*	1.558E+00	1.912E-01	8.213E-02	8.167E-03	18.974
	+	300.09		1.465E+00	9.662E-01	1.128E+00	1.204E-01	1.299
	+	74.81		3.696E+00	6.086E-01	4.623E-01	5.206E-02	7.994
	+	77.11		3.143E+00	4.499E-01	2.749E-01	3.164E-02	11.433
	+	87.30		2.384E+00	5.698E-01	5.779E-01	7.004E-02	4.125
	+	241.98		2.479E+00	6.447E-01	4.966E-01	5.220E-02	4.993
RA-224	+	295.21		1.175E+00	2.805E-01	2.117E-01	2.307E-02	5.548
	+	351.92	*	1.339E+00	2.279E-01	1.234E-01	1.285E-02	10.855
	+	240.98	*	4.701E+00	1.194E+00	9.373E-01	8.329E-02	5.015
RA-226	+	609.31	*	1.117E+00	2.182E-01	1.269E-01	1.499E-02	8.804
AC-228	+	1120.29		1.031E+00	6.627E-01	6.336E-01	6.803E-02	1.627
	+	1764.49		1.701E+00	5.356E-01	4.082E-01	3.394E-02	4.166
	+	338.32		1.689E+00	8.044E-01	3.673E-01	1.516E-01	4.597
RA-228	+	911.07	*	1.669E+00	3.734E-01	2.611E-01	2.964E-02	6.392
	+	969.11		1.441E+00	5.793E-01	3.593E-01	8.404E-02	4.010
	+	338.32		1.689E+00	8.044E-01	3.673E-01	1.516E-01	4.597
TH-228	+	911.07	*	1.669E+00	3.734E-01	2.611E-01	2.964E-02	6.392
	+	969.11		1.441E+00	5.793E-01	3.593E-01	8.404E-02	4.010
	+	74.81		2.179E+00	3.215E-01	2.726E-01	2.333E-02	7.994
TH-230	+	77.11		1.863E+00	2.258E-01	1.629E-01	1.405E-02	11.433
	+	87.30		1.414E+00	3.199E-01	3.428E-01	3.206E-02	4.125
	+	238.63	*	1.583E+00	1.943E-01	8.346E-02	8.299E-03	18.974
TH-232	+	300.09		1.489E+00	1.311E+00	1.146E+00	6.800E-01	1.299
	+	609.31	*	1.117E+00	2.182E-01	1.269E-01	1.499E-02	8.804
	+	1120.29		1.031E+00	6.627E-01	6.336E-01	6.803E-02	1.627
TH-234	+	1764.49		1.701E+00	5.356E-01	4.082E-01	3.394E-02	4.166
	+	338.32		1.689E+00	4.276E-01	3.673E-01	3.202E-02	4.597
	+	911.07	*	1.669E+00	3.734E-01	2.611E-01	2.964E-02	6.392
U-234	+	969.11		1.441E+00	5.793E-01	3.593E-01	8.404E-02	4.010
	+	63.29	*	1.985E+00	8.935E-01	7.203E-01	1.272E-01	2.755
	+	92.38		2.344E+00	6.532E-01	5.091E-01	9.459E-02	4.604
NP-237	+	609.31	*	1.117E+00	2.182E-01	1.269E-01	1.499E-02	8.804
	+	1120.29		1.031E+00	6.627E-01	6.336E-01	6.803E-02	1.627
	+	1764.49		1.701E+00	5.356E-01	4.082E-01	3.394E-02	4.166
U-238	+	86.50	*	8.836E-01	2.706E-01	2.135E-01	4.832E-02	4.138
	+	95.87		2.028E-01	6.311E-01	9.550E-01	2.394E-01	0.212
U-238	+	63.29	*	1.985E+00	8.935E-01	7.203E-01	1.272E-01	2.755

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	92.38		2.344E+00	5.366E-01	5.091E-01	4.895E-02	4.604
AM-243	+	74.67	*	3.477E-01	5.114E-02	4.348E-02	3.685E-03	7.997
	+	86.72		3.314E+01	7.496E+00	8.014E+00	7.459E-01	4.134
		117.66		1.235E+00	2.790E+00	4.536E+00	5.062E-01	0.272
		142.18		-1.957E+01	1.527E+01	2.168E+01	2.197E+00	-0.902
ANH-511	+	511.00	*	1.398E-01	7.910E-02	5.530E-02	5.301E-03	2.528

---- 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	*	-2.603E-01	3.903E-01	6.172E-01	6.048E-02	-0.422
NA-22		1274.54	*	-5.469E-04	5.530E-02	8.890E-02	7.293E-03	-0.006
NA-24		1368.53	*	-4.060E-01	5.530E-02	Half-Life too short		
AL-26		1129.67		-1.884E-01	2.191E+00	3.533E+00	2.974E-01	-0.053
		1808.65	*	2.611E-02	4.230E-02	7.909E-02	6.546E-03	0.330
TI-44		67.85		1.453E-03	1.841E-02	3.044E-02	2.469E-03	0.048
	+	78.38	*	3.383E-01	4.100E-02	3.753E-02	3.268E-03	9.014
SC-46		889.25	*	-2.639E-02	4.617E-02	7.132E-02	6.342E-03	-0.370
	+	1120.51		1.779E-01	1.137E-01	1.622E-01	1.370E-02	1.097
V-48		944.10		2.324E-02	1.248E+00	2.077E+00	1.821E-01	0.011
		983.50	*	6.759E-02	1.019E-01	1.805E-01	1.579E-02	0.374
		1312.09		3.326E-02	1.002E-01	1.699E-01	1.384E-02	0.196
CR-51		320.08	*	1.636E-01	3.934E-01	6.565E-01	6.103E-02	0.249
MN-52		744.21		-6.370E-02	3.314E-01	5.200E-01	5.527E-02	-0.122
		848.13		-5.448E-01	8.053E+00	1.339E+01	1.274E+00	-0.041
		935.52		2.127E-01	3.415E-01	6.087E-01	5.336E-02	0.349
		1246.25		2.892E+00	1.099E+01	1.831E+01	1.505E+00	0.158
		1333.61		-8.020E-01	6.543E+00	1.075E+01	8.730E-01	-0.075
		1434.06	*	1.419E-02	3.217E-01	5.401E-01	4.460E-02	0.026
MN-54		834.83	*	-2.427E-02	4.919E-02	7.851E-02	7.609E-03	-0.309
CO-56		846.75	*	-7.037E-02	4.365E-02	5.562E-02	5.302E-03	-1.265
		977.42		4.993E-01	4.024E+00	6.753E+00	5.912E-01	0.074
		1037.82		4.600E-01	3.977E-01	7.417E-01	6.772E-02	0.620
		1175.09		9.330E-02	2.906E+00	4.739E+00	3.905E-01	0.020
		1238.25		1.625E-01	1.241E-01	2.263E-01	1.920E-02	0.718
		1360.21		2.398E-01	1.169E+00	2.025E+00	1.653E-01	0.118
		1771.40		7.225E-02	2.225E-01	4.026E-01	3.345E-02	0.179
CO-57		122.06	*	-4.105E-03	1.906E-02	2.968E-02	3.409E-03	-0.138
		136.48		7.888E-02	1.613E-01	2.603E-01	2.883E-02	0.303
CO-58		810.76	*	-1.341E-02	4.228E-02	6.836E-02	6.841E-03	-0.196
FE-59		142.65		-7.344E-01	2.341E+00	3.577E+00	3.613E-01	-0.205
		192.34		9.016E-01	7.837E-01	1.390E+00	1.854E-01	0.648
		1099.22	*	5.874E-02	1.154E-01	2.009E-01	1.854E-02	0.292
		1291.56		-8.953E-02	1.676E-01	2.468E-01	2.319E-02	-0.363
CO-60		1173.22		2.241E-02	5.840E-02	9.931E-02	8.183E-03	0.226
		1332.49	*	6.863E-03	4.097E-02	7.074E-02	5.742E-03	0.097
ZN-65		1115.52	*	-2.351E-02	1.335E-01	1.825E-01	1.547E-02	-0.129
GE-68		1077.35	*	2.311E+00	1.636E+00	3.105E+00	2.666E-01	0.744

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AS-73	53.44	*		9.144E-02	1.647E-01	2.827E-01	2.289E-02	0.323
AS-74	595.88	*		2.221E-02	1.030E-01	1.731E-01	1.817E-02	0.128
	634.78			4.660E-01	4.757E-01	8.457E-01	9.165E-02	0.551
SE-75	66.05			-1.081E+00	2.009E+00	2.978E+00	2.964E-01	-0.363
	96.73			-7.305E-02	5.410E-01	7.953E-01	1.148E-01	-0.092
	121.11			3.892E-02	1.010E-01	1.633E-01	2.202E-02	0.238
	136.00			-7.452E-03	3.159E-02	4.778E-02	5.078E-03	-0.156
	198.60			3.944E-01	1.499E+00	2.561E+00	2.432E-01	0.154
	264.65	*		-1.119E-02	4.331E-02	6.208E-02	5.573E-03	-0.180
	279.53			2.111E-02	1.031E-01	1.541E-01	1.423E-02	0.137
	303.91			-8.285E-01	2.342E+00	3.273E+00	3.828E-01	-0.253
	400.65			1.122E-02	2.936E-01	4.668E-01	4.997E-02	0.024
BR-77	87.88		+	8.754E+02	1.980E+02	3.007E+02	2.827E+01	2.911
	200.40			-4.274E+00	1.834E+02	3.083E+02	2.641E+01	-0.014
	239.00		+	3.312E+02	3.784E+01	5.237E+01	4.649E+00	6.325
	249.79			-3.299E+01	8.070E+01	1.230E+02	1.097E+01	-0.268
	281.68			-4.152E+01	1.178E+02	1.659E+02	1.480E+01	-0.250
	297.23			4.157E+01	8.691E+01	1.072E+02	9.567E+00	0.388
	303.76			-4.299E+01	2.569E+02	3.663E+02	3.265E+01	-0.117
	439.47			-7.521E+01	1.969E+02	3.216E+02	2.782E+01	-0.234
	484.57			-2.609E+02	3.329E+02	5.158E+02	4.775E+01	-0.506
	520.65	*		-1.036E+01	1.491E+01	2.300E+01	2.232E+00	-0.450
	574.64			-4.655E+01	3.150E+02	5.116E+02	5.264E+01	-0.091
	578.91			-5.976E+01	1.545E+02	2.114E+02	2.185E+01	-0.283
	585.48			2.300E+02	2.912E+02	4.618E+02	4.801E+01	0.498
	755.35			2.239E+02	2.649E+02	4.661E+02	4.913E+01	0.480
	817.79			-1.138E+02	1.943E+02	3.023E+02	2.995E+01	-0.376
SR-82	698.33			-1.749E+01	4.438E+01	6.867E+01	7.493E+00	-0.255
	776.49	*		-1.011E-01	5.345E-01	8.367E-01	8.661E-02	-0.121
	1395.20			-3.446E+00	1.511E+01	2.430E+01	1.995E+00	-0.142
RB-83	520.41	*		-3.873E-02	7.413E-02	1.166E-01	1.131E-02	-0.332
	529.64			8.964E-03	1.141E-01	1.910E-01	1.873E-02	0.047
	552.65			5.407E-02	2.175E-01	3.690E-01	3.712E-02	0.147
RB-84	881.50	*		-2.933E-02	7.114E-02	1.115E-01	1.006E-02	-0.263
KR-85	513.99	*		4.607E+00	8.836E+00	1.373E+01	1.321E+00	0.335
SR-85	513.99	*		2.386E-02	4.576E-02	7.112E-02	6.844E-03	0.335
RB-86	1076.63	*		1.293E+00	1.110E+00	2.053E+00	1.763E-01	0.630
Y-88	898.02			-5.247E-02	4.708E-02	6.590E-02	5.792E-03	-0.796
	1836.01	*		3.399E-02	5.229E-02	9.725E-02	8.029E-03	0.350
ZR-88	392.90	*		1.973E-03	3.390E-02	5.410E-02	4.310E-03	0.036
Y-91	1204.90	*		-2.021E+00	2.788E+01	4.480E+01	3.691E+00	-0.045
NB-94	702.63	*		1.371E-03	4.095E-02	6.644E-02	7.236E-03	0.021
	871.10			2.566E-02	3.623E-02	6.604E-02	6.062E-03	0.388
NB-95	765.79	*		2.780E-02	5.474E-02	9.243E-02	9.660E-03	0.301
NB-95M	235.69	*		-4.080E-02	1.267E-01	1.840E-01	1.854E-02	-0.222
ZR-95	724.18			6.124E-02	1.219E-01	1.853E-01	2.108E-02	0.330
	756.15	*		7.903E-03	8.787E-02	1.425E-01	1.605E-02	0.055
NB-97	657.90	*		-5.081E-03	8.787E-02	Half-Life too short		
	1024.50			-1.015E+01	8.787E-02	Half-Life too short		

---- Non-Identified Nuclides ----

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ZR-97	254.15			-1.477E+00	8.787E-02	Half-Life	too short	
	355.39			-8.754E-01	8.787E-02	Half-Life	too short	
	507.63	*		1.003E+01	8.787E-02	Half-Life	too short	
	602.52			7.305E+00	8.787E-02	Half-Life	too short	
	1021.30			-9.910E+00	8.787E-02	Half-Life	too short	
	1147.95			-4.063E+00	8.787E-02	Half-Life	too short	
	1362.66			-1.509E+00	8.787E-02	Half-Life	too short	
	1750.46			8.772E-01	8.787E-02	Half-Life	too short	
MO-99	140.51			1.008E+01	2.774E+01	4.406E+01	1.244E+01	0.229
	181.06			-7.066E+00	1.851E+01	2.738E+01	4.971E+00	-0.258
	366.43			-7.235E+01	1.033E+02	1.528E+02	1.281E+01	-0.474
	739.58	*		-3.661E+00	1.740E+01	2.721E+01	4.470E+00	-0.135
	778.00			-2.523E+01	5.833E+01	8.844E+01	9.143E+00	-0.285
TC-99M	140.51	*		1.637E+11	5.833E+01	Half-Life	too short	
RH-101	127.23	+		6.154E-02	3.476E-02	3.981E-02	4.444E-03	1.546
	198.01	*		1.630E-02	2.638E-02	4.592E-02	3.922E-03	0.355
	295.23			-2.543E-01	2.416E-01	3.574E-01	3.152E-02	-0.711
RH-102	418.52			-2.792E-02	3.084E-01	5.195E-01	4.337E-02	-0.054
	475.06	*		-1.429E-02	3.348E-02	5.409E-02	4.942E-03	-0.264
	631.29			-5.737E-02	7.282E-02	1.091E-01	1.179E-02	-0.526
	697.49			-1.022E-01	9.713E-02	1.373E-01	1.499E-02	-0.744
	766.84			1.654E-01	1.407E-01	2.509E-01	2.620E-02	0.659
	1046.59			-5.104E-02	1.246E-01	1.917E-01	1.660E-02	-0.266
	1112.84			1.196E-01	3.364E-01	5.044E-01	4.276E-02	0.237
RU-103	497.08	*		2.768E-02	4.151E-02	7.352E-02	1.078E-02	0.376
	610.33	+		1.227E+01	2.900E+00	3.539E+00	6.301E-01	3.466
RH-106	511.85	+		6.995E-01	3.958E-01	4.799E-01	4.606E-02	1.457
	621.84	*		3.850E-02	3.478E-01	5.763E-01	8.532E-02	0.067
	1050.47			2.434E-01	2.795E+00	4.646E+00	4.018E-01	0.052
RU-106	511.85	+		6.995E-01	3.958E-01	4.799E-01	4.606E-02	1.457
	621.84	*		3.850E-02	3.478E-01	5.763E-01	6.183E-02	0.067
	1050.47			2.434E-01	2.795E+00	4.646E+00	4.018E-01	0.052
AG-108M	433.93	*		1.862E-02	3.076E-02	5.476E-02	4.882E-03	0.340
	614.37			-1.037E-02	5.004E-02	6.960E-02	7.614E-03	-0.149
	722.95			-4.888E-02	5.689E-02	6.764E-02	7.473E-03	-0.723
AG-110M	657.75	*		-9.962E-06	4.239E-02	6.036E-02	6.770E-03	0.000
	677.61			5.805E-02	3.293E-01	5.460E-01	6.109E-02	0.106
	706.67			1.601E-02	2.594E-01	4.220E-01	4.666E-02	0.038
	763.93			-6.476E-02	2.096E-01	3.238E-01	3.454E-02	-0.200
	884.67			6.399E-03	5.359E-02	9.097E-02	8.399E-03	0.070
	937.48			-1.771E-01	1.426E-01	1.983E-01	1.799E-02	-0.893
	1384.27			-1.889E-01	1.918E-01	2.589E-01	2.188E-02	-0.730
IN-111	171.28			-1.015E+00	1.050E+00	1.693E+00	1.388E-01	-0.600
	245.39	*		-1.020E+00	1.247E+00	1.696E+00	1.510E-01	-0.601
IN-113M	391.69	*		-3.705E-02	4.917E-02	7.234E-02	5.957E-03	-0.512
SN-113	391.69	*		-3.705E-02	4.917E-02	7.234E-02	5.957E-03	-0.512
IN-114M	190.27	*		-1.827E-01	1.682E-01	2.334E-01	1.972E-02	-0.783
CD-115	260.90			-8.931E+01	1.582E+02	2.497E+02	2.232E+01	-0.358
	492.35			-2.259E+01	5.210E+01	8.346E+01	7.809E+00	-0.271

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-117M		527.90	*	-9.811E+00	1.583E+01	2.458E+01	2.406E+00	-0.399
		156.02		-8.001E-01	1.936E+00	3.252E+00	2.935E-01	-0.246
		158.56	*	-3.065E-02	4.672E-02	7.733E-02	6.807E-03	-0.396
SB-122		563.90	*	1.579E+00	3.124E+00	5.394E+00	5.491E-01	0.293
		692.80		3.128E+00	7.058E+01	1.122E+02	1.228E+01	0.028
I-123		159.00	*	-1.384E+01	7.058E+01	Half-Life	too short	
		528.96		-3.257E+02	7.058E+01	Half-Life	too short	
TE-123M		159.00	*	-2.034E-02	2.333E-02	3.812E-02	3.360E-03	-0.534
I-124		602.71	*	3.373E-01	8.989E-01	1.431E+00	1.511E-01	0.236
		722.78		-6.098E+00	6.957E+00	8.238E+00	8.878E-01	-0.740
		1325.50		-1.090E+01	4.117E+01	6.567E+01	5.337E+00	-0.166
SB-124		1376.25		5.303E+01	4.926E+01	9.354E+01	7.656E+00	0.567
		1509.49		8.751E+00	2.134E+01	3.814E+01	3.175E+00	0.229
		1691.02		1.328E+00	6.118E+00	1.052E+01	8.785E-01	0.126
		602.71		1.690E-02	4.504E-02	7.170E-02	7.572E-03	0.236
		645.85		-4.388E-01	6.120E-01	9.128E-01	1.035E-01	-0.481
		709.31		3.027E+00	3.370E+00	5.957E+00	6.467E-01	0.508
		713.82		-2.014E+00	2.093E+00	2.959E+00	4.056E-01	-0.681
		722.78		-4.429E-01	5.054E-01	5.984E-01	6.539E-02	-0.740
	+	968.20		1.500E+01	5.078E+00	9.008E+00	7.891E-01	1.665
		1045.16		-1.279E+00	2.622E+00	3.968E+00	3.436E-01	-0.322
		1325.50		-8.456E-01	3.194E+00	5.095E+00	4.141E-01	-0.166
		1368.21		1.601E-02	2.155E+00	3.610E+00	4.764E-01	0.004
SB-125		1436.60		-5.649E-01	4.629E+00	7.530E+00	6.220E-01	-0.075
		1691.02	*	2.276E-02	1.048E-01	1.802E-01	1.569E-02	0.126
		427.89	*	5.521E-02	9.525E-02	1.685E-01	1.459E-02	0.328
	+	463.38		4.280E-01	3.966E-01	6.177E-01	5.948E-02	0.693
		600.56		-5.896E-02	1.936E-01	3.072E-01	3.400E-02	-0.192
		635.90		1.299E-01	3.516E-01	5.944E-01	6.780E-02	0.218
		109.28	*	-6.294E-01	7.085E+00	1.121E+01	1.348E+00	-0.056
TE-125M		388.63		7.513E-02	2.220E-01	3.640E-01	2.915E-02	0.206
I-126		666.33	*	1.710E-02	2.316E-01	3.333E-01	3.678E-02	0.051
		753.82		1.850E+00	1.786E+00	3.215E+00	3.393E-01	0.576
SB-126		223.80		8.627E-01	3.601E+00	6.096E+00	5.354E-01	0.142
		278.60		2.028E+00	2.593E+00	4.072E+00	3.631E-01	0.498
	+	296.50		1.234E+01	2.844E+00	3.417E+00	3.050E-01	3.612
		414.70		-5.003E-02	8.382E-02	1.355E-01	1.124E-02	-0.369
		415.30		7.792E-02	7.053E+00	1.198E+01	9.948E-01	0.007
		555.20		-1.151E+00	4.839E+00	7.813E+00	7.882E-01	-0.147
		573.80		-8.795E-01	1.319E+00	2.026E+00	2.083E-01	-0.434
		593.00		-6.694E-01	1.141E+00	1.754E+00	1.837E-01	-0.382
		656.30		1.329E+00	4.428E+00	6.612E+00	7.276E-01	0.201
		666.33		7.161E-03	9.698E-02	1.396E-01	1.540E-02	0.051
		675.00		-1.073E+00	2.496E+00	3.843E+00	4.230E-01	-0.279
		695.00		-2.865E-03	9.796E-02	1.580E-01	1.727E-02	-0.018
		697.00		-1.748E-01	3.496E-01	5.331E-01	5.821E-02	-0.328
		720.50	*	5.221E-02	2.074E-01	3.039E-01	3.280E-02	0.172
		856.80		-2.002E-01	6.308E-01	1.021E+00	9.585E-02	-0.196
	989.30		-6.507E-02	1.547E+00	2.541E+00	2.222E-01	-0.026	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	1034.80			-8.424E+00	1.230E+01	1.841E+01	1.598E+00	-0.458
	1213.00			-4.537E+00	6.579E+00	9.706E+00	7.994E-01	-0.467
	61.10			1.024E+01	2.263E+01	3.562E+01	3.875E+00	0.287
	252.40			1.311E+00	4.659E+00	7.587E+00	3.200E+00	0.173
	290.80			-5.584E+00	2.751E+01	3.929E+01	4.591E+00	-0.142
	411.60			-1.663E+01	1.752E+01	2.498E+01	3.931E+00	-0.666
	444.90			-6.334E+00	1.157E+01	1.849E+01	2.379E+00	-0.342
	473.00			8.749E-01	2.251E+00	3.894E+00	5.236E-01	0.225
	543.00			-1.424E+01	2.166E+01	3.325E+01	5.135E+00	-0.428
	603.60			1.161E+01	1.653E+01	2.608E+01	3.691E+00	0.445
XE-127	685.20	*		4.627E-02	1.764E+00	2.868E+00	3.871E-01	0.016
	698.50			-6.711E+00	2.312E+01	3.620E+01	6.285E+00	-0.185
	722.20			-2.280E+01	4.714E+01	6.065E+01	7.978E+00	-0.376
	783.80			3.268E+00	5.964E+00	1.006E+01	1.395E+00	0.325
	57.60			8.286E-01	1.647E+00	2.804E+00	2.208E-01	0.296
	145.22			1.903E-01	6.072E-01	9.632E-01	9.541E-02	0.198
	172.10			1.587E-02	9.695E-02	1.665E-01	1.367E-02	0.095
	202.84	*		3.064E-02	4.146E-02	7.231E-02	6.214E-03	0.424
	374.96			1.016E-01	2.305E-01	3.809E-01	3.143E-02	0.267
	80.18			1.890E+00	3.124E+00	4.327E+00	3.846E-01	0.437
I-131	284.30			-1.489E-01	1.514E+00	2.458E+00	2.302E-01	-0.061
	364.48	*		-1.806E-02	1.174E-01	1.847E-01	1.644E-02	-0.098
	636.97			-3.778E-02	2.118E+00	3.451E+00	3.881E-01	-0.011
	722.89			-9.001E+00	1.040E+01	1.235E+01	1.337E+00	-0.729
TE-132	49.72			1.886E+00	3.620E+00	5.827E+00	6.364E-01	0.324
	111.76			1.514E+01	2.677E+01	4.385E+01	5.630E+00	0.345
	116.30			-2.430E+01	2.586E+01	3.831E+01	5.019E+00	-0.634
	228.16	*		1.092E-01	7.387E-01	1.241E+00	1.986E-01	0.088
BA-133	53.15			5.493E-01	6.856E-01	1.190E+00	9.662E-02	0.461
	79.62			-3.115E-01	8.366E-01	1.078E+00	1.652E-01	-0.289
	81.00			-2.833E-02	5.785E-02	8.444E-02	1.353E-02	-0.336
	276.40	+		4.503E-01	4.652E-01	6.068E-01	8.877E-02	0.742
I-133	302.84			3.584E-02	1.493E-01	2.221E-01	2.994E-02	0.161
	356.01	*		4.767E-03	5.402E-02	7.777E-02	1.022E-02	0.061
	383.85			1.560E-01	3.109E-01	5.170E-01	6.335E-02	0.302
	510.53	+		3.067E+00	3.109E-01	Half-Life	too short	
	529.87	*		5.954E-03	3.109E-01	Half-Life	too short	
	706.58			3.744E-02	3.109E-01	Half-Life	too short	
	856.28			-6.060E-01	3.109E-01	Half-Life	too short	
	875.33			1.729E-01	3.109E-01	Half-Life	too short	
	1236.41			3.179E+00	3.109E-01	Half-Life	too short	
	1298.22			-1.005E-02	3.109E-01	Half-Life	too short	
CS-134	475.35			-1.170E+00	2.201E+00	3.522E+00	3.218E-01	-0.332
	563.23			3.174E-01	4.433E-01	7.764E-01	7.952E-02	0.409
	569.32			2.797E-03	2.262E-01	3.611E-01	3.732E-02	0.008
	604.70			-5.796E-03	4.201E-02	5.919E-02	6.271E-03	-0.098
	795.84	*		5.027E-02	5.349E-02	9.510E-02	9.708E-03	0.529
	801.93			-2.993E-01	4.478E-01	6.996E-01	7.087E-02	-0.428
	1038.57			6.785E+00	4.823E+00	9.228E+00	8.003E-01	0.735

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-135		1167.94		-1.898E+00	3.480E+00	5.272E+00	4.356E-01	-0.360
		1365.15		-2.307E-01	1.452E+00	2.361E+00	2.026E-01	-0.098
		288.45		1.275E+11	1.452E+00	Half-Life	too short	
		417.63		2.306E+11	1.452E+00	Half-Life	too short	
		546.56		7.245E+10	1.452E+00	Half-Life	too short	
		836.80		4.311E+10	1.452E+00	Half-Life	too short	
		1038.76		3.325E+11	1.452E+00	Half-Life	too short	
		1124.00		-5.002E+10	1.452E+00	Half-Life	too short	
		1131.51		1.453E+10	1.452E+00	Half-Life	too short	
		1260.41	*	-3.833E+10	1.452E+00	Half-Life	too short	
		1457.56		7.798E+12	1.452E+00	Half-Life	too short	
		1678.03		-1.247E+11	1.452E+00	Half-Life	too short	
		1706.46		-4.207E+11	1.452E+00	Half-Life	too short	
		1791.20		3.021E+10	1.452E+00	Half-Life	too short	
CS-136		66.91		-6.691E-02	3.453E-01	5.218E-01	7.897E-02	-0.128
	+	86.29		4.131E+00	1.014E+00	1.283E+00	1.707E-01	3.219
		153.22		3.112E-01	5.510E-01	9.692E-01	9.901E-02	0.321
		163.89		-9.016E-02	9.473E-01	1.611E+00	1.512E-01	-0.056
		176.55		-2.938E-01	3.075E-01	4.932E-01	4.336E-02	-0.596
		273.65		-5.674E-02	6.218E-01	7.111E-01	6.742E-02	-0.080
		340.57		-5.649E-02	1.438E-01	1.969E-01	1.762E-02	-0.287
		818.51		-3.601E-02	9.062E-02	1.452E-01	1.439E-02	-0.248
		1048.07	*	-3.279E-02	1.312E-01	2.079E-01	1.875E-02	-0.158
		1235.34		9.386E-01	8.467E-01	1.516E+00	1.753E-01	0.619
CE-139		165.85	*	-1.019E-02	2.419E-02	4.040E-02	3.284E-03	-0.252
BA-140		162.64		5.719E-01	6.698E-01	1.187E+00	1.061E-01	0.482
		304.84		-4.737E-01	1.315E+00	2.067E+00	5.812E-01	-0.229
LA-140		423.70		2.842E-01	2.144E+00	3.667E+00	1.187E+00	0.077
		537.32	*	3.183E-02	3.153E-01	5.277E-01	1.767E-01	0.060
		328.77		4.148E-01	3.344E-01	5.832E-01	5.406E-02	0.711
		432.53		-1.147E+00	2.007E+00	3.205E+00	2.876E-01	-0.358
		487.03		9.507E-02	1.576E-01	2.774E-01	2.715E-02	0.343
		751.79		-2.105E+00	2.214E+00	3.091E+00	3.503E-01	-0.681
		815.85		1.327E-01	3.431E-01	6.062E-01	6.548E-02	0.219
		867.82		7.222E-01	1.566E+00	2.774E+00	2.679E-01	0.260
		919.63		-5.738E-01	3.689E+00	6.027E+00	6.486E-01	-0.095
		925.24		-7.345E-01	1.402E+00	2.168E+00	2.015E-01	-0.339
CE-141		1596.49	*	-1.515E-01	1.274E-01	1.559E-01	1.304E-02	-0.972
		145.44	*	9.382E-03	5.485E-02	8.628E-02	8.650E-03	0.109
CE-143		57.37		2.391E-04	5.485E-02	Half-Life	too short	
		231.56		-9.369E-04	5.485E-02	Half-Life	too short	
		293.26	*	5.183E-04	5.485E-02	Half-Life	too short	
	+	350.59		4.955E-02	5.485E-02	Half-Life	too short	
		490.36		2.206E-03	5.485E-02	Half-Life	too short	
		664.57		-9.155E-05	5.485E-02	Half-Life	too short	
		721.93		-1.385E-03	5.485E-02	Half-Life	too short	
CE-144		80.11		7.537E-01	1.323E+00	1.829E+00	1.614E-01	0.412
PM-144		133.54	*	-1.623E-01	1.700E-01	2.421E-01	4.076E-02	-0.670
		476.78		-1.434E-02	7.872E-02	1.300E-01	1.290E-02	-0.110

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		618.01	-8.166E-03	3.608E-02	5.756E-02	6.268E-03	-0.142
		696.49	* -1.296E-02	4.345E-02	6.799E-02	7.426E-03	-0.191
		778.57	-1.217E-01	3.056E+00	4.866E+00	5.029E-01	-0.025
PR-144		696.49	* -8.786E-01	2.946E+00	4.609E+00	5.033E-01	-0.191
		1489.15	7.418E+00	1.368E+01	2.518E+01	2.092E+00	0.295
PM-146		453.90	* 1.293E-02	4.848E-02	8.337E-02	9.096E-03	0.155
		633.02	9.040E-01	1.791E+00	3.017E+00	1.145E+00	0.300
		735.90	-4.490E-02	1.933E-01	2.901E-01	8.497E-02	-0.155
		747.13	6.299E-02	1.085E-01	1.861E-01	2.854E-02	0.338
ND-147	+	91.11	8.002E-01	2.475E-01	3.093E-01	3.155E-02	2.587
		319.41	2.500E+00	3.542E+00	6.036E+00	5.345E-01	0.414
		439.89	-1.303E+00	6.355E+00	1.054E+01	9.130E-01	-0.124
		531.02	* 2.165E-01	6.485E-01	1.111E+00	1.741E-01	0.195
PM-149		285.90	* 2.374E+01	1.185E+02	1.965E+02	3.088E+01	0.121
EU-152		121.78	-6.296E-04	5.507E-02	8.693E-02	1.084E-02	-0.007
		244.69	-2.810E-01	2.867E-01	4.413E-01	3.928E-02	-0.637
		344.27	* 6.098E-02	9.868E-02	1.665E-01	1.527E-02	0.366
		443.98	-2.921E-01	9.638E-01	1.582E+00	1.379E-01	-0.185
		778.89	4.317E-02	3.491E-01	5.665E-01	5.852E-02	0.076
		867.32	2.984E-03	9.074E-01	1.520E+00	1.404E-01	0.002
		964.01	5.143E-01	4.087E-01	6.925E-01	6.067E-02	0.743
		1085.78	-6.536E-02	4.276E-01	6.833E-01	5.849E-02	-0.096
		1112.02	1.781E-01	4.242E-01	6.926E-01	5.873E-02	0.257
		1407.95	1.611E-01	2.146E-01	4.022E-01	3.309E-02	0.400
GD-153		69.67	-2.882E-01	7.037E-01	1.136E+00	9.314E-02	-0.254
		83.37	1.553E+01	8.600E+00	1.487E+01	1.346E+00	1.044
		97.43	* -6.461E-02	5.402E-02	8.044E-02	7.946E-03	-0.803
		103.18	-7.468E-02	7.092E-02	1.055E-01	1.077E-02	-0.708
EU-154		123.07	-2.736E-02	4.020E-02	6.040E-02	8.224E-03	-0.453
		247.94	1.723E-01	3.434E-01	5.318E-01	6.221E-02	0.324
		591.81	-1.200E-01	7.270E-01	1.175E+00	1.537E-01	-0.102
		723.30	-2.229E-01	2.462E-01	2.912E-01	3.353E-02	-0.765
		756.87	2.772E-01	8.852E-01	1.476E+00	1.980E-01	0.188
		873.19	-1.463E-02	3.350E-01	5.574E-01	7.035E-02	-0.026
		996.32	-1.532E-01	4.177E-01	6.527E-01	1.163E-01	-0.235
		1004.76	-1.351E-01	2.633E-01	4.045E-01	4.740E-02	-0.334
		1274.45	* -2.672E-02	1.576E-01	2.473E-01	2.718E-02	-0.108
EU-155		48.70	2.622E-02	3.453E-01	5.419E-01	4.585E-02	0.048
		60.01	5.579E-01	1.604E+00	2.517E+00	1.966E-01	0.222
	+	86.54	3.625E-01	8.213E-02	1.229E-01	1.152E-02	2.950
		105.31	* 1.040E-01	7.773E-02	1.321E-01	1.377E-02	0.787
TB-160	+	86.79	9.770E-01	2.210E-01	3.511E-01	3.270E-02	2.782
		197.04	-1.628E-02	4.740E-01	7.974E-01	6.802E-02	-0.020
		215.65	7.604E-01	6.491E-01	1.153E+00	1.005E-01	0.660
	+	298.57	2.152E-01	1.413E-01	1.828E-01	1.631E-02	1.178
		879.36	* -2.475E-02	1.295E-01	2.099E-01	1.899E-02	-0.118
		962.29	3.039E-01	7.995E-01	1.262E+00	1.105E-01	0.241
		966.15	7.508E-01	3.595E-01	6.312E-01	5.530E-02	1.189
		1177.93	3.212E-02	4.695E-01	7.689E-01	6.336E-02	0.042

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M		1271.85		-5.694E-01	8.704E-01	1.247E+00	1.022E-01	-0.457
		80.57		-3.487E-02	1.793E-01	2.343E-01	2.074E-02	-0.149
	+	184.41		1.821E-01	6.535E-02	5.869E-02	4.916E-03	3.104
		280.46		-6.092E-03	8.237E-02	1.196E-01	1.067E-02	-0.051
		410.95		1.202E-01	2.816E-01	4.616E-01	3.803E-02	0.260
		711.68	*	-1.210E-02	7.357E-02	1.165E-01	1.263E-02	-0.104
TM-171		752.31		-1.736E-01	3.320E-01	4.965E-01	5.245E-02	-0.350
		810.29		-2.453E-02	6.442E-02	1.034E-01	1.033E-02	-0.237
		51.35		-5.638E+00	5.190E+00	8.173E+00	6.736E-01	-0.690
		52.39		9.309E-01	2.786E+00	4.744E+00	3.875E-01	0.196
		59.40		1.150E+00	8.459E+00	1.313E+01	1.024E+00	0.088
		66.72	*	1.061E-01	1.166E+01	1.783E+01	1.436E+00	0.006
LU-176	+	88.36		7.137E-01	1.615E-01	2.149E-01	2.025E-02	3.322
		201.83		-1.134E-02	2.505E-02	4.108E-02	3.526E-03	-0.276
		306.84	*	6.897E-03	2.510E-02	4.160E-02	3.704E-03	0.166
LU-177		401.10		1.404E+00	7.490E+00	1.207E+01	9.763E-01	0.116
		112.95		-8.344E-01	1.373E+00	2.100E+00	2.275E-01	-0.397
	+	208.36	*	2.483E+00	1.528E+00	2.003E+00	1.733E-01	1.239
LU-177M		52.97		2.769E-01	3.096E-01	5.396E-01	4.386E-02	0.513
		54.07		5.387E-02	1.762E-01	2.989E-01	2.409E-02	0.180
		61.30		5.643E-02	5.104E-01	7.894E-01	6.196E-02	0.071
		121.62		3.502E-02	2.833E-01	4.511E-01	5.164E-02	0.078
		147.16		-5.573E-02	5.628E-01	8.697E-01	8.484E-02	-0.064
		171.86		-1.076E-01	3.908E-01	6.557E-01	5.382E-02	-0.164
		218.09		-2.696E-01	7.349E-01	1.201E+00	1.050E-01	-0.225
	+	268.79		2.397E+00	1.451E+00	1.515E+00	1.354E-01	1.582
		319.02		1.201E-01	2.654E-01	4.442E-01	3.934E-02	0.270
		367.43		-2.054E-01	8.677E-01	1.353E+00	1.132E-01	-0.152
		413.65	*	-1.593E-01	1.950E-01	2.821E-01	2.335E-02	-0.565
	HF-181	56.28		-9.128E-03	2.353E-01	3.916E-01	3.109E-02	-0.023
		57.53		7.022E-02	1.378E-01	2.347E-01	1.849E-02	0.299
		65.20		8.618E-02	3.783E-01	5.861E-01	4.684E-02	0.147
		133.02		-2.046E-02	5.214E-02	7.959E-02	8.582E-03	-0.257
		136.25		8.409E-02	3.645E-01	5.687E-01	6.006E-02	0.148
		345.85		-6.617E-02	2.042E-01	3.191E-01	2.759E-02	-0.207
		482.03	*	3.203E-02	4.684E-02	8.299E-02	7.657E-03	0.386
W-181		56.28		-3.469E-03	9.119E-02	1.518E-01	1.205E-02	-0.023
		57.53		2.724E-02	5.344E-02	9.099E-02	7.168E-03	0.299
		65.20	*	3.315E-02	1.455E-01	2.255E-01	1.802E-02	0.147
TA-182		67.75		-9.946E-04	4.403E-02	7.249E-02	5.876E-03	-0.014
		100.10		9.800E-02	1.170E-01	1.960E-01	1.965E-02	0.500
		152.43		-1.931E-01	2.997E-01	4.446E-01	4.148E-02	-0.434
		222.10		-1.304E-02	2.960E-01	4.929E-01	4.323E-02	-0.026
		1001.68		1.002E+00	2.397E+00	4.164E+00	3.635E-01	0.241
	+	1121.28		4.903E-01	3.135E-01	4.326E-01	3.654E-02	1.133
RE-183		1189.05		1.641E-01	4.364E-01	7.377E-01	6.079E-02	0.223
		1221.42	*	-8.572E-02	2.723E-01	4.239E-01	3.489E-02	-0.202
		1230.97		-2.932E-01	6.555E-01	1.003E+00	8.250E-02	-0.292
		57.98		-3.212E-03	5.588E-02	9.277E-02	7.290E-03	-0.035

---- 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		4.145E-03	3.494E-02	5.419E-02	4.228E-03	0.076
		67.20		-1.158E-02	8.583E-02	1.301E-01	1.051E-02	-0.089
		162.32	*	1.085E-01	9.347E-02	1.676E-01	1.418E-02	0.648
	+	208.81		2.041E+00	1.256E+00	1.670E+00	1.445E-01	1.222
		291.72		-9.735E-02	9.719E-01	1.402E+00	1.252E-01	-0.069
		57.98		-1.177E-02	2.048E-01	3.399E-01	2.671E-02	-0.035
		59.32		1.517E-02	1.279E-01	1.984E-01	1.548E-02	0.076
		67.20		-4.241E-02	3.144E-01	4.767E-01	3.851E-02	-0.089
		161.27		2.334E-01	2.971E-01	5.258E-01	4.499E-02	0.444
		216.55		1.622E-01	2.321E-01	4.031E-01	3.517E-02	0.402
		252.85	*	5.754E-02	2.132E-01	3.494E-01	3.119E-02	0.165
		318.01		1.182E-01	4.638E-01	7.655E-01	6.783E-02	0.154
		792.07		-2.437E-01	1.207E+00	1.877E+00	1.914E-01	-0.130
		903.28		1.579E+00	1.154E+00	2.159E+00	1.889E-01	0.732
OS-185		920.93		2.956E-01	5.541E-01	9.798E-01	8.585E-02	0.302
		59.72		1.952E-02	9.542E-02	1.486E-01	1.160E-02	0.131
		61.14		2.530E-02	5.460E-02	8.606E-02	6.750E-03	0.294
		69.30		-4.937E-02	1.255E-01	2.029E-01	1.659E-02	-0.243
		592.07		-4.547E-01	2.930E+00	4.738E+00	4.956E-01	-0.096
		646.12	*	-3.423E-02	5.155E-02	7.743E-02	8.461E-03	-0.442
		717.42		5.362E-01	1.089E+00	1.853E+00	2.003E-01	0.289
		874.81		3.521E-01	6.013E-01	1.084E+00	9.890E-02	0.325
		880.27		-1.995E-02	7.399E-01	1.232E+00	1.113E-01	-0.016
		155.03	*	3.194E-02	1.380E-01	2.394E-01	2.181E-02	0.133
RE-188		477.96		-1.754E+00	3.691E+00	5.941E+00	5.449E-01	-0.295
		633.10		2.071E+00	3.615E+00	6.226E+00	6.738E-01	0.333
	+	63.58		8.054E+01	3.395E+01	3.890E+01	3.084E+00	2.070
		227.08		-2.350E+00	1.115E+01	1.833E+01	1.614E+00	-0.128
W-188		290.67	*	-2.038E+00	8.062E+00	1.146E+01	1.023E+00	-0.178
	+	295.96		9.039E-01	2.085E-01	3.000E-01	2.696E-02	3.013
		308.46		-1.416E-02	9.709E-02	1.558E-01	1.394E-02	-0.091
		316.51	*	-1.777E-02	3.504E-02	5.438E-02	4.833E-03	-0.327
IR-192		468.07		1.596E-02	8.145E-02	1.296E-01	1.248E-02	0.123
		604.41		6.816E-03	5.605E-01	8.077E-01	1.162E-01	0.008
		612.46		1.350E-01	8.561E-01	1.258E+00	1.473E-01	0.107
		65.12		1.685E-02	6.718E-02	1.042E-01	8.325E-03	0.162
		66.83		-8.291E-03	3.945E-02	5.958E-02	4.804E-03	-0.139
	+	75.70		1.129E+00	1.661E-01	2.326E-01	1.986E-02	4.856
		98.88	*	2.095E-01	1.506E-01	2.577E-01	2.567E-02	0.813
	+	129.76		5.441E+00	3.073E+00	3.928E+00	4.320E-01	1.385
		367.94	*	-1.398E-04	3.073E+00	Half-Life	too short	
		579.30		-4.234E-03	3.073E+00	Half-Life	too short	
TL-200		828.27		8.238E-04	3.073E+00	Half-Life	too short	
		1205.75		3.075E-03	3.073E+00	Half-Life	too short	
		68.90		-2.366E-01	2.447E+00	4.011E+00	3.273E-01	-0.059
		70.82		-2.329E-01	1.578E+00	2.381E+00	1.967E-01	-0.098
TL-201		80.30		5.460E-01	4.054E+00	5.431E+00	4.799E-01	0.101
		135.34		-1.486E+01	2.566E+01	3.789E+01	4.026E+00	-0.392
		167.43	*	3.905E-01	6.870E+00	1.176E+01	9.574E-01	0.033

---- 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		-1.805E-02	1.867E-01	3.061E-01	2.498E-02	-0.059
		70.82		-1.772E-02	1.201E-01	1.812E-01	1.497E-02	-0.098
		80.30		4.156E-02	3.086E-01	4.134E-01	3.653E-02	0.101
		439.56	*	-2.905E-02	7.606E-02	1.242E-01	1.075E-02	-0.234
HG-203		70.83		-7.098E-02	5.002E-01	7.550E-01	1.010E-01	-0.094
		72.87		1.878E-01	3.130E-01	4.881E-01	6.365E-02	0.385
		82.60		3.681E-01	6.034E-01	1.005E+00	1.406E-01	0.366
		279.20	*	1.618E-03	4.020E-02	5.909E-02	5.409E-03	0.027
BI-207		72.80		5.089E-02	9.012E-02	1.406E-01	1.176E-02	0.362
	+	74.97		6.242E-01	9.180E-02	1.403E-01	1.191E-02	4.450
		84.90		1.421E-01	1.084E-01	1.848E-01	1.695E-02	0.769
		569.67		3.914E-04	3.558E-02	5.684E-02	5.820E-03	0.007
		1063.62	*	2.767E-02	6.879E-02	1.183E-01	1.020E-02	0.234
		1770.23		-1.920E+00	9.590E-01	8.701E-01	7.230E-02	-2.206
TL-207		81.07		-6.189E-02	1.275E-01	1.866E-01	1.659E-02	-0.332
		83.78		1.850E-01	7.636E-02	1.334E-01	1.212E-02	1.387
		94.90		1.215E-01	1.481E-01	2.315E-01	2.256E-02	0.525
		122.32		-2.106E-01	1.315E+00	2.055E+00	2.456E-01	-0.102
		144.24		4.182E-01	5.944E-01	9.621E-01	1.046E-01	0.435
		154.21		9.852E-02	3.174E-01	5.524E-01	5.519E-02	0.178
	+	269.46		5.590E-01	3.384E-01	3.674E-01	3.347E-02	1.521
		323.87	*	-9.791E-02	6.837E-01	1.093E+00	1.945E-01	-0.090
	+	338.28		7.051E+00	1.890E+00	2.688E+00	3.328E-01	2.624
		445.03		-1.329E+00	2.258E+00	3.595E+00	4.373E-01	-0.370
PO-209		260.50		-3.094E+00	8.578E+00	1.376E+01	1.230E+00	-0.225
		262.80		1.088E+01	2.276E+01	3.876E+01	3.465E+00	0.281
		896.60	*	-3.242E+00	8.773E+00	1.395E+01	1.224E+00	-0.232
PB-211		404.84	*	1.434E-01	1.037E+00	1.656E+00	1.037E+00	0.087
		427.08		2.588E+00	2.687E+00	3.981E+00	2.473E+00	0.650
		831.96		3.270E-01	1.632E+00	2.774E+00	1.743E+00	0.118
BI-212	+	727.18	*	1.750E+00	6.712E-01	8.425E-01	1.002E-01	2.077
		785.46		3.308E+00	2.408E+00	4.365E+00	4.481E-01	0.758
		1620.62		2.193E+00	1.803E+00	3.581E+00	2.995E-01	0.612
PO-215		81.07		-6.189E-02	1.275E-01	1.866E-01	1.659E-02	-0.332
		83.78		1.850E-01	7.636E-02	1.334E-01	1.212E-02	1.387
		94.90		1.215E-01	1.481E-01	2.315E-01	2.256E-02	0.525
		122.32		-2.106E-01	1.315E+00	2.055E+00	2.456E-01	-0.102
		144.24		4.182E-01	5.944E-01	9.621E-01	1.046E-01	0.435
		154.21		9.852E-02	3.174E-01	5.524E-01	5.519E-02	0.178
	+	269.46		5.590E-01	3.384E-01	3.674E-01	3.347E-02	1.521
		323.87	*	-9.791E-02	6.837E-01	1.093E+00	1.945E-01	-0.090
	+	338.28		7.051E+00	1.890E+00	2.688E+00	3.328E-01	2.624
		445.03		-1.329E+00	2.258E+00	3.595E+00	4.373E-01	-0.370
RN-219		271.23		3.175E-01	2.779E-01	4.419E-01	4.674E-02	0.719
		401.81	*	-9.622E-03	4.687E-01	7.411E-01	1.092E-01	-0.013
RN-220		549.76	*	4.322E+00	2.831E+01	4.759E+01	4.773E+00	0.091
RA-223		81.07		-6.189E-02	1.275E-01	1.866E-01	1.659E-02	-0.332
		83.78		1.850E-01	7.636E-02	1.334E-01	1.212E-02	1.387
		94.90		1.215E-01	1.481E-01	2.315E-01	2.256E-02	0.525

---- 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		-2.106E-01	1.315E+00	2.055E+00	2.456E-01	-0.102
		144.24		4.182E-01	5.944E-01	9.621E-01	1.046E-01	0.435
		154.21		9.852E-02	3.174E-01	5.524E-01	5.519E-02	0.178
	+	269.46		5.590E-01	3.384E-01	3.674E-01	3.347E-02	1.521
		323.87	*	-9.791E-02	6.837E-01	1.093E+00	1.945E-01	-0.090
	+	338.28		7.051E+00	1.890E+00	2.688E+00	3.328E-01	2.624
		445.03		-1.329E+00	2.258E+00	3.595E+00	4.373E-01	-0.370
		79.80		1.781E-01	1.028E+00	1.381E+00	2.980E-01	0.129
		236.00		4.578E-02	2.278E-01	3.444E-01	4.276E-02	0.133
		256.20	*	-2.580E-01	3.508E-01	5.454E-01	8.467E-02	-0.473
		286.10		3.579E-01	1.475E+00	2.452E+00	3.287E-01	0.146
	+	299.80		2.716E+00	1.831E+00	2.479E+00	4.373E-01	1.096
TH-227		304.40		-9.589E-01	1.944E+00	2.866E+00	5.323E-01	-0.335
		334.20		-1.464E-01	2.463E+00	3.514E+00	6.842E-01	-0.042
		79.80		1.781E-01	1.028E+00	1.381E+00	3.018E-01	0.129
	+	94.00		9.058E+00	2.753E+00	2.482E+00	5.517E-01	3.649
		236.00		4.578E-02	2.278E-01	3.444E-01	3.880E-02	0.133
		256.20	*	-2.580E-01	3.517E-01	5.454E-01	9.933E-02	-0.473
		286.10		3.579E-01	1.517E+00	2.452E+00	2.462E+00	0.146
	+	299.80		2.716E+00	1.831E+00	2.479E+00	4.373E-01	1.096
		304.40		-9.589E-01	1.944E+00	2.866E+00	5.323E-01	-0.335
		334.20		-1.464E-01	2.463E+00	3.514E+00	6.842E-01	-0.042
		85.43		6.057E-02	1.030E-01	1.715E-01	1.579E-02	0.353
	+	88.47		4.108E-01	9.294E-02	1.212E-01	1.143E-02	3.390
PA-231		100.00		1.104E-01	1.212E-01	2.037E-01	2.041E-02	0.542
		193.63	*	8.063E-02	4.180E-01	7.129E-01	6.052E-02	0.113
		210.97		1.202E-01	6.858E-01	1.047E+00	9.078E-02	0.115
		283.67	*	-1.578E-01	1.398E+00	2.266E+00	3.480E-01	-0.070
	+	301.29		1.086E+00	7.196E-01	9.877E-01	1.230E-01	1.100
		81.07		-6.189E-02	1.275E-01	1.866E-01	1.659E-02	-0.332
		83.78		1.850E-01	7.636E-02	1.334E-01	1.212E-02	1.387
		94.90		1.215E-01	1.481E-01	2.315E-01	2.256E-02	0.525
		122.32		-2.106E-01	1.315E+00	2.055E+00	2.456E-01	-0.102
		144.24		4.182E-01	5.944E-01	9.621E-01	1.046E-01	0.435
		154.21		9.852E-02	3.174E-01	5.524E-01	5.519E-02	0.178
	+	269.46		5.590E-01	3.384E-01	3.674E-01	3.347E-02	1.521
U-231		323.87	*	-9.791E-02	6.837E-01	1.093E+00	1.945E-01	-0.090
	+	338.28		7.051E+00	1.890E+00	2.688E+00	3.328E-01	2.624
		445.03		-1.329E+00	2.258E+00	3.595E+00	4.373E-01	-0.370
		84.21		9.113E+00	3.846E+00	6.710E+00	6.117E-01	1.358
	+	92.29		1.048E+01	2.399E+00	3.355E+00	3.224E-01	3.124
		95.87	*	2.693E-01	8.358E-01	1.268E+00	1.242E-01	0.212
		108.00		8.569E-02	1.762E+00	2.813E+00	2.955E-01	0.030
	+	75.28		1.821E+01	3.539E+00	4.068E+00	6.219E-01	4.477
	+	86.59		5.891E+00	2.003E+00	2.029E+00	5.488E-01	2.903
	+	300.12		7.572E-01	5.056E-01	6.988E-01	1.052E-01	1.084
		311.98	*	-2.885E-02	6.412E-02	1.002E-01	9.143E-03	-0.288
		340.50		-2.465E-01	6.661E-01	9.114E-01	2.175E-01	-0.270
PA-233		398.62		-8.754E-02	2.389E+00	3.774E+00	9.984E-01	-0.023

---- 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		2.640E-01	1.749E+00	3.002E+00	6.432E-01	0.088
		63.00		2.313E+00	1.020E+00	1.118E+00	1.690E-01	2.069
		94.67		1.117E-01	1.126E-01	1.763E-01	2.327E-02	0.633
		98.44		6.131E-02	6.879E-02	1.012E-01	5.667E-02	0.606
		99.86		3.291E-01	3.076E-01	5.205E-01	5.212E-02	0.632
		111.00		-7.980E-02	1.417E-01	2.176E-01	2.971E-02	-0.367
		131.20		-6.888E-03	9.154E-02	1.315E-01	1.434E-02	-0.052
		152.70		-4.810E-02	2.823E-01	4.327E-01	7.530E-02	-0.111
		186.00		6.557E+00	3.067E+00	2.500E+00	7.789E-01	2.623
		226.40		-2.690E-01	3.492E-01	5.509E-01	7.339E-02	-0.488
		227.20		-3.859E-02	3.755E-01	6.218E-01	5.477E-02	-0.062
		248.90		4.601E-02	8.061E-01	1.200E+00	2.704E-01	0.038
		293.70		5.639E+00	1.551E+00	1.704E+00	2.974E-01	3.310
		369.80		1.905E-01	8.868E-01	1.442E+00	3.125E-01	0.132
		568.70		-1.072E+00	1.163E+00	1.662E+00	1.700E-01	-0.645
		569.50		1.409E-02	3.167E-01	5.078E-01	5.199E-02	0.028
		574.00		-6.569E-01	1.745E+00	2.768E+00	2.846E-01	-0.237
		699.00		1.552E-02	9.234E-01	1.496E+00	3.025E-01	0.010
		706.10		-4.324E-01	1.314E+00	2.022E+00	9.115E-01	-0.214
		733.00		1.243E-01	5.151E-01	7.518E-01	1.736E-01	0.165
		742.81		-6.854E-01	1.656E+00	2.411E+00	1.628E+00	-0.284
		796.30		1.646E-01	1.094E+00	1.778E+00	4.903E-01	0.093
		805.60		5.229E-01	1.138E+00	1.998E+00	6.209E-01	0.262
		819.60		-6.513E-01	1.444E+00	2.263E+00	8.674E-01	-0.288
		826.30		-8.022E-01	1.150E+00	1.694E+00	7.620E-01	-0.474
		831.60		3.477E-01	8.467E-01	1.468E+00	4.431E-01	0.237
		876.40		-2.536E-01	8.655E-01	1.317E+00	1.355E+00	-0.193
		880.51		1.363E-02	2.690E-01	4.532E-01	4.093E-02	0.030
		883.24		6.226E-02	2.862E-01	4.882E-01	3.284E-01	0.128
		899.00		-4.097E-01	9.636E-01	1.490E+00	6.515E-01	-0.275
		925.00		-6.801E-01	1.388E+00	2.159E+00	1.892E-01	-0.315
		926.50		-1.513E-01	1.997E-01	2.904E-01	7.355E-02	-0.521
		946.00	*	-4.347E-01	4.057E-01	5.709E-01	1.075E-01	-0.761
		949.00		-1.249E-01	5.855E-01	9.474E-01	8.305E-02	-0.132
		980.50		9.589E-01	1.030E+00	1.868E+00	1.634E-01	0.513
		1394.10		1.209E-01	1.506E+00	2.545E+00	1.655E+00	0.047
PA-234M		766.42		1.433E+01	1.642E+01	2.593E+01	1.325E+01	0.553
		1001.03	*	4.014E+00	5.279E+00	9.534E+00	9.592E-01	0.421
U-235	+	89.95		2.999E+00	1.280E+00	1.313E+00	4.085E-01	2.284
	+	93.35		2.818E+00	9.903E-01	9.343E-01	2.650E-01	3.016
		105.00		6.671E-01	7.847E-01	1.270E+00	3.859E-01	0.525
		143.76	*	1.118E-01	1.802E-01	2.896E-01	5.281E-02	0.386
		163.35		1.670E-01	4.002E-01	6.951E-01	1.318E-01	0.240
	+	185.71		2.428E-01	8.713E-02	9.234E-02	7.750E-03	2.630
		205.31		-2.784E-01	5.063E-01	7.290E-01	1.391E-01	-0.382
NP-236		94.67		8.624E-02	8.513E-02	1.339E-01	1.303E-02	0.644
		98.44		4.628E-02	4.529E-02	7.648E-02	7.597E-03	0.605
		111.00		-6.036E-02	1.071E-01	1.646E-01	1.762E-02	-0.367
		160.31	*	-5.287E-02	6.593E-02	1.082E-01	9.353E-03	-0.489

---- 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		1.376E-01	1.035E-01	1.769E-01	1.769E-02	0.778
		117.00	*	1.480E-02	1.391E-01	2.219E-01	2.466E-02	0.067
	+	209.75		1.595E+00	9.813E-01	1.326E+00	1.149E-01	1.202
		228.18		3.140E-02	1.971E-01	3.315E-01	2.922E-02	0.095
	+	277.60		2.197E-01	2.256E-01	3.012E-01	2.686E-02	0.730
AM-241		334.30		-8.744E-02	1.396E+00	1.990E+00	1.742E-01	-0.044
		59.54	*	8.212E-03	4.946E-02	7.690E-02	6.523E-03	0.107
CM-243		99.55		1.416E-01	1.065E-01	1.821E-01	1.820E-02	0.778
		103.76	*	-5.051E-02	6.624E-02	1.008E-01	1.032E-02	-0.501
		117.00		1.522E-02	1.431E-01	2.283E-01	2.537E-02	0.067
	+	209.75		1.572E+00	9.674E-01	1.308E+00	1.133E-01	1.202
		228.18		3.173E-02	1.991E-01	3.349E-01	2.952E-02	0.095
AM-246	+	277.60		2.215E-01	2.274E-01	3.036E-01	2.709E-02	0.730
		798.80		1.007E-02	1.627E-01	2.618E-01	2.650E-02	0.038
		1036.00		-2.286E-02	3.937E-01	6.430E-01	5.580E-02	-0.036
		1062.04		1.962E-01	2.865E-01	5.097E-01	4.395E-02	0.385
		1078.86	*	5.666E-02	1.861E-01	3.163E-01	2.714E-02	0.179
CM-247	+	278.00		9.113E-01	9.354E-01	1.243E+00	1.109E-01	0.733
		287.40		4.408E-01	1.216E+00	2.037E+00	1.818E-01	0.216
		402.60	*	-7.865E-03	4.217E-02	6.565E-02	5.326E-03	-0.120
CF-249		252.85		2.151E-01	7.969E-01	1.306E+00	1.166E-01	0.165
		333.44		2.765E-02	1.849E-01	2.700E-01	2.365E-02	0.102
		387.95	*	-2.280E-03	4.084E-02	6.456E-02	5.179E-03	-0.035
CF-251		176.60	*	-9.539E-02	1.008E-01	1.619E-01	1.339E-02	-0.589
		227.00		-9.456E-02	3.296E-01	5.394E-01	4.750E-02	-0.175
		285.00		-9.632E-02	1.667E+00	2.715E+00	2.423E-01	-0.035

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]G243624002      *
* Acquisition date   : 7-JAN-2010 13:52:07 Detector SN#                   *
* Detector ID        : GAM21 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 02:00:26.21 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G243624002 Analyst initials: MXR1                 *
* Batch Number       : 937704 Sample Quantity : 1.2059E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51 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	2.346E+01	2.898E+00	7.121E-01	0.000E+00
CD-109	3.066E+00	6.797E-01	7.689E-01	0.000E+00
SN-126	3.009E-01	6.671E-02	7.534E-02	0.000E+00
CS-135	4.751E-01	2.827E-01	2.312E-01	0.000E+00
BA-137M	2.339E-01	7.049E-02	6.711E-02	0.000E+00
CS-137	2.473E-01	7.453E-02	7.094E-02	0.000E+00
TL-208	5.050E-01	1.018E-01	6.529E-02	0.000E+00
BI-210	1.331E+00	6.727E-01	6.730E-01	0.000E+00
PB-210	1.331E+00	6.727E-01	6.730E-01	0.000E+00
PO-210	1.331E+00	6.707E-01	6.730E-01	0.000E+00
BI-211	3.850E+00	6.111E-01	3.590E-01	0.000E+00
PB-212	1.558E+00	1.874E-01	8.376E-02	0.000E+00
PO-212	1.558E+00	1.874E-01	8.376E-02	0.000E+00
BI-214	1.117E+00	2.139E-01	1.279E-01	0.000E+00
PB-214	1.339E+00	2.234E-01	1.253E-01	0.000E+00
PO-214	1.339E+00	2.234E-01	1.253E-01	0.000E+00
PO-216	1.558E+00	1.874E-01	8.376E-02	0.000E+00
PO-218	1.339E+00	2.234E-01	1.253E-01	0.000E+00
RA-224	4.701E+00	1.170E+00	9.558E-01	0.000E+00
RA-226	1.117E+00	2.139E-01	1.279E-01	0.000E+00
AC-228	1.669E+00	3.659E-01	2.620E-01	0.000E+00
RA-228	1.669E+00	3.659E-01	2.620E-01	0.000E+00
TH-228	1.583E+00	1.904E-01	8.511E-02	0.000E+00
TH-230	1.117E+00	2.139E-01	1.279E-01	0.000E+00
TH-232	1.669E+00	3.659E-01	2.620E-01	0.000E+00
TH-234	1.985E+00	8.756E-01	7.460E-01	0.000E+00
U-234	1.117E+00	2.139E-01	1.279E-01	0.000E+00
NP-237	8.836E-01	2.651E-01	2.204E-01	0.000E+00
U-238	1.985E+00	8.756E-01	7.460E-01	0.000E+00
AM-243	3.477E-01	5.012E-02	4.495E-02	0.000E+00
ANH-511	1.398E-01	7.752E-02	5.588E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-2.603E-01	3.825E-01	6.243E-01	0.000E+00	NOT IDENT.
NA-22	-5.469E-04	5.419E-02	8.885E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.632E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.611E-02	4.145E-02	7.871E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.018E-02	3.878E-02	0.000E+00	FAIL ABUN
SC-46	-2.639E-02	4.525E-02	7.159E-02	0.000E+00	FAIL ABUN
V-48	6.759E-02	9.982E-02	1.809E-01	0.000E+00	NOT IDENT.
CR-51	1.636E-01	3.856E-01	6.672E-01	0.000E+00	NOT IDENT.
MN-52	1.419E-02	3.153E-01	5.390E-01	0.000E+00	NOT IDENT.
MN-54	-2.427E-02	4.821E-02	7.887E-02	0.000E+00	NOT IDENT.
CO-56	-7.037E-02	4.277E-02	5.587E-02	0.000E+00	NOT IDENT.
CO-57	-4.105E-03	1.868E-02	3.050E-02	0.000E+00	NOT IDENT.
CO-58	-1.341E-02	4.143E-02	6.871E-02	0.000E+00	NOT IDENT.
FE-59	5.874E-02	1.131E-01	2.011E-01	0.000E+00	NOT IDENT.
CO-60	6.863E-03	4.015E-02	7.067E-02	0.000E+00	NOT IDENT.
ZN-65	-2.351E-02	1.309E-01	1.827E-01	0.000E+00	NOT IDENT.
GE-68	2.311E+00	1.603E+00	3.110E+00	0.000E+00	NOT IDENT.
AS-73	9.144E-02	1.614E-01	2.934E-01	0.000E+00	NOT IDENT.
AS-74	2.221E-02	1.009E-01	1.746E-01	0.000E+00	NOT IDENT.
SE-75	-1.119E-02	4.244E-02	6.323E-02	0.000E+00	NOT IDENT.
BR-77	-1.036E+01	1.461E+01	2.324E+01	0.000E+00	FAIL ABUN
SR-82	-1.011E-01	5.238E-01	8.413E-01	0.000E+00	NOT IDENT.
RB-83	-3.873E-02	7.265E-02	1.178E-01	0.000E+00	NOT IDENT.
RB-84	-2.933E-02	6.972E-02	1.120E-01	0.000E+00	NOT IDENT.
KR-85	4.607E+00	8.659E+00	1.388E+01	0.000E+00	NOT IDENT.
SR-85	2.386E-02	4.485E-02	7.187E-02	0.000E+00	NOT IDENT.
RB-86	1.293E+00	1.088E+00	2.056E+00	0.000E+00	NOT IDENT.
Y-88	3.399E-02	5.124E-02	9.676E-02	0.000E+00	NOT IDENT.
ZR-88	1.973E-03	3.322E-02	5.485E-02	0.000E+00	NOT IDENT.
Y-91	-2.021E+00	2.733E+01	4.481E+01	0.000E+00	NOT IDENT.
NB-94	1.371E-03	4.013E-02	6.689E-02	0.000E+00	NOT IDENT.
NB-95	2.780E-02	5.365E-02	9.296E-02	0.000E+00	NOT IDENT.
NB-95M	-4.080E-02	1.242E-01	1.877E-01	0.000E+00	NOT IDENT.
ZR-95	7.903E-03	8.611E-02	1.434E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.970E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.516E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-3.661E+00	1.705E+01	2.737E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	4.420E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.630E-02	2.585E-02	4.693E-02	0.000E+00	FAIL ABUN
RH-102	-1.429E-02	3.281E-02	5.472E-02	0.000E+00	NOT IDENT.
RU-103	2.768E-02	4.068E-02	7.432E-02	0.000E+00	FAIL ABUN
RH-106	3.850E-02	3.409E-01	5.810E-01	0.000E+00	FAIL ABUN
RU-106	3.850E-02	3.408E-01	5.810E-01	0.000E+00	FAIL ABUN
AG-108M	1.862E-02	3.015E-02	5.545E-02	0.000E+00	NOT IDENT.
AG-110M	-9.962E-06	4.154E-02	6.081E-02	0.000E+00	NOT IDENT.
IN-111	-1.020E+00	1.222E+00	1.729E+00	0.000E+00	NOT IDENT.
IN-113M	-3.705E-02	4.819E-02	7.334E-02	0.000E+00	NOT IDENT.
SN-113	-3.705E-02	4.819E-02	7.334E-02	0.000E+00	NOT IDENT.
IN-114M	-1.827E-01	1.649E-01	2.386E-01	0.000E+00	NOT IDENT.
CD-115	-9.811E+00	1.551E+01	2.483E+01	0.000E+00	NOT IDENT.
SN-117M	-3.065E-02	4.579E-02	7.924E-02	0.000E+00	NOT IDENT.
SB-122	1.579E+00	3.062E+00	5.445E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.555E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.034E-02	2.286E-02	3.906E-02	0.000E+00	NOT IDENT.
I-124	3.373E-01	8.809E-01	1.443E+00	0.000E+00	NOT IDENT.
SB-124	2.276E-02	1.027E-01	1.795E-01	0.000E+00	FAIL ABUN
SB-125	5.521E-02	9.335E-02	1.707E-01	0.000E+00	FAIL ABUN
TE-125M	-6.294E-01	6.943E+00	1.154E+01	0.000E+00	NOT IDENT.
I-126	1.710E-02	2.269E-01	3.358E-01	0.000E+00	NOT IDENT.
SB-126	5.221E-02	2.033E-01	3.059E-01	0.000E+00	FAIL ABUN
SB-127	4.627E-02	1.729E+00	2.889E+00	0.000E+00	NOT IDENT.
XE-127	3.064E-02	4.063E-02	7.388E-02	0.000E+00	NOT IDENT.
I-131	-1.806E-02	1.150E-01	1.874E-01	0.000E+00	NOT IDENT.
TE-132	1.092E-01	7.239E-01	1.267E+00	0.000E+00	NOT IDENT.
BA-133	4.767E-03	5.294E-02	7.894E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.367E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.027E-02	5.242E-02	9.559E-02	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.755E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.279E-02	1.286E-01	2.083E-01	0.000E+00	FAIL ABUN
CE-139	-1.019E-02	2.371E-02	4.138E-02	0.000E+00	NOT IDENT.
BA-140	3.183E-02	3.090E-01	5.330E-01	0.000E+00	NOT IDENT.
LA-140	-1.515E-01	1.249E-01	1.554E-01	0.000E+00	NOT IDENT.
CE-141	9.382E-03	5.375E-02	8.851E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.762E+02	0.000E+00	0.000E+00	SHORT HLIF

CE-144	-1.623E-01	1.666E-01	2.486E-01	0.000E+00	NOT IDENT.
PM-144	-1.296E-02	4.258E-02	6.845E-02	0.000E+00	NOT IDENT.
PR-144	-8.786E-01	2.887E+00	4.641E+00	0.000E+00	NOT IDENT.
PM-146	1.293E-02	4.751E-02	8.437E-02	0.000E+00	NOT IDENT.
ND-147	2.165E-01	6.356E-01	1.122E+00	0.000E+00	FAIL ABUN
PM-149	2.374E+01	1.162E+02	2.000E+02	0.000E+00	NOT IDENT.
EU-152	6.098E-02	9.671E-02	1.691E-01	0.000E+00	NOT IDENT.
GD-153	-6.461E-02	5.294E-02	8.290E-02	0.000E+00	NOT IDENT.
EU-154	-2.672E-02	1.545E-01	2.471E-01	0.000E+00	NOT IDENT.
EU-155	1.040E-01	7.618E-02	1.360E-01	0.000E+00	FAIL ABUN
TB-160	-2.475E-02	1.269E-01	2.107E-01	0.000E+00	FAIL ABUN
HO-166M	-1.210E-02	7.209E-02	1.172E-01	0.000E+00	FAIL ABUN
TM-171	1.061E-01	1.143E+01	1.845E+01	0.000E+00	NOT IDENT.
LU-176	6.897E-03	2.460E-02	4.230E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.497E+00	2.046E+00	0.000E+00	FAIL ABUN
LU-177M	-1.593E-01	1.911E-01	2.858E-01	0.000E+00	FAIL ABUN
HF-181	3.203E-02	4.590E-02	8.393E-02	0.000E+00	NOT IDENT.
W-181	3.315E-02	1.426E-01	2.334E-01	0.000E+00	NOT IDENT.
TA-182	-8.572E-02	2.669E-01	4.239E-01	0.000E+00	FAIL ABUN
RE-183	1.085E-01	9.160E-02	1.717E-01	0.000E+00	FAIL ABUN
RE-184	5.754E-02	2.090E-01	3.561E-01	0.000E+00	NOT IDENT.
OS-185	-3.423E-02	5.052E-02	7.803E-02	0.000E+00	NOT IDENT.
RE-188	3.194E-02	1.353E-01	2.453E-01	0.000E+00	NOT IDENT.
W-188	-2.038E+00	7.901E+00	1.166E+01	0.000E+00	FAIL ABUN
IR-192	-1.777E-02	3.434E-02	5.527E-02	0.000E+00	FAIL ABUN
AU-195	2.095E-01	1.475E-01	2.656E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.175E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	3.905E-01	6.733E+00	1.204E+01	0.000E+00	NOT IDENT.
TL-202	-2.905E-02	7.454E-02	1.258E-01	0.000E+00	NOT IDENT.
HG-203	1.618E-03	3.940E-02	6.015E-02	0.000E+00	NOT IDENT.
BI-207	2.767E-02	6.741E-02	1.185E-01	0.000E+00	FAIL ABUN
TL-207	-9.791E-02	6.700E-01	1.110E+00	0.000E+00	FAIL ABUN
PO-209	-3.242E+00	8.598E+00	1.400E+01	0.000E+00	NOT IDENT.
PB-211	1.434E-01	1.016E+00	1.679E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.578E-01	8.478E-01	0.000E+00	FAIL ABUN
PO-215	-9.791E-02	6.700E-01	1.110E+00	0.000E+00	FAIL ABUN
RN-219	-9.622E-03	4.593E-01	7.511E-01	0.000E+00	NOT IDENT.
RN-220	4.322E+00	2.774E+01	4.805E+01	0.000E+00	NOT IDENT.
RA-223	-9.791E-02	6.700E-01	1.110E+00	0.000E+00	FAIL ABUN
AC-227	-2.580E-01	3.438E-01	5.557E-01	0.000E+00	FAIL ABUN
TH-227	-2.580E-01	3.447E-01	5.557E-01	0.000E+00	FAIL ABUN
TH-229	8.063E-02	4.097E-01	7.288E-01	0.000E+00	FAIL ABUN
PA-231	-1.578E-01	1.370E+00	2.306E+00	0.000E+00	FAIL ABUN
TH-231	-9.791E-02	6.700E-01	1.110E+00	0.000E+00	FAIL ABUN
U-231	2.693E-01	8.191E-01	1.307E+00	0.000E+00	FAIL ABUN
PA-233	-2.885E-02	6.284E-02	1.018E-01	0.000E+00	FAIL ABUN
PA-234	-4.347E-01	3.976E-01	5.727E-01	0.000E+00	FAIL ABUN
PA-234M	4.014E+00	5.173E+00	9.556E+00	0.000E+00	NOT IDENT.
U-235	1.118E-01	1.766E-01	2.971E-01	0.000E+00	FAIL ABUN
NP-236	-5.287E-02	6.461E-02	1.108E-01	0.000E+00	NOT IDENT.
NP-239	1.480E-02	1.363E-01	2.282E-01	0.000E+00	FAIL ABUN
AM-241	8.212E-03	4.847E-02	7.970E-02	0.000E+00	NOT IDENT.
CM-243	-5.051E-02	6.491E-02	1.038E-01	0.000E+00	FAIL ABUN
AM-246	5.666E-02	1.823E-01	3.167E-01	0.000E+00	NOT IDENT.
CM-247	-7.865E-03	4.132E-02	6.653E-02	0.000E+00	FAIL ABUN
CF-249	-2.280E-03	4.003E-02	6.547E-02	0.000E+00	NOT IDENT.
CF-251	-9.539E-02	9.883E-02	1.657E-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]G243624002.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 13:52:07.
Sample ID          : G243624002      Sample quantity      : 1.20590E+02 GRAM
Detector name      : GAM21            Detector geometry   : CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time  : 0 02:00:26.21 0.4%
Energy tolerance   : 1.50000 keV      Analyst Initials   : MXR1
Abundance limit    : 75.00000          Sensitivity         : 5.00000
Batch ID           : 937704            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	580	10.67*	7.206E-01	2.346E+01	2.346E+01	12.60
CD-109	88.03	291	3.72*	8.135E+00	2.993E+00	3.066E+00	22.62
SN-126	64.28	198	9.60	8.180E+00	7.856E-01	7.856E-01	43.98
	86.94	291	8.90	8.135E+00	1.251E+00	1.251E+00	46.35
	87.57	291	37.00*	8.135E+00	3.009E-01	3.009E-01	22.62
CS-135	268.24	95	16.00*	3.909E+00	4.751E-01	4.751E-01	60.71
BA-137M	661.65	106	89.98*	1.563E+00	2.337E-01	2.339E-01	30.75
CS-137	661.65	106	85.12*	1.563E+00	2.470E-01	2.473E-01	30.75
TL-208	277.35	38	6.80	3.805E+00	4.556E-01	4.556E-01	103.03
	510.84	92	21.60	2.038E+00	6.472E-01	6.472E-01	57.20
	583.14	243	84.20*	1.778E+00	5.050E-01	5.050E-01	20.57
	860.37	-----	12.46	1.201E+00	-----	Line Not Found	-----
BI-210	46.50	127	4.05*	7.365E+00	1.330E+00	1.331E+00	51.56
PB-210	46.50	127	4.05*	7.365E+00	1.330E+00	1.331E+00	51.56
PO-210	46.50	127	4.05*	7.365E+00	1.330E+00	1.331E+00	51.41
BI-211	72.87	-----	1.27	8.278E+00	-----	Line Not Found	-----
	351.07	480	12.94*	2.998E+00	3.850E+00	3.850E+00	16.20
PB-212	74.81	610	10.70	8.275E+00	2.145E+00	2.145E+00	17.43
	77.11	876	18.00	8.264E+00	1.833E+00	1.833E+00	12.12
	87.30	291	8.00	8.135E+00	1.392E+00	1.392E+00	24.73
	238.63	980	44.60*	4.388E+00	1.558E+00	1.558E+00	12.27
	300.09	57	3.41	3.520E+00	1.465E+00	1.465E+00	65.93
PO-212	74.81	610	10.70	8.275E+00	2.145E+00	2.145E+00	17.43
	77.11	876	18.00	8.264E+00	1.833E+00	1.833E+00	12.12
	87.30	291	8.00	8.135E+00	1.392E+00	1.392E+00	24.73
	115.19	-----	0.60	7.423E+00	-----	Line Not Found	-----
	238.63	980	44.60*	4.388E+00	1.558E+00	1.558E+00	12.27
	300.09	57	3.41	3.520E+00	1.465E+00	1.465E+00	65.93
BI-214	609.31	282	46.30*	1.700E+00	1.117E+00	1.117E+00	19.54
	1120.29	46	15.10	9.296E-01	1.031E+00	1.031E+00	64.28
	1764.49	52	15.80	5.985E-01	1.701E+00	1.701E+00	31.49
PB-214	74.81	610	6.21	8.275E+00	3.696E+00	3.696E+00	16.47

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	77.11	876	10.50	8.264E+00	3.143E+00	3.143E+00	14.32
	87.30	291	4.67	8.135E+00	2.384E+00	2.384E+00	23.90
	241.98	259	7.49	4.338E+00	2.479E+00	2.479E+00	26.01
	295.21	259	19.20	3.578E+00	1.175E+00	1.175E+00	23.88
	351.92	480	37.20*	2.998E+00	1.339E+00	1.339E+00	17.02
	74.81	610	6.21	8.275E+00	3.696E+00	3.696E+00	16.47
	77.11	876	10.50	8.264E+00	3.143E+00	3.143E+00	14.32
	87.30	291	4.67	8.135E+00	2.384E+00	2.384E+00	23.90
	241.98	259	7.49	4.338E+00	2.479E+00	2.479E+00	26.01
	295.21	259	19.20	3.578E+00	1.175E+00	1.175E+00	23.88
PO-216	351.92	480	37.20*	2.998E+00	1.339E+00	1.339E+00	17.02
	74.81	610	10.70	8.275E+00	2.145E+00	2.145E+00	17.43
	77.11	876	18.00	8.264E+00	1.833E+00	1.833E+00	12.12
	87.30	291	8.00	8.135E+00	1.392E+00	1.392E+00	24.73
	238.63	980	44.60*	4.388E+00	1.558E+00	1.558E+00	12.27
PO-218	300.09	57	3.41	3.520E+00	1.465E+00	1.465E+00	65.93
	74.81	610	6.21	8.275E+00	3.696E+00	3.696E+00	16.47
	77.11	876	10.50	8.264E+00	3.143E+00	3.143E+00	14.32
	87.30	291	4.67	8.135E+00	2.384E+00	2.384E+00	23.90
	241.98	259	7.49	4.338E+00	2.479E+00	2.479E+00	26.01
RA-224	295.21	259	19.20	3.578E+00	1.175E+00	1.175E+00	23.88
	351.92	480	37.20*	2.998E+00	1.339E+00	1.339E+00	17.02
	240.98	259	3.95*	4.338E+00	4.701E+00	4.701E+00	25.39
	609.31	282	46.30*	1.700E+00	1.117E+00	1.117E+00	19.54
	1120.29	46	15.10	9.296E-01	1.031E+00	1.031E+00	64.28
AC-228	1764.49	52	15.80	5.985E-01	1.701E+00	1.701E+00	31.49
	338.32	193	11.40	3.122E+00	1.689E+00	1.689E+00	47.64
	911.07	169	27.70*	1.136E+00	1.669E+00	1.669E+00	22.37
	969.11	82	16.60	1.070E+00	1.441E+00	1.441E+00	40.20
	338.32	193	11.40	3.122E+00	1.689E+00	1.689E+00	47.64
RA-228	911.07	169	27.70*	1.136E+00	1.669E+00	1.669E+00	22.37
	969.11	82	16.60	1.070E+00	1.441E+00	1.441E+00	40.20
	74.81	610	10.70	8.275E+00	2.145E+00	2.179E+00	14.75
	77.11	876	18.00	8.264E+00	1.833E+00	1.863E+00	12.12
	87.30	291	8.00	8.135E+00	1.392E+00	1.414E+00	22.62
TH-228	238.63	980	44.60*	4.388E+00	1.558E+00	1.583E+00	12.27
	300.09	57	3.41	3.520E+00	1.465E+00	1.489E+00	88.05
	609.31	282	46.30*	1.700E+00	1.117E+00	1.117E+00	19.54
	1120.29	46	15.10	9.296E-01	1.031E+00	1.031E+00	64.28
	1764.49	52	15.80	5.985E-01	1.701E+00	1.701E+00	31.49
TH-232	338.32	193	11.40	3.122E+00	1.689E+00	1.689E+00	25.32
	911.07	169	27.70*	1.136E+00	1.669E+00	1.669E+00	22.37
	969.11	82	16.60	1.070E+00	1.441E+00	1.441E+00	40.20
	63.29	198	3.80*	8.180E+00	1.985E+00	1.985E+00	45.02
	92.38	327	5.41	8.022E+00	2.344E+00	2.344E+00	27.87
U-234	609.31	282	46.30*	1.700E+00	1.117E+00	1.117E+00	19.54
	1120.29	46	15.10	9.296E-01	1.031E+00	1.031E+00	64.28
	1764.49	52	15.80	5.985E-01	1.701E+00	1.701E+00	31.49
	86.50	291	12.60*	8.135E+00	8.836E-01	8.836E-01	30.62

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	95.87	-----	2.60	7.953E+00	-----	Line Not Found	-----
U-238	63.29	198	3.80*	8.180E+00	1.985E+00	1.985E+00	45.02
	92.38	327	5.41	8.022E+00	2.344E+00	2.344E+00	22.89
AM-243	74.67	610	66.00*	8.275E+00	3.477E-01	3.477E-01	14.71
	86.72	291	0.34	8.135E+00	3.313E+01	3.314E+01	22.62
	117.66	-----	0.55	7.349E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.613E+00	-----	Line Not Found	-----
ANH-511	511.00	92	100.00*	2.038E+00	1.398E-01	1.398E-01	56.59

Flag: "*" = Keyline

Total number of lines in spectrum 29
Number of unidentified lines 0
Number of lines tentatively identified by NID 29 100.00%

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	2.346E+01	2.346E+01	0.296E+01	12.60	
CD-109	464.00D	1.02	2.993E+00	3.066E+00	0.694E+00	22.62	
SN-126	1.00E+05Y	1.00	3.009E-01	3.009E-01	0.681E-01	22.62	
CS-135	2.30E+06Y	1.00	4.751E-01	4.751E-01	2.885E-01	60.71	
BA-137M	30.17Y	1.00	2.337E-01	2.339E-01	0.719E-01	30.75	
CS-137	30.17Y	1.00	2.470E-01	2.473E-01	0.760E-01	30.75	
TL-208	1.41E+10Y	1.00	5.050E-01	5.050E-01	1.039E-01	20.57	
BI-210	22.26Y	1.00	1.330E+00	1.331E+00	0.686E+00	51.56	
PB-210	22.26Y	1.00	1.330E+00	1.331E+00	0.686E+00	51.56	
PO-210	22.26Y	1.00	1.330E+00	1.331E+00	0.684E+00	51.41	
BI-211	7.04E+08Y	1.00	3.850E+00	3.850E+00	0.624E+00	16.20	
PB-212	1.41E+10Y	1.00	1.558E+00	1.558E+00	0.191E+00	12.27	
PO-212	1.41E+10Y	1.00	1.558E+00	1.558E+00	0.191E+00	12.27	
BI-214	1600.00Y	1.00	1.117E+00	1.117E+00	0.218E+00	19.54	
PB-214	1600.00Y	1.00	1.339E+00	1.339E+00	0.228E+00	17.02	
PO-214	1600.00Y	1.00	1.339E+00	1.339E+00	0.228E+00	17.02	
PO-216	1.41E+10Y	1.00	1.558E+00	1.558E+00	0.191E+00	12.27	
PO-218	1600.00Y	1.00	1.339E+00	1.339E+00	0.228E+00	17.02	
RA-224	1.41E+10Y	1.00	4.701E+00	4.701E+00	1.194E+00	25.39	
RA-226	1600.00Y	1.00	1.117E+00	1.117E+00	0.218E+00	19.54	
AC-228	1.41E+10Y	1.00	1.669E+00	1.669E+00	0.373E+00	22.37	
RA-228	1.41E+10Y	1.00	1.669E+00	1.669E+00	0.373E+00	22.37	
TH-228	1.91Y	1.02	1.558E+00	1.583E+00	0.194E+00	12.27	
TH-230	4.47E+09Y	1.00	1.117E+00	1.117E+00	0.218E+00	19.54	
TH-232	1.41E+10Y	1.00	1.669E+00	1.669E+00	0.373E+00	22.37	
TH-234	4.47E+09Y	1.00	1.985E+00	1.985E+00	0.893E+00	45.02	
U-234	4.47E+09Y	1.00	1.117E+00	1.117E+00	0.218E+00	19.54	
NP-237	2.14E+06Y	1.00	8.836E-01	8.836E-01	2.706E-01	30.62	
U-238	4.47E+09Y	1.00	1.985E+00	1.985E+00	0.893E+00	45.02	
AM-243	7380.00Y	1.00	3.477E-01	3.477E-01	0.511E-01	14.71	
ANH-511	1.00E+09Y	1.00	1.398E-01	1.398E-01	0.791E-01	56.59	

Total Activity : 6.582E+01 6.593E+01

Grand Total Activity : 6.582E+01 6.593E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G243624002

Page : 5
Acquisition date : 7-JAN-2010 13:52:07

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	89.98	210	305	1.04	179.89	163	28	2.92E-02	29.2	8.08E+00	T
0	128.58	93	210	0.85	257.07	254	7	1.30E-02	55.4	7.02E+00	T
0	185.46	230	318	1.20	370.78	365	13	3.19E-02	34.9	5.46E+00	T
0	208.88	82	182	0.66	417.59	414	8	1.14E-02	60.9	4.94E+00	T
0	463.15	32	62	0.75	926.00	922	8	4.41E-03	92.2	2.26E+00	T
0	727.60	94	38	2.13	1454.91	1447	17	1.31E-02	36.5	1.42E+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]G243624002.CNF;1  *
* Acquisition date   : 7-JAN-2010 13:52:07.  Detector SN#      :             *
* Detector ID        : GAM21                      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 02:00:26.21             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G243624002             Analyst initials: MXR1          *
* Batch Number       : 937704                 Sample Quantity : 1.20590E+02 GRAM  *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51.9MS Isotope         :             *
* MSD ID             :                      MSD Isotope         :             *
* LCS ID             : 1032-A                 LCS Isotope         :             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.346E+01	2.957E+00	7.137E-01	6.093E-02	32.877
CD-109	3.066E+00	6.936E-01	7.452E-01	7.012E-02	4.114
SN-126	3.009E-01	6.807E-02	7.301E-02	6.844E-03	4.121
CS-135	4.751E-01	2.885E-01	2.270E-01	2.325E-02	2.093
BA-137M	2.339E-01	7.193E-02	6.661E-02	7.357E-03	3.512
CS-137	2.473E-01	7.605E-02	7.042E-02	7.786E-03	3.512
TL-208	5.050E-01	1.039E-01	6.471E-02	7.049E-03	7.804
BI-210	1.331E+00	6.865E-01	6.475E-01	6.174E-02	2.056
PB-210	1.331E+00	6.865E-01	6.475E-01	6.174E-02	2.056
PO-210	1.331E+00	6.844E-01	6.475E-01	5.619E-02	2.056
BI-211	3.850E+00	6.236E-01	3.537E-01	3.192E-02	10.887
PB-212	1.558E+00	1.912E-01	8.213E-02	8.167E-03	18.974
PO-212	1.558E+00	1.912E-01	8.213E-02	8.167E-03	18.974
BI-214	1.117E+00	2.182E-01	1.269E-01	1.499E-02	8.804
PB-214	1.339E+00	2.279E-01	1.234E-01	1.285E-02	10.855
PO-214	1.339E+00	2.279E-01	1.234E-01	1.285E-02	10.855
PO-216	1.558E+00	1.912E-01	8.213E-02	8.167E-03	18.974
PO-218	1.339E+00	2.279E-01	1.234E-01	1.285E-02	10.855

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224	4.701E+00	1.194E+00	9.373E-01	8.329E-02	5.015
RA-226	1.117E+00	2.182E-01	1.269E-01	1.499E-02	8.804
AC-228	1.669E+00	3.734E-01	2.611E-01	2.964E-02	6.392
RA-228	1.669E+00	3.734E-01	2.611E-01	2.964E-02	6.392
TH-228	1.583E+00	1.943E-01	8.346E-02	8.299E-03	18.974
TH-230	1.117E+00	2.182E-01	1.269E-01	1.499E-02	8.804
TH-232	1.669E+00	3.734E-01	2.611E-01	2.964E-02	6.392
TH-234	1.985E+00	8.935E-01	7.203E-01	1.272E-01	2.755
U-234	1.117E+00	2.182E-01	1.269E-01	1.499E-02	8.804
NP-237	8.836E-01	2.706E-01	2.135E-01	4.832E-02	4.138
U-238	1.985E+00	8.935E-01	7.203E-01	1.272E-01	2.755
AM-243	3.477E-01	5.114E-02	4.348E-02	3.685E-03	7.997
ANH-511	1.398E-01	7.910E-02	5.530E-02	5.301E-03	2.528

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.603E-01		3.903E-01	6.172E-01	6.048E-02	-0.422
NA-22	-5.469E-04		5.530E-02	8.890E-02	7.293E-03	-0.006
NA-24	-4.060E-01		1.343E+00	Half-Life too short		
AL-26	2.611E-02		4.230E-02	7.909E-02	6.546E-03	0.330
TI-44	3.383E-01	+	4.100E-02	3.753E-02	3.268E-03	9.014
SC-46	-2.639E-02		4.617E-02	7.132E-02	6.342E-03	-0.370
V-48	6.759E-02		1.019E-01	1.805E-01	1.579E-02	0.374
CR-51	1.636E-01		3.934E-01	6.565E-01	6.103E-02	0.249
MN-52	1.419E-02		3.217E-01	5.401E-01	4.460E-02	0.026
MN-54	-2.427E-02		4.919E-02	7.851E-02	7.609E-03	-0.309
CO-56	-7.037E-02		4.365E-02	5.562E-02	5.302E-03	-1.265
CO-57	-4.105E-03		1.906E-02	2.968E-02	3.409E-03	-0.138
CO-58	-1.341E-02		4.228E-02	6.836E-02	6.841E-03	-0.196
FE-59	5.874E-02		1.154E-01	2.009E-01	1.854E-02	0.292
CO-60	6.863E-03		4.097E-02	7.074E-02	5.742E-03	0.097
ZN-65	-2.351E-02		1.335E-01	1.825E-01	1.547E-02	-0.129
GE-68	2.311E+00		1.636E+00	3.105E+00	2.666E-01	0.744
AS-73	9.144E-02		1.647E-01	2.827E-01	2.289E-02	0.323
AS-74	2.221E-02		1.030E-01	1.731E-01	1.817E-02	0.128
SE-75	-1.119E-02		4.331E-02	6.208E-02	5.573E-03	-0.180
BR-77	-1.036E+01		1.491E+01	2.300E+01	2.232E+00	-0.450
SR-82	-1.011E-01		5.345E-01	8.367E-01	8.661E-02	-0.121
RB-83	-3.873E-02		7.413E-02	1.166E-01	1.131E-02	-0.332
RB-84	-2.933E-02		7.114E-02	1.115E-01	1.006E-02	-0.263
KR-85	4.607E+00		8.836E+00	1.373E+01	1.321E+00	0.335
SR-85	2.386E-02		4.576E-02	7.112E-02	6.844E-03	0.335
RB-86	1.293E+00		1.110E+00	2.053E+00	1.763E-01	0.630
Y-88	3.399E-02		5.229E-02	9.725E-02	8.029E-03	0.350
ZR-88	1.973E-03		3.390E-02	5.410E-02	4.310E-03	0.036
Y-91	-2.021E+00		2.788E+01	4.480E+01	3.691E+00	-0.045

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-94	1.371E-03		4.095E-02	6.644E-02	7.236E-03	0.021
NB-95	2.780E-02		5.474E-02	9.243E-02	9.660E-03	0.301
NB-95M	-4.080E-02		1.267E-01	1.840E-01	1.854E-02	-0.222
ZR-95	7.903E-03		8.787E-02	1.425E-01	1.605E-02	0.055
NB-97	-5.081E-03		1.515E-01	Half-Life too short		
ZR-97	1.003E+01		2.814E+00	Half-Life too short		
MO-99	-3.661E+00		1.740E+01	2.721E+01	4.470E+00	-0.135
TC-99M	1.637E+11		2.255E+11	Half-Life too short		
RH-101	1.630E-02		2.638E-02	4.592E-02	3.922E-03	0.355
RH-102	-1.429E-02		3.348E-02	5.409E-02	4.942E-03	-0.264
RU-103	2.768E-02		4.151E-02	7.352E-02	1.078E-02	0.376
RH-106	3.850E-02		3.478E-01	5.763E-01	8.532E-02	0.067
RU-106	3.850E-02		3.478E-01	5.763E-01	6.183E-02	0.067
AG-108M	1.862E-02		3.076E-02	5.476E-02	4.882E-03	0.340
AG-110M	-9.962E-06		4.239E-02	6.036E-02	6.770E-03	0.000
IN-111	-1.020E+00		1.247E+00	1.696E+00	1.510E-01	-0.601
IN-113M	-3.705E-02		4.917E-02	7.234E-02	5.957E-03	-0.512
SN-113	-3.705E-02		4.917E-02	7.234E-02	5.957E-03	-0.512
IN-114M	-1.827E-01		1.682E-01	2.334E-01	1.972E-02	-0.783
CD-115	-9.811E+00		1.583E+01	2.458E+01	2.406E+00	-0.399
SN-117M	-3.065E-02		4.672E-02	7.733E-02	6.807E-03	-0.396
SB-122	1.579E+00		3.124E+00	5.394E+00	5.491E-01	0.293
I-123	-1.384E+01		7.933E+00	Half-Life too short		
TE-123M	-2.034E-02		2.333E-02	3.812E-02	3.360E-03	-0.534
I-124	3.373E-01		8.989E-01	1.431E+00	1.511E-01	0.236
SB-124	2.276E-02		1.048E-01	1.802E-01	1.569E-02	0.126
SB-125	5.521E-02		9.525E-02	1.685E-01	1.459E-02	0.328
TE-125M	-6.294E-01		7.085E+00	1.121E+01	1.348E+00	-0.056
I-126	1.710E-02		2.316E-01	3.333E-01	3.678E-02	0.051
SB-126	5.221E-02		2.074E-01	3.039E-01	3.280E-02	0.172
SB-127	4.627E-02		1.764E+00	2.868E+00	3.871E-01	0.016
XE-127	3.064E-02		4.146E-02	7.231E-02	6.214E-03	0.424
I-131	-1.806E-02		1.174E-01	1.847E-01	1.644E-02	-0.098
TE-132	1.092E-01		7.387E-01	1.241E+00	1.986E-01	0.088
BA-133	4.767E-03		5.402E-02	7.777E-02	1.022E-02	0.061
I-133	5.954E-03		6.975E-03	Half-Life too short		
CS-134	5.027E-02		5.349E-02	9.510E-02	9.708E-03	0.529
I-135	-3.833E+10		4.467E+10	Half-Life too short		
CS-136	-3.279E-02		1.312E-01	2.079E-01	1.875E-02	-0.158
CE-139	-1.019E-02		2.419E-02	4.040E-02	3.284E-03	-0.252
BA-140	3.183E-02		3.153E-01	5.277E-01	1.767E-01	0.060
LA-140	-1.515E-01		1.274E-01	1.559E-01	1.304E-02	-0.972
CE-141	9.382E-03		5.485E-02	8.628E-02	8.650E-03	0.109
CE-143	5.183E-04		1.409E-04	Half-Life too short		
CE-144	-1.623E-01		1.700E-01	2.421E-01	4.076E-02	-0.670
PM-144	-1.296E-02		4.345E-02	6.799E-02	7.426E-03	-0.191
PR-144	-8.786E-01		2.946E+00	4.609E+00	5.033E-01	-0.191
PM-146	1.293E-02		4.848E-02	8.337E-02	9.096E-03	0.155

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	2.165E-01		6.485E-01	1.111E+00	1.741E-01	0.195
PM-149	2.374E+01		1.185E+02	1.965E+02	3.088E+01	0.121
EU-152	6.098E-02		9.868E-02	1.665E-01	1.527E-02	0.366
GD-153	-6.461E-02		5.402E-02	8.044E-02	7.946E-03	-0.803
EU-154	-2.672E-02		1.576E-01	2.473E-01	2.718E-02	-0.108
EU-155	1.040E-01		7.773E-02	1.321E-01	1.377E-02	0.787
TB-160	-2.475E-02		1.295E-01	2.099E-01	1.899E-02	-0.118
HO-166M	-1.210E-02		7.357E-02	1.165E-01	1.263E-02	-0.104
TM-171	1.061E-01		1.166E+01	1.783E+01	1.436E+00	0.006
LU-176	6.897E-03		2.510E-02	4.160E-02	3.704E-03	0.166
LU-177	2.483E+00	+	1.528E+00	2.003E+00	1.733E-01	1.239
LU-177M	-1.593E-01		1.950E-01	2.821E-01	2.335E-02	-0.565
HF-181	3.203E-02		4.684E-02	8.299E-02	7.657E-03	0.386
W-181	3.315E-02		1.455E-01	2.255E-01	1.802E-02	0.147
TA-182	-8.572E-02		2.723E-01	4.239E-01	3.489E-02	-0.202
RE-183	1.085E-01		9.347E-02	1.676E-01	1.418E-02	0.648
RE-184	5.754E-02		2.132E-01	3.494E-01	3.119E-02	0.165
OS-185	-3.423E-02		5.155E-02	7.743E-02	8.461E-03	-0.442
RE-188	3.194E-02		1.380E-01	2.394E-01	2.181E-02	0.133
W-188	-2.038E+00		8.062E+00	1.146E+01	1.023E+00	-0.178
IR-192	-1.777E-02		3.504E-02	5.438E-02	4.833E-03	-0.327
AU-195	2.095E-01		1.506E-01	2.577E-01	2.567E-02	0.813
TL-200	-1.398E-04		4.171E-04	Half-Life too short		
TL-201	3.905E-01		6.870E+00	1.176E+01	9.574E-01	0.033
TL-202	-2.905E-02		7.606E-02	1.242E-01	1.075E-02	-0.234
HG-203	1.618E-03		4.020E-02	5.909E-02	5.409E-03	0.027
BI-207	2.767E-02		6.879E-02	1.183E-01	1.020E-02	0.234
TL-207	-9.791E-02		6.837E-01	1.093E+00	1.945E-01	-0.090
PO-209	-3.242E+00		8.773E+00	1.395E+01	1.224E+00	-0.232
PB-211	1.434E-01		1.037E+00	1.656E+00	1.037E+00	0.087
BI-212	1.750E+00	+	6.712E-01	8.425E-01	1.002E-01	2.077
PO-215	-9.791E-02		6.837E-01	1.093E+00	1.945E-01	-0.090
RN-219	-9.622E-03		4.687E-01	7.411E-01	1.092E-01	-0.013
RN-220	4.322E+00		2.831E+01	4.759E+01	4.773E+00	0.091
RA-223	-9.791E-02		6.837E-01	1.093E+00	1.945E-01	-0.090
AC-227	-2.580E-01		3.508E-01	5.454E-01	8.467E-02	-0.473
TH-227	-2.580E-01		3.517E-01	5.454E-01	9.933E-02	-0.473
TH-229	8.063E-02		4.180E-01	7.129E-01	6.052E-02	0.113
PA-231	-1.578E-01		1.398E+00	2.266E+00	3.480E-01	-0.070
TH-231	-9.791E-02		6.837E-01	1.093E+00	1.945E-01	-0.090
U-231	2.693E-01		8.358E-01	1.268E+00	1.242E-01	0.212
PA-233	-2.885E-02		6.412E-02	1.002E-01	9.143E-03	-0.288
PA-234	-4.347E-01		4.057E-01	5.709E-01	1.075E-01	-0.761
PA-234M	4.014E+00		5.279E+00	9.534E+00	9.592E-01	0.421
U-235	1.118E-01		1.802E-01	2.896E-01	5.281E-02	0.386
NP-236	-5.287E-02		6.593E-02	1.082E-01	9.353E-03	-0.489
NP-239	1.480E-02		1.391E-01	2.219E-01	2.466E-02	0.067
AM-241	8.212E-03		4.946E-02	7.690E-02	6.523E-03	0.107

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-5.051E-02		6.624E-02	1.008E-01	1.032E-02	-0.501
AM-246	5.666E-02		1.861E-01	3.163E-01	2.714E-02	0.179
CM-247	-7.865E-03		4.217E-02	6.565E-02	5.326E-03	-0.120
CF-249	-2.280E-03		4.084E-02	6.456E-02	5.179E-03	-0.035
CF-251	-9.539E-02		1.008E-01	1.619E-01	1.339E-02	-0.589

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]G243624002          *
* Acquisition date   : 7-JAN-2010 13:52:07 Detector SN#                   *
* Detector ID        : GAM21 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 02:00:26.21 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID         *
* Sample ID          : G243624002 Analyst initials: MXR1                  *
* Batch Number       : 937704 Sample Quantity : 1.2059E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*                                     *                                       *
* CALIB. DATE/TIME   : 28-JUL-2009 10:09:51 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	2.346E+01	2.898E+00	3.562E-01	1.479E+00
CD-109	3.066E+00	6.797E-01	3.847E-01	3.468E-01
SN-126	3.009E-01	6.671E-02	3.769E-02	3.404E-02
CS-135	4.751E-01	2.827E-01	1.157E-01	1.442E-01
BA-137M	2.339E-01	7.049E-02	3.357E-02	3.597E-02
CS-137	2.473E-01	7.453E-02	3.549E-02	3.802E-02
TL-208	5.050E-01	1.018E-01	3.266E-02	5.194E-02
BI-210	1.331E+00	6.727E-01	3.367E-01	3.432E-01
PB-210	1.331E+00	6.727E-01	3.367E-01	3.432E-01
PO-210	1.331E+00	6.707E-01	3.367E-01	3.422E-01
BI-211	3.850E+00	6.111E-01	1.796E-01	3.118E-01
PB-212	1.558E+00	1.874E-01	4.190E-02	9.562E-02
PO-212	1.558E+00	1.874E-01	4.190E-02	9.562E-02
BI-214	1.117E+00	2.139E-01	6.400E-02	1.091E-01
PB-214	1.339E+00	2.234E-01	6.266E-02	1.140E-01
PO-214	1.339E+00	2.234E-01	6.266E-02	1.140E-01
PO-216	1.558E+00	1.874E-01	4.190E-02	9.562E-02
PO-218	1.339E+00	2.234E-01	6.266E-02	1.140E-01
RA-224	4.701E+00	1.170E+00	4.782E-01	5.969E-01
RA-226	1.117E+00	2.139E-01	6.400E-02	1.091E-01
AC-228	1.669E+00	3.659E-01	1.311E-01	1.867E-01
RA-228	1.669E+00	3.659E-01	1.311E-01	1.867E-01
TH-228	1.583E+00	1.904E-01	4.258E-02	9.716E-02
TH-230	1.117E+00	2.139E-01	6.400E-02	1.091E-01
TH-232	1.669E+00	3.659E-01	1.311E-01	1.867E-01
TH-234	1.985E+00	8.756E-01	3.732E-01	4.467E-01
U-234	1.117E+00	2.139E-01	6.400E-02	1.091E-01
NP-237	8.836E-01	2.651E-01	1.103E-01	1.353E-01
U-238	1.985E+00	8.756E-01	3.732E-01	4.467E-01
AM-243	3.477E-01	5.012E-02	2.249E-02	2.557E-02
ANH-511	1.398E-01	7.752E-02	2.796E-02	3.955E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-2.603E-01	3.825E-01	3.123E-01	1.951E-01 NOT IDENT.
NA-22	-5.469E-04	5.419E-02	4.445E-02	2.765E-02 NOT IDENT.
NA-24	-4.060E+05	2.632E+06	0.000E+00	1.343E+06 SHORT HLIF
AL-26	2.611E-02	4.145E-02	3.938E-02	2.115E-02 NOT IDENT.
TI-44	3.383E-01	4.018E-02	1.940E-02	2.050E-02 FAIL ABUN
SC-46	-2.639E-02	4.525E-02	3.582E-02	2.308E-02 FAIL ABUN
V-48	6.759E-02	9.982E-02	9.052E-02	5.093E-02 NOT IDENT.
CR-51	1.636E-01	3.856E-01	3.338E-01	1.967E-01 NOT IDENT.
MN-52	1.419E-02	3.153E-01	2.696E-01	1.609E-01 NOT IDENT.
MN-54	-2.427E-02	4.821E-02	3.946E-02	2.460E-02 NOT IDENT.
CO-56	-7.037E-02	4.277E-02	2.795E-02	2.182E-02 NOT IDENT.
CO-57	-4.105E-03	1.868E-02	1.526E-02	9.531E-03 NOT IDENT.
CO-58	-1.341E-02	4.143E-02	3.437E-02	2.114E-02 NOT IDENT.
FE-59	5.874E-02	1.131E-01	1.006E-01	5.772E-02 NOT IDENT.
CO-60	6.863E-03	4.015E-02	3.535E-02	2.048E-02 NOT IDENT.
ZN-65	-2.351E-02	1.309E-01	9.141E-02	6.676E-02 NOT IDENT.
GE-68	2.311E+00	1.603E+00	1.556E+00	8.180E-01 NOT IDENT.
AS-73	9.144E-02	1.614E-01	1.468E-01	8.233E-02 NOT IDENT.
AS-74	2.221E-02	1.009E-01	8.734E-02	5.148E-02 NOT IDENT.
SE-75	-1.119E-02	4.244E-02	3.164E-02	2.165E-02 NOT IDENT.
BR-77	-1.036E+01	1.461E+01	1.163E+01	7.456E+00 FAIL ABUN
SR-82	-1.011E-01	5.238E-01	4.209E-01	2.672E-01 NOT IDENT.
RB-83	-3.873E-02	7.265E-02	5.895E-02	3.706E-02 NOT IDENT.
RB-84	-2.933E-02	6.972E-02	5.601E-02	3.557E-02 NOT IDENT.
KR-85	4.607E+00	8.659E+00	6.943E+00	4.418E+00 NOT IDENT.
SR-85	2.386E-02	4.485E-02	3.596E-02	2.288E-02 NOT IDENT.
RB-86	1.293E+00	1.088E+00	1.029E+00	5.549E-01 NOT IDENT.
Y-88	3.399E-02	5.124E-02	4.841E-02	2.614E-02 NOT IDENT.
ZR-88	1.973E-03	3.322E-02	2.744E-02	1.695E-02 NOT IDENT.
Y-91	-2.021E+00	2.733E+01	2.242E+01	1.394E+01 NOT IDENT.
NB-94	1.371E-03	4.013E-02	3.346E-02	2.047E-02 NOT IDENT.
NB-95	2.780E-02	5.365E-02	4.651E-02	2.737E-02 NOT IDENT.
NB-95M	-4.080E-02	1.242E-01	9.389E-02	6.337E-02 NOT IDENT.
ZR-95	7.903E-03	8.611E-02	7.173E-02	4.393E-02 NOT IDENT.
NB-97	-5.081E+03	2.970E+05	0.000E+00	1.515E+05 SHORT HLIF
ZR-97	1.003E+07	5.516E+06	0.000E+00	2.814E+06 SHORT HLIF
MO-99	-3.661E+00	1.705E+01	1.369E+01	8.699E+00 NOT IDENT.
TC-99M	1.637E+17	4.420E+17	0.000E+00	0.000E+00 SHORT HLIF
RH-101	1.630E-02	2.585E-02	2.348E-02	1.319E-02 FAIL ABUN
RH-102	-1.429E-02	3.281E-02	2.737E-02	1.674E-02 NOT IDENT.
RU-103	2.768E-02	4.068E-02	3.718E-02	2.075E-02 FAIL ABUN
RH-106	3.850E-02	3.409E-01	2.907E-01	1.739E-01 FAIL ABUN
RU-106	3.850E-02	3.408E-01	2.907E-01	1.739E-01 FAIL ABUN
AG-108M	1.862E-02	3.015E-02	2.774E-02	1.538E-02 NOT IDENT.
AG-110M	-9.962E-06	4.154E-02	3.042E-02	2.119E-02 NOT IDENT.
IN-111	-1.020E+00	1.222E+00	8.651E-01	6.233E-01 NOT IDENT.
IN-113M	-3.705E-02	4.819E-02	3.669E-02	2.459E-02 NOT IDENT.
SN-113	-3.705E-02	4.819E-02	3.669E-02	2.459E-02 NOT IDENT.
IN-114M	-1.827E-01	1.649E-01	1.194E-01	8.411E-02 NOT IDENT.
CD-115	-9.811E+00	1.551E+01	1.242E+01	7.915E+00 NOT IDENT.
SN-117M	-3.065E-02	4.579E-02	3.964E-02	2.336E-02 NOT IDENT.
SB-122	1.579E+00	3.062E+00	2.724E+00	1.562E+00 NOT IDENT.
I-123	-1.384E+07	1.555E+07	0.000E+00	7.933E+06 SHORT HLIF
TE-123M	-2.034E-02	2.286E-02	1.954E-02	1.166E-02 NOT IDENT.
I-124	3.373E-01	8.809E-01	7.221E-01	4.495E-01 NOT IDENT.
SB-124	2.276E-02	1.027E-01	8.978E-02	5.241E-02 FAIL ABUN
SB-125	5.521E-02	9.335E-02	8.539E-02	4.763E-02 FAIL ABUN
TE-125M	-6.294E-01	6.943E+00	5.775E+00	3.542E+00 NOT IDENT.
I-126	1.710E-02	2.269E-01	1.680E-01	1.158E-01 NOT IDENT.
SB-126	5.221E-02	2.033E-01	1.530E-01	1.037E-01 FAIL ABUN
SB-127	4.627E-02	1.729E+00	1.445E+00	8.820E-01 NOT IDENT.
XE-127	3.064E-02	4.063E-02	3.696E-02	2.073E-02 NOT IDENT.
I-131	-1.806E-02	1.150E-01	9.377E-02	5.869E-02 NOT IDENT.
TE-132	1.092E-01	7.239E-01	6.337E-01	3.693E-01 NOT IDENT.
BA-133	4.767E-03	5.294E-02	3.949E-02	2.701E-02 FAIL ABUN
I-133	5.954E+03	1.367E+04	0.000E+00	6.975E+03 SHORT HLIF
CS-134	5.027E-02	5.242E-02	4.782E-02	2.675E-02 NOT IDENT.
I-135	-3.833E+16	8.755E+16	0.000E+00	0.000E+00 SHORT HLIF
CS-136	-3.279E-02	1.286E-01	1.042E-01	6.562E-02 FAIL ABUN
CE-139	-1.019E-02	2.371E-02	2.070E-02	1.210E-02 NOT IDENT.
BA-140	3.183E-02	3.090E-01	2.666E-01	1.576E-01 NOT IDENT.
LA-140	-1.515E-01	1.249E-01	7.773E-02	6.372E-02 NOT IDENT.
CE-141	9.382E-03	5.375E-02	4.428E-02	2.742E-02 NOT IDENT.
CE-143	5.183E+02	2.762E+02	0.000E+00	1.409E+02 SHORT HLIF

CE-144	-1.623E-01	1.666E-01	1.243E-01	8.500E-02	NOT IDENT.
PM-144	-1.296E-02	4.258E-02	3.425E-02	2.172E-02	NOT IDENT.
PR-144	-8.786E-01	2.887E+00	2.322E+00	1.473E+00	NOT IDENT.
PM-146	1.293E-02	4.751E-02	4.221E-02	2.424E-02	NOT IDENT.
ND-147	2.165E-01	6.356E-01	5.614E-01	3.243E-01	FAIL ABUN
PM-149	2.374E+01	1.162E+02	1.000E+02	5.927E+01	NOT IDENT.
EU-152	6.098E-02	9.671E-02	8.459E-02	4.934E-02	NOT IDENT.
GD-153	-6.461E-02	5.294E-02	4.147E-02	2.701E-02	NOT IDENT.
EU-154	-2.672E-02	1.545E-01	1.236E-01	7.881E-02	NOT IDENT.
EU-155	1.040E-01	7.618E-02	6.806E-02	3.887E-02	FAIL ABUN
TB-160	-2.475E-02	1.269E-01	1.054E-01	6.473E-02	FAIL ABUN
HO-166M	-1.210E-02	7.209E-02	5.865E-02	3.678E-02	FAIL ABUN
TM-171	1.061E-01	1.143E+01	9.231E+00	5.830E+00	NOT IDENT.
LU-176	6.897E-03	2.460E-02	2.116E-02	1.255E-02	FAIL ABUN
LU-177	2.483E+00	1.497E+00	1.024E+00	7.640E-01	FAIL ABUN
LU-177M	-1.593E-01	1.911E-01	1.430E-01	9.750E-02	FAIL ABUN
HF-181	3.203E-02	4.590E-02	4.199E-02	2.342E-02	NOT IDENT.
W-181	3.315E-02	1.426E-01	1.168E-01	7.277E-02	NOT IDENT.
TA-182	-8.572E-02	2.669E-01	2.121E-01	1.362E-01	FAIL ABUN
RE-183	1.085E-01	9.160E-02	8.589E-02	4.673E-02	FAIL ABUN
RE-184	5.754E-02	2.090E-01	1.782E-01	1.066E-01	NOT IDENT.
OS-185	-3.423E+02	5.052E-02	3.904E-02	2.577E-02	NOT IDENT.
RE-188	3.194E-02	1.353E-01	1.227E-01	6.902E-02	NOT IDENT.
W-188	-2.038E+00	7.901E+00	5.833E+00	4.031E+00	FAIL ABUN
IR-192	-1.777E-02	3.434E-02	2.765E-02	1.752E-02	FAIL ABUN
AU-195	2.095E-01	1.475E-01	1.329E-01	7.528E-02	FAIL ABUN
TL-200	-1.398E+02	8.175E+02	0.000E+00	4.171E+02	SHORT HLIF
TL-201	3.905E-01	6.733E+00	6.023E+00	3.435E+00	NOT IDENT.
TL-202	-2.905E-02	7.454E-02	6.292E-02	3.803E-02	NOT IDENT.
HG-203	1.618E-03	3.940E-02	3.010E-02	2.010E-02	NOT IDENT.
BI-207	2.767E-02	6.741E-02	5.930E-02	3.439E-02	FAIL ABUN
TL-207	-9.791E-02	6.700E-01	5.554E-01	3.418E-01	FAIL ABUN
PO-209	-3.242E+00	8.598E+00	7.006E+00	4.387E+00	NOT IDENT.
PB-211	1.434E-01	1.016E+00	8.398E-01	5.185E-01	NOT IDENT.
BI-212	1.750E+00	6.578E-01	4.242E-01	3.356E-01	FAIL ABUN
PO-215	-9.791E-02	6.700E-01	5.554E-01	3.418E-01	FAIL ABUN
RN-219	-9.622E-03	4.593E-01	3.758E-01	2.343E-01	NOT IDENT.
RN-220	4.322E+00	2.774E+01	2.404E+01	1.415E+01	NOT IDENT.
RA-223	-9.791E-02	6.700E-01	5.554E-01	3.418E-01	FAIL ABUN
AC-227	-2.580E-01	3.438E-01	2.780E-01	1.754E-01	FAIL ABUN
TH-227	-2.580E-01	3.447E-01	2.780E-01	1.759E-01	FAIL ABUN
TH-229	8.063E-02	4.097E-01	3.646E-01	2.090E-01	FAIL ABUN
PA-231	-1.578E-01	1.370E+00	1.154E+00	6.988E-01	FAIL ABUN
TH-231	-9.791E-02	6.700E-01	5.554E-01	3.418E-01	FAIL ABUN
U-231	2.693E-01	8.191E-01	6.540E-01	4.179E-01	FAIL ABUN
PA-233	-2.885E-02	6.284E-02	5.096E-02	3.206E-02	FAIL ABUN
PA-234	-4.347E-01	3.976E-01	2.865E-01	2.028E-01	FAIL ABUN
PA-234M	4.014E+00	5.173E+00	4.781E+00	2.639E+00	NOT IDENT.
U-235	1.118E-01	1.766E-01	1.486E-01	9.010E-02	FAIL ABUN
NP-236	-5.287E-02	6.461E-02	5.546E-02	3.297E-02	NOT IDENT.
NP-239	1.480E-02	1.363E-01	1.141E-01	6.954E-02	FAIL ABUN
AM-241	8.212E-03	4.847E-02	3.987E-02	2.473E-02	NOT IDENT.
CM-243	-5.051E-02	6.491E-02	5.191E-02	3.312E-02	FAIL ABUN
AM-246	5.666E-02	1.823E-01	1.585E-01	9.303E-02	NOT IDENT.
CM-247	-7.865E-03	4.132E-02	3.329E-02	2.108E-02	FAIL ABUN
CF-249	-2.280E-03	4.003E-02	3.275E-02	2.042E-02	NOT IDENT.
CF-251	-9.539E-02	9.883E-02	8.290E-02	5.042E-02	NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
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46.50	176.7255
46.50	176.7255
46.50	176.7255
48.70	162.8838
49.72	149.0393
51.35	193.9174
52.39	157.7505
52.97	158.1766
53.15	158.3082
53.44	166.9125
54.07	173.9415
56.28	204.0095
56.28	204.0120
57.37	0.0000
57.53	203.2349
57.53	203.2373
57.60	203.2969
57.98	227.4212
57.98	227.4212
59.32	229.6902
59.32	229.6902
59.40	229.7681
59.54	229.9054
59.72	230.0803
60.01	225.2431
61.10	222.4174
61.14	222.4543
61.30	241.9029
63.00	239.0632
63.29	239.3452
63.29	239.3452
63.58	239.6258
64.28	240.3019
65.12	248.2946
65.20	248.3738
65.20	248.3738
66.05	274.1275
66.72	248.5432
66.83	261.8090
66.91	261.8900
67.20	262.1835
67.20	262.1835
67.75	252.5078
67.85	250.6258
68.90	259.5902
68.90	259.5902
69.30	271.9378
69.67	272.3189
70.82	267.1468
70.82	267.1468
70.83	267.1570
72.80	277.1750
72.87	277.2442
72.87	277.2442
74.67	269.2296
74.81	269.3651
74.81	269.3651
74.81	269.3651
74.81	269.3651
74.81	269.3651
74.81	269.3651
74.81	269.3651
74.97	269.5187
75.28	269.8159
75.70	270.2162
77.11	271.5567
77.11	271.5567

77.11	271.5567
77.11	271.5567
77.11	271.5567
77.11	271.5567
77.11	271.5567
78.38	230.5557
79.62	264.6113
79.80	237.8824
79.80	237.8824
80.11	225.7090
80.18	225.7622
80.30	252.7903
80.30	252.7903
80.57	265.4648
81.00	274.1554
81.07	274.2198
81.07	274.2198
81.07	274.2198
81.07	274.2198
82.60	226.5527
83.37	227.1239
83.78	227.4318
83.78	227.4318
83.78	227.4318
83.78	227.4318
84.21	227.7513
84.90	228.2629
85.43	228.6536
86.29	229.2844
86.50	229.4384
86.54	229.4682
86.59	229.5046
86.72	229.5990
86.79	229.6486
86.94	229.7612
87.30	230.0228
87.30	230.0228
87.30	230.0228
87.30	230.0228
87.30	230.0228
87.30	230.0228
87.57	230.2198
87.88	230.4450
88.03	230.5542
88.36	230.7926
88.47	230.8721
89.95	231.9383
91.11	232.7694
92.29	233.6071
92.38	233.6717
92.38	233.6717
93.35	234.3554
94.00	234.8140
94.67	187.9343
94.67	187.9369
94.90	169.2587
94.90	169.2587
94.90	169.2587
94.90	169.2587
95.87	172.6471
95.87	172.6471
96.73	189.0835
97.43	221.8965
98.44	156.7685
98.44	156.7690
98.88	152.5774
99.55	148.4710
99.55	148.4710
99.86	150.8043
100.00	153.0663
100.10	153.1119
103.18	183.3301
103.76	182.5131
105.00	167.5037
105.31	156.4693
108.00	174.5004
109.28	184.1348

111.00	201.9951
111.00	201.9951
111.76	164.8740
112.95	197.3202
115.19	166.3376
116.30	187.5149
117.00	153.2729
117.00	153.2729
117.66	146.6006
121.11	140.8737
121.62	149.2090
121.78	151.5994
122.06	155.2039
122.32	154.1336
122.32	154.1336
122.32	154.1336
122.32	154.1336
123.07	171.9617
127.23	151.2285
129.76	172.7253
131.20	168.5299
133.02	161.6473
133.54	175.0258
135.34	162.4960
136.00	150.6805
136.25	136.2911
136.48	136.3618
140.51	161.9253
140.51	0.0000
142.18	205.2781
142.65	183.4671
143.76	165.5138
144.24	170.5919
144.24	170.5919
144.24	170.5919
144.24	170.5919
145.22	170.9482
145.44	171.0267
147.16	174.1179
152.43	184.7606
152.70	171.1225
153.22	160.8824
154.21	167.0512
154.21	167.0512
154.21	167.0512
154.21	167.0512
155.03	165.6546
156.02	182.7489
158.56	178.6184
159.00	0.0000
159.00	183.8311
160.31	186.8397
161.27	157.5449
162.32	152.7722
162.64	160.5108
163.35	169.2342
163.89	177.0721
165.85	165.7735
167.43	147.4153
171.28	172.6501
171.86	152.9592
172.10	140.9221
176.55	156.8884
176.60	156.9031
181.06	139.7057
184.41	108.7123
185.71	108.9576
186.00	109.0126
190.27	159.3633
192.34	114.6771
193.63	135.5765
197.04	145.3773
198.01	121.1908
198.60	136.6963
200.40	144.3639
201.83	160.1696
202.84	135.8194
205.31	161.9817

208.36	130.5812
208.81	130.6737
209.75	120.2688
209.75	120.2688
210.97	127.4237
215.65	110.6776
216.55	121.0736
218.09	133.4937
222.10	122.0932
223.80	114.8702
226.40	134.2156
227.00	124.8739
227.08	124.8887
227.20	124.9102
228.16	120.3479
228.18	120.3518
228.18	120.3518
231.56	0.0000
235.69	152.3152
236.00	139.4449
236.00	139.4449
238.63	123.1302
238.63	123.1302
238.63	123.1302
238.63	123.1302
239.00	123.1940
240.98	123.5365
241.98	123.7083
241.98	123.7083
241.98	123.7083
244.69	124.1732
245.39	107.7853
247.94	89.1609
248.90	100.9858
249.79	105.5039
252.40	85.2884
252.85	89.2643
252.85	89.2643
254.15	0.0000
256.20	116.2667
256.20	116.2667
260.50	102.0633
260.90	106.0835
262.80	80.5040
264.65	94.1462
268.24	97.0829
268.79	97.1520
269.46	97.2348
269.46	97.2348
269.46	97.2348
269.46	97.2348
271.23	116.0381
273.65	108.8350
276.40	97.0762
277.35	87.0656
277.60	87.0935
277.60	87.0935
278.00	83.5893
278.60	83.6514
279.20	86.7577
279.53	79.1791
280.46	85.3689
281.68	90.0755
283.67	89.7850
284.30	92.9162
285.00	96.0616
285.90	93.0976
286.10	93.1199
286.10	93.1199
287.40	96.3408
288.45	0.0000
290.67	103.4075
290.80	103.4218
291.72	92.7191
293.26	0.0000
293.70	89.8391
295.21	100.8603
295.21	100.8603

295.21	100.8603
295.96	80.7596
296.50	80.8104
297.23	80.8802
298.57	81.0072
299.80	79.5630
299.80	79.5630
300.09	87.3923
300.09	87.3923
300.09	87.3923
300.09	87.3923
300.12	87.3958
301.29	95.3274
302.84	82.9742
303.76	94.0320
303.91	100.3184
304.40	100.3750
304.40	100.3750
304.84	96.2414
306.84	90.1695
308.46	92.4365
311.98	93.8599
316.51	93.2744
318.01	87.0599
319.02	82.9052
319.41	76.5601
320.08	85.1302
323.87	95.1003
323.87	95.1003
323.87	95.1003
323.87	95.1003
325.23	118.7821
328.77	85.9375
333.44	79.3484
334.20	79.4127
334.20	79.4127
334.30	79.4216
338.28	81.3828
338.28	81.3828
338.28	81.3828
338.28	81.3828
338.32	81.3858
338.32	81.3858
338.32	81.3858
340.50	88.0977
340.57	88.1043
344.27	70.9721
345.85	87.4935
350.59	0.0000
351.07	90.1596
351.92	90.2380
351.92	90.2380
351.92	90.2380
355.39	0.0000
356.01	87.8476
364.48	59.0600
366.43	66.9873
367.43	61.4655
367.94	0.0000
369.80	67.2083
374.96	77.6755
383.85	60.1695
387.95	64.9588
388.63	61.5795
391.69	81.1953
391.69	81.1953
392.90	70.9824
398.62	77.1089
400.65	76.0990
401.10	71.5159
401.81	76.1782
402.60	78.5434
404.84	70.5995
410.95	72.1492
411.60	94.3138
413.65	76.9879
414.70	77.9348
415.30	71.8426

415.76	68.3654
417.63	0.0000
418.52	72.0453
423.70	67.0752
427.08	50.4525
427.89	55.8018
432.53	54.2444
433.93	43.6249
439.47	64.4019
439.56	64.4063
439.89	60.8458
443.98	58.3593
444.90	59.3019
445.03	59.3090
445.03	59.3090
445.03	59.3090
445.03	59.3090
453.90	62.4576
463.38	75.8888
468.07	63.4766
473.00	57.9032
475.06	69.0434
475.35	70.9010
476.78	68.2142
477.59	77.4811
477.96	73.8123
482.03	48.1295
484.57	64.9168
487.03	48.3152
490.36	0.0000
492.35	55.9744
497.08	38.3856
507.63	0.0000
510.53	0.0000
510.84	60.5342
511.00	60.5420
511.85	60.5796
511.85	60.5796
513.99	56.1233
513.99	56.1233
520.41	52.3849
520.65	55.2529
527.90	53.6245
528.96	0.0000
529.64	46.0210
529.87	0.0000
531.02	44.1470
537.32	52.0554
543.00	53.2309
546.56	0.0000
549.76	43.7558
552.65	42.8694
555.20	52.7031
563.23	51.0288
563.90	49.0875
568.70	53.1859
569.32	42.3688
569.50	43.3595
569.67	43.3649
573.80	61.2734
574.00	55.3506
574.64	50.4304
578.91	58.7032
579.30	0.0000
583.14	44.7459
585.48	46.2088
591.81	49.9985
592.07	48.0059
593.00	53.0388
595.88	40.1038
600.56	47.2625
602.52	0.0000
602.71	40.2783
602.71	40.2783
603.60	37.0774
604.41	45.1609
604.70	48.3955
609.31	47.5250

609.31	47.5250
609.31	47.5250
609.31	47.5250
610.33	42.0913
612.46	42.1472
614.37	48.6899
618.01	44.7332
621.84	37.7057
621.84	37.7057
631.29	63.5496
633.02	45.1481
633.10	45.1494
634.78	41.0876
635.90	48.3110
636.97	49.3696
645.85	50.6688
646.12	49.6421
656.30	34.9597
657.75	34.9894
657.90	0.0000
661.65	41.7493
661.65	41.7493
664.57	0.0000
666.33	35.1647
666.33	35.1647
675.00	45.2282
677.61	31.6022
685.20	33.8545
692.80	37.1875
695.00	43.6163
696.49	51.1055
696.49	51.1055
697.00	51.1201
697.49	58.5919
698.33	53.2898
698.50	53.2944
699.00	51.1772
702.63	44.8711
706.10	49.2386
706.58	0.0000
706.67	44.9711
709.31	33.2412
711.68	42.9468
713.82	52.6726
717.42	35.5429
720.50	37.9758
721.93	0.0000
722.20	43.1934
722.78	48.3916
722.78	48.3916
722.89	48.3950
722.95	48.3971
723.30	51.8628
724.18	34.5918
727.18	40.0611
733.00	36.4937
735.90	42.2688
739.58	37.0578
742.81	38.2129
744.21	40.4258
747.13	30.6395
751.79	46.0708
752.31	41.6947
753.82	25.2559
755.35	29.6721
756.15	37.3805
756.87	30.7955
763.93	47.4656
765.79	41.9869
766.42	39.7892
766.84	37.5870
776.49	47.7714
778.00	47.8068
778.57	43.3727
778.89	41.1553
783.80	43.4870
785.46	33.4799
792.07	39.1891

795.84	25.8006
796.30	35.9053
798.80	32.5790
801.93	35.1048
805.60	28.8563
810.29	32.5371
810.76	30.7370
815.85	21.7506
817.79	33.5629
818.51	35.3895
819.60	35.4085
826.30	49.1854
828.27	0.0000
831.60	42.0053
831.96	43.8387
834.83	51.2148
836.80	0.0000
846.75	40.4669
848.13	26.6891
856.28	0.0000
856.80	42.5051
860.37	32.3947
867.32	26.9270
867.82	22.2896
871.10	19.5327
873.19	27.9309
874.81	18.6343
875.33	0.0000
876.40	23.3093
879.36	19.6065
880.27	19.6142
880.51	19.6167
881.50	24.2982
883.24	19.6408
884.67	24.3331
889.25	33.7614
896.60	32.9313
898.02	35.7762
899.00	31.0825
903.28	16.5143
911.07	32.1954
911.07	32.1954
911.07	32.1954
919.63	34.2176
920.93	26.6287
925.00	32.3921
925.24	32.3955
926.50	31.4596
935.52	25.8398
937.48	45.0183
944.10	36.5008
946.00	45.1813
949.00	37.5394
962.29	44.2489
964.01	29.0588
966.15	40.3951
968.20	52.3969
969.11	19.4136
969.11	19.4136
969.11	19.4136
977.42	35.0648
980.50	30.2333
983.50	31.2469
989.30	26.4272
996.32	28.4655
1001.03	21.6358
1001.68	25.5760
1004.76	34.4719
1021.30	0.0000
1024.50	0.0000
1034.80	37.8757
1036.00	32.9065
1037.82	20.9559
1038.57	17.9675
1038.76	0.0000
1045.16	24.0176
1046.59	25.0330
1048.07	27.0514

1050.47	27.0765
1050.47	27.0765
1062.04	24.1746
1063.62	29.2294
1076.63	24.3094
1077.35	20.2627
1078.86	29.3979
1085.78	22.3599
1099.22	25.5371
1112.02	28.2238
1112.84	30.7983
1115.52	35.9673
1120.29	37.7445
1120.29	37.7445
1120.29	37.7445
1120.29	37.7445
1120.51	37.7480
1121.28	41.1914
1124.00	0.0000
1129.67	33.0531
1131.51	0.0000
1147.95	0.0000
1167.94	42.9299
1173.22	30.4217
1175.09	32.5409
1177.93	32.5727
1189.05	36.9175
1204.90	45.6035
1205.75	0.0000
1213.00	43.6025
1221.42	43.7267
1230.97	46.0066
1235.34	34.2875
1236.41	0.0000
1238.25	33.2478
1246.25	32.2603
1260.41	0.0000
1271.85	27.1106
1274.45	27.1338
1274.54	24.9631
1291.56	29.4653
1298.22	0.0000
1312.09	16.4766
1325.50	14.7077
1325.50	14.7077
1332.49	12.8977
1333.61	17.5094
1360.21	13.9374
1362.66	0.0000
1365.15	15.8192
1368.21	15.8337
1368.53	0.0000
1376.25	15.8725
1384.27	20.5910
1394.10	15.9576
1395.20	19.7191
1407.95	10.3680
1434.06	13.2970
1436.60	14.2578
1457.56	0.0000
1460.81	14.3573
1489.15	7.7191
1509.49	9.7038
1596.49	20.8624
1620.62	6.9983
1678.03	0.0000
1691.02	8.1426
1691.02	8.1426
1706.46	0.0000
1750.46	0.0000
1764.49	7.1060
1764.49	7.1060
1764.49	7.1060
1764.49	7.1060
1770.23	31.1316
1771.40	3.1140
1791.20	0.0000
1808.65	5.2362

1836.01

6.3235

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624002

Total Uranium Activity	5.9560E+00	ug/g
Total Uranium Counting Unc.	2.6063E+00	ug/g
Total Uranium Tpu	1.3297E-06	ug/g
Total Uranium Mda	1.1125E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624002
*  ANALYST       : MXR1           DETECTOR    : GAM21
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 13:52:07.96  SAMPLE ALQT: 120.590 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.358E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.099E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.834E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.363E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 15:53:56.74

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624003.CNF;1
Sample date       : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 13:52:31.
Sample ID        : G243624003 Sample quantity : 1.17310E+02 GRAM
Detector name    : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.58 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 937704 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	74.62*	328	458	1.38	149.24	143	15	4.55E-02	12.5	2.61E+00
2	3	77.01	595	296	1.04	154.03	143	15	8.26E-02	6.3	
3	4	87.16	224	342	1.18	174.31	171	24	3.11E-02	14.4	3.53E+00
4	4	89.72	136	350	1.38	179.45	171	24	1.88E-02	25.9	
5	4	92.54*	189	265	1.21	185.08	171	24	2.62E-02	18.2	
6	0	129.28	96	270	1.45	258.56	255	8	1.34E-02	31.4	
7	0	185.59*	208	240	1.38	371.19	366	10	2.88E-02	16.5	
8	0	209.06	83	193	0.74	418.12	414	8	1.15E-02	31.2	
9	2	238.39*	1167	166	1.19	476.77	469	22	1.62E-01	3.4	5.07E+00
10	2	241.71	296	203	1.77	483.42	469	22	4.11E-02	12.7	
11	0	269.56	82	204	1.61	539.12	535	11	1.14E-02	35.3	
12	0	294.79	386	151	1.14	589.59	584	12	5.36E-02	8.1	
13	0	299.86	64	165	1.28	599.72	596	10	8.86E-03	39.5	
14	0	327.43	48	111	1.45	654.87	652	8	6.60E-03	41.0	
15	0	338.30	137	231	1.38	676.60	669	12	1.90E-02	23.8	
16	0	351.58*	553	170	1.27	703.16	696	14	7.69E-02	6.7	
17	0	462.76	76	72	1.97	925.52	921	10	1.06E-02	23.7	
18	0	510.84*	106	126	1.91	1021.68	1014	17	1.47E-02	29.5	
19	0	582.62*	305	89	1.21	1165.24	1158	13	4.24E-02	8.8	
20	0	608.78*	412	85	1.24	1217.56	1212	13	5.73E-02	6.9	
21	0	726.93	81	46	1.69	1453.85	1448	11	1.12E-02	19.7	
22	0	910.77	247	74	1.85	1821.55	1815	17	3.43E-02	10.6	
23	0	968.49	136	25	1.86	1936.97	1932	13	1.88E-02	12.0	
24	0	1119.32	81	34	2.34	2238.64	2230	17	1.13E-02	19.8	
25	0	1237.52	68	41	1.38	2475.03	2468	15	9.43E-03	24.6	
26	0	1459.59*	665	30	2.40	2919.19	2909	20	9.23E-02	4.4	
27	0	1763.41	64	4	2.44	3526.82	3519	13	8.92E-03	13.8	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624003.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 12:00:00 Acquisition date : 7-JAN-2010 13:52:31
Sample ID         : G243624003 Sample quantity : 117.31 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.58 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.999E+01	2.307E+00	5.424E-01	4.057E-02	36.858
CD-109	+	88.03	*	3.781E+00	1.152E+00	1.567E+00	1.530E-01	2.413
SN-126		64.28		4.857E-01	6.662E-01	1.123E+00	1.709E-01	0.433
	+	86.94		1.543E+00	7.812E-01	7.307E-01	3.039E-01	2.111
	+	87.57	*	3.711E-01	1.130E-01	1.547E-01	1.505E-02	2.399
CS-135	+	268.24	*	3.879E-01	2.753E-01	2.795E-01	2.135E-02	1.388
TL-208		277.35		3.621E-01	4.562E-01	7.569E-01	7.998E-02	0.478
	+	510.84		6.165E-01	3.685E-01	2.384E-01	2.422E-02	2.586
	+	583.14	*	5.093E-01	9.522E-02	5.677E-02	3.686E-03	8.972
		860.37		3.470E-01	3.379E-01	6.111E-01	5.524E-02	0.568
BI-211		72.87		1.347E+01	4.825E+00	7.660E+00	6.757E-01	1.759
	+	351.07	*	3.977E+00	5.918E-01	3.496E-01	2.278E-02	11.378
PB-212	+	74.81		2.428E+00	6.832E-01	6.975E-01	8.997E-02	3.481
	+	77.11		2.460E+00	3.813E-01	3.830E-01	3.446E-02	6.422
	+	87.30		1.716E+00	5.502E-01	7.181E-01	1.001E-01	2.390
	+	238.63	*	1.805E+00	1.798E-01	1.048E-01	7.534E-03	17.225
	+	300.09		1.536E+00	1.220E+00	1.353E+00	1.124E-01	1.135
PO-212	+	74.81		2.428E+00	6.832E-01	6.975E-01	8.997E-02	3.481
	+	77.11		2.460E+00	3.813E-01	3.830E-01	3.446E-02	6.422
	+	87.30		1.716E+00	5.502E-01	7.181E-01	1.001E-01	2.390
		115.19		6.404E-01	4.226E+00	7.003E+00	4.468E-01	0.091
	+	238.63	*	1.805E+00	1.798E-01	1.048E-01	7.534E-03	17.225
	+	300.09		1.536E+00	1.220E+00	1.353E+00	1.124E-01	1.135
BI-214	+	609.31	*	1.300E+00	2.033E-01	1.365E-01	1.026E-02	9.521
	+	1120.29		1.370E+00	5.572E-01	5.336E-01	4.958E-02	2.567
	+	1764.49		1.487E+00	4.209E-01	3.137E-01	1.950E-02	4.741
PB-214	+	74.81		4.183E+00	1.153E+00	1.202E+00	1.391E-01	3.481
	+	77.11		4.217E+00	7.283E-01	6.566E-01	7.742E-02	6.422
	+	87.30		2.940E+00	9.238E-01	1.230E+00	1.525E-01	2.390
	+	241.98		2.754E+00	7.340E-01	6.311E-01	5.019E-02	4.364
	+	295.21		1.630E+00	2.997E-01	2.268E-01	1.945E-02	7.185
	+	351.92	*	1.383E+00	2.181E-01	1.219E-01	1.017E-02	11.354
PO-214	+	74.81		4.183E+00	1.153E+00	1.202E+00	1.391E-01	3.481
	+	77.11		4.217E+00	7.283E-01	6.566E-01	7.742E-02	6.422

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	87.30		2.940E+00	9.238E-01	1.230E+00	1.525E-01	2.390
	+	241.98		2.754E+00	7.340E-01	6.311E-01	5.019E-02	4.364
	+	295.21		1.630E+00	2.997E-01	2.268E-01	1.945E-02	7.185
	+	351.92	*	1.383E+00	2.181E-01	1.219E-01	1.017E-02	11.354
	+	74.81		2.428E+00	6.832E-01	6.975E-01	8.997E-02	3.481
	+	77.11		2.460E+00	3.813E-01	3.830E-01	3.446E-02	6.422
	+	87.30		1.716E+00	5.502E-01	7.181E-01	1.001E-01	2.390
PO-218	+	238.63	*	1.805E+00	1.798E-01	1.048E-01	7.534E-03	17.225
	+	300.09		1.536E+00	1.220E+00	1.353E+00	1.124E-01	1.135
	+	74.81		4.183E+00	1.153E+00	1.202E+00	1.391E-01	3.481
	+	77.11		4.217E+00	7.283E-01	6.566E-01	7.742E-02	6.422
	+	87.30		2.940E+00	9.238E-01	1.230E+00	1.525E-01	2.390
	+	241.98		2.754E+00	7.340E-01	6.311E-01	5.019E-02	4.364
	+	295.21		1.630E+00	2.997E-01	2.268E-01	1.945E-02	7.185
RA-224	+	351.92	*	1.383E+00	2.181E-01	1.219E-01	1.017E-02	11.354
RA-226	+	240.98	*	5.223E+00	1.361E+00	1.193E+00	6.720E-02	4.379
AC-228	+	609.31	*	1.300E+00	2.033E-01	1.365E-01	1.026E-02	9.521
	+	1120.29		1.370E+00	5.572E-01	5.336E-01	4.958E-02	2.567
	+	1764.49		1.487E+00	4.209E-01	3.137E-01	1.950E-02	4.741
RA-228	+	338.32		1.083E+00	6.788E-01	4.325E-01	1.764E-01	2.504
	+	911.07	*	1.868E+00	4.504E-01	2.305E-01	2.660E-02	8.105
	+	969.11		1.816E+00	6.079E-01	5.084E-01	1.184E-01	3.571
TH-228	+	338.32		1.083E+00	6.788E-01	4.325E-01	1.764E-01	2.504
	+	911.07	*	1.868E+00	4.504E-01	2.305E-01	2.660E-02	8.105
	+	969.11		1.816E+00	6.079E-01	5.084E-01	1.184E-01	3.571
TH-230	+	74.81		2.467E+00	6.554E-01	7.087E-01	6.352E-02	3.481
	+	77.11		2.500E+00	3.874E-01	3.892E-01	3.502E-02	6.422
	+	87.30		1.744E+00	5.312E-01	7.297E-01	7.083E-02	2.390
TH-232	+	238.63	*	1.834E+00	1.827E-01	1.065E-01	7.655E-03	17.225
	+	300.09		1.560E+00	1.538E+00	1.375E+00	8.104E-01	1.135
	+	609.31	*	1.300E+00	2.033E-01	1.365E-01	1.026E-02	9.521
U-234	+	1120.29		1.370E+00	5.571E-01	5.336E-01	4.958E-02	2.567
	+	1764.49		1.487E+00	4.209E-01	3.137E-01	1.950E-02	4.741
	+	338.32		1.083E+00	5.195E-01	4.325E-01	2.554E-02	2.504
NP-237	+	911.07	*	1.868E+00	4.504E-01	2.305E-01	2.660E-02	8.105
	+	969.11		1.816E+00	6.079E-01	5.084E-01	1.184E-01	3.571
	+	609.31	*	1.300E+00	2.033E-01	1.365E-01	1.026E-02	9.521
AM-243	+	1120.29		1.370E+00	5.571E-01	5.336E-01	4.958E-02	2.567
	+	1764.49		1.487E+00	4.209E-01	3.137E-01	1.950E-02	4.741
	+	86.50	*	1.090E+00	4.009E-01	4.940E-01	1.125E-01	2.206
ANH-511	+	95.87		3.884E-01	1.188E+00	1.755E+00	4.308E-01	0.221
	+	74.67	*	3.936E-01	1.045E-01	1.135E-01	1.009E-02	3.468
	+	86.72		4.086E+01	1.245E+01	1.941E+01	1.875E+00	2.105
BE-7	+	117.66		4.266E-01	4.457E+00	7.366E+00	4.561E-01	0.058
	+	142.18		6.023E+00	2.151E+01	3.495E+01	1.903E+00	0.172
	+	511.00	*	1.332E-01	7.882E-02	5.151E-02	2.992E-03	2.585

---- 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	*	-8.917E-03	3.792E-01	6.234E-01	4.237E-02	-0.014

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		-1.035E-02	5.137E-02	8.171E-02	5.487E-03	-0.127
NA-24	1368.53	*		-1.656E+00	5.137E-02	Half-Life too short		
AL-26	1129.67			8.809E-01	1.847E+00	3.190E+00	2.032E-01	0.276
	1808.65	*		-5.415E-02	3.354E-02	2.996E-02	1.801E-03	-1.807
TI-44	67.85			-4.536E-02	6.171E-02	9.597E-02	8.357E-03	-0.473
	78.38	*		4.540E-01	7.036E-02	1.009E-01	9.149E-03	4.498
SC-46	889.25	*		-1.801E-02	4.405E-02	7.026E-02	6.277E-03	-0.256
	1120.51	+		2.364E-01	9.485E-02	1.297E-01	8.449E-03	1.823
V-48	944.10			-1.304E+00	1.039E+00	1.470E+00	1.281E-01	-0.887
	983.50	*		-4.500E-03	7.471E-02	1.229E-01	1.022E-02	-0.037
	1312.09			-3.548E-03	9.807E-02	1.588E-01	1.130E-02	-0.022
CR-51	320.08	*		-2.824E-03	4.551E-01	7.629E-01	5.003E-02	-0.004
MN-52	744.21			-8.983E-02	3.681E-01	5.451E-01	3.470E-02	-0.165
	848.13			-1.778E+00	8.453E+00	1.383E+01	1.129E+00	-0.129
	935.52			2.321E-01	3.206E-01	5.689E-01	5.002E-02	0.408
	1246.25			-3.384E+00	1.033E+01	1.490E+01	9.536E-01	-0.227
	1333.61			-5.394E-01	6.764E+00	1.087E+01	7.980E-01	-0.050
	1434.06	*		-3.781E-02	2.882E-01	4.553E-01	3.294E-02	-0.083
MN-54	834.83	*		1.764E-03	4.292E-02	7.203E-02	5.703E-03	0.024
CO-56	846.75	*		1.262E-02	4.132E-02	7.113E-02	5.787E-03	0.177
	977.42			-9.237E-02	3.040E+00	4.785E+00	4.012E-01	-0.019
	1037.82			-7.729E-02	3.563E-01	5.743E-01	4.707E-02	-0.135
	1175.09			-6.422E-01	2.624E+00	4.188E+00	2.370E-01	-0.153
	1238.25	+		3.253E-01	1.612E-01	2.160E-01	1.437E-02	1.506
	1360.21			-1.508E-01	1.175E+00	1.871E+00	1.370E-01	-0.081
	1771.40			-3.338E-01	3.256E-01	4.392E-01	2.717E-02	-0.760
CO-57	122.06	*		5.705E-03	2.945E-02	4.883E-02	2.879E-03	0.117
	136.48			4.767E-02	2.443E-01	4.035E-01	2.624E-02	0.118
CO-58	810.76	*		-6.884E-02	5.967E-02	6.792E-02	5.103E-03	-1.013
FE-59	142.65			1.722E+00	3.367E+00	5.520E+00	3.002E-01	0.312
	192.34			7.801E-02	1.124E+00	1.826E+00	2.112E-01	0.043
	1099.22	*		-4.483E-02	1.028E-01	1.607E-01	1.238E-02	-0.279
	1291.56			-3.217E-02	1.308E-01	2.056E-01	1.706E-02	-0.156
CO-60	1173.22			-2.105E-02	5.184E-02	8.123E-02	4.582E-03	-0.259
	1332.49	*		-3.942E-03	4.668E-02	7.498E-02	5.505E-03	-0.053
ZN-65	1115.52	*		2.336E-02	1.334E-01	1.926E-01	1.272E-02	0.121
GE-68	1077.35	*		4.079E-01	1.457E+00	2.470E+00	1.768E-01	0.165
AS-73	53.44	*		3.320E-01	1.306E+00	2.187E+00	1.931E-01	0.152
AS-74	595.88	*		-1.882E-02	1.190E-01	1.913E-01	1.055E-02	-0.098
	634.78			1.665E-01	3.989E-01	6.728E-01	3.562E-02	0.247
SE-75	66.05			-8.538E+00	6.422E+00	1.004E+01	1.054E+00	-0.850
	96.73			9.140E-03	9.657E-01	1.406E+00	1.885E-01	0.007
	121.11			7.543E-03	1.595E-01	2.629E-01	2.452E-02	0.029
	136.00			-1.476E-02	4.624E-02	7.476E-02	4.222E-03	-0.197
	198.60			-6.385E-02	2.128E+00	3.436E+00	2.320E-01	-0.019
	264.65	*		-2.206E-02	5.884E-02	7.935E-02	4.619E-03	-0.278
	279.53			-3.697E-02	1.221E-01	2.028E-01	1.275E-02	-0.182
	303.91			4.265E-01	2.713E+00	4.019E+00	3.856E-01	0.106
	400.65			7.998E-02	3.125E-01	5.268E-01	4.794E-02	0.152

---- 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		1.080E+03	3.289E+02	5.592E+02	5.457E+01	1.931
		200.40		-4.477E+01	2.564E+02	4.112E+02	2.199E+01	-0.109
	+	239.00		3.836E+02	3.413E+01	5.808E+01	3.266E+00	6.605
		249.79		1.293E+01	1.038E+02	1.674E+02	9.519E+00	0.077
		281.68		-1.726E+02	1.323E+02	2.068E+02	1.206E+01	-0.835
		297.23		4.094E+02	1.297E+02	1.774E+02	1.042E+01	2.308
		303.76		2.460E+01	3.030E+02	4.463E+02	2.627E+01	0.055
		439.47		1.802E+02	2.150E+02	3.757E+02	2.198E+01	0.480
		484.57		7.035E+01	3.460E+02	5.782E+02	3.380E+01	0.122
		520.65	*	4.946E+00	1.464E+01	2.470E+01	1.430E+00	0.200
		574.64		2.982E+01	3.267E+02	5.066E+02	2.844E+01	0.059
		578.91		2.124E+02	1.559E+02	2.512E+02	1.405E+01	0.846
		585.48		9.512E+02	3.295E+02	5.819E+02	3.238E+01	1.635
		755.35		1.971E+02	2.852E+02	4.852E+02	3.177E+01	0.406
		817.79		1.203E+02	1.935E+02	3.425E+02	2.607E+01	0.351
SR-82		698.33		-1.029E+01	4.141E+01	6.533E+01	3.690E+00	-0.158
	*	776.49		-5.447E-01	4.225E-01	6.172E-01	4.258E-02	-0.882
		1395.20		-1.462E+01	1.375E+01	1.841E+01	1.342E+00	-0.794
RB-83	*	520.41		1.579E-02	7.292E-02	1.218E-01	7.051E-03	0.130
		529.64		-8.698E-03	1.115E-01	1.814E-01	1.046E-02	-0.048
		552.65		6.319E-03	2.375E-01	3.890E-01	2.216E-02	0.016
RB-84	*	881.50		2.221E-02	7.836E-02	1.343E-01	1.180E-02	0.165
KR-85	*	513.99		1.338E+01	8.728E+00	1.433E+01	8.317E-01	0.934
SR-85	*	513.99		6.931E-02	4.521E-02	7.423E-02	4.308E-03	0.934
RB-86	*	1076.63		-9.251E-02	9.701E-01	1.582E+00	1.134E-01	-0.058
898.02			-7.174E-02	5.195E-02	7.419E-02	6.784E-03	-0.967	
Y-88	*	1836.01		-8.620E-03	3.279E-02	5.050E-02	2.974E-03	-0.171
		392.90		-2.545E-02	3.490E-02	5.431E-02	3.135E-03	-0.469
ZR-88	*							
Y-91	*	1204.90		1.656E+01	2.170E+01	3.816E+01	2.276E+00	0.434
NB-94	*	702.63		2.594E-02	3.706E-02	6.364E-02	3.636E-03	0.408
		871.10		-3.198E-02	3.676E-02	5.534E-02	4.753E-03	-0.578
NB-95	*	765.79		4.069E-02	5.033E-02	8.653E-02	5.815E-03	0.470
NB-95M	*	235.69		5.833E-01	1.948E-01	3.116E-01	2.298E-02	1.872
ZR-95	*	724.18		1.793E-01	1.368E-01	2.174E-01	1.537E-02	0.825
		756.15		8.129E-02	9.190E-02	1.587E-01	1.218E-02	0.512
NB-97	*	657.90		1.167E-01	9.190E-02	Half-Life	too short	
		1024.50		-2.937E+00	9.190E-02	Half-Life	too short	
ZR-97	*	254.15		-7.038E+00	9.190E-02	Half-Life	too short	
		355.39		-5.856E+00	9.190E-02	Half-Life	too short	
		507.63		1.659E+01	9.190E-02	Half-Life	too short	
		602.52		-6.082E+00	9.190E-02	Half-Life	too short	
		1021.30		-1.290E+01	9.190E-02	Half-Life	too short	
		1147.95		6.876E+00	9.190E-02	Half-Life	too short	
		1362.66		1.176E+01	9.190E-02	Half-Life	too short	
		1750.46		5.895E+00	9.190E-02	Half-Life	too short	
		140.51		-4.635E+01	4.146E+01	6.160E+01	1.656E+01	-0.753
		181.06		8.156E+00	2.771E+01	4.002E+01	6.782E+00	0.204
MO-99	*	366.43		1.097E+01	1.222E+02	2.049E+02	1.201E+01	0.054
		739.58		-4.795E+00	1.796E+01	2.813E+01	3.937E+00	-0.170

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		778.00		-5.021E+01	4.612E+01	6.888E+01	4.770E+00	-0.729
TC-99M		140.51	*	-7.531E+11	4.612E+01	Half-Life	too short	
RH-101		127.23		3.585E-02	4.307E-02	6.479E-02	3.721E-03	0.553
		198.01	*	9.585E-03	3.852E-02	6.301E-02	3.359E-03	0.152
		325.23		1.113E-01	3.003E-01	4.501E-01	2.660E-02	0.247
RH-102		418.52		6.039E-02	3.398E-01	5.697E-01	3.319E-02	0.106
		475.06	*	9.804E-03	3.484E-02	5.721E-02	3.349E-03	0.171
		631.29		1.475E-02	6.160E-02	1.022E-01	5.431E-03	0.144
		697.49		5.226E-03	8.995E-02	1.459E-01	8.224E-03	0.036
		766.84		9.286E-02	1.279E-01	2.182E-01	1.470E-02	0.425
		1046.59		-1.017E-01	1.359E-01	2.058E-01	1.558E-02	-0.494
		1112.84		2.286E-01	3.217E-01	4.975E-01	3.301E-02	0.459
RU-103		497.08	*	5.601E-07	4.647E-02	7.638E-02	9.669E-03	0.000
		610.33		1.221E+01	2.526E+00	3.396E+00	5.191E-01	3.595
RH-106	+	511.85		6.663E-01	3.944E-01	4.927E-01	2.861E-02	1.353
		621.84	*	-2.746E-01	3.703E-01	5.582E-01	6.437E-02	-0.492
		1050.47		-2.076E-01	2.536E+00	4.145E+00	3.118E-01	-0.050
RU-106	+	511.85		6.663E-01	3.944E-01	4.927E-01	2.861E-02	1.353
		621.84	*	-2.746E-01	3.692E-01	5.582E-01	2.999E-02	-0.492
		1050.47		-2.076E-01	2.536E+00	4.145E+00	3.118E-01	-0.050
AG-108M		433.93	*	-6.815E-03	3.561E-02	5.808E-02	3.682E-03	-0.117
		614.37		-4.271E-04	5.376E-02	7.540E-02	4.479E-03	-0.006
		722.95		2.995E-02	5.501E-02	8.175E-02	5.315E-03	0.366
AG-110M		657.75	*	1.370E-02	4.389E-02	7.288E-02	4.050E-03	0.188
		677.61		-8.316E-02	3.509E-01	5.541E-01	3.171E-02	-0.150
		706.67		-2.622E-01	2.438E-01	3.511E-01	2.151E-02	-0.747
		763.93		-1.603E-01	1.982E-01	2.927E-01	2.049E-02	-0.548
		884.67		-8.515E-03	5.377E-02	8.813E-02	8.035E-03	-0.097
		937.48		-1.153E-01	1.315E-01	1.984E-01	1.802E-02	-0.581
		1384.27		4.899E-02	1.645E-01	2.797E-01	2.121E-02	0.175
IN-111		171.28		-5.079E-01	1.432E+00	2.290E+00	1.175E-01	-0.222
		245.39	*	-1.611E-01	1.718E+00	2.385E+00	1.350E-01	-0.068
IN-113M		391.69	*	6.512E-03	4.900E-02	8.106E-02	4.994E-03	0.080
SN-113		391.69	*	6.512E-03	4.900E-02	8.106E-02	4.994E-03	0.080
IN-114M		190.27	*	2.186E-01	2.382E-01	3.568E-01	1.881E-02	0.613
CD-115		260.90		-7.113E+01	2.126E+02	3.334E+02	1.915E+01	-0.213
		492.35		-3.419E+01	5.377E+01	8.370E+01	4.887E+00	-0.408
		527.90	*	-2.186E+00	1.548E+01	2.505E+01	1.445E+00	-0.087
SN-117M		156.02		3.995E-01	2.806E+00	4.605E+00	2.410E-01	0.087
		158.56	*	-4.026E-02	6.781E-02	1.077E-01	5.595E-03	-0.374
SB-122		563.90	*	2.413E+00	2.945E+00	5.127E+00	2.900E-01	0.471
		692.80		-1.904E+01	6.808E+01	1.072E+02	5.965E+00	-0.178
I-123		159.00	*	-1.538E+01	6.808E+01	Half-Life	too short	
		528.96		-2.293E+01	6.808E+01	Half-Life	too short	
TE-123M		159.00	*	-2.260E-02	3.358E-02	5.310E-02	2.802E-03	-0.426
I-124		602.71	*	2.626E-01	1.085E+00	1.521E+00	8.335E-02	0.173
		722.78		3.238E+00	6.705E+00	9.896E+00	5.963E-01	0.327
		1325.50		1.987E+01	4.994E+01	8.519E+01	6.187E+00	0.233
		1376.25		6.287E+01	4.333E+01	8.239E+01	6.021E+00	0.763

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1509.49		-2.997E+00	2.267E+01	3.575E+01	2.536E+00	-0.084
		1691.02		-1.084E+00	5.218E+00	8.326E+00	5.435E-01	-0.130
		602.71		1.316E-02	5.436E-02	7.621E-02	4.178E-03	0.173
		645.85		-1.869E-01	5.898E-01	9.278E-01	5.600E-02	-0.201
		709.31		1.262E+00	3.143E+00	5.260E+00	3.059E-01	0.240
		713.82		1.990E-02	1.906E+00	3.076E+00	3.156E-01	0.006
		722.78		2.352E-01	4.870E-01	7.188E-01	4.521E-02	0.327
	+	968.20		1.890E+01	4.821E+00	8.109E+00	6.875E-01	2.331
		1045.16		4.632E-01	2.848E+00	4.781E+00	3.630E-01	0.097
		1325.50		1.541E+00	3.875E+00	6.609E+00	4.800E-01	0.233
SB-125		1368.21		-1.709E+00	1.914E+00	2.598E+00	3.294E-01	-0.658
		1436.60		-5.997E-01	4.358E+00	6.883E+00	4.977E-01	-0.087
		1691.02	*	-1.857E-02	8.941E-02	1.427E-01	9.946E-03	-0.130
		427.89	*	1.101E-02	1.062E-01	1.771E-01	1.077E-02	0.062
	+	463.38		8.657E-01	4.153E-01	6.381E-01	4.348E-02	1.357
		600.56		-9.115E-02	2.186E-01	3.439E-01	2.216E-02	-0.265
TE-125M		635.90		-7.380E-02	3.045E-01	4.826E-01	3.069E-02	-0.153
		109.28	*	-1.822E+00	1.131E+01	1.854E+01	1.654E+00	-0.098
I-126		388.63		4.044E-02	2.229E-01	3.753E-01	2.170E-02	0.108
		666.33	*	1.233E-02	2.402E-01	3.903E-01	2.020E-02	0.032
SB-126		753.82		1.586E+00	2.026E+00	3.469E+00	2.263E-01	0.457
		223.80		3.916E+00	5.001E+00	8.356E+00	4.614E-01	0.469
		278.60		3.065E+00	2.961E+00	5.229E+00	3.042E-01	0.586
		296.50		1.419E+01	2.937E+00	4.351E+00	2.554E-01	3.262
		414.70		-1.118E-01	8.977E-02	1.353E-01	7.876E-03	-0.826
		415.30		-5.658E+00	7.420E+00	1.163E+01	6.771E-01	-0.486
		555.20		1.976E+00	4.730E+00	7.997E+00	4.549E-01	0.247
		573.80		-2.941E-01	1.265E+00	1.964E+00	1.103E-01	-0.150
		593.00		8.553E-01	1.170E+00	2.016E+00	1.115E-01	0.424
		656.30		-2.034E-01	4.378E+00	7.062E+00	3.635E-01	-0.029
SB-127		666.33		5.162E-03	1.006E-01	1.634E-01	8.458E-03	0.032
		675.00		-6.273E-01	2.411E+00	3.801E+00	2.015E-01	-0.165
		695.00		1.206E-02	9.623E-02	1.571E-01	8.794E-03	0.077
		697.00		2.579E-02	3.302E-01	5.367E-01	3.021E-02	0.048
		720.50	*	-2.860E-02	2.127E-01	2.900E-01	1.737E-02	-0.099
		856.80		-6.490E-01	5.921E-01	8.836E-01	7.352E-02	-0.734
		989.30		1.314E+00	1.411E+00	2.563E+00	2.117E-01	0.512
		1034.80		-6.630E-01	1.020E+01	1.671E+01	1.291E+00	-0.040
		1213.00		-2.043E+00	6.041E+00	9.550E+00	5.778E-01	-0.214
		61.10		-4.585E+01	9.237E+01	1.517E+02	1.745E+01	-0.302
SB-127		252.40		-3.466E-01	6.264E+00	9.999E+00	4.161E+00	-0.035
		290.80		-1.190E+01	3.161E+01	4.498E+01	4.294E+00	-0.265
		411.60		2.295E+00	1.574E+01	2.637E+01	3.851E+00	0.087
		444.90		3.694E+00	1.312E+01	2.211E+01	2.458E+00	0.167
		473.00		-1.025E+00	2.333E+00	3.713E+00	4.267E-01	-0.276
		543.00		4.163E-01	2.164E+01	3.547E+01	4.655E+00	0.012
		603.60		-6.896E+00	2.012E+01	2.641E+01	2.877E+00	-0.261
		685.20	*	1.023E+00	1.835E+00	3.116E+00	2.982E-01	0.328
		698.50		-5.451E+00	2.119E+01	3.337E+01	4.886E+00	-0.163

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		722.20		1.867E+01	4.641E+01	6.784E+01	6.543E+00	0.275
		783.80		9.475E+00	4.924E+00	9.329E+00	1.087E+00	1.016
		57.60		3.680E+00	8.908E+00	1.517E+01	1.328E+00	0.243
		145.22		1.403E+00	8.266E-01	1.438E+00	7.756E-02	0.976
		172.10		-4.700E-02	1.362E-01	2.177E-01	1.118E-02	-0.216
I-131		202.84	*	6.551E-04	5.869E-02	9.156E-02	4.915E-03	0.007
		374.96		-6.634E-02	2.327E-01	3.806E-01	2.221E-02	-0.174
		80.18		-7.719E+00	6.904E+00	9.507E+00	8.774E-01	-0.812
		284.30		-7.496E-01	1.781E+00	2.932E+00	1.904E-01	-0.256
		364.48	*	8.163E-02	1.401E-01	2.420E-01	1.583E-02	0.337
TE-132		636.97		-1.591E+00	1.950E+00	2.916E+00	1.762E-01	-0.546
		722.89		5.253E+00	1.005E+01	1.490E+01	9.110E-01	0.353
		49.72		-4.164E+01	3.813E+01	6.077E+01	6.649E+00	-0.685
		111.76		1.610E+01	4.381E+01	7.321E+01	7.080E+00	0.220
		116.30		6.102E+00	4.010E+01	6.644E+01	6.263E+00	0.092
BA-133		228.16	*	-8.995E-01	1.009E+00	1.534E+00	2.218E-01	-0.586
		53.15		3.069E+00	5.583E+00	9.450E+00	8.335E-01	0.325
		79.62		-7.785E-02	1.744E+00	2.549E+00	3.956E-01	-0.031
		81.00		-1.927E-01	1.411E-01	1.881E-01	3.049E-02	-1.024
		276.40		2.697E-01	4.947E-01	7.523E-01	9.756E-02	0.359
I-133		302.84		2.599E-02	1.894E-01	2.800E-01	3.276E-02	0.093
		356.01	*	-3.847E-03	5.205E-02	7.502E-02	8.704E-03	-0.051
		383.85		-3.196E-01	3.248E-01	4.999E-01	5.435E-02	-0.639
	+	510.53		2.922E+00	3.248E-01	Half-Life	too short	
		529.87	*	-5.240E-03	3.248E-01	Half-Life	too short	
CS-134		706.58		-1.115E+00	3.248E-01	Half-Life	too short	
		856.28		-1.388E+00	3.248E-01	Half-Life	too short	
		875.33		4.087E-01	3.248E-01	Half-Life	too short	
	+	1236.41		5.041E+00	3.248E-01	Half-Life	too short	
		1298.22		-2.989E-01	3.248E-01	Half-Life	too short	
I-135		475.35		1.478E+00	2.221E+00	3.746E+00	2.192E-01	0.395
		563.23		4.444E-01	3.940E-01	7.020E-01	4.060E-02	0.633
		569.32		-1.609E-01	2.212E-01	3.296E-01	1.916E-02	-0.488
		604.70		3.741E-02	4.804E-02	7.296E-02	4.016E-03	0.513
		795.84	*	5.622E-02	5.947E-02	1.064E-01	7.769E-03	0.528
		801.93		1.900E-02	4.607E-01	7.749E-01	5.727E-02	0.025
		1038.57		1.802E+00	4.401E+00	7.576E+00	5.815E-01	0.238
		1167.94		-5.265E-02	2.686E+00	4.392E+00	2.518E-01	-0.012
		1365.15		-3.358E-01	1.317E+00	2.045E+00	1.591E-01	-0.164
		288.45		4.461E+11	1.317E+00	Half-Life	too short	
		417.63		1.643E+11	1.317E+00	Half-Life	too short	
		546.56		2.125E+10	1.317E+00	Half-Life	too short	
		836.80		-2.789E+10	1.317E+00	Half-Life	too short	
		1038.76		1.448E+11	1.317E+00	Half-Life	too short	
		1124.00		-6.683E+10	1.317E+00	Half-Life	too short	
		1131.51		-6.903E+10	1.317E+00	Half-Life	too short	
		1260.41	*	5.434E+09	1.317E+00	Half-Life	too short	
		1457.56		8.929E+12	1.317E+00	Half-Life	too short	
		1678.03		4.458E+10	1.317E+00	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1706.46		-1.457E+11	1.317E+00	Half-Life	too short	
		1791.20		3.709E+10	1.317E+00	Half-Life	too short	
		66.91		-1.379E+00	1.093E+00	1.696E+00	2.625E-01	-0.813
	+	86.29		5.094E+00	1.626E+00	2.654E+00	3.594E-01	1.919
		153.22		6.488E-01	7.943E-01	1.339E+00	9.120E-02	0.484
		163.89		2.616E-01	1.327E+00	2.126E+00	1.430E-01	0.123
		176.55		2.402E-01	4.392E-01	7.309E-01	4.358E-02	0.329
		273.65		-5.815E-01	6.939E-01	9.022E-01	5.968E-02	-0.644
		340.57		2.229E-01	1.754E-01	2.785E-01	1.745E-02	0.800
		818.51		6.960E-02	8.590E-02	1.544E-01	1.179E-02	0.451
BA-137M		1048.07	*	-2.031E-02	1.266E-01	2.052E-01	1.635E-02	-0.099
		1235.34		1.482E+00	9.581E-01	1.558E+00	1.601E-01	0.951
		661.65	*	-3.212E-03	4.656E-02	7.494E-02	3.829E-03	-0.043
		661.65	*	-3.395E-03	4.921E-02	7.922E-02	4.069E-03	-0.043
		165.85	*	2.087E-02	3.462E-02	5.782E-02	2.948E-03	0.361
		162.64		-2.262E-01	9.487E-01	1.492E+00	8.868E-02	-0.152
		304.84		7.005E-01	1.722E+00	2.583E+00	7.055E-01	0.271
		423.70		9.791E-01	2.471E+00	4.163E+00	1.323E+00	0.235
		537.32	*	9.225E-02	3.139E-01	5.101E-01	1.658E-01	0.181
	+	328.77		4.881E-01	4.014E-01	6.544E-01	4.315E-02	0.746
LA-140		432.53		7.619E-01	2.280E+00	3.867E+00	2.493E-01	0.197
		487.03		3.199E-02	1.622E-01	2.710E-01	1.790E-02	0.118
		751.79		1.210E+00	2.363E+00	3.963E+00	3.040E-01	0.305
		815.85		-1.448E-01	3.756E-01	6.049E-01	5.257E-02	-0.239
		867.82		-7.905E-01	1.460E+00	2.282E+00	2.051E-01	-0.346
		919.63		-2.196E+00	3.510E+00	4.726E+00	5.151E-01	-0.465
		925.24		9.310E-01	1.291E+00	2.301E+00	2.165E-01	0.405
		1596.49	*	-1.053E-01	9.725E-02	1.291E-01	8.854E-03	-0.816
		145.44	*	9.292E-02	7.566E-02	1.295E-01	7.303E-03	0.718
		57.37		5.764E-04	7.566E-02	Half-Life	too short	
CE-141		231.56		-8.830E-04	7.566E-02	Half-Life	too short	
		293.26	*	1.885E-03	7.566E-02	Half-Life	too short	
	+	350.59		5.118E-02	7.566E-02	Half-Life	too short	
		490.36		-4.429E-03	7.566E-02	Half-Life	too short	
		664.57		-9.239E-04	7.566E-02	Half-Life	too short	
		721.93		1.039E-03	7.566E-02	Half-Life	too short	
		80.11		-3.249E+00	2.934E+00	4.044E+00	3.706E-01	-0.803
		133.54	*	1.218E-01	2.652E-01	3.907E-01	5.518E-02	0.312
		476.78		-7.112E-03	7.690E-02	1.258E-01	8.787E-03	-0.057
		618.01		1.629E-02	3.867E-02	6.499E-02	3.750E-03	0.251
PM-144		696.49	*	-1.637E-02	4.119E-02	6.408E-02	3.605E-03	-0.255
		778.57		-1.370E+00	2.345E+00	3.703E+00	2.569E-01	-0.370
		696.49	*	-1.110E+00	2.793E+00	4.345E+00	2.442E-01	-0.255
		1489.15		-1.025E+01	1.514E+01	2.155E+01	1.538E+00	-0.476
		453.90	*	-7.842E-03	4.979E-02	8.124E-02	7.036E-03	-0.097
		633.02		2.154E-01	1.552E+00	2.548E+00	9.364E-01	0.085
		735.90		5.098E-02	1.828E-01	3.008E-01	8.416E-02	0.169
		747.13		-5.074E-02	1.165E-01	1.793E-01	2.295E-02	-0.283
	+	91.11		7.942E-01	4.189E-01	6.755E-01	6.641E-02	1.176

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149 EU-152		319.41		-1.178E+00	4.118E+00	6.798E+00	4.017E-01	-0.173
		439.89		8.245E+00	6.992E+00	1.247E+01	7.302E-01	0.661
		531.02	*	7.096E-02	6.241E-01	1.032E+00	1.394E-01	0.069
		285.90	*	3.947E+01	1.366E+02	2.334E+02	3.313E+01	0.169
		121.78		1.453E-02	8.520E-02	1.411E-01	1.085E-02	0.103
		244.69		7.196E-02	4.146E-01	5.879E-01	3.325E-02	0.122
		344.27	*	-7.361E-02	1.397E-01	1.821E-01	1.207E-02	-0.404
		443.98		1.015E-01	1.098E+00	1.827E+00	1.069E-01	0.056
		778.89		-8.472E-02	2.777E-01	4.524E-01	3.139E-02	-0.187
		867.32		-2.032E-01	8.227E-01	1.334E+00	1.137E-01	-0.152
		964.01		8.266E-01	3.674E-01	6.604E-01	5.627E-02	1.252
		1085.78		3.239E-01	4.395E-01	7.802E-01	5.490E-02	0.415
		1112.02		5.214E-01	4.274E-01	7.049E-01	4.685E-02	0.740
		1407.95		-1.013E-01	1.996E-01	2.954E-01	2.148E-02	-0.343
GD-153		69.67		8.851E-01	2.369E+00	3.544E+00	3.096E-01	0.250
		83.37		1.138E+01	2.062E+01	3.086E+01	2.897E+00	0.369
		97.43	*	5.065E-02	9.776E-02	1.463E-01	1.195E-02	0.346
		103.18		-6.154E-03	1.224E-01	2.019E-01	1.509E-02	-0.030
EU-154		123.07		3.810E-03	6.052E-02	9.977E-02	9.417E-03	0.038
		247.94		2.833E-03	4.729E-01	6.613E-01	6.260E-02	0.004
		591.81		-1.105E-01	7.263E-01	1.167E+00	1.123E-01	-0.095
		723.30		1.573E-01	2.326E-01	3.505E-01	2.549E-02	0.449
		756.87		3.976E-01	9.803E-01	1.631E+00	1.728E-01	0.244
		873.19		2.532E-01	3.275E-01	5.852E-01	7.169E-02	0.433
		996.32		-2.757E-01	3.951E-01	5.965E-01	1.047E-01	-0.462
		1004.76		-1.844E-02	2.298E-01	3.768E-01	4.238E-02	-0.049
		1274.45	*	-2.308E-02	1.441E-01	2.303E-01	2.287E-02	-0.100
		48.70		-3.577E+00	3.987E+00	6.446E+00	5.199E-01	-0.555
EU-155		60.01		-6.624E+00	6.951E+00	1.120E+01	9.730E-01	-0.591
	+	86.54		4.471E-01	1.363E-01	2.294E-01	2.230E-02	1.949
		105.31	*	-2.773E-02	1.270E-01	2.080E-01	1.534E-02	-0.133
	+	86.79		1.205E+00	3.670E-01	6.096E-01	5.890E-02	1.976
		197.04		2.473E-01	6.566E-01	1.080E+00	5.751E-02	0.229
		215.65		-1.790E-01	8.949E-01	1.428E+00	7.804E-02	-0.125
	+	298.57		2.255E-01	1.787E-01	2.313E-01	1.359E-02	0.975
		879.36	*	-7.245E-02	1.661E-01	2.650E-01	2.317E-02	-0.273
		962.29		1.295E+00	6.640E-01	1.178E+00	1.006E-01	1.099
		966.15		9.755E-01	3.701E-01	6.367E-01	5.411E-02	1.532
HO-166M		1177.93		3.506E-01	4.145E-01	7.364E-01	4.189E-02	0.476
		1271.85		8.061E-01	7.465E-01	1.377E+00	9.188E-02	0.586
		80.57		-6.457E-01	3.906E-01	5.206E-01	4.787E-02	-1.240
	+	184.41		1.679E-01	5.601E-02	7.997E-02	4.179E-03	2.100
		280.46		-3.940E-02	9.469E-02	1.562E-01	9.098E-03	-0.252
		410.95		1.642E-01	2.695E-01	4.648E-01	2.702E-02	0.353
		711.68	*	2.375E-02	7.027E-02	1.168E-01	6.838E-03	0.203
		752.31		2.643E-01	3.576E-01	6.106E-01	3.967E-02	0.433
		810.29		-8.644E-02	8.831E-02	1.027E-01	7.679E-03	-0.842
		51.35		-2.526E+00	4.794E+01	8.046E+01	6.994E+00	-0.031
TM-171		52.39		1.964E+01	2.453E+01	4.189E+01	3.680E+00	0.469

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	59.40		-6.831E+00	3.712E+01	6.181E+01	5.369E+00	-0.111
		66.72	*	-3.151E+01	3.674E+01	5.887E+01	5.119E+00	-0.535
		88.36		8.801E-01	2.681E-01	4.580E-01	4.439E-02	1.922
		201.83		-2.146E-02	3.386E-02	5.305E-02	2.844E-03	-0.404
LU-177	+	306.84	*	-1.285E-02	3.006E-02	4.639E-02	2.733E-03	-0.277
		401.10		2.972E+00	8.208E+00	1.392E+01	8.065E-01	0.213
		112.95		-3.453E-01	2.162E+00	3.542E+00	2.323E-01	-0.097
		208.36	*	2.494E+00	1.564E+00	2.402E+00	1.300E-01	1.038
LU-177M	+	52.97		1.524E+00	2.536E+00	4.301E+00	3.791E-01	0.354
		54.07		-4.166E-01	1.332E+00	2.181E+00	1.927E-01	-0.191
		61.30		-4.637E-01	2.024E+00	3.362E+00	2.920E-01	-0.138
		121.62		6.433E-02	4.391E-01	7.265E-01	4.294E-02	0.089
HF-181	+	147.16		-7.839E-01	7.711E-01	1.205E+00	6.462E-02	-0.651
		171.86		-1.634E-01	5.421E-01	8.687E-01	4.460E-02	-0.188
		218.09		1.004E+00	1.004E+00	1.694E+00	9.289E-02	0.593
		268.79		1.957E+00	1.386E+00	1.705E+00	9.856E-02	1.148
W-181	+	319.02		-1.161E-01	2.989E-01	4.902E-01	2.895E-02	-0.237
		367.43		1.950E-01	1.023E+00	1.726E+00	1.011E-01	0.113
		413.65	*	-2.365E-01	2.006E-01	3.045E-01	1.772E-02	-0.777
		56.28		-7.948E-01	1.421E+00	2.331E+00	2.053E-01	-0.341
TA-182	+	57.53		1.164E-01	7.547E-01	1.273E+00	1.116E-01	0.091
		65.20		-3.605E-01	1.249E+00	2.049E+00	1.780E-01	-0.176
		133.02		-6.998E-03	8.718E-02	1.247E-01	7.003E-03	-0.056
		136.25		-5.630E-04	5.435E-01	8.907E-01	4.943E-02	-0.001
RE-183	+	345.85		-8.563E-02	2.586E-01	3.653E-01	2.155E-02	-0.234
		482.03	*	7.403E-03	5.094E-02	8.473E-02	4.956E-03	0.087
		56.28		-3.071E-01	5.506E-01	9.033E-01	7.954E-02	-0.340
		57.53		4.501E-02	2.926E-01	4.937E-01	4.326E-02	0.091
RE-184	+	65.20	*	-1.387E-01	4.804E-01	7.881E-01	6.846E-02	-0.176
		67.75		-1.175E-01	1.481E-01	2.296E-01	1.999E-02	-0.512
		100.10		1.216E-01	2.280E-01	3.410E-01	2.669E-02	0.357
		152.43		1.243E-01	3.921E-01	6.487E-01	3.428E-02	0.192
RE-183	+	222.10		9.892E-03	4.152E-01	6.692E-01	3.688E-02	0.015
		1001.68		4.927E-01	2.151E+00	3.647E+00	2.961E-01	0.135
		1121.28		3.035E-01	2.092E-01	3.457E-01	2.248E-02	0.878
		1189.05		1.130E-01	3.416E-01	5.788E-01	3.358E-02	0.195
RE-183	+	1221.42	*	9.577E-02	2.439E-01	4.128E-01	2.534E-02	0.232
		1230.97		-3.611E-01	6.753E-01	8.718E-01	5.438E-02	-0.414
		57.98		1.420E-01	2.852E-01	4.869E-01	4.258E-02	0.292
		59.32		-2.738E-02	1.543E-01	2.569E-01	2.233E-02	-0.107
RE-184	+	67.20		-3.172E-01	2.620E-01	4.130E-01	3.593E-02	-0.768
		162.32	*	-3.130E-02	1.324E-01	2.082E-01	1.071E-02	-0.150
		208.81		2.050E+00	1.285E+00	1.975E+00	1.069E-01	1.038
		291.72		-1.836E-01	1.224E+00	1.775E+00	1.040E-01	-0.103
RE-184	+	57.98		5.205E-01	1.045E+00	1.784E+00	1.560E-01	0.292
		59.32		-1.003E-01	5.648E-01	9.406E-01	8.174E-02	-0.107
		67.20		-1.162E+00	9.596E-01	1.513E+00	1.316E-01	-0.768
		161.27		-1.014E-01	4.029E-01	6.490E-01	3.348E-02	-0.156
		216.55		5.538E-02	3.128E-01	5.085E-01	2.782E-02	0.109

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185	252.85	*		-5.307E-02	2.879E-01	4.563E-01	2.602E-02	-0.116
	318.01			-7.168E-02	5.292E-01	8.811E-01	5.203E-02	-0.081
	792.07			1.814E+00	1.240E+00	2.293E+00	1.642E-01	0.791
	903.28			4.595E-01	1.392E+00	2.157E+00	1.954E-01	0.213
	920.93			-4.169E-02	5.088E-01	7.993E-01	7.129E-02	-0.052
	59.72			-3.187E-01	4.176E-01	6.789E-01	5.896E-02	-0.469
	61.14			-9.553E-02	2.225E-01	3.667E-01	3.185E-02	-0.261
	69.30			2.787E-01	4.185E-01	6.343E-01	5.538E-02	0.439
	592.07			-6.852E-01	3.050E+00	4.873E+00	2.697E-01	-0.141
	646.12	*		-2.188E-02	4.988E-02	7.751E-02	4.045E-03	-0.282
	717.42			-7.711E-02	1.057E+00	1.692E+00	1.005E-01	-0.046
	874.81			8.199E-01	6.625E-01	1.227E+00	1.063E-01	0.668
RE-188	880.27			-1.565E-01	8.969E-01	1.469E+00	1.288E-01	-0.107
	155.03	*		5.934E-02	2.062E-01	3.405E-01	1.787E-02	0.174
	477.96			-7.768E-01	3.632E+00	5.886E+00	3.444E-01	-0.132
	633.10			5.519E-01	3.173E+00	5.231E+00	2.775E-01	0.106
W-188	63.58			4.606E+01	7.053E+01	1.191E+02	1.034E+01	0.387
	227.08			-4.988E+00	1.502E+01	2.374E+01	1.316E+00	-0.210
	290.67	*		-3.501E+00	9.291E+00	1.323E+01	7.746E-01	-0.265
IR-192	295.96	+		1.254E+00	2.172E-01	3.313E-01	1.975E-02	3.785
	308.46			2.146E-02	1.077E-01	1.829E-01	1.090E-02	0.117
	316.51	*		-1.199E-03	3.996E-02	6.694E-02	3.971E-03	-0.018
	468.07			2.934E-03	8.711E-02	1.249E-01	8.412E-03	0.023
AU-195	604.41			3.418E-01	6.447E-01	9.562E-01	1.070E-01	0.357
	612.46			6.251E-01	9.793E-01	1.470E+00	1.072E-01	0.425
	65.12			-5.494E-02	2.227E-01	3.659E-01	3.179E-02	-0.150
	66.83			-1.048E-01	1.216E-01	1.948E-01	1.694E-02	-0.538
	75.70	+		1.278E+00	3.393E-01	6.128E-01	5.473E-02	2.086
	98.88	*		-1.113E-02	2.879E-01	4.176E-01	3.332E-02	-0.027
TL-200	129.76	+		6.388E+00	4.023E+00	5.885E+00	3.345E-01	1.086
	367.94	*		1.644E-04	4.023E+00	Half-Life	too short	
	579.30			2.021E-02	4.023E+00	Half-Life	too short	
	828.27			-2.815E-04	4.023E+00	Half-Life	too short	
TL-201	1205.75			2.821E-03	4.023E+00	Half-Life	too short	
	68.90			-4.189E-01	8.400E+00	1.232E+01	1.075E+00	-0.034
	70.82			3.426E+00	4.822E+00	7.307E+00	6.402E-01	0.469
	80.30			-9.281E+00	8.619E+00	1.190E+01	1.092E+00	-0.780
TL-202	135.34			-9.365E+00	3.662E+01	5.937E+01	3.305E+00	-0.158
	167.43	*		-3.948E+00	1.015E+01	1.622E+01	8.280E-01	-0.243
	68.90			-3.196E-02	6.409E-01	9.404E-01	8.203E-02	-0.034
	70.82			2.607E-01	3.669E-01	5.560E-01	4.872E-02	0.469
HG-203	80.30			-7.064E-01	6.561E-01	9.058E-01	8.314E-02	-0.780
	439.56	*		7.233E-02	8.323E-02	1.457E-01	8.525E-03	0.496
	70.83			1.097E+00	1.532E+00	2.316E+00	3.172E-01	0.474
	72.87			2.718E+00	1.011E+00	1.546E+00	2.061E-01	1.759
BI-207	82.60			3.597E-01	1.659E+00	2.287E+00	3.248E-01	0.157
	279.20	*		1.127E-02	4.647E-02	7.929E-02	4.898E-03	0.142
	72.80			7.320E-01	2.793E-01	4.425E-01	3.902E-02	1.654
	74.97	+		7.066E-01	1.875E-01	3.039E-01	2.704E-02	2.325

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207		84.90		3.749E-01	2.622E-01	4.040E-01	3.840E-02	0.928
		569.67		-1.782E-02	3.382E-02	5.135E-02	2.893E-03	-0.347
		1063.62	*	1.220E-02	6.023E-02	1.014E-01	7.450E-03	0.120
		1770.23		-1.647E+00	7.765E-01	8.278E-01	5.125E-02	-1.990
		81.07		-4.211E-01	3.062E-01	4.152E-01	3.832E-02	-1.014
		83.78		9.431E-02	1.732E-01	2.591E-01	2.441E-02	0.364
		94.90		3.836E-02	2.865E-01	4.767E-01	4.067E-02	0.080
		122.32		3.601E-01	2.040E+00	3.380E+00	2.287E-01	0.107
		144.24		1.206E+00	8.366E-01	1.414E+00	9.788E-02	0.853
		154.21		4.802E-01	4.623E-01	7.852E-01	5.161E-02	0.611
	+	269.46		4.563E-01	3.232E-01	4.077E-01	2.464E-02	1.119
		323.87	*	4.395E-01	8.692E-01	1.314E+00	2.175E-01	0.334
	+	338.28		4.521E+00	2.205E+00	2.768E+00	2.932E-01	1.633
		445.03		6.738E-01	2.567E+00	4.320E+00	4.449E-01	0.156
PO-209		260.50		-1.687E+00	1.175E+01	1.863E+01	1.070E+00	-0.091
		262.80		8.785E+00	3.107E+01	5.049E+01	2.904E+00	0.174
		896.60	*	-3.892E+00	8.816E+00	1.404E+01	1.275E+00	-0.277
BI-210		46.50	*	1.767E+00	6.221E+00	1.038E+01	8.082E-01	0.170
PB-210		46.50	*	1.767E+00	6.221E+00	1.038E+01	8.082E-01	0.170
PO-210		46.50	*	1.767E+00	6.221E+00	1.038E+01	6.964E-01	0.170
PB-211		404.84	*	-5.686E-01	1.185E+00	1.819E+00	1.134E+00	-0.313
		427.08		5.308E-01	2.408E+00	4.009E+00	2.478E+00	0.132
		831.96		8.606E-01	1.464E+00	2.405E+00	1.504E+00	0.358
BI-212	+	727.18	*	1.170E+00	4.712E-01	7.518E-01	5.967E-02	1.556
		785.46		1.581E+00	2.048E+00	3.646E+00	2.571E-01	0.434
		1620.62		1.864E+00	1.537E+00	2.999E+00	2.034E-01	0.622
PO-215		81.07		-4.211E-01	3.062E-01	4.152E-01	3.832E-02	-1.014
		83.78		9.431E-02	1.732E-01	2.591E-01	2.441E-02	0.364
		94.90		3.836E-02	2.865E-01	4.767E-01	4.067E-02	0.080
		122.32		3.601E-01	2.040E+00	3.380E+00	2.287E-01	0.107
		144.24		1.206E+00	8.366E-01	1.414E+00	9.788E-02	0.853
		154.21		4.802E-01	4.623E-01	7.852E-01	5.161E-02	0.611
	+	269.46		4.563E-01	3.232E-01	4.077E-01	2.464E-02	1.119
		323.87	*	4.395E-01	8.692E-01	1.314E+00	2.175E-01	0.334
	+	338.28		4.521E+00	2.205E+00	2.768E+00	2.932E-01	1.633
		445.03		6.738E-01	2.567E+00	4.320E+00	4.449E-01	0.156
RN-219		271.23		4.322E-01	3.547E-01	5.331E-01	4.316E-02	0.811
		401.81	*	3.887E-01	5.027E-01	8.686E-01	1.182E-01	0.448
RN-220		549.76	*	1.183E+01	3.102E+01	5.223E+01	2.981E+00	0.227
RA-223		81.07		-4.211E-01	3.062E-01	4.152E-01	3.832E-02	-1.014
		83.78		9.431E-02	1.732E-01	2.591E-01	2.441E-02	0.364
		94.90		3.836E-02	2.865E-01	4.767E-01	4.067E-02	0.080
		122.32		3.601E-01	2.040E+00	3.380E+00	2.287E-01	0.107
		144.24		1.206E+00	8.366E-01	1.414E+00	9.788E-02	0.853
		154.21		4.802E-01	4.623E-01	7.852E-01	5.161E-02	0.611
	+	269.46		4.563E-01	3.232E-01	4.077E-01	2.464E-02	1.119
		323.87	*	4.395E-01	8.692E-01	1.314E+00	2.175E-01	0.334
	+	338.28		4.521E+00	2.205E+00	2.768E+00	2.932E-01	1.633
		445.03		6.738E-01	2.567E+00	4.320E+00	4.449E-01	0.156

---- 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		-5.944E-01	2.197E+00	3.169E+00	6.884E-01	-0.188
		236.00		2.325E+00	4.573E-01	6.984E-01	7.225E-02	3.329
		256.20	*	3.084E-01	4.663E-01	7.700E-01	1.072E-01	0.401
		286.10		6.736E-01	1.695E+00	2.911E+00	3.372E-01	0.231
	+	299.80		2.846E+00	2.296E+00	3.016E+00	4.920E-01	0.944
		304.40		3.483E-01	2.419E+00	3.579E+00	6.201E-01	0.097
TH-227		334.20		-1.801E+00	3.444E+00	4.501E+00	8.267E-01	-0.400
		79.80		-5.944E-01	2.197E+00	3.169E+00	6.970E-01	-0.188
	+	94.00		7.741E+00	3.287E+00	4.453E+00	9.707E-01	1.738
		236.00		2.325E+00	4.409E-01	6.984E-01	6.238E-02	3.329
		256.20	*	3.084E-01	4.673E-01	7.700E-01	1.299E-01	0.401
		286.10		6.736E-01	1.822E+00	2.911E+00	2.916E+00	0.231
TH-229	+	299.80		2.846E+00	2.296E+00	3.016E+00	4.920E-01	0.944
		304.40		3.483E-01	2.419E+00	3.579E+00	6.201E-01	0.097
		334.20		-1.801E+00	3.444E+00	4.501E+00	8.267E-01	-0.400
		85.43		6.409E-01	2.707E-01	4.248E-01	4.056E-02	1.509
	+	88.47		2.966E-01	1.561E-01	2.627E-01	2.541E-02	1.129
		100.00		1.210E-01	2.351E-01	3.514E-01	2.754E-02	0.344
PA-231		193.63	*	-4.799E-02	5.983E-01	9.648E-01	5.111E-02	-0.050
		210.97		1.262E+00	9.991E-01	1.519E+00	8.247E-02	0.831
		283.67	*	-1.367E+00	1.695E+00	2.715E+00	3.745E-01	-0.503
	+	301.29		1.138E+00	9.075E-01	1.249E+00	1.311E-01	0.911
		81.07		-4.211E-01	3.062E-01	4.152E-01	3.832E-02	-1.014
		83.78		9.431E-02	1.732E-01	2.591E-01	2.441E-02	0.364
TH-231		94.90		3.836E-02	2.865E-01	4.767E-01	4.067E-02	0.080
		122.32		3.601E-01	2.040E+00	3.380E+00	2.287E-01	0.107
		144.24		1.206E+00	8.366E-01	1.414E+00	9.788E-02	0.853
		154.21		4.802E-01	4.623E-01	7.852E-01	5.161E-02	0.611
	+	269.46		4.563E-01	3.232E-01	4.077E-01	2.464E-02	1.119
		323.87	*	4.395E-01	8.692E-01	1.314E+00	2.175E-01	0.334
U-231	+	338.28		4.521E+00	2.205E+00	2.768E+00	2.932E-01	1.633
		445.03		6.738E-01	2.567E+00	4.320E+00	4.449E-01	0.156
		84.21		6.478E+00	8.680E+00	1.309E+01	1.237E+00	0.495
	+	92.29		8.959E+00	3.356E+00	5.524E+00	4.944E-01	1.622
		95.87	*	5.158E-01	1.573E+00	2.330E+00	1.954E-01	0.221
		108.00		4.008E-02	2.854E+00	4.714E+00	3.294E-01	0.009
PA-233	+	75.28		2.062E+01	6.066E+00	9.483E+00	1.471E+00	2.174
	+	86.59		7.265E+00	2.881E+00	3.715E+00	1.009E+00	1.955
	+	300.12		7.934E-01	6.360E-01	8.491E-01	1.144E-01	0.934
		311.98	*	-1.416E-02	7.301E-02	1.212E-01	7.581E-03	-0.117
		340.50		1.185E+00	8.584E-01	1.310E+00	3.013E-01	0.905
		398.62		-1.192E-01	2.503E+00	4.145E+00	1.072E+00	-0.029
PA-234		415.76		-5.461E-01	1.855E+00	3.006E+00	6.191E-01	-0.182
		63.00		4.556E-01	2.072E+00	3.452E+00	5.363E-01	0.132
		94.67		1.433E-01	2.095E-01	3.537E-01	4.373E-02	0.405
		98.44		6.766E-03	1.167E-01	1.702E-01	9.478E-02	0.040
		99.86		2.910E-01	5.949E-01	8.879E-01	6.975E-02	0.328
		111.00		9.375E-02	2.211E-01	3.703E-01	4.005E-02	0.253
		131.20		1.475E-01	1.379E-01	2.100E-01	1.187E-02	0.702

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		152.70		2.117E-01	3.746E-01	6.239E-01	9.748E-02	0.339
	+	186.00		6.046E+00	2.712E+00	2.868E+00	8.735E-01	2.108
		226.40		-1.380E-01	4.687E-01	7.420E-01	8.483E-02	-0.186
		227.20		-2.005E-01	5.010E-01	7.888E-01	4.374E-02	-0.254
		248.90		-2.640E-01	1.050E+00	1.523E+00	3.268E-01	-0.173
	+	293.70		7.823E+00	1.791E+00	2.063E+00	3.322E-01	3.792
		369.80		-7.791E-01	9.803E-01	1.527E+00	3.182E-01	-0.510
		568.70		-1.102E+00	1.136E+00	1.653E+00	9.319E-02	-0.667
		569.50		-1.581E-01	3.001E-01	4.556E-01	2.567E-02	-0.347
		574.00		-1.741E-01	1.699E+00	2.670E+00	1.499E-01	-0.065
		699.00		1.137E-01	8.343E-01	1.362E+00	2.444E-01	0.083
		706.10		-1.283E+00	1.339E+00	1.756E+00	7.749E-01	-0.731
		733.00		4.613E-02	5.016E-01	7.377E-01	1.576E-01	0.063
		742.81		-7.193E-02	1.833E+00	2.762E+00	1.850E+00	-0.026
		796.30		7.234E-01	1.159E+00	2.007E+00	5.347E-01	0.360
		805.60		6.510E-01	1.152E+00	1.997E+00	6.058E-01	0.326
		819.60		7.780E-01	1.419E+00	2.443E+00	9.239E-01	0.318
		826.30		-2.753E-01	9.096E-01	1.463E+00	6.521E-01	-0.188
		831.60		1.516E-01	7.138E-01	1.214E+00	3.598E-01	0.125
		876.40		7.192E-01	1.214E+00	1.719E+00	1.767E+00	0.418
		880.51		-9.072E-02	3.248E-01	5.264E-01	4.615E-02	-0.172
		883.24		1.002E-01	3.236E-01	5.443E-01	3.660E-01	0.184
		899.00		-4.140E-01	1.051E+00	1.660E+00	7.273E-01	-0.249
		925.00		7.999E-01	1.274E+00	2.252E+00	2.001E-01	0.355
		926.50		-7.613E-02	2.053E-01	3.269E-01	8.292E-02	-0.233
		946.00	*	-1.686E-01	3.352E-01	5.240E-01	9.851E-02	-0.322
		949.00		5.269E-01	5.283E-01	9.552E-01	8.279E-02	0.552
		980.50		-1.926E-01	7.323E-01	1.174E+00	9.807E-02	-0.164
		1394.10		-1.127E+00	1.559E+00	1.929E+00	1.253E+00	-0.584
PA-234M		766.42		1.257E+01	1.477E+01	2.319E+01	1.170E+01	0.542
		1001.03	*	1.924E+00	4.828E+00	8.326E+00	7.944E-01	0.231
TH-234		63.29	*	8.453E-01	1.763E+00	2.954E+00	5.323E-01	0.286
	+	92.38		2.003E+00	8.151E-01	1.232E+00	2.246E-01	1.626
U-235	+	89.95		2.977E+00	1.798E+00	2.238E+00	6.954E-01	1.330
	+	93.35		2.408E+00	1.107E+00	1.461E+00	4.101E-01	1.648
		105.00		-4.032E-01	1.246E+00	2.022E+00	5.963E-01	-0.199
		143.76	*	2.929E-01	2.571E-01	4.247E-01	6.868E-02	0.690
		163.35		-1.031E-02	5.610E-01	8.906E-01	1.583E-01	-0.012
	+	185.71		2.239E-01	7.468E-02	1.071E-01	5.609E-03	2.090
		205.31		2.317E-01	6.735E-01	9.703E-01	1.732E-01	0.239
NP-236		94.67		1.110E-01	1.587E-01	2.685E-01	2.300E-02	0.413
		98.44		5.154E-03	8.819E-02	1.286E-01	1.034E-02	0.040
		111.00		7.091E-02	1.672E-01	2.801E-01	1.882E-02	0.253
		160.31	*	-2.943E-02	9.310E-02	1.496E-01	7.738E-03	-0.197
U-238		63.29	*	8.453E-01	1.763E+00	2.954E+00	5.323E-01	0.286
	+	92.38		2.003E+00	7.504E-01	1.232E+00	1.101E-01	1.626
NP-239		99.55		9.397E-02	1.974E-01	2.946E-01	2.325E-02	0.319
		117.00	*	5.705E-02	2.243E-01	3.732E-01	2.329E-02	0.153
	+	209.75		1.602E+00	1.004E+00	1.566E+00	8.487E-02	1.023

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		228.18		-2.386E-01	2.672E-01	4.091E-01	2.272E-02	-0.583
		277.60		2.260E-01	2.158E-01	3.636E-01	2.114E-02	0.622
		334.30		-1.012E+00	1.944E+00	2.552E+00	1.508E-01	-0.397
AM-241		59.54	*	-1.041E-01	2.173E-01	3.575E-01	3.327E-02	-0.291
CM-243		99.55		9.670E-02	2.032E-01	3.031E-01	2.393E-02	0.319
		103.76	*	2.192E-02	1.112E-01	1.853E-01	1.373E-02	0.118
		117.00		5.870E-02	2.308E-01	3.839E-01	2.396E-02	0.153
	+	209.75		1.579E+00	9.899E-01	1.544E+00	8.367E-02	1.023
		228.18		-2.411E-01	2.700E-01	4.134E-01	2.295E-02	-0.583
		277.60		2.279E-01	2.176E-01	3.666E-01	2.131E-02	0.622
AM-246		798.80		-2.719E-01	1.792E-01	2.608E-01	1.898E-02	-1.043
		1036.00		-1.416E-01	3.415E-01	5.380E-01	4.147E-02	-0.263
		1062.04		-6.005E-02	2.630E-01	4.228E-01	3.115E-02	-0.142
		1078.86	*	4.464E-02	1.678E-01	2.839E-01	2.026E-02	0.157
CM-247		278.00		7.926E-01	8.611E-01	1.513E+00	8.797E-02	0.524
		287.40		1.619E+00	1.400E+00	2.440E+00	1.427E-01	0.664
		402.60	*	3.136E-02	4.448E-02	7.693E-02	4.459E-03	0.408
CF-249		252.85		-1.983E-01	1.076E+00	1.706E+00	9.726E-02	-0.116
		333.44		-2.231E-01	3.149E-01	3.312E-01	1.957E-02	-0.674
		387.95	*	1.216E-02	4.127E-02	7.004E-02	4.053E-03	0.174
CF-251		176.60	*	8.131E-02	1.441E-01	2.400E-01	1.240E-02	0.339
		227.00		-1.874E-01	4.514E-01	7.103E-01	3.938E-02	-0.264
		285.00		-2.222E-01	1.910E+00	3.198E+00	1.868E-01	-0.069

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]G243624003      *
* Acquisition date   : 7-JAN-2010 13:52:31 Detector SN#                   *
* Detector ID        : GAM23 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                       *
* Elapsed live time   : 0 02:00:00.00 Abundance limit : 75.000           *
* Elapsed real time   : 0 02:00:01.58 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G243624003 Analyst initials: MXR1                 *
* Batch Number       : 937704 Sample Quantity : 1.1731E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00 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	1.999E+01	2.261E+00	5.406E-01	0.000E+00
CD-109	3.781E+00	1.129E+00	1.608E+00	0.000E+00
SN-126	3.711E-01	1.108E-01	1.588E-01	0.000E+00
CS-135	3.879E-01	2.698E-01	2.836E-01	0.000E+00
TL-208	5.093E-01	9.332E-02	5.714E-02	0.000E+00
BI-211	3.977E+00	5.799E-01	3.537E-01	0.000E+00
PB-212	1.805E+00	1.762E-01	1.065E-01	0.000E+00
PO-212	1.805E+00	1.762E-01	1.065E-01	0.000E+00
BI-214	1.300E+00	1.992E-01	1.373E-01	0.000E+00
PB-214	1.383E+00	2.138E-01	1.233E-01	0.000E+00
PO-214	1.383E+00	2.138E-01	1.233E-01	0.000E+00
PO-216	1.805E+00	1.762E-01	1.065E-01	0.000E+00
PO-218	1.383E+00	2.138E-01	1.233E-01	0.000E+00
RA-224	5.223E+00	1.333E+00	1.212E+00	0.000E+00
RA-226	1.300E+00	1.992E-01	1.373E-01	0.000E+00
AC-228	1.868E+00	4.414E-01	2.310E-01	0.000E+00
RA-228	1.868E+00	4.414E-01	2.310E-01	0.000E+00
TH-228	1.834E+00	1.791E-01	1.082E-01	0.000E+00
TH-230	1.300E+00	1.992E-01	1.373E-01	0.000E+00
TH-232	1.868E+00	4.414E-01	2.310E-01	0.000E+00
U-234	1.300E+00	1.992E-01	1.373E-01	0.000E+00
NP-237	1.090E+00	3.929E-01	5.073E-01	0.000E+00
AM-243	3.936E-01	1.024E-01	1.167E-01	0.000E+00
ANH-511	1.332E-01	7.724E-02	5.192E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-8.917E-03	3.717E-01	6.289E-01	0.000E+00 NOT IDENT.
NA-22	-1.035E-02	5.034E-02	8.156E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.212E+06	0.000E+00	0.000E+00 SHORT HLIF

AL-26	-5.415E-02	3.287E-02	2.980E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.895E-02	1.037E-01	0.000E+00	FAIL ABUN
SC-46	-1.801E-02	4.317E-02	7.040E-02	0.000E+00	FAIL ABUN
V-48	-4.500E-03	7.322E-02	1.230E-01	0.000E+00	NOT IDENT.
CR-51	-2.824E-03	4.460E-01	7.728E-01	0.000E+00	NOT IDENT.
MN-52	-3.781E-02	2.825E-01	4.539E-01	0.000E+00	NOT IDENT.
MN-54	1.764E-03	4.206E-02	7.222E-02	0.000E+00	NOT IDENT.
CO-56	1.262E-02	4.049E-02	7.132E-02	0.000E+00	FAIL ABUN
CO-57	5.705E-03	2.886E-02	4.996E-02	0.000E+00	NOT IDENT.
CO-58	-6.884E-02	5.847E-02	6.813E-02	0.000E+00	NOT IDENT.
FE-59	-4.483E-02	1.008E-01	1.607E-01	0.000E+00	NOT IDENT.
CO-60	-3.942E-03	4.575E-02	7.481E-02	0.000E+00	NOT IDENT.
ZN-65	2.336E-02	1.308E-01	1.925E-01	0.000E+00	NOT IDENT.
GE-68	4.079E-01	1.428E+00	2.470E+00	0.000E+00	NOT IDENT.
AS-73	3.320E-01	1.280E+00	2.257E+00	0.000E+00	NOT IDENT.
AS-74	-1.882E-02	1.166E-01	1.925E-01	0.000E+00	NOT IDENT.
SE-75	-2.206E-02	5.766E-02	8.054E-02	0.000E+00	NOT IDENT.
BR-77	4.946E+00	1.435E+01	2.489E+01	0.000E+00	FAIL ABUN
SR-82	-5.447E-01	4.141E-01	6.194E-01	0.000E+00	NOT IDENT.
RB-83	1.579E-02	7.146E-02	1.227E-01	0.000E+00	NOT IDENT.
RB-84	2.221E-02	7.680E-02	1.346E-01	0.000E+00	NOT IDENT.
KR-85	1.338E+01	8.554E+00	1.445E+01	0.000E+00	NOT IDENT.
SR-85	6.931E-02	4.430E-02	7.482E-02	0.000E+00	NOT IDENT.
RB-86	-9.251E-02	9.507E-01	1.582E+00	0.000E+00	NOT IDENT.
Y-88	-8.620E-03	3.214E-02	5.021E-02	0.000E+00	NOT IDENT.
ZR-88	-2.545E-02	3.420E-02	5.490E-02	0.000E+00	NOT IDENT.
Y-91	1.656E+01	2.127E+01	3.811E+01	0.000E+00	NOT IDENT.
NB-94	2.594E-02	3.632E-02	6.393E-02	0.000E+00	NOT IDENT.
NB-95	4.069E-02	4.932E-02	8.685E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.909E-01	3.166E-01	0.000E+00	NOT IDENT.
ZR-95	8.129E-02	9.006E-02	1.593E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.095E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.455E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-4.795E+00	1.760E+01	2.824E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.677E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	9.585E-03	3.775E-02	6.415E-02	0.000E+00	NOT IDENT.
RH-102	9.804E-03	3.414E-02	5.772E-02	0.000E+00	NOT IDENT.
RU-103	5.601E-07	4.554E-02	7.701E-02	0.000E+00	NOT IDENT.
RH-106	-2.746E-01	3.629E-01	5.615E-01	0.000E+00	FAIL ABUN
RU-106	-2.746E-01	3.618E-01	5.615E-01	0.000E+00	FAIL ABUN
AG-108M	-6.815E-03	3.490E-02	5.864E-02	0.000E+00	NOT IDENT.
AG-110M	1.370E-02	4.301E-02	7.327E-02	0.000E+00	NOT IDENT.
IN-111	-1.611E-01	1.684E+00	2.422E+00	0.000E+00	NOT IDENT.
IN-113M	6.512E-03	4.802E-02	8.194E-02	0.000E+00	NOT IDENT.
SN-113	6.512E-03	4.802E-02	8.194E-02	0.000E+00	NOT IDENT.
IN-114M	2.186E-01	2.334E-01	3.634E-01	0.000E+00	NOT IDENT.
CD-115	-2.186E+00	1.517E+01	2.524E+01	0.000E+00	NOT IDENT.
SN-117M	-4.026E-02	6.646E-02	1.099E-01	0.000E+00	NOT IDENT.
SB-122	2.413E+00	2.886E+00	5.162E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.239E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.260E-02	3.291E-02	5.418E-02	0.000E+00	NOT IDENT.
I-124	2.626E-01	1.063E+00	1.530E+00	0.000E+00	NOT IDENT.
SB-124	-1.857E-02	8.762E-02	1.420E-01	0.000E+00	FAIL ABUN
SB-125	1.101E-02	1.041E-01	1.788E-01	0.000E+00	FAIL ABUN
TE-125M	-1.822E+00	1.108E+01	1.899E+01	0.000E+00	NOT IDENT.
I-126	1.233E-02	2.354E-01	3.923E-01	0.000E+00	NOT IDENT.
SB-126	-2.860E-02	2.085E-01	2.913E-01	0.000E+00	NOT IDENT.
SB-127	1.023E+00	1.799E+00	3.131E+00	0.000E+00	NOT IDENT.
XE-127	6.551E-04	5.751E-02	9.319E-02	0.000E+00	NOT IDENT.
I-131	8.163E-02	1.373E-01	2.448E-01	0.000E+00	NOT IDENT.
TE-132	-8.995E-01	9.890E-01	1.559E+00	0.000E+00	NOT IDENT.
BA-133	-3.847E-03	5.101E-02	7.591E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.367E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.622E-02	5.828E-02	1.067E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.354E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.031E-02	1.241E-01	2.052E-01	0.000E+00	FAIL ABUN
BA-137M	-3.212E-03	4.562E-02	7.534E-02	0.000E+00	NOT IDENT.
CS-137	-3.395E-03	4.823E-02	7.964E-02	0.000E+00	NOT IDENT.
CE-139	2.087E-02	3.393E-02	5.897E-02	0.000E+00	NOT IDENT.
BA-140	9.225E-02	3.077E-01	5.139E-01	0.000E+00	NOT IDENT.
LA-140	-1.053E-01	9.530E-02	1.285E-01	0.000E+00	FAIL ABUN
CE-141	9.292E-02	7.414E-02	1.323E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.273E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.218E-01	2.599E-01	3.994E-01	0.000E+00	NOT IDENT.
PM-144	-1.637E-02	4.037E-02	6.438E-02	0.000E+00	NOT IDENT.
PR-144	-1.110E+00	2.737E+00	4.365E+00	0.000E+00	NOT IDENT.
PM-146	-7.842E-03	4.879E-02	8.199E-02	0.000E+00	NOT IDENT.
ND-147	7.096E-02	6.116E-01	1.040E+00	0.000E+00	FAIL ABUN

PM-149	3.947E+01	1.338E+02	2.367E+02	0.000E+00	NOT IDENT.
EU-152	-7.361E-02	1.369E-01	1.843E-01	0.000E+00	NOT IDENT.
GD-153	5.065E-02	9.580E-02	1.500E-01	0.000E+00	NOT IDENT.
EU-154	-2.308E-02	1.412E-01	2.299E-01	0.000E+00	NOT IDENT.
EU-155	-2.773E-02	1.245E-01	2.131E-01	0.000E+00	FAIL ABUN
TB-160	-7.245E-02	1.628E-01	2.656E-01	0.000E+00	FAIL ABUN
HO-166M	2.375E-02	6.886E-02	1.174E-01	0.000E+00	FAIL ABUN
TM-171	-3.151E+01	3.601E+01	6.060E+01	0.000E+00	NOT IDENT.
LU-176	-1.285E-02	2.946E-02	4.702E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.532E+00	2.444E+00	0.000E+00	FAIL ABUN
LU-177M	-2.365E-01	1.966E-01	3.076E-01	0.000E+00	FAIL ABUN
HF-181	7.403E-03	4.992E-02	8.546E-02	0.000E+00	NOT IDENT.
W-181	-1.387E-01	4.708E-01	8.115E-01	0.000E+00	NOT IDENT.
TA-182	9.577E-02	2.390E-01	4.123E-01	0.000E+00	NOT IDENT.
RE-183	-3.130E-02	1.298E-01	2.124E-01	0.000E+00	FAIL ABUN
RE-184	-5.307E-02	2.821E-01	4.634E-01	0.000E+00	NOT IDENT.
OS-185	-2.188E-02	4.888E-02	7.794E-02	0.000E+00	NOT IDENT.
RE-188	5.934E-02	2.021E-01	3.475E-01	0.000E+00	NOT IDENT.
W-188	-3.501E+00	9.106E+00	1.341E+01	0.000E+00	NOT IDENT.
IR-192	-1.199E-03	3.916E-02	6.782E-02	0.000E+00	FAIL ABUN
AU-195	-1.113E-02	2.822E-01	4.282E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.192E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-3.948E+00	9.945E+00	1.655E+01	0.000E+00	NOT IDENT.
TL-202	7.233E-02	8.156E-02	1.471E-01	0.000E+00	NOT IDENT.
HG-203	1.127E-02	4.554E-02	8.043E-02	0.000E+00	NOT IDENT.
BI-207	1.220E-02	5.903E-02	1.014E-01	0.000E+00	FAIL ABUN
TL-207	4.395E-01	8.519E-01	1.331E+00	0.000E+00	FAIL ABUN
PO-209	-3.892E+00	8.639E+00	1.407E+01	0.000E+00	NOT IDENT.
BI-210	1.767E+00	6.097E+00	1.072E+01	0.000E+00	NOT IDENT.
PB-210	1.767E+00	6.097E+00	1.072E+01	0.000E+00	NOT IDENT.
PO-210	1.767E+00	6.097E+00	1.072E+01	0.000E+00	NOT IDENT.
PB-211	-5.686E-01	1.162E+00	1.838E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.618E-01	7.550E-01	0.000E+00	FAIL ABUN
PO-215	4.395E-01	8.519E-01	1.331E+00	0.000E+00	FAIL ABUN
RN-219	3.887E-01	4.926E-01	8.778E-01	0.000E+00	NOT IDENT.
RN-220	1.183E+01	3.040E+01	5.261E+01	0.000E+00	NOT IDENT.
RA-223	4.395E-01	8.519E-01	1.331E+00	0.000E+00	FAIL ABUN
AC-227	3.084E-01	4.570E-01	7.818E-01	0.000E+00	FAIL ABUN
TH-227	3.084E-01	4.579E-01	7.818E-01	0.000E+00	FAIL ABUN
TH-229	-4.799E-02	5.863E-01	9.825E-01	0.000E+00	FAIL ABUN
PA-231	-1.367E+00	1.661E+00	2.754E+00	0.000E+00	FAIL ABUN
TH-231	4.395E-01	8.519E-01	1.331E+00	0.000E+00	FAIL ABUN
U-231	5.158E-01	1.542E+00	2.390E+00	0.000E+00	FAIL ABUN
PA-233	-1.416E-02	7.155E-02	1.229E-01	0.000E+00	FAIL ABUN
PA-234	-1.686E-01	3.285E-01	5.248E-01	0.000E+00	FAIL ABUN
PA-234M	1.924E+00	4.731E+00	8.332E+00	0.000E+00	NOT IDENT.
TH-234	8.453E-01	1.728E+00	3.042E+00	0.000E+00	FAIL ABUN
U-235	2.929E-01	2.519E-01	4.338E-01	0.000E+00	FAIL ABUN
NP-236	-2.943E-02	9.124E-02	1.527E-01	0.000E+00	NOT IDENT.
U-238	8.453E-01	1.728E+00	3.042E+00	0.000E+00	FAIL ABUN
NP-239	5.705E-02	2.199E-01	3.820E-01	0.000E+00	FAIL ABUN
AM-241	-1.041E-01	2.130E-01	3.685E-01	0.000E+00	NOT IDENT.
CM-243	2.192E-02	1.090E-01	1.899E-01	0.000E+00	FAIL ABUN
AM-246	4.464E-02	1.644E-01	2.839E-01	0.000E+00	NOT IDENT.
CM-247	3.136E-02	4.359E-02	7.774E-02	0.000E+00	NOT IDENT.
CF-249	1.216E-02	4.045E-02	7.081E-02	0.000E+00	NOT IDENT.
CF-251	8.131E-02	1.412E-01	2.446E-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]G243624003.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 13:52:31.
Sample ID          : G243624003 Sample quantity : 1.17310E+02 GRAM
Detector name      : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.58 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit   : 75.00000 Sensitivity : 5.00000
Batch ID          : 937704 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	665	10.67*	9.973E-01	1.999E+01	1.999E+01	11.54
CD-109	88.03	224	3.72*	5.221E+00	3.691E+00	3.781E+00	30.46
SN-126	64.28	-----	9.60	2.723E+00	-----	Line Not Found	-----
	86.94	224	8.90	5.221E+00	1.543E+00	1.543E+00	50.64
	87.57	224	37.00*	5.221E+00	3.711E-01	3.711E-01	30.46
CS-135	268.24	82	16.00*	4.230E+00	3.879E-01	3.879E-01	70.98
TL-208	277.35	-----	6.80	4.140E+00	-----	Line Not Found	-----
	510.84	106	21.60	2.544E+00	6.165E-01	6.165E-01	59.77
	583.14	305	84.20*	2.278E+00	5.093E-01	5.093E-01	18.70
	860.37	-----	12.46	1.609E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	3.829E+00	-----	Line Not Found	-----
	351.07	553	12.94*	3.441E+00	3.977E+00	3.977E+00	14.88
PB-212	74.81	328	10.70	4.034E+00	2.428E+00	2.428E+00	28.14
	77.11	595	18.00	4.299E+00	2.460E+00	2.460E+00	15.50
	87.30	224	8.00	5.221E+00	1.716E+00	1.716E+00	32.06
	238.63	1167	44.60*	4.637E+00	1.805E+00	1.805E+00	9.96
	300.09	64	3.41	3.898E+00	1.536E+00	1.536E+00	79.46
PO-212	74.81	328	10.70	4.034E+00	2.428E+00	2.428E+00	28.14
	77.11	595	18.00	4.299E+00	2.460E+00	2.460E+00	15.50
	87.30	224	8.00	5.221E+00	1.716E+00	1.716E+00	32.06
	115.19	-----	0.60	6.293E+00	-----	Line Not Found	-----
	238.63	1167	44.60*	4.637E+00	1.805E+00	1.805E+00	9.96
	300.09	64	3.41	3.898E+00	1.536E+00	1.536E+00	79.46
BI-214	609.31	412	46.30*	2.194E+00	1.300E+00	1.300E+00	15.64
	1120.29	81	15.10	1.259E+00	1.370E+00	1.370E+00	40.67
	1764.49	64	15.80	8.743E-01	1.487E+00	1.487E+00	28.30
PB-214	74.81	328	6.21	4.034E+00	4.183E+00	4.183E+00	27.56
	77.11	595	10.50	4.299E+00	4.217E+00	4.217E+00	17.27
	87.30	224	4.67	5.221E+00	2.940E+00	2.940E+00	31.42
	241.98	296	7.49	4.591E+00	2.754E+00	2.754E+00	26.65
	295.21	386	19.20	3.950E+00	1.630E+00	1.630E+00	18.39
	351.92	553	37.20*	3.441E+00	1.383E+00	1.383E+00	15.77

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	74.81	328	6.21	4.034E+00	4.183E+00	4.183E+00	27.56
	77.11	595	10.50	4.299E+00	4.217E+00	4.217E+00	17.27
	87.30	224	4.67	5.221E+00	2.940E+00	2.940E+00	31.42
	241.98	296	7.49	4.591E+00	2.754E+00	2.754E+00	26.65
	295.21	386	19.20	3.950E+00	1.630E+00	1.630E+00	18.39
PO-216	351.92	553	37.20*	3.441E+00	1.383E+00	1.383E+00	15.77
	74.81	328	10.70	4.034E+00	2.428E+00	2.428E+00	28.14
	77.11	595	18.00	4.299E+00	2.460E+00	2.460E+00	15.50
	87.30	224	8.00	5.221E+00	1.716E+00	1.716E+00	32.06
	238.63	1167	44.60*	4.637E+00	1.805E+00	1.805E+00	9.96
PO-218	300.09	64	3.41	3.898E+00	1.536E+00	1.536E+00	79.46
	74.81	328	6.21	4.034E+00	4.183E+00	4.183E+00	27.56
	77.11	595	10.50	4.299E+00	4.217E+00	4.217E+00	17.27
	87.30	224	4.67	5.221E+00	2.940E+00	2.940E+00	31.42
	241.98	296	7.49	4.591E+00	2.754E+00	2.754E+00	26.65
RA-224	295.21	386	19.20	3.950E+00	1.630E+00	1.630E+00	18.39
	351.92	553	37.20*	3.441E+00	1.383E+00	1.383E+00	15.77
	240.98	296	3.95*	4.591E+00	5.223E+00	5.223E+00	26.05
	609.31	412	46.30*	2.194E+00	1.300E+00	1.300E+00	15.64
	1120.29	81	15.10	1.259E+00	1.370E+00	1.370E+00	40.67
AC-228	1764.49	64	15.80	8.743E-01	1.487E+00	1.487E+00	28.30
	338.32	137	11.40	3.547E+00	1.083E+00	1.083E+00	62.69
	911.07	247	27.70*	1.526E+00	1.868E+00	1.868E+00	24.10
	969.11	136	16.60	1.441E+00	1.816E+00	1.816E+00	33.48
	338.32	137	11.40	3.547E+00	1.083E+00	1.083E+00	62.69
RA-228	911.07	247	27.70*	1.526E+00	1.868E+00	1.868E+00	24.10
	969.11	136	16.60	1.441E+00	1.816E+00	1.816E+00	33.48
	74.81	328	10.70	4.034E+00	2.428E+00	2.467E+00	26.57
	77.11	595	18.00	4.299E+00	2.460E+00	2.500E+00	15.50
	87.30	224	8.00	5.221E+00	1.716E+00	1.744E+00	30.46
TH-228	238.63	1167	44.60*	4.637E+00	1.805E+00	1.834E+00	9.96
	300.09	64	3.41	3.898E+00	1.536E+00	1.560E+00	98.59
	609.31	412	46.30*	2.194E+00	1.300E+00	1.300E+00	15.64
	1120.29	81	15.10	1.259E+00	1.370E+00	1.370E+00	40.67
	1764.49	64	15.80	8.743E-01	1.487E+00	1.487E+00	28.30
TH-232	338.32	137	11.40	3.547E+00	1.083E+00	1.083E+00	47.98
	911.07	247	27.70*	1.526E+00	1.868E+00	1.868E+00	24.10
	969.11	136	16.60	1.441E+00	1.816E+00	1.816E+00	33.48
	609.31	412	46.30*	2.194E+00	1.300E+00	1.300E+00	15.64
	1120.29	81	15.10	1.259E+00	1.370E+00	1.370E+00	40.67
U-234	1764.49	64	15.80	8.743E-01	1.487E+00	1.487E+00	28.30
	86.50	224	12.60*	5.221E+00	1.090E+00	1.090E+00	36.79
	95.87	-----	2.60	5.757E+00	-----	Line Not Found	-----
	74.67	328	66.00*	4.034E+00	3.936E-01	3.936E-01	26.54
	86.72	224	0.34	5.221E+00	4.086E+01	4.086E+01	30.46
AM-243	117.66	-----	0.55	6.314E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.209E+00	-----	Line Not Found	-----
	511.00	106	100.00*	2.544E+00	1.332E-01	1.332E-01	59.19

Flag: "*" = Keyline

Total number of lines in spectrum 27
Number of unidentified lines 0
Number of lines tentatively identified by NID 27 100.00%

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	1.999E+01	1.999E+01	0.231E+01	11.54	
CD-109	464.00D	1.02	3.691E+00	3.781E+00	1.152E+00	30.46	
SN-126	1.00E+05Y	1.00	3.711E-01	3.711E-01	1.130E-01	30.46	
CS-135	2.30E+06Y	1.00	3.879E-01	3.879E-01	2.753E-01	70.98	
TL-208	1.41E+10Y	1.00	5.093E-01	5.093E-01	0.952E-01	18.70	
BI-211	7.04E+08Y	1.00	3.977E+00	3.977E+00	0.592E+00	14.88	
PB-212	1.41E+10Y	1.00	1.805E+00	1.805E+00	0.180E+00	9.96	
PO-212	1.41E+10Y	1.00	1.805E+00	1.805E+00	0.180E+00	9.96	
BI-214	1600.00Y	1.00	1.300E+00	1.300E+00	0.203E+00	15.64	
PB-214	1600.00Y	1.00	1.383E+00	1.383E+00	0.218E+00	15.77	
PO-214	1600.00Y	1.00	1.383E+00	1.383E+00	0.218E+00	15.77	
PO-216	1.41E+10Y	1.00	1.805E+00	1.805E+00	0.180E+00	9.96	
PO-218	1600.00Y	1.00	1.383E+00	1.383E+00	0.218E+00	15.77	
RA-224	1.41E+10Y	1.00	5.223E+00	5.223E+00	1.361E+00	26.05	
RA-226	1600.00Y	1.00	1.300E+00	1.300E+00	0.203E+00	15.64	
AC-228	1.41E+10Y	1.00	1.868E+00	1.868E+00	0.450E+00	24.10	
RA-228	1.41E+10Y	1.00	1.868E+00	1.868E+00	0.450E+00	24.10	
TH-228	1.91Y	1.02	1.805E+00	1.834E+00	0.183E+00	9.96	
TH-230	4.47E+09Y	1.00	1.300E+00	1.300E+00	0.203E+00	15.64	
TH-232	1.41E+10Y	1.00	1.868E+00	1.868E+00	0.450E+00	24.10	
U-234	4.47E+09Y	1.00	1.300E+00	1.300E+00	0.203E+00	15.64	
NP-237	2.14E+06Y	1.00	1.090E+00	1.090E+00	0.401E+00	36.79	
AM-243	7380.00Y	1.00	3.936E-01	3.936E-01	1.045E-01	26.54	
ANH-511	1.00E+09Y	1.00	1.332E-01	1.332E-01	0.788E-01	59.19	
Total Activity :			5.794E+01	5.806E+01			

Grand Total Activity : 5.794E+01 5.806E+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
4	89.72	136	350	1.38	179.45	171	24	1.88E-02	51.8	5.40E+00	T
4	92.54	189	265	1.21	185.08	171	24	2.62E-02	36.4	5.58E+00	T
0	129.28	96	270	1.45	258.56	255	8	1.34E-02	62.7	6.32E+00	T
0	185.59	208	240	1.38	371.19	366	10	2.88E-02	32.9	5.49E+00	T
0	209.06	83	193	0.74	418.12	414	8	1.15E-02	62.5	5.09E+00	T
0	327.43	48	111	1.45	654.87	652	8	6.60E-03	82.0	3.64E+00	T
0	462.76	76	72	1.97	925.52	921	10	1.06E-02	47.5	2.76E+00	T
0	726.93	81	46	1.69	1453.85	1448	11	1.12E-02	39.5	1.88E+00	T
0	1237.52	68	41	1.38	2475.03	2468	15	9.43E-03	49.1	1.15E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624003.CNF;1
* Acquisition date   : 7-JAN-2010 13:52:31.  Detector SN#      :
* Detector ID        : GAM23              Sensitivity          : 5.00000
* Geometry           : CAN                Energy tolerance      : 1.50000
* Elapsed live time  : 0 02:00:00.00      Abundance limit      : 75.00000
* Elapsed real time  : 0 02:00:01.58      Half life ratio      : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library   : SOLID
* Sample ID          : G243624003          Analyst initials  : MXR1
* Batch Number       : 937704             Sample Quantity   : 1.17310E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00.62MS 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	1.999E+01	2.307E+00	5.424E-01	4.057E-02	36.858
CD-109	3.781E+00	1.152E+00	1.567E+00	1.530E-01	2.413
SN-126	3.711E-01	1.130E-01	1.547E-01	1.505E-02	2.399
CS-135	3.879E-01	2.753E-01	2.795E-01	2.135E-02	1.388
TL-208	5.093E-01	9.522E-02	5.677E-02	3.686E-03	8.972
BI-211	3.977E+00	5.918E-01	3.496E-01	2.278E-02	11.378
PB-212	1.805E+00	1.798E-01	1.048E-01	7.534E-03	17.225
PO-212	1.805E+00	1.798E-01	1.048E-01	7.534E-03	17.225
BI-214	1.300E+00	2.033E-01	1.365E-01	1.026E-02	9.521
PB-214	1.383E+00	2.181E-01	1.219E-01	1.017E-02	11.354
PO-214	1.383E+00	2.181E-01	1.219E-01	1.017E-02	11.354
PO-216	1.805E+00	1.798E-01	1.048E-01	7.534E-03	17.225
PO-218	1.383E+00	2.181E-01	1.219E-01	1.017E-02	11.354
RA-224	5.223E+00	1.361E+00	1.193E+00	6.720E-02	4.379
RA-226	1.300E+00	2.033E-01	1.365E-01	1.026E-02	9.521
AC-228	1.868E+00	4.504E-01	2.305E-01	2.660E-02	8.105
RA-228	1.868E+00	4.504E-01	2.305E-01	2.660E-02	8.105
TH-228	1.834E+00	1.827E-01	1.065E-01	7.655E-03	17.225

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.300E+00	2.033E-01	1.365E-01	1.026E-02	9.521
TH-232	1.868E+00	4.504E-01	2.305E-01	2.660E-02	8.105
U-234	1.300E+00	2.033E-01	1.365E-01	1.026E-02	9.521
NP-237	1.090E+00	4.009E-01	4.940E-01	1.125E-01	2.206
AM-243	3.936E-01	1.045E-01	1.135E-01	1.009E-02	3.468
ANH-511	1.332E-01	7.882E-02	5.151E-02	2.992E-03	2.585

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-8.917E-03		3.792E-01	6.234E-01	4.237E-02	-0.014
NA-22	-1.035E-02		5.137E-02	8.171E-02	5.487E-03	-0.127
NA-24	-1.656E+00		1.129E+00	Half-Life too short		
AL-26	-5.415E-02		3.354E-02	2.996E-02	1.801E-03	-1.807
TI-44	4.540E-01	+	7.036E-02	1.009E-01	9.149E-03	4.498
SC-46	-1.801E-02		4.405E-02	7.026E-02	6.277E-03	-0.256
V-48	-4.500E-03		7.471E-02	1.229E-01	1.022E-02	-0.037
CR-51	-2.824E-03		4.551E-01	7.629E-01	5.003E-02	-0.004
MN-52	-3.781E-02		2.882E-01	4.553E-01	3.294E-02	-0.083
MN-54	1.764E-03		4.292E-02	7.203E-02	5.703E-03	0.024
CO-56	1.262E-02		4.132E-02	7.113E-02	5.787E-03	0.177
CO-57	5.705E-03		2.945E-02	4.883E-02	2.879E-03	0.117
CO-58	-6.884E-02		5.967E-02	6.792E-02	5.103E-03	-1.013
FE-59	-4.483E-02		1.028E-01	1.607E-01	1.238E-02	-0.279
CO-60	-3.942E-03		4.668E-02	7.498E-02	5.505E-03	-0.053
ZN-65	2.336E-02		1.334E-01	1.926E-01	1.272E-02	0.121
GE-68	4.079E-01		1.457E+00	2.470E+00	1.768E-01	0.165
AS-73	3.320E-01		1.306E+00	2.187E+00	1.931E-01	0.152
AS-74	-1.882E-02		1.190E-01	1.913E-01	1.055E-02	-0.098
SE-75	-2.206E-02		5.884E-02	7.935E-02	4.619E-03	-0.278
BR-77	4.946E+00		1.464E+01	2.470E+01	1.430E+00	0.200
SR-82	-5.447E-01		4.225E-01	6.172E-01	4.258E-02	-0.882
RB-83	1.579E-02		7.292E-02	1.218E-01	7.051E-03	0.130
RB-84	2.221E-02		7.836E-02	1.343E-01	1.180E-02	0.165
KR-85	1.338E+01		8.728E+00	1.433E+01	8.317E-01	0.934
SR-85	6.931E-02		4.521E-02	7.423E-02	4.308E-03	0.934
RB-86	-9.251E-02		9.701E-01	1.582E+00	1.134E-01	-0.058
Y-88	-8.620E-03		3.279E-02	5.050E-02	2.974E-03	-0.171
ZR-88	-2.545E-02		3.490E-02	5.431E-02	3.135E-03	-0.469
Y-91	1.656E+01		2.170E+01	3.816E+01	2.276E+00	0.434
NB-94	2.594E-02		3.706E-02	6.364E-02	3.636E-03	0.408
NB-95	4.069E-02		5.033E-02	8.653E-02	5.815E-03	0.470
NB-95M	5.833E-01		1.948E-01	3.116E-01	2.298E-02	1.872
ZR-95	8.129E-02		9.190E-02	1.587E-01	1.218E-02	0.512
NB-97	1.167E-01		1.579E-01	Half-Life too short		
ZR-97	1.659E+01		3.293E+00	Half-Life too short		
MO-99	-4.795E+00		1.796E+01	2.813E+01	3.937E+00	-0.170

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	-7.531E+11		3.406E+11	Half-Life too short		
RH-101	9.585E-03		3.852E-02	6.301E-02	3.359E-03	0.152
RH-102	9.804E-03		3.484E-02	5.721E-02	3.349E-03	0.171
RU-103	5.601E-07		4.647E-02	7.638E-02	9.669E-03	0.000
RH-106	-2.746E-01		3.703E-01	5.582E-01	6.437E-02	-0.492
RU-106	-2.746E-01		3.692E-01	5.582E-01	2.999E-02	-0.492
AG-108M	-6.815E-03		3.561E-02	5.808E-02	3.682E-03	-0.117
AG-110M	1.370E-02		4.389E-02	7.288E-02	4.050E-03	0.188
IN-111	-1.611E-01		1.718E+00	2.385E+00	1.350E-01	-0.068
IN-113M	6.512E-03		4.900E-02	8.106E-02	4.994E-03	0.080
SN-113	6.512E-03		4.900E-02	8.106E-02	4.994E-03	0.080
IN-114M	2.186E-01		2.382E-01	3.568E-01	1.881E-02	0.613
CD-115	-2.186E+00		1.548E+01	2.505E+01	1.445E+00	-0.087
SN-117M	-4.026E-02		6.781E-02	1.077E-01	5.595E-03	-0.374
SB-122	2.413E+00		2.945E+00	5.127E+00	2.900E-01	0.471
I-123	-1.538E+01		1.142E+01	Half-Life too short		
TE-123M	-2.260E-02		3.358E-02	5.310E-02	2.802E-03	-0.426
I-124	2.626E-01		1.085E+00	1.521E+00	8.335E-02	0.173
SB-124	-1.857E-02		8.941E-02	1.427E-01	9.946E-03	-0.130
SB-125	1.101E-02		1.062E-01	1.771E-01	1.077E-02	0.062
TE-125M	-1.822E+00		1.131E+01	1.854E+01	1.654E+00	-0.098
I-126	1.233E-02		2.402E-01	3.903E-01	2.020E-02	0.032
SB-126	-2.860E-02		2.127E-01	2.900E-01	1.737E-02	-0.099
SB-127	1.023E+00		1.835E+00	3.116E+00	2.982E-01	0.328
XE-127	6.551E-04		5.869E-02	9.156E-02	4.915E-03	0.007
I-131	8.163E-02		1.401E-01	2.420E-01	1.583E-02	0.337
TE-132	-8.995E-01		1.009E+00	1.534E+00	2.218E-01	-0.586
BA-133	-3.847E-03		5.205E-02	7.502E-02	8.704E-03	-0.051
I-133	-5.240E-03		6.976E-03	Half-Life too short		
CS-134	5.622E-02		5.947E-02	1.064E-01	7.769E-03	0.528
I-135	5.434E+09		3.242E+10	Half-Life too short		
CS-136	-2.031E-02		1.266E-01	2.052E-01	1.635E-02	-0.099
BA-137M	-3.212E-03		4.656E-02	7.494E-02	3.829E-03	-0.043
CS-137	-3.395E-03		4.921E-02	7.922E-02	4.069E-03	-0.043
CE-139	2.087E-02		3.462E-02	5.782E-02	2.948E-03	0.361
BA-140	9.225E-02		3.139E-01	5.101E-01	1.658E-01	0.181
LA-140	-1.053E-01		9.725E-02	1.291E-01	8.854E-03	-0.816
CE-141	9.292E-02		7.566E-02	1.295E-01	7.303E-03	0.718
CE-143	1.885E-03		2.690E-04	Half-Life too short		
CE-144	1.218E-01		2.652E-01	3.907E-01	5.518E-02	0.312
PM-144	-1.637E-02		4.119E-02	6.408E-02	3.605E-03	-0.255
PR-144	-1.110E+00		2.793E+00	4.345E+00	2.442E-01	-0.255
PM-146	-7.842E-03		4.979E-02	8.124E-02	7.036E-03	-0.097
ND-147	7.096E-02		6.241E-01	1.032E+00	1.394E-01	0.069
PM-149	3.947E+01		1.366E+02	2.334E+02	3.313E+01	0.169
EU-152	-7.361E-02		1.397E-01	1.821E-01	1.207E-02	-0.404
GD-153	5.065E-02		9.776E-02	1.463E-01	1.195E-02	0.346
EU-154	-2.308E-02		1.441E-01	2.303E-01	2.287E-02	-0.100

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	-2.773E-02		1.270E-01	2.080E-01	1.534E-02	-0.133
TB-160	-7.245E-02		1.661E-01	2.650E-01	2.317E-02	-0.273
HO-166M	2.375E-02		7.027E-02	1.168E-01	6.838E-03	0.203
TM-171	-3.151E+01		3.674E+01	5.887E+01	5.119E+00	-0.535
LU-176	-1.285E-02		3.006E-02	4.639E-02	2.733E-03	-0.277
LU-177	2.494E+00	+	1.564E+00	2.402E+00	1.300E-01	1.038
LU-177M	-2.365E-01		2.006E-01	3.045E-01	1.772E-02	-0.777
HF-181	7.403E-03		5.094E-02	8.473E-02	4.956E-03	0.087
W-181	-1.387E-01		4.804E-01	7.881E-01	6.846E-02	-0.176
TA-182	9.577E-02		2.439E-01	4.128E-01	2.534E-02	0.232
RE-183	-3.130E-02		1.324E-01	2.082E-01	1.071E-02	-0.150
RE-184	-5.307E-02		2.879E-01	4.563E-01	2.602E-02	-0.116
OS-185	-2.188E-02		4.988E-02	7.751E-02	4.045E-03	-0.282
RE-188	5.934E-02		2.062E-01	3.405E-01	1.787E-02	0.174
W-188	-3.501E+00		9.291E+00	1.323E+01	7.746E-01	-0.265
IR-192	-1.199E-03		3.996E-02	6.694E-02	3.971E-03	-0.018
AU-195	-1.113E-02		2.879E-01	4.176E-01	3.332E-02	-0.027
TL-200	1.644E-04		4.690E-04	Half-Life too short		
TL-201	-3.948E+00		1.015E+01	1.622E+01	8.280E-01	-0.243
TL-202	7.233E-02		8.323E-02	1.457E-01	8.525E-03	0.496
HG-203	1.127E-02		4.647E-02	7.929E-02	4.898E-03	0.142
BI-207	1.220E-02		6.023E-02	1.014E-01	7.450E-03	0.120
TL-207	4.395E-01		8.692E-01	1.314E+00	2.175E-01	0.334
PO-209	-3.892E+00		8.816E+00	1.404E+01	1.275E+00	-0.277
BI-210	1.767E+00		6.221E+00	1.038E+01	8.082E-01	0.170
PB-210	1.767E+00		6.221E+00	1.038E+01	8.082E-01	0.170
PO-210	1.767E+00		6.221E+00	1.038E+01	6.964E-01	0.170
PB-211	-5.686E-01		1.185E+00	1.819E+00	1.134E+00	-0.313
BI-212	1.170E+00	+	4.712E-01	7.518E-01	5.967E-02	1.556
PO-215	4.395E-01		8.692E-01	1.314E+00	2.175E-01	0.334
RN-219	3.887E-01		5.027E-01	8.686E-01	1.182E-01	0.448
RN-220	1.183E+01		3.102E+01	5.223E+01	2.981E+00	0.227
RA-223	4.395E-01		8.692E-01	1.314E+00	2.175E-01	0.334
AC-227	3.084E-01		4.663E-01	7.700E-01	1.072E-01	0.401
TH-227	3.084E-01		4.673E-01	7.700E-01	1.299E-01	0.401
TH-229	-4.799E-02		5.983E-01	9.648E-01	5.111E-02	-0.050
PA-231	-1.367E+00		1.695E+00	2.715E+00	3.745E-01	-0.503
TH-231	4.395E-01		8.692E-01	1.314E+00	2.175E-01	0.334
U-231	5.158E-01		1.573E+00	2.330E+00	1.954E-01	0.221
PA-233	-1.416E-02		7.301E-02	1.212E-01	7.581E-03	-0.117
PA-234	-1.686E-01		3.352E-01	5.240E-01	9.851E-02	-0.322
PA-234M	1.924E+00		4.828E+00	8.326E+00	7.944E-01	0.231
TH-234	8.453E-01		1.763E+00	2.954E+00	5.323E-01	0.286
U-235	2.929E-01		2.571E-01	4.247E-01	6.868E-02	0.690
NP-236	-2.943E-02		9.310E-02	1.496E-01	7.738E-03	-0.197
U-238	8.453E-01		1.763E+00	2.954E+00	5.323E-01	0.286
NP-239	5.705E-02		2.243E-01	3.732E-01	2.329E-02	0.153
AM-241	-1.041E-01		2.173E-01	3.575E-01	3.327E-02	-0.291

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	2.192E-02		1.112E-01	1.853E-01	1.373E-02	0.118
AM-246	4.464E-02		1.678E-01	2.839E-01	2.026E-02	0.157
CM-247	3.136E-02		4.448E-02	7.693E-02	4.459E-03	0.408
CF-249	1.216E-02		4.127E-02	7.004E-02	4.053E-03	0.174
CF-251	8.131E-02		1.441E-01	2.400E-01	1.240E-02	0.339

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]G243624003          *
* Acquisition date   : 7-JAN-2010 13:52:31 Detector SN#      :              *
* Detector ID        : GAM23                      Sensitivity   : 5.000        *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time   : 0 02:00:00.00             Abundance limit : 75.000      *
* Elapsed real time   : 0 02:00:01.58             Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624003             Analyst initials: MXR1          *
* Batch Number       : 937704                 Sample Quantity : 1.1731E+02 GRAM *
* Recovery           : 1.00000                Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-JUN-2009 11:17:00 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	1.999E+01	2.261E+00	2.705E-01	1.154E+00
CD-109	3.781E+00	1.129E+00	8.047E-01	5.758E-01
SN-126	3.711E-01	1.108E-01	7.946E-02	5.652E-02
CS-135	3.879E-01	2.698E-01	1.419E-01	1.377E-01
TL-208	5.093E-01	9.332E-02	2.859E-02	4.761E-02
BI-211	3.977E+00	5.799E-01	1.770E-01	2.959E-01
PB-212	1.805E+00	1.762E-01	5.327E-02	8.991E-02
PO-212	1.805E+00	1.762E-01	5.327E-02	8.991E-02
BI-214	1.300E+00	1.992E-01	6.871E-02	1.016E-01
PB-214	1.383E+00	2.138E-01	6.169E-02	1.091E-01
PO-214	1.383E+00	2.138E-01	6.169E-02	1.091E-01
PO-216	1.805E+00	1.762E-01	5.327E-02	8.991E-02
PO-218	1.383E+00	2.138E-01	6.169E-02	1.091E-01
RA-224	5.223E+00	1.333E+00	6.062E-01	6.803E-01
RA-226	1.300E+00	1.992E-01	6.871E-02	1.016E-01
AC-228	1.868E+00	4.414E-01	1.155E-01	2.252E-01
RA-228	1.868E+00	4.414E-01	1.155E-01	2.252E-01
TH-228	1.834E+00	1.791E-01	5.413E-02	9.136E-02
TH-230	1.300E+00	1.992E-01	6.871E-02	1.016E-01
TH-232	1.868E+00	4.414E-01	1.155E-01	2.252E-01
U-234	1.300E+00	1.992E-01	6.871E-02	1.016E-01
NP-237	1.090E+00	3.929E-01	2.538E-01	2.005E-01
AM-243	3.936E-01	1.024E-01	5.839E-02	5.224E-02
ANH-511	1.332E-01	7.724E-02	2.598E-02	3.941E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-8.917E-03	3.717E-01	3.146E-01	1.896E-01 NOT IDENT.
NA-22	-1.035E-02	5.034E-02	4.080E-02	2.568E-02 NOT IDENT.
NA-24	-1.656E+06	2.212E+06	0.000E+00	1.129E+06 SHORT HLIF

AL-26	-5.415E-02	3.287E-02	1.491E-02	1.677E-02	NOT IDENT.
TI-44	4.540E-01	6.895E-02	5.190E-02	3.518E-02	FAIL ABUN
SC-46	-1.801E-02	4.317E-02	3.522E-02	2.203E-02	FAIL ABUN
V-48	-4.500E-03	7.322E-02	6.153E-02	3.736E-02	NOT IDENT.
CR-51	-2.824E-03	4.460E-01	3.866E-01	2.275E-01	NOT IDENT.
MN-52	-3.781E-02	2.825E-01	2.271E-01	1.441E-01	NOT IDENT.
MN-54	1.764E-03	4.206E-02	3.613E-02	2.146E-02	NOT IDENT.
CO-56	1.262E-02	4.049E-02	3.568E-02	2.066E-02	FAIL ABUN
CO-57	5.705E-03	2.886E-02	2.499E-02	1.473E-02	NOT IDENT.
CO-58	-6.884E-02	5.847E-02	3.409E-02	2.983E-02	NOT IDENT.
FE-59	-4.483E-02	1.008E-01	8.039E-02	5.141E-02	NOT IDENT.
CO-60	-3.942E-03	4.575E-02	3.743E-02	2.334E-02	NOT IDENT.
ZN-65	2.336E-02	1.308E-01	9.633E-02	6.672E-02	NOT IDENT.
GE-68	4.079E-01	1.428E+00	1.236E+00	7.286E-01	NOT IDENT.
AS-73	3.320E-01	1.280E+00	1.129E+00	6.528E-01	NOT IDENT.
AS-74	-1.882E-02	1.166E-01	9.629E-02	5.948E-02	NOT IDENT.
SE-75	-2.206E-02	5.766E-02	4.029E-02	2.942E-02	NOT IDENT.
BR-77	4.946E+00	1.435E+01	1.245E+01	7.322E+00	FAIL ABUN
SR-82	-5.447E-01	4.141E-01	3.099E-01	2.113E-01	NOT IDENT.
RB-83	1.579E-02	7.146E-02	6.141E-02	3.646E-02	NOT IDENT.
RB-84	2.221E-02	7.680E-02	6.734E-02	3.918E-02	NOT IDENT.
KR-85	1.338E+01	8.554E+00	7.227E+00	4.364E+00	NOT IDENT.
SR-85	6.931E-02	4.430E-02	3.743E-02	2.260E-02	NOT IDENT.
RB-86	-9.251E-02	9.507E-01	7.915E-01	4.850E-01	NOT IDENT.
Y-88	-8.620E-03	3.214E-02	2.512E-02	1.640E-02	NOT IDENT.
ZR-88	-2.545E-02	3.420E-02	2.746E-02	1.745E-02	NOT IDENT.
Y-91	1.656E+01	2.127E+01	1.907E+01	1.085E+01	NOT IDENT.
NB-94	2.594E-02	3.632E-02	3.198E-02	1.853E-02	NOT IDENT.
NB-95	4.069E-02	4.932E-02	4.345E-02	2.516E-02	NOT IDENT.
NB-95M	5.833E-01	1.909E-01	1.584E-01	9.741E-02	NOT IDENT.
ZR-95	8.129E-02	9.006E-02	7.970E-02	4.595E-02	NOT IDENT.
NB-97	1.167E+05	3.095E+05	0.000E+00	1.579E+05	SHORT HLIF
ZR-97	1.659E+07	6.455E+06	0.000E+00	3.293E+06	SHORT HLIF
MO-99	-4.795E+00	1.760E+01	1.413E+01	8.982E+00	NOT IDENT.
TC-99M	-7.531E+17	6.677E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	9.585E-03	3.775E-02	3.210E-02	1.926E-02	NOT IDENT.
RH-102	9.804E-03	3.414E-02	2.888E-02	1.742E-02	NOT IDENT.
RU-103	5.601E-07	4.554E-02	3.853E-02	2.324E-02	NOT IDENT.
RH-106	-2.746E-01	3.629E-01	2.809E-01	1.851E-01	FAIL ABUN
RU-106	-2.746E-01	3.618E-01	2.809E-01	1.846E-01	FAIL ABUN
AG-108M	-6.815E-03	3.490E-02	2.934E-02	1.781E-02	NOT IDENT.
AG-110M	1.370E-02	4.301E-02	3.666E-02	2.194E-02	NOT IDENT.
IN-111	-1.611E-01	1.684E+00	1.212E+00	8.590E-01	NOT IDENT.
IN-113M	6.512E-03	4.802E-02	4.099E-02	2.450E-02	NOT IDENT.
SN-113	6.512E-03	4.802E-02	4.099E-02	2.450E-02	NOT IDENT.
IN-114M	2.186E-01	2.334E-01	1.818E-01	1.191E-01	NOT IDENT.
CD-115	-2.186E+00	1.517E+01	1.263E+01	7.740E+00	NOT IDENT.
SN-117M	-4.026E-02	6.646E-02	5.496E-02	3.391E-02	NOT IDENT.
SB-122	2.413E+00	2.886E+00	2.583E+00	1.473E+00	NOT IDENT.
I-123	-1.538E+07	2.239E+07	0.000E+00	1.142E+07	SHORT HLIF
TE-123M	-2.260E-02	3.291E-02	2.711E-02	1.679E-02	NOT IDENT.
I-124	2.626E-01	1.063E+00	7.657E-01	5.424E-01	NOT IDENT.
SB-124	-1.857E-02	8.762E-02	7.102E-02	4.470E-02	FAIL ABUN
SB-125	1.101E-02	1.041E-01	8.946E-02	5.310E-02	FAIL ABUN
TE-125M	-1.822E+00	1.108E+01	9.502E+00	5.654E+00	NOT IDENT.
I-126	1.233E-02	2.354E-01	1.963E-01	1.201E-01	NOT IDENT.
SB-126	-2.860E-02	2.085E-01	1.457E-01	1.064E-01	NOT IDENT.
SB-127	1.023E+00	1.799E+00	1.567E+00	9.177E-01	NOT IDENT.
XE-127	6.551E-04	5.751E-02	4.662E-02	2.934E-02	NOT IDENT.
I-131	8.163E-02	1.373E-01	1.225E-01	7.005E-02	NOT IDENT.
TE-132	-8.995E-01	9.890E-01	7.801E-01	5.046E-01	NOT IDENT.
BA-133	-3.847E-03	5.101E-02	3.798E-02	2.603E-02	NOT IDENT.
I-133	-5.240E+03	1.367E+04	0.000E+00	6.976E+03	SHORT HLIF
CS-134	5.622E-02	5.828E-02	5.340E-02	2.973E-02	NOT IDENT.
I-135	5.434E+15	6.354E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.031E-02	1.241E-01	1.027E-01	6.330E-02	FAIL ABUN
BA-137M	-3.212E-03	4.562E-02	3.769E-02	2.328E-02	NOT IDENT.
CS-137	-3.395E-03	4.823E-02	3.984E-02	2.461E-02	NOT IDENT.
CE-139	2.087E-02	3.393E-02	2.950E-02	1.731E-02	NOT IDENT.
BA-140	9.225E-02	3.077E-01	2.571E-01	1.570E-01	NOT IDENT.
LA-140	-1.053E-01	9.530E-02	6.429E-02	4.862E-02	FAIL ABUN
CE-141	9.292E-02	7.414E-02	6.616E-02	3.783E-02	NOT IDENT.
CE-143	1.885E+03	5.273E+02	0.000E+00	2.690E+02	SHORT HLIF
CE-144	1.218E-01	2.599E-01	1.998E-01	1.326E-01	NOT IDENT.
PM-144	-1.637E-02	4.037E-02	3.221E-02	2.060E-02	NOT IDENT.
PR-144	-1.110E+00	2.737E+00	2.184E+00	1.396E+00	NOT IDENT.
PM-146	-7.842E-03	4.879E-02	4.102E-02	2.489E-02	NOT IDENT.
ND-147	7.096E-02	6.116E-01	5.204E-01	3.120E-01	FAIL ABUN

PM-149	3.947E+01	1.338E+02	1.184E+02	6.828E+01	NOT IDENT.
EU-152	-7.361E-02	1.369E-01	9.222E-02	6.986E-02	NOT IDENT.
GD-153	5.065E-02	9.580E-02	7.506E-02	4.888E-02	NOT IDENT.
EU-154	-2.308E-02	1.412E-01	1.150E-01	7.203E-02	NOT IDENT.
EU-155	-2.773E-02	1.245E-01	1.066E-01	6.350E-02	FAIL ABUN
TB-160	-7.245E-02	1.628E-01	1.329E-01	8.304E-02	FAIL ABUN
HO-166M	2.375E-02	6.886E-02	5.871E-02	3.513E-02	FAIL ABUN
TM-171	-3.151E+01	3.601E+01	3.032E+01	1.837E+01	NOT IDENT.
LU-176	-1.285E-02	2.946E-02	2.352E-02	1.503E-02	FAIL ABUN
LU-177	2.494E+00	1.532E+00	1.223E+00	7.818E-01	FAIL ABUN
LU-177M	-2.365E-01	1.966E-01	1.539E-01	1.003E-01	FAIL ABUN
HF-181	7.403E-03	4.992E-02	4.276E-02	2.547E-02	NOT IDENT.
W-181	-1.387E-01	4.708E-01	4.060E-01	2.402E-01	NOT IDENT.
TA-182	9.577E-02	2.390E-01	2.063E-01	1.219E-01	NOT IDENT.
RE-183	-3.130E-02	1.298E-01	1.063E-01	6.620E-02	FAIL ABUN
RE-184	-5.307E-02	2.821E-01	2.318E-01	1.439E-01	NOT IDENT.
OS-185	-2.188E-02	4.888E-02	3.899E-02	2.494E-02	NOT IDENT.
RE-188	5.934E-02	2.021E-01	1.739E-01	1.031E-01	NOT IDENT.
W-188	-3.501E+00	9.106E+00	6.710E+00	4.646E+00	NOT IDENT.
IR-192	-1.199E-03	3.916E-02	3.393E-02	1.998E-02	FAIL ABUN
AU-195	-1.113E-02	2.822E-01	2.142E-01	1.440E-01	FAIL ABUN
TL-200	1.644E+02	9.192E+02	0.000E+00	4.690E+02	SHORT HLIF
TL-201	-3.948E+00	9.945E+00	8.278E+00	5.074E+00	NOT IDENT.
TL-202	7.233E-02	8.156E-02	7.359E-02	4.161E-02	NOT IDENT.
HG-203	1.127E-02	4.554E-02	4.024E-02	2.323E-02	NOT IDENT.
BI-207	1.220E-02	5.903E-02	5.074E-02	3.012E-02	FAIL ABUN
TL-207	4.395E-01	8.519E-01	6.658E-01	4.346E-01	FAIL ABUN
PO-209	-3.892E+00	8.639E+00	7.039E+00	4.408E+00	NOT IDENT.
BI-210	1.767E+00	6.097E+00	5.366E+00	3.111E+00	NOT IDENT.
PB-210	1.767E+00	6.097E+00	5.366E+00	3.111E+00	NOT IDENT.
PO-210	1.767E+00	6.097E+00	5.366E+00	3.111E+00	NOT IDENT.
PB-211	-5.686E-01	1.162E+00	9.196E-01	5.927E-01	NOT IDENT.
BI-212	1.170E+00	4.618E-01	3.777E-01	2.356E-01	FAIL ABUN
PO-215	4.395E-01	8.519E-01	6.658E-01	4.346E-01	FAIL ABUN
RN-219	3.887E-01	4.926E-01	4.391E-01	2.513E-01	NOT IDENT.
RN-220	1.183E+01	3.040E+01	2.632E+01	1.551E+01	NOT IDENT.
RA-223	4.395E-01	8.519E-01	6.658E-01	4.346E-01	FAIL ABUN
AC-227	3.084E-01	4.570E-01	3.911E-01	2.332E-01	FAIL ABUN
TH-227	3.084E-01	4.579E-01	3.911E-01	2.336E-01	FAIL ABUN
TH-229	-4.799E-02	5.863E-01	4.915E-01	2.991E-01	FAIL ABUN
PA-231	-1.367E+00	1.661E+00	1.378E+00	8.475E-01	FAIL ABUN
TH-231	4.395E-01	8.519E-01	6.658E-01	4.346E-01	FAIL ABUN
U-231	5.158E-01	1.542E+00	1.196E+00	7.865E-01	FAIL ABUN
PA-233	-1.416E-02	7.155E-02	6.146E-02	3.651E-02	FAIL ABUN
PA-234	-1.686E-01	3.285E-01	2.625E-01	1.676E-01	FAIL ABUN
PA-234M	1.924E+00	4.731E+00	4.169E+00	2.414E+00	NOT IDENT.
TH-234	8.453E-01	1.728E+00	1.522E+00	8.814E-01	FAIL ABUN
U-235	2.929E-01	2.519E-01	2.170E-01	1.285E-01	FAIL ABUN
NP-236	-2.943E-02	9.124E-02	7.637E-02	4.655E-02	NOT IDENT.
U-238	8.453E-01	1.728E+00	1.522E+00	8.814E-01	FAIL ABUN
NP-239	5.705E-02	2.199E-01	1.911E-01	1.122E-01	FAIL ABUN
AM-241	-1.041E-01	2.130E-01	1.844E-01	1.087E-01	NOT IDENT.
CM-243	2.192E-02	1.090E-01	9.500E-02	5.562E-02	FAIL ABUN
AM-246	4.464E-02	1.644E-01	1.420E-01	8.390E-02	NOT IDENT.
CM-247	3.136E-02	4.359E-02	3.889E-02	2.224E-02	NOT IDENT.
CF-249	1.216E-02	4.045E-02	3.542E-02	2.064E-02	NOT IDENT.
CF-251	8.131E-02	1.412E-01	1.224E-01	7.204E-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	243.0224
46.50	243.0224
46.50	243.0224
48.70	281.1752
49.72	284.4085
51.35	268.8134
52.39	244.6457
52.97	258.5928
53.15	262.3277
53.44	275.2585
54.07	295.6895
56.28	318.8204
56.28	318.8217
57.37	0.0000
57.53	312.1038
57.53	312.1044
57.60	300.1687
57.98	294.8242
57.98	294.8242
59.32	331.4626
59.32	331.4626
59.40	331.5043
59.54	346.3554
59.72	359.3884
60.01	366.0225
61.10	357.3876
61.14	356.4838
61.30	356.5727
63.00	328.7205
63.29	324.2203
63.29	324.2203
63.58	321.5755
64.28	318.1945
65.12	367.9694
65.20	368.0131
65.20	368.0131
66.05	410.4590
66.72	391.2541
66.83	391.3196
66.91	414.7172
67.20	406.4833
67.20	406.4833
67.75	393.3167
67.85	393.3745
68.90	374.7055
68.90	374.7055
69.30	353.9265
69.67	379.6251
70.82	387.7621
70.82	387.7621
70.83	387.7684
72.80	422.0063
72.87	422.0474
72.87	422.0474
74.67	413.6592
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74.81	413.7394
74.81	413.7394
74.81	413.7394
74.81	413.7394
74.81	413.7394
74.97	413.8297
75.28	414.0068
75.70	414.2440
77.11	398.7410
77.11	398.7410

77.11	398.7410
77.11	398.7410
77.11	398.7410
77.11	398.7410
77.11	398.7410
78.38	378.1611
79.62	398.5618
79.80	398.6561
79.80	398.6561
80.11	444.4873
80.18	444.5283
80.30	444.5978
80.30	444.5978
80.57	493.4969
81.00	475.4877
81.07	475.5315
81.07	475.5315
81.07	475.5315
81.07	475.5315
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83.37	421.9209
83.78	417.5564
83.78	417.5564
83.78	417.5564
83.78	417.5564
84.21	411.6665
84.90	401.3074
85.43	406.1759
86.29	467.9955
86.50	468.1203
86.54	468.1426
86.59	468.1724
86.72	517.3785
86.79	517.4217
86.94	517.5204
87.30	408.0969
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87.57	408.2347
87.88	408.3936
88.03	408.4698
88.36	408.6367
88.47	408.6935
89.95	409.4425
91.11	410.0262
92.29	410.6147
92.38	410.6601
92.38	410.6601
93.35	411.1416
94.00	411.4626
94.67	411.7893
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94.90	411.9052
94.90	411.9052
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96.73	289.0572
97.43	265.9643
98.44	288.0779
98.44	288.0790
98.88	289.7838
99.55	271.2994
99.55	271.2994
99.86	274.5155
100.00	274.5596
100.10	274.5929
103.18	305.3076
103.76	291.7989
105.00	319.6614
105.31	319.7721
108.00	320.7272
109.28	333.9850

111.00	313.8828
111.00	313.8828
111.76	321.0550
112.95	334.3240
115.19	310.3350
116.30	305.7347
117.00	296.0254
117.00	296.0254
117.66	295.2360
121.11	287.3123
121.62	282.4721
121.78	281.5191
122.06	281.5998
122.32	284.6706
122.32	284.6706
122.32	284.6706
122.32	284.6706
123.07	290.8857
127.23	297.1218
129.76	300.8843
131.20	270.8754
133.02	290.7356
133.54	269.8746
135.34	298.4683
136.00	304.7294
136.25	295.6892
136.48	289.6767
140.51	343.6474
140.51	0.0000
142.18	311.5960
142.65	307.6565
143.76	278.3987
144.24	280.5620
144.24	280.5620
144.24	280.5620
144.24	280.5620
145.22	261.4121
145.44	277.8064
147.16	329.3896
152.43	280.5877
152.70	271.4020
153.22	263.2988
154.21	265.5862
154.21	265.5862
154.21	265.5862
154.21	265.5862
155.03	295.6534
156.02	290.7544
158.56	297.5977
159.00	0.0000
159.00	297.7097
160.31	286.6622
161.27	266.1842
162.32	276.7880
162.64	278.9373
163.35	268.7299
163.89	258.4730
165.85	254.7423
167.43	279.0249
171.28	252.7603
171.86	247.6573
172.10	247.7062
176.55	234.9683
176.60	234.9768
181.06	240.8709
184.41	261.7744
185.71	248.5165
186.00	248.5739
190.27	223.9488
192.34	251.7040
193.63	257.2672
197.04	243.0102
198.01	249.5873
198.60	259.2999
200.40	260.7188
201.83	268.4818
202.84	255.6846
205.31	231.6374

208.36	263.3219
208.81	250.5063
209.75	213.4504
209.75	213.4504
210.97	218.8068
215.65	239.8519
216.55	224.8689
218.09	204.5500
222.10	227.9171
223.80	203.1944
226.40	219.8864
227.00	226.5114
227.08	219.9897
227.20	220.0082
228.16	236.4994
228.18	236.5027
228.18	236.5027
231.56	0.0000
235.69	243.6216
236.00	245.4255
236.00	245.4255
238.63	211.8315
238.63	211.8315
238.63	211.8315
238.63	211.8315
239.00	211.8830
240.98	212.1613
241.98	212.3012
241.98	212.3012
241.98	212.3012
244.69	172.7872
245.39	178.1580
247.94	173.1521
248.90	188.5820
249.79	181.3194
252.40	191.5906
252.85	200.5083
252.85	200.5083
254.15	0.0000
256.20	178.7322
256.20	178.7322
260.50	190.3476
260.90	189.2838
262.80	162.7529
264.65	171.4219
268.24	162.8536
268.79	159.3287
269.46	137.9026
269.46	137.9026
269.46	137.9026
269.46	137.9026
271.23	195.4256
273.65	229.8281
276.40	184.3474
277.35	173.2054
277.60	161.9824
277.60	161.9824
278.00	169.2229
278.60	161.1787
279.20	169.3446
279.53	176.5842
280.46	174.8794
281.68	185.8325
283.67	168.8912
284.30	159.9201
285.00	152.7540
285.90	148.3147
286.10	146.5218
286.10	146.5218
287.40	133.7613
288.45	0.0000
290.67	160.2163
290.80	160.2271
291.72	170.9001
293.26	0.0000
293.70	142.3291
295.21	133.3589
295.21	133.3589

295.21	133.3589
295.96	122.8052
296.50	122.8431
297.23	122.8942
298.57	122.9881
299.80	123.0754
299.80	123.0754
300.09	145.8906
300.09	145.8906
300.09	145.8906
300.09	145.8906
300.12	145.8926
301.29	155.1146
302.84	161.3399
303.76	150.7639
303.91	150.7760
304.40	150.8183
304.40	150.8183
304.84	141.7119
306.84	157.8906
308.46	136.5045
311.98	147.7871
316.51	144.4756
318.01	152.8854
319.02	151.1254
319.41	153.9225
320.08	155.8237
323.87	138.5907
323.87	138.5907
323.87	138.5907
323.87	138.5907
325.23	152.5605
328.77	132.7810
333.44	191.9285
334.20	178.3805
334.20	178.3805
334.30	178.3898
338.28	138.1082
338.28	138.1082
338.28	138.1082
338.28	138.1082
338.32	138.1101
338.32	138.1101
338.32	138.1101
340.50	136.7158
340.57	136.7194
344.27	149.4375
345.85	140.2112
350.59	0.0000
351.07	109.6604
351.92	109.7075
351.92	109.7075
351.92	109.7075
355.39	0.0000
356.01	108.0568
364.48	103.8004
366.43	114.2927
367.43	110.5687
367.94	0.0000
369.80	127.7292
374.96	123.3112
383.85	115.2720
387.95	89.7269
388.63	91.6652
391.69	94.6675
391.69	94.6675
392.90	112.9009
398.62	122.8000
400.65	121.9569
401.10	122.9437
401.81	113.3762
402.60	112.4568
404.84	134.7039
410.95	95.5244
411.60	98.4489
413.65	123.6594
414.70	121.7856
415.30	113.1181

415.76	105.4061
417.63	0.0000
418.52	108.4426
423.70	110.6379
427.08	100.1144
427.89	100.1509
432.53	77.9482
433.93	90.6705
439.47	83.0742
439.56	83.0773
439.89	77.2246
443.98	94.0102
444.90	88.1697
445.03	88.1752
445.03	88.1752
445.03	88.1752
445.03	88.1752
453.90	95.3979
463.38	87.2270
468.07	89.0486
473.00	98.1565
475.06	84.3474
475.35	74.4333
476.78	88.3796
477.59	91.3902
477.96	94.3842
482.03	89.5671
484.57	82.6869
487.03	78.7821
490.36	0.0000
492.35	84.9492
497.08	80.1055
507.63	0.0000
510.53	0.0000
510.84	77.5259
511.00	77.5306
511.85	77.5574
511.85	77.5574
513.99	65.5253
513.99	65.5253
520.41	63.6691
520.65	63.6752
527.90	67.9095
528.96	0.0000
529.64	65.9268
529.87	0.0000
531.02	62.9173
537.32	66.1204
543.00	69.3215
546.56	0.0000
549.76	75.6314
552.65	79.8053
555.20	66.5679
563.23	56.4945
563.90	62.6739
568.70	77.1936
569.32	72.0645
569.50	66.9218
569.67	66.9249
573.80	74.4739
574.00	71.0417
574.64	69.6259
578.91	67.1503
579.30	0.0000
583.14	53.4578
585.48	63.8587
591.81	75.7660
592.07	79.9251
593.00	67.4915
595.88	88.3473
600.56	92.6591
602.52	0.0000
602.71	76.4056
602.71	76.4056
603.60	93.8013
604.41	83.4023
604.70	83.4102
609.31	86.6779

609.31	86.6779
609.31	86.6779
609.31	86.6779
610.33	85.3154
612.46	78.4094
614.37	81.9498
618.01	71.2290
621.84	76.5662
621.84	76.5662
631.29	59.9794
633.02	60.0142
633.10	60.0156
634.78	52.6758
635.90	64.2883
636.97	74.8551
645.85	68.7340
646.12	69.7979
656.30	76.4016
657.75	74.3152
657.90	0.0000
661.65	87.1670
661.65	87.1670
664.57	0.0000
666.33	79.8486
666.33	79.8486
675.00	65.1267
677.61	63.0447
685.20	53.5583
692.80	76.2383
695.00	66.6212
696.49	75.2534
696.49	75.2534
697.00	66.6636
697.49	67.7496
698.33	73.1448
698.50	72.0741
699.00	66.7060
702.63	52.7791
706.10	77.6373
706.58	0.0000
706.67	77.6514
709.31	55.0491
711.68	58.3308
713.82	60.5309
717.42	62.7635
720.50	68.5998
721.93	0.0000
722.20	57.7988
722.78	57.8086
722.78	57.8086
722.89	57.8112
722.95	57.8125
723.30	57.8190
724.18	63.2566
727.18	61.5060
733.00	63.6864
735.90	60.9451
739.58	65.3701
742.81	54.5288
744.21	60.0072
747.13	73.1651
751.79	66.7053
752.31	63.4347
753.82	63.4644
755.35	63.4927
756.15	59.1284
756.87	63.5225
763.93	75.7282
765.79	57.1022
766.42	57.1124
766.84	60.4154
776.49	66.0952
778.00	61.5325
778.57	52.3567
778.89	52.3613
783.80	36.7977
785.46	54.3030
792.07	54.4074

795.84	64.6210
796.30	67.3994
798.80	92.3950
801.93	58.2614
805.60	49.0642
810.29	48.2030
810.76	51.9178
815.85	52.9214
817.79	41.8030
818.51	39.9529
819.60	44.6123
826.30	51.2145
828.27	0.0000
831.60	53.1557
831.96	47.5656
834.83	58.8049
836.80	0.0000
846.75	40.2688
848.13	50.5898
856.28	0.0000
856.80	70.4300
860.37	46.0591
867.32	39.5536
867.82	42.3843
871.10	50.9063
873.19	36.7863
874.81	33.9719
875.33	0.0000
876.40	41.5382
879.36	55.7434
880.27	50.0875
880.51	51.9810
881.50	41.5955
883.24	41.6143
884.67	44.4689
889.25	49.2599
896.60	56.0003
898.02	71.2128
899.00	60.7839
903.28	55.6233
911.07	42.8741
911.07	42.8741
911.07	42.8741
919.63	45.8340
920.93	41.2646
925.00	35.3793
925.24	34.4253
926.50	51.6555
935.52	39.3109
937.48	59.4747
944.10	54.7711
946.00	48.0682
949.00	39.4460
962.29	29.7868
964.01	31.4548
966.15	72.8827
968.20	96.1212
969.11	66.7202
969.11	66.7202
969.11	66.7202
977.42	32.5568
980.50	35.8784
983.50	34.9351
989.30	29.1541
996.32	45.7531
1001.03	36.0598
1001.68	38.0145
1004.76	40.9695
1021.30	0.0000
1024.50	0.0000
1034.80	39.3018
1036.00	46.1910
1037.82	44.2456
1038.57	38.3525
1038.76	0.0000
1045.16	41.3677
1046.59	53.2046
1048.07	42.3806

1050.47	40.4328
1050.47	40.4328
1062.04	45.4871
1063.62	41.5471
1076.63	46.6328
1077.35	41.6787
1078.86	42.6851
1085.78	32.8107
1099.22	44.8792
1112.02	36.0073
1112.84	46.3046
1115.52	58.3426
1120.29	46.3818
1120.29	46.3818
1120.29	46.3818
1120.29	46.3818
1120.51	46.3837
1121.28	48.1094
1124.00	0.0000
1129.67	36.1494
1131.51	0.0000
1147.95	0.0000
1167.94	40.5046
1173.22	50.6897
1175.09	49.6958
1177.93	37.5480
1189.05	40.6901
1204.90	40.8268
1205.75	0.0000
1213.00	60.3228
1221.42	54.2853
1230.97	63.3365
1235.34	58.1114
1236.41	0.0000
1238.25	52.8599
1246.25	49.4180
1260.41	0.0000
1271.85	21.7340
1274.45	40.3838
1274.54	40.3854
1291.56	30.1328
1298.22	0.0000
1312.09	32.3434
1325.50	29.2909
1325.50	29.2909
1332.49	30.3794
1333.61	30.3853
1360.21	26.3306
1362.66	0.0000
1365.15	22.1382
1368.21	26.3713
1368.53	0.0000
1376.25	19.0166
1384.27	16.9297
1394.10	28.6216
1395.20	32.8694
1407.95	24.4450
1434.06	19.2246
1436.60	21.3704
1457.56	0.0000
1460.81	15.0265
1489.15	25.8926
1509.49	23.8208
1596.49	22.6147
1620.62	11.3538
1678.03	0.0000
1691.02	14.3591
1691.02	14.3591
1706.46	0.0000
1750.46	0.0000
1764.49	8.4756
1764.49	8.4756
1764.49	8.4756
1764.49	8.4756
1770.23	41.6892
1771.40	24.2423
1791.20	0.0000
1808.65	17.5568

1836.01

8.8154

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624003

Total Uranium Activity	2.6502E+00	ug/g
Total Uranium Counting Unc.	5.1409E+00	ug/g
Total Uranium Tpu	2.6229E-06	ug/g
Total Uranium Mda	4.5293E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624003
*  ANALYST       : MXR1            DETECTOR    : GAM23
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 13:52:31.59  SAMPLE ALQT: 117.310 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.342E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.165E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.941E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.424E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 16:35:30.61

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624004.CNF;1
Sample date       : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 14:34:54.
Sample ID        : G243624004 Sample quantity : 1.05890E+02 GRAM
Detector name    : GAM01 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.02 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 937704 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	63.33*	28	369	1.04	127.43	124	8	3.93E-03	124.0	
2	1	74.72	337	343	1.19	150.22	144	17	4.68E-02	10.9	1.40E+00
3	1	77.07*	468	329	1.19	154.90	144	17	6.51E-02	8.5	
4	3	87.15	125	430	1.16	175.07	170	23	1.74E-02	26.9	3.16E+00
5	3	90.01	97	374	1.21	180.78	170	23	1.35E-02	33.9	
6	3	92.75*	213	348	1.38	186.27	170	23	2.96E-02	19.0	
7	0	129.17	86	333	1.52	259.10	254	10	1.19E-02	41.3	
8	0	143.41*	35	249	1.03	287.57	285	8	4.81E-03	83.7	
9	0	186.07*	209	332	1.45	372.88	366	13	2.91E-02	20.1	
10	0	209.27	93	185	1.50	419.29	415	8	1.29E-02	27.4	
11	3	238.87*	995	151	1.29	478.47	475	14	1.38E-01	4.0	1.83E+00
12	3	241.76	264	149	1.71	484.25	475	14	3.67E-02	14.1	
13	0	270.51	119	205	1.39	541.74	537	12	1.66E-02	25.7	
14	0	295.35*	315	166	1.26	591.41	586	12	4.38E-02	10.0	
15	0	299.98	65	163	0.97	600.68	597	10	9.01E-03	38.7	
16	0	328.53	56	121	1.42	657.77	652	9	7.77E-03	37.9	
17	0	338.58*	185	146	1.15	677.86	673	10	2.57E-02	14.8	
18	0	352.18*	535	163	1.55	705.05	698	15	7.43E-02	6.9	
19	0	410.33	31	95	0.82	821.34	815	10	4.25E-03	62.3	
20	0	463.34	72	109	1.45	927.33	921	14	9.93E-03	33.1	
21	0	510.82*	88	132	1.46	1022.27	1015	15	1.22E-02	34.2	
22	0	583.19*	292	112	1.22	1166.97	1161	13	4.05E-02	9.7	
23	0	609.27*	372	72	1.69	1219.11	1214	13	5.17E-02	7.1	
24	0	661.44	86	42	0.96	1323.42	1318	11	1.20E-02	18.0	
25	0	728.02	73	71	1.57	1456.53	1452	14	1.02E-02	27.4	
26	0	755.64	20	46	0.91	1511.75	1504	12	2.71E-03	72.5	
27	0	795.54	51	44	1.71	1591.53	1584	17	7.05E-03	32.7	
28	0	910.69*	212	35	1.77	1821.73	1812	18	2.95E-02	9.9	
29	2	964.22	33	24	2.11	1928.76	1920	24	4.63E-03	35.6	1.64E+00
30	2	968.51*	141	15	1.87	1937.32	1920	24	1.96E-02	10.7	
31	0	1119.84*	105	23	2.05	2239.85	2235	10	1.46E-02	13.3	
32	0	1460.25*	614	21	1.94	2920.25	2913	17	8.53E-02	4.4	
33	0	1587.78*	15	6	1.34	3175.15	3170	9	2.02E-03	46.4	
34	0	1764.26*	66	10	1.93	3527.85	3521	13	9.15E-03	16.9	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624004.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 12:00:00 Acquisition date : 7-JAN-2010 14:34:54
Sample ID         : G243624004 Sample quantity : 105.89 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA1 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.02 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.116E+01	2.405E+00	6.905E-01	4.907E-02	30.652
CD-109	+	88.03	*	2.375E+00	1.296E+00	1.532E+00	1.410E-01	1.551
SN-126	+	64.28		3.837E-01	9.536E-01	1.052E+00	1.582E-01	0.365
	+	86.94		9.691E-01	6.584E-01	6.332E-01	2.625E-01	1.531
	+	87.57	*	2.331E-01	1.272E-01	1.511E-01	1.387E-02	1.542
BA-137M	+	661.65	*	1.740E-01	6.317E-02	7.993E-02	4.036E-03	2.177
CS-137	+	661.65	*	1.839E-01	6.678E-02	8.449E-02	4.290E-03	2.177
TL-208		277.35		2.749E-01	5.189E-01	8.190E-01	8.668E-02	0.336
	+	510.84		5.921E-01	4.093E-01	2.751E-01	2.752E-02	2.152
	+	583.14	*	5.632E-01	1.151E-01	7.413E-02	4.697E-03	7.597
		860.37		5.852E-01	4.485E-01	8.051E-01	6.084E-02	0.727
BI-211		72.87		9.891E+00	4.604E+00	7.207E+00	6.037E-01	1.372
	+	351.07	*	4.446E+00	6.756E-01	4.074E-01	2.580E-02	10.913
PB-212	+	74.81		2.741E+00	6.883E-01	6.921E-01	8.712E-02	3.961
	+	77.11		2.140E+00	4.081E-01	3.900E-01	3.323E-02	5.487
	+	87.30		1.078E+00	5.983E-01	7.013E-01	9.507E-02	1.537
	+	238.63	*	1.780E+00	1.915E-01	1.223E-01	8.910E-03	14.556
	+	300.09		1.803E+00	1.402E+00	1.510E+00	1.250E-01	1.194
PO-212	+	74.81		2.741E+00	6.883E-01	6.921E-01	8.712E-02	3.961
	+	77.11		2.140E+00	4.081E-01	3.900E-01	3.323E-02	5.487
	+	87.30		1.078E+00	5.983E-01	7.013E-01	9.507E-02	1.537
	+	115.19		1.656E+00	4.468E+00	7.228E+00	4.700E-01	0.229
	+	238.63	*	1.780E+00	1.915E-01	1.223E-01	8.910E-03	14.556
	+	300.09		1.803E+00	1.402E+00	1.510E+00	1.250E-01	1.194
BI-214	+	609.31	*	1.356E+00	2.180E-01	1.328E-01	9.848E-03	10.211
	+	1120.29		2.026E+00	5.688E-01	6.130E-01	5.452E-02	3.306
	+	1764.49		1.766E+00	6.059E-01	4.694E-01	2.793E-02	3.762
PB-214	+	74.81		4.723E+00	1.155E+00	1.193E+00	1.338E-01	3.961
	+	77.11		3.669E+00	7.534E-01	6.687E-01	7.643E-02	5.487
	+	87.30		1.847E+00	1.018E+00	1.201E+00	1.438E-01	1.537
	+	241.98		2.838E+00	8.305E-01	5.917E-01	4.755E-02	4.796
	+	295.21		1.539E+00	3.357E-01	2.627E-01	2.249E-02	5.859
	+	351.92	*	1.547E+00	2.485E-01	1.420E-01	1.165E-02	10.889
PO-214	+	74.81		4.723E+00	1.155E+00	1.193E+00	1.338E-01	3.961

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	77.11		3.669E+00	7.534E-01	6.687E-01	7.643E-02	5.487
	+	87.30		1.847E+00	1.018E+00	1.201E+00	1.438E-01	1.537
	+	241.98		2.838E+00	8.305E-01	5.917E-01	4.755E-02	4.796
	+	295.21		1.539E+00	3.357E-01	2.627E-01	2.249E-02	5.859
	+	351.92	*	1.547E+00	2.485E-01	1.420E-01	1.165E-02	10.889
	+	74.81		2.741E+00	6.883E-01	6.921E-01	8.712E-02	3.961
	+	77.11		2.140E+00	4.081E-01	3.900E-01	3.323E-02	5.487
	+	87.30		1.078E+00	5.983E-01	7.013E-01	9.507E-02	1.537
PO-218	+	238.63	*	1.780E+00	1.915E-01	1.223E-01	8.910E-03	14.556
	+	300.09		1.803E+00	1.402E+00	1.510E+00	1.250E-01	1.194
	+	74.81		4.723E+00	1.155E+00	1.193E+00	1.338E-01	3.961
	+	77.11		3.669E+00	7.534E-01	6.687E-01	7.643E-02	5.487
	+	87.30		1.847E+00	1.018E+00	1.201E+00	1.438E-01	1.537
	+	241.98		2.838E+00	8.305E-01	5.917E-01	4.755E-02	4.796
	+	295.21		1.539E+00	3.357E-01	2.627E-01	2.249E-02	5.859
	+	351.92	*	1.547E+00	2.485E-01	1.420E-01	1.165E-02	10.889
RA-224	+	240.98	*	5.382E+00	1.546E+00	1.222E+00	7.032E-02	4.402
RA-226	+	609.31	*	1.356E+00	2.180E-01	1.328E-01	9.848E-03	10.211
AC-228	+	1120.29		2.026E+00	5.688E-01	6.130E-01	5.452E-02	3.306
	+	1764.49		1.766E+00	6.059E-01	4.694E-01	2.793E-02	3.762
	+	338.32		1.692E+00	8.513E-01	4.736E-01	1.930E-01	3.572
	+	911.07	*	1.845E+00	4.090E-01	2.751E-01	2.779E-02	6.706
	+	969.11		2.164E+00	6.767E-01	4.617E-01	1.050E-01	4.686
	+	338.32		1.692E+00	8.513E-01	4.736E-01	1.930E-01	3.572
	+	911.07	*	1.845E+00	4.090E-01	2.751E-01	2.779E-02	6.706
	+	969.11		2.164E+00	6.767E-01	4.617E-01	1.050E-01	4.686
TH-228	+	74.81		2.786E+00	6.499E-01	7.033E-01	5.983E-02	3.961
	+	77.11		2.175E+00	4.147E-01	3.964E-01	3.377E-02	5.487
	+	87.30		1.096E+00	5.980E-01	7.126E-01	6.523E-02	1.537
	+	238.63	*	1.809E+00	1.946E-01	1.243E-01	9.054E-03	14.556
	+	300.09		1.832E+00	1.781E+00	1.534E+00	9.042E-01	1.194
	+	609.31	*	1.356E+00	2.180E-01	1.328E-01	9.848E-03	10.211
	+	1120.29		2.026E+00	5.688E-01	6.130E-01	5.452E-02	3.306
	+	1764.49		1.766E+00	6.059E-01	4.694E-01	2.793E-02	3.762
TH-232	+	338.32		1.692E+00	5.086E-01	4.736E-01	2.723E-02	3.572
	+	911.07	*	1.845E+00	4.090E-01	2.751E-01	2.779E-02	6.706
	+	969.11		2.164E+00	6.767E-01	4.617E-01	1.050E-01	4.686
	+	63.29	*	9.694E-01	2.411E+00	2.773E+00	4.956E-01	0.350
	+	92.38		2.557E+00	1.076E+00	9.836E-01	1.775E-01	2.599
	+	609.31	*	1.356E+00	2.180E-01	1.328E-01	9.848E-03	10.211
	+	1120.29		2.026E+00	5.688E-01	6.130E-01	5.452E-02	3.306
	+	1764.49		1.766E+00	6.059E-01	4.694E-01	2.793E-02	3.762
U-234	+	89.95		2.407E+00	1.794E+00	2.017E+00	6.240E-01	1.193
	+	93.35		3.074E+00	1.451E+00	1.173E+00	3.279E-01	2.621
	+	105.00		1.366E+00	1.337E+00	2.140E+00	6.304E-01	0.639
	+	143.76	*	1.966E-01	3.305E-01	3.966E-01	6.447E-02	0.496
	+	163.35		8.071E-02	5.675E-01	9.625E-01	1.718E-01	0.084
	+	185.71		2.613E-01	1.057E-01	8.590E-02	4.684E-03	3.041
	+	205.31		8.701E-02	7.213E-01	1.069E+00	1.915E-01	0.081

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	+	86.50	*	6.845E-01	3.994E-01	4.497E-01	1.014E-01	1.522
		95.87		-6.008E-01	1.267E+00	1.735E+00	4.242E-01	-0.346
U-238	+	63.29	*	9.694E-01	2.411E+00	2.773E+00	4.956E-01	0.350
	+	92.38		2.557E+00	9.963E-01	9.836E-01	8.394E-02	2.599
AM-243	+	74.67	*	4.444E-01	1.036E-01	1.126E-01	9.489E-03	3.947
	+	86.72		2.567E+01	1.401E+01	1.682E+01	1.532E+00	1.526
		117.66		-2.841E+00	4.821E+00	7.422E+00	4.721E-01	-0.383
	+	142.18		1.651E+01	2.765E+01	3.186E+01	1.814E+00	0.518
ANH-511	+	511.00	*	1.279E-01	8.777E-02	5.944E-02	3.291E-03	2.152

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	-4.858E-01	4.420E-01	6.405E-01	4.186E-02	-0.759
NA-22		1274.54	*	-1.866E-02	5.130E-02	8.175E-02	5.240E-03	-0.228
NA-24		1368.53	*	-1.016E+00	5.130E-02	Half-Life too short		
AL-26		1129.67		-7.001E-01	2.047E+00	3.147E+00	1.846E-01	-0.222
		1808.65	*	-6.287E-03	2.827E-02	4.432E-02	2.556E-03	-0.142
TI-44		67.85		-3.767E-02	6.653E-02	9.273E-02	7.710E-03	-0.406
	+	78.38	*	3.949E-01	7.531E-02	9.811E-02	8.416E-03	4.025
SC-46		889.25	*	4.052E-03	4.363E-02	7.214E-02	5.070E-03	0.056
	+	1120.51		3.497E-01	9.539E-02	1.823E-01	1.082E-02	1.919
V-48		944.10		-5.613E-01	1.218E+00	1.879E+00	1.306E-01	-0.299
		983.50	*	-6.246E-02	9.105E-02	1.349E-01	9.147E-03	-0.463
		1312.09		-5.500E-02	9.182E-02	1.391E-01	9.376E-03	-0.395
CR-51		320.08	*	-3.284E-01	4.403E-01	6.818E-01	4.413E-02	-0.482
MN-52		744.21		-1.227E-01	3.473E-01	5.548E-01	3.184E-02	-0.221
		848.13		-3.292E+00	8.584E+00	1.341E+01	8.923E-01	-0.245
		935.52		2.105E-01	3.381E-01	5.895E-01	4.116E-02	0.357
		1246.25		3.770E+00	1.047E+01	1.812E+01	1.113E+00	0.208
		1333.61		-6.854E-01	6.248E+00	1.022E+01	7.083E-01	-0.067
		1434.06	*	3.277E-02	3.373E-01	5.667E-01	3.876E-02	0.058
MN-54		834.83	*	3.653E-02	4.990E-02	8.721E-02	5.697E-03	0.419
CO-56		846.75	*	-4.025E-02	4.349E-02	6.269E-02	4.162E-03	-0.642
		977.42		-1.474E+00	3.948E+00	6.139E+00	4.180E-01	-0.240
		1037.82		-2.569E-01	3.791E-01	5.579E-01	3.956E-02	-0.461
		1175.09		1.460E-01	2.784E+00	4.697E+00	2.594E-01	0.031
		1238.25		1.357E-01	1.160E-01	2.125E-01	1.365E-02	0.638
		1360.21		6.143E-02	1.356E+00	2.267E+00	1.567E-01	0.027
		1771.40		-8.068E-02	3.523E-01	5.492E-01	3.253E-02	-0.147
CO-57		122.06	*	1.885E-02	3.222E-02	5.255E-02	3.227E-03	0.359
		136.48		2.229E-01	2.463E-01	4.326E-01	2.906E-02	0.515
CO-58		810.76	*	-2.275E-02	5.131E-02	8.053E-02	5.111E-03	-0.283
FE-59	+	142.65		2.575E+00	4.312E+00	5.631E+00	3.202E-01	0.457
		192.34		1.267E+00	1.233E+00	2.083E+00	2.430E-01	0.608
		1099.22	*	4.593E-02	1.090E-01	1.849E-01	1.303E-02	0.248
		1291.56		5.697E-02	1.440E-01	2.520E-01	2.022E-02	0.226
CO-60		1173.22		-1.798E-02	5.105E-02	8.228E-02	4.530E-03	-0.219

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1332.49	*		-3.249E-03	4.220E-02	6.939E-02	4.808E-03	-0.047
ZN-65	1115.52	*		-3.687E-02	1.317E-01	1.739E-01	1.041E-02	-0.212
GE-68	1077.35	*		2.746E-01	1.533E+00	2.528E+00	1.579E-01	0.109
AS-73	53.44	*		-1.318E-01	1.262E+00	1.999E+00	1.702E-01	-0.066
AS-74	595.88	*		3.459E-02	1.124E-01	1.932E-01	1.034E-02	0.179
	634.78			-4.220E-01	4.579E-01	6.988E-01	3.626E-02	-0.604
SE-75	66.05			1.550E+00	6.826E+00	9.979E+00	1.017E+00	0.155
	96.73			-8.334E-01	1.061E+00	1.424E+00	1.885E-01	-0.585
	121.11			7.700E-02	1.747E-01	2.830E-01	2.681E-02	0.272
	136.00			3.142E-02	4.612E-02	8.041E-02	4.737E-03	0.391
	198.60			9.219E-01	2.303E+00	3.849E+00	2.659E-01	0.240
	264.65	*		-2.201E-02	5.733E-02	8.533E-02	5.021E-03	-0.258
	279.53			1.504E-01	1.384E-01	2.412E-01	1.522E-02	0.624
	303.91			2.437E+00	2.802E+00	4.331E+00	4.143E-01	0.563
	400.65			2.669E-01	3.172E-01	5.446E-01	4.832E-02	0.490
BR-77	87.88	+		6.841E+02	3.734E+02	5.693E+02	5.237E+01	1.202
	200.40			2.092E+02	2.771E+02	4.782E+02	2.651E+01	0.437
	239.00	+		3.816E+02	3.732E+01	6.205E+01	3.564E+00	6.150
	249.79			7.039E+01	1.122E+02	1.920E+02	1.111E+01	0.367
	281.68			-5.769E+01	1.507E+02	2.428E+02	1.420E+01	-0.238
	297.23			5.996E+02	1.355E+02	2.112E+02	1.235E+01	2.839
	303.76			1.351E+02	3.290E+02	4.905E+02	2.866E+01	0.275
	439.47			1.703E+02	2.370E+02	4.038E+02	2.227E+01	0.422
	484.57			-4.877E+02	4.107E+02	5.879E+02	3.262E+01	-0.830
	520.65	*		-3.125E-01	1.721E+01	2.740E+01	1.515E+00	-0.011
	574.64			1.142E+02	3.453E+02	5.944E+02	3.221E+01	0.192
	578.91			-1.329E+01	1.628E+02	2.356E+02	1.273E+01	-0.056
	585.48			1.907E+03	4.310E+02	8.132E+02	4.380E+01	2.346
	755.35	+		2.636E+02	3.827E+02	4.690E+02	2.736E+01	0.562
	817.79			-1.829E+01	2.013E+02	3.273E+02	2.088E+01	-0.056
SR-82	698.33			-3.303E+01	4.464E+01	6.917E+01	3.702E+00	-0.477
	776.49	*		-2.469E-02	5.135E-01	8.427E-01	5.071E-02	-0.029
	1395.20			-4.921E+00	1.389E+01	2.178E+01	1.499E+00	-0.226
RB-83	520.41	*		-5.075E-03	8.558E-02	1.358E-01	7.505E-03	-0.037
	529.64			-6.637E-02	1.271E-01	2.051E-01	1.131E-02	-0.324
	552.65			-1.014E-01	2.252E-01	3.634E-01	1.990E-02	-0.279
RB-84	881.50	*		2.241E-02	8.503E-02	1.432E-01	9.963E-03	0.156
KR-85	513.99	*		2.023E+01	1.064E+01	1.765E+01	9.767E-01	1.147
SR-85	513.99	*		1.048E-01	5.510E-02	9.142E-02	5.060E-03	1.147
RB-86	1076.63	*		3.354E-01	1.024E+00	1.717E+00	1.073E-01	0.195
Y-88	898.02			3.987E-03	4.798E-02	7.914E-02	5.666E-03	0.050
	1836.01	*		2.629E-02	3.344E-02	6.602E-02	3.737E-03	0.398
ZR-88	392.90	*		-6.681E-03	3.835E-02	6.134E-02	3.316E-03	-0.109
Y-91	1204.90	*		2.424E+01	2.462E+01	4.486E+01	2.592E+00	0.540
NB-94	702.63	*		5.371E-02	4.522E-02	8.179E-02	4.407E-03	0.657
	871.10			9.278E-03	4.240E-02	7.104E-02	4.874E-03	0.131
NB-95	765.79	*		5.653E-02	5.623E-02	1.003E-01	5.944E-03	0.563
NB-95M	235.69	*		5.429E-02	1.709E-01	2.548E-01	1.905E-02	0.213
ZR-95	724.18			7.144E-02	1.377E-01	2.102E-01	1.401E-02	0.340

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	756.15	*	8.540E-02	1.240E-01	1.595E-01	1.127E-02	0.535
NB-97		657.90	*	-5.698E-02	1.240E-01	Half-Life	too short	
		1024.50		3.474E+00	1.240E-01	Half-Life	too short	
ZR-97		254.15		3.799E+00	1.240E-01	Half-Life	too short	
		355.39		4.431E+00	1.240E-01	Half-Life	too short	
		507.63	*	2.201E+00	1.240E-01	Half-Life	too short	
		602.52		4.530E+00	1.240E-01	Half-Life	too short	
		1021.30		-2.116E+01	1.240E-01	Half-Life	too short	
		1147.95		2.920E+00	1.240E-01	Half-Life	too short	
		1362.66		1.601E+01	1.240E-01	Half-Life	too short	
		1750.46		-1.493E+01	1.240E-01	Half-Life	too short	
MO-99		140.51		-2.775E+01	4.318E+01	6.115E+01	1.647E+01	-0.454
		181.06		1.271E+00	2.985E+01	4.432E+01	7.542E+00	0.029
		366.43		-1.180E+02	1.367E+02	2.077E+02	1.163E+01	-0.568
		739.58	*	-1.981E+00	1.912E+01	3.130E+01	4.301E+00	-0.063
		778.00		-1.233E+01	5.579E+01	8.998E+01	5.427E+00	-0.137
TC-99M		140.51	*	-4.855E+11	5.579E+01	Half-Life	too short	
RH-101		127.23		3.394E-02	4.559E-02	6.710E-02	4.020E-03	0.506
		198.01	*	1.584E-02	4.215E-02	7.039E-02	3.892E-03	0.225
		325.23		-8.214E-02	3.112E-01	4.355E-01	2.525E-02	-0.189
RH-102		418.52		-8.405E-02	3.674E-01	5.828E-01	3.191E-02	-0.144
		475.06	*	4.310E-03	3.716E-02	6.020E-02	3.339E-03	0.072
		631.29		1.760E-03	6.846E-02	1.145E-01	5.962E-03	0.015
		697.49		-3.993E-02	9.808E-02	1.570E-01	8.389E-03	-0.254
		766.84		2.218E-01	1.465E-01	2.693E-01	1.598E-02	0.824
		1046.59		2.674E-02	1.429E-01	2.349E-01	1.513E-02	0.114
		1112.84		5.034E-02	3.116E-01	4.818E-01	2.888E-02	0.104
RU-103		497.08	*	-3.531E-02	5.222E-02	7.795E-02	9.767E-03	-0.453
	+	610.33		1.490E+01	3.110E+00	3.853E+00	5.870E-01	3.869
RH-106	+	511.85		6.400E-01	4.392E-01	5.658E-01	3.133E-02	1.131
		621.84	*	-2.271E-01	3.900E-01	6.162E-01	7.071E-02	-0.369
		1050.47		-8.005E-01	2.518E+00	3.884E+00	2.492E-01	-0.206
RU-106	+	511.85		6.400E-01	4.392E-01	5.658E-01	3.133E-02	1.131
		621.84	*	-2.271E-01	3.893E-01	6.162E-01	3.234E-02	-0.369
		1050.47		-8.005E-01	2.518E+00	3.884E+00	2.492E-01	-0.206
AG-108M		433.93	*	-5.546E-02	4.227E-02	6.037E-02	3.638E-03	-0.919
		614.37		6.612E-03	5.215E-02	7.701E-02	4.479E-03	0.086
		722.95		-7.074E-03	5.748E-02	8.120E-02	4.927E-03	-0.087
AG-110M		657.75	*	-2.394E-02	4.844E-02	6.540E-02	3.594E-03	-0.366
		677.61		-6.091E-03	3.597E-01	5.969E-01	3.328E-02	-0.010
		706.67		-6.913E-02	2.691E-01	4.361E-01	2.526E-02	-0.159
		763.93		-2.317E-01	2.254E-01	3.375E-01	2.112E-02	-0.687
		884.67		-2.571E-02	5.606E-02	8.627E-02	6.319E-03	-0.298
		937.48		-1.584E-01	1.396E-01	1.954E-01	1.437E-02	-0.811
		1384.27		2.992E-02	1.910E-01	3.245E-01	2.335E-02	0.092
IN-111		171.28		1.556E+00	1.557E+00	2.729E+00	1.464E-01	0.570
		245.39	*	-7.960E-01	1.742E+00	2.444E+00	1.410E-01	-0.326
IN-113M		391.69	*	1.389E-02	5.663E-02	9.345E-02	5.437E-03	0.149
SN-113		391.69	*	1.389E-02	5.663E-02	9.345E-02	5.437E-03	0.149

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
IN-114M	190.27	*		-2.169E-01	2.543E-01	3.545E-01	1.943E-02	-0.612
CD-115	260.90			1.702E+02	2.143E+02	3.699E+02	2.151E+01	0.460
	492.35			-4.944E+01	6.411E+01	9.534E+01	5.289E+00	-0.519
	527.90	*		2.024E+00	1.803E+01	3.065E+01	1.692E+00	0.066
SN-117M	156.02			2.060E+00	3.011E+00	5.218E+00	2.859E-01	0.395
	158.56	*		-4.031E-02	7.194E-02	1.186E-01	6.454E-03	-0.340
SB-122	563.90	*		8.339E-01	3.140E+00	5.388E+00	2.935E-01	0.155
	692.80			-3.628E+00	7.251E+01	1.199E+02	6.359E+00	-0.030
I-123	159.00	*		-1.548E+01	7.251E+01	Half-Life	too short	
	528.96			-9.793E+02	7.251E+01	Half-Life	too short	
TE-123M	159.00	*		-2.193E-02	3.542E-02	5.822E-02	3.212E-03	-0.377
I-124	602.71	*		6.486E-02	9.671E-01	1.485E+00	7.907E-02	0.044
	722.78			-1.770E+00	7.206E+00	1.001E+01	5.563E-01	-0.177
	1325.50			2.115E+01	4.314E+01	7.704E+01	5.288E+00	0.275
	1376.25			7.755E+01	4.830E+01	9.389E+01	6.480E+00	0.826
	1509.49			2.253E+01	2.375E+01	4.456E+01	2.993E+00	0.506
	1691.02			1.077E+00	5.354E+00	9.147E+00	5.693E-01	0.118
SB-124	602.71			3.236E-03	4.824E-02	7.406E-02	3.946E-03	0.044
	645.85			-1.675E-01	6.619E-01	1.080E+00	6.437E-02	-0.155
	709.31			-1.709E+00	3.382E+00	5.334E+00	2.903E-01	-0.320
	713.82			6.757E-01	1.924E+00	3.294E+00	3.305E-01	0.205
	722.78			-1.280E-01	5.211E-01	7.239E-01	4.229E-02	-0.177
+	968.20			2.253E+01	5.077E+00	9.708E+00	6.650E-01	2.321
	1045.16			2.593E+00	3.164E+00	5.560E+00	3.586E-01	0.466
	1325.50			1.633E+00	3.331E+00	5.949E+00	4.084E-01	0.275
	1368.21			-9.420E-01	2.100E+00	3.236E+00	4.029E-01	-0.291
	1436.60			-1.784E+00	5.043E+00	7.898E+00	5.399E-01	-0.226
	1691.02	*		1.837E-02	9.132E-02	1.560E-01	1.043E-02	0.118
SB-125	427.89	*		-9.813E-03	1.138E-01	1.823E-01	1.049E-02	-0.054
+	463.38			9.376E-01	6.240E-01	7.093E-01	4.640E-02	1.322
	600.56			2.785E-02	2.144E-01	3.627E-01	2.289E-02	0.077
	635.90			-9.123E-02	3.268E-01	5.313E-01	3.333E-02	-0.172
TE-125M	109.28	*		8.013E+00	1.173E+01	1.926E+01	1.720E+00	0.416
I-126	388.63			1.774E-01	2.810E-01	4.755E-01	2.582E-02	0.373
	666.33	*		4.016E-02	2.651E-01	3.906E-01	1.987E-02	0.103
	753.82			1.230E+00	2.117E+00	3.277E+00	1.907E-01	0.375
SB-126	223.80			-1.899E+00	5.122E+00	8.369E+00	4.749E-01	-0.227
	278.60			3.148E+00	3.361E+00	5.809E+00	3.396E-01	0.542
+	296.50			1.620E+01	3.384E+00	4.822E+00	2.820E-01	3.360
	414.70			-1.237E-02	1.098E-01	1.530E-01	8.366E-03	-0.081
	415.30			-3.013E-01	8.922E+00	1.327E+01	7.258E-01	-0.023
	555.20			3.138E+00	4.918E+00	8.698E+00	4.757E-01	0.361
	573.80			1.469E+00	1.351E+00	2.454E+00	1.331E-01	0.599
	593.00			-8.913E-01	1.130E+00	1.753E+00	9.396E-02	-0.509
	656.30			-5.861E-01	4.719E+00	6.713E+00	3.410E-01	-0.087
	666.33			1.682E-02	1.110E-01	1.636E-01	8.322E-03	0.103
	675.00			8.574E-01	2.528E+00	4.332E+00	2.235E-01	0.198
	695.00			3.277E-02	1.042E-01	1.776E-01	9.453E-03	0.185
	697.00			-1.061E-01	3.665E-01	5.931E-01	3.168E-02	-0.179

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127		720.50	*	-8.436E-02	1.900E-01	3.016E-01	1.670E-02	-0.280
		856.80		-6.593E-01	7.467E-01	1.124E+00	7.563E-02	-0.587
		989.30		1.487E+00	1.552E+00	2.805E+00	1.894E-01	0.530
		1034.80		1.030E+01	1.086E+01	1.961E+01	1.277E+00	0.525
		1213.00		-3.396E+00	6.232E+00	9.870E+00	5.773E-01	-0.344
		61.10		-6.456E+00	1.030E+02	1.486E+02	1.683E+01	-0.043
		252.40		-3.192E-01	6.764E+00	1.118E+01	4.652E+00	-0.029
		290.80		-1.852E+00	3.397E+01	4.881E+01	4.663E+00	-0.038
	+	411.60		1.986E+01	2.492E+01	3.020E+01	4.372E+00	0.658
		444.90		-1.149E+01	1.417E+01	2.106E+01	2.307E+00	-0.546
		473.00		3.178E+00	2.527E+00	4.439E+00	5.037E-01	0.716
		543.00		6.061E+00	2.504E+01	4.290E+01	5.592E+00	0.141
		603.60		-1.411E+01	1.886E+01	2.482E+01	2.687E+00	-0.568
		685.20	*	-2.915E-01	2.073E+00	3.282E+00	3.106E-01	-0.089
		698.50		-2.346E+01	2.364E+01	3.538E+01	5.144E+00	-0.663
XE-127		722.20		1.549E+01	4.822E+01	7.223E+01	6.770E+00	0.214
		783.80		9.034E+00	5.371E+00	1.005E+01	1.117E+00	0.899
		57.60		-1.010E-02	8.583E+00	1.365E+01	1.165E+00	-0.001
		145.22		-2.889E-01	1.015E+00	1.480E+00	8.349E-02	-0.195
		172.10		5.060E-02	1.528E-01	2.606E-01	1.400E-02	0.194
I-131		202.84	*	-3.301E-02	6.122E-02	9.992E-02	5.553E-03	-0.330
		374.96		-1.003E-01	2.559E-01	4.038E-01	2.236E-02	-0.248
		80.18		1.875E+00	6.741E+00	9.812E+00	8.569E-01	0.191
		284.30		-2.140E+00	1.981E+00	3.034E+00	1.973E-01	-0.705
TE-132		364.48	*	6.151E-02	1.560E-01	2.610E-01	1.649E-02	0.236
		636.97		1.480E+00	2.008E+00	3.565E+00	2.123E-01	0.415
		722.89		-2.734E+00	1.073E+01	1.489E+01	8.417E-01	-0.184
		49.72		-1.661E+01	3.634E+01	5.794E+01	6.225E+00	-0.287
		111.76		-3.208E+01	4.853E+01	7.295E+01	7.092E+00	-0.440
BA-133		116.30		1.443E+00	4.288E+01	6.824E+01	6.504E+00	0.021
		228.16	*	3.729E-01	1.068E+00	1.804E+00	2.621E-01	0.207
		53.15		5.619E-01	5.464E+00	8.746E+00	7.435E-01	0.064
		79.62		1.873E+00	1.746E+00	2.621E+00	3.993E-01	0.715
		81.00		-1.605E-01	1.419E-01	1.872E-01	2.982E-02	-0.857
I-133		276.40		5.275E-01	5.289E-01	8.168E-01	1.060E-01	0.646
		302.84		1.533E-01	1.999E-01	3.054E-01	3.567E-02	0.502
		356.01	*	1.821E-02	5.666E-02	8.346E-02	9.591E-03	0.218
		383.85		-3.230E-01	3.953E-01	6.008E-01	6.428E-02	-0.538
	+	510.53		2.873E+00	3.953E-01	Half-Life	too short	
		529.87	*	-6.217E-03	3.953E-01	Half-Life	too short	
		706.58		-2.127E-01	3.953E-01	Half-Life	too short	
		856.28		-2.199E+00	3.953E-01	Half-Life	too short	
		875.33		1.749E-01	3.953E-01	Half-Life	too short	
		1236.41		2.272E+00	3.953E-01	Half-Life	too short	
CS-134		1298.22		-2.677E-01	3.953E-01	Half-Life	too short	
		475.35		-7.387E-01	2.488E+00	3.889E+00	2.157E-01	-0.190
		563.23		-1.338E-02	4.399E-01	7.373E-01	4.113E-02	-0.018
		569.32		-9.317E-02	2.357E-01	3.827E-01	2.150E-02	-0.243
		604.70		-2.537E-02	4.511E-02	6.105E-02	3.268E-03	-0.416

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-135 I-135	+	795.84	*	1.428E-01	9.378E-02	1.099E-01	6.893E-03	1.299
		801.93		-5.476E-01	6.211E-01	7.623E-01	4.807E-02	-0.718
		1038.57		-1.988E+00	4.608E+00	7.029E+00	4.561E-01	-0.283
		1167.94		1.343E+00	2.841E+00	5.011E+00	2.782E-01	0.268
		1365.15		-3.447E-01	1.470E+00	2.354E+00	1.741E-01	-0.146
		268.24	*	2.488E-01	2.184E-01	3.428E-01	2.633E-02	0.726
		288.45		1.591E+11	2.184E-01	Half-Life	too short	
		417.63		-1.075E+11	2.184E-01	Half-Life	too short	
		546.56		-7.940E+10	2.184E-01	Half-Life	too short	
		836.80		2.527E+11	2.184E-01	Half-Life	too short	
		1038.76		-1.167E+11	2.184E-01	Half-Life	too short	
		1124.00		5.670E+11	2.184E-01	Half-Life	too short	
		1131.51		-5.282E+09	2.184E-01	Half-Life	too short	
		1260.41	*	-4.605E+10	2.184E-01	Half-Life	too short	
		1457.56		7.371E+12	2.184E-01	Half-Life	too short	
CS-136		1678.03		-9.803E+10	2.184E-01	Half-Life	too short	
		1706.46		3.150E+09	2.184E-01	Half-Life	too short	
		1791.20		-3.242E+10	2.184E-01	Half-Life	too short	
		66.91		-4.090E-01	1.188E+00	1.678E+00	2.563E-01	-0.244
	+	86.29		3.205E+00	1.776E+00	2.638E+00	3.471E-01	1.215
		153.22		9.726E-02	8.731E-01	1.482E+00	1.038E-01	0.066
		163.89		5.943E-01	1.330E+00	2.284E+00	1.578E-01	0.260
		176.55		7.221E-01	4.822E-01	8.579E-01	5.286E-02	0.842
		273.65		-2.135E-01	6.862E-01	9.705E-01	6.455E-02	-0.220
		340.57		5.298E-01	1.949E-01	3.340E-01	2.041E-02	1.586
		818.51		-3.976E-02	8.491E-02	1.313E-01	8.402E-03	-0.303
		1048.07	*	-1.694E-01	1.431E-01	1.947E-01	1.347E-02	-0.870
		1235.34		2.955E-01	8.075E-01	1.392E+00	1.411E-01	0.212
		165.85	*	-3.562E-03	3.521E-02	5.908E-02	3.156E-03	-0.060
		162.64		4.809E-01	9.438E-01	1.626E+00	1.001E-01	0.296
CE-139 BA-140		304.84		7.623E-01	1.834E+00	2.721E+00	7.428E-01	0.280
		423.70		1.380E-01	2.509E+00	4.068E+00	1.291E+00	0.034
		537.32	*	6.466E-02	3.264E-01	5.574E-01	1.810E-01	0.116
	+	328.77		6.670E-01	5.077E-01	7.283E-01	4.722E-02	0.916
		432.53		-2.084E-01	2.652E+00	4.248E+00	2.608E-01	-0.049
		487.03		1.513E-01	1.884E-01	3.217E-01	2.041E-02	0.470
		751.79		-2.588E-01	2.312E+00	3.253E+00	2.310E-01	-0.080
		815.85		2.917E-01	3.965E-01	7.024E-01	5.377E-02	0.415
		867.82		-2.746E+00	1.819E+00	2.413E+00	1.785E-01	-1.138
		919.63		-4.141E+00	3.917E+00	5.345E+00	5.032E-01	-0.775
		925.24		7.716E-02	1.505E+00	2.468E+00	1.894E-01	0.031
		1596.49	*	-7.076E-02	1.141E-01	1.657E-01	1.080E-02	-0.427
		145.44	*	-6.612E-03	8.851E-02	1.319E-01	7.749E-03	-0.050
		57.37		-5.794E-04	8.851E-02	Half-Life	too short	
		231.56		6.454E-04	8.851E-02	Half-Life	too short	
CE-141 CE-143		293.26	*	7.865E-04	8.851E-02	Half-Life	too short	
		350.59		4.355E-02	8.851E-02	Half-Life	too short	
		490.36		-2.651E-03	8.851E-02	Half-Life	too short	
		664.57		2.927E-03	8.851E-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
	721.93			1.560E-03	8.851E-02	Half-Life too short		
CE-144	80.11			9.073E-01	2.861E+00	4.173E+00	3.617E-01	0.217
	133.54	*		-1.037E-01	2.921E-01	3.993E-01	5.679E-02	-0.260
PM-144	476.78			-1.336E-01	9.166E-02	1.276E-01	8.595E-03	-1.046
	618.01			-1.655E-02	3.900E-02	6.274E-02	3.543E-03	-0.264
	696.49	*		-2.204E-04	4.412E-02	7.319E-02	3.910E-03	-0.003
	778.57			1.893E-01	2.821E+00	4.681E+00	2.827E-01	0.040
PR-144	696.49	*		-1.494E-02	2.991E+00	4.962E+00	2.648E-01	-0.003
	1489.15			-8.780E+00	1.557E+01	2.320E+01	1.567E+00	-0.378
PM-146	453.90	*		-7.149E-03	5.698E-02	9.070E-02	7.659E-03	-0.079
	633.02			1.555E-01	1.669E+00	2.807E+00	1.031E+00	0.055
	735.90			-1.206E-01	2.273E-01	2.989E-01	8.326E-02	-0.404
	747.13			-6.042E-02	1.188E-01	1.736E-01	2.168E-02	-0.348
ND-147	+ 91.11			6.434E-01	4.406E-01	7.236E-01	6.816E-02	0.889
	319.41			-7.221E+00	4.316E+00	6.202E+00	3.607E-01	-1.164
	439.89			2.602E+00	7.776E+00	1.287E+01	7.100E-01	0.202
	531.02	*		-2.963E-01	7.253E-01	1.180E+00	1.582E-01	-0.251
PM-149	285.90	*		-3.167E+01	1.466E+02	2.380E+02	3.380E+01	-0.133
EU-152	121.78			5.917E-02	9.352E-02	1.528E-01	1.203E-02	0.387
	244.69			8.906E-02	4.306E-01	6.378E-01	3.678E-02	0.140
	344.27	*		-6.519E-02	1.322E-01	1.912E-01	1.237E-02	-0.341
	443.98			-1.168E+00	1.199E+00	1.687E+00	9.315E-02	-0.692
	778.89			7.441E-02	3.304E-01	5.564E-01	3.360E-02	0.134
	867.32			-1.284E+00	1.017E+00	1.406E+00	9.596E-02	-0.913
	+ 964.01			5.887E-01	4.216E-01	6.610E-01	4.540E-02	0.891
	1085.78			-2.104E-01	4.856E-01	7.387E-01	4.571E-02	-0.285
	1112.02			2.127E-05	4.265E-01	6.675E-01	4.005E-02	0.000
	1407.95			2.946E-01	2.190E-01	4.298E-01	2.953E-02	0.685
GD-153	69.67			1.899E-01	2.301E+00	3.331E+00	2.772E-01	0.057
	83.37			-8.502E+00	2.217E+01	3.088E+01	2.737E+00	-0.275
	97.43	*		-8.759E-02	1.108E-01	1.493E-01	1.181E-02	-0.587
	103.18			-9.036E-02	1.357E-01	2.093E-01	1.540E-02	-0.432
EU-154	123.07			2.947E-02	6.581E-02	1.066E-01	1.022E-02	0.277
	247.94			5.193E-02	4.471E-01	7.459E-01	7.106E-02	0.070
	591.81			-3.678E-01	7.135E-01	1.138E+00	1.084E-01	-0.323
	723.30			3.266E-02	2.385E-01	3.489E-01	2.403E-02	0.094
	+ 756.87			9.190E-01	1.336E+00	1.687E+00	1.714E-01	0.545
	873.19			2.268E-01	3.829E-01	6.640E-01	7.362E-02	0.342
	996.32			9.259E-02	4.286E-01	7.134E-01	1.207E-01	0.130
	1004.76			-3.391E-01	2.756E-01	3.752E-01	3.857E-02	-0.904
	1274.45	*		-4.708E-02	1.439E-01	2.304E-01	2.240E-02	-0.204
EU-155	48.70			-1.495E+00	3.719E+00	5.952E+00	4.683E-01	-0.251
	60.01			-4.108E-02	7.683E+00	1.098E+01	9.315E-01	-0.004
	+ 86.54			2.809E-01	1.533E-01	2.290E-01	2.101E-02	1.227
	105.31	*		4.812E-03	1.357E-01	2.167E-01	1.584E-02	0.022
TB-160	+ 86.79			7.571E-01	4.132E-01	6.169E-01	5.621E-02	1.227
	197.04			-4.446E-01	7.073E-01	1.150E+00	6.353E-02	-0.386
	215.65			5.011E-02	9.373E-01	1.567E+00	8.827E-02	0.032
	+ 298.57			2.649E-01	2.053E-01	2.562E-01	1.498E-02	1.034

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HO-166M	879.36	*		-3.442E-02	1.740E-01	2.781E-01	1.929E-02	-0.124
	962.29			8.634E-01	6.343E-01	1.169E+00	8.041E-02	0.738
	966.15			1.257E+00	3.504E-01	6.887E-01	4.724E-02	1.826
	1177.93			6.404E-02	4.376E-01	7.453E-01	4.133E-02	0.086
	1271.85			8.769E-01	8.691E-01	1.611E+00	1.027E-01	0.544
	80.57			-1.969E-01	3.760E-01	5.223E-01	4.540E-02	-0.377
	184.41			1.379E-01	4.617E-02	8.399E-02	4.572E-03	1.642
	280.46			-4.162E-02	1.081E-01	1.743E-01	1.019E-02	-0.239
	410.95	+		3.322E-01	4.144E-01	5.363E-01	2.927E-02	0.619
	711.68	*		-4.870E-02	7.019E-02	1.080E-01	5.901E-03	-0.451
TM-171	752.31			-3.076E-02	3.715E-01	5.255E-01	3.052E-02	-0.059
	810.29			-1.348E-02	7.622E-02	1.231E-01	7.772E-03	-0.109
	51.35			3.548E+01	4.599E+01	7.744E+01	6.484E+00	0.458
	52.39			1.280E+01	2.411E+01	3.931E+01	3.326E+00	0.326
LU-176	59.40			3.434E+01	3.964E+01	5.943E+01	5.057E+00	0.578
	66.72	*		1.474E+00	4.021E+01	5.815E+01	4.837E+00	0.025
	88.36	+		5.529E-01	3.018E-01	4.626E-01	4.232E-02	1.195
	201.83			-2.211E-02	3.705E-02	6.033E-02	3.349E-03	-0.366
LU-177	306.84	*		-1.694E-02	3.139E-02	4.781E-02	2.792E-03	-0.354
	401.10			4.204E+00	8.356E+00	1.403E+01	7.621E-01	0.300
	112.95			-4.708E-01	2.351E+00	3.621E+00	2.404E-01	-0.130
	208.36	+		3.260E+00	1.795E+00	2.673E+00	1.494E-01	1.220
LU-177M	52.97	*		5.057E-01	2.500E+00	4.020E+00	3.414E-01	0.126
	54.07			-7.569E-01	1.278E+00	1.974E+00	1.684E-01	-0.383
	61.30			1.415E-01	2.242E+00	3.257E+00	2.747E-01	0.043
	121.62			3.409E-01	4.808E-01	7.887E-01	4.850E-02	0.432
HF-181	147.16			-1.303E-01	8.896E-01	1.319E+00	7.401E-02	-0.099
	171.86			4.111E-01	5.996E-01	1.038E+00	5.572E-02	0.396
	218.09			-2.837E-01	1.043E+00	1.715E+00	9.682E-02	-0.165
	268.79			2.384E+00	1.132E+00	1.876E+00	1.094E-01	1.271
	319.02			-4.649E-01	3.103E-01	4.517E-01	2.626E-02	-1.029
	367.43			-7.038E-01	1.148E+00	1.782E+00	9.965E-02	-0.395
	413.65	*		-7.967E-02	2.458E-01	3.343E-01	1.826E-02	-0.238
	56.28			-1.548E+00	1.346E+00	2.058E+00	1.758E-01	-0.752
	57.53			-1.790E-02	7.202E-01	1.144E+00	9.763E-02	-0.016
	65.20			2.634E-01	1.395E+00	2.036E+00	1.697E-01	0.129
	133.02			-5.072E-02	9.489E-02	1.282E-01	7.515E-03	-0.396
	136.25			4.360E-01	5.439E-01	9.524E-01	5.523E-02	0.458
	345.85			-7.742E-03	2.822E-01	4.022E-01	2.299E-02	-0.019
	482.03	*		3.661E-02	5.535E-02	9.362E-02	5.195E-03	0.391
W-181	56.28			-5.991E-01	5.213E-01	7.971E-01	6.810E-02	-0.752
	57.53			-7.135E-03	2.792E-01	4.435E-01	3.784E-02	-0.016
	65.20	*		1.013E-01	5.366E-01	7.830E-01	6.527E-02	0.129
TA-182	67.75			-6.503E-02	1.582E-01	2.226E-01	1.851E-02	-0.292
	100.10			1.389E-01	2.266E-01	3.719E-01	2.841E-02	0.373
	152.43			-2.530E-01	4.234E-01	6.984E-01	3.863E-02	-0.362
	222.10			-7.435E-02	4.245E-01	7.010E-01	3.972E-02	-0.106
	1001.68			9.816E-01	2.283E+00	3.899E+00	2.609E-01	0.252
	1121.28	+		9.638E-01	2.629E-01	5.020E-01	2.977E-02	1.920

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV) Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-183	1189.05		-1.330E-01	3.927E-01	6.364E-01	3.590E-02	-0.209
	1221.42	*	7.457E-02	2.357E-01	4.068E-01	2.410E-02	0.183
	1230.97		-6.052E-02	5.981E-01	9.911E-01	5.954E-02	-0.061
	57.98		-6.178E-02	2.826E-01	4.452E-01	3.797E-02	-0.139
	59.32		1.350E-01	1.643E-01	2.458E-01	2.091E-02	0.549
	67.20		-7.462E-02	2.871E-01	4.080E-01	3.393E-02	-0.183
	162.32	*	3.048E-02	1.333E-01	2.269E-01	1.223E-02	0.134
	208.81	+	2.672E+00	1.471E+00	2.182E+00	1.221E-01	1.224
	291.72		2.342E-01	1.231E+00	1.807E+00	1.057E-01	0.130
	57.98		-2.263E-01	1.035E+00	1.631E+00	1.391E-01	-0.139
RE-184	59.32		4.941E-01	6.014E-01	8.997E-01	7.656E-02	0.549
	67.20		-2.733E-01	1.052E+00	1.494E+00	1.243E-01	-0.183
	161.27		7.004E-02	4.289E-01	7.286E-01	3.936E-02	0.096
	216.55		-1.550E-02	3.287E-01	5.470E-01	3.083E-02	-0.028
	252.85	*	-9.791E-02	3.031E-01	4.935E-01	2.859E-02	-0.198
	318.01		-6.480E-01	5.526E-01	8.303E-01	4.830E-02	-0.780
	792.07		4.775E-01	1.256E+00	1.896E+00	1.167E-01	0.252
	903.28		3.257E-01	1.224E+00	1.811E+00	1.284E-01	0.180
	920.93		-4.049E-03	5.731E-01	9.338E-01	6.569E-02	-0.004
	59.72		4.144E-01	4.408E-01	6.631E-01	5.635E-02	0.625
OS-185	61.14		-1.006E-02	2.471E-01	3.568E-01	3.012E-02	-0.028
	69.30		-1.024E-01	4.163E-01	5.913E-01	4.919E-02	-0.173
	592.07		-2.023E+00	2.882E+00	4.509E+00	2.419E-01	-0.449
	646.12	*	-1.876E-02	5.651E-02	9.154E-02	4.699E-03	-0.205
	717.42		4.768E-01	1.116E+00	1.921E+00	1.059E-01	0.248
	874.81		4.647E-01	7.497E-01	1.306E+00	9.001E-02	0.356
	880.27		-5.439E-01	9.540E-01	1.454E+00	1.010E-01	-0.374
	155.03	*	2.523E-01	2.190E-01	3.857E-01	2.119E-02	0.654
	477.96		-2.563E+00	4.183E+00	6.356E+00	3.526E-01	-0.403
	633.10		2.915E-01	3.401E+00	5.719E+00	2.972E-01	0.051
W-188	63.58	+	3.935E+01	9.766E+01	1.239E+02	1.037E+01	0.318
	227.08		-1.637E+00	1.610E+01	2.666E+01	1.517E+00	-0.061
IR-192	290.67	*	-3.276E-01	9.950E+00	1.433E+01	8.382E-01	-0.023
	295.96	+	1.185E+00	2.478E-01	3.609E-01	2.144E-02	3.283
	308.46		-5.402E-03	1.139E-01	1.864E-01	1.100E-02	-0.029
	316.51	*	6.174E-02	4.187E-02	7.489E-02	4.381E-03	0.824
	468.07		-5.776E-02	9.696E-02	1.246E-01	8.055E-03	-0.464
	604.41		-3.411E-01	6.163E-01	8.338E-01	9.266E-02	-0.409
	612.46		1.137E+00	1.030E+00	1.668E+00	1.199E-01	0.681
	65.12		7.077E-02	2.492E-01	3.654E-01	3.047E-02	0.194
AU-195	66.83		-4.569E-02	1.360E-01	1.924E-01	1.601E-02	-0.237
	75.70	+	1.444E+00	3.364E-01	6.076E-01	5.142E-02	2.376
	98.88	*	1.330E-01	2.941E-01	4.577E-01	3.552E-02	0.291
TL-200	129.76	+	6.572E+00	5.441E+00	6.256E+00	3.711E-01	1.051
	367.94	*	-3.041E-04	5.441E+00	Half-Life	too short	
	579.30		3.613E-03	5.441E+00	Half-Life	too short	
TL-201	828.27		2.825E-03	5.441E+00	Half-Life	too short	
	1205.75		5.500E-03	5.441E+00	Half-Life	too short	
	68.90		-3.674E+00	8.495E+00	1.193E+01	9.925E-01	-0.308

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-202		70.82	3.043E+00	4.707E+00	7.012E+00	5.845E-01	0.434
		80.30	-3.710E+00	8.746E+00	1.223E+01	1.061E+00	-0.303
		135.34	6.947E+00	3.737E+01	6.393E+01	3.718E+00	0.109
	*	167.43	-5.646E+00	1.019E+01	1.674E+01	8.946E-01	-0.337
		68.90	-2.789E-01	6.449E-01	9.060E-01	7.535E-02	-0.308
		70.82	2.304E-01	3.564E-01	5.309E-01	4.425E-02	0.434
HG-203		80.30	-2.810E-01	6.624E-01	9.261E-01	8.036E-02	-0.303
	*	439.56	6.407E-02	9.079E-02	1.546E-01	8.523E-03	0.415
		70.83	9.694E-01	1.486E+00	2.209E+00	2.965E-01	0.439
		72.87	1.997E+00	9.505E-01	1.455E+00	1.898E-01	1.372
BI-207		82.60	-1.311E+00	1.821E+00	2.249E+00	3.119E-01	-0.583
	*	279.20	6.835E-02	5.258E-02	9.247E-02	5.735E-03	0.739
		72.80	5.029E-01	2.655E-01	4.129E-01	3.458E-02	1.218
	+	74.97	7.978E-01	1.859E-01	3.042E-01	2.567E-02	2.623
		84.90	2.942E-01	2.701E-01	4.039E-01	3.623E-02	0.728
		569.67	-8.557E-03	3.622E-02	5.961E-02	3.239E-03	-0.144
TL-207	*	1063.62	-1.664E-03	6.344E-02	1.025E-01	6.492E-03	-0.016
		1770.23	-1.935E+00	9.973E-01	1.134E+00	6.722E-02	-1.706
		81.07	-3.526E-01	3.095E-01	4.131E-01	3.603E-02	-0.854
		83.78	9.975E-03	1.855E-01	2.644E-01	2.352E-02	0.038
		94.90	5.539E-01	3.074E-01	4.796E-01	3.936E-02	1.155
		122.32	1.501E+00	2.221E+00	3.637E+00	2.539E-01	0.413
	+	144.24	6.370E-01	1.067E+00	1.443E+00	1.028E-01	0.441
		154.21	4.733E-01	4.993E-01	8.729E-01	5.911E-02	0.542
	+	269.46	7.677E-01	3.967E-01	4.503E-01	2.744E-02	1.705
	*	323.87	6.104E-01	8.741E-01	1.328E+00	2.193E-01	0.460
	+	338.28	7.064E+00	2.213E+00	3.162E+00	3.322E-01	2.234
		445.03	-2.153E+00	2.767E+00	4.129E+00	4.177E-01	-0.521
PO-209		260.50	7.874E+00	1.162E+01	1.994E+01	1.160E+00	0.395
		262.80	7.257E-01	3.255E+01	5.390E+01	3.137E+00	0.013
	*	896.60	2.881E+00	8.203E+00	1.398E+01	9.917E-01	0.206
BI-210	*	46.50	5.151E+00	5.279E+00	8.997E+00	7.127E-01	0.573
PB-210	*	46.50	5.151E+00	5.279E+00	8.997E+00	7.127E-01	0.573
PO-210	*	46.50	5.151E+00	5.275E+00	8.997E+00	6.177E-01	0.573
PB-211	*	404.84	-9.457E-01	1.478E+00	1.772E+00	1.104E+00	-0.534
		427.08	-1.676E+00	2.756E+00	3.896E+00	2.407E+00	-0.430
		831.96	-1.354E+00	1.796E+00	2.375E+00	1.482E+00	-0.570
	+	727.18	1.219E+00	6.743E-01	8.081E-01	6.109E-02	1.509
		785.46	2.186E+00	2.238E+00	4.008E+00	2.443E-01	0.545
		1620.62	-4.696E-01	1.331E+00	2.008E+00	1.294E-01	-0.234
		81.07	-3.526E-01	3.095E-01	4.131E-01	3.603E-02	-0.854
PO-215		83.78	9.975E-03	1.855E-01	2.644E-01	2.352E-02	0.038
		94.90	5.539E-01	3.074E-01	4.796E-01	3.936E-02	1.155
		122.32	1.501E+00	2.221E+00	3.637E+00	2.539E-01	0.413
	+	144.24	6.370E-01	1.067E+00	1.443E+00	1.028E-01	0.441
		154.21	4.733E-01	4.993E-01	8.729E-01	5.911E-02	0.542
	+	269.46	7.677E-01	3.967E-01	4.503E-01	2.744E-02	1.705
	*	323.87	6.104E-01	8.741E-01	1.328E+00	2.193E-01	0.460
	+	338.28	7.064E+00	2.213E+00	3.162E+00	3.322E-01	2.234

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219	+	445.03		-2.153E+00	2.767E+00	4.129E+00	4.177E-01	-0.521
		271.23		9.850E-01	5.117E-01	5.973E-01	4.856E-02	1.649
		401.81	*	3.045E-01	5.082E-01	8.574E-01	1.153E-01	0.355
RN-220		549.76	*	-2.197E+01	2.921E+01	4.574E+01	2.507E+00	-0.480
RA-223		81.07		-3.526E-01	3.095E-01	4.131E-01	3.603E-02	-0.854
		83.78		9.975E-03	1.855E-01	2.644E-01	2.352E-02	0.038
		94.90		5.539E-01	3.074E-01	4.796E-01	3.936E-02	1.155
		122.32		1.501E+00	2.221E+00	3.637E+00	2.539E-01	0.413
	+	144.24		6.370E-01	1.067E+00	1.443E+00	1.028E-01	0.441
		154.21		4.733E-01	4.993E-01	8.729E-01	5.911E-02	0.542
		269.46		7.677E-01	3.967E-01	4.503E-01	2.744E-02	1.705
		323.87	*	6.104E-01	8.741E-01	1.328E+00	2.193E-01	0.460
	+	338.28		7.064E+00	2.213E+00	3.162E+00	3.322E-01	2.234
		445.03		-2.153E+00	2.767E+00	4.129E+00	4.177E-01	-0.521
		79.80		1.256E+00	2.248E+00	3.300E+00	7.099E-01	0.381
		236.00		2.922E-01	3.197E-01	4.923E-01	5.128E-02	0.594
AC-227		256.20	*	-1.180E-01	4.810E-01	7.852E-01	1.096E-01	-0.150
		286.10		1.884E-01	1.787E+00	2.963E+00	3.432E-01	0.064
		299.80		3.341E+00	2.640E+00	3.297E+00	5.374E-01	1.014
		304.40		1.618E+00	2.575E+00	3.888E+00	6.730E-01	0.416
TH-227		334.20		-7.201E-02	3.352E+00	4.791E+00	8.778E-01	-0.015
		79.80		1.256E+00	2.248E+00	3.300E+00	7.190E-01	0.381
		94.00		9.879E+00	4.327E+00	4.897E+00	1.061E+00	2.017
		236.00		2.922E-01	3.193E-01	4.923E-01	4.438E-02	0.594
		256.20	*	-1.180E-01	4.811E-01	7.852E-01	1.327E-01	-0.150
		286.10		1.884E-01	1.797E+00	2.963E+00	2.968E+00	0.064
		299.80		3.341E+00	2.640E+00	3.297E+00	5.374E-01	1.014
		304.40		1.618E+00	2.575E+00	3.888E+00	6.730E-01	0.416
TH-229		334.20		-7.201E-02	3.352E+00	4.791E+00	8.778E-01	-0.015
		85.43		3.479E-01	2.760E-01	4.146E-01	3.735E-02	0.839
		88.47		3.183E-01	1.737E-01	2.662E-01	2.430E-02	1.196
		100.00		2.189E-01	2.319E-01	3.858E-01	2.951E-02	0.567
	+	193.63	*	5.976E-01	6.262E-01	1.091E+00	6.004E-02	0.548
		210.97		1.335E+00	1.033E+00	1.637E+00	9.178E-02	0.816
		283.67	*	-1.694E+00	1.846E+00	2.840E+00	3.919E-01	-0.596
		301.29		1.337E+00	1.043E+00	1.346E+00	1.411E-01	0.993
TH-231		81.07		-3.526E-01	3.095E-01	4.131E-01	3.603E-02	-0.854
		83.78		9.975E-03	1.855E-01	2.644E-01	2.352E-02	0.038
		94.90		5.539E-01	3.074E-01	4.796E-01	3.936E-02	1.155
		122.32		1.501E+00	2.221E+00	3.637E+00	2.539E-01	0.413
		144.24		6.370E-01	1.067E+00	1.443E+00	1.028E-01	0.441
	+	154.21		4.733E-01	4.993E-01	8.729E-01	5.911E-02	0.542
		269.46		7.677E-01	3.967E-01	4.503E-01	2.744E-02	1.705
		323.87	*	6.104E-01	8.741E-01	1.328E+00	2.193E-01	0.460
		338.28		7.064E+00	2.213E+00	3.162E+00	3.322E-01	2.234
U-231		445.03		-2.153E+00	2.767E+00	4.129E+00	4.177E-01	-0.521
		84.21		3.352E+00	9.197E+00	1.332E+01	1.188E+00	0.252
		92.29		1.149E+01	4.477E+00	6.344E+00	5.422E-01	1.811
		95.87	*	-8.017E-01	1.680E+00	2.315E+00	1.873E-01	-0.346

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233		108.00		-7.863E-01	3.057E+00	4.809E+00	3.354E-01	-0.163
	+	75.28		2.328E+01	6.178E+00	9.194E+00	1.402E+00	2.532
	+	86.59		4.564E+00	2.747E+00	3.721E+00	1.004E+00	1.226
	+	300.12		9.316E-01	7.309E-01	9.271E-01	1.248E-01	1.005
		311.98	*	-6.204E-02	8.007E-02	1.245E-01	7.705E-03	-0.498
PA-234		340.50		2.686E+00	1.089E+00	1.577E+00	3.620E-01	1.703
		398.62		4.227E-02	2.641E+00	4.283E+00	1.104E+00	0.010
		415.76		8.533E-02	2.099E+00	3.285E+00	6.733E-01	0.026
	+	63.00		1.130E+00	2.808E+00	3.630E+00	5.580E-01	0.311
		94.67		6.715E-01	2.348E-01	3.676E-01	4.462E-02	1.827
		98.44		-5.011E-03	1.286E-01	1.823E-01	1.015E-01	-0.027
		99.86		6.177E-01	5.902E-01	9.858E-01	7.554E-02	0.627
		111.00		1.571E-03	2.330E-01	3.709E-01	4.022E-02	0.004
		131.20		1.150E-01	1.443E-01	2.132E-01	1.258E-02	0.539
		152.70		-7.399E-02	4.053E-01	6.801E-01	1.068E-01	-0.109
	+	186.00		7.054E+00	3.554E+00	3.351E+00	1.022E+00	2.105
		226.40		2.168E-01	4.947E-01	8.400E-01	9.664E-02	0.258
		227.20		-3.856E-02	5.393E-01	8.944E-01	5.091E-02	-0.043
		248.90		2.051E-01	1.038E+00	1.737E+00	3.731E-01	0.118
		293.70		4.186E+00	1.283E+00	1.944E+00	3.131E-01	2.153
		369.80		5.533E-01	1.068E+00	1.791E+00	3.719E-01	0.309
		568.70		-6.977E-01	1.206E+00	1.928E+00	1.048E-01	-0.362
		569.50		-1.288E-01	3.258E-01	5.290E-01	2.874E-02	-0.243
		574.00		1.900E+00	1.828E+00	3.310E+00	1.794E-01	0.574
		699.00		-8.439E-01	9.609E-01	1.455E+00	2.597E-01	-0.580
		706.10		3.410E-01	1.378E+00	2.319E+00	1.022E+00	0.147
		733.00		4.257E-01	5.367E-01	8.394E-01	1.781E-01	0.507
		742.81		1.021E+00	1.842E+00	2.985E+00	1.997E+00	0.342
	+	796.30		2.772E+00	1.955E+00	2.120E+00	5.593E-01	1.307
		805.60		4.860E-01	1.258E+00	2.135E+00	6.422E-01	0.228
		819.60		-2.179E+00	1.579E+00	1.734E+00	6.519E-01	-1.256
		826.30		1.049E+00	1.121E+00	1.847E+00	8.198E-01	0.568
		831.60		-8.149E-01	8.435E-01	1.189E+00	3.484E-01	-0.685
		876.40		2.026E-02	1.081E+00	1.772E+00	1.819E+00	0.011
		880.51		-1.640E-01	3.325E-01	5.112E-01	3.551E-02	-0.321
		883.24		1.321E-01	3.305E-01	5.471E-01	3.667E-01	0.241
		899.00		2.003E-01	9.236E-01	1.543E+00	6.701E-01	0.130
		925.00		2.485E-01	1.482E+00	2.462E+00	1.728E-01	0.101
		926.50		-5.625E-02	2.163E-01	3.410E-01	8.449E-02	-0.165
		946.00	*	-1.816E-01	3.881E-01	5.956E-01	1.075E-01	-0.305
		949.00		4.673E-01	5.668E-01	1.003E+00	6.951E-02	0.466
		980.50		1.010E+00	8.852E-01	1.622E+00	1.102E-01	0.623
		1394.10		1.928E-01	1.370E+00	2.314E+00	1.502E+00	0.083
PA-234M		766.42		2.287E+01	1.880E+01	2.756E+01	1.388E+01	0.830
NP-236		1001.03	*	-6.483E-01	5.541E+00	8.902E+00	7.438E-01	-0.073
		94.67		5.126E-01	1.723E-01	2.792E-01	2.300E-02	1.836
		98.44		-3.807E-03	9.717E-02	1.378E-01	1.076E-02	-0.028
		111.00		1.189E-03	1.762E-01	2.805E-01	1.898E-02	0.004
		160.31	*	-2.610E-02	9.659E-02	1.611E-01	8.728E-03	-0.162

---- 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		3.135E-01	1.944E-01	3.316E-01	2.552E-02	0.945
		117.00	*	-7.772E-02	2.422E-01	3.784E-01	2.421E-02	-0.205
	+	209.75		2.087E+00	1.149E+00	1.710E+00	9.574E-02	1.221
		228.18		9.907E-02	2.826E-01	4.781E-01	2.723E-02	0.207
		277.60		1.096E-01	2.406E-01	3.936E-01	2.300E-02	0.278
AM-241		334.30		6.083E-02	1.905E+00	2.735E+00	1.577E-01	0.022
		59.54	*	2.045E-01	2.307E-01	3.460E-01	3.162E-02	0.591
CM-243		99.55		3.226E-01	2.001E-01	3.413E-01	2.626E-02	0.945
		103.76	*	5.988E-02	1.230E-01	2.006E-01	1.466E-02	0.299
		117.00		-7.997E-02	2.492E-01	3.894E-01	2.491E-02	-0.205
	+	209.75		2.058E+00	1.133E+00	1.686E+00	9.438E-02	1.221
		228.18		1.001E-01	2.856E-01	4.831E-01	2.752E-02	0.207
AM-246		277.60		1.105E-01	2.426E-01	3.968E-01	2.319E-02	0.278
		798.80		-1.009E-01	1.929E-01	2.526E-01	1.569E-02	-0.399
		1036.00		-6.224E-02	3.617E-01	5.723E-01	3.722E-02	-0.109
		1062.04		-8.475E-02	2.761E-01	4.283E-01	2.717E-02	-0.198
		1078.86	*	6.143E-02	1.783E-01	2.994E-01	1.867E-02	0.205
CM-247		278.00		5.738E-01	9.613E-01	1.635E+00	9.556E-02	0.351
		287.40		-3.134E-01	1.469E+00	2.387E+00	1.397E-01	-0.131
CF-249		402.60	*	-8.046E-03	4.628E-02	7.392E-02	4.018E-03	-0.109
		252.85		-3.659E-01	1.133E+00	1.844E+00	1.069E-01	-0.198
		333.44		-1.350E-01	3.028E-01	3.445E-01	1.988E-02	-0.392
CF-251		387.95	*	3.995E-02	5.227E-02	8.921E-02	4.849E-03	0.448
		176.60	*	1.856E-01	1.593E-01	2.803E-01	1.513E-02	0.662
		227.00		-5.863E-02	4.778E-01	7.904E-01	4.498E-02	-0.074
		285.00		-1.685E+00	2.072E+00	3.231E+00	1.890E-01	-0.522

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]G243624004      *
* Acquisition date   : 7-JAN-2010 14:34:54 Detector SN#                   *
* Detector ID        : GAM01 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 02:00:01.02 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624004 Analyst initials: MXR1                 *
* Batch Number       : 937704 Sample Quantity : 1.0589E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                           *
* CALIB. DATE/TIME   : 29-JAN-2009 10:38:56 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	2.116E+01	2.357E+00	6.858E-01	0.000E+00
CD-109	2.375E+00	1.270E+00	1.544E+00	0.000E+00
SN-126	2.331E-01	1.247E-01	1.524E-01	0.000E+00
BA-137M	1.740E-01	6.191E-02	7.972E-02	0.000E+00
CS-137	1.839E-01	6.545E-02	8.428E-02	0.000E+00
TL-208	5.632E-01	1.128E-01	7.399E-02	0.000E+00
BI-211	4.446E+00	6.621E-01	4.077E-01	0.000E+00
PB-212	1.780E+00	1.877E-01	1.226E-01	0.000E+00
PO-212	1.780E+00	1.877E-01	1.226E-01	0.000E+00
BI-214	1.356E+00	2.136E-01	1.325E-01	0.000E+00
PB-214	1.547E+00	2.435E-01	1.421E-01	0.000E+00
PO-214	1.547E+00	2.435E-01	1.421E-01	0.000E+00
PO-216	1.780E+00	1.877E-01	1.226E-01	0.000E+00
PO-218	1.547E+00	2.435E-01	1.421E-01	0.000E+00
RA-224	5.382E+00	1.515E+00	1.226E+00	0.000E+00
RA-226	1.356E+00	2.136E-01	1.325E-01	0.000E+00
AC-228	1.845E+00	4.008E-01	2.739E-01	0.000E+00
RA-228	1.845E+00	4.008E-01	2.739E-01	0.000E+00
TH-228	1.809E+00	1.907E-01	1.246E-01	0.000E+00
TH-230	1.356E+00	2.136E-01	1.325E-01	0.000E+00
TH-232	1.845E+00	4.008E-01	2.739E-01	0.000E+00
TH-234	9.694E-01	2.363E+00	2.800E+00	0.000E+00
U-234	1.356E+00	2.136E-01	1.325E-01	0.000E+00
U-235	1.966E-01	3.239E-01	3.988E-01	0.000E+00
NP-237	6.845E-01	3.914E-01	4.534E-01	0.000E+00
U-238	9.694E-01	2.363E+00	2.800E+00	0.000E+00
AM-243	4.444E-01	1.015E-01	1.136E-01	0.000E+00
ANH-511	1.279E-01	8.602E-02	5.937E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)
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BE-7	-4.858E-01	4.332E-01	6.399E-01	0.000E+00	NOT IDENT.
NA-22	-1.866E-02	5.028E-02	8.125E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.474E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-6.287E-03	2.770E-02	4.396E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	7.380E-02	9.898E-02	0.000E+00	FAIL ABUN
SC-46	4.052E-03	4.276E-02	7.184E-02	0.000E+00	FAIL ABUN
V-48	-6.246E-02	8.923E-02	1.343E-01	0.000E+00	NOT IDENT.
CR-51	-3.284E-01	4.315E-01	6.827E-01	0.000E+00	NOT IDENT.
MN-52	3.277E-02	3.305E-01	5.629E-01	0.000E+00	NOT IDENT.
MN-54	3.653E-02	4.890E-02	8.688E-02	0.000E+00	NOT IDENT.
CO-56	-4.025E-02	4.262E-02	6.245E-02	0.000E+00	NOT IDENT.
CO-57	1.885E-02	3.157E-02	5.289E-02	0.000E+00	NOT IDENT.
CO-58	-2.275E-02	5.029E-02	8.023E-02	0.000E+00	NOT IDENT.
FE-59	4.593E-02	1.069E-01	1.839E-01	0.000E+00	FAIL ABUN
CO-60	-3.249E-03	4.136E-02	6.895E-02	0.000E+00	NOT IDENT.
ZN-65	-3.687E-02	1.290E-01	1.730E-01	0.000E+00	NOT IDENT.
GE-68	2.746E-01	1.502E+00	2.515E+00	0.000E+00	NOT IDENT.
AS-73	-1.318E-01	1.236E+00	2.021E+00	0.000E+00	NOT IDENT.
AS-74	3.459E-02	1.102E-01	1.928E-01	0.000E+00	NOT IDENT.
SE-75	-2.201E-02	5.619E-02	8.553E-02	0.000E+00	NOT IDENT.
BR-77	-3.125E-01	1.686E+01	2.737E+01	0.000E+00	FAIL ABUN
SR-82	-2.469E-02	5.032E-01	8.398E-01	0.000E+00	NOT IDENT.
RB-83	-5.075E-03	8.387E-02	1.356E-01	0.000E+00	NOT IDENT.
RB-84	2.241E-02	8.333E-02	1.426E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	1.042E+01	1.762E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.400E-02	9.131E-02	0.000E+00	NOT IDENT.
RB-86	3.354E-01	1.004E+00	1.708E+00	0.000E+00	NOT IDENT.
Y-88	2.629E-02	3.277E-02	6.549E-02	0.000E+00	NOT IDENT.
ZR-88	-6.681E-03	3.758E-02	6.135E-02	0.000E+00	NOT IDENT.
Y-91	2.424E+01	2.413E+01	4.460E+01	0.000E+00	NOT IDENT.
NB-94	5.371E-02	4.431E-02	8.156E-02	0.000E+00	NOT IDENT.
NB-95	5.653E-02	5.510E-02	1.000E-01	0.000E+00	NOT IDENT.
NB-95M	5.429E-02	1.674E-01	2.556E-01	0.000E+00	NOT IDENT.
ZR-95	8.540E-02	1.215E-01	1.590E-01	0.000E+00	FAIL ABUN
NB-97	0.000E+00	3.400E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	7.033E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-1.981E+00	1.873E+01	3.120E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.431E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.584E-02	4.130E-02	7.067E-02	0.000E+00	NOT IDENT.
RH-102	4.310E-03	3.642E-02	6.015E-02	0.000E+00	NOT IDENT.
RU-103	-3.531E-02	5.118E-02	7.787E-02	0.000E+00	FAIL ABUN
RH-106	-2.271E-01	3.822E-01	6.149E-01	0.000E+00	FAIL ABUN
RU-106	-2.271E-01	3.815E-01	6.149E-01	0.000E+00	FAIL ABUN
AG-108M	-5.546E-02	4.143E-02	6.035E-02	0.000E+00	NOT IDENT.
AG-110M	-2.394E-02	4.748E-02	6.523E-02	0.000E+00	NOT IDENT.
IN-111	-7.960E-01	1.707E+00	2.450E+00	0.000E+00	NOT IDENT.
IN-113M	1.389E-02	5.549E-02	9.348E-02	0.000E+00	NOT IDENT.
SN-113	1.389E-02	5.549E-02	9.348E-02	0.000E+00	NOT IDENT.
IN-114M	-2.169E-01	2.492E-01	3.560E-01	0.000E+00	NOT IDENT.
CD-115	2.024E+00	1.766E+01	3.061E+01	0.000E+00	NOT IDENT.
SN-117M	-4.031E-02	7.051E-02	1.192E-01	0.000E+00	NOT IDENT.
SB-122	8.339E-01	3.077E+00	5.379E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.451E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.193E-02	3.471E-02	5.851E-02	0.000E+00	NOT IDENT.
I-124	6.486E-02	9.477E-01	1.482E+00	0.000E+00	NOT IDENT.
SB-124	1.837E-02	8.949E-02	1.548E-01	0.000E+00	FAIL ABUN
SB-125	-9.813E-03	1.115E-01	1.822E-01	0.000E+00	FAIL ABUN
TE-125M	8.013E+00	1.149E+01	1.939E+01	0.000E+00	NOT IDENT.
I-126	4.016E-02	2.598E-01	3.895E-01	0.000E+00	NOT IDENT.
SB-126	-8.436E-02	1.862E-01	3.007E-01	0.000E+00	FAIL ABUN
SB-127	-2.915E-01	2.031E+00	3.273E+00	0.000E+00	FAIL ABUN
XE-127	-3.301E-02	6.000E-02	1.003E-01	0.000E+00	NOT IDENT.
I-131	6.151E-02	1.529E-01	2.612E-01	0.000E+00	NOT IDENT.
TE-132	3.729E-01	1.046E+00	1.810E+00	0.000E+00	NOT IDENT.
BA-133	1.821E-02	5.552E-02	8.352E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.551E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	9.190E-02	1.095E-01	0.000E+00	FAIL ABUN
CS-135	2.488E-01	2.141E-01	3.435E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.970E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.694E-01	1.402E-01	1.937E-01	0.000E+00	FAIL ABUN
CE-139	-3.562E-03	3.451E-02	5.937E-02	0.000E+00	NOT IDENT.
BA-140	6.466E-02	3.199E-01	5.566E-01	0.000E+00	NOT IDENT.
LA-140	-7.076E-02	1.118E-01	1.645E-01	0.000E+00	FAIL ABUN
CE-141	-6.612E-03	8.674E-02	1.326E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.552E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.037E-01	2.863E-01	4.017E-01	0.000E+00	NOT IDENT.
PM-144	-2.204E-04	4.324E-02	7.299E-02	0.000E+00	NOT IDENT.

PR-144	-1.494E-02	2.932E+00	4.948E+00	0.000E+00	NOT IDENT.
PM-146	-7.149E-03	5.584E-02	9.065E-02	0.000E+00	NOT IDENT.
ND-147	-2.963E-01	7.108E-01	1.179E+00	0.000E+00	FAIL ABUN
PM-149	-3.167E+01	1.437E+02	2.385E+02	0.000E+00	NOT IDENT.
EU-152	-6.519E-02	1.296E-01	1.913E-01	0.000E+00	FAIL ABUN
GD-153	-8.759E-02	1.086E-01	1.504E-01	0.000E+00	NOT IDENT.
EU-154	-4.708E-02	1.410E-01	2.290E-01	0.000E+00	FAIL ABUN
EU-155	4.812E-03	1.330E-01	2.183E-01	0.000E+00	FAIL ABUN
TB-160	-3.442E-02	1.705E-01	2.770E-01	0.000E+00	FAIL ABUN
HO-166M	-4.870E-02	6.878E-02	1.077E-01	0.000E+00	FAIL ABUN
TM-171	1.474E+00	3.941E+01	5.871E+01	0.000E+00	NOT IDENT.
LU-176	-1.694E-02	3.076E-02	4.789E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.759E+00	2.682E+00	0.000E+00	FAIL ABUN
LU-177M	-7.967E-02	2.408E-01	3.343E-01	0.000E+00	NOT IDENT.
HF-181	3.661E-02	5.425E-02	9.354E-02	0.000E+00	NOT IDENT.
W-181	1.013E-01	5.258E-01	7.907E-01	0.000E+00	NOT IDENT.
TA-182	7.457E-02	2.309E-01	4.045E-01	0.000E+00	FAIL ABUN
RE-183	3.048E-02	1.306E-01	2.281E-01	0.000E+00	FAIL ABUN
RE-184	-9.791E-02	2.971E-01	4.948E-01	0.000E+00	NOT IDENT.
OS-185	-1.876E-02	5.538E-02	9.132E-02	0.000E+00	NOT IDENT.
RE-188	2.523E-01	2.146E-01	3.877E-01	0.000E+00	NOT IDENT.
W-188	-3.276E-01	9.751E+00	1.435E+01	0.000E+00	FAIL ABUN
IR-192	6.174E-02	4.104E-02	7.499E-02	0.000E+00	FAIL ABUN
AU-195	1.330E-01	2.882E-01	4.612E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.058E+03	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-5.646E+00	9.990E+00	1.682E+01	0.000E+00	NOT IDENT.
TL-202	6.407E-02	8.897E-02	1.545E-01	0.000E+00	NOT IDENT.
HG-203	6.835E-02	5.153E-02	9.266E-02	0.000E+00	NOT IDENT.
BI-207	-1.664E-03	6.217E-02	1.020E-01	0.000E+00	FAIL ABUN
TL-207	6.104E-01	8.566E-01	1.330E+00	0.000E+00	FAIL ABUN
PO-209	2.881E+00	8.039E+00	1.392E+01	0.000E+00	NOT IDENT.
BI-210	5.151E+00	5.173E+00	9.101E+00	0.000E+00	NOT IDENT.
PB-210	5.151E+00	5.173E+00	9.101E+00	0.000E+00	NOT IDENT.
PO-210	5.151E+00	5.170E+00	9.101E+00	0.000E+00	NOT IDENT.
PB-211	-9.457E-01	1.448E+00	1.773E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.609E-01	8.056E-01	0.000E+00	FAIL ABUN
PO-215	6.104E-01	8.566E-01	1.330E+00	0.000E+00	FAIL ABUN
RN-219	3.045E-01	4.981E-01	8.574E-01	0.000E+00	FAIL ABUN
RN-220	-2.197E+01	2.862E+01	4.567E+01	0.000E+00	NOT IDENT.
RA-223	6.104E-01	8.566E-01	1.330E+00	0.000E+00	FAIL ABUN
AC-227	-1.180E-01	4.714E-01	7.872E-01	0.000E+00	FAIL ABUN
TH-227	-1.180E-01	4.715E-01	7.872E-01	0.000E+00	FAIL ABUN
TH-229	5.976E-01	6.137E-01	1.096E+00	0.000E+00	FAIL ABUN
PA-231	-1.694E+00	1.809E+00	2.846E+00	0.000E+00	FAIL ABUN
TH-231	6.104E-01	8.566E-01	1.330E+00	0.000E+00	FAIL ABUN
U-231	-8.017E-01	1.647E+00	2.333E+00	0.000E+00	FAIL ABUN
PA-233	-6.204E-02	7.847E-02	1.247E-01	0.000E+00	FAIL ABUN
PA-234	-1.816E-01	3.804E-01	5.929E-01	0.000E+00	FAIL ABUN
PA-234M	-6.483E-01	5.431E+00	8.860E+00	0.000E+00	NOT IDENT.
NP-236	-2.610E-02	9.466E-02	1.619E-01	0.000E+00	NOT IDENT.
NP-239	-7.772E-02	2.373E-01	3.809E-01	0.000E+00	FAIL ABUN
AM-241	2.045E-01	2.261E-01	3.495E-01	0.000E+00	NOT IDENT.
CM-243	5.988E-02	1.205E-01	2.020E-01	0.000E+00	FAIL ABUN
AM-246	6.143E-02	1.747E-01	2.978E-01	0.000E+00	NOT IDENT.
CM-247	-8.046E-03	4.535E-02	7.393E-02	0.000E+00	NOT IDENT.
CF-249	3.995E-02	5.123E-02	8.924E-02	0.000E+00	NOT IDENT.
CF-251	1.856E-01	1.561E-01	2.815E-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]G243624004.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 14:34:54.
Sample ID          : G243624004          Sample quantity  : 1.05890E+02 GRAM
Detector name      : GAM01              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.02  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 937704             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	614	10.67*	9.645E-01	2.116E+01	2.116E+01	11.37
CD-109	88.03	125	3.72*	5.135E+00	2.319E+00	2.375E+00	54.58
SN-126	64.28	28	9.60	2.722E+00	3.837E-01	3.837E-01	248.50
	86.94	125	8.90	5.135E+00	9.691E-01	9.691E-01	67.94
	87.57	125	37.00*	5.135E+00	2.331E-01	2.331E-01	54.58
BA-137M	661.65	86	89.98*	1.959E+00	1.738E-01	1.740E-01	36.31
CS-137	661.65	86	85.12*	1.959E+00	1.837E-01	1.839E-01	36.31
TL-208	277.35	-----	6.80	3.972E+00	-----	Line Not Found	-----
	510.84	88	21.60	2.438E+00	5.921E-01	5.921E-01	69.13
	583.14	292	84.20*	2.182E+00	5.632E-01	5.632E-01	20.43
	860.37	-----	12.46	1.552E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	3.875E+00	-----	Line Not Found	-----
	351.07	535	12.94*	3.295E+00	4.446E+00	4.446E+00	15.20
PB-212	74.81	337	10.70	4.074E+00	2.741E+00	2.741E+00	25.11
	77.11	468	18.00	4.310E+00	2.140E+00	2.140E+00	19.07
	87.30	125	8.00	5.135E+00	1.078E+00	1.078E+00	55.49
	238.63	995	44.60*	4.444E+00	1.780E+00	1.780E+00	10.76
	300.09	65	3.41	3.738E+00	1.803E+00	1.803E+00	77.74
PO-212	74.81	337	10.70	4.074E+00	2.741E+00	2.741E+00	25.11
	77.11	468	18.00	4.310E+00	2.140E+00	2.140E+00	19.07
	87.30	125	8.00	5.135E+00	1.078E+00	1.078E+00	55.49
	115.19	-----	0.60	6.067E+00	-----	Line Not Found	-----
	238.63	995	44.60*	4.444E+00	1.780E+00	1.780E+00	10.76
	300.09	65	3.41	3.738E+00	1.803E+00	1.803E+00	77.74
BI-214	609.31	372	46.30*	2.102E+00	1.356E+00	1.356E+00	16.07
	1120.29	105	15.10	1.219E+00	2.026E+00	2.026E+00	28.07
	1764.49	66	15.80	8.368E-01	1.766E+00	1.766E+00	34.31
PB-214	74.81	337	6.21	4.074E+00	4.723E+00	4.723E+00	24.45
	77.11	468	10.50	4.310E+00	3.669E+00	3.669E+00	20.53
	87.30	125	4.67	5.135E+00	1.847E+00	1.847E+00	55.12
	241.98	264	7.49	4.405E+00	2.838E+00	2.838E+00	29.26
	295.21	315	19.20	3.784E+00	1.539E+00	1.539E+00	21.80

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	535	37.20*	3.295E+00	1.547E+00	1.547E+00	16.07
	74.81	337	6.21	4.074E+00	4.723E+00	4.723E+00	24.45
	77.11	468	10.50	4.310E+00	3.669E+00	3.669E+00	20.53
	87.30	125	4.67	5.135E+00	1.847E+00	1.847E+00	55.12
	241.98	264	7.49	4.405E+00	2.838E+00	2.838E+00	29.26
PO-216	295.21	315	19.20	3.784E+00	1.539E+00	1.539E+00	21.80
	351.92	535	37.20*	3.295E+00	1.547E+00	1.547E+00	16.07
	74.81	337	10.70	4.074E+00	2.741E+00	2.741E+00	25.11
	77.11	468	18.00	4.310E+00	2.140E+00	2.140E+00	19.07
	87.30	125	8.00	5.135E+00	1.078E+00	1.078E+00	55.49
PO-218	238.63	995	44.60*	4.444E+00	1.780E+00	1.780E+00	10.76
	300.09	65	3.41	3.738E+00	1.803E+00	1.803E+00	77.74
	74.81	337	6.21	4.074E+00	4.723E+00	4.723E+00	24.45
	77.11	468	10.50	4.310E+00	3.669E+00	3.669E+00	20.53
	87.30	125	4.67	5.135E+00	1.847E+00	1.847E+00	55.12
RA-224	241.98	264	7.49	4.405E+00	2.838E+00	2.838E+00	29.26
	295.21	315	19.20	3.784E+00	1.539E+00	1.539E+00	21.80
	351.92	535	37.20*	3.295E+00	1.547E+00	1.547E+00	16.07
	240.98	264	3.95*	4.405E+00	5.382E+00	5.382E+00	28.72
	609.31	372	46.30*	2.102E+00	1.356E+00	1.356E+00	16.07
AC-228	1120.29	105	15.10	1.219E+00	2.026E+00	2.026E+00	28.07
	1764.49	66	15.80	8.368E-01	1.766E+00	1.766E+00	34.31
	338.32	185	11.40	3.399E+00	1.692E+00	1.692E+00	50.32
	911.07	212	27.70*	1.473E+00	1.845E+00	1.845E+00	22.17
	969.11	141	16.60	1.393E+00	2.164E+00	2.164E+00	31.27
RA-228	338.32	185	11.40	3.399E+00	1.692E+00	1.692E+00	50.32
	911.07	212	27.70*	1.473E+00	1.845E+00	1.845E+00	22.17
	969.11	141	16.60	1.393E+00	2.164E+00	2.164E+00	31.27
	74.81	337	10.70	4.074E+00	2.741E+00	2.786E+00	23.33
	77.11	468	18.00	4.310E+00	2.140E+00	2.175E+00	19.07
TH-228	87.30	125	8.00	5.135E+00	1.078E+00	1.096E+00	54.58
	238.63	995	44.60*	4.444E+00	1.780E+00	1.809E+00	10.76
	300.09	65	3.41	3.738E+00	1.803E+00	1.832E+00	97.21
	609.31	372	46.30*	2.102E+00	1.356E+00	1.356E+00	16.07
	1120.29	105	15.10	1.219E+00	2.026E+00	2.026E+00	28.07
TH-232	1764.49	66	15.80	8.368E-01	1.766E+00	1.766E+00	34.31
	338.32	185	11.40	3.399E+00	1.692E+00	1.692E+00	30.07
	911.07	212	27.70*	1.473E+00	1.845E+00	1.845E+00	22.17
	969.11	141	16.60	1.393E+00	2.164E+00	2.164E+00	31.27
	63.29	28	3.80*	2.722E+00	9.694E-01	9.694E-01	248.69
TH-234	92.38	213	5.41	5.463E+00	2.557E+00	2.557E+00	42.09
	609.31	372	46.30*	2.102E+00	1.356E+00	1.356E+00	16.07
	1120.29	105	15.10	1.219E+00	2.026E+00	2.026E+00	28.07
	1764.49	66	15.80	8.368E-01	1.766E+00	1.766E+00	34.31
	89.95	97	2.70	5.313E+00	2.407E+00	2.407E+00	74.54
U-235	93.35	213	4.50	5.463E+00	3.074E+00	3.074E+00	47.22
	105.00	-----	2.10	5.910E+00	-----	Line Not Found	-----
	143.76	35	10.50*	5.945E+00	1.966E-01	1.966E-01	168.15
	163.35	-----	4.70	5.647E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	185.71	209	54.00	5.262E+00	2.613E-01	2.613E-01	40.47
	205.31	-----	4.70	4.943E+00	-----	Line Not Found	-----
NP-237	86.50	125	12.60*	5.135E+00	6.845E-01	6.845E-01	58.35
	95.87	-----	2.60	5.609E+00	-----	Line Not Found	-----
U-238	63.29	28	3.80*	2.722E+00	9.694E-01	9.694E-01	248.69
	92.38	213	5.41	5.463E+00	2.557E+00	2.557E+00	38.97
AM-243	74.67	337	66.00*	4.074E+00	4.444E-01	4.444E-01	23.30
	86.72	125	0.34	5.135E+00	2.567E+01	2.567E+01	54.58
	117.66	-----	0.55	6.083E+00	-----	Line Not Found	-----
	142.18	35	0.13	5.945E+00	1.651E+01	1.651E+01	167.46
ANH-511	511.00	88	100.00*	2.438E+00	1.279E-01	1.279E-01	68.63

Flag: "*" = Keyline

Total number of lines in spectrum 34
Number of unidentified lines 1
Number of lines tentatively identified by NID 33 97.06%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.116E+01	2.116E+01	0.241E+01	11.37	
CD-109	464.00D	1.02	2.319E+00	2.375E+00	1.296E+00	54.58	
SN-126	1.00E+05Y	1.00	2.331E-01	2.331E-01	1.272E-01	54.58	
BA-137M	30.17Y	1.00	1.738E-01	1.740E-01	0.632E-01	36.31	
CS-137	30.17Y	1.00	1.837E-01	1.839E-01	0.668E-01	36.31	
TL-208	1.41E+10Y	1.00	5.632E-01	5.632E-01	1.151E-01	20.43	
BI-211	7.04E+08Y	1.00	4.446E+00	4.446E+00	0.676E+00	15.20	
PB-212	1.41E+10Y	1.00	1.780E+00	1.780E+00	0.191E+00	10.76	
PO-212	1.41E+10Y	1.00	1.780E+00	1.780E+00	0.191E+00	10.76	
BI-214	1600.00Y	1.00	1.356E+00	1.356E+00	0.218E+00	16.07	
PB-214	1600.00Y	1.00	1.547E+00	1.547E+00	0.248E+00	16.07	
PO-214	1600.00Y	1.00	1.547E+00	1.547E+00	0.248E+00	16.07	
PO-216	1.41E+10Y	1.00	1.780E+00	1.780E+00	0.191E+00	10.76	
PO-218	1600.00Y	1.00	1.547E+00	1.547E+00	0.248E+00	16.07	
RA-224	1.41E+10Y	1.00	5.382E+00	5.382E+00	1.546E+00	28.72	
RA-226	1600.00Y	1.00	1.356E+00	1.356E+00	0.218E+00	16.07	
AC-228	1.41E+10Y	1.00	1.845E+00	1.845E+00	0.409E+00	22.17	
RA-228	1.41E+10Y	1.00	1.845E+00	1.845E+00	0.409E+00	22.17	
TH-228	1.91Y	1.02	1.780E+00	1.809E+00	0.195E+00	10.76	
TH-230	4.47E+09Y	1.00	1.356E+00	1.356E+00	0.218E+00	16.07	
TH-232	1.41E+10Y	1.00	1.845E+00	1.845E+00	0.409E+00	22.17	
TH-234	4.47E+09Y	1.00	9.694E-01	9.694E-01	24.11E-01	248.69	
U-234	4.47E+09Y	1.00	1.356E+00	1.356E+00	0.218E+00	16.07	
U-235	7.04E+08Y	1.00	1.966E-01	1.966E-01	3.305E-01	168.15	
NP-237	2.14E+06Y	1.00	6.845E-01	6.845E-01	3.994E-01	58.35	
U-238	4.47E+09Y	1.00	9.694E-01	9.694E-01	24.11E-01	248.69	
AM-243	7380.00Y	1.00	4.444E-01	4.444E-01	1.036E-01	23.30	
ANH-511	1.00E+09Y	1.00	1.279E-01	1.279E-01	0.878E-01	68.63	
Total Activity :			6.058E+01	6.066E+01			

Grand Total Activity : 6.058E+01 6.066E+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	129.17	86	333	1.52	259.10	254	10	1.19E-02	82.6	6.08E+00	T
0	209.27	93	185	1.50	419.29	415	8	1.29E-02	54.8	4.88E+00	T
0	270.51	119	205	1.39	541.74	537	12	1.66E-02	51.3	4.05E+00	T
0	328.53	56	121	1.42	657.77	652	9	7.77E-03	75.8	3.48E+00	T
0	410.33	31	95	0.82	821.34	815	10	4.25E-03	****	2.91E+00	T
0	463.34	72	109	1.45	927.33	921	14	9.93E-03	66.2	2.64E+00	T
0	728.02	73	71	1.57	1456.53	1452	14	1.02E-02	54.8	1.80E+00	T
0	755.64	20	46	0.91	1511.75	1504	12	2.71E-03	****	1.74E+00	T
0	795.54	51	44	1.71	1591.53	1584	17	7.05E-03	65.4	1.67E+00	T
2	964.22	33	24	2.11	1928.76	1920	24	4.63E-03	71.3	1.40E+00	T
0	1587.78	15	6	1.34	3175.15	3170	9	2.02E-03	92.7	9.02E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624004.CNF;1
* Acquisition date   : 7-JAN-2010 14:34:54.  Detector SN#      :
* Detector ID        : GAM01                      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 02:00:01.02             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G243624004           Analyst initials: MXR1
* Batch Number       : 937704              Sample Quantity : 1.05890E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 29-JAN-2009 10:38:56.1MS 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	2.116E+01	2.405E+00	6.905E-01	4.907E-02	30.652
CD-109	2.375E+00	1.296E+00	1.532E+00	1.410E-01	1.551
SN-126	2.331E-01	1.272E-01	1.511E-01	1.387E-02	1.542
BA-137M	1.740E-01	6.317E-02	7.993E-02	4.036E-03	2.177
CS-137	1.839E-01	6.678E-02	8.449E-02	4.290E-03	2.177
TL-208	5.632E-01	1.151E-01	7.413E-02	4.697E-03	7.597
BI-211	4.446E+00	6.756E-01	4.074E-01	2.580E-02	10.913
PB-212	1.780E+00	1.915E-01	1.223E-01	8.910E-03	14.556
PO-212	1.780E+00	1.915E-01	1.223E-01	8.910E-03	14.556
BI-214	1.356E+00	2.180E-01	1.328E-01	9.848E-03	10.211
PB-214	1.547E+00	2.485E-01	1.420E-01	1.165E-02	10.889
PO-214	1.547E+00	2.485E-01	1.420E-01	1.165E-02	10.889
PO-216	1.780E+00	1.915E-01	1.223E-01	8.910E-03	14.556
PO-218	1.547E+00	2.485E-01	1.420E-01	1.165E-02	10.889
RA-224	5.382E+00	1.546E+00	1.222E+00	7.032E-02	4.402
RA-226	1.356E+00	2.180E-01	1.328E-01	9.848E-03	10.211
AC-228	1.845E+00	4.090E-01	2.751E-01	2.779E-02	6.706
RA-228	1.845E+00	4.090E-01	2.751E-01	2.779E-02	6.706

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.809E+00	1.946E-01	1.243E-01	9.054E-03	14.556
TH-230	1.356E+00	2.180E-01	1.328E-01	9.848E-03	10.211
TH-232	1.845E+00	4.090E-01	2.751E-01	2.779E-02	6.706
TH-234	9.694E-01	2.411E+00	2.773E+00	4.956E-01	0.350
U-234	1.356E+00	2.180E-01	1.328E-01	9.848E-03	10.211
U-235	1.966E-01	3.305E-01	3.966E-01	6.447E-02	0.496
NP-237	6.845E-01	3.994E-01	4.497E-01	1.014E-01	1.522
U-238	9.694E-01	2.411E+00	2.773E+00	4.956E-01	0.350
AM-243	4.444E-01	1.036E-01	1.126E-01	9.489E-03	3.947
ANH-511	1.279E-01	8.777E-02	5.944E-02	3.291E-03	2.152

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.858E-01		4.420E-01	6.405E-01	4.186E-02	-0.759
NA-22	-1.866E-02		5.130E-02	8.175E-02	5.240E-03	-0.228
NA-24	-1.016E+00		1.262E+00	Half-Life too short		
AL-26	-6.287E-03		2.827E-02	4.432E-02	2.556E-03	-0.142
TI-44	3.949E-01	+	7.531E-02	9.811E-02	8.416E-03	4.025
SC-46	4.052E-03		4.363E-02	7.214E-02	5.070E-03	0.056
V-48	-6.246E-02		9.105E-02	1.349E-01	9.147E-03	-0.463
CR-51	-3.284E-01		4.403E-01	6.818E-01	4.413E-02	-0.482
MN-52	3.277E-02		3.373E-01	5.667E-01	3.876E-02	0.058
MN-54	3.653E-02		4.990E-02	8.721E-02	5.697E-03	0.419
CO-56	-4.025E-02		4.349E-02	6.269E-02	4.162E-03	-0.642
CO-57	1.885E-02		3.222E-02	5.255E-02	3.227E-03	0.359
CO-58	-2.275E-02		5.131E-02	8.053E-02	5.111E-03	-0.283
FE-59	4.593E-02		1.090E-01	1.849E-01	1.303E-02	0.248
CO-60	-3.249E-03		4.220E-02	6.939E-02	4.808E-03	-0.047
ZN-65	-3.687E-02		1.317E-01	1.739E-01	1.041E-02	-0.212
GE-68	2.746E-01		1.533E+00	2.528E+00	1.579E-01	0.109
AS-73	-1.318E-01		1.262E+00	1.999E+00	1.702E-01	-0.066
AS-74	3.459E-02		1.124E-01	1.932E-01	1.034E-02	0.179
SE-75	-2.201E-02		5.733E-02	8.533E-02	5.021E-03	-0.258
BR-77	-3.125E-01		1.721E+01	2.740E+01	1.515E+00	-0.011
SR-82	-2.469E-02		5.135E-01	8.427E-01	5.071E-02	-0.029
RB-83	-5.075E-03		8.558E-02	1.358E-01	7.505E-03	-0.037
RB-84	2.241E-02		8.503E-02	1.432E-01	9.963E-03	0.156
KR-85	2.023E+01		1.064E+01	1.765E+01	9.767E-01	1.147
SR-85	1.048E-01		5.510E-02	9.142E-02	5.060E-03	1.147
RB-86	3.354E-01		1.024E+00	1.717E+00	1.073E-01	0.195
Y-88	2.629E-02		3.344E-02	6.602E-02	3.737E-03	0.398
ZR-88	-6.681E-03		3.835E-02	6.134E-02	3.316E-03	-0.109
Y-91	2.424E+01		2.462E+01	4.486E+01	2.592E+00	0.540
NB-94	5.371E-02		4.522E-02	8.179E-02	4.407E-03	0.657
NB-95	5.653E-02		5.623E-02	1.003E-01	5.944E-03	0.563
NB-95M	5.429E-02		1.709E-01	2.548E-01	1.905E-02	0.213

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ZR-95	8.540E-02	+	1.240E-01	1.595E-01	1.127E-02	0.535
NB-97	-5.698E-02		1.735E-01	Half-Life too short		
ZR-97	2.201E+00		3.588E+00	Half-Life too short		
MO-99	-1.981E+00		1.912E+01	3.130E+01	4.301E+00	-0.063
TC-99M	-4.855E+11		3.791E+11	Half-Life too short		
RH-101	1.584E-02		4.215E-02	7.039E-02	3.892E-03	0.225
RH-102	4.310E-03		3.716E-02	6.020E-02	3.339E-03	0.072
RU-103	-3.531E-02		5.222E-02	7.795E-02	9.767E-03	-0.453
RH-106	-2.271E-01		3.900E-01	6.162E-01	7.071E-02	-0.369
RU-106	-2.271E-01		3.893E-01	6.162E-01	3.234E-02	-0.369
AG-108M	-5.546E-02		4.227E-02	6.037E-02	3.638E-03	-0.919
AG-110M	-2.394E-02		4.844E-02	6.540E-02	3.594E-03	-0.366
IN-111	-7.960E-01		1.742E+00	2.444E+00	1.410E-01	-0.326
IN-113M	1.389E-02		5.663E-02	9.345E-02	5.437E-03	0.149
SN-113	1.389E-02		5.663E-02	9.345E-02	5.437E-03	0.149
IN-114M	-2.169E-01		2.543E-01	3.545E-01	1.943E-02	-0.612
CD-115	2.024E+00		1.803E+01	3.065E+01	1.692E+00	0.066
SN-117M	-4.031E-02		7.194E-02	1.186E-01	6.454E-03	-0.340
SB-122	8.339E-01		3.140E+00	5.388E+00	2.935E-01	0.155
I-123	-1.548E+01		1.250E+01	Half-Life too short		
TE-123M	-2.193E-02		3.542E-02	5.822E-02	3.212E-03	-0.377
I-124	6.486E-02		9.671E-01	1.485E+00	7.907E-02	0.044
SB-124	1.837E-02		9.132E-02	1.560E-01	1.043E-02	0.118
SB-125	-9.813E-03		1.138E-01	1.823E-01	1.049E-02	-0.054
TE-125M	8.013E+00		1.173E+01	1.926E+01	1.720E+00	0.416
I-126	4.016E-02		2.651E-01	3.906E-01	1.987E-02	0.103
SB-126	-8.436E-02		1.900E-01	3.016E-01	1.670E-02	-0.280
SB-127	-2.915E-01		2.073E+00	3.282E+00	3.106E-01	-0.089
XE-127	-3.301E-02		6.122E-02	9.992E-02	5.553E-03	-0.330
I-131	6.151E-02		1.560E-01	2.610E-01	1.649E-02	0.236
TE-132	3.729E-01		1.068E+00	1.804E+00	2.621E-01	0.207
BA-133	1.821E-02		5.666E-02	8.346E-02	9.591E-03	0.218
I-133	-6.217E-03		7.914E-03	Half-Life too short		
CS-134	1.428E-01	+	9.378E-02	1.099E-01	6.893E-03	1.299
CS-135	2.488E-01		2.184E-01	3.428E-01	2.633E-02	0.726
I-135	-4.605E+10		3.556E+10	Half-Life too short		
CS-136	-1.694E-01		1.431E-01	1.947E-01	1.347E-02	-0.870
CE-139	-3.562E-03		3.521E-02	5.908E-02	3.156E-03	-0.060
BA-140	6.466E-02		3.264E-01	5.574E-01	1.810E-01	0.116
LA-140	-7.076E-02		1.141E-01	1.657E-01	1.080E-02	-0.427
CE-141	-6.612E-03		8.851E-02	1.319E-01	7.749E-03	-0.050
CE-143	7.865E-04		1.812E-04	Half-Life too short		
CE-144	-1.037E-01		2.921E-01	3.993E-01	5.679E-02	-0.260
PM-144	-2.204E-04		4.412E-02	7.319E-02	3.910E-03	-0.003
PR-144	-1.494E-02		2.991E+00	4.962E+00	2.648E-01	-0.003
PM-146	-7.149E-03		5.698E-02	9.070E-02	7.659E-03	-0.079
ND-147	-2.963E-01		7.253E-01	1.180E+00	1.582E-01	-0.251
PM-149	-3.167E+01		1.466E+02	2.380E+02	3.380E+01	-0.133

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	-6.519E-02		1.322E-01	1.912E-01	1.237E-02	-0.341
GD-153	-8.759E-02		1.108E-01	1.493E-01	1.181E-02	-0.587
EU-154	-4.708E-02		1.439E-01	2.304E-01	2.240E-02	-0.204
EU-155	4.812E-03		1.357E-01	2.167E-01	1.584E-02	0.022
TB-160	-3.442E-02		1.740E-01	2.781E-01	1.929E-02	-0.124
HO-166M	-4.870E-02		7.019E-02	1.080E-01	5.901E-03	-0.451
TM-171	1.474E+00		4.021E+01	5.815E+01	4.837E+00	0.025
LU-176	-1.694E-02		3.139E-02	4.781E-02	2.792E-03	-0.354
LU-177	3.260E+00	+	1.795E+00	2.673E+00	1.494E-01	1.220
LU-177M	-7.967E-02		2.458E-01	3.343E-01	1.826E-02	-0.238
HF-181	3.661E-02		5.535E-02	9.362E-02	5.195E-03	0.391
W-181	1.013E-01		5.366E-01	7.830E-01	6.527E-02	0.129
TA-182	7.457E-02		2.357E-01	4.068E-01	2.410E-02	0.183
RE-183	3.048E-02		1.333E-01	2.269E-01	1.223E-02	0.134
RE-184	-9.791E-02		3.031E-01	4.935E-01	2.859E-02	-0.198
OS-185	-1.876E-02		5.651E-02	9.154E-02	4.699E-03	-0.205
RE-188	2.523E-01		2.190E-01	3.857E-01	2.119E-02	0.654
W-188	-3.276E-01		9.950E+00	1.433E+01	8.382E-01	-0.023
IR-192	6.174E-02		4.187E-02	7.489E-02	4.381E-03	0.824
AU-195	1.330E-01		2.941E-01	4.577E-01	3.552E-02	0.291
TL-200	-3.041E-04		5.396E-04	Half-Life too short		
TL-201	-5.646E+00		1.019E+01	1.674E+01	8.946E-01	-0.337
TL-202	6.407E-02		9.079E-02	1.546E-01	8.523E-03	0.415
HG-203	6.835E-02		5.258E-02	9.247E-02	5.735E-03	0.739
BI-207	-1.664E-03		6.344E-02	1.025E-01	6.492E-03	-0.016
TL-207	6.104E-01		8.741E-01	1.328E+00	2.193E-01	0.460
PO-209	2.881E+00		8.203E+00	1.398E+01	9.917E-01	0.206
BI-210	5.151E+00		5.279E+00	8.997E+00	7.127E-01	0.573
PB-210	5.151E+00		5.279E+00	8.997E+00	7.127E-01	0.573
PO-210	5.151E+00		5.275E+00	8.997E+00	6.177E-01	0.573
PB-211	-9.457E-01		1.478E+00	1.772E+00	1.104E+00	-0.534
BI-212	1.219E+00	+	6.743E-01	8.081E-01	6.109E-02	1.509
PO-215	6.104E-01		8.741E-01	1.328E+00	2.193E-01	0.460
RN-219	3.045E-01		5.082E-01	8.574E-01	1.153E-01	0.355
RN-220	-2.197E+01		2.921E+01	4.574E+01	2.507E+00	-0.480
RA-223	6.104E-01		8.741E-01	1.328E+00	2.193E-01	0.460
AC-227	-1.180E-01		4.810E-01	7.852E-01	1.096E-01	-0.150
TH-227	-1.180E-01		4.811E-01	7.852E-01	1.327E-01	-0.150
TH-229	5.976E-01		6.262E-01	1.091E+00	6.004E-02	0.548
PA-231	-1.694E+00		1.846E+00	2.840E+00	3.919E-01	-0.596
TH-231	6.104E-01		8.741E-01	1.328E+00	2.193E-01	0.460
U-231	-8.017E-01		1.680E+00	2.315E+00	1.873E-01	-0.346
PA-233	-6.204E-02		8.007E-02	1.245E-01	7.705E-03	-0.498
PA-234	-1.816E-01		3.881E-01	5.956E-01	1.075E-01	-0.305
PA-234M	-6.483E-01		5.541E+00	8.902E+00	7.438E-01	-0.073
NP-236	-2.610E-02		9.659E-02	1.611E-01	8.728E-03	-0.162
NP-239	-7.772E-02		2.422E-01	3.784E-01	2.421E-02	-0.205
AM-241	2.045E-01		2.307E-01	3.460E-01	3.162E-02	0.591

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	5.988E-02		1.230E-01	2.006E-01	1.466E-02	0.299
AM-246	6.143E-02		1.783E-01	2.994E-01	1.867E-02	0.205
CM-247	-8.046E-03		4.628E-02	7.392E-02	4.018E-03	-0.109
CF-249	3.995E-02		5.227E-02	8.921E-02	4.849E-03	0.448
CF-251	1.856E-01		1.593E-01	2.803E-01	1.513E-02	0.662

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G243624004          *
* Acquisition date   : 7-JAN-2010 14:34:54 Detector SN#                   *
* Detector ID        : GAM01 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 02:00:01.02 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624004 Analyst initials: MXR1                  *
* Batch Number       : 937704 Sample Quantity : 1.0589E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 29-JAN-2009 10:38:56 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	2.116E+01	2.357E+00	3.431E-01	1.203E+00
CD-109	2.375E+00	1.270E+00	7.726E-01	6.482E-01
SN-126	2.331E-01	1.247E-01	7.624E-02	6.362E-02
BA-137M	1.740E-01	6.191E-02	3.989E-02	3.158E-02
CS-137	1.839E-01	6.545E-02	4.216E-02	3.339E-02
TL-208	5.632E-01	1.128E-01	3.702E-02	5.754E-02
BI-211	4.446E+00	6.621E-01	2.040E-01	3.378E-01
PB-212	1.780E+00	1.877E-01	6.136E-02	9.575E-02
PO-212	1.780E+00	1.877E-01	6.136E-02	9.575E-02
BI-214	1.356E+00	2.136E-01	6.631E-02	1.090E-01
PB-214	1.547E+00	2.435E-01	7.111E-02	1.242E-01
PO-214	1.547E+00	2.435E-01	7.111E-02	1.242E-01
PO-216	1.780E+00	1.877E-01	6.136E-02	9.575E-02
PO-218	1.547E+00	2.435E-01	7.111E-02	1.242E-01
RA-224	5.382E+00	1.515E+00	6.133E-01	7.728E-01
RA-226	1.356E+00	2.136E-01	6.631E-02	1.090E-01
AC-228	1.845E+00	4.008E-01	1.370E-01	2.045E-01
RA-228	1.845E+00	4.008E-01	1.370E-01	2.045E-01
TH-228	1.809E+00	1.907E-01	6.235E-02	9.730E-02
TH-230	1.356E+00	2.136E-01	6.631E-02	1.090E-01
TH-232	1.845E+00	4.008E-01	1.370E-01	2.045E-01
TH-234	9.694E-01	2.363E+00	1.401E+00	1.205E+00
U-234	1.356E+00	2.136E-01	6.631E-02	1.090E-01
U-235	1.966E-01	3.239E-01	1.995E-01	1.653E-01
NP-237	6.845E-01	3.914E-01	2.269E-01	1.997E-01
U-238	9.694E-01	2.363E+00	1.401E+00	1.205E+00
AM-243	4.444E-01	1.015E-01	5.684E-02	5.179E-02
ANH-511	1.279E-01	8.602E-02	2.970E-02	4.389E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
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BE-7	-4.858E-01	4.332E-01	3.202E-01	2.210E-01	NOT IDENT.
NA-22	-1.866E-02	5.028E-02	4.065E-02	2.565E-02	NOT IDENT.
NA-24	-1.016E+06	2.474E+06	0.000E+00	1.262E+06	SHORT HLIF
AL-26	-6.287E-03	2.770E-02	2.200E-02	1.413E-02	NOT IDENT.
TI-44	3.949E-01	7.380E-02	4.952E-02	3.765E-02	FAIL ABUN
SC-46	4.052E-03	4.276E-02	3.594E-02	2.182E-02	FAIL ABUN
V-48	-6.246E-02	8.923E-02	6.718E-02	4.552E-02	NOT IDENT.
CR-51	-3.284E-01	4.315E-01	3.415E-01	2.202E-01	NOT IDENT.
MN-52	3.277E-02	3.305E-01	2.816E-01	1.686E-01	NOT IDENT.
MN-54	3.653E-02	4.890E-02	4.346E-02	2.495E-02	NOT IDENT.
CO-56	-4.025E-02	4.262E-02	3.124E-02	2.175E-02	NOT IDENT.
CO-57	1.885E-02	3.157E-02	2.646E-02	1.611E-02	NOT IDENT.
CO-58	-2.275E-02	5.029E-02	4.014E-02	2.566E-02	NOT IDENT.
FE-59	4.593E-02	1.069E-01	9.202E-02	5.452E-02	FAIL ABUN
CO-60	-3.249E-03	4.136E-02	3.450E-02	2.110E-02	NOT IDENT.
ZN-65	-3.687E-02	1.290E-01	8.653E-02	6.583E-02	NOT IDENT.
GE-68	2.746E-01	1.502E+00	1.258E+00	7.666E-01	NOT IDENT.
AS-73	-1.318E-01	1.236E+00	1.011E+00	6.308E-01	NOT IDENT.
AS-74	3.459E-02	1.102E-01	9.644E-02	5.622E-02	NOT IDENT.
SE-75	-2.201E-02	5.619E-02	4.279E-02	2.867E-02	NOT IDENT.
BR-77	-3.125E-01	1.686E+01	1.369E+01	8.603E+00	FAIL ABUN
SR-82	-2.469E-02	5.032E-01	4.202E-01	2.567E-01	NOT IDENT.
RB-83	-5.075E-03	8.387E-02	6.783E-02	4.279E-02	NOT IDENT.
RB-84	2.241E-02	8.333E-02	7.137E-02	4.251E-02	NOT IDENT.
KR-85	2.023E+01	1.042E+01	8.818E+00	5.318E+00	NOT IDENT.
SR-85	1.048E-01	5.400E-02	4.568E-02	2.755E-02	NOT IDENT.
RB-86	3.354E-01	1.004E+00	8.544E-01	5.120E-01	NOT IDENT.
Y-88	2.629E-02	3.277E-02	3.276E-02	1.672E-02	NOT IDENT.
ZR-88	-6.681E-03	3.758E-02	3.069E-02	1.918E-02	NOT IDENT.
Y-91	2.424E+01	2.413E+01	2.231E+01	1.231E+01	NOT IDENT.
NB-94	5.371E-02	4.431E-02	4.080E-02	2.261E-02	NOT IDENT.
NB-95	5.653E-02	5.510E-02	5.003E-02	2.811E-02	NOT IDENT.
NB-95M	5.429E-02	1.674E-01	1.279E-01	8.543E-02	NOT IDENT.
ZR-95	8.540E-02	1.215E-01	7.955E-02	6.201E-02	FAIL ABUN
NB-97	-5.698E+04	3.400E+05	0.000E+00	1.735E+05	SHORT HLIF
ZR-97	2.201E+06	7.033E+06	0.000E+00	3.588E+06	SHORT HLIF
MO-99	-1.981E+00	1.873E+01	1.561E+01	9.559E+00	NOT IDENT.
TC-99M	-4.855E+17	7.431E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.584E-02	4.130E-02	3.535E-02	2.107E-02	NOT IDENT.
RH-102	4.310E-03	3.642E-02	3.009E-02	1.858E-02	NOT IDENT.
RU-103	-3.531E-02	5.118E-02	3.896E-02	2.611E-02	FAIL ABUN
RH-106	-2.271E-01	3.822E-01	3.076E-01	1.950E-01	FAIL ABUN
RU-106	-2.271E-01	3.815E-01	3.076E-01	1.947E-01	FAIL ABUN
AG-108M	-5.546E-02	4.143E-02	3.019E-02	2.114E-02	NOT IDENT.
AG-110M	-2.394E-02	4.748E-02	3.263E-02	2.422E-02	NOT IDENT.
IN-111	-7.960E-01	1.707E+00	1.226E+00	8.709E-01	NOT IDENT.
IN-113M	1.389E-02	5.549E-02	4.677E-02	2.831E-02	NOT IDENT.
SN-113	1.389E-02	5.549E-02	4.677E-02	2.831E-02	NOT IDENT.
IN-114M	-2.169E-01	2.492E-01	1.781E-01	1.271E-01	NOT IDENT.
CD-115	2.024E+00	1.766E+01	1.532E+01	9.013E+00	NOT IDENT.
SN-117M	-4.031E-02	7.051E-02	5.964E-02	3.597E-02	NOT IDENT.
SB-122	8.339E-01	3.077E+00	2.691E+00	1.570E+00	NOT IDENT.
I-123	-1.548E+07	2.451E+07	0.000E+00	1.250E+07	SHORT HLIF
TE-123M	-2.193E-02	3.471E-02	2.927E-02	1.771E-02	NOT IDENT.
I-124	6.486E-02	9.477E-01	7.412E-01	4.835E-01	NOT IDENT.
SB-124	1.837E-02	8.949E-02	7.745E-02	4.566E-02	FAIL ABUN
SB-125	-9.813E-03	1.115E-01	9.117E-02	5.689E-02	FAIL ABUN
TE-125M	8.013E+00	1.149E+01	9.702E+00	5.864E+00	NOT IDENT.
I-126	4.016E-02	2.598E-01	1.949E-01	1.325E-01	NOT IDENT.
SB-126	-8.436E-02	1.862E-01	1.504E-01	9.502E-02	FAIL ABUN
SB-127	-2.915E-01	2.031E+00	1.638E+00	1.036E+00	FAIL ABUN
XE-127	-3.301E-02	6.000E-02	5.017E-02	3.061E-02	NOT IDENT.
I-131	6.151E-02	1.529E-01	1.307E-01	7.799E-02	NOT IDENT.
TE-132	3.729E-01	1.046E+00	9.055E-01	5.338E-01	NOT IDENT.
BA-133	1.821E-02	5.552E-02	4.179E-02	2.833E-02	NOT IDENT.
I-133	-6.217E+03	1.551E+04	0.000E+00	7.914E+03	SHORT HLIF
CS-134	1.428E-01	9.190E-02	5.478E-02	4.689E-02	FAIL ABUN
CS-135	2.488E-01	2.141E-01	1.719E-01	1.092E-01	NOT IDENT.
I-135	-4.605E+16	6.970E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.694E-01	1.402E-01	9.692E-02	7.155E-02	FAIL ABUN
CE-139	-3.562E-03	3.451E-02	2.970E-02	1.761E-02	NOT IDENT.
BA-140	6.466E-02	3.199E-01	2.785E-01	1.632E-01	NOT IDENT.
LA-140	-7.076E-02	1.118E-01	8.231E-02	5.704E-02	FAIL ABUN
CE-141	-6.612E-03	8.674E-02	6.633E-02	4.426E-02	NOT IDENT.
CE-143	7.865E+02	3.552E+02	0.000E+00	1.812E+02	SHORT HLIF
CE-144	-1.037E-01	2.863E-01	2.010E-01	1.461E-01	NOT IDENT.
PM-144	-2.204E-04	4.324E-02	3.651E-02	2.206E-02	NOT IDENT.

PR-144	-1.494E-02	2.932E+00	2.476E+00	1.496E+00	NOT IDENT.
PM-146	-7.149E-03	5.584E-02	4.535E-02	2.849E-02	NOT IDENT.
ND-147	-2.963E-01	7.108E-01	5.897E-01	3.627E-01	FAIL ABUN
PM-149	-3.167E+01	1.437E+02	1.193E+02	7.329E+01	NOT IDENT.
EU-152	-6.519E-02	1.296E-01	9.573E-02	6.611E-02	FAIL ABUN
GD-153	-8.759E-02	1.086E-01	7.524E-02	5.542E-02	NOT IDENT.
EU-154	-4.708E-02	1.410E-01	1.146E-01	7.195E-02	FAIL ABUN
EU-155	4.812E-03	1.330E-01	1.092E-01	6.785E-02	FAIL ABUN
TB-160	-3.442E-02	1.705E-01	1.386E-01	8.699E-02	FAIL ABUN
HO-166M	-4.870E-02	6.878E-02	5.388E-02	3.509E-02	FAIL ABUN
TM-171	1.474E+00	3.941E+01	2.937E+01	2.011E+01	NOT IDENT.
LU-176	-1.694E-02	3.076E-02	2.396E-02	1.569E-02	FAIL ABUN
LU-177	3.260E+00	1.759E+00	1.342E+00	8.975E-01	FAIL ABUN
LU-177M	-7.967E-02	2.408E-01	1.672E-01	1.229E-01	NOT IDENT.
HF-181	3.661E-02	5.425E-02	4.680E-02	2.768E-02	NOT IDENT.
W-181	1.013E-01	5.258E-01	3.956E-01	2.683E-01	NOT IDENT.
TA-182	7.457E-02	2.309E-01	2.023E-01	1.178E-01	FAIL ABUN
RE-183	3.048E-02	1.306E-01	1.141E-01	6.663E-02	FAIL ABUN
RE-184	-9.791E-02	2.971E-01	2.475E-01	1.516E-01	NOT IDENT.
OS-185	-1.876E-02	5.538E-02	4.569E-02	2.825E-02	NOT IDENT.
RE-188	2.523E-01	2.146E-01	1.940E-01	1.095E-01	NOT IDENT.
W-188	-3.276E-01	9.751E+00	7.180E+00	4.975E+00	FAIL ABUN
IR-192	6.174E-02	4.104E-02	3.752E-02	2.094E-02	FAIL ABUN
AU-195	1.330E-01	2.882E-01	2.307E-01	1.470E-01	FAIL ABUN
TL-200	-3.041E+02	1.058E+03	0.000E+00	5.396E+02	SHORT HLIF
TL-201	-5.646E+00	9.990E+00	8.414E+00	5.097E+00	NOT IDENT.
TL-202	6.407E-02	8.897E-02	7.730E-02	4.539E-02	NOT IDENT.
HG-203	6.835E-02	5.153E-02	4.636E-02	2.629E-02	NOT IDENT.
BI-207	-1.664E-03	6.217E-02	5.101E-02	3.172E-02	FAIL ABUN
TL-207	6.104E-01	8.566E-01	6.653E-01	4.371E-01	FAIL ABUN
PO-209	2.881E+00	8.039E+00	6.964E+00	4.102E+00	NOT IDENT.
BI-210	5.151E+00	5.173E+00	4.553E+00	2.640E+00	NOT IDENT.
PB-210	5.151E+00	5.173E+00	4.553E+00	2.640E+00	NOT IDENT.
PO-210	5.151E+00	5.170E+00	4.553E+00	2.638E+00	NOT IDENT.
PB-211	-9.457E-01	1.448E+00	8.868E-01	7.390E-01	NOT IDENT.
BI-212	1.219E+00	6.609E-01	4.031E-01	3.372E-01	FAIL ABUN
PO-215	6.104E-01	8.566E-01	6.653E-01	4.371E-01	FAIL ABUN
RN-219	3.045E-01	4.981E-01	4.290E-01	2.541E-01	FAIL ABUN
RN-220	-2.197E+01	2.862E+01	2.285E+01	1.460E+01	NOT IDENT.
RA-223	6.104E-01	8.566E-01	6.653E-01	4.371E-01	FAIL ABUN
AC-227	-1.180E-01	4.714E-01	3.938E-01	2.405E-01	FAIL ABUN
TH-227	-1.180E-01	4.715E-01	3.938E-01	2.406E-01	FAIL ABUN
TH-229	5.976E-01	6.137E-01	5.482E-01	3.131E-01	FAIL ABUN
PA-231	-1.694E+00	1.809E+00	1.424E+00	9.228E-01	FAIL ABUN
TH-231	6.104E-01	8.566E-01	6.653E-01	4.371E-01	FAIL ABUN
U-231	-8.017E-01	1.647E+00	1.167E+00	8.401E-01	FAIL ABUN
PA-233	-6.204E-02	7.847E-02	6.239E-02	4.004E-02	FAIL ABUN
PA-234	-1.816E-01	3.804E-01	2.966E-01	1.941E-01	FAIL ABUN
PA-234M	-6.483E-01	5.431E+00	4.432E+00	2.771E+00	NOT IDENT.
NP-236	-2.610E-02	9.466E-02	8.102E-02	4.830E-02	NOT IDENT.
NP-239	-7.772E-02	2.373E-01	1.906E-01	1.211E-01	FAIL ABUN
AM-241	2.045E-01	2.261E-01	1.749E-01	1.153E-01	NOT IDENT.
CM-243	5.988E-02	1.205E-01	1.011E-01	6.148E-02	FAIL ABUN
AM-246	6.143E-02	1.747E-01	1.490E-01	8.914E-02	NOT IDENT.
CM-247	-8.046E-03	4.535E-02	3.699E-02	2.314E-02	NOT IDENT.
CF-249	3.995E-02	5.123E-02	4.464E-02	2.614E-02	NOT IDENT.
CF-251	1.856E-01	1.561E-01	1.409E-01	7.966E-02	NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
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46.50	203.8022
46.50	203.8022
46.50	203.8022
48.70	248.9834
49.72	252.5977
51.35	227.5699
52.39	225.9679
52.97	240.7545
53.15	240.8395
53.44	242.0145
54.07	251.6710
56.28	273.6236
56.28	273.6256
57.37	0.0000
57.53	242.8638
57.53	242.8650
57.60	242.8957
57.98	258.7829
57.98	258.7829
59.32	228.4398
59.32	228.4398
59.40	228.4736
59.54	230.1077
59.72	230.1835
60.01	277.6285
61.10	292.4012
61.14	292.4224
61.30	292.5064
63.00	301.3227
63.29	301.4767
63.29	301.4767
63.58	301.6307
64.28	303.5902
65.12	302.4414
65.20	302.4835
65.20	302.4835
66.05	285.3891
66.72	296.8888
66.83	317.6983
66.91	317.7423
67.20	308.3138
67.20	308.3138
67.75	311.7989
67.85	321.4479
68.90	318.8112
68.90	318.8112
69.30	306.1986
69.67	298.3674
70.82	295.7193
70.82	295.7193
70.83	295.7235
72.80	325.6979
72.87	325.7349
72.87	325.7349
74.67	336.3782
74.81	336.4528
74.81	336.4528
74.81	336.4528
74.81	336.4528
74.81	336.4528
74.81	336.4528
74.81	336.4528
74.97	336.5385
75.28	336.7051
75.70	336.9272
77.11	337.6731
77.11	337.6731

77.11	337.6731
77.11	337.6731
77.11	337.6731
77.11	337.6731
77.11	337.6731
78.38	322.0733
79.62	277.0555
79.80	301.5834
79.80	301.5834
80.11	301.7259
80.18	301.7584
80.30	339.3362
80.30	339.3362
80.57	339.4758
81.00	373.9927
81.07	374.0329
81.07	374.0329
81.07	374.0329
81.07	374.0329
82.60	384.1711
83.37	370.4054
83.78	352.5933
83.78	352.5933
83.78	352.5933
83.78	352.5933
84.21	333.1243
84.90	307.1807
85.43	332.0782
86.29	306.1595
86.50	306.2532
86.54	306.2702
86.59	306.2929
86.72	306.3504
86.79	306.3809
86.94	306.4476
87.30	306.6080
87.30	306.6080
87.30	306.6080
87.30	306.6080
87.30	306.6080
87.30	306.6080
87.57	306.7272
87.88	306.8634
88.03	306.9301
88.36	307.0748
88.47	307.1231
89.95	307.7716
91.11	308.2754
92.29	308.7848
92.38	308.8231
92.38	308.8231
93.35	309.2403
94.00	309.5171
94.67	213.1963
94.67	213.1973
94.90	231.5921
94.90	231.5921
94.90	231.5921
94.90	231.5921
95.87	260.2614
95.87	260.2614
96.73	270.5879
97.43	277.5300
98.44	259.4907
98.44	259.4907
98.88	243.8971
99.55	214.6064
99.55	214.6064
99.86	235.9412
100.00	235.9852
100.10	248.3216
103.18	280.7719
103.76	247.2650
105.00	211.6377
105.31	254.5167
108.00	264.4295
109.28	235.4272

111.00	255.2147
111.00	255.2147
111.76	274.7560
112.95	255.8292
115.19	239.4266
116.30	245.4564
117.00	254.8040
117.00	254.8040
117.66	257.2918
121.11	233.0843
121.62	225.1815
121.78	227.5215
122.06	227.5961
122.32	225.3649
122.32	225.3649
122.32	225.3649
122.32	225.3649
123.07	232.4673
127.23	239.3622
129.76	231.3497
131.20	216.0426
133.02	254.8851
133.54	249.7918
135.34	238.0332
136.00	222.4418
136.25	219.8739
136.48	219.9295
140.51	237.9554
140.51	0.0000
142.18	207.3468
142.65	201.8042
143.76	225.1775
144.24	250.2048
144.24	250.2048
144.24	250.2048
144.24	250.2048
145.22	267.4424
145.44	267.5023
147.16	258.0548
152.43	284.2189
152.70	274.4911
153.22	271.9618
154.21	249.9176
154.21	249.9176
154.21	249.9176
154.21	249.9176
155.03	245.6562
156.02	254.8414
158.56	268.9293
159.00	0.0000
159.00	266.3556
160.31	247.8403
161.27	233.6909
162.32	232.1295
162.64	221.4023
163.35	234.1631
163.89	218.0644
165.85	225.6985
167.43	227.8463
171.28	206.8964
171.86	221.5364
172.10	235.2068
176.55	203.3493
176.60	216.1265
181.06	230.0073
184.41	219.4948
185.71	219.7483
186.00	219.8048
190.27	240.7553
192.34	203.9855
193.63	203.6853
197.04	247.9230
198.01	223.9664
198.60	221.2874
200.40	219.7628
201.83	258.2525
202.84	251.9405
205.31	221.4165

208.36	244.4721
208.81	226.9322
209.75	208.7138
209.75	208.7138
210.97	187.8784
215.65	206.5072
216.55	203.8250
218.09	201.2411
222.10	195.2467
223.80	191.7114
226.40	182.5913
227.00	198.8507
227.08	198.8635
227.20	198.8810
228.16	189.5064
228.18	189.5094
228.18	189.5094
231.56	0.0000
235.69	197.6871
236.00	194.6672
236.00	194.6672
238.63	216.5551
238.63	216.5551
238.63	216.5551
238.63	216.5551
239.00	167.0704
240.98	167.3173
241.98	140.1125
241.98	140.1125
241.98	140.1125
244.69	151.1930
245.39	152.8143
247.94	161.4130
248.90	166.3612
249.79	157.7595
252.40	177.4509
252.85	181.3888
252.85	181.3888
254.15	0.0000
256.20	169.1844
256.20	169.1844
260.50	135.5661
260.90	132.6776
262.80	147.5093
264.65	148.6787
268.24	138.0672
268.79	128.7016
269.46	135.0427
269.46	135.0427
269.46	135.0427
269.46	135.0427
271.23	147.3930
273.65	176.3754
276.40	143.5738
277.35	159.1916
277.60	161.2865
277.60	161.2865
278.00	156.9572
278.60	150.1074
279.20	135.3506
279.53	137.3562
280.46	163.1495
281.68	155.3662
283.67	145.6654
284.30	151.6740
285.00	139.8425
285.90	128.0178
286.10	121.0860
286.10	121.0860
287.40	132.1172
288.45	0.0000
290.67	129.0166
290.80	129.0285
291.72	121.1361
293.26	0.0000
293.70	142.0415
295.21	134.1929
295.21	134.1929

295.21	134.1929
295.96	134.2585
296.50	87.9369
297.23	87.9785
298.57	88.0551
299.80	88.1249
299.80	88.1249
300.09	136.2179
300.09	136.2179
300.09	136.2179
300.09	136.2179
300.12	136.2200
301.29	131.5103
302.84	120.4028
303.76	122.0806
303.91	106.0270
304.40	115.7010
304.40	115.7010
304.84	115.7344
306.84	131.0551
308.46	112.7759
311.98	136.2360
316.51	90.0674
318.01	134.7189
319.02	132.7770
319.41	140.9195
320.08	114.6070
323.87	97.5908
323.87	97.5908
323.87	97.5908
323.87	97.5908
325.23	126.9728
328.77	114.1926
333.44	144.5035
334.20	132.5663
334.20	132.5663
334.30	132.5742
338.28	124.0704
338.28	124.0704
338.28	124.0704
338.28	124.0704
338.32	124.0723
338.32	124.0723
338.32	124.0723
340.50	96.9208
340.57	96.9251
344.27	122.1052
345.85	116.9992
350.59	0.0000
351.07	111.5662
351.92	111.6205
351.92	111.6205
351.92	111.6205
355.39	0.0000
356.01	87.8485
364.48	93.6818
366.43	113.5821
367.43	110.5175
367.94	0.0000
369.80	91.8712
374.96	107.8376
383.85	118.8797
387.95	95.9460
388.63	97.0369
391.69	95.0812
391.69	95.0812
392.90	96.2001
398.62	96.4903
400.65	80.6711
401.10	88.1229
401.81	83.9062
402.60	97.7542
404.84	107.2292
410.95	102.4468
411.60	102.4805
413.65	90.6202
414.70	85.5359
415.30	89.8409

415.76	85.5823
417.63	0.0000
418.52	95.3434
423.70	85.9265
427.08	92.5285
427.89	83.9545
432.53	79.8332
433.93	104.7187
439.47	71.4463
439.56	71.4493
439.89	77.9579
443.98	82.4536
444.90	84.6603
445.03	84.6662
445.03	84.6662
445.03	84.6662
445.03	84.6662
453.90	88.2996
463.38	81.0323
468.07	77.2600
473.00	59.3987
475.06	75.9710
475.35	84.7909
476.78	105.7822
477.59	101.4125
477.96	93.7132
482.03	68.4832
484.57	98.4207
487.03	67.5323
490.36	0.0000
492.35	85.4524
497.08	78.9606
507.63	0.0000
510.53	0.0000
510.84	77.2065
511.00	77.2128
511.85	77.2412
511.85	77.2412
513.99	66.3326
513.99	66.3326
520.41	65.1703
520.65	65.1774
527.90	68.5373
528.96	0.0000
529.64	73.1017
529.87	0.0000
531.02	73.1452
537.32	63.3811
543.00	69.8865
546.56	0.0000
549.76	64.6228
552.65	61.9670
555.20	53.8217
563.23	69.5597
563.90	61.3387
568.70	74.3021
569.32	70.6498
569.50	70.6554
569.67	66.9903
573.80	55.1528
574.00	55.1572
574.64	65.2850
578.91	72.1523
579.30	0.0000
583.14	68.2766
585.48	64.6458
591.81	62.0306
592.07	62.0372
593.00	64.8389
595.88	57.4938
600.56	65.0320
602.52	0.0000
602.71	58.4452
602.71	58.4452
603.60	74.4102
604.41	71.3322
604.70	71.3397
609.31	61.5237

609.31	61.5237
609.31	61.5237
609.31	61.5237
610.33	61.5479
612.46	63.7772
614.37	60.7106
618.01	66.4065
621.84	66.5036
621.84	66.5036
631.29	61.1025
633.02	55.4983
633.10	55.4998
634.78	69.6532
635.90	59.3255
636.97	47.1021
645.85	68.0519
646.12	69.9495
656.30	53.7655
657.75	61.7040
657.90	0.0000
661.65	72.8839
661.65	72.8839
664.57	0.0000
666.33	57.1362
666.33	57.1362
675.00	50.6282
677.61	50.6748
685.20	56.5642
692.80	65.3687
695.00	59.6462
696.49	64.4908
696.49	64.4908
697.00	69.3158
697.49	69.3281
698.33	73.2001
698.50	78.0199
699.00	80.9238
702.63	56.9114
706.10	63.7409
706.58	0.0000
706.67	66.6517
709.31	59.9444
711.68	56.1224
713.82	45.5117
717.42	50.4156
720.50	62.1156
721.93	0.0000
722.20	50.1744
722.78	59.8977
722.78	59.8977
722.89	59.9007
722.95	56.6628
723.30	53.4316
724.18	58.3066
727.18	58.3667
733.00	45.4852
735.90	63.4163
739.58	56.6562
742.81	46.9395
744.21	59.6790
747.13	55.0854
751.79	42.5018
752.31	47.4141
753.82	42.5304
755.35	52.3724
756.15	49.1113
756.87	52.3984
763.93	80.7488
765.79	54.1930
766.42	49.2773
766.84	53.2261
776.49	57.3486
778.00	55.3971
778.57	48.4820
778.89	48.4868
783.80	33.6970
785.46	44.6232
792.07	38.0919

795.84	41.7857
796.30	41.7918
798.80	51.4510
801.93	61.4709
805.60	44.9088
810.29	51.9708
810.76	54.9772
815.85	33.0387
817.79	38.0677
818.51	38.0761
819.60	48.1125
826.30	35.1547
828.27	0.0000
831.60	62.3754
831.96	62.3814
834.83	50.3516
836.80	0.0000
846.75	42.4491
848.13	39.4332
856.28	0.0000
856.80	78.0602
860.37	52.7719
867.32	52.8811
867.82	55.9399
871.10	39.7055
873.19	38.7116
874.81	37.7109
875.33	0.0000
876.40	44.8658
879.36	42.8644
880.27	44.9174
880.51	41.8578
881.50	35.7426
883.24	29.6301
884.67	37.8202
889.25	31.7296
896.60	29.7455
898.02	34.8882
899.00	30.7925
903.28	29.1178
911.07	46.3502
911.07	46.3502
911.07	46.3502
919.63	52.7732
920.93	41.3154
925.00	39.2951
925.24	40.3321
926.50	41.3809
935.52	32.1519
937.48	51.8860
944.10	47.8238
946.00	46.8083
949.00	34.3551
962.29	32.3911
964.01	32.4062
966.15	32.4251
968.20	32.4433
969.11	41.8730
969.11	41.8730
969.11	41.8730
977.42	47.2137
980.50	26.2518
983.50	43.0880
989.30	25.2615
996.32	32.6908
1001.03	32.7316
1001.68	29.5695
1004.76	52.8455
1021.30	0.0000
1024.50	0.0000
1034.80	24.5015
1036.00	36.2313
1037.82	40.5123
1038.57	37.3208
1038.76	0.0000
1045.16	27.7710
1046.59	32.0566
1048.07	48.1025

1050.47	31.0178
1050.47	31.0178
1062.04	37.5464
1063.62	31.1226
1076.63	34.4547
1077.35	34.4609
1078.86	34.4750
1085.78	38.8512
1099.22	30.3188
1112.02	43.4492
1112.84	42.1009
1115.52	45.2983
1120.29	46.8024
1120.29	46.8024
1120.29	46.8024
1120.29	46.8024
1120.51	43.5410
1121.28	36.2907
1124.00	0.0000
1129.67	39.2730
1131.51	0.0000
1147.95	0.0000
1167.94	32.1118
1173.22	39.5006
1175.09	42.2752
1177.93	39.5444
1189.05	49.7900
1204.90	39.7928
1205.75	0.0000
1213.00	53.7756
1221.42	40.8740
1230.97	51.2022
1235.34	54.9812
1236.41	0.0000
1238.25	44.7598
1246.25	41.1032
1260.41	0.0000
1271.85	24.4279
1274.45	33.8423
1274.54	33.8438
1291.56	24.5337
1298.22	0.0000
1312.09	26.5394
1325.50	16.1595
1325.50	16.1595
1332.49	19.9917
1333.61	20.9482
1360.21	26.8117
1362.66	0.0000
1365.15	22.0473
1368.21	23.0205
1368.53	0.0000
1376.25	14.4116
1384.27	19.2480
1394.10	17.3584
1395.20	23.1494
1407.95	11.6050
1434.06	19.4442
1436.60	24.3174
1457.56	0.0000
1460.81	18.5709
1489.15	21.6240
1509.49	13.8149
1596.49	20.0627
1620.62	12.0913
1678.03	0.0000
1691.02	9.1838
1691.02	9.1838
1706.46	0.0000
1750.46	0.0000
1764.49	14.1741
1764.49	14.1741
1764.49	14.1741
1764.49	14.1741
1770.23	46.5546
1771.40	16.5560
1791.20	0.0000
1808.65	5.2063

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624004

Total Uranium Activity	2.9749E+00	ug/g
Total Uranium Counting Unc.	7.0303E+00	ug/g
Total Uranium Tpu	3.5869E-06	ug/g
Total Uranium Mda	4.1690E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624004
*  ANALYST       : MXR1           DETECTOR    : GAM01
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 14:34:54.75  SAMPLE ALQT: 105.890 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 9.244E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.813E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 4.084E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.972E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 16:36:29.60

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624005.CNF;1
Sample date       : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 14:35:28.
Sample ID        : G243624005 Sample quantity : 1.36450E+02 GRAM
Detector name    : GAM02 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.28 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 937704 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	63.16*	91	360	1.14	125.51	121	8	1.26E-02	40.2	
2	2	74.52	257	329	1.08	148.24	142	16	3.57E-02	13.4	1.85E+00
3	2	76.85	371	275	0.94	152.90	142	16	5.15E-02	8.9	
4	0	87.03	125	347	0.87	173.29	170	7	1.74E-02	26.4	
5	0	92.70*	153	446	1.35	184.62	180	8	2.13E-02	27.6	
6	0	185.89*	218	327	1.46	371.10	366	12	3.03E-02	19.2	
7	0	209.37*	131	292	1.00	418.09	412	12	1.82E-02	28.0	
8	0	238.42*	750	262	1.19	476.21	472	8	1.04E-01	5.4	
9	0	241.55	123	201	1.67	482.47	480	7	1.71E-02	21.3	
10	0	269.96	67	233	1.40	539.32	535	10	9.29E-03	44.5	
11	1	294.91*	267	109	1.28	589.25	581	22	3.70E-02	9.4	3.45E+00
12	1	296.66*	44	96	1.37	592.75	581	22	6.13E-03	55.9	
13	1	299.69	75	85	1.37	598.82	581	22	1.04E-02	26.2	
14	0	338.22	154	184	0.93	675.92	671	11	2.14E-02	18.9	
15	0	351.75*	423	205	1.22	702.99	696	14	5.88E-02	8.8	
16	0	511.08*	127	118	2.15	1021.84	1015	18	1.76E-02	25.2	
17	0	582.88*	259	83	1.37	1165.52	1159	15	3.59E-02	10.0	
18	0	609.12*	311	72	1.50	1218.05	1212	11	4.32E-02	8.0	
19	0	661.51	214	83	1.39	1322.88	1317	14	2.98E-02	11.2	
20	0	727.18	93	45	1.75	1454.30	1448	12	1.29E-02	17.7	
21	0	769.84	21	111	0.85	1539.67	1531	14	2.91E-03	108.1	
22	0	911.29	161	54	1.88	1822.77	1816	12	2.23E-02	12.1	
23	0	968.79	105	36	1.60	1937.86	1933	10	1.46E-02	14.3	
24	0	1120.32*	81	29	1.86	2241.13	2236	12	1.12E-02	18.4	
25	0	1460.61*	774	14	2.31	2922.22	2913	19	1.08E-01	3.8	
26	0	1589.84	44	13	5.47	3180.89	3172	17	6.16E-03	23.8	
27	0	1729.75	18	2	2.22	3460.96	3456	9	2.46E-03	28.3	
28	0	1764.90*	42	11	1.39	3531.31	3523	14	5.84E-03	24.2	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624005.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 12:00:00 Acquisition date : 7-JAN-2010 14:35:28
Sample ID         : G243624005 Sample quantity : 136.45 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA2 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:02.28 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.942E+01	2.373E+00	5.070E-01	4.820E-02	38.299
CD-109	+	88.03	*	1.809E+00	9.731E-01	1.218E+00	1.223E-01	1.485
SN-126	+	64.28		1.015E+00	8.290E-01	8.223E-01	1.220E-01	1.234
	+	86.94		7.382E-01	4.968E-01	5.135E-01	2.138E-01	1.438
	+	87.57	*	1.776E-01	9.550E-02	1.211E-01	1.210E-02	1.467
BA-137M	+	661.65	*	3.167E-01	7.619E-02	5.540E-02	4.773E-03	5.717
CS-137	+	661.65	*	3.348E-01	8.056E-02	5.856E-02	5.055E-03	5.717
TL-208		277.35		1.839E-01	3.549E-01	6.102E-01	9.274E-02	0.301
	+	510.84		6.354E-01	3.304E-01	1.955E-01	2.532E-02	3.250
	+	583.14	*	3.688E-01	8.252E-02	4.957E-02	4.965E-03	7.441
		860.37		5.391E-01	3.023E-01	5.594E-01	5.896E-02	0.964
BI-211		72.87		4.258E+00	2.749E+00	4.863E+00	4.186E-01	0.876
	+	351.07	*	2.686E+00	5.658E-01	3.168E-01	3.655E-02	8.476
PB-212	+	74.81		1.635E+00	4.859E-01	4.825E-01	6.179E-02	3.389
	+	77.11		1.316E+00	2.630E-01	2.706E-01	2.420E-02	4.863
	+	87.30		8.212E-01	4.493E-01	5.618E-01	7.930E-02	1.462
	+	238.63	*	1.038E+00	1.714E-01	1.018E-01	1.281E-02	10.195
	+	300.09		1.602E+00	8.673E-01	1.049E+00	1.418E-01	1.527
PO-212	+	74.81		1.635E+00	4.859E-01	4.825E-01	6.179E-02	3.389
	+	77.11		1.316E+00	2.630E-01	2.706E-01	2.420E-02	4.863
	+	87.30		8.212E-01	4.493E-01	5.618E-01	7.930E-02	1.462
		115.19		-2.730E+00	3.202E+00	5.067E+00	4.261E-01	-0.539
	+	238.63	*	1.038E+00	1.714E-01	1.018E-01	1.281E-02	10.195
	+	300.09		1.602E+00	8.673E-01	1.049E+00	1.418E-01	1.527
BI-214	+	609.31	*	8.341E-01	1.605E-01	1.121E-01	1.184E-02	7.444
	+	1120.29		1.135E+00	4.345E-01	4.551E-01	4.955E-02	2.494
	+	1764.49		8.135E-01	3.999E-01	2.614E-01	2.215E-02	3.112
PB-214	+	74.81		2.818E+00	8.218E-01	8.314E-01	9.535E-02	3.389
	+	77.11		2.256E+00	4.826E-01	4.640E-01	5.451E-02	4.863
	+	87.30		1.407E+00	7.644E-01	9.624E-01	1.212E-01	1.462
	+	241.98		1.026E+00	4.576E-01	4.916E-01	6.432E-02	2.087
	+	295.21		1.002E+00	2.335E-01	1.947E-01	2.675E-02	5.145
	+	351.92	*	9.342E-01	2.028E-01	1.105E-01	1.396E-02	8.458
PO-214	+	74.81		2.818E+00	8.218E-01	8.314E-01	9.535E-02	3.389

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	77.11		2.256E+00	4.826E-01	4.640E-01	5.451E-02	4.863
	+	87.30		1.407E+00	7.644E-01	9.624E-01	1.212E-01	1.462
	+	241.98		1.026E+00	4.576E-01	4.916E-01	6.432E-02	2.087
	+	295.21		1.002E+00	2.335E-01	1.947E-01	2.675E-02	5.145
	+	351.92	*	9.342E-01	2.028E-01	1.105E-01	1.396E-02	8.458
	+	74.81		1.635E+00	4.859E-01	4.825E-01	6.179E-02	3.389
	+	77.11		1.316E+00	2.630E-01	2.706E-01	2.420E-02	4.863
	+	87.30		8.212E-01	4.493E-01	5.618E-01	7.930E-02	1.462
PO-218	+	238.63	*	1.038E+00	1.714E-01	1.018E-01	1.281E-02	10.195
	+	300.09		1.602E+00	8.673E-01	1.049E+00	1.418E-01	1.527
	+	74.81		2.818E+00	8.218E-01	8.314E-01	9.535E-02	3.389
	+	77.11		2.256E+00	4.826E-01	4.640E-01	5.451E-02	4.863
	+	87.30		1.407E+00	7.644E-01	9.624E-01	1.212E-01	1.462
	+	241.98		1.026E+00	4.576E-01	4.916E-01	6.432E-02	2.087
	+	295.21		1.002E+00	2.335E-01	1.947E-01	2.675E-02	5.145
	+	351.92	*	9.342E-01	2.028E-01	1.105E-01	1.396E-02	8.458
RA-224	+	240.98	*	1.945E+00	8.609E-01	1.159E+00	1.368E-01	1.678
RA-226	+	609.31	*	8.341E-01	1.605E-01	1.121E-01	1.184E-02	7.444
AC-228	+	1120.29		1.135E+00	4.345E-01	4.551E-01	4.955E-02	2.494
	+	1764.49		8.135E-01	3.999E-01	2.614E-01	2.215E-02	3.112
	+	338.32		1.078E+00	6.082E-01	3.284E-01	1.378E-01	3.282
	+	911.07	*	1.017E+00	2.767E-01	1.753E-01	2.185E-02	5.804
	+	969.11		1.177E+00	4.391E-01	4.265E-01	1.016E-01	2.761
	+	338.32		1.078E+00	6.082E-01	3.284E-01	1.378E-01	3.282
	+	911.07	*	1.017E+00	2.767E-01	1.753E-01	2.185E-02	5.804
	+	969.11		1.177E+00	4.391E-01	4.265E-01	1.016E-01	2.761
TH-228	+	74.81		1.662E+00	4.691E-01	4.903E-01	4.328E-02	3.389
TH-230	+	77.11		1.337E+00	2.673E-01	2.750E-01	2.460E-02	4.863
	+	87.30		8.345E-01	4.488E-01	5.709E-01	5.688E-02	1.462
	+	238.63	*	1.055E+00	1.742E-01	1.034E-01	1.302E-02	10.195
	+	300.09		1.628E+00	1.296E+00	1.066E+00	6.387E-01	1.527
	+	609.31	*	8.341E-01	1.604E-01	1.121E-01	1.184E-02	7.444
	+	1120.29		1.135E+00	4.345E-01	4.551E-01	4.955E-02	2.494
	+	1764.49		8.134E-01	3.999E-01	2.614E-01	2.215E-02	3.112
	+	338.32		1.078E+00	4.252E-01	3.284E-01	3.775E-02	3.282
TH-232	+	911.07	*	1.017E+00	2.767E-01	1.753E-01	2.185E-02	5.804
TH-234	+	969.11		1.177E+00	4.391E-01	4.265E-01	1.016E-01	2.761
	+	63.29	*	2.564E+00	2.109E+00	2.007E+00	3.544E-01	1.278
	+	92.38		1.393E+00	8.118E-01	7.462E-01	1.383E-01	1.866
	+	609.31	*	8.341E-01	1.604E-01	1.121E-01	1.184E-02	7.444
	+	1120.29		1.135E+00	4.345E-01	4.551E-01	4.955E-02	2.494
	+	1764.49		8.134E-01	3.999E-01	2.614E-01	2.215E-02	3.112
	+	86.50	*	5.214E-01	3.004E-01	3.823E-01	8.744E-02	1.364
	+	95.87		-7.461E-01	9.811E-01	1.335E+00	3.317E-01	-0.559
U-238	+	63.29	*	2.564E+00	2.109E+00	2.007E+00	3.544E-01	1.278
AM-243	+	92.38		1.393E+00	7.810E-01	7.462E-01	7.105E-02	1.866
	+	74.67	*	2.651E-01	7.478E-02	7.852E-02	6.866E-03	3.377
	+	86.72		1.955E+01	1.052E+01	1.364E+01	1.350E+00	1.434
		117.66		9.086E-01	3.337E+00	5.575E+00	4.670E-01	0.163

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		142.18		-1.296E+01	1.717E+01	2.637E+01	2.386E+00	-0.491
ANH-511	+	511.00	*	1.372E-01	7.044E-02	4.225E-02	4.188E-03	3.249

---- 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	*	6.853E-02	3.079E-01	5.062E-01	5.368E-02	0.135
NA-22		1274.54	*	2.002E-02	4.158E-02	7.204E-02	6.388E-03	0.278
NA-24		1368.53	*	8.620E-02	4.158E-02	Half-Life too short		
AL-26		1129.67		7.528E-01	1.697E+00	2.938E+00	2.510E-01	0.256
		1808.65	*	7.352E-03	2.317E-02	4.138E-02	3.425E-03	0.178
TI-44		67.85		3.730E-02	4.293E-02	7.499E-02	6.186E-03	0.497
		78.38	*	5.948E-02	3.529E-02	5.706E-02	5.166E-03	1.042
SC-46		889.25	*	1.812E-02	3.622E-02	6.194E-02	6.298E-03	0.293
	+	1120.51		1.959E-01	7.386E-02	1.232E-01	1.064E-02	1.590
V-48		944.10		-3.111E-01	9.447E-01	1.469E+00	1.470E-01	-0.212
		983.50	*	3.426E-02	7.250E-02	1.225E-01	1.199E-02	0.280
		1312.09		-1.109E-01	7.970E-02	1.036E-01	9.485E-03	-1.070
CR-51		320.08	*	9.494E-02	3.872E-01	6.527E-01	7.963E-02	0.145
MN-52		744.21		-3.051E-02	2.855E-01	4.660E-01	4.293E-02	-0.065
		848.13		-4.212E+00	7.051E+00	1.070E+01	1.060E+00	-0.394
		935.52		2.350E-02	2.745E-01	4.475E-01	4.498E-02	0.053
		1246.25		-2.836E+00	7.783E+00	1.232E+01	1.064E+00	-0.230
		1333.61		-3.129E+00	5.164E+00	7.679E+00	7.155E-01	-0.408
		1434.06	*	-3.017E-02	2.565E-01	4.095E-01	3.809E-02	-0.074
MN-54		834.83	*	1.192E-02	3.908E-02	6.542E-02	6.427E-03	0.182
CO-56		846.75	*	-3.122E-02	3.630E-02	5.311E-02	5.259E-03	-0.588
		977.42		-9.694E-01	2.869E+00	4.429E+00	4.348E-01	-0.219
		1037.82		4.662E-02	3.057E-01	5.196E-01	5.101E-02	0.090
		1175.09		8.300E-01	2.027E+00	3.501E+00	2.825E-01	0.237
		1238.25		8.119E-02	9.217E-02	1.626E-01	1.434E-02	0.499
		1360.21		-1.738E-01	8.664E-01	1.370E+00	1.278E-01	-0.127
		1771.40		-5.403E-01	3.203E-01	3.816E-01	3.223E-02	-1.416
CO-57		122.06	*	9.518E-03	2.267E-02	3.804E-02	3.180E-03	0.250
		136.48		-1.091E-01	1.886E-01	2.995E-01	2.828E-02	-0.364
CO-58		810.76	*	-3.138E-02	3.391E-02	4.912E-02	4.757E-03	-0.639
FE-59		142.65		-5.231E-01	2.750E+00	4.353E+00	3.947E-01	-0.120
		192.34		-2.311E-01	9.114E-01	1.438E+00	2.147E-01	-0.161
		1099.22	*	3.367E-02	9.444E-02	1.625E-01	1.550E-02	0.207
		1291.56		-4.961E-02	1.213E-01	1.893E-01	1.914E-02	-0.262
CO-60		1173.22		4.268E-02	4.093E-02	7.468E-02	6.014E-03	0.572
		1332.49	*	-1.354E-02	3.518E-02	5.431E-02	5.060E-03	-0.249
ZN-65		1115.52	*	-3.383E-02	1.008E-01	1.375E-01	1.196E-02	-0.246
GE-68		1077.35	*	5.993E-01	1.224E+00	2.138E+00	1.937E-01	0.280
AS-73		53.44	*	2.472E-02	1.054E+00	1.739E+00	1.439E-01	0.014
AS-74		595.88	*	1.496E-02	9.076E-02	1.541E-01	1.439E-02	0.097
		634.78		-1.783E-02	3.095E-01	5.136E-01	4.591E-02	-0.035
SE-75		66.05		8.729E-01	4.943E+00	7.626E+00	7.646E-01	0.114

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		96.73		-1.103E+00	7.518E-01	1.065E+00	1.487E-01	-1.036
		121.11		-8.053E-02	1.229E-01	1.956E-01	2.155E-02	-0.412
		136.00		-8.318E-03	3.542E-02	5.728E-02	5.069E-03	-0.145
		198.60		5.252E-01	1.668E+00	2.709E+00	3.172E-01	0.194
		264.65	*	-3.863E-02	4.665E-02	6.738E-02	8.235E-03	-0.573
		279.53		-3.984E-02	1.008E-01	1.652E-01	2.086E-02	-0.241
		303.91		3.779E-01	2.112E+00	3.150E+00	4.503E-01	0.120
		400.65		-8.090E-02	2.454E-01	3.916E-01	4.793E-02	-0.207
BR-77	+	87.88		5.211E+02	2.803E+02	3.723E+02	3.735E+01	1.400
		200.40		-1.073E+02	2.088E+02	3.180E+02	3.495E+01	-0.337
	+	239.00		2.225E+02	3.538E+01	4.424E+01	5.205E+00	5.030
		249.79		-6.487E+00	8.363E+01	1.408E+02	1.684E+01	-0.046
		281.68		-6.154E+01	1.092E+02	1.767E+02	2.188E+01	-0.348
	+	297.23		8.527E+01	9.584E+01	1.280E+02	1.563E+01	0.666
		303.76		8.861E+01	2.325E+02	3.527E+02	4.277E+01	0.251
		439.47		-2.937E+01	1.794E+02	2.876E+02	2.897E+01	-0.102
		484.57		1.600E+02	2.865E+02	4.832E+02	4.836E+01	0.331
		520.65	*	2.251E+00	1.317E+01	2.143E+01	2.115E+00	0.105
		574.64		-8.732E+01	2.475E+02	3.921E+02	3.733E+01	-0.223
		578.91		6.089E+01	1.034E+02	1.624E+02	1.540E+01	0.375
		585.48		4.681E+02	2.861E+02	4.722E+02	4.453E+01	0.991
		755.35		2.144E+01	2.013E+02	3.346E+02	3.108E+01	0.064
		817.79		-1.462E+02	1.625E+02	2.374E+02	2.306E+01	-0.616
SR-82		698.33		-1.695E+01	3.237E+01	5.104E+01	4.535E+00	-0.332
		776.49	*	-3.745E-01	3.708E-01	4.966E-01	4.685E-02	-0.754
		1395.20		7.499E-01	1.155E+01	1.902E+01	1.773E+00	0.039
RB-83		520.41	*	8.181E-04	6.825E-02	1.056E-01	1.042E-02	0.008
		529.64		4.244E-02	1.098E-01	1.813E-01	1.781E-02	0.234
		552.65		-1.807E-01	1.888E-01	2.927E-01	2.834E-02	-0.617
RB-84		881.50	*	3.450E-02	5.837E-02	1.015E-01	1.027E-02	0.340
KR-85		513.99	*	9.784E+00	6.943E+00	1.223E+01	1.211E+00	0.800
SR-85		513.99	*	5.069E-02	3.597E-02	6.336E-02	6.272E-03	0.800
RB-86		1076.63	*	2.336E-01	8.019E-01	1.376E+00	1.248E-01	0.170
Y-88		898.02		-9.668E-03	4.290E-02	6.790E-02	6.963E-03	-0.142
		1836.01	*	1.109E-02	3.171E-02	5.619E-02	4.583E-03	0.197
ZR-88		392.90	*	5.969E-03	3.133E-02	5.199E-02	5.202E-03	0.115
Y-91		1204.90	*	-1.736E+01	1.912E+01	2.871E+01	2.384E+00	-0.605
NB-94		702.63	*	-1.234E-02	3.111E-02	4.963E-02	4.425E-03	-0.249
		871.10		3.714E-02	3.266E-02	5.892E-02	5.924E-03	0.630
NB-95		765.79	*	4.860E-02	4.922E-02	7.687E-02	7.197E-03	0.632
NB-95M		235.69	*	9.604E-02	1.281E-01	2.003E-01	2.534E-02	0.479
ZR-95		724.18		1.051E-01	9.834E-02	1.585E-01	1.550E-02	0.664
		756.15	*	2.407E-02	6.512E-02	1.109E-01	1.121E-02	0.217
NB-97		657.90	*	2.303E-02	6.512E-02	Half-Life	too short	
		1024.50		-1.660E+00	6.512E-02	Half-Life	too short	
ZR-97		254.15		2.160E+00	6.512E-02	Half-Life	too short	
		355.39		-2.449E+00	6.512E-02	Half-Life	too short	
		507.63	*	9.093E+00	6.512E-02	Half-Life	too short	
		602.52		-6.949E+00	6.512E-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
	1021.30			-4.178E+00	6.512E-02	Half-Life	too short	
	1147.95			-5.909E+00	6.512E-02	Half-Life	too short	
	1362.66			-6.152E+00	6.512E-02	Half-Life	too short	
	1750.46			-4.875E+00	6.512E-02	Half-Life	too short	
MO-99	140.51			1.312E+01	3.080E+01	5.093E+01	1.416E+01	0.258
	181.06			8.485E-01	2.321E+01	3.331E+01	6.423E+00	0.025
	366.43			6.221E+01	1.081E+02	1.844E+02	1.989E+01	0.337
	739.58	*		1.191E+01	1.499E+01	2.620E+01	4.063E+00	0.455
	778.00			2.148E+01	3.631E+01	6.325E+01	5.976E+00	0.340
TC-99M	140.51	*		2.297E+11	3.631E+01	Half-Life	too short	
RH-101	127.23			-2.100E-03	2.907E-02	4.759E-02	4.039E-03	-0.044
	198.01	*		5.387E-03	3.069E-02	4.950E-02	5.414E-03	0.109
	325.23			-8.407E-02	2.214E-01	3.594E-01	4.229E-02	-0.234
RH-102	418.52			-4.190E-02	2.665E-01	4.292E-01	4.318E-02	-0.098
	475.06	*		-2.480E-02	2.807E-02	4.166E-02	4.180E-03	-0.595
	631.29			1.883E-02	4.730E-02	8.174E-02	7.339E-03	0.230
	697.49			2.960E-02	6.947E-02	1.192E-01	1.059E-02	0.248
	766.84			1.370E-01	1.324E-01	2.065E-01	1.934E-02	0.664
	1046.59			-6.347E-03	1.103E-01	1.836E-01	1.712E-02	-0.035
	1112.84			1.192E-01	2.366E-01	3.864E-01	3.369E-02	0.308
RU-103	497.08	*		-2.533E-02	4.264E-02	6.494E-02	9.753E-03	-0.390
+	610.33			9.166E+00	2.144E+00	2.657E+00	4.514E-01	3.450
RH-106	511.85	+		6.868E-01	3.525E-01	4.272E-01	4.233E-02	1.608
	621.84	*		-2.252E-01	2.936E-01	4.549E-01	6.214E-02	-0.495
	1050.47			3.528E-01	2.134E+00	3.630E+00	3.373E-01	0.097
RU-106	511.85	+		6.868E-01	3.525E-01	4.272E-01	4.233E-02	1.608
	621.84	*		-2.252E-01	2.927E-01	4.549E-01	4.131E-02	-0.495
	1050.47			3.528E-01	2.134E+00	3.630E+00	3.373E-01	0.097
AG-108M	433.93	*		2.146E-04	3.224E-02	5.246E-02	5.438E-03	0.004
	614.37			-3.903E-03	4.184E-02	6.023E-02	5.709E-03	-0.065
	722.95			-1.222E-02	4.191E-02	5.754E-02	5.399E-03	-0.212
AG-110M	657.75	*		2.240E-03	3.728E-02	5.428E-02	4.842E-03	0.041
	677.61			6.124E-02	2.860E-01	4.836E-01	4.339E-02	0.127
	706.67			2.694E-01	1.907E-01	3.510E-01	3.220E-02	0.767
	763.93			1.204E-01	1.600E-01	2.511E-01	2.405E-02	0.479
	884.67			-6.954E-02	4.393E-02	5.522E-02	5.729E-03	-1.259
	937.48			-1.401E-01	1.118E-01	1.530E-01	1.578E-02	-0.916
	1384.27			-8.202E-02	1.546E-01	2.315E-01	2.211E-02	-0.354
IN-111	171.28			-1.504E+00	1.278E+00	1.925E+00	1.996E-01	-0.781
	245.39	*		-5.910E-01	1.411E+00	2.044E+00	2.428E-01	-0.289
IN-113M	391.69	*		-6.994E-03	4.554E-02	7.385E-02	7.557E-03	-0.095
SN-113	391.69	*		-6.994E-03	4.554E-02	7.385E-02	7.557E-03	-0.095
IN-114M	190.27	*		2.433E-02	1.854E-01	2.670E-01	2.875E-02	0.091
CD-115	260.90			8.786E+00	1.633E+02	2.762E+02	3.352E+01	0.032
	492.35			3.240E+01	4.848E+01	8.218E+01	8.205E+00	0.394
	527.90	*		5.349E+00	1.520E+01	2.503E+01	2.460E+00	0.214
SN-117M	156.02			-3.286E+00	2.216E+00	3.286E+00	3.193E-01	-1.000
	158.56	*		4.794E-02	5.140E-02	8.691E-02	8.562E-03	0.552
SB-122	563.90	*		1.841E+00	2.470E+00	4.381E+00	4.206E-01	0.420

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-123	692.80			1.845E+01	5.299E+01	9.035E+01	7.991E+00	0.204
	159.00	*		1.623E+01	5.299E+01	Half-Life	too short	
	528.96			1.441E+02	5.299E+01	Half-Life	too short	
TE-123M	159.00	*		2.298E-02	2.546E-02	4.299E-02	4.265E-03	0.534
I-124	602.71	*		-3.418E-01	8.870E-01	1.238E+00	1.149E-01	-0.276
	722.78			-1.759E+00	5.139E+00	6.999E+00	6.342E-01	-0.251
	1325.50			-1.539E+01	4.212E+01	6.581E+01	6.095E+00	-0.234
SB-124	1376.25			7.300E+01	3.700E+01	7.320E+01	6.826E+00	0.997
	1509.49			1.641E+01	1.800E+01	3.308E+01	3.050E+00	0.496
	1691.02			-2.296E+00	3.721E+00	5.280E+00	4.625E-01	-0.435
	602.71			-1.705E-02	4.424E-02	6.177E-02	5.730E-03	-0.276
	645.85			1.535E-01	4.429E-01	7.609E-01	7.090E-02	0.202
	709.31			-1.779E+00	2.666E+00	4.135E+00	3.707E-01	-0.430
	713.82			1.874E-01	1.562E+00	2.609E+00	3.212E-01	0.072
	722.78			-1.272E-01	3.716E-01	5.061E-01	4.675E-02	-0.251
	+	968.20		1.226E+01	3.719E+00	6.504E+00	6.422E-01	1.885
	1045.16			3.749E-02	2.467E+00	4.135E+00	3.860E-01	0.009
	1325.50			-1.188E+00	3.253E+00	5.082E+00	4.707E-01	-0.234
	1368.21			-6.819E-02	1.670E+00	2.713E+00	3.781E-01	-0.025
	1436.60			-1.212E+00	3.453E+00	5.272E+00	4.903E-01	-0.230
	1691.02	*		-3.916E-02	6.346E-02	9.005E-02	8.191E-03	-0.435
SB-125	427.89	*		4.697E-03	8.867E-02	1.449E-01	1.480E-02	0.032
	463.38			2.687E-01	2.908E-01	4.987E-01	5.305E-02	0.539
	600.56			4.484E-02	1.714E-01	2.928E-01	2.895E-02	0.153
	635.90			-1.975E-01	2.368E-01	3.623E-01	3.478E-02	-0.545
TE-125M	109.28	*		-2.581E+00	8.345E+00	1.362E+01	1.397E+00	-0.189
I-126	388.63			-7.292E-03	2.152E-01	3.521E-01	3.558E-02	-0.021
	666.33	*		1.505E-01	1.923E-01	3.042E-01	2.631E-02	0.495
	753.82			8.477E-01	1.438E+00	2.492E+00	2.312E-01	0.340
SB-126	223.80			-7.393E-01	4.254E+00	6.671E+00	7.656E-01	-0.111
	278.60			8.244E-01	2.422E+00	4.136E+00	5.126E-01	0.199
	+	296.50		1.751E+00	1.968E+00	3.392E+00	4.146E-01	0.516
	414.70			-5.149E-02	7.547E-02	1.164E-01	1.170E-02	-0.442
	415.30			-8.862E-01	6.215E+00	1.003E+01	1.009E+00	-0.088
	555.20			-1.259E+00	4.211E+00	6.626E+00	6.403E-01	-0.190
	573.80			-2.943E-01	9.719E-01	1.593E+00	1.517E-01	-0.185
	593.00			-6.212E-01	9.611E-01	1.527E+00	1.430E-01	-0.407
	656.30			-1.509E-01	3.652E+00	5.252E+00	4.561E-01	-0.029
	666.33			6.305E-02	8.054E-02	1.274E-01	1.102E-02	0.495
	675.00			1.068E+00	1.922E+00	3.344E+00	2.914E-01	0.319
	695.00			2.615E-02	7.820E-02	1.331E-01	1.179E-02	0.196
	697.00			2.720E-02	2.677E-01	4.472E-01	3.969E-02	0.061
	720.50	*		-4.758E-02	1.638E-01	2.254E-01	2.039E-02	-0.211
	856.80			-2.182E-01	5.104E-01	7.955E-01	7.926E-02	-0.274
SB-127	989.30			-3.449E-02	1.293E+00	2.071E+00	2.017E-01	-0.017
	1034.80			-3.456E+00	8.909E+00	1.432E+01	1.348E+00	-0.241
	1213.00			-3.711E+00	4.822E+00	7.217E+00	6.040E-01	-0.514
	61.10			1.539E+01	7.465E+01	1.158E+02	1.248E+01	0.133
	252.40			-9.171E-01	4.917E+00	8.203E+00	3.522E+00	-0.112

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		290.80		1.297E+01	2.610E+01	3.992E+01	5.758E+00	0.325
		411.60		2.055E+00	1.421E+01	2.343E+01	3.926E+00	0.088
		444.90		4.319E+00	1.150E+01	1.918E+01	2.651E+00	0.225
		473.00		-8.774E-01	1.868E+00	2.885E+00	4.068E-01	-0.304
		543.00		-1.822E+00	1.848E+01	2.924E+01	4.479E+00	-0.062
		603.60		-1.684E+00	1.478E+01	2.127E+01	2.812E+00	-0.079
		685.20	*	8.026E-01	1.476E+00	2.562E+00	3.024E-01	0.313
		698.50		-5.660E+00	1.654E+01	2.650E+01	4.286E+00	-0.214
		722.20		-1.405E+01	3.674E+01	4.979E+01	5.871E+00	-0.282
		783.80		1.017E+00	4.242E+00	7.103E+00	9.440E-01	0.143
XE-127		57.60		-1.161E+00	6.439E+00	1.091E+01	8.393E-01	-0.106
		145.22		8.832E-02	6.617E-01	1.085E+00	9.964E-02	0.081
		172.10		-7.352E-02	1.206E-01	1.883E-01	1.955E-02	-0.391
		202.84	*	-2.612E-02	4.582E-02	6.945E-02	7.668E-03	-0.376
		374.96		1.148E-01	1.752E-01	3.016E-01	3.178E-02	0.381
I-131		80.18		1.253E+00	4.551E+00	6.982E+00	6.476E-01	0.179
		284.30		9.324E-01	1.468E+00	2.543E+00	3.224E-01	0.367
		364.48	*	-3.246E-02	1.231E-01	1.992E-01	2.236E-02	-0.163
		636.97		-6.499E-01	1.435E+00	2.288E+00	2.148E-01	-0.284
		722.89		-2.396E+00	7.676E+00	1.050E+01	9.581E-01	-0.228
TE-132		49.72		-2.543E+01	3.457E+01	5.116E+01	5.753E+00	-0.497
		111.76		3.458E+00	3.434E+01	5.525E+01	6.082E+00	0.063
		116.30		-5.038E+00	2.986E+01	4.889E+01	5.352E+00	-0.103
		228.16	*	5.700E-01	8.341E-01	1.362E+00	2.407E-01	0.418
BA-133		53.15		2.710E+00	4.556E+00	7.684E+00	6.394E-01	0.353
		79.62		6.069E-01	1.162E+00	1.803E+00	2.801E-01	0.337
		81.00		-1.305E-01	9.902E-02	1.360E-01	2.210E-02	-0.959
		276.40		4.644E-01	3.585E-01	6.269E-01	1.063E-01	0.741
		302.84		-8.119E-02	1.442E-01	2.004E-01	3.166E-02	-0.405
		356.01	*	-7.158E-03	4.452E-02	6.347E-02	9.468E-03	-0.113
		383.85		2.797E-01	2.918E-01	5.060E-01	6.972E-02	0.553
I-133	+	510.53		3.085E+00	2.918E-01	Half-Life	too short	
		529.87	*	5.547E-03	2.918E-01	Half-Life	too short	
		706.58		1.187E+00	2.918E-01	Half-Life	too short	
		856.28		-1.052E+00	2.918E-01	Half-Life	too short	
		875.33		6.920E-02	2.918E-01	Half-Life	too short	
		1236.41		1.041E+00	2.918E-01	Half-Life	too short	
		1298.22		-1.231E-01	2.918E-01	Half-Life	too short	
CS-134		475.35		-2.415E-01	1.749E+00	2.789E+00	2.798E-01	-0.087
		563.23		2.552E-01	3.365E-01	5.972E-01	5.781E-02	0.427
		569.32		-2.233E-03	1.850E-01	2.966E-01	2.867E-02	-0.008
		604.70		-2.011E-02	3.609E-02	4.920E-02	4.563E-03	-0.409
		795.84	*	6.507E-02	4.497E-02	8.230E-02	7.920E-03	0.791
		801.93		1.938E-01	3.587E-01	6.183E-01	5.967E-02	0.313
		1038.57		1.513E+00	3.729E+00	6.488E+00	6.091E-01	0.233
		1167.94		-8.530E-01	2.384E+00	3.805E+00	3.088E-01	-0.224
		1365.15		3.220E-01	1.137E+00	1.936E+00	1.876E-01	0.166
CS-135		268.24	*	2.835E-01	1.785E-01	2.871E-01	3.798E-02	0.988
I-135		288.45		2.774E+11	1.785E-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
		417.63		-3.663E+10	1.785E-01	Half-Life too short		
		546.56		4.560E+10	1.785E-01	Half-Life too short		
		836.80		-7.944E+10	1.785E-01	Half-Life too short		
		1038.76		8.875E+10	1.785E-01	Half-Life too short		
		1124.00		-1.957E+11	1.785E-01	Half-Life too short		
		1131.51		4.074E+10	1.785E-01	Half-Life too short		
		1260.41	*	-2.157E+10	1.785E-01	Half-Life too short		
		1457.56		5.715E+12	1.785E-01	Half-Life too short		
		1678.03		-9.067E+10	1.785E-01	Half-Life too short		
		1706.46		-3.277E+09	1.785E-01	Half-Life too short		
		1791.20		9.155E+10	1.785E-01	Half-Life too short		
CS-136		66.91		1.289E-01	8.626E-01	1.327E+00	2.017E-01	0.097
	+	86.29		2.441E+00	1.334E+00	1.855E+00	2.542E-01	1.316
		153.22		4.817E-01	6.278E-01	1.054E+00	1.107E-01	0.457
		163.89		7.960E-01	1.090E+00	1.794E+00	1.980E-01	0.444
		176.55		1.428E-02	3.749E-01	6.047E-01	6.585E-02	0.024
		273.65		-1.893E-01	5.246E-01	7.566E-01	9.632E-02	-0.250
		340.57		1.392E-01	1.355E-01	2.130E-01	2.479E-02	0.653
		818.51		-2.882E-02	7.179E-02	1.121E-01	1.090E-02	-0.257
		1048.07	*	-1.071E-02	1.100E-01	1.823E-01	1.760E-02	-0.059
		1235.34		-1.955E-01	6.288E-01	1.008E+00	1.189E-01	-0.194
CE-139		165.85	*	-3.498E-02	2.966E-02	4.481E-02	4.596E-03	-0.781
BA-140		162.64		4.665E-01	7.680E-01	1.259E+00	1.323E-01	0.371
		304.84		1.095E+00	1.310E+00	2.095E+00	6.135E-01	0.523
		423.70		5.669E-01	1.953E+00	3.237E+00	1.063E+00	0.175
		537.32	*	-2.013E-01	2.703E-01	3.877E-01	1.297E-01	-0.519
LA-140		328.77		2.633E-01	2.992E-01	5.190E-01	6.259E-02	0.507
		432.53		1.007E+00	2.091E+00	3.523E+00	3.676E-01	0.286
		487.03		-1.005E-01	1.406E-01	2.118E-01	2.216E-02	-0.474
		751.79		-1.037E+00	1.684E+00	2.597E+00	2.630E-01	-0.399
		815.85		-7.484E-02	3.019E-01	4.797E-01	5.081E-02	-0.156
		867.82		-1.181E+00	1.398E+00	2.047E+00	2.134E-01	-0.577
		919.63		-1.683E-01	2.714E+00	4.358E+00	5.187E-01	-0.039
		925.24		2.656E-01	1.132E+00	1.878E+00	1.985E-01	0.141
		1596.49	*	-1.451E-02	8.166E-02	1.110E-01	1.004E-02	-0.131
CE-141		145.44	*	-8.974E-03	5.944E-02	9.618E-02	8.985E-03	-0.093
CE-143		57.37		8.249E-05	5.944E-02	Half-Life too short		
		231.56		-2.036E-03	5.944E-02	Half-Life too short		
		293.26	*	1.031E-03	5.944E-02	Half-Life too short		
	+	350.59		3.509E-02	5.944E-02	Half-Life too short		
		490.36		-1.160E-03	5.944E-02	Half-Life too short		
		664.57		3.519E-03	5.944E-02	Half-Life too short		
		721.93		-8.512E-04	5.944E-02	Half-Life too short		
CE-144		80.11		5.202E-01	1.928E+00	2.958E+00	2.724E-01	0.176
		133.54	*	4.963E-03	1.810E-01	2.968E-01	4.634E-02	0.017
PM-144		476.78		1.203E-02	6.271E-02	1.029E-01	1.104E-02	0.117
		618.01		-6.916E-03	3.022E-02	4.957E-02	4.633E-03	-0.140
		696.49	*	1.600E-02	3.254E-02	5.607E-02	4.976E-03	0.285
		778.57		1.388E+00	1.961E+00	3.446E+00	3.257E-01	0.403

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Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144	696.49	*	1.085E+00	2.206E+00	3.802E+00	3.373E-01	0.285
	1489.15		-5.404E+00	1.125E+01	1.660E+01	1.535E+00	-0.326
PM-146	453.90	*	-1.935E-02	4.693E-02	7.218E-02	8.603E-03	-0.268
	633.02		3.504E-01	1.195E+00	2.036E+00	7.626E-01	0.172
	735.90		-1.668E-01	1.488E-01	2.051E-01	5.900E-02	-0.813
	747.13		5.227E-02	9.078E-02	1.565E-01	2.258E-02	0.334
ND-147	91.11		-2.220E-01	3.483E-01	5.288E-01	5.446E-02	-0.420
	319.41		2.898E+00	3.491E+00	6.057E+00	7.194E-01	0.478
	439.89		-1.903E+00	5.831E+00	9.215E+00	9.284E-01	-0.207
	531.02	*	2.207E-01	6.020E-01	9.920E-01	1.554E-01	0.223
PM-149	285.90	*	-1.193E+02	1.169E+02	1.808E+02	3.233E+01	-0.660
EU-152	121.78		2.495E-02	6.551E-02	1.097E-01	1.064E-02	0.227
	244.69		-5.508E-02	3.314E-01	4.895E-01	5.809E-02	-0.113
	344.27	*	-9.024E-02	1.067E-01	1.421E-01	1.670E-02	-0.635
	443.98		3.166E-01	9.039E-01	1.507E+00	1.518E-01	0.210
	778.89		1.532E-01	2.278E-01	3.988E-01	3.770E-02	0.384
	867.32		-7.504E-01	7.816E-01	1.124E+00	1.128E-01	-0.667
	964.01		1.540E-01	3.397E-01	4.992E-01	4.942E-02	0.308
	1085.78		-2.147E-01	3.639E-01	5.665E-01	5.088E-02	-0.379
	1112.02		-3.860E-02	3.190E-01	5.131E-01	4.477E-02	-0.075
	1407.95		1.567E-01	1.754E-01	3.206E-01	2.987E-02	0.489
GD-153	69.67		4.398E-02	1.690E+00	2.580E+00	2.161E-01	0.017
	83.37		8.626E+00	1.496E+01	2.295E+01	2.188E+00	0.376
	97.43	*	-6.380E-02	7.350E-02	1.151E-01	1.046E-02	-0.554
	103.18		4.527E-03	9.467E-02	1.576E-01	1.380E-02	0.029
EU-154	123.07		1.530E-02	4.588E-02	7.664E-02	8.567E-03	0.200
	247.94		1.622E-01	3.393E-01	5.864E-01	8.284E-02	0.277
	591.81		1.764E-01	5.891E-01	1.011E+00	1.237E-01	0.174
	723.30		-7.675E-03	1.736E-01	2.469E-01	2.453E-02	-0.031
	756.87		3.479E-01	7.043E-01	1.211E+00	1.511E-01	0.287
	873.19		2.282E-01	2.820E-01	4.946E-01	6.580E-02	0.461
	996.32		-3.951E-01	3.747E-01	5.153E-01	9.435E-02	-0.767
	1004.76		-1.309E-01	2.159E-01	3.409E-01	4.231E-02	-0.384
	1274.45	*	5.468E-02	1.160E-01	2.007E-01	2.306E-02	0.272
EU-155	48.70		-2.819E+00	3.624E+00	5.362E+00	4.747E-01	-0.526
	60.01		1.667E+00	5.422E+00	8.470E+00	6.391E-01	0.197
	86.54	+	2.139E-01	1.151E-01	1.612E-01	1.604E-02	1.327
	105.31	*	1.100E-02	9.689E-02	1.616E-01	1.417E-02	0.068
TB-160	86.79	+	5.767E-01	3.102E-01	4.327E-01	4.286E-02	1.333
	197.04		-1.757E-02	5.432E-01	8.667E-01	9.462E-02	-0.020
	215.65		5.010E-01	7.577E-01	1.243E+00	1.406E-01	0.403
	298.57	+	2.353E-01	1.267E-01	1.974E-01	2.408E-02	1.192
	879.36	*	9.738E-02	1.203E-01	2.131E-01	2.154E-02	0.457
	962.29		6.865E-01	5.838E-01	9.638E-01	9.550E-02	0.712
	966.15		7.759E-01	2.630E-01	4.672E-01	4.619E-02	1.661
	1177.93		-2.980E-01	3.359E-01	5.009E-01	4.052E-02	-0.595
	1271.85		1.193E-01	7.128E-01	1.194E+00	1.055E-01	0.100
HO-166M	80.57		-2.737E-01	2.636E-01	3.750E-01	3.470E-02	-0.730
	184.41	+	1.576E-01	6.295E-02	7.034E-02	7.487E-03	2.240

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		280.46		-1.447E-01	8.213E-02	1.206E-01	1.494E-02	-1.200
		410.95		1.910E-01	2.405E-01	4.129E-01	4.149E-02	0.462
		711.68	*	-3.667E-02	5.668E-02	8.792E-02	7.896E-03	-0.417
		752.31		-7.427E-03	2.481E-01	4.071E-01	3.774E-02	-0.018
		810.29		-3.189E-02	5.144E-02	7.799E-02	7.537E-03	-0.409
		51.35		9.434E+00	3.895E+01	6.746E+01	5.791E+00	0.140
		52.39		1.110E+01	2.048E+01	3.450E+01	2.910E+00	0.322
		59.40		1.884E+00	3.009E+01	4.641E+01	3.474E+00	0.041
		66.72	*	4.732E+00	2.952E+01	4.547E+01	3.715E+00	0.104
		88.36		4.212E-01	2.265E-01	2.835E-01	2.834E-02	1.485
LU-176	+	201.83		-8.517E-03	2.720E-02	4.191E-02	4.619E-03	-0.203
		306.84	*	-3.924E-03	2.337E-02	3.858E-02	4.661E-03	-0.102
		401.10		1.340E+00	6.288E+00	1.044E+01	1.047E+00	0.128
LU-177		112.95		-3.741E-01	1.668E+00	2.639E+00	2.229E-01	-0.142
	+	208.36	*	3.553E+00	2.029E+00	2.107E+00	2.351E-01	1.686
LU-177M		52.97		1.618E+00	2.099E+00	3.565E+00	2.976E-01	0.454
		54.07		-1.927E-01	1.066E+00	1.743E+00	1.426E-01	-0.111
		61.30		7.393E-01	1.632E+00	2.563E+00	1.974E-01	0.288
		121.62		1.178E-01	3.367E-01	5.633E-01	4.704E-02	0.209
		147.16		-4.603E-01	6.260E-01	9.823E-01	9.111E-02	-0.469
		171.86		-2.699E-01	4.744E-01	7.419E-01	7.700E-02	-0.364
		218.09		-1.793E-01	8.845E-01	1.388E+00	1.577E-01	-0.129
	+	268.79		1.426E+00	1.282E+00	1.491E+00	1.828E-01	0.956
		319.02		1.730E-01	2.547E-01	4.392E-01	5.218E-02	0.394
		367.43		9.498E-01	8.874E-01	1.555E+00	1.673E-01	0.611
HF-181		413.65	*	-6.199E-02	1.697E-01	2.693E-01	2.707E-02	-0.230
		56.28		-3.033E-01	1.029E+00	1.735E+00	1.365E-01	-0.175
		57.53		-9.217E-02	5.414E-01	9.177E-01	7.068E-02	-0.100
		65.20		-7.844E-01	9.936E-01	1.452E+00	1.170E-01	-0.540
		133.02		-3.690E-02	5.914E-02	9.381E-02	8.143E-03	-0.393
		136.25		-2.017E-01	4.205E-01	6.715E-01	5.910E-02	-0.300
		345.85		1.948E-01	2.021E-01	3.177E-01	3.597E-02	0.613
W-181		482.03	*	-1.531E-03	4.245E-02	6.825E-02	6.835E-03	-0.022
		56.28		-1.179E-01	3.984E-01	6.721E-01	5.287E-02	-0.175
		57.53		-3.567E-02	2.099E-01	3.558E-01	2.740E-02	-0.100
		65.20	*	-3.017E-01	3.821E-01	5.584E-01	4.498E-02	-0.540
TA-182		67.75		8.269E-02	1.037E-01	1.807E-01	1.489E-02	0.458
		100.10		1.663E-02	1.609E-01	2.690E-01	2.398E-02	0.062
		152.43		6.070E-02	3.098E-01	5.080E-01	4.843E-02	0.119
		222.10		2.702E-01	3.453E-01	5.691E-01	6.511E-02	0.475
		1001.68		-1.043E+00	2.292E+00	3.601E+00	3.479E-01	-0.290
RE-183	+	1121.28		5.398E-01	2.035E-01	3.427E-01	2.958E-02	1.575
		1189.05		-3.708E-03	2.934E-01	4.850E-01	3.967E-02	-0.008
		1221.42	*	2.295E-02	1.954E-01	3.262E-01	2.752E-02	0.070
		1230.97		1.170E-01	4.829E-01	8.138E-01	6.926E-02	0.144
		57.98		-4.015E-02	2.157E-01	3.492E-01	2.670E-02	-0.115
		59.32		2.469E-02	1.234E-01	1.918E-01	1.437E-02	0.129
		67.20		1.298E-01	1.970E-01	3.282E-01	2.693E-02	0.395
		162.32	*	6.139E-02	1.067E-01	1.747E-01	1.757E-02	0.351

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	208.81		2.912E+00	1.663E+00	1.754E+00	1.959E-01	1.660
		291.72		4.425E-01	9.971E-01	1.518E+00	1.865E-01	0.291
		57.98		-1.471E-01	7.904E-01	1.279E+00	9.782E-02	-0.115
		59.32		9.040E-02	4.518E-01	7.022E-01	5.261E-02	0.129
		67.20		4.753E-01	7.216E-01	1.202E+00	9.862E-02	0.395
		161.27		-1.525E-01	3.476E-01	5.424E-01	5.424E-02	-0.281
		216.55		3.305E-01	2.661E-01	4.467E-01	5.060E-02	0.740
		252.85	*	-1.137E-01	2.229E-01	3.660E-01	4.394E-02	-0.311
		318.01		6.831E-02	4.371E-01	7.339E-01	8.733E-02	0.093
		792.07		-6.870E-01	9.919E-01	1.517E+00	1.448E-01	-0.453
OS-185		903.28		3.383E-01	1.043E+00	1.653E+00	1.686E-01	0.205
		920.93		1.418E-01	4.276E-01	7.166E-01	7.254E-02	0.198
		59.72		1.486E-01	3.246E-01	5.113E-01	3.837E-02	0.291
		61.14		4.587E-02	1.792E-01	2.787E-01	2.142E-02	0.165
		69.30		-4.683E-02	3.105E-01	4.697E-01	3.923E-02	-0.100
		592.07		5.354E-01	2.357E+00	4.025E+00	3.772E-01	0.133
		646.12	*	1.763E-02	3.701E-02	6.430E-02	5.664E-03	0.274
		717.42		2.470E-01	8.499E-01	1.440E+00	1.299E-01	0.172
		874.81		-1.457E-01	5.898E-01	9.329E-01	9.402E-02	-0.156
		880.27		3.533E-01	6.755E-01	1.162E+00	1.175E-01	0.304
RE-188		155.03	*	-2.555E-03	1.560E-01	2.531E-01	2.446E-02	-0.010
		477.96		1.031E+00	2.932E+00	4.869E+00	4.881E-01	0.212
		633.10		7.723E-01	2.431E+00	4.173E+00	3.738E-01	0.185
W-188	+	63.58		1.041E+02	8.401E+01	1.058E+02	8.382E+00	0.984
		227.08		1.003E+01	1.261E+01	2.078E+01	2.398E+00	0.483
IR-192		290.67	*	3.976E+00	7.641E+00	1.171E+01	1.440E+00	0.339
	+	295.96		1.280E-01	1.439E-01	2.615E-01	3.209E-02	0.490
		308.46		3.145E-02	9.304E-02	1.581E-01	1.911E-02	0.199
		316.51	*	-2.831E-02	3.390E-02	5.324E-02	6.356E-03	-0.532
		468.07		4.302E-03	6.716E-02	1.091E-01	1.155E-02	0.039
AU-195		604.41		-1.588E-01	4.853E-01	6.804E-01	9.150E-02	-0.233
		612.46		5.597E-01	7.612E-01	1.192E+00	1.238E-01	0.470
		65.12		-1.374E-01	1.769E-01	2.588E-01	2.083E-02	-0.531
		66.83		2.165E-02	9.797E-02	1.513E-01	1.238E-02	0.143
	+	75.70		1.166E+00	2.330E-01	3.951E-01	3.488E-02	2.951
		98.88	*	1.305E-01	2.098E-01	3.507E-01	3.153E-02	0.372
		129.76		4.430E+00	2.621E+00	4.571E+00	3.916E-01	0.969
TL-200		367.94	*	6.482E-04	2.621E+00	Half-Life	too short	
		579.30		3.843E-03	2.621E+00	Half-Life	too short	
		828.27		-5.539E-03	2.621E+00	Half-Life	too short	
		1205.75		-2.032E-03	2.621E+00	Half-Life	too short	
TL-201		68.90		6.243E-01	6.159E+00	9.441E+00	7.858E-01	0.066
		70.82		2.420E-01	3.333E+00	5.095E+00	4.309E-01	0.047
		80.30		-4.786E+00	6.053E+00	8.748E+00	8.073E-01	-0.547
		135.34		5.174E+00	2.795E+01	4.614E+01	4.045E+00	0.112
TL-202		167.43	*	4.205E+00	8.398E+00	1.388E+01	1.428E+00	0.303
		68.90		4.740E-02	4.676E-01	7.167E-01	5.966E-02	0.066
		70.82		1.832E-02	2.523E-01	3.857E-01	3.262E-02	0.047
		80.30		-3.625E-01	4.584E-01	6.625E-01	6.114E-02	-0.547

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HG-203		439.56	*	-2.453E-02	6.957E-02	1.097E-01	1.105E-02	-0.224
		70.83		7.986E-02	1.049E+00	1.604E+00	2.166E-01	0.050
		72.87		8.595E-01	5.615E-01	9.816E-01	1.295E-01	0.876
		82.60		-3.371E-01	1.068E+00	1.667E+00	2.381E-01	-0.202
BI-207		279.20	*	4.725E-03	3.783E-02	6.393E-02	8.037E-03	0.074
		72.80		2.007E-01	1.581E-01	2.781E-01	2.392E-02	0.722
	+	74.97		4.760E-01	1.342E-01	1.999E-01	1.753E-02	2.381
		84.90		1.125E-01	1.849E-01	2.838E-01	2.751E-02	0.396
TL-207		569.67		1.487E-02	2.873E-02	4.800E-02	4.588E-03	0.310
		1063.62	*	-1.315E-02	4.947E-02	8.037E-02	7.378E-03	-0.164
		1770.23		5.404E-01	3.145E-01	7.235E-01	6.114E-02	0.747
		81.07		-2.428E-01	2.125E-01	3.002E-01	2.792E-02	-0.809
		83.78		1.181E-01	1.270E-01	1.976E-01	1.892E-02	0.598
		94.90		1.285E-01	2.207E-01	3.304E-01	3.068E-02	0.389
		122.32		2.606E-01	1.576E+00	2.614E+00	2.353E-01	0.100
		144.24		-4.899E-02	6.750E-01	1.073E+00	1.085E-01	-0.046
		154.21		3.456E-01	3.536E-01	5.988E-01	6.227E-02	0.577
	+	269.46		3.324E-01	2.989E-01	3.556E-01	4.406E-02	0.935
		323.87	*	-3.276E-01	6.845E-01	1.102E+00	2.143E-01	-0.297
	+	338.28		4.501E+00	1.819E+00	2.303E+00	3.334E-01	1.954
PO-209		445.03		8.416E-01	2.241E+00	3.738E+00	4.921E-01	0.225
		260.50		2.019E+00	8.846E+00	1.509E+01	1.831E+00	0.134
		262.80		-8.217E+00	2.531E+01	4.188E+01	5.096E+00	-0.196
		896.60	*	3.964E+00	7.367E+00	1.258E+01	1.285E+00	0.315
BI-210		46.50	*	2.765E+00	5.464E+00	8.730E+00	8.364E-01	0.317
PB-210		46.50	*	2.765E+00	5.464E+00	8.730E+00	8.364E-01	0.317
PO-210		46.50	*	2.765E+00	5.463E+00	8.730E+00	7.620E-01	0.317
PB-211		404.84	*	4.759E-01	9.654E-01	1.554E+00	9.771E-01	0.306
		427.08		-1.789E-01	2.036E+00	3.288E+00	2.050E+00	-0.054
		831.96		9.078E-01	1.371E+00	2.167E+00	1.362E+00	0.419
	+	727.18	*	1.135E+00	4.198E-01	6.446E-01	6.715E-02	1.761
		785.46		1.197E+00	1.777E+00	3.077E+00	2.922E-01	0.389
PO-215		1620.62		1.276E+00	1.128E+00	2.218E+00	1.992E-01	0.575
		81.07		-2.428E-01	2.125E-01	3.002E-01	2.792E-02	-0.809
		83.78		1.181E-01	1.270E-01	1.976E-01	1.892E-02	0.598
		94.90		1.285E-01	2.207E-01	3.304E-01	3.068E-02	0.389
		122.32		2.606E-01	1.576E+00	2.614E+00	2.353E-01	0.100
		144.24		-4.899E-02	6.750E-01	1.073E+00	1.085E-01	-0.046
		154.21		3.456E-01	3.536E-01	5.988E-01	6.227E-02	0.577
	+	269.46		3.324E-01	2.989E-01	3.556E-01	4.406E-02	0.935
		323.87	*	-3.276E-01	6.845E-01	1.102E+00	2.143E-01	-0.297
	+	338.28		4.501E+00	1.819E+00	2.303E+00	3.334E-01	1.954
		445.03		8.416E-01	2.241E+00	3.738E+00	4.921E-01	0.225
	+	271.23		4.264E-01	3.842E-01	4.448E-01	6.018E-02	0.959
RN-219		401.81	*	3.365E-01	3.847E-01	6.630E-01	1.053E-01	0.508
RN-220		549.76	*	8.604E+00	2.567E+01	4.216E+01	4.090E+00	0.204
RA-223		81.07		-2.428E-01	2.125E-01	3.002E-01	2.792E-02	-0.809
		83.78		1.181E-01	1.270E-01	1.976E-01	1.892E-02	0.598
		94.90		1.285E-01	2.207E-01	3.304E-01	3.068E-02	0.389

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		122.32		2.606E-01	1.576E+00	2.614E+00	2.353E-01	0.100
		144.24		-4.899E-02	6.750E-01	1.073E+00	1.085E-01	-0.046
		154.21		3.456E-01	3.536E-01	5.988E-01	6.227E-02	0.577
	+	269.46		3.324E-01	2.989E-01	3.556E-01	4.406E-02	0.935
		323.87	*	-3.276E-01	6.845E-01	1.102E+00	2.143E-01	-0.297
	+	338.28		4.501E+00	1.819E+00	2.303E+00	3.334E-01	1.954
		445.03		8.416E-01	2.241E+00	3.738E+00	4.921E-01	0.225
		79.80		4.269E-01	1.495E+00	2.292E+00	4.982E-01	0.186
		236.00		5.873E-01	2.595E-01	4.177E-01	6.093E-02	1.406
		256.20	*	3.635E-02	3.564E-01	6.047E-01	1.059E-01	0.060
		286.10		-1.537E+00	1.429E+00	2.206E+00	3.504E-01	-0.697
	+	299.80		2.968E+00	1.660E+00	2.340E+00	4.561E-01	1.268
		304.40		7.312E-01	1.924E+00	2.908E+00	5.905E-01	0.251
		334.20		4.284E-02	2.427E+00	3.542E+00	7.403E-01	0.012
TH-227		79.80		4.269E-01	1.495E+00	2.292E+00	5.045E-01	0.186
	+	94.00		5.382E+00	3.204E+00	3.454E+00	7.629E-01	1.558
		236.00		5.873E-01	2.577E-01	4.177E-01	5.690E-02	1.406
		256.20	*	3.635E-02	3.564E-01	6.047E-01	1.206E-01	0.060
		286.10		-1.537E+00	2.093E+00	2.206E+00	2.223E+00	-0.697
	+	299.80		2.968E+00	1.660E+00	2.340E+00	4.561E-01	1.268
TH-229		304.40		7.312E-01	1.924E+00	2.908E+00	5.905E-01	0.251
		334.20		4.284E-02	2.427E+00	3.542E+00	7.403E-01	0.012
		85.43		1.641E-02	1.929E-01	2.893E-01	2.821E-02	0.057
	+	88.47		2.424E-01	1.304E-01	1.608E-01	1.605E-02	1.508
		100.00		1.184E-01	1.631E-01	2.793E-01	2.492E-02	0.424
		193.63	*	2.015E-02	4.872E-01	7.813E-01	8.472E-02	0.026
PA-231		210.97		1.320E+00	7.717E-01	1.208E+00	1.354E-01	1.093
		283.67	*	6.465E-01	1.396E+00	2.396E+00	4.212E-01	0.270
TH-231		301.29		1.962E-01	5.839E-01	8.807E-01	1.316E-01	0.223
		81.07		-2.428E-01	2.125E-01	3.002E-01	2.792E-02	-0.809
		83.78		1.181E-01	1.270E-01	1.976E-01	1.892E-02	0.598
		94.90		1.285E-01	2.207E-01	3.304E-01	3.068E-02	0.389
		122.32		2.606E-01	1.576E+00	2.614E+00	2.353E-01	0.100
		144.24		-4.899E-02	6.750E-01	1.073E+00	1.085E-01	-0.046
U-231		154.21		3.456E-01	3.536E-01	5.988E-01	6.227E-02	0.577
	+	269.46		3.324E-01	2.989E-01	3.556E-01	4.406E-02	0.935
		323.87	*	-3.276E-01	6.845E-01	1.102E+00	2.143E-01	-0.297
	+	338.28		4.501E+00	1.819E+00	2.303E+00	3.334E-01	1.954
		445.03		8.416E-01	2.241E+00	3.738E+00	4.921E-01	0.225
		84.21		8.207E+00	6.308E+00	9.944E+00	9.566E-01	0.825
	+	92.29		6.259E+00	3.510E+00	5.097E+00	4.858E-01	1.228
		95.87	*	-9.957E-01	1.289E+00	1.782E+00	1.640E-01	-0.559
		108.00		3.684E-01	2.164E+00	3.614E+00	3.097E-01	0.102
	+	75.28		1.389E+01	4.296E+00	6.020E+00	9.298E-01	2.307
PA-233	+	86.59		3.476E+00	2.068E+00	2.617E+00	7.131E-01	1.328
	+	300.12		8.275E-01	4.566E-01	6.426E-01	1.104E-01	1.288
		311.98	*	2.516E-02	6.154E-02	1.049E-01	1.277E-02	0.240
		340.50		7.849E-01	6.496E-01	9.978E-01	2.494E-01	0.787
		398.62		-1.266E+00	2.053E+00	3.162E+00	8.574E-01	-0.401

---- 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		-2.080E-01	1.550E+00	2.502E+00	5.545E-01	-0.083
		63.00		2.989E+00	2.443E+00	3.169E+00	4.785E-01	0.943
		94.67		1.672E-01	1.630E-01	2.483E-01	3.200E-02	0.674
		98.44		2.352E-02	8.538E-02	1.393E-01	7.778E-02	0.169
		99.86		3.528E-01	4.157E-01	7.150E-01	6.384E-02	0.493
		111.00		-9.929E-02	1.748E-01	2.723E-01	3.266E-02	-0.365
		131.20		-1.346E-01	9.832E-02	1.498E-01	1.291E-02	-0.898
		152.70		1.269E-01	2.971E-01	4.914E-01	8.615E-02	0.258
		186.00		5.673E+00	2.834E+00	2.739E+00	8.721E-01	2.071
		226.40		-2.889E-02	3.972E-01	6.261E-01	9.555E-02	-0.046
		227.20		3.379E-01	4.219E-01	6.955E-01	8.028E-02	0.486
		248.90		2.230E-01	7.618E-01	1.305E+00	3.116E-01	0.171
		293.70		4.808E+00	1.298E+00	1.580E+00	3.061E-01	3.042
		369.80		6.569E-01	8.165E-01	1.395E+00	3.165E-01	0.471
		568.70		-4.750E-01	9.444E-01	1.450E+00	1.387E-01	-0.328
		569.50		2.779E-02	2.584E-01	4.187E-01	4.002E-02	0.066
		574.00		-4.947E-01	1.312E+00	2.136E+00	2.034E-01	-0.232
		699.00		-2.798E-01	6.633E-01	1.054E+00	2.023E-01	-0.266
		706.10		1.011E+00	1.080E+00	1.763E+00	7.871E-01	0.573
		733.00		3.185E-01	3.758E-01	5.895E-01	1.320E-01	0.540
		742.81		3.816E-01	1.547E+00	2.496E+00	1.680E+00	0.153
		796.30		9.899E-01	9.183E-01	1.580E+00	4.323E-01	0.627
		805.60		5.126E-01	8.976E-01	1.532E+00	4.742E-01	0.335
		819.60		5.274E-01	1.151E+00	1.942E+00	7.435E-01	0.272
		826.30		-2.565E-01	8.232E-01	1.289E+00	5.796E-01	-0.199
		831.60		6.242E-01	6.596E-01	1.123E+00	3.393E-01	0.556
		876.40		-7.638E-01	1.133E+00	1.186E+00	1.221E+00	-0.644
		880.51		1.583E-01	2.359E-01	4.127E-01	4.174E-02	0.384
		883.24		-9.595E-02	2.515E-01	3.748E-01	2.527E-01	-0.256
		899.00		-5.469E-01	9.017E-01	1.316E+00	5.798E-01	-0.416
		925.00		1.192E-01	1.100E+00	1.799E+00	1.818E-01	0.066
		926.50		-7.345E-02	1.674E-01	2.551E-01	6.585E-02	-0.288
		946.00	*	-2.260E-01	3.110E-01	4.565E-01	8.873E-02	-0.495
		949.00		2.497E-01	4.386E-01	7.491E-01	7.478E-02	0.333
		980.50		3.803E-01	7.124E-01	1.212E+00	1.188E-01	0.314
		1394.10		-6.124E-01	1.278E+00	1.834E+00	1.196E+00	-0.334
		766.42		1.585E+01	1.561E+01	2.129E+01	1.083E+01	0.744
		1001.03	*	-2.182E+00	5.184E+00	8.174E+00	8.894E-01	-0.267
U-235	+	89.95		-3.489E-01	1.338E+00	1.559E+00	4.863E-01	-0.224
		93.35		1.674E+00	1.040E+00	1.277E+00	3.610E-01	1.312
		105.00		-7.454E-03	9.575E-01	1.589E+00	4.744E-01	-0.005
		143.76	*	5.580E-02	2.058E-01	3.318E-01	5.891E-02	0.168
NP-236	+	163.35		4.608E-01	4.648E-01	7.623E-01	1.509E-01	0.604
		185.71		2.101E-01	8.394E-02	1.017E-01	1.085E-02	2.067
		205.31		-5.460E-02	5.546E-01	7.763E-01	1.577E-01	-0.070
		94.67		1.284E-01	1.232E-01	1.885E-01	1.754E-02	0.681
		98.44		1.775E-02	6.379E-02	1.053E-01	9.494E-03	0.169
		111.00		-7.510E-02	1.321E-01	2.060E-01	1.748E-02	-0.365
		160.31	*	-1.028E-01	7.644E-02	1.143E-01	1.137E-02	-0.899

----- 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		1.469E-01	1.411E-01	2.441E-01	2.184E-02	0.602
		117.00	*	3.486E-02	1.689E-01	2.814E-01	2.359E-02	0.124
	+	209.75		2.274E+00	1.299E+00	1.378E+00	1.541E-01	1.651
		228.18		1.497E-01	2.200E-01	3.607E-01	4.170E-02	0.415
		277.60		6.126E-02	1.723E-01	2.944E-01	3.644E-02	0.208
AM-241		334.30		4.756E-02	1.377E+00	2.012E+00	2.331E-01	0.024
		59.54	*	8.069E-02	1.706E-01	2.689E-01	2.203E-02	0.300
CM-243		99.55		1.512E-01	1.452E-01	2.512E-01	2.248E-02	0.602
		103.76	*	2.103E-02	8.644E-02	1.451E-01	1.266E-02	0.145
		117.00		3.587E-02	1.738E-01	2.895E-01	2.428E-02	0.124
	+	209.75		2.242E+00	1.281E+00	1.358E+00	1.519E-01	1.651
		228.18		1.512E-01	2.223E-01	3.645E-01	4.214E-02	0.415
AM-246		277.60		6.176E-02	1.737E-01	2.968E-01	3.674E-02	0.208
		798.80		-2.531E-01	1.443E-01	1.920E-01	1.840E-02	-1.319
		1036.00		-1.414E-01	2.846E-01	4.515E-01	4.248E-02	-0.313
		1062.04		-1.503E-01	2.085E-01	3.200E-01	2.942E-02	-0.470
		1078.86	*	1.019E-01	1.346E-01	2.411E-01	2.181E-02	0.423
CM-247		278.00		6.297E-01	7.038E-01	1.230E+00	1.523E-01	0.512
		287.40		-8.856E-01	1.248E+00	1.834E+00	2.261E-01	-0.483
		402.60	*	-2.244E-03	3.626E-02	5.904E-02	5.923E-03	-0.038
CF-249		252.85		-4.251E-01	8.329E-01	1.368E+00	1.642E-01	-0.311
		333.44		1.654E-03	1.762E-01	2.570E-01	2.982E-02	0.006
		387.95	*	9.911E-03	3.934E-02	6.562E-02	6.645E-03	0.151
CF-251		176.60	*	5.813E-03	1.228E-01	1.981E-01	2.076E-02	0.029
		227.00		2.964E-01	3.745E-01	6.172E-01	7.121E-02	0.480
		285.00		-1.979E-01	1.595E+00	2.654E+00	3.277E-01	-0.075

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]G243624005      *
* Acquisition date   : 7-JAN-2010 14:35:28 Detector SN#      :              *
* Detector ID        : GAM02                      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 02:00:02.28             Half life ratio : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624005             Analyst initials: MXR1          *
* Batch Number       : 937704                 Sample Quantity : 1.3645E+02 GRAM  *
* Recovery           : 1.00000                Carrier Weight   : 0.00000      *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 29-OCT-2009 10:28:07 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	1.942E+01	2.326E+00	5.083E-01	0.000E+00
CD-109	1.809E+00	9.536E-01	1.287E+00	0.000E+00
SN-126	1.776E-01	9.359E-02	1.279E-01	0.000E+00
BA-137M	3.167E-01	7.467E-02	5.640E-02	0.000E+00
CS-137	3.348E-01	7.895E-02	5.963E-02	0.000E+00
TL-208	3.688E-01	8.087E-02	5.059E-02	0.000E+00
BI-211	2.686E+00	5.545E-01	3.265E-01	0.000E+00
PB-212	1.038E+00	1.680E-01	1.056E-01	0.000E+00
PO-212	1.038E+00	1.680E-01	1.056E-01	0.000E+00
BI-214	8.341E-01	1.572E-01	1.143E-01	0.000E+00
PB-214	9.342E-01	1.987E-01	1.138E-01	0.000E+00
PO-214	9.342E-01	1.987E-01	1.138E-01	0.000E+00
PO-216	1.038E+00	1.680E-01	1.056E-01	0.000E+00
PO-218	9.342E-01	1.987E-01	1.138E-01	0.000E+00
RA-224	1.945E+00	8.437E-01	1.203E+00	0.000E+00
RA-226	8.341E-01	1.572E-01	1.143E-01	0.000E+00
AC-228	1.017E+00	2.711E-01	1.773E-01	0.000E+00
RA-228	1.017E+00	2.711E-01	1.773E-01	0.000E+00
TH-228	1.055E+00	1.707E-01	1.074E-01	0.000E+00
TH-230	8.341E-01	1.572E-01	1.143E-01	0.000E+00
TH-232	1.017E+00	2.711E-01	1.773E-01	0.000E+00
TH-234	2.564E+00	2.067E+00	2.133E+00	0.000E+00
U-234	8.341E-01	1.572E-01	1.143E-01	0.000E+00
NP-237	5.214E-01	2.944E-01	4.041E-01	0.000E+00
U-238	2.564E+00	2.067E+00	2.133E+00	0.000E+00
AM-243	2.651E-01	7.329E-02	8.322E-02	0.000E+00
ANH-511	1.372E-01	6.904E-02	4.323E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)
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BE-7	6.853E-02	3.018E-01	5.186E-01	0.000E+00	NOT IDENT.
NA-22	2.002E-02	4.075E-02	7.243E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.072E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	7.352E-03	2.271E-02	4.131E-02	0.000E+00	NOT IDENT.
TI-44	5.948E-02	3.458E-02	6.042E-02	0.000E+00	NOT IDENT.
SC-46	1.812E-02	3.549E-02	6.271E-02	0.000E+00	FAIL ABUN
V-48	3.426E-02	7.105E-02	1.238E-01	0.000E+00	NOT IDENT.
CR-51	9.494E-02	3.795E-01	6.737E-01	0.000E+00	NOT IDENT.
MN-52	-3.017E-02	2.514E-01	4.107E-01	0.000E+00	NOT IDENT.
MN-54	1.192E-02	3.830E-02	6.631E-02	0.000E+00	NOT IDENT.
CO-56	-3.122E-02	3.557E-02	5.382E-02	0.000E+00	NOT IDENT.
CO-57	9.518E-03	2.222E-02	3.996E-02	0.000E+00	NOT IDENT.
CO-58	-3.138E-02	3.324E-02	4.982E-02	0.000E+00	NOT IDENT.
FE-59	3.367E-02	9.255E-02	1.639E-01	0.000E+00	NOT IDENT.
CO-60	-1.354E-02	3.448E-02	5.455E-02	0.000E+00	NOT IDENT.
ZN-65	-3.383E-02	9.881E-02	1.385E-01	0.000E+00	NOT IDENT.
GE-68	5.993E-01	1.199E+00	2.156E+00	0.000E+00	NOT IDENT.
AS-73	2.472E-02	1.033E+00	1.853E+00	0.000E+00	NOT IDENT.
AS-74	1.496E-02	8.894E-02	1.572E-01	0.000E+00	NOT IDENT.
SE-75	-3.863E-02	4.572E-02	6.979E-02	0.000E+00	NOT IDENT.
BR-77	2.251E+00	1.291E+01	2.192E+01	0.000E+00	FAIL ABUN
SR-82	-3.745E-01	3.634E-01	5.040E-01	0.000E+00	NOT IDENT.
RB-83	8.181E-04	6.688E-02	1.080E-01	0.000E+00	NOT IDENT.
RB-84	3.450E-02	5.720E-02	1.028E-01	0.000E+00	NOT IDENT.
KR-85	9.784E+00	6.804E+00	1.251E+01	0.000E+00	NOT IDENT.
SR-85	5.069E-02	3.525E-02	6.482E-02	0.000E+00	NOT IDENT.
RB-86	2.336E-01	7.858E-01	1.388E+00	0.000E+00	NOT IDENT.
Y-88	1.109E-02	3.108E-02	5.608E-02	0.000E+00	NOT IDENT.
ZR-88	5.969E-03	3.071E-02	5.346E-02	0.000E+00	NOT IDENT.
Y-91	-1.736E+01	1.874E+01	2.889E+01	0.000E+00	NOT IDENT.
NB-94	-1.234E-02	3.049E-02	5.047E-02	0.000E+00	NOT IDENT.
NB-95	4.860E-02	4.823E-02	7.805E-02	0.000E+00	NOT IDENT.
NB-95M	9.604E-02	1.255E-01	2.079E-01	0.000E+00	NOT IDENT.
ZR-95	2.407E-02	6.382E-02	1.126E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.700E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.021E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.191E+01	1.469E+01	2.662E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.294E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	5.387E-03	3.008E-02	5.154E-02	0.000E+00	NOT IDENT.
RH-102	-2.480E-02	2.751E-02	4.269E-02	0.000E+00	NOT IDENT.
RU-103	-2.533E-02	4.179E-02	6.648E-02	0.000E+00	FAIL ABUN
RH-106	-2.252E-01	2.878E-01	4.637E-01	0.000E+00	FAIL ABUN
RU-106	-2.252E-01	2.869E-01	4.637E-01	0.000E+00	FAIL ABUN
AG-108M	2.146E-04	3.160E-02	5.384E-02	0.000E+00	NOT IDENT.
AG-110M	2.240E-03	3.653E-02	5.527E-02	0.000E+00	NOT IDENT.
IN-111	-5.910E-01	1.383E+00	2.120E+00	0.000E+00	NOT IDENT.
IN-113M	-6.994E-03	4.463E-02	7.595E-02	0.000E+00	NOT IDENT.
SN-113	-6.994E-03	4.463E-02	7.595E-02	0.000E+00	NOT IDENT.
IN-114M	2.433E-02	1.817E-01	2.782E-01	0.000E+00	NOT IDENT.
CD-115	5.349E+00	1.489E+01	2.559E+01	0.000E+00	NOT IDENT.
SN-117M	4.794E-02	5.038E-02	9.087E-02	0.000E+00	NOT IDENT.
SB-122	1.841E+00	2.420E+00	4.474E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.763E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	2.298E-02	2.495E-02	4.495E-02	0.000E+00	NOT IDENT.
I-124	-3.418E-01	8.693E-01	1.263E+00	0.000E+00	NOT IDENT.
SB-124	-3.916E-02	6.219E-02	9.003E-02	0.000E+00	FAIL ABUN
SB-125	4.697E-03	8.689E-02	1.488E-01	0.000E+00	NOT IDENT.
TE-125M	-2.581E+00	8.178E+00	1.434E+01	0.000E+00	NOT IDENT.
I-126	1.505E-01	1.885E-01	3.096E-01	0.000E+00	NOT IDENT.
SB-126	-4.758E-02	1.606E-01	2.292E-01	0.000E+00	FAIL ABUN
SB-127	8.026E-01	1.447E+00	2.607E+00	0.000E+00	NOT IDENT.
XE-127	-2.612E-02	4.490E-02	7.229E-02	0.000E+00	NOT IDENT.
I-131	-3.246E-02	1.207E-01	2.051E-01	0.000E+00	NOT IDENT.
TE-132	5.700E-01	8.174E-01	1.415E+00	0.000E+00	NOT IDENT.
BA-133	-7.158E-03	4.363E-02	6.538E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.345E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.507E-02	4.407E-02	8.351E-02	0.000E+00	NOT IDENT.
CS-135	2.835E-01	1.750E-01	2.973E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.769E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.071E-02	1.078E-01	1.840E-01	0.000E+00	FAIL ABUN
CE-139	-3.498E-02	2.906E-02	4.681E-02	0.000E+00	NOT IDENT.
BA-140	-2.013E-01	2.649E-01	3.963E-01	0.000E+00	NOT IDENT.
LA-140	-1.451E-02	8.003E-02	1.111E-01	0.000E+00	NOT IDENT.
CE-141	-8.974E-03	5.825E-02	1.007E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.423E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.963E-03	1.774E-01	3.113E-01	0.000E+00	NOT IDENT.
PM-144	1.600E-02	3.189E-02	5.704E-02	0.000E+00	NOT IDENT.
PR-144	1.085E+00	2.162E+00	3.867E+00	0.000E+00	NOT IDENT.

PM-146	-1.935E-02	4.599E-02	7.402E-02	0.000E+00	NOT IDENT.
ND-147	2.207E-01	5.899E-01	1.014E+00	0.000E+00	NOT IDENT.
PM-149	-1.193E+02	1.146E+02	1.870E+02	0.000E+00	NOT IDENT.
EU-152	-9.024E-02	1.046E-01	1.464E-01	0.000E+00	NOT IDENT.
GD-153	-6.380E-02	7.203E-02	1.214E-01	0.000E+00	NOT IDENT.
EU-154	5.468E-02	1.137E-01	2.018E-01	0.000E+00	NOT IDENT.
EU-155	1.100E-02	9.495E-02	1.702E-01	0.000E+00	FAIL ABUN
TB-160	9.738E-02	1.179E-01	2.158E-01	0.000E+00	FAIL ABUN
HO-166M	-3.667E-02	5.555E-02	8.939E-02	0.000E+00	FAIL ABUN
TM-171	4.732E+00	2.893E+01	4.828E+01	0.000E+00	NOT IDENT.
LU-176	-3.924E-03	2.290E-02	3.985E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.988E+00	2.192E+00	0.000E+00	FAIL ABUN
LU-177M	-6.199E-02	1.663E-01	2.766E-01	0.000E+00	FAIL ABUN
HF-181	-1.531E-03	4.160E-02	6.991E-02	0.000E+00	NOT IDENT.
W-181	-3.017E-01	3.744E-01	5.931E-01	0.000E+00	NOT IDENT.
TA-182	2.295E-02	1.915E-01	3.282E-01	0.000E+00	FAIL ABUN
RE-183	6.139E-02	1.046E-01	1.826E-01	0.000E+00	FAIL ABUN
RE-184	-1.137E-01	2.184E-01	3.794E-01	0.000E+00	NOT IDENT.
OS-185	1.763E-02	3.627E-02	6.550E-02	0.000E+00	NOT IDENT.
RE-188	-2.555E-03	1.529E-01	2.647E-01	0.000E+00	NOT IDENT.
W-188	3.976E+00	7.488E+00	1.211E+01	0.000E+00	FAIL ABUN
IR-192	-2.831E-02	3.322E-02	5.496E-02	0.000E+00	FAIL ABUN
AU-195	1.305E-01	2.056E-01	3.699E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.198E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	4.205E+00	8.230E+00	1.450E+01	0.000E+00	NOT IDENT.
TL-202	-2.453E-02	6.817E-02	1.126E-01	0.000E+00	NOT IDENT.
HG-203	4.725E-03	3.707E-02	6.615E-02	0.000E+00	NOT IDENT.
BI-207	-1.315E-02	4.848E-02	8.109E-02	0.000E+00	FAIL ABUN
TL-207	-3.276E-01	6.708E-01	1.137E+00	0.000E+00	FAIL ABUN
PO-209	3.964E+00	7.220E+00	1.274E+01	0.000E+00	NOT IDENT.
BI-210	2.765E+00	5.355E+00	9.328E+00	0.000E+00	NOT IDENT.
PB-210	2.765E+00	5.355E+00	9.328E+00	0.000E+00	NOT IDENT.
PO-210	2.765E+00	5.354E+00	9.328E+00	0.000E+00	NOT IDENT.
PB-211	4.759E-01	9.461E-01	1.597E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.114E-01	6.551E-01	0.000E+00	FAIL ABUN
PO-215	-3.276E-01	6.708E-01	1.137E+00	0.000E+00	FAIL ABUN
RN-219	3.365E-01	3.770E-01	6.814E-01	0.000E+00	FAIL ABUN
RN-220	8.604E+00	2.515E+01	4.308E+01	0.000E+00	NOT IDENT.
RA-223	-3.276E-01	6.708E-01	1.137E+00	0.000E+00	FAIL ABUN
AC-227	3.635E-02	3.493E-01	6.268E-01	0.000E+00	FAIL ABUN
TH-227	3.635E-02	3.493E-01	6.268E-01	0.000E+00	FAIL ABUN
TH-229	2.015E-02	4.774E-01	8.140E-01	0.000E+00	FAIL ABUN
PA-231	6.465E-01	1.368E+00	2.479E+00	0.000E+00	NOT IDENT.
TH-231	-3.276E-01	6.708E-01	1.137E+00	0.000E+00	FAIL ABUN
U-231	-9.957E-01	1.263E+00	1.880E+00	0.000E+00	FAIL ABUN
PA-233	2.516E-02	6.031E-02	1.083E-01	0.000E+00	FAIL ABUN
PA-234	-2.260E-01	3.048E-01	4.616E-01	0.000E+00	FAIL ABUN
PA-234M	-2.182E+00	5.080E+00	8.256E+00	0.000E+00	NOT IDENT.
U-235	5.580E-02	2.017E-01	3.475E-01	0.000E+00	FAIL ABUN
NP-236	-1.028E-01	7.491E-02	1.195E-01	0.000E+00	NOT IDENT.
NP-239	3.486E-02	1.655E-01	2.958E-01	0.000E+00	FAIL ABUN
AM-241	8.069E-02	1.672E-01	2.861E-01	0.000E+00	NOT IDENT.
CM-243	2.103E-02	8.471E-02	1.528E-01	0.000E+00	FAIL ABUN
AM-246	1.019E-01	1.319E-01	2.432E-01	0.000E+00	NOT IDENT.
CM-247	-2.244E-03	3.553E-02	6.068E-02	0.000E+00	NOT IDENT.
CF-249	9.911E-03	3.856E-02	6.749E-02	0.000E+00	NOT IDENT.
CF-251	5.813E-03	1.203E-01	2.067E-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]G243624005.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 14:35:28.
Sample ID          : G243624005      Sample quantity      : 1.36450E+02 GRAM
Detector name      : GAM02            Detector geometry   : CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time   : 0 02:00:02.28 0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials    : MXR1
Abundance limit    : 75.00000          Sensitivity          : 5.00000
Batch ID           : 937704            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	774	10.67*	1.028E+00	1.942E+01	1.942E+01	12.22
CD-109	88.03	125	3.72*	5.232E+00	1.766E+00	1.809E+00	53.78
SN-126	64.28	91	9.60	2.560E+00	1.015E+00	1.015E+00	81.68
	86.94	125	8.90	5.232E+00	7.382E-01	7.382E-01	67.30
	87.57	125	37.00*	5.232E+00	1.776E-01	1.776E-01	53.78
BA-137M	661.65	214	89.98*	2.070E+00	3.164E-01	3.167E-01	24.06
CS-137	661.65	214	85.12*	2.070E+00	3.344E-01	3.348E-01	24.06
TL-208	277.35	-----	6.80	3.991E+00	-----	Line Not Found	-----
	510.84	127	21.60	2.538E+00	6.354E-01	6.354E-01	52.00
	583.14	259	84.20*	2.292E+00	3.688E-01	3.688E-01	22.37
	860.37	-----	12.46	1.652E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	3.848E+00	-----	Line Not Found	-----
	351.07	423	12.94*	3.351E+00	2.686E+00	2.686E+00	21.07
PB-212	74.81	257	10.70	4.043E+00	1.635E+00	1.635E+00	29.71
	77.11	371	18.00	4.306E+00	1.316E+00	1.316E+00	19.99
	87.30	125	8.00	5.232E+00	8.212E-01	8.212E-01	54.70
	238.63	750	44.60*	4.457E+00	1.038E+00	1.038E+00	16.52
	300.09	75	3.41	3.770E+00	1.602E+00	1.602E+00	54.15
PO-212	74.81	257	10.70	4.043E+00	1.635E+00	1.635E+00	29.71
	77.11	371	18.00	4.306E+00	1.316E+00	1.316E+00	19.99
	87.30	125	8.00	5.232E+00	8.212E-01	8.212E-01	54.70
	115.19	-----	0.60	6.220E+00	-----	Line Not Found	-----
	238.63	750	44.60*	4.457E+00	1.038E+00	1.038E+00	16.52
	300.09	75	3.41	3.770E+00	1.602E+00	1.602E+00	54.15
BI-214	609.31	311	46.30*	2.213E+00	8.341E-01	8.341E-01	19.24
	1120.29	81	15.10	1.298E+00	1.135E+00	1.135E+00	38.28
	1764.49	42	15.80	9.002E-01	8.134E-01	8.135E-01	49.16
PB-214	74.81	257	6.21	4.043E+00	2.818E+00	2.818E+00	29.16
	77.11	371	10.50	4.306E+00	2.256E+00	2.256E+00	21.39
	87.30	125	4.67	5.232E+00	1.407E+00	1.407E+00	54.33
	241.98	123	7.49	4.415E+00	1.026E+00	1.026E+00	44.61
	295.21	267	19.20	3.815E+00	1.002E+00	1.002E+00	23.31

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	423	37.20*	3.351E+00	9.342E-01	9.342E-01	21.70
	74.81	257	6.21	4.043E+00	2.818E+00	2.818E+00	29.16
	77.11	371	10.50	4.306E+00	2.256E+00	2.256E+00	21.39
	87.30	125	4.67	5.232E+00	1.407E+00	1.407E+00	54.33
	241.98	123	7.49	4.415E+00	1.026E+00	1.026E+00	44.61
PO-216	295.21	267	19.20	3.815E+00	1.002E+00	1.002E+00	23.31
	351.92	423	37.20*	3.351E+00	9.342E-01	9.342E-01	21.70
	74.81	257	10.70	4.043E+00	1.635E+00	1.635E+00	29.71
	77.11	371	18.00	4.306E+00	1.316E+00	1.316E+00	19.99
	87.30	125	8.00	5.232E+00	8.212E-01	8.212E-01	54.70
PO-218	238.63	750	44.60*	4.457E+00	1.038E+00	1.038E+00	16.52
	300.09	75	3.41	3.770E+00	1.602E+00	1.602E+00	54.15
	74.81	257	6.21	4.043E+00	2.818E+00	2.818E+00	29.16
	77.11	371	10.50	4.306E+00	2.256E+00	2.256E+00	21.39
	87.30	125	4.67	5.232E+00	1.407E+00	1.407E+00	54.33
RA-224	241.98	123	7.49	4.415E+00	1.026E+00	1.026E+00	44.61
	295.21	267	19.20	3.815E+00	1.002E+00	1.002E+00	23.31
	351.92	423	37.20*	3.351E+00	9.342E-01	9.342E-01	21.70
	240.98	123	3.95*	4.415E+00	1.945E+00	1.945E+00	44.26
	609.31	311	46.30*	2.213E+00	8.341E-01	8.341E-01	19.24
RA-226	1120.29	81	15.10	1.298E+00	1.135E+00	1.135E+00	38.28
	1764.49	42	15.80	9.002E-01	8.134E-01	8.135E-01	49.16
	338.32	154	11.40	3.449E+00	1.078E+00	1.078E+00	56.43
	911.07	161	27.70*	1.568E+00	1.017E+00	1.017E+00	27.20
	969.11	105	16.60	1.483E+00	1.177E+00	1.177E+00	37.29
RA-228	338.32	154	11.40	3.449E+00	1.078E+00	1.078E+00	56.43
	911.07	161	27.70*	1.568E+00	1.017E+00	1.017E+00	27.20
	969.11	105	16.60	1.483E+00	1.177E+00	1.177E+00	37.29
	74.81	257	10.70	4.043E+00	1.635E+00	1.662E+00	28.23
	77.11	371	18.00	4.306E+00	1.316E+00	1.337E+00	19.99
TH-228	87.30	125	8.00	5.232E+00	8.212E-01	8.345E-01	53.78
	238.63	750	44.60*	4.457E+00	1.038E+00	1.055E+00	16.52
	300.09	75	3.41	3.770E+00	1.602E+00	1.628E+00	79.61
	609.31	311	46.30*	2.213E+00	8.341E-01	8.341E-01	19.24
	1120.29	81	15.10	1.298E+00	1.135E+00	1.135E+00	38.28
TH-230	1764.49	42	15.80	9.002E-01	8.134E-01	8.134E-01	49.16
	338.32	154	11.40	3.449E+00	1.078E+00	1.078E+00	39.45
	911.07	161	27.70*	1.568E+00	1.017E+00	1.017E+00	27.20
	969.11	105	16.60	1.483E+00	1.177E+00	1.177E+00	37.29
	63.29	91	3.80*	2.560E+00	2.564E+00	2.564E+00	82.25
TH-234	92.38	153	5.41	5.595E+00	1.393E+00	1.393E+00	58.29
	609.31	311	46.30*	2.213E+00	8.341E-01	8.341E-01	19.24
	1120.29	81	15.10	1.298E+00	1.135E+00	1.135E+00	38.28
	1764.49	42	15.80	9.002E-01	8.134E-01	8.134E-01	49.16
	86.50	125	12.60*	5.232E+00	5.214E-01	5.214E-01	57.61
NP-237	95.87	-----	2.60	5.755E+00	-----	Line Not Found	-----
	63.29	91	3.80*	2.560E+00	2.564E+00	2.564E+00	82.25
	92.38	153	5.41	5.595E+00	1.393E+00	1.393E+00	56.08
	74.67	257	66.00*	4.043E+00	2.651E-01	2.651E-01	28.20

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.72	125	0.34	5.232E+00	1.955E+01	1.955E+01	53.78
	117.66	-----	0.55	6.232E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.053E+00	-----	Line Not Found	-----
ANH-511	511.00	127	100.00*	2.538E+00	1.372E-01	1.372E-01	51.33

Flag: "*" = Keyline

Total number of lines in spectrum 28
Number of unidentified lines 3
Number of lines tentatively identified by NID 25 89.29%

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	1.942E+01	1.942E+01	0.237E+01	12.22	
CD-109	464.00D	1.02	1.766E+00	1.809E+00	0.973E+00	53.78	
SN-126	1.00E+05Y	1.00	1.776E-01	1.776E-01	0.955E-01	53.78	
BA-137M	30.17Y	1.00	3.164E-01	3.167E-01	0.762E-01	24.06	
CS-137	30.17Y	1.00	3.344E-01	3.348E-01	0.806E-01	24.06	
TL-208	1.41E+10Y	1.00	3.688E-01	3.688E-01	0.825E-01	22.37	
BI-211	7.04E+08Y	1.00	2.686E+00	2.686E+00	0.566E+00	21.07	
PB-212	1.41E+10Y	1.00	1.038E+00	1.038E+00	0.171E+00	16.52	
PO-212	1.41E+10Y	1.00	1.038E+00	1.038E+00	0.171E+00	16.52	
BI-214	1600.00Y	1.00	8.341E-01	8.341E-01	1.605E-01	19.24	
PB-214	1600.00Y	1.00	9.342E-01	9.342E-01	2.028E-01	21.70	
PO-214	1600.00Y	1.00	9.342E-01	9.342E-01	2.028E-01	21.70	
PO-216	1.41E+10Y	1.00	1.038E+00	1.038E+00	0.171E+00	16.52	
PO-218	1600.00Y	1.00	9.342E-01	9.342E-01	2.028E-01	21.70	
RA-224	1.41E+10Y	1.00	1.945E+00	1.945E+00	0.861E+00	44.26	
RA-226	1600.00Y	1.00	8.341E-01	8.341E-01	1.605E-01	19.24	
AC-228	1.41E+10Y	1.00	1.017E+00	1.017E+00	0.277E+00	27.20	
RA-228	1.41E+10Y	1.00	1.017E+00	1.017E+00	0.277E+00	27.20	
TH-228	1.91Y	1.02	1.038E+00	1.055E+00	0.174E+00	16.52	
TH-230	4.47E+09Y	1.00	8.341E-01	8.341E-01	1.604E-01	19.24	
TH-232	1.41E+10Y	1.00	1.017E+00	1.017E+00	0.277E+00	27.20	
TH-234	4.47E+09Y	1.00	2.564E+00	2.564E+00	2.109E+00	82.25	
U-234	4.47E+09Y	1.00	8.341E-01	8.341E-01	1.604E-01	19.24	
NP-237	2.14E+06Y	1.00	5.214E-01	5.214E-01	3.004E-01	57.61	
U-238	4.47E+09Y	1.00	2.564E+00	2.564E+00	2.109E+00	82.25	
AM-243	7380.00Y	1.00	2.651E-01	2.651E-01	0.748E-01	28.20	
ANH-511	1.00E+09Y	1.00	1.372E-01	1.372E-01	0.704E-01	51.33	
Total Activity :			4.641E+01	4.647E+01			

Grand Total Activity : 4.641E+01 4.647E+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	185.89	218	327	1.46	371.10	366	12	3.03E-02	38.5	5.29E+00	T
0	209.37	131	292	1.00	418.09	412	12	1.82E-02	56.0	4.89E+00	T
0	269.96	67	233	1.40	539.32	535	10	9.29E-03	89.1	4.07E+00	T
1	296.66	44	96	1.37	592.75	581	22	6.13E-03	****	3.80E+00	T
0	727.18	93	45	1.75	1454.30	1448	12	1.29E-02	35.5	1.91E+00	T
0	769.84	21	111	0.85	1539.67	1531	14	2.91E-03	****	1.82E+00	
0	1589.84	44	13	5.47	3180.89	3172	17	6.16E-03	47.6	9.63E-01	
0	1729.75	18	2	2.22	3460.96	3456	9	2.46E-03	56.6	9.11E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624005.CNF;1
* Acquisition date   : 7-JAN-2010 14:35:28.. Detector SN#      :
* Detector ID        : GAM02                      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 02:00:02.28             Half life ratio : 8.00000
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 22-DEC-2009 12:00:00   Nuclide Library : SOLID
* Sample ID          : G243624005             Analyst initials: MXR1
* Batch Number       : 937704                 Sample Quantity : 1.36450E+02 GRAM
*****
*
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 29-OCT-2009 10:28:07.3MS 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	1.942E+01	2.373E+00	5.070E-01	4.820E-02	38.299
CD-109	1.809E+00	9.731E-01	1.218E+00	1.223E-01	1.485
SN-126	1.776E-01	9.550E-02	1.211E-01	1.210E-02	1.467
BA-137M	3.167E-01	7.619E-02	5.540E-02	4.773E-03	5.717
CS-137	3.348E-01	8.056E-02	5.856E-02	5.055E-03	5.717
TL-208	3.688E-01	8.252E-02	4.957E-02	4.965E-03	7.441
BI-211	2.686E+00	5.658E-01	3.168E-01	3.655E-02	8.476
PB-212	1.038E+00	1.714E-01	1.018E-01	1.281E-02	10.195
PO-212	1.038E+00	1.714E-01	1.018E-01	1.281E-02	10.195
BI-214	8.341E-01	1.605E-01	1.121E-01	1.184E-02	7.444
PB-214	9.342E-01	2.028E-01	1.105E-01	1.396E-02	8.458
PO-214	9.342E-01	2.028E-01	1.105E-01	1.396E-02	8.458
PO-216	1.038E+00	1.714E-01	1.018E-01	1.281E-02	10.195
PO-218	9.342E-01	2.028E-01	1.105E-01	1.396E-02	8.458
RA-224	1.945E+00	8.609E-01	1.159E+00	1.368E-01	1.678
RA-226	8.341E-01	1.605E-01	1.121E-01	1.184E-02	7.444
AC-228	1.017E+00	2.767E-01	1.753E-01	2.185E-02	5.804
RA-228	1.017E+00	2.767E-01	1.753E-01	2.185E-02	5.804

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.055E+00	1.742E-01	1.034E-01	1.302E-02	10.195
TH-230	8.341E-01	1.604E-01	1.121E-01	1.184E-02	7.444
TH-232	1.017E+00	2.767E-01	1.753E-01	2.185E-02	5.804
TH-234	2.564E+00	2.109E+00	2.007E+00	3.544E-01	1.278
U-234	8.341E-01	1.604E-01	1.121E-01	1.184E-02	7.444
NP-237	5.214E-01	3.004E-01	3.823E-01	8.744E-02	1.364
U-238	2.564E+00	2.109E+00	2.007E+00	3.544E-01	1.278
AM-243	2.651E-01	7.478E-02	7.852E-02	6.866E-03	3.377
ANH-511	1.372E-01	7.044E-02	4.225E-02	4.188E-03	3.249

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	6.853E-02		3.079E-01	5.062E-01	5.368E-02	0.135
NA-22	2.002E-02		4.158E-02	7.204E-02	6.388E-03	0.278
NA-24	8.620E-02		1.057E+00	Half-Life too short		
AL-26	7.352E-03		2.317E-02	4.138E-02	3.425E-03	0.178
TI-44	5.948E-02		3.529E-02	5.706E-02	5.166E-03	1.042
SC-46	1.812E-02		3.622E-02	6.194E-02	6.298E-03	0.293
V-48	3.426E-02		7.250E-02	1.225E-01	1.199E-02	0.280
CR-51	9.494E-02		3.872E-01	6.527E-01	7.963E-02	0.145
MN-52	-3.017E-02		2.565E-01	4.095E-01	3.809E-02	-0.074
MN-54	1.192E-02		3.908E-02	6.542E-02	6.427E-03	0.182
CO-56	-3.122E-02		3.630E-02	5.311E-02	5.259E-03	-0.588
CO-57	9.518E-03		2.267E-02	3.804E-02	3.180E-03	0.250
CO-58	-3.138E-02		3.391E-02	4.912E-02	4.757E-03	-0.639
FE-59	3.367E-02		9.444E-02	1.625E-01	1.550E-02	0.207
CO-60	-1.354E-02		3.518E-02	5.431E-02	5.060E-03	-0.249
ZN-65	-3.383E-02		1.008E-01	1.375E-01	1.196E-02	-0.246
GE-68	5.993E-01		1.224E+00	2.138E+00	1.937E-01	0.280
AS-73	2.472E-02		1.054E+00	1.739E+00	1.439E-01	0.014
AS-74	1.496E-02		9.076E-02	1.541E-01	1.439E-02	0.097
SE-75	-3.863E-02		4.665E-02	6.738E-02	8.235E-03	-0.573
BR-77	2.251E+00		1.317E+01	2.143E+01	2.115E+00	0.105
SR-82	-3.745E-01		3.708E-01	4.966E-01	4.685E-02	-0.754
RB-83	8.181E-04		6.825E-02	1.056E-01	1.042E-02	0.008
RB-84	3.450E-02		5.837E-02	1.015E-01	1.027E-02	0.340
KR-85	9.784E+00		6.943E+00	1.223E+01	1.211E+00	0.800
SR-85	5.069E-02		3.597E-02	6.336E-02	6.272E-03	0.800
RB-86	2.336E-01		8.019E-01	1.376E+00	1.248E-01	0.170
Y-88	1.109E-02		3.171E-02	5.619E-02	4.583E-03	0.197
ZR-88	5.969E-03		3.133E-02	5.199E-02	5.202E-03	0.115
Y-91	-1.736E+01		1.912E+01	2.871E+01	2.384E+00	-0.605
NB-94	-1.234E-02		3.111E-02	4.963E-02	4.425E-03	-0.249
NB-95	4.860E-02		4.922E-02	7.687E-02	7.197E-03	0.632
NB-95M	9.604E-02		1.281E-01	2.003E-01	2.534E-02	0.479
ZR-95	2.407E-02		6.512E-02	1.109E-01	1.121E-02	0.217

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-97	2.303E-02		1.377E-01	Half-Life too short		
ZR-97	9.093E+00		2.562E+00	Half-Life too short		
MO-99	1.191E+01		1.499E+01	2.620E+01	4.063E+00	0.455
TC-99M	2.297E+11		2.701E+11	Half-Life too short		
RH-101	5.387E-03		3.069E-02	4.950E-02	5.414E-03	0.109
RH-102	-2.480E-02		2.807E-02	4.166E-02	4.180E-03	-0.595
RU-103	-2.533E-02		4.264E-02	6.494E-02	9.753E-03	-0.390
RH-106	-2.252E-01		2.936E-01	4.549E-01	6.214E-02	-0.495
RU-106	-2.252E-01		2.927E-01	4.549E-01	4.131E-02	-0.495
AG-108M	2.146E-04		3.224E-02	5.246E-02	5.438E-03	0.004
AG-110M	2.240E-03		3.728E-02	5.428E-02	4.842E-03	0.041
IN-111	-5.910E-01		1.411E+00	2.044E+00	2.428E-01	-0.289
IN-113M	-6.994E-03		4.554E-02	7.385E-02	7.557E-03	-0.095
SN-113	-6.994E-03		4.554E-02	7.385E-02	7.557E-03	-0.095
IN-114M	2.433E-02		1.854E-01	2.670E-01	2.875E-02	0.091
CD-115	5.349E+00		1.520E+01	2.503E+01	2.460E+00	0.214
SN-117M	4.794E-02		5.140E-02	8.691E-02	8.562E-03	0.552
SB-122	1.841E+00		2.470E+00	4.381E+00	4.206E-01	0.420
I-123	1.623E+01		8.993E+00	Half-Life too short		
TE-123M	2.298E-02		2.546E-02	4.299E-02	4.265E-03	0.534
I-124	-3.418E-01		8.870E-01	1.238E+00	1.149E-01	-0.276
SB-124	-3.916E-02		6.346E-02	9.005E-02	8.191E-03	-0.435
SB-125	4.697E-03		8.867E-02	1.449E-01	1.480E-02	0.032
TE-125M	-2.581E+00		8.345E+00	1.362E+01	1.397E+00	-0.189
I-126	1.505E-01		1.923E-01	3.042E-01	2.631E-02	0.495
SB-126	-4.758E-02		1.638E-01	2.254E-01	2.039E-02	-0.211
SB-127	8.026E-01		1.476E+00	2.562E+00	3.024E-01	0.313
XE-127	-2.612E-02		4.582E-02	6.945E-02	7.668E-03	-0.376
I-131	-3.246E-02		1.231E-01	1.992E-01	2.236E-02	-0.163
TE-132	5.700E-01		8.341E-01	1.362E+00	2.407E-01	0.418
BA-133	-7.158E-03		4.452E-02	6.347E-02	9.468E-03	-0.113
I-133	5.547E-03		6.862E-03	Half-Life too short		
CS-134	6.507E-02		4.497E-02	8.230E-02	7.920E-03	0.791
CS-135	2.835E-01		1.785E-01	2.871E-01	3.798E-02	0.988
I-135	-2.157E+10		3.454E+10	Half-Life too short		
CS-136	-1.071E-02		1.100E-01	1.823E-01	1.760E-02	-0.059
CE-139	-3.498E-02		2.966E-02	4.481E-02	4.596E-03	-0.781
BA-140	-2.013E-01		2.703E-01	3.877E-01	1.297E-01	-0.519
LA-140	-1.451E-02		8.166E-02	1.110E-01	1.004E-02	-0.131
CE-141	-8.974E-03		5.944E-02	9.618E-02	8.985E-03	-0.093
CE-143	1.031E-03		1.746E-04	Half-Life too short		
CE-144	4.963E-03		1.810E-01	2.968E-01	4.634E-02	0.017
PM-144	1.600E-02		3.254E-02	5.607E-02	4.976E-03	0.285
PR-144	1.085E+00		2.206E+00	3.802E+00	3.373E-01	0.285
PM-146	-1.935E-02		4.693E-02	7.218E-02	8.603E-03	-0.268
ND-147	2.207E-01		6.020E-01	9.920E-01	1.554E-01	0.223
PM-149	-1.193E+02		1.169E+02	1.808E+02	3.233E+01	-0.660
EU-152	-9.024E-02		1.067E-01	1.421E-01	1.670E-02	-0.635

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-6.380E-02		7.350E-02	1.151E-01	1.046E-02	-0.554
EU-154	5.468E-02		1.160E-01	2.007E-01	2.306E-02	0.272
EU-155	1.100E-02		9.689E-02	1.616E-01	1.417E-02	0.068
TB-160	9.738E-02		1.203E-01	2.131E-01	2.154E-02	0.457
HO-166M	-3.667E-02		5.668E-02	8.792E-02	7.896E-03	-0.417
TM-171	4.732E+00		2.952E+01	4.547E+01	3.715E+00	0.104
LU-176	-3.924E-03		2.337E-02	3.858E-02	4.661E-03	-0.102
LU-177	3.553E+00	+	2.029E+00	2.107E+00	2.351E-01	1.686
LU-177M	-6.199E-02		1.697E-01	2.693E-01	2.707E-02	-0.230
HF-181	-1.531E-03		4.245E-02	6.825E-02	6.835E-03	-0.022
W-181	-3.017E-01		3.821E-01	5.584E-01	4.498E-02	-0.540
TA-182	2.295E-02		1.954E-01	3.262E-01	2.752E-02	0.070
RE-183	6.139E-02		1.067E-01	1.747E-01	1.757E-02	0.351
RE-184	-1.137E-01		2.229E-01	3.660E-01	4.394E-02	-0.311
OS-185	1.763E-02		3.701E-02	6.430E-02	5.664E-03	0.274
RE-188	-2.555E-03		1.560E-01	2.531E-01	2.446E-02	-0.010
W-188	3.976E+00		7.641E+00	1.171E+01	1.440E+00	0.339
IR-192	-2.831E-02		3.390E-02	5.324E-02	6.356E-03	-0.532
AU-195	1.305E-01		2.098E-01	3.507E-01	3.153E-02	0.372
TL-200	6.482E-04		4.183E-04	Half-Life too short		
TL-201	4.205E+00		8.398E+00	1.388E+01	1.428E+00	0.303
TL-202	-2.453E-02		6.957E-02	1.097E-01	1.105E-02	-0.224
HG-203	4.725E-03		3.783E-02	6.393E-02	8.037E-03	0.074
BI-207	-1.315E-02		4.947E-02	8.037E-02	7.378E-03	-0.164
TL-207	-3.276E-01		6.845E-01	1.102E+00	2.143E-01	-0.297
PO-209	3.964E+00		7.367E+00	1.258E+01	1.285E+00	0.315
BI-210	2.765E+00		5.464E+00	8.730E+00	8.364E-01	0.317
PB-210	2.765E+00		5.464E+00	8.730E+00	8.364E-01	0.317
PO-210	2.765E+00		5.463E+00	8.730E+00	7.620E-01	0.317
PB-211	4.759E-01		9.654E-01	1.554E+00	9.771E-01	0.306
BI-212	1.135E+00	+	4.198E-01	6.446E-01	6.715E-02	1.761
PO-215	-3.276E-01		6.845E-01	1.102E+00	2.143E-01	-0.297
RN-219	3.365E-01		3.847E-01	6.630E-01	1.053E-01	0.508
RN-220	8.604E+00		2.567E+01	4.216E+01	4.090E+00	0.204
RA-223	-3.276E-01		6.845E-01	1.102E+00	2.143E-01	-0.297
AC-227	3.635E-02		3.564E-01	6.047E-01	1.059E-01	0.060
TH-227	3.635E-02		3.564E-01	6.047E-01	1.206E-01	0.060
TH-229	2.015E-02		4.872E-01	7.813E-01	8.472E-02	0.026
PA-231	6.465E-01		1.396E+00	2.396E+00	4.212E-01	0.270
TH-231	-3.276E-01		6.845E-01	1.102E+00	2.143E-01	-0.297
U-231	-9.957E-01		1.289E+00	1.782E+00	1.640E-01	-0.559
PA-233	2.516E-02		6.154E-02	1.049E-01	1.277E-02	0.240
PA-234	-2.260E-01		3.110E-01	4.565E-01	8.873E-02	-0.495
PA-234M	-2.182E+00		5.184E+00	8.174E+00	8.894E-01	-0.267
U-235	5.580E-02		2.058E-01	3.318E-01	5.891E-02	0.168
NP-236	-1.028E-01		7.644E-02	1.143E-01	1.137E-02	-0.899
NP-239	3.486E-02		1.689E-01	2.814E-01	2.359E-02	0.124
AM-241	8.069E-02		1.706E-01	2.689E-01	2.203E-02	0.300

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	2.103E-02		8.644E-02	1.451E-01	1.266E-02	0.145
AM-246	1.019E-01		1.346E-01	2.411E-01	2.181E-02	0.423
CM-247	-2.244E-03		3.626E-02	5.904E-02	5.923E-03	-0.038
CF-249	9.911E-03		3.934E-02	6.562E-02	6.645E-03	0.151
CF-251	5.813E-03		1.228E-01	1.981E-01	2.076E-02	0.029

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYSSYSROOT:[ALPHA.ARCHIVE.GAMMA]G243624005
* Acquisition date   : 7-JAN-2010 14:35:28 Detector SN#      :
* Detector ID        : GAM02                               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 02:00:02.28                     Half life ratio  : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID
* Sample ID          : G243624005                         Analyst initials: MXR1
* Batch Number       : 937704                             Sample Quantity : 1.3645E+02 GRAM
* Recovery           : 1.00000                             Carrier Weight  : 0.00000
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 29-OCT-2009 10:28:07 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	1.942E+01	2.326E+00	2.543E-01	1.187E+00
CD-109	1.809E+00	9.536E-01	6.440E-01	4.865E-01
SN-126	1.776E-01	9.359E-02	6.400E-02	4.775E-02
BA-137M	3.167E-01	7.467E-02	2.822E-02	3.810E-02
CS-137	3.348E-01	7.895E-02	2.983E-02	4.028E-02
TL-208	3.688E-01	8.087E-02	2.531E-02	4.126E-02
BI-211	2.686E+00	5.545E-01	1.633E-01	2.829E-01
PB-212	1.038E+00	1.680E-01	5.286E-02	8.572E-02
PO-212	1.038E+00	1.680E-01	5.286E-02	8.572E-02
BI-214	8.341E-01	1.572E-01	5.717E-02	8.023E-02
PB-214	9.342E-01	1.987E-01	5.694E-02	1.014E-01
PO-214	9.342E-01	1.987E-01	5.694E-02	1.014E-01
PO-216	1.038E+00	1.680E-01	5.286E-02	8.572E-02
PO-218	9.342E-01	1.987E-01	5.694E-02	1.014E-01
RA-224	1.945E+00	8.437E-01	6.017E-01	4.304E-01
RA-226	8.341E-01	1.572E-01	5.717E-02	8.023E-02
AC-228	1.017E+00	2.711E-01	8.873E-02	1.383E-01
RA-228	1.017E+00	2.711E-01	8.873E-02	1.383E-01
TH-228	1.055E+00	1.707E-01	5.371E-02	8.711E-02
TH-230	8.341E-01	1.572E-01	5.717E-02	8.022E-02
TH-232	1.017E+00	2.711E-01	8.873E-02	1.383E-01
TH-234	2.564E+00	2.067E+00	1.067E+00	1.054E+00
U-234	8.341E-01	1.572E-01	5.717E-02	8.022E-02
NP-237	5.214E-01	2.944E-01	2.021E-01	1.502E-01
U-238	2.564E+00	2.067E+00	1.067E+00	1.054E+00
AM-243	2.651E-01	7.329E-02	4.163E-02	3.739E-02
ANH-511	1.372E-01	6.904E-02	2.163E-02	3.522E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
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BE-7	6.853E-02	3.018E-01	2.594E-01	1.540E-01	NOT IDENT.
NA-22	2.002E-02	4.075E-02	3.624E-02	2.079E-02	NOT IDENT.
NA-24	8.620E+04	2.072E+06	0.000E+00	1.057E+06	SHORT HLIF
AL-26	7.352E-03	2.271E-02	2.067E-02	1.158E-02	NOT IDENT.
TI-44	5.948E-02	3.458E-02	3.023E-02	1.764E-02	NOT IDENT.
SC-46	1.812E-02	3.549E-02	3.138E-02	1.811E-02	FAIL ABUN
V-48	3.426E-02	7.105E-02	6.195E-02	3.625E-02	NOT IDENT.
CR-51	9.494E-02	3.795E-01	3.371E-01	1.936E-01	NOT IDENT.
MN-52	-3.017E-02	2.514E-01	2.055E-01	1.283E-01	NOT IDENT.
MN-54	1.192E-02	3.830E-02	3.317E-02	1.954E-02	NOT IDENT.
CO-56	-3.122E-02	3.557E-02	2.693E-02	1.815E-02	NOT IDENT.
CO-57	9.518E-03	2.222E-02	1.999E-02	1.134E-02	NOT IDENT.
CO-58	-3.138E-02	3.324E-02	2.492E-02	1.696E-02	NOT IDENT.
FE-59	3.367E-02	9.255E-02	8.199E-02	4.722E-02	NOT IDENT.
CO-60	-1.354E-02	3.448E-02	2.729E-02	1.759E-02	NOT IDENT.
ZN-65	-3.383E-02	9.881E-02	6.931E-02	5.041E-02	NOT IDENT.
GE-68	5.993E-01	1.199E+00	1.079E+00	6.118E-01	NOT IDENT.
AS-73	2.472E-02	1.033E+00	9.273E-01	5.272E-01	NOT IDENT.
AS-74	1.496E-02	8.894E-02	7.866E-02	4.538E-02	NOT IDENT.
SE-75	-3.863E-02	4.572E-02	3.492E-02	2.333E-02	NOT IDENT.
BR-77	2.251E+00	1.291E+01	1.097E+01	6.585E+00	FAIL ABUN
SR-82	-3.745E-01	3.634E-01	2.522E-01	1.854E-01	NOT IDENT.
RB-83	8.181E-04	6.688E-02	5.405E-02	3.412E-02	NOT IDENT.
RB-84	3.450E-02	5.720E-02	5.141E-02	2.918E-02	NOT IDENT.
KR-85	9.784E+00	6.804E+00	6.260E+00	3.472E+00	NOT IDENT.
SR-85	5.069E-02	3.525E-02	3.243E-02	1.799E-02	NOT IDENT.
RB-86	2.336E-01	7.858E-01	6.946E-01	4.009E-01	NOT IDENT.
Y-88	1.109E-02	3.108E-02	2.806E-02	1.586E-02	NOT IDENT.
ZR-88	5.969E-03	3.071E-02	2.675E-02	1.567E-02	NOT IDENT.
Y-91	-1.736E+01	1.874E+01	1.445E+01	9.562E+00	NOT IDENT.
NB-94	-1.234E-02	3.049E-02	2.525E-02	1.555E-02	NOT IDENT.
NB-95	4.860E-02	4.823E-02	3.905E-02	2.461E-02	NOT IDENT.
NB-95M	9.604E-02	1.255E-01	1.040E-01	6.406E-02	NOT IDENT.
ZR-95	2.407E-02	6.382E-02	5.633E-02	3.256E-02	NOT IDENT.
NB-97	2.303E+04	2.700E+05	0.000E+00	1.377E+05	SHORT HLIF
ZR-97	9.093E+06	5.021E+06	0.000E+00	2.562E+06	SHORT HLIF
MO-99	1.191E+01	1.469E+01	1.332E+01	7.495E+00	NOT IDENT.
TC-99M	2.297E+17	5.294E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	5.387E-03	3.008E-02	2.579E-02	1.534E-02	NOT IDENT.
RH-102	-2.480E-02	2.751E-02	2.136E-02	1.404E-02	NOT IDENT.
RU-103	-2.533E-02	4.179E-02	3.326E-02	2.132E-02	FAIL ABUN
RH-106	-2.252E-01	2.878E-01	2.320E-01	1.468E-01	FAIL ABUN
RU-106	-2.252E-01	2.869E-01	2.320E-01	1.464E-01	FAIL ABUN
AG-108M	2.146E-04	3.160E-02	2.694E-02	1.612E-02	NOT IDENT.
AG-110M	2.240E-03	3.653E-02	2.765E-02	1.864E-02	NOT IDENT.
IN-111	-5.910E-01	1.383E+00	1.061E+00	7.056E-01	NOT IDENT.
IN-113M	-6.994E-03	4.463E-02	3.800E-02	2.277E-02	NOT IDENT.
SN-113	-6.994E-03	4.463E-02	3.800E-02	2.277E-02	NOT IDENT.
IN-114M	2.433E-02	1.817E-01	1.392E-01	9.272E-02	NOT IDENT.
CD-115	5.349E+00	1.489E+01	1.280E+01	7.598E+00	NOT IDENT.
SN-117M	4.794E-02	5.038E-02	4.546E-02	2.570E-02	NOT IDENT.
SB-122	1.841E+00	2.420E+00	2.238E+00	1.235E+00	NOT IDENT.
I-123	1.623E+07	1.763E+07	0.000E+00	8.993E+06	SHORT HLIF
TE-123M	2.298E-02	2.495E-02	2.249E-02	1.273E-02	NOT IDENT.
I-124	-3.418E-01	8.693E-01	6.320E-01	4.435E-01	NOT IDENT.
SB-124	-3.916E-02	6.219E-02	4.504E-02	3.173E-02	FAIL ABUN
SB-125	4.697E-03	8.689E-02	7.444E-02	4.433E-02	NOT IDENT.
TE-125M	-2.581E+00	8.178E+00	7.175E+00	4.173E+00	NOT IDENT.
I-126	1.505E-01	1.885E-01	1.549E-01	9.615E-02	NOT IDENT.
SB-126	-4.758E-02	1.606E-01	1.146E-01	8.192E-02	FAIL ABUN
SB-127	8.026E-01	1.447E+00	1.304E+00	7.380E-01	NOT IDENT.
XE-127	-2.612E-02	4.490E-02	3.617E-02	2.291E-02	NOT IDENT.
I-131	-3.246E-02	1.207E-01	1.026E-01	6.157E-02	NOT IDENT.
TE-132	5.700E-01	8.174E-01	7.080E-01	4.171E-01	NOT IDENT.
BA-133	-7.158E-03	4.363E-02	3.271E-02	2.226E-02	NOT IDENT.
I-133	5.547E+03	1.345E+04	0.000E+00	6.862E+03	SHORT HLIF
CS-134	6.507E-02	4.407E-02	4.178E-02	2.248E-02	NOT IDENT.
CS-135	2.835E-01	1.750E-01	1.487E-01	8.927E-02	NOT IDENT.
I-135	-2.157E+16	6.769E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.071E-02	1.078E-01	9.204E-02	5.501E-02	FAIL ABUN
CE-139	-3.498E-02	2.906E-02	2.342E-02	1.483E-02	NOT IDENT.
BA-140	-2.013E-01	2.649E-01	1.983E-01	1.352E-01	NOT IDENT.
LA-140	-1.451E-02	8.003E-02	5.558E-02	4.083E-02	NOT IDENT.
CE-141	-8.974E-03	5.825E-02	5.039E-02	2.972E-02	NOT IDENT.
CE-143	1.031E+03	3.423E+02	0.000E+00	1.746E+02	SHORT HLIF
CE-144	4.963E-03	1.774E-01	1.557E-01	9.049E-02	NOT IDENT.
PM-144	1.600E-02	3.189E-02	2.854E-02	1.627E-02	NOT IDENT.
PR-144	1.085E+00	2.162E+00	1.935E+00	1.103E+00	NOT IDENT.

PM-146	-1.935E-02	4.599E-02	3.703E-02	2.346E-02	NOT IDENT.
ND-147	2.207E-01	5.899E-01	5.074E-01	3.010E-01	NOT IDENT.
PM-149	-1.193E+02	1.146E+02	9.357E+01	5.847E+01	NOT IDENT.
EU-152	-9.024E-02	1.046E-01	7.326E-02	5.336E-02	NOT IDENT.
GD-153	-6.380E-02	7.203E-02	6.076E-02	3.675E-02	NOT IDENT.
EU-154	5.468E-02	1.137E-01	1.009E-01	5.800E-02	NOT IDENT.
EU-155	1.100E-02	9.495E-02	8.516E-02	4.845E-02	FAIL ABUN
TB-160	9.738E-02	1.179E-01	1.080E-01	6.017E-02	FAIL ABUN
HO-166M	-3.667E-02	5.555E-02	4.472E-02	2.834E-02	FAIL ABUN
TM-171	4.732E+00	2.893E+01	2.416E+01	1.476E+01	NOT IDENT.
LU-176	-3.924E-03	2.290E-02	1.994E-02	1.169E-02	FAIL ABUN
LU-177	3.553E+00	1.988E+00	1.097E+00	1.014E+00	FAIL ABUN
LU-177M	-6.199E-02	1.663E-01	1.384E-01	8.485E-02	FAIL ABUN
HF-181	-1.531E-03	4.160E-02	3.498E-02	2.122E-02	NOT IDENT.
W-181	-3.017E-01	3.744E-01	2.967E-01	1.910E-01	NOT IDENT.
TA-182	2.295E-02	1.915E-01	1.642E-01	9.772E-02	FAIL ABUN
RE-183	6.139E-02	1.046E-01	9.136E-02	5.335E-02	FAIL ABUN
RE-184	-1.137E-01	2.184E-01	1.898E-01	1.114E-01	NOT IDENT.
OS-185	1.763E-02	3.627E-02	3.277E-02	1.850E-02	NOT IDENT.
RE-188	-2.555E-03	1.529E-01	1.325E-01	7.802E-02	NOT IDENT.
W-188	3.976E+00	7.488E+00	6.060E+00	3.820E+00	FAIL ABUN
IR-192	-2.831E-02	3.322E-02	2.750E-02	1.695E-02	FAIL ABUN
AU-195	1.305E-01	2.056E-01	1.850E-01	1.049E-01	FAIL ABUN
TL-200	6.482E+02	8.198E+02	0.000E+00	4.183E+02	SHORT HLIF
TL-201	4.205E+00	8.230E+00	7.254E+00	4.199E+00	NOT IDENT.
TL-202	-2.453E-02	6.817E-02	5.633E-02	3.478E-02	NOT IDENT.
HG-203	4.725E-03	3.707E-02	3.310E-02	1.891E-02	NOT IDENT.
BI-207	-1.315E-02	4.848E-02	4.057E-02	2.474E-02	FAIL ABUN
TL-207	-3.276E-01	6.708E-01	5.688E-01	3.423E-01	FAIL ABUN
PO-209	3.964E+00	7.220E+00	6.373E+00	3.684E+00	NOT IDENT.
BI-210	2.765E+00	5.355E+00	4.667E+00	2.732E+00	NOT IDENT.
PB-210	2.765E+00	5.355E+00	4.667E+00	2.732E+00	NOT IDENT.
PO-210	2.765E+00	5.354E+00	4.667E+00	2.731E+00	NOT IDENT.
PB-211	4.759E-01	9.461E-01	7.990E-01	4.827E-01	NOT IDENT.
BI-212	1.135E+00	4.114E-01	3.278E-01	2.099E-01	FAIL ABUN
PO-215	-3.276E-01	6.708E-01	5.688E-01	3.423E-01	FAIL ABUN
RN-219	3.365E-01	3.770E-01	3.409E-01	1.923E-01	FAIL ABUN
RN-220	8.604E+00	2.515E+01	2.155E+01	1.283E+01	NOT IDENT.
RA-223	-3.276E-01	6.708E-01	5.688E-01	3.423E-01	FAIL ABUN
AC-227	3.635E-02	3.493E-01	3.136E-01	1.782E-01	FAIL ABUN
TH-227	3.635E-02	3.493E-01	3.136E-01	1.782E-01	FAIL ABUN
TH-229	2.015E-02	4.774E-01	4.072E-01	2.436E-01	FAIL ABUN
PA-231	6.465E-01	1.368E+00	1.240E+00	6.982E-01	NOT IDENT.
TH-231	-3.276E-01	6.708E-01	5.688E-01	3.423E-01	FAIL ABUN
U-231	-9.957E-01	1.263E+00	9.405E-01	6.445E-01	FAIL ABUN
PA-233	2.516E-02	6.031E-02	5.419E-02	3.077E-02	FAIL ABUN
PA-234	-2.260E-01	3.048E-01	2.310E-01	1.555E-01	FAIL ABUN
PA-234M	-2.182E+00	5.080E+00	4.131E+00	2.592E+00	NOT IDENT.
U-235	5.580E-02	2.017E-01	1.739E-01	1.029E-01	FAIL ABUN
NP-236	-1.028E-01	7.491E-02	5.980E-02	3.822E-02	NOT IDENT.
NP-239	3.486E-02	1.655E-01	1.480E-01	8.446E-02	FAIL ABUN
AM-241	8.069E-02	1.672E-01	1.432E-01	8.531E-02	NOT IDENT.
CM-243	2.103E-02	8.471E-02	7.647E-02	4.322E-02	FAIL ABUN
AM-246	1.019E-01	1.319E-01	1.217E-01	6.732E-02	NOT IDENT.
CM-247	-2.244E-03	3.553E-02	3.036E-02	1.813E-02	NOT IDENT.
CF-249	9.911E-03	3.856E-02	3.376E-02	1.967E-02	NOT IDENT.
CF-251	5.813E-03	1.203E-01	1.034E-01	6.138E-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	203.5617
46.50	203.5617
46.50	203.5617
48.70	235.0078
49.72	233.3498
51.35	222.5265
52.39	209.8751
52.97	208.5991
53.15	208.7234
53.44	222.4029
54.07	229.6169
56.28	221.0571
56.28	221.0591
57.37	0.0000
57.53	223.6418
57.53	223.6431
57.60	223.6911
57.98	222.5892
57.98	222.5892
59.32	227.8933
59.32	227.8933
59.40	236.9643
59.54	219.0284
59.72	219.1491
60.01	225.7942
61.10	244.6653
61.14	244.6948
61.30	244.8123
63.00	236.0735
63.29	236.2752
63.29	236.2752
63.58	249.0827
64.28	280.9552
65.12	282.9496
65.20	283.0151
65.20	283.0151
66.05	260.0638
66.72	276.3492
66.83	276.4373
66.91	283.0831
67.20	265.6582
67.20	265.6582
67.75	262.1975
67.85	257.8712
68.90	287.3141
68.90	287.3141
69.30	302.2124
69.67	289.2552
70.82	279.5167
70.82	279.5167
70.83	279.5247
72.80	269.4157
72.87	269.4649
72.87	269.4649
74.67	270.7521
74.81	270.8504
74.81	270.8504
74.81	270.8504
74.81	270.8504
74.81	270.8504
74.81	270.8504
74.97	270.9641
75.28	271.1837
75.70	271.4802
77.11	272.4709
77.11	272.4709

77.11	272.4709
77.11	272.4709
77.11	272.4709
77.11	272.4709
77.11	272.4709
78.38	283.7634
79.62	245.1558
79.80	258.8915
79.80	258.8915
80.11	259.0930
80.18	259.1380
80.30	315.1524
80.30	315.1524
80.57	326.2856
81.00	347.1339
81.07	336.2587
81.07	336.2587
81.07	336.2587
81.07	336.2587
82.60	319.4162
83.37	302.4178
83.78	295.8415
83.78	295.8415
83.78	295.8415
83.78	295.8415
84.21	275.4868
84.90	289.7418
85.43	346.7508
86.29	382.0669
86.50	382.2585
86.54	348.1279
86.59	348.1682
86.72	348.2755
86.79	348.3311
86.94	348.4558
87.30	340.4273
87.30	340.4273
87.30	340.4273
87.30	340.4273
87.30	340.4273
87.30	340.4273
87.30	340.4273
87.57	340.6426
87.88	336.2580
88.03	336.3762
88.36	292.1210
88.47	292.1963
89.95	337.8772
91.11	343.4427
92.29	309.7418
92.38	309.8041
92.38	309.8041
93.35	250.4483
94.00	238.1320
94.67	230.0171
94.67	230.0196
94.90	225.9021
94.90	225.9021
94.90	225.9021
94.90	225.9021
95.87	267.4193
95.87	267.4193
96.73	282.3849
97.43	271.6455
98.44	236.1946
98.44	236.1946
98.88	230.7220
99.55	228.2019
99.55	228.2019
99.86	225.4989
100.00	225.5664
100.10	249.4163
103.18	245.2904
103.76	236.9546
105.00	251.0277
105.31	244.4515
108.00	241.9256
109.28	247.4009

111.00	242.4080
111.00	242.4080
111.76	224.2479
112.95	223.7959
115.19	257.1627
116.30	228.2027
117.00	222.5986
117.00	222.5986
117.66	214.9885
121.11	238.2251
121.62	213.6123
121.78	213.6757
122.06	213.7862
122.32	222.8424
122.32	222.8424
122.32	222.8424
122.32	222.8424
123.07	213.1891
127.23	245.9234
129.76	208.7183
131.20	280.0094
133.02	236.2803
133.54	219.2388
135.34	212.7929
136.00	229.3442
136.25	237.5994
136.48	237.6930
140.51	228.0161
140.51	0.0000
142.18	247.1899
142.65	249.4419
143.76	225.1163
144.24	239.7598
144.24	239.7598
144.24	239.7598
144.24	239.7598
145.22	246.3551
145.44	246.4447
147.16	271.0148
152.43	223.0364
152.70	217.8939
153.22	205.4906
154.21	193.2071
154.21	193.2071
154.21	193.2071
154.21	193.2071
155.03	218.6873
156.02	256.9317
158.56	183.9369
159.00	0.0000
159.00	184.0608
160.31	260.7419
161.27	233.5217
162.32	205.1862
162.64	207.4117
163.35	198.0488
163.89	202.4722
165.85	268.2552
167.43	216.3881
171.28	260.6921
171.86	240.4264
172.10	245.9006
176.55	221.4150
176.60	221.4296
181.06	217.8967
184.41	227.1327
185.71	209.9457
186.00	210.0293
190.27	184.1418
192.34	208.4917
193.63	206.6238
197.04	210.8947
198.01	194.4012
198.60	187.8396
200.40	199.4823
201.83	191.9871
202.84	200.1033
205.31	186.0698

208.36	182.2518
208.81	182.3550
209.75	182.5663
209.75	182.5663
210.97	148.2037
215.65	190.7443
216.55	172.6568
218.09	216.5087
222.10	174.9583
223.80	194.9163
226.40	187.4130
227.00	165.5489
227.08	165.5649
227.20	165.5867
228.16	165.7714
228.18	165.7758
228.18	165.7758
231.56	0.0000
235.69	185.2157
236.00	174.0526
236.00	174.0526
238.63	249.8867
238.63	249.8867
238.63	249.8867
238.63	249.8867
239.00	249.9886
240.98	250.5432
241.98	161.0904
241.98	161.0904
241.98	161.0904
244.69	162.9906
245.39	174.4642
247.94	153.7930
248.90	153.0641
249.79	164.7910
252.40	164.3621
252.85	173.3792
252.85	173.3792
254.15	0.0000
256.20	155.1657
256.20	155.1657
260.50	144.1577
260.90	146.9229
262.80	160.7611
264.65	162.8806
268.24	148.2262
268.79	141.0384
269.46	166.4162
269.46	166.4162
269.46	166.4162
269.46	166.4162
271.23	176.3717
273.65	181.1895
276.40	135.5342
277.35	149.4125
277.60	154.9510
277.60	154.9510
278.00	138.5027
278.60	145.0101
279.20	141.4236
279.53	151.5756
280.46	181.1374
281.68	144.5331
283.67	123.6008
284.30	117.2177
285.00	132.9983
285.90	150.6785
286.10	150.7083
286.10	150.7083
287.40	149.3569
288.45	0.0000
290.67	124.8167
290.80	124.8331
291.72	135.3536
293.26	0.0000
293.70	123.8757
295.21	124.0543
295.21	124.0543

295.21	124.0543
295.96	124.1436
296.50	124.2065
297.23	124.2918
298.57	124.4501
299.80	110.9169
299.80	110.9169
300.09	110.9476
300.09	110.9476
300.09	110.9476
300.09	110.9476
300.12	110.9494
301.29	129.0840
302.84	127.7677
303.76	106.8155
303.91	115.8572
304.40	117.4151
304.40	117.4151
304.84	102.9054
306.84	130.1288
308.46	124.6564
311.98	121.2676
316.51	141.7451
318.01	125.7420
319.02	119.1807
319.41	118.2689
320.08	136.4714
323.87	158.0008
323.87	158.0008
323.87	158.0008
323.87	158.0008
325.23	148.6024
328.77	120.2145
333.44	117.4196
334.20	122.1337
334.20	122.1337
334.30	122.1453
338.28	101.8133
338.28	101.8133
338.28	101.8133
338.28	101.8133
338.32	101.8165
338.32	101.8165
338.32	101.8165
340.50	101.0341
340.57	104.1493
344.27	129.4261
345.85	92.1241
350.59	0.0000
351.07	115.6575
351.92	115.7385
351.92	115.7385
351.92	115.7385
355.39	0.0000
356.01	102.3512
364.48	112.9685
366.43	103.2208
367.43	90.3904
367.94	0.0000
369.80	88.5709
374.96	75.9432
383.85	88.5465
387.95	103.9681
388.63	111.0918
391.69	115.4003
391.69	115.4003
392.90	108.4139
398.62	109.9001
400.65	102.9341
401.10	92.7732
401.81	80.5827
402.60	105.1249
404.84	98.1431
410.95	93.4515
411.60	100.6887
413.65	101.8672
414.70	101.9457
415.30	92.7177

415.76	91.7188
417.63	0.0000
418.52	88.8043
423.70	89.1350
427.08	96.6229
427.89	89.4014
432.53	81.3504
433.93	91.8699
439.47	84.8896
439.56	89.0875
439.89	87.0109
443.98	77.7962
444.90	84.1565
445.03	84.1638
445.03	84.1638
445.03	84.1638
445.03	84.1638
453.90	104.7842
463.38	91.6046
468.07	89.7524
473.00	80.3965
475.06	90.1652
475.35	74.0779
476.78	71.9982
477.59	74.1864
477.96	72.0534
482.03	81.9468
484.57	66.9611
487.03	86.5369
490.36	0.0000
492.35	70.5492
497.08	93.6216
507.63	0.0000
510.53	0.0000
510.84	70.2700
511.00	70.2764
511.85	70.3135
511.85	70.3135
513.99	70.4048
513.99	70.4048
520.41	69.4175
520.65	67.3777
527.90	76.5469
528.96	0.0000
529.64	76.6269
529.87	0.0000
531.02	72.2443
537.32	78.0920
543.00	66.0401
546.56	0.0000
549.76	67.4231
552.65	84.6459
555.20	72.1445
563.23	64.3212
563.90	63.4409
568.70	71.7905
569.32	64.5431
569.50	64.5500
569.67	57.2829
573.80	68.3514
574.00	68.3588
574.64	65.8499
578.91	47.2203
579.30	0.0000
583.14	55.8814
585.48	87.1398
591.81	67.1917
592.07	64.4407
593.00	82.8940
595.88	71.0314
600.56	74.9092
602.52	0.0000
602.71	87.9585
602.71	87.9585
603.60	77.1932
604.41	78.7723
604.70	83.4192
609.31	80.5264

609.31	80.5264
609.31	80.5264
609.31	80.5264
610.33	79.0214
612.46	68.2523
614.37	74.5313
618.01	70.9411
621.84	71.0830
621.84	71.0830
631.29	49.8156
633.02	49.8596
633.10	49.8622
634.78	50.8465
635.90	63.1233
636.97	56.5605
645.85	50.1883
646.12	47.3535
656.30	58.7023
657.75	61.9198
657.90	0.0000
661.65	64.9038
661.65	64.9038
664.57	0.0000
666.33	49.4290
666.33	49.4290
675.00	51.8814
677.61	56.7573
685.20	50.2087
692.80	60.0822
695.00	62.0859
696.49	59.2174
696.49	59.2174
697.00	64.0873
697.49	55.3607
698.33	68.9858
698.50	65.1042
699.00	68.0364
702.63	67.1790
706.10	51.6854
706.58	0.0000
706.67	42.9204
709.31	70.3213
711.68	66.4876
713.82	58.7241
717.42	55.8811
720.50	62.1799
721.93	0.0000
722.20	60.5902
722.78	57.3307
722.78	57.3307
722.89	57.3336
722.95	57.3350
723.30	54.0681
724.18	49.1724
727.18	56.1344
733.00	36.2057
735.90	69.2122
739.58	53.4806
742.81	66.4537
744.21	71.4568
747.13	54.6576
751.79	60.7468
752.31	51.7956
753.82	47.8441
755.35	50.8680
756.15	47.8934
756.87	46.9105
763.93	41.7175
765.79	50.1013
766.42	53.4570
766.84	60.1494
776.49	57.8875
778.00	36.2663
778.57	37.2827
778.89	38.2959
783.80	58.5763
785.46	56.5961
792.07	70.9468

795.84	42.6368
796.30	47.7218
798.80	83.3473
801.93	42.7465
805.60	39.7551
810.29	48.0040
810.76	49.0348
815.85	45.0452
817.79	53.2784
818.51	49.1941
819.60	41.0137
826.30	56.5509
828.27	0.0000
831.60	48.4309
831.96	53.5907
834.83	62.9405
836.80	0.0000
846.75	52.8776
848.13	50.8327
856.28	0.0000
856.80	63.5020
860.37	40.6577
867.32	54.3601
867.82	54.3702
871.10	34.5493
873.19	36.6731
874.81	52.4243
875.33	0.0000
876.40	56.6525
879.36	29.4096
880.27	32.5727
880.51	29.4232
881.50	28.3830
883.24	38.9223
884.67	51.5744
889.25	36.9038
896.60	43.3533
898.02	55.0151
899.00	60.3273
903.28	46.3797
911.07	35.4427
911.07	35.4427
911.07	35.4427
919.63	41.6022
920.93	39.4877
925.00	40.6171
925.24	40.6208
926.50	47.0572
935.52	45.0700
937.48	61.2110
944.10	51.6715
946.00	57.0940
949.00	40.9808
962.29	46.4439
964.01	57.8320
966.15	39.7909
968.20	74.9347
969.11	67.3539
969.11	67.3539
969.11	67.3539
977.42	45.7632
980.50	38.1779
983.50	39.3108
989.30	42.6743
996.32	57.0413
1001.03	49.4440
1001.68	49.4550
1004.76	58.6771
1021.30	0.0000
1024.50	0.0000
1034.80	47.2460
1036.00	48.1914
1037.82	44.5117
1038.57	40.8132
1038.76	0.0000
1045.16	47.4120
1046.59	45.5746
1048.07	46.5291

1050.47	40.0465
1050.47	40.0465
1062.04	46.7468
1063.62	45.8358
1076.63	43.2148
1077.35	41.3467
1078.86	35.7255
1085.78	45.2305
1099.22	47.3206
1112.02	50.8010
1112.84	44.3614
1115.52	53.8230
1120.29	48.5948
1120.29	48.5948
1120.29	48.5948
1120.29	48.5948
1120.51	50.5048
1121.28	32.6800
1124.00	0.0000
1129.67	45.8730
1131.51	0.0000
1147.95	0.0000
1167.94	50.2925
1173.22	32.9375
1175.09	37.8019
1177.93	52.3872
1189.05	47.6980
1204.90	64.5525
1205.75	0.0000
1213.00	56.8648
1221.42	54.0601
1230.97	57.1693
1235.34	69.0857
1236.41	0.0000
1238.25	56.3019
1246.25	48.5135
1260.41	0.0000
1271.85	38.8984
1274.45	32.9382
1274.54	32.9396
1291.56	39.1174
1298.22	0.0000
1312.09	41.3604
1325.50	36.4512
1325.50	36.4512
1332.49	27.3911
1333.61	29.4295
1360.21	21.4657
1362.66	0.0000
1365.15	20.4704
1368.21	23.5606
1368.53	0.0000
1376.25	15.3986
1384.27	27.7767
1394.10	29.9122
1395.20	25.7935
1407.95	17.5983
1434.06	21.8870
1436.60	20.8586
1457.56	0.0000
1460.81	18.8892
1489.15	20.0808
1509.49	14.8710
1596.49	13.0156
1620.62	8.4146
1678.03	0.0000
1691.02	12.3503
1691.02	12.3503
1706.46	0.0000
1750.46	0.0000
1764.49	8.4473
1764.49	8.4473
1764.49	8.4473
1764.49	8.4473
1770.23	0.0000
1771.40	36.7396
1791.20	0.0000
1808.65	5.8470

1836.01

8.8208

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624005

Total Uranium Activity	7.6541E+00	ug/g
Total Uranium Counting Unc.	6.1492E+00	ug/g
Total Uranium Tpu	3.1373E-06	ug/g
Total Uranium Mda	3.1761E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624005
*  ANALYST       : MXR1           DETECTOR    : GAM02
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 7-JAN-2010 14:35:28.68  SAMPLE ALQT: 136.450 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 6.485E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.139E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.520E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.213E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 16:45:01.28

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624006.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 14:44:34.
Sample ID          : G243624006 Sample quantity : 1.31190E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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	2	74.03	183	324	1.58	148.55	142	19	2.54E-02	20.5	3.32E+00
2	2	76.48*	334	365	1.59	153.45	142	19	4.64E-02	13.1	
3	0	87.12*	36	477	1.12	174.71	169	9	5.04E-03	111.7	
4	0	92.42*	165	428	1.49	185.31	181	10	2.29E-02	26.4	
5	0	185.13*	140	306	1.23	370.66	365	12	1.95E-02	27.9	
6	3	238.13*	748	176	1.39	476.61	472	18	1.04E-01	5.0	9.30E-01
7	3	241.38*	174	246	2.02	483.11	472	18	2.42E-02	23.7	
8	0	294.51*	251	170	1.52	589.32	584	12	3.48E-02	12.3	
9	0	299.78*	21	126	1.05	599.85	597	7	2.93E-03	95.8	
10	0	338.00*	174	152	1.21	676.27	670	13	2.42E-02	16.7	
11	0	351.42*	437	138	1.42	703.09	698	13	6.07E-02	7.5	
12	0	510.25*	29	150	1.81	1020.64	1013	15	4.00E-03	109.2	
13	0	582.75*	269	96	1.57	1165.58	1159	16	3.74E-02	10.5	
14	0	608.88*	319	89	1.72	1217.83	1209	17	4.43E-02	9.1	
15	0	661.44	172	84	1.28	1322.91	1316	14	2.39E-02	13.7	
16	0	726.77*	51	64	2.26	1453.54	1445	15	7.10E-03	38.5	
17	0	860.67*	26	49	1.42	1721.28	1715	12	3.58E-03	59.1	
18	0	911.13*	191	51	2.01	1822.16	1815	17	2.66E-02	11.9	
19	0	969.81*	61	98	0.89	1939.50	1930	15	8.46E-03	38.6	
20	0	1120.33*	75	23	1.93	2240.48	2233	13	1.04E-02	18.7	
21	0	1237.57	34	35	1.94	2474.91	2471	11	4.75E-03	36.9	
22	0	1460.71*	712	32	2.03	2921.15	2911	21	9.89E-02	4.3	
23	0	1765.70*	28	14	2.04	3531.09	3520	17	3.95E-03	37.6	

Flag: "*" = Peak area was modified by background subtraction

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624006.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 12:00:00 Acquisition date : 7-JAN-2010 14:44:34
Sample ID         : G243624006 Sample quantity : 131.19 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA15 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.912E+01	2.192E+00	5.422E-01	4.145E-02	35.266
CD-109	+	88.03	*	6.437E-01	1.440E+00	1.825E+00	2.111E-01	0.353
SN-126		64.28		4.317E-01	8.016E-01	1.333E+00	2.285E-01	0.324
	+	86.94		2.626E-01	5.969E-01	7.599E-01	3.196E-01	0.346
	+	87.57	*	6.317E-02	1.413E-01	1.665E-01	1.921E-02	0.379
BA-137M	+	661.65	*	2.708E-01	7.520E-02	5.841E-02	2.939E-03	4.637
CS-137	+	661.65	*	2.863E-01	7.951E-02	6.175E-02	3.124E-03	4.637
TL-208		277.35		6.786E-01	4.204E-01	7.466E-01	8.365E-02	0.909
	+	510.84		1.548E-01	3.384E-01	2.446E-01	2.462E-02	0.633
	+	583.14	*	4.106E-01	9.021E-02	6.123E-02	3.898E-03	6.705
	+	860.37		3.666E-01	4.343E-01	4.508E-01	3.875E-02	0.813
BI-211	+	72.87		1.315E+01	5.583E+00	6.234E+00	6.951E-01	2.110
	+	351.07	*	3.013E+00	4.992E-01	3.468E-01	2.383E-02	8.689
PB-212	+	74.81		1.561E+00	6.786E-01	6.883E-01	9.993E-02	2.268
	+	77.11		1.557E+00	4.429E-01	3.791E-01	4.210E-02	4.106
	+	87.30		2.922E-01	6.542E-01	8.389E-01	1.280E-01	0.348
	+	238.63	*	1.138E+00	1.479E-01	1.047E-01	8.669E-03	10.862
	+	300.09		4.931E-01	9.459E-01	1.243E+00	1.115E-01	0.397
PO-212	+	74.81		1.561E+00	6.786E-01	6.883E-01	9.993E-02	2.268
	+	77.11		1.557E+00	4.429E-01	3.791E-01	4.210E-02	4.106
	+	87.30		2.922E-01	6.542E-01	8.389E-01	1.280E-01	0.348
	+	115.19		4.966E-01	4.046E+00	6.640E+00	5.080E-01	0.075
	+	238.63	*	1.138E+00	1.479E-01	1.047E-01	8.669E-03	10.862
	+	300.09		4.931E-01	9.459E-01	1.243E+00	1.115E-01	0.397
BI-214	+	609.31	*	9.139E-01	1.789E-01	1.157E-01	8.591E-03	7.898
	+	1120.29		1.124E+00	4.324E-01	3.930E-01	3.626E-02	2.859
	+	1764.49		5.847E-01	4.409E-01	3.155E-01	1.964E-02	1.853
PB-214	+	74.81		2.690E+00	1.159E+00	1.186E+00	1.584E-01	2.268
	+	77.11		2.669E+00	7.860E-01	6.499E-01	8.752E-02	4.106
	+	87.30		5.005E-01	1.120E+00	1.437E+00	1.992E-01	0.348
	+	241.98		1.592E+00	7.674E-01	6.305E-01	5.635E-02	2.526
	+	295.21		1.030E+00	2.712E-01	2.295E-01	2.122E-02	4.489
	+	351.92	*	1.048E+00	1.821E-01	1.209E-01	1.042E-02	8.672
PO-214	+	74.81		2.690E+00	1.159E+00	1.186E+00	1.584E-01	2.268

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	77.11		2.669E+00	7.860E-01	6.499E-01	8.752E-02	4.106
	+	87.30		5.005E-01	1.120E+00	1.437E+00	1.992E-01	0.348
	+	241.98		1.592E+00	7.674E-01	6.305E-01	5.635E-02	2.526
	+	295.21		1.030E+00	2.712E-01	2.295E-01	2.122E-02	4.489
	+	351.92	*	1.048E+00	1.821E-01	1.209E-01	1.042E-02	8.672
	+	74.81		1.561E+00	6.786E-01	6.883E-01	9.993E-02	2.268
	+	77.11		1.557E+00	4.429E-01	3.791E-01	4.210E-02	4.106
	+	87.30		2.922E-01	6.542E-01	8.389E-01	1.280E-01	0.348
	+	238.63	*	1.138E+00	1.479E-01	1.047E-01	8.669E-03	10.862
	+	300.09		4.931E-01	9.459E-01	1.243E+00	1.115E-01	0.397
PO-218	+	74.81		2.690E+00	1.159E+00	1.186E+00	1.584E-01	2.268
	+	77.11		2.669E+00	7.860E-01	6.499E-01	8.752E-02	4.106
	+	87.30		5.005E-01	1.120E+00	1.437E+00	1.992E-01	0.348
	+	241.98		1.592E+00	7.674E-01	6.305E-01	5.635E-02	2.526
	+	295.21		1.030E+00	2.712E-01	2.295E-01	2.122E-02	4.489
RA-224	+	351.92	*	1.048E+00	1.821E-01	1.209E-01	1.042E-02	8.672
	+	240.98	*	3.019E+00	1.445E+00	1.192E+00	8.294E-02	2.534
	+	609.31	*	9.139E-01	1.789E-01	1.157E-01	8.591E-03	7.898
RA-226	+	1120.29		1.124E+00	4.324E-01	3.930E-01	3.626E-02	2.859
	+	1764.49		5.847E-01	4.409E-01	3.155E-01	1.964E-02	1.853
AC-228	+	338.32		1.328E+00	7.016E-01	4.068E-01	1.662E-01	3.264
	+	911.07	*	1.291E+00	3.397E-01	2.172E-01	2.415E-02	5.941
	+	969.11		7.260E-01	5.853E-01	4.277E-01	9.891E-02	1.697
RA-228	+	338.32		1.328E+00	7.016E-01	4.068E-01	1.662E-01	3.264
	+	911.07	*	1.291E+00	3.397E-01	2.172E-01	2.415E-02	5.941
	+	969.11		7.260E-01	5.853E-01	4.277E-01	9.891E-02	1.697
TH-228	+	74.81		1.586E+00	6.737E-01	6.994E-01	7.811E-02	2.268
	+	77.11		1.582E+00	4.500E-01	3.852E-01	4.278E-02	4.106
	+	87.30		2.969E-01	6.641E-01	8.525E-01	9.821E-02	0.348
TH-230	+	238.63	*	1.156E+00	1.503E-01	1.064E-01	8.810E-03	10.862
	+	300.09		5.010E-01	1.005E+00	1.263E+00	7.459E-01	0.397
	+	609.31	*	9.139E-01	1.789E-01	1.157E-01	8.591E-03	7.898
	+	1120.29		1.123E+00	4.323E-01	3.930E-01	3.625E-02	2.859
	+	1764.49		5.847E-01	4.409E-01	3.155E-01	1.964E-02	1.853
TH-232	+	338.32		1.328E+00	4.528E-01	4.068E-01	2.619E-02	3.264
	+	911.07	*	1.291E+00	3.397E-01	2.172E-01	2.415E-02	5.941
	+	969.11		7.260E-01	5.853E-01	4.277E-01	9.891E-02	1.697
U-234	+	609.31	*	9.139E-01	1.789E-01	1.157E-01	8.591E-03	7.898
	+	1120.29		1.123E+00	4.323E-01	3.930E-01	3.625E-02	2.859
	+	1764.49		5.847E-01	4.409E-01	3.155E-01	1.964E-02	1.853
NP-237	+	86.50	*	1.855E-01	4.167E-01	4.989E-01	1.178E-01	0.372
	+	95.87		-6.231E-01	1.273E+00	1.744E+00	4.376E-01	-0.357
AM-243	+	74.67	*	2.531E-01	1.074E-01	1.121E-01	1.246E-02	2.257
	+	86.72		6.956E+00	1.556E+01	2.021E+01	2.320E+00	0.344
	+	117.66		-1.269E+00	4.300E+00	6.923E+00	5.172E-01	-0.183
ANH-511	+	142.18		-1.815E+01	2.120E+01	3.223E+01	2.196E+00	-0.563
	+	511.00	*	3.344E-02	7.304E-02	5.285E-02	2.984E-03	0.633

---- 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	*	9.812E-02	3.710E-01	6.178E-01	4.117E-02	0.159

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		7.565E-04	4.658E-02	7.556E-02	5.186E-03	0.010
NA-24	1368.53	*		-1.487E+00	4.658E-02	Half-Life	too short	
AL-26	1129.67			-1.487E+00	1.593E+00	2.289E+00	1.442E-01	-0.650
	1808.65	*		-1.325E-02	2.629E-02	3.737E-02	2.236E-03	-0.355
TI-44	67.85			2.951E-02	7.264E-02	1.079E-01	1.231E-02	0.273
	78.38	*		1.548E-01	5.475E-02	8.559E-02	9.516E-03	1.808
SC-46	889.25	*		4.056E-03	3.842E-02	6.429E-02	5.393E-03	0.063
	+ 1120.51			1.939E-01	7.351E-02	1.263E-01	8.111E-03	1.535
V-48	944.10			1.466E-01	9.051E-01	1.519E+00	1.249E-01	0.097
	983.50	*		-3.462E-02	7.192E-02	1.117E-01	8.823E-03	-0.310
	1312.09			1.829E-02	7.980E-02	1.332E-01	9.720E-03	0.137
CR-51	320.08	*		-1.079E-01	4.147E-01	6.793E-01	4.899E-02	-0.159
MN-52	744.21			5.631E-02	2.713E-01	4.617E-01	2.832E-02	0.122
	848.13			-2.414E+00	7.807E+00	1.256E+01	9.681E-01	-0.192
	935.52			3.292E-02	2.882E-01	4.812E-01	3.986E-02	0.068
	1246.25			1.749E+00	9.362E+00	1.477E+01	9.632E-01	0.118
	1333.61			-9.163E-01	5.902E+00	9.316E+00	7.031E-01	-0.098
	1434.06	*		-1.165E-01	2.600E-01	3.944E-01	2.924E-02	-0.295
MN-54	834.83	*		-3.164E-02	3.829E-02	5.856E-02	4.389E-03	-0.540
CO-56	846.75	*		3.111E-02	3.934E-02	7.008E-02	5.386E-03	0.444
	977.42			9.319E-01	2.974E+00	4.854E+00	3.860E-01	0.192
	1037.82			-5.004E-02	3.545E-01	5.732E-01	4.536E-02	-0.087
	1175.09			-8.878E-01	2.529E+00	3.971E+00	2.270E-01	-0.224
	+ 1238.25			1.462E-01	1.085E-01	1.721E-01	1.163E-02	0.850
	1360.21			3.292E-01	9.238E-01	1.576E+00	1.186E-01	0.209
	1771.40			-3.539E-01	3.328E-01	3.168E-01	1.960E-02	-1.117
CO-57	122.06	*		-8.570E-03	2.935E-02	4.722E-02	3.395E-03	-0.182
	136.48			-8.039E-02	2.395E-01	3.831E-01	2.940E-02	-0.210
CO-58	810.76	*		1.699E-02	4.108E-02	7.087E-02	5.063E-03	0.240
FE-59	142.65			-2.856E+00	3.289E+00	4.994E+00	3.400E-01	-0.572
	192.34			7.435E-02	1.064E+00	1.714E+00	2.113E-01	0.043
	1099.22	*		6.323E-03	9.170E-02	1.510E-01	1.143E-02	0.042
	1291.56			9.388E-02	1.342E-01	2.345E-01	1.979E-02	0.400
CO-60	1173.22			1.426E-02	4.843E-02	8.116E-02	4.622E-03	0.176
	1332.49	*		2.367E-02	3.986E-02	6.957E-02	5.250E-03	0.340
ZN-65	1115.52	*		4.231E-02	1.003E-01	1.497E-01	9.724E-03	0.283
GE-68	1077.35	*		-2.777E-01	1.372E+00	2.198E+00	1.527E-01	-0.126
AS-73	53.44	*		7.374E-01	1.848E+00	3.126E+00	4.272E-01	0.236
AS-74	595.88	*		-6.474E-02	1.026E-01	1.565E-01	8.415E-03	-0.414
	634.78			3.835E-01	3.872E-01	6.782E-01	3.518E-02	0.565
SE-75	66.05			-1.009E+01	7.576E+00	1.156E+01	1.499E+00	-0.873
	96.73			-1.858E-01	1.045E+00	1.468E+00	2.106E-01	-0.127
	121.11			-6.527E-02	1.577E-01	2.521E-01	2.571E-02	-0.259
	136.00			-1.814E-02	4.493E-02	7.164E-02	4.989E-03	-0.253
	198.60			1.455E+00	2.149E+00	3.456E+00	2.758E-01	0.421
	264.65	*		-6.703E-02	4.789E-02	7.384E-02	5.164E-03	-0.908
	279.53			5.956E-02	1.234E-01	2.112E-01	1.541E-02	0.282
	303.91			-2.812E-01	2.642E+00	3.797E+00	3.855E-01	-0.074
	400.65			-2.295E-01	2.934E-01	4.559E-01	4.117E-02	-0.503

---- 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		1.857E+02	4.155E+02	5.285E+02	6.111E+01	0.351
		200.40		8.195E+01	2.540E+02	4.132E+02	2.824E+01	0.198
	+	239.00		2.444E+02	2.982E+01	5.093E+01	3.544E+00	4.798
		249.79		-1.115E+01	9.763E+01	1.631E+02	1.136E+01	-0.068
		281.68		-1.271E+02	1.364E+02	2.167E+02	1.492E+01	-0.586
		297.23		9.642E+01	1.550E+02	1.624E+02	1.105E+01	0.594
		303.76		-2.498E+01	2.997E+02	4.315E+02	2.917E+01	-0.058
		439.47		8.866E+01	2.221E+02	3.741E+02	2.138E+01	0.237
		484.57		4.247E+01	3.402E+02	5.608E+02	3.191E+01	0.076
		520.65	*	-1.191E+00	1.470E+01	2.376E+01	1.337E+00	-0.050
		574.64		-1.399E+02	3.101E+02	4.502E+02	2.459E+01	-0.311
		578.91		1.377E+02	1.345E+02	2.105E+02	1.146E+01	0.654
		585.48		1.233E+03	3.346E+02	6.041E+02	3.274E+01	2.042
		755.35		1.391E+02	2.316E+02	4.058E+02	2.554E+01	0.343
		817.79		-9.342E+01	1.830E+02	2.891E+02	2.089E+01	-0.323
SR-82		698.33		1.033E+01	3.699E+01	6.335E+01	3.488E+00	0.163
		776.49	*	-4.405E-01	4.057E-01	6.070E-01	4.007E-02	-0.726
		1395.20		6.028E+00	1.202E+01	2.138E+01	1.599E+00	0.282
RB-83		520.41	*	-1.884E-03	7.305E-02	1.186E-01	6.675E-03	-0.016
		529.64		-3.032E-02	1.120E-01	1.779E-01	9.971E-03	-0.170
		552.65		-9.350E-02	2.181E-01	3.410E-01	1.888E-02	-0.274
RB-84		881.50	*	1.553E-02	6.521E-02	1.108E-01	9.149E-03	0.140
KR-85		513.99	*	8.758E+00	8.944E+00	1.379E+01	7.780E-01	0.635
SR-85		513.99	*	4.538E-02	4.634E-02	7.147E-02	4.031E-03	0.635
RB-86		1076.63	*	4.403E-01	8.980E-01	1.541E+00	1.072E-01	0.286
Y-88		898.02		-1.725E-02	4.596E-02	7.329E-02	6.288E-03	-0.235
		1836.01	*	1.866E-02	3.554E-02	6.444E-02	3.764E-03	0.290
ZR-88		392.90	*	-2.196E-02	3.396E-02	5.353E-02	3.036E-03	-0.410
Y-91		1204.90	*	8.156E+00	2.004E+01	3.388E+01	2.049E+00	0.241
NB-94		702.63	*	-2.952E-02	3.681E-02	5.782E-02	3.216E-03	-0.511
		871.10		-1.946E-02	3.189E-02	4.913E-02	3.971E-03	-0.396
NB-95		765.79	*	2.276E-02	4.452E-02	7.688E-02	4.954E-03	0.296
NB-95M		235.69	*	1.065E+00	2.114E-01	3.511E-01	2.966E-02	3.033
ZR-95		724.18		1.544E-01	1.127E-01	1.865E-01	1.288E-02	0.828
		756.15	*	2.576E-02	7.543E-02	1.295E-01	9.656E-03	0.199
NB-97		657.90	*	2.276E-03	7.543E-02	Half-Life	too short	
		1024.50		-1.645E+01	7.543E-02	Half-Life	too short	
ZR-97		254.15		-6.573E+00	7.543E-02	Half-Life	too short	
		355.39		5.267E+00	7.543E-02	Half-Life	too short	
		507.63	*	1.464E+01	7.543E-02	Half-Life	too short	
		602.52		9.265E+00	7.543E-02	Half-Life	too short	
		1021.30		1.268E+01	7.543E-02	Half-Life	too short	
		1147.95		9.593E+00	7.543E-02	Half-Life	too short	
		1362.66		2.658E+00	7.543E-02	Half-Life	too short	
		1750.46		-3.540E+00	7.543E-02	Half-Life	too short	
MO-99		140.51		1.464E+01	3.854E+01	6.320E+01	1.718E+01	0.232
		181.06		-2.313E+01	2.905E+01	3.822E+01	6.679E+00	-0.605
		366.43		7.433E+01	1.205E+02	2.069E+02	1.257E+01	0.359
		739.58	*	6.816E-01	1.575E+01	2.642E+01	3.671E+00	0.026

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	778.00			-3.616E+01	4.433E+01	6.814E+01	4.514E+00	-0.531
RH-101	140.51	*		2.605E+11	4.433E+01	Half-Life too short		
	127.23			3.842E-02	3.783E-02	6.391E-02	4.503E-03	0.601
	198.01	*		1.884E-02	3.903E-02	6.226E-02	4.247E-03	0.303
	325.23			6.822E-02	2.607E-01	4.394E-01	2.889E-02	0.155
RH-102	418.52			-2.034E-01	3.166E-01	4.969E-01	2.835E-02	-0.409
	475.06	*		-2.710E-03	3.341E-02	5.430E-02	3.095E-03	-0.050
	631.29			-4.655E-02	5.325E-02	7.780E-02	4.049E-03	-0.598
	697.49			1.626E-02	8.378E-02	1.425E-01	7.830E-03	0.114
	766.84			4.814E-02	1.147E-01	1.966E-01	1.270E-02	0.245
	1046.59			-9.059E-02	1.169E-01	1.744E-01	1.271E-02	-0.520
	1112.84			6.324E-02	2.696E-01	3.909E-01	2.548E-02	0.162
RU-103	497.08	*		-3.811E-02	4.788E-02	7.298E-02	9.185E-03	-0.522
	610.33			1.004E+01	2.378E+00	2.826E+00	4.307E-01	3.554
RH-106	511.85			1.388E-01	2.647E-01	4.559E-01	2.573E-02	0.304
	621.84	*		-1.570E-01	3.540E-01	5.476E-01	6.285E-02	-0.287
	1050.47			-1.523E+00	2.153E+00	3.211E+00	2.328E-01	-0.474
RU-106	511.85			1.388E-01	2.647E-01	4.559E-01	2.573E-02	0.304
	621.84	*		-1.570E-01	3.536E-01	5.476E-01	2.877E-02	-0.287
	1050.47			-1.523E+00	2.153E+00	3.211E+00	2.328E-01	-0.474
AG-108M	433.93	*		-2.429E-02	3.775E-02	5.917E-02	3.679E-03	-0.411
	614.37			-2.306E-02	4.899E-02	6.351E-02	3.700E-03	-0.363
	722.95			2.012E-02	4.634E-02	7.050E-02	4.460E-03	0.285
AG-110M	657.75	*		-1.001E-02	4.633E-02	6.240E-02	3.420E-03	-0.160
	677.61			-1.536E-01	3.228E-01	4.934E-01	2.775E-02	-0.311
	706.67			1.524E-01	2.242E-01	3.947E-01	2.358E-02	0.386
	763.93			-2.160E-02	1.725E-01	2.849E-01	1.920E-02	-0.076
	884.67			-1.125E-02	4.635E-02	7.464E-02	6.417E-03	-0.151
	937.48			-6.133E-02	1.134E-01	1.763E-01	1.515E-02	-0.348
	1384.27			-3.792E-02	1.769E-01	2.880E-01	2.239E-02	-0.132
IN-111	171.28			-1.093E+00	1.430E+00	2.215E+00	1.478E-01	-0.494
	245.39	*		2.486E-01	1.691E+00	2.502E+00	1.742E-01	0.099
IN-113M	391.69	*		-3.398E-02	4.986E-02	7.847E-02	4.760E-03	-0.433
SN-113	391.69	*		-3.398E-02	4.986E-02	7.847E-02	4.760E-03	-0.433
IN-114M	190.27	*		7.525E-02	2.294E-01	3.285E-01	2.228E-02	0.229
CD-115	260.90			-3.660E+01	2.000E+02	3.324E+02	2.311E+01	-0.110
	492.35			5.832E+01	5.387E+01	9.486E+01	5.387E+00	0.615
	527.90	*		-2.310E+00	1.508E+01	2.419E+01	1.357E+00	-0.096
SN-117M	156.02			-1.241E+00	2.742E+00	4.342E+00	2.909E-01	-0.286
	158.56	*		-1.001E-03	6.366E-02	1.028E-01	6.873E-03	-0.010
SB-122	563.90	*		-8.419E-01	2.781E+00	4.389E+00	2.415E-01	-0.192
	692.80			2.712E+01	5.725E+01	9.963E+01	5.412E+00	0.272
I-123	159.00	*		-9.155E+00	5.725E+01	Half-Life too short		
	528.96			-5.535E+02	5.725E+01	Half-Life too short		
TE-123M	159.00	*		-1.286E-02	3.191E-02	5.057E-02	3.414E-03	-0.254
I-124	602.71	*		4.166E-01	9.365E-01	1.374E+00	7.345E-02	0.303
	722.78			2.402E+00	5.704E+00	8.666E+00	5.057E-01	0.277
	1325.50			-1.539E+01	4.376E+01	6.722E+01	5.016E+00	-0.229
	1376.25			2.312E+01	4.185E+01	7.194E+01	5.398E+00	0.321

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124	1509.49			1.665E+01	1.801E+01	3.396E+01	2.460E+00	0.490
	1691.02			-2.145E+00	4.704E+00	7.058E+00	4.646E-01	-0.304
	602.71			2.076E-02	4.667E-02	6.846E-02	3.662E-03	0.303
	645.85			-2.874E-01	5.458E-01	8.340E-01	4.965E-02	-0.345
	709.31			-9.167E-01	2.903E+00	4.737E+00	2.677E-01	-0.194
	713.82			-5.208E-01	1.584E+00	2.572E+00	2.613E-01	-0.203
	722.78			1.735E-01	4.120E-01	6.260E-01	3.823E-02	0.277
	968.20			9.891E+00	3.702E+00	6.954E+00	5.583E-01	1.423
	1045.16			5.549E-01	2.510E+00	4.214E+00	3.079E-01	0.132
	1325.50			-1.187E+00	3.376E+00	5.186E+00	3.870E-01	-0.229
SB-125	1368.21			-1.180E+00	1.796E+00	2.568E+00	3.286E-01	-0.459
	1436.60			1.148E+00	3.549E+00	6.099E+00	4.519E-01	0.188
	1691.02	*		-3.655E-02	8.014E-02	1.203E-01	8.446E-03	-0.304
	427.89	*		-4.998E-02	1.021E-01	1.619E-01	9.649E-03	-0.309
	463.38			2.518E-01	3.296E-01	5.651E-01	3.778E-02	0.445
	600.56			1.529E-01	2.162E-01	3.261E-01	2.064E-02	0.469
	635.90			5.283E-01	2.830E-01	5.271E-01	3.305E-02	1.002
	109.28	*		2.038E+00	1.087E+01	1.791E+01	1.781E+00	0.114
	388.63			1.030E-01	2.445E-01	4.139E-01	2.368E-02	0.249
	666.33	*		-5.471E-02	2.322E-01	3.110E-01	1.583E-02	-0.176
SB-126	753.82			8.003E-01	1.638E+00	2.845E+00	1.784E-01	0.281
	223.80			1.061E+00	4.947E+00	7.980E+00	5.528E-01	0.133
	278.60			3.557E+00	2.914E+00	5.148E+00	3.552E-01	0.691
	296.50			5.689E+00	3.292E+00	3.813E+00	2.596E-01	1.492
	414.70			2.172E-02	8.734E-02	1.461E-01	8.328E-03	0.149
	415.30			2.510E+00	7.299E+00	1.228E+01	7.002E-01	0.204
	555.20			-9.188E-02	4.505E+00	7.294E+00	4.034E-01	-0.013
	573.80			-1.575E-01	1.127E+00	1.802E+00	9.847E-02	-0.087
	593.00			2.887E-01	1.058E+00	1.749E+00	9.425E-02	0.165
	656.30			1.555E+00	4.187E+00	6.086E+00	3.082E-01	0.256
SB-127	666.33			-2.292E-02	9.726E-02	1.302E-01	6.628E-03	-0.176
	675.00			-2.815E-01	2.217E+00	3.514E+00	1.828E-01	-0.080
	695.00			2.959E-02	8.568E-02	1.475E-01	8.057E-03	0.201
	697.00			1.053E-01	3.010E-01	5.182E-01	2.844E-02	0.203
	720.50	*		-5.700E-02	1.747E-01	2.415E-01	1.402E-02	-0.236
	856.80			2.535E-01	5.432E-01	8.275E-01	6.495E-02	0.306
	989.30			5.919E-01	1.372E+00	2.357E+00	1.850E-01	0.251
	1034.80			6.784E+00	1.008E+01	1.763E+01	1.307E+00	0.385
	1213.00			-5.431E-01	4.951E+00	7.948E+00	4.879E-01	-0.068
	61.10			1.223E+02	1.179E+02	2.014E+02	2.872E+01	0.607
SB-127	252.40			-5.513E-01	5.788E+00	9.669E+00	4.042E+00	-0.057
	290.80			-1.327E+00	3.077E+01	4.454E+01	4.540E+00	-0.030
	411.60			5.861E+00	1.624E+01	2.731E+01	3.980E+00	0.215
	444.90			2.271E+00	1.336E+01	2.216E+01	2.450E+00	0.102
	473.00			-2.080E-01	2.258E+00	3.667E+00	4.189E-01	-0.057
	543.00			1.449E-01	2.105E+01	3.420E+01	4.468E+00	0.004
	603.60			7.928E+00	1.721E+01	2.520E+01	2.732E+00	0.315
	685.20	*		-5.663E-01	1.537E+00	2.492E+00	2.371E-01	-0.227
	698.50			5.867E+00	1.888E+01	3.239E+01	4.728E+00	0.181

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127	722.20			-1.593E+00	4.037E+01	5.801E+01	5.535E+00	-0.027
	783.80			1.460E+00	4.246E+00	7.288E+00	8.365E-01	0.200
	57.60			-8.293E+00	1.200E+01	1.913E+01	2.436E+00	-0.434
	145.22			5.020E-01	8.129E-01	1.351E+00	9.160E-02	0.372
	172.10			-4.087E-02	1.359E-01	2.157E-01	1.440E-02	-0.190
I-131	202.84		*	-5.319E-02	5.616E-02	8.556E-02	5.858E-03	-0.622
	374.96			-1.980E-01	2.275E-01	3.543E-01	2.106E-02	-0.559
	80.18			-6.339E+00	7.704E+00	9.817E+00	1.100E+00	-0.646
	284.30			-1.024E+00	1.825E+00	2.957E+00	2.200E-01	-0.346
	364.48		*	6.235E-04	1.368E-01	2.265E-01	1.530E-02	0.003
TE-132	636.97			2.017E+00	1.849E+00	3.249E+00	1.935E-01	0.621
	722.89			3.652E+00	8.501E+00	1.293E+01	7.665E-01	0.282
	49.72			-1.290E+01	6.411E+01	1.059E+02	1.608E+01	-0.122
	111.76			-4.062E+00	4.225E+01	6.875E+01	7.285E+00	-0.059
	116.30			1.681E+00	3.898E+01	6.374E+01	6.584E+00	0.026
BA-133	228.16		*	-4.366E-02	9.569E-01	1.610E+00	2.424E-01	-0.027
	53.15			1.012E+00	8.035E+00	1.345E+01	1.844E+00	0.075
	79.62			-5.914E-01	1.820E+00	2.586E+00	4.340E-01	-0.229
	81.00			-1.731E-01	1.676E-01	1.853E-01	3.225E-02	-0.934
	276.40			5.514E-01	4.184E-01	7.334E-01	9.898E-02	0.752
I-133	302.84			8.258E-02	1.736E-01	2.609E-01	3.174E-02	0.317
	356.01		*	2.689E-02	4.776E-02	7.234E-02	8.518E-03	0.372
	383.85			-1.915E-01	3.609E-01	5.757E-01	6.260E-02	-0.333
	510.53		+	7.555E-01	3.609E-01	Half-Life	too short	
	529.87		*	-2.951E-03	3.609E-01	Half-Life	too short	
CS-134	706.58			6.523E-01	3.609E-01	Half-Life	too short	
	856.28			3.628E-01	3.609E-01	Half-Life	too short	
	875.33			-7.256E-02	3.609E-01	Half-Life	too short	
	1236.41		+	2.332E+00	3.609E-01	Half-Life	too short	
	1298.22			-3.350E-01	3.609E-01	Half-Life	too short	
CS-135	475.35			2.012E-01	2.167E+00	3.566E+00	2.032E-01	0.056
	563.23			5.409E-03	3.797E-01	6.161E-01	3.469E-02	0.009
	569.32			1.409E-01	2.005E-01	3.439E-01	1.948E-02	0.410
	604.70			1.499E-02	4.259E-02	6.164E-02	3.311E-03	0.243
	795.84		*	7.580E-02	4.814E-02	8.997E-02	6.269E-03	0.842
I-135	801.93			-3.585E-01	3.930E-01	5.880E-01	4.141E-02	-0.610
	1038.57			-5.365E-02	4.352E+00	7.129E+00	5.257E-01	-0.008
	1167.94			-9.032E-01	2.500E+00	3.903E+00	2.253E-01	-0.231
	1365.15			-6.456E-02	1.173E+00	1.873E+00	1.492E-01	-0.034
	268.24		*	1.453E-01	1.694E-01	2.952E-01	2.524E-02	0.492
I-135	288.45			4.766E+11	1.694E-01	Half-Life	too short	
	417.63			-3.635E+11	1.694E-01	Half-Life	too short	
	546.56			1.027E+11	1.694E-01	Half-Life	too short	
	836.80			1.595E+11	1.694E-01	Half-Life	too short	
	1038.76			1.585E+09	1.694E-01	Half-Life	too short	
I-135	1124.00			1.402E+11	1.694E-01	Half-Life	too short	
	1131.51			-5.007E+10	1.694E-01	Half-Life	too short	
	1260.41		*	-4.774E+10	1.694E-01	Half-Life	too short	
	1457.56			5.836E+12	1.694E-01	Half-Life	too short	

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136		1678.03		2.009E+10	1.694E-01	Half-Life	too short	
		1706.46		-2.885E+11	1.694E-01	Half-Life	too short	
		1791.20		1.156E+10	1.694E-01	Half-Life	too short	
		66.91		-1.642E+00	1.314E+00	1.920E+00	3.302E-01	-0.855
	+	86.29		8.688E-01	1.945E+00	2.469E+00	3.678E-01	0.352
		153.22		9.788E-01	7.935E-01	1.346E+00	1.074E-01	0.727
		163.89		7.665E-01	1.232E+00	2.045E+00	1.627E-01	0.375
		176.55		3.484E-01	4.359E-01	7.269E-01	5.331E-02	0.479
		273.65		-1.166E+00	5.436E-01	7.991E-01	6.086E-02	-1.459
		340.57		2.768E-01	1.540E-01	2.531E-01	1.708E-02	1.094
CE-139 BA-140		818.51		7.340E-04	7.862E-02	1.309E-01	9.485E-03	0.006
		1048.07	*	-3.868E-02	1.072E-01	1.680E-01	1.294E-02	-0.230
		1235.34		4.251E-01	7.848E-01	1.165E+00	1.205E-01	0.365
		165.85	*	6.460E-04	3.336E-02	5.387E-02	3.582E-03	0.012
		162.64		-2.312E-01	8.585E-01	1.368E+00	9.988E-02	-0.169
		304.84		-7.300E-01	1.637E+00	2.265E+00	6.230E-01	-0.322
		423.70		-8.227E-01	2.235E+00	3.555E+00	1.129E+00	-0.231
		537.32	*	2.107E-02	2.919E-01	4.769E-01	1.549E-01	0.044
		328.77		6.639E-01	3.737E-01	6.706E-01	4.805E-02	0.990
		432.53		-1.369E-01	2.465E+00	4.033E+00	2.552E-01	-0.034
LA-140		487.03		-8.209E-02	1.563E-01	2.444E-01	1.580E-02	-0.336
		751.79		-8.428E-01	1.892E+00	3.036E+00	2.266E-01	-0.278
		815.85		-4.721E-02	3.549E-01	5.829E-01	4.874E-02	-0.081
		867.82		-8.850E-01	1.463E+00	2.053E+00	1.749E-01	-0.431
		919.63		2.484E+00	3.105E+00	4.958E+00	5.190E-01	0.501
		925.24		1.176E-01	1.325E+00	2.181E+00	1.944E-01	0.054
		1596.49	*	-4.566E-02	9.683E-02	1.484E-01	1.035E-02	-0.308
		145.44	*	5.702E-02	7.457E-02	1.245E-01	8.691E-03	0.458
		57.37		-9.026E-04	7.457E-02	Half-Life	too short	
		231.56		-1.467E-03	7.457E-02	Half-Life	too short	
CE-141 CE-143	+	293.26	*	1.621E-03	7.457E-02	Half-Life	too short	
	+	350.59		3.949E-02	7.457E-02	Half-Life	too short	
		490.36		-6.236E-03	7.457E-02	Half-Life	too short	
		664.57		3.503E-03	7.457E-02	Half-Life	too short	
		721.93		-2.790E-04	7.457E-02	Half-Life	too short	
		80.11		-2.591E+00	3.267E+00	4.173E+00	4.655E-01	-0.621
		133.54	*	-2.044E-01	2.338E-01	3.619E-01	5.320E-02	-0.565
		476.78		-9.031E-04	7.656E-02	1.250E-01	8.575E-03	-0.007
		618.01		1.116E-02	3.557E-02	5.888E-02	3.329E-03	0.190
		696.49	*	6.954E-03	3.615E-02	6.154E-02	3.376E-03	0.113
PR-144		778.57		-1.368E+00	2.257E+00	3.543E+00	2.351E-01	-0.386
		696.49	*	4.714E-01	2.451E+00	4.172E+00	2.287E-01	0.113
		1489.15		2.606E-01	1.101E+01	1.841E+01	1.343E+00	0.014
		453.90	*	1.343E-02	4.943E-02	8.249E-02	7.064E-03	0.163
		633.02		-1.249E+00	1.482E+00	2.066E+00	7.590E-01	-0.605
		735.90		6.437E-02	1.507E-01	2.596E-01	7.249E-02	0.248
		747.13		4.181E-03	9.370E-02	1.572E-01	1.994E-02	0.027
	+	91.11		9.645E-01	5.199E-01	7.063E-01	8.033E-02	1.366
		319.41		-2.515E+00	3.860E+00	6.169E+00	4.092E-01	-0.408

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PM-149 EU-152		439.89		6.424E+00	7.053E+00	1.226E+01	7.012E-01	0.524
		531.02	*	2.544E-02	6.130E-01	1.000E+00	1.344E-01	0.025
		285.90	*	-7.098E+00	1.388E+02	2.314E+02	3.390E+01	-0.031
		121.78		-2.539E-02	8.512E-02	1.369E-01	1.194E-02	-0.185
		244.69		2.628E-01	4.121E-01	6.288E-01	4.378E-02	0.418
		344.27	*	-9.977E-02	1.356E-01	1.549E-01	1.091E-02	-0.644
		443.98		1.013E-01	1.102E+00	1.819E+00	1.039E-01	0.056
		778.89		-8.940E-02	2.598E-01	4.189E-01	2.780E-02	-0.213
		867.32		-6.250E-01	8.899E-01	1.182E+00	9.478E-02	-0.529
		964.01		2.664E-01	3.492E-01	5.412E-01	4.364E-02	0.492
GD-153		1085.78		7.477E-02	3.506E-01	5.889E-01	4.034E-02	0.127
		1112.02		-2.468E-01	3.929E-01	5.227E-01	3.412E-02	-0.472
		1407.95		1.335E-02	1.967E-01	3.317E-01	2.474E-02	0.040
		69.67		-4.441E-02	2.498E+00	3.627E+00	4.094E-01	-0.012
		83.37		-6.900E+00	2.516E+01	2.982E+01	3.365E+00	-0.231
		97.43	*	-4.959E-03	1.097E-01	1.554E-01	1.492E-02	-0.032
		103.18		-2.258E-02	1.246E-01	2.025E-01	1.782E-02	-0.111
		123.07		2.268E-03	5.939E-02	9.692E-02	9.977E-03	0.023
		247.94		-7.748E-02	4.316E-01	6.532E-01	6.721E-02	-0.119
		591.81		-1.340E-01	7.159E-01	1.068E+00	1.019E-01	-0.125
EU-154		723.30		1.535E-01	1.944E-01	3.073E-01	2.186E-02	0.500
		756.87		1.008E-01	8.263E-01	1.394E+00	1.455E-01	0.072
		873.19		2.302E-01	2.778E-01	4.983E-01	5.928E-02	0.462
		996.32		-2.964E-01	4.123E-01	6.236E-01	1.084E-01	-0.475
		1004.76		-1.847E-01	2.305E-01	3.456E-01	3.795E-02	-0.534
		1274.45	*	7.301E-03	1.306E-01	2.129E-01	2.135E-02	0.034
		48.70		1.194E+00	6.836E+00	1.149E+01	1.478E+00	0.104
		60.01		-6.052E+00	8.921E+00	1.436E+01	1.755E+00	-0.422
	+	86.54		7.611E-02	1.702E-01	2.133E-01	2.460E-02	0.357
		105.31	*	4.800E-02	1.262E-01	2.097E-01	1.816E-02	0.229
TB-160	+	86.79		2.052E-01	4.589E-01	5.802E-01	6.663E-02	0.354
		197.04		3.045E-02	6.434E-01	1.034E+00	7.048E-02	0.029
		215.65		2.660E-01	8.577E-01	1.392E+00	9.606E-02	0.191
	+	298.57		7.244E-02	1.389E-01	2.290E-01	1.556E-02	0.316
		879.36	*	-2.180E-03	1.294E-01	2.140E-01	1.759E-02	-0.010
		962.29		3.237E-01	6.445E-01	9.710E-01	7.843E-02	0.333
		966.15		9.034E-01	2.880E-01	5.220E-01	4.200E-02	1.731
		1177.93		2.803E-01	4.005E-01	6.954E-01	3.997E-02	0.403
		1271.85		-4.779E-02	7.589E-01	1.220E+00	8.317E-02	-0.039
		80.57		-4.466E-01	4.618E-01	5.195E-01	5.803E-02	-0.860
HO-166M	+	184.41		1.117E-01	6.266E-02	7.970E-02	5.378E-03	1.401
		280.46		-6.176E-02	9.692E-02	1.567E-01	1.080E-02	-0.394
		410.95		1.326E-01	2.741E-01	4.648E-01	2.648E-02	0.285
		711.68	*	-5.822E-02	6.147E-02	9.430E-02	5.360E-03	-0.617
		752.31		9.835E-03	2.863E-01	4.796E-01	2.997E-02	0.021
		810.29		2.156E-02	6.086E-02	1.045E-01	7.430E-03	0.206
		51.35		-3.526E+01	7.535E+01	1.226E+02	1.694E+01	-0.288
		52.39		-3.746E+01	3.751E+01	5.905E+01	8.145E+00	-0.634
		59.40		-7.376E+01	5.023E+01	7.708E+01	9.485E+00	-0.957
TM-171								

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	66.72	*	-5.598E+01	4.500E+01	6.673E+01	7.674E+00	-0.839
		88.36		1.498E-01	3.351E-01	4.131E-01	4.740E-02	0.363
		201.83		-1.836E-02	3.372E-02	5.255E-02	3.595E-03	-0.349
		306.84	*	-2.720E-02	2.735E-02	4.286E-02	2.888E-03	-0.635
LU-177		401.10		-5.733E+00	7.626E+00	1.190E+01	6.762E-01	-0.482
		112.95		7.216E-01	2.059E+00	3.412E+00	2.671E-01	0.212
		208.36	*	2.106E+00	1.425E+00	2.420E+00	1.663E-01	0.870
LU-177M		52.97		-8.635E-01	3.707E+00	6.104E+00	8.384E-01	-0.141
		54.07		1.059E+00	1.844E+00	3.137E+00	4.252E-01	0.338
		61.30		1.580E+00	2.614E+00	4.396E+00	5.307E-01	0.359
		121.62		-1.250E-01	4.386E-01	7.060E-01	5.087E-02	-0.177
HF-181		147.16		5.947E-01	7.470E-01	1.249E+00	8.453E-02	0.476
		171.86		-3.428E-01	5.403E-01	8.427E-01	5.627E-02	-0.407
		218.09		-2.367E-01	9.652E-01	1.521E+00	1.051E-01	-0.156
		268.79		1.248E+00	8.594E-01	1.535E+00	1.064E-01	0.813
		319.02		-2.570E-01	2.865E-01	4.506E-01	2.990E-02	-0.570
		367.43		2.279E-01	1.036E+00	1.737E+00	1.052E-01	0.131
		413.65	*	9.003E-02	1.988E-01	3.365E-01	1.918E-02	0.268
		56.28		3.765E-01	1.924E+00	3.198E+00	4.177E-01	0.118
		57.53		-3.810E-01	9.926E-01	1.607E+00	2.050E-01	-0.237
		65.20		-1.257E+00	1.511E+00	2.382E+00	2.772E-01	-0.528
		133.02		-8.384E-02	7.681E-02	1.185E-01	8.218E-03	-0.707
		136.25		-5.346E-02	5.252E-01	8.492E-01	5.847E-02	-0.063
W-181		345.85		-4.220E-02	2.460E-01	3.280E-01	2.082E-02	-0.129
		482.03	*	1.306E-02	4.996E-02	8.312E-02	4.732E-03	0.157
		56.28		1.462E-01	7.452E-01	1.239E+00	1.618E-01	0.118
		57.53		-1.479E-01	3.848E-01	6.230E-01	7.945E-02	-0.237
TA-182		65.20	*	-4.835E-01	5.812E-01	9.158E-01	1.066E-01	-0.528
		67.75		6.977E-02	1.748E-01	2.596E-01	2.964E-02	0.269
		100.10		3.185E-02	2.147E-01	3.539E-01	3.255E-02	0.090
		152.43		3.154E-01	3.877E-01	6.484E-01	4.360E-02	0.487
RE-183		222.10		1.061E-01	3.986E-01	6.449E-01	4.465E-02	0.164
		1001.68		5.100E-01	2.235E+00	3.712E+00	2.872E-01	0.137
		1121.28	+	5.344E-01	2.026E-01	3.523E-01	2.258E-02	1.517
		1189.05		-1.949E-01	3.188E-01	4.834E-01	2.837E-02	-0.403
		1221.42	*	-3.911E-02	2.014E-01	3.202E-01	1.996E-02	-0.122
		1230.97		5.055E-01	5.093E-01	8.367E-01	5.308E-02	0.604
		57.98		-2.805E-01	3.859E-01	6.138E-01	7.761E-02	-0.457
		59.32		-3.137E-01	2.090E-01	3.198E-01	3.942E-02	-0.981
		67.20		-5.613E-02	3.076E-01	4.677E-01	5.360E-02	-0.120
		162.32	*	-4.881E-02	1.209E-01	1.914E-01	1.276E-02	-0.255
		208.81		1.373E+00	1.183E+00	1.985E+00	1.364E-01	0.691
		291.72		4.975E-01	1.185E+00	1.775E+00	1.213E-01	0.280
RE-184		57.98		-1.028E+00	1.414E+00	2.249E+00	2.843E-01	-0.457
		59.32		-1.148E+00	7.650E-01	1.171E+00	1.443E-01	-0.981
		67.20		-2.056E-01	1.126E+00	1.713E+00	1.963E-01	-0.120
		161.27		-1.241E-01	3.886E-01	6.179E-01	4.122E-02	-0.201
		216.55		5.436E-02	3.079E-01	4.962E-01	3.426E-02	0.110
		252.85	*	-1.048E-01	2.589E-01	4.260E-01	2.965E-02	-0.246

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		318.01		-4.015E-01	4.945E-01	7.821E-01	5.196E-02	-0.513
		792.07		4.744E-01	1.044E+00	1.804E+00	1.233E-01	0.263
		903.28		4.266E-01	1.236E+00	1.906E+00	1.620E-01	0.224
		920.93		-2.402E-01	4.995E-01	7.417E-01	6.220E-02	-0.324
		59.72		-4.490E-01	5.357E-01	8.545E-01	1.048E-01	-0.525
		61.14		1.332E-01	2.883E-01	4.828E-01	5.838E-02	0.276
		69.30		-2.420E-02	4.495E-01	6.514E-01	7.367E-02	-0.037
		592.07		-8.378E-01	2.885E+00	4.412E+00	2.379E-01	-0.190
		646.12	*	-1.058E-02	4.435E-02	6.970E-02	3.571E-03	-0.152
		717.42		-1.361E-01	8.951E-01	1.409E+00	8.117E-02	-0.097
RE-188		874.81		9.229E-02	5.463E-01	9.217E-01	7.507E-02	0.100
		880.27		3.597E-02	7.167E-01	1.194E+00	9.830E-02	0.030
		155.03	*	2.775E-02	1.978E-01	3.219E-01	2.159E-02	0.086
		477.96		6.081E-01	3.576E+00	5.915E+00	3.370E-01	0.103
W-188		633.10		-2.386E+00	2.892E+00	4.269E+00	2.218E-01	-0.559
		63.58		8.310E+01	8.674E+01	1.471E+02	1.737E+01	0.565
		227.08		-2.166E+00	1.431E+01	2.397E+01	1.663E+00	-0.090
IR-192	+	290.67	*	-3.615E-01	8.994E+00	1.302E+01	8.912E-01	-0.028
		295.96		7.927E-01	2.029E-01	2.911E-01	2.006E-02	2.723
	*	308.46		-5.744E-02	1.066E-01	1.720E-01	1.167E-02	-0.334
		316.51		-5.461E-03	3.785E-02	6.247E-02	4.175E-03	-0.087
		468.07		-2.649E-02	7.812E-02	1.247E-01	8.239E-03	-0.212
		604.41		1.200E-01	5.753E-01	8.199E-01	9.119E-02	0.146
AU-195		612.46		7.435E-01	9.222E-01	1.393E+00	1.002E-01	0.534
		65.12		-2.126E-01	2.696E-01	4.259E-01	4.960E-02	-0.499
	+	66.83		-1.869E-01	1.487E-01	2.203E-01	2.532E-02	-0.848
		75.70		1.379E+00	3.924E-01	5.563E-01	6.177E-02	2.479
		98.88	*	3.098E-01	2.744E-01	4.539E-01	4.254E-02	0.683
TL-200		129.76		4.225E+00	3.308E+00	5.637E+00	3.942E-01	0.750
		367.94	*	5.823E-04	3.308E+00	Half-Life	too short	
		579.30		1.406E-02	3.308E+00	Half-Life	too short	
		828.27		9.144E-03	3.308E+00	Half-Life	too short	
TL-201		1205.75		2.793E-03	3.308E+00	Half-Life	too short	
		68.90		3.332E+00	8.989E+00	1.333E+01	1.511E+00	0.250
		70.82		4.383E+00	5.137E+00	7.766E+00	8.720E-01	0.564
		80.30		-8.429E+00	9.642E+00	1.224E+01	1.366E+00	-0.689
TL-202		135.34		-1.715E+01	3.536E+01	5.616E+01	3.874E+00	-0.305
		167.43	*	1.197E+00	9.863E+00	1.600E+01	1.065E+00	0.075
		68.90		2.527E-01	6.817E-01	1.011E+00	1.146E-01	0.250
		70.82		3.315E-01	3.885E-01	5.873E-01	6.594E-02	0.564
		80.30		-6.376E-01	7.294E-01	9.257E-01	1.033E-01	-0.689
HG-203		439.56	*	3.805E-02	8.534E-02	1.441E-01	8.236E-03	0.264
		70.83		1.393E+00	1.622E+00	2.443E+00	3.759E-01	0.570
	+	72.87		2.655E+00	1.158E+00	1.633E+00	2.445E-01	1.626
		82.60		-1.340E+00	2.309E+00	2.278E+00	3.536E-01	-0.588
BI-207		279.20	*	3.564E-02	4.668E-02	8.090E-02	5.827E-03	0.440
	+	72.80		7.669E-01	3.256E-01	4.704E-01	5.246E-02	1.630
	+	74.97		4.543E-01	1.929E-01	3.081E-01	3.422E-02	1.475
		84.90		4.077E-01	2.792E-01	4.183E-01	4.754E-02	0.975

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207		569.67		1.852E-02	3.117E-02	5.304E-02	2.907E-03	0.349
		1063.62	*	-2.496E-02	5.399E-02	8.381E-02	5.955E-03	-0.298
		1770.23		-5.021E-01	6.497E-01	7.098E-01	4.395E-02	-0.707
		81.07		-4.333E-01	4.357E-01	4.095E-01	4.580E-02	-1.058
		83.78		-2.625E-02	1.934E-01	2.547E-01	2.879E-02	-0.103
		94.90		1.202E-01	2.991E-01	4.396E-01	4.408E-02	0.273
		122.32		-2.429E-01	2.008E+00	3.255E+00	2.577E-01	-0.075
		144.24		-4.113E-03	8.151E-01	1.288E+00	1.037E-01	-0.003
		154.21		4.358E-01	4.492E-01	7.552E-01	5.879E-02	0.577
		269.46		4.440E-01	1.979E-01	3.636E-01	2.601E-02	1.221
		323.87	*	-9.799E-01	8.123E-01	1.235E+00	2.076E-01	-0.793
	+	338.28		5.545E+00	1.953E+00	2.541E+00	2.769E-01	2.182
PO-209		445.03		4.188E-01	2.599E+00	4.309E+00	4.404E-01	0.097
		260.50		1.184E+00	1.096E+01	1.848E+01	1.285E+00	0.064
		262.80		-2.669E+00	2.911E+01	4.859E+01	3.376E+00	-0.055
		896.60	*	-1.810E+00	7.966E+00	1.289E+01	1.097E+00	-0.140
BI-210		46.50	*	-1.967E+00	1.161E+01	1.870E+01	1.942E+00	-0.105
PB-210		46.50	*	-1.967E+00	1.161E+01	1.870E+01	1.942E+00	-0.105
PO-210		46.50	*	-1.967E+00	1.161E+01	1.870E+01	1.796E+00	-0.105
PB-211		404.84	*	-3.035E-01	1.133E+00	1.757E+00	1.095E+00	-0.173
BI-212		427.08		6.603E-01	2.291E+00	3.779E+00	2.336E+00	0.175
		831.96		-2.979E-01	1.224E+00	1.963E+00	1.227E+00	-0.152
	+	727.18	*	6.638E-01	5.141E-01	6.352E-01	4.945E-02	1.045
		785.46		-6.371E-01	1.715E+00	2.759E+00	1.858E-01	-0.231
PO-215		1620.62		5.159E-01	1.137E+00	2.041E+00	1.404E-01	0.253
		81.07		-4.333E-01	4.357E-01	4.095E-01	4.580E-02	-1.058
		83.78		-2.625E-02	1.934E-01	2.547E-01	2.879E-02	-0.103
		94.90		1.202E-01	2.991E-01	4.396E-01	4.408E-02	0.273
		122.32		-2.429E-01	2.008E+00	3.255E+00	2.577E-01	-0.075
		144.24		-4.113E-03	8.151E-01	1.288E+00	1.037E-01	-0.003
		154.21		4.358E-01	4.492E-01	7.552E-01	5.879E-02	0.577
		269.46		4.440E-01	1.979E-01	3.636E-01	2.601E-02	1.221
		323.87	*	-9.799E-01	8.123E-01	1.235E+00	2.076E-01	-0.793
	+	338.28		5.545E+00	1.953E+00	2.541E+00	2.769E-01	2.182
		445.03		4.188E-01	2.599E+00	4.309E+00	4.404E-01	0.097
		271.23		2.622E-01	2.593E-01	4.542E-01	4.063E-02	0.577
RN-219		401.81	*	-2.287E-01	4.600E-01	7.313E-01	9.914E-02	-0.313
RN-220		549.76	*	1.346E+01	2.816E+01	4.747E+01	2.634E+00	0.284
RA-223		81.07		-4.333E-01	4.357E-01	4.095E-01	4.580E-02	-1.058
		83.78		-2.625E-02	1.934E-01	2.547E-01	2.879E-02	-0.103
		94.90		1.202E-01	2.991E-01	4.396E-01	4.408E-02	0.273
		122.32		-2.429E-01	2.008E+00	3.255E+00	2.577E-01	-0.075
AC-227		144.24		-4.113E-03	8.151E-01	1.288E+00	1.037E-01	-0.003
		154.21		4.358E-01	4.492E-01	7.552E-01	5.879E-02	0.577
		269.46		4.440E-01	1.979E-01	3.636E-01	2.601E-02	1.221
		323.87	*	-9.799E-01	8.123E-01	1.235E+00	2.076E-01	-0.793
	+	338.28		5.545E+00	1.953E+00	2.541E+00	2.769E-01	2.182
		445.03		4.188E-01	2.599E+00	4.309E+00	4.404E-01	0.097
		79.80		-8.437E-01	2.304E+00	3.260E+00	7.379E-01	-0.259

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		236.00		2.877E+00	4.961E-01	7.268E-01	8.093E-02	3.958
		256.20	*	1.833E-01	4.369E-01	7.466E-01	1.081E-01	0.246
		286.10		1.224E-01	1.689E+00	2.834E+00	3.438E-01	0.043
	+	299.80		9.138E-01	1.758E+00	2.928E+00	4.879E-01	0.312
		304.40		2.694E-01	2.206E+00	3.230E+00	5.698E-01	0.083
		334.20		-1.876E+00	3.012E+00	4.093E+00	7.597E-01	-0.458
		79.80		-8.437E-01	2.305E+00	3.260E+00	7.464E-01	-0.259
		94.00		7.143E+00	3.032E+00	4.204E+00	9.438E-01	1.699
		236.00		2.877E+00	4.728E-01	7.268E-01	7.149E-02	3.958
		256.20	*	1.833E-01	4.372E-01	7.466E-01	1.294E-01	0.246
TH-229		286.10		1.224E-01	1.693E+00	2.834E+00	2.841E+00	0.043
	+	299.80		9.138E-01	1.758E+00	2.928E+00	4.879E-01	0.312
		304.40		2.694E-01	2.206E+00	3.230E+00	5.698E-01	0.083
		334.20		-1.876E+00	3.012E+00	4.093E+00	7.597E-01	-0.458
		85.43		4.615E-01	2.741E-01	4.180E-01	4.764E-02	1.104
	+	88.47		8.625E-02	1.929E-01	2.353E-01	2.693E-02	0.367
		100.00		7.610E-02	2.209E-01	3.669E-01	3.380E-02	0.207
		193.63	*	3.529E-02	5.624E-01	9.050E-01	6.153E-02	0.039
		210.97		-3.180E-02	9.075E-01	1.449E+00	9.971E-02	-0.022
		283.67	*	-1.134E+00	1.682E+00	2.697E+00	3.848E-01	-0.420
PA-231		301.29		1.260E+00	7.166E-01	1.153E+00	1.271E-01	1.093
TH-231		81.07		-4.333E-01	4.357E-01	4.095E-01	4.580E-02	-1.058
		83.78		-2.625E-02	1.934E-01	2.547E-01	2.879E-02	-0.103
		94.90		1.202E-01	2.991E-01	4.396E-01	4.408E-02	0.273
		122.32		-2.429E-01	2.008E+00	3.255E+00	2.577E-01	-0.075
		144.24		-4.113E-03	8.151E-01	1.288E+00	1.037E-01	-0.003
		154.21		4.358E-01	4.492E-01	7.552E-01	5.879E-02	0.577
		269.46		4.440E-01	1.979E-01	3.636E-01	2.601E-02	1.221
		323.87	*	-9.799E-01	8.123E-01	1.235E+00	2.076E-01	-0.793
	+	338.28		5.545E+00	1.953E+00	2.541E+00	2.769E-01	2.182
		445.03		4.188E-01	2.599E+00	4.309E+00	4.404E-01	0.097
U-231		84.21		3.175E+00	9.186E+00	1.324E+01	1.500E+00	0.240
	+	92.29		8.099E+00	4.356E+00	5.704E+00	6.011E-01	1.420
		95.87	*	-8.323E-01	1.689E+00	2.330E+00	2.296E-01	-0.357
		108.00		-4.439E-01	2.845E+00	4.623E+00	3.824E-01	-0.096
	+	75.28		2.224E+01	6.928E+00	9.059E+00	1.528E+00	2.455
	+	86.59		1.237E+00	2.784E+00	3.472E+00	9.676E-01	0.356
	+	300.12		2.547E-01	4.895E-01	8.200E-01	1.139E-01	0.311
		311.98	*	5.436E-02	7.226E-02	1.252E-01	8.773E-03	0.434
		340.50		1.381E+00	7.780E-01	1.184E+00	2.738E-01	1.166
		398.62		9.866E-01	2.296E+00	3.855E+00	9.957E-01	0.256
PA-234		415.76		-9.459E-02	1.845E+00	3.025E+00	6.220E-01	-0.031
		63.00		2.289E+00	2.607E+00	4.385E+00	7.682E-01	0.522
		94.67		1.616E-01	2.174E-01	3.238E-01	4.355E-02	0.499
		98.44		8.350E-02	1.273E-01	1.833E-01	1.025E-01	0.456
		99.86		3.152E-01	5.577E-01	9.337E-01	8.619E-02	0.338
		111.00		-1.012E-01	2.149E-01	3.438E-01	4.005E-02	-0.295
		131.20		-6.145E-02	1.230E-01	1.956E-01	1.363E-02	-0.314
		152.70		4.421E-01	3.776E-01	6.305E-01	1.019E-01	0.701

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	186.00		4.020E+00	2.558E+00	2.836E+00	8.720E-01	1.418
		226.40		-6.928E-02	4.527E-01	7.582E-01	9.227E-02	-0.091
		227.20		-5.585E-02	4.794E-01	8.042E-01	5.579E-02	-0.069
		248.90		-1.363E-01	9.271E-01	1.506E+00	3.287E-01	-0.091
	+	293.70		4.944E+00	1.466E+00	1.804E+00	2.973E-01	2.741
		369.80		1.007E+00	9.614E-01	1.655E+00	3.457E-01	0.609
		568.70		4.019E-01	1.011E+00	1.694E+00	9.291E-02	0.237
		569.50		1.489E-01	2.794E-01	4.730E-01	2.592E-02	0.315
		574.00		-3.460E-01	1.531E+00	2.429E+00	1.327E-01	-0.142
		699.00		-5.375E-03	7.695E-01	1.290E+00	2.308E-01	-0.004
		706.10		1.060E+00	1.214E+00	2.009E+00	8.863E-01	0.527
		733.00		-2.367E-01	4.417E-01	5.878E-01	1.253E-01	-0.403
		742.81		-1.121E-01	1.412E+00	2.341E+00	1.567E+00	-0.048
		796.30		1.525E+00	9.985E-01	1.730E+00	4.593E-01	0.882
		805.60		5.573E-01	9.828E-01	1.699E+00	5.137E-01	0.328
		819.60		1.199E-01	1.241E+00	2.082E+00	7.857E-01	0.058
		826.30		-6.324E-01	9.067E-01	1.331E+00	5.926E-01	-0.475
		831.60		-4.163E-01	6.463E-01	9.879E-01	2.917E-01	-0.421
		876.40		8.709E-02	8.030E-01	1.337E+00	1.374E+00	0.065
		880.51		7.100E-02	2.542E-01	4.339E-01	3.576E-02	0.164
		883.24		-1.429E-01	2.790E-01	4.063E-01	2.730E-01	-0.352
		899.00		-2.764E-01	9.273E-01	1.477E+00	6.456E-01	-0.187
		925.00		-3.581E-02	1.289E+00	2.098E+00	1.754E-01	-0.017
		926.50		1.233E-02	1.939E-01	3.221E-01	8.113E-02	0.038
		946.00	*	3.706E-02	2.968E-01	4.959E-01	9.213E-02	0.075
		949.00		1.494E-01	4.280E-01	7.320E-01	5.989E-02	0.204
		980.50		-2.763E-01	7.093E-01	1.115E+00	8.833E-02	-0.248
		1394.10		1.486E-01	1.219E+00	2.067E+00	1.342E+00	0.072
PA-234M		766.42		2.550E+00	1.214E+01	2.037E+01	1.027E+01	0.125
		1001.03	*	2.653E+00	4.955E+00	8.461E+00	7.798E-01	0.314
TH-234		63.29	*	1.891E+00	2.207E+00	3.699E+00	7.300E-01	0.511
	+	92.38		1.800E+00	1.010E+00	1.264E+00	2.409E-01	1.424
		89.95		1.769E-02	2.291E+00	2.383E+00	7.538E-01	0.007
	+	93.35		2.164E+00	1.299E+00	1.438E+00	4.111E-01	1.505
		105.00		1.141E-01	1.238E+00	2.034E+00	6.068E-01	0.056
		143.76	*	-8.737E-02	2.548E-01	3.964E-01	6.614E-02	-0.220
		163.35		1.165E-02	5.132E-01	8.294E-01	1.516E-01	0.014
	+	185.71		1.489E-01	8.354E-02	1.051E-01	7.099E-03	1.417
		205.31		-6.826E-01	6.413E-01	9.552E-01	1.753E-01	-0.715
		94.67		1.238E-01	1.646E-01	2.457E-01	2.475E-02	0.504
		98.44		6.312E-02	8.973E-02	1.385E-01	1.308E-02	0.456
		111.00		-7.658E-02	1.624E-01	2.600E-01	2.079E-02	-0.295
		160.31	*	-4.924E-02	8.671E-02	1.361E-01	9.088E-03	-0.362
U-238		63.29	*	1.891E+00	2.207E+00	3.699E+00	7.300E-01	0.511
	+	92.38		1.800E+00	9.682E-01	1.264E+00	1.330E-01	1.424
		99.55		1.284E-01	1.874E-01	3.150E-01	2.921E-02	0.408
		117.00	*	-2.203E-02	2.165E-01	3.517E-01	2.643E-02	-0.063
		209.75		6.900E-01	9.207E-01	1.521E+00	1.046E-01	0.454
NP-239		228.18		-1.180E-02	2.531E-01	4.259E-01	2.956E-02	-0.028

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		277.60		3.020E-01	2.023E-01	3.610E-01	2.493E-02	0.836
		334.30		-9.839E-01	1.701E+00	2.335E+00	1.514E-01	-0.421
AM-241		59.54	*	-3.575E-01	2.866E-01	4.458E-01	5.673E-02	-0.802
CM-243		99.55		1.321E-01	1.928E-01	3.241E-01	3.006E-02	0.408
		103.76	*	-3.880E-02	1.158E-01	1.869E-01	1.631E-02	-0.208
		117.00		-2.267E-02	2.227E-01	3.618E-01	2.720E-02	-0.063
		209.75		6.802E-01	9.077E-01	1.500E+00	1.031E-01	0.454
		228.18		-1.192E-02	2.558E-01	4.304E-01	2.987E-02	-0.028
		277.60		3.044E-01	2.040E-01	3.640E-01	2.513E-02	0.836
AM-246		798.80		-2.709E-01	1.438E-01	1.929E-01	1.338E-02	-1.404
		1036.00		-1.170E-01	3.389E-01	5.365E-01	3.971E-02	-0.218
		1062.04		-7.712E-02	2.337E-01	3.686E-01	2.625E-02	-0.209
		1078.86	*	-1.000E-01	1.594E-01	2.436E-01	1.688E-02	-0.411
CM-247		278.00		1.282E+00	8.354E-01	1.493E+00	1.031E-01	0.859
		287.40		1.868E+00	1.380E+00	2.355E+00	1.616E-01	0.793
		402.60	*	-1.363E-02	4.418E-02	6.928E-02	3.940E-03	-0.197
CF-249		252.85		-3.918E-01	9.676E-01	1.592E+00	1.108E-01	-0.246
		333.44		-1.997E-01	2.325E-01	3.121E-01	2.026E-02	-0.640
		387.95	*	2.361E-02	4.521E-02	7.700E-02	4.415E-03	0.307
CF-251		176.60	*	1.131E-01	1.425E-01	2.377E-01	1.593E-02	0.476
		227.00		-7.461E-02	4.247E-01	7.105E-01	4.928E-02	-0.105
		285.00		-7.932E-01	1.945E+00	3.180E+00	2.186E-01	-0.249

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]G243624006      *
* Acquisition date   : 7-JAN-2010 14:44:34 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 02:00:01.10 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                          *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID        *
* Sample ID          : G243624006 Analyst initials: MXR1                 *
* Batch Number       : 937704 Sample Quantity : 1.3119E+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	1.912E+01	2.148E+00	5.428E-01	0.000E+00
CD-109	6.437E-01	1.411E+00	1.914E+00	0.000E+00
SN-126	6.317E-02	1.385E-01	1.746E-01	0.000E+00
BA-137M	2.708E-01	7.369E-02	5.927E-02	0.000E+00
CS-137	2.863E-01	7.792E-02	6.265E-02	0.000E+00
TL-208	4.106E-01	8.840E-02	6.226E-02	0.000E+00
BI-211	3.013E+00	4.893E-01	3.556E-01	0.000E+00
PB-212	1.138E+00	1.449E-01	1.081E-01	0.000E+00
PO-212	1.138E+00	1.449E-01	1.081E-01	0.000E+00
BI-214	9.139E-01	1.754E-01	1.176E-01	0.000E+00
PB-214	1.048E+00	1.784E-01	1.239E-01	0.000E+00
PO-214	1.048E+00	1.784E-01	1.239E-01	0.000E+00
PO-216	1.138E+00	1.449E-01	1.081E-01	0.000E+00
PO-218	1.048E+00	1.784E-01	1.239E-01	0.000E+00
RA-224	3.019E+00	1.416E+00	1.229E+00	0.000E+00
RA-226	9.139E-01	1.754E-01	1.176E-01	0.000E+00
AC-228	1.291E+00	3.329E-01	2.192E-01	0.000E+00
RA-228	1.291E+00	3.329E-01	2.192E-01	0.000E+00
TH-228	1.156E+00	1.473E-01	1.098E-01	0.000E+00
TH-230	9.139E-01	1.754E-01	1.176E-01	0.000E+00
TH-232	1.291E+00	3.329E-01	2.192E-01	0.000E+00
U-234	9.139E-01	1.754E-01	1.176E-01	0.000E+00
NP-237	1.855E-01	4.083E-01	5.233E-01	0.000E+00
AM-243	2.531E-01	1.053E-01	1.179E-01	0.000E+00
ANH-511	3.344E-02	7.158E-02	5.386E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	9.812E-02	3.636E-01	6.303E-01	0.000E+00 NOT IDENT.
NA-22	7.565E-04	4.565E-02	7.582E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.217E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.325E-02	2.576E-02	3.727E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.365E-02	8.990E-02	0.000E+00	NOT IDENT.
SC-46	4.056E-03	3.765E-02	6.491E-02	0.000E+00	FAIL ABUN
V-48	-3.462E-02	7.049E-02	1.126E-01	0.000E+00	NOT IDENT.
CR-51	-1.079E-01	4.064E-01	6.976E-01	0.000E+00	NOT IDENT.
MN-52	-1.165E-01	2.548E-01	3.949E-01	0.000E+00	NOT IDENT.
MN-54	-3.164E-02	3.752E-02	5.919E-02	0.000E+00	NOT IDENT.
CO-56	3.111E-02	3.855E-02	7.081E-02	0.000E+00	FAIL ABUN
CO-57	-8.570E-03	2.876E-02	4.925E-02	0.000E+00	NOT IDENT.
CO-58	1.699E-02	4.026E-02	7.166E-02	0.000E+00	NOT IDENT.
FE-59	6.323E-03	8.987E-02	1.519E-01	0.000E+00	NOT IDENT.
CO-60	2.367E-02	3.906E-02	6.975E-02	0.000E+00	NOT IDENT.
ZN-65	4.231E-02	9.832E-02	1.505E-01	0.000E+00	NOT IDENT.
GE-68	-2.777E-01	1.345E+00	2.212E+00	0.000E+00	NOT IDENT.
AS-73	7.374E-01	1.811E+00	3.303E+00	0.000E+00	NOT IDENT.
AS-74	-6.474E-02	1.006E-01	1.591E-01	0.000E+00	NOT IDENT.
SE-75	-6.703E-02	4.693E-02	7.607E-02	0.000E+00	NOT IDENT.
BR-77	-1.191E+00	1.440E+01	2.420E+01	0.000E+00	FAIL ABUN
SR-82	-4.405E-01	3.976E-01	6.142E-01	0.000E+00	NOT IDENT.
RB-83	-1.884E-03	7.159E-02	1.209E-01	0.000E+00	NOT IDENT.
RB-84	1.553E-02	6.390E-02	1.119E-01	0.000E+00	NOT IDENT.
KR-85	8.758E+00	8.765E+00	1.405E+01	0.000E+00	NOT IDENT.
SR-85	4.538E-02	4.541E-02	7.282E-02	0.000E+00	NOT IDENT.
RB-86	4.403E-01	8.800E-01	1.551E+00	0.000E+00	NOT IDENT.
Y-88	1.866E-02	3.483E-02	6.425E-02	0.000E+00	NOT IDENT.
ZR-88	-2.196E-02	3.328E-02	5.479E-02	0.000E+00	NOT IDENT.
Y-91	8.156E+00	1.964E+01	3.403E+01	0.000E+00	NOT IDENT.
NB-94	-2.952E-02	3.607E-02	5.861E-02	0.000E+00	NOT IDENT.
NB-95	2.276E-02	4.363E-02	7.781E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.072E-01	3.623E-01	0.000E+00	NOT IDENT.
ZR-95	2.576E-02	7.392E-02	1.311E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.420E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.567E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	6.816E-01	1.543E+01	2.675E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.728E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.884E-02	3.825E-02	6.444E-02	0.000E+00	NOT IDENT.
RH-102	-2.710E-03	3.275E-02	5.541E-02	0.000E+00	NOT IDENT.
RU-103	-3.811E-02	4.692E-02	7.440E-02	0.000E+00	FAIL ABUN
RH-106	-1.570E-01	3.469E-01	5.562E-01	0.000E+00	NOT IDENT.
RU-106	-1.570E-01	3.466E-01	5.562E-01	0.000E+00	NOT IDENT.
AG-108M	-2.429E-02	3.700E-02	6.046E-02	0.000E+00	NOT IDENT.
AG-110M	-1.001E-02	4.540E-02	6.332E-02	0.000E+00	NOT IDENT.
IN-111	2.486E-01	1.657E+00	2.580E+00	0.000E+00	NOT IDENT.
IN-113M	-3.398E-02	4.887E-02	8.032E-02	0.000E+00	NOT IDENT.
SN-113	-3.398E-02	4.887E-02	8.032E-02	0.000E+00	NOT IDENT.
IN-114M	7.525E-02	2.248E-01	3.403E-01	0.000E+00	NOT IDENT.
CD-115	-2.310E+00	1.478E+01	2.464E+01	0.000E+00	NOT IDENT.
SN-117M	-1.001E-03	6.239E-02	1.068E-01	0.000E+00	NOT IDENT.
SB-122	-8.419E-01	2.726E+00	4.465E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.227E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.286E-02	3.127E-02	5.252E-02	0.000E+00	NOT IDENT.
I-124	4.166E-01	9.178E-01	1.396E+00	0.000E+00	NOT IDENT.
SB-124	-3.655E-02	7.854E-02	1.201E-01	0.000E+00	NOT IDENT.
SB-125	-4.998E-02	1.001E-01	1.655E-01	0.000E+00	NOT IDENT.
TE-125M	2.038E+00	1.065E+01	1.872E+01	0.000E+00	NOT IDENT.
I-126	-5.471E-02	2.276E-01	3.155E-01	0.000E+00	NOT IDENT.
SB-126	-5.700E-02	1.712E-01	2.447E-01	0.000E+00	NOT IDENT.
SB-127	-5.663E-01	1.507E+00	2.527E+00	0.000E+00	NOT IDENT.
XE-127	-5.319E-02	5.503E-02	8.852E-02	0.000E+00	NOT IDENT.
I-131	6.235E-04	1.341E-01	2.321E-01	0.000E+00	NOT IDENT.
TE-132	-4.366E-02	9.378E-01	1.663E+00	0.000E+00	NOT IDENT.
BA-133	2.689E-02	4.680E-02	7.416E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.372E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	7.580E-02	4.718E-02	9.100E-02	0.000E+00	NOT IDENT.
CS-135	1.453E-01	1.661E-01	3.041E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.608E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.868E-02	1.050E-01	1.691E-01	0.000E+00	FAIL ABUN
CE-139	6.460E-04	3.269E-02	5.591E-02	0.000E+00	NOT IDENT.
BA-140	2.107E-02	2.860E-01	4.856E-01	0.000E+00	NOT IDENT.
LA-140	-4.566E-02	9.490E-02	1.484E-01	0.000E+00	NOT IDENT.
CE-141	5.702E-02	7.307E-02	1.295E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.304E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.044E-01	2.291E-01	3.770E-01	0.000E+00	NOT IDENT.
PM-144	6.954E-03	3.543E-02	6.238E-02	0.000E+00	NOT IDENT.
PR-144	4.714E-01	2.402E+00	4.230E+00	0.000E+00	NOT IDENT.
PM-146	1.343E-02	4.844E-02	8.422E-02	0.000E+00	NOT IDENT.
ND-147	2.544E-02	6.007E-01	1.018E+00	0.000E+00	FAIL ABUN

PM-149	-7.098E+00	1.360E+02	2.381E+02	0.000E+00	NOT IDENT.
EU-152	-9.977E-02	1.329E-01	1.588E-01	0.000E+00	NOT IDENT.
GD-153	-4.959E-03	1.075E-01	1.627E-01	0.000E+00	NOT IDENT.
EU-154	7.301E-03	1.280E-01	2.136E-01	0.000E+00	NOT IDENT.
EU-155	4.800E-02	1.237E-01	2.192E-01	0.000E+00	FAIL ABUN
TB-160	-2.180E-03	1.268E-01	2.161E-01	0.000E+00	FAIL ABUN
HO-166M	-5.822E-02	6.024E-02	9.556E-02	0.000E+00	FAIL ABUN
TM-171	-5.598E+01	4.410E+01	7.027E+01	0.000E+00	NOT IDENT.
LU-176	-2.720E-02	2.680E-02	4.405E-02	0.000E+00	FAIL ABUN
LU-177	2.106E+00	1.396E+00	2.503E+00	0.000E+00	NOT IDENT.
LU-177M	9.003E-02	1.948E-01	3.442E-01	0.000E+00	NOT IDENT.
HF-181	1.306E-02	4.896E-02	8.479E-02	0.000E+00	NOT IDENT.
W-181	-4.835E-01	5.696E-01	9.647E-01	0.000E+00	NOT IDENT.
TA-182	-3.911E-02	1.973E-01	3.215E-01	0.000E+00	FAIL ABUN
RE-183	-4.881E-02	1.185E-01	1.987E-01	0.000E+00	NOT IDENT.
RE-184	-1.048E-01	2.537E-01	4.391E-01	0.000E+00	NOT IDENT.
OS-185	-1.058E-02	4.346E-02	7.075E-02	0.000E+00	NOT IDENT.
RE-188	2.775E-02	1.939E-01	3.345E-01	0.000E+00	NOT IDENT.
W-188	-3.615E-01	8.814E+00	1.340E+01	0.000E+00	NOT IDENT.
IR-192	-5.461E-03	3.709E-02	6.417E-02	0.000E+00	FAIL ABUN
AU-195	3.098E-01	2.689E-01	4.750E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	9.479E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	1.197E+00	9.666E+00	1.660E+01	0.000E+00	NOT IDENT.
TL-202	3.805E-02	8.363E-02	1.472E-01	0.000E+00	NOT IDENT.
HG-203	3.564E-02	4.574E-02	8.327E-02	0.000E+00	FAIL ABUN
BI-207	-2.496E-02	5.291E-02	8.436E-02	0.000E+00	FAIL ABUN
TL-207	-9.799E-01	7.960E-01	1.268E+00	0.000E+00	FAIL ABUN
PO-209	-1.810E+00	7.807E+00	1.301E+01	0.000E+00	NOT IDENT.
BI-210	-1.967E+00	1.138E+01	1.980E+01	0.000E+00	NOT IDENT.
PB-210	-1.967E+00	1.138E+01	1.980E+01	0.000E+00	NOT IDENT.
PO-210	-1.967E+00	1.138E+01	1.980E+01	0.000E+00	NOT IDENT.
PB-211	-3.035E-01	1.111E+00	1.798E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.039E-01	6.434E-01	0.000E+00	FAIL ABUN
PO-215	-9.799E-01	7.960E-01	1.268E+00	0.000E+00	FAIL ABUN
RN-219	-2.287E-01	4.508E-01	7.482E-01	0.000E+00	NOT IDENT.
RN-220	1.346E+01	2.760E+01	4.832E+01	0.000E+00	NOT IDENT.
RA-223	-9.799E-01	7.960E-01	1.268E+00	0.000E+00	FAIL ABUN
AC-227	1.833E-01	4.281E-01	7.695E-01	0.000E+00	FAIL ABUN
TH-227	1.833E-01	4.285E-01	7.695E-01	0.000E+00	FAIL ABUN
TH-229	3.529E-02	5.511E-01	9.371E-01	0.000E+00	FAIL ABUN
PA-231	-1.134E+00	1.649E+00	2.775E+00	0.000E+00	NOT IDENT.
TH-231	-9.799E-01	7.960E-01	1.268E+00	0.000E+00	FAIL ABUN
U-231	-8.323E-01	1.656E+00	2.439E+00	0.000E+00	FAIL ABUN
PA-233	5.436E-02	7.081E-02	1.286E-01	0.000E+00	FAIL ABUN
PA-234	3.706E-02	2.909E-01	5.002E-01	0.000E+00	FAIL ABUN
PA-234M	2.653E+00	4.856E+00	8.525E+00	0.000E+00	NOT IDENT.
TH-234	1.891E+00	2.163E+00	3.899E+00	0.000E+00	FAIL ABUN
U-235	-8.737E-02	2.497E-01	4.124E-01	0.000E+00	FAIL ABUN
NP-236	-4.924E-02	8.498E-02	1.414E-01	0.000E+00	NOT IDENT.
U-238	1.891E+00	2.163E+00	3.899E+00	0.000E+00	FAIL ABUN
NP-239	-2.203E-02	2.121E-01	3.671E-01	0.000E+00	NOT IDENT.
AM-241	-3.575E-01	2.809E-01	4.703E-01	0.000E+00	NOT IDENT.
CM-243	-3.880E-02	1.135E-01	1.955E-01	0.000E+00	NOT IDENT.
AM-246	-1.000E-01	1.562E-01	2.451E-01	0.000E+00	NOT IDENT.
CM-247	-1.363E-02	4.329E-02	7.088E-02	0.000E+00	NOT IDENT.
CF-249	2.361E-02	4.431E-02	7.883E-02	0.000E+00	NOT IDENT.
CF-251	1.131E-01	1.397E-01	2.465E-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]G243624006.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 14:44:34.
Sample ID          : G243624006 Sample quantity : 1.31190E+02 GRAM
Detector name      : GAM15 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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	712	10.67*	9.988E-01	1.912E+01	1.912E+01	11.46
CD-109	88.03	36	3.72*	4.446E+00	6.283E-01	6.437E-01	223.67
SN-126	64.28	-----	9.60	1.930E+00	-----	Line Not Found	-----
	86.94	36	8.90	4.446E+00	2.626E-01	2.626E-01	227.30
	87.57	36	37.00*	4.446E+00	6.317E-02	6.317E-02	223.67
BA-137M	661.65	172	89.98*	2.019E+00	2.706E-01	2.708E-01	27.77
CS-137	661.65	172	85.12*	2.019E+00	2.860E-01	2.863E-01	27.77
TL-208	277.35	-----	6.80	3.788E+00	-----	Line Not Found	-----
	510.84	29	21.60	2.462E+00	1.548E-01	1.548E-01	218.56
	583.14	269	84.20*	2.230E+00	4.106E-01	4.106E-01	21.97
	860.37	26	12.46	1.612E+00	3.666E-01	3.666E-01	118.46
BI-211	72.87	183	1.27	3.130E+00	1.315E+01	1.315E+01	42.45
	351.07	437	12.94*	3.206E+00	3.013E+00	3.013E+00	16.57
PB-212	74.81	183	10.70	3.130E+00	1.561E+00	1.561E+00	43.47
	77.11	334	18.00	3.412E+00	1.557E+00	1.557E+00	28.45
	87.30	36	8.00	4.446E+00	2.922E-01	2.922E-01	223.90
	238.63	748	44.60*	4.220E+00	1.138E+00	1.138E+00	13.00
	300.09	21	3.41	3.585E+00	4.931E-01	4.931E-01	191.85
PO-212	74.81	183	10.70	3.130E+00	1.561E+00	1.561E+00	43.47
	77.11	334	18.00	3.412E+00	1.557E+00	1.557E+00	28.45
	87.30	36	8.00	4.446E+00	2.922E-01	2.922E-01	223.90
	115.19	-----	0.60	5.666E+00	-----	Line Not Found	-----
	238.63	748	44.60*	4.220E+00	1.138E+00	1.138E+00	13.00
	300.09	21	3.41	3.585E+00	4.931E-01	4.931E-01	191.85
BI-214	609.31	319	46.30*	2.156E+00	9.139E-01	9.139E-01	19.58
	1120.29	75	15.10	1.263E+00	1.123E+00	1.124E+00	38.48
	1764.49	28	15.80	8.812E-01	5.847E-01	5.847E-01	75.40
PB-214	74.81	183	6.21	3.130E+00	2.690E+00	2.690E+00	43.10
	77.11	334	10.50	3.412E+00	2.669E+00	2.669E+00	29.45
	87.30	36	4.67	4.446E+00	5.005E-01	5.005E-01	223.81
	241.98	174	7.49	4.180E+00	1.592E+00	1.592E+00	48.20
	295.21	251	19.20	3.630E+00	1.030E+00	1.030E+00	26.33

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	351.92	437	37.20*	3.206E+00	1.048E+00	1.048E+00	17.37
	74.81	183	6.21	3.130E+00	2.690E+00	2.690E+00	43.10
	77.11	334	10.50	3.412E+00	2.669E+00	2.669E+00	29.45
	87.30	36	4.67	4.446E+00	5.005E-01	5.005E-01	223.81
	241.98	174	7.49	4.180E+00	1.592E+00	1.592E+00	48.20
PO-216	295.21	251	19.20	3.630E+00	1.030E+00	1.030E+00	26.33
	351.92	437	37.20*	3.206E+00	1.048E+00	1.048E+00	17.37
	74.81	183	10.70	3.130E+00	1.561E+00	1.561E+00	43.47
	77.11	334	18.00	3.412E+00	1.557E+00	1.557E+00	28.45
	87.30	36	8.00	4.446E+00	2.922E-01	2.922E-01	223.90
PO-218	238.63	748	44.60*	4.220E+00	1.138E+00	1.138E+00	13.00
	300.09	21	3.41	3.585E+00	4.931E-01	4.931E-01	191.85
	74.81	183	6.21	3.130E+00	2.690E+00	2.690E+00	43.10
	77.11	334	10.50	3.412E+00	2.669E+00	2.669E+00	29.45
	87.30	36	4.67	4.446E+00	5.005E-01	5.005E-01	223.81
RA-224	241.98	174	7.49	4.180E+00	1.592E+00	1.592E+00	48.20
	295.21	251	19.20	3.630E+00	1.030E+00	1.030E+00	26.33
	351.92	437	37.20*	3.206E+00	1.048E+00	1.048E+00	17.37
	240.98	174	3.95*	4.180E+00	3.019E+00	3.019E+00	47.87
	609.31	319	46.30*	2.156E+00	9.139E-01	9.139E-01	19.58
AC-228	1120.29	75	15.10	1.263E+00	1.123E+00	1.123E+00	38.48
	1764.49	28	15.80	8.812E-01	5.847E-01	5.847E-01	75.40
	338.32	174	11.40	3.295E+00	1.328E+00	1.328E+00	52.83
	911.07	191	27.70*	1.531E+00	1.291E+00	1.291E+00	26.32
	969.11	61	16.60	1.446E+00	7.260E-01	7.260E-01	80.62
RA-228	338.32	174	11.40	3.295E+00	1.328E+00	1.328E+00	52.83
	911.07	191	27.70*	1.531E+00	1.291E+00	1.291E+00	26.32
	969.11	61	16.60	1.446E+00	7.260E-01	7.260E-01	80.62
	74.81	183	10.70	3.130E+00	1.561E+00	1.586E+00	42.47
	77.11	334	18.00	3.412E+00	1.557E+00	1.582E+00	28.45
TH-228	87.30	36	8.00	4.446E+00	2.922E-01	2.969E-01	223.67
	238.63	748	44.60*	4.220E+00	1.138E+00	1.156E+00	13.00
	300.09	21	3.41	3.585E+00	4.931E-01	5.010E-01	200.53
	609.31	319	46.30*	2.156E+00	9.139E-01	9.139E-01	19.58
	1120.29	75	15.10	1.263E+00	1.123E+00	1.123E+00	38.48
TH-232	1764.49	28	15.80	8.812E-01	5.847E-01	5.847E-01	75.40
	338.32	174	11.40	3.295E+00	1.328E+00	1.328E+00	34.10
	911.07	191	27.70*	1.531E+00	1.291E+00	1.291E+00	26.32
	969.11	61	16.60	1.446E+00	7.260E-01	7.260E-01	80.62
	609.31	319	46.30*	2.156E+00	9.139E-01	9.139E-01	19.58
U-234	1120.29	75	15.10	1.263E+00	1.123E+00	1.123E+00	38.48
	1764.49	28	15.80	8.812E-01	5.847E-01	5.847E-01	75.40
	86.50	36	12.60*	4.446E+00	1.855E-01	1.855E-01	224.62
	95.87	-----	2.60	5.041E+00	-----	Line Not Found	-----
	74.67	183	66.00*	3.130E+00	2.531E-01	2.531E-01	42.45
AM-243	86.72	36	0.34	4.446E+00	6.956E+00	6.956E+00	223.67
	117.66	-----	0.55	5.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.637E+00	-----	Line Not Found	-----
	511.00	29	100.00*	2.462E+00	3.344E-02	3.344E-02	218.40

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	1.912E+01	1.912E+01	0.219E+01	11.46	
CD-109	464.00D	1.02	6.283E-01	6.437E-01	14.40E-01	223.67	
SN-126	1.00E+05Y	1.00	6.317E-02	6.317E-02	14.13E-02	223.67	
BA-137M	30.17Y	1.00	2.706E-01	2.708E-01	0.752E-01	27.77	
CS-137	30.17Y	1.00	2.860E-01	2.863E-01	0.795E-01	27.77	
TL-208	1.41E+10Y	1.00	4.106E-01	4.106E-01	0.902E-01	21.97	
BI-211	7.04E+08Y	1.00	3.013E+00	3.013E+00	0.499E+00	16.57	
PB-212	1.41E+10Y	1.00	1.138E+00	1.138E+00	0.148E+00	13.00	
PO-212	1.41E+10Y	1.00	1.138E+00	1.138E+00	0.148E+00	13.00	
BI-214	1600.00Y	1.00	9.139E-01	9.139E-01	1.789E-01	19.58	
PB-214	1600.00Y	1.00	1.048E+00	1.048E+00	0.182E+00	17.37	
PO-214	1600.00Y	1.00	1.048E+00	1.048E+00	0.182E+00	17.37	
PO-216	1.41E+10Y	1.00	1.138E+00	1.138E+00	0.148E+00	13.00	
PO-218	1600.00Y	1.00	1.048E+00	1.048E+00	0.182E+00	17.37	
RA-224	1.41E+10Y	1.00	3.019E+00	3.019E+00	1.445E+00	47.87	
RA-226	1600.00Y	1.00	9.139E-01	9.139E-01	1.789E-01	19.58	
AC-228	1.41E+10Y	1.00	1.291E+00	1.291E+00	0.340E+00	26.32	
RA-228	1.41E+10Y	1.00	1.291E+00	1.291E+00	0.340E+00	26.32	
TH-228	1.91Y	1.02	1.138E+00	1.156E+00	0.150E+00	13.00	
TH-230	4.47E+09Y	1.00	9.139E-01	9.139E-01	1.789E-01	19.58	
TH-232	1.41E+10Y	1.00	1.291E+00	1.291E+00	0.340E+00	26.32	
U-234	4.47E+09Y	1.00	9.139E-01	9.139E-01	1.789E-01	19.58	
NP-237	2.14E+06Y	1.00	1.855E-01	1.855E-01	4.167E-01	224.62	
AM-243	7380.00Y	1.00	2.531E-01	2.531E-01	1.074E-01	42.45	
ANH-511	1.00E+09Y	1.00	3.344E-02	3.344E-02	7.304E-02	218.40	

Total Activity : 4.251E+01 4.254E+01

Grand Total Activity : 4.251E+01 4.254E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G243624006

Page : 5
Acquisition date : 7-JAN-2010 14:44:34

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.42	165	428	1.49	185.31	181	10	2.29E-02	52.7	4.83E+00	T
0	185.13	140	306	1.23	370.66	365	12	1.95E-02	55.7	4.99E+00	T
0	726.77	51	64	2.26	1453.54	1445	15	7.10E-03	77.1	1.87E+00	T
0	1237.57	34	35	1.94	2474.91	2471	11	4.75E-03	73.9	1.15E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624006.CNF;1  *
* Acquisition date   : 7-JAN-2010 14:44:34.  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 02:00:01.10             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G243624006             Analyst initials: MXR1          *
* Batch Number       : 937704                 Sample Quantity : 1.31190E+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	1.912E+01	2.192E+00	5.422E-01	4.145E-02	35.266
CD-109	6.437E-01	1.440E+00	1.825E+00	2.111E-01	0.353
SN-126	6.317E-02	1.413E-01	1.665E-01	1.921E-02	0.379
BA-137M	2.708E-01	7.520E-02	5.841E-02	2.939E-03	4.637
CS-137	2.863E-01	7.951E-02	6.175E-02	3.124E-03	4.637
TL-208	4.106E-01	9.021E-02	6.123E-02	3.898E-03	6.705
BI-211	3.013E+00	4.992E-01	3.468E-01	2.383E-02	8.689
PB-212	1.138E+00	1.479E-01	1.047E-01	8.669E-03	10.862
PO-212	1.138E+00	1.479E-01	1.047E-01	8.669E-03	10.862
BI-214	9.139E-01	1.789E-01	1.157E-01	8.591E-03	7.898
PB-214	1.048E+00	1.821E-01	1.209E-01	1.042E-02	8.672
PO-214	1.048E+00	1.821E-01	1.209E-01	1.042E-02	8.672
PO-216	1.138E+00	1.479E-01	1.047E-01	8.669E-03	10.862
PO-218	1.048E+00	1.821E-01	1.209E-01	1.042E-02	8.672
RA-224	3.019E+00	1.445E+00	1.192E+00	8.294E-02	2.534
RA-226	9.139E-01	1.789E-01	1.157E-01	8.591E-03	7.898
AC-228	1.291E+00	3.397E-01	2.172E-01	2.415E-02	5.941
RA-228	1.291E+00	3.397E-01	2.172E-01	2.415E-02	5.941

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.156E+00	1.503E-01	1.064E-01	8.810E-03	10.862
TH-230	9.139E-01	1.789E-01	1.157E-01	8.591E-03	7.898
TH-232	1.291E+00	3.397E-01	2.172E-01	2.415E-02	5.941
U-234	9.139E-01	1.789E-01	1.157E-01	8.591E-03	7.898
NP-237	1.855E-01	4.167E-01	4.989E-01	1.178E-01	0.372
AM-243	2.531E-01	1.074E-01	1.121E-01	1.246E-02	2.257
ANH-511	3.344E-02	7.304E-02	5.285E-02	2.984E-03	0.633

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	9.812E-02		3.710E-01	6.178E-01	4.117E-02	0.159
NA-22	7.565E-04		4.658E-02	7.556E-02	5.186E-03	0.010
NA-24	-1.487E+00		1.131E+00	Half-Life	too short	
AL-26	-1.325E-02		2.629E-02	3.737E-02	2.236E-03	-0.355
TI-44	1.548E-01		5.475E-02	8.559E-02	9.516E-03	1.808
SC-46	4.056E-03		3.842E-02	6.429E-02	5.393E-03	0.063
V-48	-3.462E-02		7.192E-02	1.117E-01	8.823E-03	-0.310
CR-51	-1.079E-01		4.147E-01	6.793E-01	4.899E-02	-0.159
MN-52	-1.165E-01		2.600E-01	3.944E-01	2.924E-02	-0.295
MN-54	-3.164E-02		3.829E-02	5.856E-02	4.389E-03	-0.540
CO-56	3.111E-02		3.934E-02	7.008E-02	5.386E-03	0.444
CO-57	-8.570E-03		2.935E-02	4.722E-02	3.395E-03	-0.182
CO-58	1.699E-02		4.108E-02	7.087E-02	5.063E-03	0.240
FE-59	6.323E-03		9.170E-02	1.510E-01	1.143E-02	0.042
CO-60	2.367E-02		3.986E-02	6.957E-02	5.250E-03	0.340
ZN-65	4.231E-02		1.003E-01	1.497E-01	9.724E-03	0.283
GE-68	-2.777E-01		1.372E+00	2.198E+00	1.527E-01	-0.126
AS-73	7.374E-01		1.848E+00	3.126E+00	4.272E-01	0.236
AS-74	-6.474E-02		1.026E-01	1.565E-01	8.415E-03	-0.414
SE-75	-6.703E-02		4.789E-02	7.384E-02	5.164E-03	-0.908
BR-77	-1.191E+00		1.470E+01	2.376E+01	1.337E+00	-0.050
SR-82	-4.405E-01		4.057E-01	6.070E-01	4.007E-02	-0.726
RB-83	-1.884E-03		7.305E-02	1.186E-01	6.675E-03	-0.016
RB-84	1.553E-02		6.521E-02	1.108E-01	9.149E-03	0.140
KR-85	8.758E+00		8.944E+00	1.379E+01	7.780E-01	0.635
SR-85	4.538E-02		4.634E-02	7.147E-02	4.031E-03	0.635
RB-86	4.403E-01		8.980E-01	1.541E+00	1.072E-01	0.286
Y-88	1.866E-02		3.554E-02	6.444E-02	3.764E-03	0.290
ZR-88	-2.196E-02		3.396E-02	5.353E-02	3.036E-03	-0.410
Y-91	8.156E+00		2.004E+01	3.388E+01	2.049E+00	0.241
NB-94	-2.952E-02		3.681E-02	5.782E-02	3.216E-03	-0.511
NB-95	2.276E-02		4.452E-02	7.688E-02	4.954E-03	0.296
NB-95M	1.065E+00		2.114E-01	3.511E-01	2.966E-02	3.033
ZR-95	2.576E-02		7.543E-02	1.295E-01	9.656E-03	0.199
NB-97	2.276E-03		1.745E-01	Half-Life	too short	
ZR-97	1.464E+01		3.350E+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	6.816E-01		1.575E+01	2.642E+01	3.671E+00	0.026
TC-99M	2.605E+11		3.433E+11	Half-Life too short		
RH-101	1.884E-02		3.903E-02	6.226E-02	4.247E-03	0.303
RH-102	-2.710E-03		3.341E-02	5.430E-02	3.095E-03	-0.050
RU-103	-3.811E-02		4.788E-02	7.298E-02	9.185E-03	-0.522
RH-106	-1.570E-01		3.540E-01	5.476E-01	6.285E-02	-0.287
RU-106	-1.570E-01		3.536E-01	5.476E-01	2.877E-02	-0.287
AG-108M	-2.429E-02		3.775E-02	5.917E-02	3.679E-03	-0.411
AG-110M	-1.001E-02		4.633E-02	6.240E-02	3.420E-03	-0.160
IN-111	2.486E-01		1.691E+00	2.502E+00	1.742E-01	0.099
IN-113M	-3.398E-02		4.986E-02	7.847E-02	4.760E-03	-0.433
SN-113	-3.398E-02		4.986E-02	7.847E-02	4.760E-03	-0.433
IN-114M	7.525E-02		2.294E-01	3.285E-01	2.228E-02	0.229
CD-115	-2.310E+00		1.508E+01	2.419E+01	1.357E+00	-0.096
SN-117M	-1.001E-03		6.366E-02	1.028E-01	6.873E-03	-0.010
SB-122	-8.419E-01		2.781E+00	4.389E+00	2.415E-01	-0.192
I-123	-9.155E+00		1.136E+01	Half-Life too short		
TE-123M	-1.286E-02		3.191E-02	5.057E-02	3.414E-03	-0.254
I-124	4.166E-01		9.365E-01	1.374E+00	7.345E-02	0.303
SB-124	-3.655E-02		8.014E-02	1.203E-01	8.446E-03	-0.304
SB-125	-4.998E-02		1.021E-01	1.619E-01	9.649E-03	-0.309
TE-125M	2.038E+00		1.087E+01	1.791E+01	1.781E+00	0.114
I-126	-5.471E-02		2.322E-01	3.110E-01	1.583E-02	-0.176
SB-126	-5.700E-02		1.747E-01	2.415E-01	1.402E-02	-0.236
SB-127	-5.663E-01		1.537E+00	2.492E+00	2.371E-01	-0.227
XE-127	-5.319E-02		5.616E-02	8.556E-02	5.858E-03	-0.622
I-131	6.235E-04		1.368E-01	2.265E-01	1.530E-02	0.003
TE-132	-4.366E-02		9.569E-01	1.610E+00	2.424E-01	-0.027
BA-133	2.689E-02		4.776E-02	7.234E-02	8.518E-03	0.372
I-133	-2.951E-03		7.002E-03	Half-Life too short		
CS-134	7.580E-02		4.814E-02	8.997E-02	6.269E-03	0.842
CS-135	1.453E-01		1.694E-01	2.952E-01	2.524E-02	0.492
I-135	-4.774E+10		3.882E+10	Half-Life too short		
CS-136	-3.868E-02		1.072E-01	1.680E-01	1.294E-02	-0.230
CE-139	6.460E-04		3.336E-02	5.387E-02	3.582E-03	0.012
BA-140	2.107E-02		2.919E-01	4.769E-01	1.549E-01	0.044
LA-140	-4.566E-02		9.683E-02	1.484E-01	1.035E-02	-0.308
CE-141	5.702E-02		7.457E-02	1.245E-01	8.691E-03	0.458
CE-143	1.621E-03	+	2.706E-04	Half-Life too short		
CE-144	-2.044E-01		2.338E-01	3.619E-01	5.320E-02	-0.565
PM-144	6.954E-03		3.615E-02	6.154E-02	3.376E-03	0.113
PR-144	4.714E-01		2.451E+00	4.172E+00	2.287E-01	0.113
PM-146	1.343E-02		4.943E-02	8.249E-02	7.064E-03	0.163
ND-147	2.544E-02		6.130E-01	1.000E+00	1.344E-01	0.025
PM-149	-7.098E+00		1.388E+02	2.314E+02	3.390E+01	-0.031
EU-152	-9.977E-02		1.356E-01	1.549E-01	1.091E-02	-0.644
GD-153	-4.959E-03		1.097E-01	1.554E-01	1.492E-02	-0.032
EU-154	7.301E-03		1.306E-01	2.129E-01	2.135E-02	0.034

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	4.800E-02		1.262E-01	2.097E-01	1.816E-02	0.229
TB-160	-2.180E-03		1.294E-01	2.140E-01	1.759E-02	-0.010
HO-166M	-5.822E-02		6.147E-02	9.430E-02	5.360E-03	-0.617
TM-171	-5.598E+01		4.500E+01	6.673E+01	7.674E+00	-0.839
LU-176	-2.720E-02		2.735E-02	4.286E-02	2.888E-03	-0.635
LU-177	2.106E+00		1.425E+00	2.420E+00	1.663E-01	0.870
LU-177M	9.003E-02		1.988E-01	3.365E-01	1.918E-02	0.268
HF-181	1.306E-02		4.996E-02	8.312E-02	4.732E-03	0.157
W-181	-4.835E-01		5.812E-01	9.158E-01	1.066E-01	-0.528
TA-182	-3.911E-02		2.014E-01	3.202E-01	1.996E-02	-0.122
RE-183	-4.881E-02		1.209E-01	1.914E-01	1.276E-02	-0.255
RE-184	-1.048E-01		2.589E-01	4.260E-01	2.965E-02	-0.246
OS-185	-1.058E-02		4.435E-02	6.970E-02	3.571E-03	-0.152
RE-188	2.775E-02		1.978E-01	3.219E-01	2.159E-02	0.086
W-188	-3.615E-01		8.994E+00	1.302E+01	8.912E-01	-0.028
IR-192	-5.461E-03		3.785E-02	6.247E-02	4.175E-03	-0.087
AU-195	3.098E-01		2.744E-01	4.539E-01	4.254E-02	0.683
TL-200	5.823E-04		4.836E-04	Half-Life too short		
TL-201	1.197E+00		9.863E+00	1.600E+01	1.065E+00	0.075
TL-202	3.805E-02		8.534E-02	1.441E-01	8.236E-03	0.264
HG-203	3.564E-02		4.668E-02	8.090E-02	5.827E-03	0.440
BI-207	-2.496E-02		5.399E-02	8.381E-02	5.955E-03	-0.298
TL-207	-9.799E-01		8.123E-01	1.235E+00	2.076E-01	-0.793
PO-209	-1.810E+00		7.966E+00	1.289E+01	1.097E+00	-0.140
BI-210	-1.967E+00		1.161E+01	1.870E+01	1.942E+00	-0.105
PB-210	-1.967E+00		1.161E+01	1.870E+01	1.942E+00	-0.105
PO-210	-1.967E+00		1.161E+01	1.870E+01	1.796E+00	-0.105
PB-211	-3.035E-01		1.133E+00	1.757E+00	1.095E+00	-0.173
BI-212	6.638E-01	+	5.141E-01	6.352E-01	4.945E-02	1.045
PO-215	-9.799E-01		8.123E-01	1.235E+00	2.076E-01	-0.793
RN-219	-2.287E-01		4.600E-01	7.313E-01	9.914E-02	-0.313
RN-220	1.346E+01		2.816E+01	4.747E+01	2.634E+00	0.284
RA-223	-9.799E-01		8.123E-01	1.235E+00	2.076E-01	-0.793
AC-227	1.833E-01		4.369E-01	7.466E-01	1.081E-01	0.246
TH-227	1.833E-01		4.372E-01	7.466E-01	1.294E-01	0.246
TH-229	3.529E-02		5.624E-01	9.050E-01	6.153E-02	0.039
PA-231	-1.134E+00		1.682E+00	2.697E+00	3.848E-01	-0.420
TH-231	-9.799E-01		8.123E-01	1.235E+00	2.076E-01	-0.793
U-231	-8.323E-01		1.689E+00	2.330E+00	2.296E-01	-0.357
PA-233	5.436E-02		7.226E-02	1.252E-01	8.773E-03	0.434
PA-234	3.706E-02		2.968E-01	4.959E-01	9.213E-02	0.075
PA-234M	2.653E+00		4.955E+00	8.461E+00	7.798E-01	0.314
TH-234	1.891E+00		2.207E+00	3.699E+00	7.300E-01	0.511
U-235	-8.737E-02		2.548E-01	3.964E-01	6.614E-02	-0.220
NP-236	-4.924E-02		8.671E-02	1.361E-01	9.088E-03	-0.362
U-238	1.891E+00		2.207E+00	3.699E+00	7.300E-01	0.511
NP-239	-2.203E-02		2.165E-01	3.517E-01	2.643E-02	-0.063
AM-241	-3.575E-01		2.866E-01	4.458E-01	5.673E-02	-0.802

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-3.880E-02		1.158E-01	1.869E-01	1.631E-02	-0.208
AM-246	-1.000E-01		1.594E-01	2.436E-01	1.688E-02	-0.411
CM-247	-1.363E-02		4.418E-02	6.928E-02	3.940E-03	-0.197
CF-249	2.361E-02		4.521E-02	7.700E-02	4.415E-03	0.307
CF-251	1.131E-01		1.425E-01	2.377E-01	1.593E-02	0.476

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]G243624006           *
* Acquisition date   : 7-JAN-2010 14:44:34 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 02:00:01.10 Half life ratio : 8.000   *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date       : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G243624006 Analyst initials: MXR1           *
* Batch Number      : 937704 Sample Quantity : 1.3119E+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	1.912E+01	2.148E+00	2.715E-01	1.096E+00
CD-109	6.437E-01	1.411E+00	9.575E-01	7.199E-01
SN-126	6.317E-02	1.385E-01	8.734E-02	7.065E-02
BA-137M	2.708E-01	7.369E-02	2.965E-02	3.760E-02
CS-137	2.863E-01	7.792E-02	3.134E-02	3.975E-02
TL-208	4.106E-01	8.840E-02	3.115E-02	4.510E-02
BI-211	3.013E+00	4.893E-01	1.779E-01	2.496E-01
PB-212	1.138E+00	1.449E-01	5.407E-02	7.395E-02
PO-212	1.138E+00	1.449E-01	5.407E-02	7.395E-02
BI-214	9.139E-01	1.754E-01	5.882E-02	8.947E-02
PB-214	1.048E+00	1.784E-01	6.200E-02	9.104E-02
PO-214	1.048E+00	1.784E-01	6.200E-02	9.104E-02
PO-216	1.138E+00	1.449E-01	5.407E-02	7.395E-02
PO-218	1.048E+00	1.784E-01	6.200E-02	9.104E-02
RA-224	3.019E+00	1.416E+00	6.151E-01	7.226E-01
RA-226	9.139E-01	1.754E-01	5.882E-02	8.947E-02
AC-228	1.291E+00	3.329E-01	1.097E-01	1.698E-01
RA-228	1.291E+00	3.329E-01	1.097E-01	1.698E-01
TH-228	1.156E+00	1.473E-01	5.494E-02	7.515E-02
TH-230	9.139E-01	1.754E-01	5.882E-02	8.946E-02
TH-232	1.291E+00	3.329E-01	1.097E-01	1.698E-01
U-234	9.139E-01	1.754E-01	5.882E-02	8.946E-02
NP-237	1.855E-01	4.083E-01	2.618E-01	2.083E-01
AM-243	2.531E-01	1.053E-01	5.898E-02	5.372E-02
ANH-511	3.344E-02	7.158E-02	2.694E-02	3.652E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	9.812E-02	3.636E-01	3.153E-01	1.855E-01 NOT IDENT.
NA-22	7.565E-04	4.565E-02	3.793E-02	2.329E-02 NOT IDENT.

NA-24	-1.487E+06	2.217E+06	0.000E+00	1.131E+06	SHORT HLIF
AL-26	-1.325E-02	2.576E-02	1.865E-02	1.314E-02	NOT IDENT.
TI-44	1.548E-01	5.365E-02	4.498E-02	2.737E-02	NOT IDENT.
SC-46	4.056E-03	3.765E-02	3.247E-02	1.921E-02	FAIL ABUN
V-48	-3.462E-02	7.049E-02	5.632E-02	3.596E-02	NOT IDENT.
CR-51	-1.079E-01	4.064E-01	3.490E-01	2.073E-01	NOT IDENT.
MN-52	-1.165E-01	2.548E-01	1.976E-01	1.300E-01	NOT IDENT.
MN-54	-3.164E-02	3.752E-02	2.961E-02	1.914E-02	NOT IDENT.
CO-56	3.111E-02	3.855E-02	3.543E-02	1.967E-02	FAIL ABUN
CO-57	-8.570E-03	2.876E-02	2.464E-02	1.467E-02	NOT IDENT.
CO-58	1.699E-02	4.026E-02	3.585E-02	2.054E-02	NOT IDENT.
FE-59	6.323E-03	8.987E-02	7.601E-02	4.585E-02	NOT IDENT.
CO-60	2.367E-02	3.906E-02	3.489E-02	1.993E-02	NOT IDENT.
ZN-65	4.231E-02	9.832E-02	7.531E-02	5.016E-02	NOT IDENT.
GE-68	-2.777E-01	1.345E+00	1.107E+00	6.860E-01	NOT IDENT.
AS-73	7.374E-01	1.811E+00	1.653E+00	9.241E-01	NOT IDENT.
AS-74	-6.474E-02	1.006E-01	7.959E-02	5.130E-02	NOT IDENT.
SE-75	-6.703E-02	4.693E-02	3.806E-02	2.394E-02	NOT IDENT.
BR-77	-1.191E+00	1.440E+01	1.211E+01	7.349E+00	FAIL ABUN
SR-82	-4.405E-01	3.976E-01	3.073E-01	2.029E-01	NOT IDENT.
RB-83	-1.884E-03	7.159E-02	6.046E-02	3.653E-02	NOT IDENT.
RB-84	1.553E-02	6.390E-02	5.597E-02	3.260E-02	NOT IDENT.
KR-85	8.758E+00	8.765E+00	7.032E+00	4.472E+00	NOT IDENT.
SR-85	4.538E-02	4.541E-02	3.643E-02	2.317E-02	NOT IDENT.
RB-86	4.403E-01	8.800E-01	7.758E-01	4.490E-01	NOT IDENT.
Y-88	1.866E-02	3.483E-02	3.214E-02	1.777E-02	NOT IDENT.
ZR-88	-2.196E-02	3.328E-02	2.741E-02	1.698E-02	NOT IDENT.
Y-91	8.156E+00	1.964E+01	1.702E+01	1.002E+01	NOT IDENT.
NB-94	-2.952E-02	3.607E-02	2.932E-02	1.840E-02	NOT IDENT.
NB-95	2.276E-02	4.363E-02	3.893E-02	2.226E-02	NOT IDENT.
NB-95M	1.065E+00	2.072E-01	1.813E-01	1.057E-01	NOT IDENT.
ZR-95	2.576E-02	7.392E-02	6.560E-02	3.772E-02	NOT IDENT.
NB-97	2.276E+03	3.420E+05	0.000E+00	1.745E+05	SHORT HLIF
ZR-97	1.464E+07	6.567E+06	0.000E+00	3.350E+06	SHORT HLIF
MO-99	6.816E-01	1.543E+01	1.338E+01	7.875E+00	NOT IDENT.
TC-99M	2.605E+17	6.728E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	1.884E-02	3.825E-02	3.224E-02	1.952E-02	NOT IDENT.
RH-102	-2.710E-03	3.275E-02	2.772E-02	1.671E-02	NOT IDENT.
RU-103	-3.811E-02	4.692E-02	3.722E-02	2.394E-02	FAIL ABUN
RH-106	-1.570E-01	3.469E-01	2.783E-01	1.770E-01	NOT IDENT.
RU-106	-1.570E-01	3.466E-01	2.783E-01	1.768E-01	NOT IDENT.
AG-108M	-2.429E-02	3.700E-02	3.025E-02	1.888E-02	NOT IDENT.
AG-110M	-1.001E-02	4.540E-02	3.168E-02	2.316E-02	NOT IDENT.
IN-111	2.486E-01	1.657E+00	1.291E+00	8.455E-01	NOT IDENT.
IN-113M	-3.398E-02	4.887E-02	4.018E-02	2.493E-02	NOT IDENT.
SN-113	-3.398E-02	4.887E-02	4.018E-02	2.493E-02	NOT IDENT.
IN-114M	7.525E-02	2.248E-01	1.702E-01	1.147E-01	NOT IDENT.
CD-115	-2.310E+00	1.478E+01	1.233E+01	7.539E+00	NOT IDENT.
SN-117M	-1.001E-03	6.239E-02	5.342E-02	3.183E-02	NOT IDENT.
SB-122	-8.419E-01	2.726E+00	2.234E+00	1.391E+00	NOT IDENT.
I-123	-9.155E+06	2.227E+07	0.000E+00	1.136E+07	SHORT HLIF
TE-123M	-1.286E-02	3.127E-02	2.628E-02	1.595E-02	NOT IDENT.
I-124	4.166E-01	9.178E-01	6.985E-01	4.683E-01	NOT IDENT.
SB-124	-3.655E-02	7.854E-02	6.008E-02	4.007E-02	NOT IDENT.
SB-125	-4.998E-02	1.001E-01	8.278E-02	5.106E-02	NOT IDENT.
TE-125M	2.038E+00	1.065E+01	9.363E+00	5.436E+00	NOT IDENT.
I-126	-5.471E-02	2.276E-01	1.578E-01	1.161E-01	NOT IDENT.
SB-126	-5.700E-02	1.712E-01	1.224E-01	8.733E-02	NOT IDENT.
SB-127	-5.663E-01	1.507E+00	1.264E+00	7.687E-01	NOT IDENT.
XE-127	-5.319E-02	5.503E-02	4.429E-02	2.808E-02	NOT IDENT.
I-131	6.235E-04	1.341E-01	1.161E-01	6.840E-02	NOT IDENT.
TE-132	-4.366E-02	9.378E-01	8.318E-01	4.785E-01	NOT IDENT.
BA-133	2.689E-02	4.680E-02	3.710E-02	2.388E-02	NOT IDENT.
I-133	-2.951E+03	1.372E+04	0.000E+00	7.002E+03	SHORT HLIF
CS-134	7.580E-02	4.718E-02	4.553E-02	2.407E-02	NOT IDENT.
CS-135	1.453E-01	1.661E-01	1.521E-01	8.472E-02	NOT IDENT.
I-135	-4.774E+16	7.608E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-3.868E-02	1.050E-01	8.461E-02	5.360E-02	FAIL ABUN
CE-139	6.460E-04	3.269E-02	2.797E-02	1.668E-02	NOT IDENT.
BA-140	2.107E-02	2.860E-01	2.429E-01	1.459E-01	NOT IDENT.
LA-140	-4.566E-02	9.490E-02	7.422E-02	4.842E-02	NOT IDENT.
CE-141	5.702E-02	7.307E-02	6.480E-02	3.728E-02	NOT IDENT.
CE-143	1.621E+03	5.304E+02	0.000E+00	2.706E+02	SHORT HLIF
CE-144	-2.044E-01	2.291E-01	1.886E-01	1.169E-01	NOT IDENT.
PM-144	6.954E-03	3.543E-02	3.121E-02	1.808E-02	NOT IDENT.
PR-144	4.714E-01	2.402E+00	2.116E+00	1.226E+00	NOT IDENT.
PM-146	1.343E-02	4.844E-02	4.214E-02	2.471E-02	NOT IDENT.
ND-147	2.544E-02	6.007E-01	5.095E-01	3.065E-01	FAIL ABUN

PM-149	-7.098E+00	1.360E+02	1.191E+02	6.941E+01	NOT IDENT.
EU-152	-9.977E-02	1.329E-01	7.947E-02	6.779E-02	NOT IDENT.
GD-153	-4.959E-03	1.075E-01	8.140E-02	5.484E-02	NOT IDENT.
EU-154	7.301E-03	1.280E-01	1.069E-01	6.531E-02	NOT IDENT.
EU-155	4.800E-02	1.237E-01	1.097E-01	6.310E-02	FAIL ABUN
TB-160	-2.180E-03	1.268E-01	1.081E-01	6.472E-02	FAIL ABUN
HO-166M	-5.822E-02	6.024E-02	4.781E-02	3.074E-02	FAIL ABUN
TM-171	-5.598E+01	4.410E+01	3.516E+01	2.250E+01	NOT IDENT.
LU-176	-2.720E-02	2.680E-02	2.204E-02	1.367E-02	FAIL ABUN
LU-177	2.106E+00	1.396E+00	1.252E+00	7.123E-01	NOT IDENT.
LU-177M	9.003E-02	1.948E-01	1.722E-01	9.939E-02	NOT IDENT.
HF-181	1.306E-02	4.896E-02	4.242E-02	2.498E-02	NOT IDENT.
W-181	-4.835E-01	5.696E-01	4.826E-01	2.906E-01	NOT IDENT.
TA-182	-3.911E-02	1.973E-01	1.609E-01	1.007E-01	FAIL ABUN
RE-183	-4.881E-02	1.185E-01	9.942E-02	6.046E-02	NOT IDENT.
RE-184	-1.048E-01	2.537E-01	2.197E-01	1.295E-01	NOT IDENT.
OS-185	-1.058E-02	4.346E-02	3.539E-02	2.218E-02	NOT IDENT.
RE-188	2.775E-02	1.939E-01	1.673E-01	9.891E-02	NOT IDENT.
W-188	-3.615E-01	8.814E+00	6.702E+00	4.497E+00	NOT IDENT.
IR-192	-5.461E-03	3.709E-02	3.210E-02	1.892E-02	FAIL ABUN
AU-195	3.098E-01	2.689E-01	2.377E-01	1.372E-01	FAIL ABUN
TL-200	5.823E+02	9.479E+02	0.000E+00	4.836E+02	SHORT HLIF
TL-201	1.197E+00	9.666E+00	8.306E+00	4.932E+00	NOT IDENT.
TL-202	3.805E-02	8.363E-02	7.366E-02	4.267E-02	NOT IDENT.
HG-203	3.564E-02	4.574E-02	4.166E-02	2.334E-02	FAIL ABUN
BI-207	-2.496E-02	5.291E-02	4.221E-02	2.699E-02	FAIL ABUN
TL-207	-9.799E-01	7.960E-01	6.344E-01	4.061E-01	FAIL ABUN
PO-209	-1.810E+00	7.807E+00	6.508E+00	3.983E+00	NOT IDENT.
BI-210	-1.967E+00	1.138E+01	9.906E+00	5.807E+00	NOT IDENT.
PB-210	-1.967E+00	1.138E+01	9.906E+00	5.807E+00	NOT IDENT.
PO-210	-1.967E+00	1.138E+01	9.906E+00	5.807E+00	NOT IDENT.
PB-211	-3.035E-01	1.111E+00	8.994E-01	5.666E-01	NOT IDENT.
BI-212	6.638E-01	5.039E-01	3.219E-01	2.571E-01	FAIL ABUN
PO-215	-9.799E-01	7.960E-01	6.344E-01	4.061E-01	FAIL ABUN
RN-219	-2.287E-01	4.508E-01	3.743E-01	2.300E-01	NOT IDENT.
RN-220	1.346E+01	2.760E+01	2.417E+01	1.408E+01	NOT IDENT.
RA-223	-9.799E-01	7.960E-01	6.344E-01	4.061E-01	FAIL ABUN
AC-227	1.833E-01	4.281E-01	3.850E-01	2.184E-01	FAIL ABUN
TH-227	1.833E-01	4.285E-01	3.850E-01	2.186E-01	FAIL ABUN
TH-229	3.529E-02	5.511E-01	4.688E-01	2.812E-01	FAIL ABUN
PA-231	-1.134E+00	1.649E+00	1.388E+00	8.412E-01	NOT IDENT.
TH-231	-9.799E-01	7.960E-01	6.344E-01	4.061E-01	FAIL ABUN
U-231	-8.323E-01	1.656E+00	1.220E+00	8.447E-01	FAIL ABUN
PA-233	5.436E-02	7.081E-02	6.433E-02	3.613E-02	FAIL ABUN
PA-234	3.706E-02	2.909E-01	2.502E-01	1.484E-01	FAIL ABUN
PA-234M	2.653E+00	4.856E+00	4.265E+00	2.478E+00	NOT IDENT.
TH-234	1.891E+00	2.163E+00	1.950E+00	1.103E+00	FAIL ABUN
U-235	-8.737E-02	2.497E-01	2.063E-01	1.274E-01	FAIL ABUN
NP-236	-4.924E-02	8.498E-02	7.073E-02	4.336E-02	NOT IDENT.
U-238	1.891E+00	2.163E+00	1.950E+00	1.103E+00	FAIL ABUN
NP-239	-2.203E-02	2.121E-01	1.836E-01	1.082E-01	NOT IDENT.
AM-241	-3.575E-01	2.809E-01	2.353E-01	1.433E-01	NOT IDENT.
CM-243	-3.880E-02	1.135E-01	9.778E-02	5.788E-02	NOT IDENT.
AM-246	-1.000E-01	1.562E-01	1.226E-01	7.971E-02	NOT IDENT.
CM-247	-1.363E-02	4.329E-02	3.546E-02	2.209E-02	NOT IDENT.
CF-249	2.361E-02	4.431E-02	3.944E-02	2.261E-02	NOT IDENT.
CF-251	1.131E-01	1.397E-01	1.233E-01	7.126E-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	218.0129
46.50	218.0129
46.50	218.0129
48.70	218.8501
49.72	232.4610
51.35	239.7320
52.39	259.1289
52.97	240.3738
53.15	229.9907
53.44	223.4434
54.07	221.7684
56.28	240.6994
56.28	240.7004
57.37	0.0000
57.53	262.2276
57.53	262.2287
57.60	277.5706
57.98	282.5228
57.98	282.5228
59.32	339.7283
59.32	339.7283
59.40	339.7701
59.54	329.2823
59.72	314.0089
60.01	317.0294
61.10	276.1744
61.14	276.1909
61.30	276.2571
63.00	286.6076
63.29	289.6259
63.29	289.6259
63.58	283.9548
64.28	305.5163
65.12	345.5779
65.20	345.6177
65.20	345.6177
66.05	360.5808
66.72	360.3712
66.83	360.4293
66.91	360.4703
67.20	311.9818
67.20	311.9818
67.75	290.7186
67.85	290.7597
68.90	281.8470
68.90	281.8470
69.30	299.1434
69.67	303.9746
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70.82	304.4578
70.83	304.4626
72.80	317.0242
72.87	317.0539
72.87	317.0539
74.67	317.8227
74.81	317.8820
74.81	317.8820
74.81	317.8820
74.81	317.8820
74.81	317.8820
74.81	317.8820
74.81	317.8820
74.97	317.9500
75.28	318.0810
75.70	318.2577
77.11	318.8485
77.11	318.8485

77.11	318.8485
77.11	318.8485
77.11	318.8485
77.11	318.8485
77.11	318.8485
78.38	324.8964
79.62	363.3295
79.80	363.4138
79.80	363.4138
80.11	389.2445
80.18	389.2791
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81.07	407.5255
81.07	407.5255
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83.78	377.1559
83.78	377.1559
83.78	377.1559
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85.43	369.1751
86.29	431.2344
86.50	431.3452
86.54	507.2447
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86.72	507.3554
86.79	507.3982
86.94	507.4914
87.30	506.3858
87.30	506.3858
87.30	506.3858
87.30	506.3858
87.30	506.3858
87.30	506.3858
87.57	430.7673
87.88	430.9288
88.03	506.8334
88.36	507.0349
88.47	507.1028
89.95	508.0020
91.11	508.7035
92.29	383.9204
92.38	383.9613
92.38	383.9613
93.35	292.3708
94.00	303.8466
94.67	316.9519
94.67	316.9531
94.90	317.0373
94.90	317.0373
94.90	317.0373
94.90	317.0373
95.87	315.7809
95.87	315.7809
96.73	306.4162
97.43	314.7291
98.44	281.4263
98.44	281.4263
98.88	272.5201
99.55	296.2715
99.55	296.2715
99.86	296.3744
100.00	304.5136
100.10	311.6317
103.18	309.6493
103.76	320.0048
105.00	300.0921
105.31	293.0691
108.00	313.3088
109.28	295.3402

111.00	314.3042
111.00	314.3042
111.76	302.2596
112.95	286.2191
115.19	283.7964
116.30	286.1774
117.00	283.2911
117.00	283.2911
117.66	283.4805
121.11	291.7032
121.62	292.8866
121.78	292.9330
122.06	291.9786
122.32	283.7676
122.32	283.7676
122.32	283.7676
122.32	283.7676
123.07	281.9049
127.23	292.4150
129.76	277.4779
131.20	319.6387
133.02	319.1410
133.54	302.5469
135.34	282.0814
136.00	292.7465
136.25	281.2700
136.48	293.9261
140.51	284.4752
140.51	0.0000
142.18	325.0012
142.65	320.9161
143.76	315.9515
144.24	299.1718
144.24	299.1718
144.24	299.1718
144.24	299.1718
145.22	283.5620
145.44	284.6755
147.16	270.2702
152.43	265.1229
152.70	256.6656
153.22	253.5832
154.21	254.8638
154.21	254.8638
154.21	254.8638
154.21	254.8638
155.03	278.5192
156.02	293.7065
158.56	252.5956
159.00	0.0000
159.00	266.6066
160.31	257.2522
161.27	252.0936
162.32	254.4597
162.64	248.0846
163.35	243.9308
163.89	232.2142
165.85	251.9688
167.43	251.2147
171.28	258.4833
171.86	255.3576
172.10	247.8306
176.55	226.9833
176.60	226.9912
181.06	279.0039
184.41	252.4042
185.71	252.6545
186.00	234.5491
190.27	219.5007
192.34	227.5339
193.63	226.6508
197.04	242.6610
198.01	232.8997
198.60	229.6852
200.40	242.1495
201.83	266.7489
202.84	273.5879
205.31	300.7027

208.36	233.5199
208.81	248.0542
209.75	254.8977
209.75	254.8977
210.97	267.3688
215.65	212.3569
216.55	220.3159
218.09	216.0707
222.10	207.6804
223.80	212.4145
226.40	229.6728
227.00	222.5563
227.08	222.5684
227.20	222.5849
228.16	223.6299
228.18	223.6329
228.18	223.6329
231.56	0.0000
235.69	222.0208
236.00	220.5550
236.00	220.5550
238.63	218.8122
238.63	218.8122
238.63	218.8122
238.63	218.8122
239.00	218.8637
240.98	219.1432
241.98	219.2829
241.98	219.2829
241.98	219.2829
244.69	185.3307
245.39	188.4521
247.94	182.6672
248.90	185.8234
249.79	183.7940
252.40	185.0093
252.85	189.6418
252.85	189.6418
254.15	0.0000
256.20	184.5264
256.20	184.5264
260.50	185.0135
260.90	185.0589
262.80	170.5243
264.65	190.0923
268.24	158.1353
268.79	147.0866
269.46	124.9360
269.46	124.9360
269.46	124.9360
269.46	124.9360
271.23	156.5643
273.65	238.4309
276.40	157.0429
277.35	147.8320
277.60	153.4327
277.60	153.4327
278.00	150.6786
278.60	156.3146
279.20	165.6777
279.53	170.3629
280.46	192.8092
281.68	192.0135
283.67	169.8385
284.30	174.5683
285.00	169.0357
285.90	161.6469
286.10	156.9935
286.10	156.9935
287.40	122.7425
288.45	0.0000
290.67	149.9063
290.80	149.9180
291.72	156.2459
293.26	0.0000
293.70	148.5999
295.21	144.0289
295.21	144.0289

295.21	144.0289
295.96	225.5303
296.50	225.6006
297.23	225.6914
298.57	225.8613
299.80	142.8281
299.80	142.8281
300.09	130.2937
300.09	130.2937
300.09	130.2937
300.09	130.2937
300.12	130.2954
301.29	130.3798
302.84	135.2078
303.76	152.5788
303.91	152.5927
304.40	130.6027
304.40	130.6027
304.84	144.8000
306.84	162.6064
308.46	152.3407
311.98	134.6192
316.51	137.7996
318.01	151.2247
319.02	154.1610
319.41	147.5300
320.08	139.9658
323.87	194.6292
323.87	194.6292
323.87	194.6292
323.87	194.6292
325.23	161.3525
328.77	142.5213
333.44	182.1792
334.20	163.0668
334.20	163.0668
334.30	163.0751
338.28	131.6886
338.28	131.6886
338.28	131.6886
338.28	131.6886
338.32	131.6919
338.32	131.6919
338.32	131.6919
340.50	101.0433
340.57	101.0471
344.27	130.1616
345.85	117.7214
350.59	0.0000
351.07	117.0637
351.92	117.1124
351.92	117.1124
351.92	117.1124
355.39	0.0000
356.01	88.9017
364.48	114.9175
366.43	109.1781
367.43	121.9101
367.94	0.0000
369.80	100.5683
374.96	136.0544
383.85	145.4761
387.95	114.2399
388.63	116.2470
391.69	127.2647
391.69	127.2647
392.90	122.4000
398.62	100.9491
400.65	129.7703
401.10	129.7975
401.81	123.8922
402.60	120.9635
404.84	122.0781
410.95	111.4682
411.60	110.5041
413.65	108.6128
414.70	104.6757
415.30	103.7067

415.76	111.7074
417.63	0.0000
418.52	115.8386
423.70	111.0989
427.08	98.2333
427.89	111.3035
432.53	107.5094
433.93	119.6377
439.47	104.8074
439.56	104.8112
439.89	92.7311
443.98	106.0190
444.90	103.0297
445.03	103.0359
445.03	103.0359
445.03	103.0359
445.03	103.0359
453.90	99.3662
463.38	107.9021
468.07	113.2100
473.00	98.1094
475.06	101.2599
475.35	97.1802
476.78	98.2606
477.59	95.2206
477.96	98.3074
482.03	96.4165
484.57	90.3547
487.03	92.4994
490.36	0.0000
492.35	72.0961
497.08	107.3147
507.63	0.0000
510.53	0.0000
510.84	95.4421
511.00	95.4483
511.85	89.9447
511.85	89.9447
513.99	88.2871
513.99	88.2871
520.41	77.0514
520.65	78.1000
527.90	73.0933
528.96	0.0000
529.64	79.4103
529.87	0.0000
531.02	71.0879
537.32	76.4949
543.00	75.6070
546.56	0.0000
549.76	71.5843
552.65	84.3066
555.20	75.9463
563.23	76.1678
563.90	78.3016
568.70	65.7176
569.32	62.5521
569.50	65.7357
569.67	63.6196
573.80	72.2085
574.00	73.2754
574.64	78.3378
578.91	60.2830
579.30	0.0000
583.14	74.5784
585.48	67.5313
591.81	77.4773
592.07	80.7482
593.00	70.5601
595.88	83.4710
600.56	67.8854
602.52	0.0000
602.71	69.7242
602.71	69.7242
603.60	76.8982
604.41	82.2866
604.70	82.2950
609.31	75.2568

609.31	75.2568
609.31	75.2568
609.31	75.2568
610.33	80.6616
612.46	80.7184
614.37	82.5664
618.01	73.3225
621.84	79.8951
621.84	79.8951
631.29	64.9849
633.02	70.4415
633.10	70.4431
634.78	53.1332
635.90	42.3049
636.97	57.5120
645.85	72.9165
646.12	64.2158
656.30	58.2409
657.75	80.1188
657.90	0.0000
661.65	63.4460
661.65	63.4460
664.57	0.0000
666.33	69.3837
666.33	69.3837
675.00	64.8150
677.61	67.0687
685.20	58.7786
692.80	61.6811
695.00	67.2508
696.49	70.0470
696.49	70.0470
697.00	70.0579
697.49	76.5224
698.33	71.0079
698.50	68.2458
699.00	77.4802
702.63	89.5719
706.10	62.8590
706.58	0.0000
706.67	65.6438
709.31	71.2491
711.68	74.0788
713.82	59.3008
717.42	55.6555
720.50	63.6663
721.93	0.0000
722.20	62.1059
722.78	55.7458
722.78	55.7458
722.89	55.7483
722.95	55.7495
723.30	52.5696
724.18	55.7703
727.18	49.4408
733.00	65.5039
735.90	53.1673
739.58	58.8292
742.81	61.6897
744.21	55.1697
747.13	58.9600
751.79	67.4751
752.31	61.8616
753.82	58.1389
755.35	55.3497
756.15	59.1163
756.87	63.8219
763.93	69.5963
765.79	57.4010
766.42	65.8813
766.84	63.0660
776.49	71.7371
778.00	65.1578
778.57	59.5009
778.89	56.6736
783.80	52.0235
785.46	58.6724
792.07	58.7822

795.84	43.6584
796.30	40.8164
798.80	78.8409
801.93	55.1420
805.60	43.7782
810.29	50.5059
810.76	50.5135
815.85	55.3568
817.79	57.2961
818.51	49.6662
819.60	48.7256
826.30	62.2163
828.27	0.0000
831.60	61.3477
831.96	55.6022
834.83	67.1588
836.80	0.0000
846.75	40.4252
848.13	53.9207
856.28	0.0000
856.80	41.3618
860.37	46.3691
867.32	49.3575
867.82	45.1704
871.10	45.5322
873.19	31.9869
874.81	37.8185
875.33	0.0000
876.40	40.7448
879.36	38.8346
880.27	37.8733
880.51	34.9622
881.50	35.9424
883.24	42.7620
884.67	41.8058
889.25	41.8557
896.60	54.6134
898.02	59.5107
899.00	58.5510
903.28	54.2184
911.07	47.9642
911.07	47.9642
911.07	47.9642
919.63	30.2708
920.93	52.9915
925.00	50.0994
925.24	50.1025
926.50	53.0662
935.52	45.3075
937.48	52.2269
944.10	39.4816
946.00	41.4753
949.00	37.5531
962.29	54.3906
964.01	52.7125
966.15	44.2341
968.20	59.5752
969.11	59.5886
969.11	59.5886
969.11	59.5886
977.42	35.8257
980.50	42.8233
983.50	43.8514
989.30	39.9202
996.32	60.9814
1001.03	41.0334
1001.68	46.0449
1004.76	58.0991
1021.30	0.0000
1024.50	0.0000
1034.80	40.3516
1036.00	55.4991
1037.82	53.5046
1038.57	51.4939
1038.76	0.0000
1045.16	39.4380
1046.59	49.5662
1048.07	39.4634

1050.47	41.5105
1050.47	41.5105
1062.04	45.6812
1063.62	47.7286
1076.63	43.7961
1077.35	50.9338
1078.86	57.0641
1085.78	29.5971
1099.22	39.9236
1112.02	58.5145
1112.84	44.0046
1115.52	38.7455
1120.29	31.7348
1120.29	31.7348
1120.29	31.7348
1120.29	31.7348
1120.51	31.7360
1121.28	28.2143
1124.00	0.0000
1129.67	45.3446
1131.51	0.0000
1147.95	0.0000
1167.94	46.7578
1173.22	47.8512
1175.09	58.2764
1177.93	45.8154
1189.05	53.2288
1204.90	47.1222
1205.75	0.0000
1213.00	48.2498
1221.42	51.4863
1230.97	36.3207
1235.34	57.8036
1236.41	0.0000
1238.25	48.5006
1246.25	48.1568
1260.41	0.0000
1271.85	39.2764
1274.45	39.2959
1274.54	39.2959
1291.56	30.9045
1298.22	0.0000
1312.09	24.6088
1325.50	33.2541
1325.50	33.2541
1332.49	22.5577
1333.61	29.0094
1360.21	17.2780
1362.66	0.0000
1365.15	20.5369
1368.21	27.0376
1368.53	0.0000
1376.25	30.3276
1384.27	30.6831
1394.10	23.2875
1395.20	22.3610
1407.95	27.0833
1434.06	19.7058
1436.60	13.1436
1457.56	0.0000
1460.81	18.8581
1489.15	15.1629
1509.49	13.3154
1596.49	23.1688
1620.62	10.6616
1678.03	0.0000
1691.02	15.6869
1691.02	15.6869
1706.46	0.0000
1750.46	0.0000
1764.49	10.9106
1764.49	10.9106
1764.49	10.9106
1764.49	10.9106
1770.23	20.8477
1771.40	22.5889
1791.20	0.0000
1808.65	9.9860

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624006

Total Uranium Activity	5.5854E+00	ug/g
Total Uranium Counting Unc.	6.4350E+00	ug/g
Total Uranium Tpu	3.2831E-06	ug/g
Total Uranium Mda	5.8033E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624006
*  ANALYST       : MXR1            DETECTOR    : GAM15
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 14:44:34.49  SAMPLE ALQT: 131.190 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 6.066E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.283E+00
GROSS GAMMA MDA (pCi/GRAM ) : 2.430E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.173E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 17:50:46.21

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624007.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:50:14.
Sample ID          : G243624007      Sample quantity   : 1.26050E+02 GRAM
Detector name      : GAM04           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.20 0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials  : MXR1
Abundance limit    : 75.00000        Sensitivity       : 5.00000
Batch ID           : 937704          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	4	74.73	326	327	1.11	149.50	143	15	4.53E-02	10.8	7.85E-01
2	4	77.00	529	267	1.05	154.05	143	15	7.35E-02	6.7	
3	0	86.98	181	364	1.07	174.01	171	7	2.51E-02	19.0	
4	3	92.25*	76	78	0.73	184.53	183	12	1.06E-02	19.0	2.02E+00
5	3	93.20*	142	326	1.27	186.45	183	12	1.97E-02	25.3	
6	0	129.13	68	300	0.85	258.32	253	8	9.50E-03	45.5	
7	0	185.91*	252	337	1.14	371.88	366	12	3.50E-02	16.2	
8	0	208.98	115	258	0.86	418.03	414	9	1.59E-02	26.9	
9	6	238.40*	1117	199	1.14	476.86	471	22	1.55E-01	3.7	1.96E+00
10	6	241.35	297	274	1.97	482.76	471	22	4.13E-02	16.0	
11	0	294.80*	374	169	1.15	589.68	585	10	5.19E-02	8.4	
12	0	300.33	31	144	1.24	600.73	596	8	4.26E-03	71.1	
13	0	327.56	68	113	1.18	655.20	652	9	9.41E-03	30.8	
14	0	337.77*	244	161	1.38	675.62	671	12	3.39E-02	12.3	
15	0	351.61*	709	125	1.26	703.30	698	12	9.85E-02	4.9	
16	0	409.79	62	100	1.24	819.66	815	11	8.54E-03	33.9	
17	0	462.54	106	103	1.31	925.17	919	13	1.47E-02	22.1	
18	0	510.38*	96	111	1.39	1020.86	1014	14	1.34E-02	29.3	
19	0	582.83*	351	110	1.40	1165.75	1160	14	4.88E-02	8.5	
20	0	608.91*	424	92	1.45	1217.91	1212	13	5.88E-02	6.9	
21	0	661.23*	77	70	1.29	1322.56	1317	9	1.07E-02	23.9	
22	0	726.73	77	72	1.94	1453.54	1448	11	1.06E-02	24.3	
23	0	767.79	36	57	1.47	1535.66	1532	9	5.06E-03	41.1	
24	0	794.60	42	49	1.60	1589.27	1584	13	5.82E-03	37.7	
25	0	835.20	22	36	0.84	1670.48	1667	8	3.06E-03	51.8	
26	0	860.66	64	29	1.38	1721.39	1714	13	8.88E-03	21.5	
27	0	910.47*	231	76	1.77	1821.01	1813	18	3.21E-02	11.1	
28	2	964.33	38	26	2.06	1928.71	1925	24	5.25E-03	26.8	1.71E+00
29	2	968.31	137	26	1.87	1936.68	1925	24	1.90E-02	11.8	
30	0	1119.14	120	40	1.36	2238.29	2231	14	1.66E-02	14.3	
31	0	1377.39	20	25	2.13	2754.71	2747	11	2.83E-03	52.2	
32	0	1459.71*	751	15	2.14	2919.31	2913	18	1.04E-01	3.9	
33	0	1762.91	72	13	2.19	3525.55	3518	16	1.01E-02	15.9	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624007.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 12:00:00 Acquisition date : 7-JAN-2010 15:50:14
Sample ID        : G243624007 Sample quantity : 126.05 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA4 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.20 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.949E+01	2.057E+00	5.197E-01	3.693E-02	37.496
MN-54	+	834.83	*	3.789E-02	3.937E-02	6.370E-02	4.610E-03	0.595
CD-109	+	88.03	*	2.968E+00	1.182E+00	1.460E+00	1.754E-01	2.033
SN-126		64.28		1.682E-01	6.178E-01	1.047E+00	1.803E-01	0.161
	+	86.94		1.211E+00	6.875E-01	6.192E-01	2.612E-01	1.955
	+	87.57	*	2.913E-01	1.160E-01	1.560E-01	1.871E-02	1.867
BA-137M	+	661.65	*	1.160E-01	5.563E-02	6.703E-02	3.269E-03	1.730
CS-137	+	661.65	*	1.226E-01	5.881E-02	7.085E-02	3.476E-03	1.730
TL-208		277.35		3.972E-01	3.371E-01	5.995E-01	6.624E-02	0.663
	+	510.84		4.857E-01	2.890E-01	2.114E-01	2.122E-02	2.298
	+	583.14	*	5.058E-01	9.143E-02	5.516E-02	3.471E-03	9.169
	+	860.37		8.764E-01	3.830E-01	4.644E-01	3.873E-02	1.887
BI-211		72.87		4.566E+00	3.307E+00	5.778E+00	6.625E-01	0.790
	+	351.07	*	4.498E+00	5.382E-01	2.903E-01	1.961E-02	15.494
PB-212	+	74.81		2.505E+00	6.566E-01	5.701E-01	8.427E-02	4.393
	+	77.11		2.236E+00	3.942E-01	3.147E-01	3.610E-02	7.106
	+	87.30		1.347E+00	5.533E-01	6.846E-01	1.068E-01	1.968
	+	238.63	*	1.545E+00	1.682E-01	8.467E-02	6.800E-03	18.242
	+	300.09		6.560E-01	9.349E-01	1.097E+00	9.655E-02	0.598
PO-212	+	74.81		2.505E+00	6.566E-01	5.701E-01	8.427E-02	4.393
	+	77.11		2.236E+00	3.942E-01	3.147E-01	3.610E-02	7.106
	+	87.30		1.347E+00	5.533E-01	6.846E-01	1.068E-01	1.968
		115.19		2.915E+00	3.252E+00	5.570E+00	4.191E-01	0.523
	+	238.63	*	1.545E+00	1.682E-01	8.467E-02	6.800E-03	18.242
	+	300.09		6.560E-01	9.349E-01	1.097E+00	9.655E-02	0.598
BI-214	+	609.31	*	1.151E+00	1.804E-01	1.072E-01	7.877E-03	10.733
	+	1120.29		1.738E+00	5.240E-01	5.022E-01	4.679E-02	3.460
		1764.49		1.262E+00	4.168E-01	8.381E-01	5.109E-02	1.505
PB-214	+	74.81		4.315E+00	1.104E+00	9.823E-01	1.340E-01	4.393
	+	77.11		3.833E+00	7.363E-01	5.395E-01	7.430E-02	7.106
	+	87.30		2.308E+00	9.364E-01	1.173E+00	1.670E-01	1.968
	+	241.98		2.468E+00	8.172E-01	5.101E-01	4.444E-02	4.838
	+	295.21		1.402E+00	2.670E-01	2.033E-01	1.846E-02	6.895
	+	351.92	*	1.565E+00	2.042E-01	1.012E-01	8.632E-03	15.461

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		4.315E+00	1.104E+00	9.823E-01	1.340E-01	4.393
	+	77.11		3.833E+00	7.363E-01	5.395E-01	7.430E-02	7.106
	+	87.30		2.308E+00	9.364E-01	1.173E+00	1.670E-01	1.968
	+	241.98		2.468E+00	8.172E-01	5.101E-01	4.444E-02	4.838
	+	295.21		1.402E+00	2.670E-01	2.033E-01	1.846E-02	6.895
	+	351.92	*	1.565E+00	2.042E-01	1.012E-01	8.632E-03	15.461
PO-216	+	74.81		2.505E+00	6.566E-01	5.701E-01	8.427E-02	4.393
	+	77.11		2.236E+00	3.942E-01	3.147E-01	3.610E-02	7.106
	+	87.30		1.347E+00	5.533E-01	6.846E-01	1.068E-01	1.968
	+	238.63	*	1.545E+00	1.682E-01	8.467E-02	6.800E-03	18.242
	+	300.09		6.560E-01	9.349E-01	1.097E+00	9.655E-02	0.598
	+	74.81		4.315E+00	1.104E+00	9.823E-01	1.340E-01	4.393
PO-218	+	77.11		3.833E+00	7.363E-01	5.395E-01	7.430E-02	7.106
	+	87.30		2.308E+00	9.364E-01	1.173E+00	1.670E-01	1.968
	+	241.98		2.468E+00	8.172E-01	5.101E-01	4.444E-02	4.838
	+	295.21		1.402E+00	2.670E-01	2.033E-01	1.846E-02	6.895
	+	351.92	*	1.565E+00	2.042E-01	1.012E-01	8.632E-03	15.461
	+	240.98	*	4.679E+00	1.527E+00	9.639E-01	6.426E-02	4.855
RA-224	+	609.31	*	1.151E+00	1.804E-01	1.072E-01	7.877E-03	10.733
RA-226	+	1120.29		1.738E+00	5.240E-01	5.022E-01	4.679E-02	3.460
	+	1764.49		1.262E+00	4.168E-01	8.381E-01	5.109E-02	1.505
	+	338.32		1.703E+00	8.119E-01	3.588E-01	1.465E-01	4.747
AC-228	+	911.07	*	1.503E+00	3.730E-01	2.008E-01	2.189E-02	7.486
	+	969.11		1.574E+00	5.183E-01	3.420E-01	7.888E-02	4.602
	+	338.32		1.703E+00	8.119E-01	3.588E-01	1.465E-01	4.747
RA-228	+	911.07	*	1.503E+00	3.730E-01	2.008E-01	2.189E-02	7.486
	+	969.11		1.574E+00	5.183E-01	3.420E-01	7.888E-02	4.602
	+	74.81		2.545E+00	6.241E-01	5.794E-01	6.667E-02	4.393
TH-228	+	77.11		2.272E+00	4.006E-01	3.198E-01	3.669E-02	7.106
	+	87.30		1.369E+00	5.454E-01	6.957E-01	8.329E-02	1.968
	+	238.63	*	1.570E+00	1.710E-01	8.605E-02	6.911E-03	18.242
TH-230	+	300.09		6.667E-01	1.027E+00	1.114E+00	6.577E-01	0.598
	+	609.31	*	1.150E+00	1.804E-01	1.072E-01	7.877E-03	10.733
	+	1120.29		1.738E+00	5.240E-01	5.022E-01	4.679E-02	3.460
TH-232	+	1764.49		1.262E+00	4.168E-01	8.381E-01	5.109E-02	1.505
	+	338.32		1.703E+00	4.324E-01	3.588E-01	2.255E-02	4.747
	+	911.07	*	1.503E+00	3.730E-01	2.008E-01	2.189E-02	7.486
U-234	+	969.11		1.574E+00	5.183E-01	3.420E-01	7.888E-02	4.602
	+	609.31	*	1.150E+00	1.804E-01	1.072E-01	7.877E-03	10.733
	+	1120.29		1.738E+00	5.240E-01	5.022E-01	4.679E-02	3.460
NP-237	+	1764.49		1.262E+00	4.168E-01	8.381E-01	5.109E-02	1.505
	+	86.50	*	8.553E-01	3.837E-01	4.162E-01	9.916E-02	2.055
	+	95.87		-1.118E+00	1.040E+00	1.392E+00	3.507E-01	-0.803
AM-243	+	74.67	*	4.060E-01	9.946E-02	9.287E-02	1.064E-02	4.372
	+	86.72		3.207E+01	1.278E+01	1.647E+01	1.964E+00	1.948
	+	117.66		-2.301E+00	3.464E+00	5.513E+00	4.024E-01	-0.417
ANH-511	+	142.18		1.247E-01	1.645E+01	2.684E+01	1.756E+00	0.005
	+	511.00	*	1.049E-01	6.180E-02	4.568E-02	2.555E-03	2.297

---- 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	*	2.105E-01	3.083E-01	5.297E-01	3.509E-02	0.397

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		-2.797E-02	4.234E-02	6.542E-02	4.278E-03	-0.428
NA-24	1368.53	*		-7.979E-01	4.234E-02	Half-Life too short		
AL-26	1129.67			-6.749E-01	1.639E+00	2.516E+00	1.623E-01	-0.268
	1808.65	*		4.459E-03	2.733E-02	4.611E-02	2.734E-03	0.097
TI-44	67.85			2.603E-02	5.340E-02	9.163E-02	1.066E-02	0.284
	78.38	*	+	4.127E-01	7.276E-02	7.889E-02	9.072E-03	5.231
SC-46	889.25	*		-2.410E-02	3.806E-02	5.827E-02	4.712E-03	-0.414
	1120.51	*	+	3.000E-01	8.827E-02	1.439E-01	9.424E-03	2.085
V-48	944.10			4.850E-01	8.538E-01	1.487E+00	1.188E-01	0.326
	983.50	*		-5.917E-02	7.646E-02	1.140E-01	8.836E-03	-0.519
	1312.09			-1.370E-02	7.713E-02	1.258E-01	8.476E-03	-0.109
CR-51	320.08	*		-2.116E-01	3.716E-01	6.004E-01	4.228E-02	-0.352
MN-52	744.21			-5.903E-02	2.512E-01	4.100E-01	2.434E-02	-0.144
	848.13			-6.263E+00	6.630E+00	9.702E+00	7.218E-01	-0.646
	935.52			6.316E-02	2.758E-01	4.632E-01	3.725E-02	0.136
	1246.25			-6.431E+00	8.975E+00	1.405E+01	8.941E-01	-0.458
	1333.61			-3.037E+00	5.705E+00	8.904E+00	6.102E-01	-0.341
	1434.06	*		-1.630E-01	2.306E-01	3.323E-01	2.268E-02	-0.491
CO-56	846.75	*		1.047E-02	3.408E-02	5.821E-02	4.318E-03	0.180
	977.42			5.029E-01	3.273E+00	4.740E+00	3.692E-01	0.106
	1077.82			5.959E-02	3.066E-01	5.074E-01	3.994E-02	0.117
	1175.09			9.983E-01	2.002E+00	3.418E+00	2.036E-01	0.292
	1238.25			1.801E-01	1.009E-01	1.897E-01	1.263E-02	0.950
	1360.21			7.271E-01	9.114E-01	1.683E+00	1.154E-01	0.432
	1771.40			-7.315E-02	1.863E-01	2.703E-01	1.641E-02	-0.271
CO-57	122.06	*		2.034E-02	2.391E-02	4.078E-02	2.831E-03	0.499
	136.48			4.219E-02	1.978E-01	3.264E-01	2.428E-02	0.129
CO-58	810.76	*		-2.694E-02	3.449E-02	5.259E-02	3.630E-03	-0.512
FE-59	142.65			-1.113E+00	2.657E+00	4.152E+00	2.714E-01	-0.268
	192.34			2.177E-01	9.302E-01	1.510E+00	1.837E-01	0.144
	1099.22	*		2.558E-02	9.234E-02	1.540E-01	1.177E-02	0.166
	1291.56			-1.220E-01	1.300E-01	1.936E-01	1.564E-02	-0.630
CO-60	1173.22			-1.446E-04	4.103E-02	6.601E-02	3.926E-03	-0.002
	1332.49	*		7.822E-03	3.772E-02	6.490E-02	4.447E-03	0.121
ZN-65	1115.52	*		8.922E-03	1.031E-01	1.456E-01	9.633E-03	0.061
GE-68	1077.35	*		-1.562E-01	1.180E+00	1.883E+00	1.315E-01	-0.083
AS-73	53.44	*		-2.700E-01	1.448E+00	2.439E+00	3.191E-01	-0.111
AS-74	595.88	*		-6.128E-03	8.771E-02	1.397E-01	7.378E-03	-0.044
	634.78			-2.674E-02	3.963E-01	6.288E-01	3.181E-02	-0.043
SE-75	66.05			-4.560E+00	5.825E+00	9.458E+00	1.241E+00	-0.482
	96.73			-1.320E+00	8.748E-01	1.155E+00	1.675E-01	-1.142
	121.11			-1.880E-02	1.307E-01	2.134E-01	2.142E-02	-0.088
	136.00			-2.741E-03	3.718E-02	6.058E-02	4.060E-03	-0.045
	198.60			-1.662E+00	1.815E+00	2.691E+00	2.077E-01	-0.618
	264.65	*		3.573E-03	3.869E-02	6.581E-02	4.427E-03	0.054
	279.53			-7.437E-02	9.975E-02	1.611E-01	1.137E-02	-0.462
	303.91			-9.649E-01	2.211E+00	3.151E+00	3.155E-01	-0.306
	400.65			-1.392E-01	2.477E-01	3.919E-01	3.528E-02	-0.355
BR-77	87.88		+	8.678E+02	3.458E+02	4.740E+02	5.696E+01	1.831

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	200.40			-8.125E+01	2.143E+02	3.359E+02	2.192E+01	-0.242
	239.00		+	3.362E+02	3.337E+01	5.214E+01	3.474E+00	6.449
	249.79			-2.063E+01	7.953E+01	1.286E+02	8.589E+00	-0.160
	281.68			-2.894E+01	1.103E+02	1.832E+02	1.216E+01	-0.158
	297.23			3.354E+01	1.178E+02	1.313E+02	8.642E+00	0.255
	303.76			-1.110E+02	2.537E+02	3.616E+02	2.367E+01	-0.307
	439.47			2.381E+02	1.733E+02	3.138E+02	1.780E+01	0.759
	484.57			9.196E+01	2.823E+02	4.726E+02	2.666E+01	0.195
	520.65		*	3.805E+00	1.244E+01	2.073E+01	1.154E+00	0.184
	574.64			1.597E+02	2.546E+02	4.336E+02	2.333E+01	0.368
	578.91			2.843E+01	1.293E+02	1.862E+02	9.983E+00	0.153
	585.48			5.594E+02	2.710E+02	4.581E+02	2.442E+01	1.221
	755.35			1.148E+02	1.904E+02	3.362E+02	2.047E+01	0.341
	817.79			4.243E+01	1.473E+02	2.521E+02	1.760E+01	0.168
SR-82	698.33			-5.781E+00	3.557E+01	5.889E+01	3.140E+00	-0.098
	776.49		*	-1.901E-01	3.526E-01	5.547E-01	3.540E-02	-0.343
	1395.20			-2.496E+00	1.041E+01	1.665E+01	1.140E+00	-0.150
RB-83	520.41		*	-4.333E-03	6.282E-02	1.012E-01	5.633E-03	-0.043
	529.64			-7.767E-03	8.403E-02	1.346E-01	7.465E-03	-0.058
	552.65			3.638E-02	1.773E-01	2.917E-01	1.595E-02	0.125
RB-84	881.50		*	1.367E-02	6.111E-02	1.033E-01	8.226E-03	0.132
KR-85	513.99		*	8.359E+00	6.777E+00	1.099E+01	6.136E-01	0.761
SR-85	513.99		*	4.333E-02	3.513E-02	5.694E-02	3.181E-03	0.761
RB-86	1076.63		*	1.843E-01	7.760E-01	1.293E+00	9.042E-02	0.142
Y-88	898.02			-8.108E-03	4.180E-02	6.741E-02	5.577E-03	-0.120
	1836.01		*	5.731E-03	2.912E-02	4.955E-02	2.892E-03	0.116
ZR-88	392.90		*	-1.333E-02	2.885E-02	4.606E-02	2.592E-03	-0.289
Y-91	1204.90		*	1.127E+01	1.933E+01	3.292E+01	2.017E+00	0.342
NB-94	702.63		*	9.327E-03	3.297E-02	5.649E-02	3.043E-03	0.165
	871.10			2.160E-02	3.335E-02	5.846E-02	4.559E-03	0.369
NB-95	765.79		*	4.277E-02	5.066E-02	7.998E-02	4.985E-03	0.535
NB-95M	235.69		*	2.163E-02	1.441E-01	2.049E-01	1.682E-02	0.106
ZR-95	724.18			1.082E-01	1.133E-01	1.809E-01	1.221E-02	0.598
	756.15		*	4.618E-02	6.380E-02	1.134E-01	8.260E-03	0.407
NB-97	657.90		*	3.600E-01	6.380E-02	Half-Life	too short	
	1024.50			4.622E-01	6.380E-02	Half-Life	too short	
ZR-97	254.15			-1.227E+01	6.380E-02	Half-Life	too short	
	355.39			2.238E+00	6.380E-02	Half-Life	too short	
	507.63		*	1.130E+01	6.380E-02	Half-Life	too short	
	602.52			1.467E+01	6.380E-02	Half-Life	too short	
	1021.30			1.293E+01	6.380E-02	Half-Life	too short	
	1147.95			-9.089E+00	6.380E-02	Half-Life	too short	
	1362.66			-6.839E+00	6.380E-02	Half-Life	too short	
	1750.46			1.023E+01	6.380E-02	Half-Life	too short	
MO-99	140.51			-1.144E+01	3.231E+01	5.162E+01	1.400E+01	-0.222
	181.06			-1.138E+01	2.361E+01	3.262E+01	5.663E+00	-0.349
	366.43			-8.711E+01	1.074E+02	1.682E+02	1.005E+01	-0.518
	739.58		*	-2.347E+00	1.276E+01	2.090E+01	2.886E+00	-0.112
	778.00			5.626E+00	4.053E+01	6.833E+01	4.376E+00	0.082

----- Non-Identified Nuclides -----

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TC-99M	140.51	*		-2.283E+11	4.053E+01	Half-Life	too short	
RH-101	127.23			1.812E-02	3.217E-02	4.881E-02	3.315E-03	0.371
	198.01	*		-1.089E-02	3.233E-02	4.960E-02	3.230E-03	-0.219
	325.23			1.241E-01	2.303E-01	3.543E-01	2.267E-02	0.350
RH-102	418.52			-2.059E-01	2.764E-01	4.291E-01	2.430E-02	-0.480
	475.06	*		-2.030E-02	2.845E-02	4.365E-02	2.468E-03	-0.465
	631.29			5.989E-03	5.394E-02	8.708E-02	4.424E-03	0.069
	697.49			-1.621E-02	7.923E-02	1.308E-01	6.960E-03	-0.124
	+ 766.84			1.665E-01	1.374E-01	2.085E-01	1.302E-02	0.799
	1046.59			-4.165E-02	1.171E-01	1.827E-01	1.327E-02	-0.228
	1112.84			1.442E-01	2.394E-01	3.667E-01	2.431E-02	0.393
RU-103	497.08	*		-2.555E-02	3.903E-02	5.957E-02	7.484E-03	-0.429
	+ 610.33			1.265E+01	2.603E+00	2.958E+00	4.498E-01	4.278
RH-106	+ 511.85			5.251E-01	3.093E-01	4.037E-01	2.257E-02	1.301
	621.84	*		-1.455E-01	2.850E-01	4.297E-01	4.909E-02	-0.339
	1050.47			1.289E+00	2.277E+00	3.927E+00	2.838E-01	0.328
RU-106	+ 511.85			5.251E-01	3.093E-01	4.037E-01	2.257E-02	1.301
	621.84	*		-1.455E-01	2.846E-01	4.297E-01	2.207E-02	-0.339
	1050.47			1.289E+00	2.277E+00	3.927E+00	2.838E-01	0.328
AG-108M	433.93	*		2.049E-02	2.994E-02	5.169E-02	3.194E-03	0.396
	614.37			5.030E-02	3.808E-02	6.230E-02	3.568E-03	0.807
	722.95			-2.812E-02	4.904E-02	6.654E-02	4.095E-03	-0.423
AG-110M	657.75	*		4.593E-02	4.025E-02	6.606E-02	3.530E-03	0.695
	677.61			-1.042E-02	2.635E-01	4.412E-01	2.415E-02	-0.024
	706.67			-9.518E-03	2.077E-01	3.467E-01	2.013E-02	-0.027
	763.93			1.636E-01	1.660E-01	2.703E-01	1.768E-02	0.605
	884.67			-2.029E-05	4.433E-02	7.302E-02	6.070E-03	0.000
	937.48			-4.495E-02	1.023E-01	1.591E-01	1.331E-02	-0.283
	1384.27			-4.428E-02	1.575E-01	2.449E-01	1.752E-02	-0.181
IN-111	171.28			-6.998E-01	1.217E+00	1.906E+00	1.215E-01	-0.367
	245.39	*		-3.849E-01	1.503E+00	2.054E+00	1.370E-01	-0.187
IN-113M	391.69	*		-1.934E-02	4.240E-02	6.778E-02	4.084E-03	-0.285
SN-113	391.69	*		-1.934E-02	4.240E-02	6.778E-02	4.084E-03	-0.285
IN-114M	190.27	*		8.106E-03	2.008E-01	2.879E-01	1.863E-02	0.028
CD-115	260.90			-9.729E+01	1.656E+02	2.715E+02	1.813E+01	-0.358
	492.35			1.652E+01	4.676E+01	7.834E+01	4.410E+00	0.211
	527.90	*		3.508E+00	1.217E+01	2.028E+01	1.125E+00	0.173
SN-117M	156.02			-1.145E+00	2.311E+00	3.661E+00	2.348E-01	-0.313
	158.56	*		-1.338E-03	5.527E-02	8.954E-02	5.727E-03	-0.015
SB-122	563.90	*		1.950E+00	2.732E+00	4.657E+00	2.526E-01	0.419
	692.80			5.686E+01	5.646E+01	1.019E+02	5.361E+00	0.558
I-123	159.00	*		-6.650E+00	5.646E+01	Half-Life	too short	
	528.96			1.562E+02	5.646E+01	Half-Life	too short	
TE-123M	159.00	*		-8.817E-03	2.730E-02	4.356E-02	2.816E-03	-0.202
I-124	602.71	*		6.254E-01	8.250E-01	1.263E+00	6.625E-02	0.495
	722.78			-3.998E+00	6.053E+00	8.116E+00	4.584E-01	-0.493
	1325.50			-2.587E+01	3.616E+01	5.385E+01	3.669E+00	-0.480
	+ 1376.25			4.878E+01	5.105E+01	7.595E+01	5.204E+00	0.642
	1509.49			2.607E+01	1.984E+01	3.827E+01	2.580E+00	0.681

----- Non-Identified Nuclides -----

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SB-124	1691.02			-5.241E-01	4.517E+00	7.205E+00	4.567E-01	-0.073
	602.71			3.095E-02	4.082E-02	6.250E-02	3.280E-03	0.495
	645.85			-7.354E-03	4.514E-01	7.600E-01	4.435E-02	-0.010
	709.31			5.842E-01	2.790E+00	4.751E+00	2.600E-01	0.123
	713.82			-9.975E-01	1.606E+00	2.538E+00	2.553E-01	-0.393
	722.78			-2.868E-01	4.342E-01	5.821E-01	3.452E-02	-0.493
	968.20		+	1.640E+01	4.063E+00	7.398E+00	5.806E-01	2.217
	1045.16			-9.774E-01	2.450E+00	3.795E+00	2.761E-01	-0.258
	1325.50			-1.982E+00	2.770E+00	4.126E+00	2.811E-01	-0.480
	1368.21			-5.410E-01	1.779E+00	2.681E+00	3.329E-01	-0.202
SB-125	1436.60			1.275E+00	3.023E+00	5.384E+00	3.673E-01	0.237
	1691.02		*	-8.867E-03	7.642E-02	1.219E-01	8.283E-03	-0.073
	427.89		*	2.445E-02	8.556E-02	1.436E-01	8.500E-03	0.170
	463.38		+	1.043E+00	4.665E-01	5.711E-01	3.797E-02	1.826
	600.56			-8.132E-02	1.722E-01	2.638E-01	1.647E-02	-0.308
TE-125M	635.90			1.185E-01	2.926E-01	4.835E-01	2.981E-02	0.245
	109.28		*	-1.077E+00	8.575E+00	1.395E+01	1.384E+00	-0.077
	388.63			5.158E-02	2.120E-01	3.561E-01	2.019E-02	0.145
SB-126	666.33		*	2.877E-01	2.122E-01	3.657E-01	1.804E-02	0.787
	753.82			9.097E-02	1.390E+00	2.333E+00	1.415E-01	0.039
	223.80			-1.374E+00	4.111E+00	6.407E+00	4.244E-01	-0.214
	278.60			1.545E-01	2.368E+00	4.010E+00	2.667E-01	0.039
	296.50			8.523E+00	2.691E+00	3.716E+00	2.446E-01	2.294
	414.70			3.015E-02	8.653E-02	1.293E-01	7.316E-03	0.233
	415.30			1.615E+00	7.160E+00	1.057E+01	5.984E-01	0.153
	555.20			7.168E-02	3.725E+00	6.019E+00	3.285E-01	0.012
	573.80			-1.363E-01	1.021E+00	1.621E+00	8.727E-02	-0.084
	593.00			-5.863E-01	9.447E-01	1.424E+00	7.537E-02	-0.412
SB-127	656.30			1.854E-01	4.259E+00	6.280E+00	3.087E-01	0.030
	666.33			1.205E-01	8.890E-02	1.532E-01	7.556E-03	0.787
	675.00			3.984E-01	1.870E+00	3.203E+00	1.614E-01	0.124
	695.00			3.319E-02	8.234E-02	1.424E-01	7.531E-03	0.233
	697.00			-8.504E-03	2.912E-01	4.873E-01	2.590E-02	-0.017
	720.50		*	1.527E-01	1.592E-01	2.588E-01	1.454E-02	0.590
	856.80			2.833E-01	4.945E-01	7.690E-01	5.824E-02	0.368
	989.30			7.796E-02	1.319E+00	2.167E+00	1.670E-01	0.036
	1034.80			4.170E+00	8.680E+00	1.491E+01	1.098E+00	0.280
	1213.00			-5.429E-01	4.756E+00	7.534E+00	4.653E-01	-0.072
SB-127	61.10			-4.021E+01	9.188E+01	1.522E+02	2.171E+01	-0.264
	252.40			6.675E-01	4.617E+00	7.881E+00	3.291E+00	0.085
	290.80			4.616E+00	2.546E+01	3.836E+01	3.856E+00	0.120
	411.60			8.477E+00	1.633E+01	2.470E+01	3.597E+00	0.343
	444.90			1.014E+01	1.122E+01	1.955E+01	2.160E+00	0.519
	473.00			1.788E-01	2.039E+00	3.349E+00	3.824E-01	0.053
	543.00			-7.557E+00	2.039E+01	3.186E+01	4.158E+00	-0.237
	603.60			5.570E+00	1.540E+01	2.246E+01	2.427E+00	0.248
	685.20		*	8.908E-01	1.419E+00	2.513E+00	2.373E-01	0.354
	698.50			-4.597E+00	1.867E+01	3.070E+01	4.465E+00	-0.150
	722.20			-8.623E+00	4.044E+01	5.732E+01	5.415E+00	-0.150

Sample ID : G243624007

Acquisition date : 7-JAN-2010 15:50:14

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127	783.80			4.710E+00	4.129E+00	7.493E+00	8.513E-01	0.629
	57.60			3.606E+00	9.443E+00	1.626E+01	2.035E+00	0.222
	145.22			2.500E-01	6.558E-01	1.087E+00	7.076E-02	0.230
	172.10			-1.213E-01	1.170E-01	1.783E-01	1.137E-02	-0.680
I-131	202.84	*		1.150E-02	4.742E-02	7.680E-02	5.020E-03	0.150
	374.96			6.023E-02	1.931E-01	3.266E-01	1.916E-02	0.184
	80.18			3.830E+00	5.213E+00	8.131E+00	9.435E-01	0.471
	284.30			2.540E-01	1.515E+00	2.576E+00	1.859E-01	0.099
TE-132	364.48	*		-1.593E-03	1.235E-01	2.048E-01	1.365E-02	-0.008
	636.97			1.543E+00	1.782E+00	3.058E+00	1.786E-01	0.505
	722.89			-5.535E+00	9.011E+00	1.216E+01	6.986E-01	-0.455
	49.72			-3.315E-01	5.060E+01	8.620E+01	1.224E+01	-0.004
BA-133	111.76			-1.580E+01	3.484E+01	5.624E+01	5.941E+00	-0.281
	116.30			-3.765E+01	3.217E+01	4.965E+01	5.083E+00	-0.758
	228.16	*		-4.794E-01	8.281E-01	1.265E+00	1.888E-01	-0.379
	53.15			-6.398E-02	6.297E+00	1.070E+01	1.401E+00	-0.006
I-133	79.62			4.635E-01	1.354E+00	2.072E+00	3.532E-01	0.224
	81.00			-1.482E-01	1.128E-01	1.527E-01	2.698E-02	-0.971
	276.40			4.881E-01	3.364E-01	6.002E-01	8.023E-02	0.813
	302.84	*		-8.417E-02	1.476E-01	2.074E-01	2.499E-02	-0.406
CS-134	356.01	*		1.563E-02	4.323E-02	6.535E-02	7.655E-03	0.239
	383.85			-4.047E-02	3.120E-01	5.119E-01	5.550E-02	-0.079
	510.53	+		2.458E+00	3.120E-01	Half-Life too short		
	529.87	*		-4.832E-03	3.120E-01	Half-Life too short		
I-135	706.58			-7.246E-02	3.120E-01	Half-Life too short		
	856.28			4.863E-01	3.120E-01	Half-Life too short		
	875.33			3.939E-02	3.120E-01	Half-Life too short		
	1236.41			2.214E+00	3.120E-01	Half-Life too short		
CS-135	1298.22			5.267E-02	3.120E-01	Half-Life too short		
	475.35			-1.798E+00	1.906E+00	2.867E+00	1.621E-01	-0.627
	563.23			4.708E-01	3.639E-01	6.462E-01	3.591E-02	0.729
	569.32			-8.808E-02	1.919E-01	2.913E-01	1.627E-02	-0.302
I-135	604.70			-3.743E-03	3.746E-02	5.170E-02	2.725E-03	-0.072
	795.84	+	*	8.773E-02	6.644E-02	8.372E-02	5.642E-03	1.048
	801.93			-1.824E-01	4.195E-01	6.061E-01	4.127E-02	-0.301
	1038.57			4.601E-01	3.733E+00	6.157E+00	4.513E-01	0.075
CS-135	1167.94			-1.963E+00	2.457E+00	3.575E+00	2.149E-01	-0.549
	1365.15			2.200E-01	1.179E+00	2.012E+00	1.477E-01	0.109
	268.24	*		2.010E-01	1.559E-01	2.780E-01	2.317E-02	0.723
	288.45			3.455E+10	1.559E-01	Half-Life too short		
I-135	417.63			4.350E+10	1.559E-01	Half-Life too short		
	546.56			1.026E+11	1.559E-01	Half-Life too short		
	836.80			3.532E+11	1.559E-01	Half-Life too short		
	1038.76			4.027E+10	1.559E-01	Half-Life too short		
I-135	1124.00			1.592E+11	1.559E-01	Half-Life too short		
	1131.51			5.749E+10	1.559E-01	Half-Life too short		
	1260.41	*		-1.757E+10	1.559E-01	Half-Life too short		
	1457.56			9.826E+12	1.559E-01	Half-Life too short		
I-135	1678.03			-1.598E+10	1.559E-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		1706.46		-3.252E+11	1.559E-01	Half-Life	too short	
		1791.20		6.048E+10	1.559E-01	Half-Life	too short	
		66.91		1.205E-01	9.663E-01	1.637E+00	2.838E-01	0.074
	+	86.29		4.016E+00	1.645E+00	2.258E+00	3.442E-01	1.778
		153.22		5.160E-01	6.795E-01	1.140E+00	8.830E-02	0.453
		163.89		4.670E-01	1.087E+00	1.795E+00	1.384E-01	0.260
		176.55		-9.842E-02	3.806E-01	6.056E-01	4.274E-02	-0.163
		273.65		-1.074E+00	4.626E-01	6.740E-01	4.976E-02	-1.593
		340.57		6.153E-02	1.387E-01	2.109E-01	1.394E-02	0.292
		818.51		-1.927E-03	6.510E-02	1.075E-01	7.529E-03	-0.018
CE-139		1048.07	*	-1.705E-02	1.134E-01	1.812E-01	1.392E-02	-0.094
		1235.34		8.034E-01	7.063E-01	1.274E+00	1.311E-01	0.631
		165.85	*	-1.308E-02	2.805E-02	4.429E-02	2.814E-03	-0.295
	BA-140	162.64		7.979E-01	7.617E-01	1.292E+00	9.089E-02	0.618
		304.84		3.377E-01	1.345E+00	2.130E+00	5.848E-01	0.159
		423.70		1.065E+00	2.002E+00	3.367E+00	1.069E+00	0.316
		537.32	*	8.443E-02	2.603E-01	4.306E-01	1.398E-01	0.196
	LA-140	328.77	+	6.190E-01	3.833E-01	5.308E-01	3.722E-02	1.166
		432.53		1.220E+00	1.980E+00	3.403E+00	2.141E-01	0.358
		487.03		-5.359E-02	1.424E-01	2.246E-01	1.443E-02	-0.239
CE-141		751.79		-9.323E-01	1.563E+00	2.444E+00	1.783E-01	-0.381
		815.85		1.574E-02	2.849E-01	4.752E-01	3.873E-02	0.033
		867.82		4.499E-01	1.369E+00	2.281E+00	1.882E-01	0.197
		919.63		2.147E-01	2.868E+00	4.485E+00	4.598E-01	0.048
		925.24		6.373E-01	1.075E+00	1.880E+00	1.630E-01	0.339
		1596.49	*	-3.998E-03	1.029E-01	1.681E-01	1.107E-02	-0.024
	CE-143	145.44	*	1.436E-02	6.005E-02	9.893E-02	6.641E-03	0.145
		57.37		1.527E-03	6.005E-02	Half-Life	too short	
		231.56		2.160E-03	6.005E-02	Half-Life	too short	
		293.26	*	1.257E-03	6.005E-02	Half-Life	too short	
CE-144		350.59	+	6.032E-02	6.005E-02	Half-Life	too short	
		490.36		5.529E-04	6.005E-02	Half-Life	too short	
		664.57		1.589E-03	6.005E-02	Half-Life	too short	
		721.93		-8.211E-06	6.005E-02	Half-Life	too short	
		80.11		1.008E+00	2.232E+00	3.436E+00	3.970E-01	0.293
		133.54	*	-2.444E-02	1.925E-01	3.130E-01	4.562E-02	-0.078
	PM-144	476.78		-2.136E-02	6.456E-02	1.024E-01	6.982E-03	-0.209
		618.01		-1.207E-02	3.059E-02	4.702E-02	2.609E-03	-0.257
		696.49	*	6.018E-03	3.552E-02	6.033E-02	3.206E-03	0.100
		778.57		5.315E-01	2.067E+00	3.524E+00	2.261E-01	0.151
PR-144		696.49	*	4.080E-01	2.408E+00	4.091E+00	2.172E-01	0.100
		1489.15		-1.909E+00	1.017E+01	1.620E+01	1.096E+00	-0.118
	PM-146	453.90	*	1.463E-03	4.306E-02	7.063E-02	6.028E-03	0.021
		633.02		-1.172E+00	1.533E+00	2.174E+00	7.983E-01	-0.539
		735.90		-3.560E-02	1.215E-01	1.959E-01	5.464E-02	-0.182
		747.13		5.356E-02	8.178E-02	1.444E-01	1.817E-02	0.371
	ND-147	91.11	+	4.145E-01	1.646E-01	5.276E-01	6.187E-02	0.786
		319.41		-2.531E-01	3.395E+00	5.657E+00	3.647E-01	-0.045
		439.89		4.926E+00	5.738E+00	1.002E+01	5.686E-01	0.492

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	531.02	*		-1.766E-01	4.892E-01	7.603E-01	1.020E-01	-0.232
PM-149	285.90	*		-1.346E+01	1.187E+02	1.974E+02	2.870E+01	-0.068
EU-152	121.78			5.437E-02	6.906E-02	1.174E-01	1.000E-02	0.463
	244.69			3.124E-02	3.547E-01	4.991E-01	3.330E-02	0.063
	344.27	*		-1.413E-02	9.658E-02	1.475E-01	1.021E-02	-0.096
	443.98			1.588E-01	8.927E-01	1.483E+00	8.413E-02	0.107
	778.89			-3.374E-02	2.448E-01	4.017E-01	2.578E-02	-0.084
	867.32			1.167E-01	8.137E-01	1.289E+00	9.974E-02	0.091
	+ 964.01			5.008E-01	2.715E-01	5.235E-01	4.123E-02	0.957
	1085.78			-6.064E-02	3.605E-01	5.716E-01	3.946E-02	-0.106
	1112.02			3.795E-01	3.329E-01	5.482E-01	3.640E-02	0.692
	1407.95			2.119E-01	2.019E-01	3.755E-01	2.568E-02	0.564
GD-153	69.67			-7.998E-01	2.076E+00	3.073E+00	3.548E-01	-0.260
	83.37			6.757E+00	1.641E+01	2.510E+01	2.939E+00	0.269
	97.43	*		-5.085E-02	8.739E-02	1.254E-01	1.231E-02	-0.406
	103.18			-8.980E-02	1.020E-01	1.618E-01	1.439E-02	-0.555
EU-154	123.07			1.073E-02	4.818E-02	7.997E-02	8.094E-03	0.134
	247.94			2.891E-01	3.629E-01	5.438E-01	5.491E-02	0.532
	591.81			2.171E-01	5.835E-01	9.689E-01	9.191E-02	0.224
	723.30			-4.384E-02	2.061E-01	2.926E-01	2.037E-02	-0.150
	756.87			-1.711E-01	7.036E-01	1.145E+00	1.182E-01	-0.149
	873.19			1.463E-02	2.856E-01	4.735E-01	5.541E-02	0.031
	996.32			-1.841E-02	3.432E-01	5.565E-01	9.639E-02	-0.033
	1004.76			8.160E-02	2.022E-01	3.441E-01	3.752E-02	0.237
	1274.45	*		-8.470E-02	1.191E-01	1.826E-01	1.791E-02	-0.464
EU-155	48.70			1.580E+00	5.340E+00	9.222E+00	1.063E+00	0.171
	60.01			-3.829E+00	7.001E+00	1.155E+01	1.403E+00	-0.332
	+ 86.54			3.509E-01	1.399E-01	1.980E-01	2.372E-02	1.772
	105.31	*		1.614E-01	1.039E-01	1.819E-01	1.586E-02	0.887
TB-160	+ 86.79			9.464E-01	3.771E-01	5.344E-01	6.377E-02	1.771
	197.04			1.123E-01	5.509E-01	8.705E-01	5.664E-02	0.129
	215.65			1.805E-01	7.296E-01	1.179E+00	7.772E-02	0.153
	298.57			-6.144E-02	1.843E-01	1.902E-01	1.250E-02	-0.323
	879.36	*		-5.913E-02	1.250E-01	1.945E-01	1.542E-02	-0.304
	962.29			6.107E-01	5.929E-01	9.510E-01	7.499E-02	0.642
	966.15			1.135E+00	2.786E-01	5.480E-01	4.308E-02	2.071
	1177.93			-1.848E-01	3.541E-01	5.343E-01	3.192E-02	-0.346
	1271.85			2.573E-01	6.286E-01	1.103E+00	7.181E-02	0.233
HO-166M	80.57			-1.047E-01	2.932E-01	4.317E-01	4.995E-02	-0.243
	184.41			9.224E-02	3.670E-02	6.428E-02	4.140E-03	1.435
	280.46			-8.135E-02	7.810E-02	1.237E-01	8.219E-03	-0.658
	+ 410.95			5.056E-01	3.437E-01	4.334E-01	2.450E-02	1.167
	711.68	*		9.947E-03	5.820E-02	9.885E-02	5.441E-03	0.101
	752.31			-9.425E-02	2.339E-01	3.738E-01	2.260E-02	-0.252
	810.29			-3.139E-02	5.231E-02	8.170E-02	5.613E-03	-0.384
TM-171	51.35			-2.581E+01	5.840E+01	9.719E+01	1.258E+01	-0.266
	52.39			-1.563E+01	2.818E+01	4.655E+01	6.088E+00	-0.336
	59.40			-1.232E+01	3.733E+01	6.227E+01	7.593E+00	-0.198
	66.72	*		-6.856E+00	3.346E+01	5.594E+01	6.539E+00	-0.123

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	88.36		6.908E-01	2.752E-01	3.665E-01	4.368E-02	1.885
		201.83		1.621E-03	2.826E-02	4.535E-02	2.962E-03	0.036
		306.84	*	1.452E-02	2.352E-02	4.082E-02	2.665E-03	0.356
		401.10		-3.711E+00	6.391E+00	1.010E+01	5.699E-01	-0.367
LU-177		112.95		4.489E-01	1.690E+00	2.821E+00	2.184E-01	0.159
	+	208.36	*	3.126E+00	1.695E+00	2.164E+00	1.420E-01	1.444
LU-177M		52.97		-7.152E-01	2.923E+00	4.913E+00	6.432E-01	-0.146
		54.07		-9.043E-02	1.456E+00	2.467E+00	3.217E-01	-0.037
		61.30		-6.912E-01	1.970E+00	3.280E+00	3.957E-01	-0.211
		121.62		5.561E-02	3.632E-01	6.012E-01	4.187E-02	0.093
		147.16		-3.498E-01	6.195E-01	9.811E-01	6.365E-02	-0.357
		171.86		-5.024E-01	4.635E-01	7.042E-01	4.491E-02	-0.713
		218.09		-1.775E-02	8.303E-01	1.321E+00	8.722E-02	-0.013
		268.79		1.754E+00	8.050E-01	1.481E+00	9.876E-02	1.185
		319.02		1.710E-03	2.447E-01	4.097E-01	2.642E-02	0.004
		367.43		-1.768E-01	8.902E-01	1.458E+00	8.694E-02	-0.121
		413.65	*	4.564E-02	1.920E-01	2.839E-01	1.606E-02	0.161
HF-181		56.28		5.636E-01	1.555E+00	2.678E+00	3.413E-01	0.211
		57.53		4.416E-01	7.878E-01	1.365E+00	1.711E-01	0.324
		65.20		-7.734E-01	1.176E+00	1.925E+00	2.269E-01	-0.402
		133.02		2.973E-02	6.422E-02	1.026E-01	6.850E-03	0.290
		136.25		3.908E-02	4.370E-01	7.174E-01	4.750E-02	0.054
		345.85		-1.169E-03	1.994E-01	2.920E-01	1.814E-02	-0.004
		482.03	*	-4.605E-02	4.044E-02	5.909E-02	3.336E-03	-0.779
W-181		56.28		2.198E-01	6.021E-01	1.037E+00	1.322E-01	0.212
		57.53		1.710E-01	3.052E-01	5.289E-01	6.628E-02	0.323
		65.20	*	-2.973E-01	4.520E-01	7.400E-01	8.723E-02	-0.402
TA-182		67.75		6.384E-02	1.286E-01	2.207E-01	2.568E-02	0.289
		100.10		1.293E-01	1.800E-01	2.936E-01	2.748E-02	0.440
		152.43		1.525E-01	3.319E-01	5.506E-01	3.546E-02	0.277
		222.10		5.634E-02	3.393E-01	5.449E-01	3.606E-02	0.103
		1001.68		-5.479E-01	1.870E+00	2.945E+00	2.244E-01	-0.186
		1121.28		6.071E-01	2.121E-01	3.775E-01	2.469E-02	1.608
		1189.05		5.830E-02	3.306E-01	5.412E-01	3.267E-02	0.108
		1221.42	*	1.164E-02	1.915E-01	3.234E-01	2.012E-02	0.036
		1230.97		-1.326E-01	5.241E-01	8.612E-01	5.407E-02	-0.154
RE-183		57.98		2.721E-02	3.079E-01	5.238E-01	6.523E-02	0.052
		59.32		-5.615E-02	1.552E-01	2.584E-01	3.155E-02	-0.217
		67.20		1.374E-01	2.348E-01	4.043E-01	4.716E-02	0.340
		162.32	*	1.094E-01	1.064E-01	1.804E-01	1.149E-02	0.606
	+	208.81		2.549E+00	1.382E+00	1.790E+00	1.175E-01	1.424
		291.72		3.675E-01	9.212E-01	1.412E+00	9.324E-02	0.260
RE-184		57.98		9.965E-02	1.128E+00	1.919E+00	2.389E-01	0.052
		59.32		-2.055E-01	5.680E-01	9.458E-01	1.155E-01	-0.217
		67.20		5.032E-01	8.598E-01	1.480E+00	1.727E-01	0.340
		161.27		3.967E-02	3.442E-01	5.609E-01	3.578E-02	0.071
		216.55		-6.329E-03	2.652E-01	4.221E-01	2.785E-02	-0.015
		252.85	*	-8.171E-02	2.132E-01	3.543E-01	2.366E-02	-0.231
		318.01		3.447E-01	4.230E-01	7.415E-01	4.787E-02	0.465

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185	792.07			8.256E-01	1.026E+00	1.636E+00	1.080E-01	0.505
	903.28			7.376E-02	1.121E+00	1.612E+00	1.323E-01	0.046
	920.93			-1.228E-01	4.069E-01	6.443E-01	5.231E-02	-0.191
	59.72			-3.481E-02	4.118E-01	6.947E-01	8.450E-02	-0.050
	61.14			-9.167E-02	2.180E-01	3.618E-01	4.369E-02	-0.253
	69.30			2.893E-02	3.709E-01	5.639E-01	6.519E-02	0.051
	592.07			9.227E-01	2.380E+00	3.961E+00	2.099E-01	0.233
	646.12	*		-1.675E-02	3.915E-02	6.354E-02	3.167E-03	-0.264
RE-188	717.42			-1.203E-01	8.323E-01	1.375E+00	7.669E-02	-0.088
	874.81			1.390E-01	5.522E-01	9.345E-01	7.342E-02	0.149
	880.27			-4.645E-01	7.072E-01	1.075E+00	8.542E-02	-0.432
	155.03	*		5.732E-03	1.685E-01	2.740E-01	1.759E-02	0.021
	477.96			3.554E+00	2.896E+00	5.172E+00	2.923E-01	0.687
W-188	633.10			-2.353E+00	3.010E+00	4.450E+00	2.256E-01	-0.529
	63.58			4.140E+01	6.691E+01	1.148E+02	1.366E+01	0.361
IR-192	227.08			3.121E+00	1.195E+01	1.928E+01	1.279E+00	0.162
	290.67	*		1.174E+00	7.374E+00	1.109E+01	7.330E-01	0.106
	295.96			1.079E+00	1.945E-01	2.965E-01	1.977E-02	3.640
	308.46			-2.103E-02	9.092E-02	1.504E-01	9.892E-03	-0.140
	316.51	*		1.676E-02	3.262E-02	5.627E-02	3.653E-03	0.298
AU-195	468.07			5.150E-02	7.116E-02	1.097E-01	7.204E-03	0.469
	604.41			-6.058E-02	5.164E-01	7.112E-01	7.874E-02	-0.085
	612.46			-6.563E-01	8.226E-01	1.031E+00	7.342E-02	-0.636
	65.12			-1.309E-01	2.096E-01	3.438E-01	4.055E-02	-0.381
	66.83			-1.319E-02	1.110E-01	1.863E-01	2.177E-02	-0.071
	75.70			1.319E+00	3.231E-01	5.199E-01	5.956E-02	2.537
	98.88	*		2.554E-01	2.426E-01	3.806E-01	3.639E-02	0.671
TL-200	129.76	+		4.110E+00	3.750E+00	4.842E+00	3.262E-01	0.849
	367.94	*		3.204E-05	3.750E+00	Half-Life	too short	
	579.30			3.903E-03	3.750E+00	Half-Life	too short	
	828.27			-7.901E-03	3.750E+00	Half-Life	too short	
TL-201	1205.75			5.799E-03	3.750E+00	Half-Life	too short	
	68.90			3.474E+00	7.553E+00	1.171E+01	1.355E+00	0.297
	70.82			-1.129E+00	4.133E+00	6.153E+00	7.082E-01	-0.184
	80.30			4.668E+00	6.565E+00	1.023E+01	1.183E+00	0.456
TL-202	135.34			-1.007E+01	3.039E+01	4.890E+01	3.245E+00	-0.206
	167.43	*		-2.759E-01	8.136E+00	1.313E+01	8.349E-01	-0.021
	68.90			2.614E-01	5.683E-01	8.808E-01	1.020E-01	0.297
	70.82			-8.474E-02	3.101E-01	4.617E-01	5.314E-02	-0.184
HG-203	80.30			3.504E-01	4.928E-01	7.679E-01	8.878E-02	0.456
	439.56	*		9.165E-02	6.580E-02	1.192E-01	6.763E-03	0.769
	70.83			-3.541E-01	1.287E+00	1.915E+00	2.987E-01	-0.185
	72.87			9.223E-01	6.744E-01	1.167E+00	1.776E-01	0.790
BI-207	82.60			1.771E-02	1.148E+00	1.835E+00	2.905E-01	0.010
	279.20	*		-1.202E-02	3.715E-02	6.154E-02	4.284E-03	-0.195
	72.80			2.419E-01	1.919E-01	3.346E-01	3.836E-02	0.723
	74.97	+		7.289E-01	1.785E-01	2.576E-01	2.951E-02	2.829
	84.90			2.435E-01	2.052E-01	3.232E-01	3.813E-02	0.753
	569.67			-1.292E-02	2.951E-02	4.484E-02	2.422E-03	-0.288

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207	1063.62	*		2.145E-03	5.522E-02	9.000E-02	6.401E-03	0.024
	1770.23			-3.654E-01	4.486E-01	5.890E-01	3.578E-02	-0.620
	81.07			-3.325E-01	2.447E-01	3.358E-01	3.893E-02	-0.990
	83.78			1.156E-01	1.375E-01	2.141E-01	2.511E-02	0.540
	94.90			-2.989E-01	2.333E-01	3.645E-01	3.757E-02	-0.820
	122.32			1.581E+00	1.641E+00	2.809E+00	2.161E-01	0.563
	144.24			5.014E-03	6.545E-01	1.044E+00	8.161E-02	0.005
	154.21			7.045E-02	3.899E-01	6.385E-01	4.814E-02	0.110
	269.46			4.881E-01	1.910E-01	3.545E-01	2.445E-02	1.377
	323.87	*		4.277E-01	6.976E-01	1.075E+00	1.799E-01	0.398
PO-209	338.28	+		7.111E+00	1.911E+00	2.523E+00	2.727E-01	2.818
	445.03			1.936E+00	2.163E+00	3.770E+00	3.844E-01	0.513
	260.50			-6.648E+00	8.728E+00	1.415E+01	9.450E-01	-0.470
	262.80			7.498E+00	2.361E+01	4.065E+01	2.714E+00	0.184
	896.60	*		-1.793E+00	7.353E+00	1.179E+01	9.677E-01	-0.152
BI-210	46.50	*		-2.032E+00	8.839E+00	1.494E+01	1.302E+00	-0.136
PB-210	46.50	*		-2.032E+00	8.839E+00	1.494E+01	1.302E+00	-0.136
PO-210	46.50	*		-2.032E+00	8.839E+00	1.494E+01	1.160E+00	-0.136
PB-211	404.84	*		-6.813E-02	1.005E+00	1.444E+00	8.998E-01	-0.047
BI-212	427.08			8.778E-01	2.016E+00	3.298E+00	2.038E+00	0.266
	831.96			5.356E-01	1.294E+00	1.905E+00	1.191E+00	0.281
	727.18	+	*	9.490E-01	4.663E-01	6.778E-01	5.181E-02	1.400
	785.46			5.546E-01	1.642E+00	2.813E+00	1.831E-01	0.197
PO-215	1620.62			9.101E-02	1.252E+00	2.079E+00	1.358E-01	0.044
	81.07			-3.325E-01	2.447E-01	3.358E-01	3.893E-02	-0.990
	83.78			1.156E-01	1.375E-01	2.141E-01	2.511E-02	0.540
	94.90			-2.989E-01	2.333E-01	3.645E-01	3.757E-02	-0.820
	122.32			1.581E+00	1.641E+00	2.809E+00	2.161E-01	0.563
	144.24			5.014E-03	6.545E-01	1.044E+00	8.161E-02	0.005
	154.21			7.045E-02	3.899E-01	6.385E-01	4.814E-02	0.110
	269.46			4.881E-01	1.910E-01	3.545E-01	2.445E-02	1.377
	323.87	*		4.277E-01	6.976E-01	1.075E+00	1.799E-01	0.398
	338.28	+		7.111E+00	1.911E+00	2.523E+00	2.727E-01	2.818
RN-219	445.03			1.936E+00	2.163E+00	3.770E+00	3.844E-01	0.513
	271.23			5.288E-01	2.416E-01	4.417E-01	3.863E-02	1.197
	401.81	*		2.275E-01	3.765E-01	6.461E-01	8.747E-02	0.352
	549.76	*		-1.178E+01	2.473E+01	3.812E+01	2.089E+00	-0.309
	81.07			-3.325E-01	2.447E-01	3.358E-01	3.893E-02	-0.990
RA-223	83.78			1.156E-01	1.375E-01	2.141E-01	2.511E-02	0.540
	94.90			-2.989E-01	2.333E-01	3.645E-01	3.757E-02	-0.820
	122.32			1.581E+00	1.641E+00	2.809E+00	2.161E-01	0.563
	144.24			5.014E-03	6.545E-01	1.044E+00	8.161E-02	0.005
	154.21			7.045E-02	3.899E-01	6.385E-01	4.814E-02	0.110
	269.46			4.881E-01	1.910E-01	3.545E-01	2.445E-02	1.377
	323.87	*		4.277E-01	6.976E-01	1.075E+00	1.799E-01	0.398
	338.28	+		7.111E+00	1.911E+00	2.523E+00	2.727E-01	2.818
	445.03			1.936E+00	2.163E+00	3.770E+00	3.844E-01	0.513
	79.80			7.487E-01	1.725E+00	2.645E+00	6.039E-01	0.283
AC-227	236.00			4.348E-01	2.721E-01	4.170E-01	4.567E-02	1.042

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TH-227		256.20	*	3.683E-01	3.643E-01	6.419E-01	9.209E-02	0.574
		286.10		-3.826E-01	1.450E+00	2.390E+00	2.867E-01	-0.160
	+	299.80		1.216E+00	1.741E+00	2.344E+00	3.884E-01	0.519
		304.40		-7.579E-02	1.958E+00	2.888E+00	5.072E-01	-0.026
		334.20		4.832E-01	2.370E+00	3.542E+00	6.554E-01	0.136
		79.80		7.487E-01	1.726E+00	2.645E+00	6.107E-01	0.283
	+	94.00		5.483E+00	3.038E+00	3.569E+00	8.061E-01	1.536
		236.00		4.348E-01	2.711E-01	4.170E-01	4.016E-02	1.042
		256.20	*	3.683E-01	3.660E-01	6.419E-01	1.105E-01	0.574
		286.10		-3.826E-01	1.499E+00	2.390E+00	2.395E+00	-0.160
TH-229	+	299.80		1.216E+00	1.741E+00	2.344E+00	3.884E-01	0.519
		304.40		-7.579E-02	1.958E+00	2.888E+00	5.072E-01	-0.026
		334.20		4.832E-01	2.370E+00	3.542E+00	6.554E-01	0.136
		85.43		1.515E-01	2.122E-01	3.278E-01	3.880E-02	0.462
	+	88.47		3.977E-01	1.584E-01	2.090E-01	2.484E-02	1.903
		100.00		1.503E-01	1.865E-01	3.054E-01	2.864E-02	0.492
		193.63	*	-1.088E-01	4.947E-01	7.842E-01	5.089E-02	-0.139
		210.97		7.291E-01	8.371E-01	1.256E+00	8.260E-02	0.580
	PA-231	283.67	*	5.444E-01	1.398E+00	2.404E+00	3.402E-01	0.226
	+	301.29		4.863E-01	6.938E-01	9.017E-01	9.821E-02	0.539
TH-231		81.07		-3.325E-01	2.447E-01	3.358E-01	3.893E-02	-0.990
		83.78		1.156E-01	1.375E-01	2.141E-01	2.511E-02	0.540
		94.90		-2.989E-01	2.333E-01	3.645E-01	3.757E-02	-0.820
		122.32		1.581E+00	1.641E+00	2.809E+00	2.161E-01	0.563
		144.24		5.014E-03	6.545E-01	1.044E+00	8.161E-02	0.005
		154.21		7.045E-02	3.899E-01	6.385E-01	4.814E-02	0.110
		269.46		4.881E-01	1.910E-01	3.545E-01	2.445E-02	1.377
		323.87	*	4.277E-01	6.976E-01	1.075E+00	1.799E-01	0.398
	+	338.28		7.111E+00	1.911E+00	2.523E+00	2.727E-01	2.818
		445.03		1.936E+00	2.163E+00	3.770E+00	3.844E-01	0.513
U-231		84.21		7.788E+00	6.953E+00	1.093E+01	1.285E+00	0.712
	+	92.29		3.497E+00	1.383E+00	4.707E+00	5.121E-01	0.743
		95.87	*	-1.505E+00	1.356E+00	1.874E+00	1.894E-01	-0.803
		108.00		-1.667E+00	2.275E+00	3.626E+00	3.002E-01	-0.460
	PA-233	75.28		2.127E+01	5.868E+00	7.777E+00	1.330E+00	2.735
	+	86.59		5.702E+00	2.694E+00	3.218E+00	9.028E-01	1.772
	+	300.12		3.390E-01	4.844E-01	6.461E-01	8.907E-02	0.525
		311.98	*	2.736E-02	6.005E-02	1.033E-01	7.046E-03	0.265
		340.50		4.294E-01	6.523E-01	9.971E-01	2.302E-01	0.431
		398.62		-7.023E-01	2.021E+00	3.241E+00	8.368E-01	-0.217
PA-234		415.76		-7.403E-02	1.720E+00	2.612E+00	5.366E-01	-0.028
		63.00		1.839E-01	1.996E+00	3.363E+00	5.907E-01	0.055
	+	94.67		4.889E-01	2.564E-01	2.760E-01	3.771E-02	1.771
		98.44		3.564E-02	1.038E-01	1.544E-01	8.641E-02	0.231
		99.86		4.382E-01	4.755E-01	7.819E-01	7.350E-02	0.560
		111.00		-1.997E-01	1.741E-01	2.668E-01	3.099E-02	-0.749
		131.20		4.147E-03	1.094E-01	1.606E-01	1.077E-02	0.026
		152.70		2.768E-01	3.172E-01	5.309E-01	8.523E-02	0.521
	+	186.00		6.589E+00	2.937E+00	2.554E+00	7.837E-01	2.580

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		226.40		2.676E-01	3.757E-01	6.199E-01	7.439E-02	0.432
		227.20		1.018E-01	3.994E-01	6.442E-01	4.274E-02	0.158
		248.90		-6.798E-02	8.677E-01	1.208E+00	2.627E-01	-0.056
	+	293.70		6.728E+00	1.576E+00	1.763E+00	2.889E-01	3.816
		369.80		2.530E-01	8.358E-01	1.411E+00	2.943E-01	0.179
		568.70		-2.384E-01	9.735E-01	1.509E+00	8.157E-02	-0.158
		569.50		-3.675E-02	2.560E-01	4.000E-01	2.161E-02	-0.092
		574.00		4.633E-01	1.356E+00	2.252E+00	1.212E-01	0.206
		699.00		-1.638E-01	7.084E-01	1.165E+00	2.078E-01	-0.141
		706.10		-6.346E-01	1.088E+00	1.677E+00	7.392E-01	-0.379
		733.00		2.047E-01	3.105E-01	5.109E-01	1.086E-01	0.401
		742.81		9.799E-01	1.384E+00	2.186E+00	1.463E+00	0.448
		796.30		8.233E-01	9.917E-01	1.547E+00	4.098E-01	0.532
		805.60		1.668E-01	8.913E-01	1.505E+00	4.542E-01	0.111
		819.60		-2.126E-01	1.048E+00	1.691E+00	6.375E-01	-0.126
		826.30		1.202E-01	7.261E-01	1.220E+00	5.428E-01	0.099
		831.60		2.850E-01	6.417E-01	9.732E-01	2.867E-01	0.293
		876.40		-4.136E-01	8.801E-01	1.194E+00	1.227E+00	-0.346
		880.51		-1.598E-01	2.545E-01	3.885E-01	3.088E-02	-0.411
		883.24		5.808E-02	2.622E-01	4.377E-01	2.939E-01	0.133
		899.00		-1.709E-01	8.228E-01	1.319E+00	5.755E-01	-0.130
		925.00		3.461E-01	1.065E+00	1.812E+00	1.467E-01	0.191
		926.50		8.512E-02	1.616E-01	2.783E-01	6.987E-02	0.306
		946.00	*	3.342E-02	2.814E-01	4.670E-01	8.631E-02	0.072
		949.00		-8.096E-02	4.216E-01	6.757E-01	5.383E-02	-0.120
		980.50		7.883E-01	7.053E-01	1.285E+00	9.981E-02	0.613
PA-234M	+	1394.10		-1.409E-02	1.054E+00	1.746E+00	1.133E+00	-0.008
		766.42		1.750E+01	1.689E+01	2.175E+01	1.096E+01	0.805
		1001.03	*	-1.924E+00	4.366E+00	6.781E+00	6.182E-01	-0.284
TH-234		63.29	*	5.158E-01	1.685E+00	2.858E+00	5.655E-01	0.180
	+	92.38		7.715E-01	3.289E-01	1.041E+00	2.004E-01	0.741
U-235		89.95		2.183E+00	1.597E+00	1.910E+00	6.067E-01	1.143
	+	93.35		1.706E+00	9.920E-01	1.233E+00	3.540E-01	1.383
		105.00		1.671E+00	1.118E+00	1.775E+00	5.300E-01	0.941
		143.76	*	-1.934E-02	2.037E-01	3.233E-01	5.359E-02	-0.060
		163.35		3.182E-01	4.561E-01	7.573E-01	1.376E-01	0.420
	+	185.71		2.440E-01	8.045E-02	9.452E-02	6.095E-03	2.582
		205.31		9.948E-02	5.687E-01	8.181E-01	1.492E-01	0.122
NP-236	+	94.67		3.708E-01	1.917E-01	2.096E-01	2.170E-02	1.769
		98.44		2.693E-02	7.706E-02	1.167E-01	1.125E-02	0.231
		111.00		-1.511E-01	1.311E-01	2.018E-01	1.603E-02	-0.749
		160.31	*	-1.569E-02	7.720E-02	1.239E-01	7.911E-03	-0.127
U-238		63.29	*	5.158E-01	1.685E+00	2.858E+00	5.655E-01	0.180
	+	92.38		7.715E-01	3.051E-01	1.041E+00	1.130E-01	0.741
NP-239		99.55		1.464E-01	1.702E-01	2.645E-01	2.500E-02	0.553
		117.00	*	-2.061E-01	1.738E-01	2.685E-01	1.976E-02	-0.768
	+	209.75		1.990E+00	1.079E+00	1.408E+00	9.248E-02	1.414
		228.18		-1.269E-01	2.163E-01	3.311E-01	2.198E-02	-0.383
		277.60		1.533E-01	1.633E-01	2.887E-01	1.920E-02	0.531

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		2.739E-01	1.342E+00	2.007E+00	1.269E-01	0.136
AM-241		59.54	*	-4.097E-02	2.157E-01	3.621E-01	4.571E-02	-0.113
CM-243		99.55		1.507E-01	1.752E-01	2.722E-01	2.572E-02	0.553
		103.76	*	-4.010E-03	9.411E-02	1.556E-01	1.372E-02	-0.026
		117.00		-2.121E-01	1.789E-01	2.762E-01	2.033E-02	-0.768
	+	209.75		1.962E+00	1.064E+00	1.388E+00	9.117E-02	1.414
		228.18		-1.283E-01	2.185E-01	3.346E-01	2.221E-02	-0.383
		277.60		1.546E-01	1.647E-01	2.911E-01	1.936E-02	0.531
AM-246		798.80		-1.913E-02	1.444E-01	2.042E-01	1.369E-02	-0.094
		1036.00		1.281E-01	2.972E-01	5.042E-01	3.706E-02	0.254
		1062.04		1.195E-01	2.254E-01	3.871E-01	2.758E-02	0.309
		1078.86	*	-2.300E-02	1.395E-01	2.218E-01	1.546E-02	-0.104
CM-247		278.00		5.613E-01	6.837E-01	1.202E+00	7.992E-02	0.467
		287.40		-8.500E-01	1.155E+00	1.848E+00	1.224E-01	-0.460
		402.60	*	1.771E-02	3.420E-02	5.846E-02	3.300E-03	0.303
CF-249		252.85		-3.053E-01	7.965E-01	1.324E+00	8.841E-02	-0.231
		333.44		1.953E-01	1.968E-01	2.735E-01	1.732E-02	0.714
		387.95	*	1.623E-02	3.961E-02	6.723E-02	3.820E-03	0.241
CF-251		176.60	*	-3.126E-02	1.243E-01	1.978E-01	1.266E-02	-0.158
		227.00		4.085E-02	3.582E-01	5.730E-01	3.801E-02	0.071
		285.00		3.119E-01	1.615E+00	2.750E+00	1.823E-01	0.113

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]G243624007
* Acquisition date   : 7-JAN-2010 15:50:14 Detector SN#      :
* Detector ID        : GAM04                      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 02:00:01.20             Half life ratio : 8.000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID
* Sample ID          : G243624007             Analyst initials: MXR1
* Batch Number       : 937704                 Sample Quantity : 1.2605E+02 GRAM
* Recovery           : 1.00000                 Carrier Weight  : 0.00000
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 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	1.949E+01	2.016E+00	5.194E-01	0.000E+00
MN-54	3.789E-02	3.858E-02	6.419E-02	0.000E+00
CD-109	2.968E+00	1.159E+00	1.519E+00	0.000E+00
SN-126	2.913E-01	1.137E-01	1.623E-01	0.000E+00
BA-137M	1.160E-01	5.452E-02	6.778E-02	0.000E+00
CS-137	1.226E-01	5.764E-02	7.165E-02	0.000E+00
TL-208	5.058E-01	8.961E-02	5.588E-02	0.000E+00
BI-211	4.498E+00	5.274E-01	2.962E-01	0.000E+00
PB-212	1.545E+00	1.649E-01	8.688E-02	0.000E+00
PO-212	1.545E+00	1.649E-01	8.688E-02	0.000E+00
BI-214	1.151E+00	1.768E-01	1.085E-01	0.000E+00
PB-214	1.565E+00	2.001E-01	1.033E-01	0.000E+00
PO-214	1.565E+00	2.001E-01	1.033E-01	0.000E+00
PO-216	1.545E+00	1.649E-01	8.688E-02	0.000E+00
PO-218	1.565E+00	2.001E-01	1.033E-01	0.000E+00
RA-224	4.679E+00	1.497E+00	9.889E-01	0.000E+00
RA-226	1.151E+00	1.768E-01	1.085E-01	0.000E+00
AC-228	1.503E+00	3.655E-01	2.021E-01	0.000E+00
RA-228	1.503E+00	3.655E-01	2.021E-01	0.000E+00
TH-228	1.570E+00	1.675E-01	8.829E-02	0.000E+00
TH-230	1.150E+00	1.768E-01	1.085E-01	0.000E+00
TH-232	1.503E+00	3.655E-01	2.021E-01	0.000E+00
U-234	1.150E+00	1.768E-01	1.085E-01	0.000E+00
NP-237	8.553E-01	3.761E-01	4.331E-01	0.000E+00
AM-243	4.060E-01	9.747E-02	9.685E-02	0.000E+00
ANH-511	1.049E-01	6.057E-02	4.636E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	2.105E-01	3.022E-01	5.381E-01	0.000E+00 NOT IDENT.

NA-22	-2.797E-02	4.149E-02	6.552E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.385E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	4.459E-03	2.678E-02	4.593E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	7.130E-02	8.221E-02	0.000E+00	FAIL ABUN
SC-46	-2.410E-02	3.730E-02	5.866E-02	0.000E+00	FAIL ABUN
V-48	-5.917E-02	7.493E-02	1.147E-01	0.000E+00	NOT IDENT.
CR-51	-2.116E-01	3.642E-01	6.135E-01	0.000E+00	NOT IDENT.
MN-52	-1.630E-01	2.260E-01	3.323E-01	0.000E+00	NOT IDENT.
CO-56	1.047E-02	3.339E-02	5.865E-02	0.000E+00	NOT IDENT.
CO-57	2.034E-02	2.344E-02	4.223E-02	0.000E+00	NOT IDENT.
CO-58	-2.694E-02	3.380E-02	5.302E-02	0.000E+00	NOT IDENT.
FE-59	2.558E-02	9.050E-02	1.546E-01	0.000E+00	NOT IDENT.
CO-60	7.822E-03	3.696E-02	6.495E-02	0.000E+00	NOT IDENT.
ZN-65	8.922E-03	1.010E-01	1.461E-01	0.000E+00	NOT IDENT.
GE-68	-1.562E-01	1.157E+00	1.891E+00	0.000E+00	NOT IDENT.
AS-73	-2.700E-01	1.419E+00	2.555E+00	0.000E+00	NOT IDENT.
AS-74	-6.128E-03	8.595E-02	1.415E-01	0.000E+00	NOT IDENT.
SE-75	3.573E-03	3.791E-02	6.743E-02	0.000E+00	NOT IDENT.
BR-77	3.805E+00	1.219E+01	2.103E+01	0.000E+00	FAIL ABUN
SR-82	-1.901E-01	3.456E-01	5.596E-01	0.000E+00	NOT IDENT.
RB-83	-4.333E-03	6.157E-02	1.026E-01	0.000E+00	NOT IDENT.
RB-84	1.367E-02	5.989E-02	1.040E-01	0.000E+00	NOT IDENT.
KR-85	8.359E+00	6.641E+00	1.115E+01	0.000E+00	NOT IDENT.
SR-85	4.333E-02	3.443E-02	5.779E-02	0.000E+00	NOT IDENT.
RB-86	1.843E-01	7.605E-01	1.298E+00	0.000E+00	NOT IDENT.
Y-88	5.731E-03	2.854E-02	4.936E-02	0.000E+00	NOT IDENT.
ZR-88	-1.333E-02	2.827E-02	4.692E-02	0.000E+00	NOT IDENT.
Y-91	1.127E+01	1.895E+01	3.299E+01	0.000E+00	NOT IDENT.
NB-94	9.327E-03	3.232E-02	5.707E-02	0.000E+00	NOT IDENT.
NB-95	4.277E-02	4.964E-02	8.070E-02	0.000E+00	NOT IDENT.
NB-95M	2.163E-02	1.412E-01	2.103E-01	0.000E+00	NOT IDENT.
ZR-95	4.618E-02	6.253E-02	1.145E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.064E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.344E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-2.347E+00	1.250E+01	2.110E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.324E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.089E-02	3.169E-02	5.103E-02	0.000E+00	NOT IDENT.
RH-102	-2.030E-02	2.788E-02	4.435E-02	0.000E+00	FAIL ABUN
RU-103	-2.555E-02	3.825E-02	6.048E-02	0.000E+00	FAIL ABUN
RH-106	-1.455E-01	2.793E-01	4.349E-01	0.000E+00	FAIL ABUN
RU-106	-1.455E-01	2.789E-01	4.349E-01	0.000E+00	FAIL ABUN
AG-108M	2.049E-02	2.934E-02	5.259E-02	0.000E+00	NOT IDENT.
AG-110M	4.593E-02	3.945E-02	6.681E-02	0.000E+00	NOT IDENT.
IN-111	-3.849E-01	1.473E+00	2.107E+00	0.000E+00	NOT IDENT.
IN-113M	-1.934E-02	4.156E-02	6.905E-02	0.000E+00	NOT IDENT.
SN-113	-1.934E-02	4.156E-02	6.905E-02	0.000E+00	NOT IDENT.
IN-114M	8.106E-03	1.968E-01	2.964E-01	0.000E+00	NOT IDENT.
CD-115	3.508E+00	1.193E+01	2.058E+01	0.000E+00	NOT IDENT.
SN-117M	-1.338E-03	5.416E-02	9.240E-02	0.000E+00	NOT IDENT.
SB-122	1.950E+00	2.677E+00	4.720E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.018E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-8.817E-03	2.675E-02	4.495E-02	0.000E+00	NOT IDENT.
I-124	6.254E-01	8.085E-01	1.279E+00	0.000E+00	FAIL ABUN
SB-124	-8.867E-03	7.490E-02	1.216E-01	0.000E+00	FAIL ABUN
SB-125	2.445E-02	8.385E-02	1.461E-01	0.000E+00	FAIL ABUN
TE-125M	-1.077E+00	8.403E+00	1.447E+01	0.000E+00	NOT IDENT.
I-126	2.877E-01	2.080E-01	3.697E-01	0.000E+00	NOT IDENT.
SB-126	1.527E-01	1.561E-01	2.614E-01	0.000E+00	NOT IDENT.
SB-127	8.908E-01	1.390E+00	2.540E+00	0.000E+00	NOT IDENT.
XE-127	1.150E-02	4.647E-02	7.898E-02	0.000E+00	NOT IDENT.
I-131	-1.593E-03	1.210E-01	2.089E-01	0.000E+00	NOT IDENT.
TE-132	-4.794E-01	8.116E-01	1.298E+00	0.000E+00	NOT IDENT.
BA-133	1.563E-02	4.236E-02	6.667E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.101E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.511E-02	8.442E-02	0.000E+00	FAIL ABUN
CS-135	2.010E-01	1.528E-01	2.848E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.836E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.705E-02	1.112E-01	1.820E-01	0.000E+00	FAIL ABUN
CE-139	-1.308E-02	2.749E-02	4.568E-02	0.000E+00	NOT IDENT.
BA-140	8.443E-02	2.551E-01	4.367E-01	0.000E+00	NOT IDENT.
LA-140	-3.998E-03	1.009E-01	1.677E-01	0.000E+00	FAIL ABUN
CE-141	1.436E-02	5.885E-02	1.022E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.910E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.444E-02	1.886E-01	3.238E-01	0.000E+00	NOT IDENT.
PM-144	6.018E-03	3.481E-02	6.096E-02	0.000E+00	NOT IDENT.
PR-144	4.080E-01	2.360E+00	4.133E+00	0.000E+00	NOT IDENT.
PM-146	1.463E-03	4.219E-02	7.181E-02	0.000E+00	NOT IDENT.
ND-147	-1.766E-01	4.794E-01	7.712E-01	0.000E+00	FAIL ABUN

PM-149	-1.346E+01	1.163E+02	2.020E+02	0.000E+00	NOT IDENT.
EU-152	-1.413E-02	9.465E-02	1.506E-01	0.000E+00	FAIL ABUN
GD-153	-5.085E-02	8.565E-02	1.303E-01	0.000E+00	NOT IDENT.
EU-154	-8.470E-02	1.167E-01	1.829E-01	0.000E+00	NOT IDENT.
EU-155	1.614E-01	1.018E-01	1.888E-01	0.000E+00	FAIL ABUN
TB-160	-5.913E-02	1.225E-01	1.959E-01	0.000E+00	FAIL ABUN
HO-166M	9.947E-03	5.703E-02	9.985E-02	0.000E+00	FAIL ABUN
TM-171	-6.856E+00	3.279E+01	5.842E+01	0.000E+00	NOT IDENT.
LU-176	1.452E-02	2.305E-02	4.174E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.661E+00	2.225E+00	0.000E+00	FAIL ABUN
LU-177M	4.564E-02	1.881E-01	2.890E-01	0.000E+00	NOT IDENT.
HF-181	-4.605E-02	3.963E-02	6.002E-02	0.000E+00	NOT IDENT.
W-181	-2.973E-01	4.429E-01	7.731E-01	0.000E+00	NOT IDENT.
TA-182	1.164E-02	1.877E-01	3.241E-01	0.000E+00	NOT IDENT.
RE-183	1.094E-01	1.042E-01	1.861E-01	0.000E+00	FAIL ABUN
RE-184	-8.171E-02	2.089E-01	3.633E-01	0.000E+00	NOT IDENT.
OS-185	-1.675E-02	3.837E-02	6.427E-02	0.000E+00	NOT IDENT.
RE-188	5.732E-03	1.651E-01	2.828E-01	0.000E+00	NOT IDENT.
W-188	1.174E+00	7.227E+00	1.135E+01	0.000E+00	NOT IDENT.
IR-192	1.676E-02	3.196E-02	5.751E-02	0.000E+00	FAIL ABUN
AU-195	2.554E-01	2.378E-01	3.953E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.642E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-2.759E-01	7.973E+00	1.354E+01	0.000E+00	NOT IDENT.
TL-202	9.165E-02	6.448E-02	1.213E-01	0.000E+00	NOT IDENT.
HG-203	-1.202E-02	3.641E-02	6.300E-02	0.000E+00	NOT IDENT.
BI-207	2.145E-03	5.412E-02	9.037E-02	0.000E+00	FAIL ABUN
TL-207	4.277E-01	6.837E-01	1.098E+00	0.000E+00	FAIL ABUN
PO-209	-1.793E+00	7.206E+00	1.187E+01	0.000E+00	NOT IDENT.
BI-210	-2.032E+00	8.662E+00	1.568E+01	0.000E+00	NOT IDENT.
PB-210	-2.032E+00	8.662E+00	1.568E+01	0.000E+00	NOT IDENT.
PO-210	-2.032E+00	8.662E+00	1.568E+01	0.000E+00	NOT IDENT.
PB-211	-6.813E-02	9.852E-01	1.470E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.569E-01	6.844E-01	0.000E+00	FAIL ABUN
PO-215	4.277E-01	6.837E-01	1.098E+00	0.000E+00	FAIL ABUN
RN-219	2.275E-01	3.690E-01	6.580E-01	0.000E+00	NOT IDENT.
RN-220	-1.178E+01	2.424E+01	3.865E+01	0.000E+00	NOT IDENT.
RA-223	4.277E-01	6.837E-01	1.098E+00	0.000E+00	FAIL ABUN
AC-227	3.683E-01	3.570E-01	6.579E-01	0.000E+00	FAIL ABUN
TH-227	3.683E-01	3.587E-01	6.579E-01	0.000E+00	FAIL ABUN
TH-229	-1.088E-01	4.848E-01	8.070E-01	0.000E+00	FAIL ABUN
PA-231	5.444E-01	1.370E+00	2.460E+00	0.000E+00	FAIL ABUN
TH-231	4.277E-01	6.837E-01	1.098E+00	0.000E+00	FAIL ABUN
U-231	-1.505E+00	1.329E+00	1.947E+00	0.000E+00	FAIL ABUN
PA-233	2.736E-02	5.885E-02	1.056E-01	0.000E+00	FAIL ABUN
PA-234	3.342E-02	2.757E-01	4.698E-01	0.000E+00	FAIL ABUN
PA-234M	-1.924E+00	4.279E+00	6.815E+00	0.000E+00	FAIL ABUN
TH-234	5.158E-01	1.651E+00	2.987E+00	0.000E+00	FAIL ABUN
U-235	-1.934E-02	1.996E-01	3.341E-01	0.000E+00	FAIL ABUN
NP-236	-1.569E-02	7.565E-02	1.278E-01	0.000E+00	FAIL ABUN
U-238	5.158E-01	1.651E+00	2.987E+00	0.000E+00	FAIL ABUN
NP-239	-2.061E-01	1.704E-01	2.783E-01	0.000E+00	FAIL ABUN
AM-241	-4.097E-02	2.113E-01	3.787E-01	0.000E+00	NOT IDENT.
CM-243	-4.010E-03	9.223E-02	1.615E-01	0.000E+00	FAIL ABUN
AM-246	-2.300E-02	1.367E-01	2.227E-01	0.000E+00	NOT IDENT.
CM-247	1.771E-02	3.352E-02	5.954E-02	0.000E+00	NOT IDENT.
CF-249	1.623E-02	3.882E-02	6.851E-02	0.000E+00	NOT IDENT.
CF-251	-3.126E-02	1.218E-01	2.038E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKAl00:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624007.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:50:14.
Sample ID          : G243624007 Sample quantity : 1.26050E+02 GRAM
Detector name      : GAM04 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.20 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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	751	10.67*	1.075E+00	1.949E+01	1.949E+01	10.56
MN-54	834.83	22	99.97*	1.793E+00	3.655E-02	3.789E-02	103.91
CD-109	88.03	181	3.72*	4.993E+00	2.897E+00	2.968E+00	39.84
SN-126	64.28	-----	9.60	2.203E+00	-----	Line Not Found	-----
	86.94	181	8.90	4.993E+00	1.211E+00	1.211E+00	56.78
	87.57	181	37.00*	4.993E+00	2.913E-01	2.913E-01	39.84
BA-137M	661.65	77	89.98*	2.209E+00	1.158E-01	1.160E-01	47.98
CS-137	661.65	77	85.12*	2.209E+00	1.224E-01	1.226E-01	47.98
TL-208	277.35	-----	6.80	4.326E+00	-----	Line Not Found	-----
	510.84	96	21.60	2.732E+00	4.857E-01	4.857E-01	59.49
	583.14	351	84.20*	2.456E+00	5.058E-01	5.058E-01	18.08
	860.37	64	12.46	1.744E+00	8.764E-01	8.764E-01	43.71
BI-211	72.87	-----	1.27	3.384E+00	-----	Line Not Found	-----
	351.07	709	12.94*	3.629E+00	4.498E+00	4.498E+00	11.97
PB-212	74.81	326	10.70	3.628E+00	2.505E+00	2.505E+00	26.22
	77.11	529	18.00	3.915E+00	2.236E+00	2.236E+00	17.63
	87.30	181	8.00	4.993E+00	1.347E+00	1.347E+00	41.08
	238.63	1117	44.60*	4.829E+00	1.545E+00	1.545E+00	10.89
	300.09	31	3.41	4.080E+00	6.560E-01	6.560E-01	142.51
PO-212	74.81	326	10.70	3.628E+00	2.505E+00	2.505E+00	26.22
	77.11	529	18.00	3.915E+00	2.236E+00	2.236E+00	17.63
	87.30	181	8.00	4.993E+00	1.347E+00	1.347E+00	41.08
	115.19	-----	0.60	6.408E+00	-----	Line Not Found	-----
	238.63	1117	44.60*	4.829E+00	1.545E+00	1.545E+00	10.89
	300.09	31	3.41	4.080E+00	6.560E-01	6.560E-01	142.51
BI-214	609.31	424	46.30*	2.369E+00	1.150E+00	1.151E+00	15.68
	1120.29	120	15.10	1.359E+00	1.738E+00	1.738E+00	30.16
	1764.49	-----	15.80	9.529E-01	-----	Line Not Found	-----
PB-214	74.81	326	6.21	3.628E+00	4.315E+00	4.315E+00	25.59
	77.11	529	10.50	3.915E+00	3.833E+00	3.833E+00	19.21
	87.30	181	4.67	4.993E+00	2.308E+00	2.308E+00	40.58
	241.98	297	7.49	4.787E+00	2.468E+00	2.468E+00	33.11

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	374	19.20	4.136E+00	1.402E+00	1.402E+00	19.05
	351.92	709	37.20*	3.629E+00	1.564E+00	1.565E+00	13.05
	74.81	326	6.21	3.628E+00	4.315E+00	4.315E+00	25.59
	77.11	529	10.50	3.915E+00	3.833E+00	3.833E+00	19.21
	87.30	181	4.67	4.993E+00	2.308E+00	2.308E+00	40.58
PO-216	241.98	297	7.49	4.787E+00	2.468E+00	2.468E+00	33.11
	295.21	374	19.20	4.136E+00	1.402E+00	1.402E+00	19.05
	351.92	709	37.20*	3.629E+00	1.564E+00	1.565E+00	13.05
	74.81	326	10.70	3.628E+00	2.505E+00	2.505E+00	26.22
	77.11	529	18.00	3.915E+00	2.236E+00	2.236E+00	17.63
PO-218	87.30	181	8.00	4.993E+00	1.347E+00	1.347E+00	41.08
	238.63	1117	44.60*	4.829E+00	1.545E+00	1.545E+00	10.89
	300.09	31	3.41	4.080E+00	6.560E-01	6.560E-01	142.51
	74.81	326	6.21	3.628E+00	4.315E+00	4.315E+00	25.59
	77.11	529	10.50	3.915E+00	3.833E+00	3.833E+00	19.21
RA-224	87.30	181	4.67	4.993E+00	2.308E+00	2.308E+00	40.58
	241.98	297	7.49	4.787E+00	2.468E+00	2.468E+00	33.11
	295.21	374	19.20	4.136E+00	1.402E+00	1.402E+00	19.05
	351.92	709	37.20*	3.629E+00	1.564E+00	1.565E+00	13.05
	240.98	297	3.95*	4.787E+00	4.679E+00	4.679E+00	32.63
RA-226	609.31	424	46.30*	2.369E+00	1.150E+00	1.151E+00	15.68
	1120.29	120	15.10	1.359E+00	1.738E+00	1.738E+00	30.16
	1764.49	-----	15.80	9.529E-01	-----	Line Not Found	-----
	338.32	244	11.40	3.739E+00	1.703E+00	1.703E+00	47.67
	911.07	231	27.70*	1.654E+00	1.503E+00	1.503E+00	24.81
AC-228	969.11	137	16.60	1.560E+00	1.574E+00	1.574E+00	32.93
	338.32	244	11.40	3.739E+00	1.703E+00	1.703E+00	47.67
	911.07	231	27.70*	1.654E+00	1.503E+00	1.503E+00	24.81
	969.11	137	16.60	1.560E+00	1.574E+00	1.574E+00	32.93
	74.81	326	10.70	3.628E+00	2.505E+00	2.545E+00	24.52
TH-228	77.11	529	18.00	3.915E+00	2.236E+00	2.272E+00	17.63
	87.30	181	8.00	4.993E+00	1.347E+00	1.369E+00	39.84
	238.63	1117	44.60*	4.829E+00	1.545E+00	1.570E+00	10.89
	300.09	31	3.41	4.080E+00	6.560E-01	6.667E-01	153.99
	609.31	424	46.30*	2.369E+00	1.150E+00	1.150E+00	15.68
TH-230	1120.29	120	15.10	1.359E+00	1.738E+00	1.738E+00	30.16
	1764.49	-----	15.80	9.529E-01	-----	Line Not Found	-----
	338.32	244	11.40	3.739E+00	1.703E+00	1.703E+00	25.39
	911.07	231	27.70*	1.654E+00	1.503E+00	1.503E+00	24.81
	969.11	137	16.60	1.560E+00	1.574E+00	1.574E+00	32.93
U-234	609.31	424	46.30*	2.369E+00	1.150E+00	1.150E+00	15.68
	1120.29	120	15.10	1.359E+00	1.738E+00	1.738E+00	30.16
	1764.49	-----	15.80	9.529E-01	-----	Line Not Found	-----
	86.50	181	12.60*	4.993E+00	8.553E-01	8.553E-01	44.87
	95.87	-----	2.60	5.678E+00	-----	Line Not Found	-----
AM-243	74.67	326	66.00*	3.628E+00	4.060E-01	4.060E-01	24.49
	86.72	181	0.34	4.993E+00	3.207E+01	3.207E+01	39.84
	117.66	-----	0.55	6.445E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.417E+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	96	100.00*	2.732E+00	1.049E-01	1.049E-01	58.90

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 1
Number of lines tentatively identified by NID 32 96.97%

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	1.949E+01	1.949E+01	0.206E+01	10.56	
MN-54	312.70D	1.04	3.655E-02	3.789E-02	3.937E-02	103.91	
CD-109	464.00D	1.02	2.897E+00	2.968E+00	1.182E+00	39.84	
SN-126	1.00E+05Y	1.00	2.913E-01	2.913E-01	1.160E-01	39.84	
BA-137M	30.17Y	1.00	1.158E-01	1.160E-01	0.556E-01	47.98	
CS-137	30.17Y	1.00	1.224E-01	1.226E-01	0.588E-01	47.98	
TL-208	1.41E+10Y	1.00	5.058E-01	5.058E-01	0.914E-01	18.08	
BI-211	7.04E+08Y	1.00	4.498E+00	4.498E+00	0.538E+00	11.97	
PB-212	1.41E+10Y	1.00	1.545E+00	1.545E+00	0.168E+00	10.89	
PO-212	1.41E+10Y	1.00	1.545E+00	1.545E+00	0.168E+00	10.89	
BI-214	1600.00Y	1.00	1.150E+00	1.151E+00	0.180E+00	15.68	
PB-214	1600.00Y	1.00	1.564E+00	1.565E+00	0.204E+00	13.05	
PO-214	1600.00Y	1.00	1.564E+00	1.565E+00	0.204E+00	13.05	
PO-216	1.41E+10Y	1.00	1.545E+00	1.545E+00	0.168E+00	10.89	
PO-218	1600.00Y	1.00	1.564E+00	1.565E+00	0.204E+00	13.05	
RA-224	1.41E+10Y	1.00	4.679E+00	4.679E+00	1.527E+00	32.63	
RA-226	1600.00Y	1.00	1.150E+00	1.151E+00	0.180E+00	15.68	
AC-228	1.41E+10Y	1.00	1.503E+00	1.503E+00	0.373E+00	24.81	
RA-228	1.41E+10Y	1.00	1.503E+00	1.503E+00	0.373E+00	24.81	
TH-228	1.91Y	1.02	1.545E+00	1.570E+00	0.171E+00	10.89	
TH-230	4.47E+09Y	1.00	1.150E+00	1.150E+00	0.180E+00	15.68	
TH-232	1.41E+10Y	1.00	1.503E+00	1.503E+00	0.373E+00	24.81	
U-234	4.47E+09Y	1.00	1.150E+00	1.150E+00	0.180E+00	15.68	
NP-237	2.14E+06Y	1.00	8.553E-01	8.553E-01	3.837E-01	44.87	
AM-243	7380.00Y	1.00	4.060E-01	4.060E-01	0.995E-01	24.49	
ANH-511	1.00E+09Y	1.00	1.049E-01	1.049E-01	0.618E-01	58.90	

Total Activity : 5.398E+01 5.408E+01

Grand Total Activity : 5.398E+01 5.408E+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	92.25	76	78	0.73	184.53	183	12	1.06E-02	38.0	5.43E+00	T
3	93.20	142	326	1.27	186.45	183	12	1.97E-02	50.6	5.50E+00	T
0	129.13	68	300	0.85	258.32	253	8	9.50E-03	91.0	6.50E+00	T
0	185.91	252	337	1.14	371.88	366	12	3.50E-02	32.3	5.70E+00	T
0	208.98	115	258	0.86	418.03	414	9	1.59E-02	53.8	5.29E+00	T
0	327.56	68	113	1.18	655.20	652	9	9.41E-03	61.5	3.83E+00	T
0	409.79	62	100	1.24	819.66	815	11	8.54E-03	67.7	3.24E+00	T
0	462.54	106	103	1.31	925.17	919	13	1.47E-02	44.2	2.95E+00	T
0	726.73	77	72	1.94	1453.54	1448	11	1.06E-02	48.5	2.03E+00	T
0	767.79	36	57	1.47	1535.66	1532	9	5.06E-03	82.3	1.94E+00	T
0	794.60	42	49	1.60	1589.27	1584	13	5.82E-03	75.4	1.88E+00	T
2	964.33	38	26	2.06	1928.71	1925	24	5.25E-03	53.7	1.57E+00	T
0	1377.39	20	25	2.13	2754.71	2747	11	2.83E-03	****	1.13E+00	T
0	1762.91	72	13	2.19	3525.55	3518	16	1.01E-02	31.9	9.53E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
*
*                               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624007.CNF;1
* Acquisition date   : 7-JAN-2010 15:50:14.  Detector SN#      :
* Detector ID        : GAM04                  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 02:00:01.20          Half life ratio  : 8.00000
*****
*
*                               SAMPLE DATA
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G243624007           Analyst initials: MXR1
* Batch Number       : 937704              Sample Quantity : 1.26050E+02 GRAM
*****
*
*                               QC DATA
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41.36MS 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	1.949E+01	2.057E+00	5.197E-01	3.693E-02	37.496
MN-54	3.789E-02	3.937E-02	6.370E-02	4.610E-03	0.595
CD-109	2.968E+00	1.182E+00	1.460E+00	1.754E-01	2.033
SN-126	2.913E-01	1.160E-01	1.560E-01	1.871E-02	1.867
BA-137M	1.160E-01	5.563E-02	6.703E-02	3.269E-03	1.730
CS-137	1.226E-01	5.881E-02	7.085E-02	3.476E-03	1.730
TL-208	5.058E-01	9.143E-02	5.516E-02	3.471E-03	9.169
BI-211	4.498E+00	5.382E-01	2.903E-01	1.961E-02	15.494
PB-212	1.545E+00	1.682E-01	8.467E-02	6.800E-03	18.242
PO-212	1.545E+00	1.682E-01	8.467E-02	6.800E-03	18.242
BI-214	1.151E+00	1.804E-01	1.072E-01	7.877E-03	10.733
PB-214	1.565E+00	2.042E-01	1.012E-01	8.632E-03	15.461
PO-214	1.565E+00	2.042E-01	1.012E-01	8.632E-03	15.461
PO-216	1.545E+00	1.682E-01	8.467E-02	6.800E-03	18.242
PO-218	1.565E+00	2.042E-01	1.012E-01	8.632E-03	15.461
RA-224	4.679E+00	1.527E+00	9.639E-01	6.426E-02	4.855
RA-226	1.151E+00	1.804E-01	1.072E-01	7.877E-03	10.733
AC-228	1.503E+00	3.730E-01	2.008E-01	2.189E-02	7.486

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-228	1.503E+00	3.730E-01	2.008E-01	2.189E-02	7.486
TH-228	1.570E+00	1.710E-01	8.605E-02	6.911E-03	18.242
TH-230	1.150E+00	1.804E-01	1.072E-01	7.877E-03	10.733
TH-232	1.503E+00	3.730E-01	2.008E-01	2.189E-02	7.486
U-234	1.150E+00	1.804E-01	1.072E-01	7.877E-03	10.733
NP-237	8.553E-01	3.837E-01	4.162E-01	9.916E-02	2.055
AM-243	4.060E-01	9.946E-02	9.287E-02	1.064E-02	4.372
ANH-511	1.049E-01	6.180E-02	4.568E-02	2.555E-03	2.297

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.105E-01		3.083E-01	5.297E-01	3.509E-02	0.397
NA-22	-2.797E-02		4.234E-02	6.542E-02	4.278E-03	-0.428
NA-24	-7.979E-01		1.217E+00	Half-Life too short		
AL-26	4.459E-03		2.733E-02	4.611E-02	2.734E-03	0.097
TI-44	4.127E-01	+	7.276E-02	7.889E-02	9.072E-03	5.231
SC-46	-2.410E-02		3.806E-02	5.827E-02	4.712E-03	-0.414
V-48	-5.917E-02		7.646E-02	1.140E-01	8.836E-03	-0.519
CR-51	-2.116E-01		3.716E-01	6.004E-01	4.228E-02	-0.352
MN-52	-1.630E-01		2.306E-01	3.323E-01	2.268E-02	-0.491
CO-56	1.047E-02		3.408E-02	5.821E-02	4.318E-03	0.180
CO-57	2.034E-02		2.391E-02	4.078E-02	2.831E-03	0.499
CO-58	-2.694E-02		3.449E-02	5.259E-02	3.630E-03	-0.512
FE-59	2.558E-02		9.234E-02	1.540E-01	1.177E-02	0.166
CO-60	7.822E-03		3.772E-02	6.490E-02	4.447E-03	0.121
ZN-65	8.922E-03		1.031E-01	1.456E-01	9.633E-03	0.061
GE-68	-1.562E-01		1.180E+00	1.883E+00	1.315E-01	-0.083
AS-73	-2.700E-01		1.448E+00	2.439E+00	3.191E-01	-0.111
AS-74	-6.128E-03		8.771E-02	1.397E-01	7.378E-03	-0.044
SE-75	3.573E-03		3.869E-02	6.581E-02	4.427E-03	0.054
BR-77	3.805E+00		1.244E+01	2.073E+01	1.154E+00	0.184
SR-82	-1.901E-01		3.526E-01	5.547E-01	3.540E-02	-0.343
RB-83	-4.333E-03		6.282E-02	1.012E-01	5.633E-03	-0.043
RB-84	1.367E-02		6.111E-02	1.033E-01	8.226E-03	0.132
KR-85	8.359E+00		6.777E+00	1.099E+01	6.136E-01	0.761
SR-85	4.333E-02		3.513E-02	5.694E-02	3.181E-03	0.761
RB-86	1.843E-01		7.760E-01	1.293E+00	9.042E-02	0.142
Y-88	5.731E-03		2.912E-02	4.955E-02	2.892E-03	0.116
ZR-88	-1.333E-02		2.885E-02	4.606E-02	2.592E-03	-0.289
Y-91	1.127E+01		1.933E+01	3.292E+01	2.017E+00	0.342
NB-94	9.327E-03		3.297E-02	5.649E-02	3.043E-03	0.165
NB-95	4.277E-02		5.066E-02	7.998E-02	4.985E-03	0.535
NB-95M	2.163E-02		1.441E-01	2.049E-01	1.682E-02	0.106
ZR-95	4.618E-02		6.380E-02	1.134E-01	8.260E-03	0.407
NB-97	3.600E-01		1.563E-01	Half-Life too short		
ZR-97	1.130E+01		2.726E+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	-2.347E+00		1.276E+01	2.090E+01	2.886E+00	-0.112
TC-99M	-2.283E+11		3.226E+11	Half-Life too short		
RH-101	-1.089E-02		3.233E-02	4.960E-02	3.230E-03	-0.219
RH-102	-2.030E-02		2.845E-02	4.365E-02	2.468E-03	-0.465
RU-103	-2.555E-02		3.903E-02	5.957E-02	7.484E-03	-0.429
RH-106	-1.455E-01		2.850E-01	4.297E-01	4.909E-02	-0.339
RU-106	-1.455E-01		2.846E-01	4.297E-01	2.207E-02	-0.339
AG-108M	2.049E-02		2.994E-02	5.169E-02	3.194E-03	0.396
AG-110M	4.593E-02		4.025E-02	6.606E-02	3.530E-03	0.695
IN-111	-3.849E-01		1.503E+00	2.054E+00	1.370E-01	-0.187
IN-113M	-1.934E-02		4.240E-02	6.778E-02	4.084E-03	-0.285
SN-113	-1.934E-02		4.240E-02	6.778E-02	4.084E-03	-0.285
IN-114M	8.106E-03		2.008E-01	2.879E-01	1.863E-02	0.028
CD-115	3.508E+00		1.217E+01	2.028E+01	1.125E+00	0.173
SN-117M	-1.338E-03		5.527E-02	8.954E-02	5.727E-03	-0.015
SB-122	1.950E+00		2.732E+00	4.657E+00	2.526E-01	0.419
I-123	-6.650E+00		1.030E+01	Half-Life too short		
TE-123M	-8.817E-03		2.730E-02	4.356E-02	2.816E-03	-0.202
I-124	6.254E-01		8.250E-01	1.263E+00	6.625E-02	0.495
SB-124	-8.867E-03		7.642E-02	1.219E-01	8.283E-03	-0.073
SB-125	2.445E-02		8.556E-02	1.436E-01	8.500E-03	0.170
TE-125M	-1.077E+00		8.575E+00	1.395E+01	1.384E+00	-0.077
I-126	2.877E-01		2.122E-01	3.657E-01	1.804E-02	0.787
SB-126	1.527E-01		1.592E-01	2.588E-01	1.454E-02	0.590
SB-127	8.908E-01		1.419E+00	2.513E+00	2.373E-01	0.354
XE-127	1.150E-02		4.742E-02	7.680E-02	5.020E-03	0.150
I-131	-1.593E-03		1.235E-01	2.048E-01	1.365E-02	-0.008
TE-132	-4.794E-01		8.281E-01	1.265E+00	1.888E-01	-0.379
BA-133	1.563E-02		4.323E-02	6.535E-02	7.655E-03	0.239
I-133	-4.832E-03		5.615E-03	Half-Life too short		
CS-134	8.773E-02	+	6.644E-02	8.372E-02	5.642E-03	1.048
CS-135	2.010E-01		1.559E-01	2.780E-01	2.317E-02	0.723
I-135	-1.757E+10		3.488E+10	Half-Life too short		
CS-136	-1.705E-02		1.134E-01	1.812E-01	1.392E-02	-0.094
CE-139	-1.308E-02		2.805E-02	4.429E-02	2.814E-03	-0.295
BA-140	8.443E-02		2.603E-01	4.306E-01	1.398E-01	0.196
LA-140	-3.998E-03		1.029E-01	1.681E-01	1.107E-02	-0.024
CE-141	1.436E-02		6.005E-02	9.893E-02	6.641E-03	0.145
CE-143	1.257E-03		1.995E-04	Half-Life too short		
CE-144	-2.444E-02		1.925E-01	3.130E-01	4.562E-02	-0.078
PM-144	6.018E-03		3.552E-02	6.033E-02	3.206E-03	0.100
PR-144	4.080E-01		2.408E+00	4.091E+00	2.172E-01	0.100
PM-146	1.463E-03		4.306E-02	7.063E-02	6.028E-03	0.021
ND-147	-1.766E-01		4.892E-01	7.603E-01	1.020E-01	-0.232
PM-149	-1.346E+01		1.187E+02	1.974E+02	2.870E+01	-0.068
EU-152	-1.413E-02		9.658E-02	1.475E-01	1.021E-02	-0.096
GD-153	-5.085E-02		8.739E-02	1.254E-01	1.231E-02	-0.406
EU-154	-8.470E-02		1.191E-01	1.826E-01	1.791E-02	-0.464

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	1.614E-01		1.039E-01	1.819E-01	1.586E-02	0.887
TB-160	-5.913E-02		1.250E-01	1.945E-01	1.542E-02	-0.304
HO-166M	9.947E-03		5.820E-02	9.885E-02	5.441E-03	0.101
TM-171	-6.856E+00		3.346E+01	5.594E+01	6.539E+00	-0.123
LU-176	1.452E-02		2.352E-02	4.082E-02	2.665E-03	0.356
LU-177	3.126E+00	+	1.695E+00	2.164E+00	1.420E-01	1.444
LU-177M	4.564E-02		1.920E-01	2.839E-01	1.606E-02	0.161
HF-181	-4.605E-02		4.044E-02	5.909E-02	3.336E-03	-0.779
W-181	-2.973E-01		4.520E-01	7.400E-01	8.723E-02	-0.402
TA-182	1.164E-02		1.915E-01	3.234E-01	2.012E-02	0.036
RE-183	1.094E-01		1.064E-01	1.804E-01	1.149E-02	0.606
RE-184	-8.171E-02		2.132E-01	3.543E-01	2.366E-02	-0.231
OS-185	-1.675E-02		3.915E-02	6.354E-02	3.167E-03	-0.264
RE-188	5.732E-03		1.685E-01	2.740E-01	1.759E-02	0.021
W-188	1.174E+00		7.374E+00	1.109E+01	7.330E-01	0.106
IR-192	1.676E-02		3.262E-02	5.627E-02	3.653E-03	0.298
AU-195	2.554E-01		2.426E-01	3.806E-01	3.639E-02	0.671
TL-200	3.204E-05		4.409E-04	Half-Life too short		
TL-201	-2.759E-01		8.136E+00	1.313E+01	8.349E-01	-0.021
TL-202	9.165E-02		6.580E-02	1.192E-01	6.763E-03	0.769
HG-203	-1.202E-02		3.715E-02	6.154E-02	4.284E-03	-0.195
BI-207	2.145E-03		5.522E-02	9.000E-02	6.401E-03	0.024
TL-207	4.277E-01		6.976E-01	1.075E+00	1.799E-01	0.398
PO-209	-1.793E+00		7.353E+00	1.179E+01	9.677E-01	-0.152
BI-210	-2.032E+00		8.839E+00	1.494E+01	1.302E+00	-0.136
PB-210	-2.032E+00		8.839E+00	1.494E+01	1.302E+00	-0.136
PO-210	-2.032E+00		8.839E+00	1.494E+01	1.160E+00	-0.136
PB-211	-6.813E-02		1.005E+00	1.444E+00	8.998E-01	-0.047
BI-212	9.490E-01	+	4.663E-01	6.778E-01	5.181E-02	1.400
PO-215	4.277E-01		6.976E-01	1.075E+00	1.799E-01	0.398
RN-219	2.275E-01		3.765E-01	6.461E-01	8.747E-02	0.352
RN-220	-1.178E+01		2.473E+01	3.812E+01	2.089E+00	-0.309
RA-223	4.277E-01		6.976E-01	1.075E+00	1.799E-01	0.398
AC-227	3.683E-01		3.643E-01	6.419E-01	9.209E-02	0.574
TH-227	3.683E-01		3.660E-01	6.419E-01	1.105E-01	0.574
TH-229	-1.088E-01		4.947E-01	7.842E-01	5.089E-02	-0.139
PA-231	5.444E-01		1.398E+00	2.404E+00	3.402E-01	0.226
TH-231	4.277E-01		6.976E-01	1.075E+00	1.799E-01	0.398
U-231	-1.505E+00		1.356E+00	1.874E+00	1.894E-01	-0.803
PA-233	2.736E-02		6.005E-02	1.033E-01	7.046E-03	0.265
PA-234	3.342E-02		2.814E-01	4.670E-01	8.631E-02	0.072
PA-234M	-1.924E+00		4.366E+00	6.781E+00	6.182E-01	-0.284
TH-234	5.158E-01		1.685E+00	2.858E+00	5.655E-01	0.180
U-235	-1.934E-02		2.037E-01	3.233E-01	5.359E-02	-0.060
NP-236	-1.569E-02		7.720E-02	1.239E-01	7.911E-03	-0.127
U-238	5.158E-01		1.685E+00	2.858E+00	5.655E-01	0.180
NP-239	-2.061E-01		1.738E-01	2.685E-01	1.976E-02	-0.768
AM-241	-4.097E-02		2.157E-01	3.621E-01	4.571E-02	-0.113

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-4.010E-03		9.411E-02	1.556E-01	1.372E-02	-0.026
AM-246	-2.300E-02		1.395E-01	2.218E-01	1.546E-02	-0.104
CM-247	1.771E-02		3.420E-02	5.846E-02	3.300E-03	0.303
CF-249	1.623E-02		3.961E-02	6.723E-02	3.820E-03	0.241
CF-251	-3.126E-02		1.243E-01	1.978E-01	1.266E-02	-0.158

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]G243624007          *
* Acquisition date   : 7-JAN-2010 15:50:14 Detector SN#                  *
* Detector ID        : GAM04                                           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 02:00:01.20                               Half life ratio  : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624007                               Analyst initials: MXR1          *
* Batch Number       : 937704                                   Sample Quantity : 1.2605E+02 GRAM *
* Recovery           : 1.00000                                Carrier Weight  : 0.00000          *
*****
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 5-MAY-2009 14:25:41 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	1.949E+01	2.016E+00	2.599E-01	1.028E+00
MN-54	3.789E-02	3.858E-02	3.212E-02	1.968E-02
CD-109	2.968E+00	1.159E+00	7.597E-01	5.912E-01
SN-126	2.913E-01	1.137E-01	8.120E-02	5.802E-02
BA-137M	1.160E-01	5.452E-02	3.391E-02	2.782E-02
CS-137	1.226E-01	5.764E-02	3.584E-02	2.941E-02
TL-208	5.058E-01	8.961E-02	2.796E-02	4.572E-02
BI-211	4.498E+00	5.274E-01	1.482E-01	2.691E-01
PB-212	1.545E+00	1.649E-01	4.347E-02	8.412E-02
PO-212	1.545E+00	1.649E-01	4.347E-02	8.412E-02
BI-214	1.151E+00	1.768E-01	5.429E-02	9.019E-02
PB-214	1.565E+00	2.001E-01	5.166E-02	1.021E-01
PO-214	1.565E+00	2.001E-01	5.166E-02	1.021E-01
PO-216	1.545E+00	1.649E-01	4.347E-02	8.412E-02
PO-218	1.565E+00	2.001E-01	5.166E-02	1.021E-01
RA-224	4.679E+00	1.497E+00	4.947E-01	7.636E-01
RA-226	1.151E+00	1.768E-01	5.429E-02	9.019E-02
AC-228	1.503E+00	3.655E-01	1.011E-01	1.865E-01
RA-228	1.503E+00	3.655E-01	1.011E-01	1.865E-01
TH-228	1.570E+00	1.675E-01	4.417E-02	8.548E-02
TH-230	1.150E+00	1.768E-01	5.429E-02	9.019E-02
TH-232	1.503E+00	3.655E-01	1.011E-01	1.865E-01
U-234	1.150E+00	1.768E-01	5.429E-02	9.019E-02
NP-237	8.553E-01	3.761E-01	2.167E-01	1.919E-01
AM-243	4.060E-01	9.747E-02	4.845E-02	4.973E-02
ANH-511	1.049E-01	6.057E-02	2.320E-02	3.090E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	2.105E-01	3.022E-01	2.692E-01	1.542E-01 NOT IDENT.

NA-22	-2.797E-02	4.149E-02	3.278E-02	2.117E-02	NOT IDENT.
NA-24	-7.979E+05	2.385E+06	0.000E+00	1.217E+06	SHORT HLIF
AL-26	4.459E-03	2.678E-02	2.298E-02	1.366E-02	NOT IDENT.
TI-44	4.127E-01	7.130E-02	4.113E-02	3.638E-02	FAIL ABUN
SC-46	-2.410E-02	3.730E-02	2.935E-02	1.903E-02	FAIL ABUN
V-48	-5.917E-02	7.493E-02	5.736E-02	3.823E-02	NOT IDENT.
CR-51	-2.116E-01	3.642E-01	3.069E-01	1.858E-01	NOT IDENT.
MN-52	-1.630E-01	2.260E-01	1.662E-01	1.153E-01	NOT IDENT.
CO-56	1.047E-02	3.339E-02	2.934E-02	1.704E-02	NOT IDENT.
CO-57	2.034E-02	2.344E-02	2.113E-02	1.196E-02	NOT IDENT.
CO-58	-2.694E-02	3.380E-02	2.652E-02	1.725E-02	NOT IDENT.
FE-59	2.558E-02	9.050E-02	7.735E-02	4.617E-02	NOT IDENT.
CO-60	7.822E-03	3.696E-02	3.250E-02	1.886E-02	NOT IDENT.
ZN-65	8.922E-03	1.010E-01	7.311E-02	5.154E-02	NOT IDENT.
GE-68	-1.562E-01	1.157E+00	9.458E-01	5.902E-01	NOT IDENT.
AS-73	-2.700E-01	1.419E+00	1.278E+00	7.239E-01	NOT IDENT.
AS-74	-6.128E-03	8.595E-02	7.080E-02	4.385E-02	NOT IDENT.
SE-75	3.573E-03	3.791E-02	3.373E-02	1.934E-02	NOT IDENT.
BR-77	3.805E+00	1.219E+01	1.052E+01	6.219E+00	FAIL ABUN
SR-82	-1.901E-01	3.456E-01	2.800E-01	1.763E-01	NOT IDENT.
RB-83	-4.333E-03	6.157E-02	5.135E-02	3.141E-02	NOT IDENT.
RB-84	1.367E-02	5.989E-02	5.204E-02	3.055E-02	NOT IDENT.
KR-85	8.359E+00	6.641E+00	5.578E+00	3.388E+00	NOT IDENT.
SR-85	4.333E-02	3.443E-02	2.891E-02	1.757E-02	NOT IDENT.
RB-86	1.843E-01	7.605E-01	6.496E-01	3.880E-01	NOT IDENT.
Y-88	5.731E-03	2.854E-02	2.469E-02	1.456E-02	NOT IDENT.
ZR-88	-1.333E-02	2.827E-02	2.347E-02	1.443E-02	NOT IDENT.
Y-91	1.127E+01	1.895E+01	1.651E+01	9.666E+00	NOT IDENT.
NB-94	9.327E-03	3.232E-02	2.855E-02	1.649E-02	NOT IDENT.
NB-95	4.277E-02	4.964E-02	4.037E-02	2.533E-02	NOT IDENT.
NB-95M	2.163E-02	1.412E-01	1.052E-01	7.203E-02	NOT IDENT.
ZR-95	4.618E-02	6.253E-02	5.728E-02	3.190E-02	NOT IDENT.
NB-97	3.600E+05	3.064E+05	0.000E+00	1.563E+05	SHORT HLIF
ZR-97	1.130E+07	5.344E+06	0.000E+00	2.726E+06	SHORT HLIF
MO-99	-2.347E+00	1.250E+01	1.055E+01	6.380E+00	NOT IDENT.
TC-99M	-2.283E+17	6.324E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.089E-02	3.169E-02	2.553E-02	1.617E-02	NOT IDENT.
RH-102	-2.030E-02	2.788E-02	2.219E-02	1.423E-02	FAIL ABUN
RU-103	-2.555E-02	3.825E-02	3.026E-02	1.951E-02	FAIL ABUN
RH-106	-1.455E-01	2.793E-01	2.176E-01	1.425E-01	FAIL ABUN
RU-106	-1.455E-01	2.789E-01	2.176E-01	1.423E-01	FAIL ABUN
AG-108M	2.049E-02	2.934E-02	2.631E-02	1.497E-02	NOT IDENT.
AG-110M	4.593E-02	3.945E-02	3.342E-02	2.013E-02	NOT IDENT.
IN-111	-3.849E-01	1.473E+00	1.054E+00	7.516E-01	NOT IDENT.
IN-113M	-1.934E-02	4.156E-02	3.455E-02	2.120E-02	NOT IDENT.
SN-113	-1.934E-02	4.156E-02	3.455E-02	2.120E-02	NOT IDENT.
IN-114M	8.106E-03	1.968E-01	1.483E-01	1.004E-01	NOT IDENT.
CD-115	3.508E+00	1.193E+01	1.029E+01	6.086E+00	NOT IDENT.
SN-117M	-1.338E-03	5.416E-02	4.623E-02	2.763E-02	NOT IDENT.
SB-122	1.950E+00	2.677E+00	2.361E+00	1.366E+00	NOT IDENT.
I-123	-6.650E+06	2.018E+07	0.000E+00	1.030E+07	SHORT HLIF
TE-123M	-8.817E-03	2.675E-02	2.249E-02	1.365E-02	NOT IDENT.
I-124	6.254E-01	8.085E-01	6.399E-01	4.125E-01	FAIL ABUN
SB-124	-8.867E-03	7.490E-02	6.082E-02	3.821E-02	FAIL ABUN
SB-125	2.445E-02	8.385E-02	7.310E-02	4.278E-02	FAIL ABUN
TE-125M	-1.077E+00	8.403E+00	7.237E+00	4.287E+00	NOT IDENT.
I-126	2.877E-01	2.080E-01	1.850E-01	1.061E-01	NOT IDENT.
SB-126	1.527E-01	1.561E-01	1.308E-01	7.962E-02	NOT IDENT.
SB-127	8.908E-01	1.390E+00	1.271E+00	7.093E-01	NOT IDENT.
XE-127	1.150E-02	4.647E-02	3.951E-02	2.371E-02	NOT IDENT.
I-131	-1.593E-03	1.210E-01	1.045E-01	6.174E-02	NOT IDENT.
TE-132	-4.794E-01	8.116E-01	6.496E-01	4.141E-01	NOT IDENT.
BA-133	1.563E-02	4.236E-02	3.335E-02	2.161E-02	NOT IDENT.
I-133	-4.832E+03	1.101E+04	0.000E+00	5.615E+03	SHORT HLIF
CS-134	8.773E-02	6.511E-02	4.224E-02	3.322E-02	FAIL ABUN
CS-135	2.010E-01	1.528E-01	1.425E-01	7.794E-02	NOT IDENT.
I-135	-1.757E+16	6.836E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.705E-02	1.112E-01	9.103E-02	5.671E-02	FAIL ABUN
CE-139	-1.308E-02	2.749E-02	2.285E-02	1.403E-02	NOT IDENT.
BA-140	8.443E-02	2.551E-01	2.185E-01	1.301E-01	NOT IDENT.
LA-140	-3.998E-03	1.009E-01	8.392E-02	5.146E-02	FAIL ABUN
CE-141	1.436E-02	5.885E-02	5.114E-02	3.003E-02	NOT IDENT.
CE-143	1.257E+03	3.910E+02	0.000E+00	1.995E+02	SHORT HLIF
CE-144	-2.444E-02	1.886E-01	1.620E-01	9.623E-02	NOT IDENT.
PM-144	6.018E-03	3.481E-02	3.050E-02	1.776E-02	NOT IDENT.
PR-144	4.080E-01	2.360E+00	2.068E+00	1.204E+00	NOT IDENT.
PM-146	1.463E-03	4.219E-02	3.592E-02	2.153E-02	NOT IDENT.
ND-147	-1.766E-01	4.794E-01	3.858E-01	2.446E-01	FAIL ABUN

PM-149	-1.346E+01	1.163E+02	1.011E+02	5.936E+01	NOT IDENT.
EU-152	-1.413E-02	9.465E-02	7.533E-02	4.829E-02	FAIL ABUN
GD-153	-5.085E-02	8.565E-02	6.517E-02	4.370E-02	NOT IDENT.
EU-154	-8.470E-02	1.167E-01	9.148E-02	5.953E-02	NOT IDENT.
EU-155	1.614E-01	1.018E-01	9.446E-02	5.196E-02	FAIL ABUN
TB-160	-5.913E-02	1.225E-01	9.799E-02	6.249E-02	FAIL ABUN
HO-166M	9.947E-03	5.703E-02	4.995E-02	2.910E-02	FAIL ABUN
TM-171	-6.856E+00	3.279E+01	2.923E+01	1.673E+01	NOT IDENT.
LU-176	1.452E-02	2.305E-02	2.088E-02	1.176E-02	FAIL ABUN
LU-177	3.126E+00	1.661E+00	1.113E+00	8.473E-01	FAIL ABUN
LU-177M	4.564E-02	1.881E-01	1.446E-01	9.599E-02	NOT IDENT.
HF-181	-4.605E-02	3.963E-02	3.003E-02	2.022E-02	NOT IDENT.
W-181	-2.973E-01	4.429E-01	3.868E-01	2.260E-01	NOT IDENT.
TA-182	1.164E-02	1.877E-01	1.621E-01	9.576E-02	NOT IDENT.
RE-183	1.094E-01	1.042E-01	9.310E-02	5.319E-02	FAIL ABUN
RE-184	-8.171E-02	2.089E-01	1.817E-01	1.066E-01	NOT IDENT.
OS-185	-1.675E-02	3.837E-02	3.215E-02	1.958E-02	NOT IDENT.
RE-188	5.732E-03	1.651E-01	1.415E-01	8.423E-02	NOT IDENT.
W-188	1.174E+00	7.227E+00	5.677E+00	3.687E+00	NOT IDENT.
IR-192	1.676E-02	3.196E-02	2.877E-02	1.631E-02	FAIL ABUN
AU-195	2.554E-01	2.378E-01	1.978E-01	1.213E-01	FAIL ABUN
TL-200	3.204E+01	8.642E+02	0.000E+00	4.409E+02	SHORT HLIF
TL-201	-2.759E-01	7.973E+00	6.776E+00	4.068E+00	NOT IDENT.
TL-202	9.165E-02	6.448E-02	6.068E-02	3.290E-02	NOT IDENT.
HG-203	-1.202E-02	3.641E-02	3.152E-02	1.857E-02	NOT IDENT.
BI-207	2.145E-03	5.412E-02	4.521E-02	2.761E-02	FAIL ABUN
TL-207	4.277E-01	6.837E-01	5.492E-01	3.488E-01	FAIL ABUN
PO-209	-1.793E+00	7.206E+00	5.939E+00	3.676E+00	NOT IDENT.
BI-210	-2.032E+00	8.662E+00	7.842E+00	4.419E+00	NOT IDENT.
PB-210	-2.032E+00	8.662E+00	7.842E+00	4.419E+00	NOT IDENT.
PO-210	-2.032E+00	8.662E+00	7.842E+00	4.419E+00	NOT IDENT.
PB-211	-6.813E-02	9.852E-01	7.356E-01	5.026E-01	NOT IDENT.
BI-212	9.490E-01	4.569E-01	3.424E-01	2.331E-01	FAIL ABUN
PO-215	4.277E-01	6.837E-01	5.492E-01	3.488E-01	FAIL ABUN
RN-219	2.275E-01	3.690E-01	3.292E-01	1.883E-01	NOT IDENT.
RN-220	-1.178E+01	2.424E+01	1.934E+01	1.237E+01	NOT IDENT.
RA-223	4.277E-01	6.837E-01	5.492E-01	3.488E-01	FAIL ABUN
AC-227	3.683E-01	3.570E-01	3.292E-01	1.822E-01	FAIL ABUN
TH-227	3.683E-01	3.587E-01	3.292E-01	1.830E-01	FAIL ABUN
TH-229	-1.088E-01	4.848E-01	4.038E-01	2.473E-01	FAIL ABUN
PA-231	5.444E-01	1.370E+00	1.231E+00	6.989E-01	FAIL ABUN
TH-231	4.277E-01	6.837E-01	5.492E-01	3.488E-01	FAIL ABUN
U-231	-1.505E+00	1.329E+00	9.741E-01	6.782E-01	FAIL ABUN
PA-233	2.736E-02	5.885E-02	5.284E-02	3.003E-02	FAIL ABUN
PA-234	3.342E-02	2.757E-01	2.350E-01	1.407E-01	FAIL ABUN
PA-234M	-1.924E+00	4.279E+00	3.410E+00	2.183E+00	FAIL ABUN
TH-234	5.158E-01	1.651E+00	1.494E+00	8.425E-01	FAIL ABUN
U-235	-1.934E-02	1.996E-01	1.671E-01	1.018E-01	FAIL ABUN
NP-236	-1.569E-02	7.565E-02	6.396E-02	3.860E-02	FAIL ABUN
U-238	5.158E-01	1.651E+00	1.494E+00	8.425E-01	FAIL ABUN
NP-239	-2.061E-01	1.704E-01	1.392E-01	8.692E-02	FAIL ABUN
AM-241	-4.097E-02	2.113E-01	1.895E-01	1.078E-01	NOT IDENT.
CM-243	-4.010E-03	9.223E-02	8.079E-02	4.705E-02	FAIL ABUN
AM-246	-2.300E-02	1.367E-01	1.114E-01	6.976E-02	NOT IDENT.
CM-247	1.771E-02	3.352E-02	2.979E-02	1.710E-02	NOT IDENT.
CF-249	1.623E-02	3.882E-02	3.427E-02	1.981E-02	NOT IDENT.
CF-251	-3.126E-02	1.218E-01	1.020E-01	6.214E-02	NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON, SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
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46.50	200.5654
46.50	200.5654
46.50	200.5654
48.70	182.9738
49.72	192.1301
51.35	195.6188
52.39	192.7155
52.97	199.9807
53.15	190.5111
53.44	193.2744
54.07	195.3517
56.28	208.7947
56.28	208.7966
57.37	0.0000
57.53	201.5625
57.53	201.5636
57.60	209.5229
57.98	225.5921
57.98	225.5921
59.32	227.2580
59.32	227.2580
59.40	227.3044
59.54	224.7311
59.72	224.8345
60.01	248.0320
61.10	242.4984
61.14	242.5227
61.30	242.6206
63.00	238.2922
63.29	233.9967
63.29	233.9967
63.58	224.3320
64.28	228.2961
65.12	274.5129
65.20	274.5659
65.20	274.5659
66.05	276.0249
66.72	263.8562
66.83	263.9262
66.91	255.8684
67.20	243.4213
67.20	243.4213
67.75	247.3481
67.85	247.4066
68.90	248.4655
68.90	248.4655
69.30	259.5678
69.67	277.4744
70.82	271.3856
70.82	271.3856
70.83	271.3917
72.80	255.7082
72.87	255.7481
72.87	255.7481
74.67	256.7706
74.81	256.8504
74.81	256.8504
74.81	256.8504
74.81	256.8504
74.81	256.8504
74.81	256.8504
74.81	256.8504
74.97	256.9401
75.28	257.1153
75.70	257.3517
77.11	258.1393
77.11	258.1393

77.11	258.1393
77.11	258.1393
77.11	258.1393
77.11	258.1393
77.11	258.1393
78.38	267.6249
79.62	241.9143
79.80	242.0059
79.80	242.0059
80.11	244.9474
80.18	231.0635
80.30	231.1211
80.30	231.1211
80.57	280.0110
81.00	324.8813
81.07	324.9276
81.07	324.9276
81.07	324.9276
81.07	324.9276
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83.78	256.6303
83.78	256.6303
83.78	256.6303
84.21	247.0300
84.90	250.1876
85.43	299.7003
86.29	350.9598
86.50	351.1061
86.54	351.1346
86.59	351.1688
86.72	394.0507
86.79	394.1040
86.94	394.2233
87.30	394.5068
87.30	394.5068
87.30	394.5068
87.30	394.5068
87.30	394.5068
87.30	394.5068
87.30	394.5068
87.57	442.2911
87.88	378.9340
88.03	379.0464
88.36	313.2477
88.47	313.3152
89.95	278.2568
91.11	278.8819
92.29	417.8456
92.38	417.9171
92.38	417.9171
93.35	336.2843
94.00	336.6991
94.67	337.1192
94.67	337.1228
94.90	337.2682
94.90	337.2682
94.90	337.2682
94.90	337.2682
95.87	275.6646
95.87	275.6646
96.73	299.1143
97.43	266.3821
98.44	248.1227
98.44	248.1227
98.88	213.6725
99.55	224.0518
99.55	224.0518
99.86	217.5242
100.00	217.5792
100.10	217.6205
103.18	263.8265
103.76	248.5625
105.00	200.4510
105.31	207.3751
108.00	249.4242
109.28	212.7198

111.00	246.7679
111.00	246.7679
111.76	250.0351
112.95	230.8067
115.19	202.9522
116.30	252.9118
117.00	241.2845
117.00	241.2845
117.66	229.6148
121.11	236.8843
121.62	233.0746
121.78	209.1190
122.06	209.2115
122.32	204.2905
122.32	204.2905
122.32	204.2905
122.32	204.2905
123.07	219.5703
127.23	211.9093
129.76	241.5982
131.20	234.5083
133.02	216.2114
133.54	237.3659
135.34	244.1250
136.00	236.1814
136.25	231.1543
136.48	231.2314
140.51	252.1354
140.51	0.0000
142.18	241.3887
142.65	246.7094
143.76	240.8927
144.24	233.8143
144.24	233.8143
144.24	233.8143
144.24	233.8143
145.22	226.8841
145.44	233.1711
147.16	253.4667
152.43	242.7428
152.70	228.1788
153.22	234.6230
154.21	250.6651
154.21	250.6651
154.21	250.6651
154.21	250.6651
155.03	246.7424
156.02	253.3756
158.56	229.9640
159.00	0.0000
159.00	235.3745
160.31	240.0075
161.27	230.7801
162.32	207.7715
162.64	206.7967
163.35	215.4789
163.89	222.0008
165.85	225.7525
167.43	205.9323
171.28	219.7936
171.86	237.1191
172.10	237.1888
176.55	230.9343
176.60	230.9495
181.06	226.2271
184.41	213.5117
185.71	213.8387
186.00	213.9104
190.27	217.1688
192.34	206.6921
193.63	218.0067
197.04	186.7950
198.01	201.3842
198.60	222.5529
200.40	216.3440
201.83	215.5759
202.84	213.5918
205.31	212.4967

208.36	226.6322
208.81	213.8647
209.75	208.4780
209.75	208.4780
210.97	200.3331
215.65	186.1034
216.55	200.9562
218.09	188.8433
222.10	182.8168
223.80	185.4112
226.40	153.9706
227.00	165.4762
227.08	159.7829
227.20	159.8029
228.16	185.0944
228.18	185.0977
228.18	185.0977
231.56	0.0000
235.69	221.0273
236.00	202.0935
236.00	202.0935
238.63	173.1766
238.63	173.1766
238.63	173.1766
238.63	173.1766
239.00	173.2391
240.98	173.5733
241.98	173.7427
241.98	173.7427
241.98	173.7427
244.69	153.2937
245.39	160.3683
247.94	117.0752
248.90	143.4162
249.79	140.0366
252.40	138.6261
252.85	158.8735
252.85	158.8735
254.15	0.0000
256.20	143.5210
256.20	143.5210
260.50	159.1205
260.90	159.1782
262.80	131.1079
264.65	131.3270
268.24	154.8997
268.79	142.5073
269.46	138.1367
269.46	138.1367
269.46	138.1367
269.46	138.1367
271.23	138.3543
273.65	216.4766
276.40	118.3641
277.35	122.9501
277.60	130.1584
277.60	130.1584
278.00	134.6924
278.60	144.6460
279.20	145.6210
279.53	156.4529
280.46	161.0798
281.68	140.5300
283.67	127.2348
284.30	134.5288
285.00	132.8015
285.90	134.7130
286.10	140.1613
286.10	140.1613
287.40	145.7490
288.45	0.0000
290.67	123.4596
290.80	123.4720
291.72	117.7526
293.26	0.0000
293.70	128.1436
295.21	135.5947
295.21	135.5947

295.21	135.5947
295.96	189.6616
296.50	189.7441
297.23	189.8616
298.57	190.0710
299.80	139.0396
299.80	139.0396
300.09	121.5071
300.09	121.5071
300.09	121.5071
300.09	121.5071
300.12	121.5091
301.29	124.5574
302.84	136.4530
303.76	138.0258
303.91	138.0418
304.40	130.7513
304.40	130.7513
304.84	126.1452
306.84	120.5238
308.46	129.8940
311.98	116.4043
316.51	113.1184
318.01	108.6110
319.02	122.6321
319.41	128.2463
320.08	140.4012
323.87	113.4007
323.87	113.4007
323.87	113.4007
323.87	113.4007
325.23	113.5213
328.77	133.3044
333.44	95.2010
334.20	115.8121
334.20	115.8121
334.30	115.8196
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338.28	121.6382
338.28	121.6382
338.28	121.6382
338.32	121.6422
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338.32	121.6422
340.50	120.8984
340.57	120.9043
344.27	112.3980
345.85	104.6910
350.59	0.0000
351.07	97.0989
351.92	97.1596
351.92	97.1596
351.92	97.1596
355.39	0.0000
356.01	91.7168
364.48	110.5412
366.43	121.2819
367.43	112.6993
367.94	0.0000
369.80	105.1696
374.96	99.7404
383.85	122.7662
387.95	104.5461
388.63	104.5934
391.69	105.7901
391.69	105.7901
392.90	101.9545
398.62	106.2828
400.65	109.3825
401.10	108.4290
401.81	82.8400
402.60	86.8291
404.84	99.6064
410.95	101.5922
411.60	96.8717
413.65	93.8195
414.70	90.7018
415.30	90.7366

415.76	96.8670
417.63	0.0000
418.52	104.6828
423.70	89.0258
427.08	82.1989
427.89	81.2385
432.53	71.4171
433.93	71.4789
439.47	58.5921
439.56	58.5956
439.89	69.7233
443.98	79.0152
444.90	71.9653
445.03	71.9707
445.03	71.9707
445.03	71.9707
445.03	71.9707
453.90	89.6852
463.38	76.8700
468.07	70.7117
473.00	87.6147
475.06	91.8478
475.35	99.0879
476.78	83.6746
477.59	69.2451
477.96	59.9568
482.03	88.0739
484.57	66.4111
487.03	85.2094
490.36	0.0000
492.35	67.7483
497.08	80.4696
507.63	0.0000
510.53	0.0000
510.84	81.0870
511.00	81.0946
511.85	72.4922
511.85	72.4922
513.99	54.0109
513.99	54.0109
520.41	64.5742
520.65	57.1723
527.90	47.8290
528.96	0.0000
529.64	48.9382
529.87	0.0000
531.02	54.2964
537.32	64.0924
543.00	82.4987
546.56	0.0000
549.76	72.0381
552.65	55.9943
555.20	57.1455
563.23	61.7123
563.90	69.3145
568.70	68.3968
569.32	70.5919
569.50	61.9089
569.67	68.4314
573.80	65.3082
574.00	57.6954
574.64	53.3575
578.91	69.8398
579.30	0.0000
583.14	67.7993
585.48	63.0615
591.81	58.2065
592.07	57.1146
593.00	71.4270
595.88	61.6226
600.56	76.1005
602.52	0.0000
602.71	56.5281
602.71	56.5281
603.60	68.9241
604.41	77.7906
604.70	76.0332
609.31	71.9923

609.31	71.9923
609.31	71.9923
609.31	71.9923
610.33	56.7359
612.46	88.7402
614.37	42.6340
618.01	66.7310
621.84	57.9366
621.84	57.9366
631.29	61.5511
633.02	81.7619
633.10	81.7641
634.78	73.9821
635.90	69.5343
636.97	60.5918
645.85	55.8817
646.12	63.1008
656.30	78.4867
657.75	60.4134
657.90	0.0000
661.65	92.2918
661.65	92.2918
664.57	0.0000
666.33	59.7798
666.33	59.7798
675.00	52.0529
677.61	50.2842
685.20	44.0297
692.80	57.9797
695.00	67.2470
696.49	74.6650
696.49	74.6650
697.00	76.5258
697.49	80.2307
698.33	77.4908
698.50	79.3421
699.00	74.7450
702.63	66.5437
706.10	79.6004
706.58	0.0000
706.67	70.3612
709.31	65.8067
711.68	60.3059
713.82	69.6460
717.42	57.6618
720.50	46.5613
721.93	0.0000
722.20	69.8914
722.78	80.7845
722.78	80.7845
722.89	80.7866
722.95	80.7887
723.30	77.6937
724.18	68.3955
727.18	42.0227
733.00	30.7570
735.90	44.0487
739.58	45.9925
742.81	41.3542
744.21	55.4839
747.13	42.3688
751.79	51.8821
752.31	49.0623
753.82	49.0915
755.35	38.7308
756.15	41.5787
756.87	53.8786
763.93	42.6566
765.79	64.8232
766.42	66.4197
766.84	63.2682
776.49	54.3017
778.00	48.6144
778.57	45.7652
778.89	52.4460
783.80	42.9928
785.46	50.6683
792.07	43.1312

795.84	46.3946
796.30	46.4028
798.80	49.6510
801.93	46.7322
805.60	43.3570
810.29	44.3997
810.76	44.4075
815.85	36.7559
817.79	32.9109
818.51	36.7930
819.60	39.7137
826.30	39.8138
828.27	0.0000
831.60	40.5416
831.96	42.1685
834.83	63.3210
836.80	0.0000
846.75	36.2033
848.13	46.9910
856.28	0.0000
856.80	36.0096
860.37	53.1009
867.32	41.8982
867.82	38.3449
871.10	40.4745
873.19	44.4562
874.81	40.5275
875.33	0.0000
876.40	46.4848
879.36	42.5738
880.27	45.5586
880.51	45.5631
881.50	33.6887
883.24	37.6753
884.67	38.6867
889.25	50.6725
896.60	49.8071
898.02	50.8294
899.00	48.8529
903.28	46.5960
911.07	44.0526
911.07	44.0526
911.07	44.0526
919.63	38.9108
920.93	40.1836
925.00	35.2102
925.24	32.1945
926.50	34.2216
935.52	42.4040
937.48	44.4522
944.10	33.4141
946.00	39.5142
949.00	43.6110
962.29	44.1437
964.01	52.6632
966.15	40.7998
968.20	40.8281
969.11	40.8398
969.11	40.8398
969.11	40.8398
977.42	39.2449
980.50	30.7449
983.50	54.3690
989.30	42.1381
996.32	40.1730
1001.03	44.3605
1001.68	42.3063
1004.76	37.1839
1021.30	0.0000
1024.50	0.0000
1034.80	32.3245
1036.00	34.4228
1037.82	35.4858
1038.57	38.6260
1038.76	0.0000
1045.16	44.9820
1046.59	48.1405
1048.07	43.9749

1050.47	36.6731
1050.47	36.6731
1062.04	36.8030
1063.62	47.3423
1076.63	35.9108
1077.35	39.0885
1078.86	42.2773
1085.78	36.0104
1099.22	40.4084
1112.02	28.4635
1112.84	33.8097
1115.52	46.3019
1120.29	55.2818
1120.29	55.2818
1120.29	55.2818
1120.29	55.2818
1120.51	55.2869
1121.28	49.9479
1124.00	0.0000
1129.67	45.0618
1131.51	0.0000
1147.95	0.0000
1167.94	50.9817
1173.22	38.0215
1175.09	31.5205
1177.93	47.8629
1189.05	51.2846
1204.90	43.8379
1205.75	0.0000
1213.00	46.1323
1221.42	50.4592
1230.97	70.8277
1235.34	63.5420
1236.41	0.0000
1238.25	53.4546
1246.25	64.6537
1260.41	0.0000
1271.85	26.9668
1274.45	43.7355
1274.54	42.8049
1291.56	47.6693
1298.22	0.0000
1312.09	29.1294
1325.50	28.2861
1325.50	28.2861
1332.49	17.9466
1333.61	25.5103
1360.21	16.1692
1362.66	0.0000
1365.15	21.9032
1368.21	25.1604
1368.53	0.0000
1376.25	22.9180
1384.27	25.0515
1394.10	19.1821
1395.20	22.0660
1407.95	22.1343
1434.06	20.3361
1436.60	11.6274
1457.56	0.0000
1460.81	18.5160
1489.15	14.7144
1509.49	14.7827
1596.49	24.1152
1620.62	16.1608
1678.03	0.0000
1691.02	13.3269
1691.02	13.3269
1706.46	0.0000
1750.46	0.0000
1764.49	10.7030
1764.49	10.7030
1764.49	10.7030
1764.49	10.7030
1770.23	15.6262
1771.40	9.3779
1791.20	0.0000
1808.65	8.3971

1836.01

7.3868

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624007

Total Uranium Activity	1.5256E+00	ug/g
Total Uranium Counting Unc.	4.9137E+00	ug/g
Total Uranium Tpu	2.5070E-06	ug/g
Total Uranium Mda	4.4468E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417               *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624007
*  ANALYST       : MXR1            DETECTOR    : GAM04
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 15:50:14.23  SAMPLE ALQT: 126.050 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.201E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 1.241E+00
GROSS GAMMA MDA (pCi/GRAM ) : 2.906E+00
GROSS GAMMA DLC (pCi/GRAM ) : 1.398E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 17:51:44.50

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624008.CNF;1
Sample date       : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:50:41.
Sample ID        : G243624008 Sample quantity : 1.30580E+02 GRAM
Detector name    : GAM12 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.45 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 937704 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	63.00*	54	473	0.70	125.48	121	9	7.49E-03	75.9	
2	3	74.72*	380	342	0.90	148.92	142	16	5.28E-02	9.0	2.30E+00
3	3	76.99	615	378	0.93	153.47	142	16	8.54E-02	6.4	
4	5	84.24*	127	279	1.51	167.98	164	29	1.76E-02	24.4	1.73E+00
5	5	86.98*	295	316	1.36	173.47	164	29	4.10E-02	12.3	
6	5	89.76	254	314	1.35	179.04	164	29	3.52E-02	13.9	
7	5	92.69*	219	311	1.39	184.90	164	29	3.04E-02	17.0	
8	0	128.77	131	286	1.22	257.08	253	9	1.81E-02	25.1	
9	0	185.89*	146	399	1.09	371.39	366	11	2.03E-02	28.8	
10	0	208.91*	110	268	1.02	417.45	413	10	1.52E-02	29.7	
11	5	238.35*	1181	165	1.04	476.35	470	19	1.64E-01	3.4	1.26E+00
12	5	241.21*	326	255	1.84	482.08	470	19	4.53E-02	13.4	
13	0	269.37	137	222	1.05	538.41	532	12	1.91E-02	23.3	
14	0	277.35	48	129	0.97	554.39	552	7	6.65E-03	41.6	
15	0	295.04*	387	206	1.17	589.79	584	11	5.37E-02	8.9	
16	0	299.67	56	140	0.59	599.04	595	8	7.73E-03	39.2	
17	0	326.79	59	235	1.49	653.31	650	14	8.25E-03	55.9	
18	0	338.07*	206	176	1.27	675.88	671	11	2.86E-02	14.6	
19	0	351.52*	686	189	1.24	702.79	696	14	9.53E-02	5.8	
20	0	462.81	65	100	1.15	925.44	921	10	8.96E-03	31.6	
21	0	510.90*	148	136	1.69	1021.67	1013	18	2.05E-02	23.0	
22	0	582.73*	379	82	1.40	1165.36	1159	14	5.27E-02	7.3	
23	0	608.97*	502	89	1.45	1217.86	1212	14	6.98E-02	6.1	
24	0	726.35*	79	70	1.54	1452.68	1447	12	1.10E-02	24.3	
25	0	767.32	63	81	2.95	1534.64	1526	18	8.70E-03	36.0	
26	0	794.24	55	53	1.54	1588.47	1582	12	7.70E-03	29.6	
27	0	859.94	53	56	1.07	1719.91	1714	12	7.35E-03	31.6	
28	0	910.55*	250	54	1.68	1821.13	1815	12	3.47E-02	8.8	
29	0	968.75*	123	112	1.07	1937.55	1930	12	1.71E-02	19.5	
30	0	1119.41	119	35	1.79	2238.88	2232	13	1.65E-02	13.9	
31	0	1237.62	62	64	1.69	2475.30	2467	17	8.61E-03	32.1	
32	0	1376.64	51	16	2.07	2753.31	2744	16	7.08E-03	22.4	
33	0	1401.45	19	5	1.70	2802.92	2799	8	2.62E-03	31.8	
34	0	1459.84*	796	15	2.02	2919.69	2912	17	1.11E-01	3.8	
35	0	1763.40*	89	22	2.49	3526.68	3519	20	1.24E-02	16.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 7-JAN-2010 17:51:47

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624008.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 12:00:00 Acquisition date : 7-JAN-2010 15:50:41
Sample ID         : G243624008 Sample quantity : 130.58 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA12 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.45 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	*	1.886E+01	1.958E+00	5.869E-01	4.184E-02	32.130
CD-109	+	88.03	*	4.151E+00	1.068E+00	1.006E+00	7.698E-02	4.126
SN-126	+	64.28		5.096E-01	7.765E-01	7.518E-01	1.056E-01	0.678
	+	86.94		1.693E+00	8.117E-01	4.151E-01	1.708E-01	4.079
	+	87.57	*	4.073E-01	1.048E-01	9.919E-02	7.560E-03	4.106
CS-135	+	268.24	*	5.367E-01	2.532E-01	2.198E-01	1.653E-02	2.442
TL-208	+	277.35		4.495E-01	3.772E-01	5.614E-01	5.880E-02	0.801
	+	510.84		7.047E-01	3.326E-01	2.073E-01	2.140E-02	3.400
	+	583.14	*	5.167E-01	8.396E-02	5.276E-02	3.774E-03	9.793
	+	860.37		6.797E-01	4.341E-01	3.789E-01	3.311E-02	1.794
BI-211		72.87		4.492E+00	2.935E+00	5.118E+00	3.434E-01	0.878
	+	351.07	*	4.050E+00	5.329E-01	2.731E-01	1.717E-02	14.830
PB-212	+	74.81		2.226E+00	4.769E-01	5.176E-01	5.983E-02	4.301
	+	77.11		2.041E+00	2.981E-01	2.937E-01	2.033E-02	6.947
	+	87.30		1.884E+00	5.200E-01	4.601E-01	5.779E-02	4.095
	+	238.63	*	1.517E+00	1.502E-01	8.305E-02	5.897E-03	18.271
	+	300.09		1.104E+00	8.696E-01	1.055E+00	8.612E-02	1.046
PO-212	+	74.81		2.226E+00	4.769E-01	5.176E-01	5.983E-02	4.301
	+	77.11		2.041E+00	2.981E-01	2.937E-01	2.033E-02	6.947
	+	87.30		1.884E+00	5.200E-01	4.601E-01	5.779E-02	4.095
	+	115.19		8.506E-01	3.149E+00	5.236E+00	3.321E-01	0.162
	+	238.63	*	1.517E+00	1.502E-01	8.305E-02	5.897E-03	18.271
	+	300.09		1.104E+00	8.696E-01	1.055E+00	8.612E-02	1.046
BI-214	+	609.31	*	1.291E+00	1.910E-01	1.048E-01	8.628E-03	12.319
	+	1120.29		1.586E+00	4.627E-01	4.506E-01	4.093E-02	3.520
	+	1764.49		1.642E+00	5.631E-01	3.252E-01	1.927E-02	5.049
PB-214	+	74.81		3.836E+00	7.921E-01	8.919E-01	8.969E-02	4.301
	+	77.11		3.498E+00	5.763E-01	5.036E-01	5.184E-02	6.947
	+	87.30		3.227E+00	8.667E-01	7.881E-01	8.532E-02	4.095
	+	241.98		2.516E+00	7.037E-01	5.002E-01	3.936E-02	5.030
	+	295.21		1.346E+00	2.653E-01	2.021E-01	1.706E-02	6.663
	+	351.92	*	1.409E+00	1.994E-01	9.521E-02	7.777E-03	14.797
PO-214	+	74.81		3.836E+00	7.921E-01	8.919E-01	8.969E-02	4.301
	+	77.11		3.498E+00	5.763E-01	5.036E-01	5.184E-02	6.947

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	87.30		3.227E+00	8.667E-01	7.881E-01	8.532E-02	4.095
	+	241.98		2.516E+00	7.037E-01	5.002E-01	3.936E-02	5.030
	+	295.21		1.346E+00	2.653E-01	2.021E-01	1.706E-02	6.663
	+	351.92	*	1.409E+00	1.994E-01	9.521E-02	7.777E-03	14.797
	+	74.81		2.226E+00	4.769E-01	5.176E-01	5.983E-02	4.301
	+	77.11		2.041E+00	2.981E-01	2.937E-01	2.033E-02	6.947
	+	87.30		1.884E+00	5.200E-01	4.601E-01	5.779E-02	4.095
	+	238.63	*	1.517E+00	1.502E-01	8.305E-02	5.897E-03	18.271
PO-218	+	300.09		1.104E+00	8.696E-01	1.055E+00	8.612E-02	1.046
	+	74.81		3.836E+00	7.921E-01	8.919E-01	8.969E-02	4.301
	+	77.11		3.498E+00	5.763E-01	5.036E-01	5.184E-02	6.947
	+	87.30		3.227E+00	8.667E-01	7.881E-01	8.532E-02	4.095
	+	241.98		2.516E+00	7.037E-01	5.002E-01	3.936E-02	5.030
	+	295.21		1.346E+00	2.653E-01	2.021E-01	1.706E-02	6.663
	+	351.92	*	1.409E+00	1.994E-01	9.521E-02	7.777E-03	14.797
	+	240.98	*	4.772E+00	1.307E+00	9.453E-01	5.215E-02	5.048
RA-224	+	609.31	*	1.291E+00	1.910E-01	1.048E-01	8.628E-03	12.319
RA-226	+	1120.29		1.586E+00	4.627E-01	4.506E-01	4.093E-02	3.520
AC-228	+	1764.49		1.642E+00	5.631E-01	3.252E-01	1.927E-02	5.049
	+	338.32		1.337E+00	6.701E-01	3.337E-01	1.360E-01	4.007
	+	911.07	*	1.517E+00	3.160E-01	2.232E-01	2.451E-02	6.798
	+	969.11		1.321E+00	5.994E-01	3.222E-01	7.429E-02	4.100
RA-228	+	338.32		1.337E+00	6.701E-01	3.337E-01	1.360E-01	4.007
	+	911.07	*	1.517E+00	3.160E-01	2.232E-01	2.451E-02	6.798
	+	969.11		1.321E+00	5.994E-01	3.222E-01	7.429E-02	4.100
	+	74.81		2.262E+00	4.368E-01	5.260E-01	3.626E-02	4.301
TH-228	+	77.11		2.074E+00	3.029E-01	2.985E-01	2.066E-02	6.947
	+	87.30		1.914E+00	4.925E-01	4.675E-01	3.553E-02	4.095
	+	238.63	*	1.542E+00	1.526E-01	8.440E-02	5.993E-03	18.271
	+	300.09		1.122E+00	1.100E+00	1.072E+00	6.317E-01	1.046
TH-230	+	609.31	*	1.291E+00	1.910E-01	1.048E-01	8.628E-03	12.319
	+	1120.29		1.586E+00	4.627E-01	4.506E-01	4.093E-02	3.520
	+	1764.49		1.642E+00	5.631E-01	3.252E-01	1.927E-02	5.049
	+	338.32		1.337E+00	3.974E-01	3.337E-01	1.890E-02	4.007
TH-232	+	911.07	*	1.517E+00	3.160E-01	2.232E-01	2.451E-02	6.798
	+	969.11		1.321E+00	5.994E-01	3.222E-01	7.429E-02	4.100
	+	63.29	*	1.287E+00	1.966E+00	1.854E+00	3.157E-01	0.694
	+	92.38		1.948E+00	7.438E-01	6.497E-01	1.136E-01	2.998
U-234	+	609.31	*	1.291E+00	1.910E-01	1.048E-01	8.628E-03	12.319
	+	1120.29		1.586E+00	4.627E-01	4.506E-01	4.093E-02	3.520
	+	1764.49		1.642E+00	5.631E-01	3.252E-01	1.927E-02	5.049
	+	86.50	*	1.196E+00	3.945E-01	2.946E-01	6.473E-02	4.059
NP-237	+	95.87		-3.032E-01	9.183E-01	1.334E+00	3.219E-01	-0.227
U-238	+	63.29	*	1.287E+00	1.966E+00	1.854E+00	3.157E-01	0.694
	+	92.38		1.948E+00	6.762E-01	6.497E-01	4.730E-02	2.998
	+	74.67	*	3.609E-01	6.957E-02	8.417E-02	5.719E-03	4.288
	+	86.72		4.485E+01	1.154E+01	1.102E+01	8.328E-01	4.069
AM-243	+	117.66		-2.366E+00	3.398E+00	5.387E+00	3.394E-01	-0.439
	+	142.18		7.823E+00	1.684E+01	2.788E+01	1.578E+00	0.281

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	+	511.00	*	1.522E-01	7.071E-02	4.478E-02	2.729E-03	3.399

---- 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	*	1.007E-02	3.062E-01	4.777E-01	3.287E-02	0.021
NA-22		1274.54	*	-3.809E-02	4.033E-02	5.861E-02	3.775E-03	-0.650
NA-24		1368.53	*	1.465E-01	4.033E-02	Half-Life too short		
AL-26		1129.67		-2.363E-01	1.616E+00	2.647E+00	1.613E-01	-0.089
		1808.65	*	5.144E-03	2.582E-02	4.458E-02	2.558E-03	0.115
TI-44		67.85		-3.855E-02	4.373E-02	6.771E-02	4.408E-03	-0.569
	+	78.38	*	3.766E-01	5.500E-02	6.932E-02	4.849E-03	5.432
SC-46		889.25	*	-4.050E-03	3.780E-02	6.053E-02	5.017E-03	-0.067
	+	1120.51		2.739E-01	7.780E-02	1.297E-01	8.060E-03	2.111
V-48		944.10		-7.954E-02	8.823E-01	1.407E+00	1.130E-01	-0.057
		983.50	*	-2.446E-03	6.779E-02	1.084E-01	8.350E-03	-0.023
		1312.09		-4.469E-02	7.673E-02	1.161E-01	7.877E-03	-0.385
CR-51		320.08	*	-6.370E-02	3.662E-01	6.009E-01	3.820E-02	-0.106
MN-52		744.21		7.009E-02	2.313E-01	3.918E-01	2.798E-02	0.179
		848.13		-4.200E+00	7.214E+00	1.097E+01	8.739E-01	-0.383
		935.52		3.562E-01	3.024E-01	5.386E-01	4.361E-02	0.661
		1246.25		5.862E+00	8.015E+00	1.332E+01	8.208E-01	0.440
		1333.61		-2.058E+00	5.512E+00	8.580E+00	5.992E-01	-0.240
		1434.06	*	3.167E-01	2.553E-01	4.858E-01	3.338E-02	0.652
MN-54		834.83	*	-1.339E-02	3.737E-02	5.886E-02	4.627E-03	-0.227
CO-56		846.75	*	-2.140E-02	3.702E-02	5.634E-02	4.482E-03	-0.380
		977.42		-1.833E+00	2.910E+00	4.335E+00	3.363E-01	-0.423
		1037.82		-8.799E-02	3.028E-01	4.923E-01	3.802E-02	-0.179
		1175.09		-3.543E-01	2.194E+00	3.576E+00	1.972E-01	-0.099
	+	1238.25		2.350E-01	1.518E-01	1.782E-01	1.147E-02	1.319
		1360.21		-5.018E-01	9.342E-01	1.403E+00	9.766E-02	-0.358
		1771.40		-9.610E-02	2.777E-01	3.556E-01	2.097E-02	-0.270
CO-57		122.06	*	-7.071E-03	2.348E-02	3.723E-02	2.328E-03	-0.190
		136.48		-3.506E-02	1.950E-01	3.148E-01	2.117E-02	-0.111
CO-58		810.76	*	-3.665E-02	3.603E-02	5.216E-02	4.014E-03	-0.703
FE-59		142.65		9.053E-01	2.706E+00	4.447E+00	2.512E-01	0.204
		192.34		-4.745E-02	8.907E-01	1.415E+00	1.636E-01	-0.034
		1099.22	*	2.375E-02	8.517E-02	1.457E-01	1.076E-02	0.163
		1291.56		-7.085E-02	1.220E-01	1.866E-01	1.503E-02	-0.380
CO-60		1173.22		2.201E-02	4.120E-02	7.173E-02	3.943E-03	0.307
		1332.49	*	2.211E-03	3.728E-02	6.150E-02	4.295E-03	0.036
ZN-65		1115.52	*	2.714E-02	9.532E-02	1.419E-01	8.926E-03	0.191
GE-68		1077.35	*	8.112E-01	9.924E-01	1.805E+00	1.217E-01	0.450
AS-73		53.44	*	3.974E-01	7.337E-01	1.259E+00	8.125E-02	0.316
AS-74		595.88	*	-4.153E-03	9.245E-02	1.542E-01	9.817E-03	-0.027
		634.78		-2.215E-01	3.478E-01	5.477E-01	3.529E-02	-0.404
SE-75		66.05		-5.921E-01	4.749E+00	7.135E+00	6.229E-01	-0.083
		96.73		-4.846E-01	7.606E-01	1.084E+00	1.372E-01	-0.447

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		121.11		-3.409E-02	1.271E-01	2.018E-01	1.922E-02	-0.169
		136.00		-1.341E-02	3.584E-02	5.730E-02	3.383E-03	-0.234
		198.60		1.929E+00	1.747E+00	2.921E+00	1.962E-01	0.660
		264.65	*	-2.315E-02	4.410E-02	6.259E-02	3.548E-03	-0.370
		279.53		3.906E-02	1.099E-01	1.661E-01	1.018E-02	0.235
		303.91		-1.354E+00	2.153E+00	2.980E+00	2.822E-01	-0.454
		400.65		8.199E-02	2.416E-01	4.032E-01	3.603E-02	0.203
BR-77	+	87.88		1.214E+03	3.123E+02	4.322E+02	3.305E+01	2.808
		200.40		-2.744E+01	2.190E+02	3.458E+02	1.834E+01	-0.079
	+	239.00		3.303E+02	2.915E+01	5.042E+01	2.777E+00	6.551
		249.79		-4.336E+01	7.915E+01	1.284E+02	7.133E+00	-0.338
		281.68		4.854E+01	1.191E+02	1.808E+02	1.022E+01	0.268
		297.23		1.675E+02	9.745E+01	1.258E+02	7.142E+00	1.331
		303.76		-9.945E+01	2.417E+02	3.414E+02	1.940E+01	-0.291
		439.47		-1.454E+02	1.845E+02	2.803E+02	1.614E+01	-0.519
		484.57		-1.512E+02	2.810E+02	4.301E+02	2.573E+01	-0.351
		520.65	*	1.869E+00	1.317E+01	2.133E+01	1.308E+00	0.088
		574.64		-4.633E+00	2.634E+02	4.302E+02	2.715E+01	-0.011
		578.91		-8.068E+00	1.132E+02	1.638E+02	1.036E+01	-0.049
		585.48		7.061E+02	2.733E+02	4.808E+02	3.048E+01	1.469
		755.35		3.606E+01	2.101E+02	3.505E+02	2.534E+01	0.103
		817.79		3.038E+01	1.712E+02	2.842E+02	2.196E+01	0.107
SR-82		698.33		-3.502E+01	3.380E+01	5.026E+01	3.406E+00	-0.697
		776.49	*	-1.433E-01	4.023E-01	6.192E-01	4.581E-02	-0.232
		1395.20		5.003E+00	1.119E+01	1.719E+01	1.190E+00	0.291
RB-83		520.41	*	2.054E-03	6.566E-02	1.053E-01	6.455E-03	0.020
		529.64		-3.740E-02	9.987E-02	1.540E-01	9.494E-03	-0.243
		552.65		6.043E-02	1.879E-01	3.236E-01	2.021E-02	0.187
RB-84		881.50	*	1.137E-02	6.691E-02	1.104E-01	9.085E-03	0.103
KR-85		513.99	*	8.511E+00	7.157E+00	1.128E+01	6.891E-01	0.754
SR-85		513.99	*	4.412E-02	3.710E-02	5.849E-02	3.572E-03	0.754
RB-86		1076.63	*	4.367E-01	6.493E-01	1.165E+00	7.862E-02	0.375
Y-88		898.02		-2.218E-02	4.614E-02	7.128E-02	5.988E-03	-0.311
		1836.01	*	-3.536E-02	3.417E-02	4.379E-02	2.465E-03	-0.808
ZR-88		392.90	*	1.336E-02	2.995E-02	5.037E-02	2.763E-03	0.265
Y-91		1204.90	*	-5.678E+00	1.792E+01	2.869E+01	1.659E+00	-0.198
NB-94		702.63	*	1.088E-02	3.000E-02	5.111E-02	3.481E-03	0.213
		871.10		-4.495E-03	3.183E-02	5.086E-02	4.144E-03	-0.088
NB-95		765.79	*	5.093E-02	4.429E-02	7.873E-02	5.759E-03	0.647
NB-95M		235.69	*	9.558E-02	1.301E-01	2.023E-01	1.475E-02	0.473
ZR-95		724.18		1.703E-01	1.068E-01	1.775E-01	1.400E-02	0.960
		756.15	*	-1.515E-02	6.811E-02	1.096E-01	9.048E-03	-0.138
NB-97		657.90	*	7.879E-02	6.811E-02	Half-Life	too short	
		1024.50		-7.305E+00	6.811E-02	Half-Life	too short	
ZR-97		254.15		-3.441E+00	6.811E-02	Half-Life	too short	
		355.39		2.080E+00	6.811E-02	Half-Life	too short	
		507.63	*	1.061E+01	6.811E-02	Half-Life	too short	
		602.52		7.311E+00	6.811E-02	Half-Life	too short	
		1021.30		3.156E+00	6.811E-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
	1147.95			-6.547E+00	6.811E-02	Half-Life too short		
	1362.66			-1.106E+01	6.811E-02	Half-Life too short		
	1750.46			-1.178E+00	6.811E-02	Half-Life too short		
MO-99	140.51			-1.481E+01	3.338E+01	5.279E+01	1.421E+01	-0.281
	181.06			-2.231E+01	2.334E+01	3.058E+01	5.182E+00	-0.730
	366.43			-4.572E+01	1.023E+02	1.628E+02	9.101E+00	-0.281
	739.58	*		8.067E+00	1.306E+01	2.269E+01	3.262E+00	0.356
	778.00			-3.492E+01	4.396E+01	6.660E+01	4.937E+00	-0.524
TC-99M	140.51	*		-2.958E+11	4.396E+01	Half-Life too short		
RH-101	127.23			2.909E-02	3.261E-02	5.004E-02	3.037E-03	0.581
	198.01	*		2.892E-02	3.224E-02	5.346E-02	2.828E-03	0.541
	325.23			1.295E-01	2.252E-01	3.431E-01	1.949E-02	0.378
RH-102	418.52			-1.966E-01	2.630E-01	4.028E-01	2.272E-02	-0.488
	475.06	*		-5.824E-03	2.530E-02	3.990E-02	2.369E-03	-0.146
	631.29			1.244E-02	5.175E-02	8.788E-02	5.658E-03	0.142
	697.49			-6.171E-02	7.442E-02	1.131E-01	7.656E-03	-0.546
+	766.84			2.699E-01	1.953E-01	2.022E-01	1.481E-02	1.335
	1046.59			-1.048E-01	1.042E-01	1.550E-01	1.098E-02	-0.676
	1112.84			1.646E-01	2.246E-01	3.561E-01	2.248E-02	0.462
RU-103	497.08	*		-3.085E-02	3.979E-02	5.927E-02	7.560E-03	-0.521
	610.33			1.420E+01	2.826E+00	3.035E+00	4.750E-01	4.679
RH-106	511.85	+		7.618E-01	3.539E-01	4.223E-01	2.575E-02	1.804
	621.84	*		1.788E-01	3.199E-01	5.544E-01	6.684E-02	0.322
	1050.47			4.297E-01	2.056E+00	3.509E+00	2.472E-01	0.122
RU-106	511.85	+		7.618E-01	3.539E-01	4.223E-01	2.575E-02	1.804
	621.84	*		1.788E-01	3.194E-01	5.544E-01	3.560E-02	0.322
	1050.47			4.297E-01	2.056E+00	3.509E+00	2.472E-01	0.122
AG-108M	433.93	*		-1.524E-02	3.137E-02	4.898E-02	3.052E-03	-0.311
	614.37			-1.649E-02	3.985E-02	5.501E-02	3.771E-03	-0.300
	722.95			-1.051E-02	4.577E-02	6.353E-02	4.693E-03	-0.165
AG-110M	657.75	*		3.985E-03	3.442E-02	5.768E-02	3.931E-03	0.069
	677.61			-1.786E-01	3.006E-01	4.728E-01	3.273E-02	-0.378
	706.67			-7.889E-02	2.050E-01	3.276E-01	2.339E-02	-0.241
	763.93			-2.651E-02	1.704E-01	2.370E-01	1.798E-02	-0.112
	884.67			3.490E-02	4.520E-02	7.913E-02	6.759E-03	0.441
	937.48			-6.491E-02	1.159E-01	1.761E-01	1.481E-02	-0.369
	1384.27			1.132E-01	1.795E-01	2.895E-01	2.095E-02	0.391
IN-111	171.28			-4.296E-01	1.146E+00	1.803E+00	9.274E-02	-0.238
	245.39	*		-5.486E-01	1.337E+00	1.931E+00	1.069E-01	-0.284
IN-113M	391.69	*		-2.446E-03	4.325E-02	7.041E-02	4.145E-03	-0.035
SN-113	391.69	*		-2.446E-03	4.325E-02	7.041E-02	4.145E-03	-0.035
IN-114M	190.27	*		3.486E-04	1.898E-01	2.692E-01	1.412E-02	0.001
CD-115	260.90			3.022E+01	1.663E+02	2.820E+02	1.577E+01	0.107
	492.35			2.200E+01	4.875E+01	8.110E+01	4.880E+00	0.271
	527.90	*		-4.352E+00	1.382E+01	2.143E+01	1.320E+00	-0.203
SN-117M	156.02			-2.317E-01	2.201E+00	3.537E+00	1.888E-01	-0.066
	158.56	*		-8.873E-03	5.228E-02	8.361E-02	4.417E-03	-0.106
SB-122	563.90	*		2.215E+00	2.377E+00	4.268E+00	2.680E-01	0.519
	692.80			2.515E+01	5.552E+01	9.510E+01	6.402E+00	0.264

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-123	159.00	*		-1.699E+00	5.552E+01	Half-Life	too short	
	528.96			-1.002E+03	5.552E+01	Half-Life	too short	
TE-123M	159.00	*		-2.251E-03	2.560E-02	4.111E-02	2.202E-03	-0.055
I-124	602.71	*		3.948E-01	9.177E-01	1.390E+00	8.871E-02	0.284
	722.78			-2.075E+00	5.627E+00	7.666E+00	5.344E-01	-0.271
	1325.50			-2.577E+01	3.830E+01	5.692E+01	3.937E+00	-0.453
	1376.25	+		1.114E+02	5.058E+01	7.890E+01	5.480E+00	1.412
	1509.49			1.888E+01	2.040E+01	3.690E+01	2.483E+00	0.512
	1691.02			1.203E+00	3.458E+00	6.190E+00	3.842E-01	0.194
SB-124	602.71			1.953E-02	4.540E-02	6.878E-02	4.391E-03	0.284
	645.85			1.218E-01	4.735E-01	7.995E-01	5.706E-02	0.152
	709.31			2.011E+00	2.670E+00	4.675E+00	3.209E-01	0.430
	713.82			-7.641E-01	1.585E+00	2.501E+00	2.720E-01	-0.305
	722.78			-1.488E-01	4.036E-01	5.498E-01	3.959E-02	-0.271
	968.20	+		1.377E+01	5.486E+00	7.792E+00	6.106E-01	1.767
	1045.16			-2.173E+00	2.373E+00	3.590E+00	2.549E-01	-0.605
	1325.50			-1.974E+00	2.934E+00	4.360E+00	3.016E-01	-0.453
	1368.21			-1.428E-01	1.811E+00	2.489E+00	3.106E-01	-0.057
	1436.60			-1.841E+00	3.835E+00	5.786E+00	3.972E-01	-0.318
	1691.02			2.034E-02	5.850E-02	1.047E-01	6.988E-03	0.194
SB-125	427.89	*		3.607E-02	8.680E-02	1.452E-01	8.630E-03	0.248
	463.38	+		5.986E-01	3.802E-01	5.391E-01	3.684E-02	1.110
	600.56			7.639E-02	1.798E-01	3.093E-01	2.231E-02	0.247
	635.90			-2.628E-02	2.523E-01	4.164E-01	3.061E-02	-0.063
TE-125M	109.28	*		7.682E+00	8.301E+00	1.419E+01	1.224E+00	0.541
I-126	388.63			-1.852E-02	2.046E-01	3.325E-01	1.826E-02	-0.056
	666.33	*		2.011E-01	1.806E-01	3.249E-01	2.119E-02	0.619
	753.82			1.328E+00	1.405E+00	2.502E+00	1.806E-01	0.531
SB-126	223.80			-5.276E-01	3.840E+00	6.473E+00	3.517E-01	-0.082
	278.60	+		3.150E+00	2.629E+00	4.137E+00	2.335E-01	0.761
	296.50	+		1.421E+01	2.656E+00	3.594E+00	2.040E-01	3.954
	414.70			1.491E-02	7.012E-02	1.159E-01	6.515E-03	0.129
	415.30			9.109E-01	5.722E+00	9.426E+00	5.300E-01	0.097
	555.20			9.498E-01	4.174E+00	7.134E+00	4.461E-01	0.133
	573.80			5.555E-02	1.022E+00	1.723E+00	1.087E-01	0.032
	593.00			-4.070E-01	9.480E-01	1.535E+00	9.757E-02	-0.265
	656.30			1.487E+00	3.435E+00	5.898E+00	3.820E-01	0.252
	666.33			8.424E-02	7.566E-02	1.361E-01	8.874E-03	0.619
	675.00			2.440E-01	2.025E+00	3.390E+00	2.234E-01	0.072
	695.00			1.778E-02	7.893E-02	1.329E-01	8.970E-03	0.134
	697.00			-1.995E-01	2.651E-01	4.090E-01	2.767E-02	-0.488
	720.50	*		9.617E-02	1.572E-01	2.419E-01	1.682E-02	0.397
	856.80			4.395E-01	5.306E-01	8.292E-01	6.661E-02	0.530
	989.30			9.271E-01	1.253E+00	2.174E+00	1.663E-01	0.427
	1034.80			6.116E-01	8.720E+00	1.469E+01	1.059E+00	0.042
	1213.00			1.403E+00	4.703E+00	7.924E+00	4.640E-01	0.177
SB-127	61.10			2.818E+01	6.314E+01	9.838E+01	9.702E+00	0.286
	252.40			3.493E+00	4.750E+00	7.919E+00	3.294E+00	0.441
	290.80			-1.779E+01	2.679E+01	3.723E+01	3.523E+00	-0.478

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		411.60		-7.789E+00	1.401E+01	2.185E+01	3.177E+00	-0.357
		444.90		6.418E+00	1.081E+01	1.826E+01	2.029E+00	0.351
		473.00		-2.619E-01	1.749E+00	2.779E+00	3.211E-01	-0.094
		543.00		-4.610E+00	1.880E+01	3.110E+01	4.156E+00	-0.148
		603.60		9.249E+00	1.572E+01	2.413E+01	2.752E+00	0.383
	*	685.20		-8.073E-01	1.567E+00	2.474E+00	2.559E-01	-0.326
		698.50		-1.828E+01	1.782E+01	2.624E+01	3.971E+00	-0.697
		722.20		-1.224E+01	3.798E+01	5.197E+01	5.349E+00	-0.236
		783.80		8.034E+00	4.522E+00	8.283E+00	9.892E-01	0.970
XE-127		57.60		1.484E+00	5.272E+00	9.047E+00	5.718E-01	0.164
		145.22		-1.430E-01	6.768E-01	1.084E+00	6.055E-02	-0.132
		172.10		-7.781E-02	1.083E-01	1.670E-01	8.599E-03	-0.466
	*	202.84		-4.999E-03	4.647E-02	7.338E-02	3.902E-03	-0.068
		374.96		-1.214E-01	1.789E-01	2.786E-01	1.548E-02	-0.436
I-131		80.18		-4.146E-01	5.837E+00	6.924E+00	4.971E-01	-0.060
		284.30		-6.279E-01	1.484E+00	2.421E+00	1.533E-01	-0.259
	*	364.48		3.786E-02	1.183E-01	1.984E-01	1.251E-02	0.191
		636.97		2.660E-01	1.557E+00	2.629E+00	1.864E-01	0.101
		722.89		-2.344E+00	8.404E+00	1.159E+01	8.170E-01	-0.202
TE-132		49.72		2.126E+00	2.059E+01	3.528E+01	3.394E+00	0.060
		111.76		-2.058E+01	3.289E+01	5.247E+01	5.002E+00	-0.392
		116.30		-1.310E+01	3.043E+01	4.891E+01	4.632E+00	-0.268
	*	228.16		3.456E-02	7.881E-01	1.338E+00	1.932E-01	0.026
BA-133		53.15		1.363E+00	3.149E+00	5.380E+00	3.479E-01	0.253
		79.62		-6.822E-01	1.556E+00	1.788E+00	2.575E-01	-0.382
		81.00		-1.204E-01	1.170E-01	1.255E-01	1.900E-02	-0.959
	+	276.40		4.443E-01	3.743E-01	5.925E-01	7.639E-02	0.750
		302.84		-8.245E-02	1.458E-01	2.030E-01	2.355E-02	-0.406
	*	356.01		-7.163E-03	4.217E-02	5.984E-02	6.865E-03	-0.120
		383.85		-4.762E-03	2.780E-01	4.544E-01	4.873E-02	-0.010
I-133	+	510.53		3.567E+00	2.780E-01	Half-Life	too short	
	*	529.87		-4.412E-03	2.780E-01	Half-Life	too short	
		706.58		-3.788E-01	2.780E-01	Half-Life	too short	
		856.28		1.882E-01	2.780E-01	Half-Life	too short	
		875.33		1.811E-01	2.780E-01	Half-Life	too short	
	+	1236.41		3.886E+00	2.780E-01	Half-Life	too short	
		1298.22		-1.658E-01	2.780E-01	Half-Life	too short	
CS-134		475.35		-7.034E-01	1.666E+00	2.580E+00	1.533E-01	-0.273
		563.23		2.203E-01	3.264E-01	5.754E-01	3.677E-02	0.383
		569.32		-5.246E-02	1.811E-01	2.908E-01	1.877E-02	-0.180
		604.70		3.159E-05	3.740E-02	5.438E-02	3.489E-03	0.001
	*	795.84		9.127E-02	5.135E-02	8.738E-02	6.662E-03	1.045
		801.93		-1.002E-01	3.921E-01	6.117E-01	4.683E-02	-0.164
		1038.57		1.843E+00	3.654E+00	6.404E+00	4.592E-01	0.288
		1167.94		-6.725E-01	2.334E+00	3.755E+00	2.092E-01	-0.179
		1365.15		3.547E-01	1.059E+00	1.817E+00	1.352E-01	0.195
I-135		288.45		-2.529E+10	1.059E+00	Half-Life	too short	
		417.63		3.878E+10	1.059E+00	Half-Life	too short	
		546.56		-1.923E+10	1.059E+00	Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	836.80			1.310E+11	1.059E+00	Half-Life	too short	
	1038.76			1.498E+11	1.059E+00	Half-Life	too short	
	1124.00			3.903E+11	1.059E+00	Half-Life	too short	
	1131.51			-2.211E+10	1.059E+00	Half-Life	too short	
	1260.41	*		1.404E+10	1.059E+00	Half-Life	too short	
	1457.56			1.017E+13	1.059E+00	Half-Life	too short	
	1678.03			1.735E+11	1.059E+00	Half-Life	too short	
	1706.46			-2.023E+11	1.059E+00	Half-Life	too short	
	1791.20			6.178E+10	1.059E+00	Half-Life	too short	
CS-136	66.91			-5.948E-01	8.335E-01	1.209E+00	1.735E-01	-0.492
	86.29	+		5.616E+00	1.541E+00	2.048E+00	2.487E-01	2.742
	153.22			-1.818E-01	6.442E-01	1.027E+00	7.097E-02	-0.177
	163.89			9.774E-01	1.038E+00	1.743E+00	1.178E-01	0.561
	176.55			3.759E-01	3.753E-01	6.290E-01	3.753E-02	0.598
	273.65			6.757E-01	5.665E-01	7.080E-01	4.581E-02	0.954
	340.57			1.521E-01	1.289E-01	2.049E-01	1.237E-02	0.742
	818.51			-2.566E-03	7.723E-02	1.256E-01	9.725E-03	-0.020
	1048.07	*		-2.463E-02	1.053E-01	1.719E-01	1.291E-02	-0.143
	1235.34			9.367E-01	7.481E-01	1.199E+00	1.216E-01	0.781
BA-137M	661.65	*		-2.755E-02	3.530E-02	5.487E-02	3.557E-03	-0.502
CS-137	661.65	*		-2.913E-02	3.732E-02	5.800E-02	3.773E-03	-0.502
CE-139	165.85	*		-2.740E-03	2.809E-02	4.498E-02	2.305E-03	-0.061
BA-140	162.64			1.683E-01	7.257E-01	1.182E+00	7.079E-02	0.142
	304.84			4.230E-01	1.217E+00	1.992E+00	5.432E-01	0.212
	423.70			-1.887E-01	1.867E+00	3.009E+00	9.555E-01	-0.063
	537.32	*		6.809E-02	2.556E-01	4.377E-01	1.427E-01	0.156
LA-140	328.77			4.961E-01	3.124E-01	5.564E-01	3.554E-02	0.892
	432.53			-1.504E+00	2.064E+00	3.155E+00	1.999E-01	-0.477
	487.03			1.389E-02	1.353E-01	2.194E-01	1.478E-02	0.063
	751.79			-1.097E+00	1.653E+00	2.536E+00	2.101E-01	-0.432
	815.85			-6.302E-02	3.235E-01	5.176E-01	4.558E-02	-0.122
	867.82			-1.840E-01	1.352E+00	2.100E+00	1.807E-01	-0.088
	919.63			-4.979E-01	2.973E+00	4.719E+00	4.870E-01	-0.106
	925.24			-6.113E-01	1.165E+00	1.770E+00	1.547E-01	-0.345
	1596.49	*		-8.698E-02	8.957E-02	1.272E-01	8.287E-03	-0.684
CE-141	145.44	*		-2.097E-02	6.089E-02	9.687E-02	5.640E-03	-0.217
CE-143	57.37			4.487E-04	6.089E-02	Half-Life	too short	
	231.56			-3.220E-04	6.089E-02	Half-Life	too short	
	293.26	*		1.465E-03	6.089E-02	Half-Life	too short	
	350.59	+		5.432E-02	6.089E-02	Half-Life	too short	
	490.36			-1.836E-03	6.089E-02	Half-Life	too short	
	664.57			-5.542E-04	6.089E-02	Half-Life	too short	
	721.93			-8.520E-04	6.089E-02	Half-Life	too short	
CE-144	80.11			-1.542E-01	2.463E+00	2.924E+00	2.076E-01	-0.053
	133.54	*		2.695E-02	1.920E-01	3.002E-01	4.274E-02	0.090
PM-144	476.78			-1.573E-02	6.187E-02	9.746E-02	6.887E-03	-0.161
	618.01			6.683E-03	3.102E-02	5.261E-02	3.541E-03	0.127
	696.49	*		-1.968E-02	3.234E-02	5.062E-02	3.425E-03	-0.389
	778.57			-1.808E+00	2.317E+00	3.520E+00	2.612E-01	-0.514

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PR-144		696.49	*	-1.334E+00	2.192E+00	3.432E+00	2.321E-01	-0.389
		1489.15		-6.957E+00	1.245E+01	1.837E+01	1.244E+00	-0.379
PM-146		453.90	*	2.160E-03	4.031E-02	6.542E-02	5.656E-03	0.033
		633.02		7.443E-02	1.276E+00	2.135E+00	7.884E-01	0.035
		735.90		-2.284E-02	1.290E-01	2.084E-01	5.871E-02	-0.110
		747.13		2.266E-02	7.808E-02	1.320E-01	1.742E-02	0.172
ND-147	+	91.11		1.246E+00	3.609E-01	5.035E-01	4.129E-02	2.474
		319.41		9.246E-01	3.352E+00	5.644E+00	3.210E-01	0.164
		439.89		-2.722E+00	5.860E+00	9.147E+00	5.272E-01	-0.298
		531.02	*	1.055E-01	5.522E-01	8.964E-01	1.227E-01	0.118
PM-149		285.90	*	-2.268E+01	1.127E+02	1.861E+02	2.628E+01	-0.122
EU-152		121.78		-1.855E-02	6.820E-02	1.083E-01	8.615E-03	-0.171
		244.69		-2.287E-01	3.244E-01	4.587E-01	2.538E-02	-0.499
		344.27	*	1.872E-02	9.432E-02	1.391E-01	8.915E-03	0.135
		443.98		7.907E-02	8.893E-01	1.450E+00	8.384E-02	0.055
		778.89		-1.045E-01	2.592E-01	4.087E-01	3.032E-02	-0.256
		867.32		-2.838E-02	7.756E-01	1.180E+00	9.576E-02	-0.024
		964.01		4.070E-01	3.602E-01	5.631E-01	4.432E-02	0.723
		1085.78		2.459E-01	3.418E-01	6.121E-01	4.066E-02	0.402
		1112.02		1.959E-01	3.266E-01	5.082E-01	3.213E-02	0.385
		1407.95		1.775E-01	1.995E-01	3.417E-01	2.360E-02	0.520
GD-153		69.67		4.027E-01	1.718E+00	2.614E+00	1.719E-01	0.154
	+	83.37		3.195E+01	1.574E+01	2.196E+01	1.605E+00	1.455
		97.43	*	-2.221E-02	7.938E-02	1.154E-01	8.023E-03	-0.193
		103.18		-3.142E-02	9.275E-02	1.509E-01	1.008E-02	-0.208
EU-154		123.07		-6.037E-03	4.752E-02	7.733E-02	7.472E-03	-0.078
		247.94		-9.087E-03	3.232E-01	5.264E-01	4.942E-02	-0.017
		591.81		6.288E-03	5.746E-01	9.629E-01	9.739E-02	0.007
		723.30		6.611E-02	1.883E-01	2.802E-01	2.262E-02	0.236
		756.87		-1.427E-03	7.296E-01	1.198E+00	1.321E-01	-0.001
		873.19		7.095E-02	2.742E-01	4.571E-01	5.452E-02	0.155
		996.32		-1.137E-01	3.666E-01	5.974E-01	1.033E-01	-0.190
		1004.76		-1.449E-01	2.019E-01	3.139E-01	3.403E-02	-0.462
		1274.45	*	-1.052E-01	1.130E-01	1.641E-01	1.599E-02	-0.641
EU-155		48.70		1.374E+00	2.052E+00	3.599E+00	2.351E-01	0.382
		60.01		5.239E-01	4.568E+00	7.008E+00	4.404E-01	0.075
	+	86.54		4.908E-01	1.264E-01	1.802E-01	1.377E-02	2.723
		105.31	*	1.855E-03	9.578E-02	1.582E-01	1.066E-02	0.012
TB-160	+	86.79		1.324E+00	3.405E-01	4.824E-01	3.648E-02	2.743
		197.04		1.567E-01	5.575E-01	8.992E-01	4.752E-02	0.174
		215.65		-1.310E-01	6.990E-01	1.094E+00	5.895E-02	-0.120
	+	298.57		1.622E-01	1.275E-01	1.849E-01	1.050E-02	0.877
		879.36	*	-7.845E-02	1.362E-01	2.069E-01	1.699E-02	-0.379
		962.29		5.181E-01	6.522E-01	9.897E-01	7.805E-02	0.523
		966.15		1.260E+00	3.471E-01	6.024E-01	4.731E-02	2.092
		1177.93		8.190E-02	3.567E-01	6.028E-01	3.339E-02	0.136
		1271.85		2.721E-01	6.263E-01	1.082E+00	6.925E-02	0.252
HO-166M		80.57		2.271E-01	2.870E-01	3.657E-01	2.606E-02	0.621
	+	184.41		9.970E-02	5.758E-02	6.418E-02	3.346E-03	1.553

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		280.46		-3.606E-02	8.563E-02	1.220E-01	6.889E-03	-0.296
		410.95		4.477E-02	2.350E-01	3.876E-01	2.169E-02	0.116
		711.68	*	6.958E-03	5.720E-02	9.540E-02	6.567E-03	0.073
		752.31		-4.484E-02	2.386E-01	3.846E-01	2.772E-02	-0.117
		810.29		-6.877E-02	5.511E-02	7.754E-02	5.945E-03	-0.887
		51.35		-1.323E+01	2.632E+01	4.389E+01	2.861E+00	-0.301
		52.39		1.068E-01	1.391E+01	2.339E+01	1.518E+00	0.005
		59.40		-7.722E+00	2.485E+01	3.725E+01	2.336E+00	-0.207
		66.72	*	-1.665E+01	2.856E+01	4.190E+01	2.711E+00	-0.397
		88.36		9.661E-01	2.485E-01	3.373E-01	2.570E-02	2.864
LU-176	+	201.83		-2.492E-02	2.812E-02	4.259E-02	2.263E-03	-0.585
		306.84	*	5.131E-03	2.194E-02	3.698E-02	2.102E-03	0.139
LU-177		401.10		1.028E-01	6.346E+00	1.036E+01	5.738E-01	0.010
		112.95		-5.371E-01	1.619E+00	2.622E+00	1.675E-01	-0.205
LU-177M	+	208.36	*	2.795E+00	1.667E+00	2.043E+00	1.093E-01	1.368
		52.97		4.984E-01	1.426E+00	2.428E+00	1.571E-01	0.205
		54.07		-4.369E-02	7.552E-01	1.264E+00	8.137E-02	-0.035
		61.30		8.513E-01	1.367E+00	2.149E+00	1.357E-01	0.396
		121.62		-8.295E-02	3.518E-01	5.598E-01	3.496E-02	-0.148
		147.16		2.702E-02	6.065E-01	9.846E-01	5.456E-02	0.027
		171.86		-3.040E-01	4.301E-01	6.637E-01	3.416E-02	-0.458
		218.09		-6.496E-02	8.216E-01	1.293E+00	6.984E-02	-0.050
	+	268.79		2.709E+00	1.271E+00	1.490E+00	8.375E-02	1.818
		319.02		6.995E-02	2.442E-01	4.115E-01	2.339E-02	0.170
		367.43		-5.667E-01	8.577E-01	1.344E+00	7.509E-02	-0.422
		413.65	*	-1.254E-01	1.602E-01	2.450E-01	1.375E-02	-0.512
HF-181		56.28		-7.891E-03	8.251E-01	1.401E+00	8.909E-02	-0.006
		57.53		1.259E-01	4.426E-01	7.595E-01	4.801E-02	0.166
		65.20		5.624E-02	9.442E-01	1.432E+00	9.203E-02	0.039
		133.02		5.143E-02	6.577E-02	1.003E-01	5.915E-03	0.513
		136.25		-6.787E-02	4.268E-01	6.894E-01	4.006E-02	-0.098
W-181		345.85		-3.069E-02	1.927E-01	2.747E-01	1.552E-02	-0.112
		482.03	*	-9.483E-03	3.935E-02	6.198E-02	3.700E-03	-0.153
		56.28		-2.649E-03	3.194E-01	5.423E-01	3.449E-02	-0.005
		57.53		4.881E-02	1.715E-01	2.943E-01	1.860E-02	0.166
		65.20	*	2.161E-02	3.629E-01	5.506E-01	3.537E-02	0.039
TA-182		67.75		-9.023E-02	1.051E-01	1.630E-01	1.060E-02	-0.554
		100.10		6.899E-02	1.615E-01	2.720E-01	1.854E-02	0.254
		152.43		-9.089E-02	3.179E-01	5.071E-01	2.749E-02	-0.179
		222.10		5.384E-02	3.081E-01	5.268E-01	2.857E-02	0.102
		1001.68		-8.901E-01	2.150E+00	3.304E+00	2.491E-01	-0.269
RE-183		1121.28		4.550E-01	2.030E-01	3.488E-01	2.164E-02	1.304
		1189.05		-1.748E-02	2.839E-01	4.666E-01	2.631E-02	-0.037
		1221.42	*	-1.187E-01	1.758E-01	2.696E-01	1.599E-02	-0.440
		1230.97		-2.190E-01	5.219E-01	6.954E-01	4.186E-02	-0.315
		57.98		8.554E-02	1.773E-01	2.940E-01	1.855E-02	0.291
		59.32		-1.077E-02	1.019E-01	1.545E-01	9.694E-03	-0.070
		67.20		-1.827E-01	2.048E-01	2.955E-01	1.917E-02	-0.618
		162.32	*	6.218E-02	1.002E-01	1.663E-01	8.644E-03	0.374

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-184	+	208.81		2.279E+00	1.359E+00	1.682E+00	9.004E-02	1.355
		291.72		-3.733E-01	9.687E-01	1.379E+00	7.819E-02	-0.271
		57.98		3.133E-01	6.494E-01	1.077E+00	6.793E-02	0.291
		59.32		-3.942E-02	3.729E-01	5.654E-01	3.547E-02	-0.070
		67.20		-6.689E-01	7.500E-01	1.082E+00	7.018E-02	-0.618
		161.27		-1.702E-01	3.236E-01	5.075E-01	2.650E-02	-0.335
		216.55		3.764E-02	2.556E-01	4.073E-01	2.197E-02	0.092
		252.85	*	1.654E-01	2.024E-01	3.547E-01	1.974E-02	0.466
		318.01		-1.545E-02	4.311E-01	7.136E-01	4.056E-02	-0.022
		792.07		1.839E+00	1.145E+00	1.909E+00	1.436E-01	0.963
OS-185		903.28		3.195E-01	1.156E+00	1.749E+00	1.456E-01	0.183
		920.93		1.060E-01	4.532E-01	7.494E-01	6.147E-02	0.142
		59.72		-6.555E-02	2.761E-01	4.156E-01	2.608E-02	-0.158
		61.14		6.816E-02	1.499E-01	2.338E-01	1.476E-02	0.291
		69.30		3.289E-02	3.015E-01	4.561E-01	2.993E-02	0.072
		592.07		2.506E-01	2.337E+00	3.946E+00	2.508E-01	0.064
		646.12	*	7.977E-03	3.945E-02	6.672E-02	4.312E-03	0.120
		717.42		4.323E-01	8.330E-01	1.436E+00	9.947E-02	0.301
		874.81		2.883E-01	5.521E-01	9.436E-01	7.714E-02	0.306
		880.27		5.893E-02	7.087E-01	1.160E+00	9.530E-02	0.051
RE-188		155.03	*	5.022E-02	1.591E-01	2.608E-01	1.398E-02	0.193
		477.96		1.772E+00	2.903E+00	4.748E+00	2.826E-01	0.373
		633.10		1.889E-01	2.607E+00	4.369E+00	2.814E-01	0.043
W-188	+	63.58		5.228E+01	7.940E+01	8.575E+01	5.470E+00	0.610
IR-192		227.08		8.955E-01	1.153E+01	1.960E+01	1.068E+00	0.046
		290.67	*	-6.851E+00	7.898E+00	1.081E+01	6.127E-01	-0.634
	+	295.96		1.037E+00	1.941E-01	2.870E-01	1.655E-02	3.613
AU-195		308.46		-1.766E-02	8.633E-02	1.417E-01	8.150E-03	-0.125
		316.51	*	1.480E-02	3.313E-02	5.634E-02	3.220E-03	0.263
		468.07		8.511E-03	6.734E-02	9.623E-02	6.522E-03	0.088
		604.41		3.187E-02	5.078E-01	7.431E-01	8.665E-02	0.043
		612.46		4.042E-01	7.595E-01	1.163E+00	9.357E-02	0.347
		65.12		-7.703E-03	1.686E-01	2.545E-01	1.634E-02	-0.030
TL-200		66.83		-5.934E-02	9.452E-02	1.383E-01	8.956E-03	-0.429
	+	75.70		1.173E+00	2.260E-01	4.521E-01	3.096E-02	2.593
		98.88	*	1.676E-01	2.278E-01	3.500E-01	2.407E-02	0.479
TL-201	+	129.76		7.424E+00	3.747E+00	4.496E+00	2.694E-01	1.651
		367.94	*	-3.349E-04	3.747E+00	Half-Life	too short	
		579.30		2.471E-03	3.747E+00	Half-Life	too short	
		828.27		1.345E-03	3.747E+00	Half-Life	too short	
TL-202		1205.75		-1.743E-03	3.747E+00	Half-Life	too short	
		68.90		-3.865E+00	6.231E+00	9.096E+00	5.955E-01	-0.425
		70.82		2.129E+00	3.534E+00	5.467E+00	3.619E-01	0.389
		80.30		-6.298E-01	7.367E+00	8.728E+00	6.206E-01	-0.072
TL-202		135.34		-2.054E+01	2.927E+01	4.603E+01	2.686E+00	-0.446
		167.43	*	-1.798E+00	8.000E+00	1.271E+01	6.516E-01	-0.141
		68.90		-2.908E-01	4.688E-01	6.844E-01	4.481E-02	-0.425
		70.82		1.598E-01	2.651E-01	4.102E-01	2.716E-02	0.389
		80.30		-4.727E-02	5.530E-01	6.551E-01	4.658E-02	-0.072

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
HG-203	439.56	*		-5.373E-02	7.000E-02	1.065E-01	6.135E-03	-0.504
	70.83			6.661E-01	1.102E+00	1.702E+00	2.117E-01	0.391
	72.87			9.075E-01	5.999E-01	1.034E+00	1.245E-01	0.878
	82.60			4.030E-01	1.013E+00	1.549E+00	2.003E-01	0.260
BI-207	279.20	*		2.040E-02	4.174E-02	6.370E-02	3.830E-03	0.320
	72.80			2.179E-01	1.696E-01	2.940E-01	1.972E-02	0.741
	74.97	+		6.479E-01	1.249E-01	2.235E-01	1.522E-02	2.899
	84.90	+		4.121E-01	2.030E-01	2.983E-01	2.214E-02	1.381
TL-207	569.67			9.202E-04	2.813E-02	4.635E-02	2.918E-03	0.020
	1063.62	*		2.303E-02	5.114E-02	8.892E-02	6.134E-03	0.259
	1770.23			-5.805E-02	5.361E-01	7.372E-01	4.351E-02	-0.079
	81.07			-2.755E-01	2.555E-01	2.755E-01	1.972E-02	-1.000
PO-209	83.78	+		2.717E-01	1.338E-01	1.912E-01	1.404E-02	1.421
	94.90			2.357E-01	1.969E-01	3.414E-01	2.426E-02	0.690
	122.32			-5.251E-01	1.618E+00	2.561E+00	1.813E-01	-0.205
	144.24			1.665E-01	6.635E-01	1.086E+00	7.690E-02	0.153
BI-210	154.21			1.517E-01	3.629E-01	5.977E-01	3.986E-02	0.254
	269.46	+		6.314E-01	2.965E-01	3.490E-01	2.056E-02	1.809
	323.87	*		-5.341E-01	6.944E-01	9.355E-01	1.541E-01	-0.571
	338.28	+		5.583E+00	1.731E+00	2.341E+00	2.448E-01	2.385
PB-210	445.03			1.093E+00	2.099E+00	3.531E+00	3.623E-01	0.310
	260.50			8.788E+00	8.762E+00	1.543E+01	8.632E-01	0.569
	262.80			-1.085E+01	2.614E+01	3.966E+01	2.221E+00	-0.273
	896.60	*		2.458E+00	8.054E+00	1.340E+01	1.118E+00	0.183
BI-211	46.50	*		-2.433E+00	2.933E+00	4.752E+00	3.580E-01	-0.512
PB-211	46.50	*		-2.433E+00	2.933E+00	4.752E+00	3.580E-01	-0.512
PO-211	46.50	*		-2.433E+00	2.931E+00	4.752E+00	3.048E-01	-0.512
PB-211	404.84	*		-1.002E+00	1.120E+00	1.405E+00	8.758E-01	-0.713
BI-212	427.08			3.670E-01	1.904E+00	3.115E+00	1.925E+00	0.118
	831.96			1.152E+00	1.327E+00	1.995E+00	1.248E+00	0.578
	727.18	+		9.282E-01	4.574E-01	6.602E-01	5.715E-02	1.406
	785.46			1.937E+00	1.863E+00	3.291E+00	2.459E-01	0.589
PO-215	1620.62			3.853E-01	1.421E+00	2.457E+00	1.583E-01	0.157
	81.07			-2.755E-01	2.555E-01	2.755E-01	1.972E-02	-1.000
	83.78	+		2.717E-01	1.338E-01	1.912E-01	1.404E-02	1.421
	94.90			2.357E-01	1.969E-01	3.414E-01	2.426E-02	0.690
RN-219	122.32			-5.251E-01	1.618E+00	2.561E+00	1.813E-01	-0.205
	144.24			1.665E-01	6.635E-01	1.086E+00	7.690E-02	0.153
	154.21			1.517E-01	3.629E-01	5.977E-01	3.986E-02	0.254
	269.46	+		6.314E-01	2.965E-01	3.490E-01	2.056E-02	1.809
RN-220	323.87	*		-5.341E-01	6.944E-01	9.355E-01	1.541E-01	-0.571
	338.28	+		5.583E+00	1.731E+00	2.341E+00	2.448E-01	2.385
	445.03			1.093E+00	2.099E+00	3.531E+00	3.623E-01	0.310
	271.23			4.326E-01	2.676E-01	4.320E-01	3.448E-02	1.001
RA-223	401.81	*		1.279E-01	3.924E-01	6.536E-01	8.822E-02	0.196
RA-223	549.76	*		-1.107E+01	2.390E+01	3.879E+01	2.419E+00	-0.285
	81.07			-2.755E-01	2.555E-01	2.755E-01	1.972E-02	-1.000
	83.78	+		2.717E-01	1.338E-01	1.912E-01	1.404E-02	1.421
	94.90			2.357E-01	1.969E-01	3.414E-01	2.426E-02	0.690

---- 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		-5.251E-01	1.618E+00	2.561E+00	1.813E-01	-0.205
		144.24		1.665E-01	6.635E-01	1.086E+00	7.690E-02	0.153
		154.21		1.517E-01	3.629E-01	5.977E-01	3.986E-02	0.254
	+	269.46		6.314E-01	2.965E-01	3.490E-01	2.056E-02	1.809
		323.87	*	-5.341E-01	6.944E-01	9.355E-01	1.541E-01	-0.571
	+	338.28		5.583E+00	1.731E+00	2.341E+00	2.448E-01	2.385
		445.03		1.093E+00	2.099E+00	3.531E+00	3.623E-01	0.310
		79.80		-8.553E-01	1.977E+00	2.267E+00	4.746E-01	-0.377
		236.00		7.573E-01	2.668E-01	4.390E-01	4.515E-02	1.725
		256.20	*	-3.739E-01	3.457E-01	5.419E-01	7.516E-02	-0.690
		286.10		2.357E-01	1.344E+00	2.267E+00	2.605E-01	0.104
	+	299.80		2.046E+00	1.637E+00	2.371E+00	3.851E-01	0.863
TH-227		304.40		3.910E-02	1.767E+00	2.730E+00	4.711E-01	0.014
		334.20		5.607E-01	3.193E+00	3.438E+00	6.289E-01	0.163
		79.80		-8.553E-01	1.978E+00	2.267E+00	4.810E-01	-0.377
	+	94.00		7.528E+00	3.016E+00	3.372E+00	7.165E-01	2.232
		236.00		7.573E-01	2.639E-01	4.390E-01	3.891E-02	1.725
		256.20	*	-3.739E-01	3.475E-01	5.419E-01	9.117E-02	-0.690
		286.10		2.357E-01	1.364E+00	2.267E+00	2.270E+00	0.104
	+	299.80		2.046E+00	1.637E+00	2.371E+00	3.851E-01	0.863
		304.40		3.910E-02	1.767E+00	2.730E+00	4.711E-01	0.014
		334.20		5.607E-01	3.193E+00	3.438E+00	6.289E-01	0.163
	+	85.43		4.067E-01	2.003E-01	3.089E-01	2.304E-02	1.317
	+	88.47		4.628E-01	1.331E-01	1.941E-01	1.477E-02	2.384
PA-231		100.00		1.183E-01	1.656E-01	2.822E-01	1.925E-02	0.419
		193.63	*	-9.186E-02	4.710E-01	7.425E-01	3.909E-02	-0.124
		210.97		-7.784E-02	7.877E-01	1.100E+00	5.901E-02	-0.071
		283.67	*	-5.091E-01	1.370E+00	2.238E+00	3.071E-01	-0.227
		301.29		9.434E-01	5.796E-01	9.387E-01	9.749E-02	1.005
TH-231		81.07		-2.755E-01	2.555E-01	2.755E-01	1.972E-02	-1.000
	+	83.78		2.717E-01	1.338E-01	1.912E-01	1.404E-02	1.421
		94.90		2.357E-01	1.969E-01	3.414E-01	2.426E-02	0.690
		122.32		-5.251E-01	1.618E+00	2.561E+00	1.813E-01	-0.205
		144.24		1.665E-01	6.635E-01	1.086E+00	7.690E-02	0.153
U-231		154.21		1.517E-01	3.629E-01	5.977E-01	3.986E-02	0.254
	+	269.46		6.314E-01	2.965E-01	3.490E-01	2.056E-02	1.809
		323.87	*	-5.341E-01	6.944E-01	9.355E-01	1.541E-01	-0.571
	+	338.28		5.583E+00	1.731E+00	2.341E+00	2.448E-01	2.385
		445.03		1.093E+00	2.099E+00	3.531E+00	3.623E-01	0.310
	+	84.21		1.390E+01	6.845E+00	9.970E+00	7.349E-01	1.394
	+	92.29		8.831E+00	3.066E+00	4.446E+00	3.240E-01	1.986
		95.87	*	-4.081E-01	1.233E+00	1.796E+00	1.265E-01	-0.227
		108.00		1.065E-01	2.185E+00	3.609E+00	2.352E-01	0.030
	+	75.28		1.890E+01	4.364E+00	6.820E+00	9.833E-01	2.772
	+	86.59		7.974E+00	2.883E+00	2.929E+00	7.761E-01	2.722
	+	300.12		5.703E-01	4.534E-01	6.633E-01	8.878E-02	0.860
PA-233		311.98	*	-3.448E-02	5.604E-02	8.939E-02	5.409E-03	-0.386
		340.50		8.047E-01	6.241E-01	9.605E-01	2.203E-01	0.838
		398.62		-3.966E-01	2.025E+00	3.256E+00	8.399E-01	-0.122

---- 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		6.597E-02	1.435E+00	2.342E+00	4.811E-01	0.028
		63.00		1.501E+00	2.287E+00	2.508E+00	3.603E-01	0.598
		94.67		2.750E-01	1.481E-01	2.578E-01	2.941E-02	1.067
		98.44		4.232E-02	9.548E-02	1.402E-01	7.789E-02	0.302
		99.86		5.102E-01	4.153E-01	7.211E-01	4.924E-02	0.707
		111.00		-7.050E-02	1.650E-01	2.661E-01	2.831E-02	-0.265
		131.20		-2.284E-02	1.046E-01	1.502E-01	8.938E-03	-0.152
		152.70		-3.767E-02	3.007E-01	4.832E-01	7.571E-02	-0.078
		186.00		3.589E+00	2.336E+00	2.484E+00	7.565E-01	1.445
		226.40		-2.264E-02	3.607E-01	6.096E-01	6.942E-02	-0.037
		227.20		-5.149E-03	3.869E-01	6.553E-01	3.571E-02	-0.008
		248.90		-5.308E-01	7.376E-01	1.173E+00	2.512E-01	-0.453
		293.70		6.463E+00	1.549E+00	1.730E+00	2.774E-01	3.736
		369.80		-3.685E-02	7.945E-01	1.300E+00	2.699E-01	-0.028
		568.70		-4.114E-01	9.049E-01	1.431E+00	9.009E-02	-0.287
		569.50		-6.515E-02	2.510E-01	4.041E-01	2.544E-02	-0.161
		574.00		2.991E-02	1.381E+00	2.322E+00	1.465E-01	0.013
		699.00		-5.615E-01	6.756E-01	1.012E+00	1.854E-01	-0.555
		706.10		-3.767E-02	9.740E-01	1.603E+00	7.099E-01	-0.024
		733.00		4.006E-02	3.607E-01	5.463E-01	1.182E-01	0.073
		742.81		3.765E-01	1.191E+00	1.975E+00	1.324E+00	0.191
		796.30		1.298E+00	9.986E-01	1.560E+00	4.169E-01	0.832
		805.60		7.792E-01	9.493E-01	1.623E+00	4.932E-01	0.480
		819.60		7.214E-01	1.251E+00	2.102E+00	7.954E-01	0.343
		826.30		-3.490E-01	8.083E-01	1.236E+00	5.511E-01	-0.282
		831.60		1.196E-01	5.940E-01	9.848E-01	2.918E-01	0.121
		876.40		3.276E-01	8.356E-01	1.297E+00	1.333E+00	0.252
		880.51		2.443E-02	2.636E-01	4.316E-01	3.548E-02	0.057
		883.24		1.056E-01	2.752E-01	4.492E-01	3.018E-01	0.235
		899.00		-7.078E-01	9.951E-01	1.425E+00	6.223E-01	-0.497
		925.00		-2.518E-01	1.127E+00	1.775E+00	1.450E-01	-0.142
		926.50		-9.818E-02	1.652E-01	2.454E-01	6.167E-02	-0.400
		946.00	*	8.606E-02	2.915E-01	4.836E-01	8.945E-02	0.178
		949.00		2.301E-01	4.400E-01	7.463E-01	5.965E-02	0.308
		980.50		6.027E-01	6.668E-01	1.177E+00	9.102E-02	0.512
		1394.10		3.078E-01	1.141E+00	1.826E+00	1.185E+00	0.169
PA-234M	+	766.42		2.838E+01	2.496E+01	2.130E+01	1.076E+01	1.332
		1001.03	*	-4.257E-01	4.884E+00	7.753E+00	7.017E-01	-0.055
U-235	+	89.95		4.645E+00	1.918E+00	1.826E+00	5.580E-01	2.544
	+	93.35		2.342E+00	1.025E+00	1.163E+00	3.214E-01	2.013
		105.00		2.381E-01	9.346E-01	1.556E+00	4.563E-01	0.153
	*	143.76		2.942E-02	2.047E-01	3.335E-01	5.417E-02	0.088
		163.35		2.363E-01	4.372E-01	7.190E-01	1.279E-01	0.329
	+	185.71		1.329E-01	7.678E-02	9.131E-02	4.766E-03	1.456
		205.31		-1.909E-02	5.493E-01	7.705E-01	1.374E-01	-0.025
NP-236		94.67		2.104E-01	1.108E-01	1.957E-01	1.394E-02	1.075
		98.44		3.195E-02	6.999E-02	1.060E-01	7.313E-03	0.301
		111.00		-5.333E-02	1.247E-01	2.012E-01	1.295E-02	-0.265
	*	160.31		-9.519E-02	7.275E-02	1.092E-01	5.724E-03	-0.872

----- 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		1.790E-01	1.429E-01	2.458E-01	1.682E-02	0.728
		117.00	*	-1.487E-01	1.697E-01	2.665E-01	1.682E-02	-0.558
	+	209.75		1.780E+00	1.061E+00	1.297E+00	6.947E-02	1.372
		228.18		-3.918E-03	2.071E-01	3.506E-01	1.913E-02	-0.011
	+	277.60		2.168E-01	1.809E-01	2.877E-01	1.623E-02	0.754
AM-241		334.30		2.381E-01	1.805E+00	1.932E+00	1.096E-01	0.123
		59.54	*	-4.062E-02	1.443E-01	2.166E-01	1.539E-02	-0.187
CM-243		99.55		1.842E-01	1.471E-01	2.530E-01	1.731E-02	0.728
		103.76	*	4.077E-02	8.515E-02	1.436E-01	9.562E-03	0.284
		117.00		-1.530E-01	1.746E-01	2.742E-01	1.731E-02	-0.558
	+	209.75		1.755E+00	1.046E+00	1.278E+00	6.848E-02	1.372
		228.18		-3.959E-03	2.093E-01	3.543E-01	1.933E-02	-0.011
AM-246	+	277.60		2.186E-01	1.824E-01	2.900E-01	1.636E-02	0.754
		798.80		-1.309E-01	1.503E-01	1.848E-01	1.400E-02	-0.708
		1036.00		-1.564E-01	2.821E-01	4.454E-01	3.205E-02	-0.351
		1062.04		1.237E-01	2.237E-01	3.924E-01	2.714E-02	0.315
		1078.86	*	4.784E-02	1.170E-01	2.039E-01	1.371E-02	0.235
CM-247	+	278.00		8.990E-01	7.501E-01	1.213E+00	6.843E-02	0.741
		287.40		5.487E-01	1.095E+00	1.878E+00	1.063E-01	0.292
CF-249		402.60	*	-1.008E-02	3.521E-02	5.627E-02	3.121E-03	-0.179
		252.85		6.179E-01	7.561E-01	1.325E+00	7.374E-02	0.466
		333.44		-1.077E-01	2.618E-01	2.581E-01	1.464E-02	-0.417
CF-251		387.95	*	4.402E-03	3.830E-02	6.311E-02	3.469E-03	0.070
		176.60	*	1.230E-01	1.225E-01	2.054E-01	1.062E-02	0.599
		227.00		2.369E-02	3.421E-01	5.816E-01	3.169E-02	0.041
		285.00		-4.726E-01	1.552E+00	2.548E+00	1.441E-01	-0.186

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]G243624008
* Acquisition date   : 7-JAN-2010 15:50:41 Detector SN#      :
* Detector ID        : GAM12                      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 02:00:01.45              Half life ratio : 8.000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID
* Sample ID          : G243624008              Analyst initials: MXR1
* Batch Number       : 937704                  Sample Quantity : 1.3058E+02 GRAM
* Recovery           : 1.00000                 Carrier Weight  : 0.00000
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24 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	1.886E+01	1.919E+00	5.874E-01	0.000E+00
CD-109	4.151E+00	1.046E+00	1.054E+00	0.000E+00
SN-126	4.073E-01	1.027E-01	1.039E-01	0.000E+00
CS-135	5.367E-01	2.482E-01	2.262E-01	0.000E+00
TL-208	5.167E-01	8.228E-02	5.362E-02	0.000E+00
BI-211	4.050E+00	5.222E-01	2.799E-01	0.000E+00
PB-212	1.517E+00	1.472E-01	8.565E-02	0.000E+00
PO-212	1.517E+00	1.472E-01	8.565E-02	0.000E+00
BI-214	1.291E+00	1.872E-01	1.064E-01	0.000E+00
PB-214	1.409E+00	1.954E-01	9.757E-02	0.000E+00
PO-214	1.409E+00	1.954E-01	9.757E-02	0.000E+00
PO-216	1.517E+00	1.472E-01	8.565E-02	0.000E+00
PO-218	1.409E+00	1.954E-01	9.757E-02	0.000E+00
RA-224	4.772E+00	1.281E+00	9.747E-01	0.000E+00
RA-226	1.291E+00	1.872E-01	1.064E-01	0.000E+00
AC-228	1.517E+00	3.097E-01	2.252E-01	0.000E+00
RA-228	1.517E+00	3.097E-01	2.252E-01	0.000E+00
TH-228	1.542E+00	1.496E-01	8.704E-02	0.000E+00
TH-230	1.291E+00	1.872E-01	1.064E-01	0.000E+00
TH-232	1.517E+00	3.097E-01	2.252E-01	0.000E+00
TH-234	1.287E+00	1.926E+00	1.952E+00	0.000E+00
U-234	1.291E+00	1.872E-01	1.064E-01	0.000E+00
NP-237	1.196E+00	3.866E-01	3.087E-01	0.000E+00
U-238	1.287E+00	1.926E+00	1.952E+00	0.000E+00
AM-243	3.609E-01	6.818E-02	8.839E-02	0.000E+00
ANH-511	1.522E-01	6.929E-02	4.561E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.007E-02	3.001E-01	4.871E-01	0.000E+00 NOT IDENT.

NA-22	-3.809E-02	3.952E-02	5.880E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	2.300E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	5.144E-03	2.530E-02	4.446E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.390E-02	7.275E-02	0.000E+00	FAIL ABUN
SC-46	-4.050E-03	3.704E-02	6.109E-02	0.000E+00	FAIL ABUN
V-48	-2.446E-03	6.644E-02	1.092E-01	0.000E+00	NOT IDENT.
CR-51	-6.370E-02	3.588E-01	6.167E-01	0.000E+00	NOT IDENT.
MN-52	3.167E-01	2.502E-01	4.864E-01	0.000E+00	NOT IDENT.
MN-54	-1.339E-02	3.663E-02	5.947E-02	0.000E+00	NOT IDENT.
CO-56	-2.140E-02	3.628E-02	5.691E-02	0.000E+00	FAIL ABUN
CO-57	-7.071E-03	2.301E-02	3.880E-02	0.000E+00	NOT IDENT.
CO-58	-3.665E-02	3.531E-02	5.272E-02	0.000E+00	NOT IDENT.
FE-59	2.375E-02	8.347E-02	1.465E-01	0.000E+00	NOT IDENT.
CO-60	2.211E-03	3.653E-02	6.165E-02	0.000E+00	NOT IDENT.
ZN-65	2.714E-02	9.342E-02	1.427E-01	0.000E+00	NOT IDENT.
GE-68	8.112E-01	9.725E-01	1.815E+00	0.000E+00	NOT IDENT.
AS-73	3.974E-01	7.190E-01	1.329E+00	0.000E+00	NOT IDENT.
AS-74	-4.153E-03	9.061E-02	1.567E-01	0.000E+00	NOT IDENT.
SE-75	-2.315E-02	4.322E-02	6.443E-02	0.000E+00	NOT IDENT.
BR-77	1.869E+00	1.291E+01	2.172E+01	0.000E+00	FAIL ABUN
SR-82	-1.433E-01	3.942E-01	6.263E-01	0.000E+00	NOT IDENT.
RB-83	2.054E-03	6.435E-02	1.072E-01	0.000E+00	NOT IDENT.
RB-84	1.137E-02	6.557E-02	1.115E-01	0.000E+00	NOT IDENT.
KR-85	8.511E+00	7.014E+00	1.149E+01	0.000E+00	NOT IDENT.
SR-85	4.412E-02	3.636E-02	5.957E-02	0.000E+00	NOT IDENT.
RB-86	4.367E-01	6.363E-01	1.172E+00	0.000E+00	NOT IDENT.
Y-88	-3.536E-02	3.349E-02	4.365E-02	0.000E+00	NOT IDENT.
ZR-88	1.336E-02	2.935E-02	5.152E-02	0.000E+00	NOT IDENT.
Y-91	-5.678E+00	1.756E+01	2.881E+01	0.000E+00	NOT IDENT.
NB-94	1.088E-02	2.940E-02	5.179E-02	0.000E+00	NOT IDENT.
NB-95	5.093E-02	4.340E-02	7.966E-02	0.000E+00	NOT IDENT.
NB-95M	9.558E-02	1.275E-01	2.086E-01	0.000E+00	NOT IDENT.
ZR-95	-1.515E-02	6.675E-02	1.109E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.608E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.660E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	8.067E+00	1.280E+01	2.297E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.543E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.892E-02	3.160E-02	5.529E-02	0.000E+00	NOT IDENT.
RH-102	-5.824E-03	2.479E-02	4.069E-02	0.000E+00	FAIL ABUN
RU-103	-3.085E-02	3.900E-02	6.039E-02	0.000E+00	FAIL ABUN
RH-106	1.788E-01	3.135E-01	5.629E-01	0.000E+00	FAIL ABUN
RU-106	1.788E-01	3.130E-01	5.629E-01	0.000E+00	FAIL ABUN
AG-108M	-1.524E-02	3.074E-02	5.002E-02	0.000E+00	NOT IDENT.
AG-110M	3.985E-03	3.373E-02	5.850E-02	0.000E+00	NOT IDENT.
IN-111	-5.486E-01	1.310E+00	1.991E+00	0.000E+00	NOT IDENT.
IN-113M	-2.446E-03	4.238E-02	7.203E-02	0.000E+00	NOT IDENT.
SN-113	-2.446E-03	4.238E-02	7.203E-02	0.000E+00	NOT IDENT.
IN-114M	3.486E-04	1.860E-01	2.786E-01	0.000E+00	NOT IDENT.
CD-115	-4.352E+00	1.355E+01	2.182E+01	0.000E+00	NOT IDENT.
SN-117M	-8.873E-03	5.123E-02	8.678E-02	0.000E+00	NOT IDENT.
SB-122	2.215E+00	2.329E+00	4.340E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.893E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-2.251E-03	2.509E-02	4.266E-02	0.000E+00	NOT IDENT.
I-124	3.948E-01	8.993E-01	1.412E+00	0.000E+00	FAIL ABUN
SB-124	2.034E-02	5.733E-02	1.045E-01	0.000E+00	FAIL ABUN
SB-125	3.607E-02	8.506E-02	1.483E-01	0.000E+00	FAIL ABUN
TE-125M	7.682E+00	8.135E+00	1.482E+01	0.000E+00	NOT IDENT.
I-126	2.011E-01	1.770E-01	3.295E-01	0.000E+00	NOT IDENT.
SB-126	9.617E-02	1.541E-01	2.450E-01	0.000E+00	FAIL ABUN
SB-127	-8.073E-01	1.535E+00	2.508E+00	0.000E+00	NOT IDENT.
XE-127	-4.999E-03	4.554E-02	7.587E-02	0.000E+00	NOT IDENT.
I-131	3.786E-02	1.159E-01	2.032E-01	0.000E+00	NOT IDENT.
TE-132	3.456E-02	7.724E-01	1.381E+00	0.000E+00	NOT IDENT.
BA-133	-7.163E-03	4.132E-02	6.131E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.285E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.033E-02	8.835E-02	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.963E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.463E-02	1.032E-01	1.730E-01	0.000E+00	FAIL ABUN
BA-137M	-2.755E-02	3.460E-02	5.565E-02	0.000E+00	NOT IDENT.
CS-137	-2.913E-02	3.657E-02	5.883E-02	0.000E+00	NOT IDENT.
CE-139	-2.740E-03	2.753E-02	4.665E-02	0.000E+00	NOT IDENT.
BA-140	6.809E-02	2.504E-01	4.454E-01	0.000E+00	NOT IDENT.
LA-140	-8.698E-02	8.778E-02	1.272E-01	0.000E+00	NOT IDENT.
CE-141	-2.097E-02	5.967E-02	1.007E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.181E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	2.695E-02	1.882E-01	3.125E-01	0.000E+00	NOT IDENT.
PM-144	-1.968E-02	3.169E-02	5.130E-02	0.000E+00	NOT IDENT.
PR-144	-1.334E+00	2.149E+00	3.478E+00	0.000E+00	NOT IDENT.

PM-146	2.160E-03	3.950E-02	6.677E-02	0.000E+00	NOT IDENT.
ND-147	1.055E-01	5.411E-01	9.125E-01	0.000E+00	FAIL ABUN
PM-149	-2.268E+01	1.105E+02	1.914E+02	0.000E+00	NOT IDENT.
EU-152	1.872E-02	9.244E-02	1.426E-01	0.000E+00	NOT IDENT.
GD-153	-2.221E-02	7.779E-02	1.207E-01	0.000E+00	FAIL ABUN
EU-154	-1.052E-01	1.107E-01	1.646E-01	0.000E+00	NOT IDENT.
EU-155	1.855E-03	9.386E-02	1.653E-01	0.000E+00	FAIL ABUN
TB-160	-7.845E-02	1.335E-01	2.089E-01	0.000E+00	FAIL ABUN
HO-166M	6.958E-03	5.606E-02	9.664E-02	0.000E+00	FAIL ABUN
TM-171	-1.665E+01	2.799E+01	4.408E+01	0.000E+00	NOT IDENT.
LU-176	5.131E-03	2.150E-02	3.799E-02	0.000E+00	FAIL ABUN
LU-177	0.000E+00	1.633E+00	2.111E+00	0.000E+00	FAIL ABUN
LU-177M	-1.254E-01	1.570E-01	2.504E-01	0.000E+00	FAIL ABUN
HF-181	-9.483E-03	3.856E-02	6.319E-02	0.000E+00	NOT IDENT.
W-181	2.161E-02	3.556E-01	5.794E-01	0.000E+00	NOT IDENT.
TA-182	-1.187E-01	1.723E-01	2.707E-01	0.000E+00	NOT IDENT.
RE-183	6.218E-02	9.821E-02	1.725E-01	0.000E+00	FAIL ABUN
RE-184	1.654E-01	1.983E-01	3.654E-01	0.000E+00	NOT IDENT.
OS-185	7.977E-03	3.866E-02	6.770E-02	0.000E+00	NOT IDENT.
RE-188	5.022E-02	1.559E-01	2.708E-01	0.000E+00	NOT IDENT.
W-188	-6.851E+00	7.740E+00	1.111E+01	0.000E+00	FAIL ABUN
IR-192	1.480E-02	3.247E-02	5.784E-02	0.000E+00	FAIL ABUN
AU-195	1.676E-01	2.233E-01	3.659E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.119E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	-1.798E+00	7.840E+00	1.318E+01	0.000E+00	NOT IDENT.
TL-202	-5.373E-02	6.860E-02	1.088E-01	0.000E+00	NOT IDENT.
HG-203	2.040E-02	4.091E-02	6.552E-02	0.000E+00	NOT IDENT.
BI-207	2.303E-02	5.012E-02	8.947E-02	0.000E+00	FAIL ABUN
TL-207	-5.341E-01	6.805E-01	9.600E-01	0.000E+00	FAIL ABUN
PO-209	2.458E+00	7.893E+00	1.352E+01	0.000E+00	NOT IDENT.
BI-210	-2.433E+00	2.874E+00	5.027E+00	0.000E+00	NOT IDENT.
PB-210	-2.433E+00	2.874E+00	5.027E+00	0.000E+00	NOT IDENT.
PO-210	-2.433E+00	2.872E+00	5.027E+00	0.000E+00	NOT IDENT.
PB-211	-1.002E+00	1.098E+00	1.437E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.482E-01	6.685E-01	0.000E+00	FAIL ABUN
PO-215	-5.341E-01	6.805E-01	9.600E-01	0.000E+00	FAIL ABUN
RN-219	1.279E-01	3.845E-01	6.684E-01	0.000E+00	NOT IDENT.
RN-220	-1.107E+01	2.342E+01	3.946E+01	0.000E+00	NOT IDENT.
RA-223	-5.341E-01	6.805E-01	9.600E-01	0.000E+00	FAIL ABUN
AC-227	-3.739E-01	3.388E-01	5.582E-01	0.000E+00	FAIL ABUN
TH-227	-3.739E-01	3.406E-01	5.582E-01	0.000E+00	FAIL ABUN
TH-229	-9.186E-02	4.616E-01	7.682E-01	0.000E+00	FAIL ABUN
PA-231	-5.091E-01	1.342E+00	2.302E+00	0.000E+00	NOT IDENT.
TH-231	-5.341E-01	6.805E-01	9.600E-01	0.000E+00	FAIL ABUN
U-231	-4.081E-01	1.208E+00	1.879E+00	0.000E+00	FAIL ABUN
PA-233	-3.448E-02	5.492E-02	9.178E-02	0.000E+00	FAIL ABUN
PA-234	8.606E-02	2.856E-01	4.876E-01	0.000E+00	FAIL ABUN
PA-234M	-4.257E-01	4.787E+00	7.809E+00	0.000E+00	FAIL ABUN
U-235	2.942E-02	2.006E-01	3.467E-01	0.000E+00	FAIL ABUN
NP-236	-9.519E-02	7.129E-02	1.133E-01	0.000E+00	NOT IDENT.
NP-239	-1.487E-01	1.663E-01	2.780E-01	0.000E+00	FAIL ABUN
AM-241	-4.062E-02	1.414E-01	2.283E-01	0.000E+00	NOT IDENT.
CM-243	4.077E-02	8.344E-02	1.500E-01	0.000E+00	FAIL ABUN
AM-246	4.784E-02	1.147E-01	2.051E-01	0.000E+00	NOT IDENT.
CM-247	-1.008E-02	3.450E-02	5.754E-02	0.000E+00	FAIL ABUN
CF-249	4.402E-03	3.753E-02	6.457E-02	0.000E+00	NOT IDENT.
CF-251	1.230E-01	1.200E-01	2.128E-01	0.000E+00	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624008.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:50:41.
Sample ID          : G243624008      Sample quantity      : 1.30580E+02 GRAM
Detector name      : GAM12            Detector geometry   : CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time   : 0 02:00:01.45  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials    : MXR1
Abundance limit    : 75.00000          Sensitivity          : 5.00000
Batch ID           : 937704            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	796	10.67*	1.138E+00	1.886E+01	1.886E+01	10.38
CD-109	88.03	295	3.72*	5.636E+00	4.051E+00	4.151E+00	25.73
SN-126	64.28	54	9.60	3.167E+00	5.096E-01	5.096E-01	152.38
	86.94	295	8.90	5.636E+00	1.693E+00	1.693E+00	47.94
	87.57	295	37.00*	5.636E+00	4.073E-01	4.073E-01	25.73
CS-135	268.24	137	16.00*	4.602E+00	5.367E-01	5.367E-01	47.18
TL-208	277.35	48	6.80	4.505E+00	4.495E-01	4.495E-01	83.91
	510.84	148	21.60	2.793E+00	7.047E-01	7.047E-01	47.19
	583.14	379	84.20*	2.506E+00	5.167E-01	5.167E-01	16.25
	860.37	53	12.46	1.795E+00	6.797E-01	6.797E-01	63.87
BI-211	72.87	-----	1.27	4.387E+00	-----	Line Not Found	-----
	351.07	686	12.94*	3.764E+00	4.050E+00	4.050E+00	13.16
PB-212	74.81	380	10.70	4.585E+00	2.226E+00	2.226E+00	21.42
	77.11	615	18.00	4.815E+00	2.041E+00	2.041E+00	14.61
	87.30	295	8.00	5.636E+00	1.884E+00	1.884E+00	27.60
	238.63	1181	44.60*	5.018E+00	1.517E+00	1.517E+00	9.90
	300.09	56	3.41	4.253E+00	1.104E+00	1.104E+00	78.79
PO-212	74.81	380	10.70	4.585E+00	2.226E+00	2.226E+00	21.42
	77.11	615	18.00	4.815E+00	2.041E+00	2.041E+00	14.61
	87.30	295	8.00	5.636E+00	1.884E+00	1.884E+00	27.60
	115.19	-----	0.60	6.604E+00	-----	Line Not Found	-----
	238.63	1181	44.60*	5.018E+00	1.517E+00	1.517E+00	9.90
	300.09	56	3.41	4.253E+00	1.104E+00	1.104E+00	78.79
BI-214	609.31	502	46.30*	2.415E+00	1.291E+00	1.291E+00	14.80
	1120.29	119	15.10	1.424E+00	1.586E+00	1.586E+00	29.17
	1764.49	89	15.80	9.905E-01	1.642E+00	1.642E+00	34.30
PB-214	74.81	380	6.21	4.585E+00	3.836E+00	3.836E+00	20.65
	77.11	615	10.50	4.815E+00	3.498E+00	3.498E+00	16.47
	87.30	295	4.67	5.636E+00	3.227E+00	3.227E+00	26.86
	241.98	326	7.49	4.977E+00	2.516E+00	2.516E+00	27.96
	295.21	387	19.20	4.303E+00	1.346E+00	1.346E+00	19.71
	351.92	686	37.20*	3.764E+00	1.409E+00	1.409E+00	14.16

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	74.81	380	6.21	4.585E+00	3.836E+00	3.836E+00	20.65
	77.11	615	10.50	4.815E+00	3.498E+00	3.498E+00	16.47
	87.30	295	4.67	5.636E+00	3.227E+00	3.227E+00	26.86
	241.98	326	7.49	4.977E+00	2.516E+00	2.516E+00	27.96
	295.21	387	19.20	4.303E+00	1.346E+00	1.346E+00	19.71
	351.92	686	37.20*	3.764E+00	1.409E+00	1.409E+00	14.16
PO-216	74.81	380	10.70	4.585E+00	2.226E+00	2.226E+00	21.42
	77.11	615	18.00	4.815E+00	2.041E+00	2.041E+00	14.61
	87.30	295	8.00	5.636E+00	1.884E+00	1.884E+00	27.60
	238.63	1181	44.60*	5.018E+00	1.517E+00	1.517E+00	9.90
	300.09	56	3.41	4.253E+00	1.104E+00	1.104E+00	78.79
	74.81	380	6.21	4.585E+00	3.836E+00	3.836E+00	20.65
PO-218	77.11	615	10.50	4.815E+00	3.498E+00	3.498E+00	16.47
	87.30	295	4.67	5.636E+00	3.227E+00	3.227E+00	26.86
	241.98	326	7.49	4.977E+00	2.516E+00	2.516E+00	27.96
	295.21	387	19.20	4.303E+00	1.346E+00	1.346E+00	19.71
	351.92	686	37.20*	3.764E+00	1.409E+00	1.409E+00	14.16
	240.98	326	3.95*	4.977E+00	4.772E+00	4.772E+00	27.39
RA-224	609.31	502	46.30*	2.415E+00	1.291E+00	1.291E+00	14.80
RA-226	1120.29	119	15.10	1.424E+00	1.586E+00	1.586E+00	29.17
	1764.49	89	15.80	9.905E-01	1.642E+00	1.642E+00	34.30
AC-228	338.32	206	11.40	3.880E+00	1.337E+00	1.337E+00	50.12
	911.07	250	27.70*	1.707E+00	1.517E+00	1.517E+00	20.82
	969.11	123	16.60	1.617E+00	1.321E+00	1.321E+00	45.37
RA-228	338.32	206	11.40	3.880E+00	1.337E+00	1.337E+00	50.12
	911.07	250	27.70*	1.707E+00	1.517E+00	1.517E+00	20.82
	969.11	123	16.60	1.617E+00	1.321E+00	1.321E+00	45.37
TH-228	74.81	380	10.70	4.585E+00	2.226E+00	2.226E+00	19.31
	77.11	615	18.00	4.815E+00	2.041E+00	2.074E+00	14.61
	87.30	295	8.00	5.636E+00	1.884E+00	1.914E+00	25.73
	238.63	1181	44.60*	5.018E+00	1.517E+00	1.542E+00	9.90
TH-230	300.09	56	3.41	4.253E+00	1.104E+00	1.122E+00	98.04
	609.31	502	46.30*	2.415E+00	1.291E+00	1.291E+00	14.80
	1120.29	119	15.10	1.424E+00	1.586E+00	1.586E+00	29.17
	1764.49	89	15.80	9.905E-01	1.642E+00	1.642E+00	34.30
TH-232	338.32	206	11.40	3.880E+00	1.337E+00	1.337E+00	29.72
	911.07	250	27.70*	1.707E+00	1.517E+00	1.517E+00	20.82
	969.11	123	16.60	1.617E+00	1.321E+00	1.321E+00	45.37
TH-234	63.29	54	3.80*	3.167E+00	1.287E+00	1.287E+00	152.68
	92.38	219	5.41	5.973E+00	1.948E+00	1.948E+00	38.18
U-234	609.31	502	46.30*	2.415E+00	1.291E+00	1.291E+00	14.80
	1120.29	119	15.10	1.424E+00	1.586E+00	1.586E+00	29.17
	1764.49	89	15.80	9.905E-01	1.642E+00	1.642E+00	34.30
NP-237	86.50	295	12.60*	5.636E+00	1.196E+00	1.196E+00	32.98
	95.87	-----	2.60	6.124E+00	-----	Line Not Found	-----
U-238	63.29	54	3.80*	3.167E+00	1.287E+00	1.287E+00	152.68
	92.38	219	5.41	5.973E+00	1.948E+00	1.948E+00	34.72
AM-243	74.67	380	66.00*	4.585E+00	3.609E-01	3.609E-01	19.28
	86.72	295	0.34	5.636E+00	4.485E+01	4.485E+01	25.73

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	117.66	-----	0.55	6.624E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.534E+00	-----	Line Not Found	-----
ANH-511	511.00	148	100.00*	2.793E+00	1.522E-01	1.522E-01	46.45

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 3
Number of lines tentatively identified by NID 32 91.43%

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	1.886E+01	1.886E+01	0.196E+01	10.38	
CD-109	464.00D	1.02	4.051E+00	4.151E+00	1.068E+00	25.73	
SN-126	1.00E+05Y	1.00	4.073E-01	4.073E-01	1.048E-01	25.73	
CS-135	2.30E+06Y	1.00	5.367E-01	5.367E-01	2.532E-01	47.18	
TL-208	1.41E+10Y	1.00	5.167E-01	5.167E-01	0.840E-01	16.25	
BI-211	7.04E+08Y	1.00	4.050E+00	4.050E+00	0.533E+00	13.16	
PB-212	1.41E+10Y	1.00	1.517E+00	1.517E+00	0.150E+00	9.90	
PO-212	1.41E+10Y	1.00	1.517E+00	1.517E+00	0.150E+00	9.90	
BI-214	1600.00Y	1.00	1.291E+00	1.291E+00	0.191E+00	14.80	
PB-214	1600.00Y	1.00	1.409E+00	1.409E+00	0.199E+00	14.16	
PO-214	1600.00Y	1.00	1.409E+00	1.409E+00	0.199E+00	14.16	
PO-216	1.41E+10Y	1.00	1.517E+00	1.517E+00	0.150E+00	9.90	
PO-218	1600.00Y	1.00	1.409E+00	1.409E+00	0.199E+00	14.16	
RA-224	1.41E+10Y	1.00	4.772E+00	4.772E+00	1.307E+00	27.39	
RA-226	1600.00Y	1.00	1.291E+00	1.291E+00	0.191E+00	14.80	
AC-228	1.41E+10Y	1.00	1.517E+00	1.517E+00	0.316E+00	20.82	
RA-228	1.41E+10Y	1.00	1.517E+00	1.517E+00	0.316E+00	20.82	
TH-228	1.91Y	1.02	1.517E+00	1.542E+00	0.153E+00	9.90	
TH-230	4.47E+09Y	1.00	1.291E+00	1.291E+00	0.191E+00	14.80	
TH-232	1.41E+10Y	1.00	1.517E+00	1.517E+00	0.316E+00	20.82	
TH-234	4.47E+09Y	1.00	1.287E+00	1.287E+00	1.966E+00	152.68	
U-234	4.47E+09Y	1.00	1.291E+00	1.291E+00	0.191E+00	14.80	
NP-237	2.14E+06Y	1.00	1.196E+00	1.196E+00	0.394E+00	32.98	
U-238	4.47E+09Y	1.00	1.287E+00	1.287E+00	1.966E+00	152.68	
AM-243	7380.00Y	1.00	3.609E-01	3.609E-01	0.696E-01	19.28	
ANH-511	1.00E+09Y	1.00	1.522E-01	1.522E-01	0.707E-01	46.45	

Total Activity : 5.749E+01 5.761E+01

Grand Total Activity : 5.749E+01 5.761E+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
5	84.24	127	279	1.51	167.98	164	29	1.76E-02	48.7	5.44E+00	T
5	89.76	254	314	1.35	179.04	164	29	3.52E-02	27.8	5.81E+00	T
0	128.77	131	286	1.22	257.08	253	9	1.81E-02	50.1	6.64E+00	T
0	185.89	146	399	1.09	371.39	366	11	2.03E-02	57.5	5.86E+00	T
0	208.91	110	268	1.02	417.45	413	10	1.52E-02	59.4	5.47E+00	T
0	326.79	59	235	1.49	653.31	650	14	8.25E-03	****	3.98E+00	
0	462.81	65	100	1.15	925.44	921	10	8.96E-03	63.1	3.03E+00	T
0	726.35	79	70	1.54	1452.68	1447	12	1.10E-02	48.5	2.08E+00	T
0	767.32	63	81	2.95	1534.64	1526	18	8.70E-03	72.0	1.98E+00	T
0	794.24	55	53	1.54	1588.47	1582	12	7.70E-03	59.2	1.92E+00	
0	1237.62	62	64	1.69	2475.30	2467	17	8.61E-03	64.3	1.30E+00	T
0	1376.64	51	16	2.07	2753.31	2744	16	7.08E-03	44.9	1.19E+00	T
0	1401.45	19	5	1.70	2802.92	2799	8	2.62E-03	63.6	1.18E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624008.CNF;1
* Acquisition date   : 7-JAN-2010 15:50:41.  Detector SN#      :
* Detector ID        : GAM12                      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 02:00:01.45             Half life ratio : 8.00000
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G243624008             Analyst initials: MXR1
* Batch Number       : 937704                 Sample Quantity : 1.30580E+02 GRAM
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24.5MS 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	1.886E+01	1.958E+00	5.869E-01	4.184E-02	32.130
CD-109	4.151E+00	1.068E+00	1.006E+00	7.698E-02	4.126
SN-126	4.073E-01	1.048E-01	9.919E-02	7.560E-03	4.106
CS-135	5.367E-01	2.532E-01	2.198E-01	1.653E-02	2.442
TL-208	5.167E-01	8.396E-02	5.276E-02	3.774E-03	9.793
BI-211	4.050E+00	5.329E-01	2.731E-01	1.717E-02	14.830
PB-212	1.517E+00	1.502E-01	8.305E-02	5.897E-03	18.271
PO-212	1.517E+00	1.502E-01	8.305E-02	5.897E-03	18.271
BI-214	1.291E+00	1.910E-01	1.048E-01	8.628E-03	12.319
PB-214	1.409E+00	1.994E-01	9.521E-02	7.777E-03	14.797
PO-214	1.409E+00	1.994E-01	9.521E-02	7.777E-03	14.797
PO-216	1.517E+00	1.502E-01	8.305E-02	5.897E-03	18.271
PO-218	1.409E+00	1.994E-01	9.521E-02	7.777E-03	14.797
RA-224	4.772E+00	1.307E+00	9.453E-01	5.215E-02	5.048
RA-226	1.291E+00	1.910E-01	1.048E-01	8.628E-03	12.319
AC-228	1.517E+00	3.160E-01	2.232E-01	2.451E-02	6.798
RA-228	1.517E+00	3.160E-01	2.232E-01	2.451E-02	6.798
TH-228	1.542E+00	1.526E-01	8.440E-02	5.993E-03	18.271

----- Identified Nuclides -----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.291E+00	1.910E-01	1.048E-01	8.628E-03	12.319
TH-232	1.517E+00	3.160E-01	2.232E-01	2.451E-02	6.798
TH-234	1.287E+00	1.966E+00	1.854E+00	3.157E-01	0.694
U-234	1.291E+00	1.910E-01	1.048E-01	8.628E-03	12.319
NP-237	1.196E+00	3.945E-01	2.946E-01	6.473E-02	4.059
U-238	1.287E+00	1.966E+00	1.854E+00	3.157E-01	0.694
AM-243	3.609E-01	6.957E-02	8.417E-02	5.719E-03	4.288
ANH-511	1.522E-01	7.071E-02	4.478E-02	2.729E-03	3.399

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.007E-02		3.062E-01	4.777E-01	3.287E-02	0.021
NA-22	-3.809E-02		4.033E-02	5.861E-02	3.775E-03	-0.650
NA-24	1.465E-01		1.174E+00	Half-Life too short		
AL-26	5.144E-03		2.582E-02	4.458E-02	2.558E-03	0.115
TI-44	3.766E-01	+	5.500E-02	6.932E-02	4.849E-03	5.432
SC-46	-4.050E-03		3.780E-02	6.053E-02	5.017E-03	-0.067
V-48	-2.446E-03		6.779E-02	1.084E-01	8.350E-03	-0.023
CR-51	-6.370E-02		3.662E-01	6.009E-01	3.820E-02	-0.106
MN-52	3.167E-01		2.553E-01	4.858E-01	3.338E-02	0.652
MN-54	-1.339E-02		3.737E-02	5.886E-02	4.627E-03	-0.227
CO-56	-2.140E-02		3.702E-02	5.634E-02	4.482E-03	-0.380
CO-57	-7.071E-03		2.348E-02	3.723E-02	2.328E-03	-0.190
CO-58	-3.665E-02		3.603E-02	5.216E-02	4.014E-03	-0.703
FE-59	2.375E-02		8.517E-02	1.457E-01	1.076E-02	0.163
CO-60	2.211E-03		3.728E-02	6.150E-02	4.295E-03	0.036
ZN-65	2.714E-02		9.532E-02	1.419E-01	8.926E-03	0.191
GE-68	8.112E-01		9.924E-01	1.805E+00	1.217E-01	0.450
AS-73	3.974E-01		7.337E-01	1.259E+00	8.125E-02	0.316
AS-74	-4.153E-03		9.245E-02	1.542E-01	9.817E-03	-0.027
SE-75	-2.315E-02		4.410E-02	6.259E-02	3.548E-03	-0.370
BR-77	1.869E+00		1.317E+01	2.133E+01	1.308E+00	0.088
SR-82	-1.433E-01		4.023E-01	6.192E-01	4.581E-02	-0.232
RB-83	2.054E-03		6.566E-02	1.053E-01	6.455E-03	0.020
RB-84	1.137E-02		6.691E-02	1.104E-01	9.085E-03	0.103
KR-85	8.511E+00		7.157E+00	1.128E+01	6.891E-01	0.754
SR-85	4.412E-02		3.710E-02	5.849E-02	3.572E-03	0.754
RB-86	4.367E-01		6.493E-01	1.165E+00	7.862E-02	0.375
Y-88	-3.536E-02		3.417E-02	4.379E-02	2.465E-03	-0.808
ZR-88	1.336E-02		2.995E-02	5.037E-02	2.763E-03	0.265
Y-91	-5.678E+00		1.792E+01	2.869E+01	1.659E+00	-0.198
NB-94	1.088E-02		3.000E-02	5.111E-02	3.481E-03	0.213
NB-95	5.093E-02		4.429E-02	7.873E-02	5.759E-03	0.647
NB-95M	9.558E-02		1.301E-01	2.023E-01	1.475E-02	0.473
ZR-95	-1.515E-02		6.811E-02	1.096E-01	9.048E-03	-0.138
NB-97	7.879E-02		1.331E-01	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
ZR-97	1.061E+01		2.888E+00	Half-Life too short		
MO-99	8.067E+00		1.306E+01	2.269E+01	3.262E+00	0.356
TC-99M	-2.958E+11		3.338E+11	Half-Life too short		
RH-101	2.892E-02		3.224E-02	5.346E-02	2.828E-03	0.541
RH-102	-5.824E-03		2.530E-02	3.990E-02	2.369E-03	-0.146
RU-103	-3.085E-02		3.979E-02	5.927E-02	7.560E-03	-0.521
RH-106	1.788E-01		3.199E-01	5.544E-01	6.684E-02	0.322
RU-106	1.788E-01		3.194E-01	5.544E-01	3.560E-02	0.322
AG-108M	-1.524E-02		3.137E-02	4.898E-02	3.052E-03	-0.311
AG-110M	3.985E-03		3.442E-02	5.768E-02	3.931E-03	0.069
IN-111	-5.486E-01		1.337E+00	1.931E+00	1.069E-01	-0.284
IN-113M	-2.446E-03		4.325E-02	7.041E-02	4.145E-03	-0.035
SN-113	-2.446E-03		4.325E-02	7.041E-02	4.145E-03	-0.035
IN-114M	3.486E-04		1.898E-01	2.692E-01	1.412E-02	0.001
CD-115	-4.352E+00		1.382E+01	2.143E+01	1.320E+00	-0.203
SN-117M	-8.873E-03		5.228E-02	8.361E-02	4.417E-03	-0.106
SB-122	2.215E+00		2.377E+00	4.268E+00	2.680E-01	0.519
I-123	-1.699E+00		9.658E+00	Half-Life too short		
TE-123M	-2.251E-03		2.560E-02	4.111E-02	2.202E-03	-0.055
I-124	3.948E-01		9.177E-01	1.390E+00	8.871E-02	0.284
SB-124	2.034E-02		5.850E-02	1.047E-01	6.988E-03	0.194
SB-125	3.607E-02		8.680E-02	1.452E-01	8.630E-03	0.248
TE-125M	7.682E+00		8.301E+00	1.419E+01	1.224E+00	0.541
I-126	2.011E-01		1.806E-01	3.249E-01	2.119E-02	0.619
SB-126	9.617E-02		1.572E-01	2.419E-01	1.682E-02	0.397
SB-127	-8.073E-01		1.567E+00	2.474E+00	2.559E-01	-0.326
XE-127	-4.999E-03		4.647E-02	7.338E-02	3.902E-03	-0.068
I-131	3.786E-02		1.183E-01	1.984E-01	1.251E-02	0.191
TE-132	3.456E-02		7.881E-01	1.338E+00	1.932E-01	0.026
BA-133	-7.163E-03		4.217E-02	5.984E-02	6.865E-03	-0.120
I-133	-4.412E-03		6.555E-03	Half-Life too short		
CS-134	9.127E-02		5.135E-02	8.738E-02	6.662E-03	1.045
I-135	1.404E+10		3.553E+10	Half-Life too short		
CS-136	-2.463E-02		1.053E-01	1.719E-01	1.291E-02	-0.143
BA-137M	-2.755E-02		3.530E-02	5.487E-02	3.557E-03	-0.502
CS-137	-2.913E-02		3.732E-02	5.800E-02	3.773E-03	-0.502
CE-139	-2.740E-03		2.809E-02	4.498E-02	2.305E-03	-0.061
BA-140	6.809E-02		2.556E-01	4.377E-01	1.427E-01	0.156
LA-140	-8.698E-02		8.957E-02	1.272E-01	8.287E-03	-0.684
CE-141	-2.097E-02		6.089E-02	9.687E-02	5.640E-03	-0.217
CE-143	1.465E-03		2.133E-04	Half-Life too short		
CE-144	2.695E-02		1.920E-01	3.002E-01	4.274E-02	0.090
PM-144	-1.968E-02		3.234E-02	5.062E-02	3.425E-03	-0.389
PR-144	-1.334E+00		2.192E+00	3.432E+00	2.321E-01	-0.389
PM-146	2.160E-03		4.031E-02	6.542E-02	5.656E-03	0.033
ND-147	1.055E-01		5.522E-01	8.964E-01	1.227E-01	0.118
PM-149	-2.268E+01		1.127E+02	1.861E+02	2.628E+01	-0.122
EU-152	1.872E-02		9.432E-02	1.391E-01	8.915E-03	0.135

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-2.221E-02		7.938E-02	1.154E-01	8.023E-03	-0.193
EU-154	-1.052E-01		1.130E-01	1.641E-01	1.599E-02	-0.641
EU-155	1.855E-03		9.578E-02	1.582E-01	1.066E-02	0.012
TB-160	-7.845E-02		1.362E-01	2.069E-01	1.699E-02	-0.379
HO-166M	6.958E-03		5.720E-02	9.540E-02	6.567E-03	0.073
TM-171	-1.665E+01		2.856E+01	4.190E+01	2.711E+00	-0.397
LU-176	5.131E-03		2.194E-02	3.698E-02	2.102E-03	0.139
LU-177	2.795E+00	+	1.667E+00	2.043E+00	1.093E-01	1.368
LU-177M	-1.254E-01		1.602E-01	2.450E-01	1.375E-02	-0.512
HF-181	-9.483E-03		3.935E-02	6.198E-02	3.700E-03	-0.153
W-181	2.161E-02		3.629E-01	5.506E-01	3.537E-02	0.039
TA-182	-1.187E-01		1.758E-01	2.696E-01	1.599E-02	-0.440
RE-183	6.218E-02		1.002E-01	1.663E-01	8.644E-03	0.374
RE-184	1.654E-01		2.024E-01	3.547E-01	1.974E-02	0.466
OS-185	7.977E-03		3.945E-02	6.672E-02	4.312E-03	0.120
RE-188	5.022E-02		1.591E-01	2.608E-01	1.398E-02	0.193
W-188	-6.851E+00		7.898E+00	1.081E+01	6.127E-01	-0.634
IR-192	1.480E-02		3.313E-02	5.634E-02	3.220E-03	0.263
AU-195	1.676E-01		2.278E-01	3.500E-01	2.407E-02	0.479
TL-200	-3.349E-04		4.142E-04	Half-Life too short		
TL-201	-1.798E+00		8.000E+00	1.271E+01	6.516E-01	-0.141
TL-202	-5.373E-02		7.000E-02	1.065E-01	6.135E-03	-0.504
HG-203	2.040E-02		4.174E-02	6.370E-02	3.830E-03	0.320
BI-207	2.303E-02		5.114E-02	8.892E-02	6.134E-03	0.259
TL-207	-5.341E-01		6.944E-01	9.355E-01	1.541E-01	-0.571
PO-209	2.458E+00		8.054E+00	1.340E+01	1.118E+00	0.183
BI-210	-2.433E+00		2.933E+00	4.752E+00	3.580E-01	-0.512
PB-210	-2.433E+00		2.933E+00	4.752E+00	3.580E-01	-0.512
PO-210	-2.433E+00		2.931E+00	4.752E+00	3.048E-01	-0.512
PB-211	-1.002E+00		1.120E+00	1.405E+00	8.758E-01	-0.713
BI-212	9.282E-01	+	4.574E-01	6.602E-01	5.715E-02	1.406
PO-215	-5.341E-01		6.944E-01	9.355E-01	1.541E-01	-0.571
RN-219	1.279E-01		3.924E-01	6.536E-01	8.822E-02	0.196
RN-220	-1.107E+01		2.390E+01	3.879E+01	2.419E+00	-0.285
RA-223	-5.341E-01		6.944E-01	9.355E-01	1.541E-01	-0.571
AC-227	-3.739E-01		3.457E-01	5.419E-01	7.516E-02	-0.690
TH-227	-3.739E-01		3.475E-01	5.419E-01	9.117E-02	-0.690
TH-229	-9.186E-02		4.710E-01	7.425E-01	3.909E-02	-0.124
PA-231	-5.091E-01		1.370E+00	2.238E+00	3.071E-01	-0.227
TH-231	-5.341E-01		6.944E-01	9.355E-01	1.541E-01	-0.571
U-231	-4.081E-01		1.233E+00	1.796E+00	1.265E-01	-0.227
PA-233	-3.448E-02		5.604E-02	8.939E-02	5.409E-03	-0.386
PA-234	8.606E-02		2.915E-01	4.836E-01	8.945E-02	0.178
PA-234M	-4.257E-01		4.884E+00	7.753E+00	7.017E-01	-0.055
U-235	2.942E-02		2.047E-01	3.335E-01	5.417E-02	0.088
NP-236	-9.519E-02		7.275E-02	1.092E-01	5.724E-03	-0.872
NP-239	-1.487E-01		1.697E-01	2.665E-01	1.682E-02	-0.558
AM-241	-4.062E-02		1.443E-01	2.166E-01	1.539E-02	-0.187

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	4.077E-02		8.515E-02	1.436E-01	9.562E-03	0.284
AM-246	4.784E-02		1.170E-01	2.039E-01	1.371E-02	0.235
CM-247	-1.008E-02		3.521E-02	5.627E-02	3.121E-03	-0.179
CF-249	4.402E-03		3.830E-02	6.311E-02	3.469E-03	0.070
CF-251	1.230E-01		1.225E-01	2.054E-01	1.062E-02	0.599

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]G243624008          *
* Acquisition date   : 7-JAN-2010 15:50:41 Detector SN#      :              *
* Detector ID        : GAM12                      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 02:00:01.45             Half life ratio : 8.000        *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624008             Analyst initials: MXR1          *
* Batch Number       : 937704                 Sample Quantity : 1.3058E+02 GRAM *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000        *
*****
*
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24 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	1.886E+01	1.919E+00	2.939E-01	9.791E-01
CD-109	4.151E+00	1.046E+00	5.272E-01	5.339E-01
SN-126	4.073E-01	1.027E-01	5.199E-02	5.239E-02
CS-135	5.367E-01	2.482E-01	1.132E-01	1.266E-01
TL-208	5.167E-01	8.228E-02	2.683E-02	4.198E-02
BI-211	4.050E+00	5.222E-01	1.400E-01	2.664E-01
PB-212	1.517E+00	1.472E-01	4.285E-02	7.510E-02
PO-212	1.517E+00	1.472E-01	4.285E-02	7.510E-02
BI-214	1.291E+00	1.872E-01	5.325E-02	9.551E-02
PB-214	1.409E+00	1.954E-01	4.881E-02	9.971E-02
PO-214	1.409E+00	1.954E-01	4.881E-02	9.971E-02
PO-216	1.517E+00	1.472E-01	4.285E-02	7.510E-02
PO-218	1.409E+00	1.954E-01	4.881E-02	9.971E-02
RA-224	4.772E+00	1.281E+00	4.876E-01	6.536E-01
RA-226	1.291E+00	1.872E-01	5.325E-02	9.551E-02
AC-228	1.517E+00	3.097E-01	1.127E-01	1.580E-01
RA-228	1.517E+00	3.097E-01	1.127E-01	1.580E-01
TH-228	1.542E+00	1.496E-01	4.354E-02	7.632E-02
TH-230	1.291E+00	1.872E-01	5.325E-02	9.551E-02
TH-232	1.517E+00	3.097E-01	1.127E-01	1.580E-01
TH-234	1.287E+00	1.926E+00	9.766E-01	9.828E-01
U-234	1.291E+00	1.872E-01	5.325E-02	9.551E-02
NP-237	1.196E+00	3.866E-01	1.545E-01	1.972E-01
U-238	1.287E+00	1.926E+00	9.766E-01	9.828E-01
AM-243	3.609E-01	6.818E-02	4.422E-02	3.479E-02
ANH-511	1.522E-01	6.929E-02	2.282E-02	3.535E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.007E-02	3.001E-01	2.437E-01	1.531E-01 NOT IDENT.

NA-22	-3.809E-02	3.952E-02	2.942E-02	2.016E-02	NOT IDENT.
NA-24	1.465E+05	2.300E+06	0.000E+00	1.174E+06	SHORT HLIF
AL-26	5.144E-03	2.530E-02	2.224E-02	1.291E-02	NOT IDENT.
TI-44	3.766E-01	5.390E-02	3.640E-02	2.750E-02	FAIL ABUN
SC-46	-4.050E-03	3.704E-02	3.056E-02	1.890E-02	FAIL ABUN
V-48	-2.446E-03	6.644E-02	5.464E-02	3.390E-02	NOT IDENT.
CR-51	-6.370E-02	3.588E-01	3.085E-01	1.831E-01	NOT IDENT.
MN-52	3.167E-01	2.502E-01	2.433E-01	1.276E-01	NOT IDENT.
MN-54	-1.339E-02	3.663E-02	2.975E-02	1.869E-02	NOT IDENT.
CO-56	-2.140E-02	3.628E-02	2.847E-02	1.851E-02	FAIL ABUN
CO-57	-7.071E-03	2.301E-02	1.941E-02	1.174E-02	NOT IDENT.
CO-58	-3.665E-02	3.531E-02	2.638E-02	1.802E-02	NOT IDENT.
FE-59	2.375E-02	8.347E-02	7.332E-02	4.258E-02	NOT IDENT.
CO-60	2.211E-03	3.653E-02	3.084E-02	1.864E-02	NOT IDENT.
ZN-65	2.714E-02	9.342E-02	7.138E-02	4.766E-02	NOT IDENT.
GE-68	8.112E-01	9.725E-01	9.083E-01	4.962E-01	NOT IDENT.
AS-73	3.974E-01	7.190E-01	6.647E-01	3.668E-01	NOT IDENT.
AS-74	-4.153E-03	9.061E-02	7.839E-02	4.623E-02	NOT IDENT.
SE-75	-2.315E-02	4.322E-02	3.224E-02	2.205E-02	NOT IDENT.
BR-77	1.869E+00	1.291E+01	1.086E+01	6.587E+00	FAIL ABUN
SR-82	-1.433E-01	3.942E-01	3.133E-01	2.011E-01	NOT IDENT.
RB-83	2.054E-03	6.435E-02	5.363E-02	3.283E-02	NOT IDENT.
RB-84	1.137E-02	6.557E-02	5.576E-02	3.345E-02	NOT IDENT.
KR-85	8.511E+00	7.014E+00	5.750E+00	3.578E+00	NOT IDENT.
SR-85	4.412E-02	3.636E-02	2.980E-02	1.855E-02	NOT IDENT.
RB-86	4.367E-01	6.363E-01	5.862E-01	3.246E-01	NOT IDENT.
Y-88	-3.536E-02	3.349E-02	2.184E-02	1.709E-02	NOT IDENT.
ZR-88	1.336E-02	2.935E-02	2.578E-02	1.498E-02	NOT IDENT.
Y-91	-5.678E+00	1.756E+01	1.441E+01	8.959E+00	NOT IDENT.
NB-94	1.088E-02	2.940E-02	2.591E-02	1.500E-02	NOT IDENT.
NB-95	5.093E-02	4.340E-02	3.985E-02	2.214E-02	NOT IDENT.
NB-95M	9.558E-02	1.275E-01	1.044E-01	6.505E-02	NOT IDENT.
ZR-95	-1.515E-02	6.675E-02	5.547E-02	3.405E-02	NOT IDENT.
NB-97	7.879E+04	2.608E+05	0.000E+00	1.331E+05	SHORT HLIF
ZR-97	1.061E+07	5.660E+06	0.000E+00	2.888E+06	SHORT HLIF
MO-99	8.067E+00	1.280E+01	1.149E+01	6.529E+00	NOT IDENT.
TC-99M	-2.958E+17	6.543E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.892E-02	3.160E-02	2.766E-02	1.612E-02	NOT IDENT.
RH-102	-5.824E-03	2.479E-02	2.036E-02	1.265E-02	FAIL ABUN
RU-103	-3.085E-02	3.900E-02	3.021E-02	1.990E-02	FAIL ABUN
RH-106	1.788E-01	3.135E-01	2.816E-01	1.600E-01	FAIL ABUN
RU-106	1.788E-01	3.130E-01	2.816E-01	1.597E-01	FAIL ABUN
AG-108M	-1.524E-02	3.074E-02	2.502E-02	1.568E-02	NOT IDENT.
AG-110M	3.985E-03	3.373E-02	2.927E-02	1.721E-02	NOT IDENT.
IN-111	-5.486E-01	1.310E+00	9.960E-01	6.683E-01	NOT IDENT.
IN-113M	-2.446E-03	4.238E-02	3.604E-02	2.162E-02	NOT IDENT.
SN-113	-2.446E-03	4.238E-02	3.604E-02	2.162E-02	NOT IDENT.
IN-114M	3.486E-04	1.860E-01	1.394E-01	9.490E-02	NOT IDENT.
CD-115	-4.352E+00	1.355E+01	1.092E+01	6.912E+00	NOT IDENT.
SN-117M	-8.873E-03	5.123E-02	4.342E-02	2.614E-02	NOT IDENT.
SB-122	2.215E+00	2.329E+00	2.171E+00	1.188E+00	NOT IDENT.
I-123	-1.699E+06	1.893E+07	0.000E+00	9.658E+06	SHORT HLIF
TE-123M	-2.251E-03	2.509E-02	2.134E-02	1.280E-02	NOT IDENT.
I-124	3.948E-01	8.993E-01	7.065E-01	4.588E-01	FAIL ABUN
SB-124	2.034E-02	5.733E-02	5.231E-02	2.925E-02	FAIL ABUN
SB-125	3.607E-02	8.506E-02	7.419E-02	4.340E-02	FAIL ABUN
TE-125M	7.682E+00	8.135E+00	7.413E+00	4.150E+00	NOT IDENT.
I-126	2.011E-01	1.770E-01	1.649E-01	9.031E-02	NOT IDENT.
SB-126	9.617E-02	1.541E-01	1.226E-01	7.860E-02	FAIL ABUN
SB-127	-8.073E-01	1.535E+00	1.255E+00	7.834E-01	NOT IDENT.
XE-127	-4.999E-03	4.554E-02	3.796E-02	2.323E-02	NOT IDENT.
I-131	3.786E-02	1.159E-01	1.016E-01	5.914E-02	NOT IDENT.
TE-132	3.456E-02	7.724E-01	6.907E-01	3.941E-01	NOT IDENT.
BA-133	-7.163E-03	4.132E-02	3.067E-02	2.108E-02	FAIL ABUN
I-133	-4.412E+03	1.285E+04	0.000E+00	6.555E+03	SHORT HLIF
CS-134	9.127E-02	5.033E-02	4.420E-02	2.568E-02	NOT IDENT.
I-135	1.404E+16	6.963E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.463E-02	1.032E-01	8.656E-02	5.266E-02	FAIL ABUN
BA-137M	-2.755E-02	3.460E-02	2.784E-02	1.765E-02	NOT IDENT.
CS-137	-2.913E-02	3.657E-02	2.943E-02	1.866E-02	NOT IDENT.
CE-139	-2.740E-03	2.753E-02	2.334E-02	1.405E-02	NOT IDENT.
BA-140	6.809E-02	2.504E-01	2.228E-01	1.278E-01	NOT IDENT.
LA-140	-8.698E-02	8.778E-02	6.362E-02	4.478E-02	NOT IDENT.
CE-141	-2.097E-02	5.967E-02	5.037E-02	3.044E-02	NOT IDENT.
CE-143	1.465E+03	4.181E+02	0.000E+00	2.133E+02	SHORT HLIF
CE-144	2.695E-02	1.882E-01	1.563E-01	9.600E-02	NOT IDENT.
PM-144	-1.968E-02	3.169E-02	2.567E-02	1.617E-02	NOT IDENT.
PR-144	-1.334E+00	2.149E+00	1.740E+00	1.096E+00	NOT IDENT.

PM-146	2.160E-03	3.950E-02	3.340E-02	2.015E-02	NOT IDENT.
ND-147	1.055E-01	5.411E-01	4.565E-01	2.761E-01	FAIL ABUN
PM-149	-2.268E+01	1.105E+02	9.574E+01	5.637E+01	NOT IDENT.
EU-152	1.872E-02	9.244E-02	7.134E-02	4.716E-02	NOT IDENT.
GD-153	-2.221E-02	7.779E-02	6.037E-02	3.969E-02	FAIL ABUN
EU-154	-1.052E-01	1.107E-01	8.237E-02	5.648E-02	NOT IDENT.
EU-155	1.855E-03	9.386E-02	8.269E-02	4.789E-02	FAIL ABUN
TB-160	-7.845E-02	1.335E-01	1.045E-01	6.809E-02	FAIL ABUN
HO-166M	6.958E-03	5.606E-02	4.835E-02	2.860E-02	FAIL ABUN
TM-171	-1.665E+01	2.799E+01	2.205E+01	1.428E+01	NOT IDENT.
LU-176	5.131E-03	2.150E-02	1.900E-02	1.097E-02	FAIL ABUN
LU-177	2.795E+00	1.633E+00	1.056E+00	8.334E-01	FAIL ABUN
LU-177M	-1.254E-01	1.570E-01	1.253E-01	8.009E-02	FAIL ABUN
HF-181	-9.483E-03	3.856E-02	3.161E-02	1.967E-02	NOT IDENT.
W-181	2.161E-02	3.556E-01	2.899E-01	1.814E-01	NOT IDENT.
TA-182	-1.187E-01	1.723E-01	1.354E-01	8.789E-02	NOT IDENT.
RE-183	6.218E-02	9.821E-02	8.631E-02	5.011E-02	FAIL ABUN
RE-184	1.654E-01	1.983E-01	1.828E-01	1.012E-01	NOT IDENT.
OS-185	7.977E-03	3.866E-02	3.387E-02	1.972E-02	NOT IDENT.
RE-188	5.022E-02	1.559E-01	1.355E-01	7.954E-02	NOT IDENT.
W-188	-6.851E+00	7.740E+00	5.559E+00	3.949E+00	FAIL ABUN
IR-192	1.480E-02	3.247E-02	2.894E-02	1.656E-02	FAIL ABUN
AU-195	1.676E-01	2.233E-01	1.831E-01	1.139E-01	FAIL ABUN
TL-200	-3.349E+02	8.119E+02	0.000E+00	4.142E+02	SHORT HLIF
TL-201	-1.798E+00	7.840E+00	6.595E+00	4.000E+00	NOT IDENT.
TL-202	-5.373E-02	6.860E-02	5.442E-02	3.500E-02	NOT IDENT.
HG-203	2.040E-02	4.091E-02	3.278E-02	2.087E-02	NOT IDENT.
BI-207	2.303E-02	5.012E-02	4.476E-02	2.557E-02	FAIL ABUN
TL-207	-5.341E-01	6.805E-01	4.803E-01	3.472E-01	FAIL ABUN
PO-209	2.458E+00	7.893E+00	6.765E+00	4.027E+00	NOT IDENT.
BI-210	-2.433E+00	2.874E+00	2.515E+00	1.466E+00	NOT IDENT.
PB-210	-2.433E+00	2.874E+00	2.515E+00	1.466E+00	NOT IDENT.
PO-210	-2.433E+00	2.872E+00	2.515E+00	1.465E+00	NOT IDENT.
PB-211	-1.002E+00	1.098E+00	7.189E-01	5.600E-01	NOT IDENT.
BI-212	9.282E-01	4.482E-01	3.345E-01	2.287E-01	FAIL ABUN
PO-215	-5.341E-01	6.805E-01	4.803E-01	3.472E-01	FAIL ABUN
RN-219	1.279E-01	3.845E-01	3.344E-01	1.962E-01	NOT IDENT.
RN-220	-1.107E+01	2.342E+01	1.974E+01	1.195E+01	NOT IDENT.
RA-223	-5.341E-01	6.805E-01	4.803E-01	3.472E-01	FAIL ABUN
AC-227	-3.739E-01	3.388E-01	2.793E-01	1.728E-01	FAIL ABUN
TH-227	-3.739E-01	3.406E-01	2.793E-01	1.738E-01	FAIL ABUN
TH-229	-9.186E-02	4.616E-01	3.843E-01	2.355E-01	FAIL ABUN
PA-231	-5.091E-01	1.342E+00	1.151E+00	6.848E-01	NOT IDENT.
TH-231	-5.341E-01	6.805E-01	4.803E-01	3.472E-01	FAIL ABUN
U-231	-4.081E-01	1.208E+00	9.400E-01	6.163E-01	FAIL ABUN
PA-233	-3.448E-02	5.492E-02	4.592E-02	2.802E-02	FAIL ABUN
PA-234	8.606E-02	2.856E-01	2.440E-01	1.457E-01	FAIL ABUN
PA-234M	-4.257E-01	4.787E+00	3.907E+00	2.442E+00	FAIL ABUN
U-235	2.942E-02	2.006E-01	1.735E-01	1.023E-01	FAIL ABUN
NP-236	-9.519E-02	7.129E-02	5.668E-02	3.637E-02	NOT IDENT.
NP-239	-1.487E-01	1.663E-01	1.391E-01	8.485E-02	FAIL ABUN
AM-241	-4.062E-02	1.414E-01	1.142E-01	7.215E-02	NOT IDENT.
CM-243	4.077E-02	8.344E-02	7.505E-02	4.257E-02	FAIL ABUN
AM-246	4.784E-02	1.147E-01	1.026E-01	5.850E-02	NOT IDENT.
CM-247	-1.008E-02	3.450E-02	2.879E-02	1.760E-02	FAIL ABUN
CF-249	4.402E-03	3.753E-02	3.230E-02	1.915E-02	NOT IDENT.
CF-251	1.230E-01	1.200E-01	1.065E-01	6.124E-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	228.6138
46.50	228.6138
46.50	228.6138
48.70	210.7135
49.72	225.9834
51.35	240.9625
52.39	230.5457
52.97	219.7262
53.15	219.8516
53.44	216.5877
54.07	234.3789
56.28	241.2263
56.28	241.2284
57.37	0.0000
57.53	237.7556
57.53	237.7570
57.60	237.8059
57.98	230.8730
57.98	230.8730
59.32	248.7265
59.32	248.7265
59.40	259.3712
59.54	259.4781
59.72	259.6149
60.01	249.2299
61.10	248.6893
61.14	248.7182
61.30	248.8323
63.00	285.2527
63.29	285.4854
63.29	285.4854
63.58	285.7186
64.28	324.7476
65.12	312.0544
65.20	306.7420
65.20	306.7420
66.05	308.8072
66.72	339.0909
66.83	339.1943
66.91	343.3240
67.20	353.0625
67.20	353.0625
67.75	358.7321
67.85	358.8311
68.90	362.8289
68.90	362.8289
69.30	333.2861
69.67	349.9535
70.82	346.9110
70.82	346.9110
70.83	346.9207
72.80	360.5875
72.87	360.6536
72.87	360.6536
74.67	362.3029
74.81	362.4312
74.81	362.4312
74.81	362.4312
74.81	362.4312
74.81	362.4312
74.81	362.4312
74.81	362.4312
74.97	362.5764
75.28	362.8580
75.70	363.2388
77.11	364.5093
77.11	364.5093

77.11	364.5093
77.11	364.5093
77.11	364.5093
77.11	364.5093
77.11	364.5093
78.38	295.1133
79.62	326.7166
79.80	326.8577
79.80	326.8577
80.11	299.1448
80.18	299.1938
80.30	299.2803
80.30	299.2803
80.57	235.1003
81.00	327.7968
81.07	327.8521
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81.07	327.8521
81.07	327.8521
82.60	274.1979
83.37	260.6037
83.78	240.6445
83.78	240.6445
83.78	240.6445
83.78	240.6445
84.21	240.8841
84.90	241.2682
85.43	241.5625
86.29	242.0365
86.50	242.1523
86.54	242.1745
86.59	242.2018
86.72	242.2734
86.79	242.3112
86.94	242.3945
87.30	242.5912
87.30	242.5912
87.30	242.5912
87.30	242.5912
87.30	242.5912
87.30	242.5912
87.57	242.7396
87.88	242.9089
88.03	242.9909
88.36	243.1706
88.47	243.2305
89.95	244.0313
91.11	244.6563
92.29	245.2865
92.38	245.3346
92.38	245.3346
93.35	245.8490
94.00	246.1927
94.67	246.5430
94.67	246.5456
94.90	246.6667
94.90	246.6667
94.90	246.6667
94.90	246.6667
95.87	269.3816
95.87	269.3816
96.73	272.7744
97.43	260.0957
98.44	243.1688
98.44	243.1701
98.88	234.6471
99.55	220.8634
99.55	220.8634
99.86	221.0043
100.00	238.5974
100.10	248.3892
103.18	247.9840
103.76	228.6459
105.00	236.0974
105.31	245.1018
108.00	249.3660
109.28	220.2250

111.00	255.7869
111.00	255.7869
111.76	258.1503
112.95	254.7354
115.19	230.7253
116.30	242.2577
117.00	252.6341
117.00	252.6341
117.66	248.9096
121.11	239.3130
121.62	239.5314
121.78	239.5999
122.06	238.7042
122.32	238.8141
122.32	238.8141
122.32	238.8141
122.32	238.8141
123.07	246.2551
127.23	235.2413
129.76	234.7214
131.20	241.4886
133.02	214.2794
133.54	231.2490
135.34	257.7127
136.00	248.6301
136.25	248.7346
136.48	257.1560
140.51	296.5737
140.51	0.0000
142.18	267.9466
142.65	266.0433
143.76	264.4074
144.24	261.4439
144.24	261.4439
144.24	261.4439
144.24	261.4439
145.22	273.4618
145.44	270.3880
147.16	254.1724
152.43	262.6437
152.70	253.1385
153.22	256.5430
154.21	234.4452
154.21	234.4452
154.21	234.4452
154.21	234.4452
155.03	236.8785
156.02	245.8167
158.56	230.5816
159.00	0.0000
159.00	224.2606
160.31	258.1800
161.27	239.0704
162.32	213.4327
162.64	226.5378
163.35	224.5995
163.89	212.8298
165.85	242.8287
167.43	224.8221
171.28	212.8723
171.86	220.7311
172.10	220.8047
176.55	222.1583
176.60	222.1737
181.06	250.2022
184.41	227.8606
185.71	236.0807
186.00	236.1709
190.27	217.7879
192.34	218.9308
193.63	221.5508
197.04	242.9422
198.01	226.1868
198.60	214.9783
200.40	248.5210
201.83	260.3802
202.84	238.9795
205.31	216.7625

208.36	203.7506
208.81	203.8604
209.75	190.2542
209.75	190.2542
210.97	218.2448
215.65	202.0389
216.55	208.0631
218.09	210.7653
222.10	197.4140
223.80	208.3460
226.40	204.5541
227.00	199.3984
227.08	199.4173
227.20	202.9732
228.16	208.4932
228.18	211.1490
228.18	211.1490
231.56	0.0000
235.69	222.3571
236.00	211.0265
236.00	211.0265
238.63	193.0441
238.63	193.0441
238.63	193.0441
238.63	193.0441
239.00	193.1199
240.98	193.5352
241.98	193.7428
241.98	193.7428
241.98	193.7428
244.69	174.1546
245.39	161.3213
247.94	160.9321
248.90	174.3909
249.79	166.4145
252.40	141.4750
252.85	141.5416
252.85	141.5416
254.15	0.0000
256.20	187.5551
256.20	187.5551
260.50	149.0593
260.90	168.3307
262.80	172.3228
264.65	161.6243
268.24	147.4585
268.79	147.5391
269.46	147.6367
269.46	147.6367
269.46	147.6367
269.46	147.6367
271.23	173.0377
273.65	111.1853
276.40	162.0204
277.35	165.5197
277.60	159.0470
277.60	159.0470
278.00	161.9010
278.60	138.5328
279.20	149.0479
279.53	149.0942
280.46	159.6745
281.68	134.4617
283.67	153.4272
284.30	158.2003
285.00	148.9388
285.90	147.1899
286.10	136.9040
286.10	136.9040
287.40	135.1934
288.45	0.0000
290.67	177.7980
290.80	168.7793
291.72	161.3829
293.26	0.0000
293.70	152.6121
295.21	155.8529
295.21	155.8529

295.21	155.8529
295.96	128.7057
296.50	128.7679
297.23	128.8551
298.57	129.0128
299.80	132.1971
299.80	132.1971
300.09	130.7133
300.09	130.7133
300.09	130.7133
300.09	130.7133
300.12	130.7154
301.29	123.2482
302.84	150.8469
303.76	141.8227
303.91	150.9919
304.40	133.5123
304.40	133.5123
304.84	125.3882
306.84	126.1589
308.46	133.0422
311.98	132.4978
316.51	134.9542
318.01	144.7838
319.02	134.2851
319.41	136.2624
320.08	147.9456
323.87	147.4587
323.87	147.4587
323.87	147.4587
323.87	147.4587
325.23	122.7682
328.77	139.3102
333.44	160.3990
334.20	125.2695
334.20	125.2695
334.30	125.2793
338.28	121.7673
338.28	121.7673
338.28	121.7673
338.28	121.7673
338.32	121.7730
338.32	121.7730
338.32	121.7730
340.50	107.0386
340.57	107.0436
344.27	104.2126
345.85	112.2514
350.59	0.0000
351.07	99.2325
351.92	99.3011
351.92	99.3011
351.92	99.3011
351.92	99.3011
355.39	0.0000
356.01	105.2052
364.48	109.3227
366.43	118.5294
367.43	124.6528
367.94	0.0000
369.80	112.7964
374.96	110.2125
383.85	107.9037
387.95	114.3635
388.63	114.4216
391.69	116.7293
391.69	116.7293
392.90	108.6348
398.62	117.3242
400.65	103.0685
401.10	110.3193
401.81	106.2502
402.60	115.5991
404.84	139.5648
410.95	111.1030
411.60	118.4270
413.65	108.1958
414.70	87.4530
415.30	84.3655

415.76	86.4778
417.63	0.0000
418.52	105.4354
423.70	97.4360
427.08	90.3134
427.89	91.4153
432.53	105.4108
433.93	104.4548
439.47	105.9082
439.56	105.9143
439.89	99.5824
443.98	88.1710
444.90	78.6589
445.03	80.7917
445.03	80.7917
445.03	80.7917
445.03	80.7917
453.90	86.6150
463.38	75.7475
468.07	75.9763
473.00	73.6176
475.06	74.7981
475.35	78.0645
476.78	83.5620
477.59	77.0896
477.96	68.4198
482.03	80.5717
484.57	82.8815
487.03	78.6396
490.36	0.0000
492.35	79.9952
497.08	92.3172
507.63	0.0000
510.53	0.0000
510.84	87.5478
511.00	87.5562
511.85	87.6008
511.85	87.6008
513.99	67.5052
513.99	67.5052
520.41	75.7861
520.65	72.4545
527.90	75.0008
528.96	0.0000
529.64	78.4381
529.87	0.0000
531.02	68.4091
537.32	76.5374
543.00	84.0133
546.56	0.0000
549.76	81.6152
552.65	75.3890
555.20	84.5923
563.23	67.6117
563.90	60.3249
568.70	74.2309
569.32	74.2566
569.50	74.2645
569.67	69.6858
573.80	77.1955
574.00	77.2037
574.64	74.5743
578.91	67.5791
579.30	0.0000
583.14	69.2743
585.48	70.9017
591.81	73.3064
592.07	70.5338
593.00	84.4949
595.88	82.7639
600.56	87.6293
602.52	0.0000
602.71	90.2167
602.71	90.2167
603.60	84.0344
604.41	88.7401
604.70	90.3111
609.31	76.7929

609.31	76.7929
609.31	76.7929
609.31	76.7929
610.33	76.8330
612.46	76.6064
614.37	76.6821
618.01	75.2578
621.84	73.5192
621.84	73.5192
631.29	67.2437
633.02	65.4051
633.10	65.4085
634.78	75.9004
635.90	68.3490
636.97	63.6353
645.85	60.1022
646.12	62.0182
656.30	68.0827
657.75	74.8484
657.90	0.0000
661.65	88.4489
661.65	88.4489
664.57	0.0000
666.33	57.8145
666.33	57.8145
675.00	67.7322
677.61	77.5039
685.20	72.9218
692.80	68.3030
695.00	69.3498
696.49	76.2404
696.49	76.2404
697.00	77.2352
697.49	78.2305
698.33	80.2183
698.50	80.2243
699.00	73.3942
702.63	58.8135
706.10	67.7433
706.58	0.0000
706.67	78.5645
709.31	58.9937
711.68	63.9796
713.82	71.9235
717.42	55.2658
720.50	52.7070
721.93	0.0000
722.20	67.5826
722.78	72.5474
722.78	72.5474
722.89	72.5509
722.95	72.5527
723.30	64.3176
724.18	57.7437
727.18	69.3865
733.00	52.5307
735.90	52.7399
739.58	43.8561
742.81	45.9146
744.21	45.9427
747.13	46.0022
751.79	63.1307
752.31	53.1229
753.82	45.1340
755.35	57.2073
756.15	63.2507
756.87	60.2578
763.93	60.4424
765.79	66.5398
766.42	66.5575
766.84	66.5704
776.49	69.7702
778.00	72.9686
778.57	75.0135
778.89	66.9136
783.80	48.7652
785.46	63.0323
792.07	50.9741

795.84	44.2463
796.30	42.5527
798.80	64.7481
801.93	56.3011
805.60	44.0844
810.29	64.7134
810.76	59.5888
815.85	54.5657
817.79	50.4870
818.51	56.6852
819.60	50.5241
826.30	58.9329
828.27	0.0000
831.60	53.8776
831.96	42.4865
834.83	69.5092
836.80	0.0000
846.75	47.9496
848.13	47.9754
856.28	0.0000
856.80	43.6045
860.37	40.1723
867.32	43.3457
867.82	45.5434
871.10	48.4078
873.19	43.1811
874.81	42.1543
875.33	0.0000
876.40	41.1252
879.36	55.9515
880.27	43.2982
880.51	46.4707
881.50	45.4324
883.24	42.2900
884.67	37.0243
889.25	49.8055
896.60	59.5068
898.02	71.2349
899.00	77.6427
903.28	57.8310
911.07	62.3238
911.07	62.3238
911.07	62.3238
919.63	54.6619
920.93	49.3265
925.00	49.4006
925.24	53.7012
926.50	50.5020
935.52	46.3562
937.48	63.6511
944.10	46.5011
946.00	45.4504
949.00	45.4997
962.29	63.4945
964.01	63.5329
966.15	81.7474
968.20	58.1732
969.11	41.8260
969.11	41.8260
969.11	41.8260
977.42	53.6213
980.50	32.8645
983.50	41.6720
989.30	36.2621
996.32	58.7474
1001.03	50.5677
1001.68	53.3378
1004.76	57.0768
1021.30	0.0000
1024.50	0.0000
1034.80	44.6406
1036.00	52.1012
1037.82	52.1331
1038.57	41.9019
1038.76	0.0000
1045.16	56.9269
1046.59	53.2172
1048.07	47.6403

1050.47	40.1988
1050.47	40.1988
1062.04	45.0430
1063.62	46.0053
1076.63	27.3433
1077.35	26.4061
1078.86	32.0798
1085.78	32.1517
1099.22	42.7368
1112.02	39.2327
1112.84	35.9725
1115.52	47.4568
1120.29	52.4442
1120.29	52.4442
1120.29	52.4442
1120.29	52.4442
1120.51	59.0047
1121.28	67.2170
1124.00	0.0000
1129.67	51.7764
1131.51	0.0000
1147.95	0.0000
1167.94	52.3850
1173.22	42.7521
1175.09	55.4159
1177.93	52.5432
1189.05	49.7881
1204.90	56.8884
1205.75	0.0000
1213.00	46.2083
1221.42	56.1766
1230.97	60.9911
1235.34	61.0689
1236.41	0.0000
1238.25	45.5564
1246.25	38.3819
1260.41	0.0000
1271.85	30.9950
1274.45	47.0268
1274.54	47.0287
1291.56	45.2399
1298.22	0.0000
1312.09	36.3970
1325.50	35.5155
1325.50	35.5155
1332.49	30.4993
1333.61	34.5755
1360.21	25.6042
1362.66	0.0000
1365.15	19.4847
1368.21	22.8733
1368.53	0.0000
1376.25	29.8272
1384.27	24.7363
1394.10	21.0798
1395.20	17.7190
1407.95	20.7406
1434.06	14.6152
1436.60	29.2487
1457.56	0.0000
1460.81	28.3755
1489.15	27.5171
1509.49	22.3356
1596.49	28.8473
1620.62	24.3288
1678.03	0.0000
1691.02	7.6044
1691.02	7.6044
1706.46	0.0000
1750.46	0.0000
1764.49	14.4852
1764.49	14.4852
1764.49	14.4852
1764.49	14.4852
1770.23	15.2276
1771.40	16.9238
1791.20	0.0000
1808.65	8.7715

1836.01

18.6223

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624008

Total Uranium Activity	3.8435E+00	ug/g
Total Uranium Counting Unc.	5.7314E+00	ug/g
Total Uranium Tpu	2.9242E-06	ug/g
Total Uranium Mda	2.9064E+00	ug/g

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*****
*
*           GEL Laboratories LLC
*           2040 SAVAGE ROAD
*           CHARLESTON , SC 29417
*           GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624008
*  ANALYST       : MXR1            DETECTOR    : GAM12
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 15:50:41.05  SAMPLE ALQT: 130.580 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.356E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.345E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.071E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.482E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 17:52:40.93

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624009.CNF;1
Sample date       : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:51:06.
Sample ID        : G243624009 Sample quantity : 1.26300E+02 GRAM
Detector name    : GAM06 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.19 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 937704 Detector SN# :
Matrix Spike ID : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.90*	94	389	0.99	125.80	122	8	1.30E-02	38.6	
2	1	74.61	352	386	1.24	149.22	144	16	4.89E-02	10.6	1.22E+00
3	1	76.88	530	349	1.15	153.75	144	16	7.36E-02	7.6	
4	0	85.28*	343	854	4.09	170.57	160	18	4.77E-02	20.8	
5	0	92.85*	246	530	1.58	185.70	182	13	3.41E-02	21.2	
6	0	128.83	90	227	1.01	257.65	255	7	1.25E-02	29.7	
7	0	185.73*	157	286	1.23	371.47	367	9	2.18E-02	21.8	
8	0	209.14	158	286	1.35	418.28	413	11	2.19E-02	22.3	
9	4	238.43*	1041	190	1.12	476.85	471	18	1.45E-01	3.8	1.29E+00
10	4	241.47	247	198	1.51	482.93	471	18	3.43E-02	14.1	
11	0	270.19	164	238	2.18	540.37	534	15	2.27E-02	22.0	
12	0	277.03	62	188	1.04	554.06	549	11	8.58E-03	44.8	
13	3	295.01	333	138	1.42	590.01	586	30	4.62E-02	8.2	2.19E+00
14	3	300.19	112	182	2.02	600.37	586	30	1.56E-02	25.8	
15	0	328.09	56	192	0.82	656.17	650	12	7.73E-03	51.8	
16	0	338.16*	247	247	1.51	676.33	667	18	3.43E-02	16.5	
17	0	351.73*	504	129	1.26	703.47	699	9	7.00E-02	6.2	
18	0	463.52	75	131	1.33	927.05	921	14	1.04E-02	34.6	
19	0	510.56*	158	119	2.05	1021.12	1012	19	2.19E-02	20.4	
20	0	582.92*	318	99	1.35	1165.84	1159	14	4.42E-02	8.8	
21	0	609.04*	394	84	1.45	1218.07	1212	14	5.47E-02	7.2	
22	0	661.95	83	99	1.11	1323.91	1318	12	1.16E-02	26.2	
23	0	727.51*	53	73	1.27	1455.03	1449	13	7.32E-03	36.6	
24	0	768.95	20	63	1.08	1537.91	1530	11	2.84E-03	78.3	
25	0	839.87	31	25	2.95	1679.75	1675	9	4.32E-03	34.0	
26	0	860.40	52	60	1.43	1720.80	1713	16	7.27E-03	35.8	
27	0	910.80*	209	36	1.51	1821.60	1815	13	2.90E-02	9.3	
28	1	964.00	48	28	2.12	1927.99	1921	30	6.65E-03	29.4	1.29E+00
29	1	968.61	131	34	2.13	1937.22	1921	30	1.82E-02	12.6	
30	0	1119.73	117	32	2.44	2239.47	2232	14	1.63E-02	13.7	
31	0	1460.63*	641	38	2.00	2921.26	2914	18	8.91E-02	4.6	
32	0	1764.64	81	8	1.70	3529.28	3521	15	1.12E-02	13.4	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624009.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 12:00:00 Acquisition date : 7-JAN-2010 15:51:06
Sample ID        : G243624009 Sample quantity : 126.30 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA6 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.19 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.856E+01	2.108E+00	6.078E-01	4.021E-02	30.534
BA-137M	+	661.65	*	1.423E-01	7.501E-02	7.221E-02	3.566E-03	1.970
CS-137	+	661.65	*	1.504E-01	7.930E-02	7.633E-02	3.792E-03	1.970
TL-208	+	277.35		6.919E-01	6.237E-01	6.294E-01	6.703E-02	1.099
	+	510.84		9.030E-01	3.786E-01	2.431E-01	2.439E-02	3.715
	+	583.14	*	5.199E-01	9.721E-02	7.583E-02	4.792E-03	6.857
	+	860.37		8.119E-01	5.849E-01	4.419E-01	3.379E-02	1.837
BI-211		72.87		1.328E+01	4.521E+00	7.164E+00	6.432E-01	1.854
	+	351.07	*	3.569E+00	4.967E-01	3.952E-01	2.551E-02	9.030
PB-212	+	74.81		2.384E+00	5.926E-01	6.699E-01	8.708E-02	3.558
	+	77.11		2.023E+00	3.597E-01	3.778E-01	3.449E-02	5.354
		87.30		1.046E-01	5.861E-01	8.038E-01	1.126E-01	0.130
	+	238.63	*	1.588E+00	1.687E-01	1.047E-01	7.716E-03	15.170
	+	300.09		2.662E+00	1.392E+00	1.438E+00	1.204E-01	1.851
PO-212	+	74.81		2.384E+00	5.926E-01	6.699E-01	8.708E-02	3.558
	+	77.11		2.023E+00	3.597E-01	3.778E-01	3.449E-02	5.354
		87.30		1.046E-01	5.861E-01	8.038E-01	1.126E-01	0.130
		115.19		-2.142E+00	4.123E+00	6.649E+00	4.388E-01	-0.322
	+	238.63	*	1.588E+00	1.687E-01	1.047E-01	7.716E-03	15.170
	+	300.09		2.662E+00	1.392E+00	1.438E+00	1.204E-01	1.851
BI-214	+	609.31	*	1.215E+00	1.961E-01	1.210E-01	8.927E-03	10.045
	+	1120.29		1.907E+00	5.514E-01	4.646E-01	4.244E-02	4.105
	+	1764.49		1.802E+00	4.939E-01	4.285E-01	2.509E-02	4.205
PB-214	+	74.81		4.107E+00	9.938E-01	1.154E+00	1.349E-01	3.558
	+	77.11		3.468E+00	6.709E-01	6.476E-01	7.701E-02	5.354
		87.30		1.792E-01	1.004E+00	1.377E+00	1.719E-01	0.130
	+	241.98		2.267E+00	6.665E-01	6.304E-01	5.115E-02	3.596
	+	295.21		1.386E+00	2.576E-01	2.519E-01	2.178E-02	5.502
	+	351.92	*	1.241E+00	1.845E-01	1.391E-01	1.154E-02	8.925
PO-214	+	74.81		4.107E+00	9.938E-01	1.154E+00	1.349E-01	3.558
	+	77.11		3.468E+00	6.709E-01	6.476E-01	7.701E-02	5.354
		87.30		1.792E-01	1.004E+00	1.377E+00	1.719E-01	0.130
	+	241.98		2.267E+00	6.665E-01	6.304E-01	5.115E-02	3.596
	+	295.21		1.386E+00	2.576E-01	2.519E-01	2.178E-02	5.502

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	351.92	*	1.241E+00	1.845E-01	1.391E-01	1.154E-02	8.925
	+	74.81		2.384E+00	5.926E-01	6.699E-01	8.708E-02	3.558
	+	77.11		2.023E+00	3.597E-01	3.778E-01	3.449E-02	5.354
	+	87.30		1.046E-01	5.861E-01	8.038E-01	1.126E-01	0.130
PO-218	+	238.63	*	1.588E+00	1.687E-01	1.047E-01	7.716E-03	15.170
	+	300.09		2.662E+00	1.392E+00	1.438E+00	1.204E-01	1.851
	+	74.81		4.107E+00	9.938E-01	1.154E+00	1.349E-01	3.558
	+	77.11		3.468E+00	6.709E-01	6.476E-01	7.701E-02	5.354
RA-224	+	87.30		1.792E-01	1.004E+00	1.377E+00	1.719E-01	0.130
	+	241.98		2.267E+00	6.665E-01	6.304E-01	5.115E-02	3.596
	+	295.21		1.386E+00	2.576E-01	2.519E-01	2.178E-02	5.502
	+	351.92	*	1.241E+00	1.845E-01	1.391E-01	1.154E-02	8.925
RA-226	+	240.98	*	4.299E+00	1.241E+00	1.191E+00	6.982E-02	3.608
AC-228	+	609.31	*	1.215E+00	1.961E-01	1.210E-01	8.927E-03	10.045
	+	1120.29		1.907E+00	5.514E-01	4.646E-01	4.244E-02	4.105
	+	1764.49		1.802E+00	4.939E-01	4.285E-01	2.509E-02	4.205
	+	338.32		1.925E+00	1.010E+00	4.200E-01	1.713E-01	4.584
RA-228	+	911.07	*	1.531E+00	3.242E-01	2.350E-01	2.401E-02	6.517
	+	969.11		1.701E+00	5.786E-01	4.190E-01	9.555E-02	4.060
	+	338.32		1.925E+00	1.010E+00	4.200E-01	1.713E-01	4.584
	+	911.07	*	1.531E+00	3.242E-01	2.350E-01	2.401E-02	6.517
TH-228	+	969.11		1.701E+00	5.786E-01	4.190E-01	9.555E-02	4.060
	+	74.81		2.422E+00	5.587E-01	6.807E-01	6.199E-02	3.558
	+	77.11		2.056E+00	3.656E-01	3.839E-01	3.505E-02	5.354
	+	87.30		1.063E-01	5.955E-01	8.168E-01	8.019E-02	0.130
TH-230	+	238.63	*	1.614E+00	1.715E-01	1.064E-01	7.841E-03	15.170
	+	300.09		2.705E+00	2.120E+00	1.462E+00	8.617E-01	1.851
	+	609.31	*	1.215E+00	1.961E-01	1.210E-01	8.927E-03	10.045
	+	1120.29		1.907E+00	5.514E-01	4.646E-01	4.244E-02	4.105
TH-232	+	1764.49		1.802E+00	4.938E-01	4.285E-01	2.509E-02	4.205
	+	338.32		1.925E+00	6.450E-01	4.200E-01	2.470E-02	4.584
	+	911.07	*	1.531E+00	3.242E-01	2.350E-01	2.401E-02	6.517
	+	969.11		1.701E+00	5.786E-01	4.190E-01	9.555E-02	4.060
TH-234	+	63.29	*	2.717E+00	2.155E+00	2.795E+00	5.081E-01	0.972
	+	92.38		2.463E+00	1.136E+00	1.115E+00	2.042E-01	2.210
U-234	+	609.31	*	1.215E+00	1.961E-01	1.210E-01	8.927E-03	10.045
	+	1120.29		1.907E+00	5.514E-01	4.646E-01	4.244E-02	4.105
	+	1764.49		1.802E+00	4.938E-01	4.285E-01	2.509E-02	4.205
	+	86.50	*	1.611E+00	7.629E-01	4.844E-01	1.105E-01	3.326
NP-237	+	95.87		-4.118E-01	1.207E+00	1.719E+00	4.231E-01	-0.240
	+	63.29	*	2.717E+00	2.155E+00	2.795E+00	5.081E-01	0.972
	+	92.38		2.463E+00	1.066E+00	1.115E+00	1.014E-01	2.210
	+	74.67	*	3.864E-01	8.902E-02	1.090E-01	9.842E-03	3.546
AM-243	+	86.72		6.042E+01	2.575E+01	1.812E+01	1.769E+00	3.335
	+	117.66		1.977E-01	4.417E+00	7.286E+00	4.671E-01	0.027
	+	142.18		1.126E+01	2.048E+01	3.424E+01	1.955E+00	0.329
ANH-511	+	511.00	*	1.951E-01	8.015E-02	5.251E-02	2.936E-03	3.714

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7		477.59	*	3.801E-01	3.998E-01	6.990E-01	4.617E-02	0.544

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		4.503E-02	4.976E-02	8.908E-02	5.501E-03	0.506
NA-24	1368.53	*		-1.745E+00	4.976E-02	Half-Life too short		
AL-26	1129.67			1.159E+00	1.901E+00	3.313E+00	2.063E-01	0.350
	1808.65	*		-1.107E-02	3.222E-02	4.914E-02	2.822E-03	-0.225
TI-44	67.85			-1.567E-02	6.158E-02	9.453E-02	8.435E-03	-0.166
	78.38	*		2.886E-01	6.763E-02	8.792E-02	8.082E-03	3.283
SC-46	889.25	*		-1.521E-02	4.119E-02	6.589E-02	4.723E-03	-0.231
+	1120.51			3.293E-01	9.268E-02	1.525E-01	9.593E-03	2.159
V-48	944.10			-7.557E-01	9.935E-01	1.508E+00	1.077E-01	-0.501
	983.50	*		2.993E-03	7.345E-02	1.222E-01	8.558E-03	0.024
	1312.09			8.344E-02	9.783E-02	1.750E-01	1.092E-02	0.477
CR-51	320.08	*		2.210E-02	4.362E-01	7.149E-01	4.710E-02	0.031
MN-52	744.21			3.359E-01	3.253E-01	5.709E-01	3.256E-02	0.588
	848.13			-1.840E+00	8.206E+00	1.340E+01	9.030E-01	-0.137
	935.52			4.601E-01	3.292E-01	6.133E-01	4.394E-02	0.750
	1246.25			1.603E+00	9.733E+00	1.615E+01	9.846E-01	0.099
	1333.61			-7.268E-01	6.664E+00	1.067E+01	6.703E-01	-0.068
	1434.06	*		2.586E-01	2.630E-01	4.956E-01	3.119E-02	0.522
MN-54	834.83	*		-3.072E-02	4.517E-02	5.862E-02	3.869E-03	-0.524
CO-56	846.75	*		6.503E-03	4.514E-02	7.314E-02	4.917E-03	0.089
	977.42			5.931E-02	3.633E+00	5.191E+00	3.647E-01	0.011
	1037.82			-1.379E-01	3.377E-01	5.317E-01	3.903E-02	-0.259
	1175.09			-2.061E-02	2.455E+00	4.019E+00	2.380E-01	-0.005
	1238.25			2.328E-01	1.079E-01	2.055E-01	1.321E-02	1.133
	1360.21			1.155E+00	1.002E+00	1.905E+00	1.199E-01	0.606
	1771.40			-1.354E+00	4.738E-01	4.680E-01	2.732E-02	-2.893
CO-57	122.06	*		-2.422E-02	3.059E-02	4.866E-02	2.972E-03	-0.498
	136.48			-1.317E-01	2.440E-01	3.908E-01	2.626E-02	-0.337
CO-58	810.76	*		-1.060E-02	4.329E-02	7.084E-02	4.523E-03	-0.150
FE-59	142.65			3.177E+00	3.158E+00	5.367E+00	3.061E-01	0.592
	192.34			4.442E-01	1.101E+00	1.814E+00	2.123E-01	0.245
	1099.22	*		-1.205E-01	1.077E-01	1.551E-01	1.138E-02	-0.777
	1291.56			-1.872E-01	1.338E-01	1.726E-01	1.335E-02	-1.084
CO-60	1173.22			5.385E-03	4.594E-02	7.627E-02	4.512E-03	0.071
	1332.49	*		1.634E-03	4.561E-02	7.445E-02	4.677E-03	0.022
ZN-65	1115.52	*		9.436E-02	1.112E-01	1.762E-01	1.116E-02	0.535
GE-68	1077.35	*		3.991E-01	1.258E+00	2.148E+00	1.408E-01	0.186
AS-73	53.44	*		-8.002E-01	1.154E+00	1.887E+00	1.725E-01	-0.424
AS-74	595.88	*		-4.652E-02	1.119E-01	1.758E-01	9.348E-03	-0.265
	634.78			-4.322E-01	3.984E-01	5.743E-01	2.935E-02	-0.753
SE-75	66.05			4.544E+00	6.666E+00	1.009E+01	1.080E+00	0.450
	96.73			-1.193E-01	9.774E-01	1.412E+00	1.910E-01	-0.085
	121.11			3.739E-02	1.609E-01	2.671E-01	2.528E-02	0.140
	136.00			-1.035E-02	4.556E-02	7.396E-02	4.359E-03	-0.140
	198.60			3.800E-01	2.259E+00	3.499E+00	2.442E-01	0.109
	264.65	*		-2.829E-03	5.830E-02	8.089E-02	4.852E-03	-0.035
	279.53			9.359E-02	1.393E-01	2.143E-01	1.377E-02	0.437
	303.91			-5.794E-01	2.423E+00	4.021E+00	3.878E-01	-0.144
	400.65			1.282E-01	3.005E-01	5.117E-01	4.584E-02	0.251

----- 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		9.122E+02	4.490E+02	5.367E+02	5.296E+01	1.700
		200.40		-1.862E+02	2.668E+02	4.173E+02	2.351E+01	-0.446
	+	239.00		3.457E+02	3.330E+01	5.692E+01	3.331E+00	6.073
		249.79		-7.681E+01	1.100E+02	1.694E+02	9.987E+00	-0.453
		281.68		-2.894E+00	1.530E+02	2.246E+02	1.340E+01	-0.013
		297.23		3.442E+02	9.782E+01	1.833E+02	1.095E+01	1.878
		303.76		-5.480E+01	2.788E+02	4.638E+02	2.768E+01	-0.118
		439.47		-5.200E+01	2.160E+02	3.474E+02	1.954E+01	-0.150
		484.57		-2.671E+02	3.512E+02	5.430E+02	3.054E+01	-0.492
		520.65	*	7.641E+00	1.746E+01	2.952E+01	1.645E+00	0.259
		574.64		2.427E+02	3.612E+02	6.036E+02	3.265E+01	0.402
		578.91		5.839E+00	1.648E+02	2.331E+02	1.257E+01	0.025
		585.48		1.806E+03	4.011E+02	7.388E+02	3.963E+01	2.444
		755.35		-3.813E+01	2.501E+02	3.955E+02	2.298E+01	-0.096
		817.79		1.242E+01	1.810E+02	3.052E+02	1.961E+01	0.041
	SR-82	698.33		-4.641E+00	4.316E+01	6.810E+01	3.590E+00	-0.068
		776.49	*	-5.919E-01	4.134E-01	5.940E-01	3.573E-02	-0.996
RB-83		1395.20		-2.472E+00	1.371E+01	2.164E+01	1.363E+00	-0.114
		520.41	*	2.566E-02	8.496E-02	1.424E-01	7.932E-03	0.180
		529.64		-9.102E-02	1.252E-01	1.930E-01	1.071E-02	-0.472
RB-84		552.65		6.675E-02	2.478E-01	4.132E-01	2.267E-02	0.162
		881.50	*	-3.013E-02	7.383E-02	1.176E-01	8.335E-03	-0.256
KR-85		513.99	*	1.863E+01	9.362E+00	1.572E+01	8.778E-01	1.185
SR-85		513.99	*	9.655E-02	4.853E-02	8.147E-02	4.550E-03	1.185
RB-86		1076.63	*	1.465E-01	8.131E-01	1.368E+00	8.971E-02	0.107
Y-88		898.02		-2.335E-02	4.397E-02	6.903E-02	5.047E-03	-0.338
		1836.01	*	7.904E-05	4.065E-02	6.720E-02	3.819E-03	0.001
ZR-88		392.90	*	-2.928E-03	3.693E-02	6.108E-02	3.390E-03	-0.048
Y-91		1204.90	*	4.547E+00	2.108E+01	3.523E+01	2.113E+00	0.129
NB-94		702.63	*	-1.682E-02	4.109E-02	6.393E-02	3.396E-03	-0.263
		871.10		1.886E-02	3.357E-02	5.931E-02	4.137E-03	0.318
NB-95		765.79	*	7.041E-02	5.495E-02	8.821E-02	5.214E-03	0.798
NB-95M		235.69	*	4.945E-01	1.895E-01	2.995E-01	2.263E-02	1.651
ZR-95		724.18		-9.084E-03	1.329E-01	1.829E-01	1.210E-02	-0.050
		756.15	*	5.120E-02	7.632E-02	1.309E-01	9.227E-03	0.391
NB-97		657.90	*	4.070E-01	7.632E-02	Half-Life	too short	
		1024.50		-1.620E+01	7.632E-02	Half-Life	too short	
ZR-97		254.15		1.788E+01	7.632E-02	Half-Life	too short	
		355.39		-1.849E-01	7.632E-02	Half-Life	too short	
		507.63	*	1.126E+01	7.632E-02	Half-Life	too short	
		602.52		-1.808E+00	7.632E-02	Half-Life	too short	
		1021.30		-5.382E+00	7.632E-02	Half-Life	too short	
		1147.95		2.646E+00	7.632E-02	Half-Life	too short	
		1362.66		6.649E+00	7.632E-02	Half-Life	too short	
		1750.46		4.990E+00	7.632E-02	Half-Life	too short	
MO-99		140.51		-1.172E+01	4.069E+01	6.420E+01	1.729E+01	-0.183
		181.06		-1.953E+01	3.086E+01	4.186E+01	7.134E+00	-0.467
		366.43		-1.119E+01	1.274E+02	2.112E+02	1.212E+01	-0.053
		739.58	*	-3.081E+00	1.907E+01	3.022E+01	4.147E+00	-0.102

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	778.00			-1.218E+01	4.540E+01	7.424E+01	4.478E+00	-0.164
TC-99M	140.51		*	-2.342E+11	4.540E+01	Half-Life	too short	
RH-101	127.23			4.717E-02	4.310E-02	6.554E-02	3.914E-03	0.720
	198.01		*	2.369E-02	4.081E-02	6.436E-02	3.615E-03	0.368
	325.23			9.527E-03	3.024E-01	4.421E-01	2.620E-02	0.022
RH-102	418.52			1.312E-02	3.284E-01	5.456E-01	3.056E-02	0.024
	475.06		*	2.415E-02	3.449E-02	5.953E-02	3.352E-03	0.406
	631.29			-1.920E-02	6.184E-02	9.750E-02	5.003E-03	-0.197
	697.49			-8.714E-04	9.550E-02	1.520E-01	8.002E-03	-0.006
	766.84			1.623E-01	1.419E-01	2.237E-01	1.325E-02	0.725
	1046.59			4.390E-03	1.156E-01	1.916E-01	1.288E-02	0.023
	1112.84			2.503E-01	2.455E-01	4.048E-01	2.566E-02	0.618
RU-103	497.08		*	-4.942E-02	4.790E-02	7.161E-02	8.994E-03	-0.690
	610.33		+	1.336E+01	2.796E+00	3.385E+00	5.152E-01	3.948
RH-106	511.85		+	9.762E-01	4.011E-01	5.156E-01	2.882E-02	1.893
	621.84		*	-1.403E-01	3.556E-01	5.560E-01	6.364E-02	-0.252
	1050.47			-1.122E+00	2.313E+00	3.590E+00	2.405E-01	-0.313
RU-106	511.85		+	9.762E-01	4.011E-01	5.156E-01	2.882E-02	1.893
	621.84		*	-1.403E-01	3.553E-01	5.560E-01	2.883E-02	-0.252
	1050.47			-1.122E+00	2.313E+00	3.590E+00	2.405E-01	-0.313
AG-108M	433.93		*	3.396E-02	3.622E-02	6.373E-02	3.908E-03	0.533
	614.37			-3.262E-03	4.453E-02	6.187E-02	3.568E-03	-0.053
	722.95			-4.195E-02	5.597E-02	6.960E-02	4.188E-03	-0.603
CD-109	88.03		*	3.241E+00	1.538E+00	1.844E+00	1.820E-01	1.758
AG-110M	657.75		*	4.733E-02	4.662E-02	7.304E-02	3.943E-03	0.648
	677.61			-1.712E-01	3.616E-01	5.588E-01	3.064E-02	-0.306
	706.67			1.613E-01	2.459E-01	4.189E-01	2.398E-02	0.385
	763.93			1.547E-02	2.045E-01	2.857E-01	1.784E-02	0.054
	884.67			-2.444E-02	5.042E-02	7.950E-02	5.924E-03	-0.307
	937.48			7.459E-02	1.254E-01	2.198E-01	1.656E-02	0.339
	1384.27			-5.301E-02	1.768E-01	2.730E-01	1.809E-02	-0.194
IN-111	171.28			-8.805E-01	1.503E+00	2.379E+00	1.293E-01	-0.370
	245.39		*	-3.124E-01	1.790E+00	2.470E+00	1.452E-01	-0.127
IN-113M	391.69		*	-4.030E-02	5.399E-02	8.554E-02	5.090E-03	-0.471
SN-113	391.69		*	-4.030E-02	5.399E-02	8.554E-02	5.090E-03	-0.471
IN-114M	190.27		*	1.735E-01	2.340E-01	3.470E-01	1.931E-02	0.500
CD-115	260.90			-4.034E+01	2.147E+02	3.397E+02	2.015E+01	-0.119
	492.35			1.399E+01	5.859E+01	9.803E+01	5.506E+00	0.143
	527.90		*	4.437E+00	1.727E+01	2.886E+01	1.603E+00	0.154
SN-117M	156.02			1.572E-01	2.877E+00	4.703E+00	2.598E-01	0.033
	158.56		*	3.600E-03	6.948E-02	1.135E-01	6.236E-03	0.032
SB-122	563.90		*	6.776E-01	3.189E+00	5.294E+00	2.885E-01	0.128
	692.80			-5.009E+00	6.496E+01	1.041E+02	5.437E+00	-0.048
I-123	159.00		*	-6.484E-01	6.496E+01	Half-Life	too short	
	528.96			-5.284E+02	6.496E+01	Half-Life	too short	
TE-123M	159.00		*	-8.590E-04	3.410E-02	5.554E-02	3.094E-03	-0.015
I-124	602.71		*	8.359E-02	1.103E+00	1.563E+00	8.260E-02	0.053
	722.78			-5.040E+00	6.962E+00	8.697E+00	4.783E-01	-0.579
	1325.50			-3.952E+00	4.818E+01	7.748E+01	4.857E+00	-0.051

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25		5.346E+01	4.474E+01	8.255E+01	5.197E+00	0.648
		1509.49		1.760E+01	1.977E+01	3.643E+01	2.280E+00	0.483
		1691.02		2.779E-01	4.995E+00	8.389E+00	5.045E-01	0.033
		602.71		4.136E-03	5.456E-02	7.733E-02	4.089E-03	0.053
		645.85		-2.849E-01	5.638E-01	8.693E-01	5.114E-02	-0.328
		709.31		-1.683E-01	3.323E+00	5.334E+00	2.866E-01	-0.032
		713.82		-3.883E-01	1.941E+00	3.069E+00	3.068E-01	-0.127
		722.78		-3.614E-01	4.993E-01	6.237E-01	3.610E-02	-0.579
	+	968.20		1.772E+01	4.644E+00	8.023E+00	5.663E-01	2.209
		1045.16		2.582E-01	2.536E+00	4.234E+00	2.848E-01	0.061
		1325.50		-3.027E-01	3.691E+00	5.935E+00	3.720E-01	-0.051
		1368.21		-1.703E+00	1.834E+00	2.466E+00	2.989E-01	-0.691
		1436.60		3.199E+00	4.011E+00	7.310E+00	4.600E-01	0.438
		1691.02	*	4.701E-03	8.450E-02	1.419E-01	9.215E-03	0.033
SB-125		427.89	*	-1.019E-02	1.015E-01	1.668E-01	9.788E-03	-0.061
	+	463.38		8.345E-01	5.806E-01	6.622E-01	4.385E-02	1.260
		600.56		6.891E-02	2.157E-01	3.595E-01	2.257E-02	0.192
		635.90		-3.715E-01	3.002E-01	4.256E-01	2.643E-02	-0.873
TE-125M		109.28	*	3.970E-02	1.095E+01	1.807E+01	1.643E+00	0.002
I-126		388.63		4.516E-03	2.563E-01	4.266E-01	2.377E-02	0.011
		666.33	*	1.122E-02	2.669E-01	3.744E-01	1.864E-02	0.030
SB-126		753.82		6.274E-02	1.723E+00	2.779E+00	1.611E-01	0.023
		223.80		-8.604E-01	4.937E+00	7.875E+00	4.549E-01	-0.109
		278.60		3.169E+00	3.417E+00	5.329E+00	3.179E-01	0.595
	+	296.50		1.463E+01	2.560E+00	4.298E+00	2.568E-01	3.403
		414.70		-2.223E-02	9.099E-02	1.484E-01	8.303E-03	-0.150
		415.30		-4.837E+00	7.591E+00	1.204E+01	6.736E-01	-0.402
		555.20		-2.062E-01	5.001E+00	8.145E+00	4.463E-01	-0.025
		573.80		2.394E-01	1.410E+00	2.329E+00	1.261E-01	0.103
		593.00		-6.449E-01	1.117E+00	1.726E+00	9.203E-02	-0.374
		656.30		1.091E+00	4.890E+00	7.020E+00	3.492E-01	0.155
		666.33		4.700E-03	1.118E-01	1.568E-01	7.810E-03	0.030
		675.00		-2.983E-01	2.492E+00	3.986E+00	2.016E-01	-0.075
		695.00		4.087E-02	9.610E-02	1.608E-01	8.429E-03	0.254
		697.00		8.214E-02	3.516E-01	5.710E-01	3.003E-02	0.144
		720.50	*	8.706E-03	1.888E-01	2.767E-01	1.516E-02	0.031
		856.80		1.659E-01	6.018E-01	8.998E-01	6.143E-02	0.184
		989.30		-4.040E-01	1.367E+00	2.186E+00	1.526E-01	-0.185
		1034.80		4.059E+00	9.937E+00	1.713E+01	1.162E+00	0.237
SN-126	+	1213.00		-3.477E+00	5.374E+00	8.166E+00	4.915E-01	-0.426
		64.28		1.075E+00	8.467E-01	1.111E+00	1.709E-01	0.968
		86.94		7.890E-02	5.295E-01	7.241E-01	3.013E-01	0.109
SB-127		87.57	*	1.528E-01	1.358E-01	1.771E-01	1.742E-02	0.863
		61.10		5.608E+01	9.815E+01	1.484E+02	1.758E+01	0.378
		252.40		-4.333E-01	6.535E+00	1.042E+01	4.342E+00	-0.042
		290.80		-5.052E+00	3.433E+01	4.983E+01	4.808E+00	-0.101
		411.60		1.365E+01	1.760E+01	3.037E+01	4.416E+00	0.449
		444.90		-1.614E+00	1.298E+01	2.125E+01	2.343E+00	-0.076
		473.00		-1.548E+00	2.367E+00	3.701E+00	4.221E-01	-0.418

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	543.00			-7.491E+00	2.321E+01	3.695E+01	4.824E+00	-0.203
	603.60			2.379E-01	1.917E+01	2.686E+01	2.907E+00	0.009
	685.20	*		-7.059E-01	1.726E+00	2.668E+00	2.517E-01	-0.265
	698.50			-4.364E+00	2.254E+01	3.529E+01	5.124E+00	-0.124
	722.20			-1.813E+01	4.719E+01	6.199E+01	5.802E+00	-0.293
	783.80			5.238E+00	4.978E+00	8.996E+00	1.002E+00	0.582
XE-127	57.60			6.997E+00	8.699E+00	1.398E+01	1.287E+00	0.500
	145.22			-2.678E-01	8.138E-01	1.313E+00	7.438E-02	-0.204
	172.10			-1.102E-01	1.412E-01	2.211E-01	1.203E-02	-0.498
	202.84	*		-7.924E-03	6.282E-02	9.309E-02	5.259E-03	-0.085
	374.96			4.259E-03	2.359E-01	3.933E-01	2.233E-02	0.011
I-131	80.18			5.209E+00	8.224E+00	9.200E+00	8.603E-01	0.566
	284.30			-8.079E-01	1.905E+00	3.054E+00	2.020E-01	-0.264
	364.48	*		2.652E-02	1.433E-01	2.417E-01	1.556E-02	0.110
	636.97			2.828E-01	1.813E+00	2.985E+00	1.758E-01	0.095
	722.89			-7.641E+00	1.032E+01	1.285E+01	7.196E-01	-0.594
TE-132	49.72			-1.469E+01	3.419E+01	5.657E+01	6.324E+00	-0.260
	111.76			-9.556E+00	4.308E+01	7.041E+01	6.935E+00	-0.136
	116.30			-1.459E+01	3.985E+01	6.464E+01	6.205E+00	-0.226
	228.16	*		-2.436E-01	1.018E+00	1.617E+00	2.357E-01	-0.151
BA-133	53.15			-2.460E+00	4.923E+00	8.114E+00	7.407E-01	-0.303
	79.62			1.572E+00	2.133E+00	2.396E+00	3.737E-01	0.656
	81.00			7.618E-02	1.593E-01	1.757E-01	2.861E-02	0.434
	276.40	+		6.838E-01	6.186E-01	7.495E-01	9.771E-02	0.912
	302.84			2.646E-02	1.672E-01	2.832E-01	3.326E-02	0.093
	356.01	*		-2.997E-03	5.565E-02	8.040E-02	9.293E-03	-0.037
	383.85			1.273E-01	3.618E-01	6.140E-01	6.614E-02	0.207
I-133	510.53	+		4.572E+00	3.618E-01	Half-Life	too short	
	529.87	*		-5.828E-03	3.618E-01	Half-Life	too short	
	706.58			7.404E-01	3.618E-01	Half-Life	too short	
	856.28			-3.422E-01	3.618E-01	Half-Life	too short	
	875.33			-5.069E-02	3.618E-01	Half-Life	too short	
	1236.41			2.974E+00	3.618E-01	Half-Life	too short	
	1298.22			7.867E-02	3.618E-01	Half-Life	too short	
CS-134	475.35			7.796E-01	2.333E+00	3.929E+00	2.213E-01	0.198
	563.23			2.051E-01	4.109E-01	6.974E-01	3.892E-02	0.294
	569.32			-1.036E-01	2.460E-01	3.835E-01	2.153E-02	-0.270
	604.70			-1.175E-02	4.603E-02	6.252E-02	3.320E-03	-0.188
	795.84	*		3.647E-02	5.179E-02	9.179E-02	5.777E-03	0.397
	801.93			9.955E-03	4.294E-01	7.212E-01	4.568E-02	0.014
	1038.57			1.874E-01	4.129E+00	6.851E+00	4.632E-01	0.027
	1167.94			-1.834E+00	2.716E+00	4.112E+00	2.449E-01	-0.446
	1365.15			-5.815E-01	1.227E+00	1.824E+00	1.244E-01	-0.319
CS-135	268.24	*		4.938E-01	2.124E-01	3.412E-01	2.651E-02	1.447
I-135	288.45			2.165E+11	2.124E-01	Half-Life	too short	
	417.63			-3.101E+11	2.124E-01	Half-Life	too short	
	546.56			-1.350E+11	2.124E-01	Half-Life	too short	
	836.80			2.134E+11	2.124E-01	Half-Life	too short	
	1038.76			3.390E+10	2.124E-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		1124.00		1.910E+11	2.124E-01	Half-Life	too short	
		1131.51		6.470E+10	2.124E-01	Half-Life	too short	
		1260.41	*	4.711E+09	2.124E-01	Half-Life	too short	
		1457.56		7.124E+12	2.124E-01	Half-Life	too short	
		1678.03		1.417E+11	2.124E-01	Half-Life	too short	
		1706.46		-1.858E+11	2.124E-01	Half-Life	too short	
		1791.20		4.497E+10	2.124E-01	Half-Life	too short	
		66.91		2.747E-01	1.153E+00	1.714E+00	2.676E-01	0.160
	+	86.29		7.564E+00	3.303E+00	2.483E+00	3.383E-01	3.046
		153.22		2.151E-01	8.311E-01	1.371E+00	9.640E-02	0.157
		163.89		-3.302E-01	1.321E+00	2.127E+00	1.480E-01	-0.155
		176.55		4.169E-01	4.551E-01	7.675E-01	4.780E-02	0.543
		273.65		3.855E-01	7.753E-01	8.287E-01	5.598E-02	0.465
		340.57		4.103E-01	1.784E-01	2.989E-01	1.864E-02	1.373
CE-139 BA-140		818.51		-8.493E-03	8.143E-02	1.349E-01	8.695E-03	-0.063
		1048.07	*	-1.514E-02	1.076E-01	1.744E-01	1.252E-02	-0.087
		1235.34		3.227E-01	7.427E-01	1.257E+00	1.276E-01	0.257
		165.85	*	-5.318E-03	3.522E-02	5.697E-02	3.080E-03	-0.093
		162.64		-9.298E-02	9.293E-01	1.507E+00	9.359E-02	-0.062
		304.84		-6.084E-01	1.557E+00	2.548E+00	6.962E-01	-0.239
		423.70		-1.797E+00	2.378E+00	3.619E+00	1.149E+00	-0.497
		537.32	*	-1.694E-01	3.209E-01	4.950E-01	1.607E-01	-0.342
	+	328.77		5.672E-01	5.894E-01	6.753E-01	4.457E-02	0.840
		432.53		1.804E+00	2.486E+00	4.311E+00	2.692E-01	0.418
LA-140		487.03		1.016E-01	1.628E-01	2.802E-01	1.796E-02	0.363
		751.79		-8.753E-01	1.983E+00	3.037E+00	2.149E-01	-0.288
		815.85		-1.761E-01	3.669E-01	5.849E-01	4.499E-02	-0.301
		867.82		-1.248E+00	1.760E+00	2.237E+00	1.678E-01	-0.558
		919.63		-1.416E+00	3.199E+00	5.067E+00	4.834E-01	-0.279
		925.24		6.467E-01	1.211E+00	2.127E+00	1.666E-01	0.304
		1596.49	*	-8.267E-02	9.729E-02	1.380E-01	8.515E-03	-0.599
	CE-141	145.44	*	-4.822E-02	7.459E-02	1.186E-01	7.000E-03	-0.406
	CE-143	57.37		1.081E-03	7.459E-02	Half-Life	too short	
		231.56		1.677E-03	7.459E-02	Half-Life	too short	
CE-144		293.26	*	1.562E-03	7.459E-02	Half-Life	too short	
	+	350.59		4.787E-02	7.459E-02	Half-Life	too short	
		490.36		8.988E-04	7.459E-02	Half-Life	too short	
		664.57		2.618E-03	7.459E-02	Half-Life	too short	
		721.93		-2.702E-04	7.459E-02	Half-Life	too short	
		80.11		2.204E+00	3.470E+00	3.883E+00	3.606E-01	0.568
PM-144		133.54	*	8.324E-02	2.672E-01	3.906E-01	5.554E-02	0.213
		476.78		5.496E-02	8.458E-02	1.451E-01	9.872E-03	0.379
		618.01		-1.534E-02	3.355E-02	5.209E-02	2.913E-03	-0.294
		696.49	*	2.835E-02	4.023E-02	6.884E-02	3.621E-03	0.412
PR-144		778.57		4.087E-01	2.331E+00	3.977E+00	2.402E-01	0.103
		696.49	*	1.922E+00	2.728E+00	4.667E+00	2.452E-01	0.412
PM-146		1489.15		-7.790E+00	1.375E+01	1.990E+01	1.248E+00	-0.391
		453.90	*	3.641E-02	5.195E-02	8.962E-02	7.628E-03	0.406
		633.02		-7.716E-01	1.495E+00	2.257E+00	8.288E-01	-0.342

---- Non-Identified Nuclides ----

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ND-147	735.90			1.002E-01	1.881E-01	3.063E-01	8.529E-02	0.327
	747.13			-9.433E-02	1.129E-01	1.659E-01	2.070E-02	-0.568
	91.11			1.143E+00	5.202E-01	6.531E-01	6.509E-02	1.751
	319.41			-1.386E-01	3.924E+00	6.568E+00	3.905E-01	-0.021
	439.89			-1.095E+00	6.936E+00	1.123E+01	6.320E-01	-0.098
PM-149	531.02		*	-1.483E-01	6.852E-01	1.102E+00	1.479E-01	-0.135
EU-152	285.90		*	-1.140E+00	1.453E+02	2.446E+02	3.486E+01	-0.005
	121.78			-6.622E-02	8.873E-02	1.414E-01	1.110E-02	-0.468
	244.69			-1.723E-01	4.361E-01	5.914E-01	3.475E-02	-0.291
	344.27		*	-6.459E-02	1.307E-01	1.822E-01	1.200E-02	-0.355
	443.98			-3.889E-01	1.073E+00	1.725E+00	9.713E-02	-0.225
	778.89			1.183E-01	2.759E-01	4.810E-01	2.905E-02	0.246
	867.32			-5.345E-01	9.883E-01	1.297E+00	8.996E-02	-0.412
	+	964.01		7.135E-01	4.230E-01	6.401E-01	4.527E-02	1.115
	1085.78			2.059E-01	4.172E-01	7.241E-01	4.711E-02	0.284
	1112.02			2.760E-01	3.570E-01	5.678E-01	3.602E-02	0.486
	1407.95			2.655E-01	2.294E-01	4.244E-01	2.672E-02	0.626
	GD-153	69.67		-2.738E-01	2.282E+00	3.337E+00	2.979E-01	-0.082
	83.37			-9.441E+00	2.079E+01	2.963E+01	2.816E+00	-0.319
	97.43		*	1.627E-02	9.997E-02	1.467E-01	1.226E-02	0.111
EU-154	103.18			-8.616E-02	1.194E-01	1.914E-01	1.471E-02	-0.450
	123.07			-6.085E-03	6.166E-02	1.010E-01	9.669E-03	-0.060
	247.94			2.632E-01	4.584E-01	7.029E-01	6.744E-02	0.374
	591.81			-5.258E-01	7.240E-01	1.103E+00	1.048E-01	-0.477
	723.30			-1.155E-01	2.290E-01	2.955E-01	2.021E-02	-0.391
EU-155	756.87			6.138E-01	8.201E-01	1.415E+00	1.436E-01	0.434
	873.19			5.764E-02	3.132E-01	5.320E-01	5.938E-02	0.108
	996.32			6.334E-02	4.109E-01	6.904E-01	1.175E-01	0.092
	1004.76			2.677E-01	2.342E-01	4.284E-01	4.473E-02	0.625
	1274.45		*	1.243E-01	1.390E-01	2.482E-01	2.376E-02	0.501
	48.70			-9.211E-01	3.454E+00	5.757E+00	4.821E-01	-0.160
	60.01			-1.794E+00	7.166E+00	1.045E+01	9.574E-01	-0.172
	+	86.54		6.610E-01	2.818E-01	2.136E-01	2.099E-02	3.095
	105.31		*	4.483E-02	1.230E-01	2.060E-01	1.563E-02	0.218
	TB-160	86.79		3.391E-01	3.766E-01	5.680E-01	5.551E-02	0.597
	197.04			-2.430E-01	7.112E-01	1.076E+00	6.036E-02	-0.226
	215.65			-5.532E-01	9.374E-01	1.411E+00	8.085E-02	-0.392
	298.57			1.685E-01	1.346E-01	2.387E-01	1.426E-02	0.706
	879.36		*	6.803E-02	1.462E-01	2.552E-01	1.802E-02	0.267
	962.29			8.353E-01	6.890E-01	1.128E+00	7.984E-02	0.741
HO-166M	966.15			1.191E+00	3.117E-01	6.153E-01	4.348E-02	1.935
	1177.93			-1.317E-01	4.124E-01	6.528E-01	3.870E-02	-0.202
	1271.85			-6.554E-02	7.911E-01	1.276E+00	7.858E-02	-0.051
	80.57			2.622E-01	4.418E-01	4.926E-01	4.590E-02	0.532
	+	184.41		1.254E-01	5.518E-02	7.992E-02	4.415E-03	1.569
	280.46			6.912E-03	1.059E-01	1.564E-01	9.332E-03	0.044
	410.95			3.596E-01	2.985E-01	5.285E-01	2.954E-02	0.680
	711.68		*	-7.728E-03	7.230E-02	1.154E-01	6.227E-03	-0.067
	752.31			-7.161E-02	3.025E-01	4.741E-01	2.740E-02	-0.151

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TM-171	810.29			-3.862E-02	6.568E-02	1.039E-01	6.598E-03	-0.372
	51.35			-4.376E-01	4.234E+01	7.117E+01	6.382E+00	-0.006
	52.39			-3.143E+00	2.159E+01	3.610E+01	3.277E+00	-0.087
	59.40			-7.618E+00	3.827E+01	5.597E+01	5.144E+00	-0.136
LU-176	66.72	*		1.533E+01	3.940E+01	5.899E+01	5.270E+00	0.260
	88.36			8.782E-01	3.494E-01	4.276E-01	4.194E-02	2.054
	201.83			-2.540E-02	3.451E-02	5.385E-02	3.038E-03	-0.472
	306.84	*		-8.779E-03	3.207E-02	4.589E-02	2.737E-03	-0.191
LU-177	401.10			2.930E+00	7.775E+00	1.321E+01	7.356E-01	0.222
	112.95			2.233E-01	2.072E+00	3.431E+00	2.325E-01	0.065
LU-177M	208.36	+	*	4.736E+00	2.132E+00	2.672E+00	1.519E-01	1.772
	52.97			-1.500E+00	2.254E+00	3.690E+00	3.364E-01	-0.407
HF-181	54.07			-7.401E-01	1.181E+00	1.937E+00	1.776E-01	-0.382
	61.30			2.480E+00	2.095E+00	3.244E+00	2.950E-01	0.764
	121.62			-2.156E-01	4.530E-01	7.306E-01	4.475E-02	-0.295
	147.16			-4.516E-01	7.533E-01	1.200E+00	6.766E-02	-0.376
	171.86			-3.796E-01	5.626E-01	8.861E-01	4.820E-02	-0.428
	218.09			1.096E-01	1.024E+00	1.658E+00	9.523E-02	0.066
	268.79	+		3.860E+00	1.717E+00	1.817E+00	1.081E-01	2.124
	319.02			-1.695E-01	2.887E-01	4.675E-01	2.779E-02	-0.362
	367.43			9.101E-02	1.082E+00	1.813E+00	1.039E-01	0.050
	413.65	*		-1.981E-01	2.167E-01	3.383E-01	1.892E-02	-0.586
	56.28			5.111E-01	1.300E+00	2.210E+00	2.034E-01	0.231
	57.53			4.746E-01	7.333E-01	1.172E+00	1.079E-01	0.405
W-181	65.20			7.660E-01	1.354E+00	2.043E+00	1.830E-01	0.375
	133.02			1.926E-02	8.694E-02	1.266E-01	7.415E-03	0.152
	136.25			-2.122E-01	5.419E-01	8.735E-01	5.068E-02	-0.243
	345.85			-7.865E-03	3.011E-01	3.822E-01	2.236E-02	-0.021
	482.03	*		-3.793E-02	5.144E-02	7.998E-02	4.500E-03	-0.474
	56.28			1.980E-01	5.032E-01	8.555E-01	7.876E-02	0.231
	57.53			1.837E-01	2.841E-01	4.541E-01	4.179E-02	0.404
	65.20	*		2.944E-01	5.206E-01	7.853E-01	7.034E-02	0.375
TA-182	67.75			-2.965E-02	1.483E-01	2.281E-01	2.036E-02	-0.130
	100.10			8.410E-02	2.277E-01	3.373E-01	2.708E-02	0.249
	152.43			1.630E-03	4.056E-01	6.623E-01	3.689E-02	0.002
	222.10			-8.844E-02	4.187E-01	6.670E-01	3.847E-02	-0.133
	1001.68			-1.569E+00	2.501E+00	3.704E+00	2.566E-01	-0.424
	1121.28			6.961E-01	2.293E-01	4.175E-01	2.624E-02	1.667
	1189.05			7.528E-02	3.333E-01	5.586E-01	3.328E-02	0.135
	1221.42	*		-1.810E-01	2.242E-01	3.355E-01	2.026E-02	-0.540
RE-183	1230.97			-5.773E-01	5.787E-01	8.533E-01	5.173E-02	-0.677
	57.98			3.059E-01	2.922E-01	4.521E-01	4.160E-02	0.677
	59.32			-2.703E-02	1.592E-01	2.331E-01	2.143E-02	-0.116
	67.20			1.187E-01	2.805E-01	4.205E-01	3.754E-02	0.282
	162.32	*		3.484E-03	1.290E-01	2.103E-01	1.146E-02	0.017
	208.81	+		3.863E+00	1.739E+00	2.204E+00	1.253E-01	1.753
RE-184	291.72			-2.603E-01	1.273E+00	1.840E+00	1.099E-01	-0.141
	57.98			1.120E+00	1.070E+00	1.656E+00	1.524E-01	0.677
	59.32			-9.892E-02	5.825E-01	8.532E-01	7.842E-02	-0.116

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		67.20		4.347E-01	1.027E+00	1.539E+00	1.374E-01	0.282
		161.27		1.079E-01	4.179E-01	6.884E-01	3.758E-02	0.157
		216.55		-1.595E-01	3.226E-01	5.073E-01	2.909E-02	-0.314
		252.85	*	3.336E-02	2.905E-01	4.681E-01	2.765E-02	0.071
		318.01		-5.329E-01	5.033E-01	7.907E-01	4.701E-02	-0.674
		792.07		1.011E+00	1.128E+00	2.025E+00	1.249E-01	0.499
		903.28		-1.466E-01	1.193E+00	1.751E+00	1.269E-01	-0.084
		920.93		-1.440E-01	4.854E-01	7.816E-01	5.631E-02	-0.184
		59.72		-1.517E-01	4.301E-01	6.240E-01	5.726E-02	-0.243
		61.14		2.278E-01	2.299E-01	3.537E-01	3.219E-02	0.644
		69.30		-2.276E-01	4.191E-01	6.005E-01	5.359E-02	-0.379
		592.07		-1.536E+00	2.900E+00	4.502E+00	2.402E-01	-0.341
		646.12	*	-3.720E-02	4.866E-02	7.306E-02	3.683E-03	-0.509
		717.42		5.111E-02	1.078E+00	1.745E+00	9.508E-02	0.029
		874.81		-4.362E-01	6.347E-01	9.814E-01	6.884E-02	-0.445
RE-188		880.27		5.979E-01	8.110E-01	1.451E+00	1.026E-01	0.412
		155.03	*	1.378E-01	2.087E-01	3.492E-01	1.934E-02	0.395
		477.96		4.623E+00	3.744E+00	6.665E+00	3.752E-01	0.694
W-188	+	633.10		-1.685E+00	2.987E+00	4.572E+00	2.341E-01	-0.369
		63.58		1.103E+02	8.577E+01	1.153E+02	1.038E+01	0.957
IR-192		227.08		-4.045E+00	1.486E+01	2.357E+01	1.366E+00	-0.172
	*	290.67		-7.330E-01	9.988E+00	1.458E+01	8.708E-01	-0.050
	+	295.96		1.067E+00	1.871E-01	3.149E-01	1.909E-02	3.388
		308.46		-2.289E-02	1.250E-01	1.801E-01	1.086E-02	-0.127
AU-195		316.51	*	-1.423E-02	3.890E-02	6.390E-02	3.820E-03	-0.223
		468.07		3.614E-02	8.229E-02	1.231E-01	8.056E-03	0.294
		604.41		-1.205E-01	6.305E-01	8.629E-01	9.571E-02	-0.140
		612.46		1.540E+00	8.859E-01	1.478E+00	1.057E-01	1.042
		65.12		1.549E-01	2.415E-01	3.653E-01	3.273E-02	0.424
		66.83		5.297E-02	1.306E-01	1.957E-01	1.747E-02	0.271
	+	75.70		1.256E+00	2.892E-01	5.590E-01	5.069E-02	2.246
TL-200		98.88	*	1.784E-01	2.848E-01	4.277E-01	3.496E-02	0.417
	+	129.76		5.821E+00	3.475E+00	5.766E+00	3.413E-01	1.010
		367.94	*	4.307E-04	3.475E+00	Half-Life	too short	
		579.30		3.451E-03	3.475E+00	Half-Life	too short	
TL-201		828.27		8.668E-03	3.475E+00	Half-Life	too short	
		1205.75		9.195E-04	3.475E+00	Half-Life	too short	
		68.90		-6.152E+00	8.502E+00	1.207E+01	1.077E+00	-0.510
		70.82		1.596E+00	4.621E+00	6.893E+00	6.161E-01	0.231
TL-202		80.30		6.636E+00	1.038E+01	1.162E+01	1.081E+00	0.571
		135.34		4.117E+00	3.740E+01	6.157E+01	3.582E+00	0.067
		167.43	*	8.721E+00	1.029E+01	1.733E+01	9.382E-01	0.503
		68.90		-4.629E-01	6.396E-01	9.081E-01	8.103E-02	-0.510
HG-203		70.82		1.197E-01	3.467E-01	5.172E-01	4.623E-02	0.231
		80.30		4.980E-01	7.793E-01	8.722E-01	8.111E-02	0.571
		439.56	*	-1.862E-02	8.188E-02	1.318E-01	7.418E-03	-0.141
		70.83		5.032E-01	1.440E+00	2.146E+00	2.964E-01	0.234
		72.87		2.683E+00	9.519E-01	1.447E+00	1.945E-01	1.854
		82.60		-8.549E-01	1.583E+00	2.242E+00	3.201E-01	-0.381

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-207		279.20	*	3.814E-02	5.406E-02	8.324E-02	5.257E-03	0.458
		72.80		7.179E-01	2.613E-01	4.133E-01	3.710E-02	1.737
	+	74.97		6.937E-01	1.598E-01	2.879E-01	2.603E-02	2.410
	+	84.90		1.247E+00	5.312E-01	3.992E-01	3.840E-02	3.123
		569.67		-6.089E-03	3.758E-02	5.976E-02	3.244E-03	-0.102
TL-207		1063.62	*	-2.405E-02	5.765E-02	9.064E-02	6.009E-03	-0.265
		1770.23		8.573E-02	6.415E-01	9.409E-01	5.496E-02	0.091
		81.07		1.657E-01	3.507E-01	3.873E-01	3.620E-02	0.428
		83.78		-9.181E-02	1.754E-01	2.491E-01	2.375E-02	-0.369
		94.90		-1.664E-01	2.853E-01	4.631E-01	4.032E-02	-0.359
		122.32		-1.404E+00	2.100E+00	3.358E+00	2.334E-01	-0.418
		144.24		6.596E-01	7.818E-01	1.320E+00	9.420E-02	0.500
		154.21		2.054E-01	4.644E-01	7.713E-01	5.250E-02	0.266
	+	269.46		8.996E-01	4.005E-01	4.395E-01	2.728E-02	2.047
		323.87	*	3.973E-01	8.590E-01	1.295E+00	2.145E-01	0.307
	+	338.28		8.038E+00	2.784E+00	2.928E+00	3.098E-01	2.745
PO-209		445.03		-1.397E-01	2.518E+00	4.144E+00	4.216E-01	-0.034
		260.50		-1.043E+00	1.155E+01	1.837E+01	1.089E+00	-0.057
		262.80		1.100E+01	3.237E+01	5.098E+01	3.026E+00	0.216
		896.60	*	7.603E+00	7.598E+00	1.391E+01	1.008E+00	0.547
		46.50	*	4.048E-01	5.198E+00	8.608E+00	7.087E-01	0.047
PB-210		46.50	*	4.048E-01	5.198E+00	8.608E+00	7.087E-01	0.047
PO-210		46.50	*	4.048E-01	5.198E+00	8.608E+00	6.218E-01	0.047
PB-211		404.84	*	-1.407E+00	1.445E+00	1.762E+00	1.098E+00	-0.798
BI-212		427.08		-2.740E-01	2.286E+00	3.743E+00	2.313E+00	-0.073
		831.96		-9.134E-01	1.452E+00	1.969E+00	1.229E+00	-0.464
	+	727.18	*	7.428E-01	5.464E-01	7.134E-01	5.365E-02	1.041
		785.46		-6.726E-01	2.078E+00	3.395E+00	2.072E-01	-0.198
		1620.62		-3.814E-01	1.247E+00	1.958E+00	1.201E-01	-0.195
PO-215		81.07		1.657E-01	3.507E-01	3.873E-01	3.620E-02	0.428
		83.78		-9.181E-02	1.754E-01	2.491E-01	2.375E-02	-0.369
		94.90		-1.664E-01	2.853E-01	4.631E-01	4.032E-02	-0.359
		122.32		-1.404E+00	2.100E+00	3.358E+00	2.334E-01	-0.418
		144.24		6.596E-01	7.818E-01	1.320E+00	9.420E-02	0.500
		154.21		2.054E-01	4.644E-01	7.713E-01	5.250E-02	0.266
	+	269.46		8.996E-01	4.005E-01	4.395E-01	2.728E-02	2.047
		323.87	*	3.973E-01	8.590E-01	1.295E+00	2.145E-01	0.307
	+	338.28		8.038E+00	2.784E+00	2.928E+00	3.098E-01	2.745
		445.03		-1.397E-01	2.518E+00	4.144E+00	4.216E-01	-0.034
	+	271.23		1.154E+00	5.175E-01	5.547E-01	4.557E-02	2.081
RN-219		401.81	*	1.433E-01	4.771E-01	8.064E-01	1.089E-01	0.178
RN-220		549.76	*	2.659E+01	3.252E+01	5.629E+01	3.094E+00	0.472
RA-223		81.07		1.657E-01	3.507E-01	3.873E-01	3.620E-02	0.428
		83.78		-9.181E-02	1.754E-01	2.491E-01	2.375E-02	-0.369
		94.90		-1.664E-01	2.853E-01	4.631E-01	4.032E-02	-0.359
		122.32		-1.404E+00	2.100E+00	3.358E+00	2.334E-01	-0.418
		144.24		6.596E-01	7.818E-01	1.320E+00	9.420E-02	0.500
		154.21		2.054E-01	4.644E-01	7.713E-01	5.250E-02	0.266
	+	269.46		8.996E-01	4.005E-01	4.395E-01	2.728E-02	2.047

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AC-227		323.87	*	3.973E-01	8.590E-01	1.295E+00	2.145E-01	0.307
	+	338.28		8.038E+00	2.784E+00	2.928E+00	3.098E-01	2.745
		445.03		-1.397E-01	2.518E+00	4.144E+00	4.216E-01	-0.034
		79.80		1.774E+00	2.708E+00	3.011E+00	6.555E-01	0.589
		236.00		2.115E+00	4.359E-01	6.692E-01	7.009E-02	3.160
		256.20	*	2.222E-01	4.759E-01	7.787E-01	1.091E-01	0.285
		286.10		1.346E-01	1.759E+00	2.975E+00	3.465E-01	0.045
TH-227	+	299.80		4.933E+00	2.671E+00	3.140E+00	5.133E-01	1.571
		304.40		-8.137E-01	2.148E+00	3.530E+00	6.126E-01	-0.231
		334.20		6.994E-01	3.651E+00	4.294E+00	7.886E-01	0.163
		79.80		1.774E+00	2.709E+00	3.011E+00	6.637E-01	0.589
	+	94.00		9.519E+00	4.538E+00	4.346E+00	9.503E-01	2.190
		236.00		2.115E+00	4.217E-01	6.692E-01	6.078E-02	3.160
		256.20	*	2.222E-01	4.763E-01	7.787E-01	1.319E-01	0.285
TH-229		286.10		1.346E-01	1.764E+00	2.975E+00	2.980E+00	0.045
	+	299.80		4.933E+00	2.671E+00	3.140E+00	5.133E-01	1.571
		304.40		-8.137E-01	2.148E+00	3.530E+00	6.126E-01	-0.231
		334.20		6.994E-01	3.651E+00	4.294E+00	7.886E-01	0.163
	+	85.43		1.230E+00	5.243E-01	4.106E-01	3.967E-02	2.996
		88.47		4.842E-01	2.000E-01	2.439E-01	2.387E-02	1.985
		100.00		9.887E-02	2.353E-01	3.496E-01	2.810E-02	0.283
PA-231		193.63	*	-5.465E-01	5.943E-01	9.191E-01	5.135E-02	-0.595
		210.97		2.156E+00	1.015E+00	1.606E+00	9.155E-02	1.343
		283.67	*	-1.259E+00	1.869E+00	2.844E+00	3.940E-01	-0.443
	+	301.29		1.973E+00	1.040E+00	1.247E+00	1.316E-01	1.582
TH-231		81.07		1.657E-01	3.507E-01	3.873E-01	3.620E-02	0.428
		83.78		-9.181E-02	1.754E-01	2.491E-01	2.375E-02	-0.369
		94.90		-1.664E-01	2.853E-01	4.631E-01	4.032E-02	-0.359
		122.32		-1.404E+00	2.100E+00	3.358E+00	2.334E-01	-0.418
U-231		144.24		6.596E-01	7.818E-01	1.320E+00	9.420E-02	0.500
		154.21		2.054E-01	4.644E-01	7.713E-01	5.250E-02	0.266
	+	269.46		8.996E-01	4.005E-01	4.395E-01	2.728E-02	2.047
		323.87	*	3.973E-01	8.590E-01	1.295E+00	2.145E-01	0.307
	+	338.28		8.038E+00	2.784E+00	2.928E+00	3.098E-01	2.745
		445.03		-1.397E-01	2.518E+00	4.144E+00	4.216E-01	-0.034
	+	84.21		4.204E+01	1.792E+01	1.272E+01	1.217E+00	3.304
PA-233	+	92.29		1.117E+01	4.832E+00	5.434E+00	4.948E-01	2.055
		95.87	*	-5.543E-01	1.620E+00	2.313E+00	1.982E-01	-0.240
		108.00		-9.381E-01	2.825E+00	4.602E+00	3.316E-01	-0.204
	+	75.28		2.024E+01	5.324E+00	8.852E+00	1.380E+00	2.287
PA-234	+	86.59		1.074E+01	5.328E+00	3.458E+00	9.408E-01	3.106
	+	300.12		1.375E+00	7.338E-01	8.791E-01	1.188E-01	1.564
		311.98	*	3.631E-02	7.373E-02	1.207E-01	7.615E-03	0.301
		340.50		2.086E+00	9.500E-01	1.403E+00	3.225E-01	1.487
		398.62		5.258E-02	2.446E+00	4.068E+00	1.050E+00	0.013
		415.76		-1.445E+00	1.911E+00	2.966E+00	6.090E-01	-0.487
	+	63.00		3.167E+00	2.495E+00	3.422E+00	5.382E-01	0.925
		94.67		2.873E-02	2.085E-01	3.470E-01	4.332E-02	0.083
		98.44		1.213E-02	1.183E-01	1.727E-01	9.624E-02	0.070

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		99.86		2.916E-01	5.974E-01	8.905E-01	7.174E-02	0.327
		111.00		1.156E-01	2.133E-01	3.585E-01	3.927E-02	0.322
		131.20		-2.385E-02	1.379E-01	1.964E-01	1.157E-02	-0.121
		152.70		-6.279E-02	3.957E-01	6.417E-01	1.009E-01	-0.098
	+	186.00		4.515E+00	2.404E+00	2.861E+00	8.728E-01	1.578
		226.40		-2.372E-01	4.650E-01	7.269E-01	8.400E-02	-0.326
		227.20		-1.241E-01	4.975E-01	7.898E-01	4.576E-02	-0.157
		248.90		-2.009E-01	9.908E-01	1.569E+00	3.375E-01	-0.128
	+	293.70		6.652E+00	1.533E+00	1.957E+00	3.160E-01	3.399
		369.80		-4.995E-01	1.020E+00	1.642E+00	3.415E-01	-0.304
		568.70		-6.554E-01	1.215E+00	1.872E+00	1.017E-01	-0.350
		569.50		-5.405E-02	3.334E-01	5.303E-01	2.879E-02	-0.102
		574.00		6.628E-01	1.884E+00	3.153E+00	1.706E-01	0.210
		699.00		-3.802E-01	8.957E-01	1.371E+00	2.443E-01	-0.277
		706.10		7.466E-01	1.272E+00	2.086E+00	9.192E-01	0.358
		733.00		-5.531E-01	5.839E-01	6.945E-01	1.473E-01	-0.796
		742.81		8.596E-01	1.766E+00	2.810E+00	1.880E+00	0.306
		796.30		9.214E-01	1.024E+00	1.795E+00	4.736E-01	0.513
		805.60		9.185E-01	1.156E+00	2.012E+00	6.052E-01	0.456
		819.60		-1.454E-01	1.256E+00	2.076E+00	7.803E-01	-0.070
		826.30		-4.089E-02	8.913E-01	1.484E+00	6.588E-01	-0.028
		831.60		-3.877E-01	6.828E-01	1.036E+00	3.037E-01	-0.374
		876.40		2.157E-01	9.209E-01	1.527E+00	1.567E+00	0.141
		880.51		1.838E-01	2.908E-01	5.154E-01	3.646E-02	0.357
		883.24		-2.148E-01	3.354E-01	4.667E-01	3.129E-01	-0.460
		899.00		-6.814E-01	9.433E-01	1.371E+00	5.960E-01	-0.497
		925.00		8.978E-01	1.176E+00	2.112E+00	1.519E-01	0.425
		926.50		1.140E-01	1.769E-01	3.107E-01	7.713E-02	0.367
		946.00	*	-4.045E-02	3.259E-01	5.340E-01	9.680E-02	-0.076
		949.00		2.773E-01	4.963E-01	8.680E-01	6.183E-02	0.319
		980.50		-2.601E-01	8.003E-01	1.212E+00	8.498E-02	-0.215
PA-234M		1394.10		2.678E-02	1.392E+00	2.261E+00	1.466E+00	0.012
		766.42		1.833E+01	1.741E+01	2.358E+01	1.187E+01	0.778
U-235		1001.03	*	-1.515E+00	5.019E+00	8.041E+00	6.873E-01	-0.188
		89.95		1.311E+00	1.964E+00	2.139E+00	6.657E-01	0.613
	+	93.35		2.962E+00	1.505E+00	1.423E+00	4.003E-01	2.081
		105.00		2.322E-01	1.209E+00	2.009E+00	5.933E-01	0.116
		143.76	*	2.430E-01	2.433E-01	4.087E-01	6.647E-02	0.594
		163.35		-2.982E-01	5.535E-01	8.763E-01	1.566E-01	-0.340
	+	185.71		1.672E-01	7.358E-02	1.060E-01	5.868E-03	1.577
		205.31		1.964E-01	7.040E-01	1.010E+00	1.811E-01	0.195
NP-236		94.67		2.413E-02	1.582E-01	2.634E-01	2.302E-02	0.092
		98.44		9.192E-03	8.930E-02	1.306E-01	1.074E-02	0.070
		111.00		8.742E-02	1.612E-01	2.712E-01	1.882E-02	0.322
		160.31	*	-2.508E-03	9.587E-02	1.561E-01	8.540E-03	-0.016
NP-239		99.55		3.155E-01	1.916E-01	3.013E-01	2.439E-02	1.047
		117.00	*	1.107E-02	2.194E-01	3.621E-01	2.339E-02	0.031
	+	209.75		3.016E+00	1.358E+00	1.714E+00	9.756E-02	1.760
		228.18		-6.407E-02	2.666E-01	4.235E-01	2.456E-02	-0.151

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	277.60		3.337E-01	2.993E-01	3.706E-01	2.210E-02	0.900
		334.30		3.877E-01	2.067E+00	2.432E+00	1.434E-01	0.159
AM-241		59.54	*	-3.730E-02	2.219E-01	3.250E-01	3.177E-02	-0.115
CM-243		99.55		3.247E-01	1.972E-01	3.101E-01	2.509E-02	1.047
		103.76	*	3.568E-02	1.089E-01	1.823E-01	1.389E-02	0.196
		117.00		1.139E-02	2.258E-01	3.725E-01	2.407E-02	0.031
	+	209.75		2.973E+00	1.339E+00	1.689E+00	9.618E-02	1.760
		228.18		-6.475E-02	2.694E-01	4.279E-01	2.482E-02	-0.151
	+	277.60		3.364E-01	3.018E-01	3.736E-01	2.229E-02	0.900
AM-246		798.80		-3.017E-01	1.562E-01	2.115E-01	1.319E-02	-1.426
		1036.00		1.490E-02	3.115E-01	5.171E-01	3.502E-02	0.029
		1062.04		3.461E-02	2.464E-01	4.125E-01	2.738E-02	0.084
		1078.86	*	-4.548E-02	1.446E-01	2.292E-01	1.500E-02	-0.198
CM-247	+	278.00		1.384E+00	1.241E+00	1.553E+00	9.262E-02	0.891
		287.40		5.549E-01	1.441E+00	2.473E+00	1.477E-01	0.224
		402.60	*	-4.696E-03	4.247E-02	7.001E-02	3.901E-03	-0.067
CF-249		252.85		1.247E-01	1.086E+00	1.749E+00	1.033E-01	0.071
		333.44		2.393E-01	2.825E-01	3.169E-01	1.870E-02	0.755
		387.95	*	4.720E-03	4.863E-02	8.133E-02	4.536E-03	0.058
CF-251		176.60	*	1.370E-01	1.485E-01	2.507E-01	1.371E-02	0.547
		227.00		-1.225E-01	4.413E-01	6.996E-01	4.053E-02	-0.175
		285.00		-7.687E-01	1.968E+00	3.249E+00	1.940E-01	-0.237

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]G243624009  *
* Acquisition date   : 7-JAN-2010 15:51:06 Detector SN#             *
* Detector ID        : GAM06                                           *
* Geometry           : CAN                                             *
* Elapsed live time  : 0 02:00:00.00                                     *
* Elapsed real time  : 0 02:00:01.19                                     *
* Sensitivity        : 5.000                                           *
* Energy tolerance   : 1.500                                           *
* Abundance limit    : 75.000                                           *
* Half life ratio    : 8.000                                           *
*****
*                               SAMPLE DATA                              *
*                               *                                         *
* Sample date       : 22-DEC-2009 12:00:00 Nuclide Library : SOLID      *
* Sample ID         : G243624009 Analyst initials: MXR1              *
* Batch Number      : 937704 Sample Quantity : 1.2630E+02 GRAM        *
* Recovery          : 1.00000 Carrier Weight : 0.00000                *
*****
*                               QC DATA                                  *
*                               *                                         *
* Standard Weight   : 0.00000                                           *
* CALIB. DATE/TIME  : 4-FEB-2009 13:05:54 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	1.856E+01	2.066E+00	6.075E-01	0.000E+00
BA-137M	1.423E-01	7.351E-02	7.303E-02	0.000E+00
CS-137	1.504E-01	7.771E-02	7.720E-02	0.000E+00
TL-208	5.199E-01	9.527E-02	7.683E-02	0.000E+00
BI-211	3.569E+00	4.868E-01	4.034E-01	0.000E+00
PB-212	1.588E+00	1.653E-01	1.074E-01	0.000E+00
PO-212	1.588E+00	1.653E-01	1.074E-01	0.000E+00
BI-214	1.215E+00	1.922E-01	1.225E-01	0.000E+00
PB-214	1.241E+00	1.808E-01	1.420E-01	0.000E+00
PO-214	1.241E+00	1.808E-01	1.420E-01	0.000E+00
PO-216	1.588E+00	1.653E-01	1.074E-01	0.000E+00
PO-218	1.241E+00	1.808E-01	1.420E-01	0.000E+00
RA-224	4.299E+00	1.216E+00	1.223E+00	0.000E+00
RA-226	1.215E+00	1.922E-01	1.225E-01	0.000E+00
AC-228	1.531E+00	3.177E-01	2.365E-01	0.000E+00
RA-228	1.531E+00	3.177E-01	2.365E-01	0.000E+00
TH-228	1.614E+00	1.680E-01	1.092E-01	0.000E+00
TH-230	1.215E+00	1.922E-01	1.225E-01	0.000E+00
TH-232	1.531E+00	3.177E-01	2.365E-01	0.000E+00
TH-234	2.717E+00	2.112E+00	2.922E+00	0.000E+00
U-234	1.215E+00	1.922E-01	1.225E-01	0.000E+00
NP-237	1.611E+00	7.476E-01	5.043E-01	0.000E+00
U-238	2.717E+00	2.112E+00	2.922E+00	0.000E+00
AM-243	3.864E-01	8.724E-02	1.137E-01	0.000E+00
ANH-511	1.951E-01	7.855E-02	5.331E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	3.801E-01	3.918E-01	7.102E-01	0.000E+00 NOT IDENT.
NA-22	4.503E-02	4.876E-02	8.922E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.330E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.107E-02	3.158E-02	4.896E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	6.628E-02	9.166E-02	0.000E+00	NOT IDENT.
SC-46	-1.521E-02	4.036E-02	6.635E-02	0.000E+00	FAIL ABUN
V-48	2.993E-03	7.198E-02	1.229E-01	0.000E+00	NOT IDENT.
CR-51	2.210E-02	4.274E-01	7.307E-01	0.000E+00	NOT IDENT.
MN-52	2.586E-01	2.577E-01	4.955E-01	0.000E+00	NOT IDENT.
MN-54	-3.072E-02	4.427E-02	5.909E-02	0.000E+00	NOT IDENT.
CO-56	6.503E-03	4.424E-02	7.370E-02	0.000E+00	NOT IDENT.
CO-57	-2.422E-02	2.997E-02	5.042E-02	0.000E+00	NOT IDENT.
CO-58	-1.060E-02	4.243E-02	7.143E-02	0.000E+00	NOT IDENT.
FE-59	-1.205E-01	1.056E-01	1.557E-01	0.000E+00	NOT IDENT.
CO-60	1.634E-03	4.469E-02	7.452E-02	0.000E+00	NOT IDENT.
ZN-65	9.436E-02	1.090E-01	1.769E-01	0.000E+00	NOT IDENT.
GE-68	3.991E-01	1.233E+00	2.157E+00	0.000E+00	NOT IDENT.
AS-73	-8.002E-01	1.131E+00	1.978E+00	0.000E+00	NOT IDENT.
AS-74	-4.652E-02	1.096E-01	1.781E-01	0.000E+00	NOT IDENT.
SE-75	-2.829E-03	5.714E-02	8.290E-02	0.000E+00	NOT IDENT.
BR-77	7.641E+00	1.711E+01	2.996E+01	0.000E+00	FAIL ABUN
SR-82	-5.919E-01	4.052E-01	5.993E-01	0.000E+00	NOT IDENT.
RB-83	2.566E-02	8.326E-02	1.445E-01	0.000E+00	NOT IDENT.
RB-84	-3.013E-02	7.236E-02	1.185E-01	0.000E+00	NOT IDENT.
KR-85	0.000E+00	9.175E+00	1.595E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.756E-02	8.270E-02	0.000E+00	NOT IDENT.
RB-86	1.465E-01	7.968E-01	1.374E+00	0.000E+00	NOT IDENT.
Y-88	7.904E-05	3.984E-02	6.694E-02	0.000E+00	NOT IDENT.
ZR-88	-2.928E-03	3.619E-02	6.225E-02	0.000E+00	NOT IDENT.
Y-91	4.547E+00	2.066E+01	3.531E+01	0.000E+00	NOT IDENT.
NB-94	-1.682E-02	4.027E-02	6.460E-02	0.000E+00	NOT IDENT.
NB-95	7.041E-02	5.385E-02	8.902E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.857E-01	3.075E-01	0.000E+00	NOT IDENT.
ZR-95	5.120E-02	7.479E-02	1.321E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.577E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	6.957E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-3.081E+00	1.869E+01	3.051E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.973E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.369E-02	4.000E-02	6.623E-02	0.000E+00	NOT IDENT.
RH-102	2.415E-02	3.380E-02	6.050E-02	0.000E+00	NOT IDENT.
RU-103	-4.942E-02	4.694E-02	7.273E-02	0.000E+00	FAIL ABUN
RH-106	-1.403E-01	3.485E-01	5.628E-01	0.000E+00	FAIL ABUN
RU-106	-1.403E-01	3.482E-01	5.628E-01	0.000E+00	FAIL ABUN
AG-108M	3.396E-02	3.550E-02	6.485E-02	0.000E+00	NOT IDENT.
CD-109	0.000E+00	1.507E+00	1.919E+00	0.000E+00	NOT IDENT.
AG-110M	4.733E-02	4.569E-02	7.388E-02	0.000E+00	NOT IDENT.
IN-111	-3.124E-01	1.754E+00	2.534E+00	0.000E+00	NOT IDENT.
IN-113M	-4.030E-02	5.291E-02	8.717E-02	0.000E+00	NOT IDENT.
SN-113	-4.030E-02	5.291E-02	8.717E-02	0.000E+00	NOT IDENT.
IN-114M	1.735E-01	2.293E-01	3.573E-01	0.000E+00	NOT IDENT.
CD-115	4.437E+00	1.692E+01	2.928E+01	0.000E+00	NOT IDENT.
SN-117M	3.600E-03	6.809E-02	1.172E-01	0.000E+00	NOT IDENT.
SB-122	6.776E-01	3.126E+00	5.366E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.523E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-8.590E-04	3.342E-02	5.734E-02	0.000E+00	NOT IDENT.
I-124	8.359E-02	1.081E+00	1.583E+00	0.000E+00	NOT IDENT.
SB-124	4.701E-03	8.281E-02	1.415E-01	0.000E+00	FAIL ABUN
SB-125	-1.019E-02	9.946E-02	1.698E-01	0.000E+00	FAIL ABUN
TE-125M	3.970E-02	1.073E+01	1.875E+01	0.000E+00	NOT IDENT.
I-126	1.122E-02	2.615E-01	3.786E-01	0.000E+00	NOT IDENT.
SB-126	8.706E-03	1.851E-01	2.794E-01	0.000E+00	FAIL ABUN
SN-126	1.528E-01	1.331E-01	1.843E-01	0.000E+00	FAIL ABUN
SB-127	-7.059E-01	1.692E+00	2.697E+00	0.000E+00	NOT IDENT.
XE-127	-7.924E-03	6.157E-02	9.577E-02	0.000E+00	NOT IDENT.
I-131	2.652E-02	1.404E-01	2.466E-01	0.000E+00	NOT IDENT.
TE-132	-2.436E-01	9.978E-01	1.660E+00	0.000E+00	NOT IDENT.
BA-133	-2.997E-03	5.454E-02	8.204E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.564E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.647E-02	5.076E-02	9.258E-02	0.000E+00	NOT IDENT.
CS-135	0.000E+00	2.082E-01	3.496E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	8.348E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.514E-02	1.055E-01	1.752E-01	0.000E+00	FAIL ABUN
CE-139	-5.318E-03	3.452E-02	5.877E-02	0.000E+00	NOT IDENT.
BA-140	-1.694E-01	3.145E-01	5.021E-01	0.000E+00	NOT IDENT.
LA-140	-8.267E-02	9.535E-02	1.378E-01	0.000E+00	FAIL ABUN
CE-141	-4.822E-02	7.310E-02	1.226E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.830E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	8.324E-02	2.618E-01	4.042E-01	0.000E+00	NOT IDENT.
PM-144	2.835E-02	3.943E-02	6.956E-02	0.000E+00	NOT IDENT.
PR-144	1.922E+00	2.673E+00	4.716E+00	0.000E+00	NOT IDENT.

PM-146	3.641E-02	5.091E-02	9.114E-02	0.000E+00	NOT IDENT.
ND-147	-1.483E-01	6.715E-01	1.118E+00	0.000E+00	NOT IDENT.
PM-149	-1.140E+00	1.423E+02	2.504E+02	0.000E+00	NOT IDENT.
EU-152	-6.459E-02	1.281E-01	1.860E-01	0.000E+00	FAIL ABUN
GD-153	1.627E-02	9.797E-02	1.524E-01	0.000E+00	NOT IDENT.
EU-154	1.243E-01	1.363E-01	2.486E-01	0.000E+00	NOT IDENT.
EU-155	4.483E-02	1.206E-01	2.139E-01	0.000E+00	FAIL ABUN
TB-160	6.803E-02	1.433E-01	2.570E-01	0.000E+00	NOT IDENT.
HO-166M	-7.728E-03	7.085E-02	1.166E-01	0.000E+00	FAIL ABUN
TM-171	1.533E+01	3.862E+01	6.164E+01	0.000E+00	NOT IDENT.
LU-176	-8.779E-03	3.142E-02	4.693E-02	0.000E+00	NOT IDENT.
LU-177	0.000E+00	2.090E+00	2.748E+00	0.000E+00	FAIL ABUN
LU-177M	-1.981E-01	2.124E-01	3.445E-01	0.000E+00	FAIL ABUN
HF-181	-3.793E-02	5.041E-02	8.127E-02	0.000E+00	NOT IDENT.
W-181	2.944E-01	5.102E-01	8.208E-01	0.000E+00	NOT IDENT.
TA-182	-1.810E-01	2.197E-01	3.362E-01	0.000E+00	NOT IDENT.
RE-183	3.484E-03	1.264E-01	2.171E-01	0.000E+00	FAIL ABUN
RE-184	3.336E-02	2.847E-01	4.801E-01	0.000E+00	NOT IDENT.
OS-185	-3.720E-02	4.769E-02	7.392E-02	0.000E+00	NOT IDENT.
RE-188	1.378E-01	2.045E-01	3.606E-01	0.000E+00	NOT IDENT.
W-188	-7.330E-01	9.788E+00	1.492E+01	0.000E+00	FAIL ABUN
IR-192	-1.423E-02	3.813E-02	6.532E-02	0.000E+00	FAIL ABUN
AU-195	1.784E-01	2.791E-01	4.444E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	1.011E+03	0.000E+00	0.000E+00	SHORT HLIF
TL-201	8.721E+00	1.008E+01	1.788E+01	0.000E+00	NOT IDENT.
TL-202	-1.862E-02	8.025E-02	1.341E-01	0.000E+00	NOT IDENT.
HG-203	3.814E-02	5.298E-02	8.524E-02	0.000E+00	NOT IDENT.
BI-207	-2.405E-02	5.649E-02	9.102E-02	0.000E+00	FAIL ABUN
TL-207	3.973E-01	8.419E-01	1.323E+00	0.000E+00	FAIL ABUN
PO-209	7.603E+00	7.446E+00	1.400E+01	0.000E+00	NOT IDENT.
BI-210	4.048E-01	5.094E+00	9.038E+00	0.000E+00	NOT IDENT.
PB-210	4.048E-01	5.094E+00	9.038E+00	0.000E+00	NOT IDENT.
PO-210	4.048E-01	5.094E+00	9.038E+00	0.000E+00	NOT IDENT.
PB-211	-1.407E+00	1.416E+00	1.795E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.355E-01	7.205E-01	0.000E+00	FAIL ABUN
PO-215	3.973E-01	8.419E-01	1.323E+00	0.000E+00	FAIL ABUN
RN-219	1.433E-01	4.675E-01	8.214E-01	0.000E+00	FAIL ABUN
RN-220	2.659E+01	3.187E+01	5.708E+01	0.000E+00	NOT IDENT.
RA-223	3.973E-01	8.419E-01	1.323E+00	0.000E+00	FAIL ABUN
AC-227	2.222E-01	4.664E-01	7.985E-01	0.000E+00	FAIL ABUN
TH-227	2.222E-01	4.668E-01	7.985E-01	0.000E+00	FAIL ABUN
TH-229	-5.465E-01	5.824E-01	9.461E-01	0.000E+00	FAIL ABUN
PA-231	-1.259E+00	1.831E+00	2.912E+00	0.000E+00	FAIL ABUN
TH-231	3.973E-01	8.419E-01	1.323E+00	0.000E+00	FAIL ABUN
U-231	-5.543E-01	1.587E+00	2.405E+00	0.000E+00	FAIL ABUN
PA-233	3.631E-02	7.225E-02	1.234E-01	0.000E+00	FAIL ABUN
PA-234	-4.045E-02	3.194E-01	5.372E-01	0.000E+00	FAIL ABUN
PA-234M	-1.515E+00	4.919E+00	8.083E+00	0.000E+00	NOT IDENT.
U-235	2.430E-01	2.384E-01	4.225E-01	0.000E+00	FAIL ABUN
NP-236	-2.508E-03	9.395E-02	1.611E-01	0.000E+00	NOT IDENT.
NP-239	1.107E-02	2.150E-01	3.754E-01	0.000E+00	FAIL ABUN
AM-241	-3.730E-02	2.175E-01	3.401E-01	0.000E+00	NOT IDENT.
CM-243	3.568E-02	1.067E-01	1.893E-01	0.000E+00	FAIL ABUN
AM-246	-4.548E-02	1.417E-01	2.302E-01	0.000E+00	NOT IDENT.
CM-247	-4.696E-03	4.162E-02	7.132E-02	0.000E+00	FAIL ABUN
CF-249	4.720E-03	4.765E-02	8.289E-02	0.000E+00	NOT IDENT.
CF-251	1.370E-01	1.456E-01	2.584E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624009.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:51:06.
Sample ID          : G243624009 Sample quantity : 1.26300E+02 GRAM
Detector name      : GAM06 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.19 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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	641	10.67*	9.624E-01	1.856E+01	1.856E+01	11.36
BA-137M	661.65	83	89.98*	1.938E+00	1.421E-01	1.423E-01	52.72
CS-137	661.65	83	85.12*	1.938E+00	1.503E-01	1.504E-01	52.72
TL-208	277.35	62	6.80	3.902E+00	6.919E-01	6.919E-01	90.14
	510.84	158	21.60	2.408E+00	9.030E-01	9.030E-01	41.93
	583.14	318	84.20*	2.158E+00	5.199E-01	5.199E-01	18.70
	860.37	52	12.46	1.539E+00	8.119E-01	8.119E-01	72.04
BI-211	72.87	-----	1.27	3.913E+00	-----	Line Not Found	-----
	351.07	504	12.94*	3.242E+00	3.569E+00	3.569E+00	13.92
PB-212	74.81	352	10.70	4.099E+00	2.384E+00	2.384E+00	24.86
	77.11	530	18.00	4.326E+00	2.023E+00	2.023E+00	17.78
	87.30	-----	8.00	5.164E+00	-----	Line Not Found	-----
	238.63	1041	44.60*	4.367E+00	1.588E+00	1.588E+00	10.62
	300.09	112	3.41	3.669E+00	2.662E+00	2.662E+00	52.29
PO-212	74.81	352	10.70	4.099E+00	2.384E+00	2.384E+00	24.86
	77.11	530	18.00	4.326E+00	2.023E+00	2.023E+00	17.78
	87.30	-----	8.00	5.164E+00	-----	Line Not Found	-----
	115.19	-----	0.60	6.030E+00	-----	Line Not Found	-----
	238.63	1041	44.60*	4.367E+00	1.588E+00	1.588E+00	10.62
	300.09	112	3.41	3.669E+00	2.662E+00	2.662E+00	52.29
BI-214	609.31	394	46.30*	2.080E+00	1.215E+00	1.215E+00	16.14
	1120.29	117	15.10	1.212E+00	1.907E+00	1.907E+00	28.91
	1764.49	81	15.80	8.403E-01	1.802E+00	1.802E+00	27.41
PB-214	74.81	352	6.21	4.099E+00	4.107E+00	4.107E+00	24.20
	77.11	530	10.50	4.326E+00	3.468E+00	3.468E+00	19.35
	87.30	-----	4.67	5.164E+00	-----	Line Not Found	-----
	241.98	247	7.49	4.326E+00	2.267E+00	2.267E+00	29.40
	295.21	333	19.20	3.718E+00	1.386E+00	1.386E+00	18.59
	351.92	504	37.20*	3.242E+00	1.241E+00	1.241E+00	14.87
PO-214	74.81	352	6.21	4.099E+00	4.107E+00	4.107E+00	24.20
	77.11	530	10.50	4.326E+00	3.468E+00	3.468E+00	19.35
	87.30	-----	4.67	5.164E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-216	241.98	247	7.49	4.326E+00	2.267E+00	2.267E+00	29.40
	295.21	333	19.20	3.718E+00	1.386E+00	1.386E+00	18.59
	351.92	504	37.20*	3.242E+00	1.241E+00	1.241E+00	14.87
	74.81	352	10.70	4.099E+00	2.384E+00	2.384E+00	24.86
	77.11	530	18.00	4.326E+00	2.023E+00	2.023E+00	17.78
	87.30	-----	8.00	5.164E+00	-----	Line Not Found	-----
PO-218	238.63	1041	44.60*	4.367E+00	1.588E+00	1.588E+00	10.62
	300.09	112	3.41	3.669E+00	2.662E+00	2.662E+00	52.29
	74.81	352	6.21	4.099E+00	4.107E+00	4.107E+00	24.20
	77.11	530	10.50	4.326E+00	3.468E+00	3.468E+00	19.35
	87.30	-----	4.67	5.164E+00	-----	Line Not Found	-----
	241.98	247	7.49	4.326E+00	2.267E+00	2.267E+00	29.40
RA-224	295.21	333	19.20	3.718E+00	1.386E+00	1.386E+00	18.59
	351.92	504	37.20*	3.242E+00	1.241E+00	1.241E+00	14.87
	240.98	247	3.95*	4.326E+00	4.299E+00	4.299E+00	28.86
	609.31	394	46.30*	2.080E+00	1.215E+00	1.215E+00	16.14
	1120.29	117	15.10	1.212E+00	1.907E+00	1.907E+00	28.91
	1764.49	81	15.80	8.403E-01	1.802E+00	1.802E+00	27.41
AC-228	338.32	247	11.40	3.344E+00	1.925E+00	1.925E+00	52.45
	911.07	209	27.70*	1.462E+00	1.531E+00	1.531E+00	21.17
	969.11	131	16.60	1.382E+00	1.701E+00	1.701E+00	34.01
	338.32	247	11.40	3.344E+00	1.925E+00	1.925E+00	52.45
	911.07	209	27.70*	1.462E+00	1.531E+00	1.531E+00	21.17
	969.11	131	16.60	1.382E+00	1.701E+00	1.701E+00	34.01
TH-228	74.81	352	10.70	4.099E+00	2.384E+00	2.422E+00	23.06
	77.11	530	18.00	4.326E+00	2.023E+00	2.056E+00	17.78
	87.30	-----	8.00	5.164E+00	-----	Line Not Found	-----
	238.63	1041	44.60*	4.367E+00	1.588E+00	1.614E+00	10.62
	300.09	112	3.41	3.669E+00	2.662E+00	2.705E+00	78.36
	609.31	394	46.30*	2.080E+00	1.215E+00	1.215E+00	16.14
TH-230	1120.29	117	15.10	1.212E+00	1.907E+00	1.907E+00	28.91
	1764.49	81	15.80	8.403E-01	1.802E+00	1.802E+00	27.41
	338.32	247	11.40	3.344E+00	1.925E+00	1.925E+00	33.51
	911.07	209	27.70*	1.462E+00	1.531E+00	1.531E+00	21.17
	969.11	131	16.60	1.382E+00	1.701E+00	1.701E+00	34.01
	63.29	94	3.80*	2.701E+00	2.717E+00	2.717E+00	79.32
TH-234	92.38	246	5.41	5.476E+00	2.463E+00	2.463E+00	46.10
	609.31	394	46.30*	2.080E+00	1.215E+00	1.215E+00	16.14
	1120.29	117	15.10	1.212E+00	1.907E+00	1.907E+00	28.91
	1764.49	81	15.80	8.403E-01	1.802E+00	1.802E+00	27.41
	86.50	343	12.60*	5.028E+00	1.611E+00	1.611E+00	47.35
	95.87	-----	2.60	5.611E+00	-----	Line Not Found	-----
U-238	63.29	94	3.80*	2.701E+00	2.717E+00	2.717E+00	79.32
	92.38	246	5.41	5.476E+00	2.463E+00	2.463E+00	43.27
	74.67	352	66.00*	4.099E+00	3.864E-01	3.864E-01	23.04
	86.72	343	0.34	5.028E+00	6.042E+01	6.042E+01	42.62
	117.66	-----	0.55	6.042E+00	-----	Line Not Found	-----
	142.18	-----	0.13	5.887E+00	-----	Line Not Found	-----
ANH-511	511.00	158	100.00*	2.408E+00	1.951E-01	1.951E-01	41.09

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 2
Number of lines tentatively identified by NID 30 93.75%

Nuclide Type :

Nuclide	Hlfe	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.856E+01	1.856E+01	0.211E+01	11.36	
BA-137M	30.17Y	1.00	1.421E-01	1.423E-01	0.750E-01	52.72	
CS-137	30.17Y	1.00	1.503E-01	1.504E-01	0.793E-01	52.72	
TL-208	1.41E+10Y	1.00	5.199E-01	5.199E-01	0.972E-01	18.70	
BI-211	7.04E+08Y	1.00	3.569E+00	3.569E+00	0.497E+00	13.92	
PB-212	1.41E+10Y	1.00	1.588E+00	1.588E+00	0.169E+00	10.62	
PO-212	1.41E+10Y	1.00	1.588E+00	1.588E+00	0.169E+00	10.62	
BI-214	1600.00Y	1.00	1.215E+00	1.215E+00	0.196E+00	16.14	
PB-214	1600.00Y	1.00	1.241E+00	1.241E+00	0.185E+00	14.87	
PO-214	1600.00Y	1.00	1.241E+00	1.241E+00	0.185E+00	14.87	
PO-216	1.41E+10Y	1.00	1.588E+00	1.588E+00	0.169E+00	10.62	
PO-218	1600.00Y	1.00	1.241E+00	1.241E+00	0.185E+00	14.87	
RA-224	1.41E+10Y	1.00	4.299E+00	4.299E+00	1.241E+00	28.86	
RA-226	1600.00Y	1.00	1.215E+00	1.215E+00	0.196E+00	16.14	
AC-228	1.41E+10Y	1.00	1.531E+00	1.531E+00	0.324E+00	21.17	
RA-228	1.41E+10Y	1.00	1.531E+00	1.531E+00	0.324E+00	21.17	
TH-228	1.91Y	1.02	1.588E+00	1.614E+00	0.171E+00	10.62	
TH-230	4.47E+09Y	1.00	1.215E+00	1.215E+00	0.196E+00	16.14	
TH-232	1.41E+10Y	1.00	1.531E+00	1.531E+00	0.324E+00	21.17	
TH-234	4.47E+09Y	1.00	2.717E+00	2.717E+00	2.155E+00	79.32	
U-234	4.47E+09Y	1.00	1.215E+00	1.215E+00	0.196E+00	16.14	
NP-237	2.14E+06Y	1.00	1.611E+00	1.611E+00	0.763E+00	47.35	
U-238	4.47E+09Y	1.00	2.717E+00	2.717E+00	2.155E+00	79.32	
AM-243	7380.00Y	1.00	3.864E-01	3.864E-01	0.890E-01	23.04	
ANH-511	1.00E+09Y	1.00	1.951E-01	1.951E-01	0.802E-01	41.09	

Total Activity : 5.440E+01 5.442E+01

Grand Total Activity : 5.440E+01 5.442E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G243624009

Page : 5
Acquisition date : 7-JAN-2010 15:51:06

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.83	90	227	1.01	257.65	255	7	1.25E-02	59.4	6.02E+00	T
0	185.73	157	286	1.23	371.47	367	9	2.18E-02	43.6	5.18E+00	T
0	209.14	158	286	1.35	418.28	413	11	2.19E-02	44.7	4.79E+00	T
0	270.19	164	238	2.18	540.37	534	15	2.27E-02	44.1	3.98E+00	T
0	328.09	56	192	0.82	656.17	650	12	7.73E-03	****	3.42E+00	T
0	463.52	75	131	1.33	927.05	921	14	1.04E-02	69.3	2.60E+00	T
0	727.51	53	73	1.27	1455.03	1449	13	7.32E-03	73.2	1.79E+00	T
0	768.95	20	63	1.08	1537.91	1530	11	2.84E-03	****	1.70E+00	
0	839.87	31	25	2.95	1679.75	1675	9	4.32E-03	67.9	1.57E+00	
1	964.00	48	28	2.12	1927.99	1921	30	6.65E-03	58.9	1.39E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624009.CNF;1 *
* Acquisition date   : 7-JAN-2010 15:51:06.  Detector SN#      :             *
* Detector ID        : GAM06                      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 02:00:01.19             Half life ratio : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID          *
* Sample ID          : G243624009             Analyst initials: MXR1          *
* Batch Number       : 937704                 Sample Quantity : 1.26300E+02 GRAM *
*****
*                                     QC DATA                                *
*                                     *                                       *
* CALIB. DATE/TIME   : 4-FEB-2009 13:05:54.47MS 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	1.856E+01	2.108E+00	6.078E-01	4.021E-02	30.534
BA-137M	1.423E-01	7.501E-02	7.221E-02	3.566E-03	1.970
CS-137	1.504E-01	7.930E-02	7.633E-02	3.792E-03	1.970
TL-208	5.199E-01	9.721E-02	7.583E-02	4.792E-03	6.857
BI-211	3.569E+00	4.967E-01	3.952E-01	2.551E-02	9.030
PB-212	1.588E+00	1.687E-01	1.047E-01	7.716E-03	15.170
PO-212	1.588E+00	1.687E-01	1.047E-01	7.716E-03	15.170
BI-214	1.215E+00	1.961E-01	1.210E-01	8.927E-03	10.045
PB-214	1.241E+00	1.845E-01	1.391E-01	1.154E-02	8.925
PO-214	1.241E+00	1.845E-01	1.391E-01	1.154E-02	8.925
PO-216	1.588E+00	1.687E-01	1.047E-01	7.716E-03	15.170
PO-218	1.241E+00	1.845E-01	1.391E-01	1.154E-02	8.925
RA-224	4.299E+00	1.241E+00	1.191E+00	6.982E-02	3.608
RA-226	1.215E+00	1.961E-01	1.210E-01	8.927E-03	10.045
AC-228	1.531E+00	3.242E-01	2.350E-01	2.401E-02	6.517
RA-228	1.531E+00	3.242E-01	2.350E-01	2.401E-02	6.517
TH-228	1.614E+00	1.715E-01	1.064E-01	7.841E-03	15.170
TH-230	1.215E+00	1.961E-01	1.210E-01	8.927E-03	10.045

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.531E+00	3.242E-01	2.350E-01	2.401E-02	6.517
TH-234	2.717E+00	2.155E+00	2.795E+00	5.081E-01	0.972
U-234	1.215E+00	1.961E-01	1.210E-01	8.927E-03	10.045
NP-237	1.611E+00	7.629E-01	4.844E-01	1.105E-01	3.326
U-238	2.717E+00	2.155E+00	2.795E+00	5.081E-01	0.972
AM-243	3.864E-01	8.902E-02	1.090E-01	9.842E-03	3.546
ANH-511	1.951E-01	8.015E-02	5.251E-02	2.936E-03	3.714

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	3.801E-01		3.998E-01	6.990E-01	4.617E-02	0.544
NA-22	4.503E-02		4.976E-02	8.908E-02	5.501E-03	0.506
NA-24	-1.745E+00		1.189E+00	Half-Life too short		
AL-26	-1.107E-02		3.222E-02	4.914E-02	2.822E-03	-0.225
TI-44	2.886E-01		6.763E-02	8.792E-02	8.082E-03	3.283
SC-46	-1.521E-02		4.119E-02	6.589E-02	4.723E-03	-0.231
V-48	2.993E-03		7.345E-02	1.222E-01	8.558E-03	0.024
CR-51	2.210E-02		4.362E-01	7.149E-01	4.710E-02	0.031
MN-52	2.586E-01		2.630E-01	4.956E-01	3.119E-02	0.522
MN-54	-3.072E-02		4.517E-02	5.862E-02	3.869E-03	-0.524
CO-56	6.503E-03		4.514E-02	7.314E-02	4.917E-03	0.089
CO-57	-2.422E-02		3.059E-02	4.866E-02	2.972E-03	-0.498
CO-58	-1.060E-02		4.329E-02	7.084E-02	4.523E-03	-0.150
FE-59	-1.205E-01		1.077E-01	1.551E-01	1.138E-02	-0.777
CO-60	1.634E-03		4.561E-02	7.445E-02	4.677E-03	0.022
ZN-65	9.436E-02		1.112E-01	1.762E-01	1.116E-02	0.535
GE-68	3.991E-01		1.258E+00	2.148E+00	1.408E-01	0.186
AS-73	-8.002E-01		1.154E+00	1.887E+00	1.725E-01	-0.424
AS-74	-4.652E-02		1.119E-01	1.758E-01	9.348E-03	-0.265
SE-75	-2.829E-03		5.830E-02	8.089E-02	4.852E-03	-0.035
BR-77	7.641E+00		1.746E+01	2.952E+01	1.645E+00	0.259
SR-82	-5.919E-01		4.134E-01	5.940E-01	3.573E-02	-0.996
RB-83	2.566E-02		8.496E-02	1.424E-01	7.932E-03	0.180
RB-84	-3.013E-02		7.383E-02	1.176E-01	8.335E-03	-0.256
KR-85	1.863E+01		9.362E+00	1.572E+01	8.778E-01	1.185
SR-85	9.655E-02		4.853E-02	8.147E-02	4.550E-03	1.185
RB-86	1.465E-01		8.131E-01	1.368E+00	8.971E-02	0.107
Y-88	7.904E-05		4.065E-02	6.720E-02	3.819E-03	0.001
ZR-88	-2.928E-03		3.693E-02	6.108E-02	3.390E-03	-0.048
Y-91	4.547E+00		2.108E+01	3.523E+01	2.113E+00	0.129
NB-94	-1.682E-02		4.109E-02	6.393E-02	3.396E-03	-0.263
NB-95	7.041E-02		5.495E-02	8.821E-02	5.214E-03	0.798
NB-95M	4.945E-01		1.895E-01	2.995E-01	2.263E-02	1.651
ZR-95	5.120E-02		7.632E-02	1.309E-01	9.227E-03	0.391
NB-97	4.070E-01		1.825E-01	Half-Life too short		
ZR-97	1.126E+01		3.550E+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	-3.081E+00		1.907E+01	3.022E+01	4.147E+00	-0.102
TC-99M	-2.342E+11		4.068E+11	Half-Life too short		
RH-101	2.369E-02		4.081E-02	6.436E-02	3.615E-03	0.368
RH-102	2.415E-02		3.449E-02	5.953E-02	3.352E-03	0.406
RU-103	-4.942E-02		4.790E-02	7.161E-02	8.994E-03	-0.690
RH-106	-1.403E-01		3.556E-01	5.560E-01	6.364E-02	-0.252
RU-106	-1.403E-01		3.553E-01	5.560E-01	2.883E-02	-0.252
AG-108M	3.396E-02		3.622E-02	6.373E-02	3.908E-03	0.533
CD-109	3.241E+00		1.538E+00	1.844E+00	1.820E-01	1.758
AG-110M	4.733E-02		4.662E-02	7.304E-02	3.943E-03	0.648
IN-111	-3.124E-01		1.790E+00	2.470E+00	1.452E-01	-0.127
IN-113M	-4.030E-02		5.399E-02	8.554E-02	5.090E-03	-0.471
SN-113	-4.030E-02		5.399E-02	8.554E-02	5.090E-03	-0.471
IN-114M	1.735E-01		2.340E-01	3.470E-01	1.931E-02	0.500
CD-115	4.437E+00		1.727E+01	2.886E+01	1.603E+00	0.154
SN-117M	3.600E-03		6.948E-02	1.135E-01	6.236E-03	0.032
SB-122	6.776E-01		3.189E+00	5.294E+00	2.885E-01	0.128
I-123	-6.484E-01		1.287E+01	Half-Life too short		
TE-123M	-8.590E-04		3.410E-02	5.554E-02	3.094E-03	-0.015
I-124	8.359E-02		1.103E+00	1.563E+00	8.260E-02	0.053
SB-124	4.701E-03		8.450E-02	1.419E-01	9.215E-03	0.033
SB-125	-1.019E-02		1.015E-01	1.668E-01	9.788E-03	-0.061
TE-125M	3.970E-02		1.095E+01	1.807E+01	1.643E+00	0.002
I-126	1.122E-02		2.669E-01	3.744E-01	1.864E-02	0.030
SB-126	8.706E-03		1.888E-01	2.767E-01	1.516E-02	0.031
SN-126	1.528E-01		1.358E-01	1.771E-01	1.742E-02	0.863
SB-127	-7.059E-01		1.726E+00	2.668E+00	2.517E-01	-0.265
XE-127	-7.924E-03		6.282E-02	9.309E-02	5.259E-03	-0.085
I-131	2.652E-02		1.433E-01	2.417E-01	1.556E-02	0.110
TE-132	-2.436E-01		1.018E+00	1.617E+00	2.357E-01	-0.151
BA-133	-2.997E-03		5.565E-02	8.040E-02	9.293E-03	-0.037
I-133	-5.828E-03		7.980E-03	Half-Life too short		
CS-134	3.647E-02		5.179E-02	9.179E-02	5.777E-03	0.397
CS-135	4.938E-01		2.124E-01	3.412E-01	2.651E-02	1.447
I-135	4.711E+09		4.259E+10	Half-Life too short		
CS-136	-1.514E-02		1.076E-01	1.744E-01	1.252E-02	-0.087
CE-139	-5.318E-03		3.522E-02	5.697E-02	3.080E-03	-0.093
BA-140	-1.694E-01		3.209E-01	4.950E-01	1.607E-01	-0.342
LA-140	-8.267E-02		9.729E-02	1.380E-01	8.515E-03	-0.599
CE-141	-4.822E-02		7.459E-02	1.186E-01	7.000E-03	-0.406
CE-143	1.562E-03		2.464E-04	Half-Life too short		
CE-144	8.324E-02		2.672E-01	3.906E-01	5.554E-02	0.213
PM-144	2.835E-02		4.023E-02	6.884E-02	3.621E-03	0.412
PR-144	1.922E+00		2.728E+00	4.667E+00	2.452E-01	0.412
PM-146	3.641E-02		5.195E-02	8.962E-02	7.628E-03	0.406
ND-147	-1.483E-01		6.852E-01	1.102E+00	1.479E-01	-0.135
PM-149	-1.140E+00		1.453E+02	2.446E+02	3.486E+01	-0.005
EU-152	-6.459E-02		1.307E-01	1.822E-01	1.200E-02	-0.355

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	1.627E-02		9.997E-02	1.467E-01	1.226E-02	0.111
EU-154	1.243E-01		1.390E-01	2.482E-01	2.376E-02	0.501
EU-155	4.483E-02		1.230E-01	2.060E-01	1.563E-02	0.218
TB-160	6.803E-02		1.462E-01	2.552E-01	1.802E-02	0.267
HO-166M	-7.728E-03		7.230E-02	1.154E-01	6.227E-03	-0.067
TM-171	1.533E+01		3.940E+01	5.899E+01	5.270E+00	0.260
LU-176	-8.779E-03		3.207E-02	4.589E-02	2.737E-03	-0.191
LU-177	4.736E+00	+	2.132E+00	2.672E+00	1.519E-01	1.772
LU-177M	-1.981E-01		2.167E-01	3.383E-01	1.892E-02	-0.586
HF-181	-3.793E-02		5.144E-02	7.998E-02	4.500E-03	-0.474
W-181	2.944E-01		5.206E-01	7.853E-01	7.034E-02	0.375
TA-182	-1.810E-01		2.242E-01	3.355E-01	2.026E-02	-0.540
RE-183	3.484E-03		1.290E-01	2.103E-01	1.146E-02	0.017
RE-184	3.336E-02		2.905E-01	4.681E-01	2.765E-02	0.071
OS-185	-3.720E-02		4.866E-02	7.306E-02	3.683E-03	-0.509
RE-188	1.378E-01		2.087E-01	3.492E-01	1.934E-02	0.395
W-188	-7.330E-01		9.988E+00	1.458E+01	8.708E-01	-0.050
IR-192	-1.423E-02		3.890E-02	6.390E-02	3.820E-03	-0.223
AU-195	1.784E-01		2.848E-01	4.277E-01	3.496E-02	0.417
TL-200	4.307E-04		5.159E-04	Half-Life too short		
TL-201	8.721E+00		1.029E+01	1.733E+01	9.382E-01	0.503
TL-202	-1.862E-02		8.188E-02	1.318E-01	7.418E-03	-0.141
HG-203	3.814E-02		5.406E-02	8.324E-02	5.257E-03	0.458
BI-207	-2.405E-02		5.765E-02	9.064E-02	6.009E-03	-0.265
TL-207	3.973E-01		8.590E-01	1.295E+00	2.145E-01	0.307
PO-209	7.603E+00		7.598E+00	1.391E+01	1.008E+00	0.547
BI-210	4.048E-01		5.198E+00	8.608E+00	7.087E-01	0.047
PB-210	4.048E-01		5.198E+00	8.608E+00	7.087E-01	0.047
PO-210	4.048E-01		5.198E+00	8.608E+00	6.218E-01	0.047
PB-211	-1.407E+00		1.445E+00	1.762E+00	1.098E+00	-0.798
BI-212	7.428E-01	+	5.464E-01	7.134E-01	5.365E-02	1.041
PO-215	3.973E-01		8.590E-01	1.295E+00	2.145E-01	0.307
RN-219	1.433E-01		4.771E-01	8.064E-01	1.089E-01	0.178
RN-220	2.659E+01		3.252E+01	5.629E+01	3.094E+00	0.472
RA-223	3.973E-01		8.590E-01	1.295E+00	2.145E-01	0.307
AC-227	2.222E-01		4.759E-01	7.787E-01	1.091E-01	0.285
TH-227	2.222E-01		4.763E-01	7.787E-01	1.319E-01	0.285
TH-229	-5.465E-01		5.943E-01	9.191E-01	5.135E-02	-0.595
PA-231	-1.259E+00		1.869E+00	2.844E+00	3.940E-01	-0.443
TH-231	3.973E-01		8.590E-01	1.295E+00	2.145E-01	0.307
U-231	-5.543E-01		1.620E+00	2.313E+00	1.982E-01	-0.240
PA-233	3.631E-02		7.373E-02	1.207E-01	7.615E-03	0.301
PA-234	-4.045E-02		3.259E-01	5.340E-01	9.680E-02	-0.076
PA-234M	-1.515E+00		5.019E+00	8.041E+00	6.873E-01	-0.188
U-235	2.430E-01		2.433E-01	4.087E-01	6.647E-02	0.594
NP-236	-2.508E-03		9.587E-02	1.561E-01	8.540E-03	-0.016
NP-239	1.107E-02		2.194E-01	3.621E-01	2.339E-02	0.031
AM-241	-3.730E-02		2.219E-01	3.250E-01	3.177E-02	-0.115

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	3.568E-02		1.089E-01	1.823E-01	1.389E-02	0.196
AM-246	-4.548E-02		1.446E-01	2.292E-01	1.500E-02	-0.198
CM-247	-4.696E-03		4.247E-02	7.001E-02	3.901E-03	-0.067
CF-249	4.720E-03		4.863E-02	8.133E-02	4.536E-03	0.058
CF-251	1.370E-01		1.485E-01	2.507E-01	1.371E-02	0.547

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]G243624009          *
* Acquisition date   : 7-JAN-2010 15:51:06 Detector SN# :                  *
* Detector ID        : GAM06 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 02:00:01.19 Half life ratio : 8.000             *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624009 Analyst initials: MXR1                  *
* Batch Number       : 937704 Sample Quantity : 1.2630E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 4-FEB-2009 13:05:54 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	1.856E+01	2.066E+00	3.039E-01	1.054E+00
BA-137M	1.423E-01	7.351E-02	3.654E-02	3.750E-02
CS-137	1.504E-01	7.771E-02	3.862E-02	3.965E-02
TL-208	5.199E-01	9.527E-02	3.844E-02	4.861E-02
BI-211	3.569E+00	4.868E-01	2.018E-01	2.484E-01
PB-212	1.588E+00	1.653E-01	5.375E-02	8.436E-02
PO-212	1.588E+00	1.653E-01	5.375E-02	8.436E-02
BI-214	1.215E+00	1.922E-01	6.128E-02	9.806E-02
PB-214	1.241E+00	1.808E-01	7.103E-02	9.227E-02
PO-214	1.241E+00	1.808E-01	7.103E-02	9.227E-02
PO-216	1.588E+00	1.653E-01	5.375E-02	8.436E-02
PO-218	1.241E+00	1.808E-01	7.103E-02	9.227E-02
RA-224	4.299E+00	1.216E+00	6.117E-01	6.203E-01
RA-226	1.215E+00	1.922E-01	6.128E-02	9.806E-02
AC-228	1.531E+00	3.177E-01	1.183E-01	1.621E-01
RA-228	1.531E+00	3.177E-01	1.183E-01	1.621E-01
TH-228	1.614E+00	1.680E-01	5.462E-02	8.573E-02
TH-230	1.215E+00	1.922E-01	6.128E-02	9.806E-02
TH-232	1.531E+00	3.177E-01	1.183E-01	1.621E-01
TH-234	2.717E+00	2.112E+00	1.462E+00	1.078E+00
U-234	1.215E+00	1.922E-01	6.128E-02	9.806E-02
NP-237	1.611E+00	7.476E-01	2.523E-01	3.814E-01
U-238	2.717E+00	2.112E+00	1.462E+00	1.078E+00
AM-243	3.864E-01	8.724E-02	5.687E-02	4.451E-02
ANH-511	1.951E-01	7.855E-02	2.667E-02	4.008E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	3.801E-01	3.918E-01	3.553E-01	1.999E-01 NOT IDENT.
NA-22	4.503E-02	4.876E-02	4.464E-02	2.488E-02 NOT IDENT.

NA-24	-1.745E+06	2.330E+06	0.000E+00	1.189E+06	SHORT HLIF
AL-26	-1.107E-02	3.158E-02	2.449E-02	1.611E-02	NOT IDENT.
TI-44	2.886E-01	6.628E-02	4.585E-02	3.382E-02	NOT IDENT.
SC-46	-1.521E-02	4.036E-02	3.319E-02	2.059E-02	FAIL ABUN
V-48	2.993E-03	7.198E-02	6.148E-02	3.672E-02	NOT IDENT.
CR-51	2.210E-02	4.274E-01	3.656E-01	2.181E-01	NOT IDENT.
MN-52	2.586E-01	2.577E-01	2.479E-01	1.315E-01	NOT IDENT.
MN-54	-3.072E-02	4.427E-02	2.956E-02	2.259E-02	NOT IDENT.
CO-56	6.503E-03	4.424E-02	3.687E-02	2.257E-02	NOT IDENT.
CO-57	-2.422E-02	2.997E-02	2.522E-02	1.529E-02	NOT IDENT.
CO-58	-1.060E-02	4.243E-02	3.573E-02	2.165E-02	NOT IDENT.
FE-59	-1.205E-01	1.056E-01	7.789E-02	5.387E-02	NOT IDENT.
CO-60	1.634E-03	4.469E-02	3.728E-02	2.280E-02	NOT IDENT.
ZN-65	9.436E-02	1.090E-01	8.848E-02	5.562E-02	NOT IDENT.
GE-68	3.991E-01	1.233E+00	1.079E+00	6.291E-01	NOT IDENT.
AS-73	-8.002E-01	1.131E+00	9.893E-01	5.771E-01	NOT IDENT.
AS-74	-4.652E-02	1.096E-01	8.909E-02	5.594E-02	NOT IDENT.
SE-75	-2.829E-03	5.714E-02	4.147E-02	2.915E-02	NOT IDENT.
BR-77	7.641E+00	1.711E+01	1.499E+01	8.728E+00	FAIL ABUN
SR-82	-5.919E-01	4.052E-01	2.998E-01	2.067E-01	NOT IDENT.
RB-83	2.566E-02	8.326E-02	7.228E-02	4.248E-02	NOT IDENT.
RB-84	-3.013E-02	7.236E-02	5.927E-02	3.692E-02	NOT IDENT.
KR-85	1.863E+01	9.175E+00	7.982E+00	4.681E+00	NOT IDENT.
SR-85	9.655E-02	4.756E-02	4.138E-02	2.427E-02	NOT IDENT.
RB-86	1.465E-01	7.968E-01	6.872E-01	4.065E-01	NOT IDENT.
Y-88	7.904E-05	3.949E-02	3.349E-02	2.033E-02	NOT IDENT.
ZR-88	-2.928E-03	3.619E-02	3.114E-02	1.847E-02	NOT IDENT.
Y-91	4.547E+00	2.066E+01	1.767E+01	1.054E+01	NOT IDENT.
NB-94	-1.682E-02	4.027E-02	3.232E-02	2.054E-02	NOT IDENT.
NB-95	7.041E-02	5.385E-02	4.453E-02	2.748E-02	NOT IDENT.
NB-95M	4.945E-01	1.857E-01	1.538E-01	9.477E-02	NOT IDENT.
ZR-95	5.120E-02	7.479E-02	6.611E-02	3.816E-02	NOT IDENT.
NB-97	4.070E+05	3.577E+05	0.000E+00	1.825E+05	SHORT HLIF
ZR-97	1.126E+07	6.957E+06	0.000E+00	3.550E+06	SHORT HLIF
MO-99	-3.081E+00	1.869E+01	1.527E+01	9.536E+00	NOT IDENT.
TC-99M	-2.342E+17	7.973E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	2.369E-02	4.000E-02	3.313E-02	2.041E-02	NOT IDENT.
RH-102	2.415E-02	3.380E-02	3.027E-02	1.724E-02	NOT IDENT.
RU-103	-4.942E-02	4.694E-02	3.638E-02	2.395E-02	FAIL ABUN
RH-106	-1.403E-01	3.485E-01	2.816E-01	1.778E-01	FAIL ABUN
RU-106	-1.403E-01	3.482E-01	2.816E-01	1.776E-01	FAIL ABUN
AG-108M	3.396E-02	3.550E-02	3.244E-02	1.811E-02	NOT IDENT.
CD-109	3.241E+00	1.507E+00	9.600E-01	7.690E-01	NOT IDENT.
AG-110M	4.733E-02	4.569E-02	3.696E-02	2.331E-02	NOT IDENT.
IN-111	-3.124E-01	1.754E+00	1.268E+00	8.951E-01	NOT IDENT.
IN-113M	-4.030E-02	5.291E-02	4.361E-02	2.699E-02	NOT IDENT.
SN-113	-4.030E-02	5.291E-02	4.361E-02	2.699E-02	NOT IDENT.
IN-114M	1.735E-01	2.293E-01	1.788E-01	1.170E-01	NOT IDENT.
CD-115	4.437E+00	1.692E+01	1.465E+01	8.633E+00	NOT IDENT.
SN-117M	3.600E-03	6.809E-02	5.863E-02	3.474E-02	NOT IDENT.
SB-122	6.776E-01	3.126E+00	2.685E+00	1.595E+00	NOT IDENT.
I-123	-6.484E+05	2.523E+07	0.000E+00	1.287E+07	SHORT HLIF
TE-123M	-8.590E-04	3.342E-02	2.868E-02	1.705E-02	NOT IDENT.
I-124	8.359E-02	1.081E+00	7.919E-01	5.514E-01	NOT IDENT.
SB-124	4.701E-03	8.281E-02	7.081E-02	4.225E-02	FAIL ABUN
SB-125	-1.019E-02	9.946E-02	8.494E-02	5.074E-02	FAIL ABUN
TE-125M	3.970E-02	1.073E+01	9.381E+00	5.474E+00	NOT IDENT.
I-126	1.122E-02	2.615E-01	1.894E-01	1.334E-01	NOT IDENT.
SB-126	8.706E-03	1.851E-01	1.398E-01	9.442E-02	FAIL ABUN
SN-126	1.528E-01	1.331E-01	9.221E-02	6.792E-02	FAIL ABUN
SB-127	-7.059E-01	1.692E+00	1.349E+00	8.632E-01	NOT IDENT.
XE-127	-7.924E-03	6.157E-02	4.791E-02	3.141E-02	NOT IDENT.
I-131	2.652E-02	1.404E-01	1.234E-01	7.166E-02	NOT IDENT.
TE-132	-2.436E-01	9.978E-01	8.306E-01	5.091E-01	NOT IDENT.
BA-133	-2.997E-03	5.454E-02	4.105E-02	2.783E-02	FAIL ABUN
I-133	-5.828E+03	1.564E+04	0.000E+00	7.980E+03	SHORT HLIF
CS-134	3.647E-02	5.076E-02	4.632E-02	2.590E-02	NOT IDENT.
CS-135	4.938E-01	2.082E-01	1.749E-01	1.062E-01	NOT IDENT.
I-135	4.711E+15	8.348E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.514E-02	1.055E-01	8.764E-02	5.381E-02	FAIL ABUN
CE-139	-5.318E-03	3.452E-02	2.940E-02	1.761E-02	NOT IDENT.
BA-140	-1.694E-01	3.145E-01	2.512E-01	1.605E-01	NOT IDENT.
LA-140	-8.267E-02	9.535E-02	6.892E-02	4.865E-02	FAIL ABUN
CE-141	-4.822E-02	7.310E-02	6.135E-02	3.730E-02	NOT IDENT.
CE-143	1.562E+03	4.830E+02	0.000E+00	2.464E+02	SHORT HLIF
CE-144	8.324E-02	2.618E-01	2.022E-01	1.336E-01	NOT IDENT.
PM-144	2.835E-02	3.943E-02	3.480E-02	2.012E-02	NOT IDENT.
PR-144	1.922E+00	2.673E+00	2.360E+00	1.364E+00	NOT IDENT.

PM-146	3.641E-02	5.091E-02	4.560E-02	2.598E-02	NOT IDENT.
ND-147	-1.483E-01	6.715E-01	5.595E-01	3.426E-01	NOT IDENT.
PM-149	-1.140E+00	1.423E+02	1.253E+02	7.263E+01	NOT IDENT.
EU-152	-6.459E-02	1.281E-01	9.305E-02	6.536E-02	FAIL ABUN
GD-153	1.627E-02	9.797E-02	7.627E-02	4.998E-02	NOT IDENT.
EU-154	1.243E-01	1.363E-01	1.244E-01	6.952E-02	NOT IDENT.
EU-155	4.483E-02	1.206E-01	1.070E-01	6.151E-02	FAIL ABUN
TB-160	6.803E-02	1.433E-01	1.286E-01	7.310E-02	NOT IDENT.
HO-166M	-7.728E-03	7.085E-02	5.833E-02	3.615E-02	FAIL ABUN
TM-171	1.533E+01	3.862E+01	3.084E+01	1.970E+01	NOT IDENT.
LU-176	-8.779E-03	3.142E-02	2.348E-02	1.603E-02	NOT IDENT.
LU-177	4.736E+00	2.090E+00	1.375E+00	1.066E+00	FAIL ABUN
LU-177M	-1.981E-01	2.124E-01	1.723E-01	1.083E-01	FAIL ABUN
HF-181	-3.793E-02	5.041E-02	4.066E-02	2.572E-02	NOT IDENT.
W-181	2.944E-01	5.102E-01	4.106E-01	2.603E-01	NOT IDENT.
TA-182	-1.810E-01	2.197E-01	1.682E-01	1.121E-01	NOT IDENT.
RE-183	3.484E-03	1.264E-01	1.086E-01	6.448E-02	FAIL ABUN
RE-184	3.336E-02	2.847E-01	2.402E-01	1.453E-01	NOT IDENT.
OS-185	-3.720E-02	4.769E-02	3.698E-02	2.433E-02	NOT IDENT.
RE-188	1.378E-01	2.045E-01	1.804E-01	1.043E-01	NOT IDENT.
W-188	-7.330E-01	9.788E+00	7.464E+00	4.994E+00	FAIL ABUN
IR-192	-1.423E-02	3.813E-02	3.268E-02	1.945E-02	FAIL ABUN
AU-195	1.784E-01	2.791E-01	2.223E-01	1.424E-01	FAIL ABUN
TL-200	4.307E+02	1.011E+03	0.000E+00	5.159E+02	SHORT HLIF
TL-201	8.721E+00	1.008E+01	8.946E+00	5.143E+00	NOT IDENT.
TL-202	-1.862E-02	8.025E-02	6.711E-02	4.094E-02	NOT IDENT.
HG-203	3.814E-02	5.298E-02	4.264E-02	2.703E-02	NOT IDENT.
BI-207	-2.405E-02	5.649E-02	4.554E-02	2.882E-02	FAIL ABUN
TL-207	3.973E-01	8.419E-01	6.620E-01	4.295E-01	FAIL ABUN
PO-209	7.603E+00	7.446E+00	7.005E+00	3.799E+00	NOT IDENT.
BI-210	4.048E-01	5.094E+00	4.522E+00	2.599E+00	NOT IDENT.
PB-210	4.048E-01	5.094E+00	4.522E+00	2.599E+00	NOT IDENT.
PO-210	4.048E-01	5.094E+00	4.522E+00	2.599E+00	NOT IDENT.
PB-211	-1.407E+00	1.416E+00	8.980E-01	7.223E-01	NOT IDENT.
BI-212	7.428E-01	5.355E-01	3.604E-01	2.732E-01	FAIL ABUN
PO-215	3.973E-01	8.419E-01	6.620E-01	4.295E-01	FAIL ABUN
RN-219	1.433E-01	4.675E-01	4.110E-01	2.385E-01	FAIL ABUN
RN-220	2.659E+01	3.187E+01	2.856E+01	1.626E+01	NOT IDENT.
RA-223	3.973E-01	8.419E-01	6.620E-01	4.295E-01	FAIL ABUN
AC-227	2.222E-01	4.664E-01	3.995E-01	2.379E-01	FAIL ABUN
TH-227	2.222E-01	4.668E-01	3.995E-01	2.382E-01	FAIL ABUN
TH-229	-5.465E-01	5.824E-01	4.733E-01	2.971E-01	FAIL ABUN
PA-231	-1.259E+00	1.831E+00	1.457E+00	9.343E-01	FAIL ABUN
TH-231	3.973E-01	8.419E-01	6.620E-01	4.295E-01	FAIL ABUN
U-231	-5.543E-01	1.587E+00	1.203E+00	8.099E-01	FAIL ABUN
PA-233	3.631E-02	7.225E-02	6.176E-02	3.686E-02	FAIL ABUN
PA-234	-4.045E-02	3.194E-01	2.688E-01	1.630E-01	FAIL ABUN
PA-234M	-1.515E+00	4.919E+00	4.044E+00	2.510E+00	NOT IDENT.
U-235	2.430E-01	2.384E-01	2.114E-01	1.216E-01	FAIL ABUN
NP-236	-2.508E-03	9.395E-02	8.060E-02	4.793E-02	NOT IDENT.
NP-239	1.107E-02	2.150E-01	1.878E-01	1.097E-01	FAIL ABUN
AM-241	-3.730E-02	2.175E-01	1.701E-01	1.109E-01	NOT IDENT.
CM-243	3.568E-02	1.067E-01	9.470E-02	5.446E-02	FAIL ABUN
AM-246	-4.548E-02	1.417E-01	1.151E-01	7.232E-02	NOT IDENT.
CM-247	-4.696E-03	4.162E-02	3.568E-02	2.124E-02	FAIL ABUN
CF-249	4.720E-03	4.765E-02	4.147E-02	2.431E-02	NOT IDENT.
CF-251	1.370E-01	1.456E-01	1.293E-01	7.427E-02	NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.50	314.3933
46.50	314.3933
46.50	314.3933
48.70	329.2471
49.72	338.0190
51.35	324.3986
52.39	331.3671
52.97	357.2784
53.15	350.0750
53.44	360.3052
54.07	365.2635
56.28	352.8157
56.28	352.8171
57.37	0.0000
57.53	342.4855
57.53	342.4862
57.60	335.1577
57.98	321.3584
57.98	321.3584
59.32	373.7494
59.32	373.7494
59.40	373.7965
59.54	373.8792
59.72	390.2459
60.01	390.4240
61.10	377.7569
61.14	355.5579
61.30	355.6465
63.00	418.7936
63.29	447.4054
63.29	447.4054
63.58	441.6552
64.28	430.2138
65.12	421.8141
65.20	421.8641
65.20	421.8641
66.05	400.0109
66.72	422.8159
66.83	422.8867
66.91	434.8926
67.20	426.1067
67.20	426.1067
67.75	453.8818
67.85	453.9484
68.90	476.6254
68.90	476.6254
69.30	475.4013
69.67	450.1483
70.82	432.8508
70.82	432.8508
70.83	432.8578
72.80	441.5995
72.87	441.6424
72.87	441.6424
74.67	456.3474
74.81	456.4359
74.81	456.4359
74.81	456.4359
74.81	456.4359
74.81	456.4359
74.81	456.4359
74.97	456.5354
75.28	456.7308
75.70	456.9925
77.11	457.8699
77.11	457.8699

77.11	457.8699
77.11	457.8699
77.11	457.8699
77.11	457.8699
77.11	457.8699
78.38	345.5087
79.62	346.0794
79.80	346.1613
79.80	346.1613
80.11	346.3043
80.18	346.3363
80.30	346.3904
80.30	346.3904
80.57	346.5140
81.00	346.7098
81.07	346.7417
81.07	346.7417
81.07	346.7417
81.07	346.7417
82.60	507.0255
83.37	507.5280
83.78	507.7975
83.78	507.7975
83.78	507.7975
83.78	507.7975
84.21	508.0792
84.90	508.5270
85.43	508.8694
86.29	509.4247
86.50	509.5604
86.54	509.5847
86.59	509.6172
86.72	509.7023
86.79	509.7448
86.94	562.4388
87.30	562.6936
87.30	562.6936
87.30	562.6936
87.30	562.6936
87.30	562.6936
87.30	562.6936
87.57	504.6101
87.88	430.4949
88.03	430.5752
88.36	396.1373
88.47	396.1923
89.95	431.6006
91.11	374.3298
92.29	566.1652
92.38	566.2278
92.38	566.2278
93.35	471.1199
94.00	471.4877
94.67	471.8621
94.67	471.8648
94.90	471.9949
94.90	471.9949
94.90	471.9949
94.90	471.9949
95.87	349.3103
95.87	349.3103
96.73	327.9090
97.43	314.1801
98.44	322.3358
98.44	322.3371
98.88	294.4577
99.55	249.4707
99.55	249.4707
99.86	302.5910
100.00	302.6395
100.10	302.6762
103.18	330.7499
103.76	299.6324
105.00	313.7781
105.31	308.9822
108.00	337.4522
109.28	331.0294

111.00	308.9476
111.00	308.9476
111.76	335.8730
112.95	315.5306
115.19	331.1562
116.30	322.6097
117.00	305.9592
117.00	305.9592
117.66	309.1528
121.11	304.2717
121.62	333.3770
121.78	345.4100
122.06	345.5090
122.32	339.6070
122.32	339.6070
122.32	339.6070
122.32	339.6070
123.07	322.8731
127.23	306.7582
129.76	329.0607
131.20	312.7966
133.02	295.5812
133.54	290.8828
135.34	304.5388
136.00	306.7542
136.25	315.9419
136.48	320.0623
140.51	313.1462
140.51	0.0000
142.18	304.4680
142.65	284.2257
143.76	281.4580
144.24	286.6834
144.24	286.6834
144.24	286.6834
144.24	286.6834
145.22	315.5326
145.44	327.8524
147.16	317.1143
152.43	319.6439
152.70	336.1684
153.22	312.6674
154.21	294.4095
154.21	294.4095
154.21	294.4095
154.21	294.4095
155.03	303.8947
156.02	316.5305
158.56	304.8309
159.00	0.0000
159.00	301.8446
160.31	307.3598
161.27	283.7917
162.32	285.0813
162.64	291.3806
163.35	300.8945
163.89	293.7664
165.85	291.1340
167.43	256.1199
171.28	280.9608
171.86	283.1862
172.10	283.2421
176.55	249.6538
176.60	249.6629
181.06	313.3006
184.41	265.1521
185.71	277.8905
186.00	258.7198
190.27	225.6454
192.34	240.0215
193.63	279.5920
197.04	254.7343
198.01	223.9886
198.60	239.0254
200.40	288.5003
201.83	288.8052
202.84	278.3170
205.31	262.5224

208.36	287.1821
208.81	260.1825
209.75	249.5993
209.75	249.5993
210.97	213.6381
215.65	259.2993
216.55	260.5452
218.09	239.1829
222.10	243.1116
223.80	221.6667
226.40	226.4177
227.00	219.9774
227.08	219.9897
227.20	220.0082
228.16	228.8704
228.18	228.8736
228.18	228.8736
231.56	0.0000
235.69	247.1270
236.00	240.1664
236.00	240.1664
238.63	217.3193
238.63	217.3193
238.63	217.3193
238.63	217.3193
239.00	217.3722
240.98	217.6577
241.98	217.8012
241.98	217.8012
241.98	217.8012
244.69	206.2868
245.39	192.2695
247.94	176.6858
248.90	202.2100
249.79	215.5932
252.40	208.2025
252.85	203.8316
252.85	203.8316
254.15	0.0000
256.20	196.4944
256.20	196.4944
260.50	188.1213
260.90	185.9435
262.80	168.1674
264.65	167.8506
268.24	143.1680
268.79	136.0560
269.46	143.2754
269.46	143.2754
269.46	143.2754
269.46	143.2754
271.23	143.4316
273.65	134.6649
276.40	134.8883
277.35	145.7624
277.60	158.3828
277.60	158.3828
278.00	163.5222
278.60	171.0835
279.20	171.1461
279.53	162.1692
280.46	162.2593
281.68	162.3779
283.67	185.1481
284.30	175.6812
285.00	171.7352
285.90	170.0193
286.10	169.1332
286.10	169.1332
287.40	170.1685
288.45	0.0000
290.67	184.3999
290.80	184.4123
291.72	190.5612
293.26	0.0000
293.70	169.5836
295.21	169.1233
295.21	169.1233

295.21	169.1233
295.96	169.1982
296.50	169.2505
297.23	169.3208
298.57	169.4503
299.80	169.5706
299.80	169.5706
300.09	169.5979
300.09	169.5979
300.09	169.5979
300.09	169.5979
300.12	169.6001
301.29	169.7137
302.84	169.8635
303.76	169.9521
303.91	169.9657
304.40	170.0134
304.40	170.0134
304.84	170.0542
306.84	154.0768
308.46	149.6358
311.98	127.3631
316.51	146.3161
318.01	157.4903
319.02	148.3609
319.41	138.2538
320.08	138.3051
323.87	140.1306
323.87	140.1306
323.87	140.1306
323.87	140.1306
325.23	164.8887
328.77	146.3680
333.44	102.1555
334.20	136.2629
334.20	136.2629
334.30	136.2700
338.28	134.0736
338.28	134.0736
338.28	134.0736
338.28	134.0736
338.32	134.0754
338.32	134.0754
338.32	134.0754
340.50	125.8407
340.57	125.8440
344.27	150.9941
345.85	144.8849
350.59	0.0000
351.07	144.3393
351.92	147.2143
351.92	147.2143
351.92	147.2143
355.39	0.0000
356.01	126.8492
364.48	117.0114
366.43	125.6275
367.43	129.4693
367.94	0.0000
369.80	139.0830
374.96	125.2083
383.85	124.7986
387.95	132.6812
388.63	126.9945
391.69	141.5232
391.69	141.5232
392.90	127.2527
398.62	119.9219
400.65	113.3143
401.10	113.3388
401.81	113.3762
402.60	118.2238
404.84	154.9094
410.95	111.9275
411.60	111.9615
413.65	142.9812
414.70	113.0867
415.30	118.9190

415.76	119.9116
417.63	0.0000
418.52	106.5061
423.70	117.4314
427.08	99.1425
427.89	97.2339
432.53	89.6405
433.93	80.9210
439.47	89.9156
439.56	89.9190
439.89	88.9549
443.98	98.9065
444.90	92.0883
445.03	92.0941
445.03	92.0941
445.03	92.0941
445.03	92.0941
453.90	94.4145
463.38	87.8853
468.07	77.5052
473.00	104.1053
475.06	87.3243
475.35	99.2444
476.78	99.3030
477.59	90.3968
477.96	82.4620
482.03	106.4854
484.57	96.6341
487.03	75.7903
490.36	0.0000
492.35	86.9480
497.08	100.1318
507.63	0.0000
510.53	0.0000
510.84	83.5669
511.00	83.5719
511.85	83.6008
511.85	83.6008
513.99	73.9259
513.99	73.9259
520.41	88.9346
520.65	88.9432
527.90	78.0452
528.96	0.0000
529.64	94.3260
529.87	0.0000
531.02	82.1984
537.32	87.4823
543.00	84.6130
546.56	0.0000
549.76	80.7416
552.65	86.9673
555.20	82.9538
563.23	72.9293
563.90	82.1953
568.70	89.5446
569.32	92.6543
569.50	85.4539
569.67	85.4580
573.80	94.8683
574.00	89.7188
574.64	82.5195
578.91	91.2555
579.30	0.0000
583.14	99.3281
585.48	74.2142
591.81	85.1070
592.07	78.8871
593.00	78.9131
595.88	84.1898
600.56	84.3302
602.52	0.0000
602.71	88.5610
602.71	88.5610
603.60	81.6418
604.41	85.1399
604.70	85.1479
609.31	71.0132

609.31	71.0132
609.31	71.0132
609.31	71.0132
610.33	59.1984
612.46	54.0154
614.37	59.2828
618.01	64.9441
621.84	70.2731
621.84	70.2731
631.29	69.4499
633.02	63.1729
633.10	63.1743
634.78	70.5855
635.90	75.8812
636.97	56.9320
645.85	67.6766
646.12	72.9705
656.30	70.7422
657.75	58.3905
657.90	0.0000
661.65	82.9150
661.65	82.9150
664.57	0.0000
666.33	76.2998
666.33	76.2998
675.00	70.4650
677.61	72.6617
685.20	57.8430
692.80	67.6481
695.00	65.5467
696.49	62.3528
696.49	62.3528
697.00	66.6636
697.49	70.9758
698.33	70.9935
698.50	72.0741
699.00	77.4650
702.63	82.9385
706.10	63.6195
706.58	0.0000
706.67	62.5525
709.31	70.1606
711.68	70.2130
713.82	68.0972
717.42	67.0920
720.50	60.3472
721.93	0.0000
722.20	68.6361
722.78	75.8738
722.78	75.8738
722.89	75.8772
722.95	75.8789
723.30	70.4669
724.18	77.7153
727.18	59.6970
733.00	90.6108
735.90	60.4614
739.58	72.9966
742.81	61.0723
744.21	52.3699
747.13	76.4412
751.79	57.9571
752.31	56.8725
753.82	54.7107
755.35	56.9245
756.15	43.7988
756.87	42.7134
763.93	54.8755
765.79	49.4154
766.42	53.0852
766.84	54.9231
776.49	67.9312
778.00	52.3486
778.57	46.8455
778.89	46.8496
783.80	51.5168
785.46	72.7108
792.07	53.4853

795.84	53.5431
796.30	49.8571
798.80	80.3837
801.93	53.6375
805.60	48.1385
810.29	60.2538
810.76	54.6991
815.85	53.8499
817.79	41.8030
818.51	46.4569
819.60	44.6123
826.30	50.2833
828.27	0.0000
831.60	55.9534
831.96	57.0787
834.83	57.6048
836.80	0.0000
846.75	48.3225
848.13	49.6530
856.28	0.0000
856.80	45.0752
860.37	37.5993
867.32	46.8185
867.82	48.4392
871.10	32.9948
873.19	41.5024
874.81	51.9016
875.33	0.0000
876.40	42.4823
879.36	37.7922
880.27	34.9668
880.51	35.9141
881.50	45.3770
883.24	50.1264
884.67	44.4689
889.25	45.4707
896.60	31.3222
898.02	48.4247
899.00	52.2361
903.28	47.0659
911.07	47.3657
911.07	47.3657
911.07	47.3657
919.63	48.6986
920.93	45.8496
925.00	30.5983
925.24	33.4690
926.50	31.5673
935.52	36.4344
937.48	43.1671
944.10	49.0057
946.00	45.1841
949.00	41.3702
962.29	46.3350
964.01	48.2859
966.15	48.3124
968.20	48.3368
969.11	48.3480
969.11	48.3480
969.11	48.3480
977.42	39.8655
980.50	41.8904
983.50	34.9351
989.30	39.8439
996.32	44.7796
1001.03	48.7295
1001.68	53.6102
1004.76	33.1658
1021.30	0.0000
1024.50	0.0000
1034.80	35.3716
1036.00	37.3459
1037.82	44.2456
1038.57	39.3359
1038.76	0.0000
1045.16	35.4580
1046.59	35.4697
1048.07	32.5247

1050.47	39.4466
1050.47	39.4466
1062.04	39.5540
1063.62	46.4932
1076.63	32.7422
1077.35	32.7476
1078.86	38.7144
1085.78	33.8049
1099.22	58.8416
1112.02	29.1488
1112.84	25.7247
1115.52	37.7511
1120.29	37.7925
1120.29	37.7925
1120.29	37.7925
1120.29	37.7925
1120.51	37.7941
1121.28	44.6730
1124.00	0.0000
1129.67	40.1660
1131.51	0.0000
1147.95	0.0000
1167.94	50.6307
1173.22	38.5242
1175.09	44.6248
1177.93	51.7554
1189.05	42.7246
1204.90	46.9508
1205.75	0.0000
1213.00	54.1883
1221.42	61.4551
1230.97	73.8926
1235.34	61.6333
1236.41	0.0000
1238.25	41.1133
1246.25	49.4180
1260.41	0.0000
1271.85	37.2583
1274.45	31.0645
1274.54	31.0657
1291.56	42.6016
1298.22	0.0000
1312.09	27.1267
1325.50	32.4292
1325.50	32.4292
1332.49	30.3794
1333.61	31.4331
1360.21	12.6387
1362.66	0.0000
1365.15	22.1382
1368.21	26.3713
1368.53	0.0000
1376.25	24.2990
1384.27	25.3945
1394.10	25.4414
1395.20	28.6282
1407.95	21.2565
1434.06	10.6803
1436.60	13.8908
1457.56	0.0000
1460.81	20.3931
1489.15	22.6560
1509.49	12.9932
1596.49	22.6147
1620.62	15.1384
1678.03	0.0000
1691.02	12.4446
1691.02	12.4446
1706.46	0.0000
1750.46	0.0000
1764.49	16.9513
1764.49	16.9513
1764.49	16.9513
1764.49	16.9513
1770.23	13.5732
1771.40	65.9390
1791.20	0.0000
1808.65	11.7045

1836.01

12.7334

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624009

Total Uranium Activity	8.1956E+00	ug/g
Total Uranium Counting Unc.	6.2842E+00	ug/g
Total Uranium Tpu	3.2062E-06	ug/g
Total Uranium Mda	4.3507E+00	ug/g

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 937704                          SAMPLE ID   : G243624009
*  ANALYST       : MXR1                             DETECTOR    : GAM06
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 7-JAN-2010 15:51:06.44          SAMPLE ALQT  : 126.300 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.479E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.415E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.821E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.855E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 17:53:35.86

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624010.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:51:31.
Sample ID          : G243624010 Sample quantity   : 1.27900E+02 GRAM
Detector name      : GAM07 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.25 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity        : 5.00000
Batch ID           : 937704 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	63.16*	60	505	1.08	125.98	123	8	8.33E-03	67.8	
2	1	74.78	510	559	1.11	149.20	145	13	7.08E-02	8.9	3.77E+00
3	1	77.09*	830	423	1.02	153.82	145	13	1.15E-01	5.4	
4	5	83.80*	164	318	1.65	167.25	164	28	2.28E-02	18.7	2.60E+00
5	5	87.12	377	353	1.20	173.88	164	28	5.23E-02	9.8	
6	5	89.80	191	335	1.18	179.24	164	28	2.66E-02	17.8	
7	5	92.81*	355	457	1.67	185.26	164	28	4.92E-02	13.4	
8	0	186.17*	126	360	1.32	371.95	367	10	1.75E-02	30.7	
9	0	209.41	76	283	1.12	418.42	415	8	1.05E-02	40.3	
10	4	238.67*	1343	174	1.09	476.94	472	21	1.86E-01	3.3	1.40E+00
11	4	241.76	327	223	1.83	483.12	472	21	4.54E-02	12.5	
12	0	270.64*	67	212	1.11	540.86	536	10	9.35E-03	43.1	
13	2	295.27*	418	134	1.14	590.11	586	18	5.80E-02	6.7	1.07E+00
14	2	300.24	96	114	1.25	600.05	586	18	1.33E-02	21.7	
15	0	328.11	93	185	1.81	655.78	651	12	1.30E-02	30.8	
16	0	338.38*	254	209	1.23	676.31	671	12	3.53E-02	13.2	
17	0	351.89*	702	170	1.26	703.34	698	12	9.75E-02	5.3	
18	0	463.02	97	73	1.53	925.56	921	10	1.34E-02	19.4	
19	0	510.83*	142	114	1.78	1021.16	1013	17	1.98E-02	21.9	
20	0	583.24*	371	91	1.42	1165.95	1159	13	5.15E-02	7.6	
21	0	609.43*	535	70	1.48	1218.34	1213	13	7.43E-02	5.5	
22	0	727.66	143	90	2.03	1454.77	1448	18	1.98E-02	17.4	
23	0	767.88	55	40	1.29	1535.20	1530	10	7.61E-03	25.5	
24	0	837.83	44	95	6.67	1675.08	1664	20	6.07E-03	56.7	
25	0	860.95*	36	47	1.54	1721.30	1715	11	4.94E-03	42.2	
26	0	911.54*	278	52	1.72	1822.48	1814	16	3.86E-02	8.5	
27	1	964.65*	41	57	1.98	1928.69	1922	21	5.73E-03	36.8	2.89E+00
28	1	969.13	178	32	1.87	1937.64	1922	21	2.47E-02	10.0	
29	0	1120.82*	111	53	1.75	2241.00	2234	16	1.54E-02	18.0	
30	0	1461.11*	817	15	2.08	2921.53	2911	19	1.14E-01	3.7	
31	0	1730.08	23	0	0.70	3459.43	3454	10	3.19E-03	20.9	
32	0	1764.62*	82	0	2.35	3528.50	3518	18	1.13E-02	11.8	

Flag: "*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624010.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 12:00:00 Acquisition date : 7-JAN-2010 15:51:31
Sample ID        : G243624010 Sample quantity : 127.90 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA7 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.25 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	1.991E+01	2.258E+00	4.995E-01	4.289E-02	39.862
CD-109	+	88.03	*	4.458E+00	9.645E-01	1.036E+00	9.755E-02	4.305
SN-126	+	64.28		3.838E-01	5.231E-01	5.923E-01	8.591E-02	0.648
	+	86.94		1.819E+00	8.344E-01	4.248E-01	1.763E-01	4.282
	+	87.57	*	4.375E-01	9.465E-02	1.019E-01	9.543E-03	4.296
TL-208		277.35		4.046E-01	3.870E-01	6.688E-01	8.189E-02	0.605
	+	510.84		7.015E-01	3.190E-01	2.048E-01	2.494E-02	3.426
	+	583.14	*	5.223E-01	9.350E-02	6.024E-02	5.762E-03	8.671
	+	860.37		4.702E-01	3.994E-01	4.387E-01	4.289E-02	1.072
BI-211		72.87		4.762E+00	2.791E+00	4.353E+00	3.435E-01	1.094
	+	351.07	*	4.326E+00	6.039E-01	3.382E-01	3.034E-02	12.792
PB-212	+	74.81		2.305E+00	4.973E-01	4.449E-01	5.488E-02	5.181
	+	77.11		2.162E+00	2.940E-01	2.572E-01	2.123E-02	8.406
	+	87.30		2.024E+00	4.823E-01	4.717E-01	6.453E-02	4.290
	+	238.63	*	1.800E+00	2.086E-01	8.707E-02	8.329E-03	20.670
	+	300.09		1.983E+00	8.841E-01	1.239E+00	1.285E-01	1.600
PO-212	+	74.81		2.305E+00	4.973E-01	4.449E-01	5.488E-02	5.181
	+	77.11		2.162E+00	2.940E-01	2.572E-01	2.123E-02	8.406
	+	87.30		2.024E+00	4.823E-01	4.717E-01	6.453E-02	4.290
	+	115.19		6.682E-01	3.233E+00	5.261E+00	4.532E-01	0.127
	+	238.63	*	1.800E+00	2.086E-01	8.707E-02	8.329E-03	20.670
	+	300.09		1.983E+00	8.841E-01	1.239E+00	1.285E-01	1.600
BI-214	+	609.31	*	1.420E+00	2.138E-01	1.104E-01	1.142E-02	12.859
	+	1120.29		1.522E+00	5.707E-01	4.383E-01	4.706E-02	3.473
	+	1764.49		1.540E+00	3.859E-01	2.686E-01	2.209E-02	5.734
PB-214	+	74.81		3.971E+00	8.265E-01	7.666E-01	8.386E-02	5.181
	+	77.11		3.707E+00	5.777E-01	4.410E-01	4.953E-02	8.406
	+	87.30		3.467E+00	7.961E-01	8.080E-01	9.784E-02	4.290
	+	241.98		2.632E+00	7.106E-01	5.245E-01	5.323E-02	5.018
	+	295.21		1.520E+00	2.603E-01	2.157E-01	2.283E-02	7.047
	+	351.92	*	1.505E+00	2.243E-01	1.179E-01	1.223E-02	12.764
PO-214	+	74.81		3.971E+00	8.265E-01	7.666E-01	8.386E-02	5.181
	+	77.11		3.707E+00	5.777E-01	4.410E-01	4.953E-02	8.406
	+	87.30		3.467E+00	7.961E-01	8.080E-01	9.784E-02	4.290

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.632E+00	7.106E-01	5.245E-01	5.323E-02	5.018
	+	295.21		1.520E+00	2.603E-01	2.157E-01	2.283E-02	7.047
	+	351.92	*	1.505E+00	2.243E-01	1.179E-01	1.223E-02	12.764
	+	74.81		2.305E+00	4.973E-01	4.449E-01	5.488E-02	5.181
	+	77.11		2.162E+00	2.940E-01	2.572E-01	2.123E-02	8.406
	+	87.30		2.024E+00	4.823E-01	4.717E-01	6.453E-02	4.290
PO-218	+	238.63	*	1.800E+00	2.086E-01	8.707E-02	8.329E-03	20.670
	+	300.09		1.983E+00	8.841E-01	1.239E+00	1.285E-01	1.600
	+	74.81		3.971E+00	8.265E-01	7.666E-01	8.386E-02	5.181
	+	77.11		3.707E+00	5.777E-01	4.410E-01	4.953E-02	8.406
	+	87.30		3.467E+00	7.961E-01	8.080E-01	9.784E-02	4.290
	+	241.98		2.632E+00	7.106E-01	5.245E-01	5.323E-02	5.018
RA-224	+	295.21		1.520E+00	2.603E-01	2.157E-01	2.283E-02	7.047
	+	351.92	*	1.505E+00	2.243E-01	1.179E-01	1.223E-02	12.764
	+	240.98	*	4.991E+00	1.318E+00	9.911E-01	8.382E-02	5.035
RA-226	+	609.31	*	1.420E+00	2.138E-01	1.104E-01	1.142E-02	12.859
	+	1120.29		1.522E+00	5.707E-01	4.383E-01	4.706E-02	3.473
AC-228	+	1764.49		1.540E+00	3.859E-01	2.686E-01	2.209E-02	5.734
	+	338.32		1.726E+00	8.448E-01	3.662E-01	1.510E-01	4.713
	+	911.07	*	1.739E+00	3.583E-01	2.027E-01	2.362E-02	8.577
RA-228	+	969.11		1.955E+00	6.021E-01	3.219E-01	7.562E-02	6.074
	+	338.32		1.726E+00	8.448E-01	3.662E-01	1.510E-01	4.713
	+	911.07	*	1.739E+00	3.583E-01	2.027E-01	2.362E-02	8.577
TH-228	+	969.11		1.955E+00	6.021E-01	3.219E-01	7.562E-02	6.074
	+	74.81		2.342E+00	4.563E-01	4.521E-01	3.675E-02	5.181
	+	77.11		2.197E+00	2.988E-01	2.614E-01	2.157E-02	8.406
TH-230	+	87.30		2.056E+00	4.449E-01	4.793E-01	4.476E-02	4.290
	+	238.63	*	1.829E+00	2.120E-01	8.849E-02	8.464E-03	20.670
	+	300.09		2.015E+00	1.480E+00	1.259E+00	7.465E-01	1.600
TH-232	+	609.31	*	1.420E+00	2.138E-01	1.104E-01	1.142E-02	12.859
	+	1120.29		1.522E+00	5.707E-01	4.383E-01	4.706E-02	3.473
	+	1764.49		1.540E+00	3.859E-01	2.686E-01	2.208E-02	5.734
TH-234	+	338.32		1.726E+00	4.783E-01	3.662E-01	3.134E-02	4.713
	+	911.07	*	1.739E+00	3.583E-01	2.027E-01	2.362E-02	8.577
	+	969.11		1.955E+00	6.021E-01	3.219E-01	7.562E-02	6.074
U-234	+	63.29	*	9.696E-01	1.325E+00	1.511E+00	2.629E-01	0.642
	+	92.38		2.740E+00	8.876E-01	6.838E-01	1.255E-01	4.007
NP-237	+	609.31	*	1.420E+00	2.138E-01	1.104E-01	1.142E-02	12.859
	+	1120.29		1.522E+00	5.707E-01	4.383E-01	4.706E-02	3.473
	+	1764.49		1.540E+00	3.859E-01	2.686E-01	2.208E-02	5.734
U-238	+	86.50	*	1.285E+00	3.841E-01	3.007E-01	6.799E-02	4.272
	+	95.87		-3.631E-01	9.277E-01	1.310E+00	3.246E-01	-0.277
	+	63.29	*	9.696E-01	1.325E+00	1.511E+00	2.629E-01	0.642
AM-243	+	92.38		2.740E+00	7.733E-01	6.838E-01	6.264E-02	4.007
	+	74.67	*	3.737E-01	7.268E-02	7.226E-02	5.808E-03	5.171
	+	86.72		4.818E+01	1.042E+01	1.126E+01	1.044E+00	4.277
ANH-511	+	117.66		-2.084E+00	3.491E+00	5.458E+00	4.695E-01	-0.382
	+	142.18		-1.151E+01	1.740E+01	2.690E+01	2.220E+00	-0.428
	+	511.00	*	1.515E-01	6.774E-02	4.424E-02	3.931E-03	3.425

---- 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	*	-1.696E-01	3.240E-01	4.961E-01	4.682E-02	-0.342
NA-22		1274.54	*	2.315E-02	3.881E-02	6.845E-02	5.619E-03	0.338
NA-24		1368.53	*	-7.747E-01	3.881E-02	Half-Life too short		
AL-26		1129.67		-1.435E+00	1.762E+00	2.441E+00	2.051E-01	-0.588
		1808.65	*	1.666E-02	2.604E-02	4.912E-02	4.006E-03	0.339
TI-44		67.85		3.140E-03	3.830E-02	5.667E-02	4.276E-03	0.055
	+	78.38	*	3.990E-01	5.426E-02	6.874E-02	5.755E-03	5.805
SC-46		889.25	*	3.972E-02	3.727E-02	6.692E-02	6.133E-03	0.594
	+	1120.51		2.628E-01	9.699E-02	1.357E-01	1.147E-02	1.937
V-48		944.10		-4.734E-01	9.437E-01	1.440E+00	1.309E-01	-0.329
		983.50	*	-2.081E-02	7.069E-02	1.099E-01	9.893E-03	-0.189
		1312.09		2.424E-02	7.884E-02	1.348E-01	1.105E-02	0.180
CR-51		320.08	*	2.659E-01	3.763E-01	6.434E-01	5.814E-02	0.413
MN-52		744.21		2.473E-01	2.558E-01	4.559E-01	4.138E-02	0.542
		848.13		-7.236E+00	7.792E+00	1.144E+01	1.050E+00	-0.632
		935.52		1.650E-01	3.201E-01	5.414E-01	4.930E-02	0.305
		1246.25		-6.366E+00	8.205E+00	1.251E+01	1.024E+00	-0.509
		1333.61		5.336E+00	5.356E+00	9.881E+00	8.096E-01	0.540
		1434.06	*	1.584E-01	2.452E-01	4.400E-01	3.659E-02	0.360
MN-54		834.83	*	1.767E-02	4.032E-02	6.813E-02	6.254E-03	0.259
CO-56		846.75	*	-5.626E-02	4.276E-02	5.751E-02	5.280E-03	-0.978
		977.42		2.568E-01	2.720E+00	4.433E+00	3.997E-01	0.058
		1037.82		-1.720E-01	2.809E-01	4.396E-01	4.079E-02	-0.391
		1175.09		1.572E+00	2.215E+00	3.917E+00	3.188E-01	0.401
		1238.25		1.637E-01	9.885E-02	1.817E-01	1.536E-02	0.901
		1360.21		-4.769E-01	9.766E-01	1.494E+00	1.230E-01	-0.319
		1771.40		-8.103E-01	3.651E-01	4.138E-01	3.399E-02	-1.958
CO-57		122.06	*	9.800E-03	2.384E-02	3.904E-02	3.359E-03	0.251
		136.48		-1.538E-01	2.085E-01	3.178E-01	2.861E-02	-0.484
CO-58		810.76	*	-4.407E-02	3.749E-02	5.315E-02	4.883E-03	-0.829
FE-59		142.65		-1.025E+00	2.781E+00	4.313E+00	3.557E-01	-0.238
		192.34		4.926E-01	9.007E-01	1.553E+00	2.039E-01	0.317
		1099.22	*	-2.872E-02	8.534E-02	1.376E-01	1.275E-02	-0.209
		1291.56		-8.543E-03	1.210E-01	1.981E-01	1.865E-02	-0.043
CO-60		1173.22		7.473E-02	4.461E-02	8.437E-02	6.866E-03	0.886
		1332.49	*	1.419E-02	3.610E-02	6.245E-02	5.116E-03	0.227
ZN-65		1115.52	*	-6.549E-02	1.070E-01	1.412E-01	1.198E-02	-0.464
GE-68		1077.35	*	6.421E-01	1.267E+00	2.217E+00	1.921E-01	0.290
AS-73		53.44	*	-7.043E-03	5.212E-01	8.456E-01	6.350E-02	-0.008
AS-74		595.88	*	-2.044E-02	9.074E-02	1.489E-01	1.334E-02	-0.137
		634.78		1.983E-01	3.570E-01	6.200E-01	5.527E-02	0.320
SE-75		66.05		-1.478E+00	3.923E+00	5.685E+00	5.393E-01	-0.260
		96.73		-6.569E-01	7.749E-01	1.063E+00	1.472E-01	-0.618
		121.11		1.169E-01	1.269E-01	2.116E-01	2.371E-02	0.552
		136.00		-1.409E-02	3.881E-02	6.034E-02	5.073E-03	-0.234
		198.60		-3.654E-01	1.674E+00	2.783E+00	2.558E-01	-0.131
		264.65	*	7.431E-03	4.701E-02	7.321E-02	6.251E-03	0.102
		279.53		-1.186E-02	1.103E-01	1.818E-01	1.602E-02	-0.065
		303.91		3.567E-01	2.317E+00	3.396E+00	3.882E-01	0.105

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BR-77		400.65		2.079E-02	2.657E-01	4.332E-01	4.736E-02	0.048
	+	87.88		1.304E+03	2.821E+02	4.211E+02	3.961E+01	3.097
		200.40		-1.632E+02	2.073E+02	3.369E+02	2.770E+01	-0.484
	+	239.00		3.919E+02	4.188E+01	5.441E+01	4.598E+00	7.202
		249.79		-1.766E+01	9.168E+01	1.401E+02	1.188E+01	-0.126
		281.68		-9.106E+01	1.187E+02	1.879E+02	1.597E+01	-0.485
		297.23		3.720E+02	9.230E+01	1.675E+02	1.432E+01	2.221
		303.76		2.257E+01	2.650E+02	3.864E+02	3.308E+01	0.058
		439.47		-5.183E+01	1.984E+02	3.135E+02	2.700E+01	-0.165
		484.57		2.923E+01	3.228E+02	5.206E+02	4.585E+01	0.056
		520.65	*	-2.728E+00	1.363E+01	2.263E+01	2.015E+00	-0.121
		574.64		-5.801E+01	2.801E+02	4.618E+02	4.142E+01	-0.126
		578.91		2.243E+01	1.302E+02	1.930E+02	1.731E+01	0.116
		585.48		1.848E+03	3.792E+02	6.737E+02	6.042E+01	2.743
SR-82		755.35		1.816E+02	2.258E+02	3.956E+02	3.600E+01	0.459
		817.79		-1.012E+02	1.918E+02	2.850E+02	2.614E+01	-0.355
		698.33		2.825E+00	3.350E+01	5.574E+01	4.998E+00	0.051
		776.49	*	-6.247E-01	4.038E-01	5.578E-01	5.093E-02	-1.120
RB-83		1395.20		8.653E+00	1.019E+01	1.872E+01	1.549E+00	0.462
		520.41	*	-1.598E-02	6.679E-02	1.106E-01	9.849E-03	-0.145
	529.64		1.185E-02	9.739E-02	1.655E-01	1.477E-02	0.072	
	552.65		-1.216E-01	2.011E-01	3.221E-01	2.884E-02	-0.378	
RB-84		881.50	*	4.112E-02	6.526E-02	1.131E-01	1.037E-02	0.364
KR-85		513.99	*	1.272E+01	7.488E+00	1.262E+01	1.122E+00	1.008
SR-85		513.99	*	6.592E-02	3.882E-02	6.542E-02	5.818E-03	1.008
RB-86		1076.63	*	3.191E-01	8.222E-01	1.425E+00	1.235E-01	0.224
Y-88		898.02		-1.643E-02	3.938E-02	6.087E-02	5.597E-03	-0.270
		1836.01	*	1.071E-02	2.896E-02	5.208E-02	4.226E-03	0.206
ZR-88		392.90	*	1.826E-02	3.299E-02	5.540E-02	4.615E-03	0.330
Y-91		1204.90	*	1.052E+00	1.831E+01	3.055E+01	2.495E+00	0.034
NB-94		702.63	*	3.437E-03	3.412E-02	5.681E-02	5.101E-03	0.060
		871.10		-3.241E-03	3.442E-02	5.543E-02	5.086E-03	-0.058
NB-95		765.79	*	8.189E-02	4.341E-02	7.526E-02	6.861E-03	1.088
NB-95M		235.69	*	5.968E-02	1.319E-01	1.997E-01	1.939E-02	0.299
ZR-95		724.18		3.772E-02	1.089E-01	1.616E-01	1.575E-02	0.233
		756.15	*	9.373E-02	6.950E-02	1.266E-01	1.257E-02	0.740
NB-97		657.90	*	-9.586E-02	6.950E-02	Half-Life	too short	
		1024.50		6.044E+00	6.950E-02	Half-Life	too short	
ZR-97		254.15		2.293E+00	6.950E-02	Half-Life	too short	
		355.39		4.698E+00	6.950E-02	Half-Life	too short	
		507.63	*	4.551E+00	6.950E-02	Half-Life	too short	
		602.52		1.062E+01	6.950E-02	Half-Life	too short	
		1021.30		-2.454E+00	6.950E-02	Half-Life	too short	
		1147.95		-6.512E+00	6.950E-02	Half-Life	too short	
		1362.66		7.274E+00	6.950E-02	Half-Life	too short	
		1750.46		-1.820E+01	6.950E-02	Half-Life	too short	
MO-99		140.51		8.471E-01	3.291E+01	5.263E+01	1.452E+01	0.016
		181.06		-9.078E-01	2.352E+01	3.514E+01	6.336E+00	-0.026
		366.43		-7.429E+01	1.063E+02	1.645E+02	1.393E+01	-0.452

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	739.58	*	-6.591E+00	1.365E+01	2.131E+01	3.292E+00	-0.309	
	778.00		-5.440E+01	4.473E+01	6.432E+01	5.876E+00	-0.846	
TC-99M	140.51	*	1.694E+10	4.473E+01	Half-Life	too short		
RH-101	127.23		-2.030E-02	3.167E-02	4.933E-02	4.189E-03	-0.412	
	198.01	*	-3.011E-03	3.048E-02	5.094E-02	4.178E-03	-0.059	
	325.23		1.477E-01	2.431E-01	3.675E-01	3.151E-02	0.402	
RH-102	418.52		6.800E-02	2.699E-01	4.449E-01	3.780E-02	0.153	
	475.06	*	-1.225E-02	2.688E-02	4.131E-02	3.624E-03	-0.297	
	631.29		1.534E-03	5.069E-02	8.458E-02	7.546E-03	0.018	
	697.49		-1.262E-02	7.246E-02	1.179E-01	1.057E-02	-0.107	
	+		766.84	2.429E-01	1.258E-01	2.031E-01	1.851E-02	1.196
	1046.59		-2.269E-02	1.112E-01	1.829E-01	1.609E-02	-0.124	
	1112.84		1.755E-01	2.316E-01	3.799E-01	3.226E-02	0.462	
RU-103	497.08	*	1.177E-02	4.180E-02	6.832E-02	9.771E-03	0.172	
	+		610.33	1.562E+01	3.139E+00	3.311E+00	5.582E-01	4.717
RH-106	+		511.85	7.583E-01	3.390E-01	4.438E-01	3.944E-02	1.709
	621.84	*	-3.038E-01	3.190E-01	4.855E-01	6.586E-02	-0.626	
	1050.47		2.092E-01	2.244E+00	3.797E+00	3.333E-01	0.055	
RU-106	+		511.85	7.583E-01	3.390E-01	4.438E-01	3.944E-02	1.709
	621.84	*	-3.038E-01	3.175E-01	4.855E-01	4.339E-02	-0.626	
	1050.47		2.092E-01	2.244E+00	3.797E+00	3.333E-01	0.055	
AG-108M	433.93	*	2.425E-02	3.256E-02	5.532E-02	4.939E-03	0.438	
	614.37		-2.845E-02	4.404E-02	5.907E-02	5.478E-03	-0.482	
	722.95		3.832E-03	4.478E-02	6.467E-02	6.049E-03	0.059	
AG-110M	657.75	*	-1.408E-02	3.498E-02	5.611E-02	5.112E-03	-0.251	
	677.61		-1.183E-01	2.984E-01	4.768E-01	4.358E-02	-0.248	
	706.67		7.042E-02	2.138E-01	3.621E-01	3.338E-02	0.195	
	763.93		1.158E-01	1.692E-01	2.618E-01	2.446E-02	0.443	
	884.67		-6.018E-02	4.787E-02	6.588E-02	6.212E-03	-0.914	
	937.48		-1.151E-01	1.216E-01	1.771E-01	1.665E-02	-0.650	
	1384.27		-6.160E-02	1.646E-01	2.565E-01	2.185E-02	-0.240	
IN-111	171.28		-7.247E-01	1.316E+00	2.021E+00	1.608E-01	-0.359	
	245.39	*	-5.848E-01	1.418E+00	2.002E+00	1.696E-01	-0.292	
IN-113M	391.69	*	-1.306E-02	4.817E-02	7.686E-02	6.607E-03	-0.170	
SN-113	391.69	*	-1.306E-02	4.817E-02	7.686E-02	6.607E-03	-0.170	
IN-114M	190.27	*	1.128E-01	1.915E-01	2.955E-01	2.405E-02	0.382	
CD-115	260.90		-6.998E+01	1.720E+02	2.798E+02	2.377E+01	-0.250	
	492.35		3.617E+01	4.948E+01	8.376E+01	7.399E+00	0.432	
	527.90	*	-8.035E+00	1.420E+01	2.284E+01	2.038E+00	-0.352	
SN-117M	156.02		-9.181E-03	2.325E+00	3.694E+00	2.975E-01	-0.002	
	158.56	*	2.432E-03	5.467E-02	8.698E-02	6.974E-03	0.028	
SB-122	563.90	*	1.159E+00	2.634E+00	4.554E+00	4.082E-01	0.254	
	692.80		3.115E+00	5.248E+01	8.723E+01	7.807E+00	0.036	
I-123	159.00	*	-8.791E+00	5.248E+01	Half-Life	too short		
	528.96		-8.539E+00	5.248E+01	Half-Life	too short		
TE-123M	159.00	*	-1.164E-02	2.762E-02	4.288E-02	3.460E-03	-0.271	
I-124	602.71	*	4.292E-01	8.436E-01	1.342E+00	1.202E-01	0.320	
	722.78		7.675E-01	5.584E+00	8.115E+00	7.328E-01	0.095	
	1325.50		1.262E+01	3.781E+01	6.495E+01	5.322E+00	0.194	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1376.25	5.365E+01	4.335E+01	7.950E+01	6.562E+00	0.675
		1509.49	1.371E+01	1.870E+01	3.359E+01	2.809E+00	0.408
		1691.02	-2.484E+00	4.250E+00	5.934E+00	4.930E-01	-0.419
		602.71	2.123E-02	4.174E-02	6.638E-02	5.948E-03	0.320
		645.85	-7.028E-02	5.184E-01	8.521E-01	8.004E-02	-0.082
		709.31	-9.949E-01	2.893E+00	4.589E+00	4.129E-01	-0.217
		713.82	5.995E-01	1.679E+00	2.848E+00	3.509E-01	0.210
		722.78	5.504E-02	4.005E-01	5.820E-01	5.359E-02	0.095
	+	968.20	2.037E+01	4.455E+00	7.731E+00	6.989E-01	2.635
		1045.16	-7.513E-01	2.394E+00	3.891E+00	3.424E-01	-0.193
		1325.50	9.669E-01	2.896E+00	4.975E+00	4.077E-01	0.194
		1368.21	-5.846E-01	1.884E+00	2.969E+00	3.930E-01	-0.197
		1436.60	1.902E+00	3.515E+00	6.217E+00	5.171E-01	0.306
		1691.02 *	-4.202E-02	7.190E-02	1.004E-01	8.695E-03	-0.419
SB-125		427.89 *	3.849E-02	8.495E-02	1.420E-01	1.238E-02	0.271
	+	463.38	9.309E-01	3.713E-01	5.746E-01	5.397E-02	1.620
		600.56	-9.963E-02	1.778E-01	2.841E-01	2.720E-02	-0.351
		635.90	-8.360E-02	2.778E-01	4.508E-01	4.322E-02	-0.185
TE-125M		109.28 *	-6.689E+00	8.857E+00	1.380E+01	1.431E+00	-0.485
		388.63	7.379E-02	2.183E-01	3.626E-01	3.025E-02	0.204
I-126		666.33 *	9.988E-02	2.016E-01	3.461E-01	3.068E-02	0.289
		753.82	-4.430E-01	1.600E+00	2.565E+00	2.333E-01	-0.173
SB-126		223.80	-4.877E+00	4.165E+00	6.455E+00	5.410E-01	-0.756
		278.60	3.114E+00	2.592E+00	4.533E+00	3.848E-01	0.687
	+	296.50	1.605E+01	2.557E+00	4.183E+00	3.575E-01	3.836
		414.70	-3.256E-02	7.364E-02	1.149E-01	9.737E-03	-0.283
		415.30	-2.160E+00	6.182E+00	9.725E+00	8.244E-01	-0.222
		555.20	8.457E-01	4.102E+00	6.990E+00	6.262E-01	0.121
		573.80	-3.993E-01	1.095E+00	1.783E+00	1.599E-01	-0.224
		593.00	-3.156E-01	9.398E-01	1.528E+00	1.370E-01	-0.207
		656.30	-3.690E+00	3.402E+00	5.082E+00	4.505E-01	-0.726
		666.33	4.184E-02	8.443E-02	1.450E-01	1.285E-02	0.289
		675.00	-6.261E-01	1.968E+00	3.166E+00	2.816E-01	-0.198
		695.00	-1.371E-02	7.630E-02	1.241E-01	1.112E-02	-0.110
		697.00	-4.811E-02	2.628E-01	4.272E-01	3.829E-02	-0.113
		720.50 *	9.251E-02	1.649E-01	2.615E-01	2.360E-02	0.354
		856.80	-7.098E-02	5.793E-01	8.008E-01	7.351E-02	-0.089
		989.30	3.180E-01	1.383E+00	2.280E+00	2.048E-01	0.139
		1034.80	-5.370E-01	8.554E+00	1.427E+01	1.261E+00	-0.038
		1213.00	-2.782E+00	4.774E+00	7.468E+00	6.103E-01	-0.373
SB-127		61.10	4.474E+01	5.082E+01	7.814E+01	8.185E+00	0.573
		252.40	-1.976E+00	5.144E+00	8.291E+00	3.490E+00	-0.238
		290.80	-6.872E+00	2.774E+01	3.948E+01	4.504E+00	-0.174
		411.60	2.440E+00	1.371E+01	2.248E+01	3.566E+00	0.109
		444.90	-3.296E+00	1.206E+01	1.901E+01	2.439E+00	-0.173
		473.00	-8.821E-01	1.873E+00	2.873E+00	3.803E-01	-0.307
		543.00	1.609E+00	1.922E+01	3.251E+01	4.823E+00	0.050
		603.60	9.283E+00	1.529E+01	2.354E+01	3.065E+00	0.394
		685.20 *	1.320E+00	1.655E+00	2.902E+00	3.460E-01	0.455

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	698.50			1.098E-01	1.750E+01	2.893E+01	4.696E+00	0.004
	722.20			9.597E+00	3.877E+01	5.709E+01	6.729E+00	0.168
	783.80			2.538E+00	4.492E+00	7.692E+00	1.005E+00	0.330
XE-127	57.60			-4.863E+00	4.025E+00	6.337E+00	4.594E-01	-0.767
	145.22			2.953E-01	7.060E-01	1.133E+00	9.301E-02	0.261
	172.10			-8.938E-02	1.258E-01	1.915E-01	1.526E-02	-0.467
	202.84	*		1.284E-02	4.598E-02	7.839E-02	6.460E-03	0.164
	374.96			1.709E-01	1.978E-01	3.399E-01	2.864E-02	0.503
I-131	80.18			4.163E-01	5.619E+00	6.528E+00	5.622E-01	0.064
	284.30			-4.383E-01	1.574E+00	2.565E+00	2.300E-01	-0.171
	364.48	*		8.982E-02	1.231E-01	2.102E-01	1.884E-02	0.427
	636.97			-1.353E+00	1.746E+00	2.716E+00	2.549E-01	-0.498
	722.89			8.588E-01	8.264E+00	1.196E+01	1.087E+00	0.072
TE-132	49.72			-1.317E+01	1.345E+01	2.141E+01	2.273E+00	-0.615
	111.76			2.707E+00	3.366E+01	5.453E+01	6.082E+00	0.050
	116.30			1.781E+01	3.091E+01	5.104E+01	5.679E+00	0.349
	228.16	*		6.217E-01	8.399E-01	1.445E+00	2.282E-01	0.430
BA-133	53.15			-1.185E-01	2.214E+00	3.586E+00	2.702E-01	-0.033
	79.62			-2.984E-01	1.463E+00	1.664E+00	2.521E-01	-0.179
	81.00			-5.099E-02	1.113E-01	1.237E-01	1.964E-02	-0.412
	276.40			3.084E-01	3.907E-01	6.490E-01	9.326E-02	0.475
	302.84			3.514E-02	1.553E-01	2.290E-01	3.033E-02	0.153
	356.01	*		3.452E-02	4.765E-02	7.234E-02	9.501E-03	0.477
	383.85			1.001E-01	2.868E-01	4.775E-01	5.939E-02	0.210
I-133	510.53	+		3.552E+00	2.868E-01	Half-Life	too short	
	529.87	*		6.159E-03	2.868E-01	Half-Life	too short	
	706.58			3.127E-01	2.868E-01	Half-Life	too short	
	856.28			-4.333E-01	2.868E-01	Half-Life	too short	
	875.33			1.490E-01	2.868E-01	Half-Life	too short	
	1236.41			5.501E-01	2.868E-01	Half-Life	too short	
	1298.22			-2.071E-01	2.868E-01	Half-Life	too short	
CS-134	475.35			-9.806E-01	1.757E+00	2.673E+00	2.345E-01	-0.367
	563.23			5.832E-02	3.352E-01	5.695E-01	5.151E-02	0.102
	569.32			7.505E-02	2.085E-01	3.492E-01	3.171E-02	0.215
	604.70			1.102E-02	3.573E-02	5.357E-02	4.810E-03	0.206
	795.84	*		6.870E-02	4.607E-02	8.428E-02	7.765E-03	0.815
	801.93			-1.301E-01	3.853E-01	5.980E-01	5.506E-02	-0.218
	1038.57			-7.802E-01	3.578E+00	5.872E+00	5.182E-01	-0.133
	1167.94			-2.497E+00	2.529E+00	3.793E+00	3.100E-01	-0.658
	1365.15			3.310E-01	1.253E+00	2.128E+00	1.841E-01	0.156
CS-135	268.24	*		-5.861E-02	1.759E-01	2.507E-01	2.472E-02	-0.234
I-135	288.45			7.043E+10	1.759E-01	Half-Life	too short	
	417.63			-1.892E+10	1.759E-01	Half-Life	too short	
	546.56			-5.202E+10	1.759E-01	Half-Life	too short	
	836.80	+		5.389E+11	1.759E-01	Half-Life	too short	
	1038.76			-4.975E+10	1.759E-01	Half-Life	too short	
	1124.00			8.072E+11	1.759E-01	Half-Life	too short	
	1131.51			-6.917E+09	1.759E-01	Half-Life	too short	
	1260.41	*		2.777E+10	1.759E-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		1457.56		3.396E+12	1.759E-01	Half-Life	too short	
		1678.03		-4.786E+10	1.759E-01	Half-Life	too short	
		1706.46		-2.566E+10	1.759E-01	Half-Life	too short	
		1791.20		-1.047E+11	1.759E-01	Half-Life	too short	
		66.91		-1.214E-01	6.791E-01	9.931E-01	1.473E-01	-0.122
	+	86.29		6.032E+00	1.426E+00	1.973E+00	2.616E-01	3.058
		153.22		4.469E-01	6.796E-01	1.112E+00	1.020E-01	0.402
		163.89		-6.319E-02	1.088E+00	1.720E+00	1.557E-01	-0.037
		176.55		-1.895E-01	3.542E-01	5.868E-01	5.014E-02	-0.323
		273.65		-6.541E-01	5.689E-01	7.589E-01	6.884E-02	-0.862
		340.57		2.722E-01	1.609E-01	2.567E-01	2.261E-02	1.061
		818.51		-8.272E-02	8.697E-02	1.237E-01	1.135E-02	-0.669
		1048.07	*	1.089E-01	1.098E-01	2.004E-01	1.833E-02	0.544
		1235.34		-6.113E-01	6.741E-01	1.029E+00	1.187E-01	-0.594
BA-137M		661.65	*	1.364E-02	3.893E-02	6.565E-02	5.810E-03	0.208
CS-137		661.65	*	1.441E-02	4.116E-02	6.940E-02	6.153E-03	0.208
CE-139		165.85	*	-2.854E-02	3.008E-02	4.523E-02	3.578E-03	-0.631
BA-140		162.64		7.460E-01	7.589E-01	1.258E+00	1.069E-01	0.593
		304.84		2.235E-01	1.454E+00	2.129E+00	5.963E-01	0.105
		423.70		-6.679E-01	1.949E+00	3.047E+00	9.871E-01	-0.219
LA-140		537.32	*	8.060E-02	2.720E-01	4.648E-01	1.544E-01	0.173
	+	328.77		8.293E-01	5.159E-01	6.146E-01	5.567E-02	1.349
		432.53		6.662E-01	2.143E+00	3.539E+00	3.184E-01	0.188
		487.03		-7.784E-02	1.494E-01	2.285E-01	2.134E-02	-0.341
		751.79		-9.307E-01	1.776E+00	2.773E+00	2.765E-01	-0.336
		815.85		2.535E-01	3.208E-01	5.637E-01	5.699E-02	0.450
		867.82		8.031E-01	1.430E+00	2.401E+00	2.307E-01	0.334
		919.63		1.012E+00	2.773E+00	4.434E+00	4.906E-01	0.228
		925.24		-4.414E-01	1.153E+00	1.784E+00	1.719E-01	-0.247
		1596.49	*	9.081E-03	8.660E-02	1.430E-01	1.196E-02	0.064
CE-141		145.44	*	6.539E-04	6.487E-02	1.023E-01	8.563E-03	0.006
CE-143		57.37		-6.478E-04	6.487E-02	Half-Life	too short	
		231.56		-2.092E-03	6.487E-02	Half-Life	too short	
		293.26	*	1.158E-03	6.487E-02	Half-Life	too short	
	+	350.59		5.805E-02	6.487E-02	Half-Life	too short	
		490.36		-6.036E-04	6.487E-02	Half-Life	too short	
		664.57		2.833E-03	6.487E-02	Half-Life	too short	
		721.93		1.542E-03	6.487E-02	Half-Life	too short	
CE-144		80.11		1.510E-01	2.369E+00	2.750E+00	2.349E-01	0.055
		133.54	*	-1.244E-02	1.994E-01	3.184E-01	4.916E-02	-0.039
PM-144		476.78		-3.590E-02	6.530E-02	9.962E-02	9.536E-03	-0.360
		618.01		2.140E-02	3.141E-02	5.497E-02	5.043E-03	0.389
		696.49	*	-2.634E-02	3.238E-02	4.947E-02	4.435E-03	-0.532
		778.57		-4.930E-01	2.113E+00	3.383E+00	3.091E-01	-0.146
PR-144		696.49	*	-1.786E+00	2.195E+00	3.354E+00	3.006E-01	-0.532
		1489.15		4.323E+00	1.000E+01	1.759E+01	1.469E+00	0.246
PM-146		453.90	*	3.826E-02	3.998E-02	6.902E-02	7.437E-03	0.554
		633.02		-4.592E-02	1.328E+00	2.203E+00	8.247E-01	-0.021
		735.90		1.291E-01	1.518E-01	2.356E-01	6.772E-02	0.548

----- 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		8.999E-02	8.837E-02	1.569E-01	2.248E-02	0.574
		91.11		8.055E-01	2.975E-01	4.739E-01	4.691E-02	1.700
		319.41		8.227E-02	3.468E+00	5.712E+00	4.900E-01	0.014
		439.89		-1.174E+00	6.399E+00	1.017E+01	8.766E-01	-0.115
		531.02	*	-1.039E-03	5.558E-01	9.354E-01	1.415E-01	-0.001
PM-149		285.90	*	6.156E+01	1.214E+02	2.060E+02	3.190E+01	0.299
EU-152		121.78		4.279E-02	6.812E-02	1.125E-01	1.115E-02	0.380
		244.69		4.311E-02	3.408E-01	5.054E-01	4.280E-02	0.085
		344.27	*	4.727E-02	1.081E-01	1.610E-01	1.459E-02	0.294
		443.98		-4.753E-01	9.901E-01	1.536E+00	1.326E-01	-0.310
		778.89		-3.399E-02	2.457E-01	3.973E-01	3.629E-02	-0.086
	+	867.32		3.576E-01	8.195E-01	1.322E+00	1.213E-01	0.270
		964.01		5.228E-01	3.876E-01	5.617E-01	5.083E-02	0.931
		1085.78		-2.953E-01	3.880E-01	5.978E-01	5.157E-02	-0.494
		1112.02		2.935E-01	3.159E-01	5.517E-01	4.687E-02	0.532
		1407.95		3.713E-02	1.893E-01	3.181E-01	2.637E-02	0.117
GD-153	+	69.67		-7.007E-01	1.340E+00	2.058E+00	1.577E-01	-0.340
		83.37		3.430E+01	1.321E+01	2.148E+01	1.909E+00	1.596
		97.43	*	-2.755E-02	7.845E-02	1.114E-01	9.962E-03	-0.247
EU-154		103.18		-2.440E-02	9.547E-02	1.529E-01	1.342E-02	-0.160
		123.07		-1.903E-02	4.878E-02	7.690E-02	8.713E-03	-0.247
		247.94		-2.318E-02	3.780E-01	5.525E-01	6.281E-02	-0.042
		591.81		-2.721E-01	6.040E-01	9.724E-01	1.160E-01	-0.280
		723.30		-1.989E-02	1.918E-01	2.704E-01	2.678E-02	-0.074
		756.87		1.048E+00	7.744E-01	1.400E+00	1.726E-01	0.748
		873.19		7.824E-02	2.935E-01	4.898E-01	6.192E-02	0.160
		996.32		1.703E-02	3.623E-01	5.859E-01	1.051E-01	0.029
		1004.76		-1.458E-01	2.124E-01	3.139E-01	3.728E-02	-0.465
		1274.45	*	6.380E-02	1.083E-01	1.908E-01	2.097E-02	0.334
EU-155		48.70		-1.128E+00	1.321E+00	2.124E+00	1.719E-01	-0.531
		60.01		2.174E+00	3.646E+00	5.555E+00	4.000E-01	0.391
		86.54		5.272E-01	1.142E-01	1.724E-01	1.608E-02	3.058
TB-160	+	105.31	*	7.965E-02	9.872E-02	1.648E-01	1.456E-02	0.483
		86.79		1.422E+00	3.076E-01	4.643E-01	4.307E-02	3.062
		197.04		3.357E-02	5.214E-01	8.778E-01	7.193E-02	0.038
		215.65		-1.444E-01	7.188E-01	1.197E+00	9.974E-02	-0.121
		298.57		1.377E-01	1.172E-01	2.038E-01	1.743E-02	0.676
		879.36	*	5.617E-02	1.364E-01	2.309E-01	2.118E-02	0.243
		962.29		4.213E-01	6.497E-01	9.770E-01	8.845E-02	0.431
		966.15		3.625E-01	2.688E-01	5.064E-01	4.580E-02	0.716
		1177.93		-5.179E-01	3.598E-01	5.067E-01	4.126E-02	-1.022
		1271.85		-2.204E-01	6.190E-01	9.770E-01	8.010E-02	-0.226
HO-166M		80.57		2.607E-01	2.839E-01	3.505E-01	3.010E-02	0.744
		184.41		3.587E-02	3.980E-02	6.287E-02	5.082E-03	0.571
		280.46		-1.021E-01	8.542E-02	1.317E-01	1.118E-02	-0.776
		410.95		1.421E-01	2.329E-01	3.930E-01	3.321E-02	0.361
		711.68	*	-2.211E-02	6.361E-02	1.009E-01	9.083E-03	-0.219
		752.31		-1.667E-01	2.684E-01	4.150E-01	3.774E-02	-0.402
		810.29		-7.108E-02	5.594E-02	7.820E-02	7.169E-03	-0.909

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TM-171		51.35		-2.787E+00	1.753E+01	2.897E+01	2.237E+00	-0.096
		52.39		6.283E-02	9.616E+00	1.562E+01	1.188E+00	0.004
		59.40		1.148E+01	1.925E+01	2.936E+01	2.111E+00	0.391
		66.72	*	-1.340E+01	2.369E+01	3.401E+01	2.544E+00	-0.394
LU-176	+	88.36		1.038E+00	2.245E-01	3.327E-01	3.126E-02	3.120
		201.83		-1.599E-05	2.698E-02	4.548E-02	3.745E-03	0.000
		306.84	*	-5.405E-03	2.413E-02	3.925E-02	3.362E-03	-0.138
		401.10		-4.385E-01	7.021E+00	1.134E+01	9.509E-01	-0.039
LU-177		112.95		-3.086E-01	1.657E+00	2.651E+00	2.288E-01	-0.116
	+	208.36	*	2.001E+00	1.623E+00	2.285E+00	1.892E-01	0.876
LU-177M		52.97		-2.236E-01	1.009E+00	1.624E+00	1.226E-01	-0.138
		54.07		3.826E-01	5.362E-01	8.925E-01	6.655E-02	0.429
		61.30		1.046E+00	1.096E+00	1.693E+00	1.226E-01	0.618
		121.62		2.180E-01	3.505E-01	5.791E-01	4.976E-02	0.376
		147.16		-3.297E-01	6.526E-01	1.015E+00	8.303E-02	-0.325
		171.86		-3.697E-01	4.988E-01	7.578E-01	6.035E-02	-0.488
		218.09		-3.050E-02	8.151E-01	1.367E+00	1.141E-01	-0.022
		268.79		6.279E-01	9.211E-01	1.403E+00	1.192E-01	0.448
		319.02		-5.973E-03	2.535E-01	4.164E-01	3.571E-02	-0.014
		367.43		-2.137E-01	8.560E-01	1.371E+00	1.160E-01	-0.156
		413.65	*	-9.732E-02	1.666E-01	2.571E-01	2.177E-02	-0.379
HF-181		56.28		-2.583E-01	5.999E-01	9.778E-01	7.149E-02	-0.264
		57.53		-4.085E-01	3.374E-01	5.312E-01	3.852E-02	-0.769
		65.20		-1.939E-01	7.657E-01	1.117E+00	8.266E-02	-0.174
		133.02		-2.226E-02	6.501E-02	1.024E-01	8.598E-03	-0.217
		136.25		-1.806E-01	4.583E-01	7.113E-01	5.933E-02	-0.254
		345.85		1.243E-02	2.074E-01	3.156E-01	2.696E-02	0.039
		482.03	*	2.482E-02	4.607E-02	7.672E-02	6.750E-03	0.323
W-181		56.28		-1.001E-01	2.322E-01	3.785E-01	2.767E-02	-0.264
		57.53		-1.583E-01	1.307E-01	2.058E-01	1.492E-02	-0.769
		65.20	*	-7.453E-02	2.943E-01	4.294E-01	3.177E-02	-0.174
TA-182		67.75		7.529E-03	9.190E-02	1.360E-01	1.025E-02	0.055
		100.10		7.365E-02	1.601E-01	2.645E-01	2.342E-02	0.278
		152.43		-4.961E-02	3.362E-01	5.310E-01	4.305E-02	-0.093
		222.10		8.802E-03	3.320E-01	5.487E-01	4.593E-02	0.016
		1001.68		5.114E-01	1.981E+00	3.308E+00	2.961E-01	0.155
	+	1121.28		7.243E-01	2.673E-01	3.709E-01	3.133E-02	1.952
		1189.05		4.473E-02	3.076E-01	5.178E-01	4.222E-02	0.086
		1221.42	*	-1.653E-01	2.066E-01	3.176E-01	2.598E-02	-0.520
		1230.97		-1.772E-01	4.876E-01	7.819E-01	6.399E-02	-0.227
RE-183		57.98		-1.116E-01	1.293E-01	2.067E-01	1.495E-02	-0.540
		59.32		5.189E-02	7.917E-02	1.211E-01	8.709E-03	0.429
		67.20		4.723E-02	1.635E-01	2.444E-01	1.834E-02	0.193
		162.32	*	9.063E-02	1.052E-01	1.735E-01	1.382E-02	0.522
	+	208.81		1.632E+00	1.323E+00	1.858E+00	1.540E-01	0.878
		291.72		-1.569E-01	1.014E+00	1.454E+00	1.240E-01	-0.108
RE-184		57.98		-4.087E-01	4.735E-01	7.570E-01	5.476E-02	-0.540
		59.32		1.899E-01	2.897E-01	4.431E-01	3.187E-02	0.429
		67.20		1.729E-01	5.988E-01	8.947E-01	6.716E-02	0.193

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		161.27		1.507E-01	3.434E-01	5.562E-01	4.437E-02	0.271
		216.55		-1.365E-01	2.564E-01	4.201E-01	3.503E-02	-0.325
		252.85	*	-6.945E-02	2.285E-01	3.748E-01	3.181E-02	-0.185
		318.01		-1.992E-01	4.462E-01	7.137E-01	6.121E-02	-0.279
		792.07		-6.408E-01	9.944E-01	1.529E+00	1.400E-01	-0.419
		903.28		1.285E+00	1.032E+00	1.751E+00	1.603E-01	0.734
		920.93		-2.423E-01	4.273E-01	6.455E-01	5.893E-02	-0.375
		59.72		2.020E-01	2.131E-01	3.299E-01	2.373E-02	0.612
		61.14		1.081E-01	1.206E-01	1.859E-01	1.345E-02	0.582
		69.30		-1.685E-01	2.292E-01	3.673E-01	2.804E-02	-0.459
		592.07		-9.114E-01	2.438E+00	3.950E+00	3.542E-01	-0.231
		646.12	*	1.633E-02	4.181E-02	7.164E-02	6.369E-03	0.228
		717.42		-1.480E-01	9.121E-01	1.484E+00	1.338E-01	-0.100
		874.81		3.721E-01	5.788E-01	1.000E+00	9.175E-02	0.372
RE-188		880.27		6.326E-01	7.173E-01	1.272E+00	1.166E-01	0.497
		155.03	*	1.532E-01	1.662E-01	2.751E-01	2.219E-02	0.557
		477.96		-5.467E-01	3.033E+00	4.789E+00	4.206E-01	-0.114
		633.10		-1.506E-01	2.706E+00	4.481E+00	3.996E-01	-0.034
W-188	+	63.58		3.938E+01	5.344E+01	6.671E+01	4.886E+00	0.590
IR-192		227.08		1.208E+00	1.251E+01	2.105E+01	1.768E+00	0.057
		290.67	*	-2.046E+00	8.039E+00	1.144E+01	9.754E-01	-0.179
	+	295.96		1.171E+00	1.870E-01	3.126E-01	2.690E-02	3.745
		308.46		-2.267E-03	9.217E-02	1.517E-01	1.306E-02	-0.015
AU-195		316.51	*	-1.412E-02	3.416E-02	5.475E-02	4.706E-03	-0.258
		468.07		2.523E-02	6.956E-02	1.016E-01	9.503E-03	0.248
		604.41		1.864E-01	4.903E-01	7.400E-01	9.801E-02	0.252
		612.46		1.647E+00	8.825E-01	1.470E+00	1.498E-01	1.120
		65.12		-2.013E-02	1.364E-01	2.000E-01	1.479E-02	-0.101
		66.83		-4.207E-02	7.868E-02	1.131E-01	8.469E-03	-0.372
	+	75.70		1.214E+00	2.361E-01	4.136E-01	3.361E-02	2.935
		98.88	*	2.832E-01	2.101E-01	3.431E-01	3.051E-02	0.825
		129.76		4.285E+00	2.862E+00	4.839E+00	4.087E-01	0.886
		367.94	*	-1.904E-04	2.862E+00	Half-Life	too short	
TL-200		579.30		2.075E-03	2.862E+00	Half-Life	too short	
		828.27		-5.714E-03	2.862E+00	Half-Life	too short	
		1205.75		2.291E-03	2.862E+00	Half-Life	too short	
		68.90		-1.232E+00	4.561E+00	7.439E+00	5.661E-01	-0.166
TL-201		70.82		9.010E-01	2.946E+00	4.393E+00	3.400E-01	0.205
		80.30		6.520E-01	7.105E+00	8.264E+00	7.075E-01	0.079
		135.34		-8.738E+00	3.180E+01	4.969E+01	4.152E+00	-0.176
		167.43	*	8.446E+00	8.539E+00	1.415E+01	1.121E+00	0.597
		68.90		-9.266E-02	3.431E-01	5.597E-01	4.259E-02	-0.166
TL-202		70.82		6.760E-02	2.210E-01	3.296E-01	2.551E-02	0.205
		80.30		4.893E-02	5.332E-01	6.202E-01	5.310E-02	0.079
		439.56	*	-1.777E-02	7.527E-02	1.192E-01	1.026E-02	-0.149
		70.83		2.851E-01	9.176E-01	1.368E+00	1.787E-01	0.208
HG-203		72.87		9.620E-01	5.720E-01	8.793E-01	1.120E-01	1.094
	+	82.60		2.582E+00	1.032E+00	1.552E+00	2.151E-01	1.663
		279.20	*	2.980E-02	4.117E-02	7.062E-02	6.169E-03	0.422

---- 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		2.594E-01	1.622E-01	2.522E-01	1.989E-02	1.028
	+	74.97		6.708E-01	1.305E-01	1.974E-01	1.592E-02	3.398
	+	84.90		4.423E-01	1.704E-01	2.810E-01	2.545E-02	1.574
		569.67		5.026E-03	3.197E-02	5.280E-02	4.735E-03	0.095
		1063.62	*	-9.373E-03	4.873E-02	7.939E-02	6.927E-03	-0.118
		1770.23		3.178E-01	5.049E-01	8.413E-01	6.911E-02	0.378
TL-207		81.07		-1.134E-01	2.452E-01	2.728E-01	2.357E-02	-0.416
	+	83.78		2.916E-01	1.124E-01	1.852E-01	1.654E-02	1.575
		94.90		3.539E-01	2.217E-01	3.445E-01	3.115E-02	1.027
		122.32		1.053E-01	1.664E+00	2.683E+00	2.474E-01	0.039
		144.24		4.942E-01	6.804E-01	1.105E+00	1.027E-01	0.447
		154.21		3.070E-01	3.877E-01	6.378E-01	5.735E-02	0.481
	+	269.46		3.242E-01	2.807E-01	3.433E-01	2.980E-02	0.944
		323.87	*	1.898E-02	7.233E-01	1.045E+00	1.847E-01	0.018
	+	338.28		7.207E+00	2.095E+00	2.626E+00	3.223E-01	2.744
		445.03		-7.634E-01	2.320E+00	3.640E+00	4.406E-01	-0.210
PO-209		260.50		-4.378E+00	9.298E+00	1.507E+01	1.281E+00	-0.290
		262.80		1.855E+01	2.556E+01	4.405E+01	3.743E+00	0.421
		896.60	*	-1.748E+00	7.387E+00	1.168E+01	1.070E+00	-0.150
BI-210		46.50	*	4.108E-01	1.806E+00	3.052E+00	2.863E-01	0.135
PB-210		46.50	*	4.108E-01	1.806E+00	3.052E+00	2.863E-01	0.135
PO-210		46.50	*	4.108E-01	1.806E+00	3.052E+00	2.597E-01	0.135
PB-211		404.84	*	6.380E-02	9.304E-01	1.514E+00	9.482E-01	0.042
		427.08		6.300E-01	1.983E+00	3.219E+00	2.000E+00	0.196
		831.96		3.815E-01	1.378E+00	1.988E+00	1.247E+00	0.192
BI-212	+	727.18	*	1.723E+00	6.263E-01	7.484E-01	7.763E-02	2.302
		785.46		9.914E-01	1.784E+00	3.060E+00	2.797E-01	0.324
		1620.62		3.175E-01	1.226E+00	2.074E+00	1.733E-01	0.153
PO-215		81.07		-1.134E-01	2.452E-01	2.728E-01	2.357E-02	-0.416
	+	83.78		2.916E-01	1.124E-01	1.852E-01	1.654E-02	1.575
		94.90		3.539E-01	2.217E-01	3.445E-01	3.115E-02	1.027
		122.32		1.053E-01	1.664E+00	2.683E+00	2.474E-01	0.039
		144.24		4.942E-01	6.804E-01	1.105E+00	1.027E-01	0.447
		154.21		3.070E-01	3.877E-01	6.378E-01	5.735E-02	0.481
	+	269.46		3.242E-01	2.807E-01	3.433E-01	2.980E-02	0.944
		323.87	*	1.898E-02	7.233E-01	1.045E+00	1.847E-01	0.018
	+	338.28		7.207E+00	2.095E+00	2.626E+00	3.223E-01	2.744
		445.03		-7.634E-01	2.320E+00	3.640E+00	4.406E-01	-0.210
RN-219	+	271.23		4.160E-01	3.608E-01	4.529E-01	4.624E-02	0.918
		401.81	*	1.237E-01	4.316E-01	7.124E-01	1.061E-01	0.174
RN-220		549.76	*	2.717E+01	2.537E+01	4.568E+01	4.090E+00	0.595
RA-223		81.07		-1.134E-01	2.452E-01	2.728E-01	2.357E-02	-0.416
	+	83.78		2.916E-01	1.124E-01	1.852E-01	1.654E-02	1.575
		94.90		3.539E-01	2.217E-01	3.445E-01	3.115E-02	1.027
		122.32		1.053E-01	1.664E+00	2.683E+00	2.474E-01	0.039
		144.24		4.942E-01	6.804E-01	1.105E+00	1.027E-01	0.447
		154.21		3.070E-01	3.877E-01	6.378E-01	5.735E-02	0.481
	+	269.46		3.242E-01	2.807E-01	3.433E-01	2.980E-02	0.944
		323.87	*	1.898E-02	7.233E-01	1.045E+00	1.847E-01	0.018

---- 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		7.207E+00	2.095E+00	2.626E+00	3.223E-01	2.744
		445.03		-7.634E-01	2.320E+00	3.640E+00	4.406E-01	-0.210
		79.80		-3.375E-01	1.858E+00	2.116E+00	4.541E-01	-0.159
		236.00		2.899E-01	2.492E-01	3.892E-01	4.716E-02	0.745
		256.20	*	2.266E-01	3.723E-01	6.363E-01	9.721E-02	0.356
TH-227		286.10		5.165E-01	1.479E+00	2.493E+00	3.274E-01	0.207
	+	299.80		3.674E+00	1.718E+00	2.626E+00	4.584E-01	1.399
		304.40		9.821E-01	2.019E+00	3.027E+00	5.572E-01	0.324
		334.20		2.847E-01	3.764E+00	3.941E+00	7.641E-01	0.072
		79.80		-3.375E-01	1.858E+00	2.116E+00	4.599E-01	-0.159
TH-229	+	94.00		1.059E+01	3.663E+00	3.385E+00	7.435E-01	3.128
		236.00		2.899E-01	2.488E-01	3.892E-01	4.256E-02	0.745
		256.20	*	2.266E-01	3.729E-01	6.363E-01	1.146E-01	0.356
		286.10		5.165E-01	1.566E+00	2.493E+00	2.502E+00	0.207
	+	299.80		3.674E+00	1.718E+00	2.626E+00	4.584E-01	1.399
PA-231		304.40		9.821E-01	2.019E+00	3.027E+00	5.572E-01	0.324
		334.20		2.847E-01	3.764E+00	3.941E+00	7.641E-01	0.072
		85.43		5.484E-01	1.717E-01	2.949E-01	2.688E-02	1.860
	+	88.47		2.992E-01	1.100E-01	1.901E-01	1.785E-02	1.574
		100.00		1.121E-01	1.641E-01	2.733E-01	2.421E-02	0.410
TH-231		193.63	*	-1.549E-01	4.726E-01	7.869E-01	6.426E-02	-0.197
		210.97		1.151E+00	8.462E-01	1.343E+00	1.115E-01	0.857
		283.67	*	-9.809E-01	1.485E+00	2.355E+00	3.561E-01	-0.416
	+	301.29		1.470E+00	6.621E-01	1.078E+00	1.315E-01	1.364
		81.07		-1.134E-01	2.452E-01	2.728E-01	2.357E-02	-0.416
U-231	+	83.78		2.916E-01	1.124E-01	1.852E-01	1.654E-02	1.575
		94.90		3.539E-01	2.217E-01	3.445E-01	3.115E-02	1.027
		122.32		1.053E-01	1.664E+00	2.683E+00	2.474E-01	0.039
		144.24		4.942E-01	6.804E-01	1.105E+00	1.027E-01	0.447
		154.21		3.070E-01	3.877E-01	6.378E-01	5.735E-02	0.481
PA-233	+	269.46		3.242E-01	2.807E-01	3.433E-01	2.980E-02	0.944
		323.87	*	1.898E-02	7.233E-01	1.045E+00	1.847E-01	0.018
	+	338.28		7.207E+00	2.095E+00	2.626E+00	3.223E-01	2.744
		445.03		-7.634E-01	2.320E+00	3.640E+00	4.406E-01	-0.210
	+	84.21		1.492E+01	5.748E+00	9.561E+00	8.584E-01	1.560
PA-234	+	92.29		1.242E+01	3.506E+00	4.260E+00	3.904E-01	2.916
		95.87	*	-4.887E-01	1.244E+00	1.764E+00	1.588E-01	-0.277
		108.00		8.576E-02	2.231E+00	3.613E+00	3.138E-01	0.024
	+	75.28		1.957E+01	4.546E+00	6.096E+00	9.178E-01	3.211
	+	86.59		8.565E+00	2.858E+00	2.800E+00	7.569E-01	3.059
PA-234	+	300.12		1.024E+00	4.695E-01	7.275E-01	1.079E-01	1.408
		311.98	*	-2.397E-02	6.248E-02	1.004E-01	8.858E-03	-0.239
		340.50		1.448E+00	8.159E-01	1.209E+00	2.879E-01	1.197
		398.62		1.999E-01	2.135E+00	3.484E+00	9.251E-01	0.057
		415.76		1.300E-01	1.521E+00	2.477E+00	5.324E-01	0.052
PA-234	+	63.00		1.130E+00	1.541E+00	1.947E+00	2.883E-01	0.581
		94.67		4.216E-01	1.678E-01	2.608E-01	3.314E-02	1.617
		98.44		1.146E-01	1.090E-01	1.371E-01	7.653E-02	0.836
		99.86		3.188E-01	4.168E-01	6.964E-01	6.172E-02	0.458

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		111.00		1.218E-01	1.669E-01	2.771E-01	3.356E-02	0.440
		131.20		-1.066E-01	1.076E-01	1.644E-01	1.384E-02	-0.649
		152.70		-3.573E-02	3.230E-01	5.109E-01	8.579E-02	-0.070
	+	186.00		3.179E+00	2.188E+00	2.472E+00	7.682E-01	1.286
		226.40		-2.146E-01	3.851E-01	6.271E-01	8.188E-02	-0.342
		227.20		1.178E-01	4.184E-01	7.100E-01	5.963E-02	0.166
		248.90		-6.026E-01	9.135E-01	1.262E+00	2.822E-01	-0.477
		293.70		5.789E+00	1.361E+00	1.769E+00	3.054E-01	3.272
		369.80		-1.089E+00	8.584E-01	1.216E+00	2.641E-01	-0.895
		568.70		5.417E-01	1.002E+00	1.740E+00	1.561E-01	0.311
		569.50		7.332E-02	2.858E-01	4.755E-01	4.264E-02	0.154
		574.00		-4.986E-01	1.478E+00	2.412E+00	2.163E-01	-0.207
		699.00		1.053E-01	6.676E-01	1.117E+00	2.150E-01	0.094
		706.10		-7.606E-02	1.057E+00	1.735E+00	7.749E-01	-0.044
		733.00		-8.312E-02	4.474E-01	6.234E-01	1.395E-01	-0.133
		742.81		-8.805E-01	1.414E+00	1.971E+00	1.326E+00	-0.447
		796.30		1.382E+00	9.537E-01	1.629E+00	4.434E-01	0.849
		805.60		9.819E-01	9.626E-01	1.651E+00	5.085E-01	0.595
		819.60		-1.117E+00	1.435E+00	1.988E+00	7.585E-01	-0.562
		826.30		-2.614E-01	8.443E-01	1.324E+00	5.936E-01	-0.197
		831.60		2.958E-01	6.723E-01	9.994E-01	2.999E-01	0.296
		876.40		-1.461E-01	8.520E-01	1.339E+00	1.377E+00	-0.109
		880.51		2.623E-01	2.551E-01	4.584E-01	4.203E-02	0.572
		883.24		-1.674E-01	2.908E-01	4.045E-01	2.722E-01	-0.414
		899.00		-4.616E-01	8.273E-01	1.218E+00	5.339E-01	-0.379
		925.00		-5.734E-01	1.131E+00	1.723E+00	1.572E-01	-0.333
		926.50		-4.109E-02	1.748E-01	2.752E-01	7.006E-02	-0.149
		946.00	*	4.495E-02	3.056E-01	5.011E-01	9.513E-02	0.090
		949.00		3.514E-01	4.560E-01	7.913E-01	7.186E-02	0.444
		980.50		6.106E-03	6.841E-01	1.103E+00	9.941E-02	0.006
PA-234M	+	1394.10		5.885E-03	1.078E+00	1.771E+00	1.152E+00	0.003
		766.42		2.553E+01	1.838E+01	2.121E+01	1.078E+01	1.204
U-235		1001.03	*	-5.340E-01	4.448E+00	7.142E+00	7.324E-01	-0.075
	+	89.95		3.004E+00	1.418E+00	1.635E+00	5.078E-01	1.837
	+	93.35		3.294E+00	1.279E+00	1.135E+00	3.199E-01	2.902
		105.00		9.448E-01	1.001E+00	1.620E+00	4.840E-01	0.583
		143.76	*	8.328E-02	2.100E-01	3.363E-01	5.824E-02	0.248
		163.35		1.347E-01	4.571E-01	7.340E-01	1.379E-01	0.184
	+	185.71		1.177E-01	7.293E-02	9.100E-02	7.367E-03	1.294
		205.31		1.256E-01	5.743E-01	8.635E-01	1.634E-01	0.145
NP-236		94.67		3.220E-01	1.242E-01	1.980E-01	1.793E-02	1.626
		98.44		8.659E-02	6.714E-02	1.036E-01	9.230E-03	0.836
		111.00		9.214E-02	1.260E-01	2.096E-01	1.813E-02	0.440
		160.31	*	6.978E-03	7.566E-02	1.206E-01	9.639E-03	0.058
NP-239		99.55		1.550E-01	1.398E-01	2.362E-01	2.096E-02	0.656
		117.00	*	-1.027E-02	1.738E-01	2.792E-01	2.402E-02	-0.037
	+	209.75		1.274E+00	1.033E+00	1.439E+00	1.193E-01	0.886
		228.18		1.614E-01	2.189E-01	3.782E-01	3.179E-02	0.427
		277.60		2.333E-01	1.828E-01	3.201E-01	2.718E-02	0.729

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		334.30		1.312E-01	2.132E+00	2.228E+00	1.909E-01	0.059
AM-241		59.54	*	9.988E-02	1.111E-01	1.716E-01	1.360E-02	0.582
CM-243		99.55		1.595E-01	1.439E-01	2.431E-01	2.156E-02	0.656
		103.76	*	1.085E-02	8.769E-02	1.428E-01	1.251E-02	0.076
		117.00		-1.057E-02	1.788E-01	2.873E-01	2.472E-02	-0.037
	+	209.75		1.256E+00	1.019E+00	1.418E+00	1.176E-01	0.886
		228.18		1.631E-01	2.212E-01	3.822E-01	3.212E-02	0.427
		277.60		2.353E-01	1.843E-01	3.228E-01	2.740E-02	0.729
AM-246		798.80		-2.180E-01	1.430E-01	1.972E-01	1.806E-02	-1.106
		1036.00		-3.102E-02	2.800E-01	4.649E-01	4.107E-02	-0.067
		1062.04		-1.110E-01	2.112E-01	3.342E-01	2.918E-02	-0.332
		1078.86	*	1.021E-01	1.474E-01	2.615E-01	2.264E-02	0.391
CM-247		278.00		7.040E-01	7.546E-01	1.305E+00	1.108E-01	0.540
		287.40		4.704E-01	1.175E+00	1.988E+00	1.693E-01	0.237
		402.60	*	1.645E-02	3.786E-02	6.314E-02	5.301E-03	0.260
CF-249		252.85		-2.595E-01	8.538E-01	1.400E+00	1.189E-01	-0.185
		333.44		-8.314E-02	2.925E-01	2.910E-01	2.493E-02	-0.286
		387.95	*	2.769E-03	4.049E-02	6.611E-02	5.518E-03	0.042
CF-251		176.60	*	-6.268E-02	1.156E-01	1.914E-01	1.533E-02	-0.327
		227.00		1.036E-02	3.701E-01	6.211E-01	5.216E-02	0.017
		285.00		2.196E-01	1.677E+00	2.797E+00	2.381E-01	0.078

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]G243624010      *
* Acquisition date   : 7-JAN-2010 15:51:31 Detector SN#                   *
* Detector ID        : GAM07 Sensitivity : 5.000                          *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.25 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID         : G243624010 Analyst initials: MXR1                  *
* Batch Number      : 937704 Sample Quantity : 1.2790E+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	1.991E+01	2.213E+00	4.995E-01	0.000E+00
CD-109	4.458E+00	9.452E-01	1.080E+00	0.000E+00
SN-126	4.375E-01	9.276E-02	1.063E-01	0.000E+00
TL-208	5.223E-01	9.163E-02	6.111E-02	0.000E+00
BI-211	4.326E+00	5.918E-01	3.457E-01	0.000E+00
PB-212	1.800E+00	2.044E-01	8.953E-02	0.000E+00
PO-212	1.800E+00	2.044E-01	8.953E-02	0.000E+00
BI-214	1.420E+00	2.095E-01	1.119E-01	0.000E+00
PB-214	1.505E+00	2.198E-01	1.205E-01	0.000E+00
PO-214	1.505E+00	2.198E-01	1.205E-01	0.000E+00
PO-216	1.800E+00	2.044E-01	8.953E-02	0.000E+00
PO-218	1.505E+00	2.198E-01	1.205E-01	0.000E+00
RA-224	4.991E+00	1.292E+00	1.019E+00	0.000E+00
RA-226	1.420E+00	2.095E-01	1.119E-01	0.000E+00
AC-228	1.739E+00	3.511E-01	2.042E-01	0.000E+00
RA-228	1.739E+00	3.511E-01	2.042E-01	0.000E+00
TH-228	1.829E+00	2.077E-01	9.098E-02	0.000E+00
TH-230	1.420E+00	2.095E-01	1.119E-01	0.000E+00
TH-232	1.739E+00	3.511E-01	2.042E-01	0.000E+00
TH-234	9.696E-01	1.298E+00	1.584E+00	0.000E+00
U-234	1.420E+00	2.095E-01	1.119E-01	0.000E+00
NP-237	1.285E+00	3.764E-01	3.138E-01	0.000E+00
U-238	9.696E-01	1.298E+00	1.584E+00	0.000E+00
AM-243	3.737E-01	7.122E-02	7.557E-02	0.000E+00
ANH-511	1.515E-01	6.638E-02	4.497E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.696E-01	3.175E-01	5.047E-01	0.000E+00 NOT IDENT.
NA-22	2.315E-02	3.803E-02	6.860E-02	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.447E+06	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.666E-02	2.552E-02	4.896E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.317E-02	7.184E-02	0.000E+00	FAIL ABUN
SC-46	3.972E-02	3.653E-02	6.745E-02	0.000E+00	FAIL ABUN
V-48	-2.081E-02	6.927E-02	1.106E-01	0.000E+00	NOT IDENT.
CR-51	2.659E-01	3.688E-01	6.586E-01	0.000E+00	NOT IDENT.
MN-52	1.584E-01	2.403E-01	4.401E-01	0.000E+00	NOT IDENT.
MN-54	1.767E-02	3.952E-02	6.873E-02	0.000E+00	NOT IDENT.
CO-56	-5.626E-02	4.190E-02	5.801E-02	0.000E+00	NOT IDENT.
CO-57	9.800E-03	2.337E-02	4.054E-02	0.000E+00	NOT IDENT.
CO-58	-4.407E-02	3.674E-02	5.364E-02	0.000E+00	NOT IDENT.
FE-59	-2.872E-02	8.363E-02	1.382E-01	0.000E+00	NOT IDENT.
CO-60	1.419E-02	3.538E-02	6.255E-02	0.000E+00	NOT IDENT.
ZN-65	-6.549E-02	1.049E-01	1.418E-01	0.000E+00	NOT IDENT.
GE-68	6.421E-01	1.242E+00	2.228E+00	0.000E+00	NOT IDENT.
AS-73	-7.043E-03	5.108E-01	8.886E-01	0.000E+00	NOT IDENT.
AS-74	-2.044E-02	8.892E-02	1.510E-01	0.000E+00	NOT IDENT.
SE-75	7.431E-03	4.607E-02	7.515E-02	0.000E+00	NOT IDENT.
BR-77	-2.728E+00	1.335E+01	2.299E+01	0.000E+00	FAIL ABUN
SR-82	-6.247E-01	3.957E-01	5.633E-01	0.000E+00	NOT IDENT.
RB-83	-1.598E-02	6.545E-02	1.124E-01	0.000E+00	NOT IDENT.
RB-84	4.112E-02	6.395E-02	1.140E-01	0.000E+00	NOT IDENT.
KR-85	1.272E+01	7.338E+00	1.283E+01	0.000E+00	NOT IDENT.
SR-85	6.592E-02	3.804E-02	6.649E-02	0.000E+00	NOT IDENT.
RB-86	3.191E-01	8.058E-01	1.432E+00	0.000E+00	NOT IDENT.
Y-88	1.071E-02	2.838E-02	5.189E-02	0.000E+00	NOT IDENT.
ZR-88	1.826E-02	3.233E-02	5.654E-02	0.000E+00	NOT IDENT.
Y-91	1.052E+00	1.794E+01	3.064E+01	0.000E+00	NOT IDENT.
NB-94	3.437E-03	3.344E-02	5.747E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	4.254E-02	7.603E-02	0.000E+00	NOT IDENT.
NB-95M	5.968E-02	1.293E-01	2.054E-01	0.000E+00	NOT IDENT.
ZR-95	9.373E-02	6.811E-02	1.279E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.673E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.624E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	-6.591E+00	1.338E+01	2.154E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.449E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-3.011E-03	2.987E-02	5.252E-02	0.000E+00	NOT IDENT.
RH-102	-1.225E-02	2.634E-02	4.204E-02	0.000E+00	FAIL ABUN
RU-103	1.177E-02	4.097E-02	6.947E-02	0.000E+00	FAIL ABUN
RH-106	-3.038E-01	3.127E-01	4.920E-01	0.000E+00	FAIL ABUN
RU-106	-3.038E-01	3.112E-01	4.920E-01	0.000E+00	FAIL ABUN
AG-108M	2.425E-02	3.191E-02	5.637E-02	0.000E+00	NOT IDENT.
AG-110M	-1.408E-02	3.428E-02	5.681E-02	0.000E+00	NOT IDENT.
IN-111	-5.848E-01	1.389E+00	2.058E+00	0.000E+00	NOT IDENT.
IN-113M	-1.306E-02	4.721E-02	7.843E-02	0.000E+00	NOT IDENT.
SN-113	-1.306E-02	4.721E-02	7.843E-02	0.000E+00	NOT IDENT.
IN-114M	1.128E-01	1.876E-01	3.049E-01	0.000E+00	NOT IDENT.
CD-115	-8.035E+00	1.391E+01	2.321E+01	0.000E+00	NOT IDENT.
SN-117M	2.432E-03	5.357E-02	8.998E-02	0.000E+00	NOT IDENT.
SB-122	1.159E+00	2.582E+00	4.622E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.044E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.164E-02	2.707E-02	4.436E-02	0.000E+00	NOT IDENT.
I-124	4.292E-01	8.267E-01	1.360E+00	0.000E+00	NOT IDENT.
SB-124	-4.202E-02	7.047E-02	1.002E-01	0.000E+00	FAIL ABUN
SB-125	3.849E-02	8.325E-02	1.447E-01	0.000E+00	FAIL ABUN
TE-125M	-6.689E+00	8.680E+00	1.436E+01	0.000E+00	NOT IDENT.
I-126	9.988E-02	1.975E-01	3.504E-01	0.000E+00	NOT IDENT.
SB-126	9.251E-02	1.616E-01	2.644E-01	0.000E+00	FAIL ABUN
SB-127	1.320E+00	1.622E+00	2.937E+00	0.000E+00	NOT IDENT.
XE-127	1.284E-02	4.506E-02	8.079E-02	0.000E+00	NOT IDENT.
I-131	8.982E-02	1.207E-01	2.148E-01	0.000E+00	NOT IDENT.
TE-132	6.217E-01	8.231E-01	1.486E+00	0.000E+00	NOT IDENT.
BA-133	3.452E-02	4.670E-02	7.394E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.220E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.870E-02	4.515E-02	8.508E-02	0.000E+00	NOT IDENT.
CS-135	-5.861E-02	1.724E-01	2.573E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.951E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.089E-01	1.076E-01	2.014E-01	0.000E+00	FAIL ABUN
BA-137M	1.364E-02	3.815E-02	6.647E-02	0.000E+00	NOT IDENT.
CS-137	1.441E-02	4.033E-02	7.026E-02	0.000E+00	NOT IDENT.
CE-139	-2.854E-02	2.948E-02	4.676E-02	0.000E+00	NOT IDENT.
BA-140	8.060E-02	2.665E-01	4.721E-01	0.000E+00	NOT IDENT.
LA-140	9.081E-03	8.487E-02	1.428E-01	0.000E+00	FAIL ABUN
CE-141	6.539E-04	6.358E-02	1.059E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.815E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.244E-02	1.954E-01	3.302E-01	0.000E+00	NOT IDENT.
PM-144	-2.634E-02	3.173E-02	5.005E-02	0.000E+00	NOT IDENT.
PR-144	-1.786E+00	2.151E+00	3.393E+00	0.000E+00	NOT IDENT.

PM-146	3.826E-02	3.918E-02	7.028E-02	0.000E+00	NOT IDENT.
ND-147	-1.039E-03	5.447E-01	9.503E-01	0.000E+00	FAIL ABUN
PM-149	6.156E+01	1.189E+02	2.112E+02	0.000E+00	NOT IDENT.
EU-152	4.727E-02	1.060E-01	1.646E-01	0.000E+00	FAIL ABUN
GD-153	-2.755E-02	7.688E-02	1.161E-01	0.000E+00	FAIL ABUN
EU-154	6.380E-02	1.062E-01	1.912E-01	0.000E+00	NOT IDENT.
EU-155	7.965E-02	9.675E-02	1.715E-01	0.000E+00	FAIL ABUN
TB-160	5.617E-02	1.337E-01	2.328E-01	0.000E+00	FAIL ABUN
HO-166M	-2.211E-02	6.234E-02	1.020E-01	0.000E+00	NOT IDENT.
TM-171	-1.340E+01	2.322E+01	3.563E+01	0.000E+00	NOT IDENT.
LU-176	-5.405E-03	2.365E-02	4.020E-02	0.000E+00	FAIL ABUN
LU-177	2.001E+00	1.590E+00	2.354E+00	0.000E+00	FAIL ABUN
LU-177M	-9.732E-02	1.632E-01	2.622E-01	0.000E+00	NOT IDENT.
HF-181	2.482E-02	4.515E-02	7.805E-02	0.000E+00	NOT IDENT.
W-181	-7.453E-02	2.884E-01	4.500E-01	0.000E+00	NOT IDENT.
TA-182	-1.653E-01	2.025E-01	3.185E-01	0.000E+00	FAIL ABUN
RE-183	9.063E-02	1.030E-01	1.795E-01	0.000E+00	FAIL ABUN
RE-184	-6.945E-02	2.240E-01	3.851E-01	0.000E+00	NOT IDENT.
OS-185	1.633E-02	4.097E-02	7.256E-02	0.000E+00	NOT IDENT.
RE-188	1.532E-01	1.628E-01	2.846E-01	0.000E+00	NOT IDENT.
W-188	-2.046E+00	7.878E+00	1.172E+01	0.000E+00	FAIL ABUN
IR-192	-1.412E-02	3.347E-02	5.606E-02	0.000E+00	FAIL ABUN
AU-195	2.832E-01	2.059E-01	3.574E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.109E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	8.446E+00	8.369E+00	1.462E+01	0.000E+00	NOT IDENT.
TL-202	-1.777E-02	7.376E-02	1.214E-01	0.000E+00	NOT IDENT.
HG-203	2.980E-02	4.034E-02	7.244E-02	0.000E+00	FAIL ABUN
BI-207	-9.373E-03	4.775E-02	7.979E-02	0.000E+00	FAIL ABUN
TL-207	1.898E-02	7.088E-01	1.069E+00	0.000E+00	FAIL ABUN
PO-209	-1.748E+00	7.239E+00	1.177E+01	0.000E+00	NOT IDENT.
BI-210	4.108E-01	1.770E+00	3.214E+00	0.000E+00	NOT IDENT.
PB-210	4.108E-01	1.770E+00	3.214E+00	0.000E+00	NOT IDENT.
PO-210	4.108E-01	1.770E+00	3.214E+00	0.000E+00	NOT IDENT.
PB-211	6.380E-02	9.118E-01	1.544E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	6.137E-01	7.566E-01	0.000E+00	FAIL ABUN
PO-215	1.898E-02	7.088E-01	1.069E+00	0.000E+00	FAIL ABUN
RN-219	1.237E-01	4.229E-01	7.268E-01	0.000E+00	FAIL ABUN
RN-220	2.717E+01	2.486E+01	4.638E+01	0.000E+00	NOT IDENT.
RA-223	1.898E-02	7.088E-01	1.069E+00	0.000E+00	FAIL ABUN
AC-227	2.266E-01	3.648E-01	6.536E-01	0.000E+00	FAIL ABUN
TH-227	2.266E-01	3.655E-01	6.536E-01	0.000E+00	FAIL ABUN
TH-229	-1.549E-01	4.631E-01	8.116E-01	0.000E+00	FAIL ABUN
PA-231	-9.809E-01	1.456E+00	2.416E+00	0.000E+00	FAIL ABUN
TH-231	1.898E-02	7.088E-01	1.069E+00	0.000E+00	FAIL ABUN
U-231	-4.887E-01	1.219E+00	1.838E+00	0.000E+00	FAIL ABUN
PA-233	-2.397E-02	6.123E-02	1.029E-01	0.000E+00	FAIL ABUN
PA-234	4.495E-02	2.995E-01	5.046E-01	0.000E+00	FAIL ABUN
PA-234M	-5.340E-01	4.359E+00	7.185E+00	0.000E+00	FAIL ABUN
U-235	8.328E-02	2.058E-01	3.484E-01	0.000E+00	FAIL ABUN
NP-236	6.978E-03	7.415E-02	1.247E-01	0.000E+00	NOT IDENT.
NP-239	-1.027E-02	1.703E-01	2.901E-01	0.000E+00	FAIL ABUN
AM-241	9.988E-02	1.089E-01	1.800E-01	0.000E+00	NOT IDENT.
CM-243	1.085E-02	8.593E-02	1.486E-01	0.000E+00	FAIL ABUN
AM-246	1.021E-01	1.445E-01	2.627E-01	0.000E+00	NOT IDENT.
CM-247	1.645E-02	3.711E-02	6.441E-02	0.000E+00	NOT IDENT.
CF-249	2.769E-03	3.968E-02	6.748E-02	0.000E+00	NOT IDENT.
CF-251	-6.268E-02	1.133E-01	1.977E-01	0.000E+00	NOT IDENT.

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624010.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:51:31.
Sample ID          : G243624010 Sample quantity : 1.27900E+02 GRAM
Detector name      : GAM07 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.25 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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	817	10.67*	1.129E+00	1.991E+01	1.991E+01	11.34
CD-109	88.03	377	3.72*	6.831E+00	4.352E+00	4.458E+00	21.63
SN-126	64.28	60	9.60	4.780E+00	3.838E-01	3.838E-01	136.29
	86.94	377	8.90	6.831E+00	1.819E+00	1.819E+00	45.87
	87.57	377	37.00*	6.831E+00	4.375E-01	4.375E-01	21.63
TL-208	277.35	-----	6.80	4.401E+00	-----	Line Not Found	-----
	510.84	142	21.60	2.756E+00	7.015E-01	7.015E-01	45.48
	583.14	371	84.20*	2.476E+00	5.223E-01	5.223E-01	17.90
	860.37	36	12.46	1.782E+00	4.702E-01	4.702E-01	84.94
BI-211	72.87	-----	1.27	5.899E+00	-----	Line Not Found	-----
	351.07	702	12.94*	3.681E+00	4.326E+00	4.326E+00	13.96
PB-212	74.81	510	10.70	6.070E+00	2.305E+00	2.305E+00	21.58
	77.11	830	18.00	6.256E+00	2.162E+00	2.162E+00	13.60
	87.30	377	8.00	6.831E+00	2.024E+00	2.024E+00	23.83
	238.63	1343	44.60*	4.910E+00	1.800E+00	1.800E+00	11.59
	300.09	96	3.41	4.150E+00	1.983E+00	1.983E+00	44.59
PO-212	74.81	510	10.70	6.070E+00	2.305E+00	2.305E+00	21.58
	77.11	830	18.00	6.256E+00	2.162E+00	2.162E+00	13.60
	87.30	377	8.00	6.831E+00	2.024E+00	2.024E+00	23.83
	115.19	-----	0.60	7.150E+00	-----	Line Not Found	-----
	238.63	1343	44.60*	4.910E+00	1.800E+00	1.800E+00	11.59
	300.09	96	3.41	4.150E+00	1.983E+00	1.983E+00	44.59
BI-214	609.31	535	46.30*	2.389E+00	1.420E+00	1.420E+00	15.06
	1120.29	111	15.10	1.413E+00	1.522E+00	1.522E+00	37.49
	1764.49	82	15.80	9.833E-01	1.540E+00	1.540E+00	25.06
PB-214	74.81	510	6.21	6.070E+00	3.971E+00	3.971E+00	20.81
	77.11	830	10.50	6.256E+00	3.707E+00	3.707E+00	15.59
	87.30	377	4.67	6.831E+00	3.466E+00	3.467E+00	22.97
	241.98	327	7.49	4.865E+00	2.632E+00	2.632E+00	27.00
	295.21	418	19.20	4.202E+00	1.520E+00	1.520E+00	17.12
	351.92	702	37.20*	3.681E+00	1.505E+00	1.505E+00	14.90
PO-214	74.81	510	6.21	6.070E+00	3.971E+00	3.971E+00	20.81

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-216	77.11	830	10.50	6.256E+00	3.707E+00	3.707E+00	15.59
	87.30	377	4.67	6.831E+00	3.466E+00	3.467E+00	22.97
	241.98	327	7.49	4.865E+00	2.632E+00	2.632E+00	27.00
	295.21	418	19.20	4.202E+00	1.520E+00	1.520E+00	17.12
	351.92	702	37.20*	3.681E+00	1.505E+00	1.505E+00	14.90
	74.81	510	10.70	6.070E+00	2.305E+00	2.305E+00	21.58
	77.11	830	18.00	6.256E+00	2.162E+00	2.162E+00	13.60
	87.30	377	8.00	6.831E+00	2.024E+00	2.024E+00	23.83
	238.63	1343	44.60*	4.910E+00	1.800E+00	1.800E+00	11.59
	300.09	96	3.41	4.150E+00	1.983E+00	1.983E+00	44.59
PO-218	74.81	510	6.21	6.070E+00	3.971E+00	3.971E+00	20.81
	77.11	830	10.50	6.256E+00	3.707E+00	3.707E+00	15.59
	87.30	377	4.67	6.831E+00	3.466E+00	3.467E+00	22.97
	241.98	327	7.49	4.865E+00	2.632E+00	2.632E+00	27.00
	295.21	418	19.20	4.202E+00	1.520E+00	1.520E+00	17.12
	351.92	702	37.20*	3.681E+00	1.505E+00	1.505E+00	14.90
RA-224	240.98	327	3.95*	4.865E+00	4.991E+00	4.991E+00	26.41
RA-226	609.31	535	46.30*	2.389E+00	1.420E+00	1.420E+00	15.06
	1120.29	111	15.10	1.413E+00	1.522E+00	1.522E+00	37.49
	1764.49	82	15.80	9.833E-01	1.540E+00	1.540E+00	25.06
AC-228	338.32	254	11.40	3.792E+00	1.726E+00	1.726E+00	48.95
	911.07	278	27.70*	1.695E+00	1.739E+00	1.739E+00	20.60
	969.11	178	16.60	1.606E+00	1.955E+00	1.955E+00	30.80
RA-228	338.32	254	11.40	3.792E+00	1.726E+00	1.726E+00	48.95
	911.07	278	27.70*	1.695E+00	1.739E+00	1.739E+00	20.60
	969.11	178	16.60	1.606E+00	1.955E+00	1.955E+00	30.80
TH-228	74.81	510	10.70	6.070E+00	2.305E+00	2.342E+00	19.48
	77.11	830	18.00	6.256E+00	2.162E+00	2.197E+00	13.60
	87.30	377	8.00	6.831E+00	2.024E+00	2.056E+00	21.63
	238.63	1343	44.60*	4.910E+00	1.800E+00	1.829E+00	11.59
TH-230	300.09	96	3.41	4.150E+00	1.983E+00	2.015E+00	73.44
	609.31	535	46.30*	2.389E+00	1.420E+00	1.420E+00	15.06
	1120.29	111	15.10	1.413E+00	1.522E+00	1.522E+00	37.49
	1764.49	82	15.80	9.833E-01	1.540E+00	1.540E+00	25.06
TH-232	338.32	254	11.40	3.792E+00	1.726E+00	1.726E+00	27.71
	911.07	278	27.70*	1.695E+00	1.739E+00	1.739E+00	20.60
	969.11	178	16.60	1.606E+00	1.955E+00	1.955E+00	30.80
TH-234	63.29	60	3.80*	4.780E+00	9.696E-01	9.696E-01	136.63
	92.38	355	5.41	7.019E+00	2.740E+00	2.740E+00	32.39
U-234	609.31	535	46.30*	2.389E+00	1.420E+00	1.420E+00	15.06
	1120.29	111	15.10	1.413E+00	1.522E+00	1.522E+00	37.49
	1764.49	82	15.80	9.833E-01	1.540E+00	1.540E+00	25.06
NP-237	86.50	377	12.60*	6.831E+00	1.285E+00	1.285E+00	29.90
	95.87	-----	2.60	7.087E+00	-----	Line Not Found	-----
U-238	63.29	60	3.80*	4.780E+00	9.696E-01	9.696E-01	136.63
	92.38	355	5.41	7.019E+00	2.740E+00	2.740E+00	28.22
AM-243	74.67	510	66.00*	6.070E+00	3.737E-01	3.737E-01	19.45
	86.72	377	0.34	6.831E+00	4.818E+01	4.818E+01	21.63
	117.66	-----	0.55	7.126E+00	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	142.18	-----	0.13	6.723E+00	-----	Line Not Found	-----
ANH-511	511.00	142	100.00*	2.756E+00	1.515E-01	1.515E-01	44.71

Flag: "*" = Keyline

Total number of lines in spectrum 32
Number of unidentified lines 1
Number of lines tentatively identified by NID 31 96.88%

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	1.991E+01	1.991E+01	0.226E+01	11.34	
CD-109	464.00D	1.02	4.352E+00	4.458E+00	0.964E+00	21.63	
SN-126	1.00E+05Y	1.00	4.375E-01	4.375E-01	0.947E-01	21.63	
TL-208	1.41E+10Y	1.00	5.223E-01	5.223E-01	0.935E-01	17.90	
BI-211	7.04E+08Y	1.00	4.326E+00	4.326E+00	0.604E+00	13.96	
PB-212	1.41E+10Y	1.00	1.800E+00	1.800E+00	0.209E+00	11.59	
PO-212	1.41E+10Y	1.00	1.800E+00	1.800E+00	0.209E+00	11.59	
BI-214	1600.00Y	1.00	1.420E+00	1.420E+00	0.214E+00	15.06	
PB-214	1600.00Y	1.00	1.505E+00	1.505E+00	0.224E+00	14.90	
PO-214	1600.00Y	1.00	1.505E+00	1.505E+00	0.224E+00	14.90	
PO-216	1.41E+10Y	1.00	1.800E+00	1.800E+00	0.209E+00	11.59	
PO-218	1600.00Y	1.00	1.505E+00	1.505E+00	0.224E+00	14.90	
RA-224	1.41E+10Y	1.00	4.991E+00	4.991E+00	1.318E+00	26.41	
RA-226	1600.00Y	1.00	1.420E+00	1.420E+00	0.214E+00	15.06	
AC-228	1.41E+10Y	1.00	1.739E+00	1.739E+00	0.358E+00	20.60	
RA-228	1.41E+10Y	1.00	1.739E+00	1.739E+00	0.358E+00	20.60	
TH-228	1.91Y	1.02	1.800E+00	1.829E+00	0.212E+00	11.59	
TH-230	4.47E+09Y	1.00	1.420E+00	1.420E+00	0.214E+00	15.06	
TH-232	1.41E+10Y	1.00	1.739E+00	1.739E+00	0.358E+00	20.60	
TH-234	4.47E+09Y	1.00	9.696E-01	9.696E-01	13.25E-01	136.63	
U-234	4.47E+09Y	1.00	1.420E+00	1.420E+00	0.214E+00	15.06	
NP-237	2.14E+06Y	1.00	1.285E+00	1.285E+00	0.384E+00	29.90	
U-238	4.47E+09Y	1.00	9.696E-01	9.696E-01	13.25E-01	136.63	
AM-243	7380.00Y	1.00	3.737E-01	3.737E-01	0.727E-01	19.45	
ANH-511	1.00E+09Y	1.00	1.515E-01	1.515E-01	0.677E-01	44.71	

Total Activity : 6.090E+01 6.104E+01

Grand Total Activity : 6.090E+01 6.104E+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
5	83.80	164	318	1.65	167.25	164	28	2.28E-02	37.5	6.68E+00	T
5	89.80	191	335	1.18	179.24	164	28	2.66E-02	35.6	6.93E+00	T
0	186.17	126	360	1.32	371.95	367	10	1.75E-02	61.4	5.81E+00	T
0	209.41	76	283	1.12	418.42	415	8	1.05E-02	80.7	5.38E+00	T
0	270.64	67	212	1.11	540.86	536	10	9.35E-03	86.2	4.48E+00	T
0	328.11	93	185	1.81	655.78	651	12	1.30E-02	61.5	3.88E+00	T
0	463.02	97	73	1.53	925.56	921	10	1.34E-02	38.8	2.98E+00	T
0	727.66	143	90	2.03	1454.77	1448	18	1.98E-02	34.8	2.06E+00	T
0	767.88	55	40	1.29	1535.20	1530	10	7.61E-03	51.0	1.97E+00	T
0	837.83	44	95	6.67	1675.08	1664	20	6.07E-03	***	1.82E+00	T
1	964.65	41	57	1.98	1928.69	1922	21	5.73E-03	73.6	1.61E+00	T
0	1730.08	23	0	0.70	3459.43	3454	10	3.19E-03	41.7	9.96E-01	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624010.CNF;1
* Acquisition date   : 7-JAN-2010 15:51:31.  Detector SN#      :
* Detector ID        : GAM07                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.25             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G243624010           Analyst initials: MXR1
* Batch Number       : 937704              Sample Quantity : 1.27900E+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	1.991E+01	2.258E+00	4.995E-01	4.289E-02	39.862
CD-109	4.458E+00	9.645E-01	1.036E+00	9.755E-02	4.305
SN-126	4.375E-01	9.465E-02	1.019E-01	9.543E-03	4.296
TL-208	5.223E-01	9.350E-02	6.024E-02	5.762E-03	8.671
BI-211	4.326E+00	6.039E-01	3.382E-01	3.034E-02	12.792
PB-212	1.800E+00	2.086E-01	8.707E-02	8.329E-03	20.670
PO-212	1.800E+00	2.086E-01	8.707E-02	8.329E-03	20.670
BI-214	1.420E+00	2.138E-01	1.104E-01	1.142E-02	12.859
PB-214	1.505E+00	2.243E-01	1.179E-01	1.223E-02	12.764
PO-214	1.505E+00	2.243E-01	1.179E-01	1.223E-02	12.764
PO-216	1.800E+00	2.086E-01	8.707E-02	8.329E-03	20.670
PO-218	1.505E+00	2.243E-01	1.179E-01	1.223E-02	12.764
RA-224	4.991E+00	1.318E+00	9.911E-01	8.382E-02	5.035
RA-226	1.420E+00	2.138E-01	1.104E-01	1.142E-02	12.859
AC-228	1.739E+00	3.583E-01	2.027E-01	2.362E-02	8.577
RA-228	1.739E+00	3.583E-01	2.027E-01	2.362E-02	8.577
TH-228	1.829E+00	2.120E-01	8.849E-02	8.464E-03	20.670
TH-230	1.420E+00	2.138E-01	1.104E-01	1.142E-02	12.859

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.739E+00	3.583E-01	2.027E-01	2.362E-02	8.577
TH-234	9.696E-01	1.325E+00	1.511E+00	2.629E-01	0.642
U-234	1.420E+00	2.138E-01	1.104E-01	1.142E-02	12.859
NP-237	1.285E+00	3.841E-01	3.007E-01	6.799E-02	4.272
U-238	9.696E-01	1.325E+00	1.511E+00	2.629E-01	0.642
AM-243	3.737E-01	7.268E-02	7.226E-02	5.808E-03	5.171
ANH-511	1.515E-01	6.774E-02	4.424E-02	3.931E-03	3.425

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.696E-01		3.240E-01	4.961E-01	4.682E-02	-0.342
NA-22	2.315E-02		3.881E-02	6.845E-02	5.619E-03	0.338
NA-24	-7.747E-01		1.249E+00	Half-Life too short		
AL-26	1.666E-02		2.604E-02	4.912E-02	4.006E-03	0.339
TI-44	3.990E-01	+	5.426E-02	6.874E-02	5.755E-03	5.805
SC-46	3.972E-02		3.727E-02	6.692E-02	6.133E-03	0.594
V-48	-2.081E-02		7.069E-02	1.099E-01	9.893E-03	-0.189
CR-51	2.659E-01		3.763E-01	6.434E-01	5.814E-02	0.413
MN-52	1.584E-01		2.452E-01	4.400E-01	3.659E-02	0.360
MN-54	1.767E-02		4.032E-02	6.813E-02	6.254E-03	0.259
CO-56	-5.626E-02		4.276E-02	5.751E-02	5.280E-03	-0.978
CO-57	9.800E-03		2.384E-02	3.904E-02	3.359E-03	0.251
CO-58	-4.407E-02		3.749E-02	5.315E-02	4.883E-03	-0.829
FE-59	-2.872E-02		8.534E-02	1.376E-01	1.275E-02	-0.209
CO-60	1.419E-02		3.610E-02	6.245E-02	5.116E-03	0.227
ZN-65	-6.549E-02		1.070E-01	1.412E-01	1.198E-02	-0.464
GE-68	6.421E-01		1.267E+00	2.217E+00	1.921E-01	0.290
AS-73	-7.043E-03		5.212E-01	8.456E-01	6.350E-02	-0.008
AS-74	-2.044E-02		9.074E-02	1.489E-01	1.334E-02	-0.137
SE-75	7.431E-03		4.701E-02	7.321E-02	6.251E-03	0.102
BR-77	-2.728E+00		1.363E+01	2.263E+01	2.015E+00	-0.121
SR-82	-6.247E-01		4.038E-01	5.578E-01	5.093E-02	-1.120
RB-83	-1.598E-02		6.679E-02	1.106E-01	9.849E-03	-0.145
RB-84	4.112E-02		6.526E-02	1.131E-01	1.037E-02	0.364
KR-85	1.272E+01		7.488E+00	1.262E+01	1.122E+00	1.008
SR-85	6.592E-02		3.882E-02	6.542E-02	5.818E-03	1.008
RB-86	3.191E-01		8.222E-01	1.425E+00	1.235E-01	0.224
Y-88	1.071E-02		2.896E-02	5.208E-02	4.226E-03	0.206
ZR-88	1.826E-02		3.299E-02	5.540E-02	4.615E-03	0.330
Y-91	1.052E+00		1.831E+01	3.055E+01	2.495E+00	0.034
NB-94	3.437E-03		3.412E-02	5.681E-02	5.101E-03	0.060
NB-95	8.189E-02		4.341E-02	7.526E-02	6.861E-03	1.088
NB-95M	5.968E-02		1.319E-01	1.997E-01	1.939E-02	0.299
ZR-95	9.373E-02		6.950E-02	1.266E-01	1.257E-02	0.740
NB-97	-9.586E-02		1.364E-01	Half-Life too short		
ZR-97	4.551E+00		2.870E+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	-6.591E+00		1.365E+01	2.131E+01	3.292E+00	-0.309
TC-99M	1.694E+10		3.290E+11	Half-Life too short		
RH-101	-3.011E-03		3.048E-02	5.094E-02	4.178E-03	-0.059
RH-102	-1.225E-02		2.688E-02	4.131E-02	3.624E-03	-0.297
RU-103	1.177E-02		4.180E-02	6.832E-02	9.771E-03	0.172
RH-106	-3.038E-01		3.190E-01	4.855E-01	6.586E-02	-0.626
RU-106	-3.038E-01		3.175E-01	4.855E-01	4.339E-02	-0.626
AG-108M	2.425E-02		3.256E-02	5.532E-02	4.939E-03	0.438
AG-110M	-1.408E-02		3.498E-02	5.611E-02	5.112E-03	-0.251
IN-111	-5.848E-01		1.418E+00	2.002E+00	1.696E-01	-0.292
IN-113M	-1.306E-02		4.817E-02	7.686E-02	6.607E-03	-0.170
SN-113	-1.306E-02		4.817E-02	7.686E-02	6.607E-03	-0.170
IN-114M	1.128E-01		1.915E-01	2.955E-01	2.405E-02	0.382
CD-115	-8.035E+00		1.420E+01	2.284E+01	2.038E+00	-0.352
SN-117M	2.432E-03		5.467E-02	8.698E-02	6.974E-03	0.028
SB-122	1.159E+00		2.634E+00	4.554E+00	4.082E-01	0.254
I-123	-8.791E+00		1.043E+01	Half-Life too short		
TE-123M	-1.164E-02		2.762E-02	4.288E-02	3.460E-03	-0.271
I-124	4.292E-01		8.436E-01	1.342E+00	1.202E-01	0.320
SB-124	-4.202E-02		7.190E-02	1.004E-01	8.695E-03	-0.419
SB-125	3.849E-02		8.495E-02	1.420E-01	1.238E-02	0.271
TE-125M	-6.689E+00		8.857E+00	1.380E+01	1.431E+00	-0.485
I-126	9.988E-02		2.016E-01	3.461E-01	3.068E-02	0.289
SB-126	9.251E-02		1.649E-01	2.615E-01	2.360E-02	0.354
SB-127	1.320E+00		1.655E+00	2.902E+00	3.460E-01	0.455
XE-127	1.284E-02		4.598E-02	7.839E-02	6.460E-03	0.164
I-131	8.982E-02		1.231E-01	2.102E-01	1.884E-02	0.427
TE-132	6.217E-01		8.399E-01	1.445E+00	2.282E-01	0.430
BA-133	3.452E-02		4.765E-02	7.234E-02	9.501E-03	0.477
I-133	6.159E-03		6.227E-03	Half-Life too short		
CS-134	6.870E-02		4.607E-02	8.428E-02	7.765E-03	0.815
CS-135	-5.861E-02		1.759E-01	2.507E-01	2.472E-02	-0.234
I-135	2.777E+10		3.546E+10	Half-Life too short		
CS-136	1.089E-01		1.098E-01	2.004E-01	1.833E-02	0.544
BA-137M	1.364E-02		3.893E-02	6.565E-02	5.810E-03	0.208
CS-137	1.441E-02		4.116E-02	6.940E-02	6.153E-03	0.208
CE-139	-2.854E-02		3.008E-02	4.523E-02	3.578E-03	-0.631
BA-140	8.060E-02		2.720E-01	4.648E-01	1.544E-01	0.173
LA-140	9.081E-03		8.660E-02	1.430E-01	1.196E-02	0.064
CE-141	6.539E-04		6.487E-02	1.023E-01	8.563E-03	0.006
CE-143	1.158E-03		1.947E-04	Half-Life too short		
CE-144	-1.244E-02		1.994E-01	3.184E-01	4.916E-02	-0.039
PM-144	-2.634E-02		3.238E-02	4.947E-02	4.435E-03	-0.532
PR-144	-1.786E+00		2.195E+00	3.354E+00	3.006E-01	-0.532
PM-146	3.826E-02		3.998E-02	6.902E-02	7.437E-03	0.554
ND-147	-1.039E-03		5.558E-01	9.354E-01	1.415E-01	-0.001
PM-149	6.156E+01		1.214E+02	2.060E+02	3.190E+01	0.299
EU-152	4.727E-02		1.081E-01	1.610E-01	1.459E-02	0.294

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	-2.755E-02		7.845E-02	1.114E-01	9.962E-03	-0.247
EU-154	6.380E-02		1.083E-01	1.908E-01	2.097E-02	0.334
EU-155	7.965E-02		9.872E-02	1.648E-01	1.456E-02	0.483
TB-160	5.617E-02		1.364E-01	2.309E-01	2.118E-02	0.243
HO-166M	-2.211E-02		6.361E-02	1.009E-01	9.083E-03	-0.219
TM-171	-1.340E+01		2.369E+01	3.401E+01	2.544E+00	-0.394
LU-176	-5.405E-03		2.413E-02	3.925E-02	3.362E-03	-0.138
LU-177	2.001E+00	+	1.623E+00	2.285E+00	1.892E-01	0.876
LU-177M	-9.732E-02		1.666E-01	2.571E-01	2.177E-02	-0.379
HF-181	2.482E-02		4.607E-02	7.672E-02	6.750E-03	0.323
W-181	-7.453E-02		2.943E-01	4.294E-01	3.177E-02	-0.174
TA-182	-1.653E-01		2.066E-01	3.176E-01	2.598E-02	-0.520
RE-183	9.063E-02		1.052E-01	1.735E-01	1.382E-02	0.522
RE-184	-6.945E-02		2.285E-01	3.748E-01	3.181E-02	-0.185
OS-185	1.633E-02		4.181E-02	7.164E-02	6.369E-03	0.228
RE-188	1.532E-01		1.662E-01	2.751E-01	2.219E-02	0.557
W-188	-2.046E+00		8.039E+00	1.144E+01	9.754E-01	-0.179
IR-192	-1.412E-02		3.416E-02	5.475E-02	4.706E-03	-0.258
AU-195	2.832E-01		2.101E-01	3.431E-01	3.051E-02	0.825
TL-200	-1.904E-04		4.137E-04	Half-Life too short		
TL-201	8.446E+00		8.539E+00	1.415E+01	1.121E+00	0.597
TL-202	-1.777E-02		7.527E-02	1.192E-01	1.026E-02	-0.149
HG-203	2.980E-02		4.117E-02	7.062E-02	6.169E-03	0.422
BI-207	-9.373E-03		4.873E-02	7.939E-02	6.927E-03	-0.118
TL-207	1.898E-02		7.233E-01	1.045E+00	1.847E-01	0.018
PO-209	-1.748E+00		7.387E+00	1.168E+01	1.070E+00	-0.150
BI-210	4.108E-01		1.806E+00	3.052E+00	2.863E-01	0.135
PB-210	4.108E-01		1.806E+00	3.052E+00	2.863E-01	0.135
PO-210	4.108E-01		1.806E+00	3.052E+00	2.597E-01	0.135
PB-211	6.380E-02		9.304E-01	1.514E+00	9.482E-01	0.042
BI-212	1.723E+00	+	6.263E-01	7.484E-01	7.763E-02	2.302
PO-215	1.898E-02		7.233E-01	1.045E+00	1.847E-01	0.018
RN-219	1.237E-01		4.316E-01	7.124E-01	1.061E-01	0.174
RN-220	2.717E+01		2.537E+01	4.568E+01	4.090E+00	0.595
RA-223	1.898E-02		7.233E-01	1.045E+00	1.847E-01	0.018
AC-227	2.266E-01		3.723E-01	6.363E-01	9.721E-02	0.356
TH-227	2.266E-01		3.729E-01	6.363E-01	1.146E-01	0.356
TH-229	-1.549E-01		4.726E-01	7.869E-01	6.426E-02	-0.197
PA-231	-9.809E-01		1.485E+00	2.355E+00	3.561E-01	-0.416
TH-231	1.898E-02		7.233E-01	1.045E+00	1.847E-01	0.018
U-231	-4.887E-01		1.244E+00	1.764E+00	1.588E-01	-0.277
PA-233	-2.397E-02		6.248E-02	1.004E-01	8.858E-03	-0.239
PA-234	4.495E-02		3.056E-01	5.011E-01	9.513E-02	0.090
PA-234M	-5.340E-01		4.448E+00	7.142E+00	7.324E-01	-0.075
U-235	8.328E-02		2.100E-01	3.363E-01	5.824E-02	0.248
NP-236	6.978E-03		7.566E-02	1.206E-01	9.639E-03	0.058
NP-239	-1.027E-02		1.738E-01	2.792E-01	2.402E-02	-0.037
AM-241	9.988E-02		1.111E-01	1.716E-01	1.360E-02	0.582

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	1.085E-02		8.769E-02	1.428E-01	1.251E-02	0.076
AM-246	1.021E-01		1.474E-01	2.615E-01	2.264E-02	0.391
CM-247	1.645E-02		3.786E-02	6.314E-02	5.301E-03	0.260
CF-249	2.769E-03		4.049E-02	6.611E-02	5.518E-03	0.042
CF-251	-6.268E-02		1.156E-01	1.914E-01	1.533E-02	-0.327

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]G243624010          *
* Acquisition date   : 7-JAN-2010 15:51:31 Detector SN#      :             *
* Detector ID        : GAM07 Sensitivity      : 5.000           *
* Geometry           : CAN Energy tolerance: 1.500           *
* Elapsed live time: 0 02:00:00.00 Abundance limit : 75.000    *
* Elapsed real time: 0 02:00:01.25 Half life ratio : 8.000     *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624010 Analyst initials: MXR1         *
* Batch Number       : 937704 Sample Quantity : 1.2790E+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	1.991E+01	2.213E+00	2.499E-01	1.129E+00
CD-109	4.458E+00	9.452E-01	5.406E-01	4.822E-01
SN-126	4.375E-01	9.276E-02	5.317E-02	4.733E-02
TL-208	5.223E-01	9.163E-02	3.057E-02	4.675E-02
BI-211	4.326E+00	5.918E-01	1.730E-01	3.019E-01
PB-212	1.800E+00	2.044E-01	4.479E-02	1.043E-01
PO-212	1.800E+00	2.044E-01	4.479E-02	1.043E-01
BI-214	1.420E+00	2.095E-01	5.600E-02	1.069E-01
PB-214	1.505E+00	2.198E-01	6.030E-02	1.121E-01
PO-214	1.505E+00	2.198E-01	6.030E-02	1.121E-01
PO-216	1.800E+00	2.044E-01	4.479E-02	1.043E-01
PO-218	1.505E+00	2.198E-01	6.030E-02	1.121E-01
RA-224	4.991E+00	1.292E+00	5.098E-01	6.590E-01
RA-226	1.420E+00	2.095E-01	5.600E-02	1.069E-01
AC-228	1.739E+00	3.511E-01	1.022E-01	1.791E-01
RA-228	1.739E+00	3.511E-01	1.022E-01	1.791E-01
TH-228	1.829E+00	2.077E-01	4.552E-02	1.060E-01
TH-230	1.420E+00	2.095E-01	5.600E-02	1.069E-01
TH-232	1.739E+00	3.511E-01	1.022E-01	1.791E-01
TH-234	9.696E-01	1.298E+00	7.924E-01	6.624E-01
U-234	1.420E+00	2.095E-01	5.600E-02	1.069E-01
NP-237	1.285E+00	3.764E-01	1.570E-01	1.921E-01
U-238	9.696E-01	1.298E+00	7.924E-01	6.624E-01
AM-243	3.737E-01	7.122E-02	3.781E-02	3.634E-02
ANH-511	1.515E-01	6.638E-02	2.250E-02	3.387E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.696E-01	3.175E-01	2.525E-01	1.620E-01 NOT IDENT.
NA-22	2.315E-02	3.803E-02	3.432E-02	1.941E-02 NOT IDENT.

NA-24	-7.747E+05	2.447E+06	0.000E+00	1.249E+06	SHORT HLIF
AL-26	1.666E-02	2.552E-02	2.449E-02	1.302E-02	NOT IDENT.
TI-44	3.990E-01	5.317E-02	3.594E-02	2.713E-02	FAIL ABUN
SC-46	3.972E-02	3.653E-02	3.374E-02	1.864E-02	FAIL ABUN
V-48	-2.081E-02	6.927E-02	5.533E-02	3.534E-02	NOT IDENT.
CR-51	2.659E-01	3.688E-01	3.295E-01	1.881E-01	NOT IDENT.
MN-52	1.584E-01	2.403E-01	2.202E-01	1.226E-01	NOT IDENT.
MN-54	1.767E-02	3.952E-02	3.439E-02	2.016E-02	NOT IDENT.
CO-56	-5.626E-02	4.190E-02	2.902E-02	2.138E-02	NOT IDENT.
CO-57	9.800E-03	2.337E-02	2.028E-02	1.192E-02	NOT IDENT.
CO-58	-4.407E-02	3.674E-02	2.684E-02	1.875E-02	NOT IDENT.
FE-59	-2.872E-02	8.363E-02	6.915E-02	4.267E-02	NOT IDENT.
CO-60	1.419E-02	3.538E-02	3.129E-02	1.805E-02	NOT IDENT.
ZN-65	-6.549E-02	1.049E-01	7.093E-02	5.351E-02	NOT IDENT.
GE-68	6.421E-01	1.242E+00	1.114E+00	6.335E-01	NOT IDENT.
AS-73	-7.043E-03	5.108E-01	4.446E-01	2.606E-01	NOT IDENT.
AS-74	-2.044E-02	8.892E-02	7.552E-02	4.537E-02	NOT IDENT.
SE-75	7.431E-03	4.607E-02	3.760E-02	2.351E-02	NOT IDENT.
BR-77	-2.728E+00	1.335E+01	1.150E+01	6.813E+00	FAIL ABUN
SR-82	-6.247E-01	3.957E-01	2.818E-01	2.019E-01	NOT IDENT.
RB-83	-1.598E-02	6.545E-02	5.621E-02	3.339E-02	NOT IDENT.
RB-84	4.112E-02	6.395E-02	5.703E-02	3.263E-02	NOT IDENT.
KR-85	1.272E+01	7.338E+00	6.417E+00	3.744E+00	NOT IDENT.
SR-85	6.592E-02	3.804E-02	3.326E-02	1.941E-02	NOT IDENT.
RB-86	3.191E-01	8.058E-01	7.165E-01	4.111E-01	NOT IDENT.
Y-88	1.071E-02	2.838E-02	2.596E-02	1.448E-02	NOT IDENT.
ZR-88	1.826E-02	3.233E-02	2.829E-02	1.649E-02	NOT IDENT.
Y-91	1.052E+00	1.794E+01	1.533E+01	9.153E+00	NOT IDENT.
NB-94	3.437E-03	3.344E-02	2.875E-02	1.706E-02	NOT IDENT.
NB-95	8.189E-02	4.254E-02	3.804E-02	2.170E-02	NOT IDENT.
NB-95M	5.968E-02	1.293E-01	1.028E-01	6.597E-02	NOT IDENT.
ZR-95	9.373E-02	6.811E-02	6.399E-02	3.475E-02	NOT IDENT.
NB-97	-9.586E+04	2.673E+05	0.000E+00	1.364E+05	SHORT HLIF
ZR-97	4.551E+06	5.624E+06	0.000E+00	2.870E+06	SHORT HLIF
MO-99	-6.591E+00	1.338E+01	1.078E+01	6.825E+00	NOT IDENT.
TC-99M	1.694E+16	6.449E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-3.011E-03	2.987E-02	2.628E-02	1.524E-02	NOT IDENT.
RH-102	-1.225E-02	2.634E-02	2.103E-02	1.344E-02	FAIL ABUN
RU-103	1.177E-02	4.097E-02	3.476E-02	2.090E-02	FAIL ABUN
RH-106	-3.038E-01	3.127E-01	2.462E-01	1.595E-01	FAIL ABUN
RU-106	-3.038E-01	3.112E-01	2.462E-01	1.588E-01	FAIL ABUN
AG-108M	2.425E-02	3.191E-02	2.820E-02	1.628E-02	NOT IDENT.
AG-110M	-1.408E-02	3.428E-02	2.842E-02	1.749E-02	NOT IDENT.
IN-111	-5.848E-01	1.389E+00	1.029E+00	7.089E-01	NOT IDENT.
IN-113M	-1.306E-02	4.721E-02	3.924E-02	2.409E-02	NOT IDENT.
SN-113	-1.306E-02	4.721E-02	3.924E-02	2.409E-02	NOT IDENT.
IN-114M	1.128E-01	1.876E-01	1.525E-01	9.574E-02	NOT IDENT.
CD-115	-8.035E+00	1.391E+01	1.161E+01	7.098E+00	NOT IDENT.
SN-117M	2.432E-03	5.357E-02	4.502E-02	2.733E-02	NOT IDENT.
SB-122	1.159E+00	2.582E+00	2.312E+00	1.317E+00	NOT IDENT.
I-123	-8.791E+06	2.044E+07	0.000E+00	1.043E+07	SHORT HLIF
TE-123M	-1.164E-02	2.707E-02	2.219E-02	1.381E-02	NOT IDENT.
I-124	4.292E-01	8.267E-01	6.805E-01	4.218E-01	NOT IDENT.
SB-124	-4.202E-02	7.047E-02	5.011E-02	3.595E-02	FAIL ABUN
SB-125	3.849E-02	8.325E-02	7.241E-02	4.247E-02	FAIL ABUN
TE-125M	-6.689E+00	8.680E+00	7.183E+00	4.428E+00	NOT IDENT.
I-126	9.988E-02	1.975E-01	1.753E-01	1.008E-01	NOT IDENT.
SB-126	9.251E-02	1.616E-01	1.323E-01	8.244E-02	FAIL ABUN
SB-127	1.320E+00	1.622E+00	1.469E+00	8.277E-01	NOT IDENT.
XE-127	1.284E-02	4.506E-02	4.042E-02	2.299E-02	NOT IDENT.
I-131	8.982E-02	1.207E-01	1.075E-01	6.156E-02	NOT IDENT.
TE-132	6.217E-01	8.231E-01	7.437E-01	4.200E-01	NOT IDENT.
BA-133	3.452E-02	4.670E-02	3.699E-02	2.383E-02	NOT IDENT.
I-133	6.159E+03	1.220E+04	0.000E+00	6.227E+03	SHORT HLIF
CS-134	6.870E-02	4.515E-02	4.257E-02	2.304E-02	NOT IDENT.
CS-135	-5.861E-02	1.724E-01	1.287E-01	8.797E-02	NOT IDENT.
I-135	2.777E+16	6.951E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.089E-01	1.076E-01	1.008E-01	5.488E-02	FAIL ABUN
BA-137M	1.364E-02	3.815E-02	3.325E-02	1.947E-02	NOT IDENT.
CS-137	1.441E-02	4.033E-02	3.515E-02	2.058E-02	NOT IDENT.
CE-139	-2.854E-02	2.948E-02	2.339E-02	1.504E-02	NOT IDENT.
BA-140	8.060E-02	2.665E-01	2.362E-01	1.360E-01	NOT IDENT.
LA-140	9.081E-03	8.487E-02	7.143E-02	4.330E-02	FAIL ABUN
CE-141	6.539E-04	6.358E-02	5.300E-02	3.244E-02	NOT IDENT.
CE-143	1.158E+03	3.815E+02	0.000E+00	1.947E+02	SHORT HLIF
CE-144	-1.244E-02	1.954E-01	1.652E-01	9.972E-02	NOT IDENT.
PM-144	-2.634E-02	3.173E-02	2.504E-02	1.619E-02	NOT IDENT.
PR-144	-1.786E+00	2.151E+00	1.698E+00	1.098E+00	NOT IDENT.

PM-146	3.826E-02	3.918E-02	3.516E-02	1.999E-02	NOT IDENT.
ND-147	-1.039E-03	5.447E-01	4.754E-01	2.779E-01	FAIL ABUN
PM-149	6.156E+01	1.189E+02	1.057E+02	6.068E+01	NOT IDENT.
EU-152	4.727E-02	1.060E-01	8.235E-02	5.407E-02	FAIL ABUN
GD-153	-2.755E-02	7.688E-02	5.807E-02	3.922E-02	FAIL ABUN
EU-154	6.380E-02	1.062E-01	9.566E-02	5.417E-02	NOT IDENT.
EU-155	7.965E-02	9.675E-02	8.582E-02	4.936E-02	FAIL ABUN
TB-160	5.617E-02	1.337E-01	1.165E-01	6.820E-02	FAIL ABUN
HO-166M	-2.211E-02	6.234E-02	5.104E-02	3.181E-02	NOT IDENT.
TM-171	-1.340E+01	2.322E+01	1.783E+01	1.184E+01	NOT IDENT.
LU-176	-5.405E-03	2.365E-02	2.011E-02	1.206E-02	FAIL ABUN
LU-177	2.001E+00	1.590E+00	1.178E+00	8.113E-01	FAIL ABUN
LU-177M	-9.732E-02	1.632E-01	1.312E-01	8.328E-02	NOT IDENT.
HF-181	2.482E-02	4.515E-02	3.905E-02	2.303E-02	NOT IDENT.
W-181	-7.453E-02	2.884E-01	2.251E-01	1.471E-01	NOT IDENT.
TA-182	-1.653E-01	2.025E-01	1.594E-01	1.033E-01	FAIL ABUN
RE-183	9.063E-02	1.030E-01	8.978E-02	5.258E-02	FAIL ABUN
RE-184	-6.945E-02	2.240E-01	1.926E-01	1.143E-01	NOT IDENT.
OS-185	1.633E-02	4.097E-02	3.630E-02	2.090E-02	NOT IDENT.
RE-188	1.532E-01	1.628E-01	1.424E-01	8.309E-02	NOT IDENT.
W-188	-2.046E+00	7.878E+00	5.865E+00	4.020E+00	FAIL ABUN
IR-192	-1.412E-02	3.347E-02	2.805E-02	1.708E-02	FAIL ABUN
AU-195	2.832E-01	2.059E-01	1.788E-01	1.051E-01	FAIL ABUN
TL-200	-1.904E+02	8.109E+02	0.000E+00	4.137E+02	SHORT HLIF
TL-201	8.446E+00	8.369E+00	7.317E+00	4.270E+00	NOT IDENT.
TL-202	-1.777E-02	7.376E-02	6.074E-02	3.763E-02	NOT IDENT.
HG-203	2.980E-02	4.034E-02	3.624E-02	2.058E-02	FAIL ABUN
BI-207	-9.373E-03	4.775E-02	3.992E-02	2.436E-02	FAIL ABUN
TL-207	1.898E-02	7.088E-01	5.350E-01	3.616E-01	FAIL ABUN
PO-209	-1.748E+00	7.239E+00	5.891E+00	3.694E+00	NOT IDENT.
BI-210	4.108E-01	1.770E+00	1.608E+00	9.031E-01	NOT IDENT.
PB-210	4.108E-01	1.770E+00	1.608E+00	9.031E-01	NOT IDENT.
PO-210	4.108E-01	1.770E+00	1.608E+00	9.031E-01	NOT IDENT.
PB-211	6.380E-02	9.118E-01	7.725E-01	4.652E-01	NOT IDENT.
BI-212	1.723E+00	6.137E-01	3.785E-01	3.131E-01	FAIL ABUN
PO-215	1.898E-02	7.088E-01	5.350E-01	3.616E-01	FAIL ABUN
RN-219	1.237E-01	4.229E-01	3.636E-01	2.158E-01	FAIL ABUN
RN-220	2.717E+01	2.486E+01	2.321E+01	1.268E+01	NOT IDENT.
RA-223	1.898E-02	7.088E-01	5.350E-01	3.616E-01	FAIL ABUN
AC-227	2.266E-01	3.648E-01	3.270E-01	1.861E-01	FAIL ABUN
TH-227	2.266E-01	3.655E-01	3.270E-01	1.865E-01	FAIL ABUN
TH-229	-1.549E-01	4.631E-01	4.060E-01	2.363E-01	FAIL ABUN
PA-231	-9.809E-01	1.456E+00	1.208E+00	7.427E-01	FAIL ABUN
TH-231	1.898E-02	7.088E-01	5.350E-01	3.616E-01	FAIL ABUN
U-231	-4.887E-01	1.219E+00	9.197E-01	6.219E-01	FAIL ABUN
PA-233	-2.397E-02	6.123E-02	5.146E-02	3.124E-02	FAIL ABUN
PA-234	4.495E-02	2.995E-01	2.524E-01	1.528E-01	FAIL ABUN
PA-234M	-5.340E-01	4.359E+00	3.594E+00	2.224E+00	FAIL ABUN
U-235	8.328E-02	2.058E-01	1.743E-01	1.050E-01	FAIL ABUN
NP-236	6.978E-03	7.415E-02	6.241E-02	3.783E-02	NOT IDENT.
NP-239	-1.027E-02	1.703E-01	1.451E-01	8.688E-02	FAIL ABUN
AM-241	9.988E-02	1.089E-01	9.007E-02	5.554E-02	NOT IDENT.
CM-243	1.085E-02	8.593E-02	7.435E-02	4.384E-02	FAIL ABUN
AM-246	1.021E-01	1.445E-01	1.314E-01	7.372E-02	NOT IDENT.
CM-247	1.645E-02	3.711E-02	3.222E-02	1.893E-02	NOT IDENT.
CF-249	2.769E-03	3.968E-02	3.376E-02	2.025E-02	NOT IDENT.
CF-251	-6.268E-02	1.133E-01	9.890E-02	5.778E-02	NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.50	290.9142
46.50	290.9142
46.50	290.9142
48.70	345.6870
49.72	343.7728
51.35	317.5786
52.39	317.4692
52.97	327.5134
53.15	319.0395
53.44	320.2311
54.07	296.7293
56.28	334.0718
56.28	334.0735
57.37	0.0000
57.53	374.7901
57.53	374.7921
57.60	374.8531
57.98	357.7428
57.98	357.7428
59.32	322.4094
59.32	322.4094
59.40	329.7650
59.54	316.7370
59.72	316.8711
60.01	341.9263
61.10	336.9334
61.14	336.9641
61.30	337.0887
63.00	407.0597
63.29	407.3267
63.29	407.3267
63.58	407.5932
64.28	422.0045
65.12	415.4023
65.20	415.4758
65.20	415.4758
66.05	422.1793
66.72	449.4998
66.83	449.6107
66.91	427.4275
67.20	399.4795
67.20	399.4795
67.75	414.8239
67.85	414.9133
68.90	436.2201
68.90	436.2201
69.30	463.4449
69.67	458.6367
70.82	434.0066
70.82	434.0066
70.83	434.0154
72.80	449.3212
72.87	449.3874
72.87	449.3874
74.67	448.5294
74.81	448.6564
74.81	448.6564
74.81	448.6564
74.81	448.6564
74.81	448.6564
74.81	448.6564
74.81	448.6564
74.97	448.8016
75.28	449.0829
75.70	449.4617
77.11	450.7298
77.11	450.7298

77.11	450.7298
77.11	450.7298
77.11	450.7298
77.11	450.7298
77.11	450.7298
78.38	430.0792
79.62	414.3646
79.80	414.5099
79.80	414.5099
80.11	396.4607
80.18	396.5143
80.30	396.6055
80.30	396.6055
80.57	329.6591
81.00	415.4707
81.07	415.5267
81.07	415.5267
81.07	415.5267
81.07	415.5267
82.60	376.9071
83.37	400.4687
83.78	355.2263
83.78	355.2263
83.78	355.2263
83.78	355.2263
84.21	355.5140
84.90	355.9712
85.43	356.3224
86.29	356.8907
86.50	357.0284
86.54	357.0548
86.59	357.0883
86.72	357.1731
86.79	357.2172
86.94	357.3178
87.30	357.5525
87.30	357.5525
87.30	357.5525
87.30	357.5525
87.30	357.5525
87.30	357.5525
87.57	357.7290
87.88	357.9320
88.03	358.0291
88.36	358.2444
88.47	358.3167
89.95	359.2733
91.11	360.0199
92.29	360.7718
92.38	360.8300
92.38	360.8300
93.35	361.4442
94.00	361.8554
94.67	289.7146
94.67	289.7174
94.90	303.9331
94.90	303.9331
94.90	303.9331
94.90	303.9331
94.90	303.9331
95.87	335.8281
95.87	335.8281
96.73	344.1825
97.43	320.9897
98.44	260.0696
98.44	260.0696
98.88	267.5180
99.55	274.7677
99.55	274.7677
99.86	281.2308
100.00	281.2960
100.10	290.8284
103.18	302.9033
103.76	291.5301
105.00	271.9349
105.31	278.4483
108.00	293.5261
109.28	325.1369

111.00	260.5976
111.00	260.5976
111.76	281.3054
112.95	288.2778
115.19	265.5228
116.30	245.4271
117.00	265.1687
117.00	265.1687
117.66	277.3490
121.11	236.3029
121.62	244.1090
121.78	244.1660
122.06	256.2615
122.32	270.5398
122.32	270.5398
122.32	270.5398
122.32	270.5398
123.07	276.2967
127.23	322.9973
129.76	275.6405
131.20	341.3792
133.02	291.2921
133.54	281.5255
135.34	282.2205
136.00	279.1374
136.25	280.3444
136.48	293.7854
140.51	277.4762
140.51	0.0000
142.18	307.2438
142.65	292.8497
143.76	265.1831
144.24	256.3562
144.24	256.3562
144.24	256.3562
144.24	256.3562
145.22	261.1865
145.44	277.0253
147.16	297.9561
152.43	278.3715
152.70	279.6028
153.22	251.3520
154.21	247.1073
154.21	247.1073
154.21	247.1073
154.21	247.1073
155.03	232.5402
156.02	259.0766
158.56	234.6998
159.00	0.0000
159.00	254.2982
160.31	235.2003
161.27	233.1762
162.32	216.2199
162.64	216.3021
163.35	238.3646
163.89	243.1295
165.85	278.3449
167.43	212.9091
171.28	263.8473
171.86	274.4931
172.10	274.5699
176.55	244.6891
176.60	244.7040
181.06	255.2758
184.41	274.6289
185.71	247.1987
186.00	247.2775
190.27	219.3974
192.34	222.2045
193.63	238.5954
197.04	208.9644
198.01	214.5625
198.60	217.3886
200.40	248.3962
201.83	234.3436
202.84	237.2943
205.31	251.8242

208.36	277.2857
208.81	284.6737
209.75	262.5898
209.75	262.5898
210.97	227.0684
215.65	223.9210
216.55	233.2669
218.09	216.2121
222.10	193.1419
223.80	223.8580
226.40	219.7966
227.00	211.6056
227.08	211.6230
227.20	207.9489
228.16	196.1120
228.18	196.1168
228.18	196.1168
231.56	0.0000
235.69	210.1678
236.00	207.2461
236.00	207.2461
238.63	195.2295
238.63	195.2295
238.63	195.2295
238.63	195.2295
239.00	195.2965
240.98	195.6489
241.98	195.8267
241.98	195.8267
241.98	195.8267
244.69	172.8243
245.39	169.9262
247.94	164.2850
248.90	191.5775
249.79	173.6132
252.40	183.4706
252.85	185.4353
252.85	185.4353
254.15	0.0000
256.20	165.1043
256.20	165.1043
260.50	179.0527
260.90	172.4466
262.80	150.7770
264.65	170.7688
268.24	190.2050
268.79	173.4120
269.46	150.4788
269.46	150.4788
269.46	150.4788
269.46	150.4788
271.23	173.7679
273.65	231.1304
276.40	176.5011
277.35	173.8779
277.60	162.3193
277.60	162.3193
278.00	168.1722
278.60	154.7168
279.20	162.5321
279.53	182.8976
280.46	197.5627
281.68	175.4625
283.67	166.0372
284.30	157.3775
285.00	148.7184
285.90	140.0713
286.10	145.9305
286.10	145.9305
287.40	142.1883
288.45	0.0000
290.67	156.2280
290.80	156.2451
291.72	154.7963
293.26	0.0000
293.70	145.6417
295.21	162.6692
295.21	162.6692

295.21	162.6692
295.96	162.7654
296.50	162.8338
297.23	162.9275
298.57	163.0972
299.80	163.2543
299.80	163.2543
300.09	165.2571
300.09	165.2571
300.09	165.2571
300.09	165.2571
300.12	165.2622
301.29	130.7534
302.84	141.9500
303.76	145.2077
303.91	145.2234
304.40	132.6466
304.40	132.6466
304.84	137.4307
306.84	145.3536
308.46	133.6528
311.98	143.9358
316.51	143.4287
318.01	146.5806
319.02	135.7136
319.41	135.7531
320.08	125.8327
323.87	134.5969
323.87	134.5969
323.87	134.5969
323.87	134.5969
325.23	128.3145
328.77	162.8182
333.44	177.4851
334.20	157.4020
334.20	157.4020
334.30	157.4139
338.28	134.5870
338.28	134.5870
338.28	134.5870
338.28	134.5870
338.32	134.5911
338.32	134.5911
338.32	134.5911
340.50	142.7035
340.57	142.7100
344.27	120.3205
345.85	127.5059
350.59	0.0000
351.07	139.8806
351.92	139.9643
351.92	139.9643
351.92	139.9643
355.39	0.0000
356.01	96.7133
364.48	100.9788
366.43	119.6834
367.43	107.3738
367.94	0.0000
369.80	129.2591
374.96	98.5718
383.85	99.1444
387.95	117.1953
388.63	112.0124
391.69	135.3067
391.69	135.3067
392.90	118.6159
398.62	114.8312
400.65	118.1421
401.10	124.5053
401.81	118.2275
402.60	110.8928
404.84	111.0482
410.95	93.4208
411.60	94.5204
413.65	104.2087
414.70	96.8277
415.30	96.8625

415.76	88.3724
417.63	0.0000
418.52	88.5206
423.70	99.4951
427.08	85.7605
427.89	79.3669
432.53	90.3408
433.93	86.1096
439.47	104.7483
439.56	104.7528
439.89	104.7735
443.98	108.2703
444.90	102.9118
445.03	102.9205
445.03	102.9205
445.03	102.9205
445.03	102.9205
453.90	66.4228
463.38	80.5730
468.07	72.0032
473.00	81.4456
475.06	80.4363
475.35	81.5518
476.78	89.3353
477.59	93.7885
477.96	86.0826
482.03	90.6985
484.57	91.9312
487.03	96.4904
490.36	0.0000
492.35	72.2968
497.08	81.3999
507.63	0.0000
510.53	0.0000
510.84	79.7450
511.00	79.7515
511.85	79.7867
511.85	79.7867
513.99	69.0000
513.99	69.0000
520.41	84.8800
520.65	84.8914
527.90	85.2059
528.96	0.0000
529.64	71.6728
529.87	0.0000
531.02	74.4466
537.32	80.1475
543.00	77.6331
546.56	0.0000
549.76	65.0648
552.65	92.6877
555.20	76.2644
563.23	72.8725
563.90	76.5865
568.70	79.5374
569.32	83.2632
569.50	83.2698
569.67	83.2764
573.80	88.0768
574.00	87.1565
574.64	85.3291
578.91	80.5454
579.30	0.0000
583.14	84.7415
585.48	71.4726
591.81	81.3458
592.07	77.6139
593.00	76.7128
595.88	76.8149
600.56	92.9406
602.52	0.0000
602.71	76.5202
602.71	76.5202
603.60	73.6421
604.41	73.6689
604.70	73.6785
609.31	80.1171

609.31	80.1171
609.31	80.1171
609.31	80.1171
610.33	80.1544
612.46	77.0849
614.37	89.7490
618.01	66.2385
621.84	86.2589
621.84	86.2589
631.29	62.8241
633.02	67.6355
633.10	67.6372
634.78	61.0141
635.90	80.1199
636.97	86.8388
645.85	76.6387
646.12	63.2333
656.30	79.8713
657.75	78.9570
657.90	0.0000
661.65	81.0182
661.65	81.0182
664.57	0.0000
666.33	77.3145
666.33	77.3145
675.00	64.9880
677.61	69.9135
685.20	60.3940
692.80	61.5604
695.00	65.5295
696.49	74.3765
696.49	74.3765
697.00	65.5818
697.49	68.5320
698.33	67.5765
698.50	68.5610
699.00	63.6765
702.63	75.5450
706.10	75.6502
706.58	0.0000
706.67	71.7364
709.31	73.7805
711.68	74.8366
713.82	66.0316
717.42	71.0613
720.50	60.7027
721.93	0.0000
722.20	60.9786
722.78	62.6406
722.78	62.6406
722.89	62.6437
722.95	62.6453
723.30	67.6010
724.18	70.9230
727.18	59.4478
733.00	72.8249
735.90	39.7686
739.58	56.7509
742.81	63.8016
744.21	45.8821
747.13	46.9323
751.79	67.0245
752.31	68.0382
753.82	71.0815
755.35	55.0953
756.15	44.0902
756.87	47.1090
763.93	48.5764
765.79	36.8770
766.42	53.6523
766.84	62.0446
776.49	82.8048
778.00	75.7782
778.57	54.5722
778.89	54.5788
783.80	61.7670
785.46	59.7793
792.07	72.1146

795.84	45.7701
796.30	43.7433
798.80	81.4570
801.93	55.0468
805.60	38.7886
810.29	63.3941
810.76	62.3820
815.85	40.9824
817.79	58.4403
818.51	68.7110
819.60	67.7128
826.30	60.6767
828.27	0.0000
831.60	46.3656
831.96	53.2421
834.83	67.0503
836.80	0.0000
846.75	73.6632
848.13	65.2917
856.28	0.0000
856.80	58.9065
860.37	51.0002
867.32	41.7324
867.82	41.7393
871.10	53.2779
873.19	47.0435
874.81	42.8858
875.33	0.0000
876.40	53.3744
879.36	43.9995
880.27	34.5823
880.51	32.4887
881.50	36.6936
883.24	50.3520
884.67	58.7727
889.25	34.6871
896.60	52.6868
898.02	49.5485
899.00	52.7295
903.28	34.6997
911.07	48.7054
911.07	48.7054
911.07	48.7054
919.63	35.8363
920.93	48.8638
925.00	49.9926
925.24	48.9334
926.50	51.0820
935.52	57.6360
937.48	70.4875
944.10	54.5847
946.00	49.2636
949.00	43.9509
962.29	59.2083
964.01	44.1611
966.15	44.1911
968.20	44.2191
969.11	39.5572
969.11	39.5572
969.11	39.5572
977.42	38.9391
980.50	41.1422
983.50	45.5150
989.30	47.7684
996.32	46.7845
1001.03	42.4934
1001.68	39.2326
1004.76	54.5410
1021.30	0.0000
1024.50	0.0000
1034.80	42.1966
1036.00	44.9645
1037.82	45.9066
1038.57	44.9984
1038.76	0.0000
1045.16	49.6868
1046.59	49.7087
1048.07	36.8376

1050.47	47.0011
1050.47	47.0011
1062.04	48.0856
1063.62	37.9303
1076.63	46.4315
1077.35	46.4417
1078.86	46.4620
1085.78	54.9356
1099.22	46.7346
1112.02	39.3989
1112.84	39.4075
1115.52	65.9987
1120.29	47.0133
1120.29	47.0133
1120.29	47.0133
1120.29	47.0133
1120.51	47.0154
1121.28	47.0256
1124.00	0.0000
1129.67	56.5625
1131.51	0.0000
1147.95	0.0000
1167.94	65.7347
1173.22	35.2987
1175.09	44.8619
1177.93	67.8221
1189.05	53.6530
1204.90	52.9165
1205.75	0.0000
1213.00	60.7416
1221.42	74.4058
1230.97	68.7784
1235.34	90.1921
1236.41	0.0000
1238.25	55.3185
1246.25	60.2971
1260.41	0.0000
1271.85	35.2397
1274.45	29.3860
1274.54	29.3860
1291.56	38.3652
1298.22	0.0000
1312.09	29.6619
1325.50	25.7916
1325.50	25.7916
1332.49	24.8423
1333.61	20.8727
1360.21	31.0101
1362.66	0.0000
1365.15	27.0406
1368.21	34.0761
1368.53	0.0000
1376.25	34.1411
1384.27	32.1940
1394.10	22.1844
1395.20	16.1380
1407.95	28.3258
1434.06	16.2839
1436.60	17.3113
1457.56	0.0000
1460.81	19.4546
1489.15	12.3652
1509.49	18.6313
1596.49	17.9262
1620.62	15.8972
1678.03	0.0000
1691.02	15.0505
1691.02	15.0505
1706.46	0.0000
1750.46	0.0000
1764.49	9.3481
1764.49	9.3481
1764.49	9.3481
1764.49	9.3481
1770.23	9.8262
1771.40	52.4199
1791.20	0.0000
1808.65	6.5989

1836.01

7.5804

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624010

Total Uranium Activity	2.9230E+00	ug/g
Total Uranium Counting Unc.	3.8635E+00	ug/g
Total Uranium Tpu	1.9712E-06	ug/g
Total Uranium Mda	2.3589E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624010
*  ANALYST       : MXR1            DETECTOR    : GAM07
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE : 7-JAN-2010 15:51:31.01  SAMPLE ALQT: 127.900 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.776E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 1.243E+00
GROSS GAMMA MDA (pCi/GRAM )     : 3.233E+00
GROSS GAMMA DLC (pCi/GRAM )     : 1.568E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 17:54:31.92

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624011.CNF;1
Sample date       : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:51:54.
Sample ID        : G243624011 Sample quantity : 1.21910E+02 GRAM
Detector name    : GAM10 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.00 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID        : 937704 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	2	74.58*	410	371	1.17	149.29	143	18	5.69E-02	9.5	2.19E+00
2	2	76.82	526	315	1.07	153.78	143	18	7.31E-02	7.0	
3	0	87.03	190	423	1.34	174.17	171	7	2.64E-02	19.4	
4	6	89.78	127	344	0.99	179.68	177	12	1.76E-02	24.2	1.22E+00
5	6	92.73*	187	351	1.46	185.57	177	12	2.60E-02	19.2	
6	0	185.76*	220	322	1.35	371.47	366	10	3.05E-02	17.3	
7	0	209.09	84	268	1.05	418.09	415	8	1.17E-02	35.3	
8	5	238.55*	1216	204	1.04	476.97	472	17	1.69E-01	3.5	1.75E+00
9	5	241.59	316	257	1.72	483.04	472	17	4.39E-02	13.0	
10	0	270.20	131	189	1.96	540.21	535	11	1.82E-02	22.2	
11	0	277.68	60	192	1.41	555.17	550	10	8.28E-03	45.6	
12	0	295.14*	432	145	1.24	590.07	585	10	6.00E-02	7.2	
13	0	299.69	123	131	1.06	599.16	595	9	1.70E-02	19.1	
14	0	328.62	56	198	1.03	656.98	651	10	7.84E-03	48.5	
15	0	338.59*	287	247	1.48	676.90	669	16	3.99E-02	13.9	
16	0	352.00*	696	166	1.29	703.70	698	12	9.66E-02	5.4	
17	0	409.57	31	127	1.65	818.77	813	10	4.37E-03	69.4	
18	0	463.54	94	102	2.37	926.65	920	12	1.31E-02	23.8	
19	0	510.70*	86	133	1.24	1020.91	1014	14	1.20E-02	34.2	
20	0	583.36*	346	116	1.45	1166.16	1158	13	4.81E-02	8.5	
21	0	609.45*	542	101	1.39	1218.33	1212	13	7.52E-02	5.9	
22	0	727.84*	97	104	2.14	1455.01	1447	16	1.35E-02	25.7	
23	0	768.79	42	60	0.96	1536.88	1531	11	5.83E-03	39.1	
24	0	795.48	51	57	0.96	1590.26	1584	12	7.05E-03	32.9	
25	0	861.06	66	56	2.05	1721.37	1715	16	9.17E-03	28.2	
26	0	911.48*	245	52	1.24	1822.21	1816	13	3.40E-02	9.0	
27	0	935.27	34	38	1.26	1869.77	1864	9	4.75E-03	37.3	
28	2	965.16	50	62	1.96	1929.54	1924	22	6.97E-03	33.8	1.81E+00
29	2	969.26*	136	50	1.78	1937.74	1924	22	1.89E-02	13.5	
30	0	1120.72*	108	31	1.64	2240.65	2237	9	1.50E-02	13.7	
31	0	1239.16*	34	48	2.28	2477.54	2468	12	4.79E-03	44.4	
32	0	1378.31	35	18	1.31	2755.88	2750	12	4.81E-03	29.9	
33	0	1461.26*	777	34	2.10	2921.83	2914	20	1.08E-01	4.1	
34	0	1621.19	26	0	1.49	3241.81	3235	13	3.61E-03	19.6	
35	0	1765.47*	74	9	2.12	3530.51	3521	17	1.03E-02	15.5	

Flag: "*" = Peak area was modified by background subtraction


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624011.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 12:00:00 Acquisition date : 7-JAN-2010 15:51:54
Sample ID         : G243624011 Sample quantity : 121.91 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA10 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:01.00 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.027E+01	2.404E+00	5.802E-01	4.998E-02	34.931
CD-109	+	88.03	*	3.065E+00	1.237E+00	1.412E+00	1.601E-01	2.170
SN-126		64.28		-7.817E-02	6.959E-01	1.144E+00	1.957E-01	-0.068
	+	86.94		1.250E+00	7.144E-01	6.348E-01	2.666E-01	1.970
	+	87.57	*	3.008E-01	1.214E-01	1.396E-01	1.580E-02	2.154
TL-208	+	277.35		5.862E-01	5.385E-01	5.563E-01	6.067E-02	1.054
	+	510.84		4.205E-01	2.914E-01	2.167E-01	2.278E-02	1.940
	+	583.14	*	4.817E-01	8.796E-02	6.159E-02	4.138E-03	7.822
	+	860.37		8.867E-01	5.073E-01	4.351E-01	4.249E-02	2.038
BI-211		72.87		1.019E+01	4.009E+00	6.918E+00	7.607E-01	1.473
	+	351.07	*	4.260E+00	5.547E-01	3.152E-01	2.298E-02	13.515
BI-212	+	727.18	*	1.177E+00	6.115E-01	4.409E-01	3.527E-02	2.671
		785.46		9.489E-01	1.772E+00	3.053E+00	2.262E-01	0.311
	+	1620.62		2.840E+00	1.135E+00	1.547E+00	1.180E-01	1.836
PB-212	+	74.81		3.054E+00	7.287E-01	6.394E-01	9.204E-02	4.777
	+	77.11		2.170E+00	3.841E-01	3.543E-01	3.874E-02	6.125
	+	87.30		1.391E+00	5.783E-01	6.485E-01	9.785E-02	2.145
	+	238.63	*	1.641E+00	1.684E-01	9.456E-02	7.173E-03	17.358
	+	300.09		2.535E+00	9.938E-01	1.105E+00	9.707E-02	2.295
PO-212	+	74.81		3.054E+00	7.287E-01	6.394E-01	9.204E-02	4.777
	+	77.11		2.170E+00	3.841E-01	3.543E-01	3.874E-02	6.125
	+	87.30		1.391E+00	5.783E-01	6.485E-01	9.785E-02	2.145
		115.19		-1.439E+00	3.612E+00	5.761E+00	4.122E-01	-0.250
	+	238.63	*	1.641E+00	1.684E-01	9.456E-02	7.173E-03	17.358
	+	300.09		2.535E+00	9.938E-01	1.105E+00	9.707E-02	2.295
BI-214	+	609.31	*	1.424E+00	1.990E-01	1.110E-01	8.445E-03	12.829
	+	1120.29		1.555E+00	4.511E-01	4.761E-01	4.653E-02	3.265
	+	1764.49		1.479E+00	4.683E-01	2.704E-01	1.806E-02	5.470
PB-214	+	74.81		5.263E+00	1.219E+00	1.102E+00	1.456E-01	4.777
	+	77.11		3.720E+00	7.170E-01	6.073E-01	8.094E-02	6.125
	+	87.30		2.383E+00	9.790E-01	1.111E+00	1.520E-01	2.145
	+	241.98		2.560E+00	7.012E-01	5.693E-01	4.737E-02	4.497
	+	295.21		1.572E+00	2.674E-01	2.002E-01	1.808E-02	7.851
	+	351.92	*	1.482E+00	2.079E-01	1.099E-01	9.854E-03	13.487

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	74.81		5.263E+00	1.219E+00	1.102E+00	1.456E-01	4.777
	+	77.11		3.720E+00	7.170E-01	6.073E-01	8.094E-02	6.125
	+	87.30		2.383E+00	9.790E-01	1.111E+00	1.520E-01	2.145
	+	241.98		2.560E+00	7.012E-01	5.693E-01	4.737E-02	4.497
	+	295.21		1.572E+00	2.674E-01	2.002E-01	1.808E-02	7.851
	+	351.92	*	1.482E+00	2.079E-01	1.099E-01	9.854E-03	13.487
PO-216	+	74.81		3.054E+00	7.287E-01	6.394E-01	9.204E-02	4.777
	+	77.11		2.170E+00	3.841E-01	3.543E-01	3.874E-02	6.125
	+	87.30		1.391E+00	5.783E-01	6.485E-01	9.785E-02	2.145
	+	238.63	*	1.641E+00	1.684E-01	9.456E-02	7.173E-03	17.358
	+	300.09		2.535E+00	9.938E-01	1.105E+00	9.707E-02	2.295
PO-218	+	74.81		5.263E+00	1.219E+00	1.102E+00	1.456E-01	4.777
	+	77.11		3.720E+00	7.170E-01	6.073E-01	8.094E-02	6.125
	+	87.30		2.383E+00	9.790E-01	1.111E+00	1.520E-01	2.145
	+	241.98		2.560E+00	7.012E-01	5.693E-01	4.737E-02	4.497
	+	295.21		1.572E+00	2.674E-01	2.002E-01	1.808E-02	7.851
	+	351.92	*	1.482E+00	2.079E-01	1.099E-01	9.854E-03	13.487
RA-224	+	240.98	*	4.854E+00	1.302E+00	1.076E+00	6.604E-02	4.512
RA-226	+	609.31	*	1.424E+00	1.990E-01	1.110E-01	8.445E-03	12.829
	+	1120.29		1.555E+00	4.511E-01	4.761E-01	4.653E-02	3.265
	+	1764.49		1.479E+00	4.683E-01	2.704E-01	1.806E-02	5.470
AC-228	+	338.32		1.941E+00	9.589E-01	3.564E-01	1.458E-01	5.445
	+	911.07	*	1.566E+00	3.415E-01	1.954E-01	2.412E-02	8.015
	+	969.11		1.546E+00	5.556E-01	3.458E-01	8.177E-02	4.471
RA-228	+	338.32		1.941E+00	9.589E-01	3.564E-01	1.458E-01	5.445
	+	911.07	*	1.566E+00	3.415E-01	1.954E-01	2.412E-02	8.015
	+	969.11		1.546E+00	5.556E-01	3.458E-01	8.177E-02	4.471
TH-228	+	74.81		3.104E+00	6.823E-01	6.497E-01	7.152E-02	4.777
	+	77.11		2.205E+00	3.904E-01	3.600E-01	3.936E-02	6.125
	+	87.30		1.414E+00	5.705E-01	6.590E-01	7.446E-02	2.145
	+	238.63	*	1.668E+00	1.711E-01	9.609E-02	7.289E-03	17.358
	+	300.09		2.576E+00	1.811E+00	1.123E+00	6.625E-01	2.295
TH-230	+	609.31	*	1.424E+00	1.990E-01	1.110E-01	8.445E-03	12.829
	+	1120.29		1.555E+00	4.511E-01	4.761E-01	4.653E-02	3.265
	+	1764.49		1.479E+00	4.683E-01	2.704E-01	1.806E-02	5.469
TH-232	+	338.32		1.941E+00	5.534E-01	3.564E-01	2.389E-02	5.445
	+	911.07	*	1.566E+00	3.415E-01	1.954E-01	2.412E-02	8.015
	+	969.11		1.546E+00	5.556E-01	3.458E-01	8.177E-02	4.471
U-234	+	609.31	*	1.424E+00	1.990E-01	1.110E-01	8.445E-03	12.829
	+	1120.29		1.555E+00	4.511E-01	4.761E-01	4.653E-02	3.265
	+	1764.49		1.479E+00	4.683E-01	2.704E-01	1.806E-02	5.469
NP-237	+	86.50	*	8.832E-01	4.003E-01	4.771E-01	1.121E-01	1.851
		95.87		-3.715E-01	1.040E+00	1.484E+00	3.708E-01	-0.250
AM-243	+	74.67	*	4.952E-01	1.087E-01	1.041E-01	1.140E-02	4.755
	+	86.72		3.312E+01	1.337E+01	1.688E+01	1.901E+00	1.963
		117.66		-5.519E+00	3.886E+00	5.857E+00	4.064E-01	-0.942
		142.18		1.091E+01	1.843E+01	3.022E+01	1.804E+00	0.361
ANH-511	+	511.00	*	9.082E-02	6.248E-02	4.683E-02	3.000E-03	1.939

---- 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	*	-9.324E-02	3.118E-01	4.910E-01	3.651E-02	-0.190

----- 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	*	2.253E-03	4.058E-02	6.795E-02	5.263E-03	0.033	
NA-24	1368.53	*	-4.698E+00	4.058E-02	Half-Life too short			
AL-26	1129.67		-5.105E-01	1.574E+00	2.552E+00	1.791E-01	-0.200	
	1808.65	*	-1.394E-03	3.270E-02	5.236E-02	3.320E-03	-0.027	
TI-44	67.85		-2.355E-02	5.952E-02	9.723E-02	1.098E-02	-0.242	
	78.38	*	1.628E-01	4.747E-02	8.091E-02	8.853E-03	2.012	
SC-46	889.25	*	1.865E-02	3.755E-02	6.452E-02	6.385E-03	0.289	
+	1120.51		2.684E-01	7.583E-02	1.413E-01	1.015E-02	1.900	
V-48	944.10		2.721E-01	9.513E-01	1.593E+00	1.544E-01	0.171	
	983.50	*	2.813E-03	7.648E-02	1.245E-01	1.152E-02	0.023	
	1312.09		-7.432E-03	8.063E-02	1.323E-01	1.104E-02	-0.056	
CR-51	320.08	*	2.040E-02	3.745E-01	6.223E-01	4.495E-02	0.033	
MN-52	744.21		-9.668E-03	2.720E-01	4.492E-01	2.930E-02	-0.022	
	848.13		-1.970E+00	7.406E+00	1.182E+01	1.047E+00	-0.167	
+	935.52		4.901E-01	3.691E-01	5.876E-01	5.745E-02	0.834	
	1246.25		-1.484E+00	8.375E+00	1.372E+01	9.991E-01	-0.108	
	1333.61		-8.800E-01	5.691E+00	9.243E+00	8.031E-01	-0.095	
	1434.06	*	-7.600E-02	2.816E-01	4.456E-01	3.766E-02	-0.171	
MN-54	834.83	*	2.442E-02	4.035E-02	6.948E-02	5.935E-03	0.351	
CO-56	846.75	*	2.726E-03	3.654E-02	6.042E-02	5.335E-03	0.045	
	977.42		-2.408E+00	3.275E+00	4.512E+00	4.206E-01	-0.534	
	1037.82		-1.386E-02	3.299E-01	5.305E-01	4.770E-02	-0.026	
	1175.09		-3.380E-01	2.419E+00	3.999E+00	2.477E-01	-0.085	
+	1238.25		1.425E-01	1.270E-01	1.769E-01	1.319E-02	0.806	
	1360.21		2.971E-01	1.124E+00	1.919E+00	1.658E-01	0.155	
	1771.40		-1.332E-01	2.244E-01	2.443E-01	1.619E-02	-0.545	
CO-57	122.06	*	-5.053E-03	2.564E-02	4.116E-02	2.715E-03	-0.123	
	136.48		2.652E-02	2.072E-01	3.360E-01	2.350E-02	0.079	
CO-58	810.76	*	2.215E-03	3.875E-02	6.414E-02	5.132E-03	0.035	
FE-59	142.65		4.035E+00	2.882E+00	4.870E+00	2.902E-01	0.828	
	192.34		6.993E-02	9.824E-01	1.561E+00	1.836E-01	0.045	
	1099.22	*	-3.049E-02	1.041E-01	1.623E-01	1.355E-02	-0.188	
	1291.56		-4.193E-03	1.330E-01	2.202E-01	2.038E-02	-0.019	
CO-60	1173.22		-5.268E-04	4.782E-02	7.998E-02	4.932E-03	-0.007	
	1332.49	*	6.703E-03	3.729E-02	6.328E-02	5.499E-03	0.106	
ZN-65	1115.52	*	-1.562E-03	9.730E-02	1.342E-01	9.773E-03	-0.012	
GE-68	1077.35	*	2.048E-01	1.232E+00	2.022E+00	1.602E-01	0.101	
AS-73	53.44	*	-1.302E+00	1.625E+00	2.548E+00	3.372E-01	-0.511	
AS-74	595.88	*	-4.798E-02	9.577E-02	1.551E-01	8.863E-03	-0.309	
	634.78		5.409E-02	3.293E-01	5.593E-01	2.952E-02	0.097	
SE-75	66.05		-3.874E+00	6.425E+00	1.040E+01	1.340E+00	-0.372	
	96.73		-1.045E+00	8.471E-01	1.205E+00	1.706E-01	-0.867	
	121.11		1.593E-01	1.385E-01	2.347E-01	2.298E-02	0.679	
	136.00		4.018E-03	3.927E-02	6.360E-02	3.950E-03	0.063	
	198.60		-3.499E-01	1.908E+00	2.912E+00	2.063E-01	-0.120	
	264.65	*	5.258E-03	4.769E-02	7.090E-02	4.522E-03	0.074	
	279.53		-3.256E-02	1.187E-01	1.708E-01	1.170E-02	-0.191	
	303.91		-3.306E-01	2.213E+00	3.192E+00	3.200E-01	-0.104	
	400.65		2.209E-01	2.414E-01	4.178E-01	4.080E-02	0.529	

---- 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		8.965E+02	3.618E+02	5.065E+02	5.743E+01	1.770
		200.40		1.175E+02	2.318E+02	3.752E+02	2.164E+01	0.313
	+	239.00		3.574E+02	3.298E+01	5.341E+01	3.270E+00	6.692
		249.79		-2.287E+01	8.489E+01	1.406E+02	8.730E+00	-0.163
		281.68		5.701E+01	1.297E+02	1.967E+02	1.267E+01	0.290
		297.23		3.658E+02	1.013E+02	1.510E+02	9.859E+00	2.423
		303.76		-6.966E+01	2.553E+02	3.644E+02	2.391E+01	-0.191
		439.47		8.912E+01	1.974E+02	3.307E+02	2.224E+01	0.269
		484.57		1.142E+02	3.013E+02	5.007E+02	3.281E+01	0.228
		520.65	*	-4.902E+00	1.336E+01	2.073E+01	1.315E+00	-0.237
		574.64		-2.896E+02	2.603E+02	3.844E+02	2.275E+01	-0.754
		578.91		1.170E+02	1.245E+02	2.002E+02	1.177E+01	0.584
		585.48		1.615E+03	3.412E+02	6.397E+02	3.721E+01	2.525
		755.35		1.196E+02	2.351E+02	4.049E+02	2.736E+01	0.295
		817.79		-7.992E+01	1.830E+02	2.883E+02	2.347E+01	-0.277
SR-82		698.33		-8.264E+00	3.317E+01	5.404E+01	3.032E+00	-0.153
		776.49	*	-1.742E-01	3.956E-01	6.273E-01	4.523E-02	-0.278
		1395.20		-6.496E+00	1.076E+01	1.605E+01	1.374E+00	-0.405
RB-83		520.41	*	-2.411E-02	6.566E-02	1.019E-01	6.467E-03	-0.237
		529.64		-1.858E-03	1.079E-01	1.727E-01	1.085E-02	-0.011
		552.65		-6.885E-02	1.976E-01	3.060E-01	1.869E-02	-0.225
RB-84		881.50	*	6.490E-02	6.872E-02	1.227E-01	1.190E-02	0.529
KR-85		513.99	*	9.680E+00	7.984E+00	1.253E+01	8.005E-01	0.772
SR-85		513.99	*	5.018E-02	4.139E-02	6.496E-02	4.150E-03	0.772
RB-86		1076.63	*	2.217E-01	8.193E-01	1.360E+00	1.079E-01	0.163
Y-88		898.02		1.053E-03	3.651E-02	5.984E-02	6.080E-03	0.018
		1836.01	*	-2.066E-02	2.923E-02	3.730E-02	2.288E-03	-0.554
ZR-88		392.90	*	1.461E-02	3.112E-02	5.243E-02	3.563E-03	0.279
Y-91		1204.90	*	-2.148E+00	1.898E+01	3.137E+01	2.084E+00	-0.068
NB-94		702.63	*	1.902E-02	3.361E-02	5.829E-02	3.319E-03	0.326
		871.10		1.114E-02	3.261E-02	5.525E-02	5.212E-03	0.202
NB-95		765.79	*	3.863E-02	4.569E-02	7.211E-02	5.032E-03	0.536
NB-95M		235.69	*	1.043E-01	1.430E-01	2.209E-01	1.713E-02	0.472
ZR-95		724.18		2.179E-02	1.065E-01	1.571E-01	1.120E-02	0.139
		756.15	*	6.590E-02	7.343E-02	1.301E-01	1.022E-02	0.506
NB-97		657.90	*	1.040E-01	7.343E-02	Half-Life	too short	
		1024.50		7.653E+00	7.343E-02	Half-Life	too short	
ZR-97		254.15		6.987E+00	7.343E-02	Half-Life	too short	
		355.39		4.135E+00	7.343E-02	Half-Life	too short	
		507.63	*	8.517E+00	7.343E-02	Half-Life	too short	
		602.52		-3.159E+00	7.343E-02	Half-Life	too short	
		1021.30		-5.268E+00	7.343E-02	Half-Life	too short	
		1147.95		-5.270E+00	7.343E-02	Half-Life	too short	
		1362.66		2.985E+01	7.343E-02	Half-Life	too short	
		1750.46		-1.660E+01	7.343E-02	Half-Life	too short	
MO-99		140.51		-2.458E+01	3.599E+01	5.439E+01	1.468E+01	-0.452
		181.06		-8.497E-01	2.535E+01	3.571E+01	6.095E+00	-0.024
		366.43		3.535E+01	1.078E+02	1.809E+02	1.225E+01	0.195
		739.58	*	4.719E-01	1.554E+01	2.526E+01	3.550E+00	0.019

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	778.00			1.978E+01	4.331E+01	7.438E+01	5.387E+00	0.266
TC-99M	140.51	*		-4.918E+11	4.331E+01	Half-Life too short		
RH-101	127.23			2.698E-02	3.263E-02	5.459E-02	3.489E-03	0.494
	198.01	*		-2.186E-02	3.499E-02	5.213E-02	2.994E-03	-0.419
	325.23			2.762E-02	2.344E-01	3.441E-01	2.291E-02	0.080
RH-102	418.52			-1.160E-01	2.875E-01	4.549E-01	3.079E-02	-0.255
	475.06	*		8.860E-03	2.702E-02	4.483E-02	2.957E-03	0.198
	631.29			-3.152E-02	5.104E-02	8.101E-02	4.310E-03	-0.389
	697.49			7.571E-04	7.088E-02	1.181E-01	6.605E-03	0.006
	766.84			1.571E-01	1.245E-01	2.024E-01	1.417E-02	0.776
	1046.59			-1.839E-01	1.143E-01	1.447E-01	1.216E-02	-1.270
	1112.84			6.080E-02	2.157E-01	3.575E-01	2.617E-02	0.170
RU-103	497.08	*		-1.770E-02	3.897E-02	5.924E-02	7.686E-03	-0.299
	610.33			1.566E+01	3.022E+00	3.335E+00	5.112E-01	4.696
RH-106	511.85	+		4.545E-01	3.127E-01	3.997E-01	2.558E-02	1.137
	621.84	*		-1.974E-01	3.099E-01	4.919E-01	5.686E-02	-0.401
	1050.47			1.993E+00	2.286E+00	4.031E+00	3.363E-01	0.494
RU-106	511.85	+		4.545E-01	3.127E-01	3.997E-01	2.558E-02	1.137
	621.84	*		-1.974E-01	3.092E-01	4.919E-01	2.672E-02	-0.401
	1050.47			1.993E+00	2.286E+00	4.031E+00	3.363E-01	0.494
AG-108M	433.93	*		-3.848E-03	3.460E-02	5.580E-02	4.001E-03	-0.069
	614.37			-6.805E-03	4.358E-02	6.263E-02	3.777E-03	-0.109
	722.95			-1.005E-02	4.327E-02	6.047E-02	3.967E-03	-0.166
AG-110M	657.75	*		1.339E-02	3.274E-02	5.651E-02	3.061E-03	0.237
	677.61			-1.141E-01	2.930E-01	4.721E-01	2.650E-02	-0.242
	706.67			-9.274E-02	2.198E-01	3.535E-01	2.163E-02	-0.262
	763.93			-6.825E-02	1.851E-01	2.529E-01	1.831E-02	-0.270
	884.67			-3.965E-02	5.058E-02	7.569E-02	7.587E-03	-0.524
	937.48			2.837E-02	1.393E-01	2.014E-01	2.021E-02	0.141
	1384.27			7.144E-02	1.711E-01	2.648E-01	2.338E-02	0.270
IN-111	171.28			1.412E+00	1.298E+00	2.175E+00	1.196E-01	0.649
	245.39	*		8.193E-01	1.421E+00	2.190E+00	1.352E-01	0.374
IN-113M	391.69	*		2.419E-03	4.630E-02	7.601E-02	5.420E-03	0.032
SN-113	391.69	*		2.419E-03	4.630E-02	7.601E-02	5.420E-03	0.032
IN-114M	190.27	*		-1.001E-01	2.125E-01	2.893E-01	1.641E-02	-0.346
CD-115	260.90			-3.839E+01	1.735E+02	2.873E+02	1.809E+01	-0.134
	492.35			4.092E+00	4.355E+01	7.078E+01	4.610E+00	0.058
	527.90	*		-5.623E-01	1.478E+01	2.362E+01	1.487E+00	-0.024
SN-117M	156.02			1.830E-01	2.489E+00	3.999E+00	2.264E-01	0.046
	158.56	*		-3.040E-02	6.049E-02	9.446E-02	5.298E-03	-0.322
SB-122	563.90	*		1.020E+00	2.765E+00	4.547E+00	2.735E-01	0.224
	692.80			-4.763E+01	5.416E+01	8.114E+01	4.467E+00	-0.587
I-123	159.00	*		-3.571E+00	5.416E+01	Half-Life too short		
	528.96			1.789E+02	5.416E+01	Half-Life too short		
TE-123M	159.00	*		-4.728E-03	2.956E-02	4.693E-02	2.665E-03	-0.101
I-124	602.71	*		-8.395E-02	8.396E-01	1.274E+00	7.185E-02	-0.066
	722.78			-1.030E+00	5.391E+00	7.577E+00	4.613E-01	-0.136
	1325.50			9.817E+00	4.240E+01	7.227E+01	6.196E+00	0.136
	1376.25			6.850E+01	4.619E+01	8.040E+01	6.918E+00	0.852

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124		1509.49		2.802E+01	2.241E+01	4.215E+01	3.446E+00	0.665
		1691.02		-2.860E-01	4.291E+00	6.873E+00	4.943E-01	-0.042
		602.71		-4.153E-03	4.154E-02	6.301E-02	3.556E-03	-0.066
		645.85		2.573E-01	4.930E-01	8.582E-01	5.121E-02	0.300
		709.31		1.411E+00	2.864E+00	4.940E+00	2.876E-01	0.286
		713.82		-5.886E-01	1.690E+00	2.727E+00	2.801E-01	-0.216
		722.78		-7.385E-02	3.866E-01	5.434E-01	3.450E-02	-0.136
	+	968.20		1.611E+01	4.615E+00	7.677E+00	7.237E-01	2.099
		1045.16		-2.611E+00	2.465E+00	3.444E+00	2.900E-01	-0.758
		1325.50		7.519E-01	3.248E+00	5.536E+00	4.746E-01	0.136
		1368.21		-3.381E+00	2.098E+00	2.629E+00	3.544E-01	-1.286
		1436.60		2.560E+00	3.868E+00	6.963E+00	5.879E-01	0.368
SB-125		1691.02	*	-4.838E-03	7.259E-02	1.163E-01	8.833E-03	-0.042
		427.89	*	-1.863E-02	9.272E-02	1.487E-01	1.035E-02	-0.125
	+	463.38		8.950E-01	4.315E-01	5.749E-01	4.312E-02	1.557
		600.56		1.507E-01	1.730E-01	3.081E-01	2.031E-02	0.489
		635.90		-7.451E-02	2.493E-01	4.068E-01	2.579E-02	-0.183
TE-125M		109.28	*	-1.383E+00	9.797E+00	1.586E+01	1.522E+00	-0.087
		388.63		1.274E-01	2.164E-01	3.674E-01	2.496E-02	0.347
I-126		666.33	*	7.932E-02	1.903E-01	3.277E-01	1.644E-02	0.242
		753.82		8.964E-01	1.561E+00	2.706E+00	1.820E-01	0.331
SB-126		223.80		-1.576E-03	4.203E+00	7.099E+00	4.250E-01	0.000
	+	278.60		4.108E+00	3.757E+00	4.485E+00	2.879E-01	0.916
	+	296.50		1.659E+01	2.625E+00	3.941E+00	2.572E-01	4.208
		414.70		1.516E-02	8.484E-02	1.298E-01	8.797E-03	0.117
		415.30		2.921E+00	6.683E+00	1.087E+01	7.362E-01	0.269
		555.20		8.086E-01	4.116E+00	6.691E+00	4.074E-01	0.121
		573.80		-1.434E+00	9.548E-01	1.394E+00	8.262E-02	-1.029
		593.00		2.309E-01	9.774E-01	1.652E+00	9.483E-02	0.140
		656.30		-1.419E+00	3.199E+00	5.137E+00	2.571E-01	-0.276
		666.33		3.323E-02	7.972E-02	1.373E-01	6.886E-03	0.242
SB-127		675.00		1.835E-02	2.003E+00	3.344E+00	1.730E-01	0.005
		695.00		-2.446E-02	7.736E-02	1.224E-01	6.791E-03	-0.200
		697.00		-2.886E-02	2.602E-01	4.289E-01	2.395E-02	-0.067
		720.50	*	-7.845E-02	1.742E-01	2.370E-01	1.432E-02	-0.331
		856.80		-1.661E-01	5.587E-01	7.583E-01	6.883E-02	-0.219
		989.30		7.343E-01	1.396E+00	2.384E+00	2.188E-01	0.308
		1034.80		7.022E-01	9.085E+00	1.481E+01	1.269E+00	0.047
		1213.00		-5.268E+00	5.061E+00	7.520E+00	5.088E-01	-0.701
		61.10		-5.823E+01	1.031E+02	1.675E+02	2.395E+01	-0.348
		252.40		5.270E-01	5.066E+00	8.540E+00	3.561E+00	0.062
		290.80		-1.043E+01	2.828E+01	4.024E+01	4.015E+00	-0.259
		411.60		-8.050E-01	1.698E+01	2.414E+01	3.629E+00	-0.033
		444.90		-8.908E+00	1.211E+01	1.850E+01	2.149E+00	-0.482
		473.00		-7.270E-01	2.015E+00	3.161E+00	3.766E-01	-0.230
		543.00		7.606E+00	1.972E+01	3.256E+01	4.348E+00	0.234
		603.60		-1.025E+01	1.571E+01	2.135E+01	2.348E+00	-0.480
		685.20	*	1.208E-01	1.541E+00	2.585E+00	2.469E-01	0.047
		698.50		-4.514E+00	1.731E+01	2.816E+01	4.125E+00	-0.160

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127	722.20			-1.367E+00	3.654E+01	5.241E+01	5.090E+00	-0.026
	783.80			2.480E+00	4.430E+00	7.637E+00	9.079E-01	0.325
	57.60			6.799E-01	1.010E+01	1.690E+01	2.148E+00	0.040
	145.22			4.281E-01	7.288E-01	1.201E+00	7.081E-02	0.356
	172.10			1.979E-01	1.214E-01	2.080E-01	1.146E-02	0.951
I-131	202.84	*		-1.726E-02	4.737E-02	7.919E-02	4.586E-03	-0.218
	374.96			1.019E-02	2.039E-01	3.356E-01	2.277E-02	0.030
	80.18			2.920E+00	5.898E+00	8.917E+00	9.830E-01	0.327
	284.30			-2.923E-01	1.662E+00	2.747E+00	1.937E-01	-0.106
	364.48	*		3.112E-02	1.311E-01	2.185E-01	1.609E-02	0.142
TE-132	636.97			-3.743E-01	1.542E+00	2.528E+00	1.522E-01	-0.148
	722.89			-1.738E+00	7.983E+00	1.118E+01	6.906E-01	-0.156
	49.72			4.149E+01	5.318E+01	9.143E+01	1.325E+01	0.454
	111.76			-2.364E+00	3.878E+01	6.292E+01	6.467E+00	-0.038
	116.30			2.604E+00	3.433E+01	5.594E+01	5.581E+00	0.047
BA-133	228.16	*		-3.697E-02	8.456E-01	1.424E+00	2.089E-01	-0.026
	53.15			-5.603E+00	6.972E+00	1.092E+01	1.447E+00	-0.513
	79.62			1.026E+00	1.530E+00	2.324E+00	3.872E-01	0.442
	81.00			-1.528E-01	1.240E-01	1.673E-01	2.891E-02	-0.913
	276.40	+		5.793E-01	5.341E-01	6.466E-01	8.565E-02	0.896
I-133	302.84			-4.660E-02	1.490E-01	2.119E-01	2.553E-02	-0.220
	356.01	*		-2.736E-03	4.717E-02	6.775E-02	8.174E-03	-0.040
	383.85			5.890E-03	2.814E-01	4.617E-01	5.278E-02	0.013
	510.53	+		2.130E+00	2.814E-01	Half-Life	too short	
	529.87	*		6.499E-04	2.814E-01	Half-Life	too short	
CS-134	706.58			-4.497E-01	2.814E-01	Half-Life	too short	
	856.28			-3.389E-01	2.814E-01	Half-Life	too short	
	875.33			-6.640E-02	2.814E-01	Half-Life	too short	
	1236.41			7.123E-01	2.814E-01	Half-Life	too short	
	1298.22			-6.598E-01	2.814E-01	Half-Life	too short	
CS-135	475.35			4.296E-01	1.779E+00	2.931E+00	1.933E-01	0.147
	563.23			1.461E-01	3.726E-01	6.092E-01	3.739E-02	0.240
	569.32			-2.952E-02	1.869E-01	2.882E-01	1.768E-02	-0.102
	604.70			-1.809E-02	3.634E-02	5.029E-02	2.844E-03	-0.360
	795.84	+	*	1.039E-01	6.886E-02	9.531E-02	7.348E-03	1.090
I-135	801.93			-2.421E-01	4.468E-01	6.245E-01	4.890E-02	-0.388
	1038.57			8.600E-01	4.090E+00	6.753E+00	5.752E-01	0.127
	1167.94			2.672E+00	2.646E+00	4.807E+00	3.016E-01	0.556
	1365.15			1.997E+00	1.384E+00	2.650E+00	2.391E-01	0.753
	268.24	*		8.594E-02	1.721E-01	2.621E-01	2.118E-02	0.328
I-135	288.45			2.832E+11	1.721E-01	Half-Life	too short	
	417.63			-4.103E+11	1.721E-01	Half-Life	too short	
	546.56			-1.995E+11	1.721E-01	Half-Life	too short	
	836.80			9.308E+10	1.721E-01	Half-Life	too short	
	1038.76			6.479E+10	1.721E-01	Half-Life	too short	
I-135	1124.00			1.027E+12	1.721E-01	Half-Life	too short	
	1131.51			-2.274E+10	1.721E-01	Half-Life	too short	
	1260.41	*		-1.879E+10	1.721E-01	Half-Life	too short	
	1457.56			2.930E+12	1.721E-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		1678.03		9.628E+10	1.721E-01	Half-Life	too short	
		1706.46		1.118E+11	1.721E-01	Half-Life	too short	
		1791.20		-6.292E+10	1.721E-01	Half-Life	too short	
		66.91		-2.087E-01	1.069E+00	1.761E+00	3.016E-01	-0.118
	+	86.29		4.147E+00	1.720E+00	2.431E+00	3.582E-01	1.706
		153.22		1.665E-01	7.061E-01	1.144E+00	8.191E-02	0.146
		163.89		-8.688E-01	1.148E+00	1.762E+00	1.236E-01	-0.493
		176.55		2.782E-02	3.919E-01	6.257E-01	3.938E-02	0.044
		273.65		-1.434E-01	6.729E-01	6.971E-01	4.974E-02	-0.206
		340.57		4.498E-01	1.509E-01	2.607E-01	1.833E-02	1.726
		818.51		2.346E-03	7.661E-02	1.264E-01	1.032E-02	0.019
		1048.07	*	-1.029E-01	1.128E-01	1.613E-01	1.412E-02	-0.638
BA-137M		1235.34		-2.393E-01	7.338E-01	1.010E+00	1.091E-01	-0.237
		661.65	*	-1.909E-02	3.483E-02	5.559E-02	2.743E-03	-0.343
		661.65	*	-2.018E-02	3.682E-02	5.876E-02	2.916E-03	-0.343
CE-139		165.85	*	1.524E-02	2.977E-02	4.869E-02	2.659E-03	0.313
BA-140		162.64		-2.270E-01	7.982E-01	1.258E+00	7.897E-02	-0.181
		304.84		-6.552E-01	1.393E+00	2.054E+00	5.642E-01	-0.319
		423.70		-2.972E-01	1.973E+00	3.173E+00	1.014E+00	-0.094
LA-140		537.32	*	9.240E-02	2.781E-01	4.551E-01	1.484E-01	0.203
	+	328.77		4.993E-01	4.853E-01	6.156E-01	4.485E-02	0.811
		432.53		-6.374E-01	2.319E+00	3.698E+00	2.688E-01	-0.172
		487.03		6.941E-02	1.423E-01	2.383E-01	1.722E-02	0.291
		751.79		-1.270E+00	1.836E+00	2.850E+00	2.232E-01	-0.446
		815.85		-7.664E-03	3.395E-01	5.575E-01	5.099E-02	-0.014
		867.82		1.610E-01	1.642E+00	2.361E+00	2.307E-01	0.068
		919.63		2.289E+00	3.021E+00	5.170E+00	6.067E-01	0.443
		925.24		-5.272E-01	1.091E+00	1.673E+00	1.733E-01	-0.315
		1596.49	*	-6.120E-02	9.198E-02	1.323E-01	1.026E-02	-0.463
CE-141		145.44	*	1.577E-03	6.688E-02	1.076E-01	6.584E-03	0.015
CE-143		57.37		6.902E-04	6.688E-02	Half-Life	too short	
		231.56		-2.856E-03	6.688E-02	Half-Life	too short	
		293.26	*	1.137E-03	6.688E-02	Half-Life	too short	
	+	350.59		5.716E-02	6.688E-02	Half-Life	too short	
		490.36		-2.420E-03	6.688E-02	Half-Life	too short	
		664.57		1.256E-03	6.688E-02	Half-Life	too short	
CE-144		721.93		-6.321E-04	6.688E-02	Half-Life	too short	
		80.11		1.266E+00	2.491E+00	3.768E+00	4.135E-01	0.336
		133.54	*	-2.224E-01	2.097E-01	3.176E-01	4.563E-02	-0.700
PM-144		476.78		-2.397E-02	6.503E-02	1.018E-01	7.753E-03	-0.235
		618.01		3.666E-03	3.169E-02	5.363E-02	3.134E-03	0.068
		696.49	*	2.189E-03	3.140E-02	5.256E-02	2.933E-03	0.042
PR-144		778.57		1.371E+00	2.261E+00	3.928E+00	2.851E-01	0.349
		696.49	*	1.484E-01	2.129E+00	3.564E+00	1.987E-01	0.042
		1489.15		-1.084E+00	1.286E+01	2.085E+01	1.721E+00	-0.052
PM-146		453.90	*	2.151E-02	4.148E-02	6.982E-02	6.449E-03	0.308
		633.02		4.193E-01	1.276E+00	2.181E+00	8.014E-01	0.192
		735.90		4.003E-02	1.632E-01	2.608E-01	7.303E-02	0.153
		747.13		3.353E-02	8.970E-02	1.532E-01	1.975E-02	0.219

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	91.11		7.064E-01	3.507E-01	5.723E-01	6.380E-02	1.234
		319.41		2.200E-01	3.454E+00	5.742E+00	3.811E-01	0.038
		439.89		3.268E+00	6.300E+00	1.060E+01	7.129E-01	0.308
		531.02	*	2.232E-01	6.210E-01	1.023E+00	1.405E-01	0.218
PM-149		285.90	*	7.363E+01	1.294E+02	2.213E+02	3.201E+01	0.333
EU-152		121.78		2.871E-02	7.369E-02	1.215E-01	1.001E-02	0.236
		244.69		3.892E-01	3.372E-01	5.381E-01	3.319E-02	0.723
		344.27	*	-4.443E-02	1.013E-01	1.405E-01	1.035E-02	-0.316
		443.98		-5.465E-01	9.504E-01	1.474E+00	9.889E-02	-0.371
		778.89		1.873E-01	2.547E-01	4.475E-01	3.250E-02	0.419
		867.32		2.477E-01	8.898E-01	1.314E+00	1.227E-01	0.189
	+	964.01		6.544E-01	4.464E-01	6.099E-01	5.778E-02	1.073
		1085.78		4.014E-01	4.348E-01	7.633E-01	5.942E-02	0.526
		1112.02		5.938E-02	3.024E-01	4.967E-01	3.643E-02	0.120
		1407.95		2.476E-01	2.130E-01	3.963E-01	3.379E-02	0.625
GD-153		69.67		1.745E+00	2.302E+00	3.534E+00	3.941E-01	0.494
		83.37		2.423E+01	1.829E+01	2.830E+01	3.137E+00	0.856
		97.43	*	-1.134E-01	8.071E-02	1.207E-01	1.124E-02	-0.939
		103.18		-2.569E-02	1.059E-01	1.710E-01	1.445E-02	-0.150
EU-154		123.07		-6.429E-02	5.368E-02	8.151E-02	8.055E-03	-0.789
		247.94		-2.939E-02	3.494E-01	5.652E-01	5.532E-02	-0.052
		591.81		-3.521E-02	6.067E-01	1.003E+00	9.775E-02	-0.035
		723.30		-9.375E-02	1.888E-01	2.548E-01	1.867E-02	-0.368
		756.87		6.147E-01	7.715E-01	1.357E+00	1.457E-01	0.453
		873.19		8.440E-02	2.934E-01	4.940E-01	6.357E-02	0.171
		996.32		-2.395E-01	3.765E-01	5.632E-01	1.014E-01	-0.425
		1004.76		-1.064E-01	2.258E-01	3.470E-01	4.132E-02	-0.307
		1274.45	*	1.480E-02	1.128E-01	1.904E-01	2.029E-02	0.078
EU-155		48.70		2.431E-01	5.596E+00	9.409E+00	1.130E+00	0.026
		60.01		-1.908E+00	7.618E+00	1.257E+01	1.548E+00	-0.152
	+	86.54		3.624E-01	1.463E-01	2.107E-01	2.384E-02	1.720
		105.31	*	1.287E-01	1.107E-01	1.886E-01	1.565E-02	0.682
TB-160	+	86.79		9.774E-01	3.944E-01	5.653E-01	6.369E-02	1.729
		197.04		-4.560E-01	5.909E-01	8.717E-01	4.999E-02	-0.523
		215.65		4.412E-01	7.131E-01	1.238E+00	7.322E-02	0.356
	+	298.57		3.726E-01	1.444E-01	2.053E-01	1.342E-02	1.815
		879.36	*	4.729E-02	1.368E-01	2.316E-01	2.233E-02	0.204
		962.29		5.215E-01	5.979E-01	9.343E-01	8.870E-02	0.558
	+	966.15		4.538E-01	3.095E-01	4.972E-01	4.699E-02	0.913
		1177.93		9.970E-02	3.582E-01	6.153E-01	3.837E-02	0.162
		1271.85		1.308E-01	6.406E-01	1.092E+00	8.401E-02	0.120
HO-166M		80.57		-2.105E-01	3.311E-01	4.717E-01	5.182E-02	-0.446
	+	184.41		1.570E-01	5.503E-02	6.823E-02	3.832E-03	2.301
		280.46		-5.730E-02	9.152E-02	1.278E-01	8.218E-03	-0.448
	+	410.95		2.491E-01	3.459E-01	4.252E-01	2.883E-02	0.586
		711.68	*	-4.379E-03	6.327E-02	1.046E-01	6.137E-03	-0.042
		752.31		-1.031E-01	2.790E-01	4.470E-01	2.991E-02	-0.231
		810.29		-1.220E-02	5.835E-02	9.414E-02	7.500E-03	-0.130
TM-171		51.35		-5.467E+00	6.111E+01	1.020E+02	1.341E+01	-0.054

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	52.39		-4.486E+01	3.221E+01	4.854E+01	6.428E+00	-0.924
		59.40		-1.380E+01	4.127E+01	6.787E+01	8.431E+00	-0.203
		66.72	*	6.183E+00	3.663E+01	6.120E+01	6.972E+00	0.101
		88.36		7.134E-01	2.879E-01	3.970E-01	4.465E-02	1.797
		201.83		4.165E-03	2.812E-02	4.801E-02	2.776E-03	0.087
LU-177	+	306.84	*	8.192E-03	2.414E-02	4.084E-02	2.686E-03	0.201
		401.10		3.519E+00	6.378E+00	1.081E+01	7.339E-01	0.326
		112.95		1.132E+00	1.873E+00	3.122E+00	2.298E-01	0.362
LU-177M	+	208.36	*	2.252E+00	1.598E+00	2.224E+00	1.300E-01	1.012
		52.97		-4.490E+00	3.277E+00	4.952E+00	6.560E-01	-0.907
HF-181	+	54.07		-9.956E-01	1.621E+00	2.568E+00	3.387E-01	-0.388
		61.30		3.481E-02	2.181E+00	3.635E+00	4.397E-01	0.010
		121.62		3.060E-01	3.782E-01	6.347E-01	4.199E-02	0.482
		147.16		-4.722E-01	6.573E-01	1.019E+00	5.963E-02	-0.463
		171.86		6.532E-01	4.868E-01	8.242E-01	4.538E-02	0.792
		218.09		1.033E-02	8.191E-01	1.386E+00	8.226E-02	0.007
		268.79		2.710E+00	1.213E+00	1.418E+00	9.011E-02	1.910
		319.02		4.006E-03	2.516E-01	4.172E-01	2.767E-02	0.010
		367.43		-4.176E-02	8.978E-01	1.470E+00	9.957E-02	-0.028
		413.65	*	5.726E-02	1.930E-01	2.835E-01	1.921E-02	0.202
		56.28		2.639E-01	1.658E+00	2.787E+00	3.601E-01	0.095
		57.53		2.102E-01	8.421E-01	1.419E+00	1.806E-01	0.148
		65.20		-1.027E+00	1.295E+00	2.078E+00	2.402E-01	-0.494
		133.02		-5.182E-02	6.745E-02	1.048E-01	6.511E-03	-0.494
		136.25		2.544E-02	4.621E-01	7.468E-01	4.571E-02	0.034
W-181	+	345.85		7.171E-02	2.135E-01	2.980E-01	2.004E-02	0.241
		482.03	*	-1.582E-02	4.185E-02	6.541E-02	4.293E-03	-0.242
		56.28		1.017E-01	6.419E-01	1.079E+00	1.394E-01	0.094
TA-182	+	57.53		8.138E-02	3.263E-01	5.498E-01	6.995E-02	0.148
		65.20	*	-3.948E-01	4.976E-01	7.989E-01	9.230E-02	-0.494
		67.75		-6.946E-02	1.428E-01	2.323E-01	2.625E-02	-0.299
		100.10		1.885E-01	1.777E-01	3.028E-01	2.691E-02	0.623
		152.43		-1.449E-02	3.351E-01	5.361E-01	3.076E-02	-0.027
RE-183	+	222.10		-4.245E-02	3.399E-01	5.712E-01	3.411E-02	-0.074
		1001.68		6.449E-01	2.220E+00	3.625E+00	3.270E-01	0.178
		1121.28		7.397E-01	2.090E-01	3.956E-01	2.836E-02	1.870
		1189.05		-8.848E-03	2.832E-01	4.722E-01	3.023E-02	-0.019
		1221.42	*	9.311E-02	2.006E-01	3.484E-01	2.402E-02	0.267
		1230.97		1.405E-01	5.758E-01	8.532E-01	6.010E-02	0.165
		57.98		1.955E-02	3.251E-01	5.439E-01	6.881E-02	0.036
		59.32		-6.473E-02	1.715E-01	2.815E-01	3.500E-02	-0.230
		67.20		-1.216E-01	2.619E-01	4.267E-01	4.841E-02	-0.285
		162.32	*	1.474E-02	1.102E-01	1.772E-01	9.799E-03	0.083
RE-184	+	208.81		1.836E+00	1.303E+00	1.819E+00	1.064E-01	1.010
		291.72		-5.704E-01	1.025E+00	1.435E+00	9.325E-02	-0.397
		57.98		7.161E-02	1.191E+00	1.992E+00	2.520E-01	0.036
		59.32		-2.369E-01	6.276E-01	1.030E+00	1.281E-01	-0.230
		67.20		-4.453E-01	9.588E-01	1.562E+00	1.773E-01	-0.285
		161.27		2.455E-01	3.575E-01	5.898E-01	3.275E-02	0.416

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185	216.55			1.840E-01	2.507E-01	4.374E-01	2.590E-02	0.421
	252.85	*		8.261E-02	2.253E-01	3.849E-01	2.400E-02	0.215
	318.01			1.154E-01	4.430E-01	7.449E-01	4.938E-02	0.155
	792.07			5.430E-01	1.110E+00	1.683E+00	1.271E-01	0.323
	903.28			1.877E-01	9.027E-01	1.470E+00	1.482E-01	0.128
	920.93			1.405E-01	4.376E-01	7.376E-01	7.316E-02	0.190
	59.72			1.193E-02	4.520E-01	7.544E-01	9.331E-02	0.016
	61.14			-1.305E-01	2.445E-01	3.983E-01	4.829E-02	-0.328
	69.30			4.245E-01	4.153E-01	6.440E-01	7.199E-02	0.659
	592.07			-2.504E-01	2.487E+00	4.097E+00	2.356E-01	-0.061
	646.12	*		2.951E-02	4.160E-02	7.342E-02	3.772E-03	0.402
	717.42			4.497E-01	8.809E-01	1.524E+00	9.117E-02	0.295
	874.81			-6.220E-02	5.694E-01	9.213E-01	8.777E-02	-0.068
RE-188	880.27			7.263E-01	7.454E-01	1.335E+00	1.291E-01	0.544
	155.03	*		2.082E-01	1.770E-01	2.980E-01	1.693E-02	0.699
	477.96			-1.259E+00	3.008E+00	4.689E+00	3.087E-01	-0.269
W-188	633.10			8.560E-01	2.587E+00	4.453E+00	2.359E-01	0.192
	63.58			-2.246E+01	7.511E+01	1.227E+02	1.442E+01	-0.183
	227.08			-1.767E-01	1.284E+01	2.166E+01	1.303E+00	-0.008
IR-192	290.67	*		-5.887E+00	8.407E+00	1.165E+01	7.565E-01	-0.505
	295.96		+	1.210E+00	1.919E-01	3.027E-01	1.999E-02	3.998
	308.46			5.318E-02	9.543E-02	1.632E-01	1.085E-02	0.326
AU-195	316.51	*		-1.752E-02	3.487E-02	5.608E-02	3.728E-03	-0.312
	468.07			6.716E-02	6.798E-02	1.065E-01	7.900E-03	0.630
	604.41			-2.467E-01	4.963E-01	6.860E-01	7.725E-02	-0.360
	612.46			2.130E+00	9.069E-01	1.564E+00	1.153E-01	1.361
	65.12			-1.800E-01	2.305E-01	3.704E-01	4.283E-02	-0.486
	66.83			-2.048E-02	1.223E-01	2.019E-01	2.297E-02	-0.101
TL-200	75.70		+	1.923E+00	3.404E-01	5.673E-01	6.205E-02	3.389
	98.88	*		1.626E-01	2.268E-01	3.767E-01	3.418E-02	0.432
	129.76			4.272E+00	2.995E+00	5.107E+00	3.222E-01	0.837
TL-201	367.94	*		-3.540E-04	2.995E+00	Half-Life	too short	
	579.30			4.963E-03	2.995E+00	Half-Life	too short	
	828.27			-3.433E-03	2.995E+00	Half-Life	too short	
	1205.75			1.046E-03	2.995E+00	Half-Life	too short	
TL-202	68.90			6.775E+00	8.507E+00	1.309E+01	1.466E+00	0.518
	70.82			3.203E+00	4.641E+00	7.101E+00	7.872E-01	0.451
	80.30			-4.097E+00	7.809E+00	1.120E+01	1.230E+00	-0.366
	135.34			1.069E+01	3.164E+01	5.182E+01	3.184E+00	0.206
	167.43	*		5.201E+00	8.758E+00	1.438E+01	7.862E-01	0.362
HG-203	68.90			5.097E-01	6.400E-01	9.845E-01	1.103E-01	0.518
	70.82			2.403E-01	3.481E-01	5.328E-01	5.906E-02	0.451
	80.30			-3.075E-01	5.860E-01	8.406E-01	9.228E-02	-0.366
	439.56	*		3.144E-02	7.500E-02	1.253E-01	8.428E-03	0.251
BI-207	70.83			9.982E-01	1.448E+00	2.210E+00	3.378E-01	0.452
	72.87			2.058E+00	8.356E-01	1.397E+00	2.077E-01	1.473
	82.60			-7.819E-01	1.577E+00	2.056E+00	3.163E-01	-0.380
BI-207	279.20	*		-6.442E-03	4.608E-02	6.701E-02	4.522E-03	-0.096
	72.80			5.038E-01	2.286E-01	3.947E-01	4.342E-02	1.276

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207	+	74.97		8.889E-01	1.951E-01	2.871E-01	3.142E-02	3.097
		84.90		2.810E-01	2.392E-01	3.673E-01	4.098E-02	0.765
		569.67		-2.134E-03	2.932E-02	4.559E-02	2.719E-03	-0.047
		1063.62	*	2.111E-02	5.198E-02	8.757E-02	7.129E-03	0.241
		1770.23		-1.052E-01	4.474E-01	5.617E-01	3.727E-02	-0.187
		81.07		-3.443E-01	2.695E-01	3.678E-01	4.046E-02	-0.936
		83.78		1.320E-01	1.591E-01	2.419E-01	2.686E-02	0.546
		94.90		3.666E-01	2.455E-01	3.859E-01	3.768E-02	0.950
		122.32		-2.020E+00	1.831E+00	2.807E+00	2.071E-01	-0.720
		144.24		7.023E-01	7.260E-01	1.206E+00	8.837E-02	0.583
		154.21		2.469E-01	4.026E-01	6.626E-01	4.592E-02	0.373
	+	269.46		6.315E-01	2.829E-01	3.491E-01	2.303E-02	1.809
		323.87	*	5.216E-02	7.185E-01	1.051E+00	1.769E-01	0.050
	+	338.28		8.105E+00	2.418E+00	2.637E+00	2.915E-01	3.074
PO-209		445.03		-1.636E+00	2.341E+00	3.591E+00	3.882E-01	-0.455
		260.50		2.199E+00	9.108E+00	1.545E+01	9.723E-01	0.142
		262.80		-5.959E-01	2.518E+01	4.212E+01	2.658E+00	-0.014
		896.60	*	1.319E+00	6.474E+00	1.083E+01	1.092E+00	0.122
BI-210		46.50	*	-4.690E-01	9.264E+00	1.527E+01	1.497E+00	-0.031
PB-210		46.50	*	-4.690E-01	9.264E+00	1.527E+01	1.497E+00	-0.031
PO-210		46.50	*	-4.690E-01	9.264E+00	1.527E+01	1.370E+00	-0.031
PB-211		404.84	*	-7.696E-01	1.196E+00	1.463E+00	9.132E-01	-0.526
PO-215		427.08		-7.808E-01	2.106E+00	3.243E+00	2.008E+00	-0.241
		831.96		-5.828E-01	1.315E+00	1.989E+00	1.246E+00	-0.293
		81.07		-3.443E-01	2.695E-01	3.678E-01	4.046E-02	-0.936
		83.78		1.320E-01	1.591E-01	2.419E-01	2.686E-02	0.546
		94.90		3.666E-01	2.455E-01	3.859E-01	3.768E-02	0.950
		122.32		-2.020E+00	1.831E+00	2.807E+00	2.071E-01	-0.720
		144.24		7.023E-01	7.260E-01	1.206E+00	8.837E-02	0.583
		154.21		2.469E-01	4.026E-01	6.626E-01	4.592E-02	0.373
	+	269.46		6.315E-01	2.829E-01	3.491E-01	2.303E-02	1.809
		323.87	*	5.216E-02	7.185E-01	1.051E+00	1.769E-01	0.050
RN-219	+	338.28		8.105E+00	2.418E+00	2.637E+00	2.915E-01	3.074
		445.03		-1.636E+00	2.341E+00	3.591E+00	3.882E-01	-0.455
	+	271.23		8.102E-01	3.656E-01	4.441E-01	3.784E-02	1.825
		401.81	*	1.213E-02	3.998E-01	6.544E-01	9.199E-02	0.019
RN-220		549.76	*	1.886E+01	2.529E+01	4.302E+01	2.638E+00	0.438
RA-223		81.07		-3.443E-01	2.695E-01	3.678E-01	4.046E-02	-0.936
AC-227		83.78		1.320E-01	1.591E-01	2.419E-01	2.686E-02	0.546
		94.90		3.666E-01	2.455E-01	3.859E-01	3.768E-02	0.950
		122.32		-2.020E+00	1.831E+00	2.807E+00	2.071E-01	-0.720
		144.24		7.023E-01	7.260E-01	1.206E+00	8.837E-02	0.583
		154.21		2.469E-01	4.026E-01	6.626E-01	4.592E-02	0.373
	+	269.46		6.315E-01	2.829E-01	3.491E-01	2.303E-02	1.809
		323.87	*	5.216E-02	7.185E-01	1.051E+00	1.769E-01	0.050
	+	338.28		8.105E+00	2.418E+00	2.637E+00	2.915E-01	3.074
		445.03		-1.636E+00	2.341E+00	3.591E+00	3.882E-01	-0.455
		79.80		1.065E+00	1.945E+00	2.931E+00	6.607E-01	0.364
		236.00		3.903E-01	2.717E-01	4.303E-01	4.569E-02	0.907

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-227		256.20	*	-4.808E-02	3.714E-01	6.187E-01	8.760E-02	-0.078
		286.10		7.106E-01	1.581E+00	2.692E+00	3.205E-01	0.264
	+	299.80		4.698E+00	1.956E+00	2.713E+00	4.495E-01	1.731
		304.40		-4.095E-01	2.012E+00	2.887E+00	5.073E-01	-0.142
		334.20		-2.228E+00	3.082E+00	3.862E+00	7.196E-01	-0.577
		79.80		1.065E+00	1.945E+00	2.931E+00	6.684E-01	0.364
	+	94.00		7.187E+00	3.195E+00	3.703E+00	8.269E-01	1.941
		236.00		3.903E-01	2.709E-01	4.303E-01	3.980E-02	0.907
		256.20	*	-4.808E-02	3.714E-01	6.187E-01	1.056E-01	-0.078
		286.10		7.106E-01	1.732E+00	2.692E+00	2.697E+00	0.264
TH-229	+	299.80		4.698E+00	1.956E+00	2.713E+00	4.495E-01	1.731
		304.40		-4.095E-01	2.012E+00	2.887E+00	5.073E-01	-0.142
		334.20		-2.228E+00	3.082E+00	3.862E+00	7.196E-01	-0.577
		85.43		2.150E-01	2.470E-01	3.750E-01	4.194E-02	0.573
	+	88.47		2.624E-01	1.300E-01	2.272E-01	2.549E-02	1.155
		100.00		1.912E-01	1.832E-01	3.120E-01	2.778E-02	0.613
		193.63	*	3.572E-01	5.027E-01	8.244E-01	4.702E-02	0.433
		210.97		1.075E+00	8.041E-01	1.292E+00	7.584E-02	0.832
	PA-231	283.67	*	-4.905E-01	1.607E+00	2.544E+00	3.578E-01	-0.193
		301.29		1.497E+00	6.396E-01	1.058E+00	1.151E-01	1.415
TH-231		81.07		-3.443E-01	2.695E-01	3.678E-01	4.046E-02	-0.936
		83.78		1.320E-01	1.591E-01	2.419E-01	2.686E-02	0.546
		94.90		3.666E-01	2.455E-01	3.859E-01	3.768E-02	0.950
		122.32		-2.020E+00	1.831E+00	2.807E+00	2.071E-01	-0.720
		144.24		7.023E-01	7.260E-01	1.206E+00	8.837E-02	0.583
		154.21		2.469E-01	4.026E-01	6.626E-01	4.592E-02	0.373
	+	269.46		6.315E-01	2.829E-01	3.491E-01	2.303E-02	1.809
		323.87	*	5.216E-02	7.185E-01	1.051E+00	1.769E-01	0.050
	+	338.28		8.105E+00	2.418E+00	2.637E+00	2.915E-01	3.074
		445.03		-1.636E+00	2.341E+00	3.591E+00	3.882E-01	-0.455
U-231		84.21		7.762E+00	8.044E+00	1.228E+01	1.366E+00	0.632
	+	92.29		8.432E+00	3.348E+00	4.907E+00	5.052E-01	1.718
		95.87	*	-5.001E-01	1.395E+00	1.998E+00	1.915E-01	-0.250
		108.00		4.817E-01	2.505E+00	4.115E+00	3.239E-01	0.117
	PA-233	75.28		2.594E+01	6.578E+00	8.709E+00	1.460E+00	2.978
	+	86.59		5.888E+00	2.807E+00	3.417E+00	9.492E-01	1.723
	+	300.12		1.310E+00	5.319E-01	7.530E-01	1.037E-01	1.739
		311.98	*	-2.441E-02	6.307E-02	1.022E-01	7.074E-03	-0.239
		340.50		2.266E+00	8.656E-01	1.227E+00	2.849E-01	1.846
		398.62		-1.400E+00	2.042E+00	3.119E+00	8.140E-01	-0.449
PA-234		415.76		8.634E-01	1.619E+00	2.720E+00	5.681E-01	0.317
		63.00		5.893E-01	2.220E+00	3.700E+00	6.474E-01	0.159
		94.67		4.371E-01	1.834E-01	2.898E-01	3.842E-02	1.508
		98.44		5.623E-03	9.317E-02	1.506E-01	8.417E-02	0.037
		99.86		4.732E-01	4.636E-01	7.889E-01	7.039E-02	0.600
		111.00		6.296E-03	1.926E-01	3.139E-01	3.564E-02	0.020
		131.20		-1.020E-01	1.106E-01	1.711E-01	1.072E-02	-0.596
		152.70		7.949E-02	3.222E-01	5.221E-01	8.240E-02	0.152
	+	186.00		5.652E+00	2.608E+00	2.640E+00	8.060E-01	2.141

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV) Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		226.40	1.446E-01	3.975E-01	6.810E-01	7.946E-02	0.212
		227.20	9.190E-03	4.283E-01	7.235E-01	4.354E-02	0.013
		248.90	-8.235E-01	8.104E-01	1.258E+00	2.716E-01	-0.655
	+	293.70	7.543E+00	1.645E+00	1.737E+00	2.841E-01	4.342
		369.80	-8.405E-01	8.299E-01	1.234E+00	2.606E-01	-0.681
		568.70	-1.616E-01	9.021E-01	1.414E+00	8.446E-02	-0.114
		569.50	-2.956E-02	2.593E-01	4.015E-01	2.395E-02	-0.074
		574.00	-1.850E+00	1.301E+00	1.919E+00	1.137E-01	-0.964
		699.00	-4.332E-01	6.905E-01	1.081E+00	1.939E-01	-0.401
		706.10	-6.916E-01	1.143E+00	1.743E+00	7.690E-01	-0.397
		733.00	-2.235E-01	4.447E-01	5.969E-01	1.277E-01	-0.375
		742.81	-1.857E-01	1.338E+00	2.180E+00	1.460E+00	-0.085
	+	796.30	2.018E+00	1.434E+00	1.844E+00	4.935E-01	1.094
		805.60	4.555E-01	9.640E-01	1.642E+00	4.998E-01	0.277
		819.60	1.205E-01	1.204E+00	1.999E+00	7.583E-01	0.060
		826.30	-6.339E-02	8.541E-01	1.394E+00	6.228E-01	-0.045
		831.60	-4.739E-03	6.441E-01	1.058E+00	3.152E-01	-0.004
		876.40	-5.672E-01	1.013E+00	1.257E+00	1.293E+00	-0.451
		880.51	2.874E-01	2.705E-01	4.875E-01	4.715E-02	0.590
		883.24	-1.085E-01	3.004E-01	4.584E-01	3.089E-01	-0.237
		899.00	-1.224E-01	7.370E-01	1.177E+00	5.184E-01	-0.104
		925.00	-4.100E-01	1.040E+00	1.612E+00	1.593E-01	-0.254
		926.50	-1.073E-01	1.624E-01	2.398E-01	6.169E-02	-0.448
		946.00 *	-2.319E-01	3.122E-01	4.622E-01	8.907E-02	-0.502
		949.00	-1.060E-01	4.414E-01	6.992E-01	6.739E-02	-0.152
		980.50	5.034E-01	7.454E-01	1.292E+00	1.200E-01	0.390
PA-234M		1394.10	1.495E-01	1.104E+00	1.854E+00	1.206E+00	0.081
		766.42	9.554E+00	1.396E+01	2.032E+01	1.026E+01	0.470
		1001.03 *	5.552E-01	4.919E+00	7.892E+00	8.145E-01	0.070
TH-234		63.29 *	-3.148E-01	1.891E+00	3.105E+00	6.121E-01	-0.101
	+	92.38	1.860E+00	7.954E-01	1.082E+00	2.048E-01	1.719
U-235	+	89.95	2.634E+00	1.520E+00	2.062E+00	6.507E-01	1.277
	+	93.35	2.236E+00	1.069E+00	1.248E+00	3.558E-01	1.791
		105.00	9.681E-01	1.116E+00	1.827E+00	5.432E-01	0.530
		143.76 *	2.658E-01	2.270E-01	3.743E-01	6.120E-02	0.710
		163.35	-2.481E-01	4.764E-01	7.383E-01	1.321E-01	-0.336
	+	185.71	2.093E-01	7.337E-02	9.788E-02	5.509E-03	2.139
		205.31	1.340E-01	5.633E-01	8.552E-01	1.538E-01	0.157
NP-236		94.67	3.335E-01	1.360E-01	2.201E-01	2.159E-02	1.515
		98.44	4.232E-03	7.039E-02	1.139E-01	1.041E-02	0.037
		111.00	4.762E-03	1.457E-01	2.374E-01	1.794E-02	0.020
		160.31 *	1.710E-02	8.070E-02	1.303E-01	7.263E-03	0.131
U-238		63.29 *	-3.148E-01	1.891E+00	3.105E+00	6.121E-01	-0.101
	+	92.38	1.860E+00	7.384E-01	1.082E+00	1.112E-01	1.719
NP-239		99.55	1.950E-01	1.537E-01	2.639E-01	2.367E-02	0.739
		117.00 *	-1.048E-01	1.921E-01	3.038E-01	2.125E-02	-0.345
	+	209.75	1.434E+00	1.017E+00	1.449E+00	8.484E-02	0.990
		228.18	-8.376E-03	2.216E-01	3.732E-01	2.249E-02	-0.022
	+	277.60	2.827E-01	2.585E-01	3.157E-01	2.025E-02	0.895

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AM-241		334.30		-1.225E+00	1.734E+00	2.195E+00	1.469E-01	-0.558
		59.54	*	-6.200E-02	2.391E-01	3.945E-01	5.066E-02	-0.157
		99.55		2.007E-01	1.582E-01	2.715E-01	2.436E-02	0.739
CM-243		103.76	*	3.888E-02	9.725E-02	1.615E-01	1.353E-02	0.241
		117.00		-1.079E-01	1.977E-01	3.126E-01	2.187E-02	-0.345
	+	209.75		1.414E+00	1.003E+00	1.428E+00	8.364E-02	0.990
AM-246		228.18		-8.464E-03	2.239E-01	3.771E-01	2.273E-02	-0.022
	+	277.60		2.850E-01	2.606E-01	3.183E-01	2.041E-02	0.895
		798.80		-6.299E-02	1.591E-01	2.151E-01	1.658E-02	-0.293
CM-247		1036.00		-2.368E-01	3.112E-01	4.579E-01	3.917E-02	-0.517
		1062.04		-5.274E-02	2.201E-01	3.446E-01	2.814E-02	-0.153
		1078.86	*	-1.227E-01	1.571E-01	2.309E-01	1.824E-02	-0.531
CF-249	+	278.00		1.172E+00	1.072E+00	1.304E+00	8.365E-02	0.899
		287.40		7.103E-01	1.245E+00	2.135E+00	1.382E-01	0.333
		402.60	*	-8.203E-03	3.757E-02	5.827E-02	3.957E-03	-0.141
CF-251		252.85		3.087E-01	8.418E-01	1.438E+00	8.966E-02	0.215
		333.44		-1.178E-01	2.501E-01	2.905E-01	1.943E-02	-0.406
		387.95	*	-1.547E-03	4.070E-02	6.647E-02	4.516E-03	-0.023
		176.60	*	4.701E-02	1.263E-01	2.046E-01	1.135E-02	0.230
		227.00		1.125E-02	3.806E-01	6.431E-01	3.869E-02	0.017
		285.00		-3.545E-01	1.774E+00	2.927E+00	1.890E-01	-0.121

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]G243624011      *
* Acquisition date   : 7-JAN-2010 15:51:54 Detector SN#      :              *
* Detector ID        : GAM10                      Sensitivity   : 5.000        *
* Geometry           : CAN                          Energy tolerance: 1.500      *
* Elapsed live time   : 0 02:00:00.00              Abundance limit : 75.000      *
* Elapsed real time   : 0 02:00:01.00              Half life ratio  : 8.000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G243624011              Analyst initials: MXR1         *
* Batch Number       : 937704                  Sample Quantity : 1.2191E+02 GRAM  *
* Recovery           : 1.00000                 Carrier Weight   : 0.00000      *
*****
*
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08 MS Isotope      :              *
* MSD DPM             : 0.000                      MSD Isotope :              *
* LCS DPM             : 0.000                      LCS Isotope  :              *
* LCSD DPM            : 0.000                      LCSD Isotope :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.027E+01	2.356E+00	5.792E-01	0.000E+00
CD-109	3.065E+00	1.212E+00	1.460E+00	0.000E+00
SN-126	3.008E-01	1.189E-01	1.443E-01	0.000E+00
TL-208	4.817E-01	8.620E-02	6.220E-02	0.000E+00
BI-211	4.260E+00	5.436E-01	3.204E-01	0.000E+00
BI-212	1.177E+00	5.993E-01	4.440E-01	0.000E+00
PB-212	1.641E+00	1.650E-01	9.658E-02	0.000E+00
PO-212	1.641E+00	1.650E-01	9.658E-02	0.000E+00
BI-214	1.424E+00	1.950E-01	1.120E-01	0.000E+00
PB-214	1.482E+00	2.037E-01	1.117E-01	0.000E+00
PO-214	1.482E+00	2.037E-01	1.117E-01	0.000E+00
PO-216	1.641E+00	1.650E-01	9.658E-02	0.000E+00
PO-218	1.482E+00	2.037E-01	1.117E-01	0.000E+00
RA-224	4.854E+00	1.275E+00	1.099E+00	0.000E+00
RA-226	1.424E+00	1.950E-01	1.120E-01	0.000E+00
AC-228	1.566E+00	3.347E-01	1.962E-01	0.000E+00
RA-228	1.566E+00	3.347E-01	1.962E-01	0.000E+00
TH-228	1.668E+00	1.677E-01	9.815E-02	0.000E+00
TH-230	1.424E+00	1.950E-01	1.120E-01	0.000E+00
TH-232	1.566E+00	3.347E-01	1.962E-01	0.000E+00
U-234	1.424E+00	1.950E-01	1.120E-01	0.000E+00
NP-237	8.832E-01	3.923E-01	4.933E-01	0.000E+00
AM-243	4.952E-01	1.065E-01	1.079E-01	0.000E+00
ANH-511	9.082E-02	6.123E-02	4.737E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-9.324E-02	3.055E-01	4.972E-01	0.000E+00 NOT IDENT.
NA-22	2.253E-03	3.977E-02	6.795E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.701E+06	0.000E+00	0.000E+00 SHORT HLIF

AL-26	-1.394E-03	3.204E-02	5.212E-02	0.000E+00	NOT IDENT.
TI-44	0.000E+00	4.652E-02	8.377E-02	0.000E+00	NOT IDENT.
SC-46	1.865E-02	3.680E-02	6.481E-02	0.000E+00	FAIL ABUN
V-48	2.813E-03	7.495E-02	1.249E-01	0.000E+00	NOT IDENT.
CR-51	2.040E-02	3.670E-01	6.333E-01	0.000E+00	NOT IDENT.
MN-52	-7.600E-02	2.760E-01	4.449E-01	0.000E+00	FAIL ABUN
MN-54	2.442E-02	3.954E-02	6.985E-02	0.000E+00	NOT IDENT.
CO-56	2.726E-03	3.581E-02	6.073E-02	0.000E+00	FAIL ABUN
CO-57	-5.053E-03	2.512E-02	4.239E-02	0.000E+00	NOT IDENT.
CO-58	2.215E-03	3.797E-02	6.450E-02	0.000E+00	NOT IDENT.
FE-59	-3.049E-02	1.020E-01	1.626E-01	0.000E+00	NOT IDENT.
CO-60	6.703E-03	3.654E-02	6.324E-02	0.000E+00	NOT IDENT.
ZN-65	-1.562E-03	9.536E-02	1.344E-01	0.000E+00	NOT IDENT.
GE-68	2.048E-01	1.207E+00	2.026E+00	0.000E+00	NOT IDENT.
AS-73	-1.302E+00	1.592E+00	2.650E+00	0.000E+00	NOT IDENT.
AS-74	-4.798E-02	9.386E-02	1.567E-01	0.000E+00	NOT IDENT.
SE-75	5.258E-03	4.674E-02	7.232E-02	0.000E+00	NOT IDENT.
BR-77	-4.902E+00	1.309E+01	2.096E+01	0.000E+00	FAIL ABUN
SR-82	-1.742E-01	3.877E-01	6.313E-01	0.000E+00	NOT IDENT.
RB-83	-2.411E-02	6.435E-02	1.031E-01	0.000E+00	NOT IDENT.
RB-84	6.490E-02	6.734E-02	1.233E-01	0.000E+00	NOT IDENT.
KR-85	9.680E+00	7.824E+00	1.268E+01	0.000E+00	NOT IDENT.
SR-85	5.018E-02	4.056E-02	6.572E-02	0.000E+00	NOT IDENT.
RB-86	2.217E-01	8.029E-01	1.362E+00	0.000E+00	NOT IDENT.
Y-88	-2.066E-02	2.865E-02	3.712E-02	0.000E+00	NOT IDENT.
ZR-88	1.461E-02	3.049E-02	5.322E-02	0.000E+00	NOT IDENT.
Y-91	-2.148E+00	1.860E+01	3.139E+01	0.000E+00	NOT IDENT.
NB-94	1.902E-02	3.293E-02	5.874E-02	0.000E+00	NOT IDENT.
NB-95	3.863E-02	4.477E-02	7.257E-02	0.000E+00	NOT IDENT.
NB-95M	1.043E-01	1.401E-01	2.256E-01	0.000E+00	NOT IDENT.
ZR-95	6.590E-02	7.197E-02	1.310E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.493E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	5.064E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	4.719E-01	1.523E+01	2.543E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	7.088E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.186E-02	3.429E-02	5.336E-02	0.000E+00	NOT IDENT.
RH-102	8.860E-03	2.648E-02	4.540E-02	0.000E+00	NOT IDENT.
RU-103	-1.770E-02	3.819E-02	5.995E-02	0.000E+00	FAIL ABUN
RH-106	-1.974E-01	3.037E-01	4.964E-01	0.000E+00	FAIL ABUN
RU-106	-1.974E-01	3.030E-01	4.964E-01	0.000E+00	FAIL ABUN
AG-108M	-3.848E-03	3.391E-02	5.657E-02	0.000E+00	NOT IDENT.
AG-110M	1.339E-02	3.209E-02	5.698E-02	0.000E+00	NOT IDENT.
IN-111	8.193E-01	1.393E+00	2.236E+00	0.000E+00	NOT IDENT.
IN-113M	2.419E-03	4.538E-02	7.715E-02	0.000E+00	NOT IDENT.
SN-113	2.419E-03	4.538E-02	7.715E-02	0.000E+00	NOT IDENT.
IN-114M	-1.001E-01	2.082E-01	2.963E-01	0.000E+00	NOT IDENT.
CD-115	-5.623E-01	1.448E+01	2.389E+01	0.000E+00	NOT IDENT.
SN-117M	-3.040E-02	5.929E-02	9.697E-02	0.000E+00	NOT IDENT.
SB-122	1.020E+00	2.710E+00	4.594E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	2.188E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-4.728E-03	2.897E-02	4.817E-02	0.000E+00	NOT IDENT.
I-124	-8.395E-02	8.228E-01	1.286E+00	0.000E+00	NOT IDENT.
SB-124	-4.838E-03	7.114E-02	1.158E-01	0.000E+00	FAIL ABUN
SB-125	-1.863E-02	9.086E-02	1.507E-01	0.000E+00	FAIL ABUN
TE-125M	-1.383E+00	9.601E+00	1.635E+01	0.000E+00	NOT IDENT.
I-126	7.932E-02	1.865E-01	3.304E-01	0.000E+00	NOT IDENT.
SB-126	-7.845E-02	1.707E-01	2.388E-01	0.000E+00	FAIL ABUN
SB-127	1.208E-01	1.510E+00	2.606E+00	0.000E+00	NOT IDENT.
XE-127	-1.726E-02	4.642E-02	8.105E-02	0.000E+00	NOT IDENT.
I-131	3.112E-02	1.284E-01	2.220E-01	0.000E+00	NOT IDENT.
TE-132	-3.697E-02	8.287E-01	1.455E+00	0.000E+00	NOT IDENT.
BA-133	-2.736E-03	4.623E-02	6.885E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.390E+04	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	6.749E-02	9.588E-02	0.000E+00	FAIL ABUN
CS-135	8.594E-02	1.686E-01	2.673E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.606E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.029E-01	1.106E-01	1.617E-01	0.000E+00	FAIL ABUN
BA-137M	-1.909E-02	3.413E-02	5.606E-02	0.000E+00	NOT IDENT.
CS-137	-2.018E-02	3.608E-02	5.926E-02	0.000E+00	NOT IDENT.
CE-139	1.524E-02	2.918E-02	4.995E-02	0.000E+00	NOT IDENT.
BA-140	9.240E-02	2.725E-01	4.602E-01	0.000E+00	NOT IDENT.
LA-140	-6.120E-02	9.014E-02	1.319E-01	0.000E+00	FAIL ABUN
CE-141	1.577E-03	6.554E-02	1.105E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.715E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.224E-01	2.055E-01	3.267E-01	0.000E+00	NOT IDENT.
PM-144	2.189E-03	3.077E-02	5.297E-02	0.000E+00	NOT IDENT.
PR-144	1.484E-01	2.086E+00	3.591E+00	0.000E+00	NOT IDENT.
PM-146	2.151E-02	4.065E-02	7.074E-02	0.000E+00	NOT IDENT.

ND-147	2.232E-01	6.086E-01	1.035E+00	0.000E+00	FAIL ABUN
PM-149	7.363E+01	1.268E+02	2.255E+02	0.000E+00	NOT IDENT.
EU-152	-4.443E-02	9.928E-02	1.429E-01	0.000E+00	FAIL ABUN
GD-153	-1.134E-01	7.909E-02	1.246E-01	0.000E+00	NOT IDENT.
EU-154	1.480E-02	1.105E-01	1.904E-01	0.000E+00	NOT IDENT.
EU-155	1.287E-01	1.084E-01	1.946E-01	0.000E+00	FAIL ABUN
TB-160	4.729E-02	1.340E-01	2.327E-01	0.000E+00	FAIL ABUN
HO-166M	-4.379E-03	6.201E-02	1.053E-01	0.000E+00	FAIL ABUN
TM-171	6.183E+00	3.589E+01	6.349E+01	0.000E+00	NOT IDENT.
LU-176	8.192E-03	2.366E-02	4.158E-02	0.000E+00	FAIL ABUN
LU-177	2.252E+00	1.566E+00	2.276E+00	0.000E+00	FAIL ABUN
LU-177M	5.726E-02	1.892E-01	2.876E-01	0.000E+00	FAIL ABUN
HF-181	-1.582E-02	4.101E-02	6.622E-02	0.000E+00	NOT IDENT.
W-181	-3.948E-01	4.876E-01	8.289E-01	0.000E+00	NOT IDENT.
TA-182	9.311E-02	1.965E-01	3.485E-01	0.000E+00	FAIL ABUN
RE-183	1.474E-02	1.080E-01	1.818E-01	0.000E+00	FAIL ABUN
RE-184	8.261E-02	2.208E-01	3.928E-01	0.000E+00	NOT IDENT.
OS-185	2.951E-02	4.077E-02	7.406E-02	0.000E+00	NOT IDENT.
RE-188	2.082E-01	1.735E-01	3.060E-01	0.000E+00	NOT IDENT.
W-188	-5.887E+00	8.239E+00	1.187E+01	0.000E+00	NOT IDENT.
IR-192	-1.752E-02	3.418E-02	5.708E-02	0.000E+00	FAIL ABUN
AU-195	1.626E-01	2.222E-01	3.889E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	8.609E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	5.201E+00	8.583E+00	1.475E+01	0.000E+00	NOT IDENT.
TL-202	3.144E-02	7.350E-02	1.271E-01	0.000E+00	NOT IDENT.
HG-203	-6.442E-03	4.516E-02	6.831E-02	0.000E+00	NOT IDENT.
BI-207	2.111E-02	5.094E-02	8.777E-02	0.000E+00	FAIL ABUN
TL-207	5.216E-02	7.042E-01	1.069E+00	0.000E+00	FAIL ABUN
PO-209	1.319E+00	6.344E+00	1.087E+01	0.000E+00	NOT IDENT.
BI-210	-4.690E-01	9.079E+00	1.591E+01	0.000E+00	NOT IDENT.
PB-210	-4.690E-01	9.079E+00	1.591E+01	0.000E+00	NOT IDENT.
PO-210	-4.690E-01	9.079E+00	1.591E+01	0.000E+00	NOT IDENT.
PB-211	-7.696E-01	1.172E+00	1.484E+00	0.000E+00	NOT IDENT.
PO-215	5.216E-02	7.042E-01	1.069E+00	0.000E+00	FAIL ABUN
RN-219	1.213E-02	3.918E-01	6.640E-01	0.000E+00	FAIL ABUN
RN-220	1.886E+01	2.479E+01	4.348E+01	0.000E+00	NOT IDENT.
RA-223	5.216E-02	7.042E-01	1.069E+00	0.000E+00	FAIL ABUN
AC-227	-4.808E-02	3.640E-01	6.314E-01	0.000E+00	FAIL ABUN
TH-227	-4.808E-02	3.640E-01	6.314E-01	0.000E+00	FAIL ABUN
TH-229	3.572E-01	4.926E-01	8.442E-01	0.000E+00	FAIL ABUN
PA-231	-4.905E-01	1.575E+00	2.593E+00	0.000E+00	NOT IDENT.
TH-231	5.216E-02	7.042E-01	1.069E+00	0.000E+00	FAIL ABUN
U-231	-5.001E-01	1.368E+00	2.063E+00	0.000E+00	FAIL ABUN
PA-233	-2.441E-02	6.181E-02	1.041E-01	0.000E+00	FAIL ABUN
PA-234	-2.319E-01	3.060E-01	4.640E-01	0.000E+00	FAIL ABUN
PA-234M	5.552E-01	4.820E+00	7.916E+00	0.000E+00	NOT IDENT.
TH-234	-3.148E-01	1.854E+00	3.223E+00	0.000E+00	FAIL ABUN
U-235	2.658E-01	2.224E-01	3.846E-01	0.000E+00	FAIL ABUN
NP-236	1.710E-02	7.909E-02	1.338E-01	0.000E+00	NOT IDENT.
U-238	-3.148E-01	1.854E+00	3.223E+00	0.000E+00	FAIL ABUN
NP-239	-1.048E-01	1.883E-01	3.130E-01	0.000E+00	FAIL ABUN
AM-241	-6.200E-02	2.343E-01	4.098E-01	0.000E+00	NOT IDENT.
CM-243	3.888E-02	9.530E-02	1.666E-01	0.000E+00	FAIL ABUN
AM-246	-1.227E-01	1.539E-01	2.314E-01	0.000E+00	NOT IDENT.
CM-247	-8.203E-03	3.682E-02	5.913E-02	0.000E+00	FAIL ABUN
CF-249	-1.547E-03	3.989E-02	6.748E-02	0.000E+00	NOT IDENT.
CF-251	4.701E-02	1.237E-01	2.098E-01	0.000E+00	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC
*                                     2040 Savage Road
*                                     Charleston, SC 29414
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624011.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 15:51:54.
Sample ID          : G243624011 Sample quantity : 1.21910E+02 GRAM
Detector name      : GAM10 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.00 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	777	10.67*	1.107E+00	2.027E+01	2.027E+01	11.86
CD-109	88.03	190	3.72*	5.256E+00	2.992E+00	3.065E+00	40.35
SN-126	64.28	-----	9.60	2.419E+00	-----	Line Not Found	-----
	86.94	190	8.90	5.256E+00	1.250E+00	1.250E+00	57.14
	87.57	190	37.00*	5.256E+00	3.008E-01	3.008E-01	40.35
TL-208	277.35	60	6.80	4.606E+00	5.862E-01	5.862E-01	91.87
	510.84	86	21.60	2.930E+00	4.205E-01	4.205E-01	69.30
	583.14	346	84.20*	2.626E+00	4.817E-01	4.817E-01	18.26
	860.37	66	12.46	1.839E+00	8.867E-01	8.867E-01	57.21
BI-211	72.87	-----	1.27	3.633E+00	-----	Line Not Found	-----
	351.07	696	12.94*	3.886E+00	4.260E+00	4.260E+00	13.02
BI-212	727.18	97	11.80*	2.159E+00	1.177E+00	1.177E+00	51.94
	785.46	-----	1.97	2.010E+00	-----	Line Not Found	-----
	1620.62	26	2.75	1.025E+00	2.840E+00	2.840E+00	39.96
PB-212	74.81	410	10.70	3.860E+00	3.054E+00	3.054E+00	23.86
	77.11	526	18.00	4.148E+00	2.170E+00	2.170E+00	17.70
	87.30	190	8.00	5.256E+00	1.391E+00	1.391E+00	41.57
	238.63	1216	44.60*	5.115E+00	1.641E+00	1.641E+00	10.26
	300.09	123	3.41	4.364E+00	2.535E+00	2.535E+00	39.20
PO-212	74.81	410	10.70	3.860E+00	3.054E+00	3.054E+00	23.86
	77.11	526	18.00	4.148E+00	2.170E+00	2.170E+00	17.70
	87.30	190	8.00	5.256E+00	1.391E+00	1.391E+00	41.57
	115.19	-----	0.60	6.657E+00	-----	Line Not Found	-----
	238.63	1216	44.60*	5.115E+00	1.641E+00	1.641E+00	10.26
	300.09	123	3.41	4.364E+00	2.535E+00	2.535E+00	39.20
BI-214	609.31	542	46.30*	2.530E+00	1.424E+00	1.424E+00	13.98
	1120.29	108	15.10	1.415E+00	1.555E+00	1.555E+00	29.02
	1764.49	74	15.80	9.762E-01	1.479E+00	1.479E+00	31.66
PB-214	74.81	410	6.21	3.860E+00	5.263E+00	5.263E+00	23.17
	77.11	526	10.50	4.148E+00	3.720E+00	3.720E+00	19.27
	87.30	190	4.67	5.256E+00	2.383E+00	2.383E+00	41.08
	241.98	316	7.49	5.071E+00	2.560E+00	2.560E+00	27.39

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PO-214	295.21	432	19.20	4.411E+00	1.572E+00	1.572E+00	17.02
	351.92	696	37.20*	3.886E+00	1.482E+00	1.482E+00	14.03
	74.81	410	6.21	3.860E+00	5.263E+00	5.263E+00	23.17
	77.11	526	10.50	4.148E+00	3.720E+00	3.720E+00	19.27
	87.30	190	4.67	5.256E+00	2.383E+00	2.383E+00	41.08
PO-216	241.98	316	7.49	5.071E+00	2.560E+00	2.560E+00	27.39
	295.21	432	19.20	4.411E+00	1.572E+00	1.572E+00	17.02
	351.92	696	37.20*	3.886E+00	1.482E+00	1.482E+00	14.03
	74.81	410	10.70	3.860E+00	3.054E+00	3.054E+00	23.86
	77.11	526	18.00	4.148E+00	2.170E+00	2.170E+00	17.70
PO-218	87.30	190	8.00	5.256E+00	1.391E+00	1.391E+00	41.57
	238.63	1216	44.60*	5.115E+00	1.641E+00	1.641E+00	10.26
	300.09	123	3.41	4.364E+00	2.535E+00	2.535E+00	39.20
	74.81	410	6.21	3.860E+00	5.263E+00	5.263E+00	23.17
	77.11	526	10.50	4.148E+00	3.720E+00	3.720E+00	19.27
RA-224	87.30	190	4.67	5.256E+00	2.383E+00	2.383E+00	41.08
	241.98	316	7.49	5.071E+00	2.560E+00	2.560E+00	27.39
	295.21	432	19.20	4.411E+00	1.572E+00	1.572E+00	17.02
	351.92	696	37.20*	3.886E+00	1.482E+00	1.482E+00	14.03
	240.98	316	3.95*	5.071E+00	4.854E+00	4.854E+00	26.81
AC-228	609.31	542	46.30*	2.530E+00	1.424E+00	1.424E+00	13.98
	1120.29	108	15.10	1.415E+00	1.555E+00	1.555E+00	29.02
	1764.49	74	15.80	9.762E-01	1.479E+00	1.479E+00	31.66
	338.32	287	11.40	3.997E+00	1.941E+00	1.941E+00	49.41
	911.07	245	27.70*	1.739E+00	1.566E+00	1.566E+00	21.80
RA-228	969.11	136	16.60	1.636E+00	1.546E+00	1.546E+00	35.93
	338.32	287	11.40	3.997E+00	1.941E+00	1.941E+00	49.41
	911.07	245	27.70*	1.739E+00	1.566E+00	1.566E+00	21.80
	969.11	136	16.60	1.636E+00	1.546E+00	1.546E+00	35.93
	74.81	410	10.70	3.860E+00	3.054E+00	3.104E+00	21.98
TH-228	77.11	526	18.00	4.148E+00	2.170E+00	2.205E+00	17.70
	87.30	190	8.00	5.256E+00	1.391E+00	1.414E+00	40.35
	238.63	1216	44.60*	5.115E+00	1.641E+00	1.668E+00	10.26
	300.09	123	3.41	4.364E+00	2.535E+00	2.576E+00	70.30
	609.31	542	46.30*	2.530E+00	1.424E+00	1.424E+00	13.98
TH-230	1120.29	108	15.10	1.415E+00	1.555E+00	1.555E+00	29.02
	1764.49	74	15.80	9.762E-01	1.479E+00	1.479E+00	31.66
	338.32	287	11.40	3.997E+00	1.941E+00	1.941E+00	28.51
	911.07	245	27.70*	1.739E+00	1.566E+00	1.566E+00	21.80
	969.11	136	16.60	1.636E+00	1.546E+00	1.546E+00	35.93
U-234	609.31	542	46.30*	2.530E+00	1.424E+00	1.424E+00	13.98
	1120.29	108	15.10	1.415E+00	1.555E+00	1.555E+00	29.02
	1764.49	74	15.80	9.762E-01	1.479E+00	1.479E+00	31.66
	86.50	190	12.60*	5.256E+00	8.832E-01	8.832E-01	45.32
	95.87	-----	2.60	5.933E+00	-----	Line Not Found	-----
AM-243	74.67	410	66.00*	3.860E+00	4.952E-01	4.952E-01	21.95
	86.72	190	0.34	5.256E+00	3.312E+01	3.312E+01	40.35
	117.66	-----	0.55	6.694E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.676E+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	86	100.00*	2.930E+00	9.082E-02	9.082E-02	68.80

Flag: "*" = Keyline

Total number of lines in spectrum 35
Number of unidentified lines 2
Number of lines tentatively identified by NID 33 94.29%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.027E+01	2.027E+01	0.240E+01	11.86	
CD-109	464.00D	1.02	2.992E+00	3.065E+00	1.237E+00	40.35	
SN-126	1.00E+05Y	1.00	3.008E-01	3.008E-01	1.214E-01	40.35	
TL-208	1.41E+10Y	1.00	4.817E-01	4.817E-01	0.880E-01	18.26	
BI-211	7.04E+08Y	1.00	4.260E+00	4.260E+00	0.555E+00	13.02	
BI-212	1.41E+10Y	1.00	1.177E+00	1.177E+00	0.612E+00	51.94	
PB-212	1.41E+10Y	1.00	1.641E+00	1.641E+00	0.168E+00	10.26	
PO-212	1.41E+10Y	1.00	1.641E+00	1.641E+00	0.168E+00	10.26	
BI-214	1600.00Y	1.00	1.424E+00	1.424E+00	0.199E+00	13.98	
PB-214	1600.00Y	1.00	1.482E+00	1.482E+00	0.208E+00	14.03	
PO-214	1600.00Y	1.00	1.482E+00	1.482E+00	0.208E+00	14.03	
PO-216	1.41E+10Y	1.00	1.641E+00	1.641E+00	0.168E+00	10.26	
PO-218	1600.00Y	1.00	1.482E+00	1.482E+00	0.208E+00	14.03	
RA-224	1.41E+10Y	1.00	4.854E+00	4.854E+00	1.302E+00	26.81	
RA-226	1600.00Y	1.00	1.424E+00	1.424E+00	0.199E+00	13.98	
AC-228	1.41E+10Y	1.00	1.566E+00	1.566E+00	0.341E+00	21.80	
RA-228	1.41E+10Y	1.00	1.566E+00	1.566E+00	0.341E+00	21.80	
TH-228	1.91Y	1.02	1.641E+00	1.668E+00	0.171E+00	10.26	
TH-230	4.47E+09Y	1.00	1.424E+00	1.424E+00	0.199E+00	13.98	
TH-232	1.41E+10Y	1.00	1.566E+00	1.566E+00	0.341E+00	21.80	
U-234	4.47E+09Y	1.00	1.424E+00	1.424E+00	0.199E+00	13.98	
NP-237	2.14E+06Y	1.00	8.832E-01	8.832E-01	4.003E-01	45.32	
AM-243	7380.00Y	1.00	4.952E-01	4.952E-01	1.087E-01	21.95	
ANH-511	1.00E+09Y	1.00	9.082E-02	9.082E-02	6.248E-02	68.80	

Total Activity : 5.721E+01 5.731E+01

Grand Total Activity : 5.721E+01 5.731E+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
6	89.78	127	344	0.99	179.68	177	12	1.76E-02	48.3	5.49E+00	T
6	92.73	187	351	1.46	185.57	177	12	2.60E-02	38.4	5.72E+00	T
0	185.76	220	322	1.35	371.47	366	10	3.05E-02	34.6	5.98E+00	T
0	209.09	84	268	1.05	418.09	415	8	1.17E-02	70.7	5.57E+00	T
0	270.20	131	189	1.96	540.21	535	11	1.82E-02	44.3	4.69E+00	T
0	328.62	56	198	1.03	656.98	651	10	7.84E-03	96.9	4.08E+00	T
0	409.57	31	127	1.65	818.77	813	10	4.37E-03	****	3.47E+00	T
0	463.54	94	102	2.37	926.65	920	12	1.31E-02	47.6	3.16E+00	T
0	768.79	42	60	0.96	1536.88	1531	11	5.83E-03	78.1	2.05E+00	
0	795.48	51	57	0.96	1590.26	1584	12	7.05E-03	65.8	1.99E+00	T
0	935.27	34	38	1.26	1869.77	1864	9	4.75E-03	74.7	1.70E+00	T
2	965.16	50	62	1.96	1929.54	1924	22	6.97E-03	67.5	1.64E+00	T
0	1239.16	34	48	2.28	2477.54	2468	12	4.79E-03	88.8	1.28E+00	T
0	1378.31	35	18	1.31	2755.88	2750	12	4.81E-03	59.7	1.16E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G243624011.CNF;1
* Acquisition date   : 7-JAN-2010 15:51:54.  Detector SN#      :
* Detector ID        : GAM10                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:01.00             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G243624011           Analyst initials: MXR1
* Batch Number       : 937704              Sample Quantity : 1.21910E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08.8MS Isotope      :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A              LCS Isotope       :
*****

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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	2.027E+01	2.404E+00	5.802E-01	4.998E-02	34.931
CD-109	3.065E+00	1.237E+00	1.412E+00	1.601E-01	2.170
SN-126	3.008E-01	1.214E-01	1.396E-01	1.580E-02	2.154
TL-208	4.817E-01	8.796E-02	6.159E-02	4.138E-03	7.822
BI-211	4.260E+00	5.547E-01	3.152E-01	2.298E-02	13.515
BI-212	1.177E+00	6.115E-01	4.409E-01	3.527E-02	2.671
PB-212	1.641E+00	1.684E-01	9.456E-02	7.173E-03	17.358
PO-212	1.641E+00	1.684E-01	9.456E-02	7.173E-03	17.358
BI-214	1.424E+00	1.990E-01	1.110E-01	8.445E-03	12.829
PB-214	1.482E+00	2.079E-01	1.099E-01	9.854E-03	13.487
PO-214	1.482E+00	2.079E-01	1.099E-01	9.854E-03	13.487
PO-216	1.641E+00	1.684E-01	9.456E-02	7.173E-03	17.358
PO-218	1.482E+00	2.079E-01	1.099E-01	9.854E-03	13.487
RA-224	4.854E+00	1.302E+00	1.076E+00	6.604E-02	4.512
RA-226	1.424E+00	1.990E-01	1.110E-01	8.445E-03	12.829
AC-228	1.566E+00	3.415E-01	1.954E-01	2.412E-02	8.015
RA-228	1.566E+00	3.415E-01	1.954E-01	2.412E-02	8.015
TH-228	1.668E+00	1.711E-01	9.609E-02	7.289E-03	17.358

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	1.424E+00	1.990E-01	1.110E-01	8.445E-03	12.829
TH-232	1.566E+00	3.415E-01	1.954E-01	2.412E-02	8.015
U-234	1.424E+00	1.990E-01	1.110E-01	8.445E-03	12.829
NP-237	8.832E-01	4.003E-01	4.771E-01	1.121E-01	1.851
AM-243	4.952E-01	1.087E-01	1.041E-01	1.140E-02	4.755
ANH-511	9.082E-02	6.248E-02	4.683E-02	3.000E-03	1.939

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-9.324E-02		3.118E-01	4.910E-01	3.651E-02	-0.190
NA-22	2.253E-03		4.058E-02	6.795E-02	5.263E-03	0.033
NA-24	-4.698E+00		1.378E+00	Half-Life too short		
AL-26	-1.394E-03		3.270E-02	5.236E-02	3.320E-03	-0.027
TI-44	1.628E-01		4.747E-02	8.091E-02	8.853E-03	2.012
SC-46	1.865E-02		3.755E-02	6.452E-02	6.385E-03	0.289
V-48	2.813E-03		7.648E-02	1.245E-01	1.152E-02	0.023
CR-51	2.040E-02		3.745E-01	6.223E-01	4.495E-02	0.033
MN-52	-7.600E-02		2.816E-01	4.456E-01	3.766E-02	-0.171
MN-54	2.442E-02		4.035E-02	6.948E-02	5.935E-03	0.351
CO-56	2.726E-03		3.654E-02	6.042E-02	5.335E-03	0.045
CO-57	-5.053E-03		2.564E-02	4.116E-02	2.715E-03	-0.123
CO-58	2.215E-03		3.875E-02	6.414E-02	5.132E-03	0.035
FE-59	-3.049E-02		1.041E-01	1.623E-01	1.355E-02	-0.188
CO-60	6.703E-03		3.729E-02	6.328E-02	5.499E-03	0.106
ZN-65	-1.562E-03		9.730E-02	1.342E-01	9.773E-03	-0.012
GE-68	2.048E-01		1.232E+00	2.022E+00	1.602E-01	0.101
AS-73	-1.302E+00		1.625E+00	2.548E+00	3.372E-01	-0.511
AS-74	-4.798E-02		9.577E-02	1.551E-01	8.863E-03	-0.309
SE-75	5.258E-03		4.769E-02	7.090E-02	4.522E-03	0.074
BR-77	-4.902E+00		1.336E+01	2.073E+01	1.315E+00	-0.237
SR-82	-1.742E-01		3.956E-01	6.273E-01	4.523E-02	-0.278
RB-83	-2.411E-02		6.566E-02	1.019E-01	6.467E-03	-0.237
RB-84	6.490E-02		6.872E-02	1.227E-01	1.190E-02	0.529
KR-85	9.680E+00		7.984E+00	1.253E+01	8.005E-01	0.772
SR-85	5.018E-02		4.139E-02	6.496E-02	4.150E-03	0.772
RB-86	2.217E-01		8.193E-01	1.360E+00	1.079E-01	0.163
Y-88	-2.066E-02		2.923E-02	3.730E-02	2.288E-03	-0.554
ZR-88	1.461E-02		3.112E-02	5.243E-02	3.563E-03	0.279
Y-91	-2.148E+00		1.898E+01	3.137E+01	2.084E+00	-0.068
NB-94	1.902E-02		3.361E-02	5.829E-02	3.319E-03	0.326
NB-95	3.863E-02		4.569E-02	7.211E-02	5.032E-03	0.536
NB-95M	1.043E-01		1.430E-01	2.209E-01	1.713E-02	0.472
ZR-95	6.590E-02		7.343E-02	1.301E-01	1.022E-02	0.506
NB-97	1.040E-01		1.272E-01	Half-Life too short		
ZR-97	8.517E+00		2.584E+00	Half-Life too short		
MO-99	4.719E-01		1.554E+01	2.526E+01	3.550E+00	0.019

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	-4.918E+11		3.617E+11	Half-Life too short		
RH-101	-2.186E-02		3.499E-02	5.213E-02	2.994E-03	-0.419
RH-102	8.860E-03		2.702E-02	4.483E-02	2.957E-03	0.198
RU-103	-1.770E-02		3.897E-02	5.924E-02	7.686E-03	-0.299
RH-106	-1.974E-01		3.099E-01	4.919E-01	5.686E-02	-0.401
RU-106	-1.974E-01		3.092E-01	4.919E-01	2.672E-02	-0.401
AG-108M	-3.848E-03		3.460E-02	5.580E-02	4.001E-03	-0.069
AG-110M	1.339E-02		3.274E-02	5.651E-02	3.061E-03	0.237
IN-111	8.193E-01		1.421E+00	2.190E+00	1.352E-01	0.374
IN-113M	2.419E-03		4.630E-02	7.601E-02	5.420E-03	0.032
SN-113	2.419E-03		4.630E-02	7.601E-02	5.420E-03	0.032
IN-114M	-1.001E-01		2.125E-01	2.893E-01	1.641E-02	-0.346
CD-115	-5.623E-01		1.478E+01	2.362E+01	1.487E+00	-0.024
SN-117M	-3.040E-02		6.049E-02	9.446E-02	5.298E-03	-0.322
SB-122	1.020E+00		2.765E+00	4.547E+00	2.735E-01	0.224
I-123	-3.571E+00		1.116E+01	Half-Life too short		
TE-123M	-4.728E-03		2.956E-02	4.693E-02	2.665E-03	-0.101
I-124	-8.395E-02		8.396E-01	1.274E+00	7.185E-02	-0.066
SB-124	-4.838E-03		7.259E-02	1.163E-01	8.833E-03	-0.042
SB-125	-1.863E-02		9.272E-02	1.487E-01	1.035E-02	-0.125
TE-125M	-1.383E+00		9.797E+00	1.586E+01	1.522E+00	-0.087
I-126	7.932E-02		1.903E-01	3.277E-01	1.644E-02	0.242
SB-126	-7.845E-02		1.742E-01	2.370E-01	1.432E-02	-0.331
SB-127	1.208E-01		1.541E+00	2.585E+00	2.469E-01	0.047
XE-127	-1.726E-02		4.737E-02	7.919E-02	4.586E-03	-0.218
I-131	3.112E-02		1.311E-01	2.185E-01	1.609E-02	0.142
TE-132	-3.697E-02		8.456E-01	1.424E+00	2.089E-01	-0.026
BA-133	-2.736E-03		4.717E-02	6.775E-02	8.174E-03	-0.040
I-133	6.499E-04		7.093E-03	Half-Life too short		
CS-134	1.039E-01	+	6.886E-02	9.531E-02	7.348E-03	1.090
CS-135	8.594E-02		1.721E-01	2.621E-01	2.118E-02	0.328
I-135	-1.879E+10		3.881E+10	Half-Life too short		
CS-136	-1.029E-01		1.128E-01	1.613E-01	1.412E-02	-0.638
BA-137M	-1.909E-02		3.483E-02	5.559E-02	2.743E-03	-0.343
CS-137	-2.018E-02		3.682E-02	5.876E-02	2.916E-03	-0.343
CE-139	1.524E-02		2.977E-02	4.869E-02	2.659E-03	0.313
BA-140	9.240E-02		2.781E-01	4.551E-01	1.484E-01	0.203
LA-140	-6.120E-02		9.198E-02	1.323E-01	1.026E-02	-0.463
CE-141	1.577E-03		6.688E-02	1.076E-01	6.584E-03	0.015
CE-143	1.137E-03		1.896E-04	Half-Life too short		
CE-144	-2.224E-01		2.097E-01	3.176E-01	4.563E-02	-0.700
PM-144	2.189E-03		3.140E-02	5.256E-02	2.933E-03	0.042
PR-144	1.484E-01		2.129E+00	3.564E+00	1.987E-01	0.042
PM-146	2.151E-02		4.148E-02	6.982E-02	6.449E-03	0.308
ND-147	2.232E-01		6.210E-01	1.023E+00	1.405E-01	0.218
PM-149	7.363E+01		1.294E+02	2.213E+02	3.201E+01	0.333
EU-152	-4.443E-02		1.013E-01	1.405E-01	1.035E-02	-0.316
GD-153	-1.134E-01		8.071E-02	1.207E-01	1.124E-02	-0.939

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154	1.480E-02		1.128E-01	1.904E-01	2.029E-02	0.078
EU-155	1.287E-01		1.107E-01	1.886E-01	1.565E-02	0.682
TB-160	4.729E-02		1.368E-01	2.316E-01	2.233E-02	0.204
HO-166M	-4.379E-03		6.327E-02	1.046E-01	6.137E-03	-0.042
TM-171	6.183E+00		3.663E+01	6.120E+01	6.972E+00	0.101
LU-176	8.192E-03		2.414E-02	4.084E-02	2.686E-03	0.201
LU-177	2.252E+00	+	1.598E+00	2.224E+00	1.300E-01	1.012
LU-177M	5.726E-02		1.930E-01	2.835E-01	1.921E-02	0.202
HF-181	-1.582E-02		4.185E-02	6.541E-02	4.293E-03	-0.242
W-181	-3.948E-01		4.976E-01	7.989E-01	9.230E-02	-0.494
TA-182	9.311E-02		2.006E-01	3.484E-01	2.402E-02	0.267
RE-183	1.474E-02		1.102E-01	1.772E-01	9.799E-03	0.083
RE-184	8.261E-02		2.253E-01	3.849E-01	2.400E-02	0.215
OS-185	2.951E-02		4.160E-02	7.342E-02	3.772E-03	0.402
RE-188	2.082E-01		1.770E-01	2.980E-01	1.693E-02	0.699
W-188	-5.887E+00		8.407E+00	1.165E+01	7.565E-01	-0.505
IR-192	-1.752E-02		3.487E-02	5.608E-02	3.728E-03	-0.312
AU-195	1.626E-01		2.268E-01	3.767E-01	3.418E-02	0.432
TL-200	-3.540E-04		4.392E-04	Half-Life too short		
TL-201	5.201E+00		8.758E+00	1.438E+01	7.862E-01	0.362
TL-202	3.144E-02		7.500E-02	1.253E-01	8.428E-03	0.251
HG-203	-6.442E-03		4.608E-02	6.701E-02	4.522E-03	-0.096
BI-207	2.111E-02		5.198E-02	8.757E-02	7.129E-03	0.241
TL-207	5.216E-02		7.185E-01	1.051E+00	1.769E-01	0.050
PO-209	1.319E+00		6.474E+00	1.083E+01	1.092E+00	0.122
BI-210	-4.690E-01		9.264E+00	1.527E+01	1.497E+00	-0.031
PB-210	-4.690E-01		9.264E+00	1.527E+01	1.497E+00	-0.031
PO-210	-4.690E-01		9.264E+00	1.527E+01	1.370E+00	-0.031
PB-211	-7.696E-01		1.196E+00	1.463E+00	9.132E-01	-0.526
PO-215	5.216E-02		7.185E-01	1.051E+00	1.769E-01	0.050
RN-219	1.213E-02		3.998E-01	6.544E-01	9.199E-02	0.019
RN-220	1.886E+01		2.529E+01	4.302E+01	2.638E+00	0.438
RA-223	5.216E-02		7.185E-01	1.051E+00	1.769E-01	0.050
AC-227	-4.808E-02		3.714E-01	6.187E-01	8.760E-02	-0.078
TH-227	-4.808E-02		3.714E-01	6.187E-01	1.056E-01	-0.078
TH-229	3.572E-01		5.027E-01	8.244E-01	4.702E-02	0.433
PA-231	-4.905E-01		1.607E+00	2.544E+00	3.578E-01	-0.193
TH-231	5.216E-02		7.185E-01	1.051E+00	1.769E-01	0.050
U-231	-5.001E-01		1.395E+00	1.998E+00	1.915E-01	-0.250
PA-233	-2.441E-02		6.307E-02	1.022E-01	7.074E-03	-0.239
PA-234	-2.319E-01		3.122E-01	4.622E-01	8.907E-02	-0.502
PA-234M	5.552E-01		4.919E+00	7.892E+00	8.145E-01	0.070
TH-234	-3.148E-01		1.891E+00	3.105E+00	6.121E-01	-0.101
U-235	2.658E-01		2.270E-01	3.743E-01	6.120E-02	0.710
NP-236	1.710E-02		8.070E-02	1.303E-01	7.263E-03	0.131
U-238	-3.148E-01		1.891E+00	3.105E+00	6.121E-01	-0.101
NP-239	-1.048E-01		1.921E-01	3.038E-01	2.125E-02	-0.345
AM-241	-6.200E-02		2.391E-01	3.945E-01	5.066E-02	-0.157

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	3.888E-02		9.725E-02	1.615E-01	1.353E-02	0.241
AM-246	-1.227E-01		1.571E-01	2.309E-01	1.824E-02	-0.531
CM-247	-8.203E-03		3.757E-02	5.827E-02	3.957E-03	-0.141
CF-249	-1.547E-03		4.070E-02	6.647E-02	4.516E-03	-0.023
CF-251	4.701E-02		1.263E-01	2.046E-01	1.135E-02	0.230

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]G243624011            *
* Acquisition date   : 7-JAN-2010 15:51:54 Detector SN#      :                *
* Detector ID        : GAM10                      Sensitivity   : 5.000          *
* Geometry           : CAN                        Energy tolerance: 1.500          *
* Elapsed live time  : 0 02:00:00.00              Abundance limit : 75.000          *
* Elapsed real time  : 0 02:00:01.00              Half life ratio : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID            *
* Sample ID          : G243624011              Analyst initials: MXR1          *
* Batch Number       : 937704                  Sample Quantity : 1.2191E+02 GRAM    *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000          *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 16-MAR-2009 13:18:08 MS Isotope      :                *
* MSD DPM             : 0.000                     MSD Isotope   :                *
* LCS DPM             : 0.000                     LCS Isotope    :                *
* LCSD DPM            : 0.000                     LCSD Isotope   :                *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
K-40	2.027E+01	2.356E+00	2.898E-01	1.202E+00
CD-109	3.065E+00	1.212E+00	7.305E-01	6.184E-01
SN-126	3.008E-01	1.189E-01	7.222E-02	6.069E-02
TL-208	4.817E-01	8.620E-02	3.112E-02	4.398E-02
BI-211	4.260E+00	5.436E-01	1.603E-01	2.774E-01
BI-212	1.177E+00	5.993E-01	2.221E-01	3.058E-01
PB-212	1.641E+00	1.650E-01	4.832E-02	8.419E-02
PO-212	1.641E+00	1.650E-01	4.832E-02	8.419E-02
BI-214	1.424E+00	1.950E-01	5.604E-02	9.948E-02
PB-214	1.482E+00	2.037E-01	5.587E-02	1.039E-01
PO-214	1.482E+00	2.037E-01	5.587E-02	1.039E-01
PO-216	1.641E+00	1.650E-01	4.832E-02	8.419E-02
PO-218	1.482E+00	2.037E-01	5.587E-02	1.039E-01
RA-224	4.854E+00	1.275E+00	5.497E-01	6.508E-01
RA-226	1.424E+00	1.950E-01	5.604E-02	9.948E-02
AC-228	1.566E+00	3.347E-01	9.817E-02	1.707E-01
RA-228	1.566E+00	3.347E-01	9.817E-02	1.707E-01
TH-228	1.668E+00	1.677E-01	4.910E-02	8.556E-02
TH-230	1.424E+00	1.950E-01	5.604E-02	9.948E-02
TH-232	1.566E+00	3.347E-01	9.817E-02	1.707E-01
U-234	1.424E+00	1.950E-01	5.604E-02	9.948E-02
NP-237	8.832E-01	3.923E-01	2.468E-01	2.002E-01
AM-243	4.952E-01	1.065E-01	5.397E-02	5.435E-02
ANH-511	9.082E-02	6.123E-02	2.370E-02	3.124E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-9.324E-02	3.055E-01	2.487E-01	1.559E-01 NOT IDENT.
NA-22	2.253E-03	3.977E-02	3.399E-02	2.029E-02 NOT IDENT.
NA-24	-4.698E+06	2.701E+06	0.000E+00	1.378E+06 SHORT HLIF

AL-26	-1.394E-03	3.204E-02	2.607E-02	1.635E-02	NOT IDENT.
TI-44	1.628E-01	4.652E-02	4.191E-02	2.373E-02	NOT IDENT.
SC-46	1.865E-02	3.680E-02	3.243E-02	1.878E-02	FAIL ABUN
V-48	2.813E-03	7.495E-02	6.251E-02	3.824E-02	NOT IDENT.
CR-51	2.040E-02	3.670E-01	3.168E-01	1.873E-01	NOT IDENT.
MN-52	-7.600E-02	2.760E-01	2.226E-01	1.408E-01	FAIL ABUN
MN-54	2.442E-02	3.954E-02	3.495E-02	2.018E-02	NOT IDENT.
CO-56	2.726E-03	3.581E-02	3.039E-02	1.827E-02	FAIL ABUN
CO-57	-5.053E-03	2.512E-02	2.121E-02	1.282E-02	NOT IDENT.
CO-58	2.215E-03	3.797E-02	3.227E-02	1.937E-02	NOT IDENT.
FE-59	-3.049E-02	1.020E-01	8.134E-02	5.206E-02	NOT IDENT.
CO-60	6.703E-03	3.654E-02	3.164E-02	1.864E-02	NOT IDENT.
ZN-65	-1.562E-03	9.536E-02	6.724E-02	4.865E-02	NOT IDENT.
GE-68	2.048E-01	1.207E+00	1.014E+00	6.160E-01	NOT IDENT.
AS-73	-1.302E+00	1.592E+00	1.326E+00	8.124E-01	NOT IDENT.
AS-74	-4.798E-02	9.386E-02	7.837E-02	4.789E-02	NOT IDENT.
SE-75	5.258E-03	4.674E-02	3.618E-02	2.385E-02	NOT IDENT.
BR-77	-4.902E+00	1.309E+01	1.049E+01	6.678E+00	FAIL ABUN
SR-82	-1.742E-01	3.877E-01	3.158E-01	1.978E-01	NOT IDENT.
RB-83	-2.411E-02	6.435E-02	5.157E-02	3.283E-02	NOT IDENT.
RB-84	6.490E-02	6.734E-02	6.167E-02	3.436E-02	NOT IDENT.
KR-85	9.680E+00	7.824E+00	6.343E+00	3.992E+00	NOT IDENT.
SR-85	5.018E-02	4.056E-02	3.288E-02	2.069E-02	NOT IDENT.
RB-86	2.217E-01	8.029E-01	6.816E-01	4.096E-01	NOT IDENT.
Y-88	-2.066E-02	2.865E-02	1.857E-02	1.462E-02	NOT IDENT.
ZR-88	1.461E-02	3.049E-02	2.663E-02	1.556E-02	NOT IDENT.
Y-91	-2.148E+00	1.860E+01	1.570E+01	9.488E+00	NOT IDENT.
NB-94	1.902E-02	3.293E-02	2.939E-02	1.680E-02	NOT IDENT.
NB-95	3.863E-02	4.477E-02	3.631E-02	2.284E-02	NOT IDENT.
NB-95M	1.043E-01	1.401E-01	1.129E-01	7.149E-02	NOT IDENT.
ZR-95	6.590E-02	7.197E-02	6.553E-02	3.672E-02	NOT IDENT.
NB-97	1.040E+05	2.493E+05	0.000E+00	1.272E+05	SHORT HLIF
ZR-97	8.517E+06	5.064E+06	0.000E+00	2.584E+06	SHORT HLIF
MO-99	4.719E-01	1.523E+01	1.272E+01	7.772E+00	NOT IDENT.
TC-99M	-4.918E+17	7.088E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-2.186E-02	3.429E-02	2.670E-02	1.749E-02	NOT IDENT.
RH-102	8.860E-03	2.648E-02	2.271E-02	1.351E-02	NOT IDENT.
RU-103	-1.770E-02	3.819E-02	2.999E-02	1.949E-02	FAIL ABUN
RH-106	-1.974E-01	3.037E-01	2.484E-01	1.549E-01	FAIL ABUN
RU-106	-1.974E-01	3.030E-01	2.484E-01	1.546E-01	FAIL ABUN
AG-108M	-3.848E-03	3.391E-02	2.830E-02	1.730E-02	NOT IDENT.
AG-110M	1.339E-02	3.209E-02	2.851E-02	1.637E-02	NOT IDENT.
IN-111	8.193E-01	1.393E+00	1.118E+00	7.106E-01	NOT IDENT.
IN-113M	2.419E-03	4.538E-02	3.860E-02	2.315E-02	NOT IDENT.
SN-113	2.419E-03	4.538E-02	3.860E-02	2.315E-02	NOT IDENT.
IN-114M	-1.001E-01	2.082E-01	1.482E-01	1.062E-01	NOT IDENT.
CD-115	-5.623E-01	1.448E+01	1.195E+01	7.390E+00	NOT IDENT.
SN-117M	-3.040E-02	5.929E-02	4.851E-02	3.025E-02	NOT IDENT.
SB-122	1.020E+00	2.710E+00	2.299E+00	1.382E+00	NOT IDENT.
I-123	-3.571E+06	2.188E+07	0.000E+00	1.116E+07	SHORT HLIF
TE-123M	-4.728E-03	2.897E-02	2.410E-02	1.478E-02	NOT IDENT.
I-124	-8.395E-02	8.228E-01	6.433E-01	4.198E-01	NOT IDENT.
SB-124	-4.838E-03	7.114E-02	5.794E-02	3.630E-02	FAIL ABUN
SB-125	-1.863E-02	9.086E-02	7.541E-02	4.636E-02	FAIL ABUN
TE-125M	-1.383E+00	9.601E+00	8.180E+00	4.898E+00	NOT IDENT.
I-126	7.932E-02	1.865E-01	1.653E-01	9.516E-02	NOT IDENT.
SB-126	-7.845E-02	1.707E-01	1.195E-01	8.708E-02	FAIL ABUN
SB-127	1.208E-01	1.510E+00	1.304E+00	7.706E-01	NOT IDENT.
XE-127	-1.726E-02	4.642E-02	4.055E-02	2.368E-02	NOT IDENT.
I-131	3.112E-02	1.284E-01	1.111E-01	6.554E-02	NOT IDENT.
TE-132	-3.697E-02	8.287E-01	7.280E-01	4.228E-01	NOT IDENT.
BA-133	-2.736E-03	4.623E-02	3.445E-02	2.359E-02	FAIL ABUN
I-133	6.499E+02	1.390E+04	0.000E+00	7.093E+03	SHORT HLIF
CS-134	1.039E-01	6.749E-02	4.797E-02	3.443E-02	FAIL ABUN
CS-135	8.594E-02	1.686E-01	1.337E-01	8.603E-02	NOT IDENT.
I-135	-1.879E+16	7.606E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.029E-01	1.106E-01	8.091E-02	5.641E-02	FAIL ABUN
BA-137M	-1.909E-02	3.413E-02	2.804E-02	1.741E-02	NOT IDENT.
CS-137	-2.018E-02	3.608E-02	2.965E-02	1.841E-02	NOT IDENT.
CE-139	1.524E-02	2.918E-02	2.499E-02	1.489E-02	NOT IDENT.
BA-140	9.240E-02	2.725E-01	2.302E-01	1.390E-01	NOT IDENT.
LA-140	-6.120E-02	9.014E-02	6.597E-02	4.599E-02	FAIL ABUN
CE-141	1.577E-03	6.554E-02	5.531E-02	3.344E-02	NOT IDENT.
CE-143	1.137E+03	3.715E+02	0.000E+00	1.896E+02	SHORT HLIF
CE-144	-2.224E-01	2.055E-01	1.634E-01	1.048E-01	NOT IDENT.
PM-144	2.189E-03	3.077E-02	2.650E-02	1.570E-02	NOT IDENT.
PR-144	1.484E-01	2.086E+00	1.797E+00	1.064E+00	NOT IDENT.
PM-146	2.151E-02	4.065E-02	3.539E-02	2.074E-02	NOT IDENT.

ND-147	2.232E-01	6.086E-01	5.176E-01	3.105E-01	FAIL ABUN
PM-149	7.363E+01	1.268E+02	1.128E+02	6.472E+01	NOT IDENT.
EU-152	-4.443E-02	9.928E-02	7.147E-02	5.065E-02	FAIL ABUN
GD-153	-1.134E-01	7.909E-02	6.236E-02	4.035E-02	NOT IDENT.
EU-154	1.480E-02	1.105E-01	9.527E-02	5.638E-02	NOT IDENT.
EU-155	1.287E-01	1.084E-01	9.736E-02	5.533E-02	FAIL ABUN
TB-160	4.729E-02	1.340E-01	1.164E-01	6.838E-02	FAIL ABUN
HO-166M	-4.379E-03	6.201E-02	5.270E-02	3.164E-02	FAIL ABUN
TM-171	6.183E+00	3.589E+01	3.176E+01	1.831E+01	NOT IDENT.
LU-176	8.192E-03	2.366E-02	2.080E-02	1.207E-02	FAIL ABUN
LU-177	2.252E+00	1.566E+00	1.138E+00	7.988E-01	FAIL ABUN
LU-177M	5.726E-02	1.892E-01	1.439E-01	9.652E-02	FAIL ABUN
HF-181	-1.582E-02	4.101E-02	3.313E-02	2.092E-02	NOT IDENT.
W-181	-3.948E-01	4.876E-01	4.147E-01	2.488E-01	NOT IDENT.
TA-182	9.311E-02	1.965E-01	1.744E-01	1.003E-01	FAIL ABUN
RE-183	1.474E-02	1.080E-01	9.096E-02	5.508E-02	FAIL ABUN
RE-184	8.261E-02	2.208E-01	1.965E-01	1.127E-01	NOT IDENT.
OS-185	2.951E-02	4.077E-02	3.705E-02	2.080E-02	NOT IDENT.
RE-188	2.082E-01	1.735E-01	1.531E-01	8.850E-02	NOT IDENT.
W-188	-5.887E+00	8.239E+00	5.940E+00	4.203E+00	NOT IDENT.
IR-192	-1.752E-02	3.418E-02	2.855E-02	1.744E-02	FAIL ABUN
AU-195	1.626E-01	2.222E-01	1.946E-01	1.134E-01	FAIL ABUN
TL-200	-3.540E+02	8.609E+02	0.000E+00	4.392E+02	SHORT HLIF
TL-201	5.201E+00	8.583E+00	7.378E+00	4.379E+00	NOT IDENT.
TL-202	3.144E-02	7.350E-02	6.356E-02	3.750E-02	NOT IDENT.
HG-203	-6.442E-03	4.516E-02	3.418E-02	2.304E-02	NOT IDENT.
BI-207	2.111E-02	5.094E-02	4.391E-02	2.599E-02	FAIL ABUN
TL-207	5.216E-02	7.042E-01	5.350E-01	3.593E-01	FAIL ABUN
PO-209	1.319E+00	6.344E+00	5.440E+00	3.237E+00	NOT IDENT.
BI-210	-4.690E-01	9.079E+00	7.958E+00	4.632E+00	NOT IDENT.
PB-210	-4.690E-01	9.079E+00	7.958E+00	4.632E+00	NOT IDENT.
PO-210	-4.690E-01	9.079E+00	7.958E+00	4.632E+00	NOT IDENT.
PB-211	-7.696E-01	1.172E+00	7.424E-01	5.981E-01	NOT IDENT.
PO-215	5.216E-02	7.042E-01	5.350E-01	3.593E-01	FAIL ABUN
RN-219	1.213E-02	3.918E-01	3.322E-01	1.999E-01	FAIL ABUN
RN-220	1.886E+01	2.479E+01	2.175E+01	1.265E+01	NOT IDENT.
RA-223	5.216E-02	7.042E-01	5.350E-01	3.593E-01	FAIL ABUN
AC-227	-4.808E-02	3.640E-01	3.159E-01	1.857E-01	FAIL ABUN
TH-227	-4.808E-02	3.640E-01	3.159E-01	1.857E-01	FAIL ABUN
TH-229	3.572E-01	4.926E-01	4.224E-01	2.513E-01	FAIL ABUN
PA-231	-4.905E-01	1.575E+00	1.297E+00	8.035E-01	NOT IDENT.
TH-231	5.216E-02	7.042E-01	5.350E-01	3.593E-01	FAIL ABUN
U-231	-5.001E-01	1.368E+00	1.032E+00	6.977E-01	FAIL ABUN
PA-233	-2.441E-02	6.181E-02	5.206E-02	3.153E-02	FAIL ABUN
PA-234	-2.319E-01	3.060E-01	2.321E-01	1.561E-01	FAIL ABUN
PA-234M	5.552E-01	4.820E+00	3.960E+00	2.459E+00	NOT IDENT.
TH-234	-3.148E-01	1.854E+00	1.613E+00	9.457E-01	FAIL ABUN
U-235	2.658E-01	2.224E-01	1.924E-01	1.135E-01	FAIL ABUN
NP-236	1.710E-02	7.909E-02	6.693E-02	4.035E-02	NOT IDENT.
U-238	-3.148E-01	1.854E+00	1.613E+00	9.457E-01	FAIL ABUN
NP-239	-1.048E-01	1.883E-01	1.566E-01	9.605E-02	FAIL ABUN
AM-241	-6.200E-02	2.343E-01	2.050E-01	1.196E-01	NOT IDENT.
CM-243	3.888E-02	9.530E-02	8.335E-02	4.862E-02	FAIL ABUN
AM-246	-1.227E-01	1.539E-01	1.158E-01	7.854E-02	NOT IDENT.
CM-247	-8.203E-03	3.682E-02	2.958E-02	1.879E-02	FAIL ABUN
CF-249	-1.547E-03	3.989E-02	3.376E-02	2.035E-02	NOT IDENT.
CF-251	4.701E-02	1.237E-01	1.049E-01	6.314E-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	261.2524
46.50	261.2524
46.50	261.2524
48.70	265.5767
49.72	246.0272
51.35	255.4075
52.39	285.7845
52.97	291.7829
53.15	268.6746
53.44	274.4536
54.07	271.1622
56.28	283.8914
56.28	283.8937
57.37	0.0000
57.53	276.2987
57.53	276.2998
57.60	285.7445
57.98	289.7690
57.98	289.7690
59.32	313.3464
59.32	313.3464
59.40	313.4055
59.54	313.5094
59.72	303.2510
60.01	322.3646
61.10	341.1932
61.14	341.2244
61.30	321.4386
63.00	315.0799
63.29	335.2905
63.29	335.2905
63.58	335.5107
64.28	324.5848
65.12	361.5406
65.20	361.6045
65.20	361.6045
66.05	356.5359
66.72	330.1846
66.83	345.6262
66.91	345.6866
67.20	356.4757
67.20	356.4757
67.75	354.9782
67.85	355.0551
68.90	325.4820
68.90	325.4820
69.30	317.0748
69.67	328.9190
70.82	332.6241
70.82	332.6241
70.83	332.6311
72.80	344.2141
72.87	344.2645
72.87	344.2645
74.67	345.5393
74.81	345.6383
74.81	345.6383
74.81	345.6383
74.81	345.6383
74.81	345.6383
74.81	345.6383
74.81	345.6383
74.97	345.7499
75.28	345.9678
75.70	346.2613
77.11	347.2426
77.11	347.2426

77.11	347.2426
77.11	347.2426
77.11	347.2426
77.11	347.2426
77.11	347.2426
78.38	348.1194
79.62	304.6072
79.80	309.1517
79.80	309.1517
80.11	309.3398
80.18	309.3813
80.30	365.7173
80.30	365.7173
80.57	365.9095
81.00	394.3851
81.07	394.4379
81.07	394.4379
81.07	394.4379
81.07	394.4379
82.60	406.5028
83.37	309.7910
83.78	350.2786
83.78	350.2786
83.78	350.2786
83.78	350.2786
84.21	343.1031
84.90	348.0299
85.43	405.1912
86.29	477.7212
86.50	477.9086
86.54	477.9427
86.59	477.9865
86.72	428.6443
86.79	428.6967
86.94	428.8167
87.30	366.0875
87.30	366.0875
87.30	366.0875
87.30	366.0875
87.30	366.0875
87.30	366.0875
87.30	366.0875
87.57	366.2681
87.88	366.4766
88.03	366.5771
88.36	366.7986
88.47	366.8712
89.95	307.5533
91.11	308.1945
92.29	308.8420
92.38	308.8918
92.38	308.8918
93.35	259.3676
94.00	233.8492
94.67	215.8774
94.67	215.8796
94.90	235.7378
94.90	235.7378
94.90	235.7378
94.90	235.7378
95.87	274.2201
95.87	274.2201
96.73	300.2599
97.43	289.2132
98.44	254.0077
98.44	254.0077
98.88	230.7175
99.55	219.7361
99.55	219.7361
99.86	230.0766
100.00	230.1315
100.10	230.1716
103.18	266.3099
103.76	251.1261
105.00	250.6036
105.31	245.5719
108.00	274.6170
109.28	290.7524

111.00	287.3751
111.00	287.3751
111.76	293.9723
112.95	270.4951
115.19	278.7650
116.30	256.1412
117.00	273.2269
117.00	273.2269
117.66	296.6416
121.11	228.3871
121.62	232.7922
121.78	244.4893
122.06	261.5305
122.32	299.7620
122.32	299.7620
122.32	299.7620
122.32	299.7620
123.07	296.9118
127.23	261.3636
129.76	265.5157
131.20	316.4744
133.02	286.0858
133.54	291.6729
135.34	244.9214
136.00	254.8624
136.25	254.9488
136.48	251.7886
140.51	292.2732
140.51	0.0000
142.18	270.0567
142.65	249.5206
143.76	262.9809
144.24	269.6964
144.24	269.6964
144.24	269.6964
144.24	269.6964
145.22	272.2298
145.44	290.8996
147.16	283.8767
152.43	256.0015
152.70	251.6735
153.22	263.9882
154.21	254.3607
154.21	254.3607
154.21	254.3607
154.21	254.3607
155.03	242.4452
156.02	277.1047
158.56	283.5339
159.00	0.0000
159.00	269.2245
160.31	250.7126
161.27	234.2719
162.32	242.3900
162.64	257.0093
163.35	262.8212
163.89	271.9438
165.85	231.0773
167.43	223.6442
171.28	212.2382
171.86	207.8629
172.10	196.6208
176.55	237.3807
176.60	224.8991
181.06	251.7209
184.41	238.9105
185.71	214.5809
186.00	214.6494
190.27	252.5526
192.34	235.7795
193.63	207.1709
197.04	239.2835
198.01	245.3403
198.60	232.6945
200.40	235.4632
201.83	246.9049
202.84	262.9395
205.31	239.0044

208.36	262.3118
208.81	253.9666
209.75	210.4279
209.75	210.4279
210.97	203.6162
215.65	200.6605
216.55	194.6191
218.09	215.3835
222.10	222.4818
223.80	221.0566
226.40	213.5340
227.00	222.6328
227.08	224.4453
227.20	222.6763
228.16	217.4865
228.18	217.4902
228.18	217.4902
231.56	0.0000
235.69	241.8361
236.00	241.9074
236.00	241.9074
238.63	226.8848
238.63	226.8848
238.63	226.8848
238.63	226.8848
239.00	226.9611
240.98	227.3731
241.98	227.5810
241.98	227.5810
241.98	227.5810
244.69	151.8512
245.39	162.1736
247.94	170.4942
248.90	198.7754
249.79	175.0989
252.40	173.6662
252.85	168.2200
252.85	168.2200
254.15	0.0000
256.20	180.6995
256.20	180.6995
260.50	160.0915
260.90	173.1068
262.80	161.3355
264.65	160.4786
268.24	169.9090
268.79	162.5340
269.46	154.7917
269.46	154.7917
269.46	154.7917
269.46	154.7917
271.23	151.2867
273.65	160.9508
276.40	151.9393
277.35	148.3034
277.60	148.3347
277.60	148.3347
278.00	145.7534
278.60	157.8538
279.20	175.9799
279.53	168.5059
280.46	168.6344
281.68	144.6867
283.67	177.9165
284.30	175.5812
285.00	174.7360
285.90	160.6850
286.10	167.3284
286.10	167.3284
287.40	158.9843
288.45	0.0000
290.67	180.6557
290.80	167.0088
291.72	167.1323
293.26	0.0000
293.70	152.1777
295.21	140.1697
295.21	140.1697

295.21	140.1697
295.96	99.0917
296.50	99.1329
297.23	99.1901
298.57	99.2948
299.80	131.5006
299.80	131.5006
300.09	131.5300
300.09	131.5300
300.09	131.5300
300.12	131.5321
301.29	120.9360
302.84	141.0075
303.76	142.6401
303.91	139.5904
304.40	145.7795
304.40	145.7795
304.84	150.9474
306.84	138.3662
308.46	135.6514
311.98	149.5200
316.51	153.9027
318.01	135.6635
319.02	135.7660
319.41	136.7745
320.08	138.7844
323.87	135.4745
323.87	135.4745
323.87	135.4745
323.87	135.4745
325.23	129.3754
328.77	187.5352
333.44	185.5545
334.20	190.2346
334.20	190.2346
334.30	190.2465
338.28	128.8312
338.28	128.8312
338.28	128.8312
338.28	128.8312
338.32	128.8352
338.32	128.8352
338.32	128.8352
340.50	104.0161
340.57	104.0209
344.27	120.0952
345.85	104.8047
350.59	0.0000
351.07	123.0483
351.92	123.1221
351.92	123.1221
351.92	123.1221
355.39	0.0000
356.01	121.0786
364.48	127.1860
366.43	111.3100
367.43	118.4087
367.94	0.0000
369.80	124.6263
374.96	122.0284
383.85	103.4661
387.95	124.0831
388.63	109.8918
391.69	124.3810
391.69	124.3810
392.90	110.1918
398.62	116.7362
400.65	88.1770
401.10	97.4324
401.81	108.7626
402.60	114.9753
404.84	133.2288
410.95	112.2714
411.60	118.9230
413.65	99.2271
414.70	104.8077
415.30	98.1456

415.76	96.2511
417.63	0.0000
418.52	114.0367
423.70	103.9948
427.08	109.4156
427.89	108.4275
432.53	119.1820
433.93	115.0941
439.47	97.6247
439.56	98.6802
439.89	95.5489
443.98	105.2505
444.90	113.7299
445.03	113.7398
445.03	113.7398
445.03	113.7398
445.03	113.7398
453.90	81.5070
463.38	76.6252
468.07	64.8765
473.00	96.2979
475.06	74.9838
475.35	77.1383
476.78	90.0652
477.59	87.9596
477.96	91.1971
482.03	89.2501
484.57	79.6819
487.03	78.7109
490.36	0.0000
492.35	64.8798
497.08	73.7161
507.63	0.0000
510.53	0.0000
510.84	91.7257
511.00	91.7334
511.85	90.8991
511.85	90.8991
513.99	82.2506
513.99	82.2506
520.41	77.9163
520.65	77.9249
527.90	79.3169
528.96	0.0000
529.64	83.7976
529.87	0.0000
531.02	81.6489
537.32	77.4811
543.00	72.1510
546.56	0.0000
549.76	64.5977
552.65	80.3035
555.20	71.4707
563.23	72.8731
563.90	79.6258
568.70	67.4451
569.32	65.2164
569.50	65.2217
569.67	65.2270
573.80	82.9348
574.00	82.9415
574.64	83.1689
578.91	67.7747
579.30	0.0000
583.14	90.5469
585.48	74.0284
591.81	74.5507
592.07	74.5607
593.00	72.7734
595.88	91.9998
600.56	72.1145
602.52	0.0000
602.71	86.1531
602.71	86.1531
603.60	95.9843
604.41	88.3995
604.70	88.4113
609.31	82.4875

609.31	82.4875
609.31	82.4875
609.31	82.4875
610.33	93.2226
612.46	79.5446
614.37	85.7386
618.01	77.2919
621.84	81.1121
621.84	81.1121
631.29	73.1232
633.02	59.2844
633.10	59.2875
634.78	57.4771
635.90	66.7811
636.97	64.9568
645.85	63.3466
646.12	60.5582
656.30	66.4412
657.75	61.8009
657.90	0.0000
661.65	80.6628
661.65	80.6628
664.57	0.0000
666.33	71.4244
666.33	71.4244
675.00	65.0851
677.61	68.9330
685.20	61.5739
692.80	67.4691
695.00	59.9223
696.49	61.8611
696.49	61.8611
697.00	64.7312
697.49	64.7428
698.33	71.4331
698.50	71.4386
699.00	78.1222
702.63	68.6971
706.10	90.7695
706.58	0.0000
706.67	86.9677
709.31	68.8834
711.68	77.5670
713.82	76.6758
717.42	59.5100
720.50	73.6784
721.93	0.0000
722.20	57.7002
722.78	62.5228
722.78	62.5228
722.89	62.5260
722.95	62.5276
723.30	70.5547
724.18	70.5780
727.18	61.6688
733.00	75.6540
735.90	66.4757
739.58	61.0036
742.81	63.0195
744.21	64.9946
747.13	57.2989
751.79	73.9423
752.31	71.0378
753.82	58.4209
755.35	64.3000
756.15	56.5245
756.87	54.5904
763.93	70.0517
765.79	53.7982
766.42	66.8569
766.84	60.3433
776.49	68.7490
778.00	54.0480
778.57	53.0771
778.89	49.1504
783.80	60.0752
785.46	59.1270
792.07	55.9791

795.84	56.0579
796.30	52.7682
798.80	64.3716
801.93	67.9872
805.60	48.6471
810.29	57.6814
810.76	53.7126
815.85	54.8080
817.79	60.8302
818.51	51.8692
819.60	50.8917
826.30	60.0161
828.27	0.0000
831.60	62.1347
831.96	69.1583
834.83	64.2125
836.80	0.0000
846.75	45.3406
848.13	52.4189
856.28	0.0000
856.80	55.6110
860.37	48.5941
867.32	42.2841
867.82	47.3662
871.10	42.6778
873.19	45.7592
874.81	47.8193
875.33	0.0000
876.40	55.9896
879.36	43.8178
880.27	35.6768
880.51	35.6793
881.50	36.7110
883.24	55.0995
884.67	59.2093
889.25	39.8750
896.60	35.8741
898.02	37.9422
899.00	40.0064
903.28	37.6666
911.07	43.2571
911.07	43.2571
911.07	43.2571
919.63	40.1668
920.93	41.3320
925.00	40.3530
925.24	43.4602
926.50	45.5480
935.52	53.6420
937.48	55.4076
944.10	45.8101
946.00	57.2975
949.00	49.0103
962.29	47.1237
964.01	57.6278
966.15	42.9879
968.20	43.0160
969.11	43.0280
969.11	43.0280
969.11	43.0280
977.42	55.2416
980.50	40.0225
983.50	47.4401
989.30	43.3012
996.32	53.9796
1001.03	48.7582
1001.68	48.7672
1004.76	56.2413
1021.30	0.0000
1024.50	0.0000
1034.80	39.6214
1036.00	53.5620
1037.82	48.2322
1038.57	46.0990
1038.76	0.0000
1045.16	51.5602
1046.59	56.9569
1048.07	50.5296

1050.47	34.4281
1050.47	34.4281
1062.04	42.1021
1063.62	38.8811
1076.63	40.1128
1077.35	40.1219
1078.86	59.6675
1085.78	41.3064
1099.22	57.8342
1112.02	39.4260
1112.84	39.4348
1115.52	42.0225
1120.29	50.4944
1120.29	50.4944
1120.29	50.4944
1120.29	50.4944
1120.51	47.2055
1121.28	46.1180
1124.00	0.0000
1129.67	44.9416
1131.51	0.0000
1147.95	0.0000
1167.94	44.4902
1173.22	56.6216
1175.09	58.5062
1177.93	45.5407
1189.05	42.8798
1204.90	53.3586
1205.75	0.0000
1213.00	61.9153
1221.42	50.7700
1230.97	58.1660
1235.34	66.3218
1236.41	0.0000
1238.25	55.0389
1246.25	51.0974
1260.41	0.0000
1271.85	29.5254
1274.45	32.4049
1274.54	33.3580
1291.56	41.1593
1298.22	0.0000
1312.09	30.7865
1325.50	29.9228
1325.50	29.9228
1332.49	25.1388
1333.61	29.9821
1360.21	30.1750
1362.66	0.0000
1365.15	19.4906
1368.21	46.8125
1368.53	0.0000
1376.25	23.4502
1384.27	18.4604
1394.10	19.6248
1395.20	25.5186
1407.95	23.6260
1434.06	25.7493
1436.60	17.8367
1457.56	0.0000
1460.81	22.9176
1489.15	22.0600
1509.49	20.1449
1596.49	22.5774
1620.62	9.2827
1678.03	0.0000
1691.02	11.5089
1691.02	11.5089
1706.46	0.0000
1750.46	0.0000
1764.49	8.4915
1764.49	8.4915
1764.49	8.4915
1764.49	8.4915
1770.23	9.1082
1771.40	9.1103
1791.20	0.0000
1808.65	12.8452

1836.01

10.7593

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G243624011

Total Uranium Activity	-8.1356E-01	ug/g
Total Uranium Counting Unc.	5.5155E+00	ug/g
Total Uranium Tpu	2.8140E-06	ug/g
Total Uranium Mda	4.7986E+00	ug/g

```

*****
*
*           GEL Laboratories LLC
*           2040 SAVAGE ROAD
*           CHARLESTON ,SC 29417
*           GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G243624011
*  ANALYST       : MXR1            DETECTOR    : GAM10
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 15:51:54.62  SAMPLE ALQT: 121.910 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.809E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.354E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.818E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.849E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 17:55:28.70

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006617.CNF;1
Sample date        : 31-DEC-2009 00:00:00 Acquisition date : 7-JAN-2010 15:52:27.
Sample ID          : G1202006617 Sample quantity : 1.36450E+02 GRAM
Detector name      : GAM11 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:00.60 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 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	92.42*	22	112	0.95	183.77	180	10	3.05E-03	108.5	
2	0	185.49*	8	55	1.17	370.05	367	7	1.13E-03	203.1	
3	0	238.45*	2	55	1.00	476.04	472	9	3.45E-04	628.1	
4	0	559.08*	11	14	1.44	1117.71	1111	10	1.47E-03	80.1	

Flag: "*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006617.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 31-DEC-2009 00:00:00 Acquisition date : 7-JAN-2010 15:52:27
Sample ID         : G1202006617 Sample quantity : 136.45 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA11 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:00.60 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

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	477.59	*	-1.020E-01	1.322E-01	1.957E-01	2.214E-02	-0.521	
NA-22	1274.54	*	-2.347E-02	1.738E-02	1.627E-02	1.336E-03	-1.443	
NA-24	1368.53	*	2.263E-05	1.738E-02	Half-Life too short			
AL-26	1129.67		7.230E-02	6.312E-01	1.064E+00	8.992E-02	0.068	
	1808.65	*	1.061E-02	2.086E-02	3.844E-02	3.138E-03	0.276	
K-40	1460.81	*	1.010E-01	2.514E-01	4.597E-01	3.975E-02	0.220	
TI-44	67.85		-7.032E-03	1.390E-02	2.081E-02	1.576E-03	-0.338	
	78.38	*	-3.855E-03	1.131E-02	1.714E-02	1.445E-03	-0.225	
SC-46	889.25	*	1.713E-04	1.817E-02	3.054E-02	3.008E-03	0.006	
	1120.51		-2.267E-02	2.422E-02	3.450E-02	2.942E-03	-0.657	
V-48	944.10		-1.477E-01	2.143E-01	2.905E-01	2.810E-02	-0.509	
	983.50	*	-1.099E-02	2.397E-02	3.645E-02	3.457E-03	-0.301	
	1312.09		1.517E-02	2.361E-02	4.426E-02	3.649E-03	0.343	
CR-51	320.08	*	-5.407E-03	1.500E-01	2.388E-01	3.466E-02	-0.023	
MN-52	744.21		-4.116E-02	5.149E-02	7.178E-02	6.974E-03	-0.573	
	848.13		-8.308E-01	1.320E+00	1.995E+00	1.966E-01	-0.416	
	935.52		2.711E-02	3.700E-02	7.071E-02	6.865E-03	0.383	
	1246.25		4.681E-01	9.886E-01	1.794E+00	1.464E-01	0.261	
	1333.61		-3.896E-01	1.222E+00	1.900E+00	1.570E-01	-0.205	
	1434.06	*	-6.780E-02	5.469E-02	5.707E-02	4.781E-03	-1.188	
MN-54	834.83	*	-3.528E-03	1.798E-02	2.945E-02	2.900E-03	-0.120	
CO-56	846.75	*	7.280E-05	1.941E-02	3.271E-02	3.222E-03	0.002	
	977.42		3.334E-01	1.061E+00	1.881E+00	1.790E-01	0.177	
	1037.82		7.692E-02	1.287E-01	2.362E-01	2.267E-02	0.326	
	1175.09		-7.875E-01	8.587E-01	1.102E+00	8.857E-02	-0.715	
	1238.25		5.544E-03	2.541E-02	4.366E-02	3.674E-03	0.127	
	1360.21		-6.286E-02	3.674E-01	5.498E-01	4.564E-02	-0.114	
	1771.40		5.501E-03	1.231E-01	2.058E-01	1.693E-02	0.027	
CO-57	122.06	*	5.831E-03	9.752E-03	1.732E-02	1.465E-03	0.337	
	136.48		6.365E-02	8.084E-02	1.447E-01	1.359E-02	0.440	
CO-58	810.76	*	-1.134E-03	1.671E-02	2.636E-02	2.596E-03	-0.043	
FE-59	142.65		-4.247E-01	1.071E+00	1.651E+00	1.475E-01	-0.257	
	192.34		2.002E-01	3.483E-01	6.044E-01	9.067E-02	0.331	
	1099.22	*	-4.122E-03	3.625E-02	5.842E-02	5.491E-03	-0.071	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-60	1291.56			-2.178E-02	4.687E-02	6.713E-02	6.335E-03	-0.324
	1173.22			-5.921E-03	1.814E-02	2.760E-02	2.218E-03	-0.214
	1332.49	*		-6.537E-03	2.244E-02	3.504E-02	2.896E-03	-0.187
ZN-65	1115.52	*		3.868E-03	4.257E-02	7.112E-02	6.103E-03	0.054
GE-68	1077.35	*		2.290E-01	4.031E-01	7.574E-01	6.726E-02	0.302
AS-73	53.44	*		1.139E-01	2.464E-01	3.797E-01	2.852E-02	0.300
AS-74	595.88	*		-9.413E-03	3.376E-02	5.314E-02	5.404E-03	-0.177
SE-75	634.78			8.563E-02	1.294E-01	2.314E-01	2.264E-02	0.370
	66.05			1.502E+00	1.489E+00	2.512E+00	2.387E-01	0.598
	96.73			-1.413E-01	2.894E-01	3.833E-01	5.296E-02	-0.369
BR-77	121.11			1.314E-02	5.356E-02	9.266E-02	1.028E-02	0.142
	136.00			9.841E-03	1.495E-02	2.652E-02	2.334E-03	0.371
	198.60			-2.156E-01	7.874E-01	1.190E+00	1.423E-01	-0.181
	264.65	*		1.738E-02	2.151E-02	3.729E-02	5.481E-03	0.466
	279.53			-6.402E-03	4.737E-02	7.532E-02	1.179E-02	-0.085
	303.91			6.830E-01	9.630E-01	1.656E+00	2.752E-01	0.413
	400.65			7.105E-02	1.153E-01	2.071E-01	2.650E-02	0.343
	87.88			4.887E+00	6.584E+00	1.099E+01	1.041E+00	0.445
	200.40			-7.760E+00	7.506E+00	1.100E+01	1.244E+00	-0.705
	239.00	+		5.364E-02	6.738E-01	8.705E-01	1.157E-01	0.062
	249.79			1.116E+00	2.990E+00	5.074E+00	7.035E-01	0.220
	281.68			1.146E+00	4.932E+00	8.150E+00	1.257E+00	0.141
	297.23			-1.318E+00	2.855E+00	4.344E+00	6.518E-01	-0.303
	303.76			5.885E+00	9.842E+00	1.677E+01	2.482E+00	0.351
	439.47			8.903E-01	6.393E+00	1.095E+01	1.181E+00	0.081
	484.57			-3.962E+00	1.348E+01	2.093E+01	2.253E+00	-0.189
	520.65	*		8.388E-02	5.285E-01	8.964E-01	9.552E-02	0.094
	574.64			-5.659E+00	1.157E+01	1.767E+01	1.827E+00	-0.320
	578.91			2.066E+00	5.097E+00	8.802E+00	9.073E-01	0.235
	585.48			-5.541E+00	9.137E+00	1.368E+01	1.403E+00	-0.405
SR-82	755.35			-5.279E+00	8.685E+00	1.231E+01	1.199E+00	-0.429
	817.79			3.508E+00	7.004E+00	1.224E+01	1.204E+00	0.287
	698.33			1.110E+01	1.580E+01	2.782E+01	2.668E+00	0.399
	776.49	*		1.550E-02	1.239E-01	2.040E-01	1.995E-02	0.076
RB-83	1395.20			1.929E-01	4.497E+00	7.329E+00	6.115E-01	0.026
	520.41	*		-1.205E-02	3.078E-02	4.818E-02	5.135E-03	-0.250
	529.64			-5.327E-03	4.479E-02	7.288E-02	7.737E-03	-0.073
RB-84	552.65			-2.672E-02	8.956E-02	1.206E-01	1.266E-02	-0.221
	881.50	*		2.115E-03	2.888E-02	4.906E-02	4.833E-03	0.043
KR-85	513.99	*		-1.995E+01	5.900E+00	6.144E+00	6.563E-01	-3.246
SR-85	513.99	*		-9.456E-02	2.797E-02	2.913E-02	3.111E-03	-3.246
RB-86	1076.63	*		7.488E-02	2.139E-01	3.817E-01	3.391E-02	0.196
Y-88	898.02			-9.703E-03	1.920E-02	2.731E-02	2.699E-03	-0.355
ZR-88	1836.01	*		-5.329E-03	2.082E-02	3.184E-02	2.585E-03	-0.167
	392.90	*		-3.537E-03	1.250E-02	2.042E-02	2.178E-03	-0.173
Y-91	1204.90	*		9.421E-01	6.564E+00	1.106E+01	8.952E-01	0.085
NB-94	702.63	*		2.159E-04	1.674E-02	2.715E-02	2.607E-03	0.008
NB-95	871.10			4.418E-03	1.739E-02	3.032E-02	2.988E-03	0.146
	765.79	*		8.488E-03	1.686E-02	2.945E-02	2.875E-03	0.288

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NB-95M		235.69	*	-2.644E-02	5.257E-02	7.120E-02	9.942E-03	-0.371
ZR-95		724.18		6.538E-04	3.785E-02	6.130E-02	6.336E-03	0.011
		756.15	*	-1.150E-02	2.839E-02	4.190E-02	4.409E-03	-0.275
NB-97		657.90	*	1.258E-05	2.839E-02	Half-Life	too short	
		1024.50		2.432E-03	2.839E-02	Half-Life	too short	
ZR-97		254.15		-1.837E-03	2.839E-02	Half-Life	too short	
		355.39		-5.024E-04	2.839E-02	Half-Life	too short	
		507.63	*	-2.448E-03	2.839E-02	Half-Life	too short	
		602.52		-1.226E-03	2.839E-02	Half-Life	too short	
		1021.30		3.042E-05	2.839E-02	Half-Life	too short	
		1147.95		-4.149E-04	2.839E-02	Half-Life	too short	
		1362.66		-1.634E-03	2.839E-02	Half-Life	too short	
		1750.46		-1.770E-03	2.839E-02	Half-Life	too short	
MO-99		140.51		-9.777E-01	1.784E+00	2.618E+00	7.270E-01	-0.373
		181.06		-4.420E-01	1.084E+00	1.638E+00	3.144E-01	-0.270
		366.43		1.581E+00	5.899E+00	9.685E+00	1.173E+00	0.163
		739.58	*	1.697E-01	8.960E-01	1.488E+00	2.355E-01	0.114
		778.00		-1.175E+00	2.266E+00	3.238E+00	3.168E-01	-0.363
TC-99M		140.51	*	-1.050E+01	2.266E+00	Half-Life	too short	
RH-101		127.23		-5.829E-03	1.144E-02	1.851E-02	1.581E-03	-0.315
		198.01	*	-1.925E-03	1.527E-02	2.350E-02	2.630E-03	-0.082
		325.23		2.784E-02	1.139E-01	1.867E-01	2.620E-02	0.149
RH-102		418.52		6.567E-02	1.279E-01	2.282E-01	2.453E-02	0.288
		475.06	*	-2.745E-04	1.373E-02	2.286E-02	2.465E-03	-0.012
		631.29		-2.289E-02	2.885E-02	4.137E-02	4.063E-03	-0.553
		697.49		4.144E-02	4.361E-02	7.879E-02	7.554E-03	0.526
		766.84		3.042E-02	4.709E-02	8.377E-02	8.178E-03	0.363
		1046.59		-9.745E-03	4.600E-02	7.262E-02	6.610E-03	-0.134
		1112.84		-9.940E-03	9.402E-02	1.515E-01	1.302E-02	-0.066
RU-103		497.08	*	-4.517E-03	1.566E-02	2.494E-02	3.876E-03	-0.181
		610.33		1.283E-01	3.318E-01	5.698E-01	9.948E-02	0.225
RH-106		511.85		-3.033E-01	1.522E-01	2.649E-01	2.832E-02	-1.145
		621.84	*	5.389E-02	1.663E-01	2.836E-01	4.036E-02	0.190
		1050.47		4.285E-01	1.044E+00	1.853E+00	1.682E-01	0.231
RU-106		511.85		-3.033E-01	1.522E-01	2.649E-01	2.832E-02	-1.145
		621.84	*	5.389E-02	1.662E-01	2.836E-01	2.813E-02	0.190
		1050.47		4.285E-01	1.044E+00	1.853E+00	1.682E-01	0.231
AG-108M		433.93	*	-7.068E-03	1.444E-02	2.214E-02	2.447E-03	-0.319
		614.37		-3.921E-03	1.749E-02	2.762E-02	2.842E-03	-0.142
		722.95		1.155E-03	1.864E-02	3.042E-02	3.032E-03	0.038
CD-109		88.03	*	9.509E-02	2.754E-01	4.434E-01	4.205E-02	0.214
AG-110M		657.75	*	8.937E-03	1.664E-02	2.921E-02	2.847E-03	0.306
		677.61		-3.647E-02	1.290E-01	1.983E-01	1.932E-02	-0.184
		706.67		-5.677E-03	1.090E-01	1.750E-01	1.720E-02	-0.032
		763.93		5.074E-03	7.015E-02	1.142E-01	1.139E-02	0.044
		884.67		-7.445E-03	2.250E-02	3.559E-02	3.593E-03	-0.209
		937.48		-4.590E-02	4.036E-02	4.776E-02	4.766E-03	-0.961
		1384.27		-2.361E-02	7.078E-02	1.031E-01	8.852E-03	-0.229
IN-111		171.28		2.328E-02	6.659E-02	1.143E-01	1.137E-02	0.204

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	245.39	*		2.283E-02	6.939E-02	1.171E-01	1.596E-02	0.195
IN-113M	391.69	*		-2.280E-03	1.819E-02	3.033E-02	3.299E-03	-0.075
SN-113	391.69	*		-2.280E-03	1.819E-02	3.033E-02	3.299E-03	-0.075
IN-114M	190.27	*		-1.348E-02	6.678E-02	1.085E-01	1.174E-02	-0.124
CD-115	260.90			-3.509E+00	6.049E+00	9.163E+00	1.326E+00	-0.383
	492.35			1.883E+00	1.746E+00	3.266E+00	3.510E-01	0.577
	527.90	*		9.417E-02	4.612E-01	7.871E-01	8.362E-02	0.120
SN-117M	156.02			3.528E-01	5.936E-01	1.045E+00	9.779E-02	0.338
	158.56	*		7.857E-03	1.561E-02	2.719E-02	2.570E-03	0.289
SB-122	563.90	*		8.438E-02	1.201E-01	2.198E-01	2.290E-02	0.384
	692.80			-2.043E+00	3.562E+00	5.288E+00	5.062E-01	-0.386
I-123	159.00	*		-1.934E-06	3.562E+00	Half-Life	too short	
	528.96			-3.833E-03	3.562E+00	Half-Life	too short	
TE-123M	159.00	*		-1.158E-04	1.155E-02	1.931E-02	1.838E-03	-0.006
I-124	602.71	*		-5.278E-02	9.750E-02	1.475E-01	1.491E-02	-0.358
	722.78			1.958E-02	5.632E-01	9.149E-01	8.840E-02	0.021
	1325.50			2.014E+00	3.765E+00	7.003E+00	5.782E-01	0.288
	1376.25			-2.425E-01	4.421E+00	7.046E+00	5.864E-01	-0.034
	1509.49			9.179E-01	2.818E+00	4.999E+00	4.207E-01	0.184
	1691.02			-4.530E-01	6.155E-01	7.816E-01	6.517E-02	-0.580
SB-124	602.71			-9.694E-03	1.790E-02	2.709E-02	2.739E-03	-0.358
	645.85			-1.313E-01	2.468E-01	3.702E-01	3.747E-02	-0.355
	709.31			1.183E+00	1.326E+00	2.408E+00	2.317E-01	0.491
	713.82			-4.683E-01	7.863E-01	1.146E+00	1.466E-01	-0.409
	722.78			5.212E-03	1.499E-01	2.436E-01	2.394E-02	0.021
	968.20			-8.903E-01	1.186E+00	1.750E+00	1.673E-01	-0.509
	1045.16			-2.760E-02	9.072E-01	1.492E+00	1.359E-01	-0.019
	1325.50			5.726E-01	1.070E+00	1.991E+00	1.644E-01	0.288
	1368.21			1.921E-01	8.711E-01	1.476E+00	1.960E-01	0.130
	1436.60			6.425E-01	1.614E+00	2.876E+00	2.410E-01	0.223
	1691.02	*		-2.844E-02	3.865E-02	4.908E-02	4.265E-03	-0.580
SB-125	427.89	*		-2.842E-03	3.627E-02	6.036E-02	6.582E-03	-0.047
	463.38			1.965E-01	1.253E-01	2.444E-01	2.771E-02	0.804
	600.56			1.998E-02	8.628E-02	1.460E-01	1.558E-02	0.137
	635.90			5.063E-02	1.319E-01	2.274E-01	2.363E-02	0.223
TE-125M	109.28	*		7.685E-01	3.145E+00	5.471E+00	5.607E-01	0.140
I-126	388.63			-3.226E-02	6.007E-02	9.506E-02	1.031E-02	-0.339
	666.33	*		3.088E-02	5.122E-02	9.159E-02	8.683E-03	0.337
	753.82			-4.142E-01	5.005E-01	6.841E-01	6.661E-02	-0.605
SB-126	223.80			5.581E-01	9.706E-01	1.691E+00	2.112E-01	0.330
	278.60			6.237E-02	7.020E-01	1.145E+00	1.769E-01	0.054
	296.50			-5.520E-02	4.469E-01	6.906E-01	1.038E-01	-0.080
	414.70			-2.116E-02	2.167E-02	3.167E-02	3.402E-03	-0.668
	415.30			-1.704E+00	1.758E+00	2.561E+00	2.751E-01	-0.666
	555.20			5.515E-02	1.162E+00	1.702E+00	1.783E-01	0.032
	573.80			-2.102E-01	3.341E-01	4.979E-01	5.152E-02	-0.422
	593.00			-8.194E-02	2.871E-01	4.505E-01	4.592E-02	-0.182
	656.30			1.261E-02	1.042E+00	1.700E+00	1.620E-01	0.007
	666.33			1.268E-02	2.104E-02	3.763E-02	3.567E-03	0.337

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-126		675.00		2.662E-01	5.777E-01	1.011E+00	9.613E-02	0.263
		695.00		2.101E-02	2.896E-02	5.119E-02	4.904E-03	0.410
		697.00		8.179E-02	1.044E-01	1.850E-01	1.773E-02	0.442
		720.50	*	2.018E-03	4.347E-02	7.078E-02	6.835E-03	0.029
		856.80		5.862E-02	1.299E-01	2.350E-01	2.316E-02	0.249
		989.30		-2.393E-01	3.526E-01	5.004E-01	4.731E-02	-0.478
		1034.80		-1.304E+00	2.607E+00	3.878E+00	3.560E-01	-0.336
		1213.00		5.986E-01	9.678E-01	1.818E+00	1.474E-01	0.329
		64.28		-2.640E-01	1.908E-01	2.694E-01	3.908E-02	-0.980
		86.94		-6.040E-02	1.273E-01	1.862E-01	7.731E-02	-0.324
SB-127		87.57	*	1.889E-02	2.634E-02	4.388E-02	4.139E-03	0.431
		61.10		-5.163E+00	4.986E+00	7.117E+00	5.724E-01	-0.725
		252.40		-3.850E-01	4.708E-01	6.341E-01	2.729E-01	-0.607
		290.80		-8.285E-01	2.683E+00	4.168E+00	6.506E-01	-0.199
		411.60		7.943E-01	1.470E+00	2.618E+00	4.147E-01	0.303
		444.90		1.582E-01	1.102E+00	1.884E+00	2.397E-01	0.084
		473.00		1.779E-01	2.153E-01	3.925E-01	5.120E-02	0.453
		543.00		1.601E+00	2.097E+00	3.795E+00	5.459E-01	0.422
		603.60		-2.142E-01	1.482E+00	2.381E+00	2.885E-01	-0.090
		685.20	*	-1.135E-01	1.512E-01	2.076E-01	2.169E-02	-0.547
XE-127		698.50		1.492E+00	2.255E+00	3.943E+00	5.988E-01	0.378
		722.20		-4.607E-01	3.587E+00	5.665E+00	5.841E-01	-0.081
		783.80		-9.047E-02	3.918E-01	6.115E-01	7.196E-02	-0.148
		57.60		1.159E+00	1.468E+00	2.533E+00	1.823E-01	0.458
		145.22		-3.307E-01	2.742E-01	3.906E-01	3.519E-02	-0.846
		172.10		2.068E-02	4.473E-02	7.733E-02	7.722E-03	0.267
		202.84	*	3.366E-03	1.528E-02	2.576E-02	2.945E-03	0.131
		374.96		4.925E-02	7.482E-02	1.292E-01	1.505E-02	0.381
		80.18		-9.492E-01	8.051E-01	1.102E+00	9.499E-02	-0.862
		284.30		2.814E-02	3.975E-01	6.458E-01	1.007E-01	0.044
I-131		364.48	*	-2.245E-03	2.637E-02	4.121E-02	5.161E-03	-0.054
		636.97		-1.423E-01	3.909E-01	6.000E-01	6.091E-02	-0.237
		722.89		8.636E-02	1.649E+00	2.686E+00	2.599E-01	0.032
		49.72		-5.512E-01	1.036E+00	1.558E+00	1.343E-01	-0.354
		111.76		8.011E-01	2.149E+00	3.776E+00	3.452E-01	0.212
		116.30		-4.533E-01	2.037E+00	3.402E+00	3.098E-01	-0.133
		228.16	*	-6.043E-03	6.726E-02	1.052E-01	1.829E-02	-0.057
		53.15		1.551E-01	1.170E+00	1.750E+00	1.319E-01	0.089
		79.62		-4.218E-01	4.275E-01	5.944E-01	9.026E-02	-0.710
		81.00		1.665E-02	2.963E-02	4.894E-02	7.790E-03	0.340
TE-132		276.40		-8.464E-02	1.621E-01	2.448E-01	4.704E-02	-0.346
		302.84		-5.042E-02	7.459E-02	1.101E-01	1.976E-02	-0.458
		356.01	*	2.891E-03	1.818E-02	2.951E-02	4.759E-03	0.098
		383.85		-3.743E-02	1.320E-01	2.162E-01	3.123E-02	-0.173
		510.53		-3.133E-04	1.320E-01	Half-Life	too short	
		529.87	*	-5.913E-07	1.320E-01	Half-Life	too short	
		706.58		-3.638E-05	1.320E-01	Half-Life	too short	
		856.28		-6.479E-05	1.320E-01	Half-Life	too short	
		875.33		-3.941E-05	1.320E-01	Half-Life	too short	
						Half-Life	too short	

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-134	1236.41			3.411E-04	1.320E-01	Half-Life	too short	
	1298.22			6.593E-05	1.320E-01	Half-Life	too short	
	475.35			8.180E-02	8.790E-01	1.485E+00	1.601E-01	0.055
	563.23			1.203E-01	1.524E-01	2.798E-01	2.935E-02	0.430
	569.32			-5.865E-02	9.701E-02	1.449E-01	1.518E-02	-0.405
	604.70			-3.009E-03	1.619E-02	2.584E-02	2.611E-03	-0.116
	795.84	*		1.048E-02	2.044E-02	3.573E-02	3.525E-03	0.293
	801.93			-5.868E-03	2.347E-01	3.773E-01	3.721E-02	-0.016
	1038.57			9.947E-01	1.630E+00	3.010E+00	2.757E-01	0.330
	1167.94			2.388E-02	9.916E-01	1.634E+00	1.321E-01	0.015
CS-135	1365.15			2.912E-01	5.501E-01	1.009E+00	8.792E-02	0.289
I-135	268.24	*		1.708E-02	7.295E-02	1.209E-01	1.897E-02	0.141
CS-136	288.45			-2.136E+01	7.295E-02	Half-Life	too short	
	417.63			6.576E+01	7.295E-02	Half-Life	too short	
	546.56			-1.264E+01	7.295E-02	Half-Life	too short	
	836.80			2.902E+01	7.295E-02	Half-Life	too short	
	1038.76			1.755E+01	7.295E-02	Half-Life	too short	
	1124.00			-1.047E+02	7.295E-02	Half-Life	too short	
	1131.51			1.055E+01	7.295E-02	Half-Life	too short	
	1260.41	*		4.006E+00	7.295E-02	Half-Life	too short	
	1457.56			8.201E+01	7.295E-02	Half-Life	too short	
	1678.03			4.117E+01	7.295E-02	Half-Life	too short	
	1706.46			-7.658E+01	7.295E-02	Half-Life	too short	
	1791.20			2.363E+00	7.295E-02	Half-Life	too short	
	66.91			-1.243E-01	1.794E-01	2.583E-01	3.835E-02	-0.481
	86.29			-4.734E-02	2.562E-01	3.930E-01	5.227E-02	-0.120
	153.22			2.522E-02	1.591E-01	2.709E-01	2.766E-02	0.093
	163.89			-4.905E-01	3.243E-01	4.342E-01	4.592E-02	-1.130
	176.55			-2.703E-02	9.520E-02	1.540E-01	1.633E-02	-0.176
	273.65			7.856E-02	1.289E-01	2.216E-01	3.435E-02	0.354
	340.57			5.950E-03	3.852E-02	6.247E-02	8.460E-03	0.095
	818.51			7.624E-03	2.335E-02	3.961E-02	3.896E-03	0.192
BA-137M	1048.07	*		-2.727E-02	3.274E-02	4.457E-02	4.206E-03	-0.612
	1235.34			9.176E-02	1.220E-01	2.330E-01	2.681E-02	0.394
	661.65	*		-1.329E-02	1.789E-02	2.562E-02	2.424E-03	-0.519
	661.65	*		-1.405E-02	1.891E-02	2.708E-02	2.566E-03	-0.519
	165.85	*		-2.228E-03	1.090E-02	1.785E-02	1.734E-03	-0.125
CS-137	162.64			2.733E-02	2.170E-01	3.472E-01	3.490E-02	0.079
CE-139	304.84			3.100E-01	4.161E-01	7.053E-01	2.150E-01	0.440
BA-140	423.70			2.223E-01	5.683E-01	9.939E-01	3.285E-01	0.224
LA-140	537.32	*		5.607E-02	8.372E-02	1.474E-01	4.968E-02	0.380
	328.77			-1.543E-03	9.258E-02	1.474E-01	2.093E-02	-0.010
	432.53			-3.300E-01	6.015E-01	9.127E-01	1.015E-01	-0.362
	487.03			-3.165E-02	4.333E-02	6.469E-02	7.240E-03	-0.489
	751.79			4.005E-01	5.933E-01	1.051E+00	1.110E-01	0.381
	815.85			6.988E-03	1.026E-01	1.661E-01	1.779E-02	0.042
	867.82			-4.404E-01	4.310E-01	5.857E-01	6.007E-02	-0.752
	919.63			7.547E-01	7.835E-01	1.525E+00	1.768E-01	0.495
	925.24			1.407E-01	2.955E-01	5.398E-01	5.523E-02	0.261

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	1596.49	*		1.259E-03	2.573E-02	4.348E-02	3.656E-03	0.029
CE-141	145.44	*		-1.528E-02	2.185E-02	3.458E-02	3.169E-03	-0.442
CE-143	57.37			8.144E+00	6.797E+00	1.216E+01	1.047E+00	0.669
	231.56			-1.454E+01	2.932E+01	4.516E+01	1.490E+01	-0.322
	293.26	*		2.457E-02	1.419E+00	2.288E+00	5.667E-01	0.011
	350.59			-1.588E+01	1.836E+01	2.624E+01	8.519E+00	-0.605
	490.36			1.271E+01	3.185E+01	5.534E+01	1.783E+01	0.230
	664.57			4.648E+00	1.376E+01	2.344E+01	7.628E+00	0.198
	721.93			-5.689E+00	1.564E+01	2.358E+01	6.952E+00	-0.241
CE-144	80.11			-8.510E-01	6.895E-01	9.358E-01	8.048E-02	-0.909
	133.54	*		-5.888E-02	7.995E-02	1.260E-01	1.965E-02	-0.467
PM-144	476.78			-2.327E-02	3.060E-02	4.550E-02	5.202E-03	-0.512
	618.01			6.478E-04	1.543E-02	2.540E-02	2.582E-03	0.025
	696.49	*		1.319E-02	2.007E-02	3.509E-02	3.363E-03	0.376
	778.57			-5.054E-01	9.099E-01	1.273E+00	1.246E-01	-0.397
PR-144	696.49	*		8.901E-01	1.354E+00	2.368E+00	2.270E-01	0.376
	1489.15			-1.441E+00	5.806E+00	9.125E+00	7.674E-01	-0.158
PM-146	453.90	*		9.437E-04	2.034E-02	3.427E-02	4.297E-03	0.028
	633.02			3.075E-01	7.051E-01	1.208E+00	4.550E-01	0.254
	735.90			-1.031E-02	6.875E-02	1.077E-01	3.118E-02	-0.096
	747.13			-2.786E-03	4.921E-02	7.853E-02	1.158E-02	-0.035
ND-147	91.11	+		4.974E-02	1.081E-01	1.052E-01	1.042E-02	0.473
	319.41			6.631E-01	9.764E-01	1.681E+00	2.396E-01	0.395
	439.89			-5.210E-01	1.412E+00	2.237E+00	2.413E-01	-0.233
	531.02	*		5.387E-02	1.454E-01	2.541E-01	4.112E-02	0.212
PM-149	285.90	*		-9.514E-01	4.368E+00	6.869E+00	1.376E+00	-0.139
EU-152	121.78			2.077E-02	2.935E-02	5.243E-02	5.129E-03	0.396
	244.69			2.072E-02	1.374E-01	2.275E-01	3.091E-02	0.091
	344.27	*		-2.295E-02	4.418E-02	6.499E-02	8.811E-03	-0.353
	443.98			1.199E-01	3.981E-01	6.948E-01	7.497E-02	0.173
	778.89			-7.343E-02	1.128E-01	1.550E-01	1.517E-02	-0.474
	867.32			-1.120E-01	3.674E-01	5.841E-01	5.756E-02	-0.192
	964.01			-5.178E-02	1.206E-01	1.854E-01	1.777E-02	-0.279
	1085.78			-9.548E-02	1.866E-01	2.448E-01	2.158E-02	-0.390
	1112.02			-5.273E-03	1.354E-01	2.212E-01	1.903E-02	-0.024
	1407.95			-8.348E-02	9.251E-02	1.104E-01	9.227E-03	-0.756
GD-153	69.67			5.440E-01	4.277E-01	7.652E-01	5.893E-02	0.711
	83.37			1.422E+00	4.727E+00	7.610E+00	6.807E-01	0.187
	97.43	*		-3.118E-02	3.380E-02	4.050E-02	3.598E-03	-0.770
	103.18			-2.142E-02	3.629E-02	5.906E-02	5.124E-03	-0.363
EU-154	123.07			4.340E-03	2.065E-02	3.562E-02	4.007E-03	0.122
	247.94			-5.708E-02	1.551E-01	2.416E-01	3.796E-02	-0.236
	591.81			-1.614E-01	2.981E-01	4.477E-01	5.769E-02	-0.360
	723.30			5.011E-03	7.786E-02	1.271E-01	1.333E-02	0.039
	756.87			1.150E-01	3.060E-01	5.293E-01	6.779E-02	0.217
	873.19			2.115E-01	1.573E-01	3.086E-01	4.056E-02	0.685
	996.32			-1.406E-01	1.911E-01	2.749E-01	4.994E-02	-0.511
	1004.76			-3.855E-02	1.058E-01	1.645E-01	2.008E-02	-0.234
	1274.45	*		-6.582E-02	4.896E-02	4.562E-02	5.017E-03	-1.443

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155		48.70		-7.018E-01	6.714E-01	9.475E-01	7.662E-02	-0.741
		60.01		-1.019E-02	1.456E+00	2.314E+00	1.651E-01	-0.004
		86.54		-8.402E-03	3.498E-02	5.337E-02	5.011E-03	-0.157
TB-160		105.31	*	5.142E-02	3.921E-02	7.324E-02	6.391E-03	0.702
		86.79		-4.555E-02	8.998E-02	1.338E-01	1.249E-02	-0.340
		197.04		-6.872E-02	2.481E-01	3.774E-01	4.206E-02	-0.182
		215.65		2.993E-02	3.028E-01	5.022E-01	6.063E-02	0.060
		298.57		1.184E-03	4.848E-02	7.812E-02	1.169E-02	0.015
		879.36	*	-1.127E-02	6.489E-02	1.060E-01	1.044E-02	-0.106
		962.29		-4.469E-03	1.901E-01	3.155E-01	3.026E-02	-0.014
		966.15		-2.802E-02	7.830E-02	1.222E-01	1.170E-02	-0.229
		1177.93		8.504E-02	1.135E-01	2.177E-01	1.751E-02	0.391
		1271.85		-4.538E-02	2.261E-01	3.461E-01	2.838E-02	-0.131
HO-166M		80.57		-2.852E-02	8.602E-02	1.301E-01	1.125E-02	-0.219
	+	184.41		5.023E-03	2.041E-02	3.051E-02	3.217E-03	0.165
		280.46		2.523E-03	4.026E-02	6.543E-02	1.011E-02	0.039
		410.95		1.372E-01	1.104E-01	2.097E-01	2.250E-02	0.654
		711.68	*	-2.378E-02	3.224E-02	4.591E-02	4.421E-03	-0.518
		752.31		1.378E-02	1.367E-01	2.236E-01	2.177E-02	0.062
		810.29		-1.398E-02	2.791E-02	4.008E-02	3.939E-03	-0.349
		51.35		-5.644E-01	8.763E+00	1.394E+01	1.078E+00	-0.040
		52.39		1.952E+00	5.073E+00	7.790E+00	5.933E-01	0.251
		59.40		5.625E-01	7.718E+00	1.238E+01	8.803E-01	0.045
LU-176		66.72	*	-5.513E+00	9.628E+00	1.412E+01	1.059E+00	-0.390
		88.36		1.959E-03	7.167E-02	1.030E-01	9.743E-03	0.019
		201.83		1.257E-03	1.062E-02	1.774E-02	2.019E-03	0.071
		306.84	*	-5.325E-03	1.181E-02	1.786E-02	2.625E-03	-0.298
LU-177		401.10		2.938E+00	3.115E+00	5.764E+00	6.166E-01	0.510
		112.95		-2.469E-01	2.607E-01	4.057E-01	3.446E-02	-0.609
LU-177M		208.36	*	1.025E-01	2.230E-01	3.634E-01	4.253E-02	0.282
		52.97		9.146E-02	5.146E-01	7.743E-01	5.850E-02	0.118
		54.07		-3.046E-02	2.607E-01	3.764E-01	2.804E-02	-0.081
		61.30		-5.756E-01	4.895E-01	6.896E-01	4.965E-02	-0.835
		121.62		1.157E-01	1.470E-01	2.640E-01	2.230E-02	0.438
		147.16		2.384E-01	2.480E-01	4.477E-01	4.060E-02	0.533
		171.86		8.873E-02	2.007E-01	3.465E-01	3.456E-02	0.256
		218.09		5.077E-03	3.635E-01	5.977E-01	7.290E-02	0.008
		268.79		-9.315E-02	3.533E-01	5.556E-01	8.281E-02	-0.168
		319.02		4.725E-02	1.085E-01	1.830E-01	2.612E-02	0.258
		367.43		1.620E-01	4.155E-01	6.915E-01	8.340E-02	0.234
		413.65	*	-4.220E-02	7.411E-02	1.158E-01	1.243E-02	-0.364
HF-181		56.28		6.933E-02	2.413E-01	3.966E-01	2.887E-02	0.175
		57.53		1.062E-01	1.267E-01	2.195E-01	1.581E-02	0.484
		65.20		-3.633E-01	3.058E-01	4.236E-01	3.140E-02	-0.858
		133.02		-1.571E-02	2.332E-02	3.719E-02	3.225E-03	-0.422
		136.25		1.422E-01	1.590E-01	2.869E-01	2.511E-02	0.496
		345.85		-4.524E-03	7.962E-02	1.223E-01	1.607E-02	-0.037
		482.03	*	1.051E-02	1.741E-02	3.122E-02	3.362E-03	0.337
		56.28		2.934E-02	1.022E-01	1.680E-01	1.223E-02	0.175
W-181		56.28		2.934E-02	1.022E-01	1.680E-01	1.223E-02	0.175

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TA-182	57.53			4.513E-02	5.372E-02	9.309E-02	6.704E-03	0.485
	65.20	*		-1.528E-01	1.287E-01	1.782E-01	1.321E-02	-0.858
	67.75			-1.494E-02	3.181E-02	4.782E-02	3.620E-03	-0.312
	100.10			1.894E-02	5.801E-02	1.021E-01	8.957E-03	0.186
	152.43			-2.303E-02	1.163E-01	1.915E-01	1.769E-02	-0.120
	222.10			-4.575E-02	1.260E-01	1.979E-01	2.455E-02	-0.231
	1001.68			4.279E-01	1.112E+00	1.914E+00	1.797E-01	0.223
	1121.28			3.271E-02	5.059E-02	9.384E-02	7.996E-03	0.349
RE-183	1189.05			4.154E-02	1.027E-01	1.836E-01	1.481E-02	0.226
	1221.42	*		3.376E-02	5.793E-02	1.081E-01	8.784E-03	0.312
	1230.97			-3.324E-02	1.687E-01	2.380E-01	1.938E-02	-0.140
	57.98			-3.045E-02	5.567E-02	8.348E-02	5.992E-03	-0.365
	59.32			8.487E-04	2.957E-02	4.721E-02	3.360E-03	0.018
	67.20			-5.789E-02	6.294E-02	8.861E-02	6.677E-03	-0.653
	162.32	*		2.348E-02	4.003E-02	7.024E-02	6.733E-03	0.334
	208.81			-1.919E-01	4.152E-01	6.222E-01	7.296E-02	-0.308
RE-184	291.72			-4.870E-02	4.195E-01	6.668E-01	1.011E-01	-0.073
	57.98			-1.172E-01	2.142E-01	3.212E-01	2.306E-02	-0.365
	59.32			3.263E-03	1.137E-01	1.815E-01	1.292E-02	0.018
	67.20			-2.227E-01	2.421E-01	3.408E-01	2.568E-02	-0.653
	161.27			-3.399E-02	1.396E-01	2.284E-01	2.181E-02	-0.149
	216.55			8.287E-02	1.118E-01	1.954E-01	2.368E-02	0.424
	252.85	*		-7.390E-02	8.722E-02	1.248E-01	1.751E-02	-0.592
	318.01			-1.060E-01	2.129E-01	3.188E-01	4.561E-02	-0.333
OS-185	792.07			-1.900E-01	4.274E-01	6.241E-01	6.119E-02	-0.304
	903.28			3.500E-02	3.795E-01	6.473E-01	6.361E-02	0.054
	920.93			-3.617E-02	1.817E-01	2.919E-01	2.851E-02	-0.124
	59.72			3.943E-02	7.925E-02	1.326E-01	9.439E-03	0.297
	61.14			-5.336E-02	5.133E-02	7.328E-02	5.271E-03	-0.728
	69.30			8.525E-02	7.495E-02	1.324E-01	1.016E-02	0.644
	592.07			-6.727E-01	1.146E+00	1.707E+00	1.741E-01	-0.394
	646.12	*		1.467E-04	2.108E-02	3.440E-02	3.321E-03	0.004
RE-188	717.42			-2.958E-02	4.183E-01	6.681E-01	6.446E-02	-0.044
	874.81			-1.481E-02	3.057E-01	4.999E-01	4.926E-02	-0.030
	880.27			-3.644E-02	3.631E-01	6.001E-01	5.912E-02	-0.061
	155.03	*		-1.751E-02	6.187E-02	1.011E-01	9.432E-03	-0.173
	477.96			-6.914E-01	1.265E+00	1.943E+00	2.093E-01	-0.356
	633.10			5.026E-01	1.298E+00	2.238E+00	2.193E-01	0.225
	63.58			-1.336E+01	1.825E+01	2.795E+01	2.046E+00	-0.478
	227.08			-3.500E+00	5.460E+00	7.993E+00	1.012E+00	-0.438
IR-192	290.67	*		-8.464E-01	3.317E+00	5.189E+00	7.881E-01	-0.163
	295.96			-1.720E-02	4.978E-02	7.512E-02	1.132E-02	-0.229
	308.46			-4.053E-02	4.388E-02	6.165E-02	9.045E-03	-0.657
	316.51	*		1.089E-03	1.424E-02	2.301E-02	3.308E-03	0.047
	468.07			-1.467E-02	2.714E-02	4.186E-02	4.726E-03	-0.350
	604.41			-8.397E-02	2.073E-01	3.199E-01	4.490E-02	-0.263
	612.46			-1.994E-01	3.197E-01	4.751E-01	5.290E-02	-0.420
	65.12			-1.155E-01	6.369E-02	8.260E-02	6.119E-03	-1.398
AU-195	66.83			-1.998E-02	3.102E-02	4.512E-02	3.389E-03	-0.443

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Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	75.70			5.217E-02	5.718E-02	9.696E-02	7.933E-03	0.538
	98.88	*		8.167E-03	8.145E-02	1.306E-01	1.152E-02	0.063
	129.76			6.482E-01	1.019E+00	1.812E+00	1.558E-01	0.358
TL-200	367.94	*		8.462E-01	1.821E+00	3.063E+00	3.686E-01	0.276
	579.30			-6.664E-01	1.633E+01	2.672E+01	2.753E+00	-0.025
	828.27			-6.733E+00	2.101E+01	3.146E+01	3.096E+00	-0.214
	1205.75			-6.835E+00	8.370E+00	1.102E+01	8.925E-01	-0.620
TL-201	68.90			-3.417E-02	2.583E-01	4.025E-01	3.078E-02	-0.085
	70.82			-1.219E-01	1.353E-01	1.903E-01	1.481E-02	-0.641
	80.30			-3.338E-01	3.075E-01	4.265E-01	3.676E-02	-0.783
	135.34			8.193E-01	1.829E+00	3.198E+00	2.792E-01	0.256
	167.43	*		3.144E-01	4.655E-01	8.253E-01	8.074E-02	0.381
TL-202	68.90			-1.100E-02	8.315E-02	1.296E-01	9.908E-03	-0.085
	70.82			-3.913E-02	4.342E-02	6.108E-02	4.755E-03	-0.641
	80.30			-1.072E-01	9.874E-02	1.369E-01	1.180E-02	-0.783
	439.56	*		1.474E-03	1.768E-02	3.005E-02	3.241E-03	0.049
HG-203	70.83			-2.326E-01	2.581E-01	3.611E-01	4.728E-02	-0.644
	72.87			-6.859E-02	1.508E-01	2.251E-01	2.875E-02	-0.305
	82.60			-6.435E-02	3.337E-01	5.122E-01	7.117E-02	-0.126
	279.20	*		-4.128E-05	1.637E-02	2.643E-02	4.129E-03	-0.002
BI-207	72.80			-2.248E-02	4.937E-02	7.379E-02	5.857E-03	-0.305
	74.97			-3.960E-03	3.310E-02	5.149E-02	4.180E-03	-0.077
	84.90			1.832E-02	6.542E-02	1.049E-01	9.560E-03	0.175
	569.67			-7.606E-03	1.515E-02	2.301E-02	2.388E-03	-0.331
	1063.62	*		-5.352E-03	2.189E-02	3.059E-02	2.748E-03	-0.175
	1770.23			1.903E-01	2.490E-01	4.952E-01	4.076E-02	0.384
TL-207	81.07			3.884E-02	6.549E-02	1.088E-01	9.461E-03	0.357
	83.78			-3.252E-03	4.305E-02	6.683E-02	6.008E-03	-0.049
	94.90			5.539E-02	7.875E-02	1.231E-01	1.109E-02	0.450
	122.32			3.371E-01	6.946E-01	1.223E+00	1.112E-01	0.276
	144.24			-1.538E-01	3.048E-01	4.651E-01	4.634E-02	-0.331
	154.21			-1.010E-01	1.482E-01	2.323E-01	2.346E-02	-0.435
	269.46			-1.041E-02	8.402E-02	1.342E-01	2.019E-02	-0.078
	323.87	*		3.875E-01	3.549E-01	6.163E-01	1.289E-01	0.629
	338.28			-3.834E-01	5.682E-01	8.251E-01	1.328E-01	-0.465
	445.03			1.969E-01	9.910E-01	1.705E+00	2.340E-01	0.115
TL-208	277.35			-1.420E-01	1.641E-01	2.343E-01	4.154E-02	-0.606
	510.84			-4.559E-02	1.453E-01	2.778E-01	3.766E-02	-0.164
	583.14	*		-1.343E-02	2.158E-02	3.179E-02	3.433E-03	-0.422
	860.37			-3.540E-02	1.254E-01	2.008E-01	2.091E-02	-0.176
PO-209	260.50			-5.176E+00	4.658E+00	6.539E+00	9.446E-01	-0.792
	262.80			4.323E+00	1.326E+01	2.217E+01	3.231E+00	0.195
	896.60	*		-2.220E+00	3.568E+00	5.329E+00	5.246E-01	-0.417
BI-210	46.50	*		3.995E-01	1.148E+00	1.830E+00	1.704E-01	0.218
PB-210	46.50	*		3.995E-01	1.148E+00	1.830E+00	1.704E-01	0.218
PO-210	46.50	*		3.995E-01	1.148E+00	1.830E+00	1.543E-01	0.218
BI-211	72.87			-3.853E-01	8.459E-01	1.264E+00	1.004E-01	-0.305
	351.07	*		-7.705E-02	1.013E-01	1.530E-01	2.018E-02	-0.504
PB-211	404.84	*		-1.958E-01	4.359E-01	6.671E-01	4.202E-01	-0.293

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BI-212	427.08			-1.124E-01	9.330E-01	1.399E+00	8.740E-01	-0.080
	831.96			-2.110E-01	5.906E-01	8.529E-01	5.360E-01	-0.247
	727.18	*		-6.844E-02	1.406E-01	2.081E-01	2.274E-02	-0.329
	785.46			-5.467E-01	7.771E-01	1.089E+00	1.067E-01	-0.502
PB-212	1620.62			4.378E-01	7.484E-01	1.398E+00	1.174E-01	0.313
	74.81			-1.078E-02	1.143E-01	1.783E-01	2.205E-02	-0.060
	77.11			5.597E-02	6.444E-02	1.089E-01	9.050E-03	0.514
	87.30			2.118E-02	1.297E-01	2.054E-01	2.819E-02	0.103
PO-212	+	238.63	*	2.938E-03	3.691E-02	4.662E-02	6.529E-03	0.063
		300.09		-6.889E-03	3.580E-01	5.739E-01	9.197E-02	-0.012
		74.81		-1.078E-02	1.143E-01	1.783E-01	2.205E-02	-0.060
		77.11		5.597E-02	6.444E-02	1.089E-01	9.050E-03	0.514
BI-214		87.30		2.118E-02	1.297E-01	2.054E-01	2.819E-02	0.103
		115.19		-9.014E-01	1.213E+00	1.923E+00	1.629E-01	-0.469
	+	238.63	*	2.938E-03	3.691E-02	4.662E-02	6.529E-03	0.063
		300.09		-6.889E-03	3.580E-01	5.739E-01	9.197E-02	-0.012
PB-214		609.31	*	-1.222E-02	4.040E-02	6.188E-02	6.995E-03	-0.198
		1120.29		-1.408E-01	1.507E-01	2.143E-01	2.314E-02	-0.657
		1764.49		-1.181E-01	1.432E-01	2.139E-01	1.762E-02	-0.552
		74.81		-1.858E-02	1.970E-01	3.072E-01	3.373E-02	-0.060
PO-214		77.11		9.596E-02	1.107E-01	1.867E-01	2.105E-02	0.514
		87.30		3.629E-02	2.222E-01	3.519E-01	4.278E-02	0.103
		241.98		7.422E-02	1.436E-01	2.246E-01	3.272E-02	0.330
		295.21		-2.066E-02	6.948E-02	1.054E-01	1.719E-02	-0.196
PO-215		351.92	*	-7.466E-03	3.425E-02	5.574E-02	7.887E-03	-0.134
		74.81		-1.858E-02	1.970E-01	3.072E-01	3.373E-02	-0.060
		77.11		9.596E-02	1.107E-01	1.867E-01	2.105E-02	0.514
		87.30		3.629E-02	2.222E-01	3.519E-01	4.278E-02	0.103
PO-216		241.98		7.422E-02	1.436E-01	2.246E-01	3.272E-02	0.330
		295.21		-2.066E-02	6.948E-02	1.054E-01	1.719E-02	-0.196
		351.92	*	-7.466E-03	3.425E-02	5.574E-02	7.887E-03	-0.134
		81.07		3.884E-02	6.549E-02	1.088E-01	9.461E-03	0.357
PO-218		83.78		-3.252E-03	4.305E-02	6.683E-02	6.008E-03	-0.049
		94.90		5.539E-02	7.875E-02	1.231E-01	1.109E-02	0.450
		122.32		3.371E-01	6.946E-01	1.223E+00	1.112E-01	0.276
		144.24		-1.538E-01	3.048E-01	4.651E-01	4.634E-02	-0.331
PO-215		154.21		-1.010E-01	1.482E-01	2.323E-01	2.346E-02	-0.435
		269.46		-1.041E-02	8.402E-02	1.342E-01	2.019E-02	-0.078
		323.87	*	3.875E-01	3.549E-01	6.163E-01	1.289E-01	0.629
		338.28		-3.834E-01	5.682E-01	8.251E-01	1.328E-01	-0.465
PO-216		445.03		1.969E-01	9.910E-01	1.705E+00	2.340E-01	0.115
		74.81		-1.078E-02	1.143E-01	1.783E-01	2.205E-02	-0.060
		77.11		5.597E-02	6.444E-02	1.089E-01	9.050E-03	0.514
		87.30		2.118E-02	1.297E-01	2.054E-01	2.819E-02	0.103
PO-218	+	238.63	*	2.938E-03	3.691E-02	4.662E-02	6.529E-03	0.063
		300.09		-6.889E-03	3.580E-01	5.739E-01	9.197E-02	-0.012
		74.81		-1.858E-02	1.970E-01	3.072E-01	3.373E-02	-0.060
		77.11		9.596E-02	1.107E-01	1.867E-01	2.105E-02	0.514
		87.30		3.629E-02	2.222E-01	3.519E-01	4.278E-02	0.103

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RN-219		241.98		7.422E-02	1.436E-01	2.246E-01	3.272E-02	0.330
		295.21		-2.066E-02	6.948E-02	1.054E-01	1.719E-02	-0.196
		351.92	*	-7.466E-03	3.425E-02	5.574E-02	7.887E-03	-0.134
		271.23		-8.436E-02	1.118E-01	1.646E-01	2.645E-02	-0.513
		401.81	*	6.580E-02	1.945E-01	3.402E-01	5.548E-02	0.193
RN-220		549.76	*	4.786E-02	1.092E+01	1.804E+01	1.896E+00	0.003
RA-223		81.07		3.884E-02	6.549E-02	1.088E-01	9.461E-03	0.357
		83.78		-3.252E-03	4.305E-02	6.683E-02	6.008E-03	-0.049
		94.90		5.539E-02	7.875E-02	1.231E-01	1.109E-02	0.450
		122.32		3.371E-01	6.946E-01	1.223E+00	1.112E-01	0.276
		144.24		-1.538E-01	3.048E-01	4.651E-01	4.634E-02	-0.331
		154.21		-1.010E-01	1.482E-01	2.323E-01	2.346E-02	-0.435
		269.46		-1.041E-02	8.402E-02	1.342E-01	2.019E-02	-0.078
		323.87	*	3.875E-01	3.549E-01	6.163E-01	1.289E-01	0.629
		338.28		-3.834E-01	5.682E-01	8.251E-01	1.328E-01	-0.465
		445.03		1.969E-01	9.910E-01	1.705E+00	2.340E-01	0.115
RA-224		240.98	*	6.078E-02	2.885E-01	4.328E-01	5.797E-02	0.140
RA-226		609.31	*	-1.222E-02	4.040E-02	6.188E-02	6.995E-03	-0.198
		1120.29		-1.408E-01	1.507E-01	2.143E-01	2.314E-02	-0.657
AC-227		1764.49		-1.181E-01	1.432E-01	2.139E-01	1.762E-02	-0.552
		79.80		-5.754E-01	5.479E-01	7.426E-01	1.595E-01	-0.775
		236.00		-1.052E-01	1.079E-01	1.339E-01	2.109E-02	-0.785
		256.20	*	2.052E-01	1.736E-01	3.090E-01	5.889E-02	0.664
		286.10		-2.271E-01	7.684E-01	1.198E+00	2.190E-01	-0.190
		299.80		-1.197E-01	6.682E-01	1.051E+00	2.241E-01	-0.114
		304.40		8.181E-01	9.097E-01	1.575E+00	3.465E-01	0.519
TH-227		334.20		-5.548E-03	1.192E+00	1.899E+00	4.200E-01	-0.003
		79.80		-5.754E-01	5.483E-01	7.426E-01	1.616E-01	-0.775
		94.00		-1.937E+00	8.977E-01	1.175E+00	2.580E-01	-1.648
		236.00		-1.052E-01	1.078E-01	1.339E-01	1.990E-02	-0.785
		256.20	*	2.052E-01	1.746E-01	3.090E-01	6.584E-02	0.664
		286.10		-2.271E-01	8.009E-01	1.198E+00	1.211E+00	-0.190
		299.80		-1.197E-01	6.682E-01	1.051E+00	2.241E-01	-0.114
		304.40		8.181E-01	9.097E-01	1.575E+00	3.465E-01	0.519
AC-228		334.20		-5.548E-03	1.192E+00	1.899E+00	4.200E-01	-0.003
		338.32		-9.464E-02	1.409E-01	1.967E-01	8.367E-02	-0.481
		911.07	*	-6.228E-03	7.079E-02	1.227E-01	1.494E-02	-0.051
		969.11		-9.388E-03	1.221E-01	2.017E-01	4.781E-02	-0.047
		338.32		-9.464E-02	1.409E-01	1.967E-01	8.367E-02	-0.481
RA-228		911.07	*	-6.228E-03	7.079E-02	1.227E-01	1.494E-02	-0.051
		969.11		-9.388E-03	1.221E-01	2.017E-01	4.781E-02	-0.047
TH-228		74.81		-1.087E-02	1.152E-01	1.796E-01	1.470E-02	-0.060
		77.11		5.640E-02	6.494E-02	1.098E-01	9.120E-03	0.514
		87.30		2.135E-02	1.307E-01	2.070E-01	1.946E-02	0.103
TH-229	+	238.63	*	2.961E-03	3.719E-02	4.698E-02	6.579E-03	0.063
		300.09		-6.942E-03	3.607E-01	5.783E-01	3.500E-01	-0.012
		85.43		5.962E-02	6.253E-02	1.060E-01	9.728E-03	0.563
		88.47		-1.821E-04	4.114E-02	5.892E-02	5.565E-03	-0.003
		100.00		1.829E-02	6.320E-02	1.109E-01	9.736E-03	0.165

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	193.63	*	1.622E-02	2.214E-01	3.687E-01	4.048E-02	0.044
	210.97		-1.566E-01	3.331E-01	4.937E-01	5.843E-02	-0.317
	609.31	*	-1.222E-02	4.040E-02	6.188E-02	6.994E-03	-0.198
	1120.29		-1.408E-01	1.507E-01	2.143E-01	2.314E-02	-0.657
PA-231	1764.49		-1.181E-01	1.432E-01	2.138E-01	1.762E-02	-0.552
	283.67	*	5.797E-01	7.666E-01	1.318E+00	2.612E-01	0.440
TH-231	301.29		1.353E-01	2.626E-01	4.441E-01	7.654E-02	0.305
	81.07		3.884E-02	6.549E-02	1.088E-01	9.461E-03	0.357
	83.78		-3.252E-03	4.305E-02	6.683E-02	6.008E-03	-0.049
	94.90		5.539E-02	7.875E-02	1.231E-01	1.109E-02	0.450
U-231	122.32		3.371E-01	6.946E-01	1.223E+00	1.112E-01	0.276
	144.24		-1.538E-01	3.048E-01	4.651E-01	4.634E-02	-0.331
	154.21		-1.010E-01	1.482E-01	2.323E-01	2.346E-02	-0.435
	269.46		-1.041E-02	8.402E-02	1.342E-01	2.019E-02	-0.078
	323.87	*	3.875E-01	3.549E-01	6.163E-01	1.289E-01	0.629
	338.28		-3.834E-01	5.682E-01	8.251E-01	1.328E-01	-0.465
	445.03		1.969E-01	9.910E-01	1.705E+00	2.340E-01	0.115
	84.21		-2.854E-01	5.693E-01	8.478E-01	7.664E-02	-0.337
	92.29	+	1.765E-01	3.834E-01	4.928E-01	4.515E-02	0.358
	95.87	*	-4.064E-02	1.199E-01	1.629E-01	1.459E-02	-0.249
TH-232	108.00		-2.289E-01	2.248E-01	3.514E-01	3.009E-02	-0.651
	338.32		-9.464E-02	1.356E-01	1.967E-01	2.652E-02	-0.481
	911.07	*	-6.228E-03	7.079E-02	1.227E-01	1.494E-02	-0.051
PA-233	969.11		-9.388E-03	1.221E-01	2.017E-01	4.781E-02	-0.047
	75.28		4.059E-01	9.588E-01	1.563E+00	2.358E-01	0.260
	86.59		-3.150E-01	5.932E-01	8.712E-01	2.357E-01	-0.362
	300.12		-2.993E-03	1.850E-01	2.967E-01	5.703E-02	-0.010
PA-234	311.98	*	-4.138E-03	3.125E-02	4.927E-02	7.229E-03	-0.084
	340.50		5.336E-02	2.781E-01	4.525E-01	1.174E-01	0.118
	398.62		-2.226E-01	9.307E-01	1.526E+00	4.177E-01	-0.146
	415.76		-2.612E-01	7.284E-01	1.169E+00	2.629E-01	-0.223
	63.00		-3.344E-01	5.758E-01	8.913E-01	1.319E-01	-0.375
	94.67		4.180E-02	5.655E-02	8.854E-02	1.123E-02	0.472
	98.44		-3.769E-03	3.442E-02	5.419E-02	3.025E-02	-0.070
	99.86		4.629E-02	1.600E-01	2.807E-01	2.466E-02	0.165
	111.00		4.832E-02	6.599E-02	1.188E-01	1.427E-02	0.407
	131.20		1.051E-02	4.040E-02	6.978E-02	6.020E-03	0.151
	152.70		-4.221E-03	1.127E-01	1.884E-01	3.273E-02	-0.022
	186.00	+	1.808E-01	7.368E-01	1.141E+00	3.632E-01	0.158
	226.40		-2.166E-01	1.850E-01	2.482E-01	3.998E-02	-0.873
	227.20		-1.139E-01	1.981E-01	2.923E-01	3.702E-02	-0.390
	248.90		1.970E-02	3.347E-01	5.485E-01	1.365E-01	0.036
	293.70		1.028E-01	3.073E-01	5.108E-01	1.087E-01	0.201
	369.80		8.062E-02	3.874E-01	6.303E-01	1.468E-01	0.128
	568.70		-1.929E-01	4.813E-01	7.420E-01	7.704E-02	-0.260
	569.50		-7.380E-02	1.337E-01	2.012E-01	2.088E-02	-0.367
	574.00		-5.614E-01	7.424E-01	1.084E+00	1.121E-01	-0.518
	699.00		5.408E-02	3.915E-01	6.458E-01	1.262E-01	0.084
	706.10		-2.067E-02	5.568E-01	8.960E-01	4.013E-01	-0.023

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		733.00		-1.222E-01	1.776E-01	2.463E-01	5.575E-02	-0.496
		742.81		-3.254E-01	7.753E-01	1.115E+00	7.512E-01	-0.292
		796.30		2.800E-01	3.923E-01	6.990E-01	1.919E-01	0.401
		805.60		-2.297E-01	5.560E-01	8.211E-01	2.546E-01	-0.280
		819.60		1.792E-01	5.562E-01	9.386E-01	3.597E-01	0.191
		826.30		1.444E-01	4.177E-01	6.994E-01	3.147E-01	0.206
		831.60		-5.567E-02	3.071E-01	4.728E-01	1.429E-01	-0.118
		876.40		-1.970E-01	5.143E-01	7.313E-01	7.526E-01	-0.269
		880.51		-1.393E-02	1.388E-01	2.293E-01	2.259E-02	-0.061
		883.24		1.183E-01	1.536E-01	2.519E-01	1.698E-01	0.470
		899.00		-3.758E-03	3.975E-01	6.236E-01	2.742E-01	-0.006
		925.00		6.333E-02	4.653E-01	7.993E-01	7.794E-02	0.079
		926.50		6.574E-02	7.447E-02	1.410E-01	3.621E-02	0.466
		946.00	*	-6.099E-02	1.184E-01	1.745E-01	3.361E-02	-0.350
		949.00		2.529E-01	1.891E-01	3.853E-01	3.719E-02	0.656
		980.50		-2.738E-02	3.208E-01	5.251E-01	4.989E-02	-0.052
		1394.10		-2.093E-01	6.298E-01	9.053E-01	5.889E-01	-0.231
PA-234M		766.42		1.955E+00	5.158E+00	8.664E+00	4.414E+00	0.226
		1001.03	*	1.202E+00	2.615E+00	4.544E+00	4.834E-01	0.265
TH-234		63.29	*	-3.138E-01	4.910E-01	7.543E-01	1.312E-01	-0.416
	+	92.38		1.583E-01	3.448E-01	4.413E-01	8.096E-02	0.359
U-234		609.31	*	-1.222E-02	4.040E-02	6.188E-02	6.994E-03	-0.198
		1120.29		-1.408E-01	1.507E-01	2.143E-01	2.314E-02	-0.657
		1764.49		-1.181E-01	1.432E-01	2.138E-01	1.762E-02	-0.552
U-235		89.95		3.419E-02	3.793E-01	5.489E-01	1.705E-01	0.062
	+	93.35		1.903E-01	4.165E-01	4.924E-01	1.387E-01	0.387
		105.00		3.011E-01	4.023E-01	7.096E-01	2.118E-01	0.424
		143.76	*	-5.335E-03	9.404E-02	1.493E-01	2.639E-02	-0.036
		163.35		-2.271E-01	2.119E-01	2.949E-01	5.765E-02	-0.770
	+	185.71		6.697E-03	2.721E-02	4.253E-02	4.510E-03	0.157
		205.31		-2.344E-02	2.007E-01	3.269E-01	6.724E-02	-0.072
NP-236		94.67		3.174E-02	4.280E-02	6.717E-02	6.059E-03	0.473
		98.44		-2.865E-03	2.597E-02	4.096E-02	3.621E-03	-0.070
		111.00		3.655E-02	4.982E-02	8.983E-02	7.649E-03	0.407
		160.31	*	4.333E-03	3.258E-02	5.512E-02	5.244E-03	0.079
NP-237		86.50	*	-1.711E-02	8.522E-02	1.304E-01	2.952E-02	-0.131
		95.87		-1.227E-01	3.634E-01	4.920E-01	1.218E-01	-0.249
U-238		63.29	*	-3.138E-01	4.910E-01	7.543E-01	1.312E-01	-0.416
	+	92.38		1.583E-01	3.439E-01	4.413E-01	4.041E-02	0.359
NP-239		99.55		-7.847E-03	5.945E-02	9.363E-02	8.236E-03	-0.084
		117.00	*	5.531E-02	6.622E-02	1.204E-01	1.019E-02	0.459
		209.75		-2.935E-01	3.414E-01	4.844E-01	5.702E-02	-0.606
		228.18		6.864E-03	1.063E-01	1.687E-01	2.145E-02	0.041
		277.60		-4.423E-02	7.719E-02	1.156E-01	1.780E-02	-0.383
		334.30		3.679E-02	6.795E-01	1.089E+00	1.488E-01	0.034
AM-241		59.54	*	2.727E-02	4.321E-02	7.327E-02	5.758E-03	0.372
AM-243		74.67	*	-1.344E-03	1.861E-02	2.908E-02	2.353E-03	-0.046
		86.72		-1.708E+00	3.307E+00	4.912E+00	4.583E-01	-0.348
		117.66		1.159E+00	1.459E+00	2.630E+00	2.225E-01	0.441

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	142.18			-8.154E-01	7.057E+00	1.178E+01	1.050E+00	-0.069
	99.55			-8.070E-03	6.114E-02	9.630E-02	8.471E-03	-0.084
	103.76	*		-2.539E-02	3.547E-02	5.715E-02	4.949E-03	-0.444
	117.00			5.687E-02	6.809E-02	1.238E-01	1.048E-02	0.459
	209.75			-2.891E-01	3.364E-01	4.772E-01	5.619E-02	-0.606
	228.18			6.932E-03	1.074E-01	1.704E-01	2.167E-02	0.041
AM-246	277.60			-4.456E-02	7.778E-02	1.165E-01	1.793E-02	-0.383
	798.80			-5.461E-02	7.534E-02	1.054E-01	1.035E-02	-0.518
	1036.00			-2.387E-03	1.411E-01	2.329E-01	2.137E-02	-0.010
	1062.04			-2.221E-02	1.037E-01	1.497E-01	1.346E-02	-0.148
	1078.86	*		7.989E-04	4.963E-02	8.225E-02	7.295E-03	0.010
CM-247	278.00			-1.862E-02	3.163E-01	5.075E-01	7.822E-02	-0.037
	287.40			-8.451E-02	5.855E-01	9.280E-01	1.418E-01	-0.091
	402.60	*		6.313E-03	1.681E-02	2.957E-02	3.164E-03	0.214
CF-249	252.85			-2.859E-01	3.374E-01	4.829E-01	6.775E-02	-0.592
	333.44			-3.722E-02	8.990E-02	1.364E-01	1.869E-02	-0.273
	387.95	*		-1.726E-03	1.821E-02	3.052E-02	3.323E-03	-0.057
CF-251	176.60	*		-1.649E-02	4.836E-02	7.772E-02	7.917E-03	-0.212
	227.00			-1.185E-01	1.761E-01	2.566E-01	3.247E-02	-0.462
	285.00			1.565E-01	8.770E-01	1.440E+00	2.209E-01	0.109
ANH-511	511.00	*		-2.252E-02	3.194E-02	5.968E-02	6.382E-03	-0.377

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]G1202006617      *
* Acquisition date   : 7-JAN-2010 15:52:27 Detector SN# :                    *
* Detector ID        : GAM11 Sensitivity      : 5.000                        *
* Geometry           : CAN Energy tolerance : 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000              *
* Elapsed real time  : 0 02:00:00.60 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 31-DEC-2009 00:00:00 Nuclide Library : SOLID           *
* Sample ID         : G1202006617 Analyst initials: MXR1                   *
* Batch Number      : 937704 Sample Quantity : 1.3645E+02 GRAM             *
* Recovery          : 1.00000 Carrier Weight : 0.00000                     *
*****
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                                *
* CALIB. DATE/TIME : 18-NOV-2009 15:33:22 MS Isotope :                     *
* MSD DPM           : 0.000 MSD Isotope :                                   *
* LCS DPM           : 0.000 LCS Isotope :                                   *
* LCSD DPM          : 0.000 LCSD Isotope :                                   *
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Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)
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---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.020E-01	1.295E-01	2.005E-01	0.000E+00 NOT IDENT.
NA-22	-2.347E-02	1.703E-02	1.636E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.006E+02	0.000E+00	0.000E+00 SHORT HLIF
AL-26	1.061E-02	2.044E-02	3.838E-02	0.000E+00 NOT IDENT.
K-40	1.010E-01	2.463E-01	4.610E-01	0.000E+00 NOT IDENT.
TI-44	-3.855E-03	1.108E-02	1.815E-02	0.000E+00 NOT IDENT.
SC-46	1.713E-04	1.781E-02	3.092E-02	0.000E+00 NOT IDENT.
V-48	-1.099E-02	2.349E-02	3.683E-02	0.000E+00 NOT IDENT.
CR-51	-5.407E-03	1.470E-01	2.465E-01	0.000E+00 NOT IDENT.
MN-52	-6.780E-02	5.360E-02	5.724E-02	0.000E+00 NOT IDENT.
MN-54	-3.528E-03	1.762E-02	2.986E-02	0.000E+00 NOT IDENT.
CO-56	7.280E-05	1.902E-02	3.314E-02	0.000E+00 NOT IDENT.
CO-57	5.831E-03	9.557E-03	1.819E-02	0.000E+00 NOT IDENT.
CO-58	-1.134E-03	1.638E-02	2.674E-02	0.000E+00 NOT IDENT.
FE-59	-4.122E-03	3.553E-02	5.890E-02	0.000E+00 NOT IDENT.
CO-60	-6.537E-03	2.199E-02	3.520E-02	0.000E+00 NOT IDENT.
ZN-65	3.868E-03	4.172E-02	7.169E-02	0.000E+00 NOT IDENT.
GE-68	2.290E-01	3.950E-01	7.639E-01	0.000E+00 NOT IDENT.
AS-73	1.139E-01	2.414E-01	4.048E-01	0.000E+00 NOT IDENT.
AS-74	-9.413E-03	3.308E-02	5.422E-02	0.000E+00 NOT IDENT.
SE-75	1.738E-02	2.108E-02	3.863E-02	0.000E+00 NOT IDENT.
BR-77	8.388E-02	5.179E-01	9.169E-01	0.000E+00 FAIL ABUN
SR-82	1.550E-02	1.214E-01	2.071E-01	0.000E+00 NOT IDENT.
RB-83	-1.205E-02	3.017E-02	4.928E-02	0.000E+00 NOT IDENT.
RB-84	2.115E-03	2.830E-02	4.967E-02	0.000E+00 NOT IDENT.
KR-85	-1.995E+01	5.782E+00	6.286E+00	0.000E+00 NOT IDENT.

SR-85	-9.456E-02	2.741E-02	2.980E-02	0.000E+00	NOT IDENT.
RB-86	7.488E-02	2.096E-01	3.850E-01	0.000E+00	NOT IDENT.
Y-88	-5.329E-03	2.041E-02	3.178E-02	0.000E+00	NOT IDENT.
ZR-88	-3.537E-03	1.225E-02	2.100E-02	0.000E+00	NOT IDENT.
Y-91	9.421E-01	6.433E+00	1.113E+01	0.000E+00	NOT IDENT.
NB-94	2.159E-04	1.640E-02	2.761E-02	0.000E+00	NOT IDENT.
NB-95	8.488E-03	1.653E-02	2.991E-02	0.000E+00	NOT IDENT.
NB-95M	-2.644E-02	5.152E-02	7.391E-02	0.000E+00	NOT IDENT.
ZR-95	-1.150E-02	2.782E-02	4.255E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	3.097E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	9.653E+02	0.000E+00	0.000E+00	SHORT HLIF
MO-99	1.697E-01	8.781E-01	1.512E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.863E+07	0.000E+00	0.000E+00	SHORT HLIF
RH-101	-1.925E-03	1.497E-02	2.447E-02	0.000E+00	NOT IDENT.
RH-102	-2.745E-04	1.345E-02	2.343E-02	0.000E+00	NOT IDENT.
RU-103	-4.517E-03	1.535E-02	2.553E-02	0.000E+00	NOT IDENT.
RH-106	5.389E-02	1.630E-01	2.891E-01	0.000E+00	NOT IDENT.
RU-106	5.389E-02	1.629E-01	2.891E-01	0.000E+00	NOT IDENT.
AG-108M	-7.068E-03	1.415E-02	2.272E-02	0.000E+00	NOT IDENT.
CD-109	9.509E-02	2.699E-01	4.686E-01	0.000E+00	NOT IDENT.
AG-110M	8.937E-03	1.631E-02	2.975E-02	0.000E+00	NOT IDENT.
IN-111	2.283E-02	6.801E-02	1.215E-01	0.000E+00	NOT IDENT.
IN-113M	-2.280E-03	1.783E-02	3.119E-02	0.000E+00	NOT IDENT.
SN-113	-2.280E-03	1.783E-02	3.119E-02	0.000E+00	NOT IDENT.
IN-114M	-1.348E-02	6.544E-02	1.131E-01	0.000E+00	NOT IDENT.
CD-115	9.417E-02	4.520E-01	8.049E-01	0.000E+00	NOT IDENT.
SN-117M	7.857E-03	1.530E-02	2.843E-02	0.000E+00	NOT IDENT.
SB-122	8.438E-02	1.177E-01	2.245E-01	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.889E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.158E-04	1.131E-02	2.019E-02	0.000E+00	NOT IDENT.
I-124	-5.278E-02	9.555E-02	1.505E-01	0.000E+00	NOT IDENT.
SB-124	-2.844E-02	3.788E-02	4.907E-02	0.000E+00	NOT IDENT.
SB-125	-2.842E-03	3.555E-02	6.197E-02	0.000E+00	NOT IDENT.
TE-125M	7.685E-01	3.082E+00	5.759E+00	0.000E+00	NOT IDENT.
I-126	3.088E-02	5.020E-02	9.325E-02	0.000E+00	NOT IDENT.
SB-126	2.018E-03	4.260E-02	7.195E-02	0.000E+00	NOT IDENT.
SN-126	1.889E-02	2.581E-02	4.637E-02	0.000E+00	NOT IDENT.
SB-127	-1.135E-01	1.481E-01	2.113E-01	0.000E+00	NOT IDENT.
XE-127	3.366E-03	1.497E-02	2.682E-02	0.000E+00	NOT IDENT.
I-131	-2.245E-03	2.584E-02	4.243E-02	0.000E+00	NOT IDENT.
TE-132	-6.043E-03	6.592E-02	1.093E-01	0.000E+00	NOT IDENT.
BA-133	2.891E-03	1.782E-02	3.040E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.901E+00	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.048E-02	2.003E-02	3.625E-02	0.000E+00	NOT IDENT.
CS-135	1.708E-02	7.149E-02	1.252E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.280E+07	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.727E-02	3.208E-02	4.498E-02	0.000E+00	NOT IDENT.
BA-137M	-1.329E-02	1.753E-02	2.608E-02	0.000E+00	NOT IDENT.
CS-137	-1.405E-02	1.853E-02	2.757E-02	0.000E+00	NOT IDENT.
CE-139	-2.228E-03	1.068E-02	1.865E-02	0.000E+00	NOT IDENT.
BA-140	5.607E-02	8.205E-02	1.507E-01	0.000E+00	NOT IDENT.
LA-140	1.259E-03	2.521E-02	4.352E-02	0.000E+00	NOT IDENT.
CE-141	-1.528E-02	2.141E-02	3.621E-02	0.000E+00	NOT IDENT.
CE-143	2.457E-02	1.391E+00	2.365E+00	0.000E+00	NOT IDENT.
CE-144	-5.888E-02	7.835E-02	1.321E-01	0.000E+00	NOT IDENT.
PM-144	1.319E-02	1.966E-02	3.569E-02	0.000E+00	NOT IDENT.
PR-144	8.901E-01	1.327E+00	2.409E+00	0.000E+00	NOT IDENT.
PM-146	9.437E-04	1.993E-02	3.515E-02	0.000E+00	NOT IDENT.
ND-147	5.387E-02	1.425E-01	2.599E-01	0.000E+00	FAIL ABUN
PM-149	-9.514E-01	4.281E+00	7.105E+00	0.000E+00	NOT IDENT.
EU-152	-2.295E-02	4.330E-02	6.699E-02	0.000E+00	NOT IDENT.
GD-153	-3.118E-02	3.313E-02	4.272E-02	0.000E+00	NOT IDENT.
EU-154	-6.582E-02	4.798E-02	4.587E-02	0.000E+00	NOT IDENT.
EU-155	5.142E-02	3.843E-02	7.715E-02	0.000E+00	NOT IDENT.
TB-160	-1.127E-02	6.359E-02	1.073E-01	0.000E+00	NOT IDENT.
HO-166M	-2.378E-02	3.159E-02	4.668E-02	0.000E+00	FAIL ABUN
TM-171	-5.513E+00	9.435E+00	1.499E+01	0.000E+00	NOT IDENT.
LU-176	-5.325E-03	1.157E-02	1.845E-02	0.000E+00	NOT IDENT.
LU-177	1.025E-01	2.185E-01	3.781E-01	0.000E+00	NOT IDENT.
LU-177M	-4.220E-02	7.262E-02	1.189E-01	0.000E+00	NOT IDENT.
HF-181	1.051E-02	1.706E-02	3.198E-02	0.000E+00	NOT IDENT.
W-181	-1.528E-01	1.261E-01	1.893E-01	0.000E+00	NOT IDENT.
TA-182	3.376E-02	5.677E-02	1.088E-01	0.000E+00	NOT IDENT.
RE-183	2.348E-02	3.923E-02	7.341E-02	0.000E+00	NOT IDENT.
RE-184	-7.390E-02	8.548E-02	1.294E-01	0.000E+00	NOT IDENT.
OS-185	1.467E-04	2.066E-02	3.504E-02	0.000E+00	NOT IDENT.
RE-188	-1.751E-02	6.063E-02	1.058E-01	0.000E+00	NOT IDENT.
W-188	-8.464E-01	3.251E+00	5.365E+00	0.000E+00	NOT IDENT.

IR-192	1.089E-03	1.395E-02	2.376E-02	0.000E+00	NOT IDENT.
AU-195	8.167E-03	7.982E-02	1.377E-01	0.000E+00	NOT IDENT.
TL-200	8.462E-01	1.784E+00	3.153E+00	0.000E+00	NOT IDENT.
TL-201	3.144E-01	4.562E-01	8.620E-01	0.000E+00	NOT IDENT.
TL-202	1.474E-03	1.733E-02	3.084E-02	0.000E+00	NOT IDENT.
HG-203	-4.128E-05	1.605E-02	2.735E-02	0.000E+00	NOT IDENT.
BI-207	-5.352E-03	2.145E-02	3.086E-02	0.000E+00	NOT IDENT.
TL-207	3.875E-01	3.478E-01	6.360E-01	0.000E+00	NOT IDENT.
TL-208	-1.343E-02	2.115E-02	3.244E-02	0.000E+00	NOT IDENT.
PO-209	-2.220E+00	3.496E+00	5.394E+00	0.000E+00	NOT IDENT.
BI-210	3.995E-01	1.125E+00	1.956E+00	0.000E+00	NOT IDENT.
PB-210	3.995E-01	1.125E+00	1.956E+00	0.000E+00	NOT IDENT.
PO-210	3.995E-01	1.125E+00	1.956E+00	0.000E+00	NOT IDENT.
BI-211	-7.705E-02	9.930E-02	1.576E-01	0.000E+00	NOT IDENT.
PB-211	-1.958E-01	4.272E-01	6.855E-01	0.000E+00	NOT IDENT.
BI-212	-6.844E-02	1.378E-01	2.115E-01	0.000E+00	NOT IDENT.
PB-212	2.938E-03	3.617E-02	4.838E-02	0.000E+00	FAIL ABUN
PO-212	2.938E-03	3.617E-02	4.838E-02	0.000E+00	FAIL ABUN
BI-214	-1.222E-02	3.960E-02	6.310E-02	0.000E+00	NOT IDENT.
PB-214	-7.466E-03	3.356E-02	5.743E-02	0.000E+00	NOT IDENT.
PO-214	-7.466E-03	3.356E-02	5.743E-02	0.000E+00	NOT IDENT.
PO-215	3.875E-01	3.478E-01	6.360E-01	0.000E+00	NOT IDENT.
PO-216	2.938E-03	3.617E-02	4.838E-02	0.000E+00	FAIL ABUN
PO-218	-7.466E-03	3.356E-02	5.743E-02	0.000E+00	NOT IDENT.
RN-219	6.580E-02	1.906E-01	3.496E-01	0.000E+00	NOT IDENT.
RN-220	4.786E-02	1.070E+01	1.843E+01	0.000E+00	NOT IDENT.
RA-223	3.875E-01	3.478E-01	6.360E-01	0.000E+00	NOT IDENT.
RA-224	6.078E-02	2.828E-01	4.491E-01	0.000E+00	NOT IDENT.
RA-226	-1.222E-02	3.960E-02	6.310E-02	0.000E+00	NOT IDENT.
AC-227	2.052E-01	1.701E-01	3.203E-01	0.000E+00	NOT IDENT.
TH-227	2.052E-01	1.712E-01	3.203E-01	0.000E+00	NOT IDENT.
AC-228	-6.228E-03	6.937E-02	1.242E-01	0.000E+00	NOT IDENT.
RA-228	-6.228E-03	6.937E-02	1.242E-01	0.000E+00	NOT IDENT.
TH-228	2.961E-03	3.645E-02	4.876E-02	0.000E+00	FAIL ABUN
TH-229	1.622E-02	2.170E-01	3.841E-01	0.000E+00	NOT IDENT.
TH-230	-1.222E-02	3.960E-02	6.310E-02	0.000E+00	NOT IDENT.
PA-231	5.797E-01	7.513E-01	1.364E+00	0.000E+00	NOT IDENT.
TH-231	3.875E-01	3.478E-01	6.360E-01	0.000E+00	NOT IDENT.
U-231	-4.064E-02	1.175E-01	1.719E-01	0.000E+00	FAIL ABUN
TH-232	-6.228E-03	6.937E-02	1.242E-01	0.000E+00	NOT IDENT.
PA-233	-4.138E-03	3.063E-02	5.088E-02	0.000E+00	NOT IDENT.
PA-234	-6.099E-02	1.161E-01	1.764E-01	0.000E+00	FAIL ABUN
PA-234M	1.202E+00	2.562E+00	4.590E+00	0.000E+00	NOT IDENT.
TH-234	-3.138E-01	4.812E-01	8.017E-01	0.000E+00	FAIL ABUN
U-234	-1.222E-02	3.960E-02	6.310E-02	0.000E+00	NOT IDENT.
U-235	-5.335E-03	9.216E-02	1.563E-01	0.000E+00	FAIL ABUN
NP-236	4.333E-03	3.193E-02	5.763E-02	0.000E+00	NOT IDENT.
NP-237	-1.711E-02	8.352E-02	1.378E-01	0.000E+00	NOT IDENT.
U-238	-3.138E-01	4.812E-01	8.017E-01	0.000E+00	FAIL ABUN
NP-239	5.531E-02	6.489E-02	1.266E-01	0.000E+00	NOT IDENT.
AM-241	2.727E-02	4.235E-02	7.796E-02	0.000E+00	NOT IDENT.
AM-243	-1.344E-03	1.823E-02	3.082E-02	0.000E+00	NOT IDENT.
CM-243	-2.539E-02	3.476E-02	6.022E-02	0.000E+00	NOT IDENT.
AM-246	7.989E-04	4.864E-02	8.296E-02	0.000E+00	NOT IDENT.
CM-247	6.313E-03	1.647E-02	3.039E-02	0.000E+00	NOT IDENT.
CF-249	-1.726E-03	1.784E-02	3.139E-02	0.000E+00	NOT IDENT.
CF-251	-1.649E-02	4.739E-02	8.111E-02	0.000E+00	NOT IDENT.
ANH-511	-2.252E-02	3.130E-02	6.107E-02	0.000E+00	NOT IDENT.

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006617.CNF;1
Sample date        : 31-DEC-2009 00:00:00 Acquisition date : 7-JAN-2010 15:52:27.
Sample ID          : G1202006617      Sample quantity   : 1.36450E+02 GRAM
Detector name      : GAM11             Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00     Elapsed real time: 0 02:00:00.60  0.0%
Energy tolerance   : 1.50000 keV       Analyst Initials : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 937704            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****

```

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : G1202006617

Page : 2
Acquisition date : 7-JAN-2010 15:52:27

Total number of lines in spectrum	4	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	3	75.00%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202006617

Page : 3
Acquisition date : 7-JAN-2010 15:52:27

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.42	22	112	0.95	183.77	180	10	3.05E-03	****	7.04E+00	T
0	185.49	8	55	1.17	370.05	367	7	1.13E-03	****	6.16E+00	T
0	238.45	2	55	1.00	476.04	472	9	3.45E-04	****	5.21E+00	T
0	559.08	11	14	1.44	1117.71	1111	10	1.47E-03	****	2.75E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006617.CNF;1
* Acquisition date   : 7-JAN-2010 15:52:27.  Detector SN#      :
* Detector ID        : GAM11                      Sensitivity    : 5.00000
* Geometry           : CAN                      Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.00000
* Elapsed real time  : 0 02:00:00.60             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 31-DEC-2009 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202006617           Analyst initials: MXR1
* Batch Number       : 937704                Sample Quantity : 1.36450E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 18-NOV-2009 15:33:22.2MS Isotope      :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A                LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.020E-01		1.322E-01	1.957E-01	2.214E-02	-0.521
NA-22	-2.347E-02		1.738E-02	1.627E-02	1.336E-03	-1.443
NA-24	2.263E-05		5.132E-05	Half-Life too short		
AL-26	1.061E-02		2.086E-02	3.844E-02	3.138E-03	0.276
K-40	1.010E-01		2.514E-01	4.597E-01	3.975E-02	0.220
TI-44	-3.855E-03		1.131E-02	1.714E-02	1.445E-03	-0.225
SC-46	1.713E-04		1.817E-02	3.054E-02	3.008E-03	0.006
V-48	-1.099E-02		2.397E-02	3.645E-02	3.457E-03	-0.301
CR-51	-5.407E-03		1.500E-01	2.388E-01	3.466E-02	-0.023
MN-52	-6.780E-02		5.469E-02	5.707E-02	4.781E-03	-1.188
MN-54	-3.528E-03		1.798E-02	2.945E-02	2.900E-03	-0.120
CO-56	7.280E-05		1.941E-02	3.271E-02	3.222E-03	0.002
CO-57	5.831E-03		9.752E-03	1.732E-02	1.465E-03	0.337
CO-58	-1.134E-03		1.671E-02	2.636E-02	2.596E-03	-0.043
FE-59	-4.122E-03		3.625E-02	5.842E-02	5.491E-03	-0.071
CO-60	-6.537E-03		2.244E-02	3.504E-02	2.896E-03	-0.187
ZN-65	3.868E-03		4.257E-02	7.112E-02	6.103E-03	0.054

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GE-68	2.290E-01		4.031E-01	7.574E-01	6.726E-02	0.302
AS-73	1.139E-01		2.464E-01	3.797E-01	2.852E-02	0.300
AS-74	-9.413E-03		3.376E-02	5.314E-02	5.404E-03	-0.177
SE-75	1.738E-02		2.151E-02	3.729E-02	5.481E-03	0.466
BR-77	8.388E-02		5.285E-01	8.964E-01	9.552E-02	0.094
SR-82	1.550E-02		1.239E-01	2.040E-01	1.995E-02	0.076
RB-83	-1.205E-02		3.078E-02	4.818E-02	5.135E-03	-0.250
RB-84	2.115E-03		2.888E-02	4.906E-02	4.833E-03	0.043
KR-85	-1.995E+01		5.900E+00	6.144E+00	6.563E-01	-3.246
SR-85	-9.456E-02		2.797E-02	2.913E-02	3.111E-03	-3.246
RB-86	7.488E-02		2.139E-01	3.817E-01	3.391E-02	0.196
Y-88	-5.329E-03		2.082E-02	3.184E-02	2.585E-03	-0.167
ZR-88	-3.537E-03		1.250E-02	2.042E-02	2.178E-03	-0.173
Y-91	9.421E-01		6.564E+00	1.106E+01	8.952E-01	0.085
NB-94	2.159E-04		1.674E-02	2.715E-02	2.607E-03	0.008
NB-95	8.488E-03		1.686E-02	2.945E-02	2.875E-03	0.288
NB-95M	-2.644E-02		5.257E-02	7.120E-02	9.942E-03	-0.371
ZR-95	-1.150E-02		2.839E-02	4.190E-02	4.409E-03	-0.275
NB-97	1.258E-05		1.580E-05	Half-Life too short		
ZR-97	-2.448E-03		4.925E-04	Half-Life too short		
MO-99	1.697E-01		8.960E-01	1.488E+00	2.355E-01	0.114
TC-99M	-1.050E+01		9.506E+00	Half-Life too short		
RH-101	-1.925E-03		1.527E-02	2.350E-02	2.630E-03	-0.082
RH-102	-2.745E-04		1.373E-02	2.286E-02	2.465E-03	-0.012
RU-103	-4.517E-03		1.566E-02	2.494E-02	3.876E-03	-0.181
RH-106	5.389E-02		1.663E-01	2.836E-01	4.036E-02	0.190
RU-106	5.389E-02		1.662E-01	2.836E-01	2.813E-02	0.190
AG-108M	-7.068E-03		1.444E-02	2.214E-02	2.447E-03	-0.319
CD-109	9.509E-02		2.754E-01	4.434E-01	4.205E-02	0.214
AG-110M	8.937E-03		1.664E-02	2.921E-02	2.847E-03	0.306
IN-111	2.283E-02		6.939E-02	1.171E-01	1.596E-02	0.195
IN-113M	-2.280E-03		1.819E-02	3.033E-02	3.299E-03	-0.075
SN-113	-2.280E-03		1.819E-02	3.033E-02	3.299E-03	-0.075
IN-114M	-1.348E-02		6.678E-02	1.085E-01	1.174E-02	-0.124
CD-115	9.417E-02		4.612E-01	7.871E-01	8.362E-02	0.120
SN-117M	7.857E-03		1.561E-02	2.719E-02	2.570E-03	0.289
SB-122	8.438E-02		1.201E-01	2.198E-01	2.290E-02	0.384
I-123	-1.934E-06		9.639E-05	Half-Life too short		
TE-123M	-1.158E-04		1.155E-02	1.931E-02	1.838E-03	-0.006
I-124	-5.278E-02		9.750E-02	1.475E-01	1.491E-02	-0.358
SB-124	-2.844E-02		3.865E-02	4.908E-02	4.265E-03	-0.580
SB-125	-2.842E-03		3.627E-02	6.036E-02	6.582E-03	-0.047
TE-125M	7.685E-01		3.145E+00	5.471E+00	5.607E-01	0.140
I-126	3.088E-02		5.122E-02	9.159E-02	8.683E-03	0.337
SB-126	2.018E-03		4.347E-02	7.078E-02	6.835E-03	0.029
SN-126	1.889E-02		2.634E-02	4.388E-02	4.139E-03	0.431
SB-127	-1.135E-01		1.512E-01	2.076E-01	2.169E-02	-0.547
XE-127	3.366E-03		1.528E-02	2.576E-02	2.945E-03	0.131

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	-2.245E-03		2.637E-02	4.121E-02	5.161E-03	-0.054
TE-132	-6.043E-03		6.726E-02	1.052E-01	1.829E-02	-0.057
BA-133	2.891E-03		1.818E-02	2.951E-02	4.759E-03	0.098
I-133	-5.913E-07		3.521E-06	Half-Life too short		
CS-134	1.048E-02		2.044E-02	3.573E-02	3.525E-03	0.293
CS-135	1.708E-02		7.295E-02	1.209E-01	1.897E-02	0.141
I-135	4.006E+00		6.528E+00	Half-Life too short		
CS-136	-2.727E-02		3.274E-02	4.457E-02	4.206E-03	-0.612
BA-137M	-1.329E-02		1.789E-02	2.562E-02	2.424E-03	-0.519
CS-137	-1.405E-02		1.891E-02	2.708E-02	2.566E-03	-0.519
CE-139	-2.228E-03		1.090E-02	1.785E-02	1.734E-03	-0.125
BA-140	5.607E-02		8.372E-02	1.474E-01	4.968E-02	0.380
LA-140	1.259E-03		2.573E-02	4.348E-02	3.656E-03	0.029
CE-141	-1.528E-02		2.185E-02	3.458E-02	3.169E-03	-0.442
CE-143	2.457E-02		1.419E+00	2.288E+00	5.667E-01	0.011
CE-144	-5.888E-02		7.995E-02	1.260E-01	1.965E-02	-0.467
PM-144	1.319E-02		2.007E-02	3.509E-02	3.363E-03	0.376
PR-144	8.901E-01		1.354E+00	2.368E+00	2.270E-01	0.376
PM-146	9.437E-04		2.034E-02	3.427E-02	4.297E-03	0.028
ND-147	5.387E-02		1.454E-01	2.541E-01	4.112E-02	0.212
PM-149	-9.514E-01		4.368E+00	6.869E+00	1.376E+00	-0.139
EU-152	-2.295E-02		4.418E-02	6.499E-02	8.811E-03	-0.353
GD-153	-3.118E-02		3.380E-02	4.050E-02	3.598E-03	-0.770
EU-154	-6.582E-02		4.896E-02	4.562E-02	5.017E-03	-1.443
EU-155	5.142E-02		3.921E-02	7.324E-02	6.391E-03	0.702
TB-160	-1.127E-02		6.489E-02	1.060E-01	1.044E-02	-0.106
HO-166M	-2.378E-02		3.224E-02	4.591E-02	4.421E-03	-0.518
TM-171	-5.513E+00		9.628E+00	1.412E+01	1.059E+00	-0.390
LU-176	-5.325E-03		1.181E-02	1.786E-02	2.625E-03	-0.298
LU-177	1.025E-01		2.230E-01	3.634E-01	4.253E-02	0.282
LU-177M	-4.220E-02		7.411E-02	1.158E-01	1.243E-02	-0.364
HF-181	1.051E-02		1.741E-02	3.122E-02	3.362E-03	0.337
W-181	-1.528E-01		1.287E-01	1.782E-01	1.321E-02	-0.858
TA-182	3.376E-02		5.793E-02	1.081E-01	8.784E-03	0.312
RE-183	2.348E-02		4.003E-02	7.024E-02	6.733E-03	0.334
RE-184	-7.390E-02		8.722E-02	1.248E-01	1.751E-02	-0.592
OS-185	1.467E-04		2.108E-02	3.440E-02	3.321E-03	0.004
RE-188	-1.751E-02		6.187E-02	1.011E-01	9.432E-03	-0.173
W-188	-8.464E-01		3.317E+00	5.189E+00	7.881E-01	-0.163
IR-192	1.089E-03		1.424E-02	2.301E-02	3.308E-03	0.047
AU-195	8.167E-03		8.145E-02	1.306E-01	1.152E-02	0.063
TL-200	8.462E-01		1.821E+00	3.063E+00	3.686E-01	0.276
TL-201	3.144E-01		4.655E-01	8.253E-01	8.074E-02	0.381
TL-202	1.474E-03		1.768E-02	3.005E-02	3.241E-03	0.049
HG-203	-4.128E-05		1.637E-02	2.643E-02	4.129E-03	-0.002
BI-207	-5.352E-03		2.189E-02	3.059E-02	2.748E-03	-0.175
TL-207	3.875E-01		3.549E-01	6.163E-01	1.289E-01	0.629
TL-208	-1.343E-02		2.158E-02	3.179E-02	3.433E-03	-0.422

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-209	-2.220E+00		3.568E+00	5.329E+00	5.246E-01	-0.417
BI-210	3.995E-01		1.148E+00	1.830E+00	1.704E-01	0.218
PB-210	3.995E-01		1.148E+00	1.830E+00	1.704E-01	0.218
PO-210	3.995E-01		1.148E+00	1.830E+00	1.543E-01	0.218
BI-211	-7.705E-02		1.013E-01	1.530E-01	2.018E-02	-0.504
PB-211	-1.958E-01		4.359E-01	6.671E-01	4.202E-01	-0.293
BI-212	-6.844E-02		1.406E-01	2.081E-01	2.274E-02	-0.329
PB-212	2.938E-03	+	3.691E-02	4.662E-02	6.529E-03	0.063
PO-212	2.938E-03	+	3.691E-02	4.662E-02	6.529E-03	0.063
BI-214	-1.222E-02		4.040E-02	6.188E-02	6.995E-03	-0.198
PB-214	-7.466E-03		3.425E-02	5.574E-02	7.887E-03	-0.134
PO-214	-7.466E-03		3.425E-02	5.574E-02	7.887E-03	-0.134
PO-215	3.875E-01		3.549E-01	6.163E-01	1.289E-01	0.629
PO-216	2.938E-03	+	3.691E-02	4.662E-02	6.529E-03	0.063
PO-218	-7.466E-03		3.425E-02	5.574E-02	7.887E-03	-0.134
RN-219	6.580E-02		1.945E-01	3.402E-01	5.548E-02	0.193
RN-220	4.786E-02		1.092E+01	1.804E+01	1.896E+00	0.003
RA-223	3.875E-01		3.549E-01	6.163E-01	1.289E-01	0.629
RA-224	6.078E-02		2.885E-01	4.328E-01	5.797E-02	0.140
RA-226	-1.222E-02		4.040E-02	6.188E-02	6.995E-03	-0.198
AC-227	2.052E-01		1.736E-01	3.090E-01	5.889E-02	0.664
TH-227	2.052E-01		1.746E-01	3.090E-01	6.584E-02	0.664
AC-228	-6.228E-03		7.079E-02	1.227E-01	1.494E-02	-0.051
RA-228	-6.228E-03		7.079E-02	1.227E-01	1.494E-02	-0.051
TH-228	2.961E-03	+	3.719E-02	4.698E-02	6.579E-03	0.063
TH-229	1.622E-02		2.214E-01	3.687E-01	4.048E-02	0.044
TH-230	-1.222E-02		4.040E-02	6.188E-02	6.994E-03	-0.198
PA-231	5.797E-01		7.666E-01	1.318E+00	2.612E-01	0.440
TH-231	3.875E-01		3.549E-01	6.163E-01	1.289E-01	0.629
U-231	-4.064E-02		1.199E-01	1.629E-01	1.459E-02	-0.249
TH-232	-6.228E-03		7.079E-02	1.227E-01	1.494E-02	-0.051
PA-233	-4.138E-03		3.125E-02	4.927E-02	7.229E-03	-0.084
PA-234	-6.099E-02		1.184E-01	1.745E-01	3.361E-02	-0.350
PA-234M	1.202E+00		2.615E+00	4.544E+00	4.834E-01	0.265
TH-234	-3.138E-01		4.910E-01	7.543E-01	1.312E-01	-0.416
U-234	-1.222E-02		4.040E-02	6.188E-02	6.994E-03	-0.198
U-235	-5.335E-03		9.404E-02	1.493E-01	2.639E-02	-0.036
NP-236	4.333E-03		3.258E-02	5.512E-02	5.244E-03	0.079
NP-237	-1.711E-02		8.522E-02	1.304E-01	2.952E-02	-0.131
U-238	-3.138E-01		4.910E-01	7.543E-01	1.312E-01	-0.416
NP-239	5.531E-02		6.622E-02	1.204E-01	1.019E-02	0.459
AM-241	2.727E-02		4.321E-02	7.327E-02	5.758E-03	0.372
AM-243	-1.344E-03		1.861E-02	2.908E-02	2.353E-03	-0.046
CM-243	-2.539E-02		3.547E-02	5.715E-02	4.949E-03	-0.444
AM-246	7.989E-04		4.963E-02	8.225E-02	7.295E-03	0.010
CM-247	6.313E-03		1.681E-02	2.957E-02	3.164E-03	0.214
CF-249	-1.726E-03		1.821E-02	3.052E-02	3.323E-03	-0.057
CF-251	-1.649E-02		4.836E-02	7.772E-02	7.917E-03	-0.212

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ANH-511	-2.252E-02		3.194E-02	5.968E-02	6.382E-03	-0.377

VAX/VMS Nuclide Identification Report Generated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*                                     *                                       *
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202006617          *
* Acquisition date   : 7-JAN-2010 15:52:27 Detector SN# :                   *
* Detector ID        : GAM11 Sensitivity : 5.000                            *
* Geometry           : CAN Energy tolerance: 1.500                          *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000               *
* Elapsed real time  : 0 02:00:00.60 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date       : 31-DEC-2009 00:00:00 Nuclide Library : SOLID           *
* Sample ID         : G1202006617 Analyst initials: MXR1                   *
* Batch Number      : 937704 Sample Quantity : 1.3645E+02 GRAM             *
* Recovery          : 1.00000 Carrier Weight : 0.00000                     *
*****
*                                     QC DATA                                *
*                                     *                                       *
* CALIB. DATE/TIME  : 18-NOV-2009 15:33:22 MS Isotope :                     *
* MSD DPM           : 0.000 MSD Isotope :                                 *
* LCS DPM           : 0.000 LCS Isotope :                                 *
* LCSD DPM          : 0.000 LCSD Isotope :                                 *
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Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act Error	DLC (pCi/GRAM)	TPU	
---- Non-Identified Nuclides ----					
Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU	
BE-7	-1.020E-01	1.295E-01	1.003E-01	6.609E-02	NOT IDENT.
NA-22	-2.347E-02	1.703E-02	8.184E-03	8.688E-03	NOT IDENT.
NA-24	2.263E+01	1.006E+02	0.000E+00	5.132E+01	SHORT HLIF
AL-26	1.061E-02	2.044E-02	1.920E-02	1.043E-02	NOT IDENT.
K-40	1.010E-01	2.463E-01	2.306E-01	1.257E-01	NOT IDENT.
TI-44	-3.855E-03	1.108E-02	9.082E-03	5.655E-03	NOT IDENT.
SC-46	1.713E-04	1.781E-02	1.547E-02	9.087E-03	NOT IDENT.
V-48	-1.099E-02	2.349E-02	1.843E-02	1.199E-02	NOT IDENT.
CR-51	-5.407E-03	1.470E-01	1.233E-01	7.500E-02	NOT IDENT.
MN-52	-6.780E-02	5.360E-02	2.864E-02	2.734E-02	NOT IDENT.
MN-54	-3.528E-03	1.762E-02	1.494E-02	8.988E-03	NOT IDENT.
CO-56	7.280E-05	1.902E-02	1.658E-02	9.703E-03	NOT IDENT.
CO-57	5.831E-03	9.557E-03	9.101E-03	4.876E-03	NOT IDENT.
CO-58	-1.134E-03	1.638E-02	1.338E-02	8.356E-03	NOT IDENT.
FE-59	-4.122E-03	3.553E-02	2.947E-02	1.813E-02	NOT IDENT.
CO-60	-6.537E-03	2.199E-02	1.761E-02	1.122E-02	NOT IDENT.
ZN-65	3.868E-03	4.172E-02	3.587E-02	2.128E-02	NOT IDENT.
GE-68	2.290E-01	3.950E-01	3.822E-01	2.015E-01	NOT IDENT.
AS-73	1.139E-01	2.414E-01	2.025E-01	1.232E-01	NOT IDENT.
AS-74	-9.413E-03	3.308E-02	2.712E-02	1.688E-02	NOT IDENT.
SE-75	1.738E-02	2.108E-02	1.932E-02	1.075E-02	NOT IDENT.
BR-77	8.388E-02	5.179E-01	4.587E-01	2.643E-01	FAIL ABUN
SR-82	1.550E-02	1.214E-01	1.036E-01	6.193E-02	NOT IDENT.
RB-83	-1.205E-02	3.017E-02	2.466E-02	1.539E-02	NOT IDENT.
RB-84	2.115E-03	2.830E-02	2.485E-02	1.444E-02	NOT IDENT.
KR-85	-1.995E+01	5.782E+00	3.145E+00	2.950E+00	NOT IDENT.

SR-85	-9.456E-02	2.741E-02	1.491E-02	1.398E-02	NOT IDENT.
RB-86	7.488E-02	2.096E-01	1.926E-01	1.069E-01	NOT IDENT.
Y-88	-5.329E-03	2.041E-02	1.590E-02	1.041E-02	NOT IDENT.
ZR-88	-3.537E-03	1.225E-02	1.051E-02	6.248E-03	NOT IDENT.
Y-91	9.421E-01	6.433E+00	5.569E+00	3.282E+00	NOT IDENT.
NB-94	2.159E-04	1.640E-02	1.381E-02	8.369E-03	NOT IDENT.
NB-95	8.488E-03	1.653E-02	1.496E-02	8.432E-03	NOT IDENT.
NB-95M	-2.644E-02	5.152E-02	3.698E-02	2.628E-02	NOT IDENT.
ZR-95	-1.150E-02	2.782E-02	2.129E-02	1.419E-02	NOT IDENT.
NB-97	1.258E+01	3.097E+01	0.000E+00	1.580E+01	SHORT HLIF
ZR-97	-2.448E+03	9.653E+02	0.000E+00	4.925E+02	SHORT HLIF
MO-99	1.697E-01	8.781E-01	7.563E-01	4.480E-01	NOT IDENT.
TC-99M	-1.050E+07	1.863E+07	0.000E+00	9.506E+06	SHORT HLIF
RH-101	-1.925E-03	1.497E-02	1.224E-02	7.637E-03	NOT IDENT.
RH-102	-2.745E-04	1.345E-02	1.172E-02	6.863E-03	NOT IDENT.
RU-103	-4.517E-03	1.535E-02	1.277E-02	7.831E-03	NOT IDENT.
RH-106	5.389E-02	1.630E-01	1.446E-01	8.315E-02	NOT IDENT.
RU-106	5.389E-02	1.629E-01	1.446E-01	8.310E-02	NOT IDENT.
AG-108M	-7.068E-03	1.415E-02	1.137E-02	7.219E-03	NOT IDENT.
CD-109	9.509E-02	2.699E-01	2.344E-01	1.377E-01	NOT IDENT.
AG-110M	8.937E-03	1.631E-02	1.488E-02	8.322E-03	NOT IDENT.
IN-111	2.283E-02	6.801E-02	6.076E-02	3.470E-02	NOT IDENT.
IN-113M	-2.280E-03	1.783E-02	1.560E-02	9.095E-03	NOT IDENT.
SN-113	-2.280E-03	1.783E-02	1.560E-02	9.095E-03	NOT IDENT.
IN-114M	-1.348E-02	6.544E-02	5.657E-02	3.339E-02	NOT IDENT.
CD-115	9.417E-02	4.520E-01	4.027E-01	2.306E-01	NOT IDENT.
SN-117M	7.857E-03	1.530E-02	1.422E-02	7.807E-03	NOT IDENT.
SB-122	8.438E-02	1.177E-01	1.123E-01	6.004E-02	NOT IDENT.
I-123	-1.934E+00	1.889E+02	0.000E+00	9.639E+01	SHORT HLIF
TE-123M	-1.158E-04	1.131E-02	1.010E-02	5.773E-03	NOT IDENT.
I-124	-5.278E-02	9.555E-02	7.529E-02	4.875E-02	NOT IDENT.
SB-124	-2.844E-02	3.788E-02	2.455E-02	1.933E-02	NOT IDENT.
SB-125	-2.842E-03	3.555E-02	3.100E-02	1.814E-02	NOT IDENT.
TE-125M	7.685E-01	3.082E+00	2.881E+00	1.572E+00	NOT IDENT.
I-126	3.088E-02	5.020E-02	4.665E-02	2.561E-02	NOT IDENT.
SB-126	2.018E-03	4.260E-02	3.600E-02	2.174E-02	NOT IDENT.
SN-126	1.889E-02	2.581E-02	2.320E-02	1.317E-02	NOT IDENT.
SB-127	-1.135E-01	1.481E-01	1.057E-01	7.558E-02	NOT IDENT.
XE-127	3.366E-03	1.497E-02	1.342E-02	7.638E-03	NOT IDENT.
I-131	-2.245E-03	2.584E-02	2.123E-02	1.318E-02	NOT IDENT.
TE-132	-6.043E-03	6.592E-02	5.467E-02	3.363E-02	NOT IDENT.
BA-133	2.891E-03	1.782E-02	1.521E-02	9.091E-03	NOT IDENT.
I-133	-5.913E-01	6.901E+00	0.000E+00	3.521E+00	SHORT HLIF
CS-134	1.048E-02	2.003E-02	1.814E-02	1.022E-02	NOT IDENT.
CS-135	1.708E-02	7.149E-02	6.265E-02	3.648E-02	NOT IDENT.
I-135	4.006E+06	1.280E+07	0.000E+00	6.528E+06	SHORT HLIF
CS-136	-2.727E-02	3.208E-02	2.251E-02	1.637E-02	NOT IDENT.
BA-137M	-1.329E-02	1.753E-02	1.305E-02	8.945E-03	NOT IDENT.
CS-137	-1.405E-02	1.853E-02	1.379E-02	9.456E-03	NOT IDENT.
CE-139	-2.228E-03	1.068E-02	9.329E-03	5.449E-03	NOT IDENT.
BA-140	5.607E-02	8.205E-02	7.538E-02	4.186E-02	NOT IDENT.
LA-140	1.259E-03	2.521E-02	2.177E-02	1.286E-02	NOT IDENT.
CE-141	-1.528E-02	2.141E-02	1.812E-02	1.092E-02	NOT IDENT.
CE-143	2.457E-02	1.391E+00	1.183E+00	7.095E-01	NOT IDENT.
CE-144	-5.888E-02	7.835E-02	6.610E-02	3.997E-02	NOT IDENT.
PM-144	1.319E-02	1.966E-02	1.786E-02	1.003E-02	NOT IDENT.
PR-144	8.901E-01	1.327E+00	1.205E+00	6.772E-01	NOT IDENT.
PM-146	9.437E-04	1.993E-02	1.758E-02	1.017E-02	NOT IDENT.
ND-147	5.387E-02	1.425E-01	1.300E-01	7.270E-02	FAIL ABUN
PM-149	-9.514E-01	4.281E+00	3.555E+00	2.184E+00	NOT IDENT.
EU-152	-2.295E-02	4.330E-02	3.351E-02	2.209E-02	NOT IDENT.
GD-153	-3.118E-02	3.313E-02	2.137E-02	1.690E-02	NOT IDENT.
EU-154	-6.582E-02	4.798E-02	2.295E-02	2.448E-02	NOT IDENT.
EU-155	5.142E-02	3.843E-02	3.860E-02	1.960E-02	NOT IDENT.
TB-160	-1.127E-02	6.359E-02	5.369E-02	3.245E-02	NOT IDENT.
HO-166M	-2.378E-02	3.159E-02	2.335E-02	1.612E-02	FAIL ABUN
TM-171	-5.513E+00	9.435E+00	7.500E+00	4.814E+00	NOT IDENT.
LU-176	-5.325E-03	1.157E-02	9.230E-03	5.904E-03	NOT IDENT.
LU-177	1.025E-01	2.185E-01	1.892E-01	1.115E-01	NOT IDENT.
LU-177M	-4.220E-02	7.262E-02	5.950E-02	3.705E-02	NOT IDENT.
HF-181	1.051E-02	1.706E-02	1.600E-02	8.707E-03	NOT IDENT.
W-181	-1.528E-01	1.261E-01	9.470E-02	6.433E-02	NOT IDENT.
TA-182	3.376E-02	5.677E-02	5.443E-02	2.896E-02	NOT IDENT.
RE-183	2.348E-02	3.923E-02	3.673E-02	2.001E-02	NOT IDENT.
RE-184	-7.390E-02	8.548E-02	6.474E-02	4.361E-02	NOT IDENT.
OS-185	1.467E-04	2.066E-02	1.753E-02	1.054E-02	NOT IDENT.
RE-188	-1.751E-02	6.063E-02	5.292E-02	3.094E-02	NOT IDENT.
W-188	-8.464E-01	3.251E+00	2.684E+00	1.659E+00	NOT IDENT.

IR-192	1.089E-03	1.395E-02	1.189E-02	7.119E-03	NOT IDENT.
AU-195	8.167E-03	7.982E-02	6.887E-02	4.073E-02	NOT IDENT.
TL-200	8.462E-01	1.784E+00	1.577E+00	9.104E-01	NOT IDENT.
TL-201	3.144E-01	4.562E-01	4.313E-01	2.327E-01	NOT IDENT.
TL-202	1.474E-03	1.733E-02	1.543E-02	8.841E-03	NOT IDENT.
HG-203	-4.128E-05	1.605E-02	1.368E-02	8.186E-03	NOT IDENT.
BI-207	-5.352E-03	2.145E-02	1.544E-02	1.095E-02	NOT IDENT.
TL-207	3.875E-01	3.478E-01	3.182E-01	1.774E-01	NOT IDENT.
TL-208	-1.343E-02	2.115E-02	1.623E-02	1.079E-02	NOT IDENT.
PO-209	-2.220E+00	3.496E+00	2.699E+00	1.784E+00	NOT IDENT.
BI-210	3.995E-01	1.125E+00	9.786E-01	5.739E-01	NOT IDENT.
PB-210	3.995E-01	1.125E+00	9.786E-01	5.739E-01	NOT IDENT.
PO-210	3.995E-01	1.125E+00	9.786E-01	5.738E-01	NOT IDENT.
BI-211	-7.705E-02	9.930E-02	7.887E-02	5.066E-02	NOT IDENT.
PB-211	-1.958E-01	4.272E-01	3.430E-01	2.179E-01	NOT IDENT.
BI-212	-6.844E-02	1.378E-01	1.058E-01	7.028E-02	NOT IDENT.
PB-212	2.938E-03	3.617E-02	2.421E-02	1.845E-02	FAIL ABUN
PO-212	2.938E-03	3.617E-02	2.421E-02	1.845E-02	FAIL ABUN
BI-214	-1.222E-02	3.960E-02	3.157E-02	2.020E-02	NOT IDENT.
PB-214	-7.466E-03	3.356E-02	2.873E-02	1.712E-02	NOT IDENT.
PO-214	-7.466E-03	3.356E-02	2.873E-02	1.712E-02	NOT IDENT.
PO-215	3.875E-01	3.478E-01	3.182E-01	1.774E-01	NOT IDENT.
PO-216	2.938E-03	3.617E-02	2.421E-02	1.845E-02	FAIL ABUN
PO-218	-7.466E-03	3.356E-02	2.873E-02	1.712E-02	NOT IDENT.
RN-219	6.580E-02	1.906E-01	1.749E-01	9.724E-02	NOT IDENT.
RN-220	4.786E-02	1.070E+01	9.222E+00	5.458E+00	NOT IDENT.
RA-223	3.875E-01	3.478E-01	3.182E-01	1.774E-01	NOT IDENT.
RA-224	6.078E-02	2.828E-01	2.247E-01	1.443E-01	NOT IDENT.
RA-226	-1.222E-02	3.960E-02	3.157E-02	2.020E-02	NOT IDENT.
AC-227	2.052E-01	1.701E-01	1.602E-01	8.678E-02	NOT IDENT.
TH-227	2.052E-01	1.712E-01	1.602E-01	8.732E-02	NOT IDENT.
AC-228	-6.228E-03	6.937E-02	6.213E-02	3.539E-02	NOT IDENT.
RA-228	-6.228E-03	6.937E-02	6.213E-02	3.539E-02	NOT IDENT.
TH-228	2.961E-03	3.645E-02	2.439E-02	1.860E-02	FAIL ABUN
TH-229	1.622E-02	2.170E-01	1.922E-01	1.107E-01	NOT IDENT.
TH-230	-1.222E-02	3.960E-02	3.157E-02	2.020E-02	NOT IDENT.
PA-231	5.797E-01	7.513E-01	6.823E-01	3.833E-01	NOT IDENT.
TH-231	3.875E-01	3.478E-01	3.182E-01	1.774E-01	NOT IDENT.
U-231	-4.064E-02	1.175E-01	8.599E-02	5.997E-02	FAIL ABUN
TH-232	-6.228E-03	6.937E-02	6.213E-02	3.539E-02	NOT IDENT.
PA-233	-4.138E-03	3.063E-02	2.546E-02	1.563E-02	NOT IDENT.
PA-234	-6.099E-02	1.161E-01	8.826E-02	5.921E-02	FAIL ABUN
PA-234M	1.202E+00	2.562E+00	2.296E+00	1.307E+00	NOT IDENT.
TH-234	-3.138E-01	4.812E-01	4.011E-01	2.455E-01	FAIL ABUN
U-234	-1.222E-02	3.960E-02	3.157E-02	2.020E-02	NOT IDENT.
U-235	-5.335E-03	9.216E-02	7.822E-02	4.702E-02	FAIL ABUN
NP-236	4.333E-03	3.193E-02	2.883E-02	1.629E-02	NOT IDENT.
NP-237	-1.711E-02	8.352E-02	6.896E-02	4.261E-02	NOT IDENT.
U-238	-3.138E-01	4.812E-01	4.011E-01	2.455E-01	FAIL ABUN
NP-239	5.531E-02	6.489E-02	6.334E-02	3.311E-02	NOT IDENT.
AM-241	2.727E-02	4.235E-02	3.900E-02	2.161E-02	NOT IDENT.
AM-243	-1.344E-03	1.823E-02	1.542E-02	9.303E-03	NOT IDENT.
CM-243	-2.539E-02	3.476E-02	3.013E-02	1.774E-02	NOT IDENT.
AM-246	7.989E-04	4.864E-02	4.151E-02	2.482E-02	NOT IDENT.
CM-247	6.313E-03	1.647E-02	1.520E-02	8.403E-03	NOT IDENT.
CF-249	-1.726E-03	1.784E-02	1.570E-02	9.104E-03	NOT IDENT.
CF-251	-1.649E-02	4.739E-02	4.058E-02	2.418E-02	NOT IDENT.
ANH-511	-2.252E-02	3.130E-02	3.055E-02	1.597E-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	44.5868
46.50	44.5868
46.50	44.5868
48.70	61.3698
49.72	49.4876
51.35	53.0770
52.39	42.1639
52.97	45.5792
53.15	45.6059
53.44	37.8551
54.07	43.5104
56.28	48.3099
56.28	48.3104
57.37	34.9465
57.53	40.6031
57.53	40.6034
57.60	40.6119
57.98	62.1186
57.98	62.1186
59.32	54.4340
59.32	54.4340
59.40	54.4471
59.54	44.2569
59.72	47.6871
60.01	56.8198
61.10	86.6469
61.14	86.6571
61.30	92.4017
63.00	66.4941
63.29	67.6973
63.29	67.6973
63.58	71.1991
64.28	78.2464
65.12	110.7297
65.20	92.2957
65.20	92.2957
66.05	43.9456
66.72	71.8346
66.83	71.8573
66.91	71.8729
67.20	74.2515
67.20	74.2515
67.75	66.2307
67.85	66.2489
68.90	60.6118
68.90	60.6118
69.30	37.3401
69.67	35.0418
70.82	59.7551
70.82	59.7551
70.83	59.7567
72.80	58.8917
72.87	58.9024
72.87	58.9024
74.67	76.9321
74.81	76.9599
74.81	76.9599
74.81	76.9599
74.81	76.9599
74.81	76.9599
74.81	76.9599
74.81	76.9599
74.97	76.9916
75.28	69.9405
75.70	64.0822
77.11	63.1207
77.11	63.1207

77.11	63.1207
77.11	63.1207
77.11	63.1207
77.11	63.1207
77.11	63.1207
78.38	72.8801
79.62	79.0966
79.80	79.1318
79.80	79.1318
80.11	82.7919
80.18	82.8061
80.30	82.8303
80.30	82.8303
80.57	67.2690
81.00	51.7075
81.07	51.7163
81.07	51.7163
81.07	51.7163
81.07	51.7163
82.60	72.4297
83.37	62.8878
83.78	73.8448
83.78	73.8448
83.78	73.8448
83.78	73.8448
84.21	87.2501
84.90	71.6137
85.43	59.5498
86.29	80.3715
86.50	80.4108
86.54	81.6368
86.59	90.1768
86.72	90.2039
86.79	90.2180
86.94	90.2496
87.30	72.0161
87.30	72.0161
87.30	72.0161
87.30	72.0161
87.30	72.0161
87.30	72.0161
87.57	57.4042
87.88	57.4455
88.03	67.2465
88.36	73.4157
88.47	73.4340
89.95	62.2204
91.11	65.6665
92.29	51.8489
92.38	51.8591
92.38	51.8591
93.35	51.9706
94.00	52.0450
94.67	43.0204
94.67	43.0210
94.90	43.0424
94.90	43.0424
94.90	43.0424
94.90	43.0424
95.87	59.7231
95.87	59.7231
96.73	61.4965
97.43	64.9175
98.44	54.2143
98.44	54.2146
98.88	50.0909
99.55	55.1779
99.55	55.1779
99.86	55.2142
100.00	55.2303
100.10	54.4054
103.18	66.5470
103.76	72.5301
105.00	56.6488
105.31	47.3782
108.00	78.2567
109.28	61.3997

111.00	50.4838
111.00	50.4838
111.76	53.9862
112.95	65.2762
115.19	59.5180
116.30	59.6433
117.00	43.2767
117.00	43.2767
117.66	53.7297
121.11	67.1561
121.62	57.6161
121.78	57.6328
122.06	56.7887
122.32	59.4377
122.32	59.4377
122.32	59.4377
122.32	59.4377
123.07	63.8951
127.23	61.7267
129.76	52.2583
131.20	59.4926
133.02	74.8219
133.54	73.1055
135.34	58.1267
136.00	56.4010
136.25	51.9465
136.48	53.7585
140.51	64.9438
140.51	0.0000
142.18	68.7389
142.65	61.5510
143.76	58.0345
144.24	63.5244
144.24	63.5244
144.24	63.5244
144.24	63.5244
145.22	74.5319
145.44	76.3762
147.16	51.0576
152.43	53.3201
152.70	47.8243
153.22	48.7834
154.21	61.7629
154.21	61.7629
154.21	61.7629
154.21	61.7629
155.03	61.8409
156.02	49.9175
158.56	58.4614
159.00	0.0000
159.00	66.8569
160.31	60.4753
161.27	63.3571
162.32	50.3915
162.64	40.1454
163.35	57.0100
163.89	63.6027
165.85	54.4051
167.43	40.4271
171.28	54.8317
171.86	58.6611
172.10	58.6813
176.55	53.3340
176.60	53.3380
181.06	59.7994
184.41	51.9846
185.71	59.7907
186.00	59.3310
190.27	58.2123
192.34	49.6148
193.63	61.3914
197.04	53.8318
198.01	48.9985
198.60	48.0544
200.40	62.9089
201.83	43.3277
202.84	43.3828
205.31	50.4397

208.36	47.6514
208.81	62.5770
209.75	61.6544
209.75	61.6544
210.97	54.7751
215.65	55.0845
216.55	47.1229
218.09	56.2495
222.10	44.4051
223.80	32.3587
226.40	53.7553
227.00	49.7327
227.08	49.7372
227.20	48.7290
228.16	47.7664
228.18	44.7184
228.18	44.7184
231.56	71.4170
235.69	56.8872
236.00	63.0590
236.00	63.0590
238.63	43.1907
238.63	43.1907
238.63	43.1907
238.63	43.1907
239.00	43.2083
240.98	43.3027
241.98	35.6094
241.98	35.6094
241.98	35.6094
244.69	43.4787
245.39	38.3316
247.94	46.7482
248.90	38.4769
249.79	33.3089
252.40	41.7521
252.85	40.7278
252.85	40.7278
254.15	0.0000
256.20	33.5358
256.20	33.5358
260.50	62.1089
260.90	54.7623
262.80	50.6494
264.65	47.5735
268.24	47.7475
268.79	52.0206
269.46	48.8694
269.46	48.8694
269.46	48.8694
269.46	48.8694
271.23	57.4706
273.65	36.2723
276.40	48.1393
277.35	50.3257
277.60	46.0541
277.60	46.0541
278.00	40.7152
278.60	40.7391
279.20	43.9812
279.53	46.1415
280.46	47.2576
281.68	46.2386
283.67	42.0183
284.30	50.6681
285.00	48.5449
285.90	50.7465
286.10	52.9159
286.10	52.9159
287.40	46.4950
288.45	0.0000
290.67	50.9788
290.80	50.9855
291.72	49.9438
293.26	47.8421
293.70	44.5985
295.21	47.9299
295.21	47.9299

295.21	47.9299
295.96	49.0540
296.50	43.6255
297.23	53.4781
298.57	45.8956
299.80	48.1357
299.80	48.1357
300.09	45.9606
300.09	45.9606
300.09	45.9606
300.09	45.9606
300.12	45.9614
301.29	39.4380
302.84	59.2416
303.76	39.5281
303.91	37.3369
304.40	35.1569
304.40	35.1569
304.84	36.2703
306.84	45.1449
308.46	50.7252
311.98	43.1434
316.51	33.3221
318.01	45.6003
319.02	28.9432
319.41	32.2940
320.08	41.2268
323.87	38.0107
323.87	38.0107
323.87	38.0107
323.87	38.0107
325.23	45.8906
328.77	41.5407
333.44	54.1074
334.20	48.5027
334.20	48.5027
334.30	48.5071
338.28	52.0663
338.28	52.0663
338.28	52.0663
338.28	52.0663
338.32	52.0682
338.32	52.0682
338.32	52.0682
340.50	37.4218
340.57	37.4244
344.27	37.5406
345.85	26.1988
350.59	28.5889
351.07	32.0321
351.92	25.1855
351.92	25.1855
351.92	25.1855
355.39	0.0000
356.01	26.4183
364.48	27.7549
366.43	27.7979
367.43	28.9790
367.94	26.6714
369.80	27.8721
374.96	22.1547
383.85	33.4611
387.95	34.4487
388.63	35.3503
391.69	30.1173
391.69	30.1173
392.90	31.9175
398.62	32.9447
400.65	29.4269
401.10	25.8688
401.81	32.1301
402.60	29.4697
404.84	35.7794
410.95	21.5632
411.60	28.7646
413.65	33.3082
414.70	36.0364
415.30	34.2491

415.76	31.5559
417.63	0.0000
418.52	25.2947
423.70	25.3878
427.08	23.6303
427.89	22.7345
432.53	24.6327
433.93	24.6566
439.47	20.1678
439.56	20.1688
439.89	22.9244
443.98	21.1494
444.90	23.9231
445.03	23.9251
445.03	23.9251
445.03	23.9251
445.03	23.9251
453.90	28.6973
463.38	15.8363
468.07	28.9669
473.00	23.4352
475.06	28.1598
475.35	26.2872
476.78	31.9497
477.59	31.0261
477.96	28.2124
482.03	21.6857
484.57	25.4983
487.03	32.1588
490.36	23.6961
492.35	19.9294
497.08	24.7475
507.63	0.0000
510.53	0.0000
510.84	34.5567
511.00	46.0800
511.85	51.8671
511.85	51.8671
513.99	129.8347
513.99	129.8347
520.41	27.9982
520.65	21.2433
527.90	19.3958
528.96	0.0000
529.64	23.2983
529.87	0.0000
531.02	16.5165
537.32	19.5032
543.00	19.5679
546.56	0.0000
549.76	18.6620
552.65	20.4636
555.20	15.7642
563.23	14.8457
563.90	12.8711
568.70	18.8626
569.32	21.8483
569.50	20.8571
569.67	20.8590
573.80	29.8672
574.00	31.8613
574.64	28.8849
578.91	26.9563
579.30	32.9537
583.14	24.0168
585.48	31.0605
591.81	27.1458
592.07	27.1500
593.00	24.1450
595.88	27.2052
600.56	24.2432
602.52	0.0000
602.71	32.3613
602.71	32.3613
603.60	28.3290
604.41	30.3662
604.70	28.3461
609.31	28.4153

609.31	28.4153
609.31	28.4153
609.31	28.4153
610.33	25.3838
612.46	31.5118
614.37	23.4029
618.01	23.4471
621.84	24.5156
621.84	24.5156
631.29	31.8202
633.02	20.5475
633.10	20.5481
634.78	17.4809
635.90	19.5485
636.97	23.6766
645.85	29.9877
646.12	24.8203
656.30	20.7892
657.75	18.7234
657.90	0.0000
661.65	29.1818
661.65	29.1818
664.57	17.7429
666.33	13.5796
666.33	13.5796
675.00	14.6862
677.61	17.8555
685.20	20.0292
692.80	32.7975
695.00	24.3589
696.49	27.5552
696.49	27.5552
697.00	26.5022
697.49	23.3273
698.33	25.4583
698.50	25.4597
699.00	27.5877
702.63	23.3837
706.10	26.6151
706.58	0.0000
706.67	26.6220
709.31	18.1253
711.68	29.8867
713.82	27.7789
717.42	21.4044
720.50	18.2192
721.93	23.5932
722.20	20.3788
722.78	18.2384
722.78	18.2384
722.89	18.2394
722.95	18.2399
723.30	18.2425
724.18	18.2498
727.18	24.7246
733.00	22.6342
735.90	18.3473
739.58	19.4584
742.81	27.0653
744.21	29.2486
747.13	23.8631
751.79	17.3906
752.31	19.5694
753.82	26.1094
755.35	20.6838
756.15	17.4243
756.87	10.8936
763.93	16.3911
765.79	14.2172
766.42	16.4090
766.84	14.2235
776.49	12.0856
778.00	17.5908
778.57	15.3958
778.89	17.5977
783.80	11.0217
785.46	15.4411
792.07	18.8028

795.84	13.2938
796.30	11.0803
798.80	27.7298
801.93	19.9918
805.60	25.5844
810.29	18.9471
810.76	15.6064
815.85	15.6393
817.79	12.2978
818.51	13.4198
819.60	12.3072
826.30	15.7068
828.27	19.0876
831.60	19.1136
831.96	19.1167
834.83	22.5165
836.80	0.0000
846.75	21.7195
848.13	22.6373
856.28	0.0000
856.80	11.8120
860.37	17.2883
867.32	16.4232
867.82	21.9018
871.10	17.3612
873.19	10.9740
874.81	19.2163
875.33	0.0000
876.40	22.8912
879.36	19.2507
880.27	18.3403
880.51	18.3420
881.50	16.5142
883.24	10.0987
884.67	17.4530
889.25	17.4836
896.60	20.3017
898.02	15.6959
899.00	12.0072
903.28	11.1018
911.07	12.0625
911.07	12.0625
911.07	12.0625
919.63	7.4469
920.93	13.0382
925.00	10.2599
925.24	8.3953
926.50	7.4660
935.52	6.5545
937.48	14.9926
944.10	10.3324
946.00	13.1595
949.00	5.6459
962.29	13.2375
964.01	17.9762
966.15	17.9897
968.20	17.0556
969.11	11.3742
969.11	11.3742
969.11	11.3742
977.42	8.5559
980.50	13.3236
983.50	17.1488
989.30	15.2742
996.32	22.9682
1001.03	12.4614
1001.68	13.4230
1004.76	19.1963
1021.30	0.0000
1024.50	0.0000
1034.80	15.5156
1036.00	14.5518
1037.82	9.7070
1038.57	8.7385
1038.76	0.0000
1045.16	10.7046
1046.59	11.6830
1048.07	17.5333

1050.47	11.6982
1050.47	11.6982
1062.04	7.8289
1063.62	5.8746
1076.63	6.8831
1077.35	4.9177
1078.86	7.8723
1085.78	10.8485
1099.22	13.8674
1112.02	12.9295
1112.84	12.9333
1115.52	16.9270
1120.29	17.9499
1120.29	17.9499
1120.29	17.9499
1120.29	17.9499
1120.51	17.9508
1121.28	7.9801
1124.00	0.0000
1129.67	9.0013
1131.51	0.0000
1147.95	0.0000
1167.94	11.1327
1173.22	13.1777
1175.09	16.2281
1177.93	5.0757
1189.05	7.1299
1204.90	10.2339
1205.75	15.3545
1213.00	5.1292
1221.42	5.1418
1230.97	6.1875
1235.34	5.1628
1236.41	0.0000
1238.25	7.2341
1246.25	6.2150
1260.41	0.0000
1271.85	7.3042
1274.45	14.6193
1274.54	14.6193
1291.56	11.5419
1298.22	0.0000
1312.09	5.2764
1325.50	4.2367
1325.50	4.2367
1332.49	8.4895
1333.61	10.6152
1360.21	4.2766
1362.66	0.0000
1365.15	5.3528
1368.21	9.6429
1368.53	0.0000
1376.25	10.7373
1384.27	8.6078
1394.10	10.7876
1395.20	8.6328
1407.95	12.9920
1434.06	16.3499
1436.60	5.4534
1457.56	0.0000
1460.81	7.6819
1489.15	8.2888
1509.49	11.1074
1596.49	5.6702
1620.62	6.6522
1678.03	0.0000
1691.02	8.6895
1691.02	8.6895
1706.46	0.0000
1750.46	0.0000
1764.49	8.8293
1764.49	8.8293
1764.49	8.8293
1764.49	8.8293
1770.23	2.9468
1771.40	5.8950
1791.20	0.0000
1808.65	5.9414

1836.01

7.9668

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202006617

Total Uranium Activity	-9.3609E-01	ug/g
Total Uranium Counting Unc.	1.4322E+00	ug/g
Total Uranium Tpu	7.3073E-07	ug/g
Total Uranium Mda	1.1938E+00	ug/g

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*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON , SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID : G1202006617
*  ANALYST       : MXR1           DETECTOR   : GAM11
*  SAMPLE DATE   : 31-DEC-2009 00:00:00.00 COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 15:52:27.19 SAMPLE ALQT: 136.450 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.404E-02
GROSS GAMMA ERROR   (pCi/GRAM ) : 4.690E-02
GROSS GAMMA MDA     (pCi/GRAM ) : 8.519E-02
GROSS GAMMA DLC     (pCi/GRAM ) : 3.941E-02

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 18:06:41.57

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                          *
*                                     Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006618.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 16:06:15.
Sample ID          : G1202006618 Sample quantity : 1.33620E+02 GRAM
Detector name      : GAM18 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:01.59 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 937704 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	75.13*	461	417	1.21	149.37	143	29	6.40E-02	8.9	2.55E+00
2	3	77.48	637	357	1.02	154.08	143	29	8.85E-02	6.2	
3	0	87.04	138	548	1.03	173.19	172	7	1.92E-02	29.0	
4	4	90.33	112	210	0.89	179.77	178	17	1.55E-02	18.8	1.76E+00
5	4	93.37*	213	531	1.51	185.85	178	17	2.95E-02	21.7	
6	0	186.06*	295	353	1.53	371.15	366	11	4.10E-02	14.2	
7	0	209.91	143	311	1.18	418.85	414	10	1.99E-02	24.6	
8	5	238.95*	1679	179	1.21	476.90	469	19	2.33E-01	2.8	2.49E+00
9	5	241.89	397	255	1.90	482.78	469	19	5.51E-02	12.7	
10	0	270.60	136	245	1.26	540.19	536	10	1.89E-02	23.1	
11	2	295.50*	602	169	1.60	589.97	585	21	8.37E-02	5.9	3.64E+00
12	2	300.22	142	202	1.72	599.40	585	21	1.98E-02	19.9	
13	0	328.78	94	194	0.91	656.50	652	10	1.31E-02	29.7	
14	0	338.53*	314	186	1.43	676.00	672	9	4.36E-02	9.8	
15	0	352.16*	938	215	1.29	703.24	696	13	1.30E-01	4.7	
16	0	463.84	156	153	1.54	926.55	920	16	2.17E-02	19.4	
17	0	511.10*	207	212	1.75	1021.04	1013	18	2.87E-02	20.1	
18	0	583.54*	529	163	1.53	1165.88	1158	14	7.34E-02	6.8	
19	0	609.53*	745	182	1.40	1217.84	1211	15	1.03E-01	5.5	
20	0	727.44	140	92	1.31	1453.61	1447	14	1.95E-02	16.7	
21	0	768.59	78	103	1.58	1535.88	1530	14	1.09E-02	30.0	
22	0	794.64	72	86	1.67	1587.98	1580	14	1.00E-02	29.9	
23	0	861.30	93	141	2.26	1721.26	1712	22	1.29E-02	34.5	
24	0	911.36*	386	70	1.87	1821.36	1814	14	5.35E-02	7.0	
25	0	937.60	34	105	4.47	1873.82	1859	18	4.70E-03	74.0	
26	1	964.90*	78	97	2.32	1928.42	1920	24	1.08E-02	29.5	1.14E+00
27	1	969.10*	247	67	2.04	1936.83	1920	24	3.44E-02	9.7	
28	0	1120.23	150	85	2.14	2239.04	2232	16	2.08E-02	16.0	
29	0	1239.49*	39	113	1.32	2477.51	2467	16	5.41E-03	64.4	
30	0	1378.29	43	38	2.16	2755.09	2748	11	5.96E-03	31.9	
31	0	1460.84*	1467	58	2.35	2920.17	2909	21	2.04E-01	2.9	
32	0	1729.70	58	5	2.42	3457.85	3448	17	8.09E-03	15.5	
33	0	1764.13*	178	10	2.09	3526.72	3518	19	2.48E-02	9.0	

Flag: "*" = Peak area was modified by background subtraction

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006618.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 12:00:00 Acquisition date : 7-JAN-2010 16:06:15
Sample ID        : G1202006618 Sample quantity : 133.62 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.59 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00

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Full Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	+	1460.81	*	2.041E+01	1.957E+00	4.049E-01	3.073E-02	50.408
CD-109	+	88.03	*	1.666E+00	9.783E-01	1.211E+00	1.119E-01	1.376
SN-126		64.28		-1.074E-01	5.034E-01	8.173E-01	1.208E-01	-0.131
	+	86.94		6.797E-01	4.847E-01	4.353E-01	1.805E-01	1.561
	+	87.57	*	1.635E-01	9.601E-02	1.020E-01	9.399E-03	1.603
TL-208		277.35		2.861E-01	2.910E-01	4.930E-01	5.178E-02	0.580
	+	510.84		6.237E-01	2.598E-01	1.519E-01	1.615E-02	4.107
	+	583.14	*	4.487E-01	7.076E-02	4.348E-02	3.408E-03	10.320
	+	860.37		7.169E-01	5.011E-01	3.112E-01	3.480E-02	2.304
BI-211		72.87		4.860E+00	3.008E+00	4.745E+00	3.918E-01	1.024
	+	351.07	*	3.737E+00	4.229E-01	2.295E-01	1.473E-02	16.285
PB-212	+	74.81		2.442E+00	5.317E-01	4.773E-01	5.983E-02	5.116
	+	77.11		1.881E+00	2.836E-01	2.670E-01	2.263E-02	7.045
	+	87.30		7.562E-01	4.504E-01	4.736E-01	6.433E-02	1.597
	+	238.63	*	1.558E+00	1.420E-01	6.774E-02	4.839E-03	22.998
	+	300.09		1.960E+00	7.973E-01	8.728E-01	7.167E-02	2.245
PO-212	+	74.81		2.442E+00	5.317E-01	4.773E-01	5.983E-02	5.116
	+	77.11		1.881E+00	2.836E-01	2.670E-01	2.263E-02	7.045
	+	87.30		7.562E-01	4.504E-01	4.736E-01	6.433E-02	1.597
		115.19		1.618E+00	2.962E+00	4.878E+00	3.073E-01	0.332
	+	238.63	*	1.558E+00	1.420E-01	6.774E-02	4.839E-03	22.998
	+	300.09		1.960E+00	7.973E-01	8.728E-01	7.167E-02	2.245
BI-214	+	609.31	*	1.185E+00	1.680E-01	8.434E-02	7.534E-03	14.056
	+	1120.29		1.194E+00	3.977E-01	3.222E-01	3.085E-02	3.706
	+	1764.49		1.873E+00	3.560E-01	2.125E-01	1.292E-02	8.811
PB-214	+	74.81		4.208E+00	8.842E-01	8.225E-01	9.182E-02	5.116
	+	77.11		3.225E+00	5.448E-01	4.578E-01	5.218E-02	7.045
	+	87.30		1.295E+00	7.672E-01	8.113E-01	9.733E-02	1.597
	+	241.98		2.206E+00	5.853E-01	4.072E-01	3.220E-02	5.417
	+	295.21		1.460E+00	2.113E-01	1.532E-01	1.300E-02	9.532
	+	351.92	*	1.300E+00	1.620E-01	7.997E-02	6.616E-03	16.255
PO-214	+	74.81		4.208E+00	8.842E-01	8.225E-01	9.182E-02	5.116
	+	77.11		3.225E+00	5.448E-01	4.578E-01	5.218E-02	7.045
	+	87.30		1.295E+00	7.672E-01	8.113E-01	9.733E-02	1.597

----- Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-216	+	241.98		2.206E+00	5.853E-01	4.072E-01	3.220E-02	5.417
	+	295.21		1.460E+00	2.113E-01	1.532E-01	1.300E-02	9.532
	+	351.92	*	1.300E+00	1.620E-01	7.997E-02	6.616E-03	16.255
	+	74.81		2.442E+00	5.317E-01	4.773E-01	5.983E-02	5.116
	+	77.11		1.881E+00	2.836E-01	2.670E-01	2.263E-02	7.045
	+	87.30		7.562E-01	4.504E-01	4.736E-01	6.433E-02	1.597
PO-218	+	238.63	*	1.558E+00	1.420E-01	6.774E-02	4.839E-03	22.998
	+	300.09		1.960E+00	7.973E-01	8.728E-01	7.167E-02	2.245
	+	74.81		4.208E+00	8.842E-01	8.225E-01	9.182E-02	5.116
	+	77.11		3.225E+00	5.448E-01	4.578E-01	5.218E-02	7.045
	+	87.30		1.295E+00	7.672E-01	8.113E-01	9.733E-02	1.597
	+	241.98		2.206E+00	5.853E-01	4.072E-01	3.220E-02	5.417
RA-224	+	295.21		1.460E+00	2.113E-01	1.532E-01	1.300E-02	9.532
	+	351.92	*	1.300E+00	1.620E-01	7.997E-02	6.616E-03	16.255
	+	240.98	*	4.182E+00	1.085E+00	7.699E-01	4.289E-02	5.432
RA-226	+	609.31	*	1.185E+00	1.680E-01	8.434E-02	7.534E-03	14.056
	+	1120.29		1.194E+00	3.977E-01	3.222E-01	3.085E-02	3.706
	+	1764.49		1.873E+00	3.560E-01	2.125E-01	1.292E-02	8.811
AC-228	+	338.32		1.387E+00	6.278E-01	3.027E-01	1.234E-01	4.582
	+	911.07	*	1.407E+00	2.715E-01	1.552E-01	2.056E-02	9.066
	+	969.11		1.587E+00	4.889E-01	2.565E-01	6.143E-02	6.188
RA-228	+	338.32		1.387E+00	6.278E-01	3.027E-01	1.234E-01	4.582
	+	911.07	*	1.407E+00	2.715E-01	1.552E-01	2.056E-02	9.066
	+	969.11		1.587E+00	4.889E-01	2.565E-01	6.143E-02	6.188
TH-228	+	74.81		2.482E+00	4.888E-01	4.851E-01	4.088E-02	5.116
	+	77.11		1.912E+00	2.882E-01	2.714E-01	2.300E-02	7.045
	+	87.30		7.684E-01	4.512E-01	4.813E-01	4.424E-02	1.597
TH-230	+	238.63	*	1.583E+00	1.443E-01	6.884E-02	4.918E-03	22.998
	+	300.09		1.992E+00	1.417E+00	8.870E-01	5.227E-01	2.245
	+	609.31	*	1.185E+00	1.680E-01	8.434E-02	7.534E-03	14.056
	+	1120.29		1.194E+00	3.977E-01	3.222E-01	3.085E-02	3.706
	+	1764.49		1.873E+00	3.560E-01	2.125E-01	1.292E-02	8.811
	+	338.32		1.387E+00	2.844E-01	3.027E-01	1.751E-02	4.582
TH-232	+	911.07	*	1.407E+00	2.715E-01	1.552E-01	2.056E-02	9.066
	+	969.11		1.587E+00	4.889E-01	2.565E-01	6.143E-02	6.188
	+	609.31	*	1.185E+00	1.680E-01	8.434E-02	7.534E-03	14.056
U-234	+	1120.29		1.194E+00	3.977E-01	3.222E-01	3.085E-02	3.706
	+	1764.49		1.873E+00	3.560E-01	2.125E-01	1.292E-02	8.811
	+	86.50	*	4.801E-01	2.988E-01	3.095E-01	6.982E-02	1.551
NP-237	+	95.87		1.534E-01	9.014E-01	1.322E+00	3.229E-01	0.116
	+	74.67	*	3.959E-01	7.785E-02	7.769E-02	6.483E-03	5.096
	+	86.72		1.800E+01	1.057E+01	1.157E+01	1.058E+00	1.556
AM-243	+	117.66		1.393E-01	3.201E+00	5.158E+00	3.173E-01	0.027
	+	142.18		-1.004E+01	1.438E+01	2.167E+01	1.194E+00	-0.463
	+	511.00	*	1.347E-01	5.498E-02	3.281E-02	2.167E-03	4.106

----- 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	*	1.739E-01	2.424E-01	4.162E-01	3.016E-02	0.418

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		-9.019E-03	3.303E-02	5.300E-02	3.606E-03	-0.170
NA-24	1368.53	*		-5.714E-01	3.303E-02	Half-Life too short		
AL-26	1129.67			-3.806E-01	1.247E+00	1.832E+00	1.223E-01	-0.208
	1808.65	*		1.008E-02	2.082E-02	3.674E-02	2.145E-03	0.274
TI-44	67.85			1.640E-02	4.311E-02	7.121E-02	5.727E-03	0.230
	78.38	+		3.472E-01	5.235E-02	7.527E-02	6.436E-03	4.612
SC-46	889.25	*		-1.348E-02	2.925E-02	4.596E-02	5.127E-03	-0.293
	1120.51	+		2.062E-01	6.731E-02	9.551E-02	6.598E-03	2.159
V-48	944.10			7.154E-03	7.020E-01	1.088E+00	1.151E-01	0.007
	983.50	*		9.904E-03	5.084E-02	8.374E-02	8.283E-03	0.118
	1312.09			-1.790E-02	6.188E-02	9.853E-02	7.177E-03	-0.182
CR-51	320.08	*		9.329E-02	2.860E-01	4.689E-01	3.019E-02	0.199
MN-52	744.21			1.398E-01	1.919E-01	3.341E-01	2.947E-02	0.418
	848.13			1.171E+00	5.633E+00	9.391E+00	9.825E-01	0.125
	935.52			2.102E-01	2.298E-01	3.966E-01	4.254E-02	0.530
	1246.25			4.533E+00	6.773E+00	1.023E+01	6.581E-01	0.443
	1333.61			2.119E+00	3.765E+00	6.523E+00	4.927E-01	0.325
	1434.06	*		6.897E-03	2.039E-01	3.322E-01	2.448E-02	0.021
MN-54	834.83	*		1.220E-02	3.014E-02	5.079E-02	5.203E-03	0.240
CO-56	846.75	*		-1.640E-02	3.052E-02	4.804E-02	5.015E-03	-0.341
	977.42			1.258E+00	2.261E+00	3.579E+00	3.580E-01	0.352
	1037.82			-1.710E-01	2.183E-01	3.288E-01	3.046E-02	-0.520
	1175.09			-6.367E-02	1.596E+00	2.633E+00	1.461E-01	-0.024
	1238.25	+		8.775E-02	1.131E-01	1.229E-01	8.194E-03	0.714
	1360.21			4.854E-01	7.119E-01	1.244E+00	9.349E-02	0.390
	1771.40			5.765E-02	1.975E-01	2.928E-01	1.770E-02	0.197
CO-57	122.06	*		5.434E-04	2.178E-02	3.499E-02	2.073E-03	0.016
	136.48			-2.442E-02	1.666E-01	2.636E-01	1.725E-02	-0.093
CO-58	810.76	*		-1.984E-02	3.055E-02	4.789E-02	4.728E-03	-0.414
FE-59	142.65			-4.217E-01	2.257E+00	3.487E+00	1.919E-01	-0.121
	192.34			1.844E-01	7.654E-01	1.251E+00	1.450E-01	0.147
	1099.22	*		-2.542E-02	6.440E-02	1.038E-01	8.540E-03	-0.245
	1291.56			1.440E-02	9.094E-02	1.512E-01	1.271E-02	0.095
CO-60	1173.22			-2.629E-02	3.278E-02	5.084E-02	2.810E-03	-0.517
	1332.49	*		1.405E-02	2.628E-02	4.535E-02	3.427E-03	0.310
ZN-65	1115.52	*		-2.761E-03	7.375E-02	1.045E-01	7.359E-03	-0.026
GE-68	1077.35	*		6.487E-01	9.014E-01	1.582E+00	1.257E-01	0.410
AS-73	53.44	*		2.421E-01	9.917E-01	1.642E+00	1.302E-01	0.147
AS-74	595.88	*		-3.918E-02	7.351E-02	1.146E-01	8.234E-03	-0.342
	634.78			1.434E-01	2.669E-01	4.461E-01	3.322E-02	0.321
SE-75	66.05			-7.715E+00	4.763E+00	7.211E+00	7.142E-01	-1.070
	96.73			-8.639E-01	7.645E-01	1.032E+00	1.361E-01	-0.837
	121.11			1.106E-02	1.152E-01	1.858E-01	1.734E-02	0.060
	136.00			-1.100E-02	3.135E-02	4.911E-02	2.797E-03	-0.224
	198.60			1.425E-01	1.463E+00	2.399E+00	1.628E-01	0.059
	264.65	*		-7.044E-03	3.426E-02	5.348E-02	3.059E-03	-0.132
	279.53			5.361E-02	8.355E-02	1.401E-01	8.657E-03	0.383
	303.91			-1.383E-01	1.823E+00	2.562E+00	2.437E-01	-0.054
	400.65			1.298E-01	2.024E-01	3.405E-01	3.102E-02	0.381

---- 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		4.887E+02	2.870E+02	4.040E+02	3.733E+01	1.210
		200.40		6.934E+01	1.727E+02	2.924E+02	1.575E+01	0.237
	+	239.00		3.402E+02	2.700E+01	4.196E+01	2.334E+00	8.107
		249.79		-4.946E+01	6.538E+01	1.032E+02	5.783E+00	-0.479
		281.68		-1.219E+02	9.489E+01	1.439E+02	8.210E+00	-0.847
		297.23		5.720E+02	8.027E+01	1.489E+02	8.546E+00	3.843
		303.76		-5.367E+00	2.104E+02	2.968E+02	1.707E+01	-0.018
		439.47		4.100E+01	1.433E+02	2.378E+02	1.450E+01	0.172
		484.57		1.661E+01	2.230E+02	3.691E+02	2.369E+01	0.045
		520.65	*	-4.422E+00	1.037E+01	1.599E+01	1.067E+00	-0.276
		574.64		-1.379E+02	2.264E+02	3.417E+02	2.406E+01	-0.404
		578.91		-1.876E+01	1.011E+02	1.391E+02	9.832E+00	-0.135
		585.48		2.309E+03	3.370E+02	5.752E+02	4.092E+01	4.015
		755.35		1.431E+02	1.638E+02	2.868E+02	2.577E+01	0.499
		817.79		-3.812E+01	1.313E+02	2.114E+02	2.107E+01	-0.180
SR-82	698.33		1.224E+01	2.582E+01	4.433E+01	3.609E+00	0.276	
	776.49	*	-1.840E-01	3.520E-01	4.971E-01	4.629E-02	-0.370	
	1395.20		-3.997E+00	8.510E+00	1.312E+01	9.778E-01	-0.305	
RB-83	520.41	*	-2.403E-02	5.069E-02	7.788E-02	5.194E-03	-0.309	
	529.64		1.700E-02	7.376E-02	1.225E-01	8.248E-03	0.139	
	552.65		6.597E-02	1.421E-01	2.387E-01	1.645E-02	0.276	
RB-84	881.50	*	-1.741E-02	5.183E-02	8.239E-02	9.081E-03	-0.211	
KR-85	513.99	*	2.440E+01	6.750E+00	1.168E+01	7.741E-01	2.088	
SR-85	513.99	*	1.265E-01	3.500E-02	6.058E-02	4.013E-03	2.088	
RB-86	1076.63	*	2.973E-01	5.998E-01	1.037E+00	8.254E-02	0.287	
Y-88	898.02		6.049E-03	3.344E-02	5.377E-02	6.095E-03	0.112	
	1836.01	*	8.927E-03	2.428E-02	4.201E-02	2.393E-03	0.213	
	392.90	*	9.566E-03	2.231E-02	3.822E-02	2.198E-03	0.250	
ZR-88	1204.90	*	-4.750E+00	1.394E+01	2.243E+01	1.326E+00	-0.212	
Y-91	702.63	*	-9.238E-03	2.485E-02	4.049E-02	3.321E-03	-0.228	
	871.10		-7.072E-03	2.933E-02	4.001E-02	4.339E-03	-0.177	
NB-95	765.79	*	5.061E-02	3.686E-02	5.857E-02	5.358E-03	0.864	
NB-95M	235.69	*	-3.539E-03	1.066E-01	1.540E-01	1.130E-02	-0.023	
ZR-95	724.18		4.734E-02	8.151E-02	1.228E-01	1.138E-02	0.386	
	756.15	*	4.279E-02	5.223E-02	9.113E-02	8.967E-03	0.470	
NB-97	657.90	*	-1.760E-01	5.223E-02	Half-Life	too short		
	1024.50		-3.907E+00	5.223E-02	Half-Life	too short		
ZR-97	254.15		-1.288E+00	5.223E-02	Half-Life	too short		
	355.39		7.129E+00	5.223E-02	Half-Life	too short		
	507.63	*	7.339E+00	5.223E-02	Half-Life	too short		
	602.52		-2.335E+00	5.223E-02	Half-Life	too short		
	1021.30		-1.697E+00	5.223E-02	Half-Life	too short		
	1147.95		-1.103E+00	5.223E-02	Half-Life	too short		
	1362.66		-7.269E+00	5.223E-02	Half-Life	too short		
	1750.46		-5.031E+00	5.223E-02	Half-Life	too short		
MO-99	140.51		-1.078E+01	2.805E+01	4.277E+01	1.150E+01	-0.252	
	181.06		5.012E+00	1.885E+01	2.828E+01	4.802E+00	0.177	
	366.43		4.556E+01	7.999E+01	1.386E+02	8.007E+00	0.329	
	739.58	*	2.746E+00	1.062E+01	1.796E+01	2.740E+00	0.153	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	778.00			-3.270E+01	3.530E+01	5.302E+01	4.950E+00	-0.617
	140.51	*		-2.211E+11	3.530E+01	Half-Life	too short	
RH-101	127.23			-2.243E-02	2.765E-02	4.271E-02	2.467E-03	-0.525
	198.01	*		9.060E-04	2.696E-02	4.412E-02	2.372E-03	0.021
	325.23			-2.392E-01	2.004E-01	2.549E-01	1.473E-02	-0.938
RH-102	418.52			3.285E-02	2.092E-01	3.518E-01	2.091E-02	0.093
	475.06	*		4.140E-03	2.166E-02	3.614E-02	2.296E-03	0.115
	631.29			-9.293E-03	3.899E-02	6.161E-02	4.572E-03	-0.151
	697.49			1.527E-02	5.745E-02	9.748E-02	7.924E-03	0.157
	766.84			1.564E-01	9.775E-02	1.565E-01	1.434E-02	0.999
	1046.59			3.044E-02	8.064E-02	1.387E-01	1.197E-02	0.219
	1112.84			-3.837E-02	1.856E-01	2.577E-01	1.830E-02	-0.149
RU-103	497.08	*		-1.911E-02	2.989E-02	4.690E-02	6.089E-03	-0.408
	610.33	+		1.304E+01	2.535E+00	2.432E+00	3.900E-01	5.361
RH-106	511.85	+		6.743E-01	2.752E-01	3.564E-01	2.356E-02	1.892
	621.84	*		4.278E-02	2.353E-01	3.842E-01	4.834E-02	0.111
	1050.47			9.029E-01	1.718E+00	2.979E+00	2.545E-01	0.303
RU-106	511.85	+		6.743E-01	2.752E-01	3.564E-01	2.356E-02	1.892
	621.84	*		4.278E-02	2.353E-01	3.842E-01	2.827E-02	0.111
	1050.47			9.029E-01	1.718E+00	2.979E+00	2.545E-01	0.303
AG-108M	433.93	*		1.571E-02	2.392E-02	4.120E-02	2.692E-03	0.381
	614.37			8.673E-04	3.115E-02	4.346E-02	3.349E-03	0.020
	722.95			2.422E-04	3.459E-02	4.965E-02	4.391E-03	0.005
AG-110M	657.75	*		-2.113E-02	2.720E-02	4.345E-02	3.427E-03	-0.486
	677.61			-2.410E-02	2.082E-01	3.457E-01	2.805E-02	-0.070
	706.67			9.240E-03	1.504E-01	2.519E-01	2.144E-02	0.037
	763.93			8.920E-02	1.328E-01	2.016E-01	1.885E-02	0.442
	884.67			2.218E-02	3.560E-02	6.095E-02	6.883E-03	0.364
	937.48	+		1.071E-01	1.588E-01	1.382E-01	1.512E-02	0.775
	1384.27			9.866E-02	1.311E-01	2.034E-01	1.577E-02	0.485
IN-111	171.28			1.404E-01	9.580E-01	1.624E+00	8.547E-02	0.086
	245.39	*		8.920E-01	1.055E+00	1.609E+00	8.993E-02	0.554
IN-113M	391.69	*		-3.743E-02	3.319E-02	5.211E-02	3.197E-03	-0.718
SN-113	391.69	*		-3.743E-02	3.319E-02	5.211E-02	3.197E-03	-0.718
IN-114M	190.27	*		-1.579E-02	1.577E-01	2.313E-01	1.235E-02	-0.068
CD-115	260.90			-5.658E+01	1.398E+02	2.209E+02	1.247E+01	-0.256
	492.35			1.663E+01	3.505E+01	5.942E+01	3.847E+00	0.280
	527.90	*		-3.831E+00	1.066E+01	1.699E+01	1.142E+00	-0.225
SN-117M	156.02			4.722E-01	1.800E+00	3.082E+00	1.646E-01	0.153
	158.56	*		-2.346E-02	4.333E-02	7.187E-02	3.820E-03	-0.326
SB-122	563.90	*		7.969E-01	1.988E+00	3.316E+00	2.311E-01	0.240
	692.80			-3.603E-01	4.282E+01	7.152E+01	5.766E+00	-0.005
I-123	159.00	*		-3.331E+00	4.282E+01	Half-Life	too short	
	528.96			1.878E+02	4.282E+01	Half-Life	too short	
TE-123M	159.00	*		-4.354E-03	2.124E-02	3.570E-02	1.926E-03	-0.122
I-124	602.71	*		1.497E-01	7.107E-01	1.010E+00	7.300E-02	0.148
	722.78			-2.289E-01	4.288E+00	6.119E+00	5.200E-01	-0.037
	1325.50			-1.997E+01	2.958E+01	4.494E+01	3.353E+00	-0.444
	1376.25			6.533E+01	3.150E+01	5.915E+01	4.430E+00	1.104

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124	1509.49			6.934E+00	1.310E+01	2.309E+01	1.654E+00	0.300
	1691.02			-1.721E-02	3.490E+00	5.760E+00	3.715E-01	-0.003
	602.71			7.396E-03	3.510E-02	4.987E-02	3.607E-03	0.148
	645.85			-8.715E-02	3.810E-01	6.016E-01	4.877E-02	-0.145
	709.31			1.251E+00	2.018E+00	3.495E+00	2.901E-01	0.358
	713.82			-4.072E-01	1.189E+00	1.935E+00	2.295E-01	-0.210
	722.78			-1.639E-02	3.071E-01	4.381E-01	3.806E-02	-0.037
	+	968.20		1.654E+01	3.617E+00	6.024E+00	6.126E-01	2.746
	1045.16			4.233E-01	1.666E+00	2.843E+00	2.462E-01	0.149
	1325.50			-1.527E+00	2.262E+00	3.437E+00	2.564E-01	-0.444
	1368.21			-5.143E-01	1.333E+00	1.983E+00	2.537E-01	-0.259
	1436.60			4.429E-01	2.858E+00	4.720E+00	3.475E-01	0.094
SB-125	1691.02	*		-2.907E-04	5.895E-02	9.729E-02	6.712E-03	-0.003
	427.89	*		3.682E-02	6.462E-02	1.110E-01	6.937E-03	0.332
	+	463.38		9.324E-01	3.680E-01	4.214E-01	3.021E-02	2.213
	600.56			-6.975E-02	1.428E-01	2.236E-01	1.781E-02	-0.312
TE-125M I-126	635.90			-8.119E-03	1.949E-01	3.125E-01	2.577E-02	-0.026
	109.28	*		3.823E+00	7.863E+00	1.295E+01	1.139E+00	0.295
	388.63			1.280E-01	1.564E-01	2.731E-01	1.570E-02	0.469
	666.33	*		-4.562E-02	1.547E-01	2.550E-01	1.960E-02	-0.179
SB-126	753.82			9.691E-01	1.110E+00	1.946E+00	1.745E-01	0.498
	223.80			-3.354E-01	3.161E+00	5.208E+00	2.863E-01	-0.064
	278.60			2.297E+00	1.986E+00	3.404E+00	1.940E-01	0.675
	+	296.50		1.542E+01	2.012E+00	3.229E+00	1.853E-01	4.775
	414.70			-1.299E-03	6.032E-02	1.005E-01	5.946E-03	-0.013
	415.30			2.244E+00	4.888E+00	8.352E+00	4.943E-01	0.269
	555.20			5.820E-01	3.081E+00	5.081E+00	3.510E-01	0.115
	573.80			1.752E-01	8.429E-01	1.387E+00	9.756E-02	0.126
	593.00			-6.008E-01	7.404E-01	1.128E+00	8.082E-02	-0.533
	656.30			-1.002E+00	2.657E+00	4.356E+00	3.305E-01	-0.230
	666.33			-1.911E-02	6.479E-02	1.068E-01	8.211E-03	-0.179
	675.00			-6.725E-01	1.538E+00	2.501E+00	1.953E-01	-0.269
SB-127	695.00			7.694E-03	6.158E-02	1.037E-01	8.390E-03	0.074
	697.00			2.381E-02	2.144E-01	3.605E-01	2.928E-02	0.066
	720.50	*		7.070E-02	1.246E-01	1.884E-01	1.595E-02	0.375
	856.80			-9.258E-02	4.572E-01	6.296E-01	6.677E-02	-0.147
	989.30			-3.237E-01	8.622E-01	1.342E+00	1.313E-01	-0.241
	1034.80			7.260E-01	6.545E+00	1.065E+01	9.455E-01	0.068
	1213.00			4.880E-01	3.494E+00	5.824E+00	3.502E-01	0.084
	61.10			-1.317E+01	6.975E+01	1.157E+02	1.251E+01	-0.114
	252.40			-3.177E-01	3.847E+00	6.282E+00	2.614E+00	-0.051
	290.80			-1.447E+00	2.206E+01	3.116E+01	2.961E+00	-0.046
	411.60			7.228E+00	1.129E+01	1.938E+01	2.841E+00	0.373
	444.90			1.025E+00	8.774E+00	1.465E+01	1.655E+00	0.070
SB-127	473.00			8.245E-02	1.501E+00	2.420E+00	2.849E-01	0.034
	543.00			1.179E+01	1.435E+01	2.455E+01	3.355E+00	0.480
	603.60			9.490E-01	1.260E+01	1.768E+01	2.104E+00	0.054
	685.20	*		2.474E-01	1.154E+00	1.958E+00	2.196E-01	0.126
	698.50			6.246E+00	1.352E+01	2.315E+01	3.656E+00	0.270

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
XE-127		722.20		8.851E+00	2.895E+01	4.275E+01	4.866E+00	0.207
		783.80		2.109E+00	3.199E+00	5.505E+00	7.302E-01	0.383
		57.60		2.908E-01	6.275E+00	1.053E+01	8.119E-01	0.028
		145.22		5.837E-01	5.776E-01	9.541E-01	5.215E-02	0.612
		172.10		-3.473E-02	8.901E-02	1.476E-01	7.772E-03	-0.235
I-131		202.84	*	-1.951E-02	3.732E-02	6.091E-02	3.288E-03	-0.320
		374.96		-6.834E-03	1.386E-01	2.325E-01	1.341E-02	-0.029
		80.18		-4.628E-01	4.682E+00	6.864E+00	5.989E-01	-0.067
		284.30		-7.375E-01	1.252E+00	1.972E+00	1.259E-01	-0.374
		364.48	*	-1.336E-02	9.048E-02	1.513E-01	9.782E-03	-0.088
TE-132		636.97		1.358E-01	1.204E+00	1.953E+00	1.566E-01	0.070
		722.89		-9.092E-02	6.373E+00	9.127E+00	7.816E-01	-0.010
		49.72		-3.190E+00	3.026E+01	5.086E+01	5.343E+00	-0.063
		111.76		-1.810E+00	3.035E+01	4.886E+01	4.695E+00	-0.037
		116.30		1.098E+01	2.885E+01	4.715E+01	4.439E+00	0.233
BA-133		228.16	*	-1.761E-01	6.846E-01	1.119E+00	1.619E-01	-0.157
		53.15		3.839E-01	4.266E+00	7.022E+00	5.572E-01	0.055
		79.62		8.780E-01	1.246E+00	1.886E+00	2.873E-01	0.465
		81.00		-2.356E-02	9.027E-02	1.311E-01	2.088E-02	-0.180
		276.40		-3.684E-02	3.430E-01	4.765E-01	6.154E-02	-0.077
I-133		302.84		8.750E-02	1.240E-01	1.836E-01	2.135E-02	0.477
		356.01	*	-8.791E-03	3.766E-02	5.134E-02	5.931E-03	-0.171
		383.85		-3.678E-01	2.214E-01	3.314E-01	3.595E-02	-1.110
	+	510.53		3.185E+00	2.214E-01	Half-Life	too short	
		529.87	*	-1.526E-04	2.214E-01	Half-Life	too short	
CS-134		706.58		4.655E-02	2.214E-01	Half-Life	too short	
		856.28		-2.941E-01	2.214E-01	Half-Life	too short	
		875.33		2.156E-01	2.214E-01	Half-Life	too short	
		1236.41		1.759E+00	2.214E-01	Half-Life	too short	
		1298.22		-2.110E-01	2.214E-01	Half-Life	too short	
I-135		475.35		2.826E-01	1.427E+00	2.382E+00	1.514E-01	0.119
		563.23		-1.428E-02	2.727E-01	4.419E-01	3.122E-02	-0.032
		569.32		9.608E-03	1.578E-01	2.514E-01	1.797E-02	0.038
		604.70		1.757E-03	3.047E-02	4.268E-02	3.103E-03	0.041
	+	795.84	*	8.589E-02	5.207E-02	6.702E-02	6.482E-03	1.282
CS-135		801.93		-2.150E-01	3.355E-01	4.837E-01	4.718E-02	-0.444
		1038.57		-2.037E+00	2.632E+00	3.954E+00	3.479E-01	-0.515
		1167.94		1.152E+00	1.822E+00	3.154E+00	1.789E-01	0.365
		1365.15		-3.716E-01	8.880E-01	1.380E+00	1.098E-01	-0.269
		268.24	*	1.715E-01	1.296E-01	2.009E-01	1.519E-02	0.854
I-135		288.45		2.259E+11	1.296E-01	Half-Life	too short	
		417.63		-1.014E+11	1.296E-01	Half-Life	too short	
		546.56		2.324E+10	1.296E-01	Half-Life	too short	
		836.80		2.214E+11	1.296E-01	Half-Life	too short	
		1038.76		-1.256E+11	1.296E-01	Half-Life	too short	
I-135		1124.00		9.771E+11	1.296E-01	Half-Life	too short	
		1131.51		-2.897E+10	1.296E-01	Half-Life	too short	
		1260.41	*	-4.937E+10	1.296E-01	Half-Life	too short	
		1457.56		8.272E+12	1.296E-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		1678.03		1.155E+10	1.296E-01	Half-Life	too short	
		1706.46		4.799E+10	1.296E-01	Half-Life	too short	
		1791.20		-7.741E+09	1.296E-01	Half-Life	too short	
	+	66.91		-1.148E+00	8.060E-01	1.215E+00	1.835E-01	-0.945
		86.29		2.255E+00	1.342E+00	1.793E+00	2.364E-01	1.258
		153.22		3.453E-01	5.272E-01	9.151E-01	6.300E-02	0.377
		163.89		-4.613E-02	8.684E-01	1.449E+00	9.900E-02	-0.032
		176.55		3.932E-02	2.897E-01	4.900E-01	2.970E-02	0.080
		273.65		8.005E-03	4.185E-01	5.982E-01	3.898E-02	0.013
		340.57		4.612E-01	1.389E-01	2.273E-01	1.399E-02	2.029
		818.51		-3.170E-03	5.596E-02	9.176E-02	9.163E-03	-0.035
		1048.07	*	-1.705E-02	8.224E-02	1.353E-01	1.213E-02	-0.126
BA-137M		1235.34		5.821E-01	5.330E-01	8.235E-01	8.467E-02	0.707
		661.65	*	2.095E-03	2.887E-02	4.864E-02	3.707E-03	0.043
		661.65	*	2.215E-03	3.052E-02	5.141E-02	3.929E-03	0.043
		165.85	*	1.467E-04	2.258E-02	3.816E-02	2.003E-03	0.004
CE-139		162.64		2.796E-01	6.102E-01	1.038E+00	6.291E-02	0.269
		304.84		-7.329E-01	1.214E+00	1.616E+00	4.408E-01	-0.454
		423.70		-9.625E-01	1.441E+00	2.249E+00	7.155E-01	-0.428
		537.32	*	4.838E-02	1.933E-01	3.200E-01	1.047E-01	0.151
LA-140	+	328.77		5.478E-01	3.270E-01	4.430E-01	2.870E-02	1.237
		432.53		2.754E-01	1.593E+00	2.675E+00	1.773E-01	0.103
		487.03		3.667E-02	1.037E-01	1.746E-01	1.245E-02	0.210
		751.79		-4.450E-01	1.295E+00	2.094E+00	2.058E-01	-0.212
		815.85		-5.346E-02	2.467E-01	3.996E-01	4.319E-02	-0.134
		867.82		-3.859E-01	1.230E+00	1.663E+00	1.855E-01	-0.232
		919.63		9.914E-01	2.189E+00	3.423E+00	4.325E-01	0.290
		925.24		-9.795E-01	9.729E-01	1.300E+00	1.472E-01	-0.754
		1596.49	*	-2.353E-02	6.869E-02	1.096E-01	7.521E-03	-0.215
		145.44	*	5.132E-02	5.247E-02	8.655E-02	4.941E-03	0.593
		57.37		-8.022E-04	5.247E-02	Half-Life	too short	
		231.56		3.748E-03	5.247E-02	Half-Life	too short	
CE-143		293.26	*	6.522E-04	5.247E-02	Half-Life	too short	
		350.59		4.561E-02	5.247E-02	Half-Life	too short	
		490.36		-1.601E-03	5.247E-02	Half-Life	too short	
		664.57		2.043E-03	5.247E-02	Half-Life	too short	
CE-144		721.93		5.748E-04	5.247E-02	Half-Life	too short	
		80.11		-4.576E-02	1.979E+00	2.912E+00	2.522E-01	-0.016
		133.54	*	-1.506E-01	1.690E-01	2.567E-01	3.629E-02	-0.587
		476.78		3.897E-02	5.075E-02	8.732E-02	6.479E-03	0.446
PM-144		618.01		1.032E-02	2.420E-02	3.804E-02	2.896E-03	0.271
		696.49	*	5.807E-03	2.582E-02	4.371E-02	3.549E-03	0.133
		778.57		-1.657E+00	1.796E+00	2.773E+00	2.592E-01	-0.597
		696.49	*	3.937E-01	1.751E+00	2.964E+00	2.405E-01	0.133
PR-144		1489.15		-3.827E+00	8.725E+00	1.329E+01	9.600E-01	-0.288
		453.90	*	1.400E-02	3.152E-02	5.353E-02	4.762E-03	0.262
		633.02		3.381E-01	9.887E-01	1.619E+00	6.011E-01	0.209
		735.90		-7.267E-02	1.171E-01	1.737E-01	4.973E-02	-0.418
PM-146		747.13		-3.358E-02	6.513E-02	1.038E-01	1.473E-02	-0.323

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
ND-147	+	91.11		4.629E-01	1.798E-01	4.378E-01	4.118E-02	1.057
		319.41		-2.812E+00	2.727E+00	4.129E+00	2.385E-01	-0.681
		439.89		1.018E+00	4.586E+00	7.580E+00	4.625E-01	0.134
		531.02	*	7.789E-02	4.146E-01	6.863E-01	9.575E-02	0.113
PM-149		285.90	*	2.672E+01	9.852E+01	1.622E+02	2.294E+01	0.165
EU-152		121.78		9.350E-03	6.251E-02	1.009E-01	7.779E-03	0.093
		244.69		2.957E-01	2.677E-01	4.130E-01	2.307E-02	0.716
		344.27	*	-1.606E-02	8.593E-02	1.181E-01	7.710E-03	-0.136
		443.98		-1.156E-01	7.197E-01	1.183E+00	7.251E-02	-0.098
		778.89		-2.165E-01	2.064E-01	3.151E-01	2.946E-02	-0.687
		867.32		-1.019E-01	6.698E-01	9.233E-01	9.955E-02	-0.110
	+	964.01		5.751E-01	3.445E-01	4.677E-01	4.791E-02	1.230
		1085.78		-2.028E-02	2.742E-01	4.544E-01	3.521E-02	-0.045
		1112.02		3.081E-02	2.446E-01	3.657E-01	2.604E-02	0.084
		1407.95		6.060E-02	1.490E-01	2.517E-01	1.869E-02	0.241
GD-153		69.67		7.525E-01	1.646E+00	2.500E+00	2.029E-01	0.301
		83.37		5.546E+00	1.419E+01	2.096E+01	1.862E+00	0.265
		97.43	*	-1.131E-01	7.787E-02	1.035E-01	8.093E-03	-1.093
		103.18		-9.118E-02	9.152E-02	1.420E-01	1.024E-02	-0.642
EU-154		123.07		-1.956E-03	4.379E-02	7.008E-02	6.628E-03	-0.028
		247.94		-1.309E-02	2.648E-01	4.192E-01	3.948E-02	-0.031
		591.81		-4.009E-01	4.754E-01	7.215E-01	7.674E-02	-0.556
		723.30		4.587E-02	1.431E-01	2.114E-01	1.993E-02	0.217
		756.87		2.117E-01	5.704E-01	9.687E-01	1.188E-01	0.219
		873.19		1.499E-01	2.182E-01	3.680E-01	5.125E-02	0.407
		996.32		-9.803E-02	2.643E-01	4.125E-01	7.543E-02	-0.238
		1004.76		4.754E-02	1.573E-01	2.603E-01	3.200E-02	0.183
		1274.45	*	6.364E-03	8.976E-02	1.483E-01	1.481E-02	0.043
EU-155		48.70		-7.956E-01	3.082E+00	5.153E+00	3.909E-01	-0.154
		60.01		-2.498E+00	4.997E+00	8.192E+00	6.251E-01	-0.305
	+	86.54		1.970E-01	1.157E-01	1.603E-01	1.477E-02	1.229
		105.31	*	1.084E-01	9.115E-02	1.542E-01	1.102E-02	0.703
TB-160	+	86.79		5.313E-01	3.120E-01	4.366E-01	3.995E-02	1.217
		197.04		2.655E-01	4.387E-01	7.492E-01	4.023E-02	0.354
		215.65		5.264E-01	6.178E-01	9.904E-01	5.406E-02	0.532
		298.57		2.872E-01	9.391E-02	1.699E-01	9.759E-03	1.690
		879.36	*	-5.066E-02	1.040E-01	1.632E-01	1.792E-02	-0.310
		962.29		9.671E-01	5.052E-01	8.131E-01	8.353E-02	1.189
	+	966.15		3.989E-01	2.389E-01	4.367E-01	4.457E-02	0.913
		1177.93		1.305E-01	2.507E-01	4.314E-01	2.409E-02	0.303
		1271.85		2.371E-02	5.237E-01	8.635E-01	5.836E-02	0.027
HO-166M		80.57		-4.804E-02	2.506E-01	3.655E-01	3.176E-02	-0.131
		184.41		8.755E-02	2.950E-02	4.928E-02	2.618E-03	1.777
		280.46		-2.182E-02	6.488E-02	1.038E-01	5.921E-03	-0.210
		410.95		9.863E-02	1.896E-01	3.245E-01	1.910E-02	0.304
		711.68	*	-1.124E-02	4.410E-02	7.227E-02	6.024E-03	-0.156
		752.31		-2.579E-02	1.966E-01	3.233E-01	2.890E-02	-0.080
		810.29		-1.955E-02	4.571E-02	7.299E-02	7.186E-03	-0.268
TM-171		51.35		-2.757E-02	3.739E+01	6.301E+01	4.994E+00	0.000

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-176	+	52.39	-2.951E+00	1.901E+01	3.099E+01	2.462E+00	-0.095
		59.40	-3.121E+01	2.714E+01	4.322E+01	3.281E+00	-0.722
		66.72 *	-4.119E+01	2.740E+01	4.191E+01	3.351E+00	-0.983
		88.36	3.878E-01	2.277E-01	3.213E-01	2.950E-02	1.207
		201.83	-2.982E-02	2.260E-02	3.563E-02	1.922E-03	-0.837
LU-177	+	306.84 *	4.062E-04	2.102E-02	3.142E-02	1.809E-03	0.013
		401.10	2.914E+00	5.318E+00	8.921E+00	5.186E-01	0.327
		112.95	-1.004E+00	1.527E+00	2.393E+00	1.542E-01	-0.420
LU-177M	+	208.36 *	1.096E+00	1.103E+00	1.693E+00	9.181E-02	0.647
		52.97	2.687E-02	1.944E+00	3.190E+00	2.532E-01	0.008
HF-181	+	54.07	-1.641E-01	1.003E+00	1.634E+00	1.292E-01	-0.100
		61.30	-6.543E-02	1.502E+00	2.506E+00	1.936E-01	-0.026
		121.62	3.820E-02	3.217E-01	5.188E-01	3.077E-02	0.074
		147.16	-3.863E-01	5.526E-01	8.481E-01	4.615E-02	-0.455
		171.86	-9.427E-02	3.533E-01	5.891E-01	3.101E-02	-0.160
		218.09	1.814E-01	6.485E-01	1.088E+00	5.951E-02	0.167
		268.79	1.207E+00	7.018E-01	1.106E+00	6.272E-02	1.091
		319.02	-2.426E-01	2.010E-01	3.009E-01	1.737E-02	-0.806
		367.43	2.592E-01	6.518E-01	1.120E+00	6.469E-02	0.231
		413.65 *	-1.741E-01	1.358E-01	2.105E-01	1.243E-02	-0.827
		56.28	-4.734E-01	1.021E+00	1.680E+00	1.309E-01	-0.282
		57.53	-1.740E-01	5.337E-01	8.825E-01	6.805E-02	-0.197
		65.20	-2.139E-01	9.272E-01	1.501E+00	1.191E-01	-0.142
		133.02	-4.563E-03	5.403E-02	8.587E-02	4.857E-03	-0.053
		136.25	-1.540E-01	3.730E-01	5.828E-01	3.263E-02	-0.264
W-181	+	345.85	-8.480E-02	1.714E-01	2.294E-01	1.327E-02	-0.370
		482.03 *	-1.523E-02	3.213E-02	5.137E-02	3.288E-03	-0.297
		56.28	-1.832E-01	3.951E-01	6.502E-01	5.065E-02	-0.282
TA-182	+	57.53	-6.767E-02	2.067E-01	3.418E-01	2.636E-02	-0.198
		65.20 *	-8.221E-02	3.563E-01	5.770E-01	4.577E-02	-0.142
		67.75	3.317E-02	1.037E-01	1.710E-01	1.374E-02	0.194
RE-183	+	100.10	1.510E-01	1.715E-01	2.597E-01	1.952E-02	0.581
		152.43	-1.431E-01	2.823E-01	4.359E-01	2.345E-02	-0.328
		222.10	-1.983E-01	2.562E-01	4.093E-01	2.247E-02	-0.484
		1001.68	-4.673E-01	1.550E+00	2.431E+00	2.321E-01	-0.192
		1121.28	5.681E-01	1.855E-01	2.613E-01	1.800E-02	2.175
		1189.05	1.655E-01	2.092E-01	3.667E-01	2.097E-02	0.451
		1221.42 *	1.340E-01	1.402E-01	2.467E-01	1.509E-02	0.543
		1230.97	-3.317E-02	3.824E-01	5.323E-01	3.320E-02	-0.062
		57.98	5.378E-02	2.024E-01	3.426E-01	2.632E-02	0.157
		59.32	-1.316E-01	1.128E-01	1.794E-01	1.363E-02	-0.733
RE-184	+	67.20	-1.651E-01	1.891E-01	2.974E-01	2.384E-02	-0.555
		162.32 *	5.888E-02	8.402E-02	1.441E-01	7.607E-03	0.409
		208.81	2.198E+00	1.087E+00	1.392E+00	7.554E-02	1.579
		291.72	-4.458E-01	8.083E-01	1.100E+00	6.305E-02	-0.405
		57.98	1.970E-01	7.412E-01	1.255E+00	9.638E-02	0.157
RE-184	+	59.32	-4.816E-01	4.127E-01	6.567E-01	4.989E-02	-0.733
		67.20	-6.046E-01	6.922E-01	1.089E+00	8.728E-02	-0.555
		161.27	-8.387E-02	2.671E-01	4.467E-01	2.362E-02	-0.188

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
OS-185		216.55		2.731E-01	2.008E-01	3.508E-01	1.916E-02	0.778
		252.85	*	-5.474E-02	1.752E-01	2.830E-01	1.590E-02	-0.193
		318.01		-1.601E-01	3.441E-01	5.399E-01	3.116E-02	-0.297
		792.07		5.287E-01	8.250E-01	1.245E+00	1.190E-01	0.425
		903.28		6.728E-03	8.910E-01	1.300E+00	1.459E-01	0.005
		920.93		-6.421E-02	3.188E-01	5.101E-01	5.590E-02	-0.126
		59.72		-3.084E-01	3.006E-01	4.814E-01	3.661E-02	-0.641
		61.14		-2.558E-02	1.655E-01	2.749E-01	2.121E-02	-0.093
		69.30		1.546E-01	2.967E-01	4.520E-01	3.662E-02	0.342
		592.07		-1.764E+00	1.936E+00	2.927E+00	2.096E-01	-0.603
		646.12	*	-1.077E-02	3.206E-02	5.019E-02	3.774E-03	-0.215
		717.42		-2.009E-01	6.568E-01	1.072E+00	9.022E-02	-0.187
		874.81		3.008E-01	4.241E-01	7.309E-01	7.973E-02	0.411
		880.27		-2.544E-01	5.697E-01	8.968E-01	9.865E-02	-0.284
RE-188		155.03	*	7.067E-02	1.319E-01	2.280E-01	1.220E-02	0.310
W-188		477.96		9.555E-01	2.338E+00	3.947E+00	2.515E-01	0.242
		633.10		9.595E-01	1.989E+00	3.316E+00	2.465E-01	0.289
		63.58		3.007E+01	5.266E+01	8.783E+01	6.901E+00	0.342
IR-192		227.08		-7.793E+00	1.003E+01	1.602E+01	8.831E-01	-0.486
		290.67	*	-2.676E-02	6.401E+00	9.083E+00	5.203E-01	-0.003
	+	295.96		1.124E+00	1.472E-01	2.353E-01	1.372E-02	4.778
AU-195		308.46		3.437E-02	7.609E-02	1.258E-01	7.328E-03	0.273
		316.51	*	-4.362E-03	2.721E-02	4.349E-02	2.522E-03	-0.100
		468.07		2.715E-02	5.144E-02	7.724E-02	5.504E-03	0.352
		604.41		-2.747E-02	4.183E-01	5.795E-01	7.041E-02	-0.047
		612.46		4.766E+00	8.912E-01	1.505E+00	1.320E-01	3.166
		65.12		-2.108E-02	1.655E-01	2.692E-01	2.134E-02	-0.078
		66.83		-1.315E-01	9.053E-02	1.388E-01	1.110E-02	-0.947
TL-200	+	75.70		1.286E+00	2.529E-01	3.880E-01	3.259E-02	3.315
		98.88	*	6.594E-02	2.185E-01	3.221E-01	2.465E-02	0.205
		129.76		2.428E+00	2.424E+00	4.025E+00	2.303E-01	0.603
TL-201		367.94	*	9.120E-06	2.424E+00	Half-Life	too short	
		579.30		1.984E-04	2.424E+00	Half-Life	too short	
		828.27		-1.390E-03	2.424E+00	Half-Life	too short	
TL-202		1205.75		-1.567E-03	2.424E+00	Half-Life	too short	
		68.90		3.635E+00	5.682E+00	9.229E+00	7.461E-01	0.394
		70.82		-2.106E+00	3.407E+00	4.902E+00	4.003E-01	-0.430
		80.30		-7.626E-01	5.912E+00	8.653E+00	7.502E-01	-0.088
HG-203		135.34		-1.016E+01	2.560E+01	4.003E+01	2.248E+00	-0.254
		167.43	*	1.560E+00	6.733E+00	1.147E+01	6.019E-01	0.136
		68.90		2.730E-01	4.267E-01	6.931E-01	5.603E-02	0.394
		70.82		-1.578E-01	2.552E-01	3.672E-01	2.998E-02	-0.430
BI-207		80.30		-5.713E-02	4.429E-01	6.483E-01	5.621E-02	-0.088
		439.56	*	1.520E-02	5.415E-02	8.980E-02	5.475E-03	0.169
		70.83		-6.520E-01	1.060E+00	1.523E+00	2.028E-01	-0.428
		72.87		9.819E-01	6.156E-01	9.588E-01	1.243E-01	1.024
BI-207		82.60		-2.914E-01	1.033E+00	1.496E+00	2.076E-01	-0.195
		279.20	*	3.022E-02	3.122E-02	5.312E-02	3.221E-03	0.569
BI-207		72.80		2.616E-01	1.748E-01	2.749E-01	2.269E-02	0.952

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TL-207	+	74.97		7.108E-01	1.398E-01	2.073E-01	1.733E-02	3.429
		84.90		2.040E-01	2.213E-01	2.723E-01	2.450E-02	0.749
		569.67		-9.503E-03	2.512E-02	3.893E-02	2.728E-03	-0.244
		1063.62	*	1.364E-02	3.849E-02	6.594E-02	5.443E-03	0.207
		1770.23		2.526E-01	4.336E-01	6.711E-01	4.060E-02	0.376
		81.07		-5.380E-02	1.989E-01	2.888E-01	2.518E-02	-0.186
		83.78		9.437E-02	1.215E-01	1.823E-01	1.625E-02	0.518
		94.90		5.079E-01	2.297E-01	3.630E-01	2.955E-02	1.399
		122.32		-3.775E-02	1.499E+00	2.402E+00	1.631E-01	-0.016
		144.24		1.586E-01	5.647E-01	8.905E-01	6.214E-02	0.178
		154.21		2.703E-01	3.020E-01	5.279E-01	3.513E-02	0.512
	+	269.46		4.424E-01	2.063E-01	2.697E-01	1.602E-02	1.640
PO-209	+	323.87	*	3.164E-01	5.388E-01	7.888E-01	1.302E-01	0.401
	+	338.28		5.792E+00	1.292E+00	1.941E+00	2.043E-01	2.984
		445.03		6.550E-01	1.679E+00	2.846E+00	2.977E-01	0.230
		260.50		-5.180E+00	7.466E+00	1.162E+01	6.558E-01	-0.446
		262.80		-4.317E+00	2.040E+01	3.252E+01	1.838E+00	-0.133
		896.60	*	-2.798E-01	5.725E+00	9.314E+00	1.051E+00	-0.030
BI-210		46.50	*	1.670E+00	4.601E+00	7.897E+00	6.110E-01	0.211
PB-210		46.50	*	1.670E+00	4.601E+00	7.897E+00	6.110E-01	0.211
PO-210		46.50	*	1.670E+00	4.600E+00	7.897E+00	5.253E-01	0.211
PB-211		404.84	*	-2.664E-01	7.552E-01	1.209E+00	7.540E-01	-0.220
BI-212		427.08		1.613E-03	1.449E+00	2.412E+00	1.492E+00	0.001
		831.96		-7.644E-01	1.045E+00	1.436E+00	9.033E-01	-0.532
	+	727.18	*	1.002E+00	3.494E-01	4.900E-01	4.880E-02	2.046
		785.46		-4.839E-01	1.424E+00	2.101E+00	1.986E-01	-0.230
PO-215		1620.62		1.162E+00	1.088E+00	1.988E+00	1.344E-01	0.585
		81.07		-5.380E-02	1.989E-01	2.888E-01	2.518E-02	-0.186
		83.78		9.437E-02	1.215E-01	1.823E-01	1.625E-02	0.518
		94.90		5.079E-01	2.297E-01	3.630E-01	2.955E-02	1.399
		122.32		-3.775E-02	1.499E+00	2.402E+00	1.631E-01	-0.016
		144.24		1.586E-01	5.647E-01	8.905E-01	6.214E-02	0.178
RN-219		154.21		2.703E-01	3.020E-01	5.279E-01	3.513E-02	0.512
	+	269.46		4.424E-01	2.063E-01	2.697E-01	1.602E-02	1.640
	+	323.87	*	3.164E-01	5.388E-01	7.888E-01	1.302E-01	0.401
	+	338.28		5.792E+00	1.292E+00	1.941E+00	2.043E-01	2.984
		445.03		6.550E-01	1.679E+00	2.846E+00	2.977E-01	0.230
	+	271.23		5.676E-01	2.664E-01	3.597E-01	2.884E-02	1.578
RN-220		401.81	*	1.451E-01	3.264E-01	5.438E-01	7.404E-02	0.267
RA-223		549.76	*	-1.012E+01	1.884E+01	2.952E+01	2.029E+00	-0.343
		81.07		-5.380E-02	1.989E-01	2.888E-01	2.518E-02	-0.186
		83.78		9.437E-02	1.215E-01	1.823E-01	1.625E-02	0.518
		94.90		5.079E-01	2.297E-01	3.630E-01	2.955E-02	1.399
		122.32		-3.775E-02	1.499E+00	2.402E+00	1.631E-01	-0.016
		144.24		1.586E-01	5.647E-01	8.905E-01	6.214E-02	0.178
		154.21		2.703E-01	3.020E-01	5.279E-01	3.513E-02	0.512
	+	269.46		4.424E-01	2.063E-01	2.697E-01	1.602E-02	1.640
	+	323.87	*	3.164E-01	5.388E-01	7.888E-01	1.302E-01	0.401
	+	338.28		5.792E+00	1.292E+00	1.941E+00	2.043E-01	2.984

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		445.03		6.550E-01	1.679E+00	2.846E+00	2.977E-01	0.230
		79.80		4.770E-01	1.552E+00	2.315E+00	4.980E-01	0.206
		236.00		1.322E-01	2.032E-01	3.039E-01	3.135E-02	0.435
		256.20	*	3.246E-01	2.963E-01	5.045E-01	7.007E-02	0.643
		286.10		3.674E-01	1.189E+00	1.960E+00	2.258E-01	0.187
+		299.80		3.632E+00	1.563E+00	2.119E+00	3.448E-01	1.714
		304.40		-6.639E-01	1.655E+00	2.263E+00	3.912E-01	-0.293
		334.20		2.544E+00	2.765E+00	3.064E+00	5.616E-01	0.830
		79.80		4.770E-01	1.552E+00	2.315E+00	5.044E-01	0.206
		94.00		6.100E+00	2.955E+00	3.345E+00	7.239E-01	1.824
TH-227		236.00		1.322E-01	2.031E-01	3.039E-01	2.704E-02	0.435
		256.20	*	3.246E-01	2.979E-01	5.045E-01	8.496E-02	0.643
		286.10		3.674E-01	1.244E+00	1.960E+00	1.964E+00	0.187
		299.80		3.632E+00	1.563E+00	2.119E+00	3.448E-01	1.714
		304.40		-6.639E-01	1.655E+00	2.263E+00	3.912E-01	-0.293
TH-229		334.20		2.544E+00	2.765E+00	3.064E+00	5.616E-01	0.830
		85.43		2.388E-01	2.179E-01	2.707E-01	2.447E-02	0.882
		88.47		2.232E-01	1.311E-01	1.851E-01	1.695E-02	1.206
		100.00		1.495E-01	1.767E-01	2.672E-01	2.012E-02	0.560
		193.63	*	-3.901E-02	3.944E-01	6.570E-01	3.518E-02	-0.059
PA-231		210.97		1.704E+00	8.420E-01	1.049E+00	5.703E-02	1.624
		283.67	*	-5.945E-01	1.157E+00	1.826E+00	2.510E-01	-0.326
TH-231		301.29		1.453E+00	5.983E-01	8.260E-01	8.611E-02	1.759
		81.07		-5.380E-02	1.989E-01	2.888E-01	2.518E-02	-0.186
		83.78		9.437E-02	1.215E-01	1.823E-01	1.625E-02	0.518
		94.90		5.079E-01	2.297E-01	3.630E-01	2.955E-02	1.399
		122.32		-3.775E-02	1.499E+00	2.402E+00	1.631E-01	-0.016
		144.24		1.586E-01	5.647E-01	8.905E-01	6.214E-02	0.178
		154.21		2.703E-01	3.020E-01	5.279E-01	3.513E-02	0.512
		269.46		4.424E-01	2.063E-01	2.697E-01	1.602E-02	1.640
		323.87	*	3.164E-01	5.388E-01	7.888E-01	1.302E-01	0.401
		338.28		5.792E+00	1.292E+00	1.941E+00	2.043E-01	2.984
		445.03		6.550E-01	1.679E+00	2.846E+00	2.977E-01	0.230
		84.21		5.392E+00	6.205E+00	9.337E+00	8.352E-01	0.578
U-231		92.29		7.169E+00	3.162E+00	3.878E+00	3.302E-01	1.848
		95.87	*	2.069E-01	1.215E+00	1.782E+00	1.428E-01	0.116
PA-233		108.00		-1.889E+00	2.113E+00	3.286E+00	2.235E-01	-0.575
		75.28		2.074E+01	4.854E+00	6.029E+00	9.172E-01	3.440
		86.59		3.201E+00	2.048E+00	2.617E+00	7.063E-01	1.223
		300.12		1.013E+00	4.257E-01	5.887E-01	7.897E-02	1.720
		311.98	*	8.346E-03	5.215E-02	8.486E-02	5.198E-03	0.098
PA-234		340.50		2.300E+00	8.222E-01	1.064E+00	2.443E-01	2.161
		398.62		-6.583E-01	1.559E+00	2.535E+00	6.554E-01	-0.260
		415.76		6.069E-01	1.210E+00	2.063E+00	4.254E-01	0.294
		63.00		1.950E+00	1.577E+00	2.647E+00	3.991E-01	0.737
		94.67		5.440E-01	2.448E-01	2.712E-01	3.280E-02	2.006
		98.44		1.986E-02	8.764E-02	1.278E-01	7.112E-02	0.155
		99.86		3.572E-01	4.466E-01	6.741E-01	5.085E-02	0.530
		111.00		1.285E-02	1.534E-01	2.485E-01	2.666E-02	0.052

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		131.20		9.305E-02	8.734E-02	1.454E-01	8.279E-03	0.640
		152.70		2.390E-03	2.666E-01	4.213E-01	6.597E-02	0.006
	+	186.00		5.423E+00	2.257E+00	2.074E+00	6.319E-01	2.615
		226.40		-3.938E-02	3.067E-01	5.044E-01	5.758E-02	-0.078
		227.20		-2.169E-01	3.341E-01	5.368E-01	2.959E-02	-0.404
		248.90		-4.364E-02	5.916E-01	9.680E-01	2.075E-01	-0.045
		293.70		4.143E+00	9.631E-01	1.276E+00	2.048E-01	3.248
		369.80		1.648E-01	6.160E-01	1.050E+00	2.185E-01	0.157
		568.70		3.216E-01	7.675E-01	1.279E+00	8.958E-02	0.251
		569.50		-9.298E-02	2.224E-01	3.437E-01	2.408E-02	-0.271
		574.00		-1.830E-01	1.157E+00	1.860E+00	1.309E-01	-0.098
		699.00		1.199E-01	5.239E-01	8.865E-01	1.673E-01	0.135
		706.10		1.250E-02	7.627E-01	1.274E+00	5.671E-01	0.010
		733.00		1.379E-02	3.131E-01	4.504E-01	1.000E-01	0.031
		742.81		4.338E-01	1.013E+00	1.662E+00	1.117E+00	0.261
		796.30		1.190E+00	8.787E-01	1.310E+00	3.587E-01	0.909
		805.60		3.351E-01	8.483E-01	1.340E+00	4.154E-01	0.250
		819.60		2.635E-02	8.440E-01	1.393E+00	5.344E-01	0.019
		826.30		-1.938E-01	5.829E-01	9.229E-01	4.158E-01	-0.210
		831.60		-4.453E-01	5.002E-01	7.394E-01	2.243E-01	-0.602
		876.40		7.451E-03	6.203E-01	1.016E+00	1.047E+00	0.007
		880.51		-8.529E-02	2.035E-01	3.211E-01	3.534E-02	-0.266
		883.24		6.091E-02	2.118E-01	3.477E-01	2.350E-01	0.175
		899.00		1.017E-01	6.875E-01	1.102E+00	4.882E-01	0.092
		925.00		-8.294E-01	9.379E-01	1.273E+00	1.387E-01	-0.652
		926.50		-1.020E-01	1.587E-01	2.010E-01	5.252E-02	-0.507
		946.00	*	-3.143E-03	2.158E-01	3.502E-01	6.909E-02	-0.009
		949.00		-1.241E-01	3.180E-01	4.988E-01	5.238E-02	-0.249
		980.50		-2.841E-02	5.300E-01	8.543E-01	8.497E-02	-0.033
		1394.10		-1.723E-01	9.040E-01	1.430E+00	9.285E-01	-0.121
PA-234M		766.42		1.684E+01	1.315E+01	1.627E+01	8.270E+00	1.035
		1001.03	*	1.083E+00	3.416E+00	5.634E+00	6.078E-01	0.192
TH-234		63.29	*	9.457E-01	1.332E+00	2.218E+00	3.910E-01	0.426
	+	92.38		1.579E+00	7.402E-01	8.573E-01	1.545E-01	1.841
U-235	+	89.95		1.725E+00	8.405E-01	1.646E+00	5.092E-01	1.048
	+	93.35		1.898E+00	9.783E-01	1.058E+00	2.958E-01	1.793
		105.00		6.725E-01	9.235E-01	1.505E+00	4.430E-01	0.447
		143.76	*	3.994E-02	1.738E-01	2.734E-01	4.428E-02	0.146
		163.35		7.864E-02	3.596E-01	6.058E-01	1.079E-01	0.130
	+	185.71		2.009E-01	5.795E-02	7.707E-02	4.099E-03	2.606
		205.31		2.896E-01	4.433E-01	6.685E-01	1.194E-01	0.433
NP-236	+	94.67		4.126E-01	1.820E-01	2.059E-01	1.683E-02	2.004
		98.44		1.497E-02	6.573E-02	9.660E-02	7.439E-03	0.155
		111.00		9.720E-03	1.160E-01	1.880E-01	1.236E-02	0.052
		160.31	*	-2.676E-02	5.989E-02	9.967E-02	5.280E-03	-0.269
U-238		63.29	*	9.457E-01	1.332E+00	2.218E+00	3.910E-01	0.426
	+	92.38		1.579E+00	6.964E-01	8.573E-01	7.287E-02	1.841
NP-239		99.55		1.349E-01	1.483E-01	2.251E-01	1.706E-02	0.599
		117.00	*	1.098E-01	1.593E-01	2.635E-01	1.631E-02	0.417

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	+	209.75	1.716E+00	8.483E-01	1.092E+00	5.932E-02	1.571
		228.18	-4.452E-02	1.789E-01	2.926E-01	1.614E-02	-0.152
		277.60	1.158E-01	1.388E-01	2.347E-01	1.337E-02	0.493
		334.30	1.436E+00	1.546E+00	1.736E+00	1.004E-01	0.828
AM-241		59.54 *	-1.762E-01	1.573E-01	2.507E-01	2.079E-02	-0.703
CM-243		99.55	1.389E-01	1.527E-01	2.317E-01	1.755E-02	0.599
		103.76 *	-1.644E-02	8.162E-02	1.312E-01	9.394E-03	-0.125
		117.00	1.130E-01	1.639E-01	2.711E-01	1.678E-02	0.417
	+	209.75	1.692E+00	8.363E-01	1.077E+00	5.849E-02	1.571
		228.18	-4.499E-02	1.808E-01	2.957E-01	1.631E-02	-0.152
		277.60	1.168E-01	1.400E-01	2.366E-01	1.348E-02	0.493
AM-246		798.80	-4.907E-02	1.208E-01	1.639E-01	1.584E-02	-0.299
		1036.00	4.193E-03	1.962E-01	3.290E-01	2.913E-02	0.013
		1062.04	4.784E-02	1.632E-01	2.786E-01	2.310E-02	0.172
		1078.86 *	3.834E-02	1.022E-01	1.753E-01	1.387E-02	0.219
CM-247		278.00	2.305E-01	5.784E-01	9.595E-01	5.466E-02	0.240
		287.40	3.195E-01	9.599E-01	1.585E+00	9.066E-02	0.202
		402.60 *	9.052E-03	2.945E-02	4.883E-02	2.844E-03	0.185
CF-249		252.85	-2.045E-01	6.546E-01	1.057E+00	5.939E-02	-0.193
		333.44	1.695E-01	2.015E-01	2.241E-01	1.296E-02	0.757
		387.95 *	3.656E-02	2.865E-02	5.109E-02	2.937E-03	0.716
CF-251		176.60 *	1.384E-02	9.455E-02	1.600E-01	8.449E-03	0.086
		227.00	-2.366E-01	2.977E-01	4.750E-01	2.618E-02	-0.498
		285.00	-4.159E-02	1.331E+00	2.161E+00	1.235E-01	-0.019

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]G1202006618      *
* Acquisition date   : 7-JAN-2010 16:06:15 Detector SN#      :              *
* Detector ID        : GAM18                      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 02:00:01.59             Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202006618             Analyst initials: MXR1         *
* Batch Number       : 937704                  Sample Quantity : 1.3362E+02 GRAM *
* Recovery           : 1.00000                 Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23 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	2.041E+01	1.918E+00	4.057E-01	0.000E+00
CD-109	1.666E+00	9.587E-01	1.274E+00	0.000E+00
SN-126	1.635E-01	9.409E-02	1.074E-01	0.000E+00
TL-208	4.487E-01	6.935E-02	4.429E-02	0.000E+00
BI-211	3.737E+00	4.145E-01	2.358E-01	0.000E+00
PB-212	1.558E+00	1.392E-01	7.008E-02	0.000E+00
PO-212	1.558E+00	1.392E-01	7.008E-02	0.000E+00
BI-214	1.185E+00	1.646E-01	8.584E-02	0.000E+00
PB-214	1.300E+00	1.588E-01	8.219E-02	0.000E+00
PO-214	1.300E+00	1.588E-01	8.219E-02	0.000E+00
PO-216	1.558E+00	1.392E-01	7.008E-02	0.000E+00
PO-218	1.300E+00	1.588E-01	8.219E-02	0.000E+00
RA-224	4.182E+00	1.063E+00	7.964E-01	0.000E+00
RA-226	1.185E+00	1.646E-01	8.584E-02	0.000E+00
AC-228	1.407E+00	2.661E-01	1.568E-01	0.000E+00
RA-228	1.407E+00	2.661E-01	1.568E-01	0.000E+00
TH-228	1.583E+00	1.414E-01	7.122E-02	0.000E+00
TH-230	1.185E+00	1.646E-01	8.584E-02	0.000E+00
TH-232	1.407E+00	2.661E-01	1.568E-01	0.000E+00
U-234	1.185E+00	1.646E-01	8.584E-02	0.000E+00
NP-237	4.801E-01	2.928E-01	3.257E-01	0.000E+00
AM-243	3.959E-01	7.629E-02	8.198E-02	0.000E+00
ANH-511	1.347E-01	5.388E-02	3.350E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	1.739E-01	2.375E-01	4.254E-01	0.000E+00 NOT IDENT.
NA-22	-9.019E-03	3.237E-02	5.323E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	1.815E+06	0.000E+00	0.000E+00 SHORT HLIF
AL-26	1.008E-02	2.041E-02	3.666E-02	0.000E+00 NOT IDENT.

TI-44	0.000E+00	5.130E-02	7.936E-02	0.000E+00	FAIL ABUN
SC-46	-1.348E-02	2.867E-02	4.647E-02	0.000E+00	FAIL ABUN
V-48	9.904E-03	4.982E-02	8.450E-02	0.000E+00	NOT IDENT.
CR-51	9.329E-02	2.802E-01	4.826E-01	0.000E+00	NOT IDENT.
MN-52	6.897E-03	1.998E-01	3.329E-01	0.000E+00	NOT IDENT.
MN-54	1.220E-02	2.954E-02	5.141E-02	0.000E+00	NOT IDENT.
CO-56	-1.640E-02	2.991E-02	4.861E-02	0.000E+00	FAIL ABUN
CO-57	5.434E-04	2.135E-02	3.662E-02	0.000E+00	NOT IDENT.
CO-58	-1.984E-02	2.994E-02	4.849E-02	0.000E+00	NOT IDENT.
FE-59	-2.542E-02	6.311E-02	1.045E-01	0.000E+00	NOT IDENT.
CO-60	1.405E-02	2.575E-02	4.551E-02	0.000E+00	NOT IDENT.
ZN-65	-2.761E-03	7.228E-02	1.052E-01	0.000E+00	NOT IDENT.
GE-68	6.487E-01	8.834E-01	1.594E+00	0.000E+00	NOT IDENT.
AS-73	2.421E-01	9.719E-01	1.742E+00	0.000E+00	NOT IDENT.
AS-74	-3.918E-02	7.204E-02	1.167E-01	0.000E+00	NOT IDENT.
SE-75	-7.044E-03	3.358E-02	5.524E-02	0.000E+00	NOT IDENT.
BR-77	-4.422E+00	1.016E+01	1.632E+01	0.000E+00	FAIL ABUN
SR-82	-1.840E-01	3.449E-01	5.037E-01	0.000E+00	NOT IDENT.
RB-83	-2.403E-02	4.967E-02	7.949E-02	0.000E+00	NOT IDENT.
RB-84	-1.741E-02	5.079E-02	8.330E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	6.615E+00	1.193E+01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.430E-02	6.184E-02	0.000E+00	NOT IDENT.
RB-86	2.973E-01	5.878E-01	1.045E+00	0.000E+00	NOT IDENT.
Y-88	8.927E-03	2.380E-02	4.191E-02	0.000E+00	NOT IDENT.
ZR-88	9.566E-03	2.186E-02	3.920E-02	0.000E+00	NOT IDENT.
Y-91	-4.750E+00	1.366E+01	2.255E+01	0.000E+00	NOT IDENT.
NB-94	-9.238E-03	2.435E-02	4.110E-02	0.000E+00	NOT IDENT.
NB-95	5.061E-02	3.612E-02	5.937E-02	0.000E+00	NOT IDENT.
NB-95M	-3.539E-03	1.045E-01	1.593E-01	0.000E+00	NOT IDENT.
ZR-95	4.279E-02	5.118E-02	9.240E-02	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.085E+05	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	4.227E+06	0.000E+00	0.000E+00	SHORT HLIF
MO-99	2.746E+00	1.041E+01	1.822E+01	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	5.647E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	9.060E-04	2.643E-02	4.580E-02	0.000E+00	NOT IDENT.
RH-102	4.140E-03	2.122E-02	3.695E-02	0.000E+00	NOT IDENT.
RU-103	-1.911E-02	2.929E-02	4.790E-02	0.000E+00	FAIL ABUN
RH-106	4.278E-02	2.306E-01	3.909E-01	0.000E+00	FAIL ABUN
RU-106	4.278E-02	2.306E-01	3.909E-01	0.000E+00	FAIL ABUN
AG-108M	1.571E-02	2.344E-02	4.219E-02	0.000E+00	NOT IDENT.
AG-110M	-2.113E-02	2.665E-02	4.416E-02	0.000E+00	FAIL ABUN
IN-111	8.920E-01	1.034E+00	1.664E+00	0.000E+00	NOT IDENT.
IN-113M	-3.743E-02	3.253E-02	5.346E-02	0.000E+00	NOT IDENT.
SN-113	-3.743E-02	3.253E-02	5.346E-02	0.000E+00	NOT IDENT.
IN-114M	-1.579E-02	1.545E-01	2.402E-01	0.000E+00	NOT IDENT.
CD-115	-3.831E+00	1.044E+01	1.734E+01	0.000E+00	NOT IDENT.
SN-117M	-2.346E-02	4.246E-02	7.489E-02	0.000E+00	NOT IDENT.
SB-122	7.969E-01	1.948E+00	3.380E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	1.592E+07	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-4.354E-03	2.082E-02	3.720E-02	0.000E+00	NOT IDENT.
I-124	1.497E-01	6.964E-01	1.028E+00	0.000E+00	NOT IDENT.
SB-124	-2.907E-04	5.777E-02	9.720E-02	0.000E+00	FAIL ABUN
SB-125	3.682E-02	6.332E-02	1.137E-01	0.000E+00	FAIL ABUN
TE-125M	3.823E+00	7.706E+00	1.358E+01	0.000E+00	NOT IDENT.
I-126	-4.562E-02	1.516E-01	2.591E-01	0.000E+00	NOT IDENT.
SB-126	7.070E-02	1.221E-01	1.912E-01	0.000E+00	FAIL ABUN
SB-127	2.474E-01	1.131E+00	1.989E+00	0.000E+00	NOT IDENT.
XE-127	-1.951E-02	3.658E-02	6.320E-02	0.000E+00	NOT IDENT.
I-131	-1.336E-02	8.867E-02	1.554E-01	0.000E+00	NOT IDENT.
TE-132	-1.761E-01	6.709E-01	1.158E+00	0.000E+00	NOT IDENT.
BA-133	-8.791E-03	3.690E-02	5.275E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	9.647E+03	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.103E-02	6.788E-02	0.000E+00	FAIL ABUN
CS-135	1.715E-01	1.270E-01	2.075E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.760E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.705E-02	8.060E-02	1.364E-01	0.000E+00	FAIL ABUN
BA-137M	2.095E-03	2.830E-02	4.943E-02	0.000E+00	NOT IDENT.
CS-137	2.215E-03	2.991E-02	5.225E-02	0.000E+00	NOT IDENT.
CE-139	1.467E-04	2.213E-02	3.973E-02	0.000E+00	NOT IDENT.
BA-140	4.838E-02	1.894E-01	3.264E-01	0.000E+00	NOT IDENT.
LA-140	-2.353E-02	6.731E-02	1.096E-01	0.000E+00	FAIL ABUN
CE-141	5.132E-02	5.142E-02	9.031E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.520E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.506E-01	1.657E-01	2.682E-01	0.000E+00	NOT IDENT.
PM-144	5.807E-03	2.530E-02	4.438E-02	0.000E+00	NOT IDENT.
PR-144	3.937E-01	1.716E+00	3.009E+00	0.000E+00	NOT IDENT.
PM-146	1.400E-02	3.089E-02	5.477E-02	0.000E+00	NOT IDENT.
ND-147	7.789E-02	4.063E-01	7.002E-01	0.000E+00	FAIL ABUN

PM-149	2.672E+01	9.655E+01	1.673E+02	0.000E+00	NOT IDENT.
EU-152	-1.606E-02	8.421E-02	1.215E-01	0.000E+00	FAIL ABUN
GD-153	-1.131E-01	7.631E-02	1.087E-01	0.000E+00	NOT IDENT.
EU-154	6.364E-03	8.796E-02	1.489E-01	0.000E+00	NOT IDENT.
EU-155	1.084E-01	8.932E-02	1.618E-01	0.000E+00	FAIL ABUN
TB-160	-5.066E-02	1.019E-01	1.650E-01	0.000E+00	FAIL ABUN
HO-166M	-1.124E-02	4.321E-02	7.335E-02	0.000E+00	NOT IDENT.
TM-171	-4.119E+01	2.685E+01	4.431E+01	0.000E+00	NOT IDENT.
LU-176	4.062E-04	2.060E-02	3.237E-02	0.000E+00	FAIL ABUN
LU-177	1.096E+00	1.081E+00	1.755E+00	0.000E+00	NOT IDENT.
LU-177M	-1.741E-01	1.331E-01	2.157E-01	0.000E+00	NOT IDENT.
HF-181	-1.523E-02	3.149E-02	5.250E-02	0.000E+00	NOT IDENT.
W-181	-8.221E-02	3.492E-01	6.102E-01	0.000E+00	NOT IDENT.
TA-182	1.340E-01	1.374E-01	2.479E-01	0.000E+00	FAIL ABUN
RE-183	5.888E-02	8.234E-02	1.501E-01	0.000E+00	FAIL ABUN
RE-184	-5.474E-02	1.717E-01	2.925E-01	0.000E+00	NOT IDENT.
OS-185	-1.077E-02	3.142E-02	5.103E-02	0.000E+00	NOT IDENT.
RE-188	7.067E-02	1.292E-01	2.376E-01	0.000E+00	NOT IDENT.
W-188	-2.676E-02	6.273E+00	9.366E+00	0.000E+00	NOT IDENT.
IR-192	-4.362E-03	2.667E-02	4.477E-02	0.000E+00	FAIL ABUN
AU-195	6.594E-02	2.141E-01	3.383E-01	0.000E+00	FAIL ABUN
TL-200	0.000E+00	6.321E+02	0.000E+00	0.000E+00	SHORT HLIF
TL-201	1.560E+00	6.598E+00	1.194E+01	0.000E+00	NOT IDENT.
TL-202	1.520E-02	5.306E-02	9.193E-02	0.000E+00	NOT IDENT.
HG-203	3.022E-02	3.059E-02	5.481E-02	0.000E+00	NOT IDENT.
BI-207	1.364E-02	3.772E-02	6.644E-02	0.000E+00	FAIL ABUN
TL-207	3.164E-01	5.280E-01	8.118E-01	0.000E+00	FAIL ABUN
PO-209	-2.798E-01	5.610E+00	9.414E+00	0.000E+00	NOT IDENT.
BI-210	1.670E+00	4.509E+00	8.398E+00	0.000E+00	NOT IDENT.
PB-210	1.670E+00	4.509E+00	8.398E+00	0.000E+00	NOT IDENT.
PO-210	1.670E+00	4.508E+00	8.398E+00	0.000E+00	NOT IDENT.
PB-211	-2.664E-01	7.401E-01	1.240E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	3.425E-01	4.971E-01	0.000E+00	FAIL ABUN
PO-215	3.164E-01	5.280E-01	8.118E-01	0.000E+00	FAIL ABUN
RN-219	1.451E-01	3.198E-01	5.576E-01	0.000E+00	FAIL ABUN
RN-220	-1.012E+01	1.846E+01	3.010E+01	0.000E+00	NOT IDENT.
RA-223	3.164E-01	5.280E-01	8.118E-01	0.000E+00	FAIL ABUN
AC-227	3.246E-01	2.904E-01	5.213E-01	0.000E+00	FAIL ABUN
TH-227	3.246E-01	2.920E-01	5.213E-01	0.000E+00	FAIL ABUN
TH-229	-3.901E-02	3.865E-01	6.822E-01	0.000E+00	FAIL ABUN
PA-231	-5.945E-01	1.134E+00	1.884E+00	0.000E+00	FAIL ABUN
TH-231	3.164E-01	5.280E-01	8.118E-01	0.000E+00	FAIL ABUN
U-231	2.069E-01	1.190E+00	1.873E+00	0.000E+00	FAIL ABUN
PA-233	8.346E-03	5.111E-02	8.739E-02	0.000E+00	FAIL ABUN
PA-234	-3.143E-03	2.115E-01	3.536E-01	0.000E+00	FAIL ABUN
PA-234M	1.083E+00	3.348E+00	5.684E+00	0.000E+00	NOT IDENT.
TH-234	9.457E-01	1.306E+00	2.347E+00	0.000E+00	FAIL ABUN
U-235	3.994E-02	1.703E-01	2.853E-01	0.000E+00	FAIL ABUN
NP-236	-2.676E-02	5.870E-02	1.038E-01	0.000E+00	FAIL ABUN
U-238	9.457E-01	1.306E+00	2.347E+00	0.000E+00	FAIL ABUN
NP-239	1.098E-01	1.561E-01	2.760E-01	0.000E+00	FAIL ABUN
AM-241	-1.762E-01	1.542E-01	2.655E-01	0.000E+00	NOT IDENT.
CM-243	-1.644E-02	7.999E-02	1.377E-01	0.000E+00	FAIL ABUN
AM-246	3.834E-02	1.002E-01	1.766E-01	0.000E+00	NOT IDENT.
CM-247	9.052E-03	2.886E-02	5.006E-02	0.000E+00	NOT IDENT.
CF-249	3.656E-02	2.808E-02	5.242E-02	0.000E+00	NOT IDENT.
CF-251	1.384E-02	9.266E-02	1.664E-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]G1202006618.CNF;1
Sample date        : 22-DEC-2009 12:00:00 Acquisition date : 7-JAN-2010 16:06:15.
Sample ID          : G1202006618      Sample quantity   : 1.33620E+02 GRAM
Detector name      : GAM18             Detector geometry: CAN
Elapsed live time   : 0 02:00:00.00    Elapsed real time: 0 02:00:01.59 0.0%
Energy tolerance    : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit     : 75.00000          Sensitivity       : 5.00000
Batch ID           : 937704             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	1467	10.67*	1.893E+00	2.041E+01	2.041E+01	9.59
CD-109	88.03	138	3.72*	6.421E+00	1.626E+00	1.666E+00	58.72
SN-126	64.28	-----	9.60	3.245E+00	-----	Line Not Found	-----
	86.94	138	8.90	6.421E+00	6.797E-01	6.797E-01	71.30
	87.57	138	37.00*	6.421E+00	1.635E-01	1.635E-01	58.72
TL-208	277.35	-----	6.80	6.258E+00	-----	Line Not Found	-----
	510.84	207	21.60	4.308E+00	6.237E-01	6.237E-01	41.65
	583.14	529	84.20*	3.932E+00	4.487E-01	4.487E-01	15.77
	860.37	93	12.46	2.912E+00	7.169E-01	7.169E-01	69.89
BI-211	72.87	-----	1.27	4.622E+00	-----	Line Not Found	-----
	351.07	938	12.94*	5.449E+00	3.737E+00	3.737E+00	11.32
PB-212	74.81	461	10.70	4.955E+00	2.442E+00	2.442E+00	21.77
	77.11	637	18.00	5.284E+00	1.881E+00	1.881E+00	15.08
	87.30	138	8.00	6.421E+00	7.562E-01	7.562E-01	59.57
	238.63	1679	44.60*	6.789E+00	1.558E+00	1.558E+00	9.12
	300.09	142	3.41	5.983E+00	1.960E+00	1.960E+00	40.68
PO-212	74.81	461	10.70	4.955E+00	2.442E+00	2.442E+00	21.77
	77.11	637	18.00	5.284E+00	1.881E+00	1.881E+00	15.08
	87.30	138	8.00	6.421E+00	7.562E-01	7.562E-01	59.57
	115.19	-----	0.60	8.058E+00	-----	Line Not Found	-----
	238.63	1679	44.60*	6.789E+00	1.558E+00	1.558E+00	9.12
	300.09	142	3.41	5.983E+00	1.960E+00	1.960E+00	40.68
BI-214	609.31	745	46.30*	3.811E+00	1.185E+00	1.185E+00	14.17
	1120.29	150	15.10	2.334E+00	1.194E+00	1.194E+00	33.31
	1764.49	178	15.80	1.695E+00	1.873E+00	1.873E+00	19.01
PB-214	74.81	461	6.21	4.955E+00	4.208E+00	4.208E+00	21.01
	77.11	637	10.50	5.284E+00	3.225E+00	3.225E+00	16.89
	87.30	138	4.67	6.421E+00	1.295E+00	1.295E+00	59.23
	241.98	397	7.49	6.745E+00	2.206E+00	2.206E+00	26.53
	295.21	602	19.20	6.038E+00	1.460E+00	1.460E+00	14.47
	351.92	938	37.20*	5.449E+00	1.300E+00	1.300E+00	12.46
PO-214	74.81	461	6.21	4.955E+00	4.208E+00	4.208E+00	21.01

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	77.11	637	10.50	5.284E+00	3.225E+00	3.225E+00	16.89
	87.30	138	4.67	6.421E+00	1.295E+00	1.295E+00	59.23
	241.98	397	7.49	6.745E+00	2.206E+00	2.206E+00	26.53
	295.21	602	19.20	6.038E+00	1.460E+00	1.460E+00	14.47
	351.92	938	37.20*	5.449E+00	1.300E+00	1.300E+00	12.46
PO-216	74.81	461	10.70	4.955E+00	2.442E+00	2.442E+00	21.77
	77.11	637	18.00	5.284E+00	1.881E+00	1.881E+00	15.08
	87.30	138	8.00	6.421E+00	7.562E-01	7.562E-01	59.57
	238.63	1679	44.60*	6.789E+00	1.558E+00	1.558E+00	9.12
	300.09	142	3.41	5.983E+00	1.960E+00	1.960E+00	40.68
PO-218	74.81	461	6.21	4.955E+00	4.208E+00	4.208E+00	21.01
	77.11	637	10.50	5.284E+00	3.225E+00	3.225E+00	16.89
	87.30	138	4.67	6.421E+00	1.295E+00	1.295E+00	59.23
	241.98	397	7.49	6.745E+00	2.206E+00	2.206E+00	26.53
	295.21	602	19.20	6.038E+00	1.460E+00	1.460E+00	14.47
	351.92	938	37.20*	5.449E+00	1.300E+00	1.300E+00	12.46
RA-224	240.98	397	3.95*	6.745E+00	4.182E+00	4.182E+00	25.93
RA-226	609.31	745	46.30*	3.811E+00	1.185E+00	1.185E+00	14.17
	1120.29	150	15.10	2.334E+00	1.194E+00	1.194E+00	33.31
	1764.49	178	15.80	1.695E+00	1.873E+00	1.873E+00	19.01
AC-228	338.32	314	11.40	5.578E+00	1.387E+00	1.387E+00	45.26
	911.07	386	27.70*	2.779E+00	1.407E+00	1.407E+00	19.30
	969.11	247	16.60	2.639E+00	1.587E+00	1.587E+00	30.80
RA-228	338.32	314	11.40	5.578E+00	1.387E+00	1.387E+00	45.26
	911.07	386	27.70*	2.779E+00	1.407E+00	1.407E+00	19.30
	969.11	247	16.60	2.639E+00	1.587E+00	1.587E+00	30.80
TH-228	74.81	461	10.70	4.955E+00	2.442E+00	2.482E+00	19.69
	77.11	637	18.00	5.284E+00	1.881E+00	1.912E+00	15.08
	87.30	138	8.00	6.421E+00	7.562E-01	7.684E-01	58.72
	238.63	1679	44.60*	6.789E+00	1.558E+00	1.583E+00	9.12
	300.09	142	3.41	5.983E+00	1.960E+00	1.992E+00	71.14
TH-230	609.31	745	46.30*	3.811E+00	1.185E+00	1.185E+00	14.17
	1120.29	150	15.10	2.334E+00	1.194E+00	1.194E+00	33.31
	1764.49	178	15.80	1.695E+00	1.873E+00	1.873E+00	19.01
TH-232	338.32	314	11.40	5.578E+00	1.387E+00	1.387E+00	20.51
	911.07	386	27.70*	2.779E+00	1.407E+00	1.407E+00	19.30
	969.11	247	16.60	2.639E+00	1.587E+00	1.587E+00	30.80
U-234	609.31	745	46.30*	3.811E+00	1.185E+00	1.185E+00	14.17
	1120.29	150	15.10	2.334E+00	1.194E+00	1.194E+00	33.31
	1764.49	178	15.80	1.695E+00	1.873E+00	1.873E+00	19.01
NP-237	86.50	138	12.60*	6.421E+00	4.801E-01	4.801E-01	62.24
	95.87	-----	2.60	7.180E+00	-----	Line Not Found	-----
AM-243	74.67	461	66.00*	4.955E+00	3.959E-01	3.959E-01	19.66
	86.72	138	0.34	6.421E+00	1.800E+01	1.800E+01	58.72
	117.66	-----	0.55	8.112E+00	-----	Line Not Found	-----
	142.18	-----	0.13	8.232E+00	-----	Line Not Found	-----
ANH-511	511.00	207	100.00*	4.308E+00	1.347E-01	1.347E-01	40.81

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 3
Number of lines tentatively identified by NID 30 90.91%

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	2.041E+01	2.041E+01	0.196E+01	9.59	
CD-109	464.00D	1.02	1.626E+00	1.666E+00	0.978E+00	58.72	
SN-126	1.00E+05Y	1.00	1.635E-01	1.635E-01	0.960E-01	58.72	
TL-208	1.41E+10Y	1.00	4.487E-01	4.487E-01	0.708E-01	15.77	
BI-211	7.04E+08Y	1.00	3.737E+00	3.737E+00	0.423E+00	11.32	
PB-212	1.41E+10Y	1.00	1.558E+00	1.558E+00	0.142E+00	9.12	
PO-212	1.41E+10Y	1.00	1.558E+00	1.558E+00	0.142E+00	9.12	
BI-214	1600.00Y	1.00	1.185E+00	1.185E+00	0.168E+00	14.17	
PB-214	1600.00Y	1.00	1.300E+00	1.300E+00	0.162E+00	12.46	
PO-214	1600.00Y	1.00	1.300E+00	1.300E+00	0.162E+00	12.46	
PO-216	1.41E+10Y	1.00	1.558E+00	1.558E+00	0.142E+00	9.12	
PO-218	1600.00Y	1.00	1.300E+00	1.300E+00	0.162E+00	12.46	
RA-224	1.41E+10Y	1.00	4.182E+00	4.182E+00	1.085E+00	25.93	
RA-226	1600.00Y	1.00	1.185E+00	1.185E+00	0.168E+00	14.17	
AC-228	1.41E+10Y	1.00	1.407E+00	1.407E+00	0.272E+00	19.30	
RA-228	1.41E+10Y	1.00	1.407E+00	1.407E+00	0.272E+00	19.30	
TH-228	1.91Y	1.02	1.558E+00	1.583E+00	0.144E+00	9.12	
TH-230	4.47E+09Y	1.00	1.185E+00	1.185E+00	0.168E+00	14.17	
TH-232	1.41E+10Y	1.00	1.407E+00	1.407E+00	0.272E+00	19.30	
U-234	4.47E+09Y	1.00	1.185E+00	1.185E+00	0.168E+00	14.17	
NP-237	2.14E+06Y	1.00	4.801E-01	4.801E-01	2.988E-01	62.24	
AM-243	7380.00Y	1.00	3.959E-01	3.959E-01	0.779E-01	19.66	
ANH-511	1.00E+09Y	1.00	1.347E-01	1.347E-01	0.550E-01	40.81	

Total Activity : 5.067E+01 5.074E+01

Grand Total Activity : 5.067E+01 5.074E+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
4	90.33	112	210	0.89	179.77	178	17	1.55E-02	37.7	6.74E+00	T
4	93.37	213	531	1.51	185.85	178	17	2.95E-02	43.3	6.99E+00	T
0	186.06	295	353	1.53	371.15	366	11	4.10E-02	28.4	7.65E+00	T
0	209.91	143	311	1.18	418.85	414	10	1.99E-02	49.1	7.25E+00	T
0	270.60	136	245	1.26	540.19	536	10	1.89E-02	46.2	6.35E+00	T
0	328.78	94	194	0.91	656.50	652	10	1.31E-02	59.3	5.68E+00	T
0	463.84	156	153	1.54	926.55	920	16	2.17E-02	38.8	4.59E+00	T
0	727.44	140	92	1.31	1453.61	1447	14	1.95E-02	33.4	3.34E+00	T
0	768.59	78	103	1.58	1535.88	1530	14	1.09E-02	59.9	3.19E+00	
0	794.64	72	86	1.67	1587.98	1580	14	1.00E-02	59.8	3.11E+00	T
0	937.60	34	105	4.47	1873.82	1859	18	4.70E-03	****	2.71E+00	T
1	964.90	78	97	2.32	1928.42	1920	24	1.08E-02	59.0	2.65E+00	T
0	1239.49	39	113	1.32	2477.51	2467	16	5.41E-03	****	2.15E+00	T
0	1378.29	43	38	2.16	2755.09	2748	11	5.96E-03	63.7	1.97E+00	
0	1729.70	58	5	2.42	3457.85	3448	17	8.09E-03	30.9	1.71E+00	

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006618.CNF;1
* Acquisition date   : 7-JAN-2010 16:06:15.  Detector SN#      :
* Detector ID        : GAM18                      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 02:00:01.59             Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 22-DEC-2009 12:00:00  Nuclide Library : SOLID
* Sample ID          : G1202006618           Analyst initials: MXR1
* Batch Number       : 937704                Sample Quantity : 1.33620E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 23-APR-2009 11:59:23.2MS Isotope      :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A                LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.041E+01	1.957E+00	4.049E-01	3.073E-02	50.408
CD-109	1.666E+00	9.783E-01	1.211E+00	1.119E-01	1.376
SN-126	1.635E-01	9.601E-02	1.020E-01	9.399E-03	1.603
TL-208	4.487E-01	7.076E-02	4.348E-02	3.408E-03	10.320
BI-211	3.737E+00	4.229E-01	2.295E-01	1.473E-02	16.285
PB-212	1.558E+00	1.420E-01	6.774E-02	4.839E-03	22.998
PO-212	1.558E+00	1.420E-01	6.774E-02	4.839E-03	22.998
BI-214	1.185E+00	1.680E-01	8.434E-02	7.534E-03	14.056
PB-214	1.300E+00	1.620E-01	7.997E-02	6.616E-03	16.255
PO-214	1.300E+00	1.620E-01	7.997E-02	6.616E-03	16.255
PO-216	1.558E+00	1.420E-01	6.774E-02	4.839E-03	22.998
PO-218	1.300E+00	1.620E-01	7.997E-02	6.616E-03	16.255
RA-224	4.182E+00	1.085E+00	7.699E-01	4.289E-02	5.432
RA-226	1.185E+00	1.680E-01	8.434E-02	7.534E-03	14.056
AC-228	1.407E+00	2.715E-01	1.552E-01	2.056E-02	9.066
RA-228	1.407E+00	2.715E-01	1.552E-01	2.056E-02	9.066
TH-228	1.583E+00	1.443E-01	6.884E-02	4.918E-03	22.998
TH-230	1.185E+00	1.680E-01	8.434E-02	7.534E-03	14.056

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	1.407E+00	2.715E-01	1.552E-01	2.056E-02	9.066
U-234	1.185E+00	1.680E-01	8.434E-02	7.534E-03	14.056
NP-237	4.801E-01	2.988E-01	3.095E-01	6.982E-02	1.551
AM-243	3.959E-01	7.785E-02	7.769E-02	6.483E-03	5.096
ANH-511	1.347E-01	5.498E-02	3.281E-02	2.167E-03	4.106

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.739E-01		2.424E-01	4.162E-01	3.016E-02	0.418
NA-22	-9.019E-03		3.303E-02	5.300E-02	3.606E-03	-0.170
NA-24	-5.714E-01		9.261E-01	Half-Life too short		
AL-26	1.008E-02		2.082E-02	3.674E-02	2.145E-03	0.274
TI-44	3.472E-01	+	5.235E-02	7.527E-02	6.436E-03	4.612
SC-46	-1.348E-02		2.925E-02	4.596E-02	5.127E-03	-0.293
V-48	9.904E-03		5.084E-02	8.374E-02	8.283E-03	0.118
CR-51	9.329E-02		2.860E-01	4.689E-01	3.019E-02	0.199
MN-52	6.897E-03		2.039E-01	3.322E-01	2.448E-02	0.021
MN-54	1.220E-02		3.014E-02	5.079E-02	5.203E-03	0.240
CO-56	-1.640E-02		3.052E-02	4.804E-02	5.015E-03	-0.341
CO-57	5.434E-04		2.178E-02	3.499E-02	2.073E-03	0.016
CO-58	-1.984E-02		3.055E-02	4.789E-02	4.728E-03	-0.414
FE-59	-2.542E-02		6.440E-02	1.038E-01	8.540E-03	-0.245
CO-60	1.405E-02		2.628E-02	4.535E-02	3.427E-03	0.310
ZN-65	-2.761E-03		7.375E-02	1.045E-01	7.359E-03	-0.026
GE-68	6.487E-01		9.014E-01	1.582E+00	1.257E-01	0.410
AS-73	2.421E-01		9.917E-01	1.642E+00	1.302E-01	0.147
AS-74	-3.918E-02		7.351E-02	1.146E-01	8.234E-03	-0.342
SE-75	-7.044E-03		3.426E-02	5.348E-02	3.059E-03	-0.132
BR-77	-4.422E+00		1.037E+01	1.599E+01	1.067E+00	-0.276
SR-82	-1.840E-01		3.520E-01	4.971E-01	4.629E-02	-0.370
RB-83	-2.403E-02		5.069E-02	7.788E-02	5.194E-03	-0.309
RB-84	-1.741E-02		5.183E-02	8.239E-02	9.081E-03	-0.211
KR-85	2.440E+01		6.750E+00	1.168E+01	7.741E-01	2.088
SR-85	1.265E-01		3.500E-02	6.058E-02	4.013E-03	2.088
RB-86	2.973E-01		5.998E-01	1.037E+00	8.254E-02	0.287
Y-88	8.927E-03		2.428E-02	4.201E-02	2.393E-03	0.213
ZR-88	9.566E-03		2.231E-02	3.822E-02	2.198E-03	0.250
Y-91	-4.750E+00		1.394E+01	2.243E+01	1.326E+00	-0.212
NB-94	-9.238E-03		2.485E-02	4.049E-02	3.321E-03	-0.228
NB-95	5.061E-02		3.686E-02	5.857E-02	5.358E-03	0.864
NB-95M	-3.539E-03		1.066E-01	1.540E-01	1.130E-02	-0.023
ZR-95	4.279E-02		5.223E-02	9.113E-02	8.967E-03	0.470
NB-97	-1.760E-01		1.064E-01	Half-Life too short		
ZR-97	7.339E+00		2.157E+00	Half-Life too short		
MO-99	2.746E+00		1.062E+01	1.796E+01	2.740E+00	0.153
TC-99M	-2.211E+11		2.881E+11	Half-Life too short		

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-101	9.060E-04		2.696E-02	4.412E-02	2.372E-03	0.021
RH-102	4.140E-03		2.166E-02	3.614E-02	2.296E-03	0.115
RU-103	-1.911E-02		2.989E-02	4.690E-02	6.089E-03	-0.408
RH-106	4.278E-02		2.353E-01	3.842E-01	4.834E-02	0.111
RU-106	4.278E-02		2.353E-01	3.842E-01	2.827E-02	0.111
AG-108M	1.571E-02		2.392E-02	4.120E-02	2.692E-03	0.381
AG-110M	-2.113E-02		2.720E-02	4.345E-02	3.427E-03	-0.486
IN-111	8.920E-01		1.055E+00	1.609E+00	8.993E-02	0.554
IN-113M	-3.743E-02		3.319E-02	5.211E-02	3.197E-03	-0.718
SN-113	-3.743E-02		3.319E-02	5.211E-02	3.197E-03	-0.718
IN-114M	-1.579E-02		1.577E-01	2.313E-01	1.235E-02	-0.068
CD-115	-3.831E+00		1.066E+01	1.699E+01	1.142E+00	-0.225
SN-117M	-2.346E-02		4.333E-02	7.187E-02	3.820E-03	-0.326
SB-122	7.969E-01		1.988E+00	3.316E+00	2.311E-01	0.240
I-123	-3.331E+00		8.125E+00	Half-Life	too short	
TE-123M	-4.354E-03		2.124E-02	3.570E-02	1.926E-03	-0.122
I-124	1.497E-01		7.107E-01	1.010E+00	7.300E-02	0.148
SB-124	-2.907E-04		5.895E-02	9.729E-02	6.712E-03	-0.003
SB-125	3.682E-02		6.462E-02	1.110E-01	6.937E-03	0.332
TE-125M	3.823E+00		7.863E+00	1.295E+01	1.139E+00	0.295
I-126	-4.562E-02		1.547E-01	2.550E-01	1.960E-02	-0.179
SB-126	7.070E-02		1.246E-01	1.884E-01	1.595E-02	0.375
SB-127	2.474E-01		1.154E+00	1.958E+00	2.196E-01	0.126
XE-127	-1.951E-02		3.732E-02	6.091E-02	3.288E-03	-0.320
I-131	-1.336E-02		9.048E-02	1.513E-01	9.782E-03	-0.088
TE-132	-1.761E-01		6.846E-01	1.119E+00	1.619E-01	-0.157
BA-133	-8.791E-03		3.766E-02	5.134E-02	5.931E-03	-0.171
I-133	-1.526E-04		4.922E-03	Half-Life	too short	
CS-134	8.589E-02	+	5.207E-02	6.702E-02	6.482E-03	1.282
CS-135	1.715E-01		1.296E-01	2.009E-01	1.519E-02	0.854
I-135	-4.937E+10		2.939E+10	Half-Life	too short	
CS-136	-1.705E-02		8.224E-02	1.353E-01	1.213E-02	-0.126
BA-137M	2.095E-03		2.887E-02	4.864E-02	3.707E-03	0.043
CS-137	2.215E-03		3.052E-02	5.141E-02	3.929E-03	0.043
CE-139	1.467E-04		2.258E-02	3.816E-02	2.003E-03	0.004
BA-140	4.838E-02		1.933E-01	3.200E-01	1.047E-01	0.151
LA-140	-2.353E-02		6.869E-02	1.096E-01	7.521E-03	-0.215
CE-141	5.132E-02		5.247E-02	8.655E-02	4.941E-03	0.593
CE-143	6.522E-04		1.286E-04	Half-Life	too short	
CE-144	-1.506E-01		1.690E-01	2.567E-01	3.629E-02	-0.587
PM-144	5.807E-03		2.582E-02	4.371E-02	3.549E-03	0.133
PR-144	3.937E-01		1.751E+00	2.964E+00	2.405E-01	0.133
PM-146	1.400E-02		3.152E-02	5.353E-02	4.762E-03	0.262
ND-147	7.789E-02		4.146E-01	6.863E-01	9.575E-02	0.113
PM-149	2.672E+01		9.852E+01	1.622E+02	2.294E+01	0.165
EU-152	-1.606E-02		8.593E-02	1.181E-01	7.710E-03	-0.136
GD-153	-1.131E-01		7.787E-02	1.035E-01	8.093E-03	-1.093
EU-154	6.364E-03		8.976E-02	1.483E-01	1.481E-02	0.043

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	1.084E-01		9.115E-02	1.542E-01	1.102E-02	0.703
TB-160	-5.066E-02		1.040E-01	1.632E-01	1.792E-02	-0.310
HO-166M	-1.124E-02		4.410E-02	7.227E-02	6.024E-03	-0.156
TM-171	-4.119E+01		2.740E+01	4.191E+01	3.351E+00	-0.983
LU-176	4.062E-04		2.102E-02	3.142E-02	1.809E-03	0.013
LU-177	1.096E+00		1.103E+00	1.693E+00	9.181E-02	0.647
LU-177M	-1.741E-01		1.358E-01	2.105E-01	1.243E-02	-0.827
HF-181	-1.523E-02		3.213E-02	5.137E-02	3.288E-03	-0.297
W-181	-8.221E-02		3.563E-01	5.770E-01	4.577E-02	-0.142
TA-182	1.340E-01		1.402E-01	2.467E-01	1.509E-02	0.543
RE-183	5.888E-02		8.402E-02	1.441E-01	7.607E-03	0.409
RE-184	-5.474E-02		1.752E-01	2.830E-01	1.590E-02	-0.193
OS-185	-1.077E-02		3.206E-02	5.019E-02	3.774E-03	-0.215
RE-188	7.067E-02		1.319E-01	2.280E-01	1.220E-02	0.310
W-188	-2.676E-02		6.401E+00	9.083E+00	5.203E-01	-0.003
IR-192	-4.362E-03		2.721E-02	4.349E-02	2.522E-03	-0.100
AU-195	6.594E-02		2.185E-01	3.221E-01	2.465E-02	0.205
TL-200	9.120E-06		3.225E-04	Half-Life too short		
TL-201	1.560E+00		6.733E+00	1.147E+01	6.019E-01	0.136
TL-202	1.520E-02		5.415E-02	8.980E-02	5.475E-03	0.169
HG-203	3.022E-02		3.122E-02	5.312E-02	3.221E-03	0.569
BI-207	1.364E-02		3.849E-02	6.594E-02	5.443E-03	0.207
TL-207	3.164E-01		5.388E-01	7.888E-01	1.302E-01	0.401
PO-209	-2.798E-01		5.725E+00	9.314E+00	1.051E+00	-0.030
BI-210	1.670E+00		4.601E+00	7.897E+00	6.110E-01	0.211
PB-210	1.670E+00		4.601E+00	7.897E+00	6.110E-01	0.211
PO-210	1.670E+00		4.600E+00	7.897E+00	5.253E-01	0.211
PB-211	-2.664E-01		7.552E-01	1.209E+00	7.540E-01	-0.220
BI-212	1.002E+00	+	3.494E-01	4.900E-01	4.880E-02	2.046
PO-215	3.164E-01		5.388E-01	7.888E-01	1.302E-01	0.401
RN-219	1.451E-01		3.264E-01	5.438E-01	7.404E-02	0.267
RN-220	-1.012E+01		1.884E+01	2.952E+01	2.029E+00	-0.343
RA-223	3.164E-01		5.388E-01	7.888E-01	1.302E-01	0.401
AC-227	3.246E-01		2.963E-01	5.045E-01	7.007E-02	0.643
TH-227	3.246E-01		2.979E-01	5.045E-01	8.496E-02	0.643
TH-229	-3.901E-02		3.944E-01	6.570E-01	3.518E-02	-0.059
PA-231	-5.945E-01		1.157E+00	1.826E+00	2.510E-01	-0.326
TH-231	3.164E-01		5.388E-01	7.888E-01	1.302E-01	0.401
U-231	2.069E-01		1.215E+00	1.782E+00	1.428E-01	0.116
PA-233	8.346E-03		5.215E-02	8.486E-02	5.198E-03	0.098
PA-234	-3.143E-03		2.158E-01	3.502E-01	6.909E-02	-0.009
PA-234M	1.083E+00		3.416E+00	5.634E+00	6.078E-01	0.192
TH-234	9.457E-01		1.332E+00	2.218E+00	3.910E-01	0.426
U-235	3.994E-02		1.738E-01	2.734E-01	4.428E-02	0.146
NP-236	-2.676E-02		5.989E-02	9.967E-02	5.280E-03	-0.269
U-238	9.457E-01		1.332E+00	2.218E+00	3.910E-01	0.426
NP-239	1.098E-01		1.593E-01	2.635E-01	1.631E-02	0.417
AM-241	-1.762E-01		1.573E-01	2.507E-01	2.079E-02	-0.703

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	-1.644E-02		8.162E-02	1.312E-01	9.394E-03	-0.125
AM-246	3.834E-02		1.022E-01	1.753E-01	1.387E-02	0.219
CM-247	9.052E-03		2.945E-02	4.883E-02	2.844E-03	0.185
CF-249	3.656E-02		2.865E-02	5.109E-02	2.937E-03	0.716
CF-251	1.384E-02		9.455E-02	1.600E-01	8.449E-03	0.086

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]G1202006618          *
* Acquisition date   : 7-JAN-2010 16:06:15 Detector SN#      :              *
* Detector ID       : GAM18                      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 02:00:01.59             Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 22-DEC-2009 12:00:00 Nuclide Library : SOLID           *
* Sample ID        : G1202006618             Analyst initials: MXR1          *
* Batch Number     : 937704                  Sample Quantity : 1.3362E+02 GRAM *
* Recovery         : 1.00000                  Carrier Weight  : 0.00000        *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME : 23-APR-2009 11:59:23 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	2.041E+01	1.918E+00	2.030E-01	9.786E-01
CD-109	1.666E+00	9.587E-01	6.374E-01	4.892E-01
SN-126	1.635E-01	9.409E-02	5.371E-02	4.800E-02
TL-208	4.487E-01	6.935E-02	2.216E-02	3.538E-02
BI-211	3.737E+00	4.145E-01	1.180E-01	2.115E-01
PB-212	1.558E+00	1.392E-01	3.506E-02	7.101E-02
PO-212	1.558E+00	1.392E-01	3.506E-02	7.101E-02
BI-214	1.185E+00	1.646E-01	4.294E-02	8.398E-02
PB-214	1.300E+00	1.588E-01	4.112E-02	8.101E-02
PO-214	1.300E+00	1.588E-01	4.112E-02	8.101E-02
PO-216	1.558E+00	1.392E-01	3.506E-02	7.101E-02
PO-218	1.300E+00	1.588E-01	4.112E-02	8.101E-02
RA-224	4.182E+00	1.063E+00	3.985E-01	5.423E-01
RA-226	1.185E+00	1.646E-01	4.294E-02	8.398E-02
AC-228	1.407E+00	2.661E-01	7.846E-02	1.358E-01
RA-228	1.407E+00	2.661E-01	7.846E-02	1.358E-01
TH-228	1.583E+00	1.414E-01	3.563E-02	7.217E-02
TH-230	1.185E+00	1.646E-01	4.294E-02	8.398E-02
TH-232	1.407E+00	2.661E-01	7.846E-02	1.358E-01
U-234	1.185E+00	1.646E-01	4.294E-02	8.398E-02
NP-237	4.801E-01	2.928E-01	1.630E-01	1.494E-01
AM-243	3.959E-01	7.629E-02	4.101E-02	3.893E-02
ANH-511	1.347E-01	5.388E-02	1.676E-02	2.749E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	1.739E-01	2.375E-01	2.128E-01	1.212E-01 NOT IDENT.
NA-22	-9.019E-03	3.237E-02	2.663E-02	1.652E-02 NOT IDENT.
NA-24	-5.714E+05	1.815E+06	0.000E+00	9.261E+05 SHORT HLIF
AL-26	1.008E-02	2.041E-02	1.834E-02	1.041E-02 NOT IDENT.

TI-44	3.472E-01	5.130E-02	3.970E-02	2.617E-02	FAIL ABUN
SC-46	-1.348E-02	2.867E-02	2.325E-02	1.463E-02	FAIL ABUN
V-48	9.904E-03	4.982E-02	4.227E-02	2.542E-02	NOT IDENT.
CR-51	9.329E-02	2.802E-01	2.415E-01	1.430E-01	NOT IDENT.
MN-52	6.897E-03	1.998E-01	1.665E-01	1.019E-01	NOT IDENT.
MN-54	1.220E-02	2.954E-02	2.572E-02	1.507E-02	NOT IDENT.
CO-56	-1.640E-02	2.991E-02	2.432E-02	1.526E-02	FAIL ABUN
CO-57	5.434E-04	2.135E-02	1.832E-02	1.089E-02	NOT IDENT.
CO-58	-1.984E-02	2.994E-02	2.426E-02	1.527E-02	NOT IDENT.
FE-59	-2.542E-02	6.311E-02	5.227E-02	3.220E-02	NOT IDENT.
CO-60	1.405E-02	2.575E-02	2.277E-02	1.314E-02	NOT IDENT.
ZN-65	-2.761E-03	7.228E-02	5.262E-02	3.688E-02	NOT IDENT.
GE-68	6.487E-01	8.834E-01	7.975E-01	4.507E-01	NOT IDENT.
AS-73	2.421E-01	9.719E-01	8.716E-01	4.959E-01	NOT IDENT.
AS-74	-3.918E-02	7.204E-02	5.838E-02	3.676E-02	NOT IDENT.
SE-75	-7.044E-03	3.358E-02	2.763E-02	1.713E-02	NOT IDENT.
BR-77	-4.422E+00	1.016E+01	8.167E+00	5.184E+00	FAIL ABUN
SR-82	-1.840E-01	3.449E-01	2.520E-01	1.760E-01	NOT IDENT.
RB-83	-2.403E-02	4.967E-02	3.977E-02	2.534E-02	NOT IDENT.
RB-84	-1.741E-02	5.079E-02	4.168E-02	2.592E-02	NOT IDENT.
KR-85	2.440E+01	6.615E+00	5.968E+00	3.375E+00	NOT IDENT.
SR-85	1.265E-01	3.430E-02	3.094E-02	1.750E-02	NOT IDENT.
RB-86	2.973E-01	5.878E-01	5.226E-01	2.999E-01	NOT IDENT.
Y-88	8.927E-03	2.380E-02	2.097E-02	1.214E-02	NOT IDENT.
ZR-88	9.566E-03	2.186E-02	1.961E-02	1.115E-02	NOT IDENT.
Y-91	-4.750E+00	1.366E+01	1.128E+01	6.969E+00	NOT IDENT.
NB-94	-9.238E-03	2.435E-02	2.056E-02	1.242E-02	NOT IDENT.
NB-95	5.061E-02	3.612E-02	2.970E-02	1.843E-02	NOT IDENT.
NB-95M	-3.539E-03	1.045E-01	7.972E-02	5.329E-02	NOT IDENT.
ZR-95	4.279E-02	5.118E-02	4.623E-02	2.611E-02	NOT IDENT.
NB-97	-1.760E+05	2.085E+05	0.000E+00	1.064E+05	SHORT HLIF
ZR-97	7.339E+06	4.227E+06	0.000E+00	2.157E+06	SHORT HLIF
MO-99	2.746E+00	1.041E+01	9.113E+00	5.310E+00	NOT IDENT.
TC-99M	-2.211E+17	5.647E+17	0.000E+00	0.000E+00	SHORT HLIF
RH-101	9.060E-04	2.643E-02	2.291E-02	1.348E-02	NOT IDENT.
RH-102	4.140E-03	2.122E-02	1.848E-02	1.083E-02	NOT IDENT.
RU-103	-1.911E-02	2.929E-02	2.397E-02	1.494E-02	FAIL ABUN
RH-106	4.278E-02	2.306E-01	1.956E-01	1.177E-01	FAIL ABUN
RU-106	4.278E-02	2.306E-01	1.956E-01	1.177E-01	FAIL ABUN
AG-108M	1.571E-02	2.344E-02	2.111E-02	1.196E-02	NOT IDENT.
AG-110M	-2.113E-02	2.665E-02	2.209E-02	1.360E-02	FAIL ABUN
IN-111	8.920E-01	1.034E+00	8.326E-01	5.274E-01	NOT IDENT.
IN-113M	-3.743E-02	3.253E-02	2.674E-02	1.660E-02	NOT IDENT.
SN-113	-3.743E-02	3.253E-02	2.674E-02	1.660E-02	NOT IDENT.
IN-114M	-1.579E-02	1.545E-01	1.202E-01	7.885E-02	NOT IDENT.
CD-115	-3.831E+00	1.044E+01	8.674E+00	5.329E+00	NOT IDENT.
SN-117M	-2.346E-02	4.246E-02	3.747E-02	2.166E-02	NOT IDENT.
SB-122	7.969E-01	1.948E+00	1.691E+00	9.939E-01	NOT IDENT.
I-123	-3.331E+06	1.592E+07	0.000E+00	8.125E+06	SHORT HLIF
TE-123M	-4.354E-03	2.082E-02	1.861E-02	1.062E-02	NOT IDENT.
I-124	1.497E-01	6.964E-01	5.141E-01	3.553E-01	NOT IDENT.
SB-124	-2.907E-04	5.777E-02	4.863E-02	2.947E-02	FAIL ABUN
SB-125	3.682E-02	6.332E-02	5.689E-02	3.231E-02	FAIL ABUN
TE-125M	3.823E+00	7.706E+00	6.793E+00	3.931E+00	NOT IDENT.
I-126	-4.562E-02	1.516E-01	1.296E-01	7.733E-02	NOT IDENT.
SB-126	7.070E-02	1.221E-01	9.566E-02	6.228E-02	FAIL ABUN
SB-127	2.474E-01	1.131E+00	9.950E-01	5.772E-01	NOT IDENT.
XE-127	-1.951E-02	3.658E-02	3.162E-02	1.866E-02	NOT IDENT.
I-131	-1.336E-02	8.867E-02	7.774E-02	4.524E-02	NOT IDENT.
TE-132	-1.761E-01	6.709E-01	5.796E-01	3.423E-01	NOT IDENT.
BA-133	-8.791E-03	3.690E-02	2.639E-02	1.883E-02	NOT IDENT.
I-133	-1.526E+02	9.647E+03	0.000E+00	4.922E+03	SHORT HLIF
CS-134	8.589E-02	5.103E-02	3.396E-02	2.603E-02	FAIL ABUN
CS-135	1.715E-01	1.270E-01	1.038E-01	6.481E-02	NOT IDENT.
I-135	-4.937E+16	5.760E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.705E-02	8.060E-02	6.824E-02	4.112E-02	FAIL ABUN
BA-137M	2.095E-03	2.830E-02	2.473E-02	1.444E-02	NOT IDENT.
CS-137	2.215E-03	2.991E-02	2.614E-02	1.526E-02	NOT IDENT.
CE-139	1.467E-04	2.213E-02	1.988E-02	1.129E-02	NOT IDENT.
BA-140	4.838E-02	1.894E-01	1.633E-01	9.666E-02	NOT IDENT.
LA-140	-2.353E-02	6.731E-02	5.485E-02	3.434E-02	FAIL ABUN
CE-141	5.132E-02	5.142E-02	4.518E-02	2.623E-02	NOT IDENT.
CE-143	6.522E+02	2.520E+02	0.000E+00	1.286E+02	SHORT HLIF
CE-144	-1.506E-01	1.657E-01	1.342E-01	8.452E-02	NOT IDENT.
PM-144	5.807E-03	2.530E-02	2.220E-02	1.291E-02	NOT IDENT.
PR-144	3.937E-01	1.716E+00	1.506E+00	8.753E-01	NOT IDENT.
PM-146	1.400E-02	3.089E-02	2.740E-02	1.576E-02	NOT IDENT.
ND-147	7.789E-02	4.063E-01	3.503E-01	2.073E-01	FAIL ABUN

PM-149	2.672E+01	9.655E+01	8.369E+01	4.926E+01	NOT IDENT.
EU-152	-1.606E-02	8.421E-02	6.077E-02	4.296E-02	FAIL ABUN
GD-153	-1.131E-01	7.631E-02	5.440E-02	3.894E-02	NOT IDENT.
EU-154	6.364E-03	8.796E-02	7.450E-02	4.488E-02	NOT IDENT.
EU-155	1.084E-01	8.932E-02	8.093E-02	4.557E-02	FAIL ABUN
TB-160	-5.066E-02	1.019E-01	8.254E-02	5.198E-02	FAIL ABUN
HO-166M	-1.124E-02	4.321E-02	3.670E-02	2.205E-02	NOT IDENT.
TM-171	-4.119E+01	2.685E+01	2.217E+01	1.370E+01	NOT IDENT.
LU-176	4.062E-04	2.060E-02	1.619E-02	1.051E-02	FAIL ABUN
LU-177	1.096E+00	1.081E+00	8.782E-01	5.514E-01	NOT IDENT.
LU-177M	-1.741E-01	1.331E-01	1.079E-01	6.792E-02	NOT IDENT.
HF-181	-1.523E-02	3.149E-02	2.627E-02	1.606E-02	NOT IDENT.
W-181	-8.221E-02	3.492E-01	3.053E-01	1.782E-01	NOT IDENT.
TA-182	1.340E-01	1.374E-01	1.240E-01	7.011E-02	FAIL ABUN
RE-183	5.888E-02	8.234E-02	7.509E-02	4.201E-02	FAIL ABUN
RE-184	-5.474E-02	1.717E-01	1.463E-01	8.760E-02	NOT IDENT.
OS-185	-1.077E-02	3.142E-02	2.553E-02	1.603E-02	NOT IDENT.
RE-188	7.067E-02	1.292E-01	1.189E-01	6.594E-02	NOT IDENT.
W-188	-2.676E-02	6.273E+00	4.686E+00	3.201E+00	NOT IDENT.
IR-192	-4.362E-03	2.667E-02	2.240E-02	1.361E-02	FAIL ABUN
AU-195	6.594E-02	2.141E-01	1.693E-01	1.093E-01	FAIL ABUN
TL-200	9.120E+00	6.321E+02	0.000E+00	3.225E+02	SHORT HLIF
TL-201	1.560E+00	6.598E+00	5.971E+00	3.366E+00	NOT IDENT.
TL-202	1.520E-02	5.306E-02	4.599E-02	2.707E-02	NOT IDENT.
HG-203	3.022E-02	3.059E-02	2.742E-02	1.561E-02	NOT IDENT.
BI-207	1.364E-02	3.772E-02	3.324E-02	1.924E-02	FAIL ABUN
TL-207	3.164E-01	5.280E-01	4.061E-01	2.694E-01	FAIL ABUN
PO-209	-2.798E-01	5.610E+00	4.710E+00	2.862E+00	NOT IDENT.
BI-210	1.670E+00	4.509E+00	4.201E+00	2.300E+00	NOT IDENT.
PB-210	1.670E+00	4.509E+00	4.201E+00	2.300E+00	NOT IDENT.
PO-210	1.670E+00	4.508E+00	4.201E+00	2.300E+00	NOT IDENT.
PB-211	-2.664E-01	7.401E-01	6.203E-01	3.776E-01	NOT IDENT.
BI-212	1.002E+00	3.425E-01	2.487E-01	1.747E-01	FAIL ABUN
PO-215	3.164E-01	5.280E-01	4.061E-01	2.694E-01	FAIL ABUN
RN-219	1.451E-01	3.198E-01	2.790E-01	1.632E-01	FAIL ABUN
RN-220	-1.012E+01	1.846E+01	1.506E+01	9.418E+00	NOT IDENT.
RA-223	3.164E-01	5.280E-01	4.061E-01	2.694E-01	FAIL ABUN
AC-227	3.246E-01	2.904E-01	2.608E-01	1.482E-01	FAIL ABUN
TH-227	3.246E-01	2.920E-01	2.608E-01	1.490E-01	FAIL ABUN
TH-229	-3.901E-02	3.865E-01	3.413E-01	1.972E-01	FAIL ABUN
PA-231	-5.945E-01	1.134E+00	9.424E-01	5.784E-01	FAIL ABUN
TH-231	3.164E-01	5.280E-01	4.061E-01	2.694E-01	FAIL ABUN
U-231	2.069E-01	1.190E+00	9.369E-01	6.073E-01	FAIL ABUN
PA-233	8.346E-03	5.111E-02	4.372E-02	2.608E-02	FAIL ABUN
PA-234	-3.143E-03	2.115E-01	1.769E-01	1.079E-01	FAIL ABUN
PA-234M	1.083E+00	3.348E+00	2.843E+00	1.708E+00	NOT IDENT.
TH-234	9.457E-01	1.306E+00	1.174E+00	6.661E-01	FAIL ABUN
U-235	3.994E-02	1.703E-01	1.427E-01	8.691E-02	FAIL ABUN
NP-236	-2.676E-02	5.870E-02	5.194E-02	2.995E-02	FAIL ABUN
U-238	9.457E-01	1.306E+00	1.174E+00	6.661E-01	FAIL ABUN
NP-239	1.098E-01	1.561E-01	1.381E-01	7.965E-02	FAIL ABUN
AM-241	-1.762E-01	1.542E-01	1.328E-01	7.867E-02	NOT IDENT.
CM-243	-1.644E-02	7.999E-02	6.890E-02	4.081E-02	FAIL ABUN
AM-246	3.834E-02	1.002E-01	8.836E-02	5.112E-02	NOT IDENT.
CM-247	9.052E-03	2.886E-02	2.504E-02	1.472E-02	NOT IDENT.
CF-249	3.656E-02	2.808E-02	2.622E-02	1.432E-02	NOT IDENT.
CF-251	1.384E-02	9.266E-02	8.325E-02	4.728E-02	NOT IDENT.

 * GEL Laboratories LLC *
 * 2040 SAVAGE ROAD *
 * CHARLESTON , SC 29417 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
46.50	258.7244
46.50	258.7244
46.50	258.7244
48.70	280.7455
49.72	282.7963
51.35	288.2338
52.39	273.0675
52.97	271.8561
53.15	271.1326
53.44	268.6994
54.07	281.2085
56.28	292.7244
56.28	292.7276
57.37	0.0000
57.53	291.2838
57.53	291.2854
57.60	275.6327
57.98	272.3046
57.98	272.3046
59.32	342.4694
59.32	342.4694
59.40	342.5658
59.54	342.7343
59.72	342.9504
60.01	333.0370
61.10	350.2189
61.14	350.2674
61.30	351.3975
63.00	306.3141
63.29	329.2555
63.29	329.2555
63.58	329.5759
64.28	365.3707
65.12	354.9978
65.20	355.0915
65.20	355.0915
66.05	405.5914
66.72	400.7483
66.83	398.0300
66.91	398.1318
67.20	367.9244
67.20	367.9244
67.75	336.0251
67.85	334.2187
68.90	337.8352
68.90	337.8352
69.30	343.4578
69.67	348.1953
70.82	388.5930
70.82	388.5930
70.83	388.6053
72.80	353.0355
72.87	353.1111
72.87	353.1111
74.67	368.2350
74.81	368.3891
74.81	368.3891
74.81	368.3891
74.81	368.3891
74.81	368.3891
74.81	368.3891
74.81	368.3891
74.97	368.5643
75.28	368.9052
75.70	369.3648
77.11	370.8968
77.11	370.8968

77.11	370.8968
77.11	370.8968
77.11	370.8968
77.11	370.8968
77.11	370.8968
78.38	372.2660
79.62	373.5931
79.80	373.7846
79.80	373.7846
80.11	374.1140
80.18	374.1886
80.30	374.3150
80.30	374.3150
80.57	374.6023
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81.07	375.1308
81.07	375.1308
81.07	375.1308
82.60	376.7375
83.37	377.5379
83.78	377.9688
83.78	377.9688
83.78	377.9688
83.78	377.9688
84.21	378.4150
84.90	359.4913
85.43	360.0088
86.29	360.8459
86.50	361.0492
86.54	361.0874
86.59	361.1364
86.72	361.2617
86.79	361.3271
86.94	361.4741
87.30	349.6606
87.30	349.6606
87.30	349.6606
87.30	349.6606
87.30	349.6606
87.30	349.6606
87.57	349.9116
87.88	481.1435
88.03	481.3363
88.36	457.3631
88.47	457.4959
89.95	459.2766
91.11	342.4249
92.29	343.4662
92.38	343.5461
92.38	343.5461
93.35	344.3951
94.00	344.9633
94.67	345.5401
94.67	345.5452
94.90	345.7443
94.90	345.7443
94.90	345.7443
94.90	345.7443
95.87	346.5830
95.87	346.5830
96.73	384.7069
97.43	385.3684
98.44	320.6316
98.44	320.6316
98.88	330.3701
99.55	301.1104
99.55	301.1104
99.86	307.6138
100.00	307.7184
100.10	307.7947
103.18	360.6823
103.76	322.1001
105.00	309.2653
105.31	290.4115
108.00	363.6653
109.28	306.9666

111.00	313.5234
111.00	313.5234
111.76	309.7515
112.95	342.9182
115.19	300.1721
116.30	304.1530
117.00	293.7318
117.00	293.7318
117.66	312.6684
121.11	307.2740
121.62	313.0944
121.78	313.1988
122.06	322.1781
122.32	322.3510
122.32	322.3510
122.32	322.3510
122.32	322.3510
123.07	317.3438
127.23	373.3883
129.76	320.5533
131.20	295.7056
133.02	305.7537
133.54	329.6906
135.34	299.2249
136.00	297.3411
136.25	304.2696
136.48	294.2191
140.51	302.1686
140.51	0.0000
142.18	322.5541
142.65	313.6768
143.76	308.5822
144.24	308.8531
144.24	308.8531
144.24	308.8531
144.24	308.8531
145.22	295.6033
145.44	295.7236
147.16	356.6652
152.43	339.0530
152.70	318.2306
153.22	295.7706
154.21	291.8984
154.21	291.8984
154.21	291.8984
154.21	291.8984
155.03	300.2154
156.02	298.9708
158.56	307.3409
159.00	0.0000
159.00	294.3119
160.31	308.2516
161.27	302.5402
162.32	266.6336
162.64	281.0035
163.35	283.1169
163.89	294.9560
165.85	296.8071
167.43	291.3029
171.28	271.4769
171.86	275.3405
172.10	278.1545
176.55	279.2119
176.60	279.2329
181.06	290.1478
184.41	262.1763
185.71	284.0902
186.00	284.2148
190.27	294.2035
192.34	292.7582
193.63	306.1111
197.04	292.6190
198.01	310.8706
198.60	301.7334
200.40	294.9706
201.83	346.5601
202.84	320.5747
205.31	274.8076

208.36	318.6638
208.81	311.2320
209.75	257.7846
209.75	257.7846
210.97	267.7786
215.65	254.0782
216.55	234.1493
218.09	261.6670
222.10	265.9664
223.80	251.9634
226.40	267.4548
227.00	292.0834
227.08	292.1131
227.20	287.2731
228.16	289.5842
228.18	289.5909
228.18	289.5909
231.56	0.0000
235.69	287.6142
236.00	297.2107
236.00	297.2107
238.63	246.8343
238.63	246.8343
238.63	246.8343
238.63	246.8343
239.00	246.9464
240.98	247.5486
241.98	247.8526
241.98	247.8526
241.98	247.8526
244.69	198.1381
245.39	175.9167
247.94	199.3745
248.90	206.7733
249.79	221.0608
252.40	209.6520
252.85	224.8902
252.85	224.8902
254.15	0.0000
256.20	205.5284
256.20	205.5284
260.50	229.9589
260.90	220.9039
262.80	210.1649
264.65	213.8212
268.24	183.9551
268.79	205.4352
269.46	212.1666
269.46	212.1666
269.46	212.1666
269.46	212.1666
271.23	238.9562
273.65	241.2529
276.40	226.5177
277.35	214.6564
277.60	214.7132
277.60	214.7132
278.00	226.2229
278.60	199.3740
279.20	196.3857
279.53	207.8888
280.46	224.7506
281.68	245.8849
283.67	211.9581
284.30	218.3695
285.00	204.9423
285.90	205.1396
286.10	205.1815
286.10	205.1815
287.40	207.5652
288.45	0.0000
290.67	207.0220
290.80	207.0520
291.72	217.3631
293.26	0.0000
293.70	202.6172
295.21	184.9709
295.21	184.9709

295.21	184.9709
295.96	185.1151
296.50	185.2192
297.23	185.3580
298.57	185.6171
299.80	185.8521
299.80	185.8521
300.09	185.9081
300.09	185.9081
300.09	185.9081
300.09	185.9081
300.12	185.9135
301.29	194.0060
302.84	187.4968
303.76	199.6170
303.91	199.6455
304.40	211.6961
304.40	211.6961
304.84	216.9170
306.84	201.0954
308.46	190.7112
311.98	208.5879
316.51	195.4859
318.01	192.5309
319.02	211.1270
319.41	205.7918
320.08	171.2430
323.87	154.9069
323.87	154.9069
323.87	154.9069
323.87	154.9069
325.23	226.5637
328.77	197.8251
333.44	171.2606
334.20	171.3820
334.20	171.3820
334.30	171.3986
338.28	217.2543
338.28	217.2543
338.28	217.2543
338.28	217.2543
338.32	217.2633
338.32	217.2633
338.32	217.2633
340.50	210.4115
340.57	210.4260
344.27	182.7571
345.85	184.7980
350.59	0.0000
351.07	153.9887
351.92	154.1087
351.92	154.1087
351.92	154.1087
355.39	0.0000
356.01	172.1602
364.48	159.0037
366.43	149.3218
367.43	148.5469
367.94	0.0000
369.80	153.3914
374.96	144.0477
383.85	188.3137
387.95	131.8124
388.63	142.9550
391.69	184.0021
391.69	184.0021
392.90	146.2387
398.62	170.1752
400.65	154.6199
401.10	161.2013
401.81	161.2931
402.60	166.9931
404.84	194.4008
410.95	170.9338
411.60	161.6258
413.65	194.8307
414.70	163.9066
415.30	146.0788

415.76	141.4178
417.63	0.0000
418.52	145.5029
423.70	146.0932
427.08	135.0612
427.89	123.7253
432.53	138.4916
433.93	130.0351
439.47	127.7008
439.56	127.7089
439.89	128.7018
443.98	149.3275
444.90	140.7531
445.03	134.0183
445.03	134.0183
445.03	134.0183
445.03	134.0183
453.90	127.1349
463.38	120.1953
468.07	106.2201
473.00	126.8184
475.06	132.0387
475.35	134.0377
476.78	125.2931
477.59	123.3902
477.96	131.3213
482.03	140.6081
484.57	122.0090
487.03	115.2623
490.36	0.0000
492.35	106.7087
497.08	131.0656
507.63	0.0000
510.53	0.0000
510.84	117.1357
511.00	117.1477
511.85	117.2142
511.85	117.2142
513.99	114.6808
513.99	114.6808
520.41	119.6813
520.65	119.7014
527.90	116.4075
528.96	0.0000
529.64	103.2488
529.87	0.0000
531.02	102.3169
537.32	104.7866
543.00	97.9456
546.56	0.0000
549.76	120.1065
552.65	101.6511
555.20	111.1614
563.23	128.4173
563.90	113.8459
568.70	124.6566
569.32	117.3676
569.50	131.0028
569.67	131.0181
573.80	123.9893
574.00	133.4616
574.64	140.1725
578.91	128.2342
579.30	0.0000
583.14	121.5137
585.48	112.8646
591.81	133.8196
592.07	132.7789
593.00	128.5979
595.88	134.1396
600.56	151.5822
602.52	0.0000
602.71	133.6029
602.71	133.6029
603.60	139.0168
604.41	146.2160
604.70	142.6725
609.31	129.8180

609.31	129.8180
609.31	129.8180
609.31	129.8180
610.33	129.8948
612.46	107.4805
614.37	105.8044
618.01	97.0378
621.84	104.8102
621.84	104.8102
631.29	101.0217
633.02	91.3315
633.10	88.0737
634.78	91.4218
635.90	99.1003
636.97	94.8015
645.85	109.4971
646.12	109.5142
656.30	124.7995
657.75	141.4267
657.90	0.0000
661.65	141.7244
661.65	141.7244
664.57	0.0000
666.33	147.6107
666.33	147.6107
675.00	114.9230
677.61	93.7341
685.20	95.9695
692.80	119.7292
695.00	117.9917
696.49	117.1443
696.49	117.1443
697.00	120.9244
697.49	117.2053
698.33	110.6874
698.50	110.6970
699.00	113.5409
702.63	124.0911
706.10	113.0078
706.58	0.0000
706.67	108.3319
709.31	97.1555
711.68	110.4921
713.82	107.7749
717.42	108.9168
720.50	92.6866
721.93	0.0000
722.20	97.6465
722.78	109.0713
722.78	109.0713
722.89	109.0760
722.95	109.0783
723.30	102.5859
724.18	112.4042
727.18	115.1533
733.00	99.8037
735.90	111.2492
739.58	88.0862
742.81	88.2247
744.21	82.5251
747.13	100.9006
751.79	100.1618
752.31	98.2605
753.82	82.9066
755.35	85.8620
756.15	86.8597
756.87	96.5434
763.93	89.6710
765.79	96.3983
766.42	101.4142
766.84	106.4219
776.49	125.6957
778.00	122.3253
778.57	123.8658
778.89	124.8594
783.80	91.9021
785.46	98.6262
792.07	89.1676

795.84	89.3210
796.30	96.0821
798.80	106.3169
801.93	116.9839
805.60	90.8451
810.29	106.8684
810.76	108.8721
815.85	88.2866
817.79	89.3573
818.51	83.4258
819.60	75.5176
826.30	84.7112
828.27	0.0000
831.60	116.8738
831.96	114.8947
834.83	113.0368
836.80	0.0000
846.75	103.5679
848.13	83.5083
856.28	0.0000
856.80	107.3345
860.37	74.8446
867.32	76.5135
867.82	83.4877
871.10	85.3450
873.19	68.7799
874.81	69.1967
875.33	0.0000
876.40	83.4981
879.36	88.6992
880.27	85.6731
880.51	84.6616
881.50	83.6766
883.24	75.5673
884.67	69.4817
889.25	88.0419
896.60	90.3615
898.02	85.2780
899.00	90.4510
903.28	98.8457
911.07	83.6664
911.07	83.6664
911.07	83.6664
919.63	62.1887
920.93	74.6660
925.00	88.6372
925.24	92.8011
926.50	92.6504
935.52	83.4456
937.48	76.9492
944.10	74.1000
946.00	75.4116
949.00	79.6955
962.29	83.1183
964.01	73.8324
966.15	73.8936
968.20	73.9506
969.11	73.9777
969.11	73.9777
969.11	73.9777
977.42	63.6108
980.50	74.2995
983.50	63.7573
989.30	61.7678
996.32	79.0149
1001.03	69.5280
1001.68	81.3128
1004.76	74.9803
1021.30	0.0000
1024.50	0.0000
1034.80	64.9805
1036.00	63.1523
1037.82	71.5564
1038.57	67.8570
1038.76	0.0000
1045.16	63.3610
1046.59	68.9879
1048.07	80.2171

1050.47	75.6183
1050.47	75.6183
1062.04	72.1794
1063.62	75.9714
1076.63	72.5527
1077.35	67.8566
1078.86	71.6662
1085.78	70.8932
1099.22	77.8703
1112.02	72.6998
1112.84	81.8112
1115.52	83.5571
1120.29	75.5614
1120.29	75.5614
1120.29	75.5614
1120.29	75.5614
1120.51	75.5669
1121.28	82.0445
1124.00	0.0000
1129.67	73.8821
1131.51	0.0000
1147.95	0.0000
1167.94	76.7654
1173.22	96.3655
1175.09	80.8405
1177.93	70.1920
1189.05	65.5512
1204.90	96.3662
1205.75	0.0000
1213.00	84.7852
1221.42	76.1111
1230.97	86.7493
1235.34	92.0804
1236.41	0.0000
1238.25	82.4731
1246.25	69.7290
1260.41	0.0000
1271.85	68.2680
1274.45	69.3249
1274.54	77.3652
1291.56	61.6021
1298.22	0.0000
1312.09	61.9787
1325.50	58.1411
1325.50	58.1411
1332.49	38.8403
1333.61	36.8073
1360.21	37.0898
1362.66	0.0000
1365.15	47.4600
1368.21	46.9838
1368.53	0.0000
1376.25	46.5742
1384.27	34.4908
1394.10	47.8482
1395.20	49.9436
1407.95	51.1636
1434.06	42.0661
1436.60	39.9907
1457.56	0.0000
1460.81	39.1925
1489.15	37.3535
1509.49	32.8584
1596.49	41.2678
1620.62	34.7552
1678.03	0.0000
1691.02	27.4907
1691.02	27.4907
1706.46	0.0000
1750.46	0.0000
1764.49	18.9722
1764.49	18.9722
1764.49	18.9722
1764.49	18.9722
1770.23	24.8843
1771.40	21.3353
1791.20	0.0000
1808.65	16.1348

1836.01

18.2609

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202006618

Total Uranium Activity	2.8320E+00	ug/g
Total Uranium Counting Unc.	3.8851E+00	ug/g
Total Uranium Tpu	1.9822E-06	ug/g
Total Uranium Mda	3.4937E+00	ug/g

```

*****
*
*               GEL Laboratories LLC
*               2040 SAVAGE ROAD
*               CHARLESTON ,SC 29417
*               GROSS GAMMA REPORT
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G1202006618
*  ANALYST       : MXR1            DETECTOR    : GAM18
*  SAMPLE DATE   : 22-DEC-2009 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 16:06:15.15  SAMPLE ALQT: 133.620 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 8.043E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.050E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.181E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.056E+00

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VAX/VMS Nuclide Identification Report Generated 7-JAN-2010 17:07:21.82

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*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                          *
*                               Charleston, SC 29414                      *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006619.CNF;1
Sample date       : 31-DEC-2009 00:00:00 Acquisition date : 7-JAN-2010 16:06:51.
Sample ID        : G1202006619 Sample quantity   : 1.55440E+02 GRAM
Detector name    : GAM13 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.61 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity      : 5.00000
Batch ID        : 937704 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	2	57.62	105	550	0.86	115.00	113	11	2.92E-02	28.9	1.47E+00
2	2	59.47	6961	683	1.03	118.71	113	11	1.93E+00	1.3	
3	0	63.26*	20	440	1.00	126.29	124	7	5.43E-03	193.3	
4	2	74.72*	180	496	1.11	149.21	144	15	5.00E-02	21.9	6.79E-01
5	2	77.02*	303	406	0.93	153.82	144	15	8.41E-02	12.2	
6	5	87.94	1790	349	1.08	175.65	169	22	4.97E-01	2.8	2.26E+00
7	5	92.72*	181	307	1.50	185.23	169	22	5.03E-02	23.5	
8	0	121.71	262	371	1.13	243.21	238	11	7.29E-02	15.5	
9	0	185.72*	39	312	1.13	371.27	368	10	1.08E-02	91.4	
10	0	238.69*	346	349	1.24	477.24	473	9	9.61E-02	11.2	
11	0	295.35*	59	280	0.97	590.59	585	11	1.65E-02	56.5	
12	0	338.17*	70	210	1.22	676.24	672	11	1.94E-02	42.3	
13	0	351.99*	163	189	1.37	703.89	697	10	4.52E-02	17.8	
14	0	510.60*	45	177	1.69	1021.21	1012	15	1.26E-02	69.7	
15	0	583.13*	100	146	1.85	1166.32	1161	11	2.78E-02	25.8	
16	0	609.22*	125	134	1.59	1218.52	1210	13	3.48E-02	21.3	
17	0	661.45	2031	140	1.68	1323.01	1314	16	5.64E-01	2.6	
18	0	911.31*	80	131	1.45	1822.91	1816	14	2.23E-02	32.9	
19	0	968.64*	35	157	4.25	1937.61	1930	14	9.80E-03	77.6	
20	0	1172.92	1636	86	1.98	2346.34	2338	19	4.54E-01	2.8	
21	0	1332.24	1452	32	2.15	2665.14	2656	18	4.03E-01	2.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 7-JAN-2010 17:07:26

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006619.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 31-DEC-2009 00:00:00 Acquisition date : 7-JAN-2010 16:06:51
Sample ID         : G1202006619 Sample quantity : 155.44 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA13 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.61 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
CO-57	+	122.06	*	2.253E-01	7.527E-02	5.986E-02	7.572E-03	3.764
		136.48		1.604E-01	3.190E-01	5.277E-01	6.177E-02	0.304
CO-60	+	1173.22		6.391E+00	5.048E-01	1.474E-01	8.103E-03	43.349
	+	1332.49	*	6.284E+00	4.995E-01	1.105E-01	6.283E-03	56.887
CD-109	+	88.03	*	3.248E+01	3.155E+00	1.486E+00	1.173E-01	21.849
SN-126	+	64.28		1.332E-01	5.153E-01	5.983E-01	9.316E-02	0.223
	+	86.94		1.342E+01	5.583E+00	6.122E-01	2.524E-01	21.919
	+	87.57	*	3.228E+00	3.135E-01	1.475E-01	1.167E-02	21.878
BA-137M	+	661.65	*	5.402E+00	5.210E-01	1.316E-01	1.073E-02	41.053
CS-137	+	661.65	*	5.711E+00	5.516E-01	1.391E-01	1.137E-02	41.053
W-181	+	56.28		3.840E-01	2.247E-01	5.060E-01	4.548E-02	0.759
	+	57.53		2.203E-01	1.289E-01	2.957E-01	2.729E-02	0.745
		65.20	*	7.065E-02	2.877E-01	4.427E-01	4.083E-02	0.160
TL-208		277.35		5.698E-02	6.640E-01	1.092E+00	1.279E-01	0.052
	+	510.84		3.984E-01	5.569E-01	5.070E-01	5.510E-02	0.786
	+	583.14	*	2.542E-01	1.329E-01	1.165E-01	9.644E-03	2.182
		860.37		7.165E-01	7.713E-01	1.347E+00	1.136E-01	0.532
BI-211		72.87		2.567E+00	3.176E+00	4.958E+00	4.336E-01	0.518
	+	351.07	*	1.736E+00	6.324E-01	6.126E-01	4.465E-02	2.834
PB-212	+	74.81		1.105E+00	5.042E-01	5.576E-01	7.093E-02	1.982
	+	77.11		1.107E+00	2.858E-01	3.333E-01	2.832E-02	3.320
	+	87.30		1.493E+01	2.081E+00	6.818E-01	8.700E-02	21.896
	+	238.63	*	7.952E-01	1.928E-01	1.839E-01	1.671E-02	4.324
		300.09		7.339E-01	1.662E+00	2.464E+00	2.344E-01	0.298
PO-212	+	74.81		1.105E+00	5.042E-01	5.576E-01	7.093E-02	1.982
	+	77.11		1.107E+00	2.858E-01	3.333E-01	2.832E-02	3.320
	+	87.30		1.493E+01	2.081E+00	6.818E-01	8.700E-02	21.896
		115.19		2.711E+00	5.145E+00	8.610E+00	9.985E-01	0.315
	+	238.63	*	7.952E-01	1.928E-01	1.839E-01	1.671E-02	4.324
		300.09		7.339E-01	1.662E+00	2.464E+00	2.344E-01	0.298
PB-214	+	74.81		1.904E+00	8.619E-01	9.608E-01	1.093E-01	1.982
	+	77.11		1.897E+00	5.108E-01	5.714E-01	6.521E-02	3.320
	+	87.30		2.558E+01	3.171E+00	1.168E+00	1.291E-01	21.896
		241.98		1.469E+00	7.018E-01	1.134E+00	1.098E-01	1.295

---- Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-214	+	295.21		3.710E-01	4.212E-01	4.041E-01	3.958E-02	0.918
	+	351.92	*	6.039E-01	2.222E-01	2.266E-01	2.029E-02	2.665
	+	74.81		1.904E+00	8.619E-01	9.608E-01	1.093E-01	1.982
	+	77.11		1.897E+00	5.108E-01	5.714E-01	6.521E-02	3.320
	+	87.30		2.558E+01	3.171E+00	1.168E+00	1.291E-01	21.896
PO-216		241.98		1.469E+00	7.018E-01	1.134E+00	1.098E-01	1.295
	+	295.21		3.710E-01	4.212E-01	4.041E-01	3.958E-02	0.918
	+	351.92	*	6.039E-01	2.222E-01	2.266E-01	2.029E-02	2.665
	+	74.81		1.105E+00	5.042E-01	5.576E-01	7.093E-02	1.982
	+	77.11		1.107E+00	2.858E-01	3.333E-01	2.832E-02	3.320
PO-218	+	87.30		1.493E+01	2.081E+00	6.818E-01	8.700E-02	21.896
	+	238.63	*	7.952E-01	1.928E-01	1.839E-01	1.671E-02	4.324
		300.09		7.339E-01	1.662E+00	2.464E+00	2.344E-01	0.298
	+	74.81		1.904E+00	8.619E-01	9.608E-01	1.093E-01	1.982
	+	77.11		1.897E+00	5.108E-01	5.714E-01	6.521E-02	3.320
AC-228	+	87.30		2.558E+01	3.171E+00	1.168E+00	1.291E-01	21.896
		241.98		1.469E+00	7.018E-01	1.134E+00	1.098E-01	1.295
	+	295.21		3.710E-01	4.212E-01	4.041E-01	3.958E-02	0.918
	+	351.92	*	6.039E-01	2.222E-01	2.266E-01	2.029E-02	2.665
	+	338.32		8.195E-01	7.709E-01	6.932E-01	2.838E-01	1.182
RA-228	+	911.07	*	9.158E-01	6.109E-01	6.124E-01	6.359E-02	1.495
	+	969.11		7.070E-01	1.109E+00	1.154E+00	2.634E-01	0.613
	+	338.32		8.195E-01	7.709E-01	6.932E-01	2.838E-01	1.182
	+	911.07	*	9.158E-01	6.109E-01	6.124E-01	6.359E-02	1.495
	+	969.11		7.070E-01	1.109E+00	1.154E+00	2.634E-01	0.613
TH-228	+	74.81		1.114E+00	4.974E-01	5.619E-01	4.890E-02	1.982
	+	77.11		1.115E+00	2.880E-01	3.359E-01	2.853E-02	3.320
	+	87.30		1.504E+01	1.461E+00	6.871E-01	5.445E-02	21.896
	+	238.63	*	8.013E-01	1.943E-01	1.853E-01	1.684E-02	4.324
		300.09		7.395E-01	1.729E+00	2.482E+00	1.468E+00	0.298
TH-232	+	338.32		8.195E-01	6.964E-01	6.932E-01	4.827E-02	1.182
	+	911.07	*	9.158E-01	6.109E-01	6.124E-01	6.359E-02	1.495
	+	969.11		7.070E-01	1.109E+00	1.154E+00	2.634E-01	0.613
	+	63.29	*	3.364E-01	1.302E+00	1.503E+00	2.759E-01	0.224
	+	92.38		2.251E+00	1.134E+00	1.024E+00	1.843E-01	2.198
NP-237	+	86.50	*	9.479E+00	2.162E+00	4.319E-01	9.554E-02	21.948
		95.87		-9.125E-01	1.225E+00	1.698E+00	4.199E-01	-0.537
	+	63.29	*	3.364E-01	1.302E+00	1.503E+00	2.759E-01	0.224
	+	92.38		2.251E+00	1.076E+00	1.024E+00	8.644E-02	2.198
	+	59.54	*	1.268E+01	1.334E+00	2.366E-01	2.406E-02	53.601
AM-241	+	74.67	*	1.792E-01	8.000E-02	9.037E-02	7.806E-03	1.983
	+	86.72		3.555E+02	3.453E+01	1.621E+01	1.289E+00	21.934
		117.66		-6.638E+00	6.420E+00	8.683E+00	1.039E+00	-0.764
		142.18		-2.055E+01	2.825E+01	4.397E+01	4.659E+00	-0.467
	+	511.00	*	8.605E-02	1.201E-01	1.135E-01	7.919E-03	0.758

---- 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	*	-1.451E-01	6.687E-01	1.105E+00	8.306E-02	-0.131

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	1274.54	*		-3.204E-02	6.475E-02	1.008E-01	5.689E-03	-0.318
NA-24	1368.53	*		1.878E-04	6.475E-02	Half-Life too short		
AL-26	1129.67			-4.317E+00	3.861E+00	5.622E+00	3.332E-01	-0.768
	1808.65	*		3.794E-02	5.368E-02	1.007E-01	5.682E-03	0.377
K-40	1460.81	*		4.277E-01	6.297E-01	1.126E+00	6.883E-02	0.380
TI-44	67.85			2.167E-02	3.900E-02	6.422E-02	5.814E-03	0.337
	78.38	*	+	2.041E-01	5.272E-02	7.204E-02	6.068E-03	2.834
SC-46	889.25	*		-4.988E-02	1.034E-01	1.659E-01	1.256E-02	-0.301
	1120.51			1.285E-01	1.230E-01	2.127E-01	1.279E-02	0.604
V-48	944.10			-1.935E+00	1.852E+00	2.832E+00	2.068E-01	-0.683
	983.50	*		-4.292E-02	1.415E-01	2.273E-01	1.608E-02	-0.189
	1312.09			-2.068E-02	9.701E-02	1.566E-01	8.878E-03	-0.132
CR-51	320.08	*		4.041E-01	5.862E-01	9.925E-01	7.724E-02	0.407
MN-52	744.21			4.027E-03	2.161E-01	3.478E-01	2.824E-02	0.012
	848.13			2.550E-01	6.553E+00	1.093E+01	8.508E-01	0.023
	935.52			5.097E-02	2.937E-01	4.889E-01	3.591E-02	0.104
	1246.25			1.963E-01	3.900E+00	6.538E+00	3.659E-01	0.030
	1333.61		+	3.208E+02	2.550E+01	3.890E+01	2.213E+00	8.246
	1434.06	*		-2.070E-02	1.262E-01	2.010E-01	1.155E-02	-0.103
MN-54	834.83	*		-3.013E-02	8.840E-02	1.439E-01	1.129E-02	-0.209
CO-56	846.75	*		-2.416E-02	9.181E-02	1.500E-01	1.169E-02	-0.161
	977.42			-7.127E-01	8.036E+00	1.282E+01	9.115E-01	-0.056
	1037.82			-1.959E-01	7.754E-01	1.242E+00	9.048E-02	-0.158
	1175.09			2.620E+02	2.047E+01	3.278E+01	1.803E+00	7.991
	1238.25			7.981E-02	1.179E-01	2.098E-01	1.251E-02	0.380
	1360.21			3.097E-01	1.476E+00	2.513E+00	1.434E-01	0.123
	1771.40			-3.170E-01	4.697E-01	6.968E-01	3.954E-02	-0.455
CO-58	810.76	*		-3.156E-02	8.718E-02	1.419E-01	1.130E-02	-0.222
FE-59	142.65			-2.721E+00	3.874E+00	6.039E+00	6.368E-01	-0.451
	192.34			-8.630E-01	1.377E+00	2.186E+00	2.837E-01	-0.395
	1099.22	*		2.242E-02	2.235E-01	3.652E-01	2.609E-02	0.061
	1291.56			7.000E-02	1.662E-01	2.902E-01	2.120E-02	0.241
ZN-65	1115.52	*		-1.714E-01	2.413E-01	3.719E-01	2.258E-02	-0.461
GE-68	1077.35	*		-7.064E-02	3.251E+00	5.278E+00	3.374E-01	-0.013
AS-73	53.44	*		-4.691E-01	5.582E-01	9.324E-01	7.876E-02	-0.503
AS-74	595.88	*		-9.719E-02	1.438E-01	2.243E-01	1.723E-02	-0.433
	634.78			4.907E-01	5.945E-01	1.022E+00	8.146E-02	0.480
SE-75	66.05			-1.427E+00	3.916E+00	5.852E+00	6.374E-01	-0.244
	96.73			-5.336E-01	9.839E-01	1.404E+00	1.949E-01	-0.380
	121.11		+	1.183E+00	4.041E-01	4.439E-01	6.398E-02	2.665
	136.00			4.256E-02	5.806E-02	9.697E-02	1.095E-02	0.439
	198.60			3.059E+00	2.778E+00	4.873E+00	4.355E-01	0.628
	264.65	*		-2.910E-02	7.347E-02	1.193E-01	9.349E-03	-0.244
	279.53			-1.128E-01	1.878E-01	3.004E-01	2.417E-02	-0.375
	303.91			-3.017E+00	4.036E+00	6.326E+00	6.720E-01	-0.477
	400.65			-1.740E-01	5.366E-01	8.439E-01	7.757E-02	-0.206
BR-77	87.88		+	8.041E+02	7.810E+01	9.551E+01	7.539E+00	8.419
	200.40			-1.363E+01	2.954E+01	4.895E+01	3.878E+00	-0.278
	239.00		+	1.447E+01	3.448E+00	5.017E+00	3.963E-01	2.884

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
	249.79			-6.283E+00	1.303E+01	2.117E+01	1.665E+00	-0.297
	281.68			4.598E+00	1.847E+01	3.088E+01	2.368E+00	0.149
	297.23			-5.058E+00	1.354E+01	1.904E+01	1.432E+00	-0.266
	303.76			-2.975E+01	4.065E+01	6.387E+01	4.758E+00	-0.466
	439.47			2.589E+01	3.859E+01	6.692E+01	4.228E+00	0.387
	484.57			-3.764E+01	5.667E+01	9.088E+01	6.127E+00	-0.414
	520.65	*		-2.869E+00	2.555E+00	3.923E+00	2.771E-01	-0.731
	574.64			5.128E+01	4.745E+01	8.357E+01	6.279E+00	0.614
	578.91			-1.442E+01	2.409E+01	3.230E+01	2.438E+00	-0.446
	585.48			9.842E+01	5.082E+01	8.265E+01	6.281E+00	1.191
	755.35			-4.469E+01	4.438E+01	6.538E+01	5.294E+00	-0.684
	817.79			-1.010E+01	3.666E+01	6.001E+01	4.750E+00	-0.168
SR-82	698.33			-2.980E+01	5.923E+01	9.202E+01	7.512E+00	-0.324
	776.49	*		-2.565E-01	7.359E-01	1.205E+00	9.700E-02	-0.213
	1395.20			-1.056E+01	1.433E+01	2.082E+01	1.193E+00	-0.507
RB-83	520.41	*		-2.006E-01	1.433E-01	2.155E-01	1.522E-02	-0.931
	529.64			6.411E-02	2.113E-01	3.567E-01	2.547E-02	0.180
	552.65			-2.975E-01	3.960E-01	6.198E-01	4.546E-02	-0.480
RB-84	881.50	*		-1.897E-02	1.587E-01	2.566E-01	1.955E-02	-0.074
KR-85	513.99	*		1.725E+01	1.706E+01	2.653E+01	1.858E+00	0.650
SR-85	513.99	*		8.178E-02	8.085E-02	1.258E-01	8.809E-03	0.650
RB-86	1076.63	*		1.078E+00	1.563E+00	2.665E+00	1.705E-01	0.405
Y-88	898.02			-1.174E-01	1.101E-01	1.690E-01	1.279E-02	-0.695
	1836.01	*		1.006E-03	4.872E-02	8.118E-02	4.571E-03	0.012
ZR-88	392.90	*		-4.151E-02	6.342E-02	9.793E-02	5.736E-03	-0.424
Y-91	1204.90	*		1.566E+01	2.473E+01	4.410E+01	2.444E+00	0.355
NB-94	702.63	*		1.022E-02	7.275E-02	1.188E-01	9.696E-03	0.086
	871.10			8.894E-03	8.880E-02	1.483E-01	1.138E-02	0.060
NB-95	765.79	*		1.239E-02	8.781E-02	1.486E-01	1.200E-02	0.083
NB-95M	235.69	*		5.659E-02	2.156E-01	3.226E-01	2.984E-02	0.175
ZR-95	724.18			-1.639E-02	1.894E-01	3.032E-01	2.708E-02	-0.054
	756.15	*		-1.877E-01	1.538E-01	2.213E-01	1.996E-02	-0.848
NB-97	657.90	*		8.852E-04	1.538E-01	Half-Life too short		
	1024.50			-4.751E-03	1.538E-01	Half-Life too short		
ZR-97	254.15			2.543E-03	1.538E-01	Half-Life too short		
	355.39			1.657E-03	1.538E-01	Half-Life too short		
	507.63	*		2.110E-03	1.538E-01	Half-Life too short		
	602.52			1.660E-04	1.538E-01	Half-Life too short		
	1021.30			-1.788E-03	1.538E-01	Half-Life too short		
	1147.95			-4.943E-03	1.538E-01	Half-Life too short		
	1362.66			2.097E-03	1.538E-01	Half-Life too short		
	1750.46			2.151E-03	1.538E-01	Half-Life too short		
MO-99	140.51			4.238E+00	6.256E+00	1.024E+01	2.913E+00	0.414
	181.06			-7.124E-02	4.291E+00	6.461E+00	1.160E+00	-0.011
	366.43			-8.174E+00	2.717E+01	4.315E+01	2.775E+00	-0.189
	739.58	*		2.047E+00	3.933E+00	6.564E+00	9.786E-01	0.312
	778.00			-6.585E+00	1.248E+01	2.018E+01	1.623E+00	-0.326
TC-99M	140.51	*		4.435E+01	1.248E+01	Half-Life too short		
RH-101	127.23			2.430E-03	5.027E-02	7.808E-02	9.481E-03	0.031

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV) Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RH-102	198.01	*	5.602E-02	5.291E-02	9.279E-02	7.348E-03	0.604
	325.23		-1.779E-01	4.290E-01	6.845E-01	4.907E-02	-0.260
	418.52		-4.594E-01	6.398E-01	9.765E-01	5.970E-02	-0.470
	475.06	*	8.490E-03	6.911E-02	1.163E-01	7.739E-03	0.073
	631.29		-1.286E-01	1.166E-01	1.736E-01	1.379E-02	-0.741
	697.49		-8.659E-02	1.634E-01	2.534E-01	2.069E-02	-0.342
	766.84		1.311E-01	2.369E-01	4.106E-01	3.315E-02	0.319
RU-103	1046.59		-8.044E-02	3.031E-01	4.847E-01	3.217E-02	-0.166
	1112.84		4.036E-01	5.957E-01	1.010E+00	6.141E-02	0.400
	497.08	*	-2.602E-02	7.860E-02	1.283E-01	1.689E-02	-0.203
RH-106	610.33	+	5.700E+00	2.601E+00	3.235E+00	5.264E-01	1.762
	511.85	+	4.238E-01	5.914E-01	6.498E-01	4.539E-02	0.652
RU-106	621.84	*	6.715E-01	7.067E-01	1.219E+00	1.571E-01	0.551
	1050.47		-1.189E-01	5.896E+00	9.595E+00	6.340E-01	-0.012
	511.85	+	4.238E-01	5.914E-01	6.498E-01	4.539E-02	0.652
AG-108M	621.84	*	6.715E-01	7.034E-01	1.219E+00	9.600E-02	0.551
	1050.47		-1.189E-01	5.896E+00	9.595E+00	6.340E-01	-0.012
	433.93	*	3.781E-02	7.479E-02	1.290E-01	8.679E-03	0.293
AG-110M	614.37		1.734E-02	9.474E-02	1.364E-01	1.118E-02	0.127
	722.95		-8.905E-02	9.601E-02	1.437E-01	1.222E-02	-0.620
	657.75	*	3.503E-01	1.088E-01	1.844E-01	1.549E-02	1.899
	677.61		5.054E-01	6.512E-01	1.114E+00	9.382E-02	0.454
	706.67		3.093E-01	4.399E-01	7.462E-01	6.277E-02	0.414
	763.93		-3.304E-01	3.631E-01	5.716E-01	4.767E-02	-0.578
	884.67		5.368E-02	1.294E-01	2.200E-01	1.740E-02	0.244
	937.48		-5.196E-02	3.124E-01	5.094E-01	3.922E-02	-0.102
	1384.27		-8.094E-02	2.612E-01	4.115E-01	2.503E-02	-0.197
	171.28		3.096E-01	2.572E-01	4.335E-01	3.403E-02	0.714
IN-111	245.39	*	-5.046E-01	3.108E-01	4.750E-01	3.743E-02	-1.062
IN-113M	391.69	*	3.672E-02	9.026E-02	1.485E-01	9.250E-03	0.247
SN-113	391.69	*	3.672E-02	9.026E-02	1.485E-01	9.250E-03	0.247
IN-114M	190.27	*	-1.404E-02	3.096E-01	4.328E-01	3.421E-02	-0.032
CD-115	260.90		7.184E+00	2.207E+01	3.723E+01	2.908E+00	0.193
	492.35		3.459E+00	7.911E+00	1.351E+01	9.202E-01	0.256
	527.90	*	5.038E-02	2.288E+00	3.798E+00	2.706E-01	0.013
	156.02		-7.101E-01	2.368E+00	3.736E+00	3.375E-01	-0.190
SN-117M	158.56	*	8.473E-03	5.788E-02	9.340E-02	8.156E-03	0.091
SB-122	563.90	*	-2.260E-01	6.455E-01	1.039E+00	7.718E-02	-0.217
	692.80		-2.140E+00	1.417E+01	2.268E+01	1.852E+00	-0.094
I-123	159.00	*	2.927E-04	1.417E+01	Half-Life too short		
	528.96		4.189E-02	1.417E+01	Half-Life too short		
TE-123M	159.00	*	1.776E-02	4.222E-02	6.904E-02	6.028E-03	0.257
I-124	602.71	*	-2.113E-02	4.511E-01	6.367E-01	4.923E-02	-0.033
	722.78		-2.705E+00	2.893E+00	4.325E+00	3.524E-01	-0.625
	1325.50		-2.509E+00	2.034E+01	2.903E+01	1.650E+00	-0.086
	1376.25		6.175E+00	1.319E+01	2.320E+01	1.327E+00	0.266
	1509.49		-6.474E-01	7.232E+00	1.165E+01	6.717E-01	-0.056
	1691.02		-5.448E-01	1.950E+00	2.970E+00	1.701E-01	-0.183
	602.71		-3.888E-03	8.298E-02	1.171E-01	9.058E-03	-0.033
SB-124							

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125		645.85		-2.998E-01	9.841E-01	1.565E+00	1.346E-01	-0.192
		709.31		-2.740E+00	5.660E+00	8.796E+00	7.177E-01	-0.311
		713.82		5.334E-02	3.260E+00	5.267E+00	6.168E-01	0.010
		722.78		-7.213E-01	7.714E-01	1.153E+00	9.624E-02	-0.625
	+	968.20		6.678E+00	1.037E+01	1.169E+01	8.377E-01	0.571
		1045.16		-1.659E+00	5.980E+00	9.553E+00	6.351E-01	-0.174
		1325.50		-7.145E-01	5.793E+00	8.269E+00	4.698E-01	-0.086
		1368.21		1.776E+00	2.448E+00	4.458E+00	5.273E-01	0.398
		1436.60		-4.636E+00	5.239E+00	7.206E+00	4.142E-01	-0.643
		1691.02	*	-3.427E-02	1.227E-01	1.868E-01	1.163E-02	-0.183
		427.89	*	1.885E-01	2.065E-01	3.628E-01	2.335E-02	0.520
		463.38		-1.642E-01	6.105E-01	1.009E+00	7.476E-02	-0.163
		600.56		6.438E-02	3.868E-01	6.056E-01	5.099E-02	0.106
		635.90		6.464E-01	6.032E-01	1.051E+00	9.170E-02	0.615
		109.28	*	4.631E+00	1.160E+01	1.938E+01	2.352E+00	0.239
TE-125M		388.63		-8.170E-02	2.970E-01	4.701E-01	2.783E-02	-0.174
I-126		666.33	*	1.098E-01	2.959E-01	4.309E-01	3.516E-02	0.255
SB-126		753.82		2.097E-01	2.238E+00	3.619E+00	2.932E-01	0.058
		223.80		-1.313E+00	4.514E+00	7.480E+00	5.929E-01	-0.176
		278.60		-4.817E-01	2.885E+00	4.727E+00	3.636E-01	-0.102
	+	296.50		2.434E+00	2.758E+00	3.159E+00	2.378E-01	0.770
		414.70		6.615E-02	1.093E-01	1.808E-01	1.099E-02	0.366
		415.30		1.898E+00	9.071E+00	1.468E+01	8.930E-01	0.129
		555.20		1.944E+00	5.597E+00	9.444E+00	6.947E-01	0.206
		573.80		1.156E+00	1.347E+00	2.345E+00	1.760E-01	0.493
		593.00		1.930E-01	1.267E+00	2.102E+00	1.610E-01	0.092
		656.30		1.189E+00	5.760E+00	8.255E+00	6.703E-01	0.144
		666.33		4.512E-02	1.216E-01	1.770E-01	1.444E-02	0.255
		675.00		-3.940E+00	2.798E+00	3.988E+00	3.256E-01	-0.988
		695.00		1.117E-01	1.079E-01	1.872E-01	1.528E-02	0.597
		697.00		3.773E-02	3.769E-01	6.141E-01	5.014E-02	0.061
		720.50	*	5.082E-02	2.073E-01	3.404E-01	2.774E-02	0.149
SB-127		856.80		-1.370E-01	8.125E-01	1.336E+00	1.035E-01	-0.103
		989.30		4.856E-01	2.281E+00	3.793E+00	2.669E-01	0.128
		1034.80		6.548E+00	1.537E+01	2.584E+01	1.738E+00	0.253
		1213.00		3.050E+00	4.736E+00	8.409E+00	4.670E-01	0.363
		61.10		3.115E+02	3.723E+01	3.836E+01	3.895E+00	8.122
		252.40		4.219E-01	2.009E+00	3.365E+00	1.394E+00	0.125
		290.80		1.869E+00	1.145E+01	1.674E+01	1.406E+00	0.112
		411.60		3.445E+00	7.173E+00	1.177E+01	1.544E+00	0.293
		444.90		-6.650E+00	5.908E+00	9.306E+00	8.631E-01	-0.715
		473.00		2.949E-01	1.034E+00	1.755E+00	1.736E-01	0.168
		543.00		2.250E+00	8.899E+00	1.496E+01	1.821E+00	0.150
		603.60		-1.503E+00	7.206E+00	1.001E+01	1.024E+00	-0.150
		685.20	*	-2.048E-01	7.730E-01	1.226E+00	1.128E-01	-0.167
		698.50		-3.726E+00	8.461E+00	1.319E+01	1.890E+00	-0.282
		722.20		-1.486E+01	1.755E+01	2.640E+01	2.351E+00	-0.563
XE-127		783.80		1.405E+00	2.153E+00	3.748E+00	3.877E-01	0.375
	+	57.60		6.072E+00	3.553E+00	1.097E+01	1.014E+00	0.553

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	145.22			4.366E-01	9.276E-01	1.527E+00	1.568E-01	0.286
	172.10			1.461E-01	1.661E-01	2.760E-01	2.167E-02	0.529
	202.84	*		-3.797E-02	6.412E-02	1.055E-01	8.358E-03	-0.360
	374.96			1.879E-01	3.525E-01	5.861E-01	3.660E-02	0.321
	80.18			3.516E-02	2.929E+00	4.400E+00	3.667E-01	0.008
	284.30			8.757E-01	1.447E+00	2.457E+00	1.992E-01	0.356
	364.48	*		7.406E-03	1.270E-01	2.060E-01	1.449E-02	0.036
TE-132	636.97			1.943E+00	1.853E+00	3.222E+00	2.726E-01	0.603
	722.89			-8.013E+00	8.486E+00	1.268E+01	1.035E+00	-0.632
	49.72			5.114E+00	2.056E+00	3.631E+00	3.062E-01	1.408
	111.76			-6.628E+00	8.637E+00	1.352E+01	1.567E+00	-0.490
BA-133	116.30			1.361E+01	8.523E+00	1.415E+01	1.731E+00	0.962
	228.16	*		7.961E-03	2.431E-01	4.083E-01	5.818E-02	0.020
	53.15			-2.329E+00	2.512E+00	4.187E+00	3.514E-01	-0.556
	79.62			2.427E-02	1.558E+00	2.343E+00	3.532E-01	0.010
	81.00			-6.459E-02	1.237E-01	1.805E-01	2.832E-02	-0.358
I-133	276.40			2.086E-01	6.582E-01	1.094E+00	1.523E-01	0.191
	302.84			-1.015E-01	2.897E-01	4.649E-01	5.843E-02	-0.218
	356.01	*		7.004E-02	9.644E-02	1.456E-01	1.748E-02	0.481
	383.85			4.305E-01	6.427E-01	1.071E+00	1.178E-01	0.402
	510.53	+		2.233E-03	6.427E-01	Half-Life	too short	
	529.87	*		9.091E-06	6.427E-01	Half-Life	too short	
	706.58			1.721E-03	6.427E-01	Half-Life	too short	
	856.28			-2.101E-03	6.427E-01	Half-Life	too short	
	875.33			1.670E-04	6.427E-01	Half-Life	too short	
	1236.41			2.292E-03	6.427E-01	Half-Life	too short	
CS-134	1298.22			-7.747E-04	6.427E-01	Half-Life	too short	
	475.35			1.043E+00	4.451E+00	7.532E+00	5.014E-01	0.138
	563.23			-2.698E-01	7.717E-01	1.243E+00	9.343E-02	-0.217
	569.32			-2.153E-01	4.022E-01	6.374E-01	4.847E-02	-0.338
	604.70			-1.717E-02	7.865E-02	1.091E-01	8.475E-03	-0.157
CS-135	795.84	*		1.091E-01	1.010E-01	1.804E-01	1.454E-02	0.605
	801.93			-3.056E-01	9.132E-01	1.491E+00	1.197E-01	-0.205
	1038.57			3.448E+00	1.020E+01	1.704E+01	1.141E+00	0.202
	1167.94			1.747E+01	7.132E+00	1.217E+01	6.753E-01	1.436
	1365.15			2.602E-01	1.988E+00	3.345E+00	2.103E-01	0.078
I-135	268.24	*		1.566E-01	2.811E-01	4.775E-01	4.410E-02	0.328
I-135	288.45			-3.261E+02	2.811E-01	Half-Life	too short	
	417.63			-3.053E+02	2.811E-01	Half-Life	too short	
	546.56			-2.635E+01	2.811E-01	Half-Life	too short	
	836.80			-2.294E+02	2.811E-01	Half-Life	too short	
	1038.76			1.091E+02	2.811E-01	Half-Life	too short	
	1124.00			1.635E+02	2.811E-01	Half-Life	too short	
	1131.51			-4.447E+01	2.811E-01	Half-Life	too short	
	1260.41	*		2.416E+01	2.811E-01	Half-Life	too short	
	1457.56			-1.716E+02	2.811E-01	Half-Life	too short	
	1678.03			1.571E+01	2.811E-01	Half-Life	too short	
	1706.46			1.144E+02	2.811E-01	Half-Life	too short	
	1791.20			1.228E+02	2.811E-01	Half-Life	too short	

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	66.91			1.139E-01	4.547E-01	6.985E-01	1.098E-01	0.163
	86.29			1.036E+01	1.708E+00	2.286E+00	2.840E-01	4.533
	153.22			7.538E-01	6.644E-01	1.121E+00	1.155E-01	0.672
	163.89			-2.939E-01	1.226E+00	1.933E+00	1.773E-01	-0.152
	176.55			4.072E-01	3.884E-01	6.495E-01	5.459E-02	0.627
	273.65			-5.437E-01	5.509E-01	8.645E-01	7.221E-02	-0.629
	340.57			1.672E-01	1.671E-01	2.561E-01	1.851E-02	0.653
	818.51			4.576E-02	1.224E-01	2.091E-01	1.655E-02	0.219
	1048.07	*		2.108E-02	1.926E-01	3.165E-01	2.243E-02	0.067
	1235.34			3.007E-01	5.392E-01	9.506E-01	9.370E-02	0.316
CE-139	165.85	*		1.951E-02	4.715E-02	7.677E-02	6.019E-03	0.254
BA-140	162.64			-5.896E-02	8.419E-01	1.339E+00	1.173E-01	-0.044
	304.84			1.093E-01	1.649E+00	2.714E+00	7.514E-01	0.040
	423.70			-1.523E+00	3.018E+00	4.613E+00	1.469E+00	-0.330
	537.32	*		-7.621E-02	3.748E-01	6.110E-01	2.004E-01	-0.125
LA-140	328.77			1.416E-03	3.748E-01	6.114E-01	4.705E-02	0.002
	432.53			-9.858E-01	3.130E+00	5.191E+00	3.539E-01	-0.190
	487.03			3.645E-02	1.997E-01	3.367E-01	2.502E-02	0.108
	751.79			1.816E+00	2.683E+00	4.516E+00	4.100E-01	0.402
	815.85			-2.969E-01	5.369E-01	8.619E-01	7.752E-02	-0.344
	867.82			1.111E+00	2.402E+00	4.102E+00	3.363E-01	0.271
	919.63			-2.943E+00	5.735E+00	8.691E+00	8.434E-01	-0.339
	925.24			1.687E+00	2.161E+00	3.729E+00	2.991E-01	0.453
	1596.49	*		1.355E-02	9.463E-02	1.577E-01	9.087E-03	0.086
CE-141	145.44	*		3.370E-02	8.195E-02	1.346E-01	1.396E-02	0.250
CE-143	57.37			2.813E+01	1.651E+01	4.572E+01	4.723E+00	0.615
	231.56			-3.946E+01	1.005E+02	1.640E+02	5.147E+01	-0.241
	293.26	*		9.178E+00	6.675E+00	1.009E+01	2.122E+00	0.909
	350.59			3.192E+02	1.499E+02	1.673E+02	5.109E+01	1.908
	490.36			-2.134E+01	1.464E+02	2.420E+02	7.529E+01	-0.088
	664.57			1.204E+03	4.068E+02	2.595E+02	8.350E+01	4.639
	721.93			-2.635E+01	7.052E+01	1.097E+02	3.185E+01	-0.240
	80.11			4.186E-02	2.517E+00	3.783E+00	3.149E-01	0.011
CE-144	133.54	*		-3.341E-01	3.217E-01	4.869E-01	8.439E-02	-0.686
PM-144	476.78			-8.702E-02	1.549E-01	2.510E-01	1.928E-02	-0.347
	618.01			-3.260E-02	7.192E-02	1.140E-01	9.236E-03	-0.286
	696.49	*		-1.480E-02	7.368E-02	1.174E-01	9.584E-03	-0.126
PR-144	778.57			-3.217E+00	5.459E+00	8.791E+00	7.071E-01	-0.366
	696.49	*		-9.991E-01	4.973E+00	7.922E+00	6.468E-01	-0.126
	1489.15			4.446E+00	1.794E+01	3.067E+01	1.767E+00	0.145
PM-146	453.90	*		-5.537E-02	1.036E-01	1.691E-01	1.534E-02	-0.328
	633.02			1.483E+00	3.006E+00	4.995E+00	1.859E+00	0.297
	735.90			-1.355E-01	3.577E-01	5.559E-01	1.582E-01	-0.244
	747.13			2.539E-02	2.176E-01	3.527E-01	4.843E-02	0.072
ND-147	91.11			-4.823E-01	2.211E-01	3.750E-01	3.381E-02	-1.286
	319.41			1.208E+00	3.918E+00	6.512E+00	4.722E-01	0.186
	439.89			6.120E+00	8.572E+00	1.490E+01	9.419E-01	0.411
PM-149	531.02	*		1.849E-01	7.462E-01	1.255E+00	1.776E-01	0.147
	285.90	*		-3.338E+00	1.625E+01	2.650E+01	3.975E+00	-0.126

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Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-152	+	121.78		6.659E-01	2.249E-01	2.553E-01	3.454E-02	2.608
		244.69		-8.625E-01	6.111E-01	9.085E-01	7.161E-02	-0.949
		344.27	*	1.468E-02	2.312E-01	3.073E-01	2.304E-02	0.048
		443.98		-2.732E+00	2.183E+00	3.421E+00	2.176E-01	-0.799
		778.89		-2.522E-01	6.361E-01	1.038E+00	8.350E-02	-0.243
		867.32		5.299E-01	2.139E+00	3.606E+00	2.774E-01	0.147
		964.01		-6.074E-01	9.310E-01	1.237E+00	8.892E-02	-0.491
		1085.78		3.981E-01	1.057E+00	1.763E+00	1.115E-01	0.226
		1112.02		8.112E-01	8.309E-01	1.435E+00	8.742E-02	0.565
		1407.95		9.161E-02	2.753E-01	4.763E-01	2.732E-02	0.192
GD-153		69.67		-8.102E-01	1.553E+00	2.295E+00	2.052E-01	-0.353
		83.37		-1.153E+01	1.939E+01	2.838E+01	2.311E+00	-0.406
		97.43	*	-2.210E-02	1.061E-01	1.549E-01	1.409E-02	-0.143
		103.18		7.656E-02	1.371E-01	2.313E-01	2.285E-02	0.331
EU-154	+	123.07		4.672E-01	1.599E-01	1.719E-01	2.506E-02	2.717
		247.94		3.191E-02	6.192E-01	1.035E+00	1.130E-01	0.031
		591.81		-3.784E-02	1.288E+00	2.110E+00	2.315E-01	-0.018
		723.30		-2.775E-01	4.046E-01	6.185E-01	5.630E-02	-0.449
		756.87		-2.375E+00	1.841E+00	2.618E+00	3.038E-01	-0.907
		873.19		1.334E-01	7.621E-01	1.278E+00	1.482E-01	0.104
		996.32		2.396E-03	9.611E-01	1.575E+00	2.683E-01	0.002
		1004.76		7.102E-02	5.790E-01	9.554E-01	9.988E-02	0.074
		1274.45	*	-8.982E-02	1.817E-01	2.826E-01	2.611E-02	-0.318
		48.70		4.205E-01	1.077E+00	1.863E+00	1.406E-01	0.226
EU-155	+	60.01		4.114E+02	4.103E+01	2.316E+01	2.217E+00	17.765
	+	86.54		3.877E+00	3.795E-01	3.606E-01	2.906E-02	10.752
TB-160		105.31	*	-1.012E-01	1.455E-01	2.311E-01	2.372E-02	-0.438
	+	86.79		9.667E+00	9.390E-01	1.014E+00	8.063E-02	9.535
		197.04		3.627E-01	8.531E-01	1.463E+00	1.158E-01	0.248
		215.65		1.826E-01	1.138E+00	1.930E+00	1.531E-01	0.095
		298.57		-1.447E-01	2.290E-01	3.153E-01	2.367E-02	-0.459
		879.36	*	-2.048E-01	3.469E-01	5.424E-01	4.138E-02	-0.378
		962.29		-3.745E-01	1.621E+00	2.242E+00	1.614E-01	-0.167
		966.15		-9.144E-02	6.145E-01	8.558E-01	6.143E-02	-0.107
		1177.93		-6.892E-03	8.389E-01	1.153E+00	6.348E-02	-0.006
		1271.85		-4.360E-01	9.305E-01	1.449E+00	8.151E-02	-0.301
HO-166M		80.57		-8.471E-02	3.352E-01	4.972E-01	4.126E-02	-0.170
	+	184.41		4.702E-02	8.602E-02	1.039E-01	8.198E-03	0.453
		280.46		-3.816E-02	1.538E-01	2.508E-01	1.926E-02	-0.152
		410.95		2.260E-01	5.444E-01	8.916E-01	5.384E-02	0.254
		711.68	*	-7.524E-02	1.331E-01	2.041E-01	1.665E-02	-0.369
		752.31		2.646E-01	6.380E-01	1.056E+00	8.555E-02	0.251
TM-171		810.29		1.904E-02	1.376E-01	2.319E-01	1.842E-02	0.082
		51.35		1.005E+01	1.855E+01	3.208E+01	2.582E+00	0.313
		52.39		-4.680E+00	1.044E+01	1.763E+01	1.454E+00	-0.265
	+	59.40		2.154E+03	2.148E+02	1.249E+02	1.197E+01	17.251
LU-176		66.72	*	6.372E+00	2.416E+01	3.716E+01	3.391E+00	0.171
	+	88.36		7.656E+00	7.436E-01	9.020E-01	7.155E-02	8.488
		201.83		-5.131E-02	4.493E-02	7.178E-02	5.687E-03	-0.715

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
LU-177		306.84	*	-5.753E-03	4.827E-02	7.866E-02	5.831E-03	-0.073
		401.10		-4.752E+00	1.483E+01	2.334E+01	1.386E+00	-0.204
		112.95		-1.196E+00	1.098E+00	1.685E+00	1.898E-01	-0.710
		208.36	*	5.401E-01	8.165E-01	1.413E+00	1.121E-01	0.382
		52.97		-1.092E+00	1.093E+00	1.819E+00	1.520E-01	-0.601
		54.07		-3.430E-01	6.447E-01	1.038E+00	8.889E-02	-0.331
		61.30		1.702E+01	2.297E+00	2.953E+00	2.800E-01	5.763
	+	121.62		3.310E+00	1.106E+00	1.265E+00	1.591E-01	2.616
		147.16		4.804E-02	9.498E-01	1.533E+00	1.541E-01	0.031
		171.86		8.553E-01	7.454E-01	1.253E+00	9.840E-02	0.683
LU-177M		218.09		1.379E-01	1.358E+00	2.296E+00	1.821E-01	0.060
		268.79		8.479E-01	1.374E+00	2.341E+00	1.817E-01	0.362
		319.02		7.554E-02	4.770E-01	7.864E-01	5.707E-02	0.096
		367.43		1.654E-01	1.802E+00	2.928E+00	1.877E-01	0.056
		413.65	*	2.052E-01	3.835E-01	6.318E-01	3.832E-02	0.325
	+	56.28		9.061E-01	5.301E-01	1.261E+00	1.134E-01	0.718
	+	57.53		5.195E-01	3.039E-01	8.894E-01	8.208E-02	0.584
		65.20		1.679E-01	6.837E-01	1.052E+00	9.705E-02	0.160
		133.02		-3.173E-02	9.023E-02	1.437E-01	1.661E-02	-0.221
		136.25		4.158E-01	6.239E-01	1.039E+00	1.167E-01	0.400
HF-181		345.85		1.666E-01	3.696E-01	5.438E-01	3.716E-02	0.306
		482.03	*	1.197E-02	8.332E-02	1.403E-01	9.425E-03	0.085
		67.75		5.223E-02	8.885E-02	1.465E-01	1.327E-02	0.357
		100.10		-8.761E-02	2.200E-01	3.564E-01	3.371E-02	-0.246
		152.43		-8.221E-03	4.856E-01	7.792E-01	7.365E-02	-0.011
		222.10		2.245E-02	5.470E-01	9.207E-01	7.300E-02	0.024
		1001.68		-9.698E-01	5.165E+00	8.408E+00	5.850E-01	-0.115
		1121.28		4.356E-01	3.428E-01	6.007E-01	3.608E-02	0.725
		1189.05		-2.905E-01	5.370E-01	8.545E-01	4.717E-02	-0.340
		1221.42	*	8.040E-02	2.652E-01	4.573E-01	2.545E-02	0.176
TA-182		1230.97		-1.717E-01	6.194E-01	1.000E+00	5.580E-02	-0.172
	+	57.98		2.168E-01	1.269E-01	5.577E-01	5.195E-02	0.389
	+	59.32		8.258E+00	8.235E-01	4.790E-01	4.586E-02	17.238
		67.20		1.099E-01	1.595E-01	2.497E-01	2.271E-02	0.440
		162.32	*	6.595E-03	1.701E-01	2.720E-01	2.251E-02	0.024
		208.81		9.293E-01	1.483E+00	2.563E+00	2.032E-01	0.363
		291.72		-4.731E-01	1.778E+00	2.518E+00	1.908E-01	-0.188
	+	57.98		8.343E-01	4.881E-01	2.146E+00	1.999E-01	0.389
	+	59.32		3.175E+01	3.166E+00	1.842E+00	1.763E-01	17.238
		67.20		4.228E-01	6.137E-01	9.604E-01	8.734E-02	0.440
RE-183		161.27		1.774E-01	5.641E-01	9.161E-01	7.700E-02	0.194
		216.55		3.927E-01	4.263E-01	7.441E-01	5.902E-02	0.528
		252.85	*	5.374E-02	3.990E-01	6.684E-01	5.247E-02	0.080
		318.01		-4.799E-01	8.527E-01	1.351E+00	9.821E-02	-0.355
		792.07		-5.005E-01	2.122E+00	3.492E+00	2.795E-01	-0.143
		903.28		-1.444E+00	2.907E+00	4.114E+00	3.085E-01	-0.351
		920.93		-8.219E-01	1.300E+00	2.061E+00	1.528E-01	-0.399
	+	59.72		2.295E+01	2.289E+00	1.321E+00	1.267E-01	17.373
		61.14		2.767E+00	3.267E-01	3.723E-01	3.534E-02	7.432
RE-184								
OS-185								

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RE-188		69.30		-1.063E-01	2.485E-01	3.935E-01	3.527E-02	-0.270
		592.07		3.379E-02	4.997E+00	8.206E+00	6.278E-01	0.004
		646.12	*	-3.399E-02	8.534E-02	1.347E-01	1.084E-02	-0.252
		717.42		-2.171E-01	1.857E+00	2.968E+00	2.419E-01	-0.073
		874.81		-1.480E-01	1.418E+00	2.334E+00	1.786E-01	-0.063
		880.27		-3.666E-01	1.976E+00	3.182E+00	2.426E-01	-0.115
		155.03	*	-1.999E-02	2.444E-01	3.904E-01	3.572E-02	-0.051
		477.96		-1.581E+00	6.621E+00	1.093E+01	7.300E-01	-0.145
		633.10		3.136E+00	5.587E+00	9.472E+00	7.536E-01	0.331
		63.58		1.255E+01	4.853E+01	6.862E+01	6.403E+00	0.183
W-188	+	227.08		3.106E+00	2.027E+01	3.423E+01	2.712E+00	0.091
IR-192		290.67	*	5.466E+00	1.384E+01	2.057E+01	1.560E+00	0.266
	+	295.96		2.638E-01	2.990E-01	3.479E-01	2.646E-02	0.758
		308.46		1.426E-02	1.719E-01	2.829E-01	2.107E-02	0.050
		316.51	*	1.078E-02	6.083E-02	1.005E-01	7.349E-03	0.107
		468.07		4.598E-02	1.440E-01	2.449E-01	1.808E-02	0.188
AU-195		604.41		-2.621E-01	9.961E-01	1.374E+00	1.712E-01	-0.191
		612.46		7.425E-01	1.585E+00	2.341E+00	2.153E-01	0.317
		65.12		5.012E-02	1.355E-01	2.095E-01	1.934E-02	0.239
		66.83		2.009E-02	7.848E-02	1.207E-01	1.100E-02	0.167
	+	75.70		5.636E-01	2.517E-01	3.864E-01	3.314E-02	1.459
		98.88	*	8.552E-02	2.751E-01	4.576E-01	4.252E-02	0.187
TL-200		129.76		1.799E+00	4.206E+00	6.957E+00	8.272E-01	0.259
		367.94	*	3.812E+00	8.036E+00	1.334E+01	8.534E-01	0.286
		579.30		-4.674E+01	7.485E+01	1.001E+02	7.561E+00	-0.467
		828.27		-4.051E+01	1.048E+02	1.701E+02	1.339E+01	-0.238
TL-201		1205.75		3.180E+00	3.124E+01	5.277E+01	2.926E+00	0.060
		68.90		-1.217E-01	7.272E-01	1.220E+00	1.096E-01	-0.100
		70.82		-2.660E-01	4.878E-01	7.194E-01	6.380E-02	-0.370
		80.30		1.210E-02	1.112E+00	1.670E+00	1.388E-01	0.007
TL-202		135.34		4.625E+00	7.081E+00	1.180E+01	1.335E+00	0.392
		167.43	*	-1.211E-01	2.063E+00	3.281E+00	2.571E-01	-0.037
		68.90		-3.925E-02	2.345E-01	3.933E-01	3.535E-02	-0.100
		70.82		-8.555E-02	1.569E-01	2.313E-01	2.052E-02	-0.370
		80.30		3.894E-03	3.577E-01	5.373E-01	4.467E-02	0.007
HG-203		439.56	*	8.566E-02	1.074E-01	1.873E-01	1.183E-02	0.457
		70.83		-5.030E-01	9.307E-01	1.371E+00	1.886E-01	-0.367
		72.87		4.569E-01	5.671E-01	8.825E-01	1.172E-01	0.518
		82.60		-2.942E-01	1.277E+00	1.903E+00	2.564E-01	-0.155
BI-207		279.20	*	-3.024E-02	6.519E-02	1.051E-01	8.366E-03	-0.288
		72.80		1.390E-01	1.847E-01	2.877E-01	2.517E-02	0.483
	+	74.97		3.215E-01	1.435E-01	2.006E-01	1.729E-02	1.603
		84.90		-7.050E-02	2.528E-01	3.753E-01	3.024E-02	-0.188
		569.67		-4.731E-02	6.225E-02	9.685E-02	7.238E-03	-0.488
TL-207		1063.62	*	5.879E-02	1.362E-01	2.286E-01	1.487E-02	0.257
		1770.23		-9.002E-01	1.028E+00	1.474E+00	8.366E-02	-0.611
		81.07		-1.416E-01	2.729E-01	3.993E-01	3.302E-02	-0.355
		83.78		-4.340E-02	1.668E-01	2.480E-01	2.014E-02	-0.175
		94.90		2.007E-01	2.818E-01	4.356E-01	3.819E-02	0.461

---- Non-Identified Nuclides ----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PO-209	+	122.32		1.588E+01	5.330E+00	6.107E+00	7.980E-01	2.599
		144.24		-2.892E-02	1.070E+00	1.726E+00	1.939E-01	-0.017
		154.21		5.538E-01	5.923E-01	9.922E-01	9.974E-02	0.558
		269.46		3.186E-01	3.315E-01	5.724E-01	4.555E-02	0.557
		323.87	*	-1.550E+00	1.321E+00	1.975E+00	3.368E-01	-0.785
	+	338.28		3.422E+00	2.924E+00	3.511E+00	3.937E-01	0.975
		445.03		-4.905E+00	5.237E+00	8.338E+00	8.840E-01	-0.588
		260.50		5.188E+00	1.661E+01	2.801E+01	2.188E+00	0.185
		262.80		-2.937E+00	4.645E+01	7.684E+01	5.993E+00	-0.038
		896.60	*	8.976E+00	2.075E+01	3.523E+01	2.652E+00	0.255
BI-210		46.50	*	-1.494E+00	1.169E+00	1.749E+00	1.425E-01	-0.854
PB-210		46.50	*	-1.494E+00	1.169E+00	1.749E+00	1.425E-01	-0.854
PO-210		46.50	*	-1.494E+00	1.167E+00	1.749E+00	1.247E-01	-0.854
PB-211		404.84	*	4.284E-02	2.031E+00	3.259E+00	2.032E+00	0.013
BI-212		427.08		5.138E+00	5.736E+00	8.087E+00	5.001E+00	0.635
		831.96		3.884E+00	3.834E+00	5.344E+00	3.343E+00	0.727
	*	727.18		5.843E-02	6.726E-01	1.090E+00	1.046E-01	0.054
BI-214		785.46		7.157E-01	3.960E+00	6.708E+00	5.382E-01	0.107
		1620.62		1.120E+00	2.510E+00	4.344E+00	2.500E-01	0.258
	+	609.31	*	6.021E-01	2.628E-01	3.486E-01	3.260E-02	1.727
PO-215		1120.29		6.445E-01	7.688E-01	1.312E+00	1.173E-01	0.491
		1764.49		7.157E-01	4.589E-01	9.141E-01	5.192E-02	0.783
		81.07		-1.416E-01	2.729E-01	3.993E-01	3.302E-02	-0.355
RN-219		83.78		-4.340E-02	1.668E-01	2.480E-01	2.014E-02	-0.175
		94.90		2.007E-01	2.818E-01	4.356E-01	3.819E-02	0.461
	+	122.32		1.588E+01	5.330E+00	6.107E+00	7.980E-01	2.599
RN-220		144.24		-2.892E-02	1.070E+00	1.726E+00	1.939E-01	-0.017
		154.21		5.538E-01	5.923E-01	9.922E-01	9.974E-02	0.558
		269.46		3.186E-01	3.315E-01	5.724E-01	4.555E-02	0.557
RA-223		323.87	*	-1.550E+00	1.321E+00	1.975E+00	3.368E-01	-0.785
	+	338.28		3.422E+00	2.924E+00	3.511E+00	3.937E-01	0.975
		445.03		-4.905E+00	5.237E+00	8.338E+00	8.840E-01	-0.588
RA-224		271.23		5.378E-01	4.311E-01	7.503E-01	7.199E-02	0.717
		401.81	*	-6.387E-01	9.118E-01	1.395E+00	1.907E-01	-0.458
	*	549.76		6.962E+00	5.399E+01	8.996E+01	6.576E+00	0.077
RA-226		81.07		-1.416E-01	2.729E-01	3.993E-01	3.302E-02	-0.355
		83.78		-4.340E-02	1.668E-01	2.480E-01	2.014E-02	-0.175
		94.90		2.007E-01	2.818E-01	4.356E-01	3.819E-02	0.461
RA-226	+	122.32		1.588E+01	5.330E+00	6.107E+00	7.980E-01	2.599
		144.24		-2.892E-02	1.070E+00	1.726E+00	1.939E-01	-0.017
		154.21		5.538E-01	5.923E-01	9.922E-01	9.974E-02	0.558
RA-226		269.46		3.186E-01	3.315E-01	5.724E-01	4.555E-02	0.557
		323.87	*	-1.550E+00	1.321E+00	1.975E+00	3.368E-01	-0.785
	+	338.28		3.422E+00	2.924E+00	3.511E+00	3.937E-01	0.975
RA-226		445.03		-4.905E+00	5.237E+00	8.338E+00	8.840E-01	-0.588
		240.98	*	4.436E+00	1.447E+00	2.403E+00	1.897E-01	1.846
	+	609.31	*	6.021E-01	2.628E-01	3.486E-01	3.260E-02	1.727
RA-226		1120.29		6.445E-01	7.688E-01	1.312E+00	1.173E-01	0.491
		1764.49		7.157E-01	4.589E-01	9.141E-01	5.192E-02	0.783

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Activity Key	(pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-227		79.80		-6.474E-02	1.982E+00	2.973E+00	6.360E-01	-0.022
		236.00		2.069E-01	4.361E-01	6.597E-01	7.754E-02	0.314
		256.20	*	3.599E-01	6.639E-01	1.129E+00	1.685E-01	0.319
		286.10		-4.346E-01	2.835E+00	4.636E+00	5.832E-01	-0.094
		299.80		1.469E+00	3.100E+00	4.595E+00	7.795E-01	0.320
		304.40		-1.245E+00	3.700E+00	5.929E+00	1.062E+00	-0.210
		334.20		1.005E+00	5.056E+00	7.309E+00	1.371E+00	0.138
TH-227		79.80		-6.474E-02	1.982E+00	2.973E+00	6.442E-01	-0.022
	+	94.00		8.697E+00	4.507E+00	4.595E+00	1.001E+00	1.893
		236.00		2.069E-01	4.360E-01	6.597E-01	6.948E-02	0.314
		256.20	*	3.599E-01	6.647E-01	1.129E+00	1.999E-01	0.319
		286.10		-4.346E-01	2.867E+00	4.636E+00	4.650E+00	-0.094
		299.80		1.469E+00	3.100E+00	4.595E+00	7.795E-01	0.320
		304.40		-1.245E+00	3.700E+00	5.929E+00	1.062E+00	-0.210
TH-229		334.20		1.005E+00	5.056E+00	7.309E+00	1.371E+00	0.138
		85.43		-2.868E-02	2.522E-01	3.752E-01	3.012E-02	-0.076
	+	88.47		4.407E+00	4.281E-01	5.154E-01	4.095E-02	8.551
		100.00		-7.441E-02	2.396E-01	3.899E-01	3.682E-02	-0.191
		193.63	*	-4.775E-01	7.919E-01	1.306E+00	1.033E-01	-0.366
		210.97		1.005E+00	1.226E+00	2.134E+00	1.692E-01	0.471
	+	609.31	*	6.021E-01	2.628E-01	3.486E-01	3.260E-02	1.727
TH-230		1120.29		6.445E-01	7.688E-01	1.311E+00	1.173E-01	0.491
		1764.49		7.157E-01	4.589E-01	9.141E-01	5.191E-02	0.783
PA-231		283.67	*	1.229E+00	2.828E+00	4.759E+00	6.974E-01	0.258
		301.29		1.507E+00	1.162E+00	1.883E+00	2.159E-01	0.801
TH-231		81.07		-1.416E-01	2.729E-01	3.993E-01	3.302E-02	-0.355
		83.78		-4.340E-02	1.668E-01	2.480E-01	2.014E-02	-0.175
		94.90		2.007E-01	2.818E-01	4.356E-01	3.819E-02	0.461
	+	122.32		1.588E+01	5.330E+00	6.107E+00	7.980E-01	2.599
		144.24		-2.892E-02	1.070E+00	1.726E+00	1.939E-01	-0.017
		154.21		5.538E-01	5.923E-01	9.922E-01	9.974E-02	0.558
		269.46		3.186E-01	3.315E-01	5.724E-01	4.555E-02	0.557
U-231		323.87	*	-1.550E+00	1.321E+00	1.975E+00	3.368E-01	-0.785
	+	338.28		3.422E+00	2.924E+00	3.511E+00	3.937E-01	0.975
		445.03		-4.905E+00	5.237E+00	8.338E+00	8.840E-01	-0.588
		84.21		-5.272E-01	2.098E+00	3.121E+00	2.526E-01	-0.169
	+	92.29		2.505E+00	1.198E+00	1.555E+00	1.311E-01	1.611
		95.87	*	-3.016E-01	3.988E-01	5.612E-01	4.991E-02	-0.537
		108.00		5.040E-01	8.202E-01	1.383E+00	1.459E-01	0.364
PA-233	+	75.28		9.385E+00	4.357E+00	6.082E+00	9.329E-01	1.543
	+	86.59		6.319E+01	1.718E+01	6.036E+00	1.607E+00	10.469
		300.12		3.726E-01	8.593E-01	1.272E+00	1.812E-01	0.293
		311.98	*	-3.661E-02	1.216E-01	1.958E-01	1.496E-02	-0.187
		340.50		1.289E+00	1.239E+00	1.856E+00	4.320E-01	0.695
		398.62		2.182E+00	4.528E+00	7.413E+00	1.919E+00	0.294
		415.76		-1.056E+00	3.729E+00	5.851E+00	1.209E+00	-0.180
PA-234	+	63.00		3.922E-01	1.517E+00	2.133E+00	3.398E-01	0.184
		94.67		2.849E-01	2.095E-01	3.311E-01	4.134E-02	0.860
		98.44		4.589E-02	1.173E-01	1.912E-01	1.069E-01	0.240

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
		99.86		-6.140E-02	6.100E-01	9.958E-01	9.385E-02	-0.062
		111.00		-2.303E-02	2.540E-01	4.149E-01	5.755E-02	-0.055
		131.20		3.723E-03	1.632E-01	2.652E-01	3.114E-02	0.014
		152.70		6.488E-02	4.929E-01	7.967E-01	1.391E-01	0.081
+		186.00		1.693E+00	3.138E+00	3.874E+00	1.202E+00	0.437
		226.40		3.871E-01	6.849E-01	1.175E+00	1.499E-01	0.330
		227.20		-1.007E-01	7.440E-01	1.241E+00	9.829E-02	-0.081
		248.90		-2.513E-01	1.396E+00	2.304E+00	5.100E-01	-0.109
		293.70		2.675E+00	1.465E+00	2.267E+00	3.808E-01	1.180
		369.80		-1.878E-01	1.789E+00	2.871E+00	6.025E-01	-0.065
		568.70		-1.365E-01	2.049E+00	3.360E+00	2.509E-01	-0.041
		569.50		-3.617E-01	5.563E-01	8.736E-01	6.528E-02	-0.414
		574.00		2.774E+00	2.956E+00	5.169E+00	3.881E-01	0.537
		699.00		-8.110E-01	1.532E+00	2.365E+00	4.464E-01	-0.343
		706.10		1.931E+00	2.444E+00	3.921E+00	1.745E+00	0.493
		733.00		6.095E-01	8.837E-01	1.477E+00	3.251E-01	0.413
		742.81		-2.098E+00	3.427E+00	4.754E+00	3.193E+00	-0.441
		796.30		1.351E+00	2.023E+00	3.477E+00	9.338E-01	0.388
		805.60		5.269E-01	2.352E+00	3.978E+00	1.212E+00	0.132
		819.60		1.643E-01	3.060E+00	5.121E+00	1.939E+00	0.032
		826.30		-1.957E+00	2.214E+00	3.170E+00	1.414E+00	-0.617
		831.60		2.172E+00	1.644E+00	2.748E+00	8.145E-01	0.790
		876.40		-8.245E-02	2.142E+00	3.539E+00	3.636E+00	-0.023
		880.51		-1.281E-01	7.557E-01	1.219E+00	9.289E-02	-0.105
		883.24		3.580E-01	8.010E-01	1.304E+00	8.749E-01	0.275
		899.00		-1.023E+00	2.341E+00	3.693E+00	1.607E+00	-0.277
		925.00		2.337E+00	3.385E+00	5.811E+00	4.299E-01	0.402
		926.50		1.000E-01	5.016E-01	8.366E-01	2.082E-01	0.120
		946.00	*	-3.818E-01	8.652E-01	1.380E+00	2.510E-01	-0.277
		949.00		8.630E-01	1.279E+00	2.189E+00	1.593E-01	0.394
		980.50		-6.290E-01	2.028E+00	3.257E+00	2.310E-01	-0.193
PA-234M		1394.10		8.415E-02	1.779E+00	2.954E+00	1.913E+00	0.028
		766.42		1.314E+01	2.583E+01	4.323E+01	2.190E+01	0.304
		1001.03	*	-3.296E+00	1.219E+01	1.974E+01	1.692E+00	-0.167
U-234	+	609.31	*	6.021E-01	2.628E-01	3.486E-01	3.260E-02	1.727
		1120.29		6.445E-01	7.688E-01	1.311E+00	1.173E-01	0.491
		1764.49		7.157E-01	4.589E-01	9.141E-01	5.191E-02	0.783
U-235		89.95		4.679E+00	2.008E+00	2.580E+00	7.927E-01	1.814
	+	93.35		2.706E+00	1.481E+00	1.659E+00	4.647E-01	1.631
		105.00		-8.702E-01	1.454E+00	2.288E+00	6.936E-01	-0.380
		143.76	*	-6.995E-02	3.327E-01	5.318E-01	9.819E-02	-0.132
		163.35		-4.678E-01	8.053E-01	1.240E+00	2.341E-01	-0.377
	+	185.71		6.270E-02	1.147E-01	1.419E-01	1.120E-02	0.442
		205.31		-2.890E-01	8.414E-01	1.390E+00	2.609E-01	-0.208
NP-236		94.67		2.189E-01	1.579E-01	2.515E-01	2.197E-02	0.870
		98.44		3.470E-02	8.655E-02	1.445E-01	1.335E-02	0.240
		111.00		-1.742E-02	1.921E-01	3.138E-01	3.446E-02	-0.055
		160.31	*	-7.413E-03	1.286E-01	2.051E-01	1.748E-02	-0.036
NP-239		99.55		4.515E-02	2.020E-01	3.346E-01	3.140E-02	0.135

----- Non-Identified Nuclides -----

Nuclide	Line Ided	Energy (keV)	Key	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243		117.00	*	6.064E-02	3.077E-01	4.550E-01	5.400E-02	0.133
		209.75		8.546E-01	1.251E+00	2.167E+00	1.719E-01	0.394
		228.18		8.481E-03	3.891E-01	6.531E-01	5.174E-02	0.013
		277.60		5.528E-02	3.203E-01	5.289E-01	4.073E-02	0.105
		334.30		6.288E-01	2.866E+00	4.152E+00	2.918E-01	0.151
		99.55		4.644E-02	2.078E-01	3.442E-01	3.229E-02	0.135
		103.76	*	9.940E-02	1.279E-01	2.176E-01	2.167E-02	0.457
		117.00		6.235E-02	3.164E-01	4.679E-01	5.553E-02	0.133
		209.75		8.420E-01	1.233E+00	2.135E+00	1.693E-01	0.394
		228.18		8.566E-03	3.930E-01	6.596E-01	5.225E-02	0.013
AM-246		277.60		5.570E-02	3.228E-01	5.330E-01	4.104E-02	0.105
		798.80		-3.629E-01	3.183E-01	4.875E-01	3.891E-02	-0.745
		1036.00		-5.187E-03	8.005E-01	1.306E+00	8.770E-02	-0.004
		1062.04		2.382E-01	5.973E-01	1.000E+00	6.517E-02	0.238
CM-247		1078.86	*	-1.208E-01	3.822E-01	6.070E-01	3.872E-02	-0.199
		278.00		8.179E-03	1.342E+00	2.198E+00	1.692E-01	0.004
		287.40		-3.895E-01	2.252E+00	3.678E+00	2.802E-01	-0.106
		402.60	*	-1.467E-02	7.951E-02	1.261E-01	7.508E-03	-0.116
CF-249		252.85		2.079E-01	1.544E+00	2.586E+00	2.030E-01	0.080
		333.44		3.694E-01	3.570E-01	5.479E-01	3.859E-02	0.674
		387.95	*	-3.695E-02	8.749E-02	1.373E-01	8.152E-03	-0.269
CF-251		176.60	*	2.606E-01	1.956E-01	3.316E-01	2.608E-02	0.786
		227.00		1.313E-01	6.568E-01	1.111E+00	8.806E-02	0.118
		285.00		-9.485E-02	3.239E+00	5.334E+00	4.075E-01	-0.018

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]G1202006619      *
* Acquisition date   : 7-JAN-2010 16:06:51 Detector SN# :                    *
* Detector ID        : GAM13 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 01:00:01.61 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 31-DEC-2009 00:00:00 Nuclide Library : SOLID           *
* Sample ID          : G1202006619 Analyst initials: MXR1                   *
* Batch Number       : 937704 Sample Quantity : 1.5544E+02 GRAM             *
* Recovery           : 1.00000 Carrier Weight : 0.00000                     *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                              *
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22 MS Isotope :                    *
* MSD DPM             : 0.000 MSD Isotope :                                *
* LCS DPM             : 0.000 LCS Isotope :                                *
* LCSD DPM           : 0.000 LCSD Isotope :                                *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
CO-57	2.253E-01	7.377E-02	6.447E-02	0.000E+00
CO-60	6.284E+00	4.895E-01	1.117E-01	0.000E+00
CD-109	3.248E+01	3.091E+00	1.614E+00	0.000E+00
SN-126	3.228E+00	3.073E-01	1.602E-01	0.000E+00
BA-137M	5.402E+00	5.105E-01	1.357E-01	0.000E+00
CS-137	5.711E+00	5.405E-01	1.434E-01	0.000E+00
W-181	7.065E-02	2.819E-01	4.841E-01	0.000E+00
TL-208	2.542E-01	1.302E-01	1.205E-01	0.000E+00
BI-211	1.736E+00	6.197E-01	6.422E-01	0.000E+00
PB-212	7.952E-01	1.890E-01	1.948E-01	0.000E+00
PO-212	7.952E-01	1.890E-01	1.948E-01	0.000E+00
PB-214	6.039E-01	2.178E-01	2.376E-01	0.000E+00
PO-214	6.039E-01	2.178E-01	2.376E-01	0.000E+00
PO-216	7.952E-01	1.890E-01	1.948E-01	0.000E+00
PO-218	6.039E-01	2.178E-01	2.376E-01	0.000E+00
AC-228	9.158E-01	5.987E-01	6.258E-01	0.000E+00
RA-228	9.158E-01	5.987E-01	6.258E-01	0.000E+00
TH-228	8.013E-01	1.904E-01	1.962E-01	0.000E+00
TH-232	9.158E-01	5.987E-01	6.258E-01	0.000E+00
TH-234	3.364E-01	1.276E+00	1.645E+00	0.000E+00
NP-237	9.479E+00	2.119E+00	4.691E-01	0.000E+00
U-238	3.364E-01	1.276E+00	1.645E+00	0.000E+00
AM-241	1.268E+01	1.307E+00	2.593E-01	0.000E+00
AM-243	1.792E-01	7.840E-02	9.851E-02	0.000E+00
ANH-511	8.605E-02	1.177E-01	1.178E-01	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)	
BE-7	-1.451E-01	6.554E-01	1.149E+00	0.000E+00 NOT IDENT.
NA-22	-3.204E-02	6.345E-02	1.021E-01	0.000E+00 NOT IDENT.

NA-24	0.000E+00	2.758E+02	0.000E+00	0.000E+00	SHORT HLIF
AL-26	3.794E-02	5.261E-02	1.009E-01	0.000E+00	NOT IDENT.
K-40	4.277E-01	6.171E-01	1.135E+00	0.000E+00	NOT IDENT.
TI-44	0.000E+00	5.167E-02	7.844E-02	0.000E+00	FAIL ABUN
SC-46	-4.988E-02	1.014E-01	1.697E-01	0.000E+00	NOT IDENT.
V-48	-4.292E-02	1.387E-01	2.318E-01	0.000E+00	NOT IDENT.
CR-51	4.041E-01	5.745E-01	1.043E+00	0.000E+00	NOT IDENT.
MN-52	-2.070E-02	1.237E-01	2.028E-01	0.000E+00	FAIL ABUN
MN-54	-3.013E-02	8.663E-02	1.474E-01	0.000E+00	NOT IDENT.
CO-56	-2.416E-02	8.998E-02	1.536E-01	0.000E+00	NOT IDENT.
CO-58	-3.156E-02	8.544E-02	1.455E-01	0.000E+00	NOT IDENT.
FE-59	2.242E-02	2.190E-01	3.713E-01	0.000E+00	NOT IDENT.
ZN-65	-1.714E-01	2.365E-01	3.779E-01	0.000E+00	NOT IDENT.
GE-68	-7.064E-02	3.186E+00	5.369E+00	0.000E+00	NOT IDENT.
AS-73	-4.691E-01	5.471E-01	1.025E+00	0.000E+00	NOT IDENT.
AS-74	-9.719E-02	1.410E-01	2.319E-01	0.000E+00	NOT IDENT.
SE-75	-2.910E-02	7.200E-02	1.260E-01	0.000E+00	FAIL ABUN
BR-77	-2.869E+00	2.504E+00	4.071E+00	0.000E+00	FAIL ABUN
SR-82	-2.565E-01	7.212E-01	1.237E+00	0.000E+00	NOT IDENT.
RB-83	-2.006E-01	1.404E-01	2.236E-01	0.000E+00	NOT IDENT.
RB-84	-1.897E-02	1.555E-01	2.625E-01	0.000E+00	NOT IDENT.
KR-85	1.725E+01	1.671E+01	2.753E+01	0.000E+00	NOT IDENT.
SR-85	8.178E-02	7.923E-02	1.305E-01	0.000E+00	NOT IDENT.
RB-86	1.078E+00	1.532E+00	2.711E+00	0.000E+00	NOT IDENT.
Y-88	1.006E-03	4.775E-02	8.134E-02	0.000E+00	NOT IDENT.
ZR-88	-4.151E-02	6.215E-02	1.024E-01	0.000E+00	NOT IDENT.
Y-91	1.566E+01	2.424E+01	4.472E+01	0.000E+00	NOT IDENT.
NB-94	1.022E-02	7.130E-02	1.223E-01	0.000E+00	NOT IDENT.
NB-95	1.239E-02	8.605E-02	1.526E-01	0.000E+00	NOT IDENT.
NB-95M	5.659E-02	2.113E-01	3.417E-01	0.000E+00	NOT IDENT.
ZR-95	-1.877E-01	1.507E-01	2.273E-01	0.000E+00	NOT IDENT.
NB-97	0.000E+00	2.161E+02	0.000E+00	0.000E+00	SHORT HLIF
ZR-97	0.000E+00	2.555E+03	0.000E+00	0.000E+00	SHORT HLIF
MO-99	2.047E+00	3.855E+00	6.746E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	6.342E+07	0.000E+00	0.000E+00	SHORT HLIF
RH-101	5.602E-02	5.185E-02	9.873E-02	0.000E+00	NOT IDENT.
RH-102	8.490E-03	6.773E-02	1.210E-01	0.000E+00	NOT IDENT.
RU-103	-2.602E-02	7.702E-02	1.333E-01	0.000E+00	FAIL ABUN
RH-106	6.715E-01	6.926E-01	1.259E+00	0.000E+00	FAIL ABUN
RU-106	6.715E-01	6.893E-01	1.259E+00	0.000E+00	FAIL ABUN
AG-108M	3.781E-02	7.329E-02	1.345E-01	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	1.066E-01	1.902E-01	0.000E+00	NOT IDENT.
IN-111	-5.046E-01	3.045E-01	5.026E-01	0.000E+00	NOT IDENT.
IN-113M	3.672E-02	8.846E-02	1.552E-01	0.000E+00	NOT IDENT.
SN-113	3.672E-02	8.846E-02	1.552E-01	0.000E+00	NOT IDENT.
IN-114M	-1.404E-02	3.035E-01	4.610E-01	0.000E+00	NOT IDENT.
CD-115	5.038E-02	2.242E+00	3.939E+00	0.000E+00	NOT IDENT.
SN-117M	8.473E-03	5.672E-02	9.994E-02	0.000E+00	NOT IDENT.
SB-122	-2.260E-01	6.326E-01	1.076E+00	0.000E+00	NOT IDENT.
I-123	0.000E+00	6.818E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	1.776E-02	4.138E-02	7.386E-02	0.000E+00	NOT IDENT.
I-124	-2.113E-02	4.421E-01	6.580E-01	0.000E+00	NOT IDENT.
SB-124	-3.427E-02	1.202E-01	1.876E-01	0.000E+00	FAIL ABUN
SB-125	1.885E-01	2.023E-01	3.784E-01	0.000E+00	NOT IDENT.
TE-125M	4.631E+00	1.137E+01	2.093E+01	0.000E+00	NOT IDENT.
I-126	1.098E-01	2.900E-01	4.441E-01	0.000E+00	NOT IDENT.
SB-126	5.082E-02	2.032E-01	3.501E-01	0.000E+00	FAIL ABUN
SB-127	-2.048E-01	7.575E-01	1.263E+00	0.000E+00	NOT IDENT.
XE-127	-3.797E-02	6.284E-02	1.122E-01	0.000E+00	FAIL ABUN
I-131	7.406E-03	1.244E-01	2.157E-01	0.000E+00	NOT IDENT.
TE-132	7.961E-03	2.383E-01	4.328E-01	0.000E+00	NOT IDENT.
BA-133	7.004E-02	9.451E-02	1.526E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.193E+01	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.091E-01	9.902E-02	1.850E-01	0.000E+00	NOT IDENT.
CS-135	1.566E-01	2.755E-01	5.041E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.621E+07	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.108E-02	1.888E-01	3.222E-01	0.000E+00	NOT IDENT.
CE-139	1.951E-02	4.620E-02	8.206E-02	0.000E+00	NOT IDENT.
BA-140	-7.621E-02	3.673E-01	6.334E-01	0.000E+00	NOT IDENT.
LA-140	1.355E-02	9.274E-02	1.586E-01	0.000E+00	NOT IDENT.
CE-141	3.370E-02	8.031E-02	1.443E-01	0.000E+00	NOT IDENT.
CE-143	9.178E+00	6.542E+00	1.063E+01	0.000E+00	FAIL ABUN
CE-144	-3.341E-01	3.153E-01	5.232E-01	0.000E+00	NOT IDENT.
PM-144	-1.480E-02	7.221E-02	1.208E-01	0.000E+00	NOT IDENT.
PR-144	-9.991E-01	4.874E+00	8.155E+00	0.000E+00	NOT IDENT.
PM-146	-5.537E-02	1.015E-01	1.760E-01	0.000E+00	NOT IDENT.
ND-147	1.849E-01	7.313E-01	1.301E+00	0.000E+00	NOT IDENT.
PM-149	-3.338E+00	1.593E+01	2.794E+01	0.000E+00	NOT IDENT.

EU-152	1.468E-02	2.266E-01	3.224E-01	0.000E+00	FAIL ABUN
GD-153	-2.210E-02	1.040E-01	1.677E-01	0.000E+00	NOT IDENT.
EU-154	-8.982E-02	1.780E-01	2.861E-01	0.000E+00	FAIL ABUN
EU-155	-1.012E-01	1.426E-01	2.498E-01	0.000E+00	FAIL ABUN
TB-160	-2.048E-01	3.399E-01	5.548E-01	0.000E+00	FAIL ABUN
HO-166M	-7.524E-02	1.304E-01	2.100E-01	0.000E+00	FAIL ABUN
TM-171	6.372E+00	2.368E+01	4.062E+01	0.000E+00	FAIL ABUN
LU-176	-5.753E-03	4.730E-02	8.276E-02	0.000E+00	FAIL ABUN
LU-177	5.401E-01	8.002E-01	1.502E+00	0.000E+00	NOT IDENT.
LU-177M	2.052E-01	3.758E-01	6.596E-01	0.000E+00	FAIL ABUN
HF-181	1.197E-02	8.166E-02	1.459E-01	0.000E+00	FAIL ABUN
TA-182	8.040E-02	2.599E-01	4.635E-01	0.000E+00	NOT IDENT.
RE-183	6.595E-03	1.667E-01	2.909E-01	0.000E+00	FAIL ABUN
RE-184	5.374E-02	3.911E-01	7.068E-01	0.000E+00	FAIL ABUN
OS-185	-3.399E-02	8.364E-02	1.389E-01	0.000E+00	FAIL ABUN
RE-188	-1.999E-02	2.395E-01	4.179E-01	0.000E+00	NOT IDENT.
W-188	5.466E+00	1.357E+01	2.167E+01	0.000E+00	FAIL ABUN
IR-192	1.078E-02	5.961E-02	1.056E-01	0.000E+00	FAIL ABUN
AU-195	8.552E-02	2.696E-01	4.954E-01	0.000E+00	FAIL ABUN
TL-200	3.812E+00	7.876E+00	1.397E+01	0.000E+00	NOT IDENT.
TL-201	-1.211E-01	2.022E+00	3.506E+00	0.000E+00	NOT IDENT.
TL-202	8.566E-02	1.053E-01	1.952E-01	0.000E+00	NOT IDENT.
HG-203	-3.024E-02	6.388E-02	1.108E-01	0.000E+00	NOT IDENT.
BI-207	5.879E-02	1.335E-01	2.326E-01	0.000E+00	FAIL ABUN
TL-207	-1.550E+00	1.294E+00	2.075E+00	0.000E+00	FAIL ABUN
PO-209	8.976E+00	2.034E+01	3.601E+01	0.000E+00	NOT IDENT.
BI-210	-1.494E+00	1.145E+00	1.928E+00	0.000E+00	NOT IDENT.
PB-210	-1.494E+00	1.145E+00	1.928E+00	0.000E+00	NOT IDENT.
PO-210	-1.494E+00	1.144E+00	1.928E+00	0.000E+00	NOT IDENT.
PB-211	4.284E-02	1.991E+00	3.404E+00	0.000E+00	NOT IDENT.
BI-212	5.843E-02	6.591E-01	1.121E+00	0.000E+00	NOT IDENT.
BI-214	0.000E+00	2.575E-01	3.602E-01	0.000E+00	FAIL ABUN
PO-215	-1.550E+00	1.294E+00	2.075E+00	0.000E+00	FAIL ABUN
RN-219	-6.387E-01	8.935E-01	1.457E+00	0.000E+00	NOT IDENT.
RN-220	6.962E+00	5.291E+01	9.320E+01	0.000E+00	NOT IDENT.
RA-223	-1.550E+00	1.294E+00	2.075E+00	0.000E+00	FAIL ABUN
RA-224	0.000E+00	1.418E+00	2.544E+00	0.000E+00	NOT IDENT.
RA-226	0.000E+00	2.575E-01	3.602E-01	0.000E+00	FAIL ABUN
AC-227	3.599E-01	6.506E-01	1.194E+00	0.000E+00	NOT IDENT.
TH-227	3.599E-01	6.515E-01	1.194E+00	0.000E+00	FAIL ABUN
TH-229	-4.775E-01	7.761E-01	1.391E+00	0.000E+00	FAIL ABUN
TH-230	0.000E+00	2.575E-01	3.602E-01	0.000E+00	FAIL ABUN
PA-231	1.229E+00	2.771E+00	5.017E+00	0.000E+00	NOT IDENT.
TH-231	-1.550E+00	1.294E+00	2.075E+00	0.000E+00	FAIL ABUN
U-231	-3.016E-01	3.908E-01	6.080E-01	0.000E+00	FAIL ABUN
PA-233	-3.661E-02	1.192E-01	2.059E-01	0.000E+00	FAIL ABUN
PA-234	-3.818E-01	8.479E-01	1.408E+00	0.000E+00	FAIL ABUN
PA-234M	-3.296E+00	1.195E+01	2.012E+01	0.000E+00	NOT IDENT.
U-234	0.000E+00	2.575E-01	3.602E-01	0.000E+00	FAIL ABUN
U-235	-6.995E-02	3.260E-01	5.705E-01	0.000E+00	FAIL ABUN
NP-236	-7.413E-03	1.260E-01	2.194E-01	0.000E+00	NOT IDENT.
NP-239	6.064E-02	3.015E-01	4.906E-01	0.000E+00	NOT IDENT.
CM-243	9.940E-02	1.254E-01	2.354E-01	0.000E+00	NOT IDENT.
AM-246	-1.208E-01	3.746E-01	6.174E-01	0.000E+00	NOT IDENT.
CM-247	-1.467E-02	7.792E-02	1.317E-01	0.000E+00	NOT IDENT.
CF-249	-3.695E-02	8.574E-02	1.436E-01	0.000E+00	NOT IDENT.
CF-251	2.606E-01	1.917E-01	3.538E-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]G1202006619.CNF;1
Sample date        : 31-DEC-2009 00:00:00 Acquisition date : 7-JAN-2010 16:06:51.
Sample ID          : G1202006619      Sample quantity   : 1.55440E+02 GRAM
Detector name      : GAM13            Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00    Elapsed real time: 0 01:00:01.61  0.0%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 937704           Detector SN#      :
Matrix Spike ID    :                  LCS ID            : 1032-A
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	262	85.51*	6.705E+00	2.209E-01	2.253E-01	33.41
	136.48	-----	10.60	6.430E+00	-----	Line Not Found	-----
CO-60	1173.22	1636	100.00	1.240E+00	6.373E+00	6.391E+00	7.90
	1332.49	1452	100.00*	1.119E+00	6.267E+00	6.284E+00	7.95
CD-109	88.03	1790	3.72*	7.238E+00	3.211E+01	3.248E+01	9.71
SN-126	64.28	20	9.60	7.391E+00	1.332E-01	1.332E-01	386.93
	86.94	1790	8.90	7.238E+00	1.342E+01	1.342E+01	41.60
	87.57	1790	37.00*	7.238E+00	3.228E+00	3.228E+00	9.71
BA-137M	661.65	2031	89.98*	2.018E+00	5.400E+00	5.402E+00	9.64
CS-137	661.65	2031	85.12*	2.018E+00	5.708E+00	5.711E+00	9.66
W-181	56.28	105	18.70	7.378E+00	3.674E-01	3.840E-01	58.51
	57.53	105	32.60	7.378E+00	2.108E-01	2.203E-01	58.51
	65.20	-----	13.80*	7.391E+00	-----	Line Not Found	-----
TL-208	277.35	-----	6.80	4.225E+00	-----	Line Not Found	-----
	510.84	45	21.60	2.538E+00	3.984E-01	3.984E-01	139.79
	583.14	100	84.20*	2.256E+00	2.542E-01	2.542E-01	52.28
	860.37	-----	12.46	1.606E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.27	7.369E+00	-----	Line Not Found	-----
	351.07	163	12.94*	3.496E+00	1.736E+00	1.736E+00	36.43
PB-212	74.81	180	10.70	7.359E+00	1.105E+00	1.105E+00	45.62
	77.11	303	18.00	7.343E+00	1.107E+00	1.107E+00	25.83
	87.30	1790	8.00	7.238E+00	1.493E+01	1.493E+01	13.94
	238.63	346	44.60*	4.712E+00	7.952E-01	7.952E-01	24.25
	300.09	-----	3.41	3.976E+00	-----	Line Not Found	-----
PO-212	74.81	180	10.70	7.359E+00	1.105E+00	1.105E+00	45.62
	77.11	303	18.00	7.343E+00	1.107E+00	1.107E+00	25.83
	87.30	1790	8.00	7.238E+00	1.493E+01	1.493E+01	13.94
	115.19	-----	0.60	6.822E+00	-----	Line Not Found	-----
	238.63	346	44.60*	4.712E+00	7.952E-01	7.952E-01	24.25
	300.09	-----	3.41	3.976E+00	-----	Line Not Found	-----
PB-214	74.81	180	6.21	7.359E+00	1.904E+00	1.904E+00	45.26
	77.11	303	10.50	7.343E+00	1.897E+00	1.897E+00	26.93

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	87.30	1790	4.67	7.238E+00	2.558E+01	2.558E+01	12.40
	241.98	-----	7.49	4.668E+00	-----	Line Not Found	-----
	295.21	59	19.20	4.026E+00	3.710E-01	3.710E-01	113.50
	351.92	163	37.20*	3.496E+00	6.039E-01	6.039E-01	36.80
PO-214	74.81	180	6.21	7.359E+00	1.904E+00	1.904E+00	45.26
	77.11	303	10.50	7.343E+00	1.897E+00	1.897E+00	26.93
	87.30	1790	4.67	7.238E+00	2.558E+01	2.558E+01	12.40
	241.98	-----	7.49	4.668E+00	-----	Line Not Found	-----
	295.21	59	19.20	4.026E+00	3.710E-01	3.710E-01	113.50
	351.92	163	37.20*	3.496E+00	6.039E-01	6.039E-01	36.80
PO-216	74.81	180	10.70	7.359E+00	1.105E+00	1.105E+00	45.62
	77.11	303	18.00	7.343E+00	1.107E+00	1.107E+00	25.83
	87.30	1790	8.00	7.238E+00	1.493E+01	1.493E+01	13.94
	238.63	346	44.60*	4.712E+00	7.952E-01	7.952E-01	24.25
	300.09	-----	3.41	3.976E+00	-----	Line Not Found	-----
PO-218	74.81	180	6.21	7.359E+00	1.904E+00	1.904E+00	45.26
	77.11	303	10.50	7.343E+00	1.897E+00	1.897E+00	26.93
	87.30	1790	4.67	7.238E+00	2.558E+01	2.558E+01	12.40
	241.98	-----	7.49	4.668E+00	-----	Line Not Found	-----
	295.21	59	19.20	4.026E+00	3.710E-01	3.710E-01	113.50
	351.92	163	37.20*	3.496E+00	6.039E-01	6.039E-01	36.80
AC-228	338.32	70	11.40	3.613E+00	8.195E-01	8.195E-01	94.08
	911.07	80	27.70*	1.529E+00	9.158E-01	9.158E-01	66.71
	969.11	35	16.60	1.452E+00	7.070E-01	7.070E-01	156.83
RA-228	338.32	70	11.40	3.613E+00	8.195E-01	8.195E-01	94.08
	911.07	80	27.70*	1.529E+00	9.158E-01	9.158E-01	66.71
	969.11	35	16.60	1.452E+00	7.070E-01	7.070E-01	156.83
TH-228	74.81	180	10.70	7.359E+00	1.105E+00	1.114E+00	44.67
	77.11	303	18.00	7.343E+00	1.107E+00	1.115E+00	25.83
	87.30	1790	8.00	7.238E+00	1.493E+01	1.504E+01	9.71
	238.63	346	44.60*	4.712E+00	7.952E-01	8.013E-01	24.25
	300.09	-----	3.41	3.976E+00	-----	Line Not Found	-----
TH-232	338.32	70	11.40	3.613E+00	8.195E-01	8.195E-01	84.98
	911.07	80	27.70*	1.529E+00	9.158E-01	9.158E-01	66.71
	969.11	35	16.60	1.452E+00	7.070E-01	7.070E-01	156.83
TH-234	63.29	20	3.80*	7.391E+00	3.364E-01	3.364E-01	387.05
	92.38	181	5.41	7.178E+00	2.251E+00	2.251E+00	50.39
NP-237	86.50	1790	12.60*	7.238E+00	9.479E+00	9.479E+00	22.81
	95.87	-----	2.60	7.135E+00	-----	Line Not Found	-----
U-238	63.29	20	3.80*	7.391E+00	3.364E-01	3.364E-01	387.05
	92.38	181	5.41	7.178E+00	2.251E+00	2.251E+00	47.82
AM-241	59.54	6961	35.90*	7.384E+00	1.268E+01	1.268E+01	10.52
AM-243	74.67	180	66.00*	7.359E+00	1.792E-01	1.792E-01	44.65
	86.72	1790	0.34	7.238E+00	3.555E+02	3.555E+02	9.71
	117.66	-----	0.55	6.778E+00	-----	Line Not Found	-----
	142.18	-----	0.13	6.323E+00	-----	Line Not Found	-----
ANH-511	511.00	45	100.00*	2.538E+00	8.605E-02	8.605E-02	139.54

Flag: "*" = Keyline

Total number of lines in spectrum 21
Number of unidentified lines 0
Number of lines tentatively identified by NID 21 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.02	2.209E-01	2.253E-01	0.753E-01	33.41	
CO-60	5.27Y	1.00	6.267E+00	6.284E+00	0.499E+00	7.95	
CD-109	464.00D	1.01	3.211E+01	3.248E+01	0.315E+01	9.71	
SN-126	1.00E+05Y	1.00	3.228E+00	3.228E+00	0.314E+00	9.71	
BA-137M	30.17Y	1.00	5.400E+00	5.402E+00	0.521E+00	9.64	
CS-137	30.17Y	1.00	5.708E+00	5.711E+00	0.552E+00	9.66	
W-181	120.95D	1.05	2.108E-01	2.203E-01	1.289E-01	58.51	K
TL-208	1.41E+10Y	1.00	2.542E-01	2.542E-01	1.329E-01	52.28	
BI-211	7.04E+08Y	1.00	1.736E+00	1.736E+00	0.632E+00	36.43	
PB-212	1.41E+10Y	1.00	7.952E-01	7.952E-01	1.928E-01	24.25	
PO-212	1.41E+10Y	1.00	7.952E-01	7.952E-01	1.928E-01	24.25	
PB-214	1600.00Y	1.00	6.039E-01	6.039E-01	2.222E-01	36.80	
PO-214	1600.00Y	1.00	6.039E-01	6.039E-01	2.222E-01	36.80	
PO-216	1.41E+10Y	1.00	7.952E-01	7.952E-01	1.928E-01	24.25	
PO-218	1600.00Y	1.00	6.039E-01	6.039E-01	2.222E-01	36.80	
AC-228	1.41E+10Y	1.00	9.158E-01	9.158E-01	6.109E-01	66.71	
RA-228	1.41E+10Y	1.00	9.158E-01	9.158E-01	6.109E-01	66.71	
TH-228	1.91Y	1.01	7.952E-01	8.013E-01	1.943E-01	24.25	
TH-232	1.41E+10Y	1.00	9.158E-01	9.158E-01	6.109E-01	66.71	
TH-234	4.47E+09Y	1.00	3.364E-01	3.364E-01	13.02E-01	387.05	
NP-237	2.14E+06Y	1.00	9.479E+00	9.479E+00	2.162E+00	22.81	
U-238	4.47E+09Y	1.00	3.364E-01	3.364E-01	13.02E-01	387.05	
AM-241	432.20Y	1.00	1.268E+01	1.268E+01	0.133E+01	10.52	
AM-243	7380.00Y	1.00	1.792E-01	1.792E-01	0.800E-01	44.65	
ANH-511	1.00E+09Y	1.00	8.605E-02	8.605E-02	12.01E-02	139.54	

Total Activity : 8.597E+01 8.638E+01

Grand Total Activity : 8.597E+01 8.638E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202006619

Page : 4
Acquisition date : 7-JAN-2010 16:06:51

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.72	39	312	1.13	371.27	368	10	1.08E-02	****	5.53E+00	T
0	609.22	125	134	1.59	1218.52	1210	13	3.48E-02	42.6	2.17E+00	T

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202006619.CNF;1 *
* Acquisition date   : 7-JAN-2010 16:06:51.  Detector SN#      :             *
* Detector ID        : GAM13                      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 01:00:01.61             Half life ratio : 8.00000      *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 31-DEC-2009 00:00:00  Nuclide Library : SOLID          *
* Sample ID          : G1202006619           Analyst initials: MXR1          *
* Batch Number       : 937704                Sample Quantity : 1.55440E+02 GRAM *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22.03MS 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
CO-57	2.253E-01	7.527E-02	5.986E-02	7.572E-03	3.764
CO-60	6.284E+00	4.995E-01	1.105E-01	6.283E-03	56.887
CD-109	3.248E+01	3.155E+00	1.486E+00	1.173E-01	21.849
SN-126	3.228E+00	3.135E-01	1.475E-01	1.167E-02	21.878
BA-137M	5.402E+00	5.210E-01	1.316E-01	1.073E-02	41.053
CS-137	5.711E+00	5.516E-01	1.391E-01	1.137E-02	41.053
W-181	2.203E-01	1.289E-01	4.427E-01	4.083E-02	0.498
TL-208	2.542E-01	1.329E-01	1.165E-01	9.644E-03	2.182
BI-211	1.736E+00	6.324E-01	6.126E-01	4.465E-02	2.834
PB-212	7.952E-01	1.928E-01	1.839E-01	1.671E-02	4.324
PO-212	7.952E-01	1.928E-01	1.839E-01	1.671E-02	4.324
PB-214	6.039E-01	2.222E-01	2.266E-01	2.029E-02	2.665
PO-214	6.039E-01	2.222E-01	2.266E-01	2.029E-02	2.665
PO-216	7.952E-01	1.928E-01	1.839E-01	1.671E-02	4.324
PO-218	6.039E-01	2.222E-01	2.266E-01	2.029E-02	2.665
AC-228	9.158E-01	6.109E-01	6.124E-01	6.359E-02	1.495
RA-228	9.158E-01	6.109E-01	6.124E-01	6.359E-02	1.495
TH-228	8.013E-01	1.943E-01	1.853E-01	1.684E-02	4.324

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-232	9.158E-01	6.109E-01	6.124E-01	6.359E-02	1.495
TH-234	3.364E-01	1.302E+00	1.503E+00	2.759E-01	0.224
NP-237	9.479E+00	2.162E+00	4.319E-01	9.554E-02	21.948
U-238	3.364E-01	1.302E+00	1.503E+00	2.759E-01	0.224
AM-241	1.268E+01	1.334E+00	2.366E-01	2.406E-02	53.601
AM-243	1.792E-01	8.000E-02	9.037E-02	7.806E-03	1.983
ANH-511	8.605E-02	1.201E-01	1.135E-01	7.919E-03	0.758

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.451E-01		6.687E-01	1.105E+00	8.306E-02	-0.131
NA-22	-3.204E-02		6.475E-02	1.008E-01	5.689E-03	-0.318
NA-24	1.878E-04		1.407E-04	Half-Life too short		
AL-26	3.794E-02		5.368E-02	1.007E-01	5.682E-03	0.377
K-40	4.277E-01		6.297E-01	1.126E+00	6.883E-02	0.380
TI-44	2.041E-01	+	5.272E-02	7.204E-02	6.068E-03	2.834
SC-46	-4.988E-02		1.034E-01	1.659E-01	1.256E-02	-0.301
V-48	-4.292E-02		1.415E-01	2.273E-01	1.608E-02	-0.189
CR-51	4.041E-01		5.862E-01	9.925E-01	7.724E-02	0.407
MN-52	-2.070E-02		1.262E-01	2.010E-01	1.155E-02	-0.103
MN-54	-3.013E-02		8.840E-02	1.439E-01	1.129E-02	-0.209
CO-56	-2.416E-02		9.181E-02	1.500E-01	1.169E-02	-0.161
CO-58	-3.156E-02		8.718E-02	1.419E-01	1.130E-02	-0.222
FE-59	2.242E-02		2.235E-01	3.652E-01	2.609E-02	0.061
ZN-65	-1.714E-01		2.413E-01	3.719E-01	2.258E-02	-0.461
GE-68	-7.064E-02		3.251E+00	5.278E+00	3.374E-01	-0.013
AS-73	-4.691E-01		5.582E-01	9.324E-01	7.876E-02	-0.503
AS-74	-9.719E-02		1.438E-01	2.243E-01	1.723E-02	-0.433
SE-75	-2.910E-02		7.347E-02	1.193E-01	9.349E-03	-0.244
BR-77	-2.869E+00		2.555E+00	3.923E+00	2.771E-01	-0.731
SR-82	-2.565E-01		7.359E-01	1.205E+00	9.700E-02	-0.213
RB-83	-2.006E-01		1.433E-01	2.155E-01	1.522E-02	-0.931
RB-84	-1.897E-02		1.587E-01	2.566E-01	1.955E-02	-0.074
KR-85	1.725E+01		1.706E+01	2.653E+01	1.858E+00	0.650
SR-85	8.178E-02		8.085E-02	1.258E-01	8.809E-03	0.650
RB-86	1.078E+00		1.563E+00	2.665E+00	1.705E-01	0.405
Y-88	1.006E-03		4.872E-02	8.118E-02	4.571E-03	0.012
ZR-88	-4.151E-02		6.342E-02	9.793E-02	5.736E-03	-0.424
Y-91	1.566E+01		2.473E+01	4.410E+01	2.444E+00	0.355
NB-94	1.022E-02		7.275E-02	1.188E-01	9.696E-03	0.086
NB-95	1.239E-02		8.781E-02	1.486E-01	1.200E-02	0.083
NB-95M	5.659E-02		2.156E-01	3.226E-01	2.984E-02	0.175
ZR-95	-1.877E-01		1.538E-01	2.213E-01	1.996E-02	-0.848
NB-97	8.852E-04		1.103E-04	Half-Life too short		
ZR-97	2.110E-03		1.304E-03	Half-Life too short		
MO-99	2.047E+00		3.933E+00	6.564E+00	9.786E-01	0.312

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TC-99M	4.435E+01		3.236E+01	Half-Life too short		
RH-101	5.602E-02		5.291E-02	9.279E-02	7.348E-03	0.604
RH-102	8.490E-03		6.911E-02	1.163E-01	7.739E-03	0.073
RU-103	-2.602E-02		7.860E-02	1.283E-01	1.689E-02	-0.203
RH-106	6.715E-01		7.067E-01	1.219E+00	1.571E-01	0.551
RU-106	6.715E-01		7.034E-01	1.219E+00	9.600E-02	0.551
AG-108M	3.781E-02		7.479E-02	1.290E-01	8.679E-03	0.293
AG-110M	3.503E-01		1.088E-01	1.844E-01	1.549E-02	1.899
IN-111	-5.046E-01		3.108E-01	4.750E-01	3.743E-02	-1.062
IN-113M	3.672E-02		9.026E-02	1.485E-01	9.250E-03	0.247
SN-113	3.672E-02		9.026E-02	1.485E-01	9.250E-03	0.247
IN-114M	-1.404E-02		3.096E-01	4.328E-01	3.421E-02	-0.032
CD-115	5.038E-02		2.288E+00	3.798E+00	2.706E-01	0.013
SN-117M	8.473E-03		5.788E-02	9.340E-02	8.156E-03	0.091
SB-122	-2.260E-01		6.455E-01	1.039E+00	7.718E-02	-0.217
I-123	2.927E-04		3.478E-04	Half-Life too short		
TE-123M	1.776E-02		4.222E-02	6.904E-02	6.028E-03	0.257
I-124	-2.113E-02		4.511E-01	6.367E-01	4.923E-02	-0.033
SB-124	-3.427E-02		1.227E-01	1.868E-01	1.163E-02	-0.183
SB-125	1.885E-01		2.065E-01	3.628E-01	2.335E-02	0.520
TE-125M	4.631E+00		1.160E+01	1.938E+01	2.352E+00	0.239
I-126	1.098E-01		2.959E-01	4.309E-01	3.516E-02	0.255
SB-126	5.082E-02		2.073E-01	3.404E-01	2.774E-02	0.149
SB-127	-2.048E-01		7.730E-01	1.226E+00	1.128E-01	-0.167
XE-127	-3.797E-02		6.412E-02	1.055E-01	8.358E-03	-0.360
I-131	7.406E-03		1.270E-01	2.060E-01	1.449E-02	0.036
TE-132	7.961E-03		2.431E-01	4.083E-01	5.818E-02	0.020
BA-133	7.004E-02		9.644E-02	1.456E-01	1.748E-02	0.481
I-133	9.091E-06		1.629E-05	Half-Life too short		
CS-134	1.091E-01		1.010E-01	1.804E-01	1.454E-02	0.605
CS-135	1.566E-01		2.811E-01	4.775E-01	4.410E-02	0.328
I-135	2.416E+01		2.868E+01	Half-Life too short		
CS-136	2.108E-02		1.926E-01	3.165E-01	2.243E-02	0.067
CE-139	1.951E-02		4.715E-02	7.677E-02	6.019E-03	0.254
BA-140	-7.621E-02		3.748E-01	6.110E-01	2.004E-01	-0.125
LA-140	1.355E-02		9.463E-02	1.577E-01	9.087E-03	0.086
CE-141	3.370E-02		8.195E-02	1.346E-01	1.396E-02	0.250
CE-143	9.178E+00		6.675E+00	1.009E+01	2.122E+00	0.909
CE-144	-3.341E-01		3.217E-01	4.869E-01	8.439E-02	-0.686
PM-144	-1.480E-02		7.368E-02	1.174E-01	9.584E-03	-0.126
PR-144	-9.991E-01		4.973E+00	7.922E+00	6.468E-01	-0.126
PM-146	-5.537E-02		1.036E-01	1.691E-01	1.534E-02	-0.328
ND-147	1.849E-01		7.462E-01	1.255E+00	1.776E-01	0.147
PM-149	-3.338E+00		1.625E+01	2.650E+01	3.975E+00	-0.126
EU-152	1.468E-02		2.312E-01	3.073E-01	2.304E-02	0.048
GD-153	-2.210E-02		1.061E-01	1.549E-01	1.409E-02	-0.143
EU-154	-8.982E-02		1.817E-01	2.826E-01	2.611E-02	-0.318
EU-155	-1.012E-01		1.455E-01	2.311E-01	2.372E-02	-0.438

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TB-160	-2.048E-01		3.469E-01	5.424E-01	4.138E-02	-0.378
HO-166M	-7.524E-02		1.331E-01	2.041E-01	1.665E-02	-0.369
TM-171	6.372E+00		2.416E+01	3.716E+01	3.391E+00	0.171
LU-176	-5.753E-03		4.827E-02	7.866E-02	5.831E-03	-0.073
LU-177	5.401E-01		8.165E-01	1.413E+00	1.121E-01	0.382
LU-177M	2.052E-01		3.835E-01	6.318E-01	3.832E-02	0.325
HF-181	1.197E-02		8.332E-02	1.403E-01	9.425E-03	0.085
TA-182	8.040E-02		2.652E-01	4.573E-01	2.545E-02	0.176
RE-183	6.595E-03		1.701E-01	2.720E-01	2.251E-02	0.024
RE-184	5.374E-02		3.990E-01	6.684E-01	5.247E-02	0.080
OS-185	-3.399E-02		8.534E-02	1.347E-01	1.084E-02	-0.252
RE-188	-1.999E-02		2.444E-01	3.904E-01	3.572E-02	-0.051
W-188	5.466E+00		1.384E+01	2.057E+01	1.560E+00	0.266
IR-192	1.078E-02		6.083E-02	1.005E-01	7.349E-03	0.107
AU-195	8.552E-02		2.751E-01	4.576E-01	4.252E-02	0.187
TL-200	3.812E+00		8.036E+00	1.334E+01	8.534E-01	0.286
TL-201	-1.211E-01		2.063E+00	3.281E+00	2.571E-01	-0.037
TL-202	8.566E-02		1.074E-01	1.873E-01	1.183E-02	0.457
HG-203	-3.024E-02		6.519E-02	1.051E-01	8.366E-03	-0.288
BI-207	5.879E-02		1.362E-01	2.286E-01	1.487E-02	0.257
TL-207	-1.550E+00		1.321E+00	1.975E+00	3.368E-01	-0.785
PO-209	8.976E+00		2.075E+01	3.523E+01	2.652E+00	0.255
BI-210	-1.494E+00		1.169E+00	1.749E+00	1.425E-01	-0.854
PB-210	-1.494E+00		1.169E+00	1.749E+00	1.425E-01	-0.854
PO-210	-1.494E+00		1.167E+00	1.749E+00	1.247E-01	-0.854
PB-211	4.284E-02		2.031E+00	3.259E+00	2.032E+00	0.013
BI-212	5.843E-02		6.726E-01	1.090E+00	1.046E-01	0.054
BI-214	6.021E-01	+	2.628E-01	3.486E-01	3.260E-02	1.727
PO-215	-1.550E+00		1.321E+00	1.975E+00	3.368E-01	-0.785
RN-219	-6.387E-01		9.118E-01	1.395E+00	1.907E-01	-0.458
RN-220	6.962E+00		5.399E+01	8.996E+01	6.576E+00	0.077
RA-223	-1.550E+00		1.321E+00	1.975E+00	3.368E-01	-0.785
RA-224	4.436E+00		1.447E+00	2.403E+00	1.897E-01	1.846
RA-226	6.021E-01	+	2.628E-01	3.486E-01	3.260E-02	1.727
AC-227	3.599E-01		6.639E-01	1.129E+00	1.685E-01	0.319
TH-227	3.599E-01		6.647E-01	1.129E+00	1.999E-01	0.319
TH-229	-4.775E-01		7.919E-01	1.306E+00	1.033E-01	-0.366
TH-230	6.021E-01	+	2.628E-01	3.486E-01	3.260E-02	1.727
PA-231	1.229E+00		2.828E+00	4.759E+00	6.974E-01	0.258
TH-231	-1.550E+00		1.321E+00	1.975E+00	3.368E-01	-0.785
U-231	-3.016E-01		3.988E-01	5.612E-01	4.991E-02	-0.537
PA-233	-3.661E-02		1.216E-01	1.958E-01	1.496E-02	-0.187
PA-234	-3.818E-01		8.652E-01	1.380E+00	2.510E-01	-0.277
PA-234M	-3.296E+00		1.219E+01	1.974E+01	1.692E+00	-0.167
U-234	6.021E-01	+	2.628E-01	3.486E-01	3.260E-02	1.727
U-235	-6.995E-02		3.327E-01	5.318E-01	9.819E-02	-0.132
NP-236	-7.413E-03		1.286E-01	2.051E-01	1.748E-02	-0.036
NP-239	6.064E-02		3.077E-01	4.550E-01	5.400E-02	0.133

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CM-243	9.940E-02		1.279E-01	2.176E-01	2.167E-02	0.457
AM-246	-1.208E-01		3.822E-01	6.070E-01	3.872E-02	-0.199
CM-247	-1.467E-02		7.951E-02	1.261E-01	7.508E-03	-0.116
CF-249	-3.695E-02		8.749E-02	1.373E-01	8.152E-03	-0.269
CF-251	2.606E-01		1.956E-01	3.316E-01	2.608E-02	0.786

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]G1202006619          *
* Acquisition date   : 7-JAN-2010 16:06:51 Detector SN#      :              *
* Detector ID        : GAM13                      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 01:00:01.61             Half-life ratio : 8.000     *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 31-DEC-2009 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202006619             Analyst initials: MXR1        *
* Batch Number       : 937704                   Sample Quantity : 1.5544E+02 GRAM *
* Recovery           : 1.00000                  Carrier Weight  : 0.00000     *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-FEB-2009 10:41:22 MS Isotope       :              *
* MSD DPM             : 0.000                    MSD Isotope   :              *
* LCS DPM             : 0.000                    LCS Isotope    :              *
* LCSD DPM            : 0.000                    LCSD Isotope   :              *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act Error	DLC (pCi/GRAM)	TPU
CO-57	2.253E-01	7.377E-02	3.226E-02	3.764E-02
CO-60	6.284E+00	4.895E-01	5.588E-02	2.497E-01
CD-109	3.248E+01	3.091E+00	8.074E-01	1.577E+00
SN-126	3.228E+00	3.073E-01	8.015E-02	1.568E-01
BA-137M	5.402E+00	5.105E-01	6.787E-02	2.605E-01
CS-137	5.711E+00	5.405E-01	7.175E-02	2.758E-01
W-181	7.065E-02	2.819E-01	2.422E-01	1.438E-01
TL-208	2.542E-01	1.302E-01	6.029E-02	6.645E-02
BI-211	1.736E+00	6.197E-01	3.213E-01	3.162E-01
PB-212	7.952E-01	1.890E-01	9.743E-02	9.641E-02
PO-212	7.952E-01	1.890E-01	9.743E-02	9.641E-02
PB-214	6.039E-01	2.178E-01	1.188E-01	1.111E-01
PO-214	6.039E-01	2.178E-01	1.188E-01	1.111E-01
PO-216	7.952E-01	1.890E-01	9.743E-02	9.641E-02
PO-218	6.039E-01	2.178E-01	1.188E-01	1.111E-01
AC-228	9.158E-01	5.987E-01	3.131E-01	3.055E-01
RA-228	9.158E-01	5.987E-01	3.131E-01	3.055E-01
TH-228	8.013E-01	1.904E-01	9.818E-02	9.715E-02
TH-232	9.158E-01	5.987E-01	3.131E-01	3.055E-01
TH-234	3.364E-01	1.276E+00	8.232E-01	6.511E-01
NP-237	9.479E+00	2.119E+00	2.347E-01	1.081E+00
U-238	3.364E-01	1.276E+00	8.232E-01	6.511E-01
AM-241	1.268E+01	1.307E+00	1.297E-01	6.670E-01
AM-243	1.792E-01	7.840E-02	4.928E-02	4.000E-02
ANH-511	8.605E-02	1.177E-01	5.893E-02	6.004E-02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L Act error	DLC (pCi/GRAM)	TPU
BE-7	-1.451E-01	6.554E-01	5.748E-01	3.344E-01 NOT IDENT.
NA-22	-3.204E-02	6.345E-02	5.106E-02	3.237E-02 NOT IDENT.

NA-24	1.878E+02	2.758E+02	0.000E+00	1.407E+02	SHORT HLIF
AL-26	3.794E-02	5.261E-02	5.050E-02	2.684E-02	NOT IDENT.
K-40	4.277E-01	6.171E-01	5.681E-01	3.149E-01	NOT IDENT.
TI-44	2.041E-01	5.167E-02	3.924E-02	2.636E-02	FAIL ABUN
SC-46	-4.988E-02	1.014E-01	8.489E-02	5.171E-02	NOT IDENT.
V-48	-4.292E-02	1.387E-01	1.160E-01	7.076E-02	NOT IDENT.
CR-51	4.041E-01	5.745E-01	5.218E-01	2.931E-01	NOT IDENT.
MN-52	-2.070E-02	1.237E-01	1.015E-01	6.312E-02	FAIL ABUN
MN-54	-3.013E-02	8.663E-02	7.374E-02	4.420E-02	NOT IDENT.
CO-56	-2.416E-02	8.998E-02	7.683E-02	4.591E-02	NOT IDENT.
CO-58	-3.156E-02	8.544E-02	7.279E-02	4.359E-02	NOT IDENT.
FE-59	2.242E-02	2.190E-01	1.857E-01	1.118E-01	NOT IDENT.
ZN-65	-1.714E-01	2.365E-01	1.891E-01	1.207E-01	NOT IDENT.
GE-68	-7.064E-02	3.186E+00	2.686E+00	1.626E+00	NOT IDENT.
AS-73	-4.691E-01	5.471E-01	5.126E-01	2.791E-01	NOT IDENT.
AS-74	-9.719E-02	1.410E-01	1.160E-01	7.191E-02	NOT IDENT.
SE-75	-2.910E-02	7.200E-02	6.306E-02	3.674E-02	FAIL ABUN
BR-77	-2.869E+00	2.504E+00	2.037E+00	1.278E+00	FAIL ABUN
SR-82	-2.565E-01	7.212E-01	6.189E-01	3.679E-01	NOT IDENT.
RB-83	-2.006E-01	1.404E-01	1.119E-01	7.163E-02	NOT IDENT.
RB-84	-1.897E-02	1.555E-01	1.313E-01	7.935E-02	NOT IDENT.
KR-85	1.725E+01	1.671E+01	1.378E+01	8.528E+00	NOT IDENT.
SR-85	8.178E-02	7.923E-02	6.530E-02	4.042E-02	NOT IDENT.
RB-86	1.078E+00	1.532E+00	1.356E+00	7.815E-01	NOT IDENT.
Y-88	1.006E-03	4.775E-02	4.069E-02	2.436E-02	NOT IDENT.
ZR-88	-4.151E-02	6.215E-02	5.121E-02	3.171E-02	NOT IDENT.
Y-91	1.566E+01	2.424E+01	2.237E+01	1.237E+01	NOT IDENT.
NB-94	1.022E-02	7.130E-02	6.116E-02	3.638E-02	NOT IDENT.
NB-95	1.239E-02	8.605E-02	7.635E-02	4.391E-02	NOT IDENT.
NB-95M	5.659E-02	2.113E-01	1.710E-01	1.078E-01	NOT IDENT.
ZR-95	-1.877E-01	1.507E-01	1.137E-01	7.691E-02	NOT IDENT.
NB-97	8.852E+02	2.161E+02	0.000E+00	1.103E+02	SHORT HLIF
ZR-97	2.110E+03	2.555E+03	0.000E+00	1.304E+03	SHORT HLIF
MO-99	2.047E+00	3.855E+00	3.375E+00	1.967E+00	NOT IDENT.
TC-99M	4.435E+07	6.342E+07	0.000E+00	3.236E+07	SHORT HLIF
RH-101	5.602E-02	5.185E-02	4.940E-02	2.646E-02	NOT IDENT.
RH-102	8.490E-03	6.773E-02	6.052E-02	3.456E-02	NOT IDENT.
RU-103	-2.602E-02	7.702E-02	6.668E-02	3.930E-02	FAIL ABUN
RH-106	6.715E-01	6.926E-01	6.298E-01	3.534E-01	FAIL ABUN
RU-106	6.715E-01	6.893E-01	6.298E-01	3.517E-01	FAIL ABUN
AG-108M	3.781E-02	7.329E-02	6.729E-02	3.740E-02	NOT IDENT.
AG-110M	3.503E-01	1.066E-01	9.514E-02	5.438E-02	NOT IDENT.
IN-111	-5.046E-01	3.045E-01	2.515E-01	1.554E-01	NOT IDENT.
IN-113M	3.672E-02	8.846E-02	7.765E-02	4.513E-02	NOT IDENT.
SN-113	3.672E-02	8.846E-02	7.765E-02	4.513E-02	NOT IDENT.
IN-114M	-1.404E-02	3.035E-01	2.306E-01	1.548E-01	NOT IDENT.
CD-115	5.038E-02	2.242E+00	1.971E+00	1.144E+00	NOT IDENT.
SN-117M	8.473E-03	5.672E-02	5.000E-02	2.894E-02	NOT IDENT.
SB-122	-2.260E-01	6.326E-01	5.383E-01	3.228E-01	NOT IDENT.
I-123	2.927E+02	6.818E+02	0.000E+00	3.478E+02	SHORT HLIF
TE-123M	1.776E-02	4.138E-02	3.695E-02	2.111E-02	NOT IDENT.
I-124	-2.113E-02	4.421E-01	3.292E-01	2.256E-01	NOT IDENT.
SB-124	-3.427E-02	1.202E-01	9.385E-02	6.134E-02	FAIL ABUN
SB-125	1.885E-01	2.023E-01	1.893E-01	1.032E-01	NOT IDENT.
TE-125M	4.631E+00	1.137E+01	1.047E+01	5.800E+00	NOT IDENT.
I-126	1.098E-01	2.900E-01	2.222E-01	1.479E-01	NOT IDENT.
SB-126	5.082E-02	2.032E-01	1.752E-01	1.037E-01	FAIL ABUN
SB-127	-2.048E-01	7.575E-01	6.319E-01	3.865E-01	NOT IDENT.
XE-127	-3.797E-02	6.284E-02	5.611E-02	3.206E-02	FAIL ABUN
I-131	7.406E-03	1.244E-01	1.079E-01	6.348E-02	NOT IDENT.
TE-132	7.961E-03	2.383E-01	2.165E-01	1.216E-01	NOT IDENT.
BA-133	7.004E-02	9.451E-02	7.636E-02	4.822E-02	NOT IDENT.
I-133	9.091E+00	3.193E+01	0.000E+00	1.629E+01	SHORT HLIF
CS-134	1.091E-01	9.902E-02	9.256E-02	5.052E-02	NOT IDENT.
CS-135	1.566E-01	2.755E-01	2.522E-01	1.405E-01	NOT IDENT.
I-135	2.416E+07	5.621E+07	0.000E+00	2.868E+07	SHORT HLIF
CS-136	2.108E-02	1.888E-01	1.612E-01	9.631E-02	NOT IDENT.
CE-139	1.951E-02	4.620E-02	4.105E-02	2.357E-02	NOT IDENT.
BA-140	-7.621E-02	3.673E-01	3.169E-01	1.874E-01	NOT IDENT.
LA-140	1.355E-02	9.274E-02	7.936E-02	4.732E-02	NOT IDENT.
CE-141	3.370E-02	8.031E-02	7.221E-02	4.097E-02	NOT IDENT.
CE-143	9.178E+00	6.542E+00	5.319E+00	3.338E+00	FAIL ABUN
CE-144	-3.341E-01	3.153E-01	2.618E-01	1.609E-01	NOT IDENT.
PM-144	-1.480E-02	7.221E-02	6.045E-02	3.684E-02	NOT IDENT.
PR-144	-9.991E-01	4.874E+00	4.080E+00	2.487E+00	NOT IDENT.
PM-146	-5.537E-02	1.015E-01	8.807E-02	5.178E-02	NOT IDENT.
ND-147	1.849E-01	7.313E-01	6.511E-01	3.731E-01	NOT IDENT.
PM-149	-3.338E+00	1.593E+01	1.398E+01	8.126E+00	NOT IDENT.

EU-152	1.468E-02	2.266E-01	1.613E-01	1.156E-01	FAIL ABUN
GD-153	-2.210E-02	1.040E-01	8.392E-02	5.305E-02	NOT IDENT.
EU-154	-8.982E-02	1.780E-01	1.432E-01	9.083E-02	FAIL ABUN
EU-155	-1.012E-01	1.426E-01	1.250E-01	7.274E-02	FAIL ABUN
TB-160	-2.048E-01	3.399E-01	2.776E-01	1.734E-01	FAIL ABUN
HO-166M	-7.524E-02	1.304E-01	1.051E-01	6.654E-02	FAIL ABUN
TM-171	6.372E+00	2.368E+01	2.032E+01	1.208E+01	FAIL ABUN
LU-176	-5.753E-03	4.730E-02	4.140E-02	2.413E-02	FAIL ABUN
LU-177	5.401E-01	8.002E-01	7.515E-01	4.083E-01	NOT IDENT.
LU-177M	2.052E-01	3.758E-01	3.300E-01	1.917E-01	FAIL ABUN
HF-181	1.197E-02	8.166E-02	7.297E-02	4.166E-02	FAIL ABUN
TA-182	8.040E-02	2.599E-01	2.319E-01	1.326E-01	NOT IDENT.
RE-183	6.595E-03	1.667E-01	1.455E-01	8.505E-02	FAIL ABUN
RE-184	5.374E-02	3.911E-01	3.536E-01	1.995E-01	FAIL ABUN
OS-185	-3.399E-02	8.364E-02	6.951E-02	4.267E-02	FAIL ABUN
RE-188	-1.999E-02	2.395E-01	2.091E-01	1.222E-01	NOT IDENT.
W-188	5.466E+00	1.357E+01	1.084E+01	6.921E+00	FAIL ABUN
IR-192	1.078E-02	5.961E-02	5.284E-02	3.041E-02	FAIL ABUN
AU-195	8.552E-02	2.696E-01	2.478E-01	1.375E-01	FAIL ABUN
TL-200	3.812E+00	7.876E+00	6.987E+00	4.018E+00	NOT IDENT.
TL-201	-1.211E-01	2.022E+00	1.754E+00	1.032E+00	NOT IDENT.
TL-202	8.566E-02	1.053E-01	9.766E-02	5.371E-02	NOT IDENT.
HG-203	-3.024E-02	6.388E-02	5.545E-02	3.259E-02	NOT IDENT.
BI-207	5.879E-02	1.335E-01	1.164E-01	6.812E-02	FAIL ABUN
TL-207	-1.550E+00	1.294E+00	1.038E+00	6.604E-01	FAIL ABUN
PO-209	8.976E+00	2.034E+01	1.802E+01	1.038E+01	NOT IDENT.
BI-210	-1.494E+00	1.145E+00	9.646E-01	5.843E-01	NOT IDENT.
PB-210	-1.494E+00	1.145E+00	9.646E-01	5.843E-01	NOT IDENT.
PO-210	-1.494E+00	1.144E+00	9.646E-01	5.835E-01	NOT IDENT.
PB-211	4.284E-02	1.991E+00	1.703E+00	1.016E+00	NOT IDENT.
BI-212	5.843E-02	6.591E-01	5.607E-01	3.363E-01	NOT IDENT.
BI-214	6.021E-01	2.575E-01	1.802E-01	1.314E-01	FAIL ABUN
PO-215	-1.550E+00	1.294E+00	1.038E+00	6.604E-01	FAIL ABUN
RN-219	-6.387E-01	8.935E-01	7.291E-01	4.559E-01	NOT IDENT.
RN-220	6.962E+00	5.291E+01	4.663E+01	2.700E+01	NOT IDENT.
RA-223	-1.550E+00	1.294E+00	1.038E+00	6.604E-01	FAIL ABUN
RA-224	4.436E+00	1.418E+00	1.273E+00	7.236E-01	NOT IDENT.
RA-226	6.021E-01	2.575E-01	1.802E-01	1.314E-01	FAIL ABUN
AC-227	3.599E-01	6.506E-01	5.973E-01	3.319E-01	NOT IDENT.
TH-227	3.599E-01	6.515E-01	5.973E-01	3.324E-01	FAIL ABUN
TH-229	-4.775E-01	7.761E-01	6.957E-01	3.960E-01	FAIL ABUN
TH-230	6.021E-01	2.575E-01	1.802E-01	1.314E-01	FAIL ABUN
PA-231	1.229E+00	2.771E+00	2.510E+00	1.414E+00	NOT IDENT.
TH-231	-1.550E+00	1.294E+00	1.038E+00	6.604E-01	FAIL ABUN
U-231	-3.016E-01	3.908E-01	3.042E-01	1.994E-01	FAIL ABUN
PA-233	-3.661E-02	1.192E-01	1.030E-01	6.080E-02	FAIL ABUN
PA-234	-3.818E-01	8.479E-01	7.047E-01	4.326E-01	FAIL ABUN
PA-234M	-3.296E+00	1.195E+01	1.006E+01	6.097E+00	NOT IDENT.
U-234	6.021E-01	2.575E-01	1.802E-01	1.314E-01	FAIL ABUN
U-235	-6.995E-02	3.260E-01	2.854E-01	1.663E-01	FAIL ABUN
NP-236	-7.413E-03	1.260E-01	1.098E-01	6.428E-02	NOT IDENT.
NP-239	6.064E-02	3.015E-01	2.454E-01	1.538E-01	NOT IDENT.
CM-243	9.940E-02	1.254E-01	1.177E-01	6.396E-02	NOT IDENT.
AM-246	-1.208E-01	3.746E-01	3.089E-01	1.911E-01	NOT IDENT.
CM-247	-1.467E-02	7.792E-02	6.589E-02	3.976E-02	NOT IDENT.
CF-249	-3.695E-02	8.574E-02	7.182E-02	4.375E-02	NOT IDENT.
CF-251	2.606E-01	1.917E-01	1.770E-01	9.781E-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	568.4781
46.50	568.4781
46.50	568.4781
48.70	745.8517
49.72	714.6130
51.35	866.2668
52.39	905.4707
52.97	927.0847
53.15	916.6849
53.44	917.7239
54.07	904.2693
56.28	882.9947
56.28	883.0051
57.37	917.7148
57.53	918.2578
57.53	918.2658
57.60	918.4954
57.98	775.5803
57.98	775.5803
59.32	779.3835
59.32	779.3835
59.40	779.6090
59.54	780.0030
59.72	780.5108
60.01	781.3261
61.10	317.9518
61.14	317.9970
61.30	318.1771
63.00	320.0774
63.29	353.4977
63.29	353.4977
63.58	353.8521
64.28	357.3600
65.12	355.7175
65.20	355.8138
65.20	355.8138
66.05	374.2078
66.72	352.2726
66.83	352.4050
66.91	352.4973
67.20	331.3711
67.20	331.3711
67.75	346.2188
67.85	346.3347
68.90	372.3490
68.90	372.3490
69.30	382.5573
69.67	390.8629
70.82	396.3761
70.82	396.3761
70.83	396.3895
72.80	377.0047
72.87	377.0869
72.87	377.0869
74.67	381.9403
74.81	382.1037
74.81	382.1037
74.81	382.1037
74.81	382.1037
74.81	382.1037
74.81	382.1037
74.81	382.1037
74.97	382.2924
75.28	382.6530
75.70	383.1429
77.11	384.7761
77.11	384.7761

77.11	384.7761
77.11	384.7761
77.11	384.7761
77.11	384.7761
77.11	384.7761
78.38	376.5079
79.62	368.1240
79.80	368.3174
79.80	368.3174
80.11	364.4605
80.18	364.5362
80.30	364.6617
80.30	364.6617
80.57	381.7276
81.00	397.6026
81.07	397.6839
81.07	397.6839
81.07	397.6839
81.07	397.6839
82.60	378.3367
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83.78	392.3034
83.78	392.3034
83.78	392.3034
84.21	392.7785
84.90	390.7066
85.43	408.2959
86.29	308.8467
86.50	309.0258
86.54	309.0590
86.59	309.1021
86.72	309.2115
86.79	309.2695
86.94	309.3989
87.30	309.7040
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87.30	309.7040
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87.57	309.9328
87.88	310.1948
88.03	310.3208
88.36	310.5994
88.47	310.6922
89.95	311.9308
91.11	312.8958
92.29	313.8708
92.38	313.9454
92.38	313.9454
93.35	314.7413
94.00	210.3425
94.67	207.7980
94.67	207.8012
94.90	207.9234
94.90	207.9234
94.90	207.9234
94.90	207.9234
95.87	231.7626
95.87	231.7626
96.73	236.6546
97.43	225.3639
98.44	208.3307
98.44	208.3307
98.88	210.5186
99.55	220.6776
99.55	220.6776
99.86	230.6624
100.00	245.4707
100.10	245.5330
103.18	222.6460
103.76	211.0662
105.00	250.4555
105.31	250.6401
108.00	221.2046
109.28	220.8594

111.00	229.7975
111.00	229.7975
111.76	242.3108
112.95	256.1257
115.19	224.8555
116.30	189.7104
117.00	223.7129
117.00	223.7129
117.66	262.3995
121.11	223.6543
121.62	223.8983
121.78	223.9744
122.06	224.1080
122.32	224.2316
122.32	224.2316
122.32	224.2316
122.32	224.2316
123.07	242.1825
127.23	239.2833
129.76	236.1168
131.20	246.2780
133.02	249.2904
133.54	269.6379
135.34	214.3579
136.00	215.6978
136.25	215.8031
136.48	224.4086
140.51	220.8029
140.51	0.0000
142.18	253.7629
142.65	253.9886
143.76	235.1089
144.24	226.6840
144.24	226.6840
144.24	226.6840
144.24	226.6840
145.22	222.7727
145.44	219.6193
147.16	217.0634
152.43	212.5802
152.70	212.6828
153.22	183.2525
154.21	186.8731
154.21	186.8731
154.21	186.8731
154.21	186.8731
155.03	219.0713
156.02	219.4539
158.56	207.1411
159.00	0.0000
159.00	202.8648
160.31	229.9902
161.27	228.1455
162.32	228.5563
162.64	234.2590
163.35	250.1771
163.89	242.5820
165.85	223.1969
167.43	222.6634
171.28	183.3426
171.86	184.6501
172.10	191.5210
176.55	178.0645
176.60	166.6634
181.06	208.3125
184.41	232.2836
185.71	248.9612
186.00	249.0727
190.27	227.3770
192.34	238.6122
193.63	232.0413
197.04	223.4963
198.01	201.6970
198.60	200.1001
200.40	237.9085
201.83	242.8490
202.84	234.2926
205.31	236.0153

208.36	231.6473
208.81	234.4882
209.75	228.4996
209.75	228.4996
210.97	217.1743
215.65	216.7652
216.55	202.5021
218.09	216.5772
222.10	215.0037
223.80	231.9952
226.40	211.6312
227.00	222.8482
227.08	222.8722
227.20	233.0375
228.16	227.7973
228.18	227.8030
228.18	227.8030
231.56	227.8792
235.69	233.9323
236.00	234.0243
236.00	234.0243
238.63	296.3096
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238.63	296.3096
238.63	296.3096
239.00	327.6819
240.98	215.9991
241.98	199.7484
241.98	199.7484
241.98	199.7484
244.69	258.3315
245.39	263.9398
247.94	191.9573
248.90	192.1819
249.79	203.7622
252.40	194.8995
252.85	196.9084
252.85	196.9084
254.15	0.0000
256.20	180.5076
256.20	180.5076
260.50	178.5499
260.90	177.6718
262.80	185.7672
264.65	191.9553
268.24	194.6881
268.79	194.8138
269.46	185.2615
269.46	185.2615
269.46	185.2615
269.46	185.2615
271.23	180.7778
273.65	232.9280
276.40	185.7440
277.35	187.8984
277.60	185.9933
277.60	185.9933
278.00	192.9329
278.60	197.9622
279.20	202.0174
279.53	206.9948
280.46	198.3722
281.68	184.8703
283.67	181.3356
284.30	176.5282
285.00	190.4821
285.90	191.6555
286.10	191.6970
286.10	191.6970
287.40	188.0112
288.45	0.0000
290.67	173.1839
290.80	184.3327
291.72	190.8779
293.26	183.2251
293.70	168.9660
295.21	193.5856
295.21	193.5856

295.21	193.5856
295.96	206.1228
296.50	223.8257
297.23	243.2000
298.57	229.1247
299.80	202.1445
299.80	202.1445
300.09	200.6012
300.09	200.6012
300.09	200.6012
300.09	200.6012
300.12	200.6073
301.29	176.7520
302.84	219.2840
303.76	220.5004
303.91	220.5338
304.40	203.5196
304.40	203.5196
304.84	195.5482
306.84	191.9135
308.46	180.0914
311.98	179.7224
316.51	166.2657
318.01	192.0534
319.02	168.7287
319.41	163.6792
320.08	157.6446
323.87	209.6155
323.87	209.6155
323.87	209.6155
323.87	209.6155
325.23	194.4621
328.77	184.8095
333.44	147.6865
334.20	177.6864
334.20	177.6864
334.30	177.7046
338.28	161.4993
338.28	161.4993
338.28	161.4993
338.28	161.4993
338.32	161.5064
338.32	161.5064
338.32	161.5064
340.50	135.3190
340.57	135.3289
344.27	163.4625
345.85	151.1125
350.59	152.8323
351.07	152.8987
351.92	172.2246
351.92	172.2246
351.92	172.2246
355.39	0.0000
356.01	138.9756
364.48	167.5791
366.43	175.3561
367.43	159.4584
367.94	150.9657
369.80	169.4445
374.96	149.7448
383.85	156.3289
387.95	185.2008
388.63	178.7669
391.69	156.2797
391.69	156.2797
392.90	185.9764
398.62	156.0882
400.65	177.2680
401.10	181.7415
401.81	186.2569
402.60	168.7328
404.84	170.1482
410.95	169.8861
411.60	171.0858
413.65	164.6911
414.70	153.6939
415.30	159.3389

415.76	175.0032
417.63	0.0000
418.52	177.6231
423.70	187.3271
427.08	151.8359
427.89	161.1590
432.53	184.3321
433.93	169.1537
439.47	178.0533
439.56	173.5228
439.89	173.5671
443.98	195.9854
444.90	197.9463
445.03	191.5789
445.03	191.5789
445.03	191.5789
445.03	191.5789
453.90	195.6131
463.38	172.9408
468.07	167.0383
473.00	165.7712
475.06	170.6801
475.35	164.1836
476.78	175.5592
477.59	163.5135
477.96	167.2946
482.03	143.4095
484.57	152.1182
487.03	135.4500
490.36	142.3643
492.35	135.0086
497.08	143.9769
507.63	0.0000
510.53	0.0000
510.84	152.9824
511.00	164.1552
511.85	170.6292
511.85	170.6292
513.99	127.7563
513.99	127.7563
520.41	152.0403
520.65	142.4392
527.90	121.8472
528.96	0.0000
529.64	114.2405
529.87	0.0000
531.02	114.3442
537.32	124.5438
543.00	104.4896
546.56	0.0000
549.76	105.9223
552.65	123.8005
555.20	108.2544
563.23	125.6140
563.90	121.7057
568.70	109.1675
569.32	116.1573
569.50	116.1716
569.67	116.1831
573.80	84.6202
574.00	84.6306
574.64	84.6638
578.91	126.4935
579.30	129.8540
583.14	97.1160
585.48	113.6266
591.81	102.6524
592.07	102.6674
593.00	98.6962
595.88	116.0164
600.56	104.9557
602.52	0.0000
602.71	106.3535
602.71	106.3535
603.60	114.8551
604.41	113.2179
604.70	113.2370
609.31	108.4583

609.31	108.4583
609.31	108.4583
609.31	108.4583
610.33	105.1321
612.46	108.6563
614.37	108.7760
618.01	125.6936
621.84	96.2697
621.84	96.2697
631.29	113.2603
633.02	90.6963
633.10	90.7006
634.78	93.8815
635.90	89.8122
636.97	93.9970
645.85	99.6516
646.12	98.6274
656.30	106.1394
657.75	100.9997
657.90	0.0000
661.65	113.0810
661.65	113.0810
664.57	85.6423
666.33	92.7220
666.33	92.7220
675.00	110.7294
677.61	83.4245
685.20	98.6036
692.80	105.3833
695.00	79.9255
696.49	103.4509
696.49	103.4509
697.00	96.0117
697.49	105.6395
698.33	105.6854
698.50	104.6251
699.00	105.7216
702.63	98.4306
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711.68	101.0362
713.82	92.5361
717.42	94.8621
720.50	91.7693
721.93	103.7203
722.20	117.7817
722.78	123.2207
722.78	123.2207
722.89	124.3073
722.95	124.3129
723.30	123.2514
724.18	104.9191
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752.31	93.2198
753.82	93.2883
755.35	115.3231
756.15	116.4680
756.87	119.8042
763.93	124.0714
765.79	112.2230
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778.57	121.2320
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795.84	81.1642
796.30	88.6450
798.80	116.7730
801.93	105.7145
805.60	98.3948
810.29	94.8498
810.76	107.0814
815.85	115.8005
817.79	105.5378
818.51	97.0885
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828.27	112.6592
831.60	82.4865
831.96	87.2420
834.83	117.7359
836.80	0.0000
846.75	110.7183
848.13	101.2361
856.28	0.0000
856.80	125.5843
860.37	114.2547
867.32	105.9292
867.82	103.0641
871.10	107.0660
873.19	102.3338
874.81	106.2693
875.33	0.0000
876.40	105.3742
879.36	118.0907
880.27	113.2938
880.51	113.3057
881.50	109.4756
883.24	105.6780
884.67	106.7124
889.25	132.1899
896.60	116.9971
898.02	140.4785
899.00	127.8471
903.28	126.1183
911.07	133.3908
911.07	133.3908
911.07	133.3908
919.63	141.7295
920.93	145.7447
925.00	115.4075
925.24	112.4600
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935.52	134.7189
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949.00	116.5215
962.29	157.8908
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966.15	161.5658
968.20	147.5024
969.11	153.1488
969.11	153.1488
969.11	153.1488
977.42	121.9408
980.50	117.9593
983.50	117.0880
989.30	107.2314
996.32	104.4753
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1001.68	108.7524
1004.76	110.9138
1021.30	0.0000
1024.50	0.0000
1034.80	93.6364
1036.00	102.9419
1037.82	106.1014
1038.57	96.8572
1038.76	0.0000
1045.16	105.3535
1046.59	106.4409
1048.07	100.2957

1050.47	98.3128
1050.47	98.3128
1062.04	93.5266
1063.62	92.5381
1076.63	88.7907
1077.35	102.3944
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1085.78	96.4136
1099.22	110.5542
1112.02	92.0092
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1120.29	102.8770
1120.29	102.8770
1120.29	102.8770
1120.29	102.8770
1120.51	98.6422
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1173.22	65.8525
1175.09	51.8496
1177.93	72.2871
1189.05	64.1773
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1205.75	38.3403
1213.00	37.4916
1221.42	34.7727
1230.97	38.6491
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1236.41	0.0000
1238.25	35.9033
1246.25	30.3092
1260.41	0.0000
1271.85	30.5491
1274.45	34.3954
1274.54	34.3966
1291.56	25.9312
1298.22	0.0000
1312.09	33.8208
1325.50	28.8618
1325.50	28.8618
1332.49	30.1372
1333.61	27.2295
1360.21	21.5603
1362.66	0.0000
1365.15	22.5724
1368.21	15.7160
1368.53	0.0000
1376.25	19.6903
1384.27	26.6431
1394.10	18.8005
1395.20	26.7250
1407.95	17.8807
1434.06	15.0084
1436.60	23.0289
1457.56	0.0000
1460.81	21.1655
1489.15	14.2178
1509.49	19.3996
1596.49	16.7037
1620.62	19.9542
1678.03	0.0000
1691.02	14.9551
1691.02	14.9551
1706.46	0.0000
1750.46	0.0000
1764.49	12.3605
1764.49	12.3605
1764.49	12.3605
1764.49	12.3605
1770.23	27.6088
1771.40	24.7598
1791.20	0.0000
1808.65	8.6427

1836.01

8.6951

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202006619

Total Uranium Activity	9.6850E-01	ug/g
Total Uranium Counting Unc.	3.7994E+00	ug/g
Total Uranium Tpu	1.9385E-06	ug/g
Total Uranium Mda	2.4526E+00	ug/g

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 937704          SAMPLE ID   : G1202006619
*  ANALYST       : MXR1            DETECTOR    : GAM13
*  SAMPLE DATE   : 31-DEC-2009 00:00:00.00  COUNT TIME : 0 01:00:00.00
*  ANALYSIS DATE: 7-JAN-2010 16:06:51.69  SAMPLE ALQT: 155.440 GRAM
*
*****

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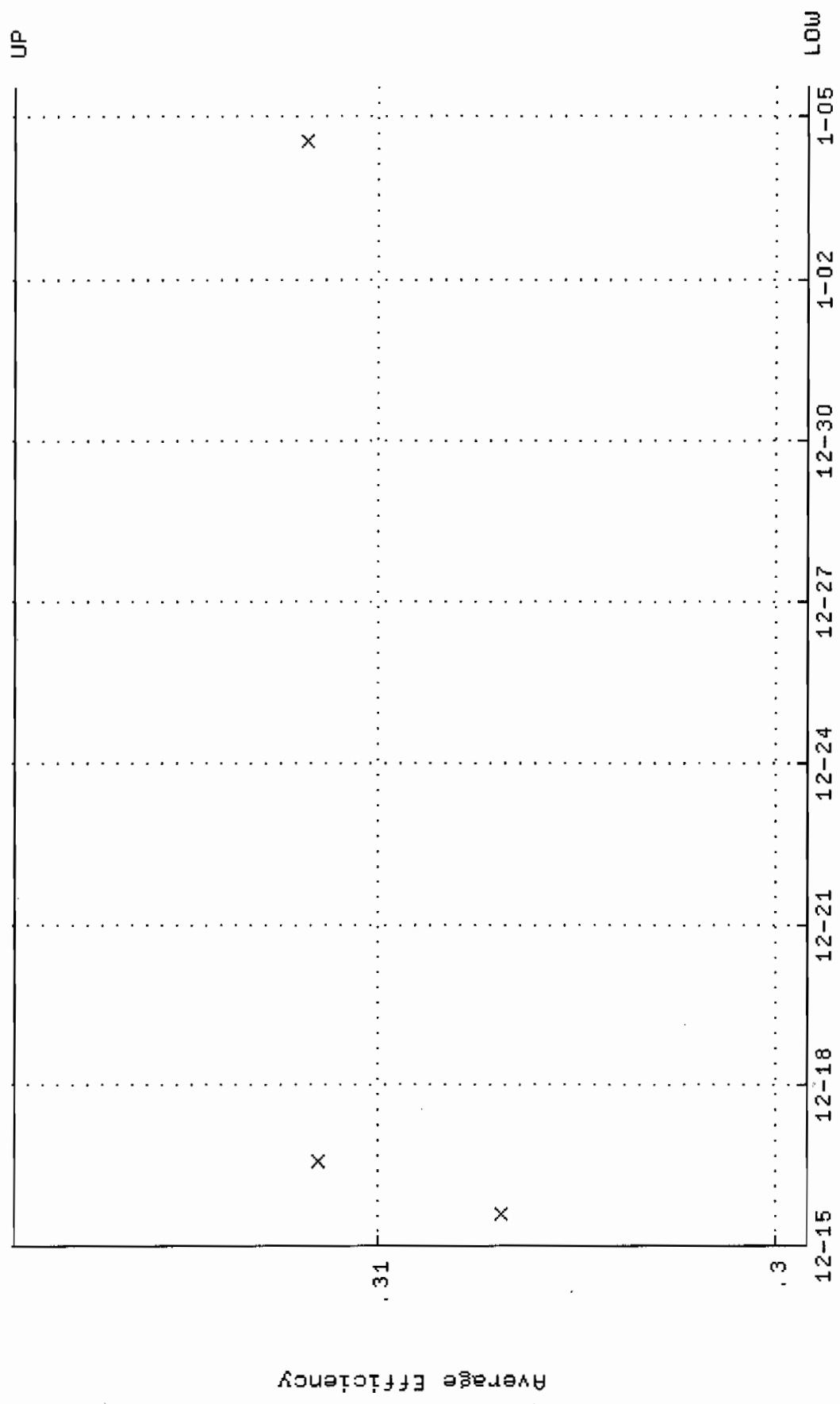
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.568E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 3.247E+00
GROSS GAMMA MDA      (pCi/GRAM ) : 4.700E+00
GROSS GAMMA DLC      (pCi/GRAM ) : 2.305E+00

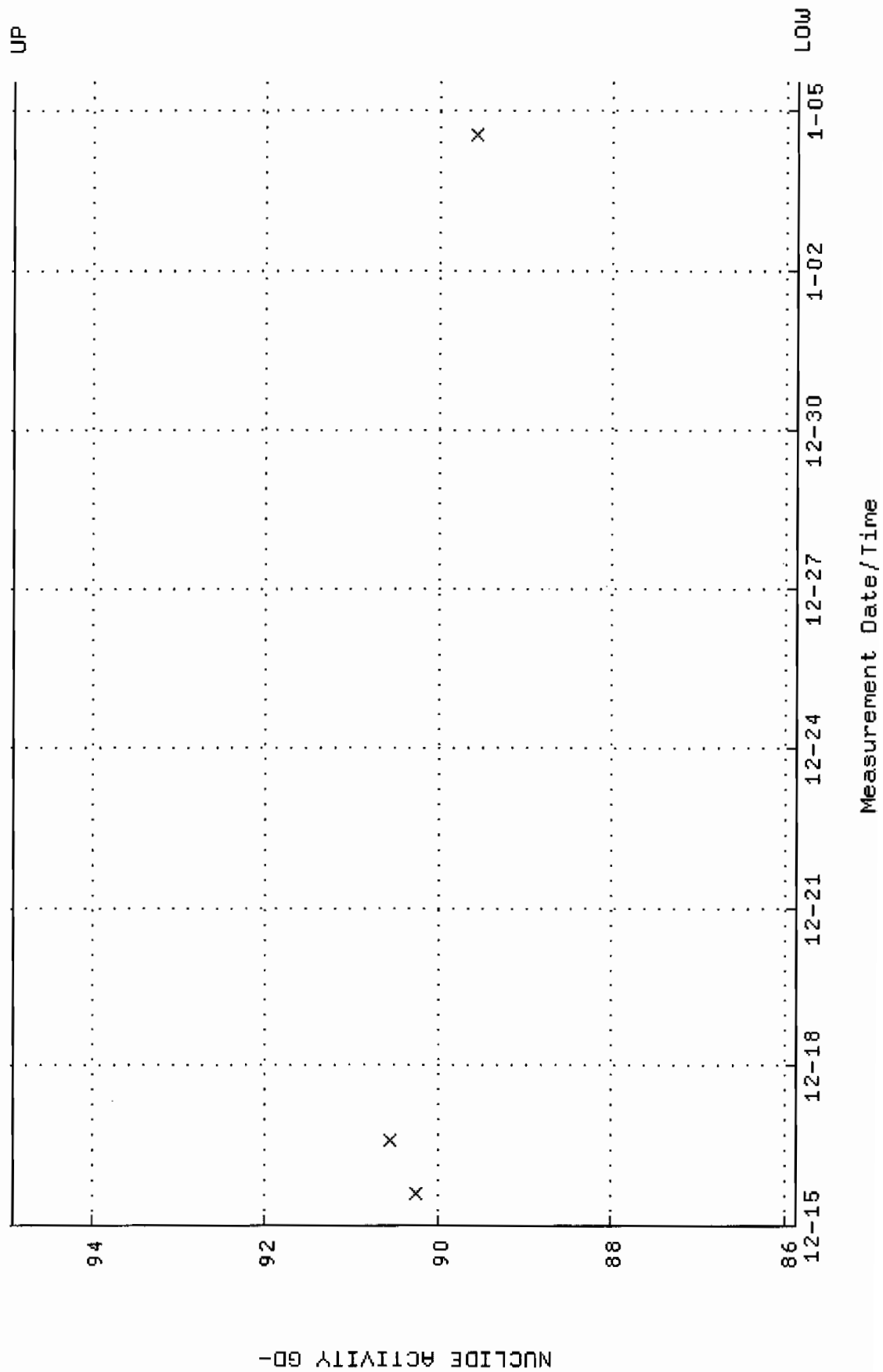
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BACKGROUND AND EFFICIENCY DATA

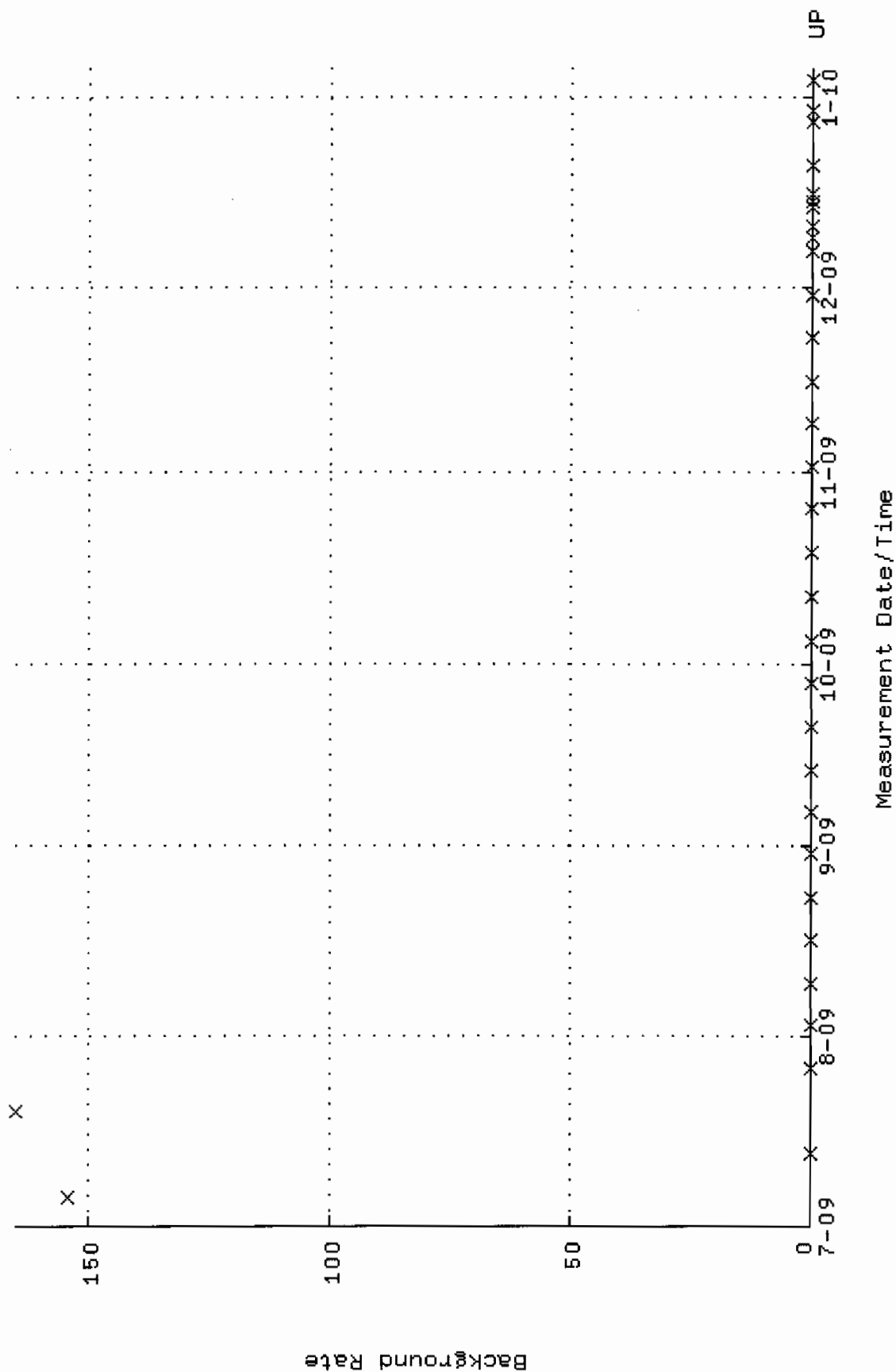
QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.299193 through 0.319193



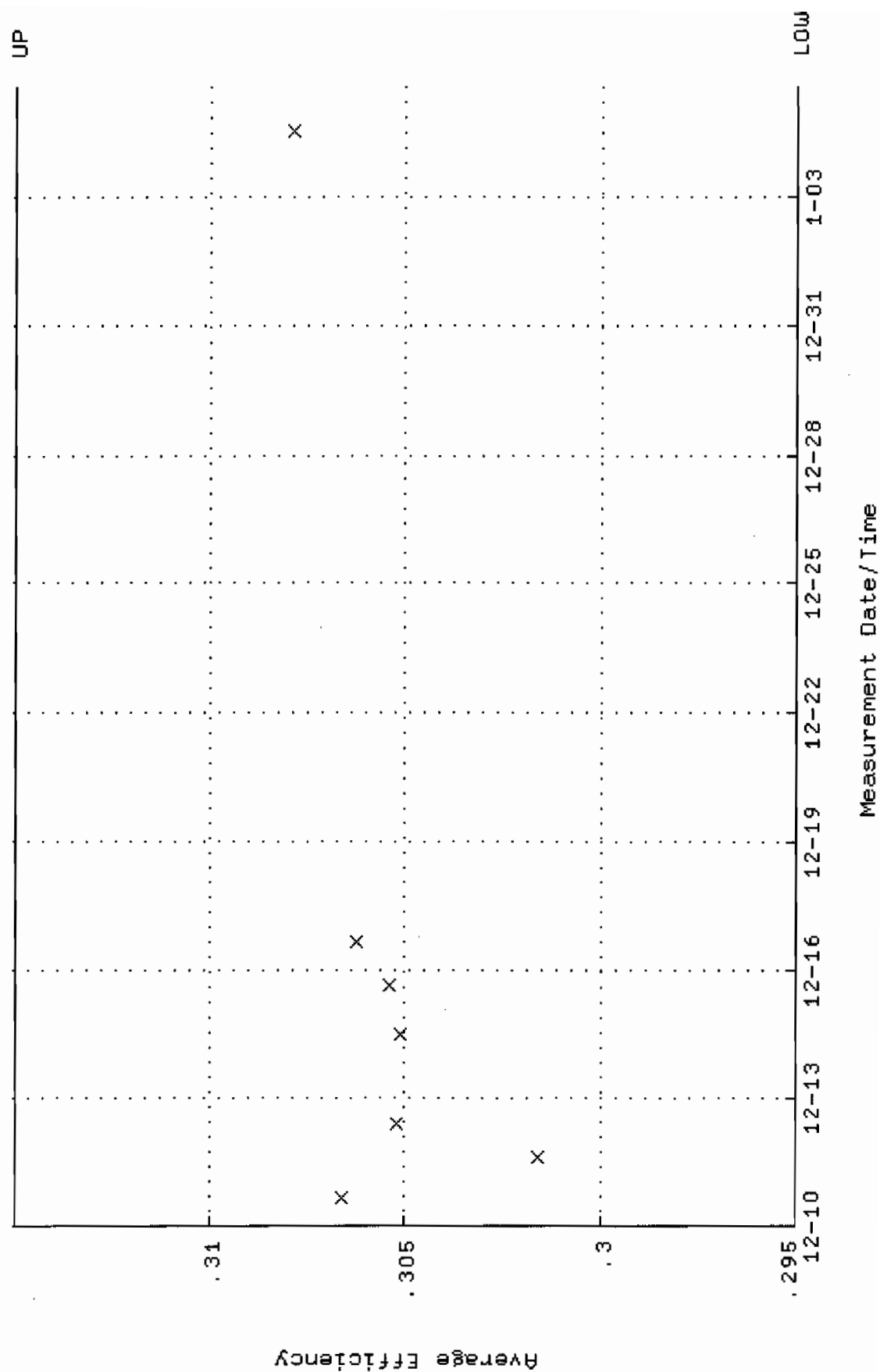
QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 85.8745 through 94.9139



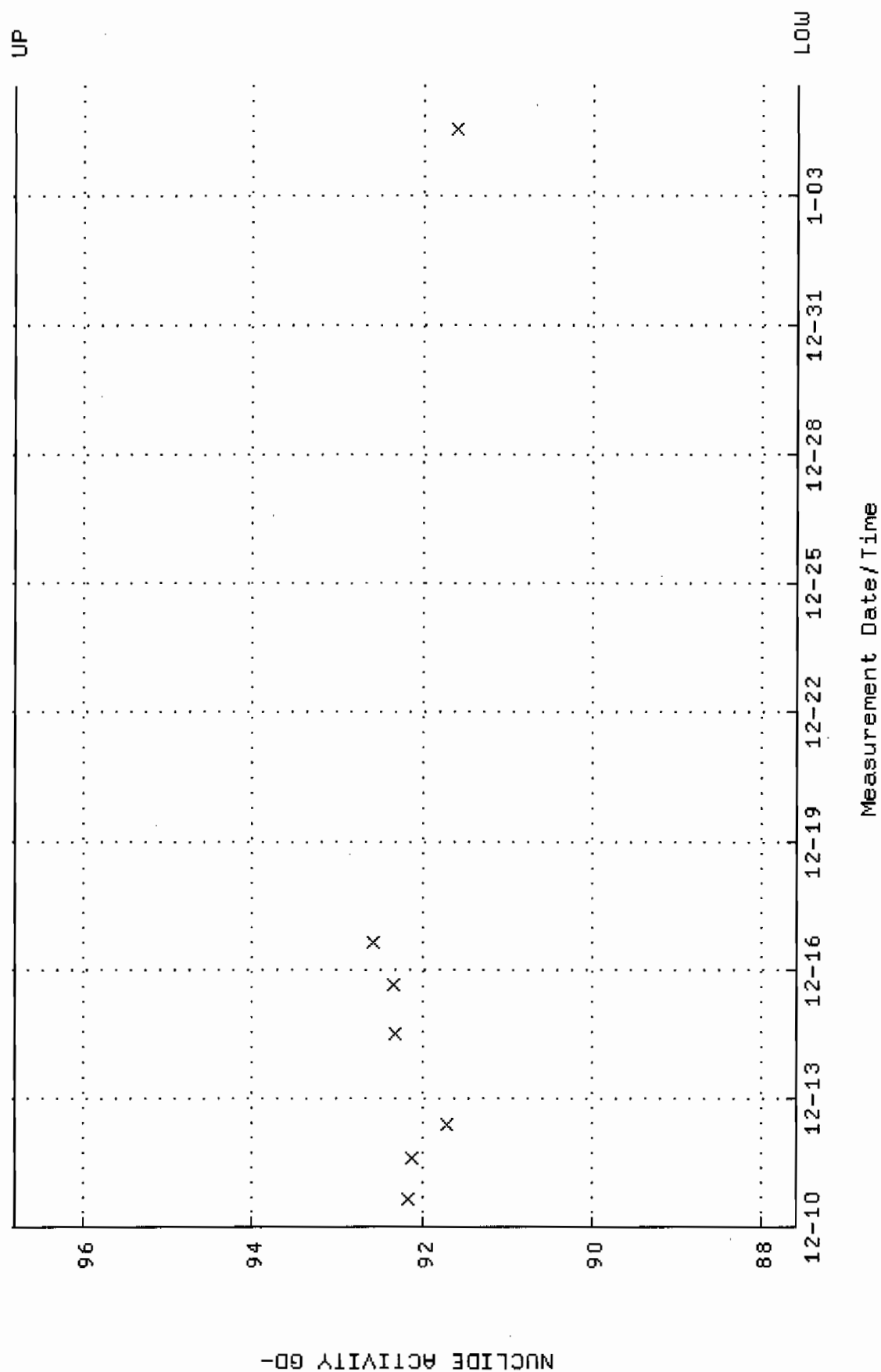
QA filename : DKA100:[ENV_ALPHA.QA.B]B003.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:11:54 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



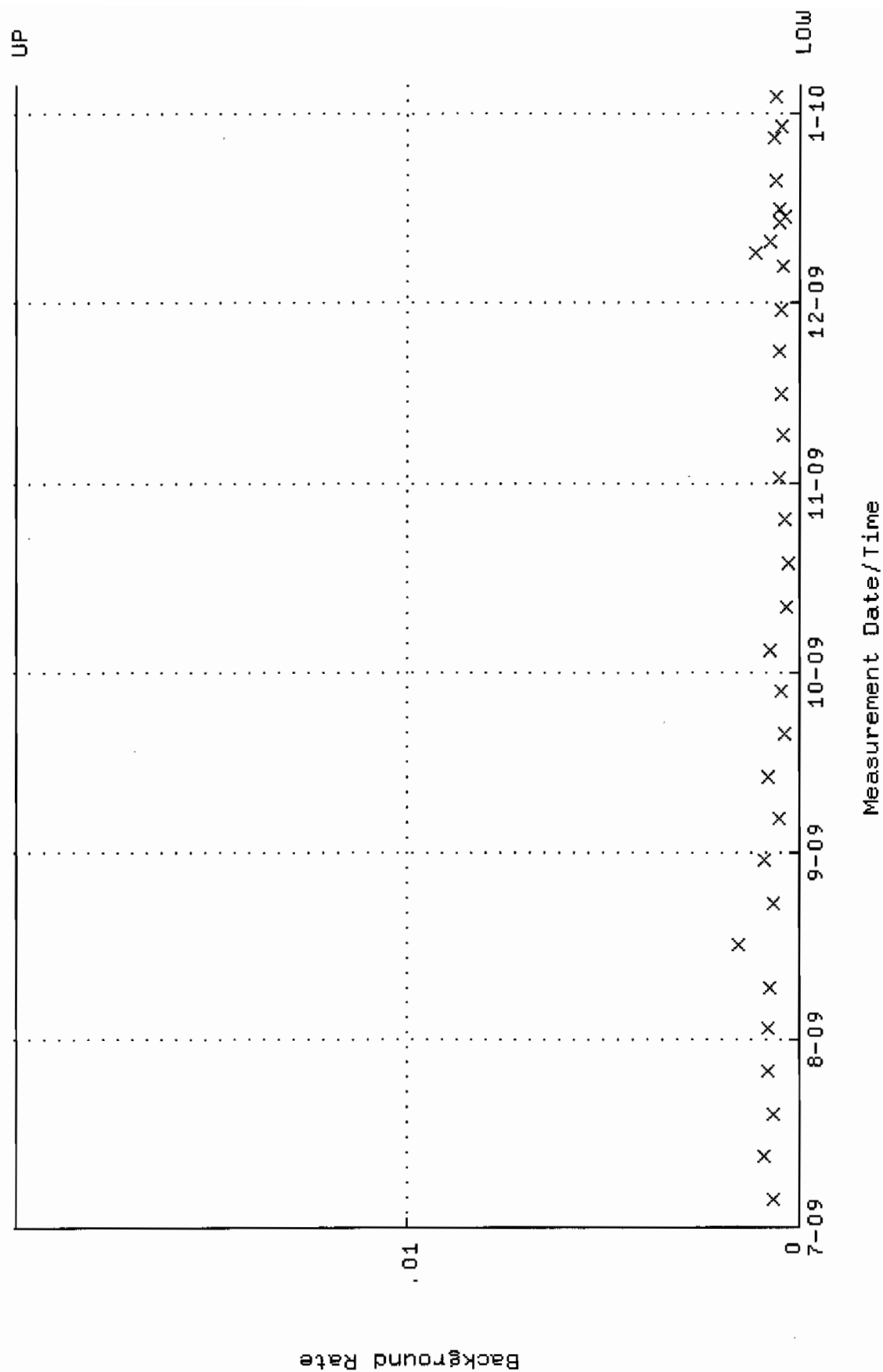
QA filename : DKA100:[ENV_ALPHA.QA.W]W004.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-DEC-2009 15:29:34 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.294995 through 0.314995



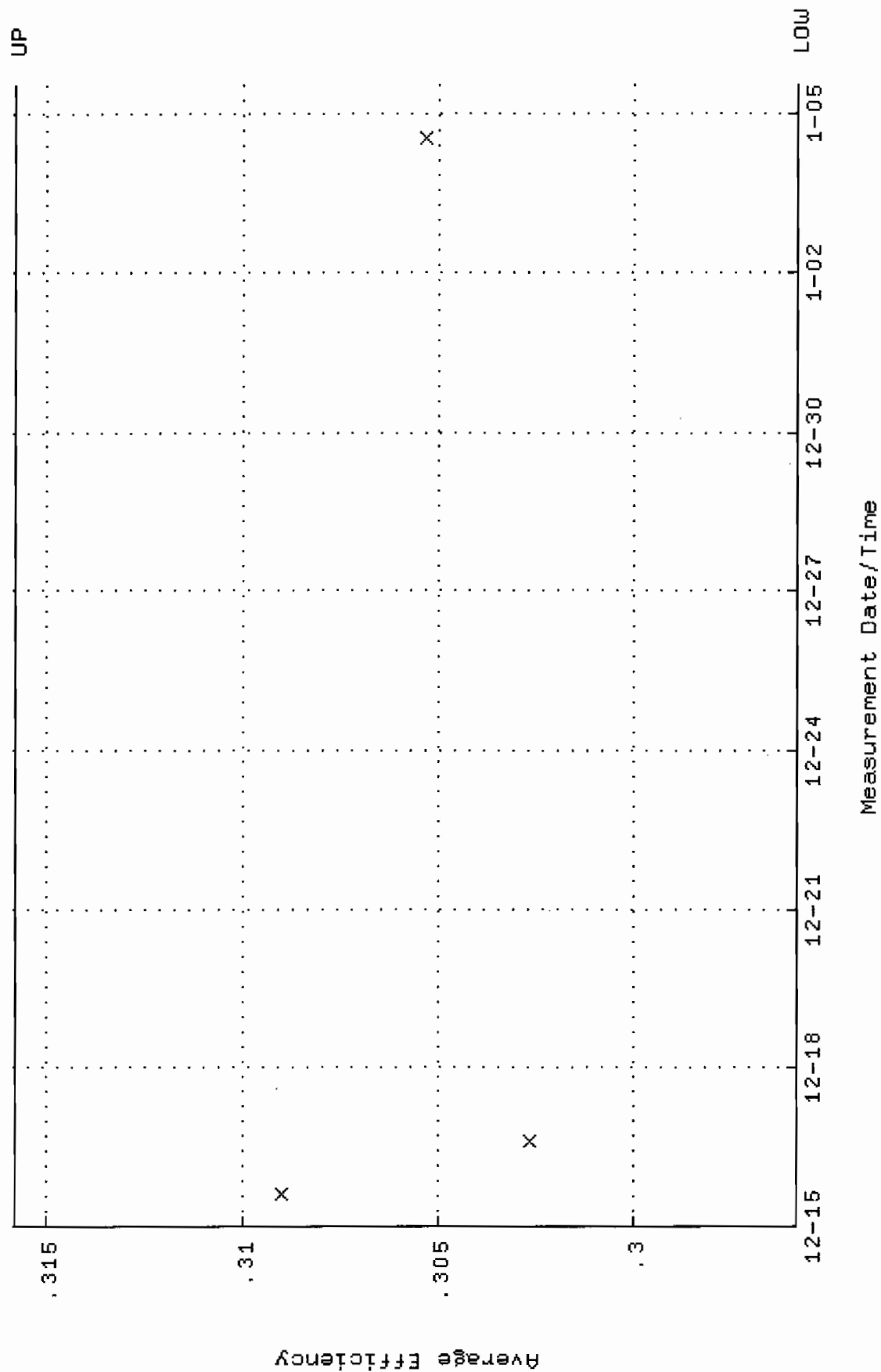
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-DEC-2009 15:29:34 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 87.5863 through 96.8059



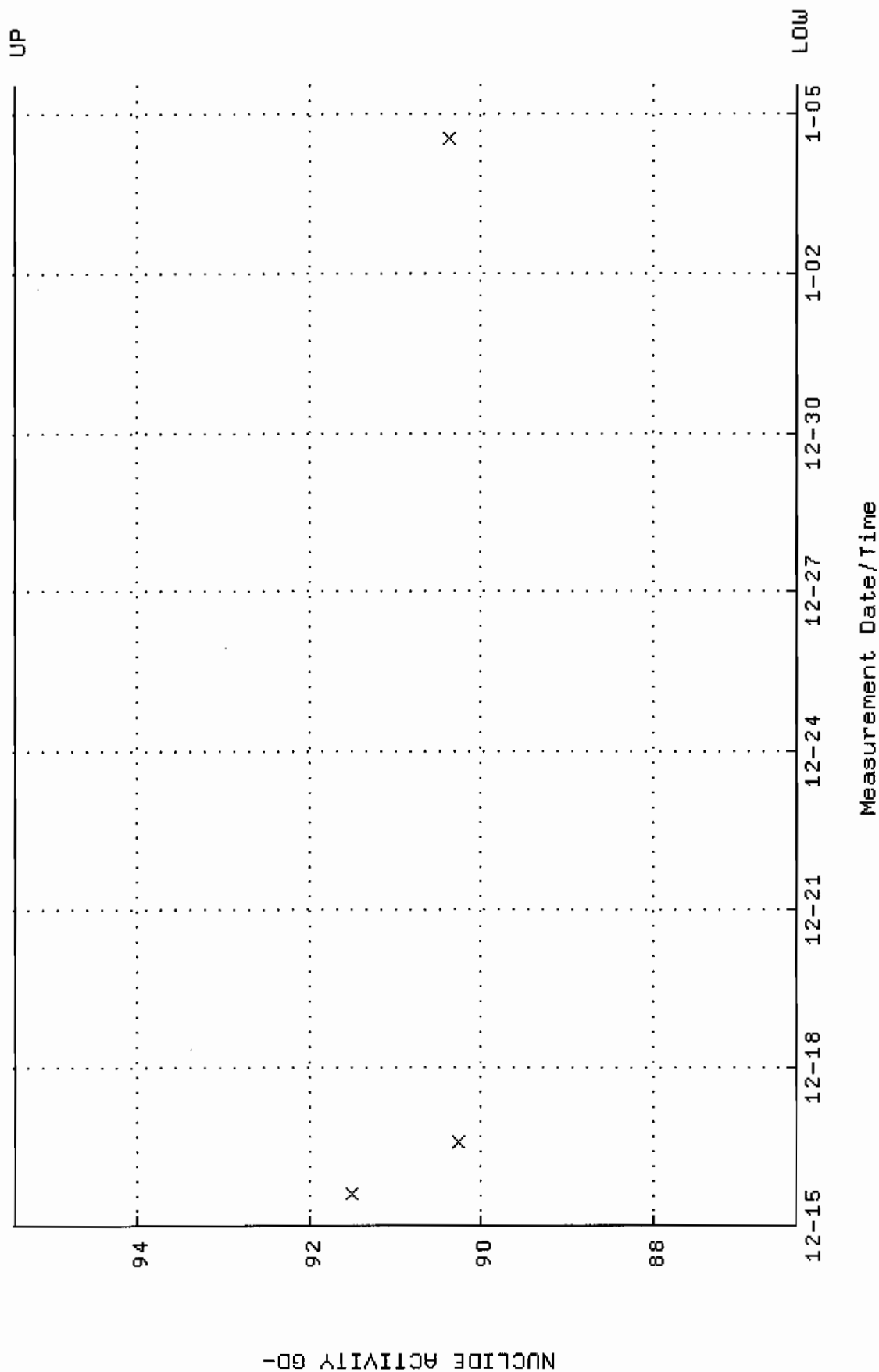
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 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:11:54 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



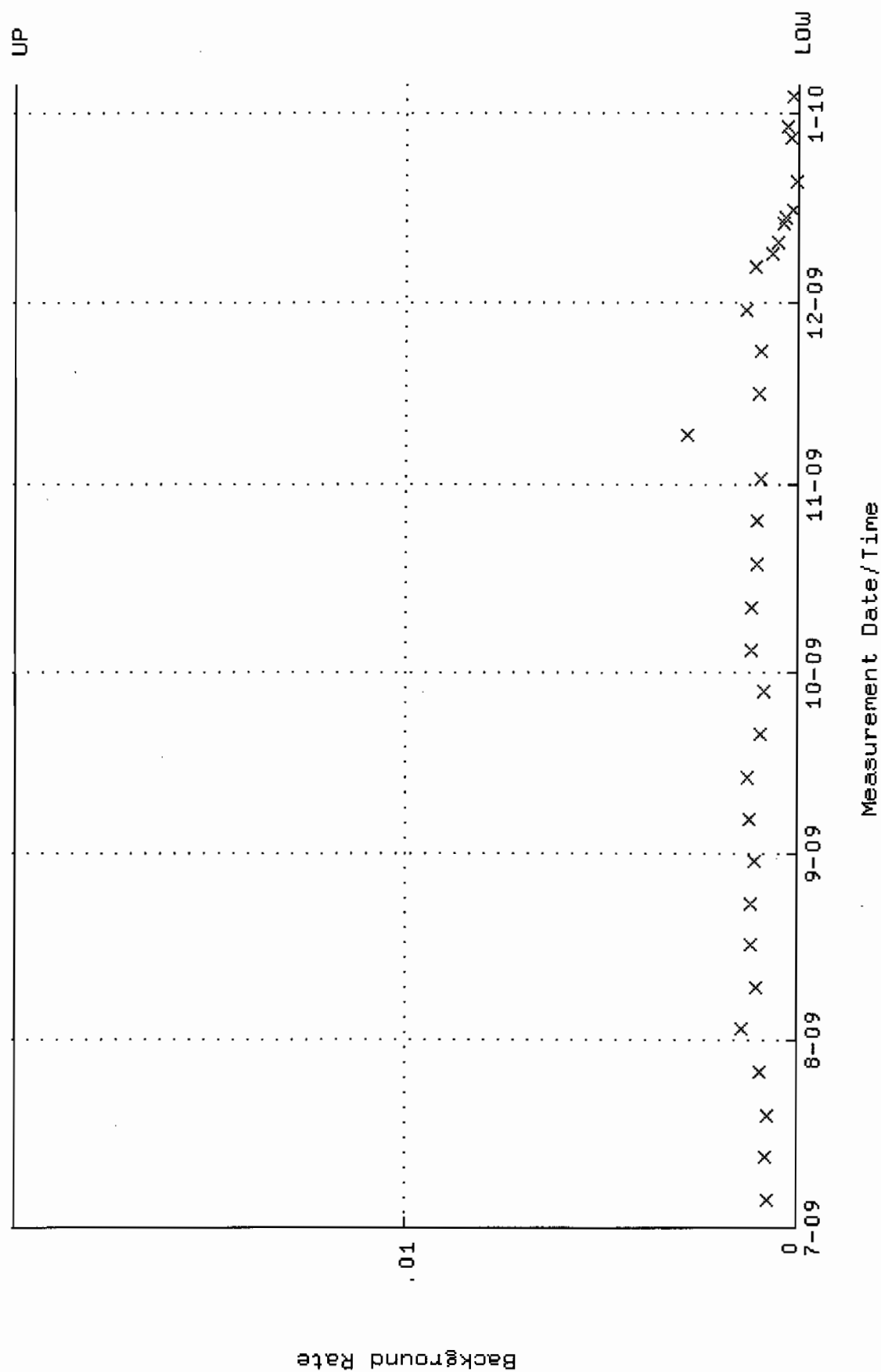
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 Parameter Name : AVRGEFF (Average Efficiency)
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 Lower/Upper Lmts: 0.295821 through 0.315821



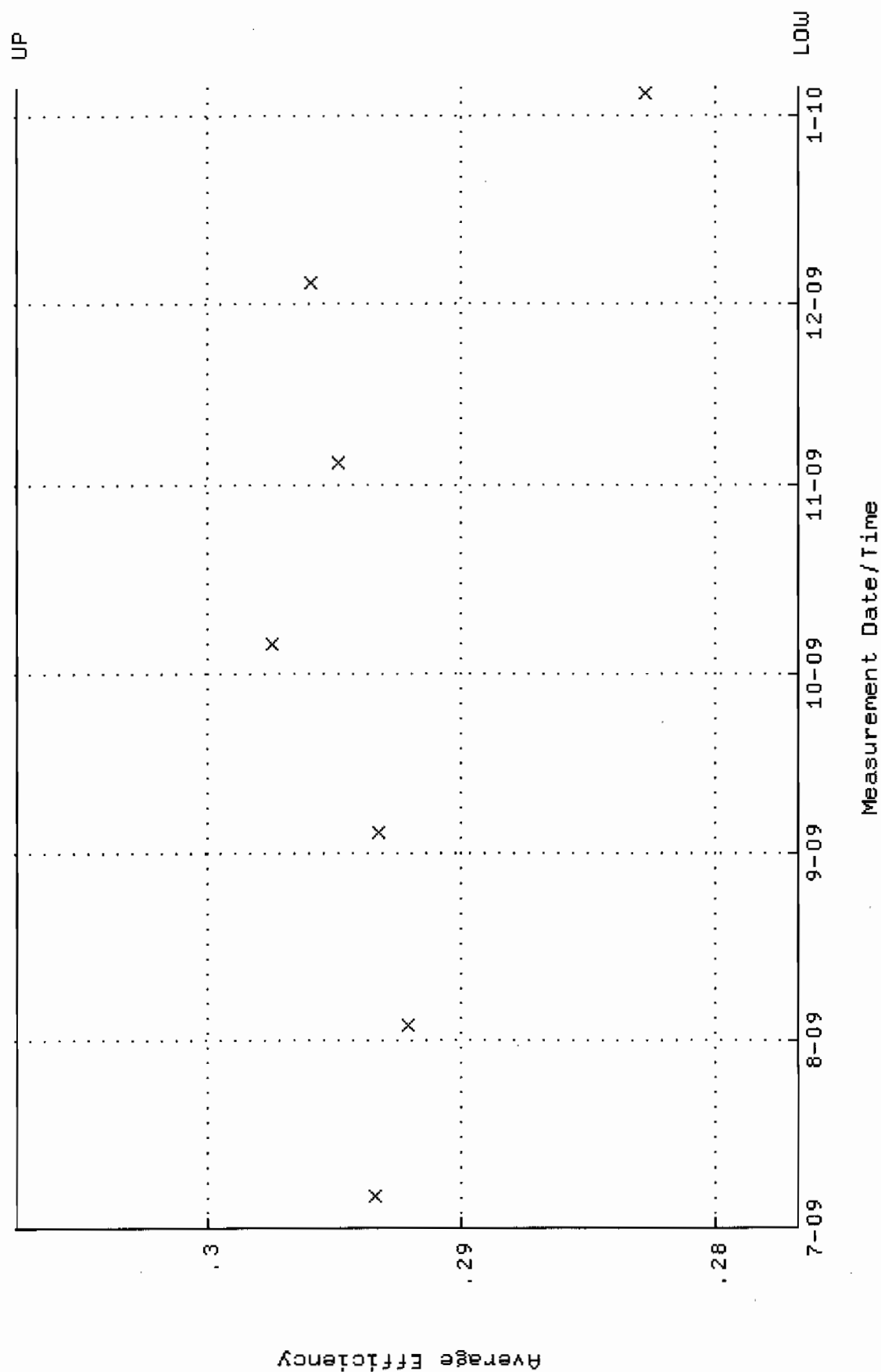
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 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 86.3237 through 95.4105



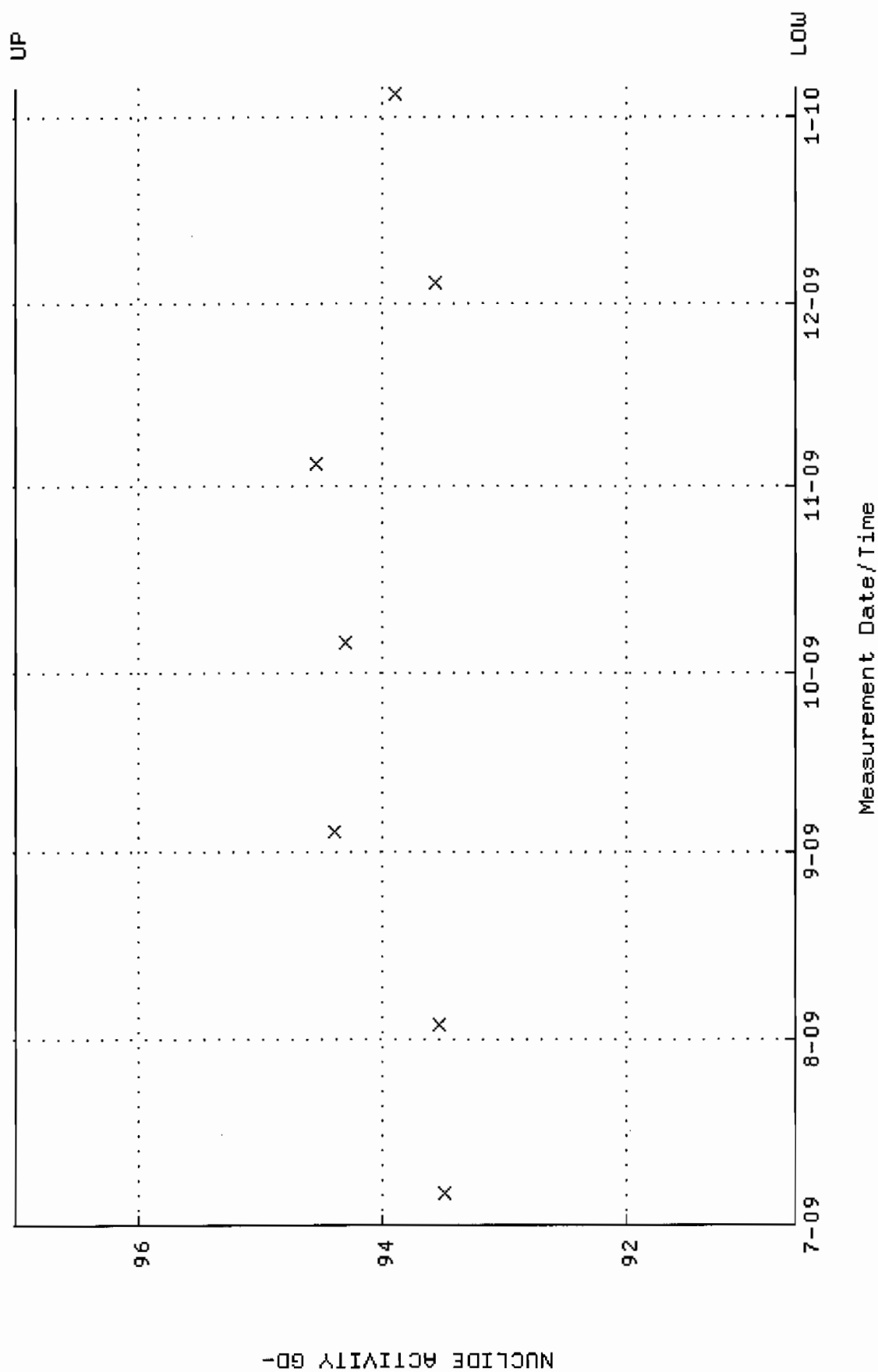
QA filename : DKA100:[ENV_ALPHA.QA.B]B006.QAF;2
 Parameter Name : BACKRATE (Background Rate)
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



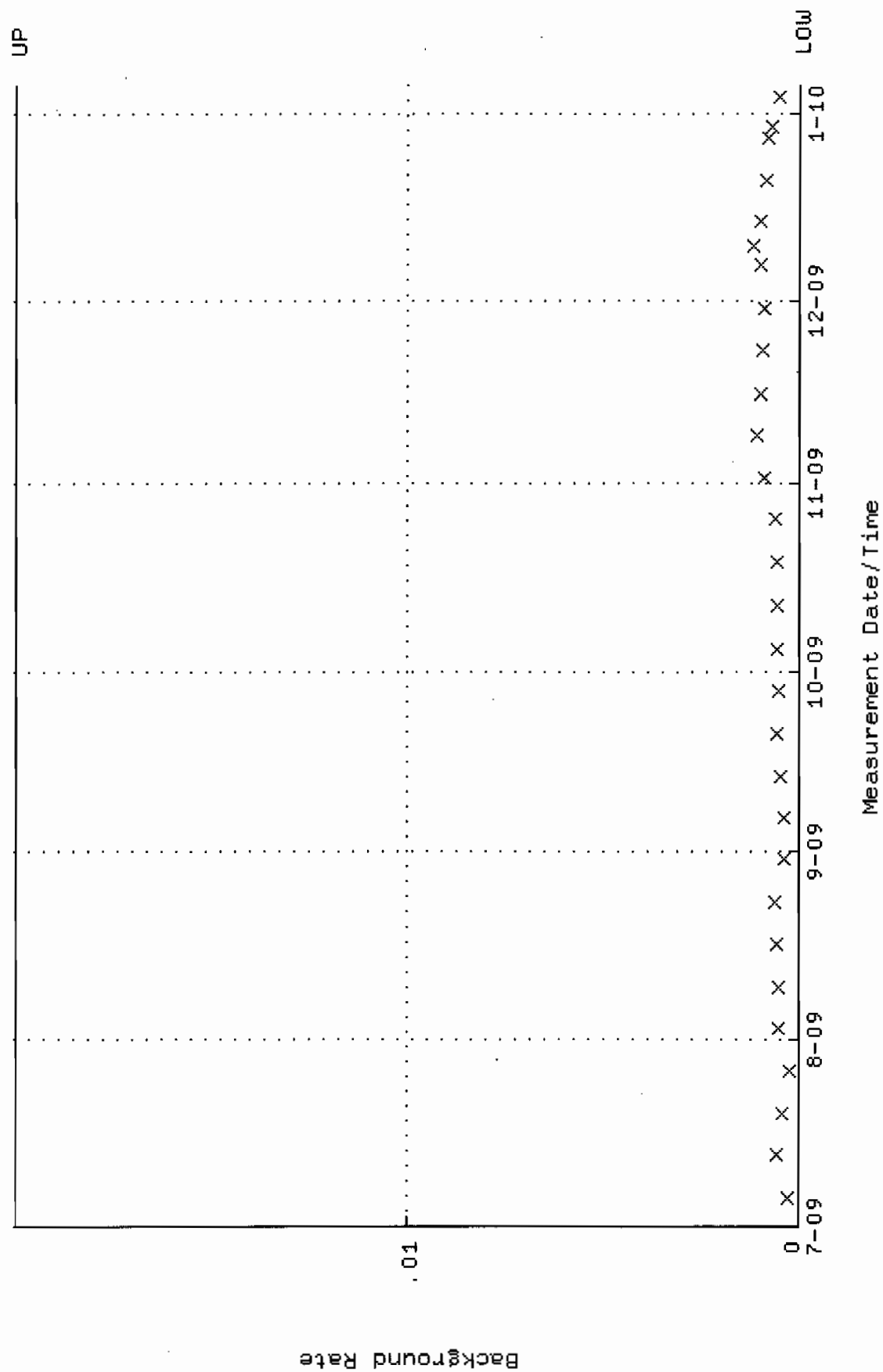
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.276771 through 0.307557



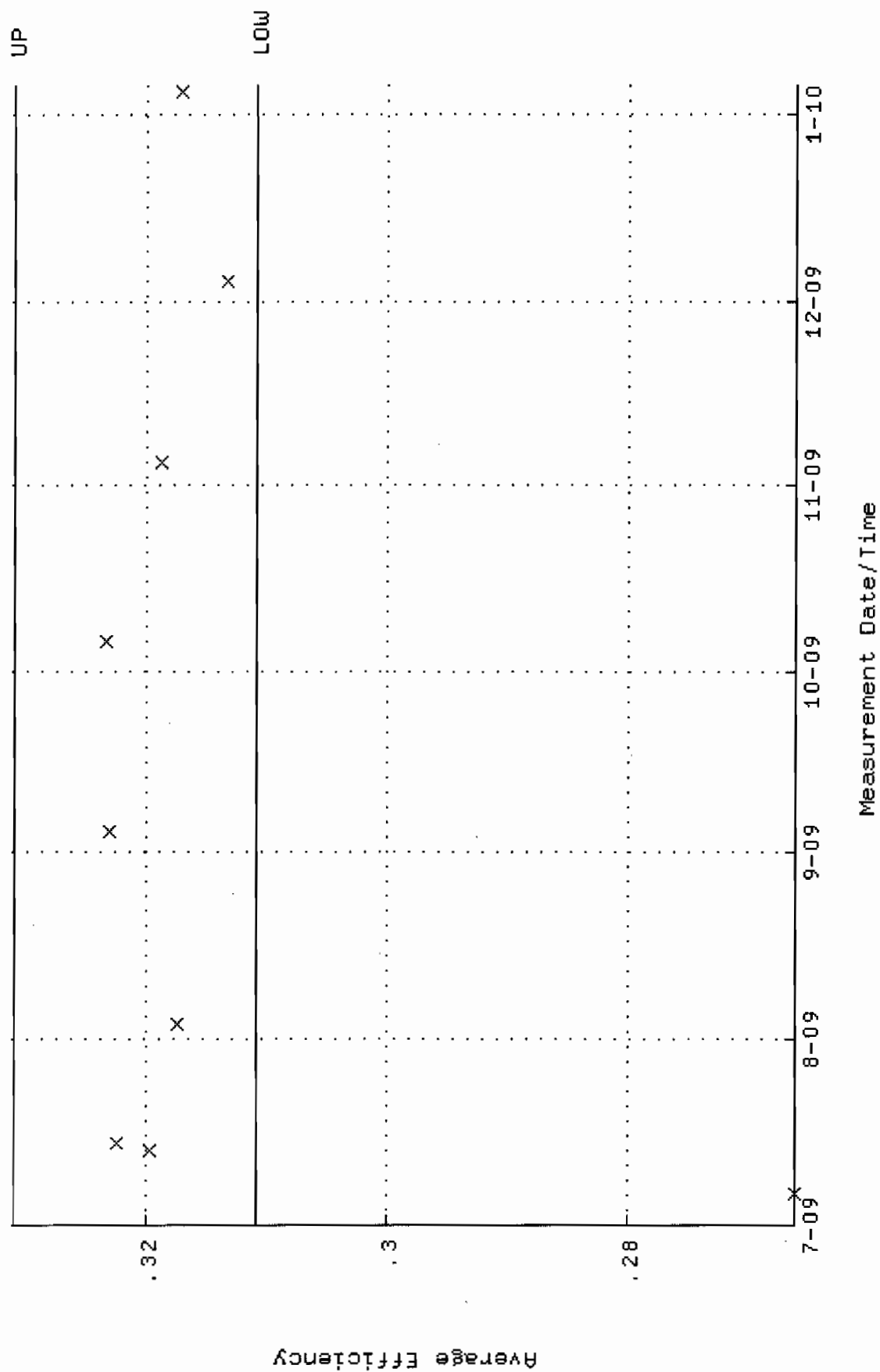
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 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 90.6063 through 97.0149



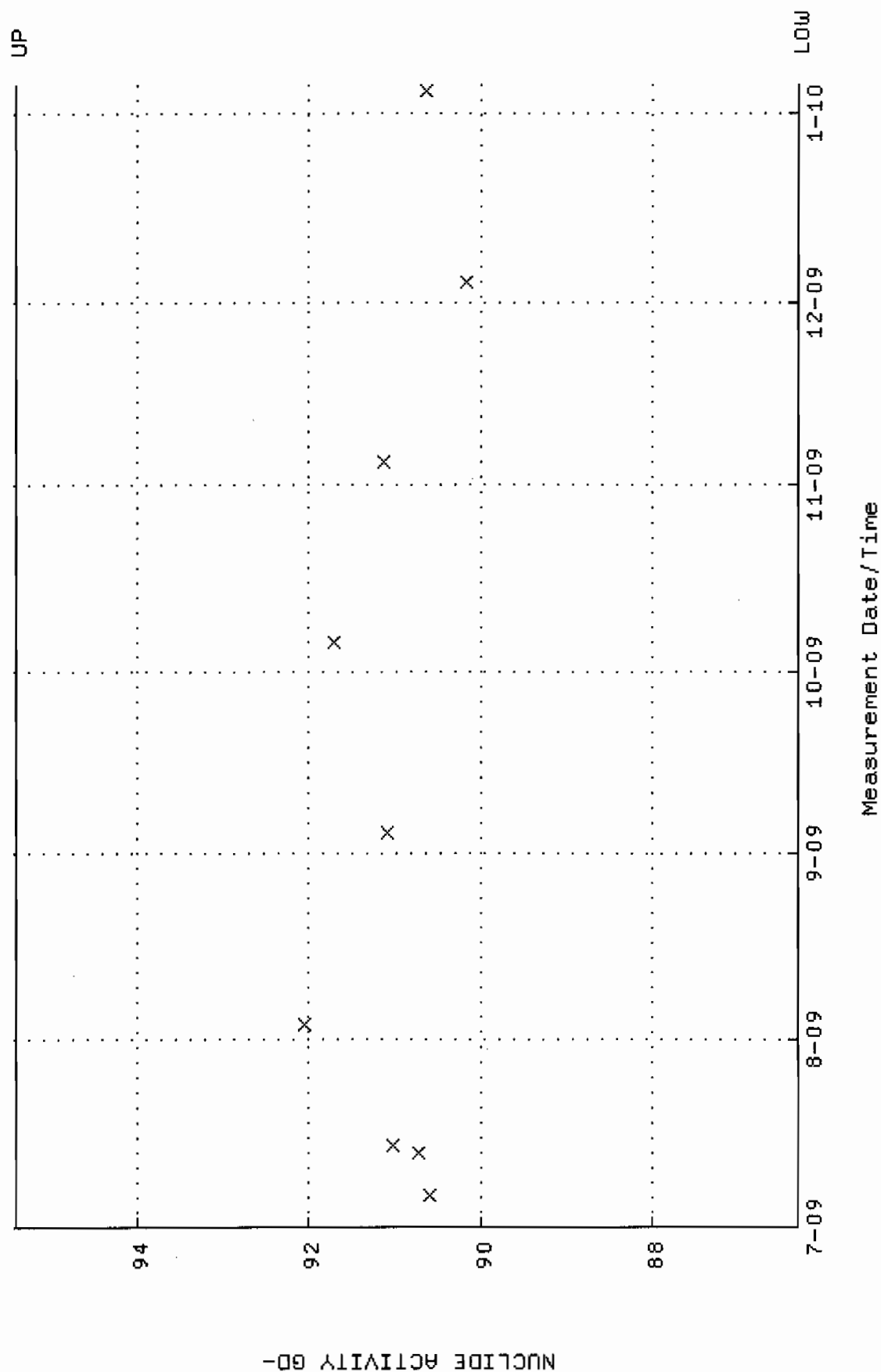
QA filename : DKA100:[ENV_ALPHA.QA.B]B017.QAF;1
 Parameter Name : BACKRATE (Background Rate)
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



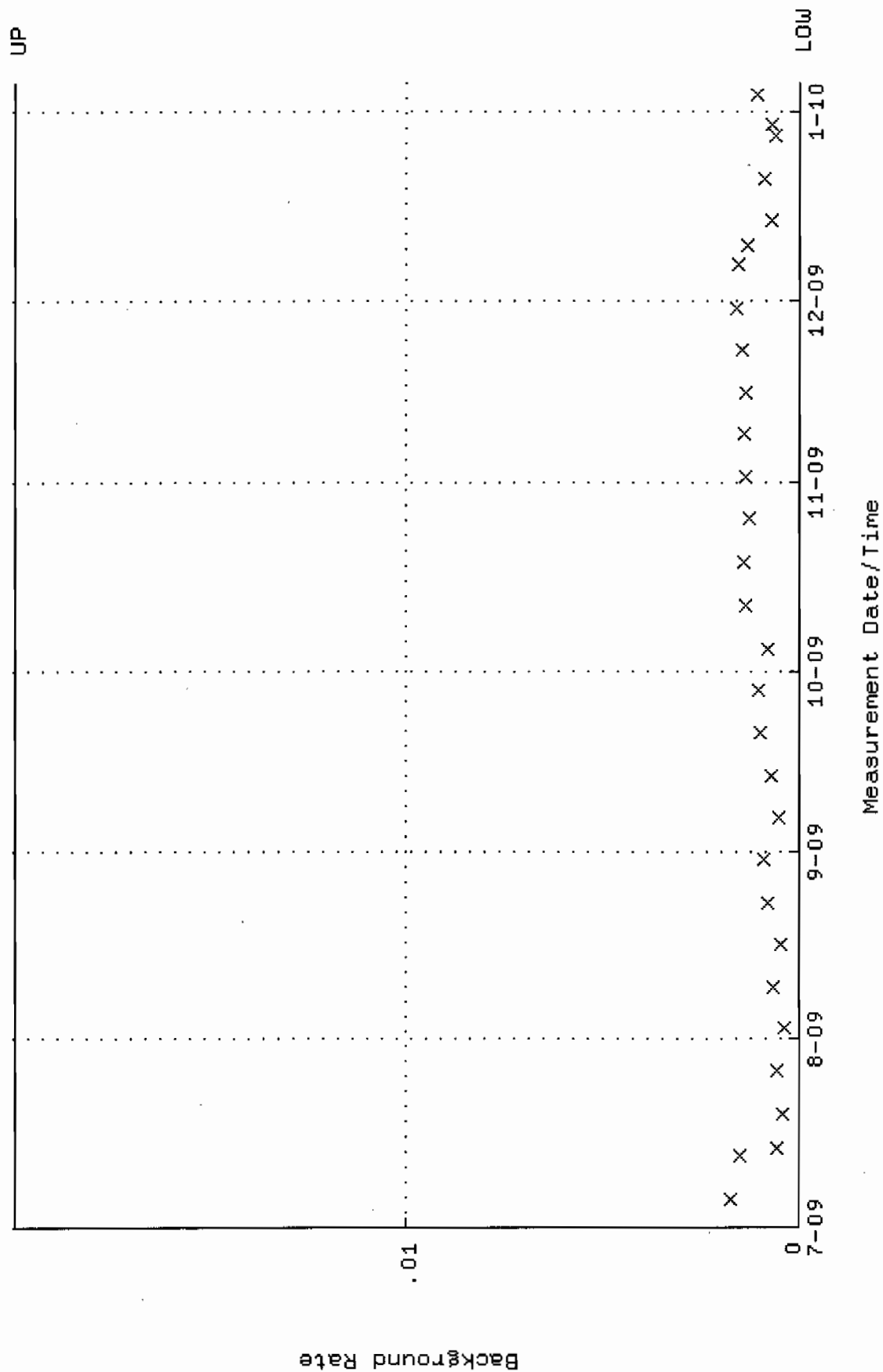
QA filename : DKA100:[ENV-ALPHA.QA.W]W018.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
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 Lower/Upper Lmts: 0.310950 through 0.330950



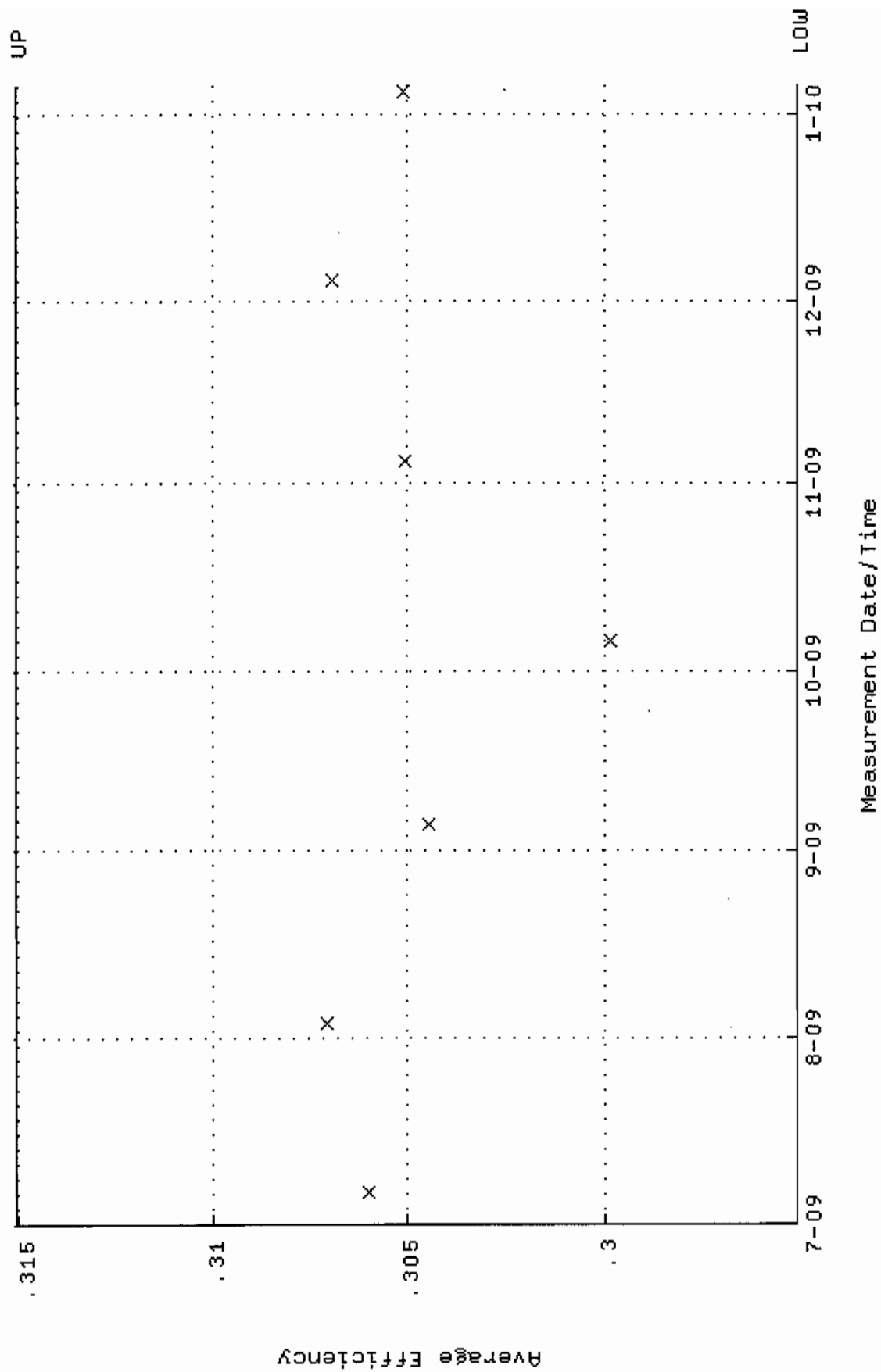
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:12 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 86.3167 through 95.4027



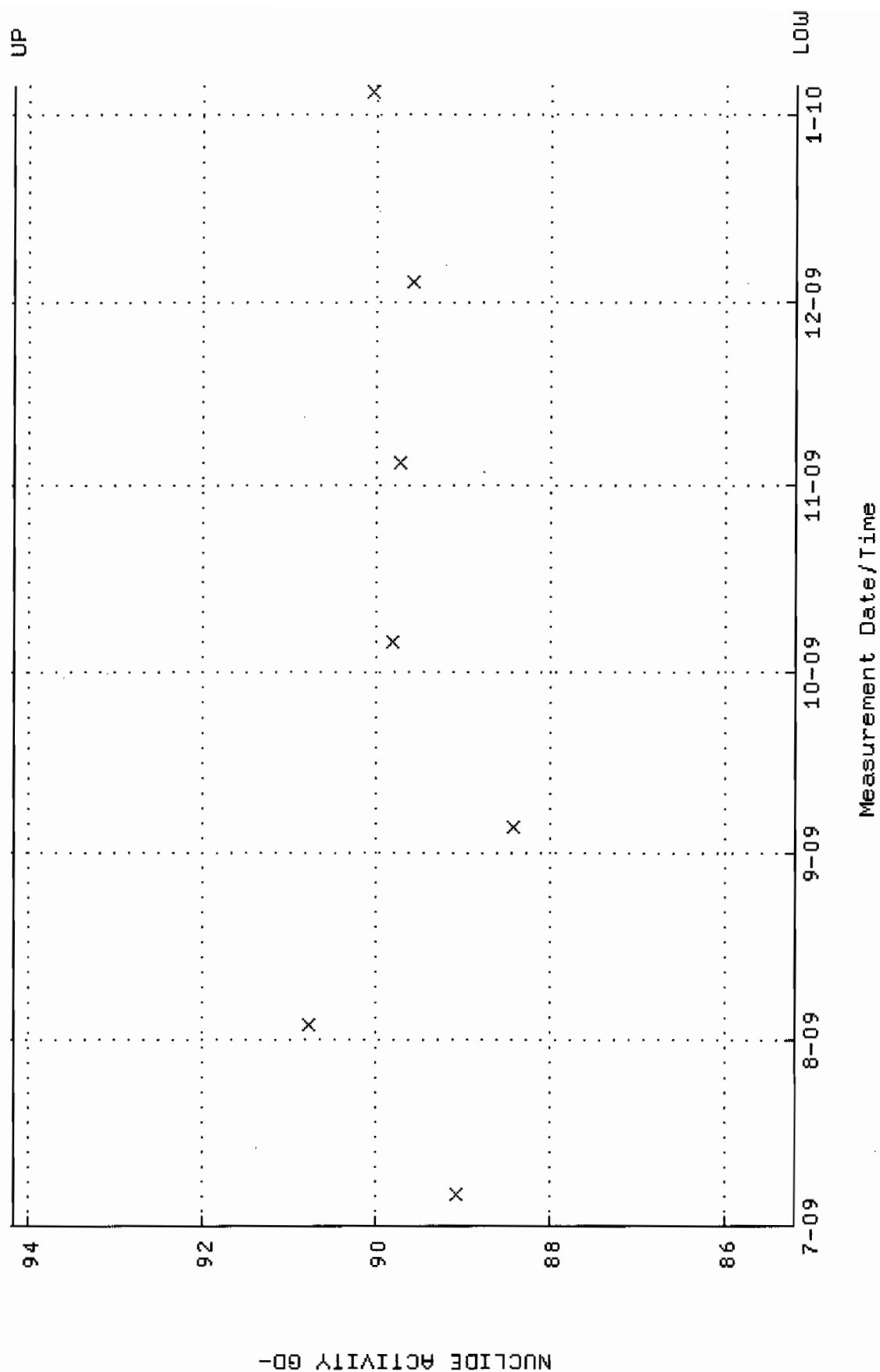
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 Parameter Name : BACKRATE (Background Rate)
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



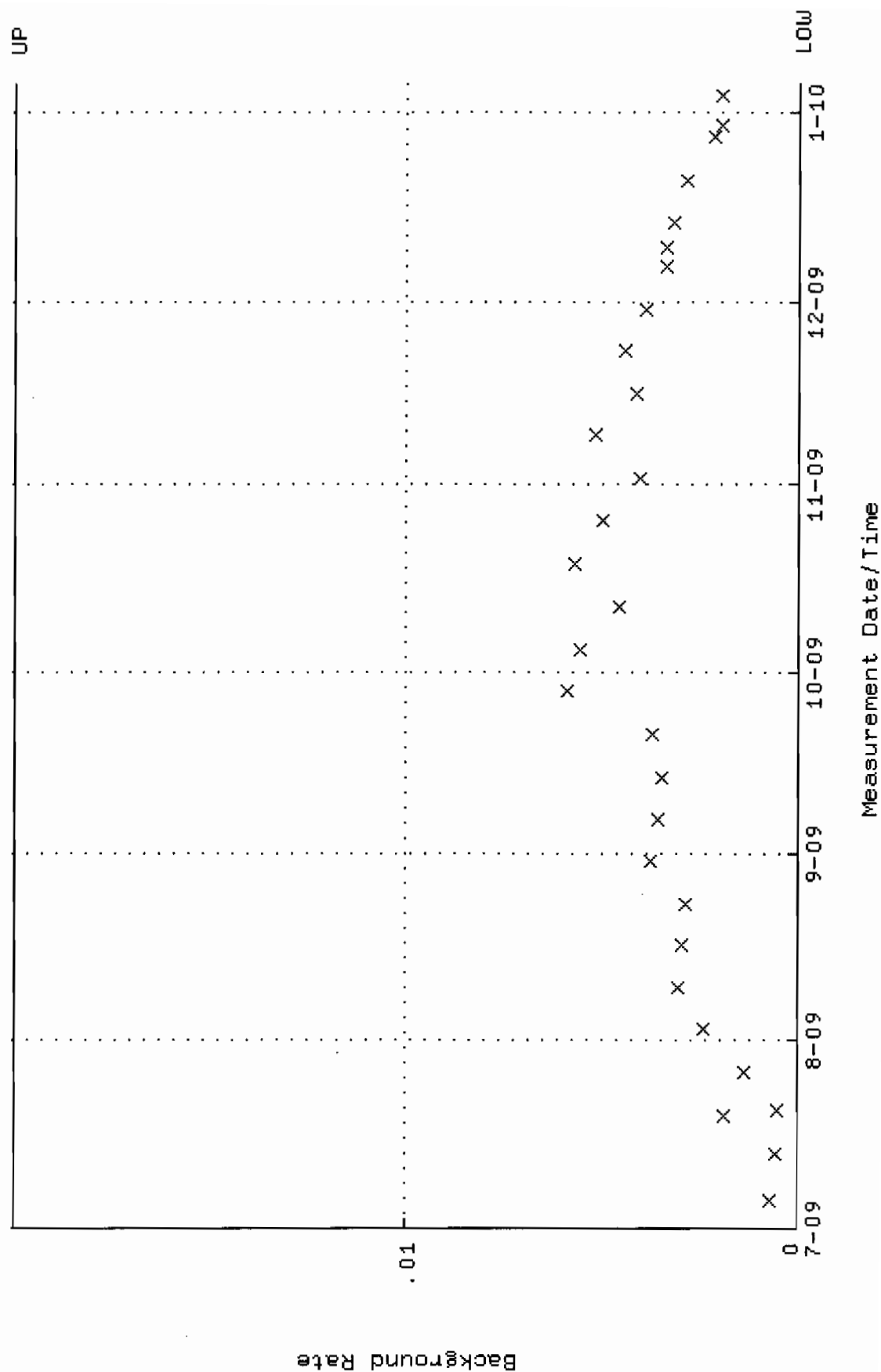
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 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.295040 through 0.315040



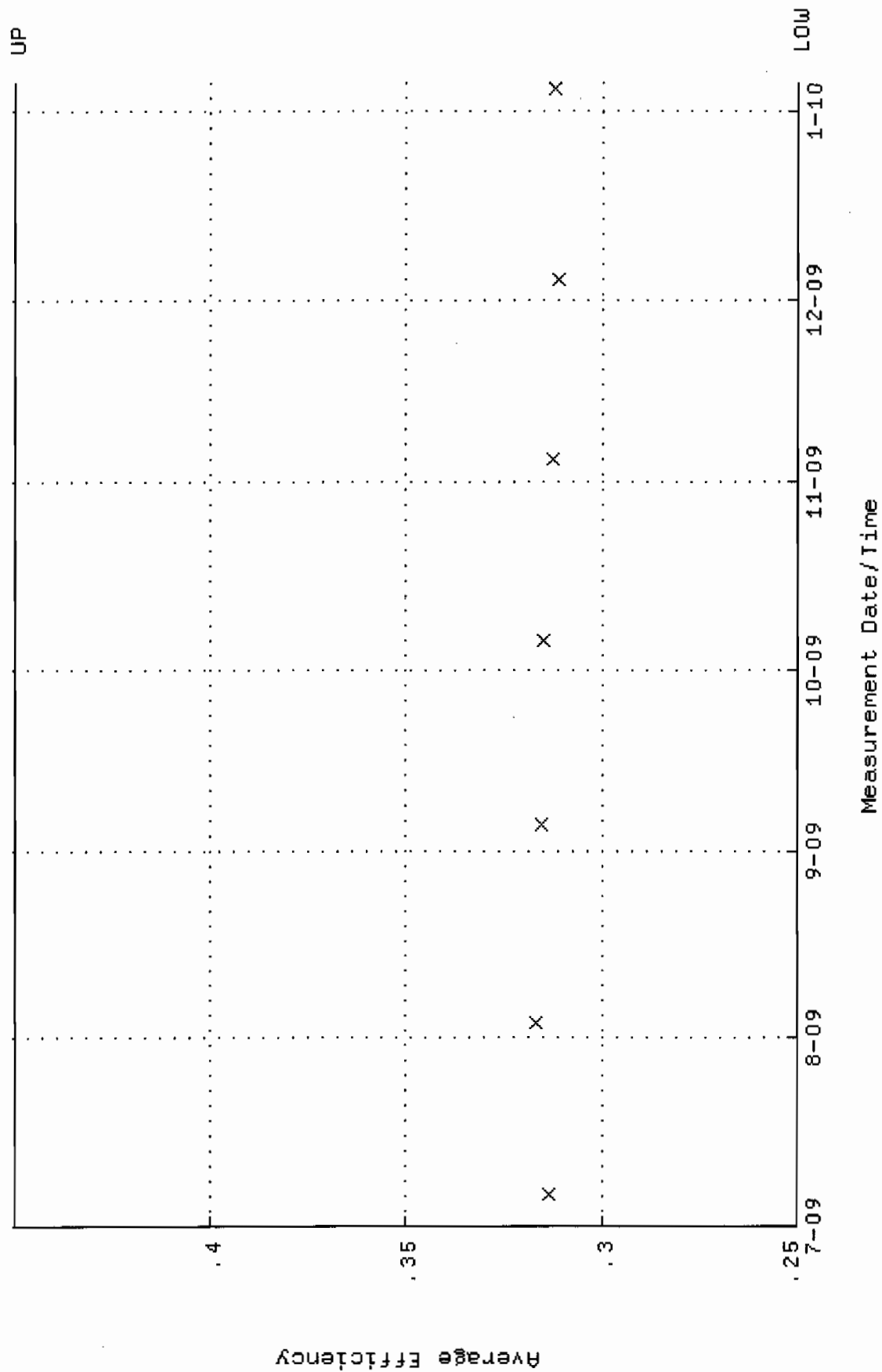
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 85.1965 through 94.1645



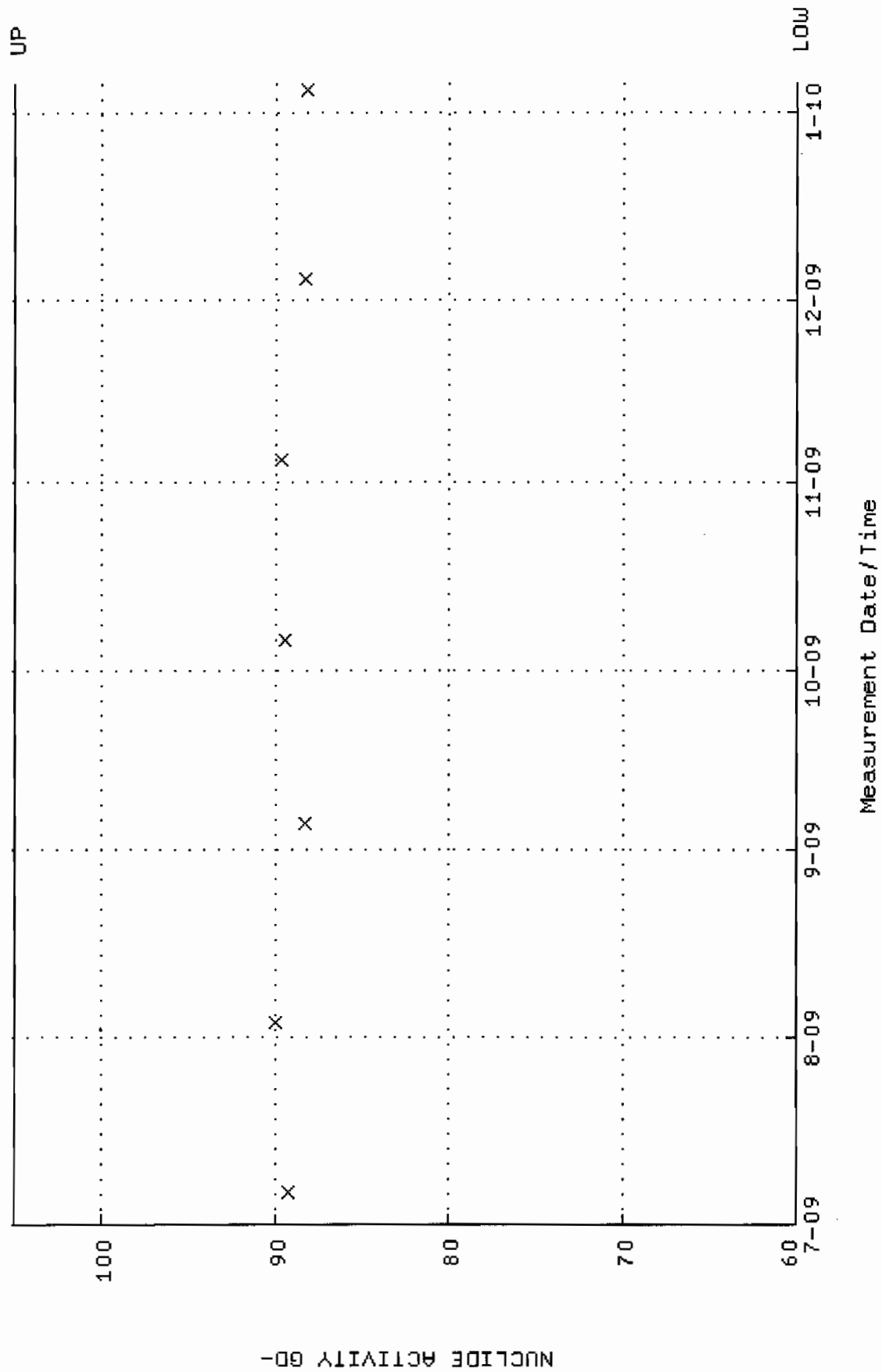
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 Parameter Name : BACKRATE (Background Rate)
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 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



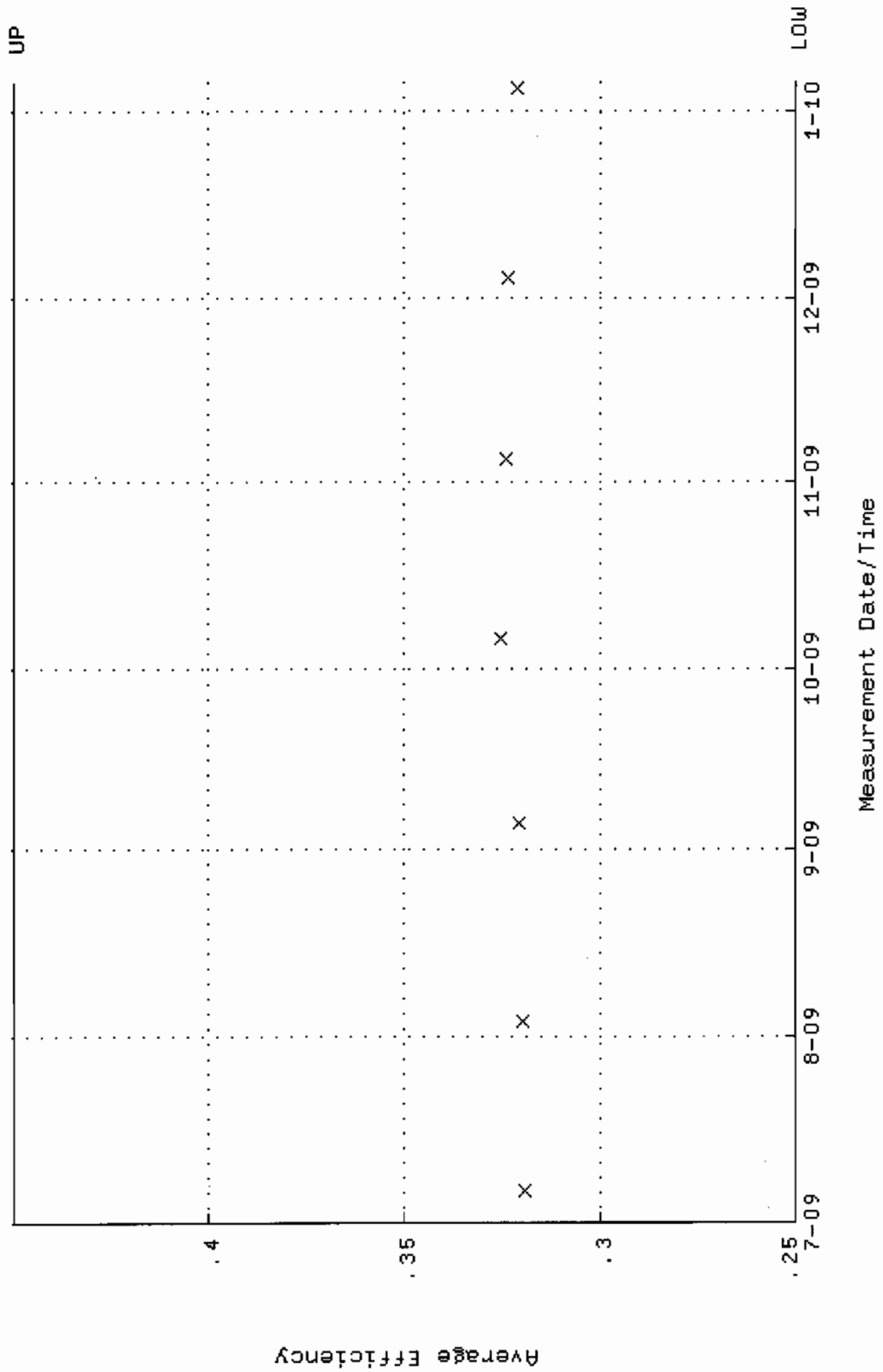
QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



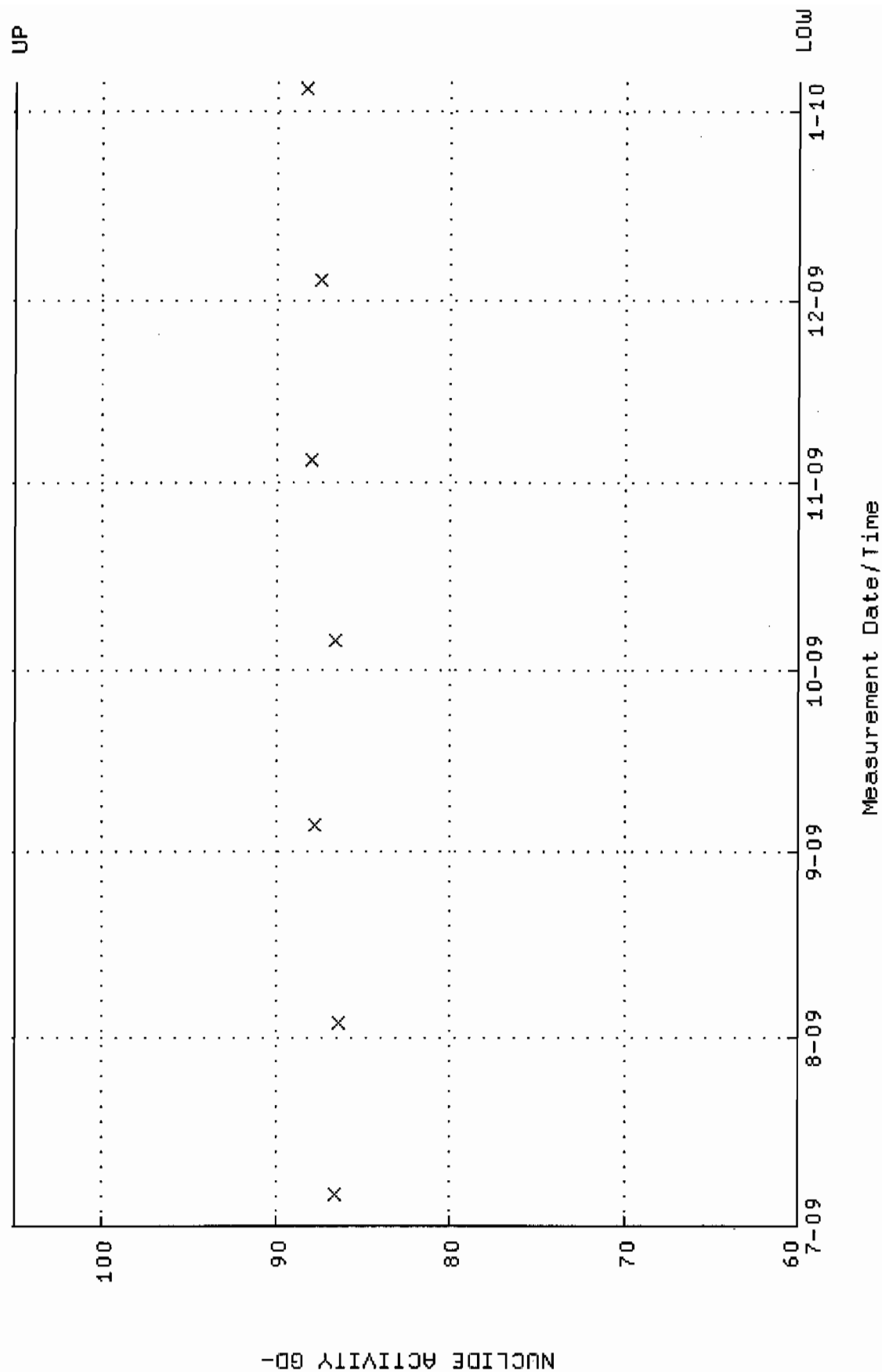
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W030.QAF;3
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 Lower/Upper Lmts: 0.250000 through 0.450000



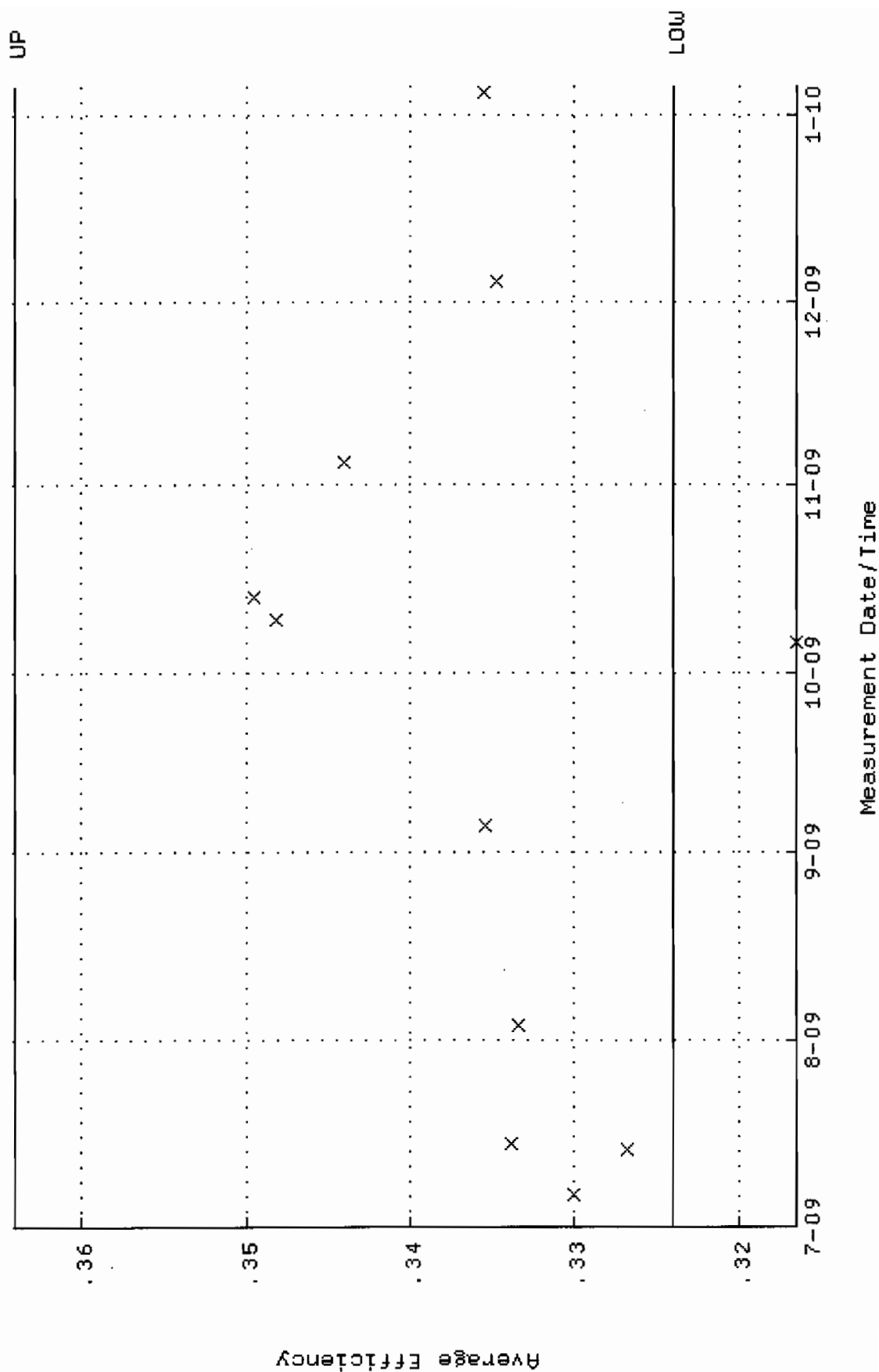
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 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:14 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



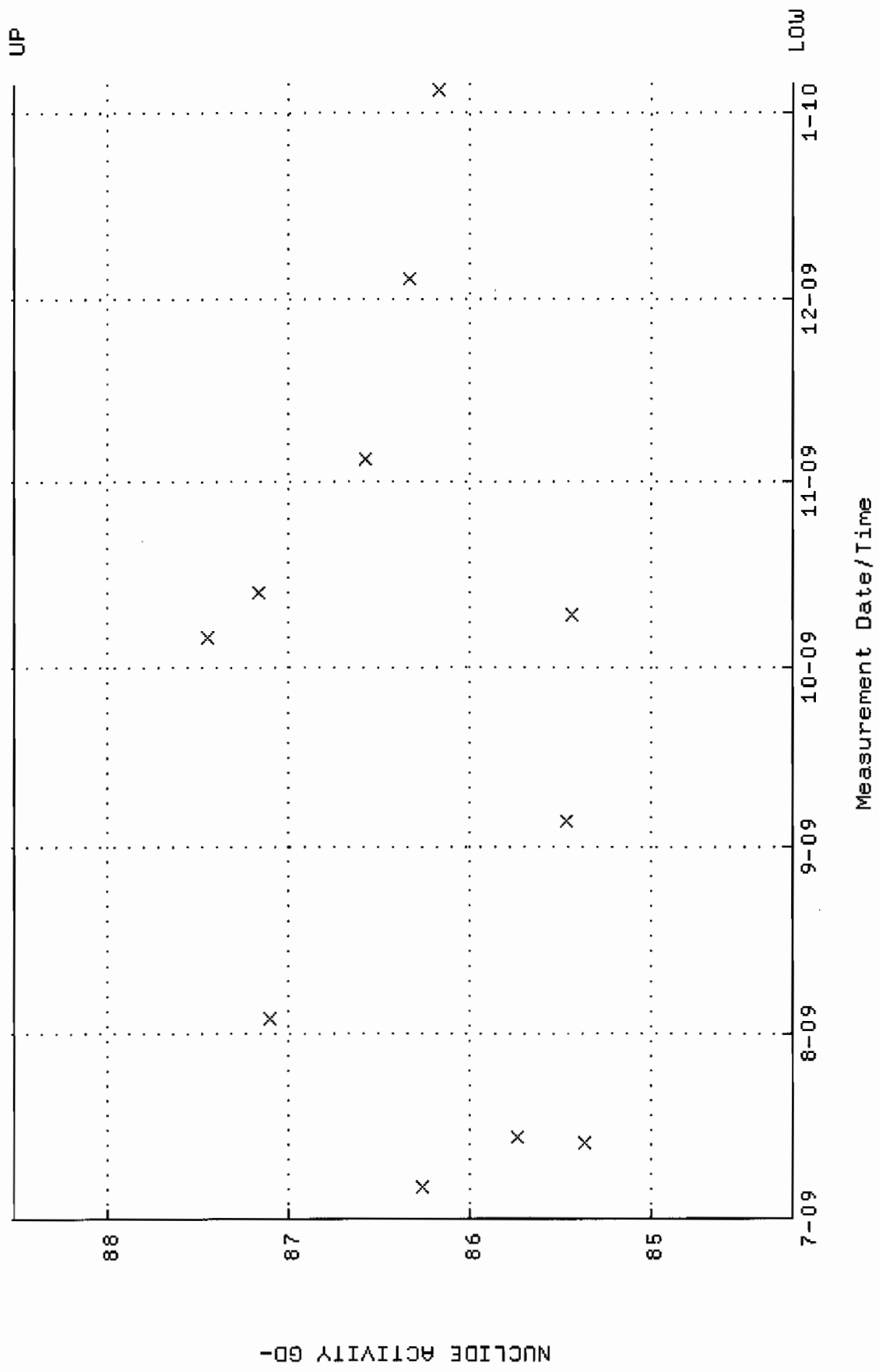
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



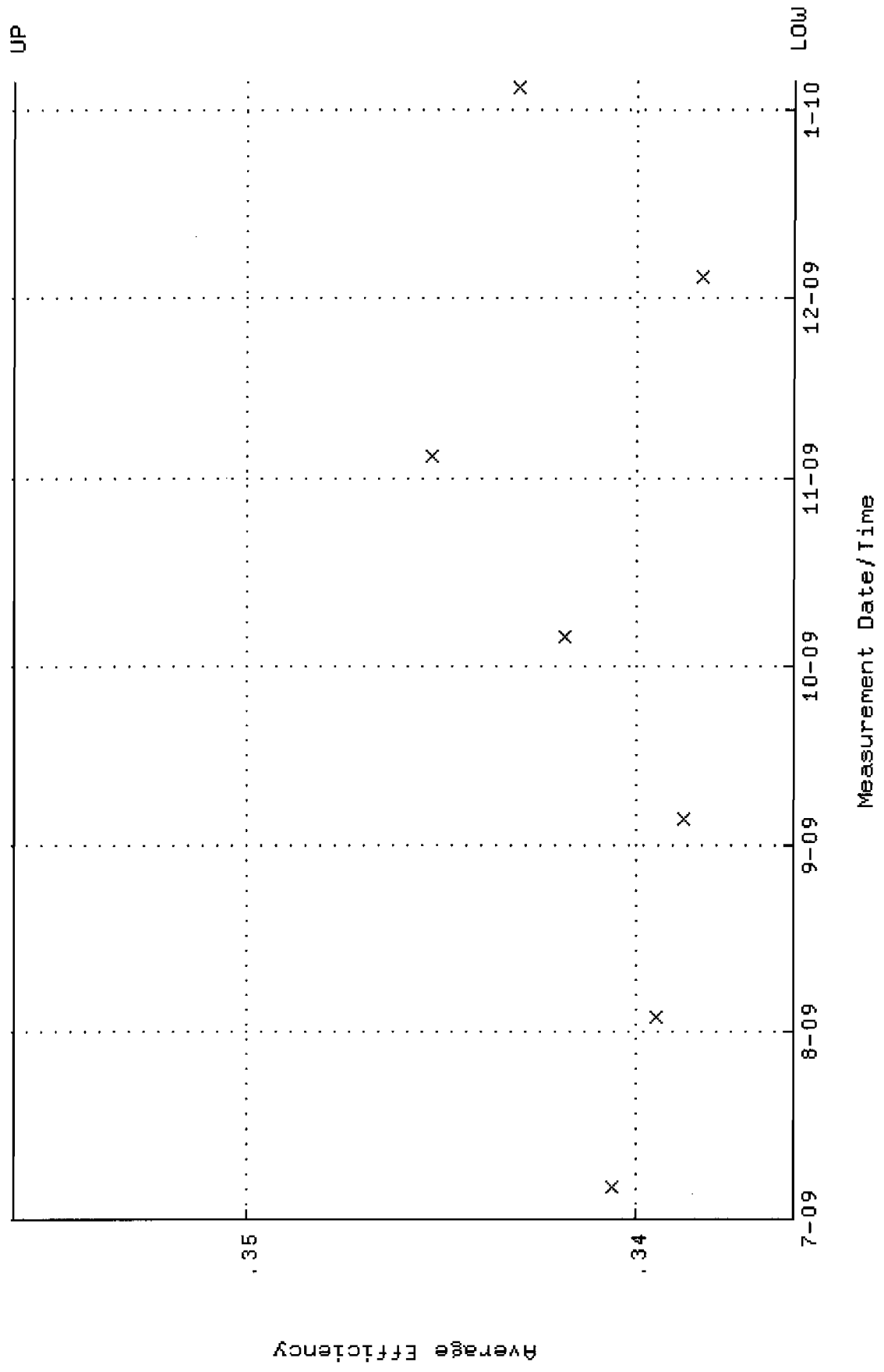
QA filename : DKA100:[ENV_ALPHA.QA.W]W031.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.324029 through 0.364065



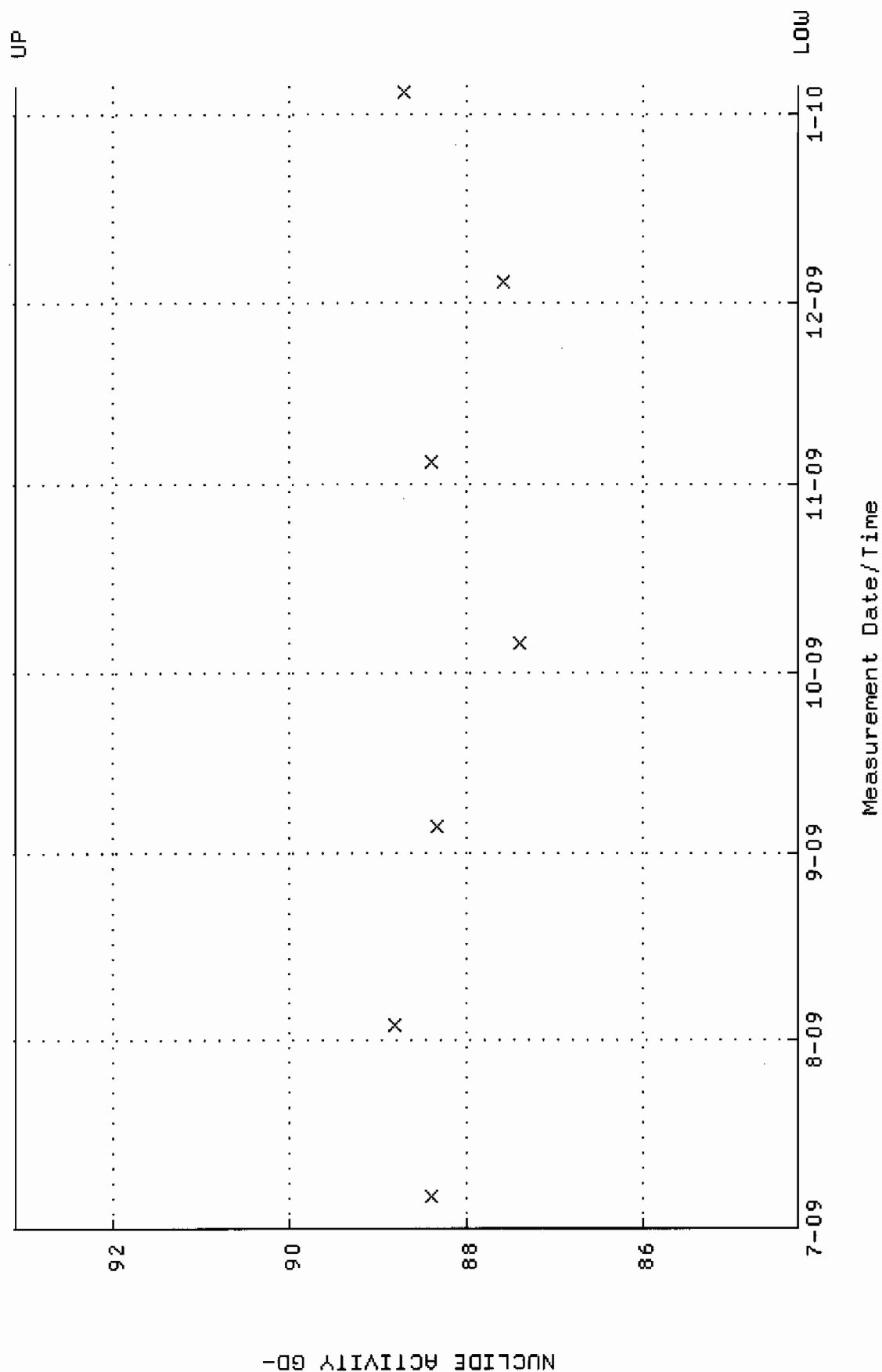
QA filename : DKA100:[ENV_ALPHA.QA.W]W031.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:15 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 84.2165 through 88.5165



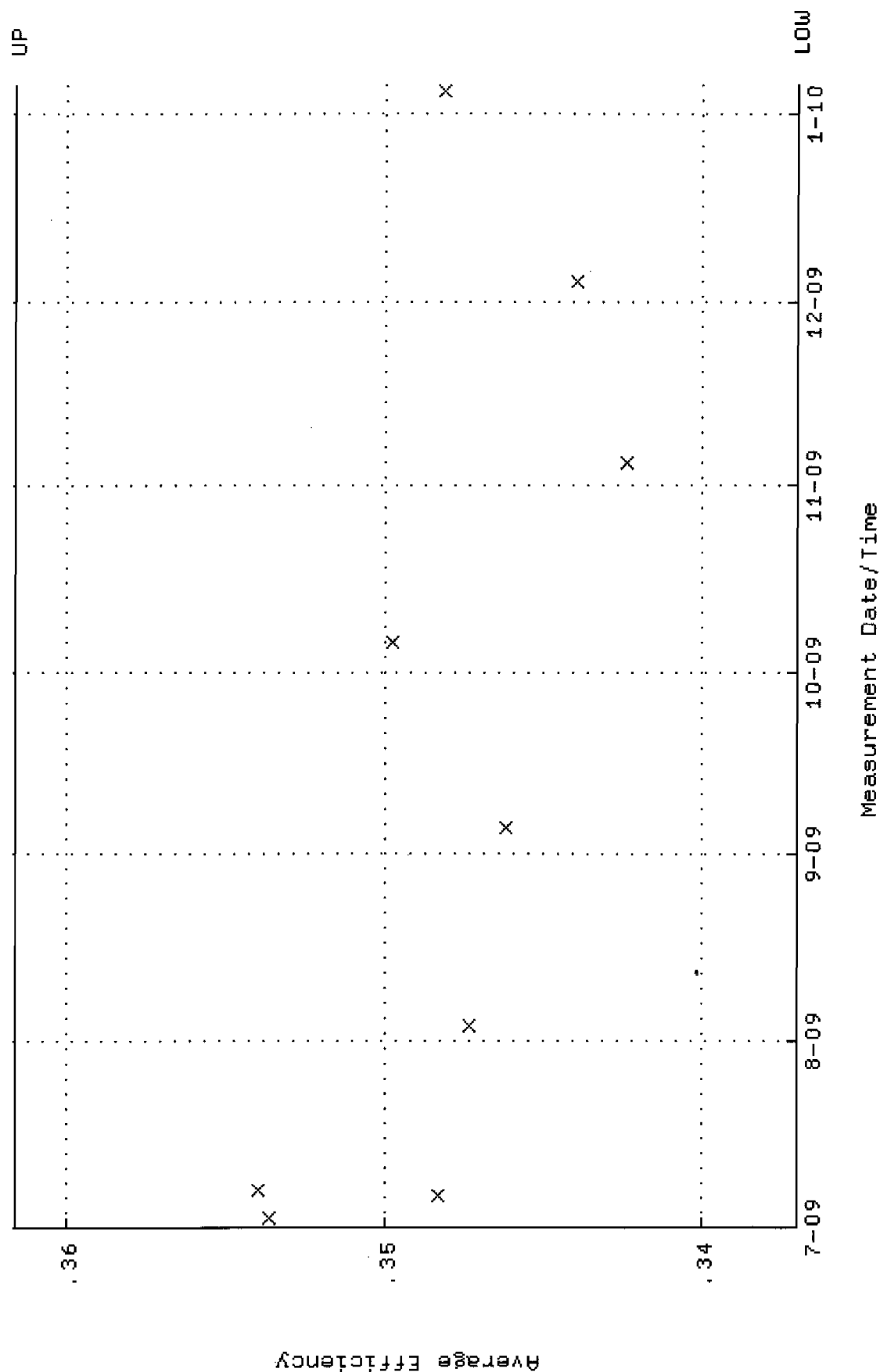
QA filename : DKA100:[ENV_ALPHA.QA.W]W043.QAF;102
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.335973 through 0.355973



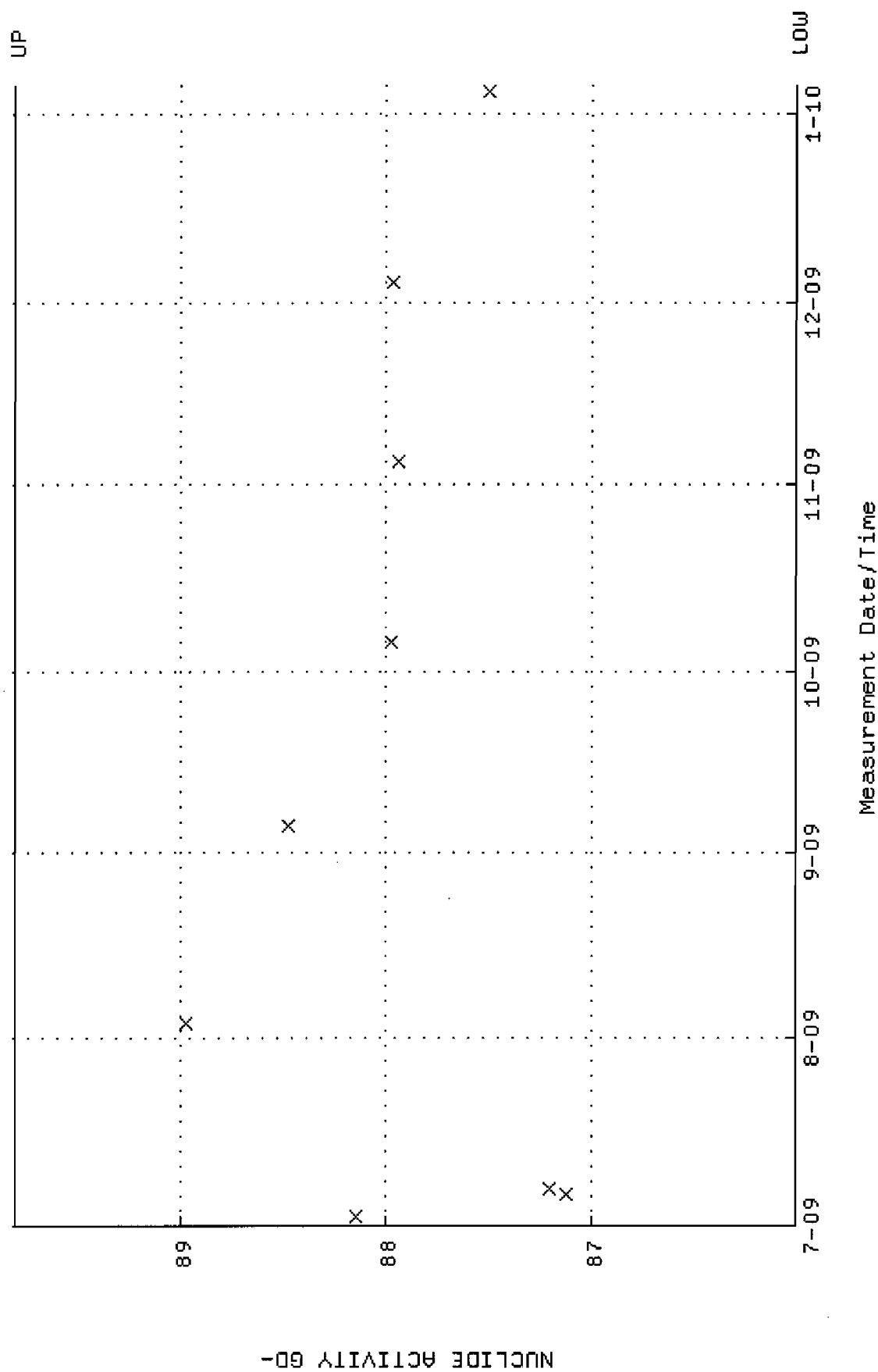
QA filename : DKA100:[ENV_ALPHA.QA.W]W043.QAF;102
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 84.2440 through 93.1118



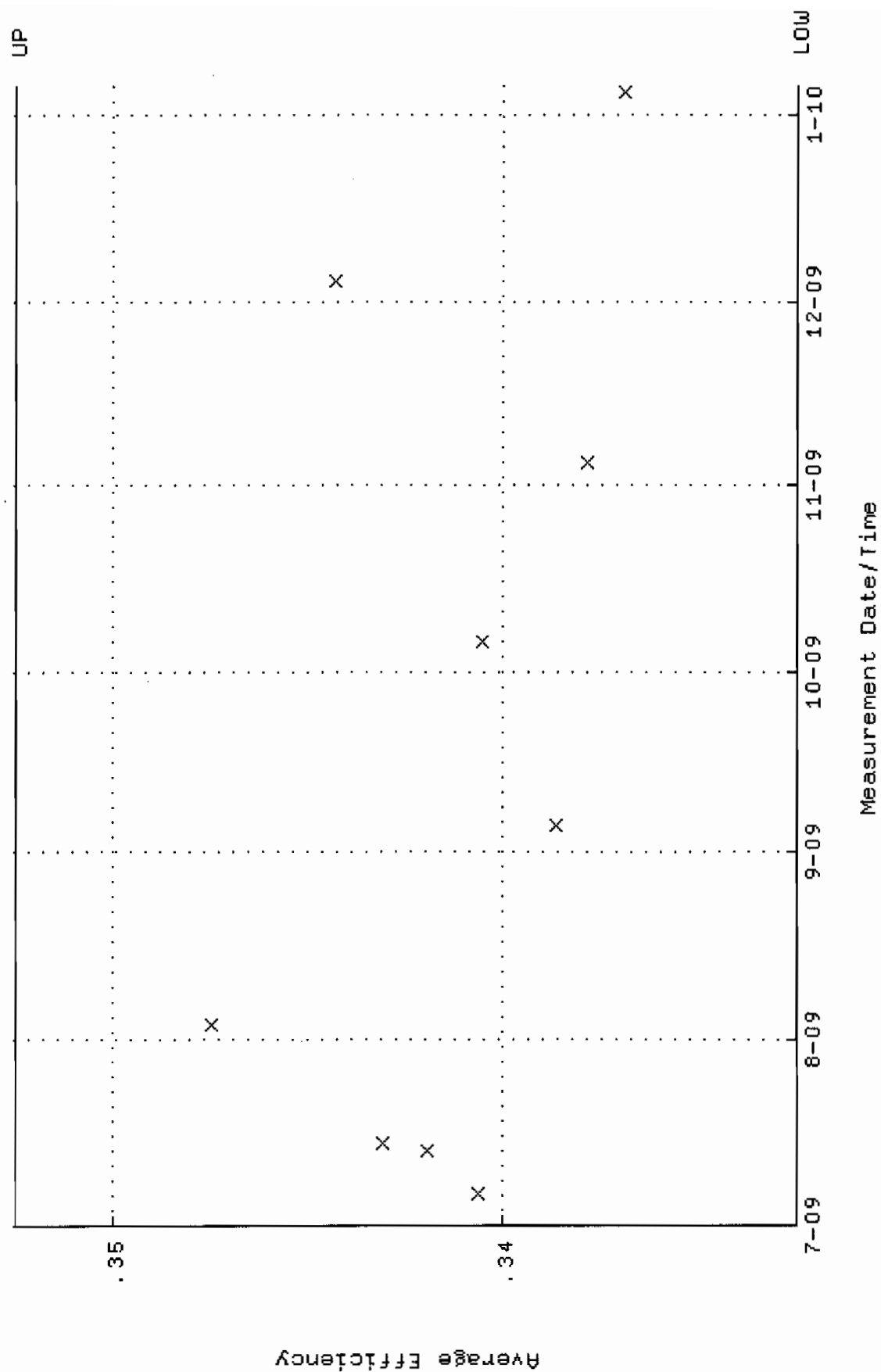
QA filename : DKA100:[ENV_ALPHA.QA.W]W044.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 2-JUL-2009 15:04:12 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.336958 through 0.361648



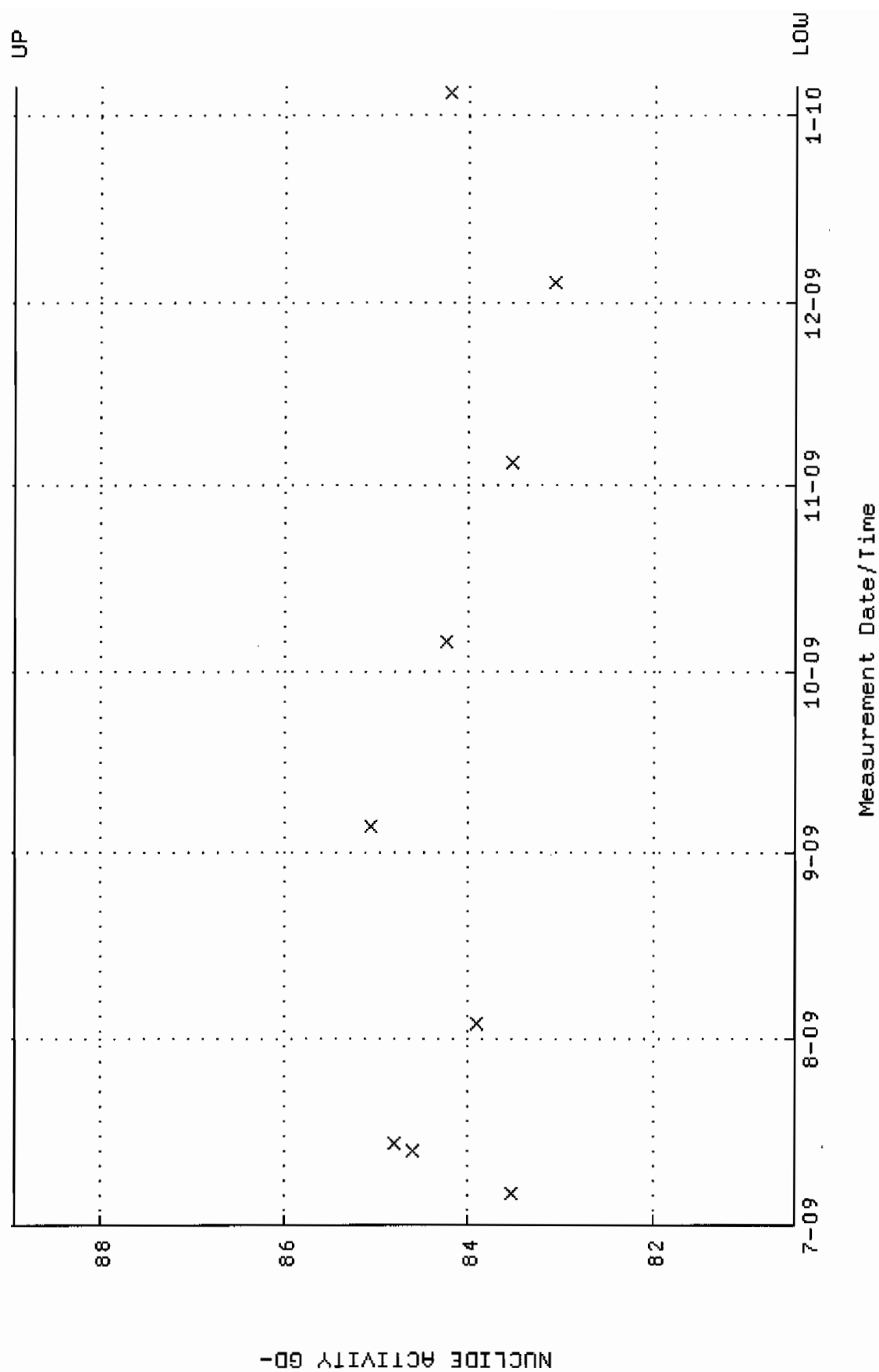
QA filename : DKA100:[ENV-ALPHA.QA.W]W044.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 2-JUL-2009 15:04:12 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 86.0137 through 89.8023



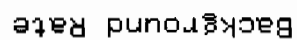
QA filename : DKA100:[ENV_ALPHA.QA.W]W045.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.332472 through 0.352472



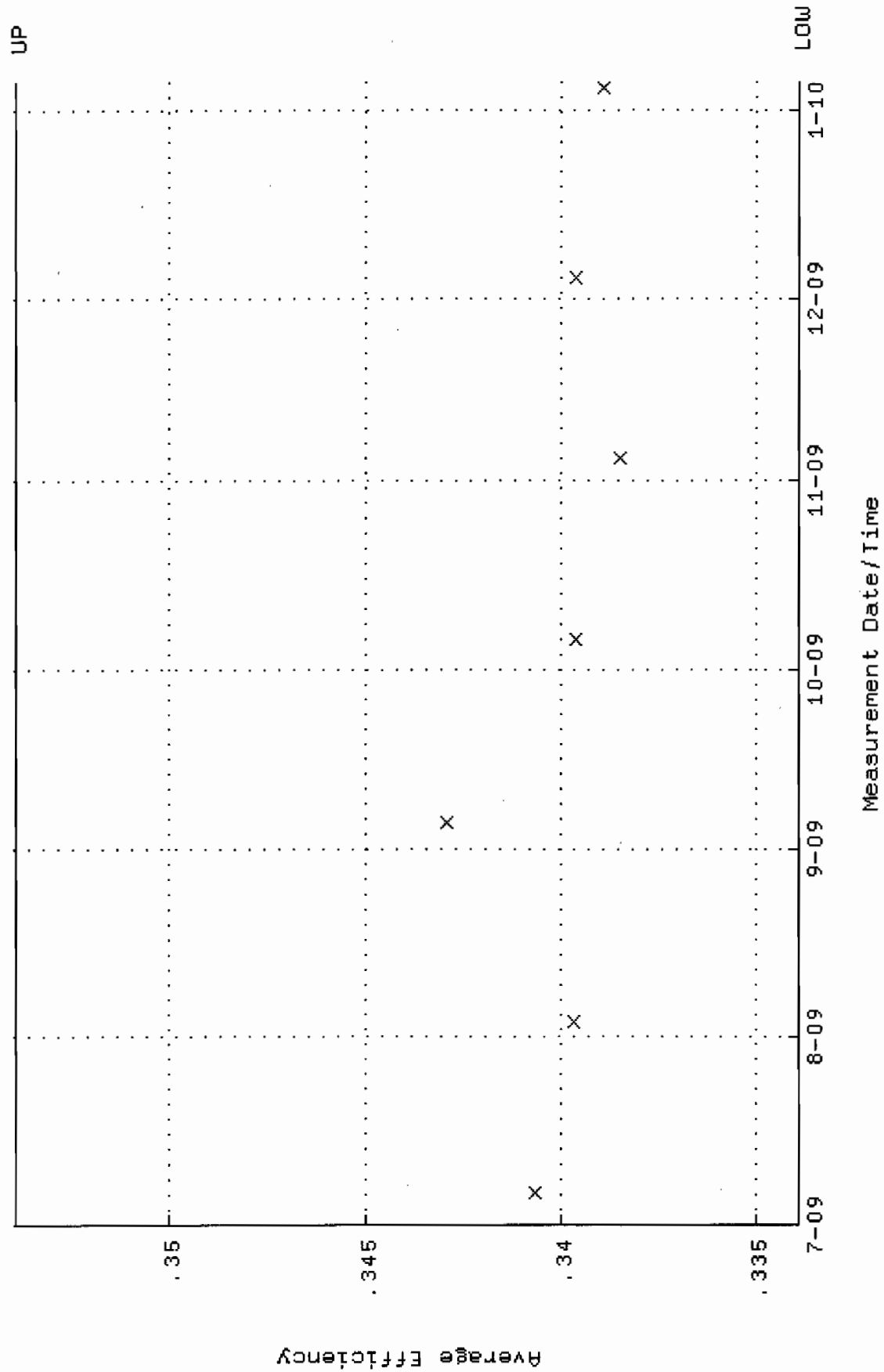
QA filename : DKA100:[ENV_ALPHA.QA.W]W045.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 80.4622 through 88.9320



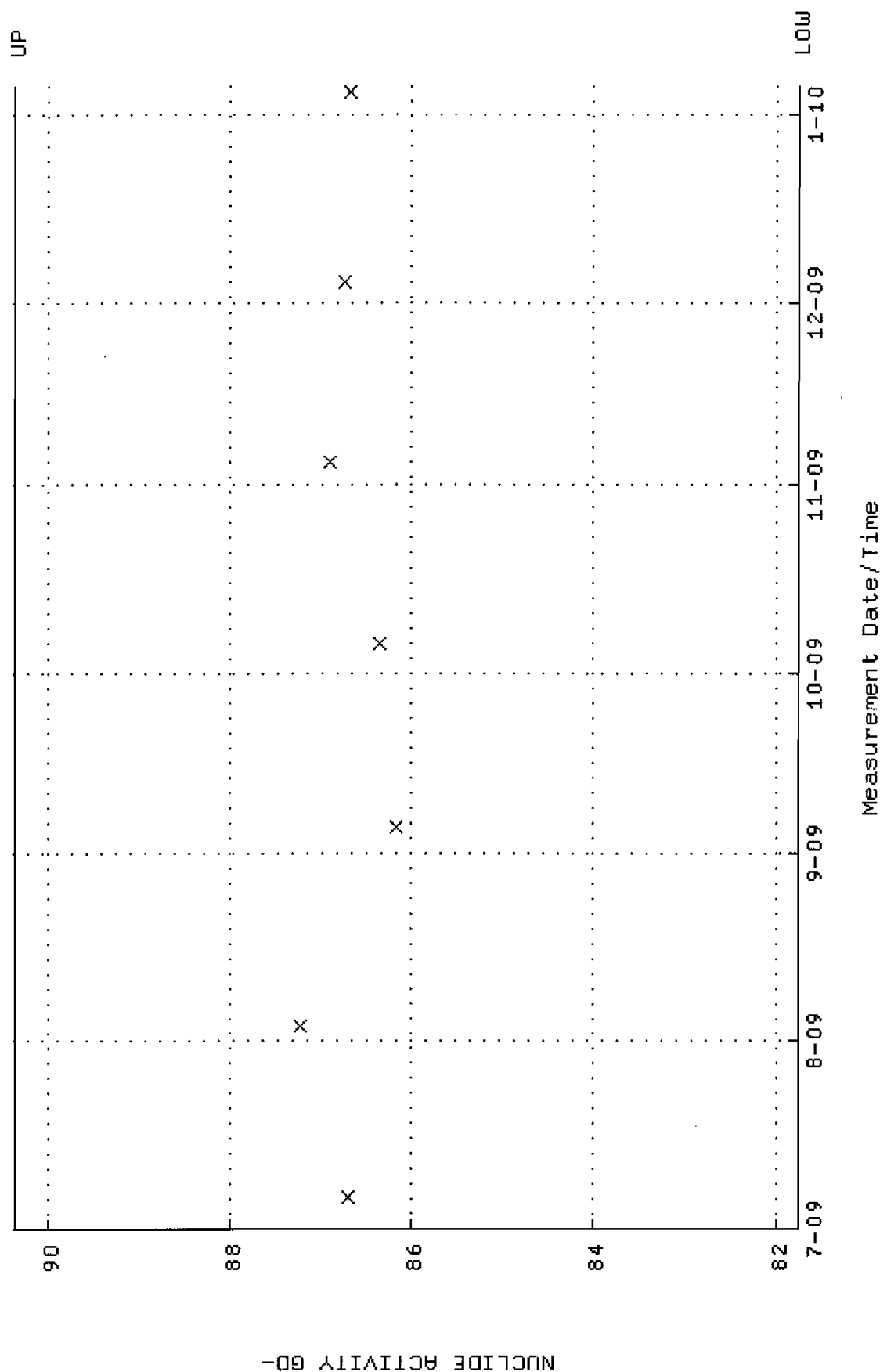
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



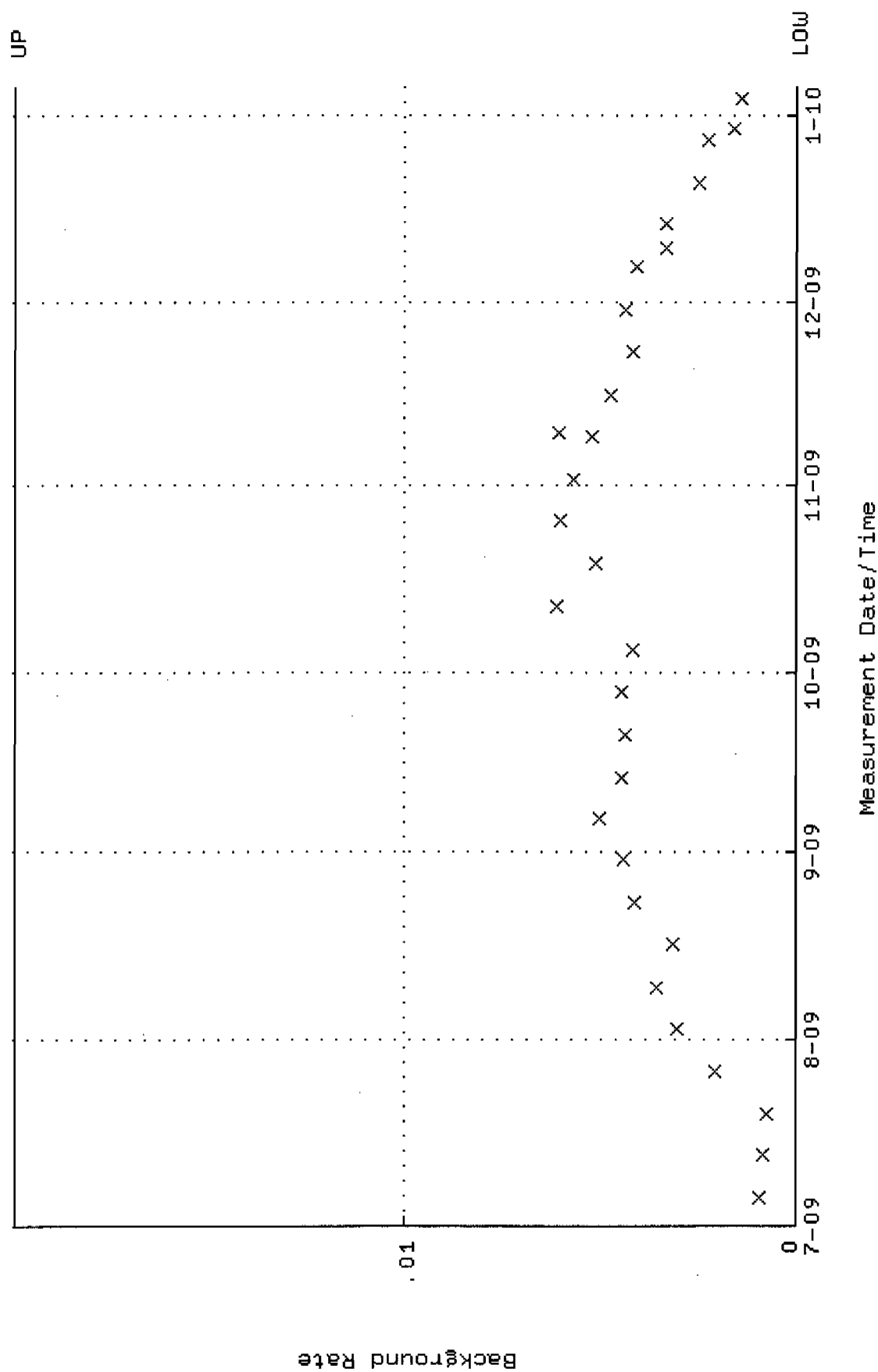
QA filename : DKA100:[ENV_ALPHA.QA.W]W046.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.333927 through 0.353927



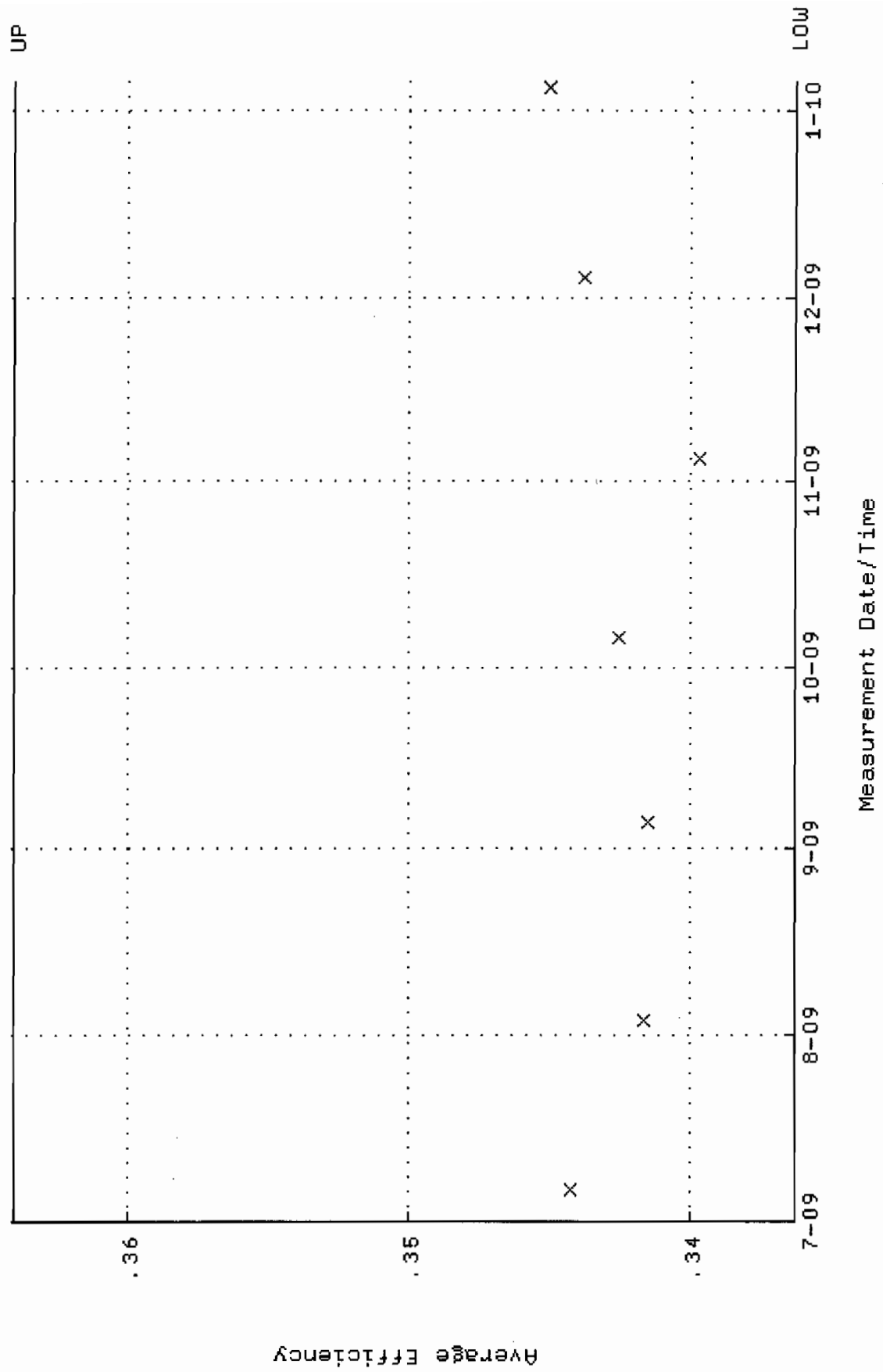
QA filename : DKA100:[ENV_ALPHA,QA.W]W046.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 81.7568 through 90.3628



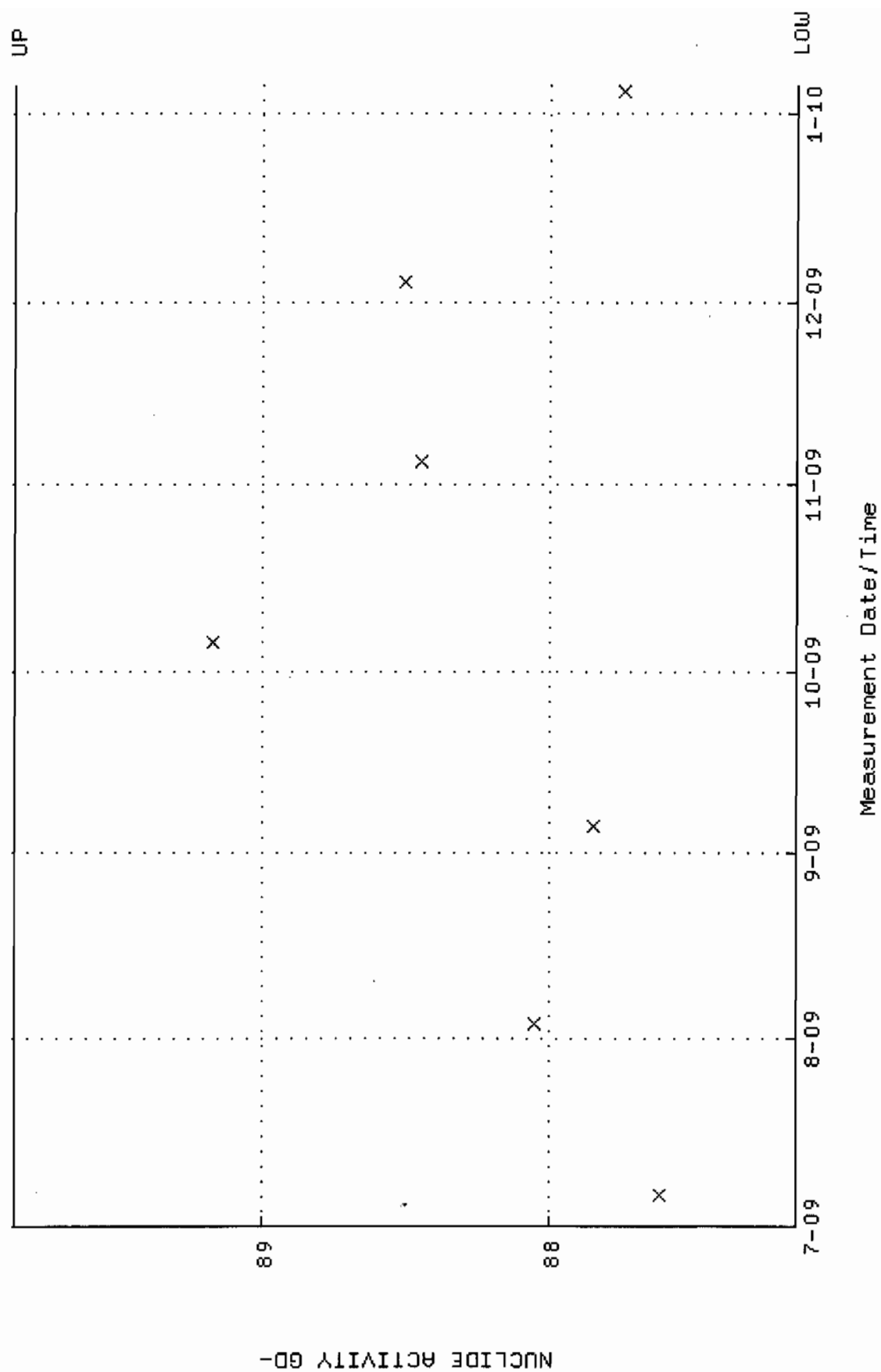
QA filename : DKA100:[ENV_ALPHA.QA.B]B046.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



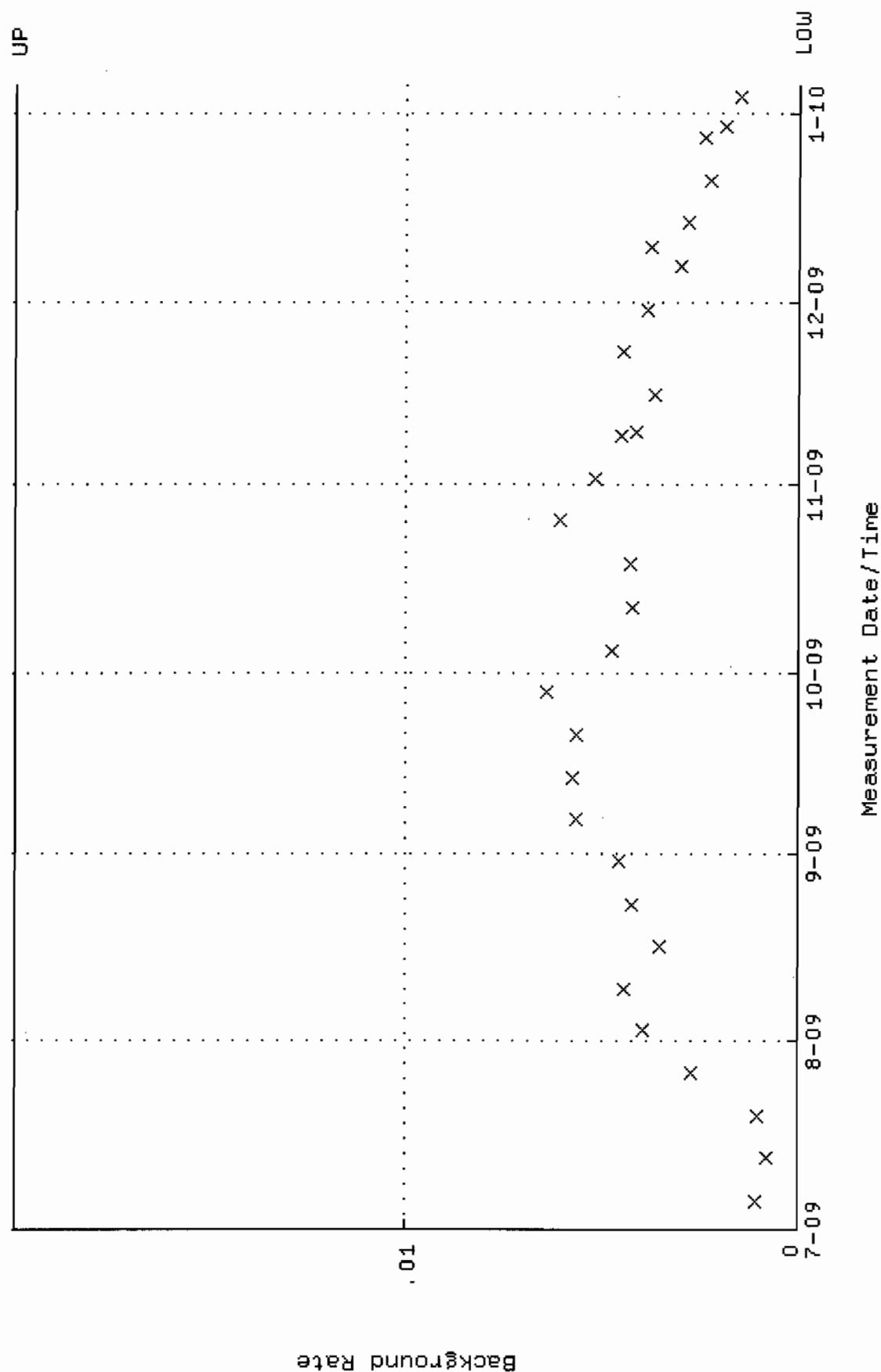
QA filename : DKA100:[ENV_ALPHA.QA.W]W047.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.336276 through 0.364038



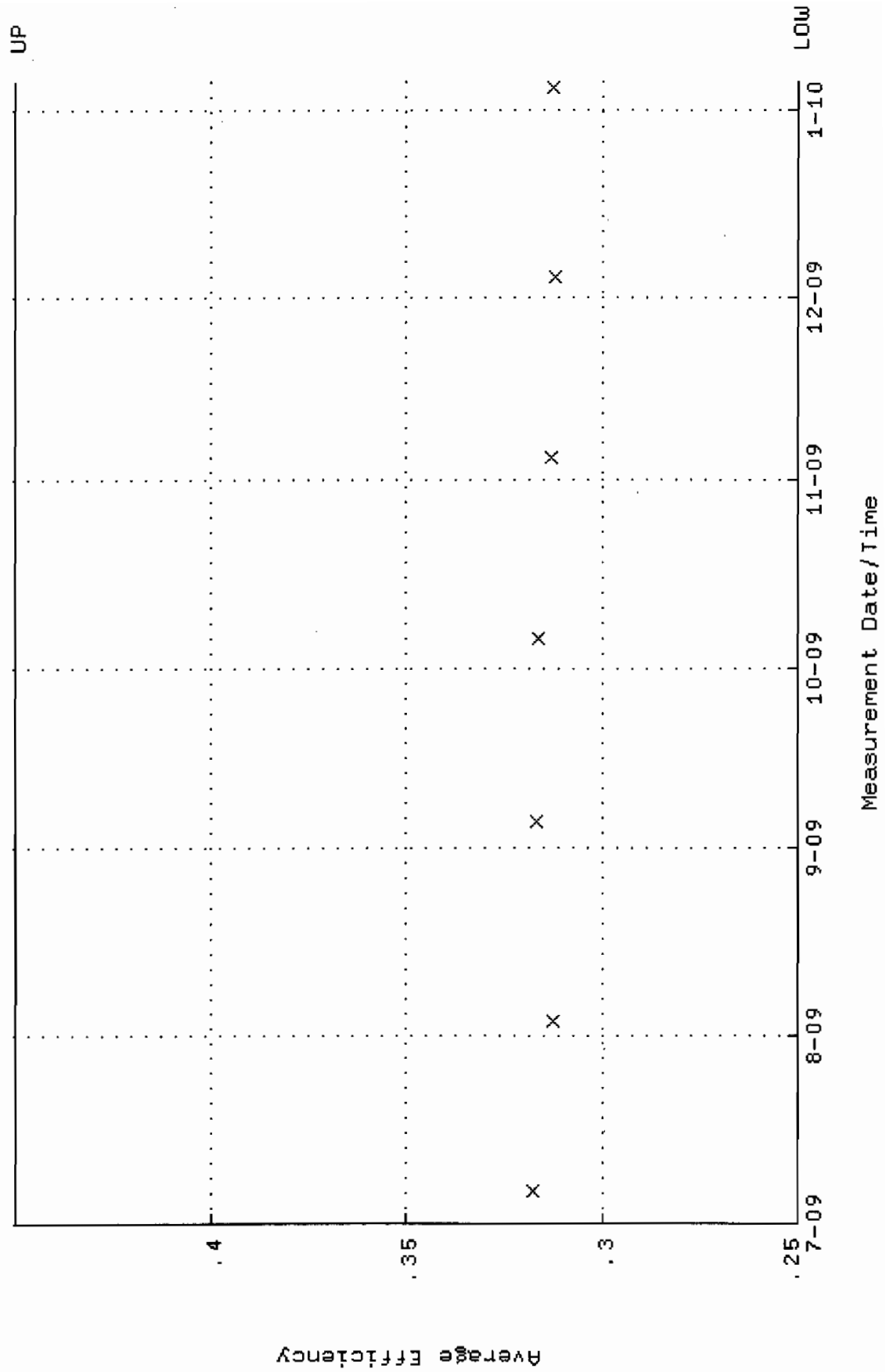
QA filename : DKA100:[ENV_ALPHA.QA.W]W047.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 87.1403 through 89.8631



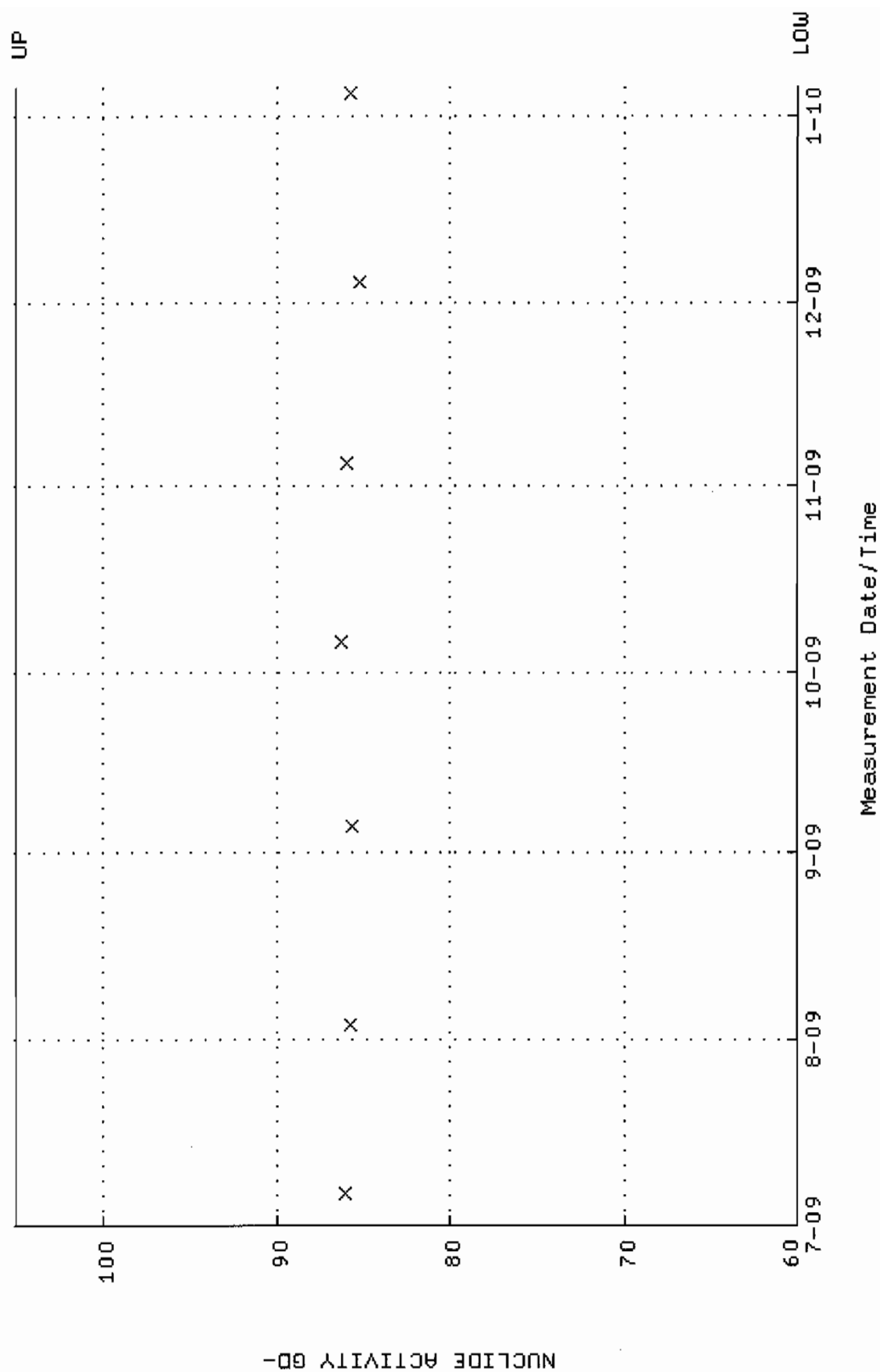
QA filename : DKA100:[ENV_ALPHA.QA.B]B047.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



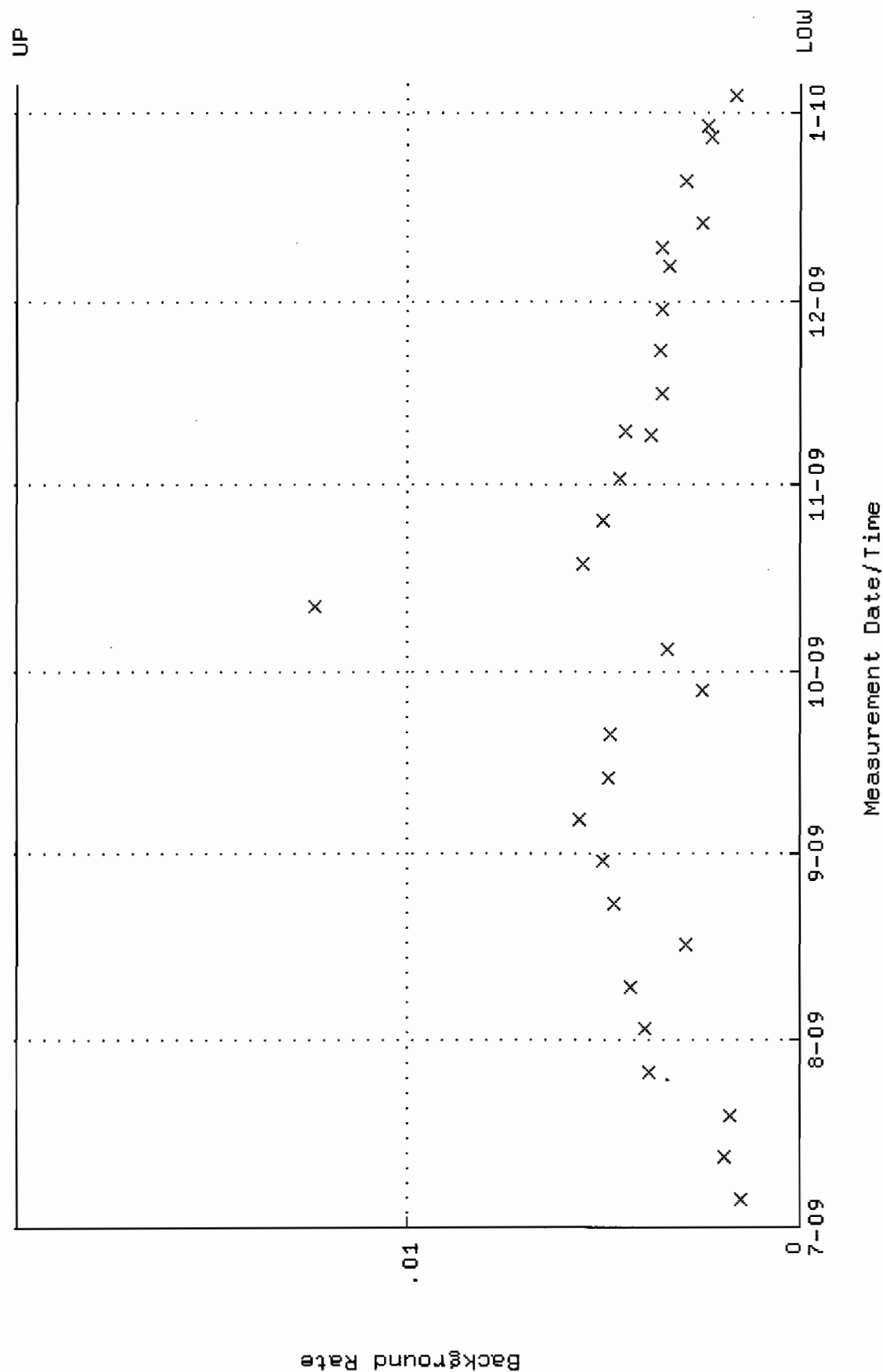
QA filename : DKA100:[ENV_ALPHA.QA.W]W048.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



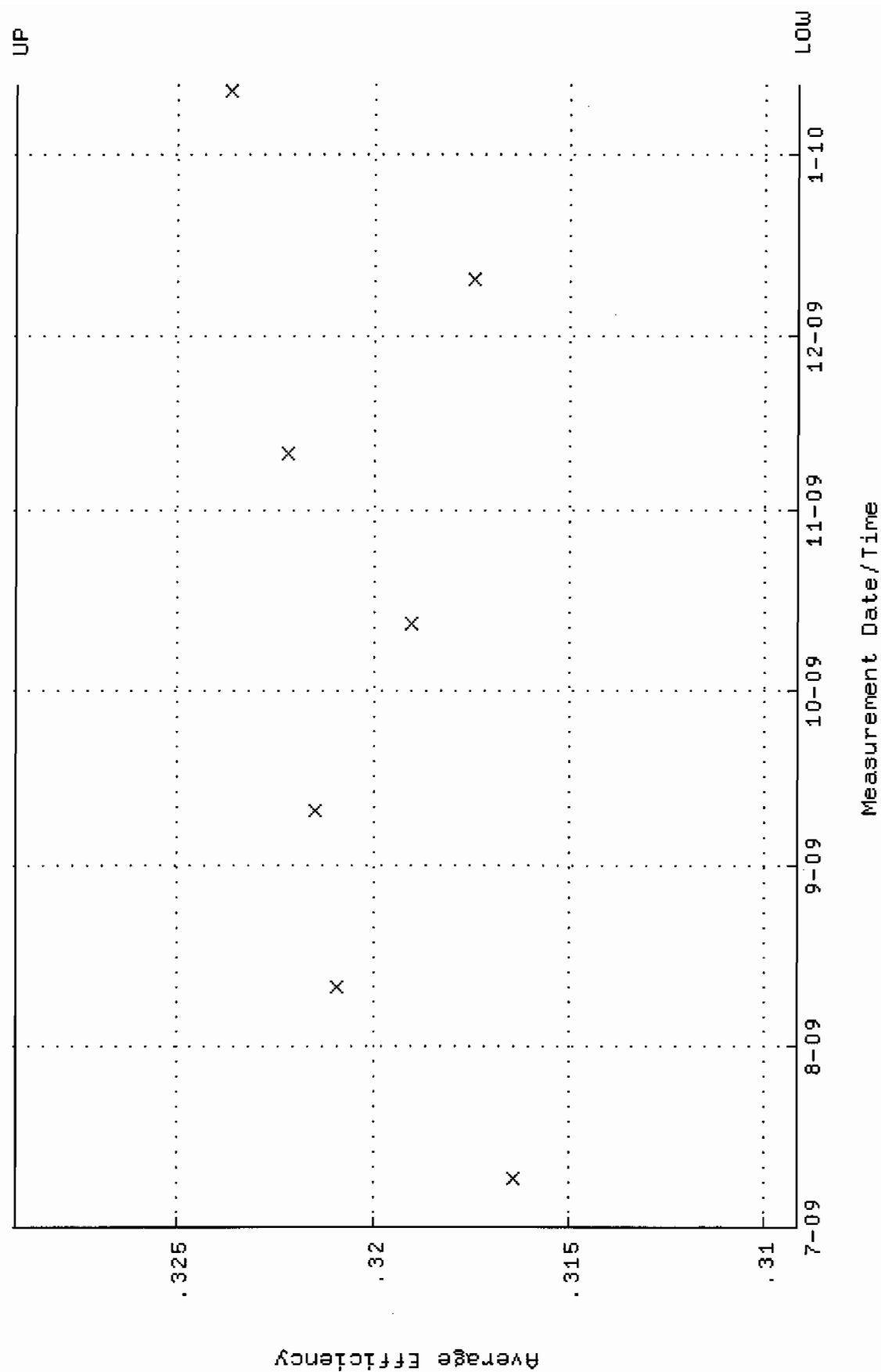
QA filename : DKA100:[ENV_ALPHA.QA.W]W048.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 6-JUL-2009 09:46:17 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000



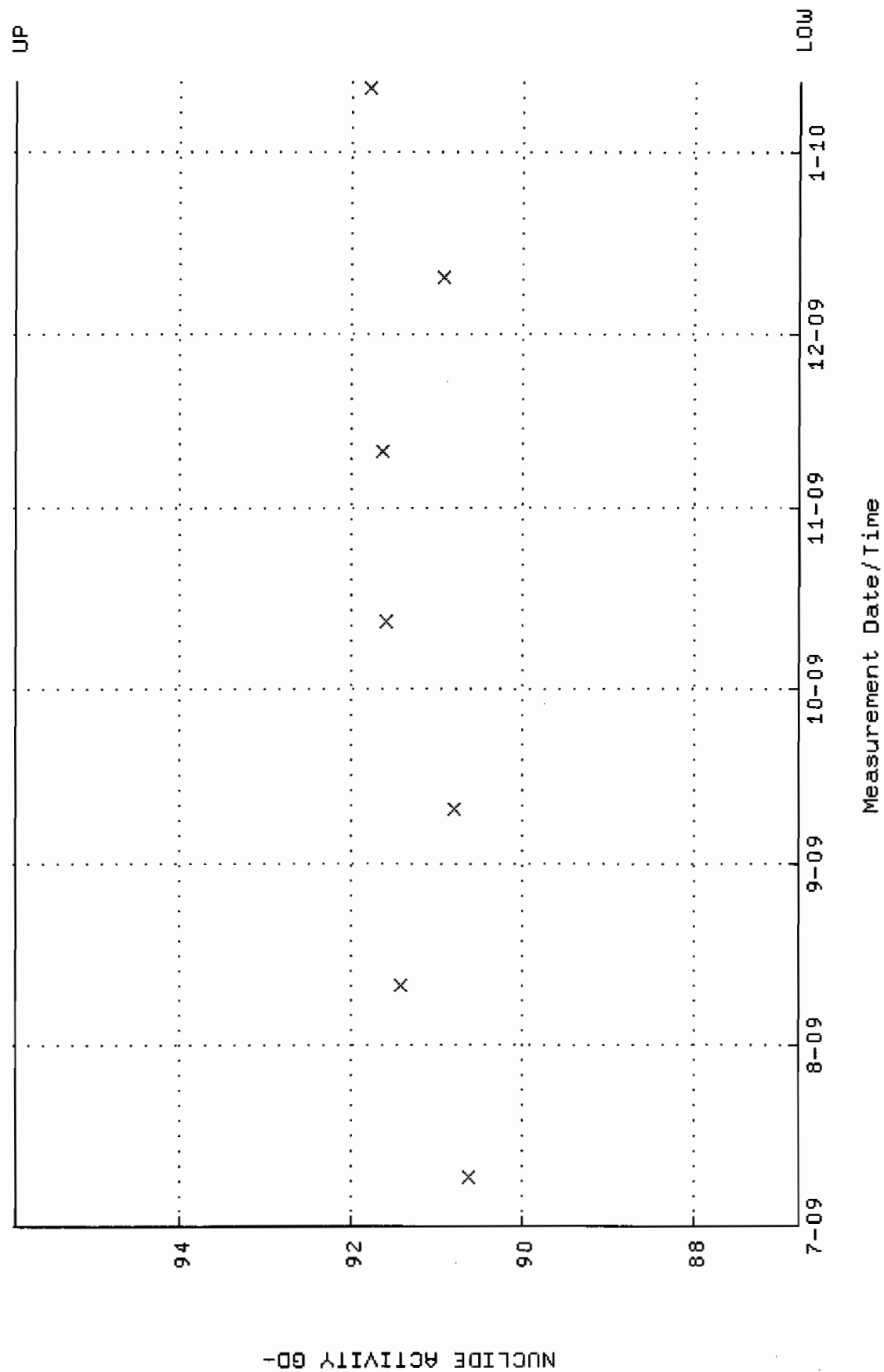
QA filename : DKA100:[ENV_ALPHA.QA.B]B048.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:00 through 5-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



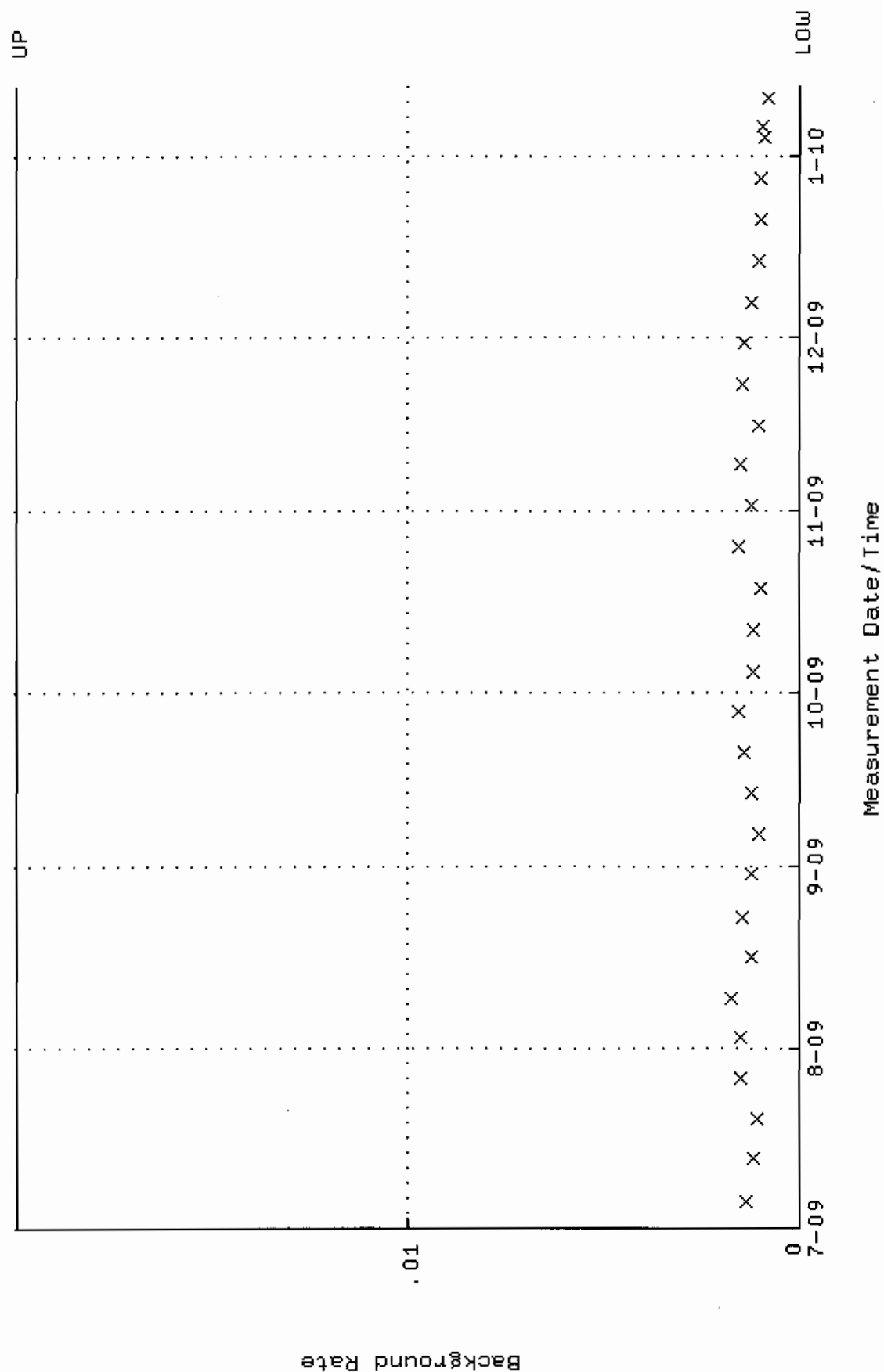
QA filename : DKA100:[ENV_ALPHA.QA.W]W071.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.309161 through 0.329161



QA filename : DKA100:[ENV_ALPHA.QA.W]W071.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 86.7769 through 95.9113



QA filename : DKA100:[ENV_ALPHA.QA.B]B071.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

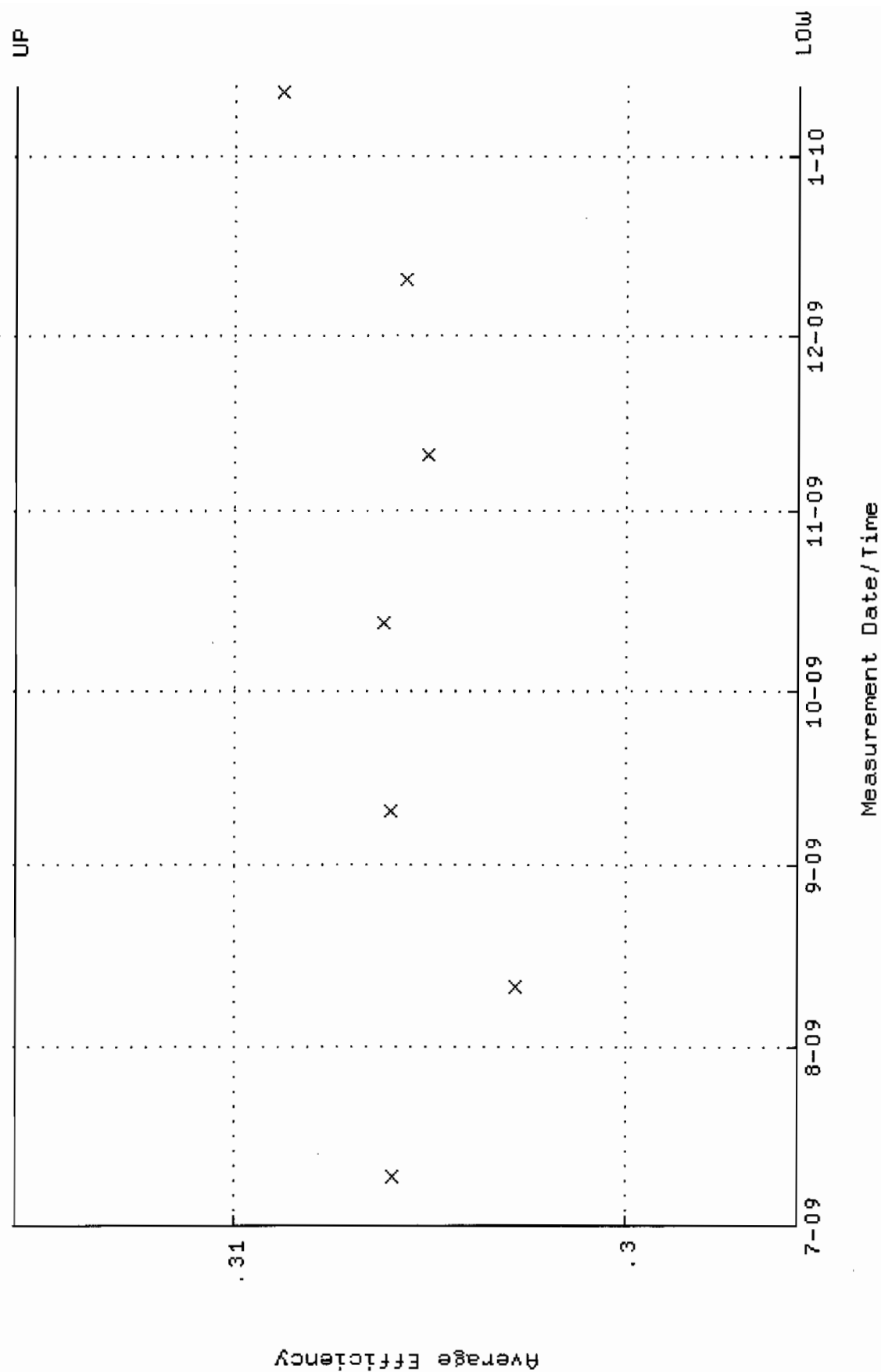


QA filename : DKA100:[ENV_ALPHA.QA.W]W076.QAF;2

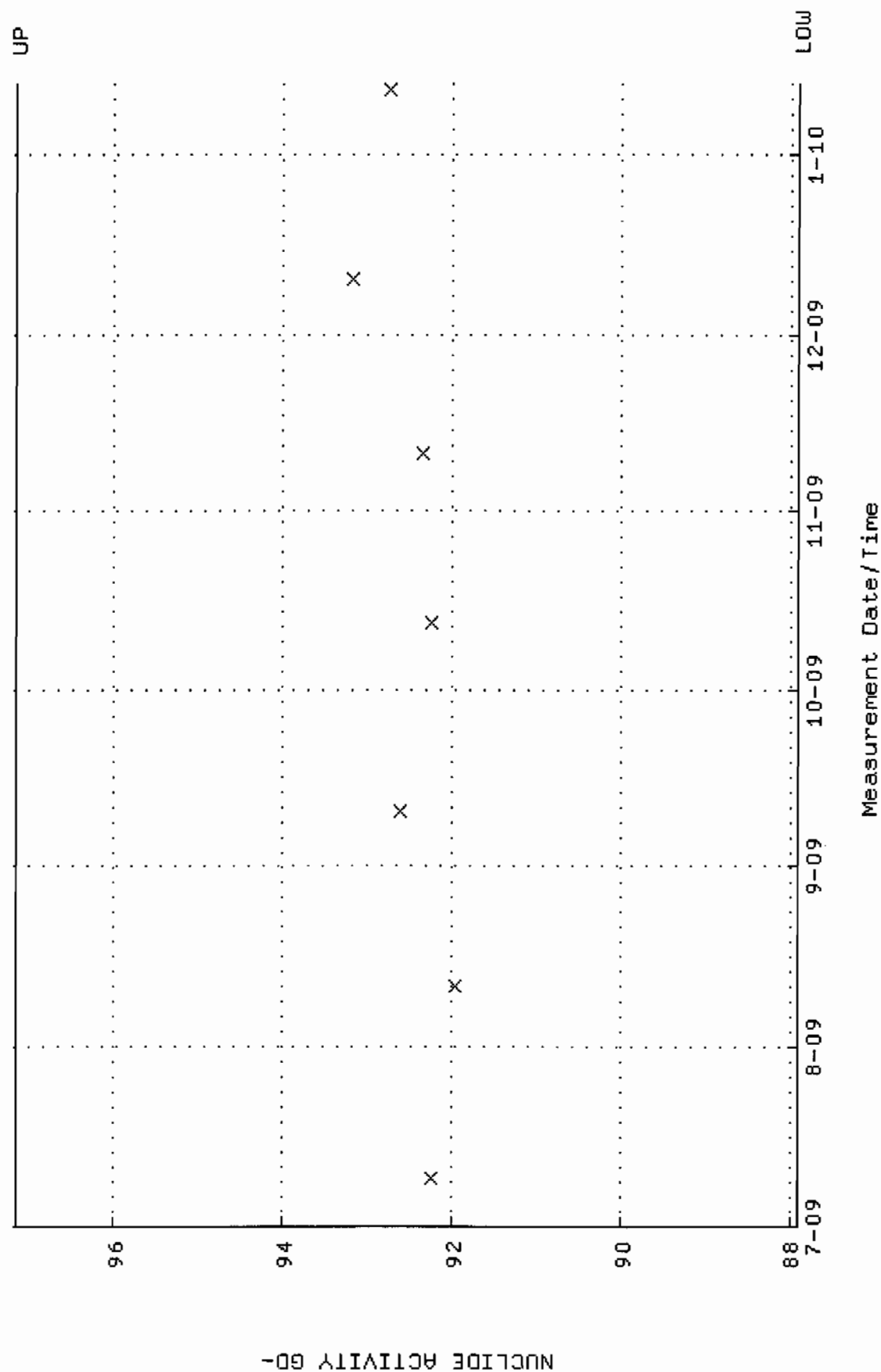
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00

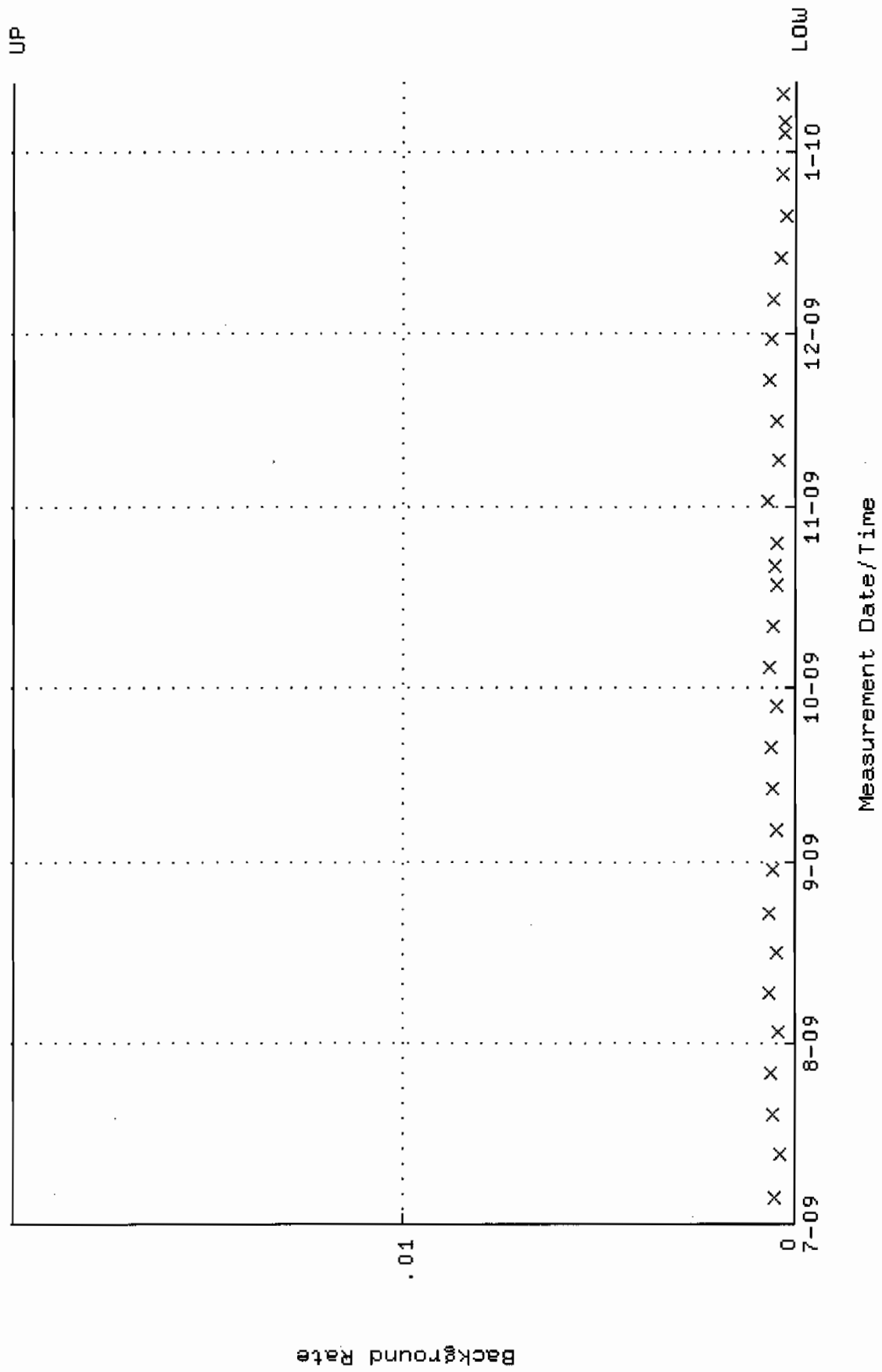
Lower/Upper Lmts: 0.295613 through 0.315613



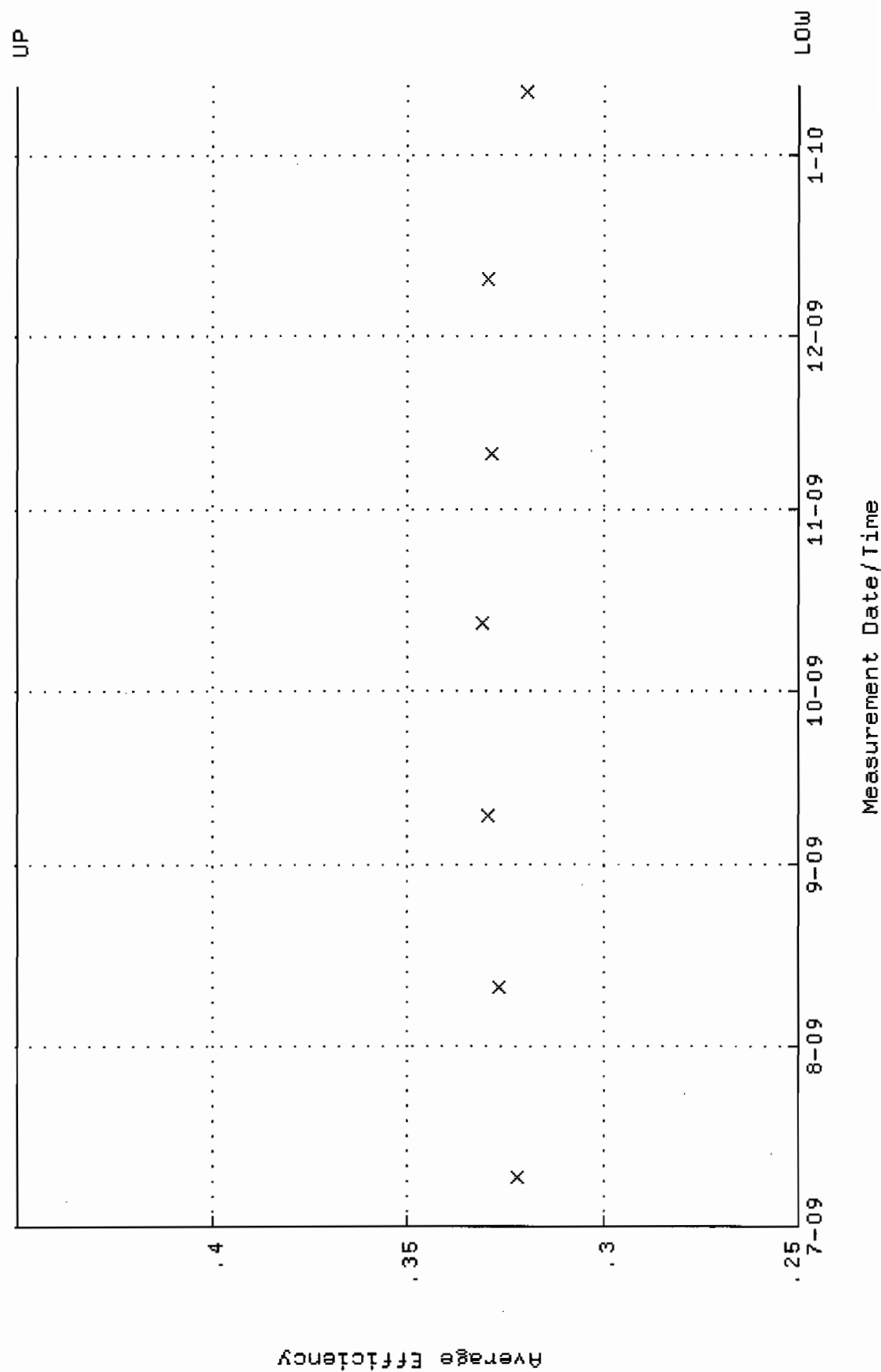
QA filename : DKA100:[ENV_ALPHA.QA.W]W076.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 87.9031 through 97.1561



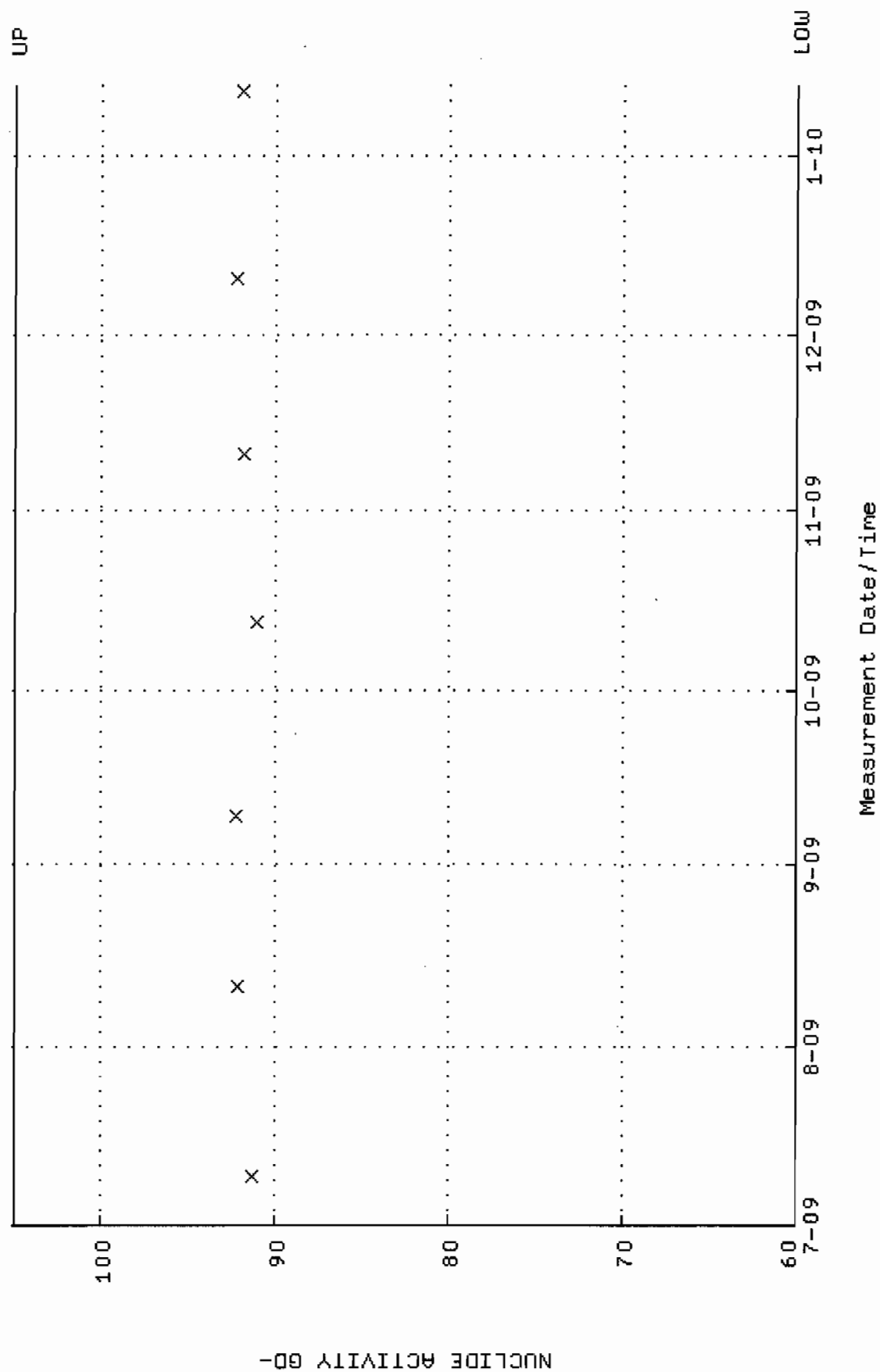
QA filename : DKA100:[ENV_ALPHA.QA.B]B076.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:02 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



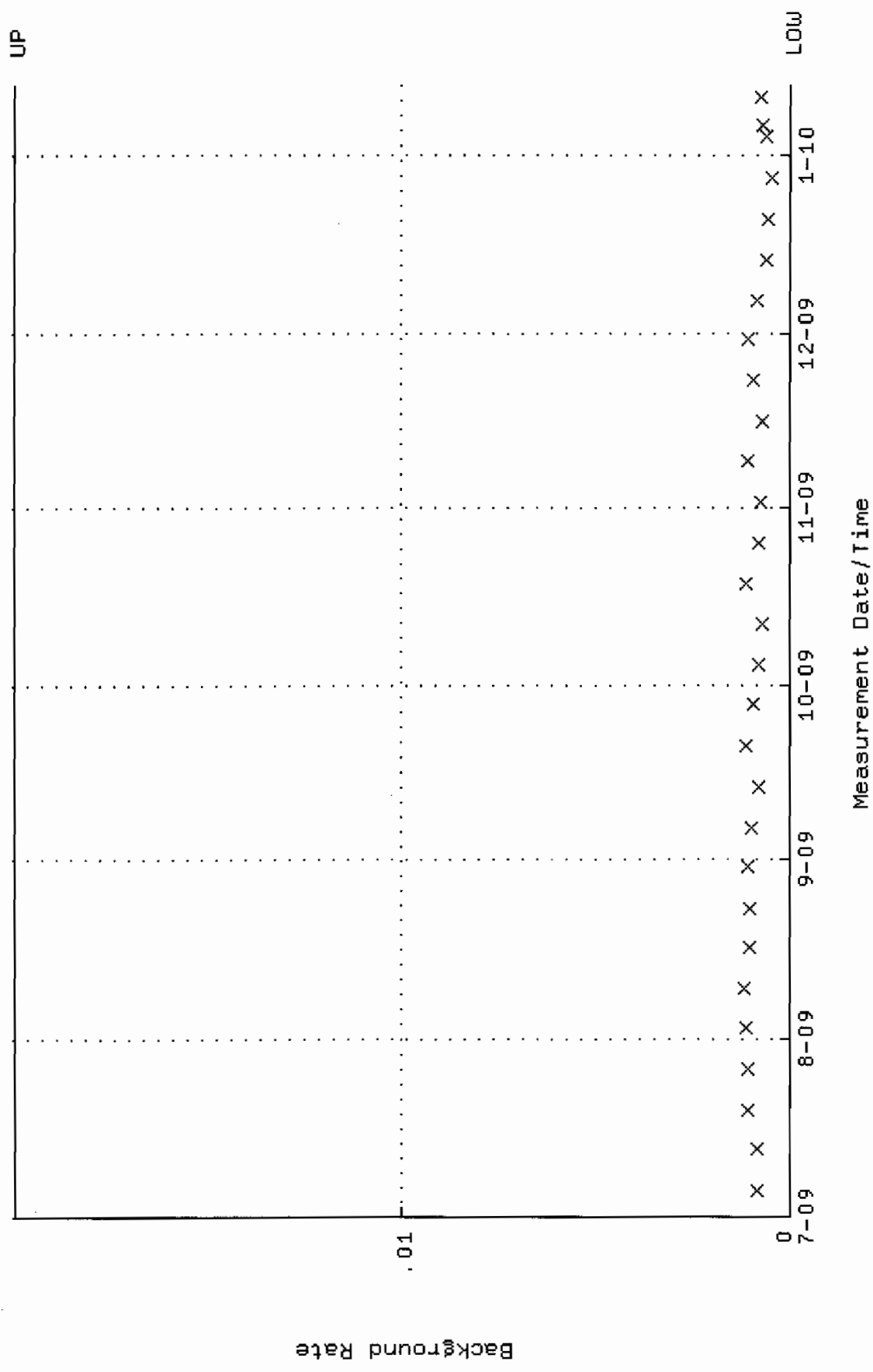
QA filename : DKA100:[ENV_ALPHA.QA.w]W077.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



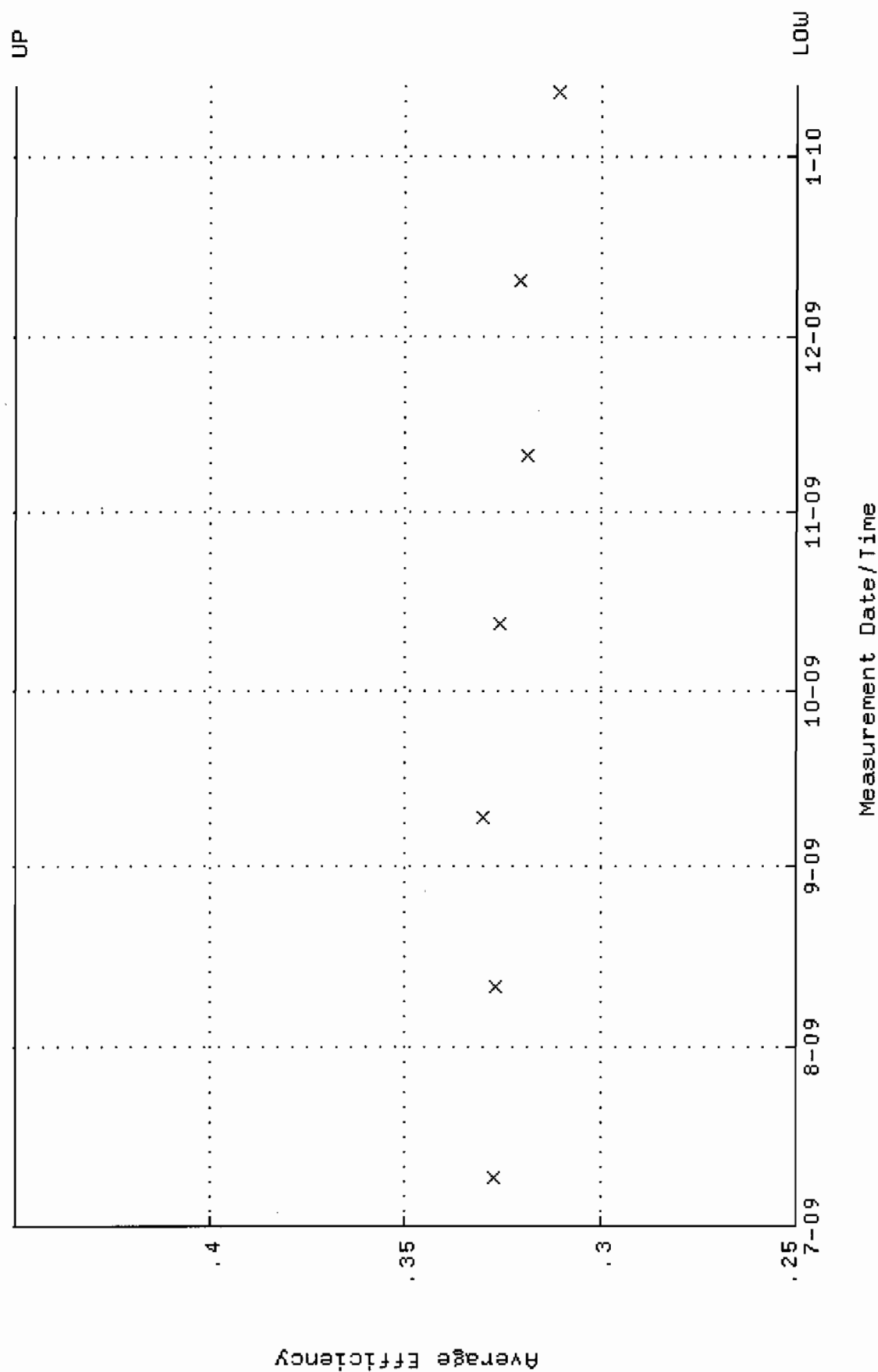
QA filename : DKA100:[ENV_ALPHA.QA.W]W077.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000



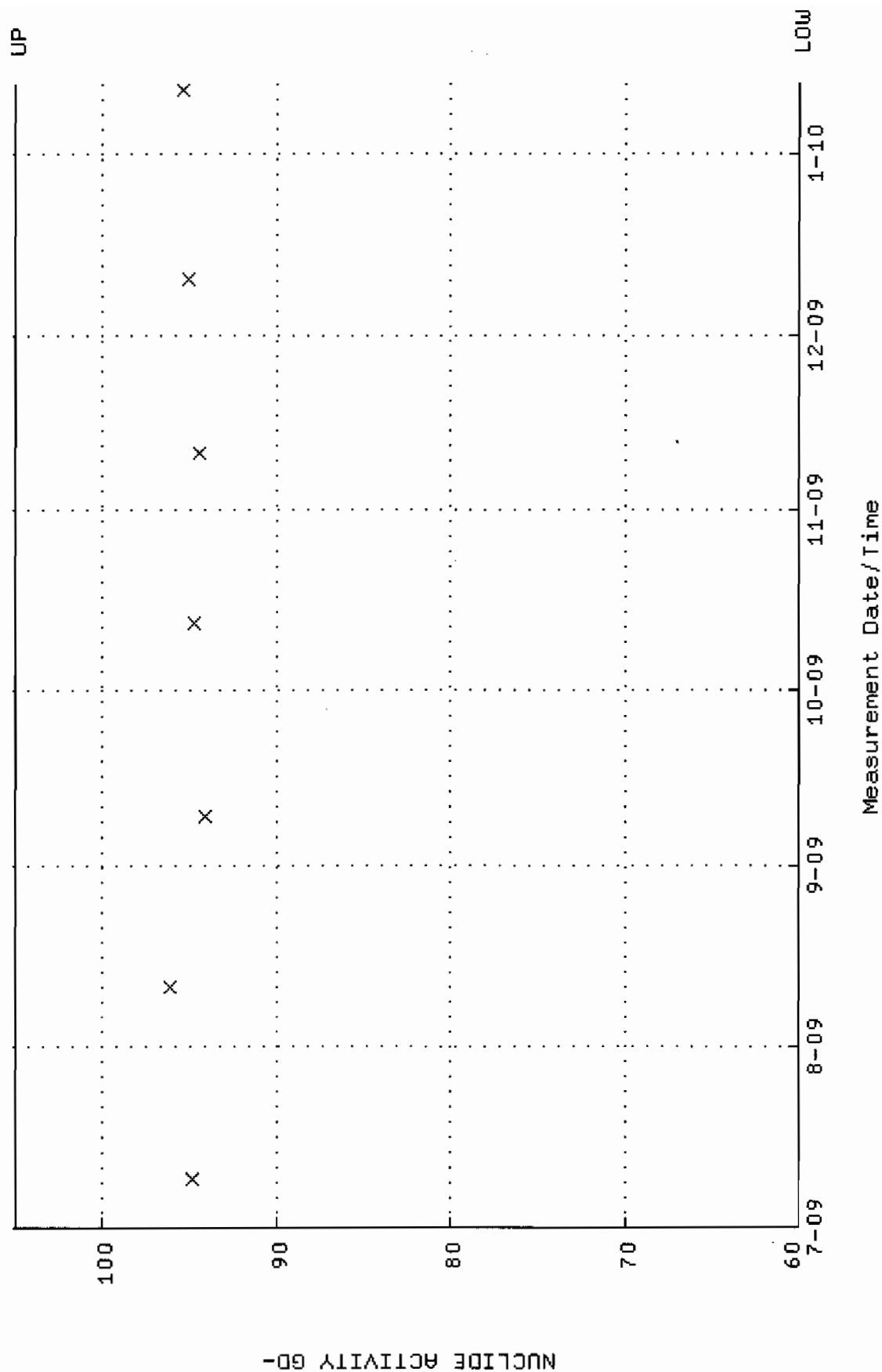
QA filename : DKA100:[ENV_ALPHA.QA.B]B077.QAF;3
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:03 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



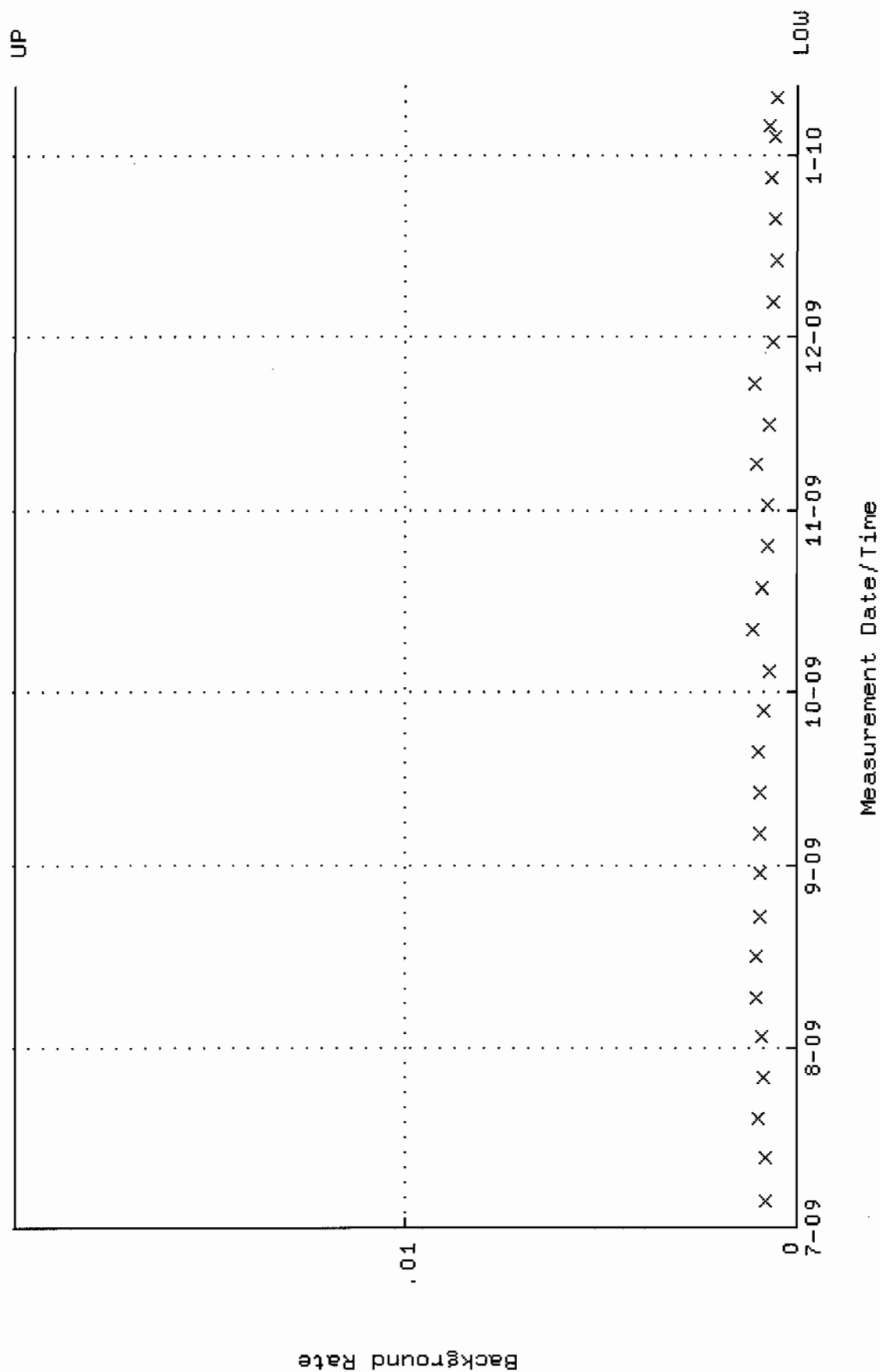
QA filename : DKA100:[ENV_ALPHA.QA.W]W078.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



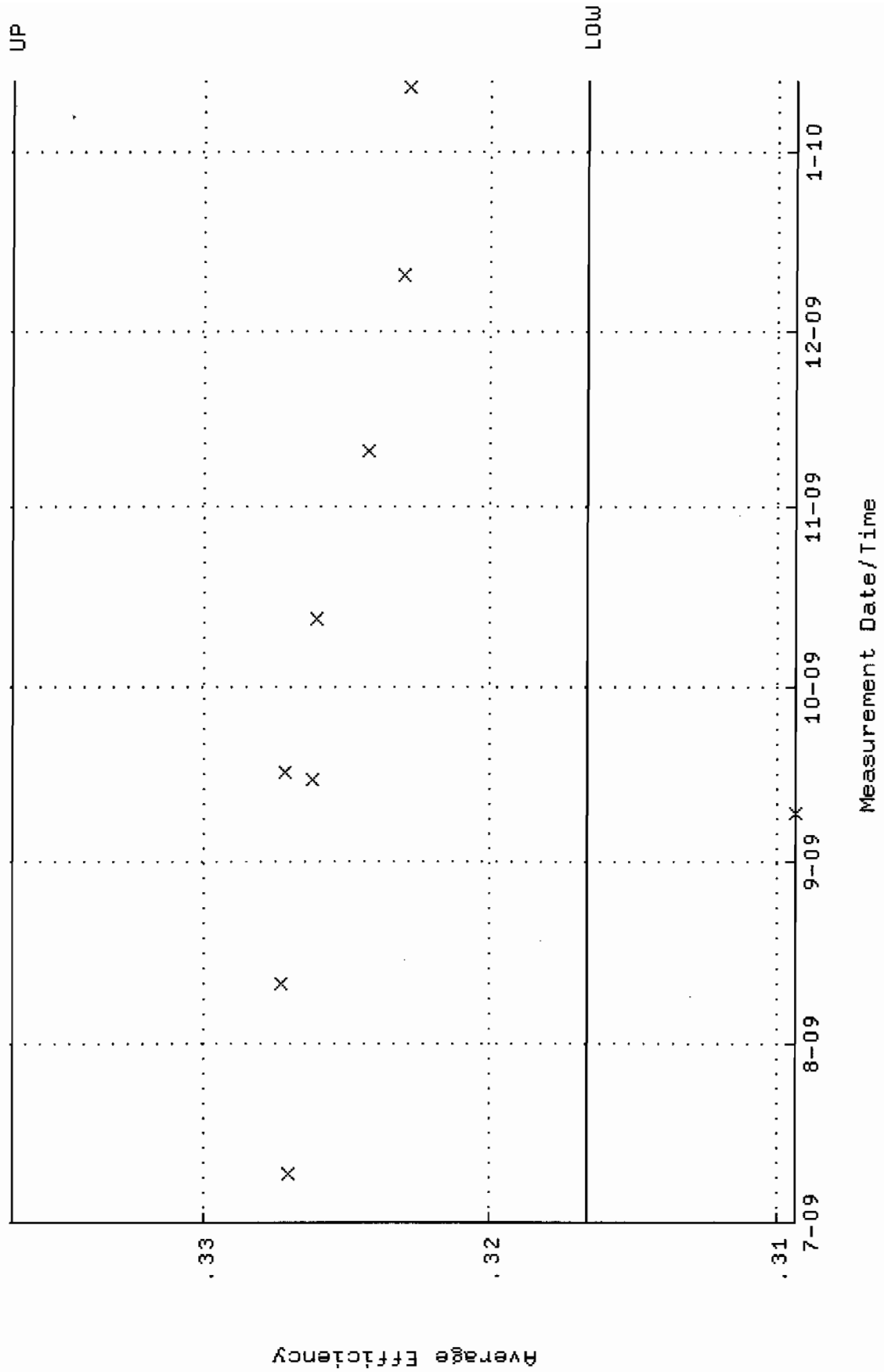
QA filename : DKA100:[ENV_ALPHA.QA.W]W078.QAF;6
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



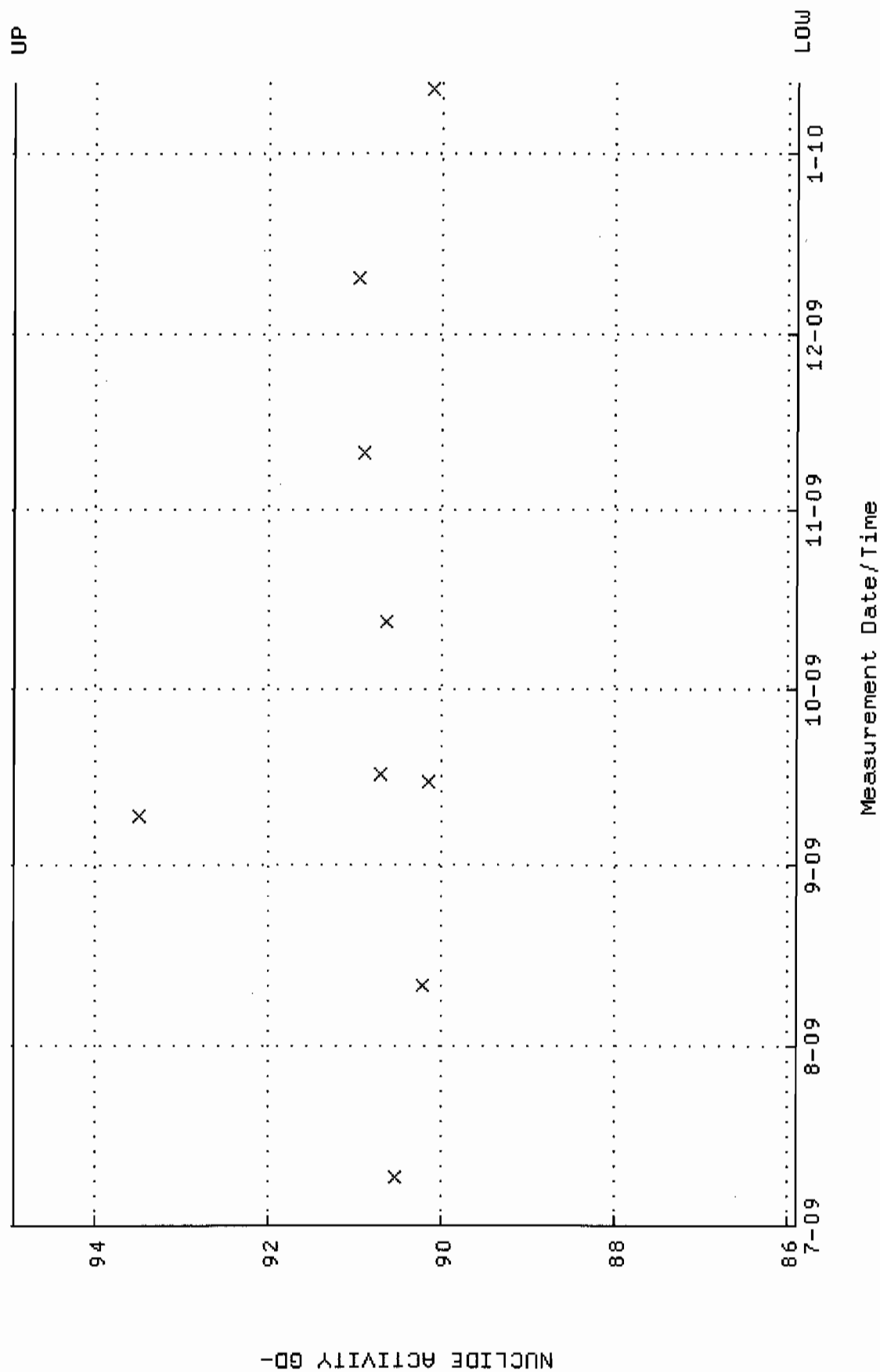
QA filename : DKA100:[ENV_ALPHA.QA.B]B078.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:03 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



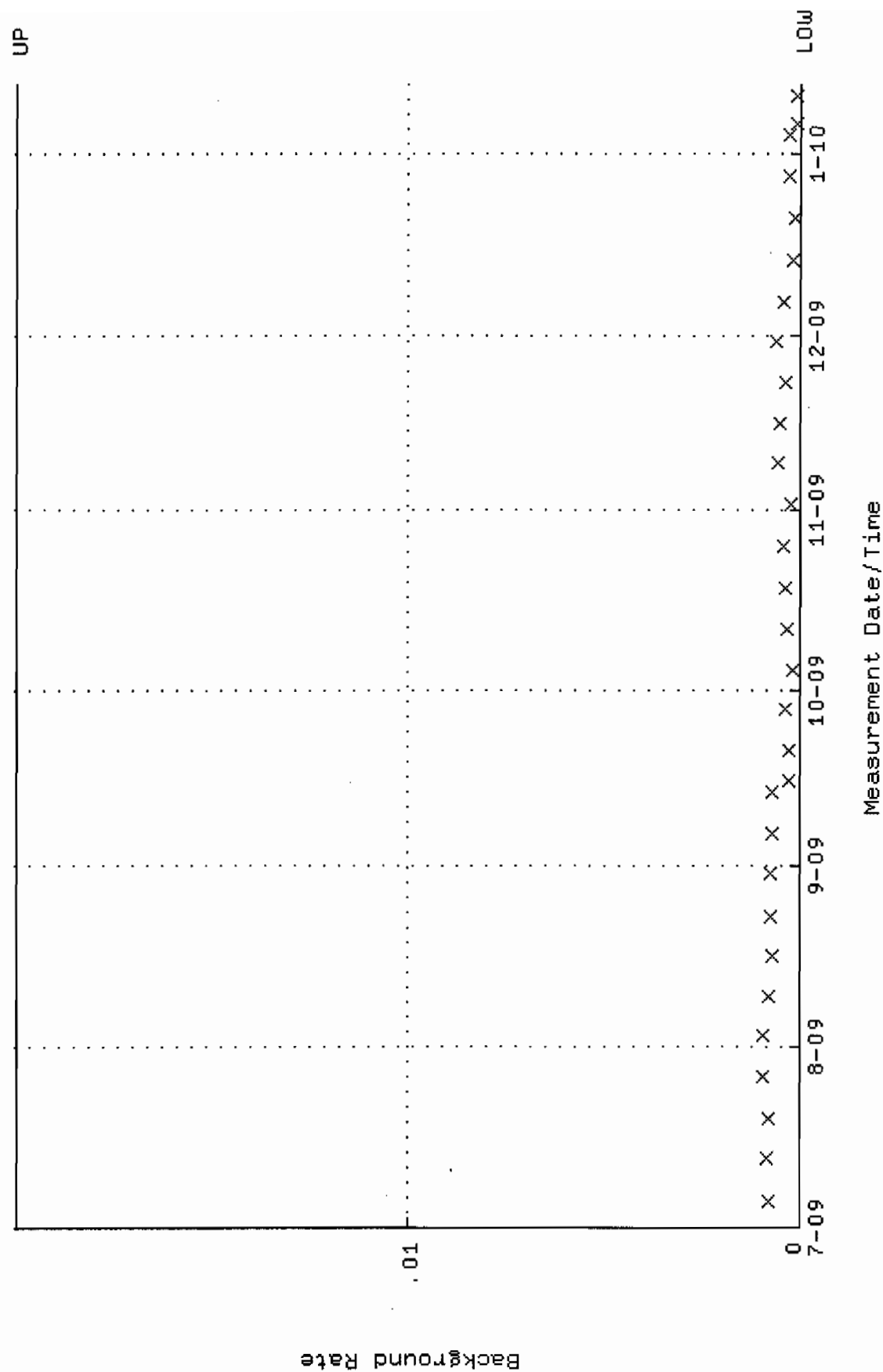
QA filename : DKA100:[ENV_ALPHA.QA.W]W079.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.316654 through 0.336654



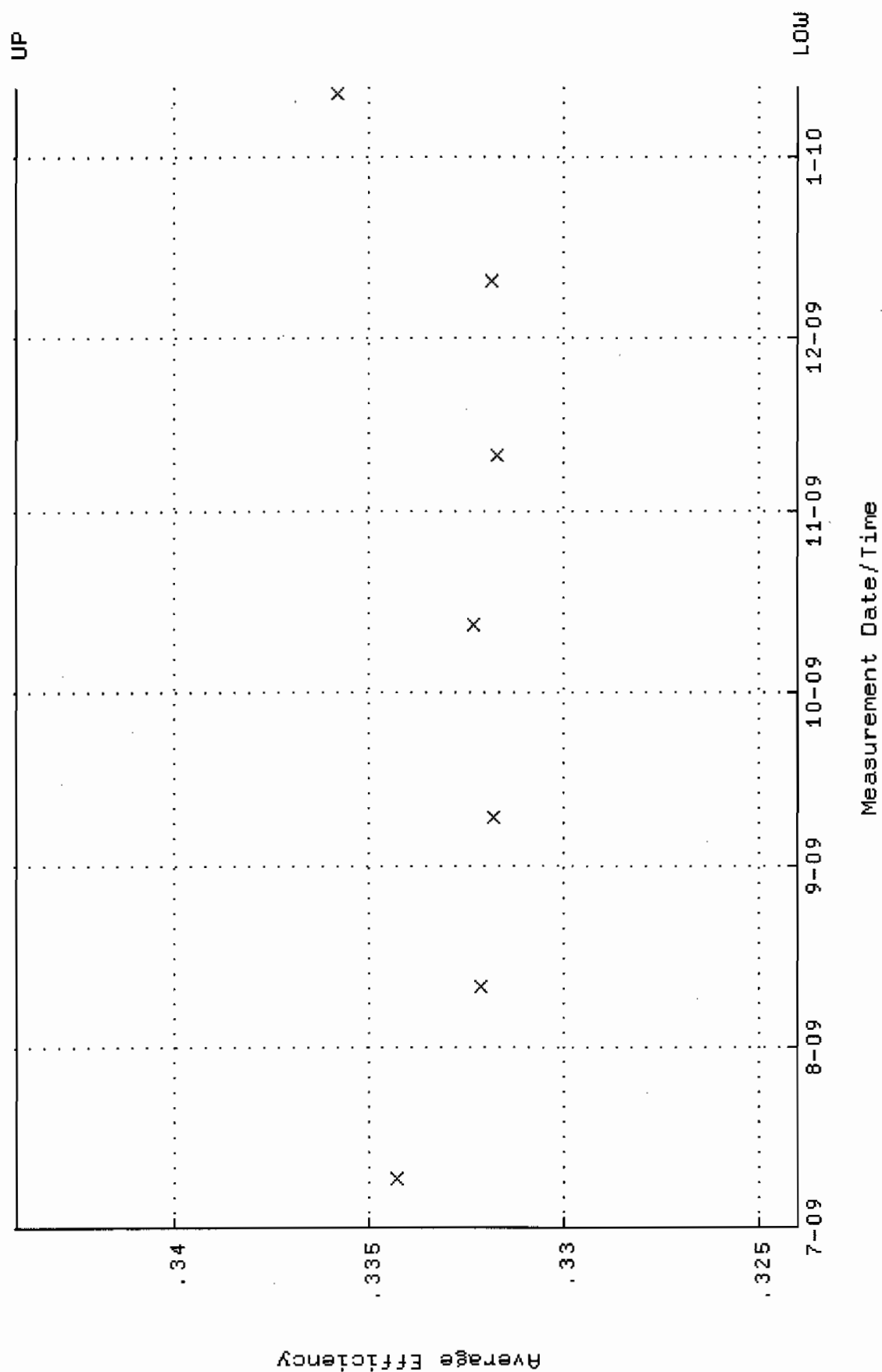
QA filename : DKA100:[ENV_ALPHA.QA.W]W079.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 85.8913 through 94.9325



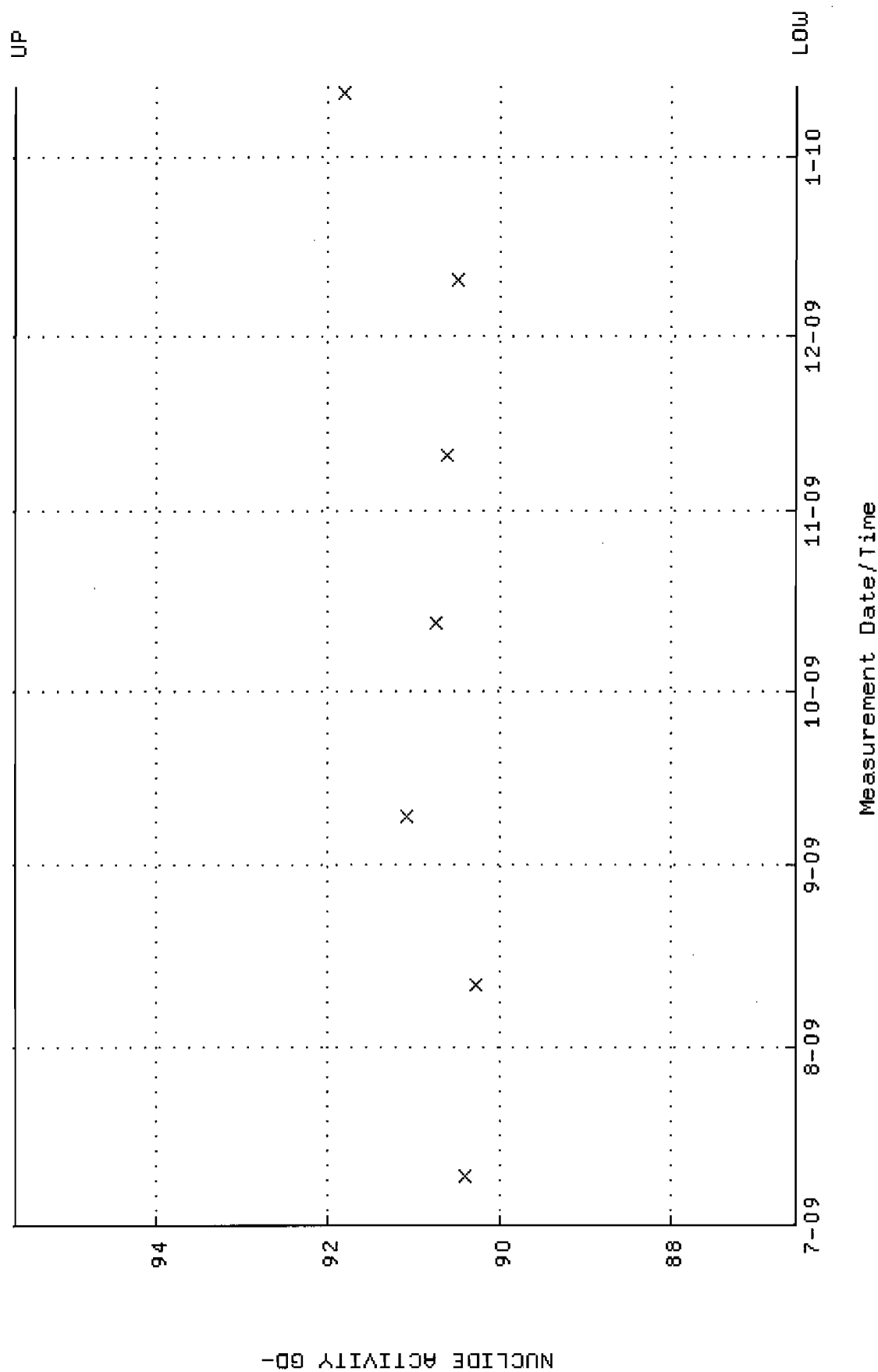
QA filename : DKA100:[ENVY_ALPHA.QA.B]B079.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:03 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.w]W080.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.324032 through 0.344032



QA filename : DKA100:[ENV-ALPHA.QA.W]W080.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:11 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 86.5393 through 95.6487

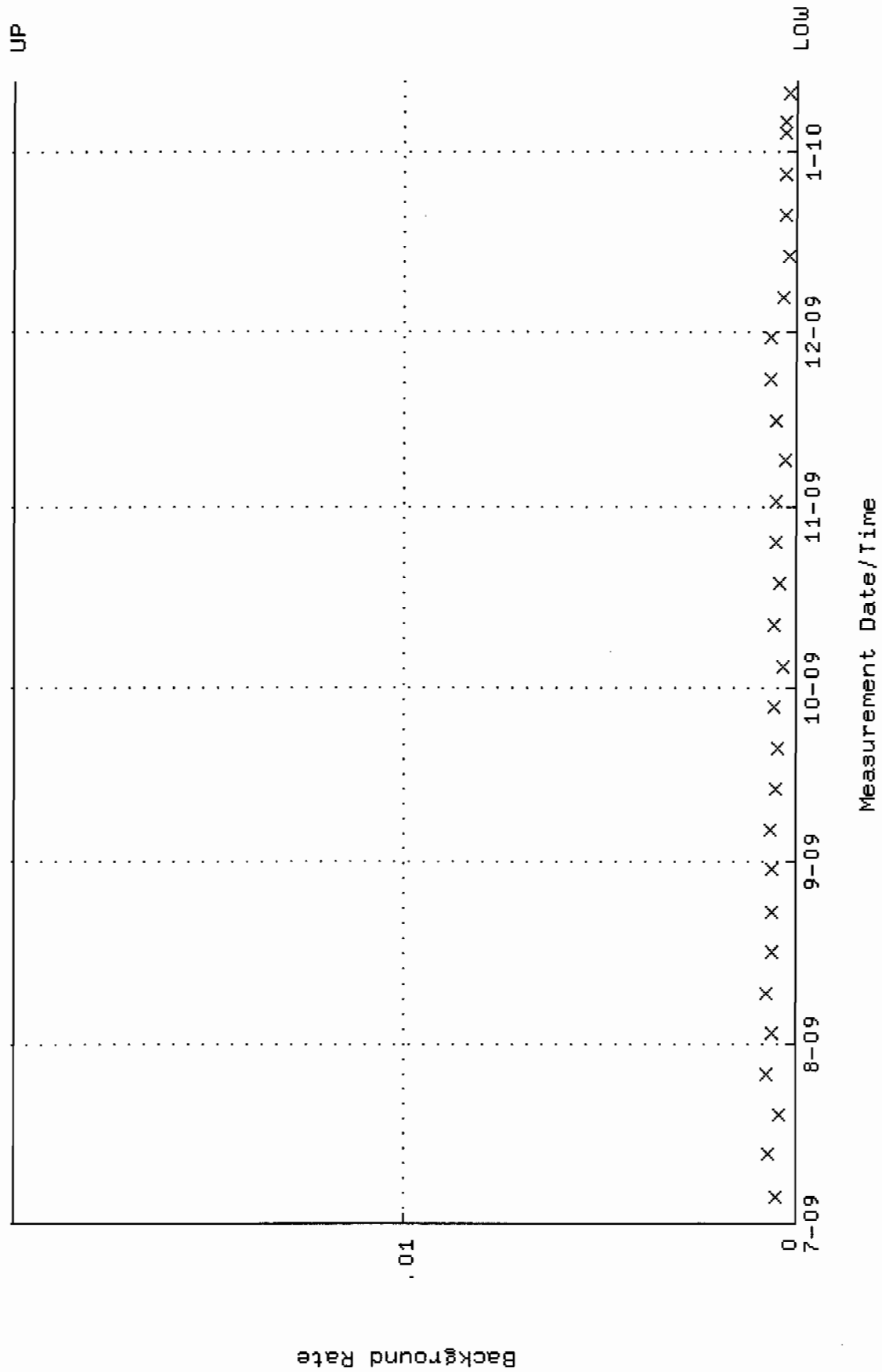


QA filename : DKA100:[ENV_ALPHA.QA.B]B080.QAF;2

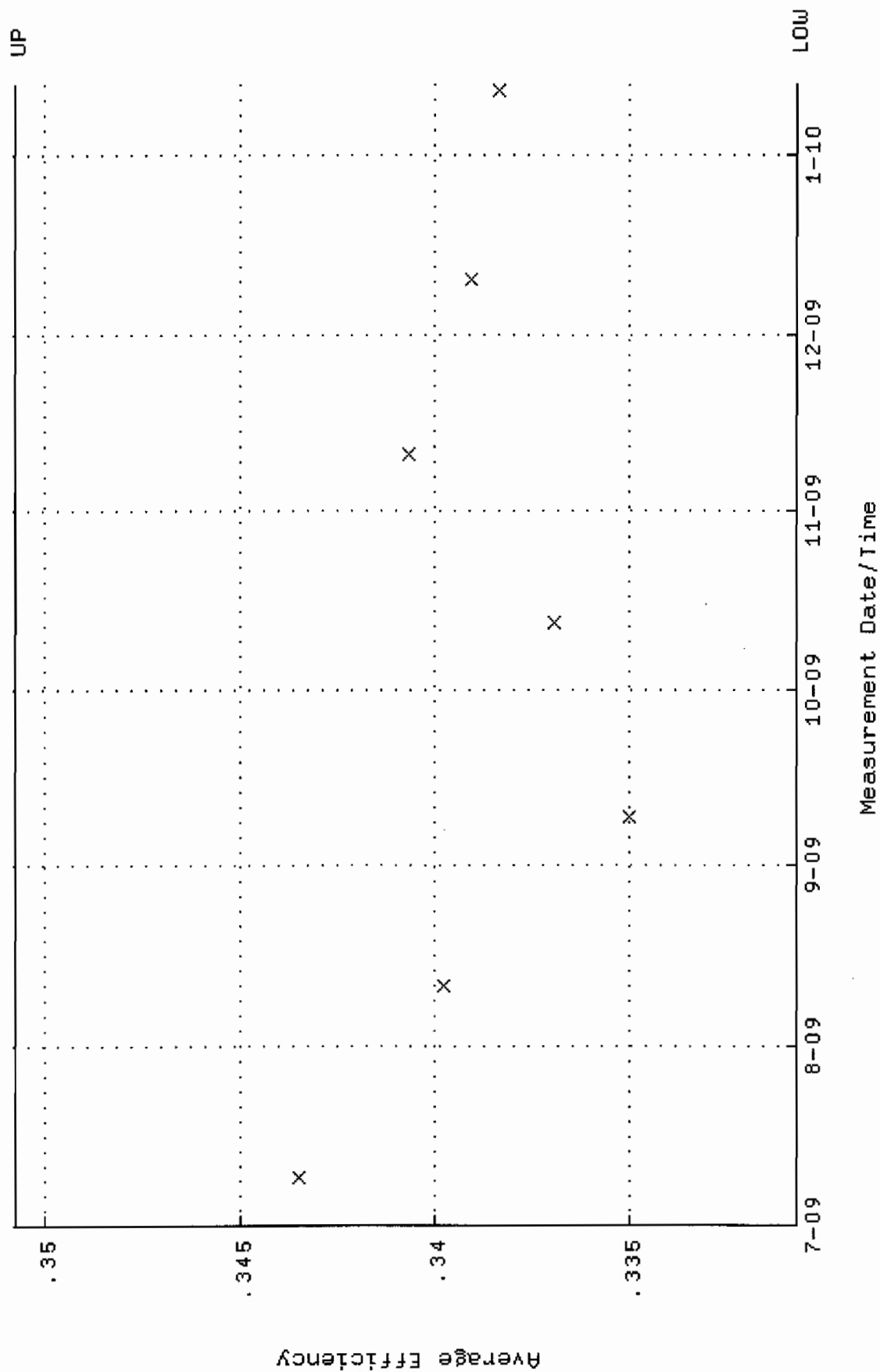
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 5-JUL-2009 15:12:03 through 12-JAN-2010 12:00:00

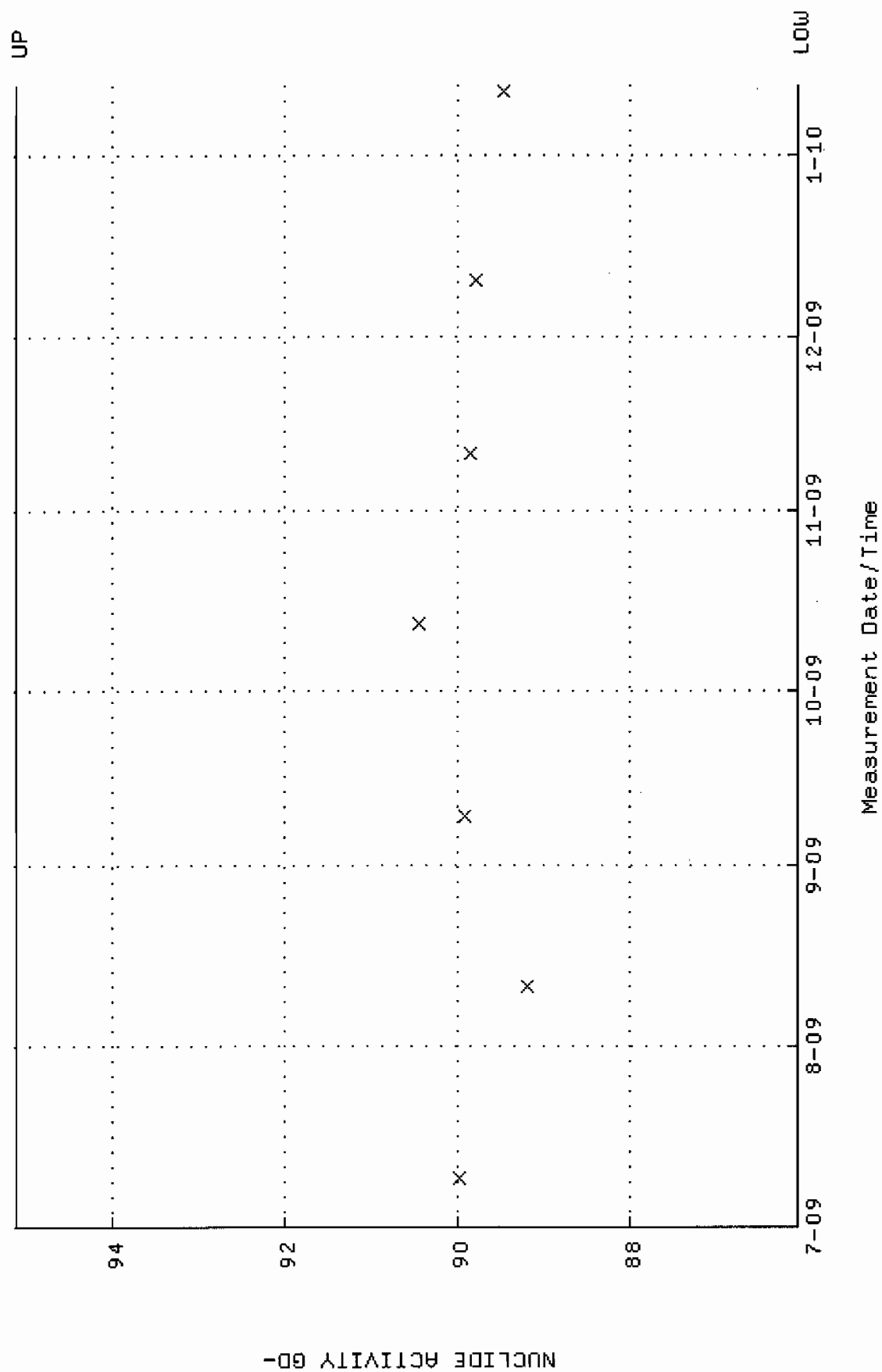
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W084.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: 0.330740 through 0.350740



QA filename : DKA100:[ENVY_ALPHA.QA.W]W084.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: 86.0569 through 95.1155

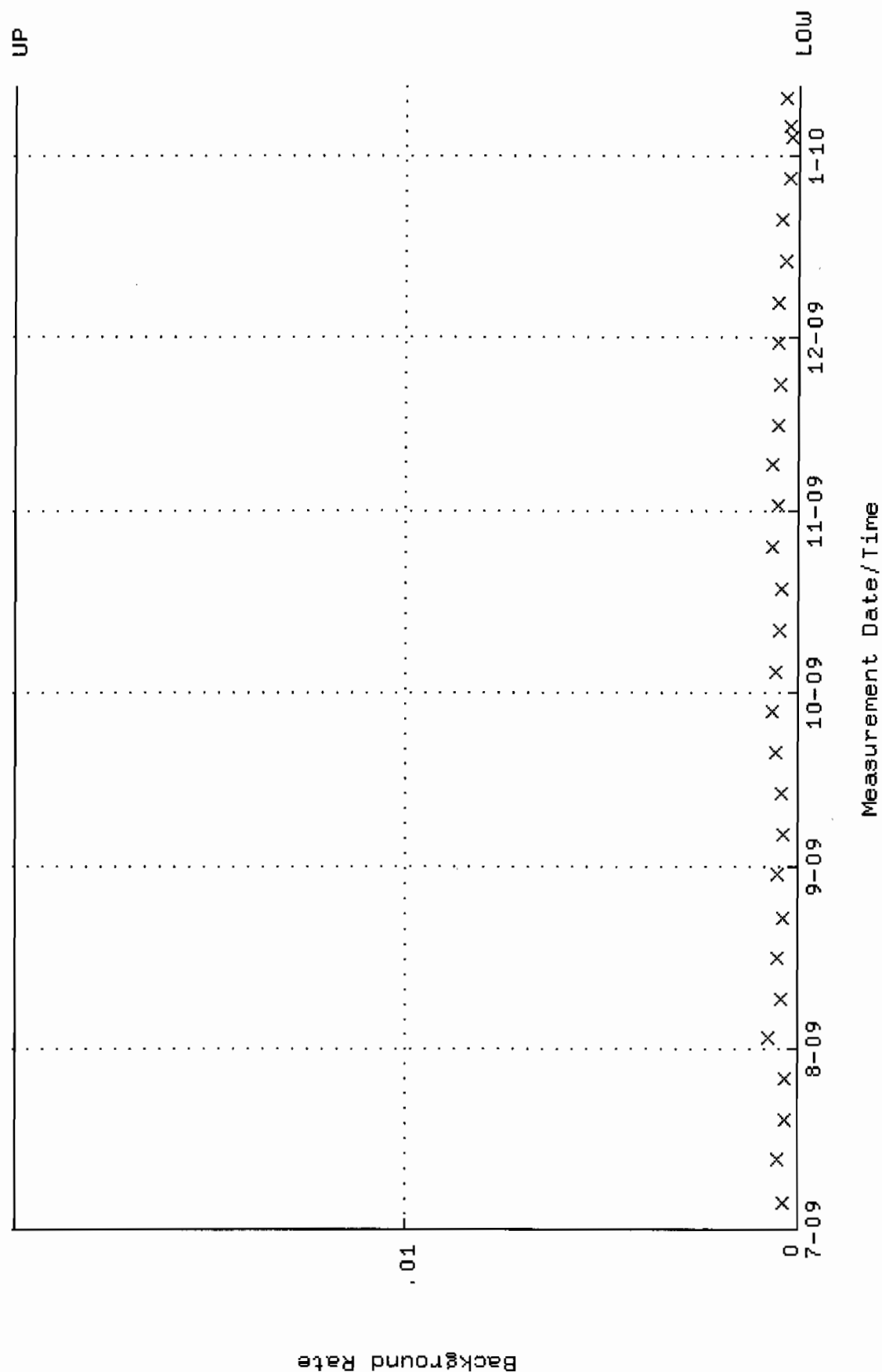


QA filename : DKA100:[ENV_ALPHA.QA.B]B084.QAF;2

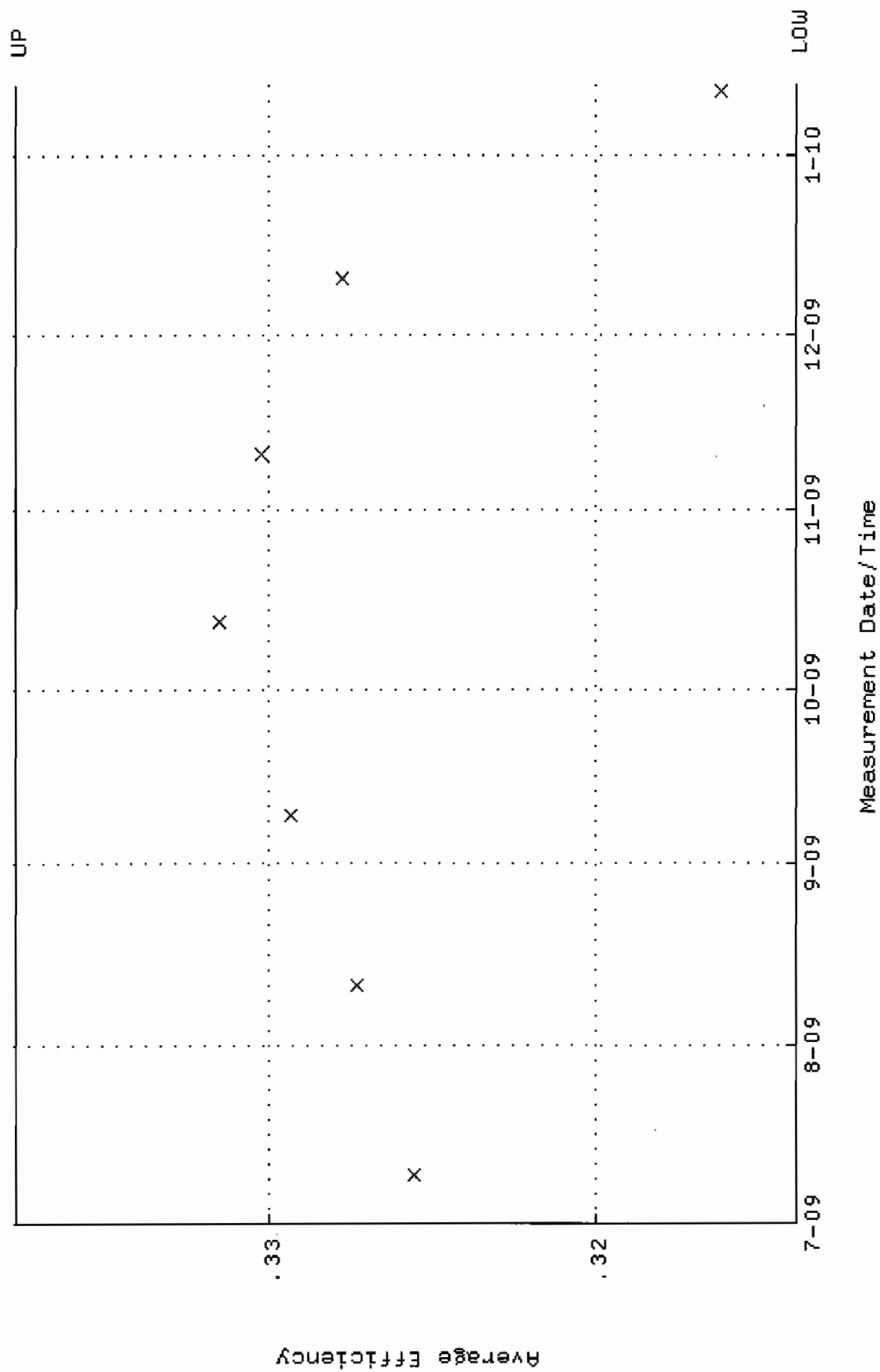
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 5-JUL-2009 15:12:04 through 12-JAN-2010 12:00:00

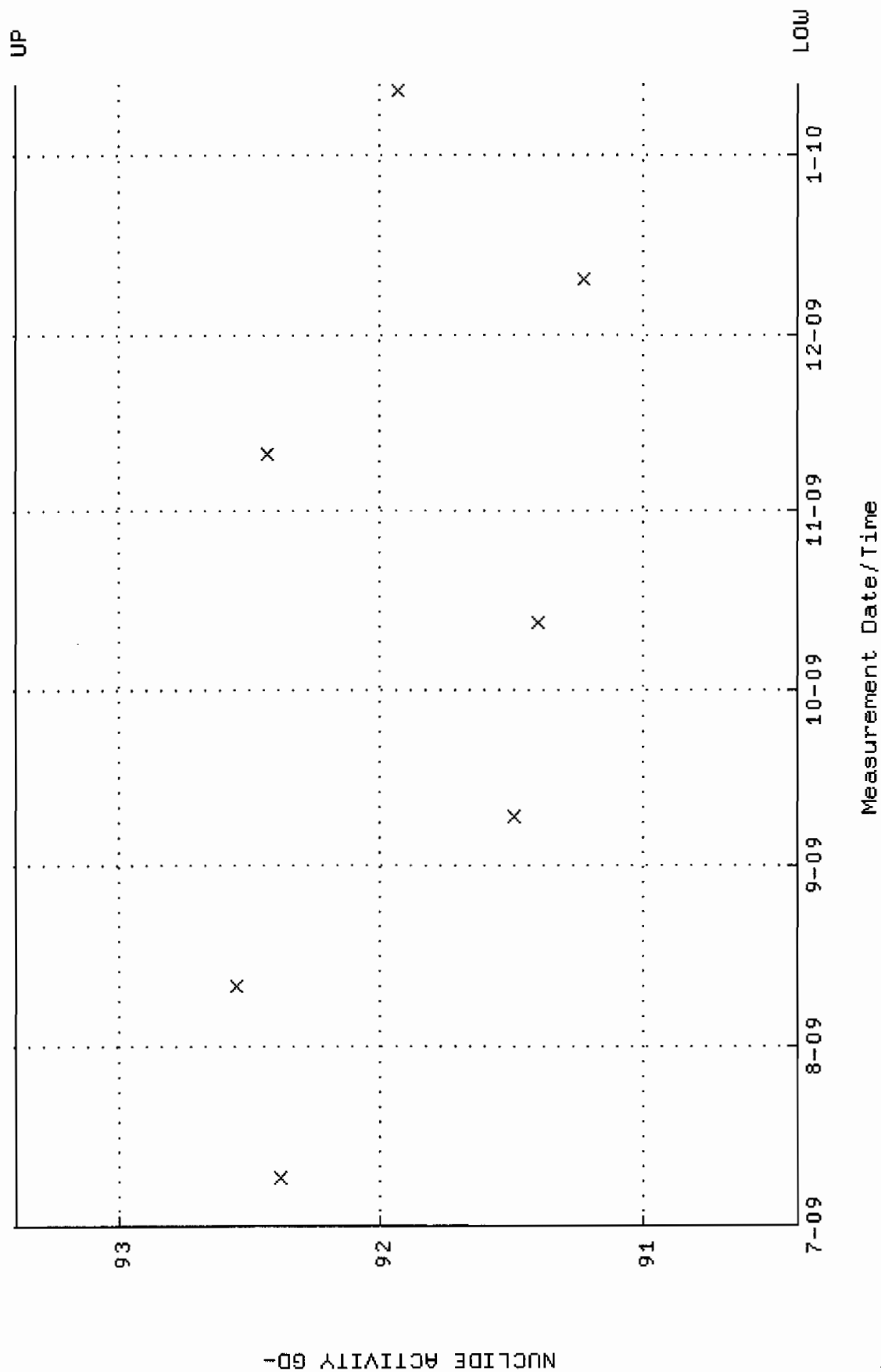
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



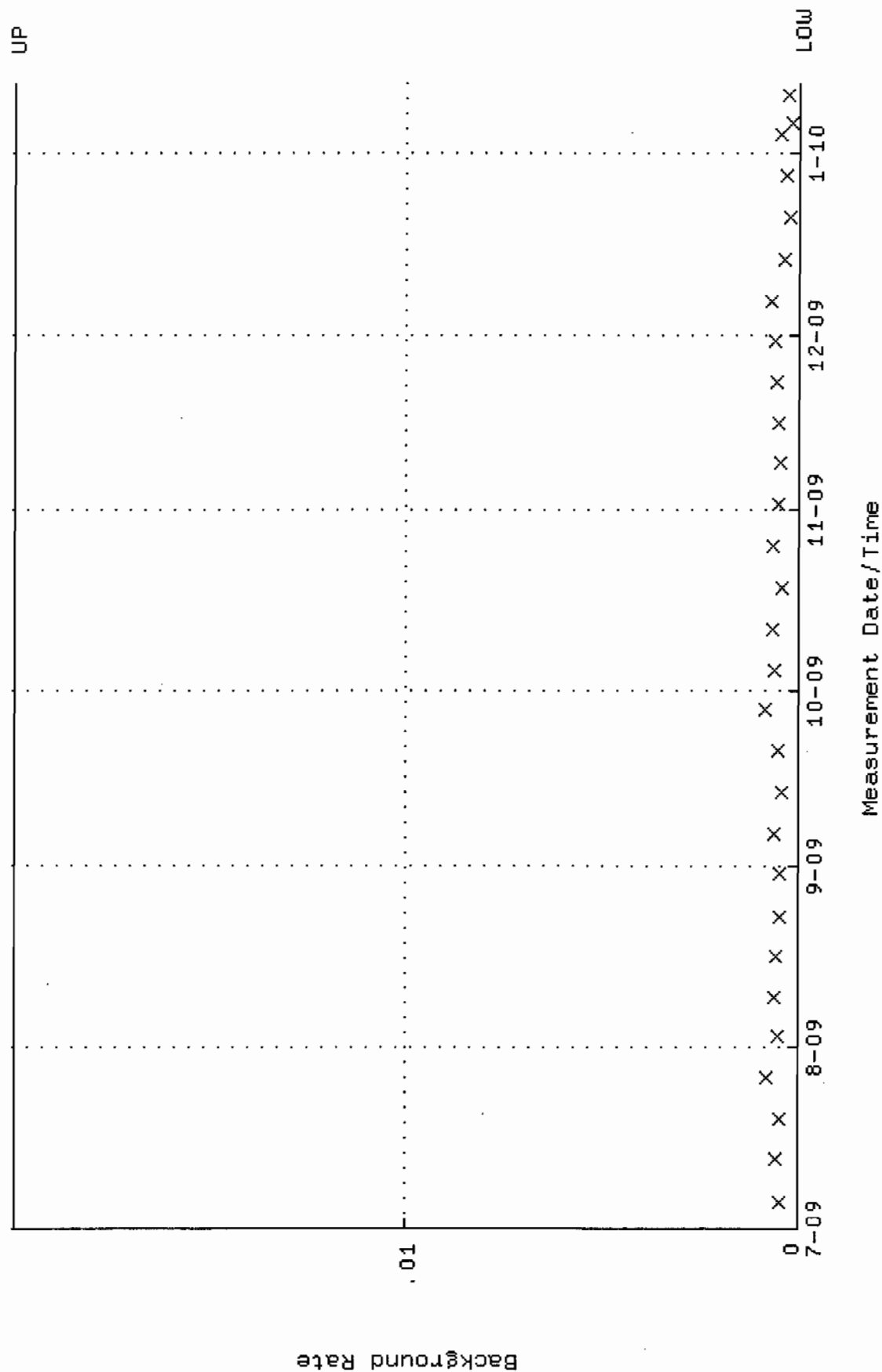
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.313884 through 0.337714



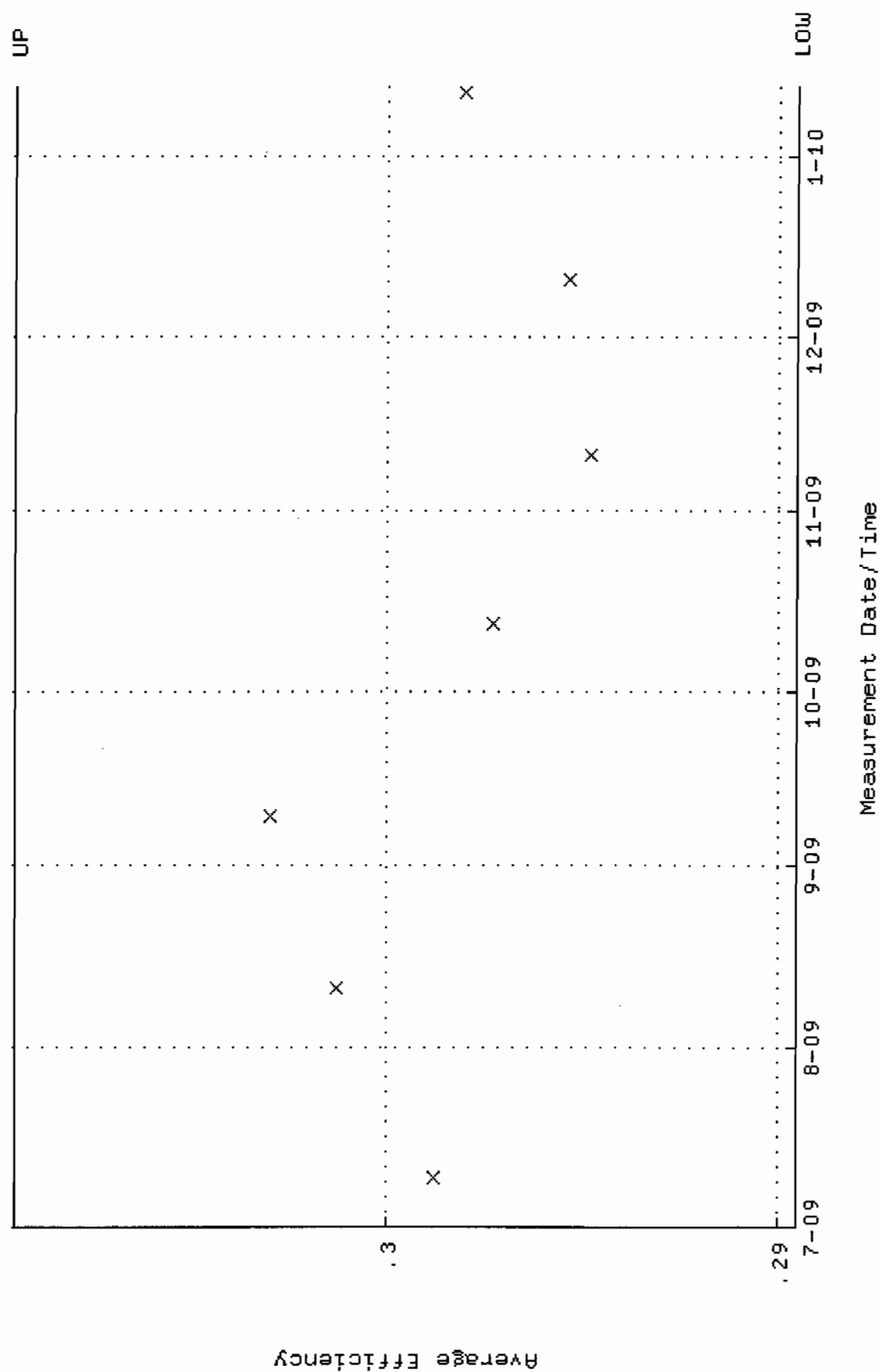
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 90.4059 through 93.3969



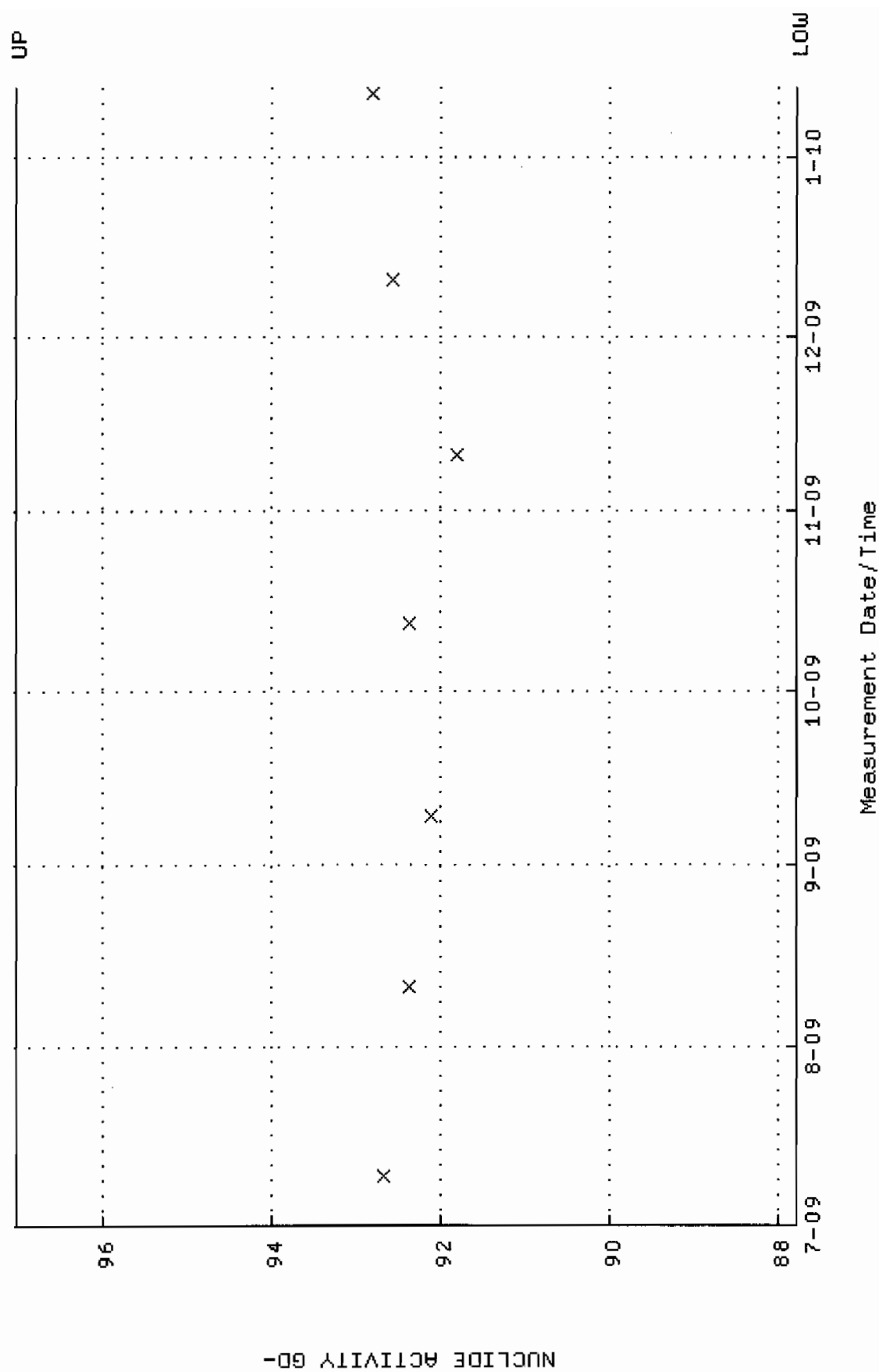
QA filename : DKA100:[ENV_ALPHA.QA.B]B085.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:04 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



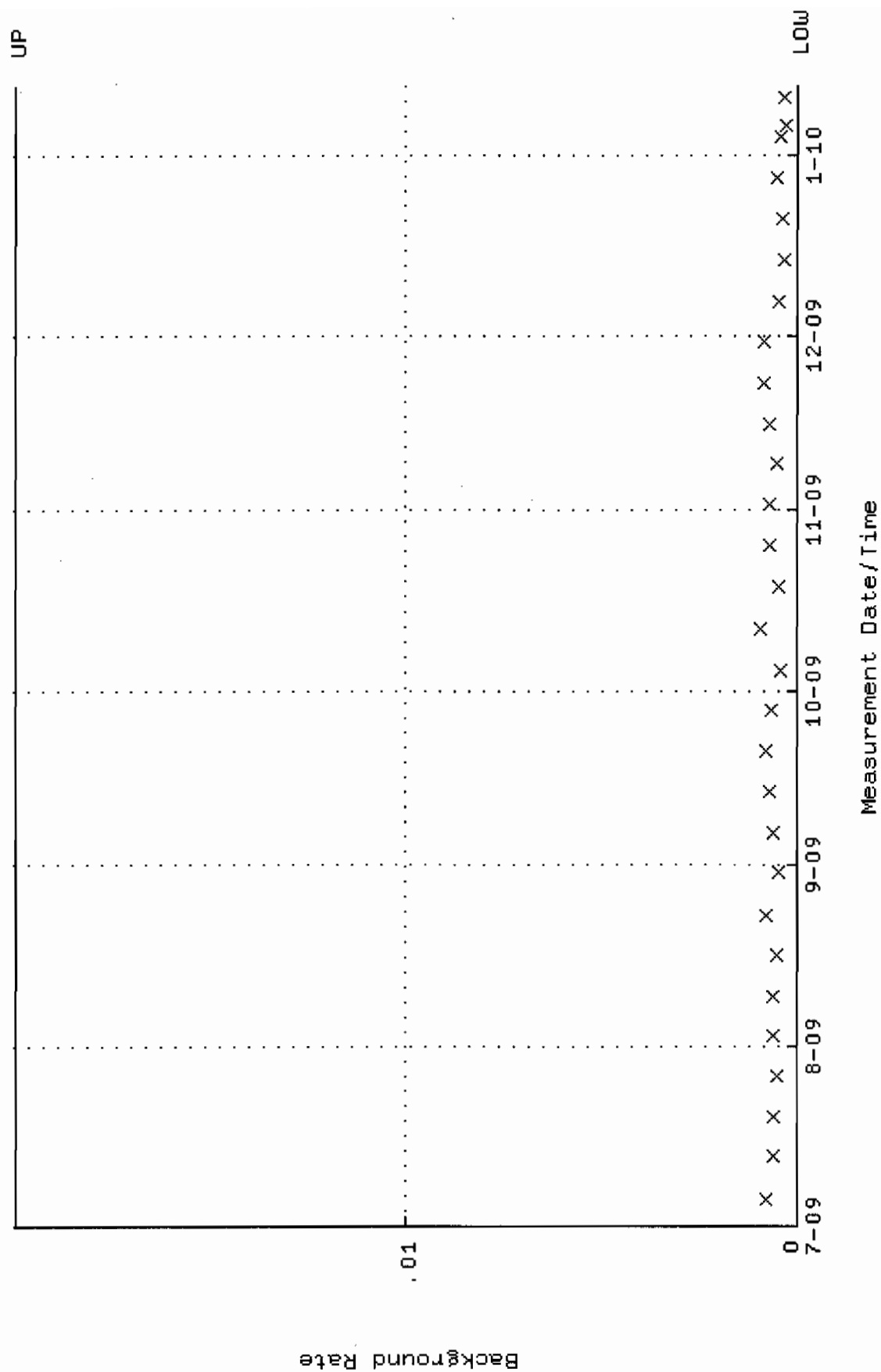
QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.289508 through 0.309508



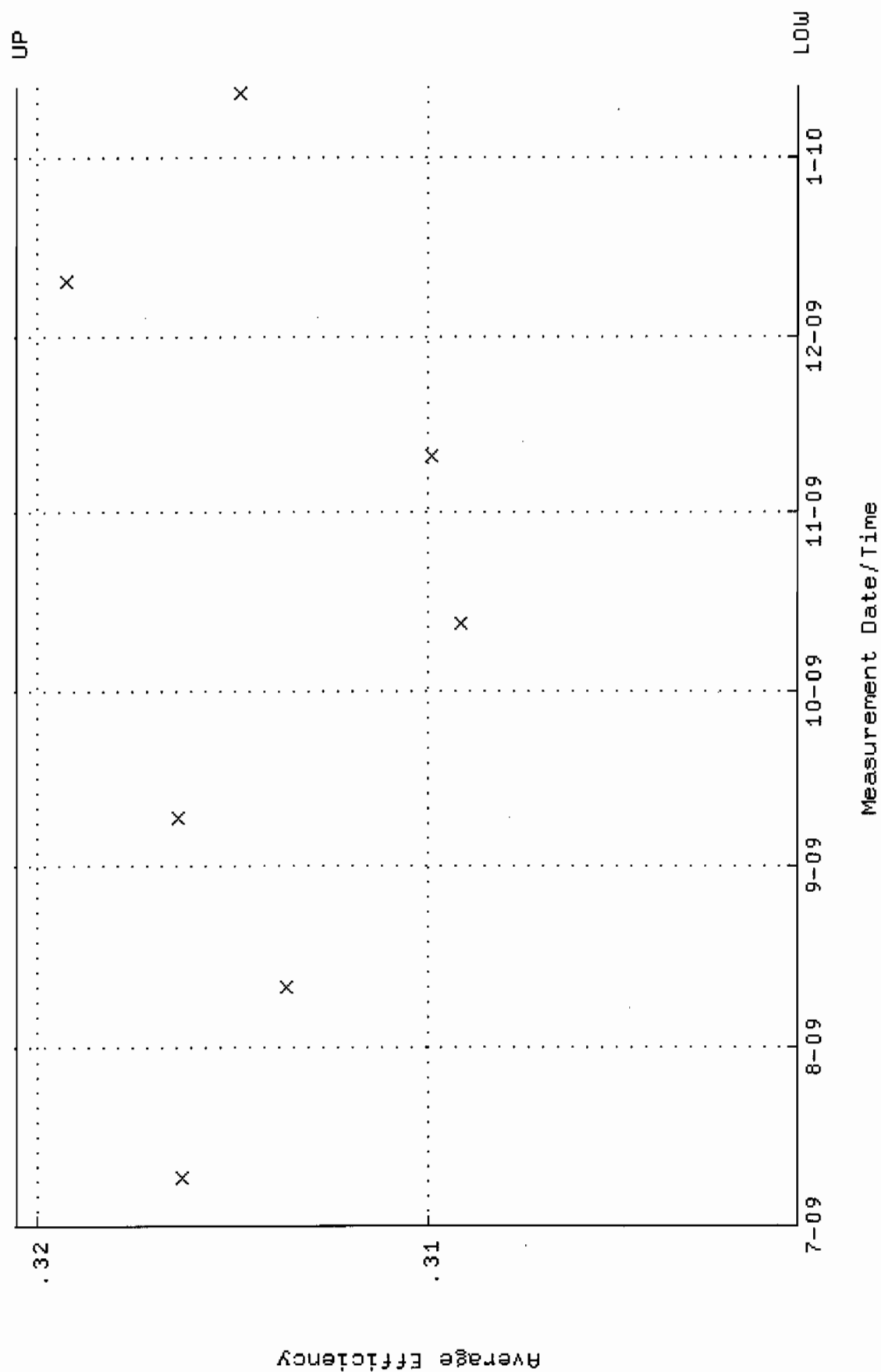
QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 87.7898 through 97.0308



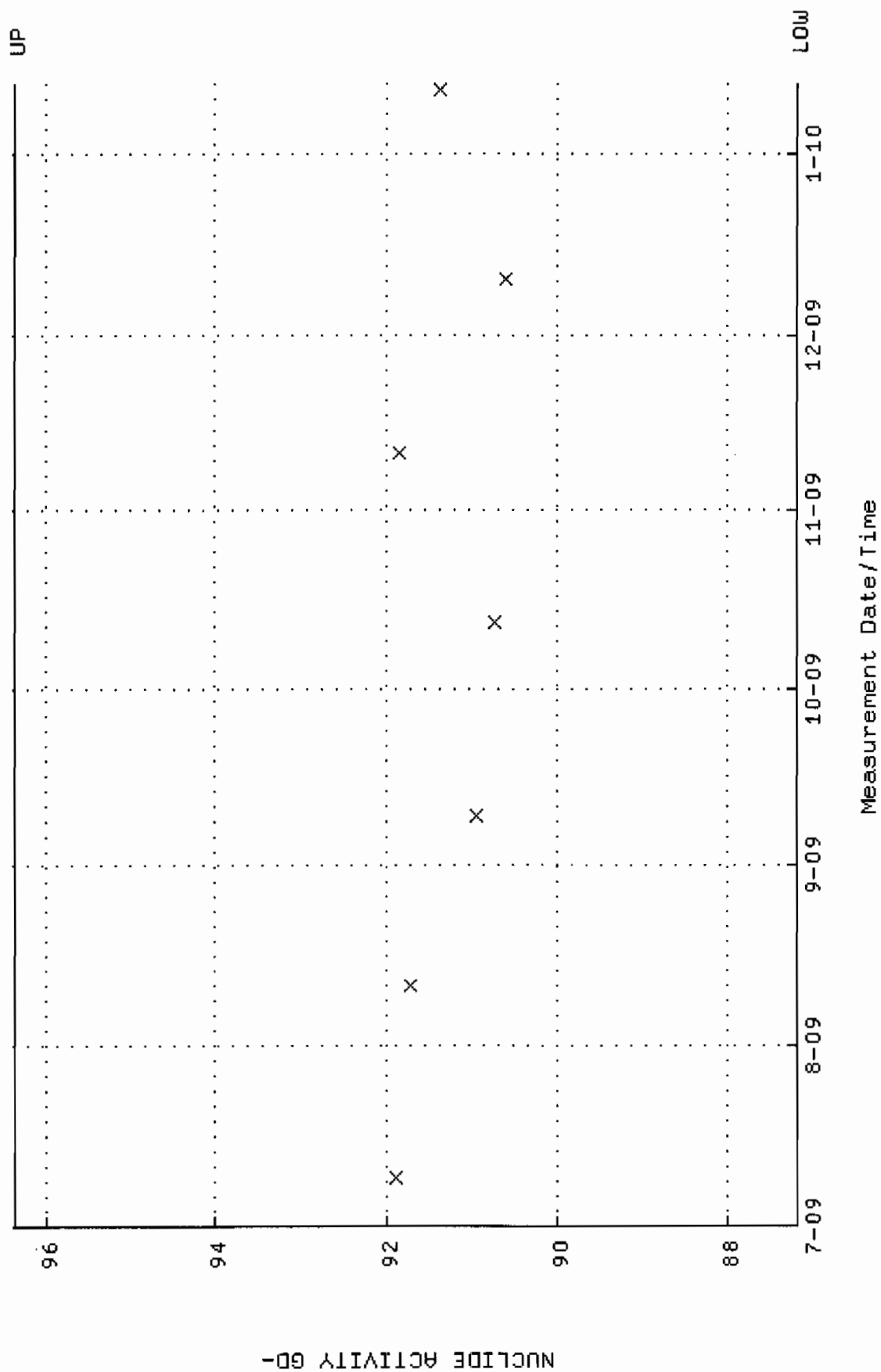
QA filename : DKA100:[ENV_ALPHA.QA.B]B086.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:04 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



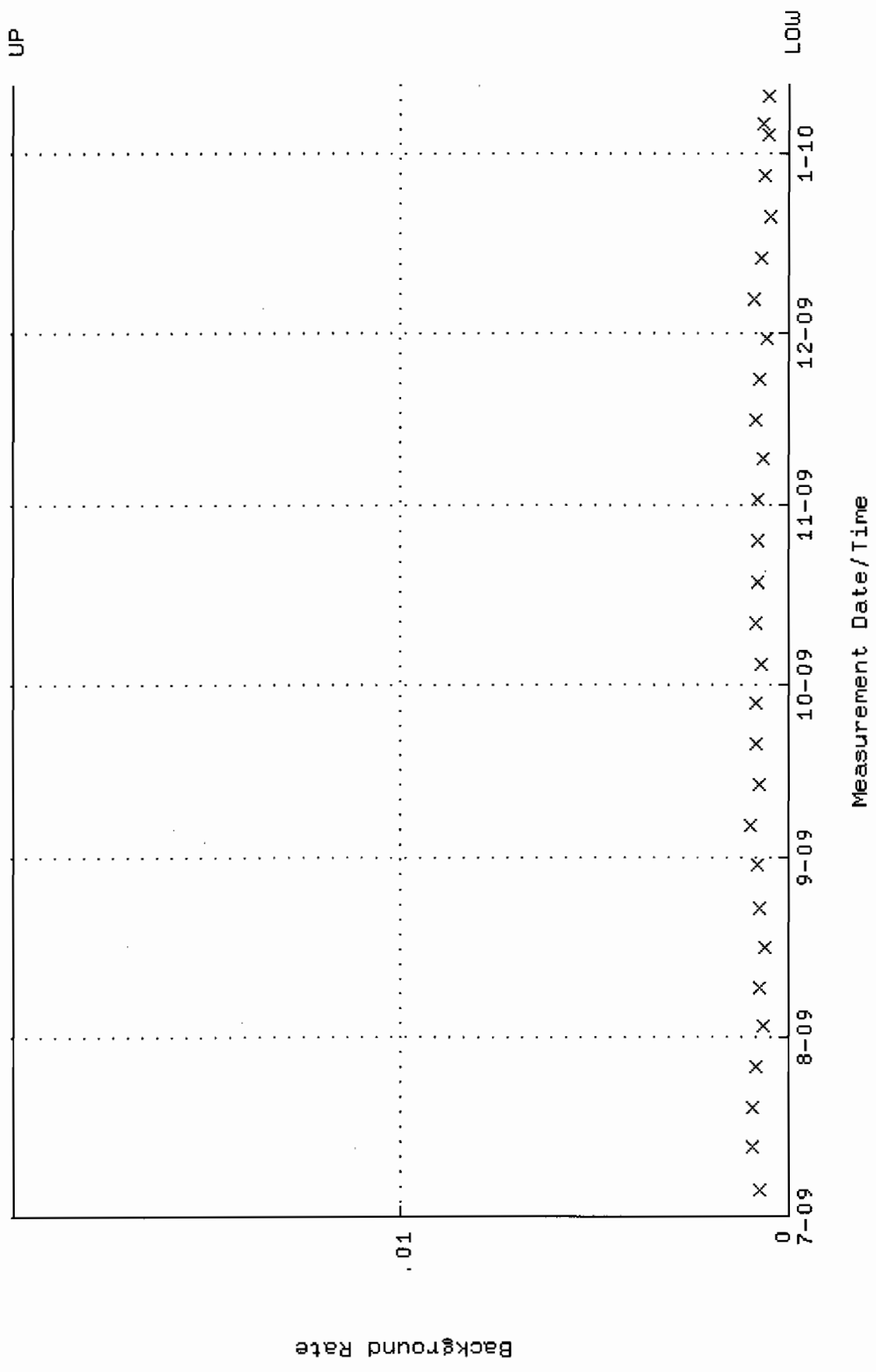
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.300530 through 0.320530



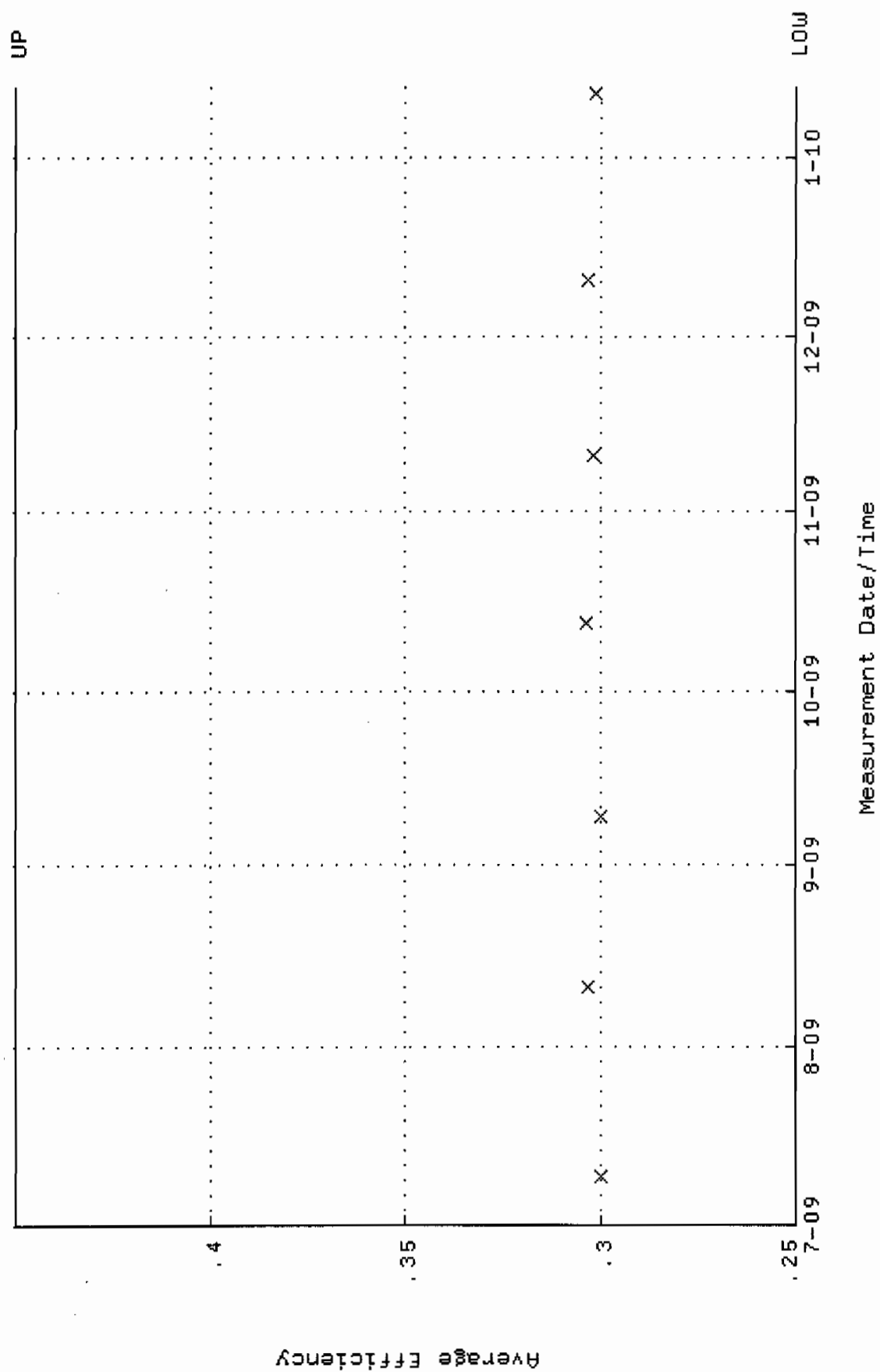
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 87.1845 through 96.3619



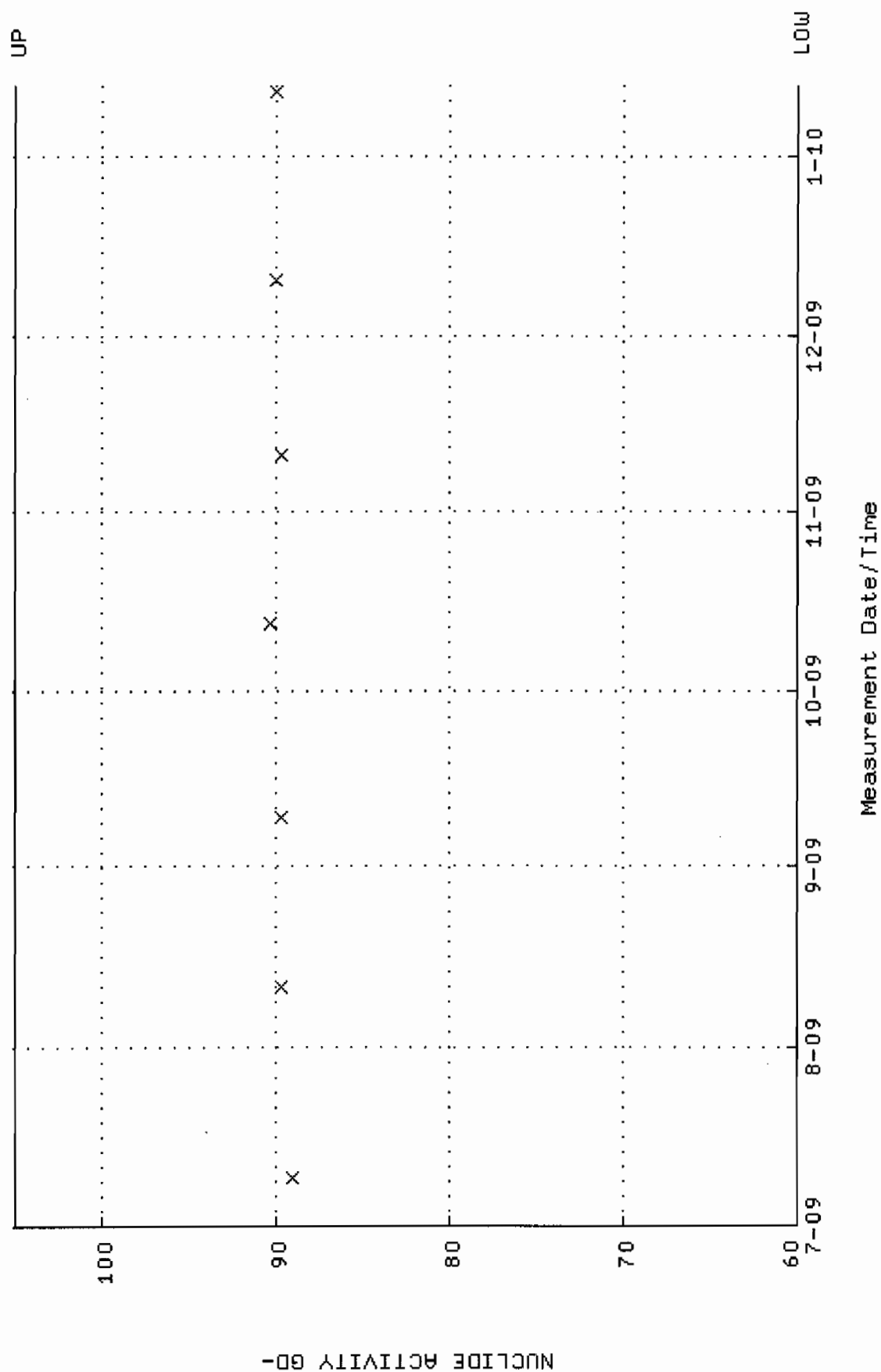
QA filename : DKA100:[ENV_ALPHA.QA.B]B087.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:04 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



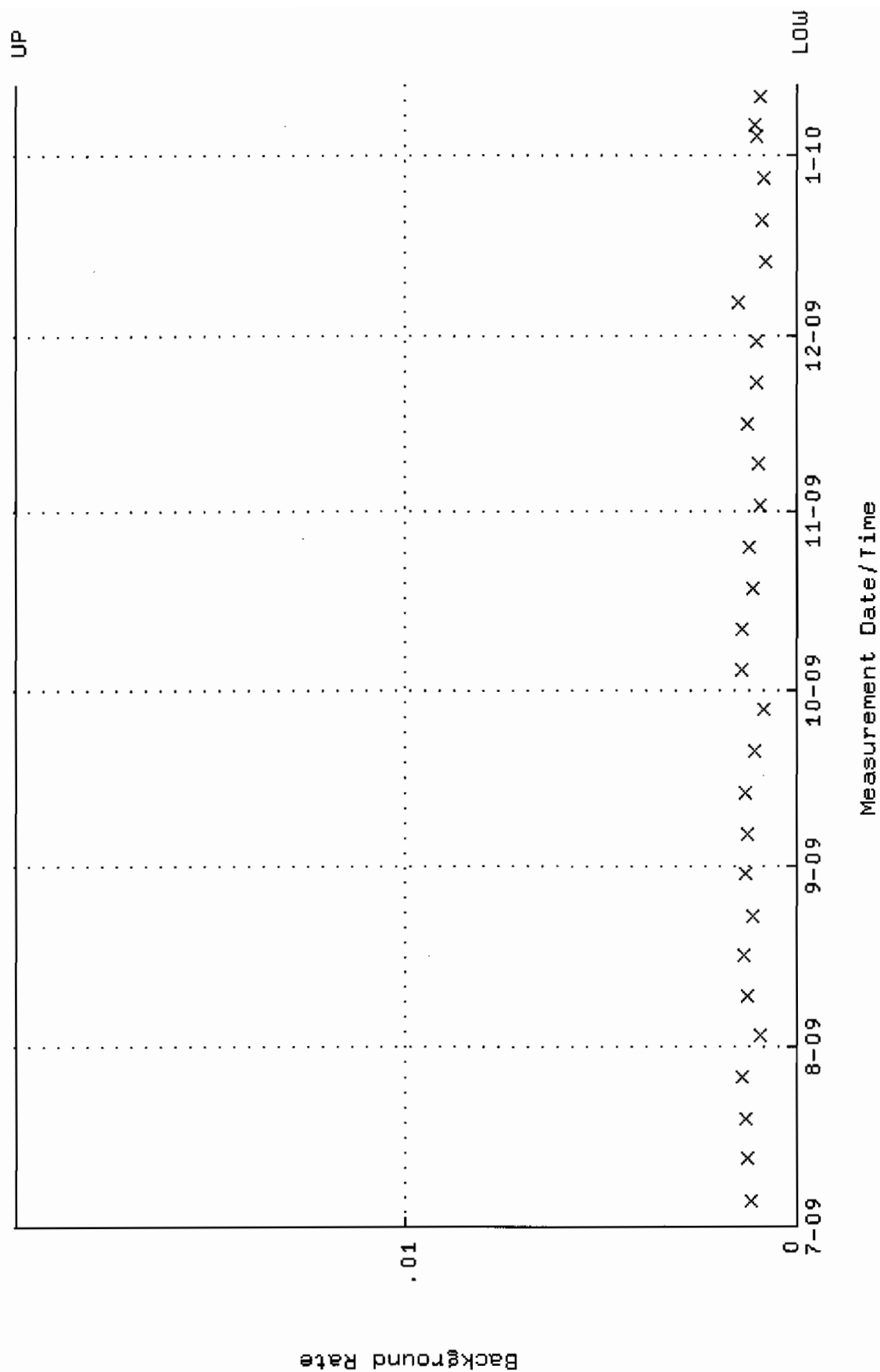
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



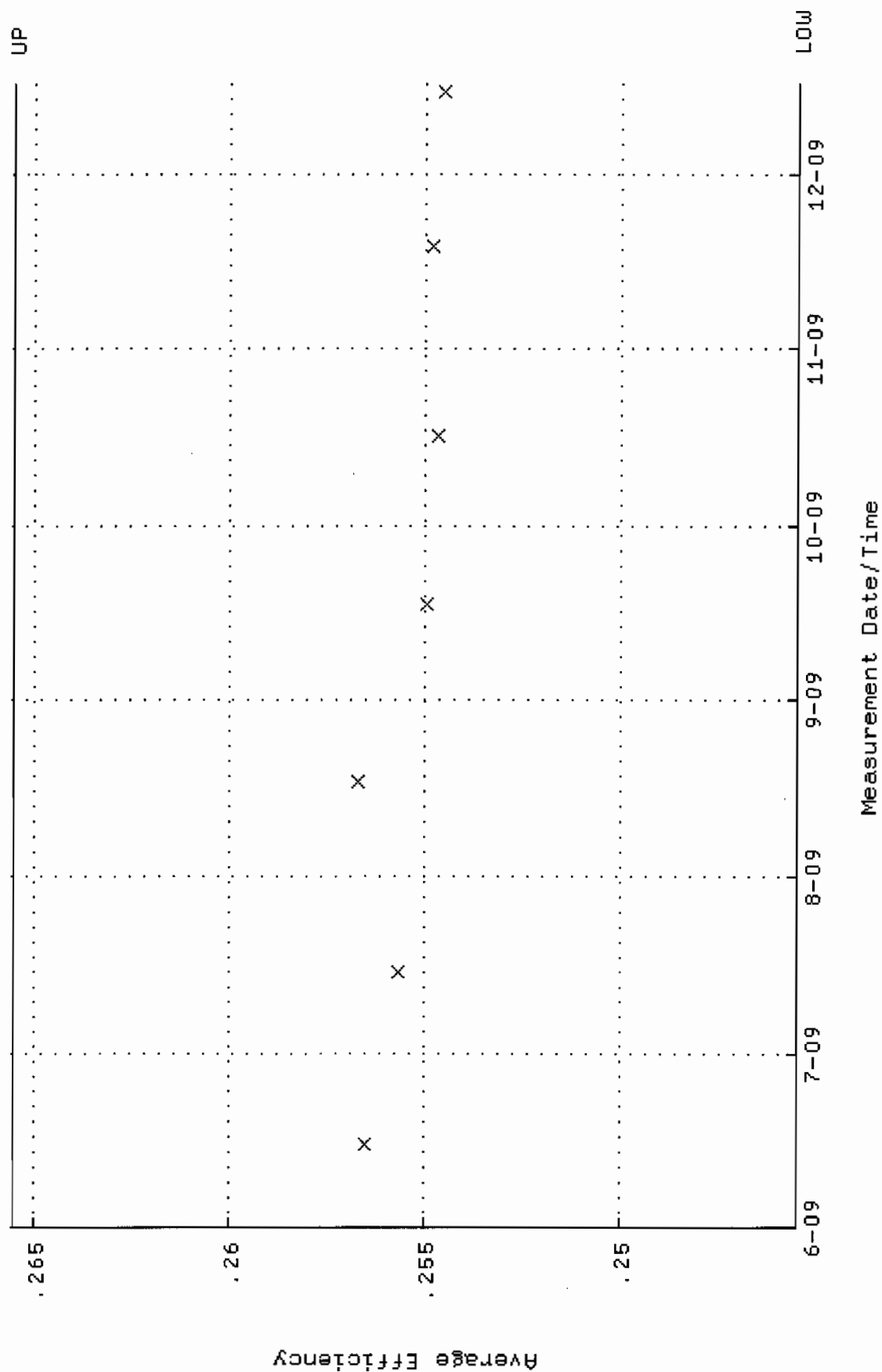
QA filename : DKA100:[ENV_ALPHA.QA.W]W088.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 9-JUL-2009 08:08:12 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.0000



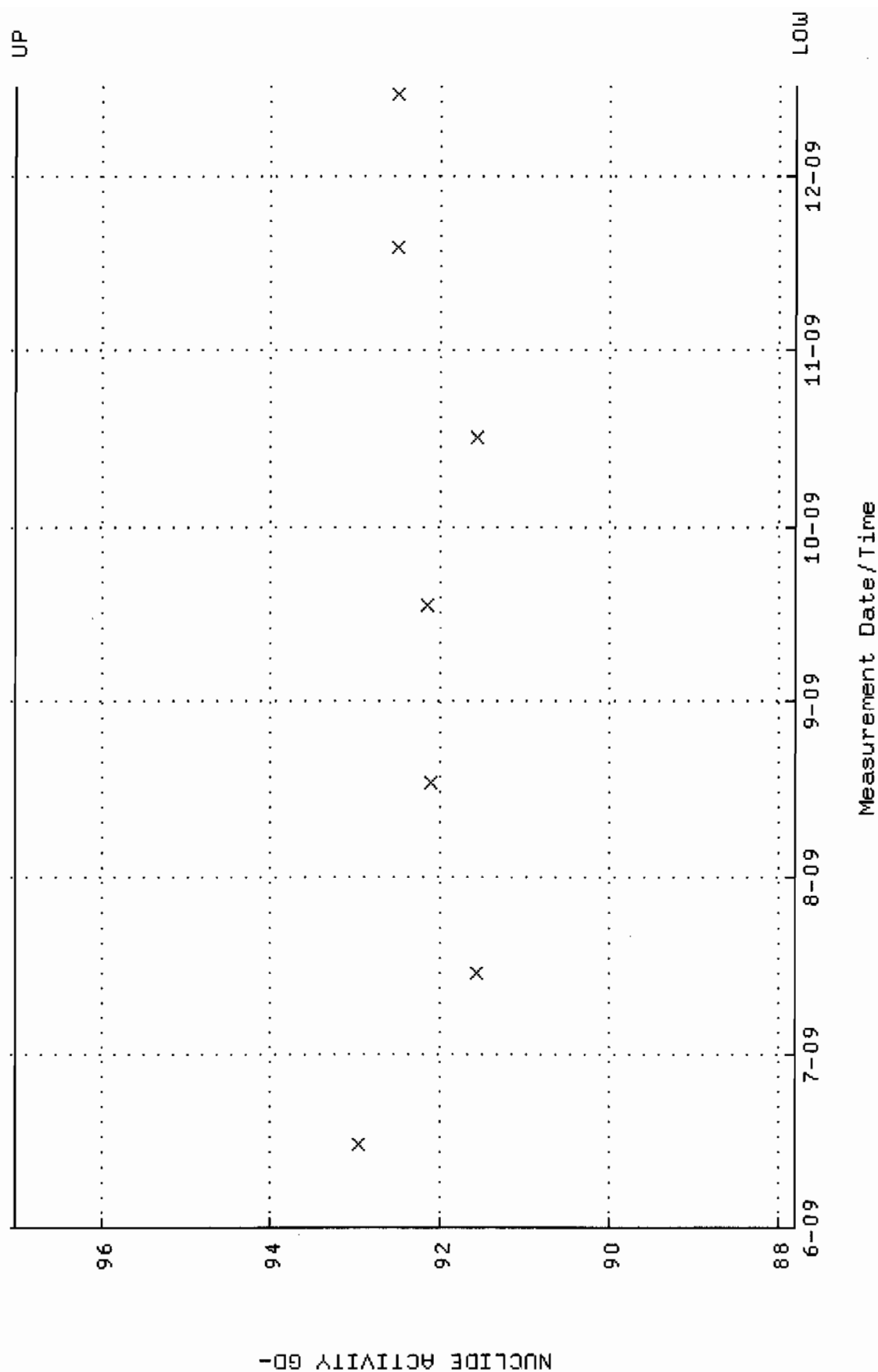
QA filename : DKA100:[ENV_ALPHA.QA.B]B088.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:12:04 through 12-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



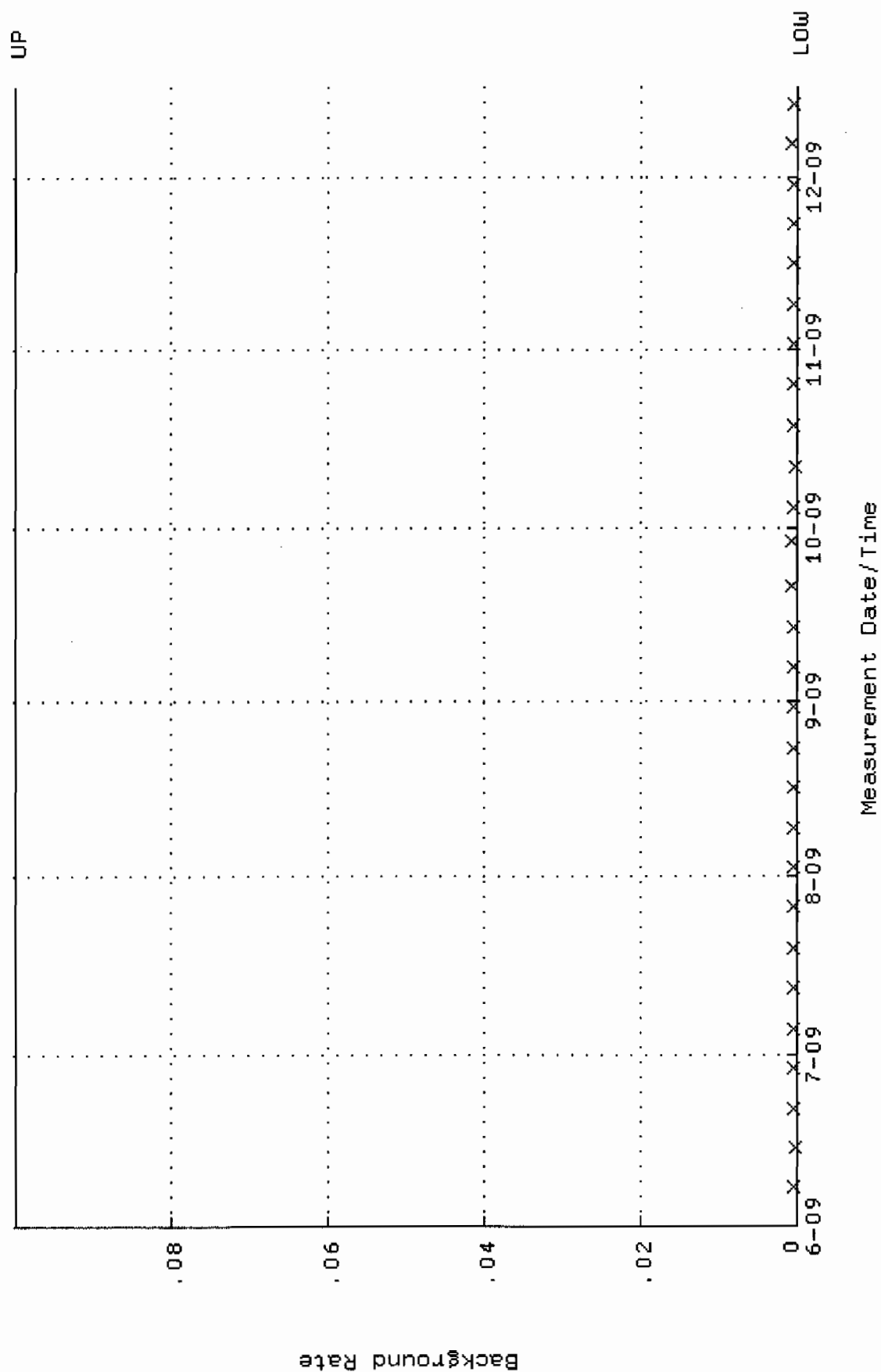
QA filename : DKA100:[ENV_ALPHA.QA.W]W114.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:34:22 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.245499 through 0.265499



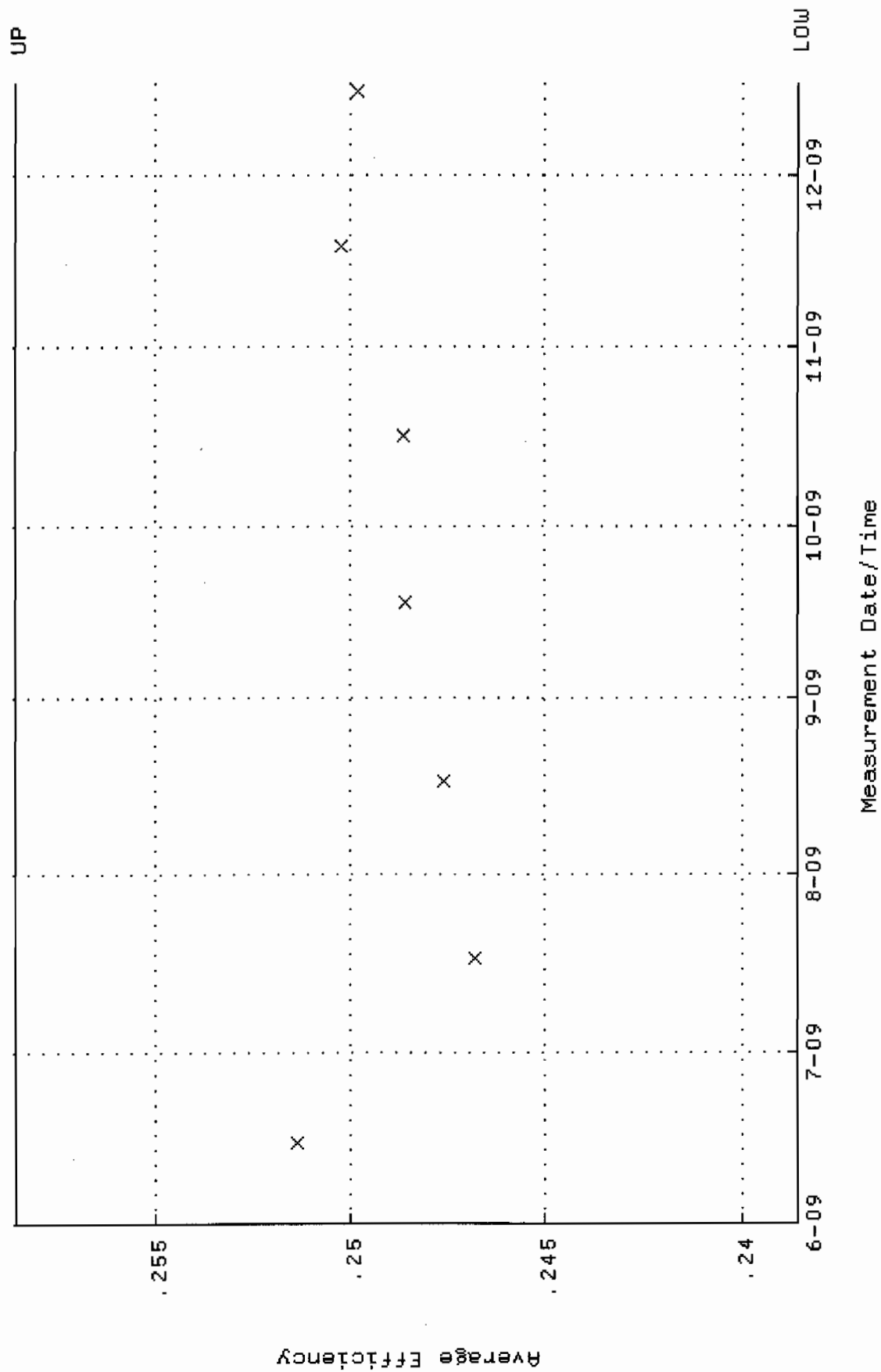
QA filename : DKA100:[ENV_ALPHA.QA.W]W114.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:34:22 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 87.8108 through 97.0540



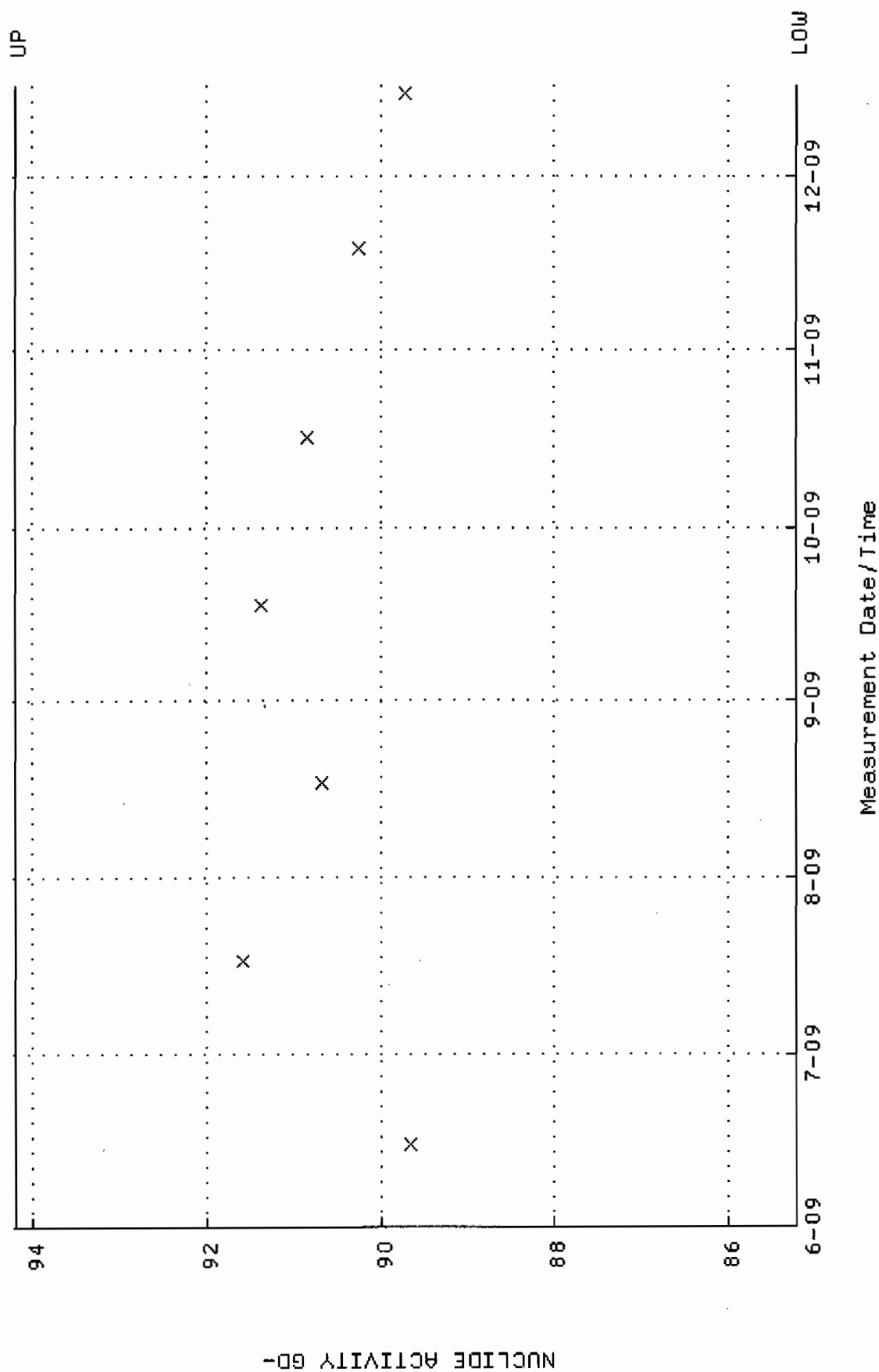
QA filename : DKA100:[ENV_ALPHA.QA.B]B114.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:08:44 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



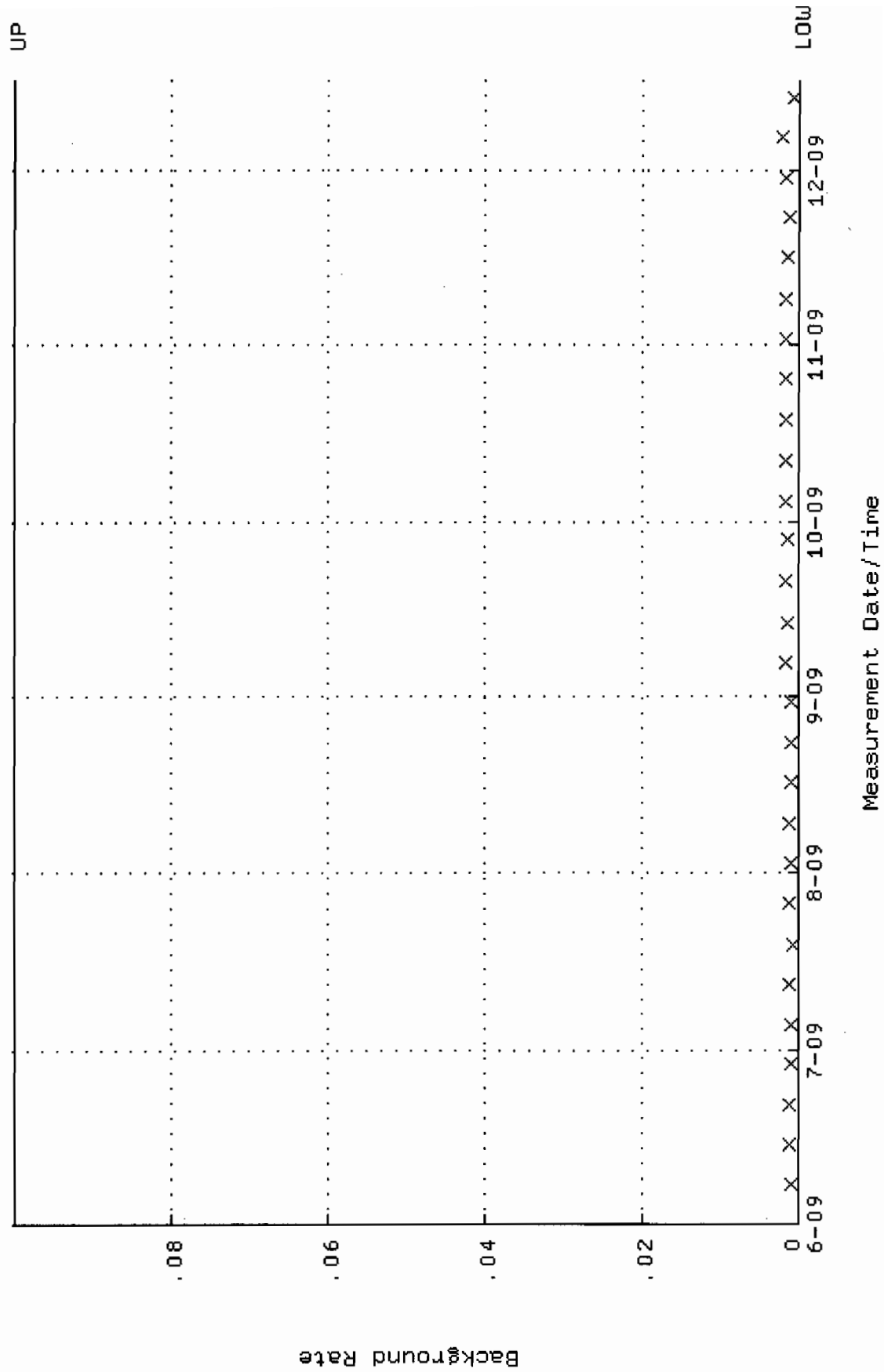
QA filename : DKA100:[ENV_ALPHA.QA.W]W136.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:36:16 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.238568 through 0.258568



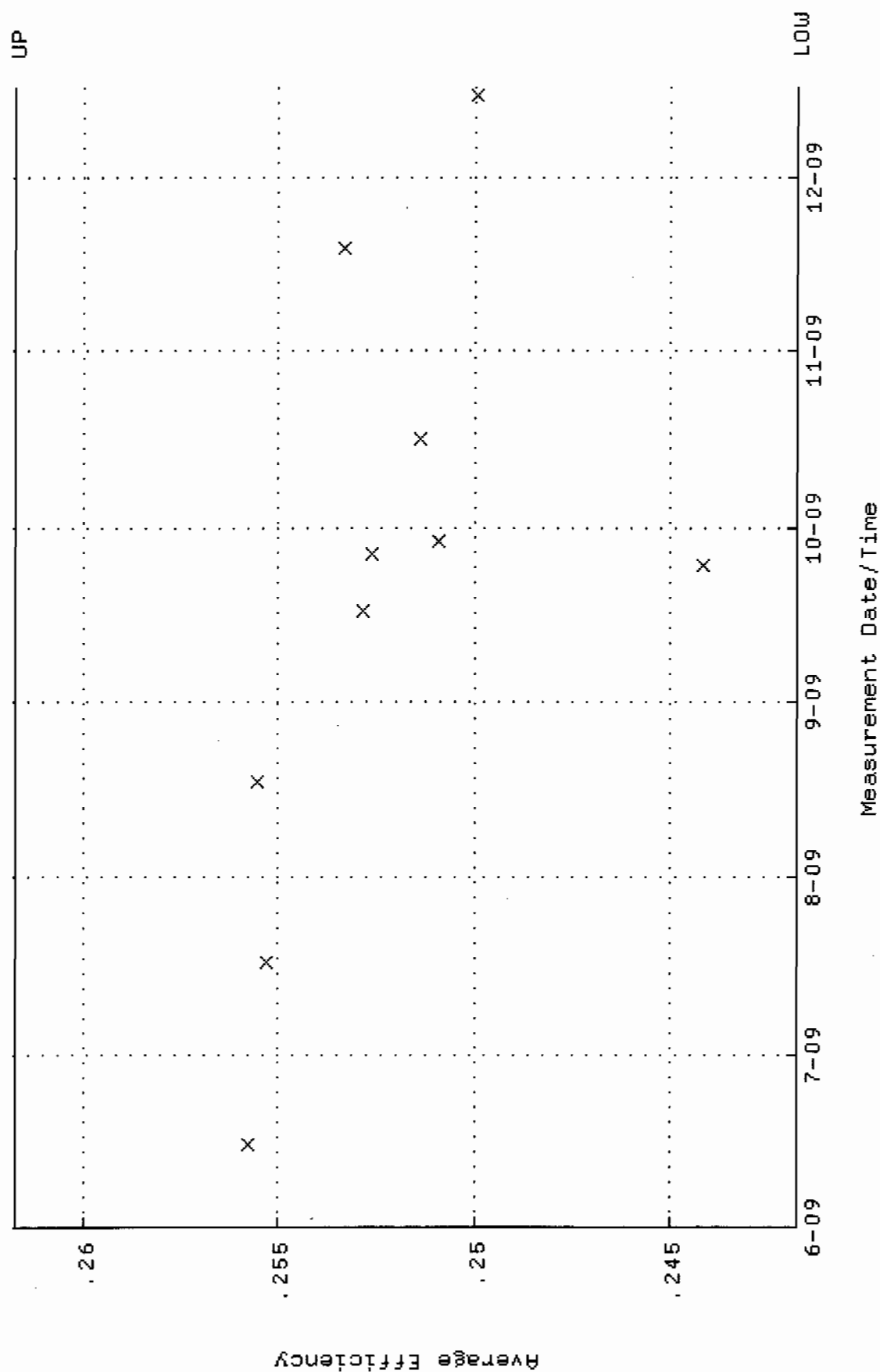
QA filename : DKA100:[ENV_ALPHA.QA.W]w136.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:36:16 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 85.2214 through 94.1920



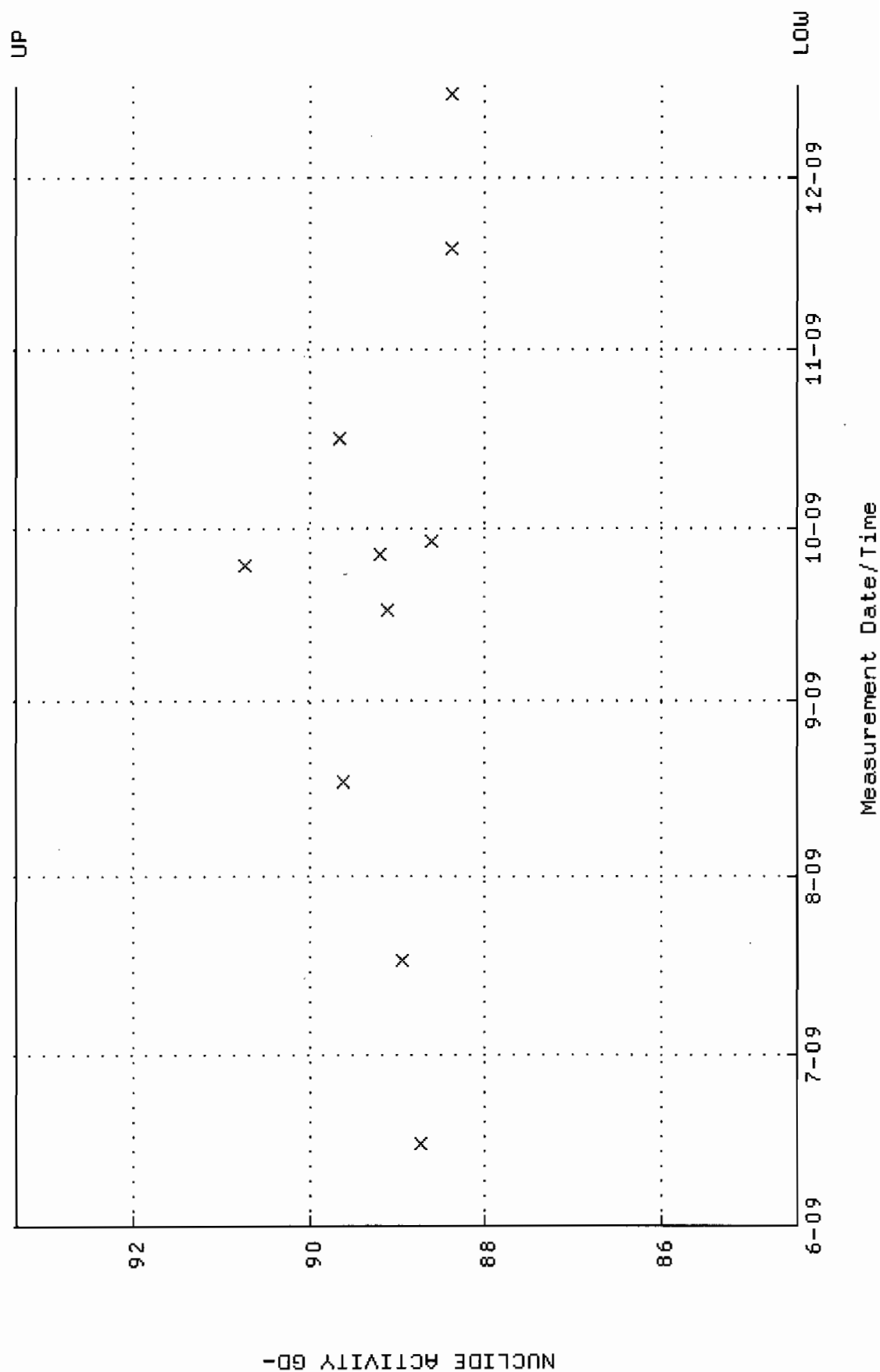
QA filename : DKA100:[ENV_ALPHA.QA.B]B136.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:10:15 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



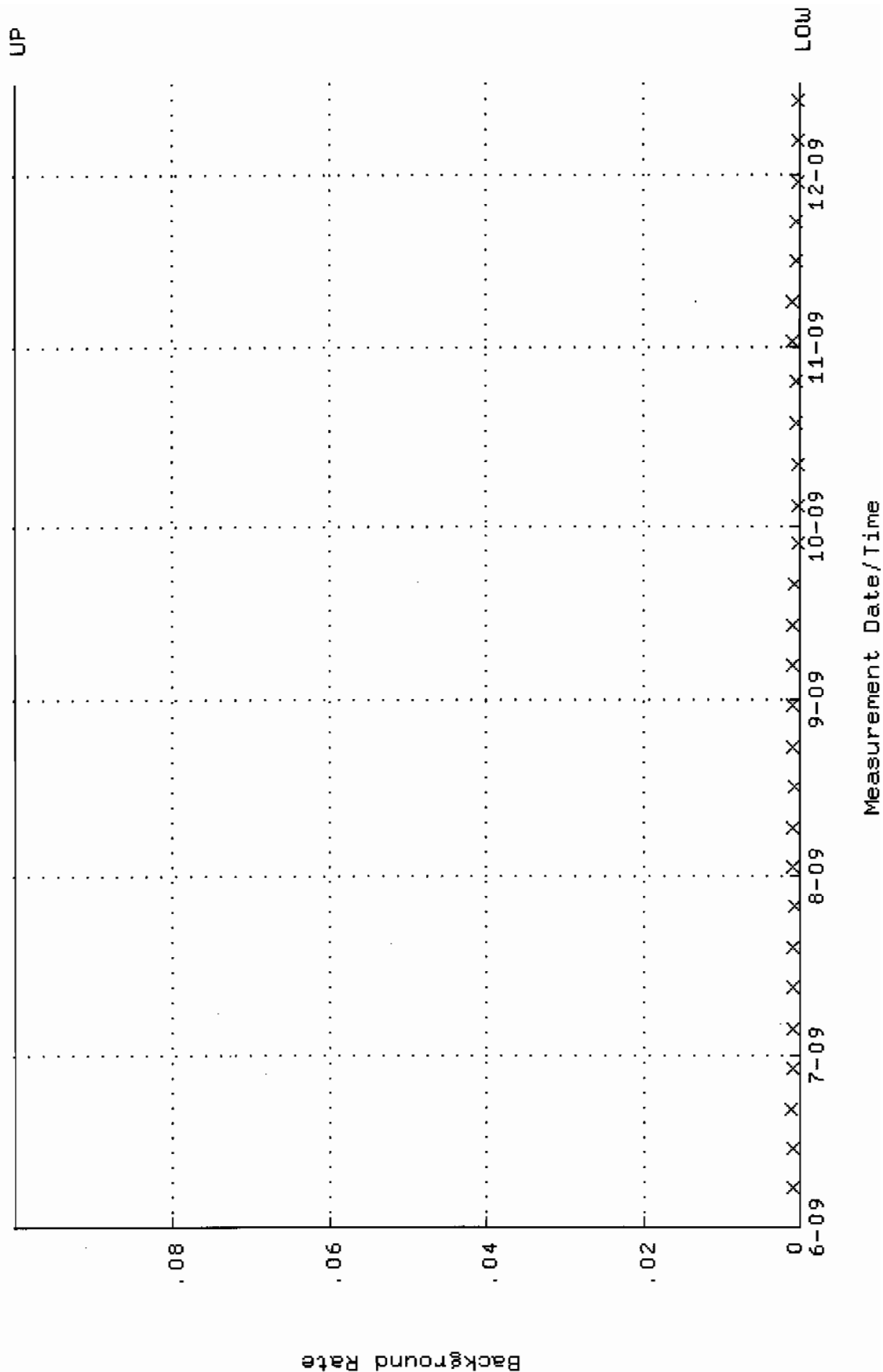
QA filename : DKA100:[ENV_ALPHA.QA.W]W137.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:36:21 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.241744 through 0.261744



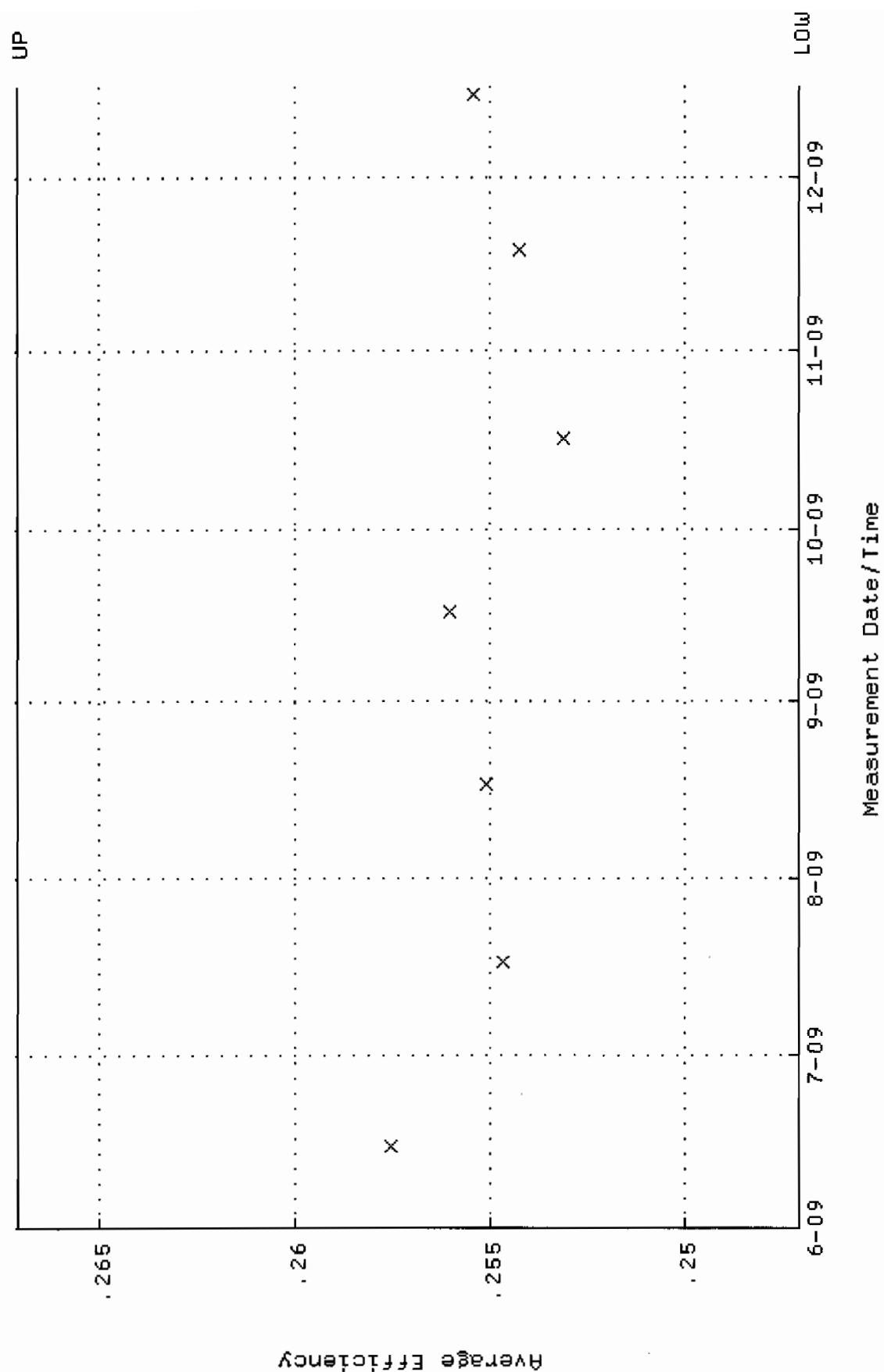
QA filename : DKA100:[ENV_ALPHA.QA.W]W137.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:36:21 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 84.4530 through 93.3428



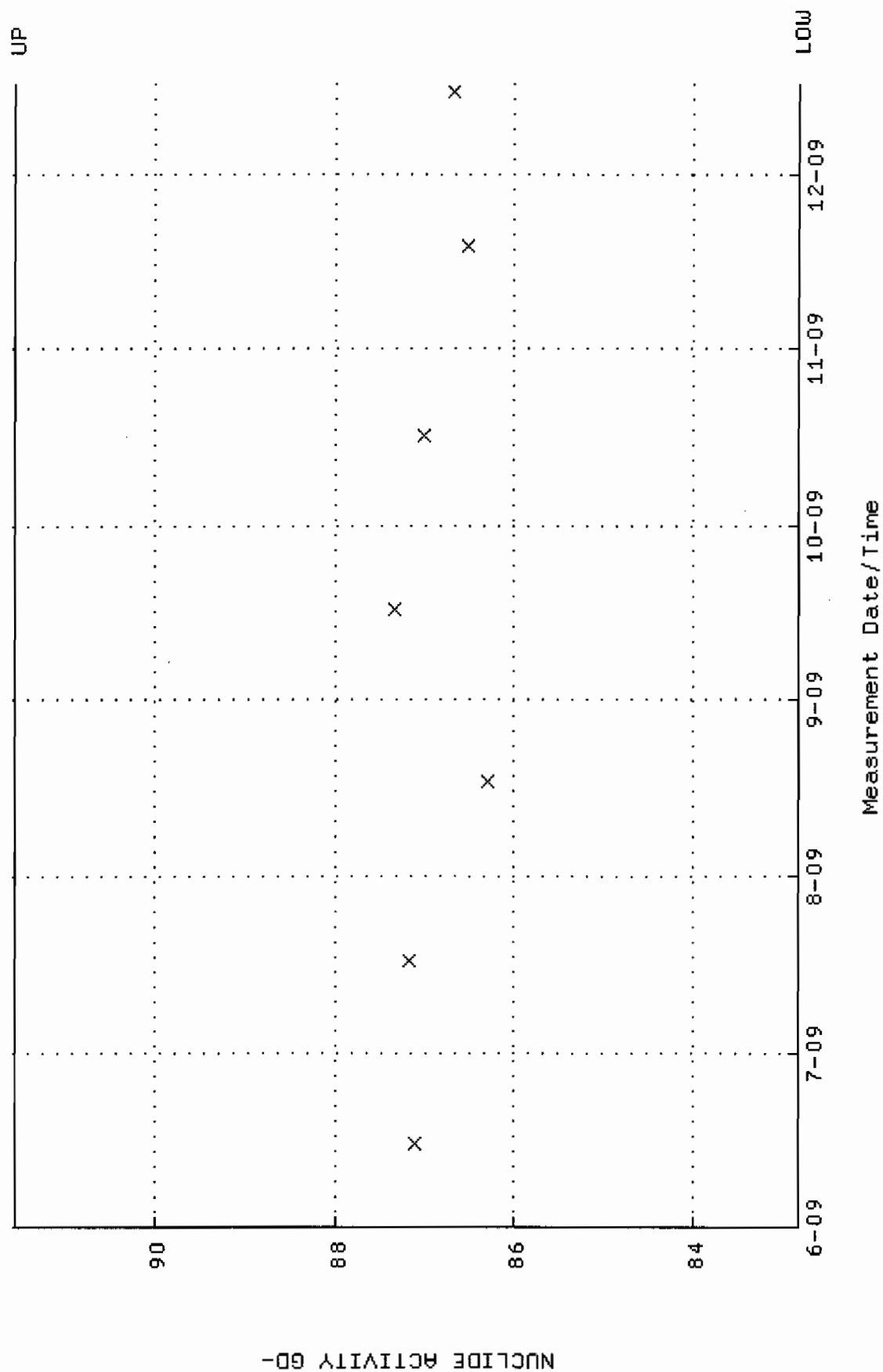
QA filename : DKA100:[ENV_ALPHA.QA.B]B137.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:10:19 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



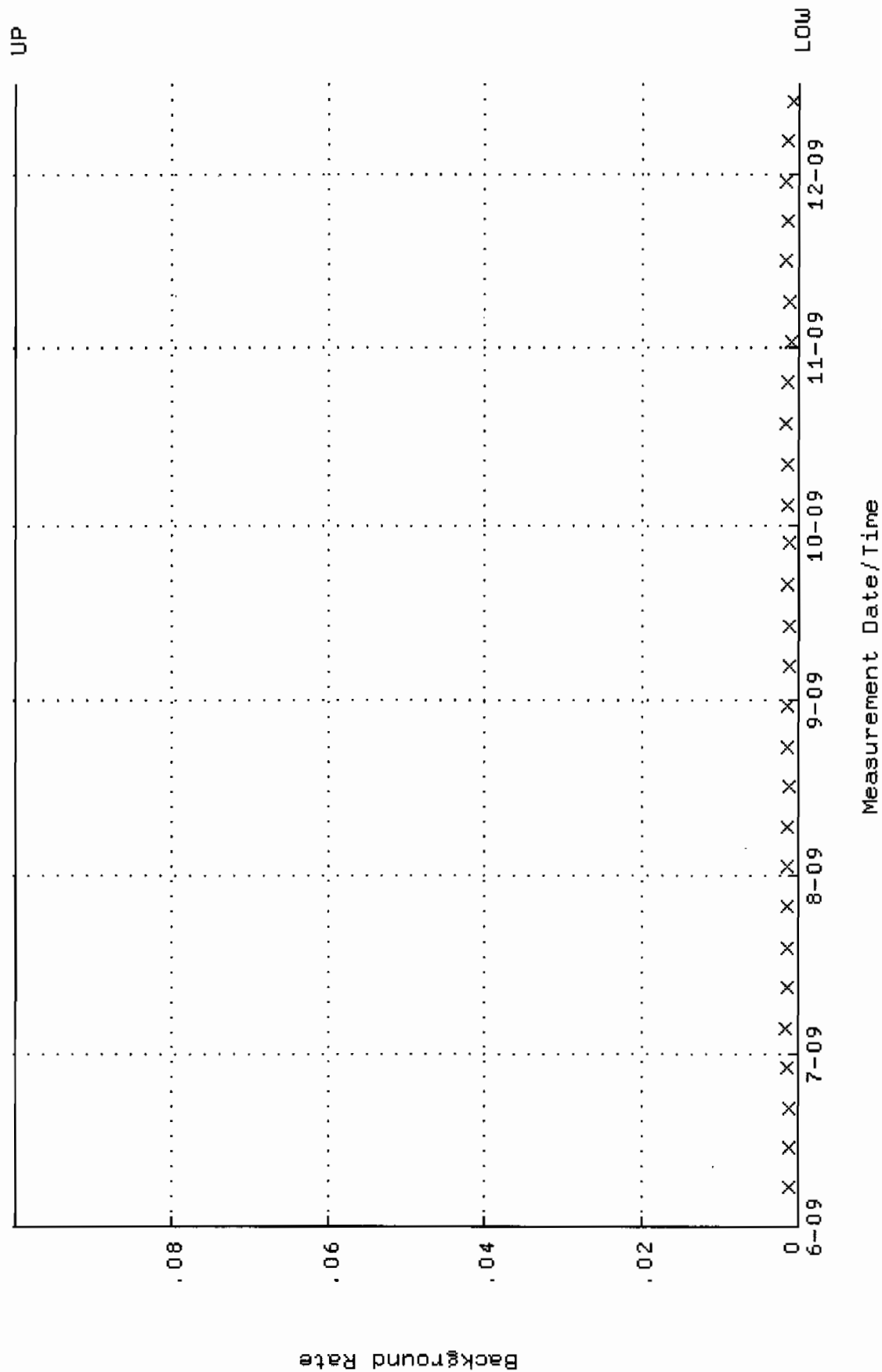
QA filename : DKA100:[ENV_ALPHA.QA.W]U138.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:36:25 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.247085 through 0.267085



QA filename : DKA100:[ENV_ALPHA.QA.W]W138.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:36:25 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 82.8399 through 91.5599



QA filename : DKA100:[ENV_ALPHA.QA.B]B138.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:10:23 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000

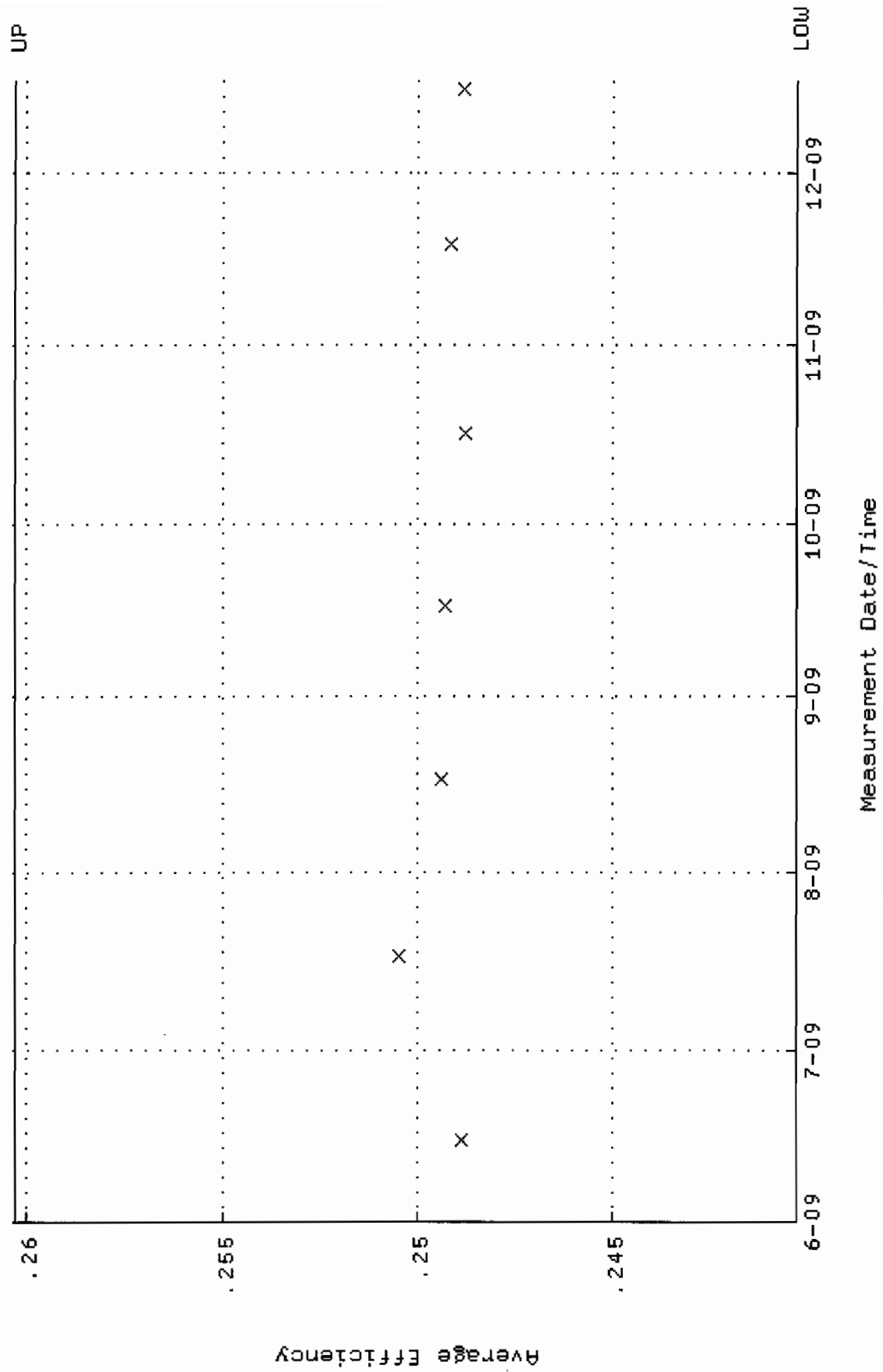


QA filename : DKA100:[ENV_ALPHA.QA.W]W139.QAF;1

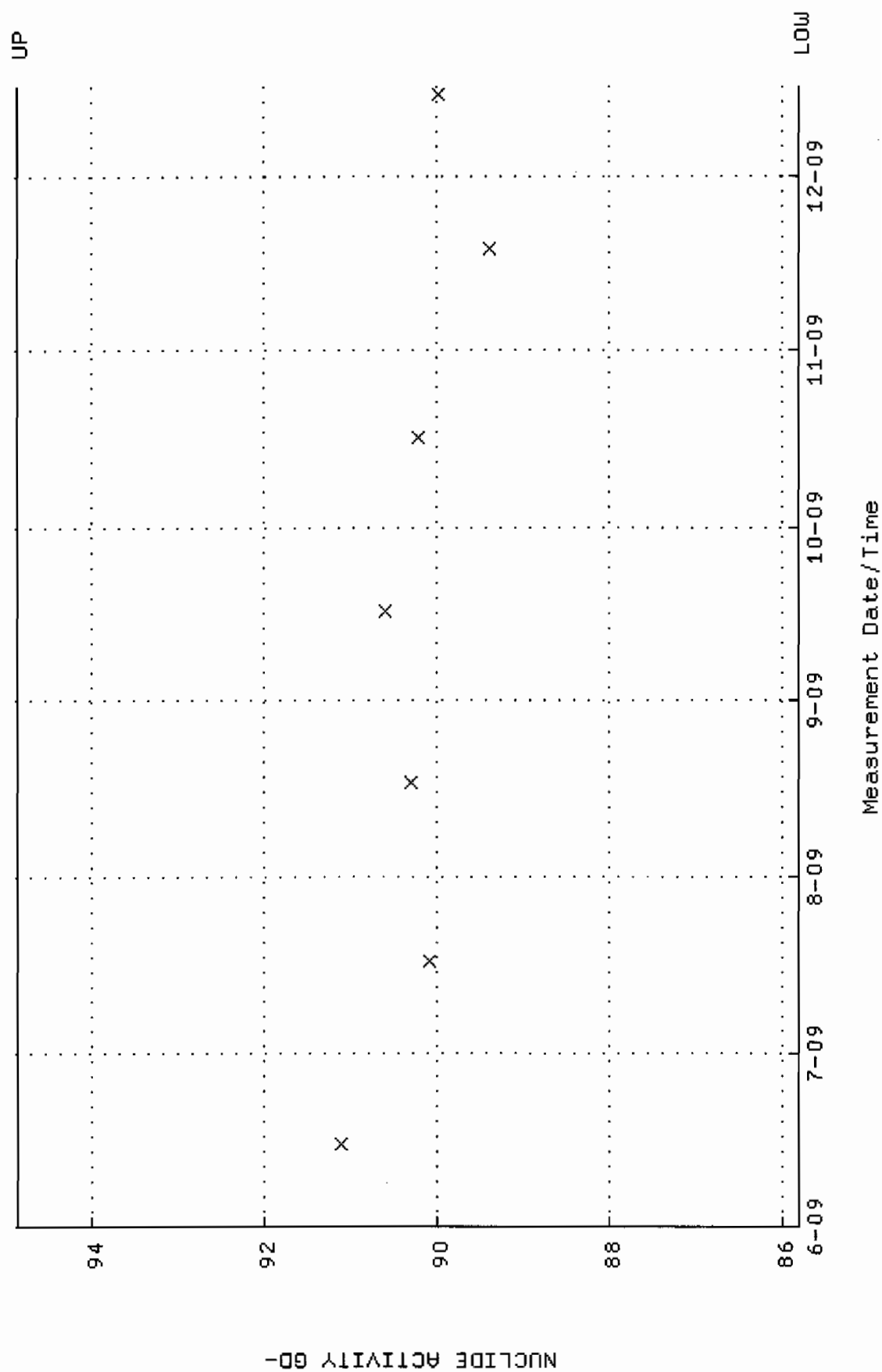
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 15-JUN-2009 10:36:30 through 16-DEC-2009 12:00:00

Lower/Upper Lmts: 0.240299 through 0.260299



QA filename : DKA100:[ENV_ALPHA.QA.W]W139.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:36:30 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 85.8145 through 94.8477

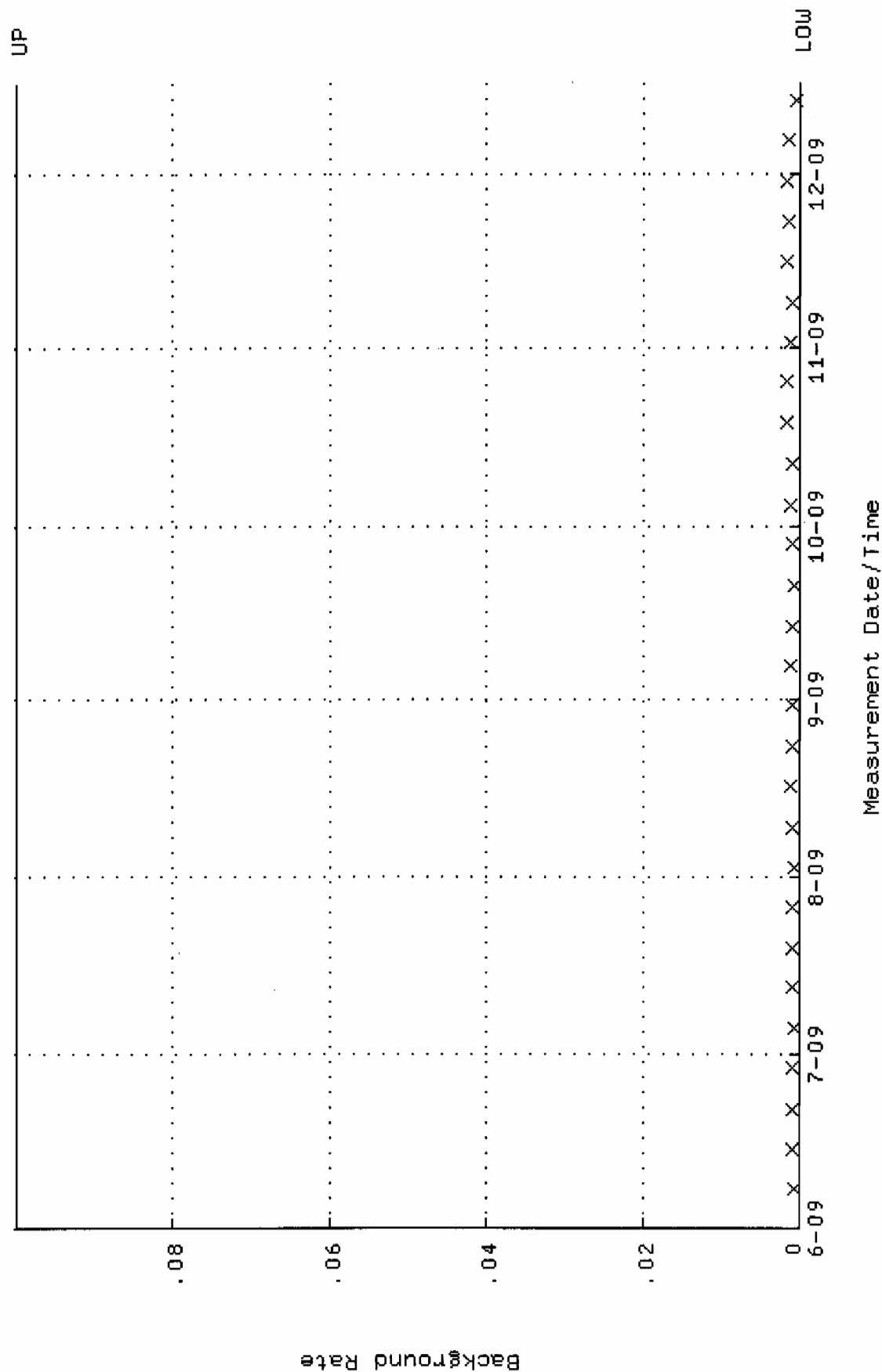


QA filename : DKA100:[ENV_ALPHA.QA.B]B139.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 7-JUN-2009 17:10:28 through 16-DEC-2009 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

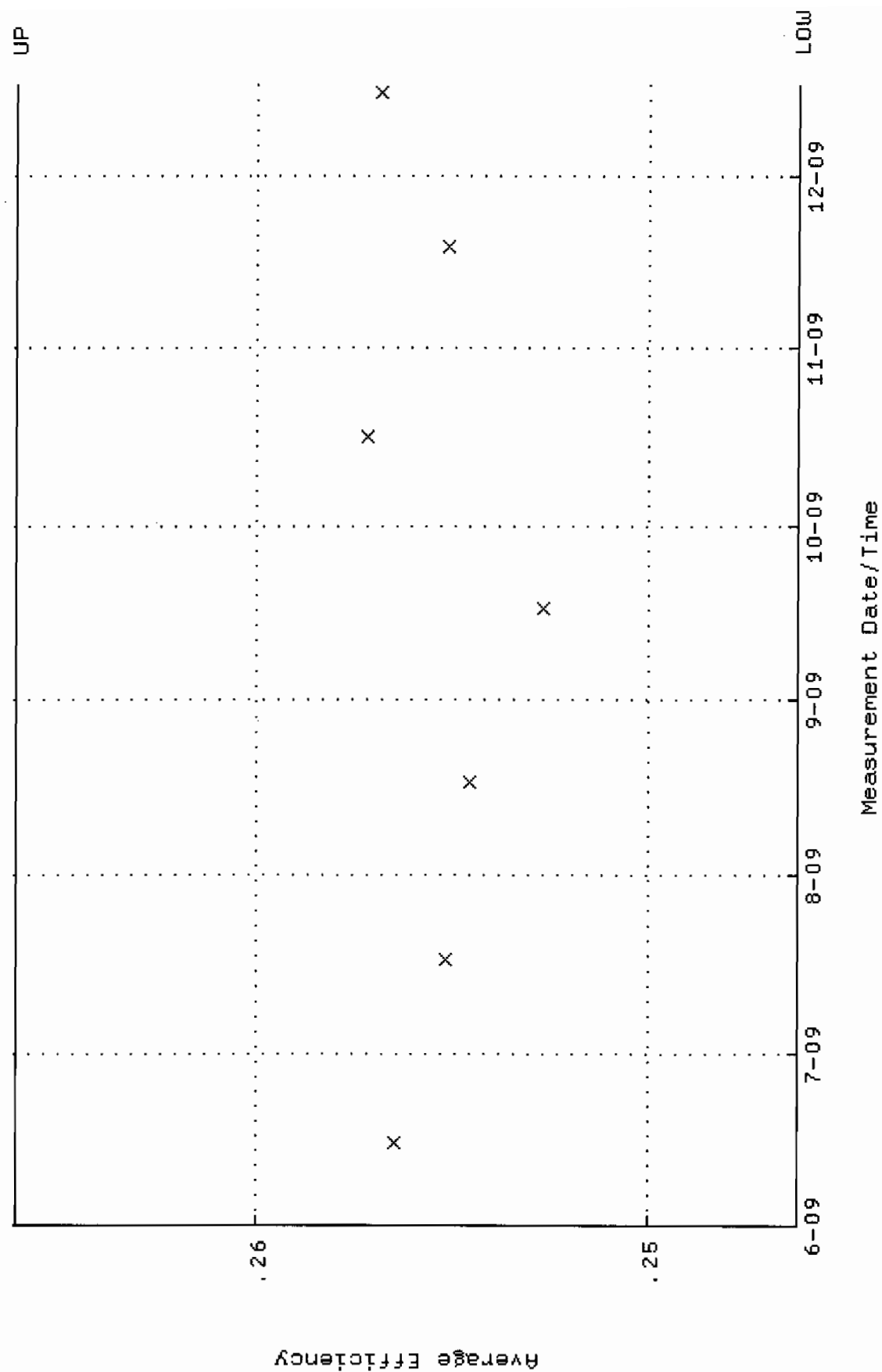


QA filename : DKA100:[ENV_ALPHA.QA.W]W140.QAF;1

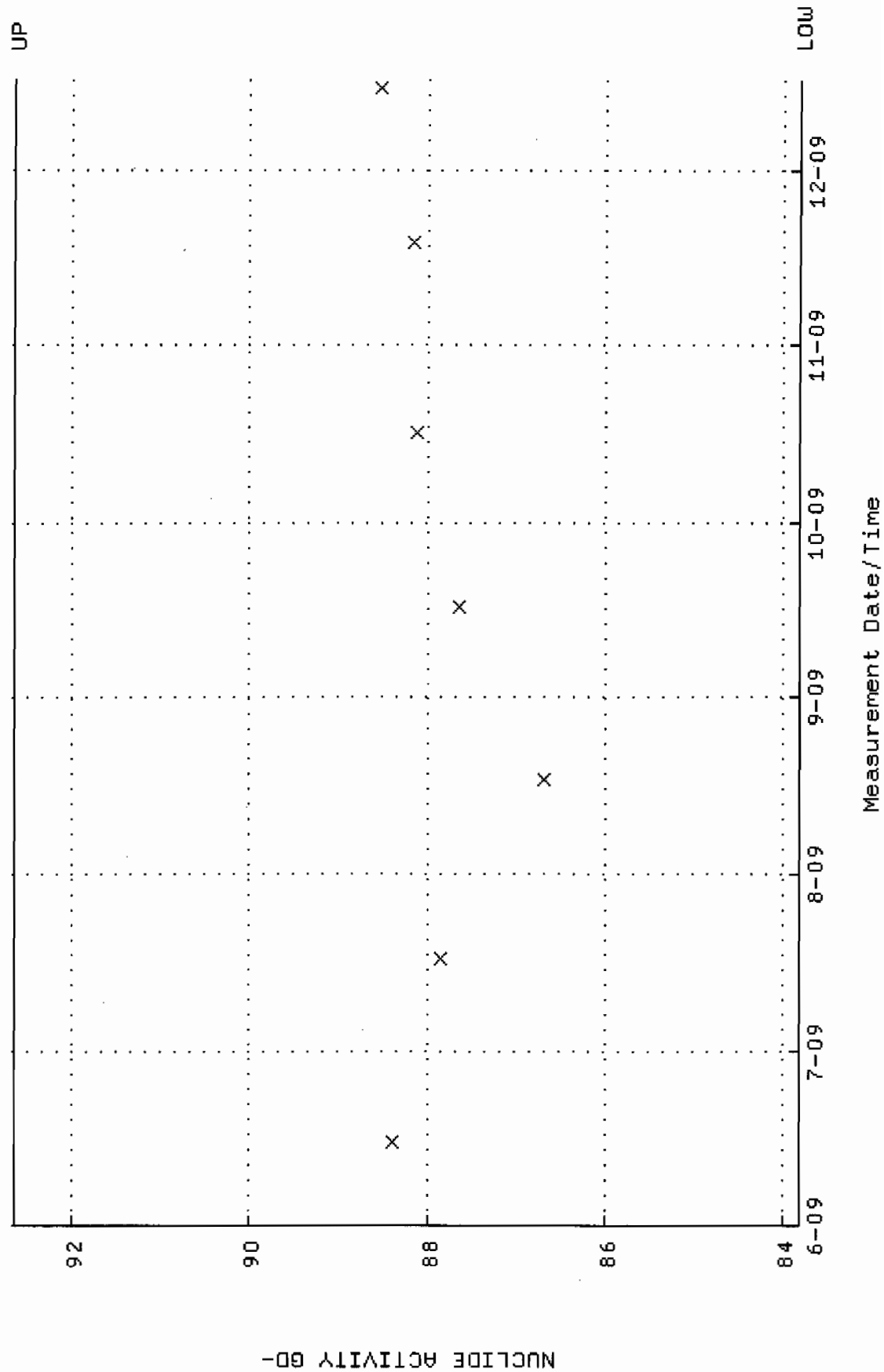
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 15-JUN-2009 10:36:37 through 16-DEC-2009 12:00:00

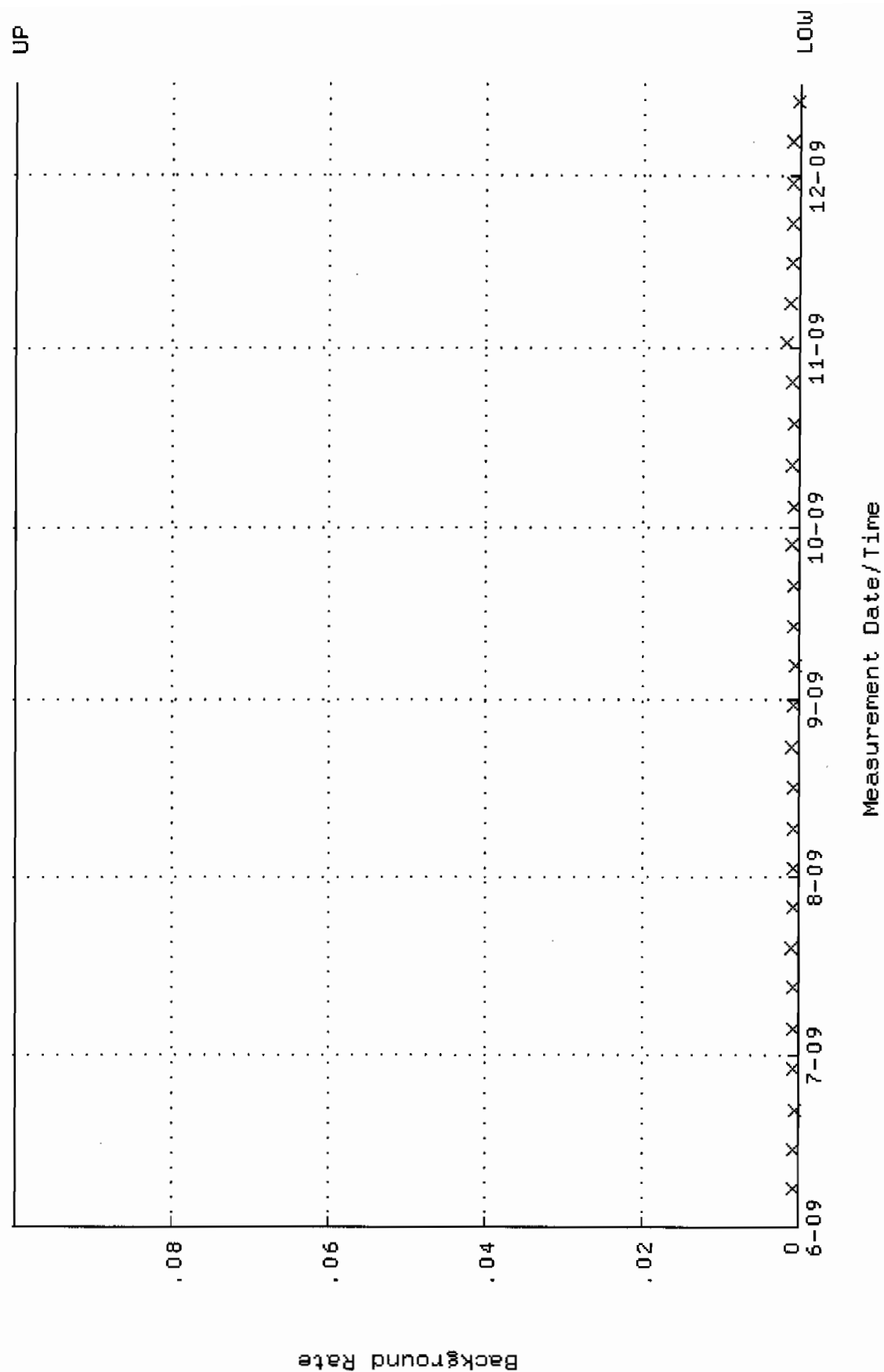
Lower/Upper Lmts: 0.246178 through 0.266178



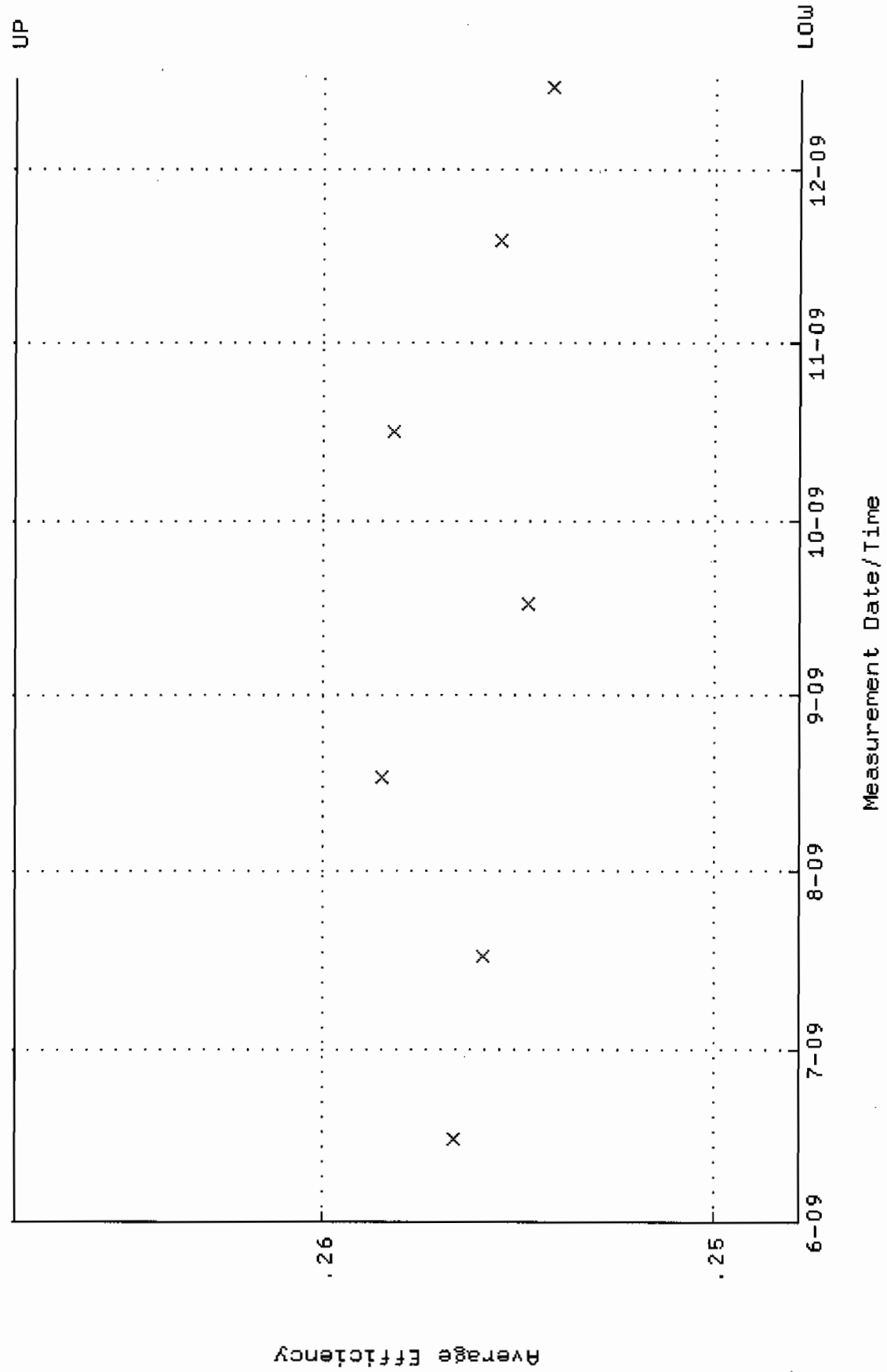
QA filename : DKA100:[ENV_ALPHA.QA.W]w140.QAF;1
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 15-JUN-2009 10:36:37 through 16-DEC-2009 12:00:00
Lower/Upper Lmts: 83.8171 through 92.6399



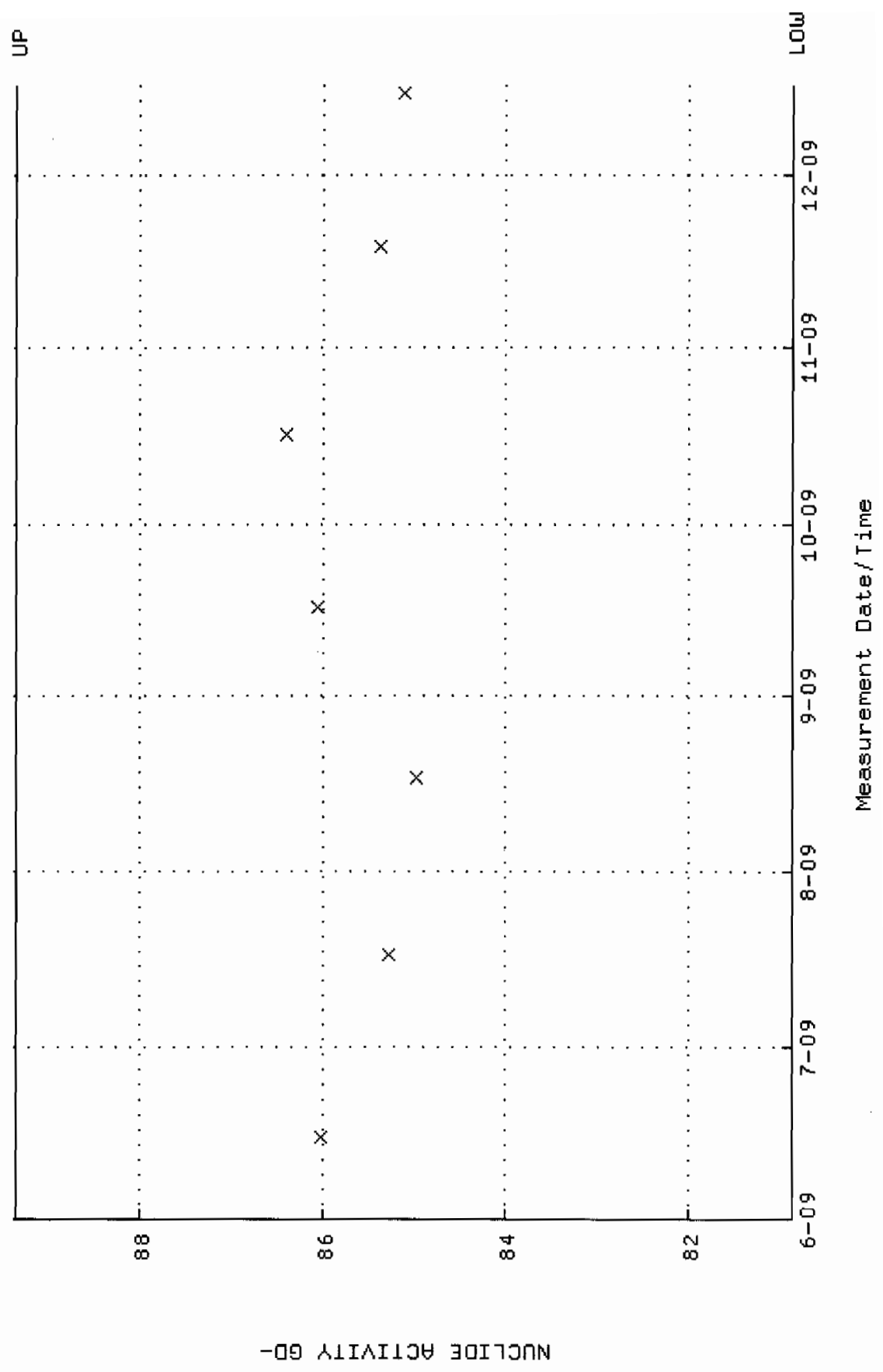
QA filename : DKA100:[ENV_ALPHA.QA.B]B140.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:10:33 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W141.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:36:41 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.247845 through 0.267845



QA filename : DKA100:[ENV_ALPHA.QA.W]w141.QAF;1
Parameter Name : NLACTIVY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 15-JUN-2009 10:36:41 through 16-DEC-2009 12:00:00
Lower/Upper Lmts: 80.8595 through 89.3711



UP

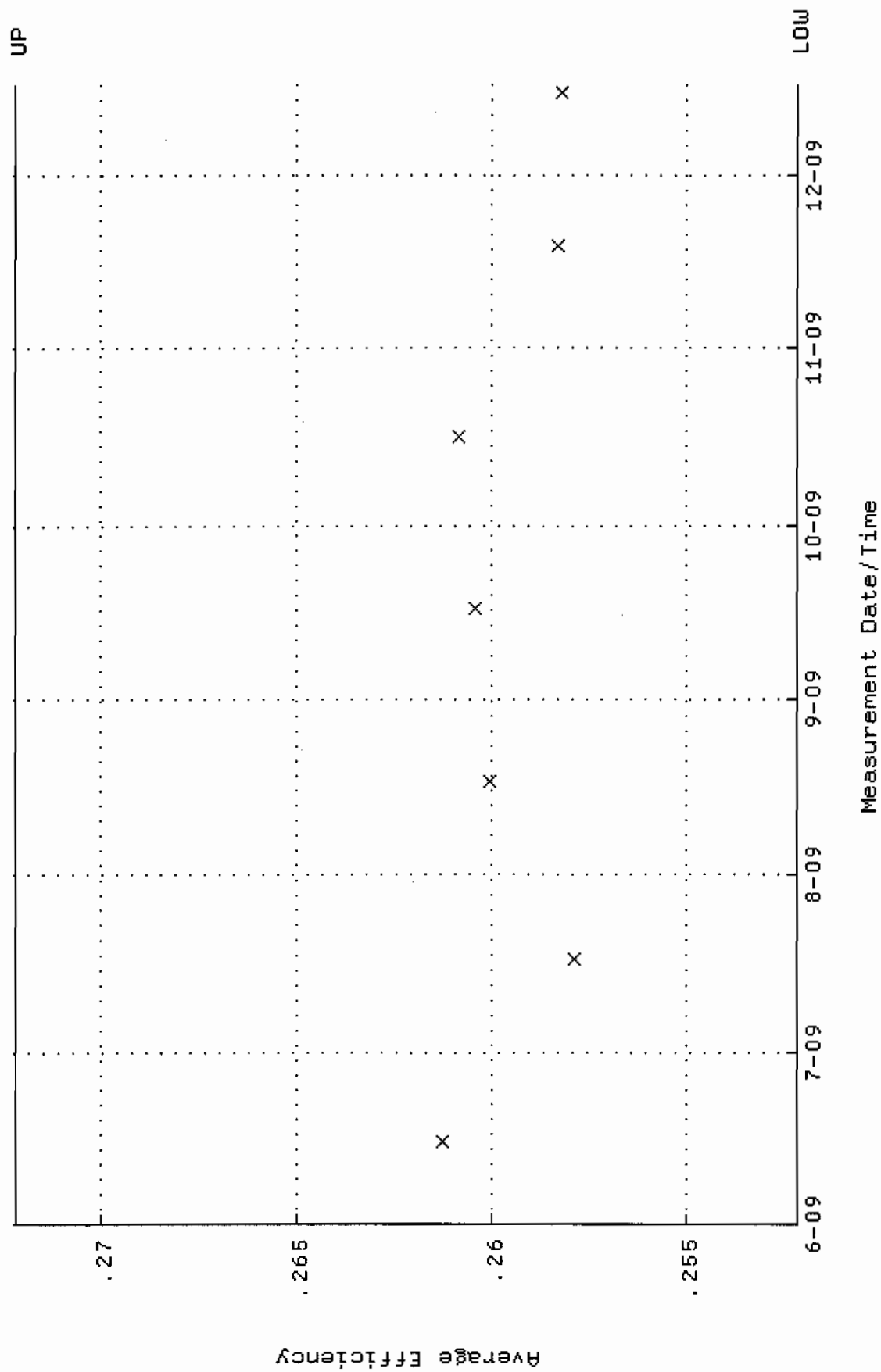
Date	Background Rate
6-09	0.015
7-09	0.000
8-09	0.000
9-09	0.000
10-09	0.000
11-09	0.000
12-09	0.000
1-10	0.000
2-10	0.000
3-10	0.000
4-10	0.000
5-10	0.000
6-10	0.000
7-10	0.000
8-10	0.000
9-10	0.000
10-10	0.000
11-10	0.000
12-10	0.000
1-11	0.000
2-11	0.000
3-11	0.000
4-11	0.000
5-11	0.000
6-11	0.000
7-11	0.000
8-11	0.000
9-11	0.000
10-11	0.000
11-11	0.000
12-11	0.000
1-12	0.000
2-12	0.000
3-12	0.000
4-12	0.000
5-12	0.000
6-12	0.000
7-12	0.000
8-12	0.000
9-12	0.000
10-12	0.000
11-12	0.000
12-12	0.000

QA filename : DKA100:[ENV_ALPHA.QA.W]W142.QAF;2

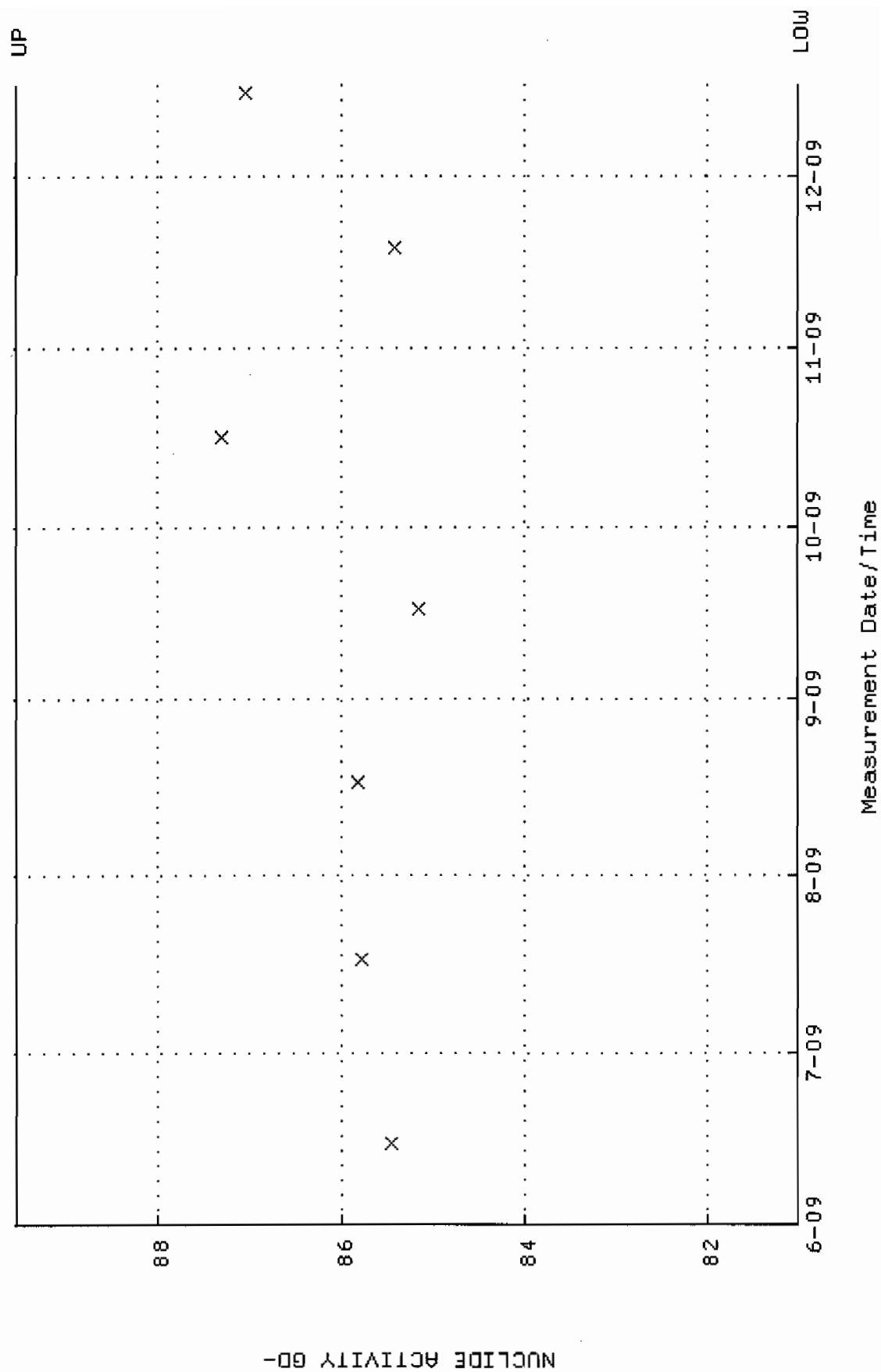
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 15-JUN-2009 10:36:46 through 16-DEC-2009 12:00:00

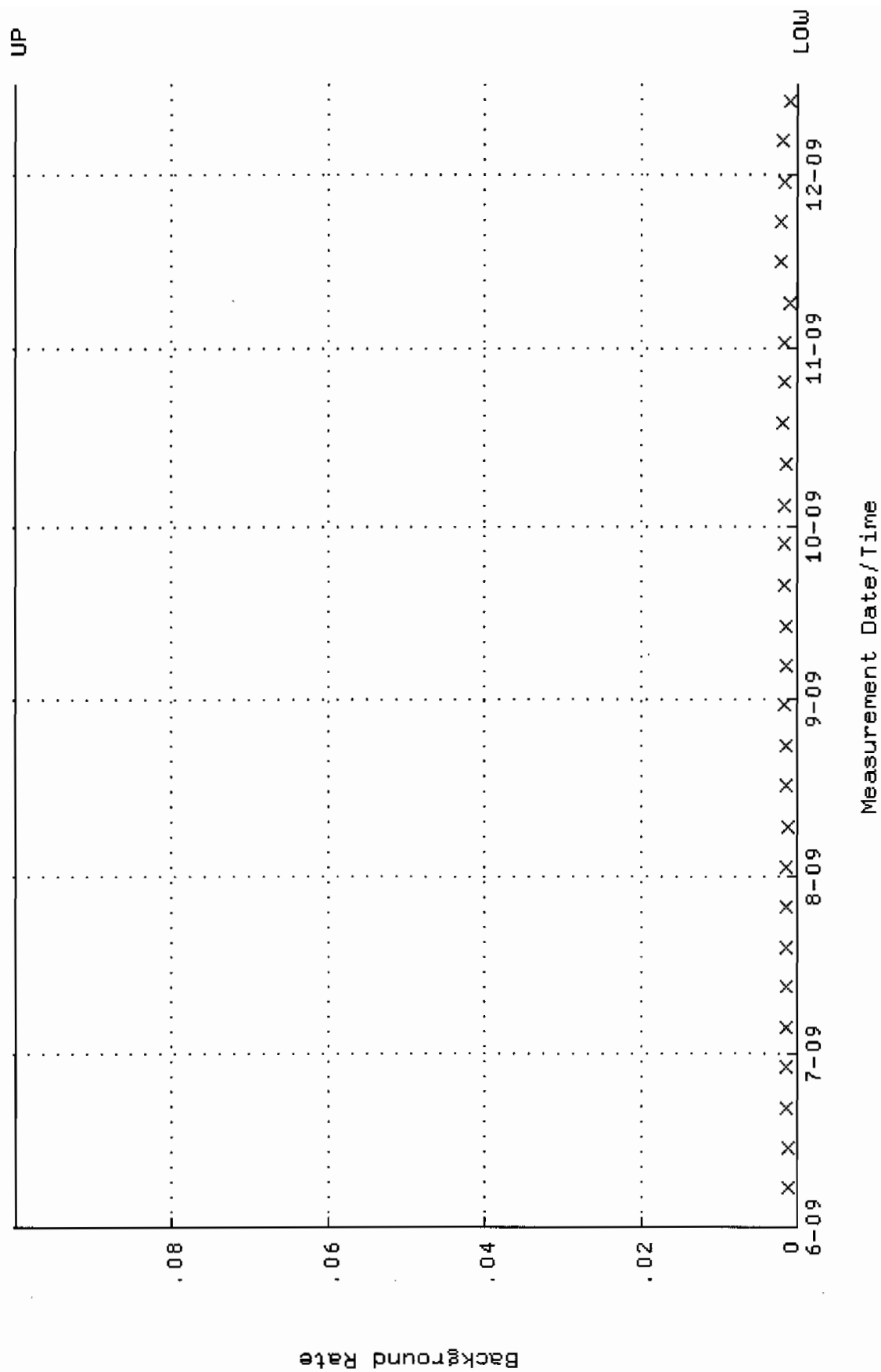
Lower/Upper Lmts: 0.252182 through 0.272182



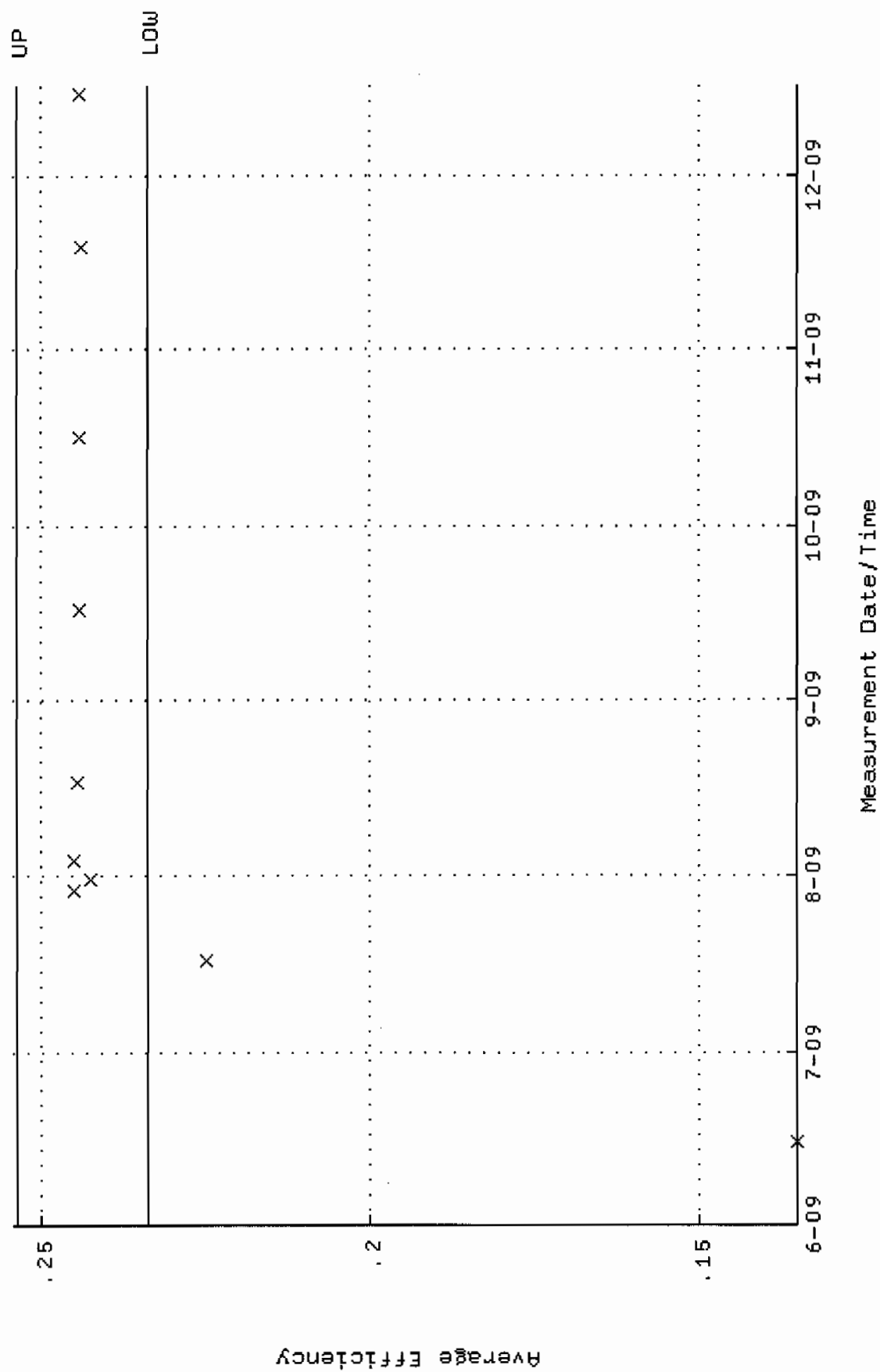
QA filename : DKA100:[ENV_ALPHA.QA.W]W142.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:36:46 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 81.0245 through 89.5533



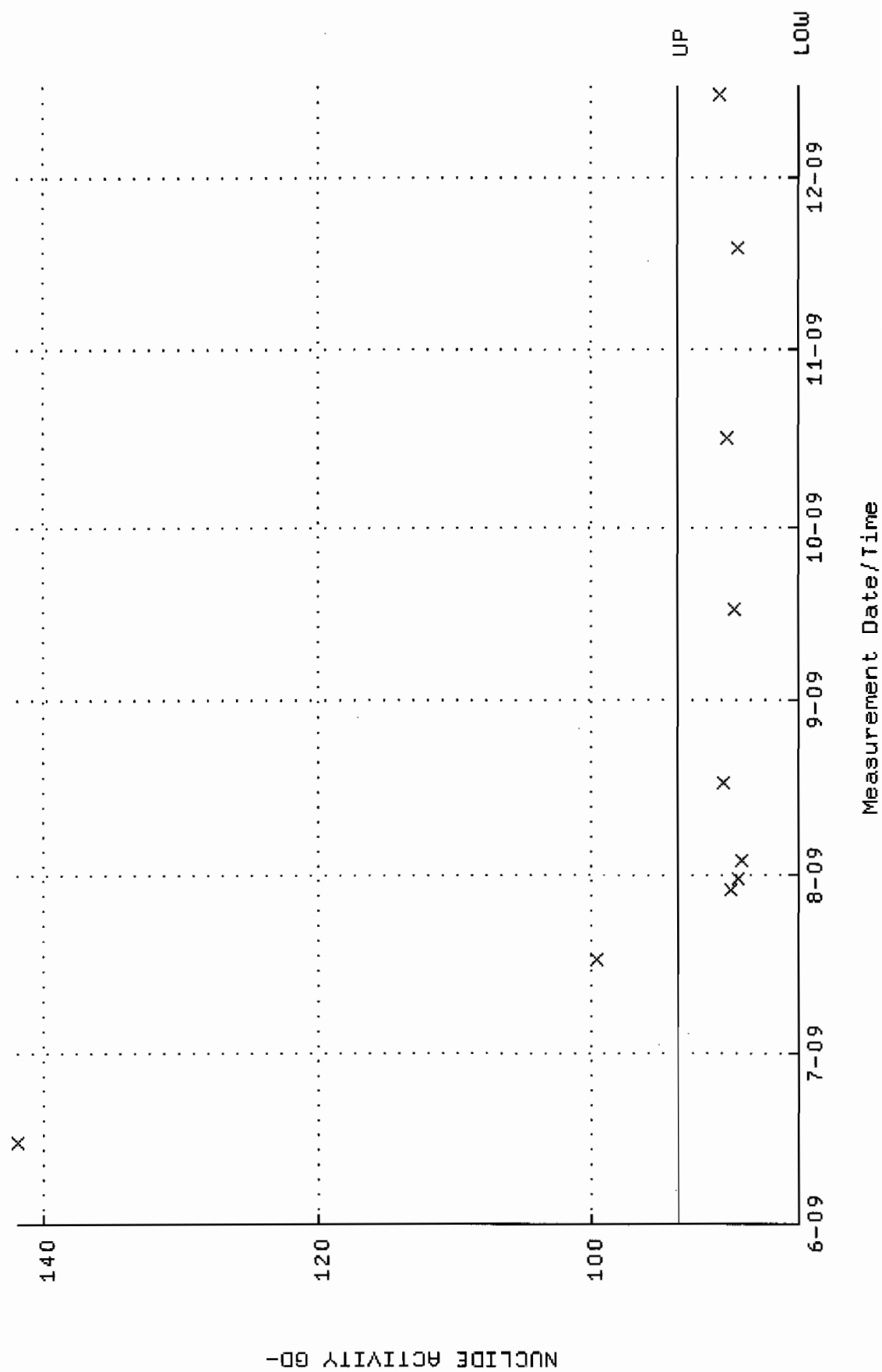
QA filename : DKA100:[ENV_ALPHA.QA.B]B142.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:10:42 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



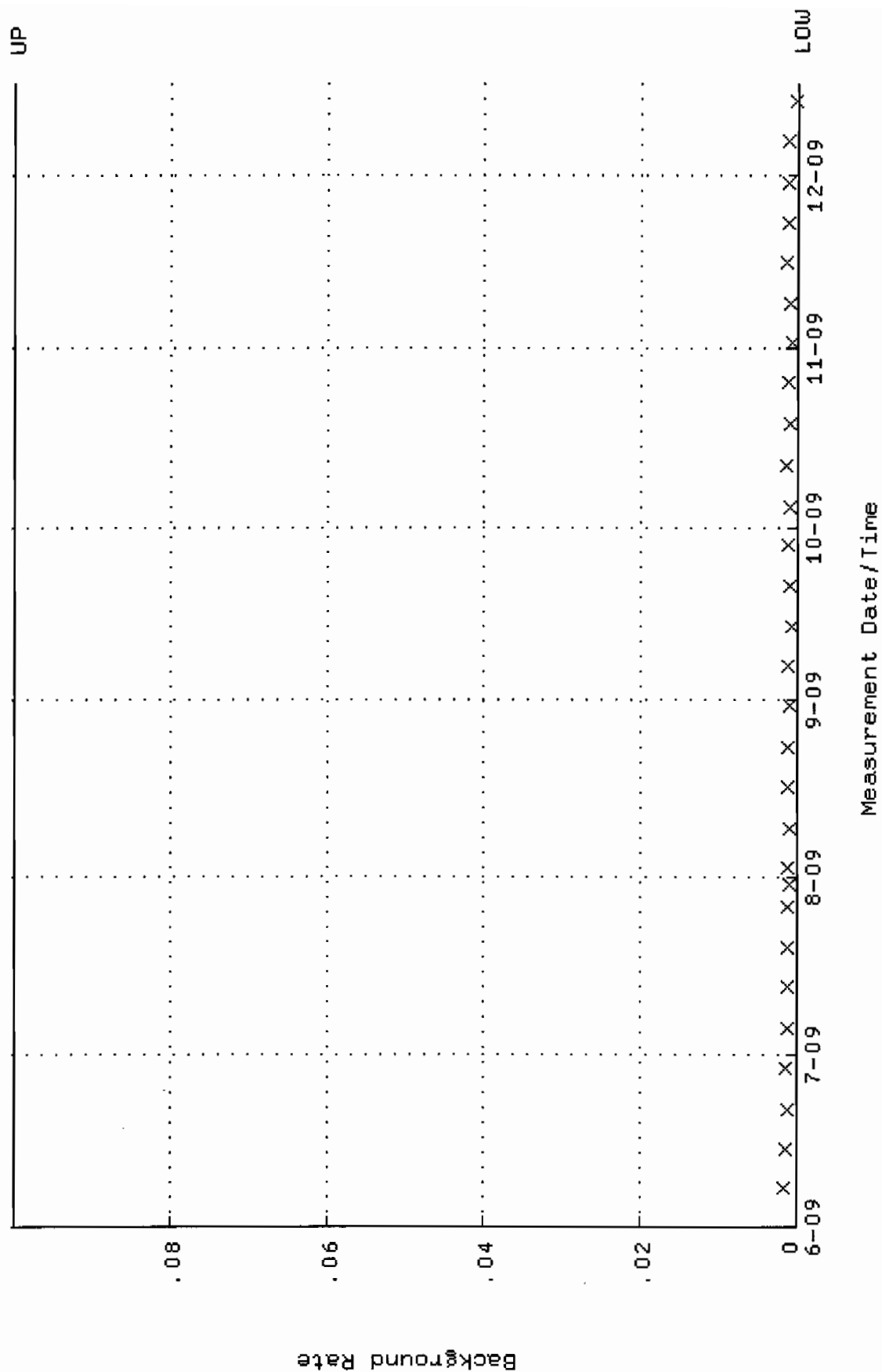
QA filename : DKA100:[ENV_ALPHA.QA.W]W143.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:36:52 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.233879 through 0.253879



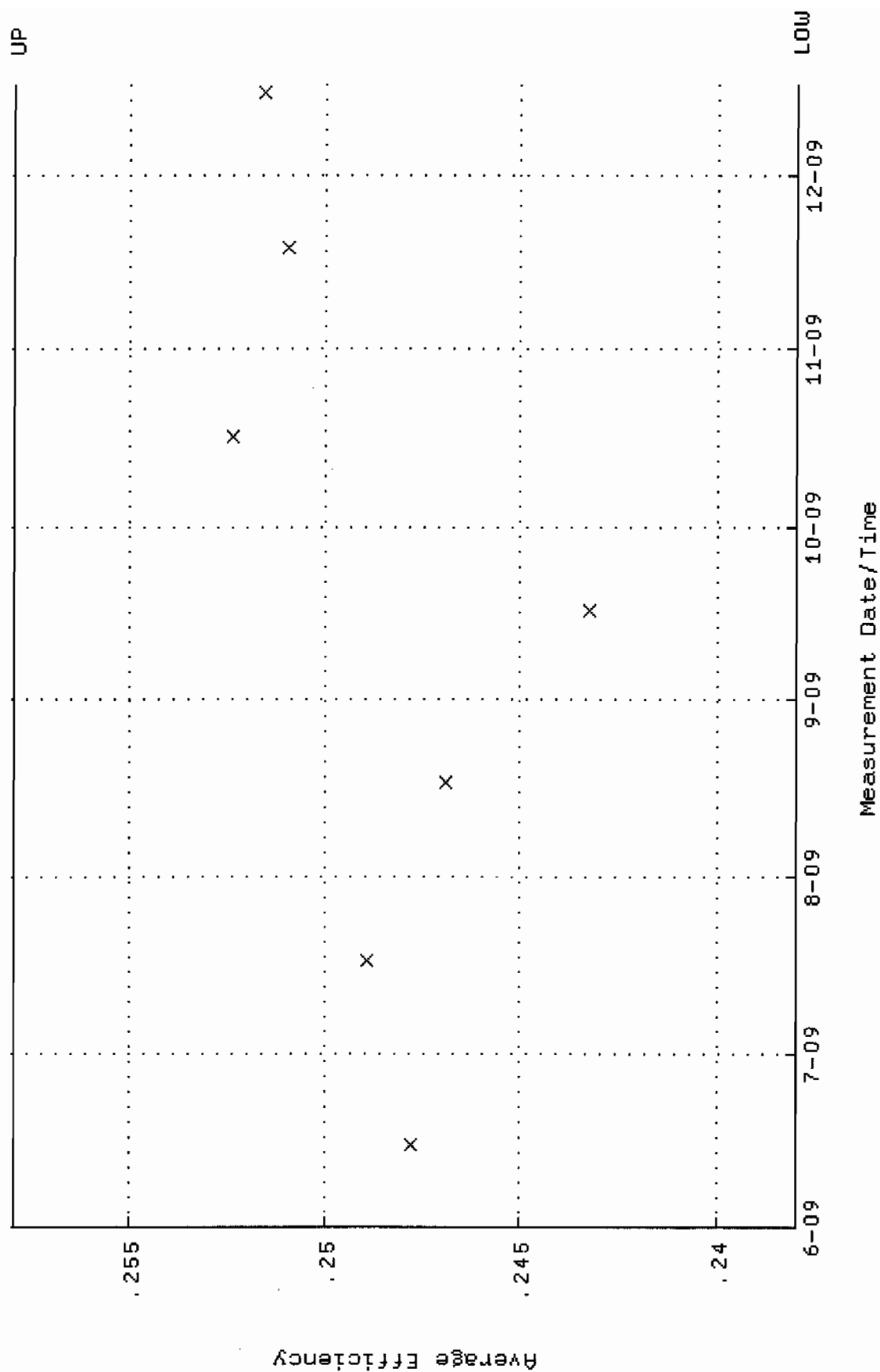
QA filename : DKA100:[ENV_ALPHA.QA.W]W143.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:36:52 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 84.9200 through 93.8590



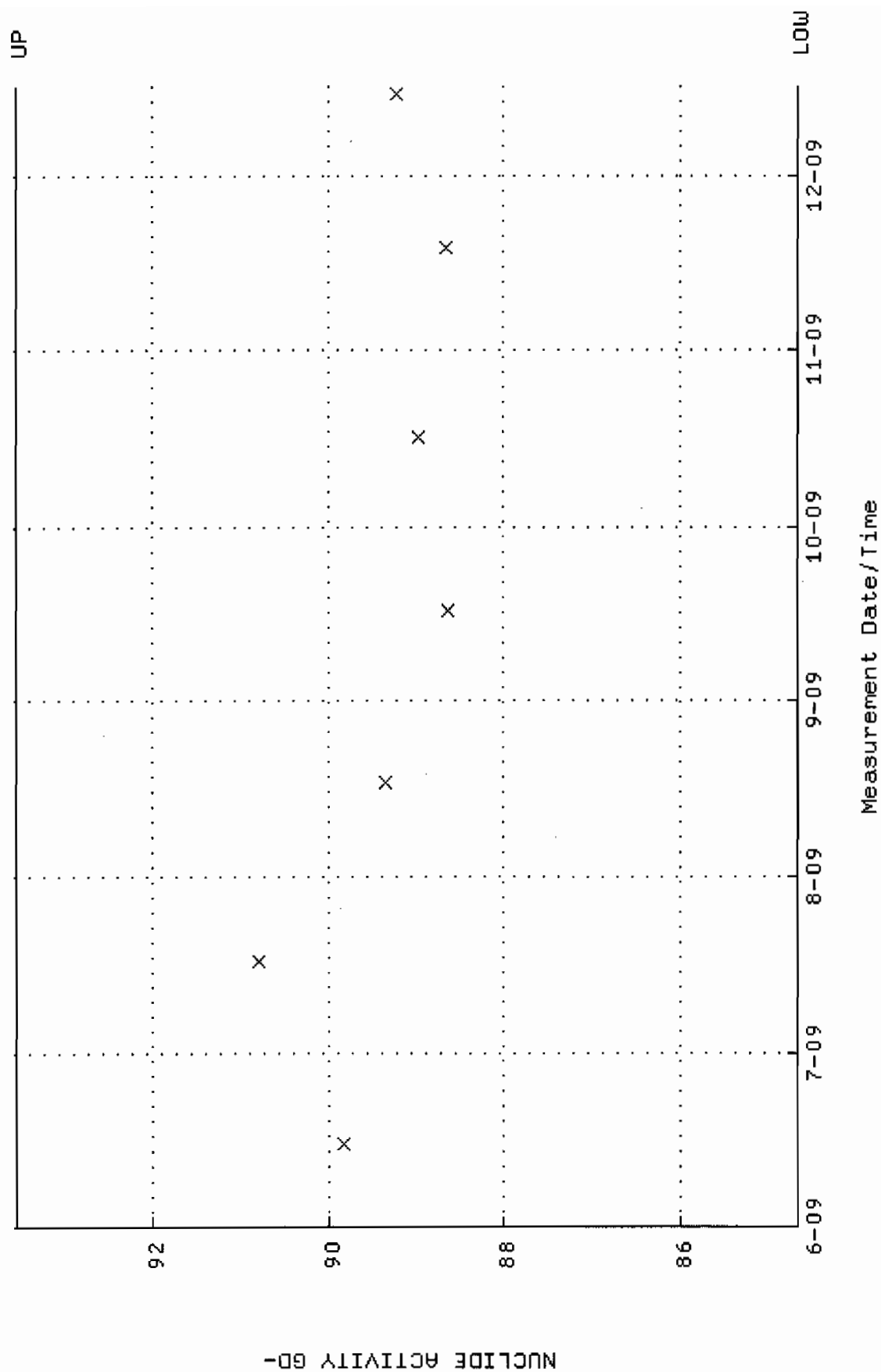
QA filename : DKA100:[ENV_ALPHA.QA.B]B143.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:10:47 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



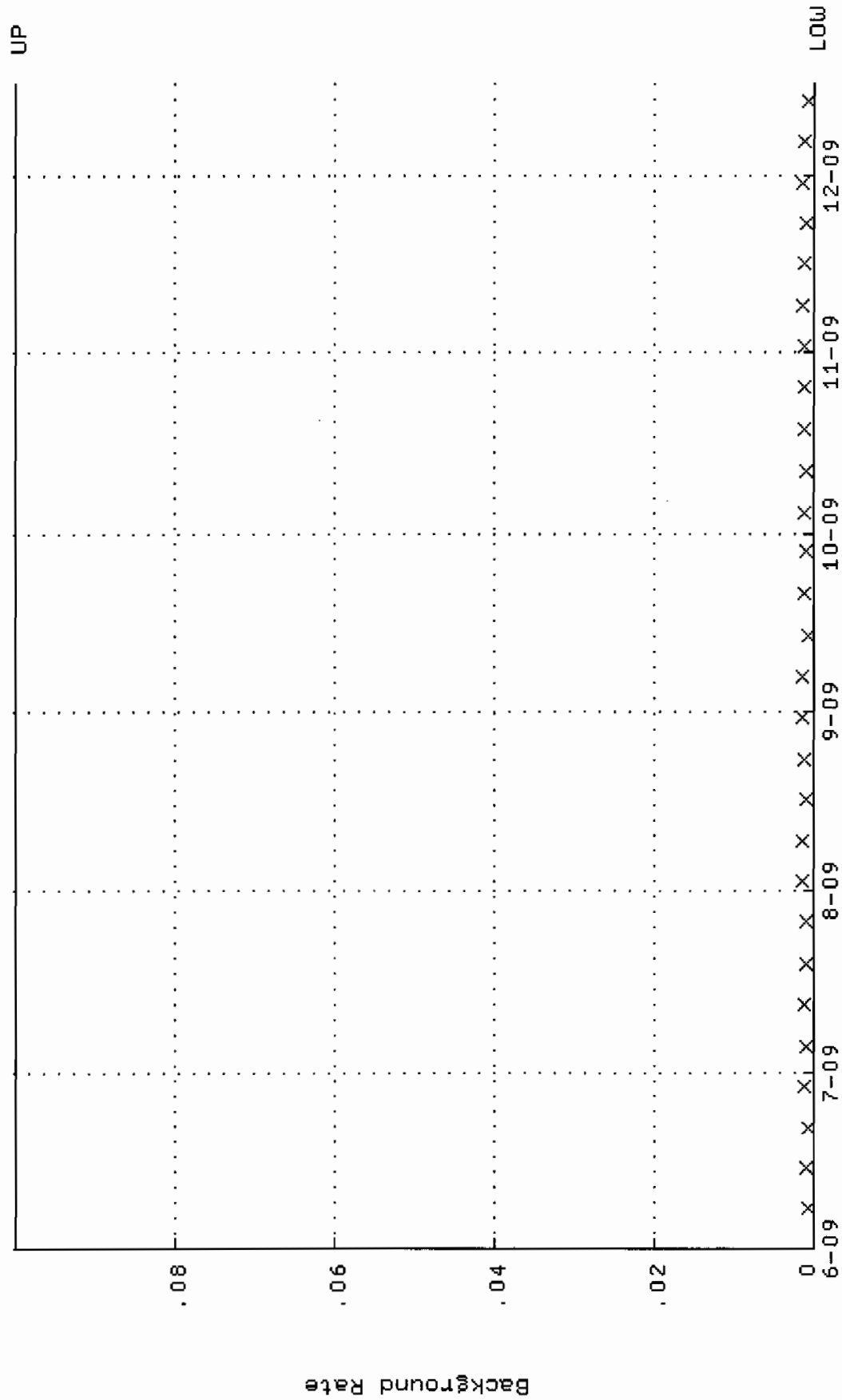
QA filename : DKA100:[ENV_ALPHA.QA.W]W144.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:36:58 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.237963 through 0.257963



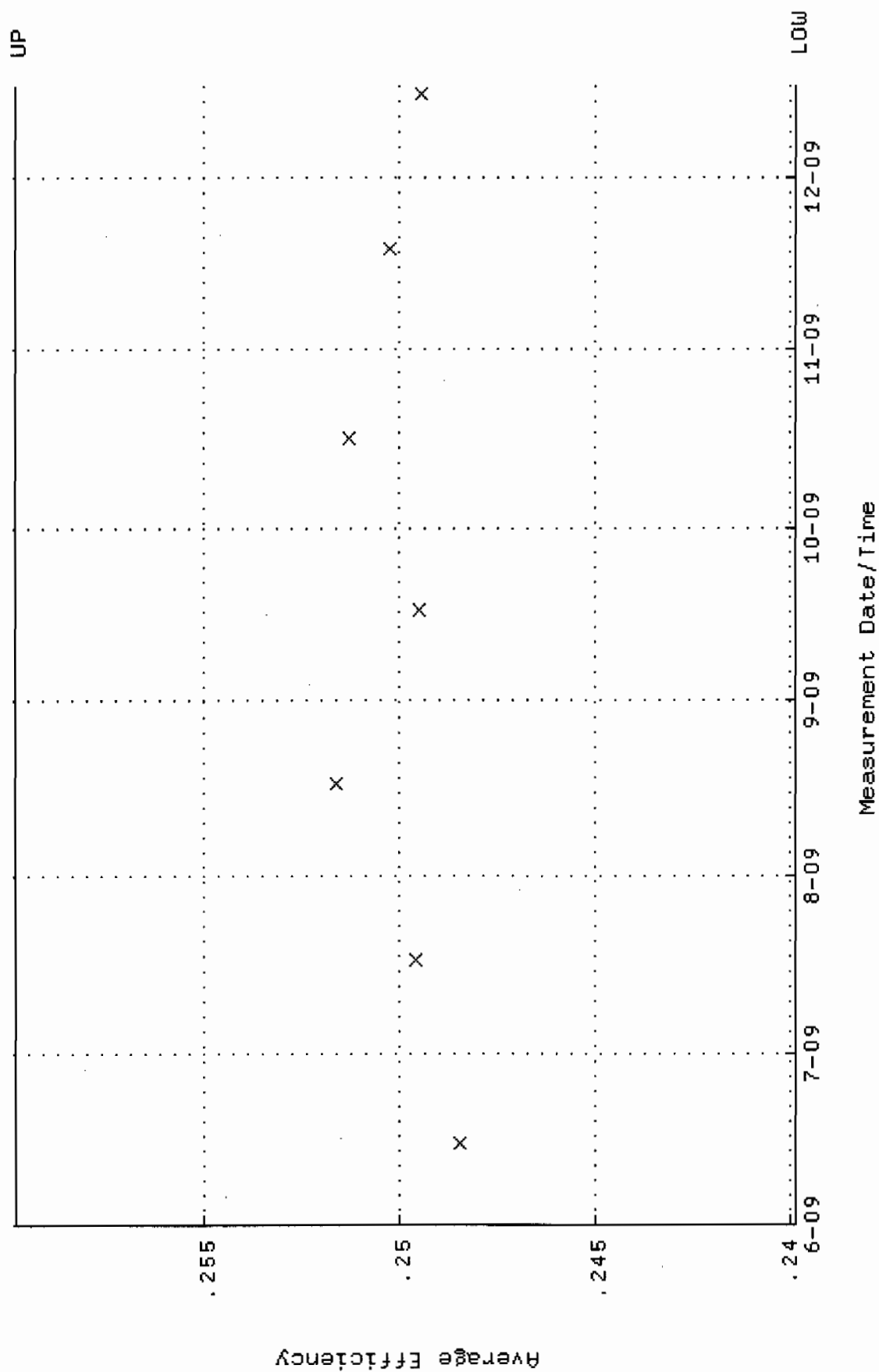
QA filename : DKA100:[ENV_ALPHA.QA.W]W144.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:36:58 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 84.6507 through 93.5613



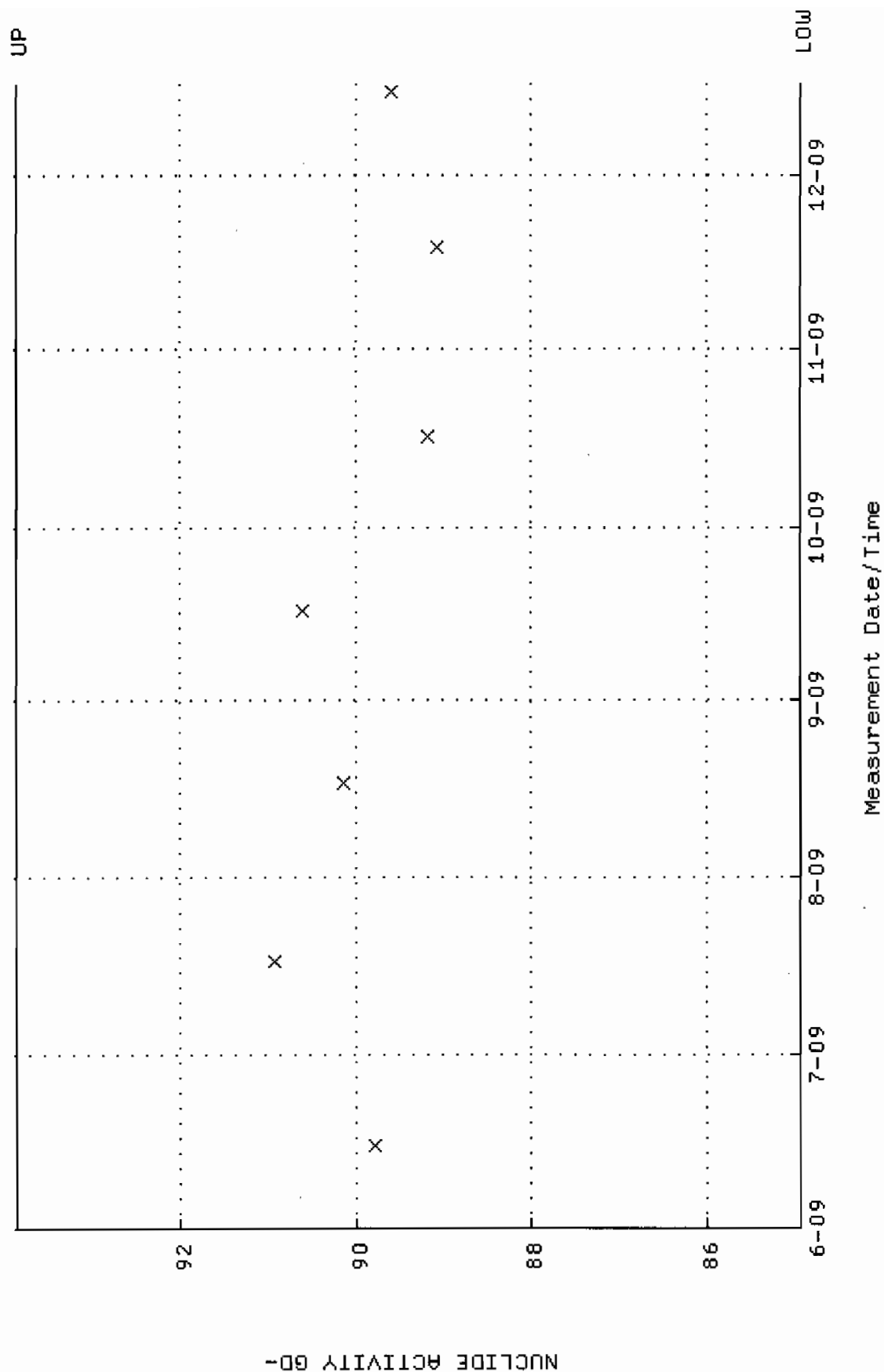
QA filename : DKA100:[ENV_ALPHA.QA.B]B144.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:10:51 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.w]w145.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:37:03 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.239850 through 0.259850



QA filename : DKA100:[ENV_ALPHA.QA.W]w145.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:37:03 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 84.9354 through 93.8760

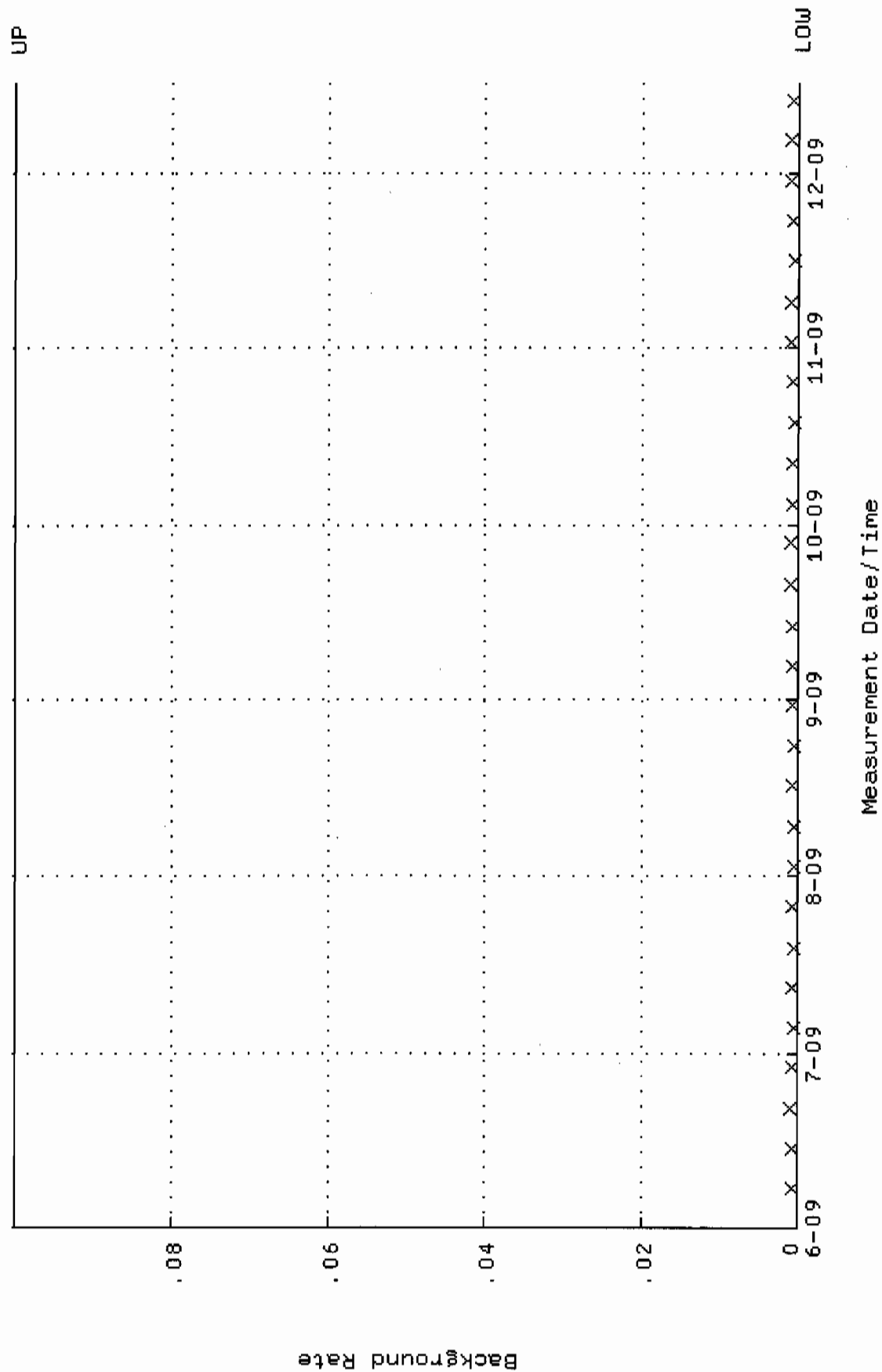


QA filename : DKA100:[ENV_ALPHA.QA.B]B145.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 7-JUN-2009 17:10:56 through 16-DEC-2009 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

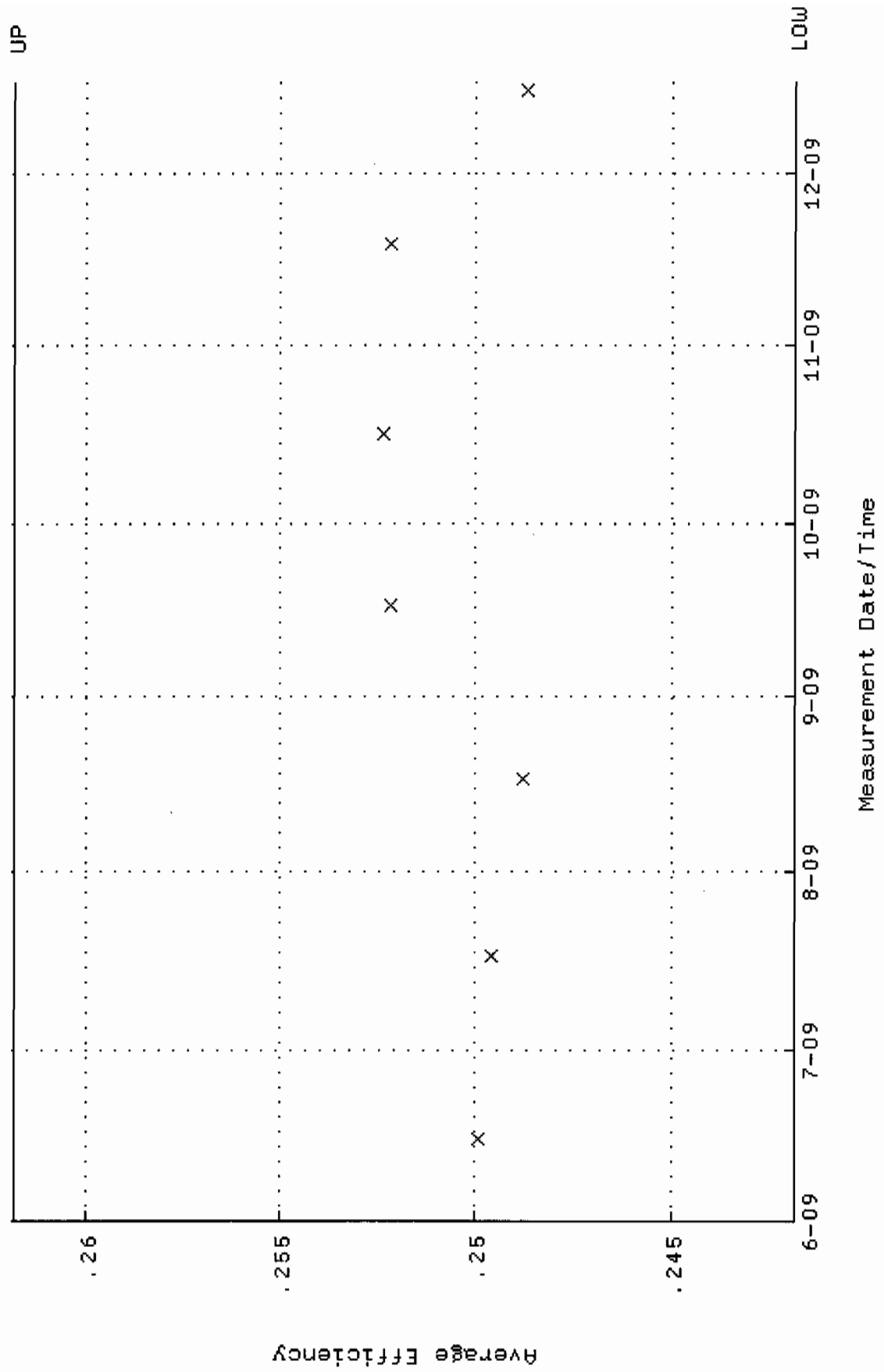


QA filename : DKA100:[ENV_ALPHA.QA.W]W146.QAF;2

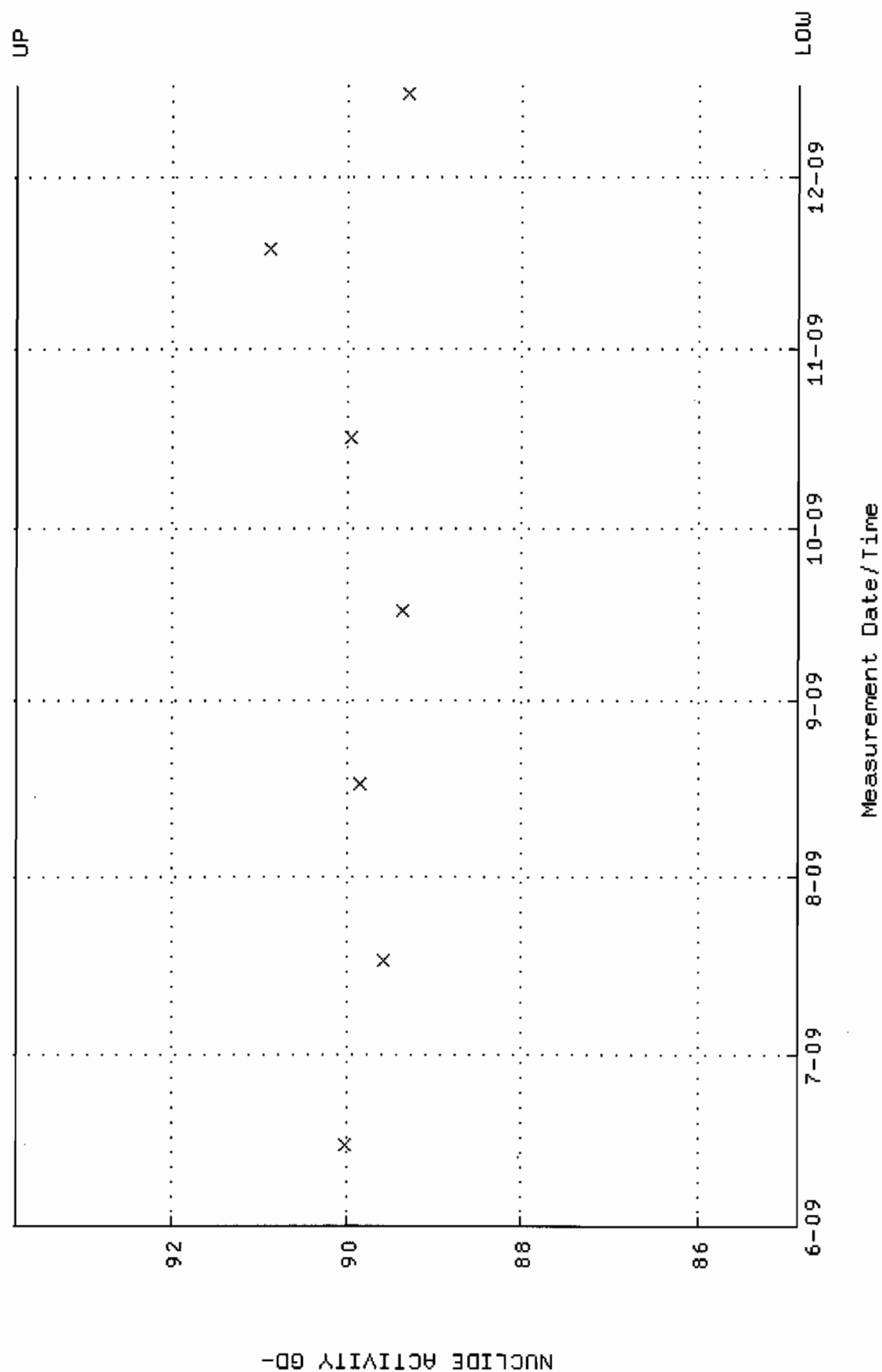
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 15-JUN-2009 10:37:08 through 16-DEC-2009 12:00:00

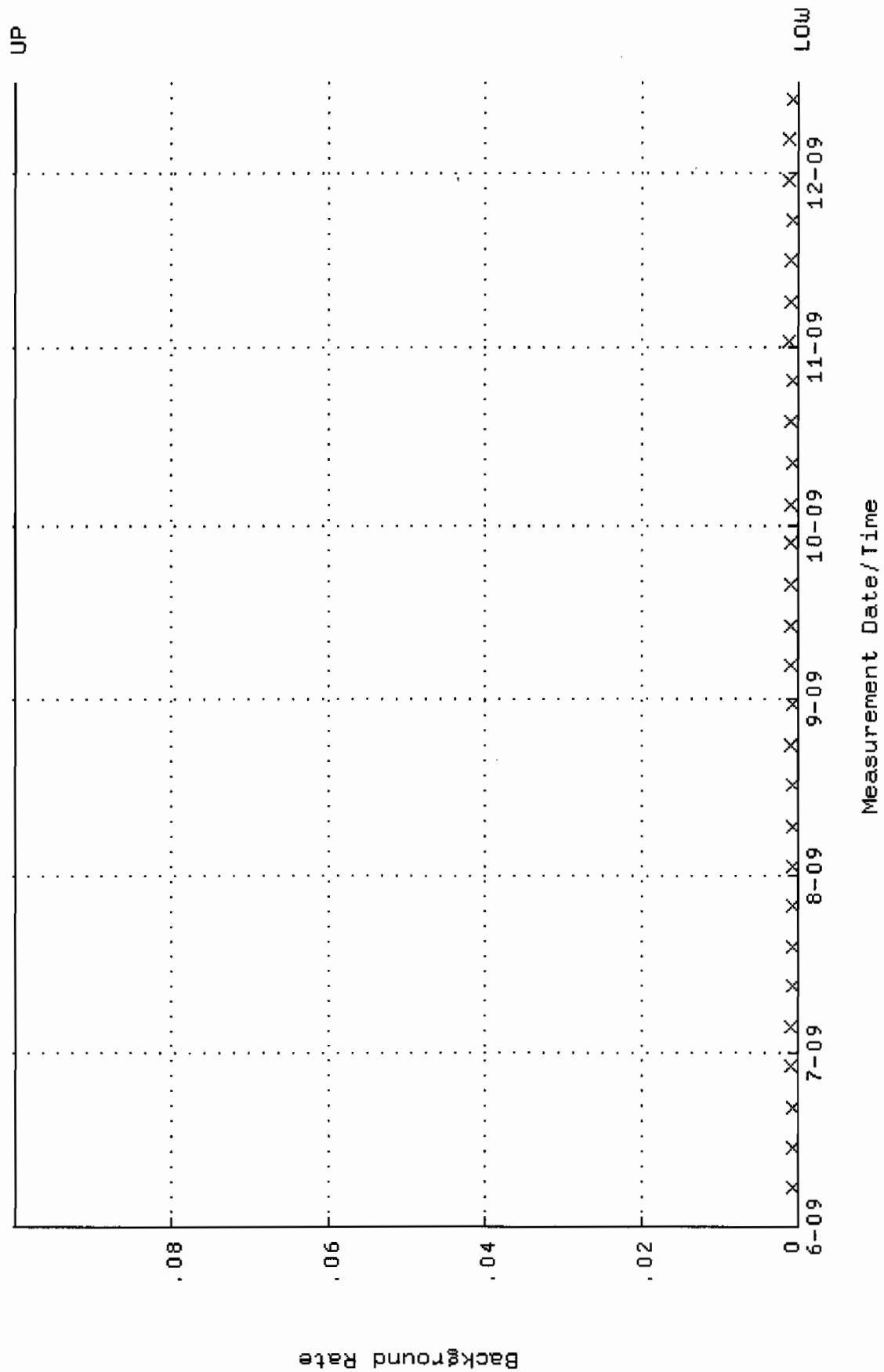
Lower/Upper Lmts: 0.241831 through 0.261831



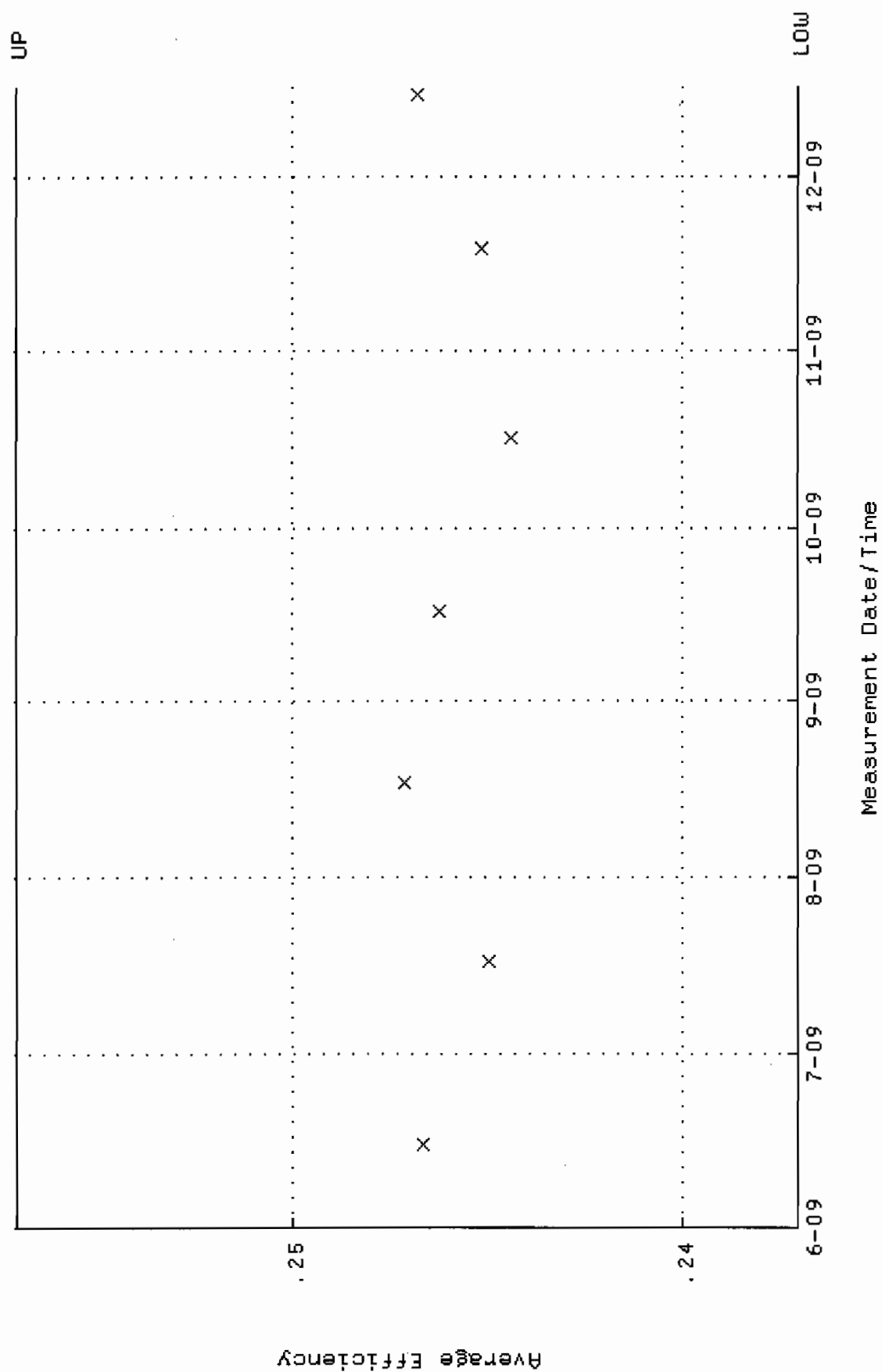
QA filename : DKA100:[ENV_ALPHA.QA.W]W146.QAF;2
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:37:08 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 84.8578 through 93.7902



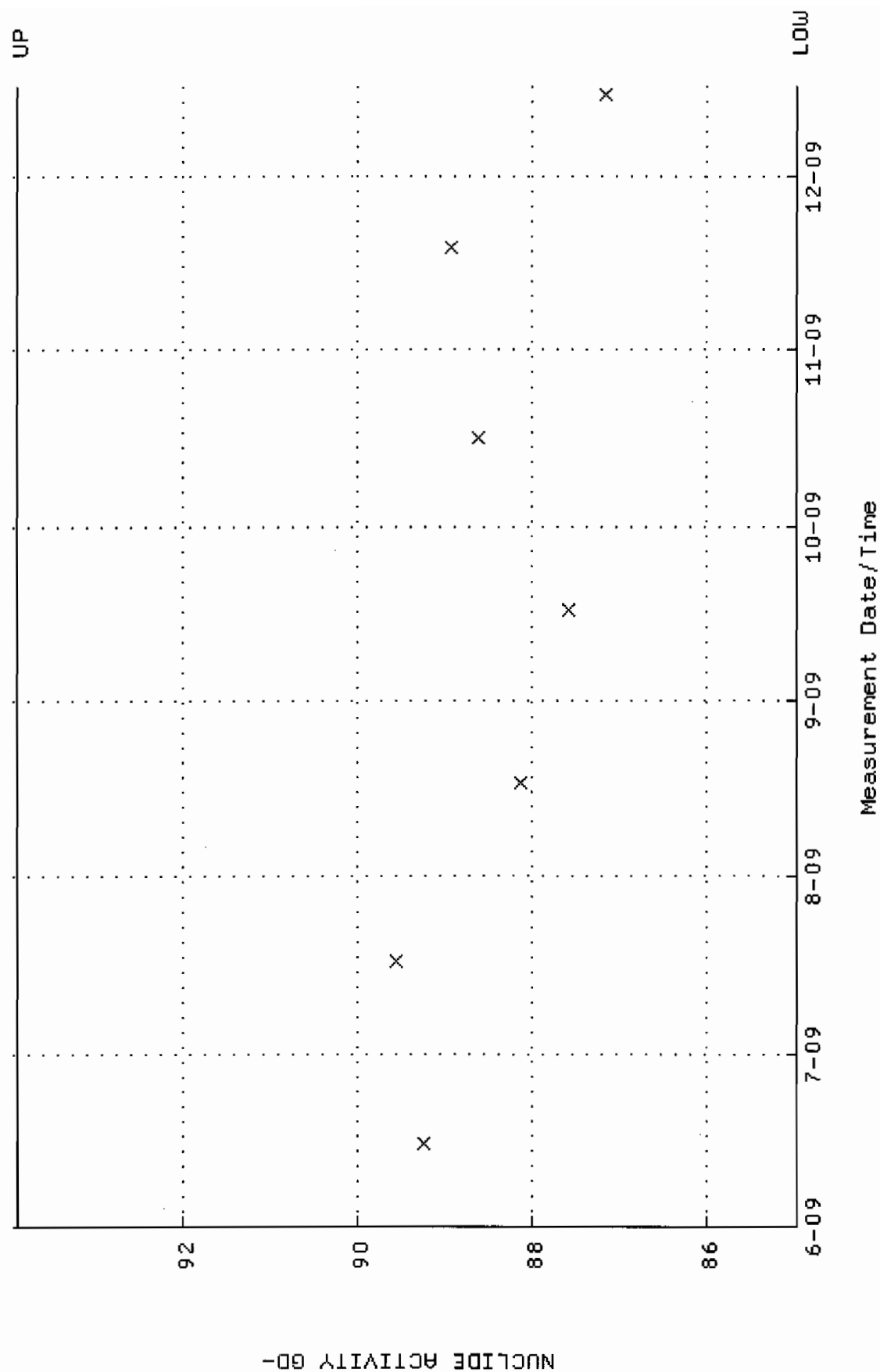
QA filename : DKA100:[ENV_ALPHA.QA.B]B146.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 7-JUN-2009 17:11:01 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]U147.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:37:13 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.237046 through 0.257046



QA filename : DKA100:[ENV_ALPHA.QA.W]W147.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-JUN-2009 10:37:13 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 84.9777 through 93.9227

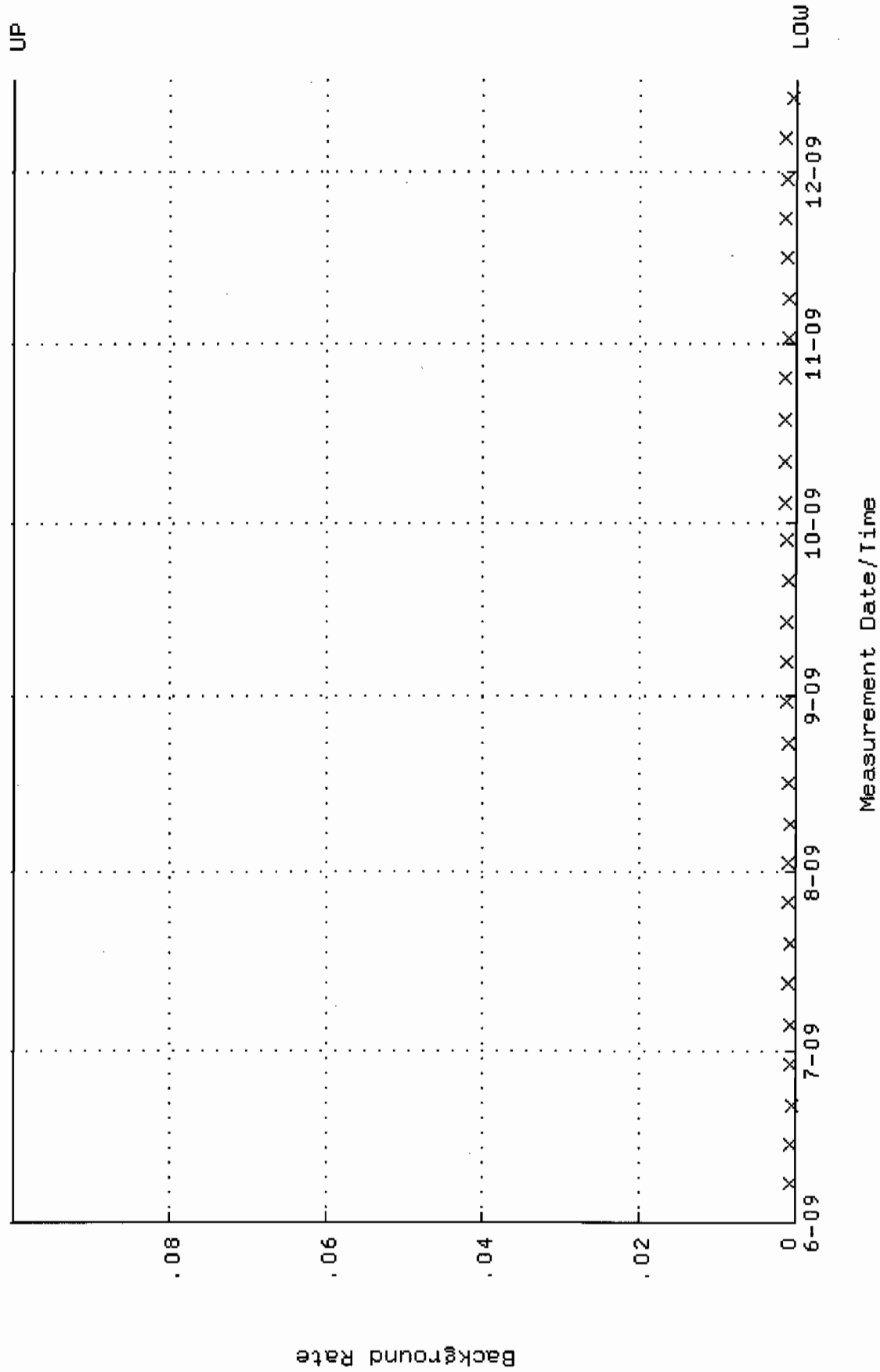


QA filename : DKA100:[ENVY_ALPHA.QA.B]B147.QAF;1

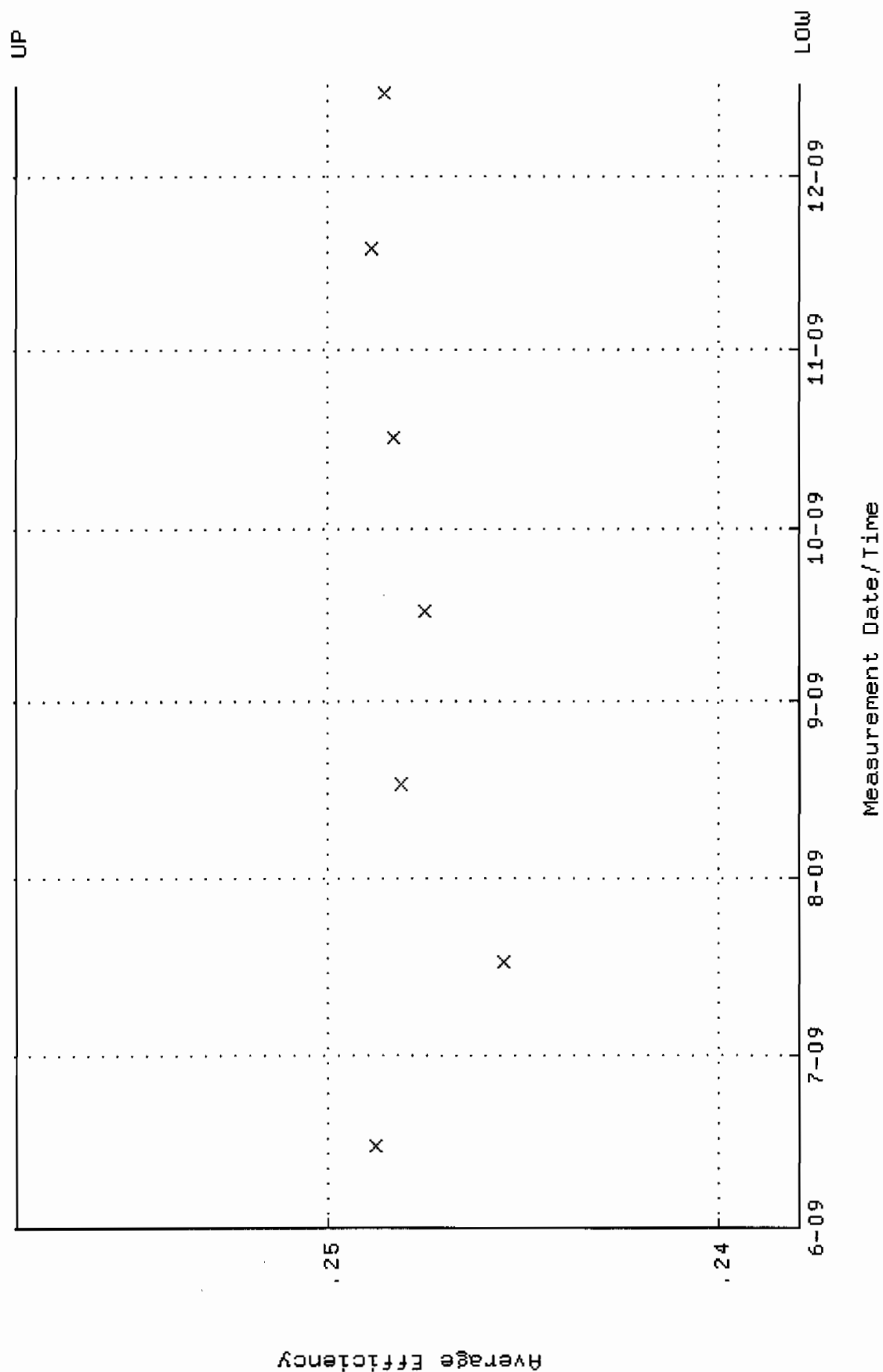
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 7-JUN-2009 17:11:05 through 16-DEC-2009 12:00:00

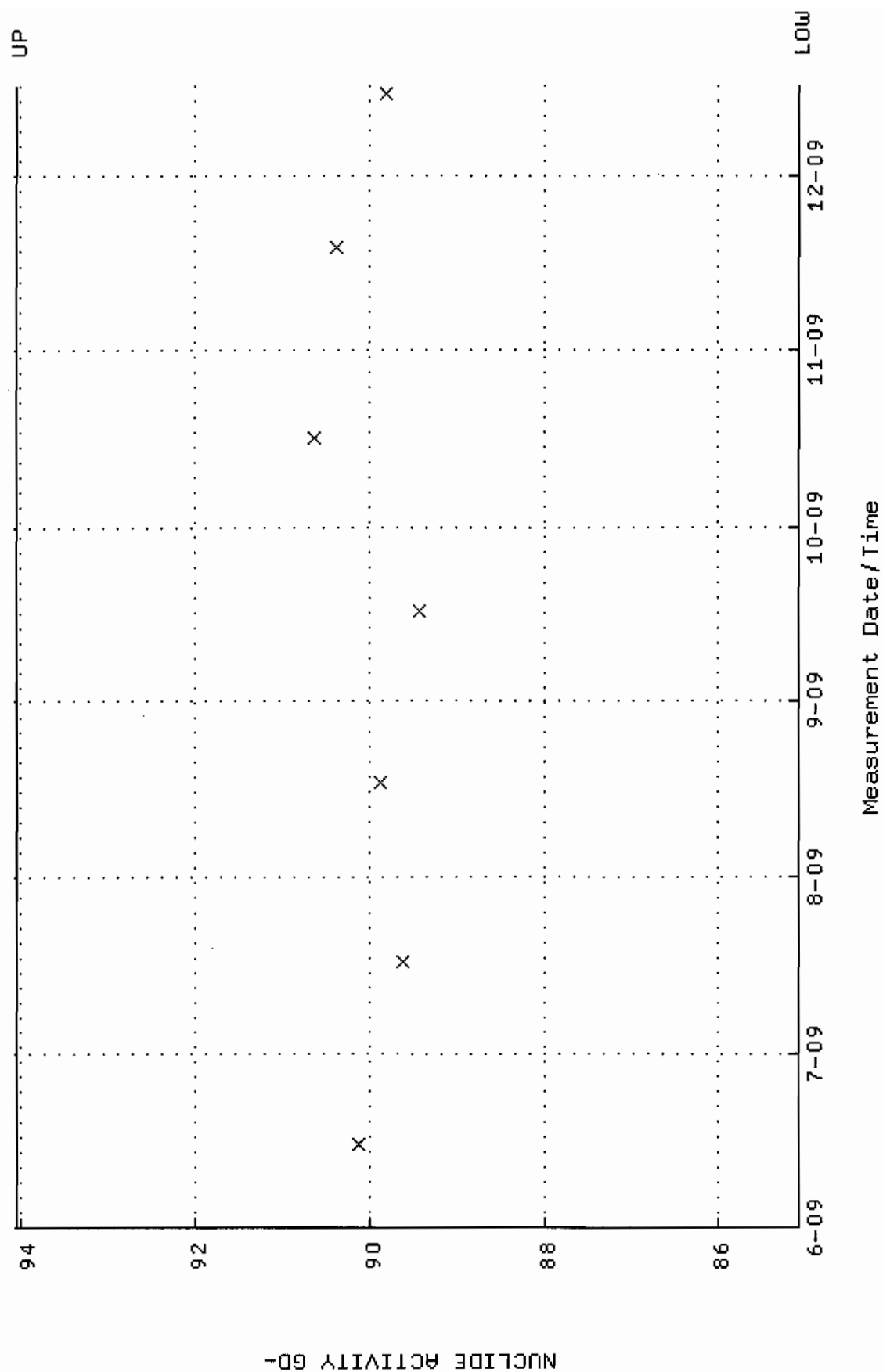
Lower/Upper Lmts: 0.000000E+00 through 0.100000



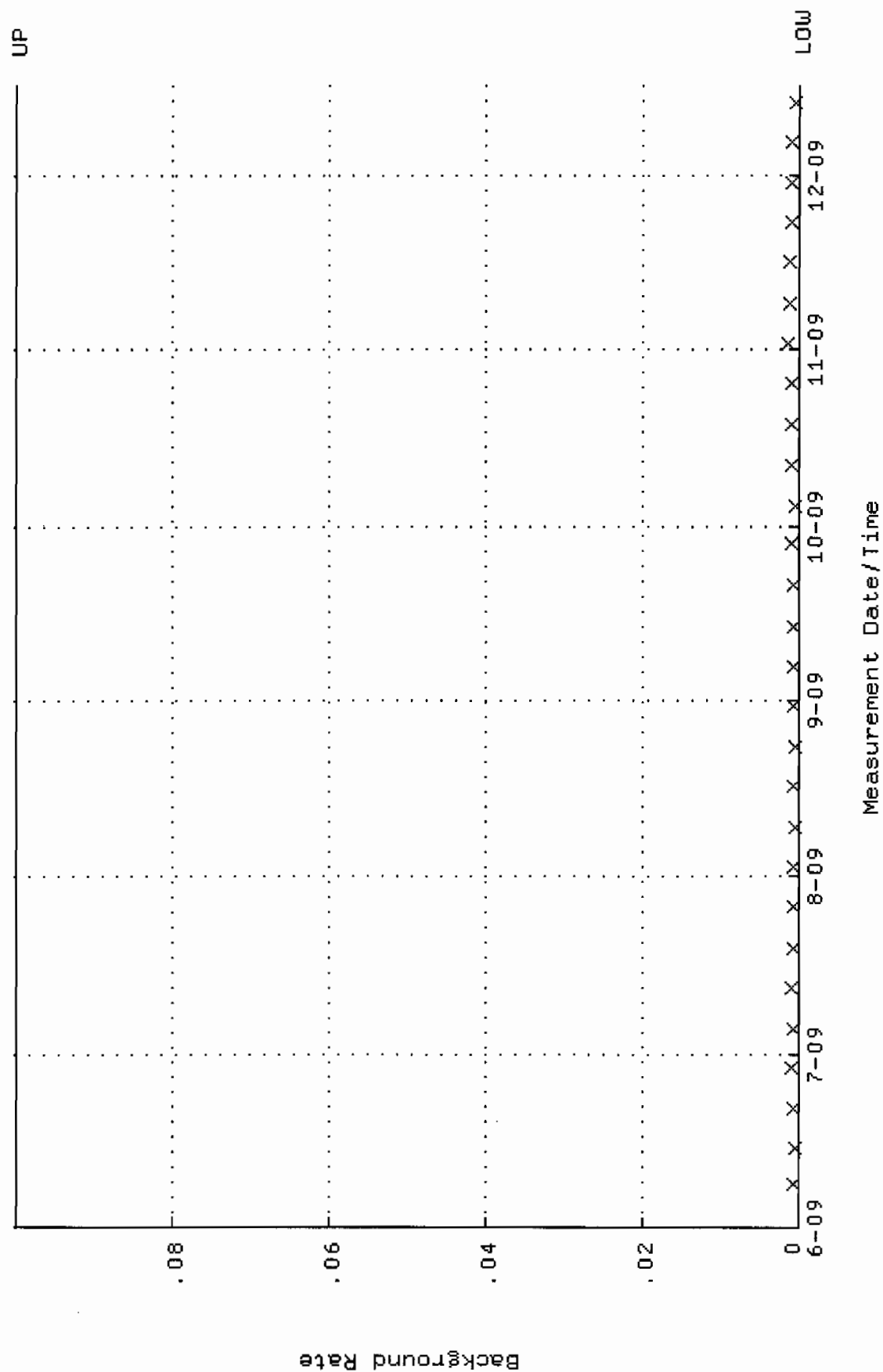
QA filename : DKA100:[ENV_ALPHA.QA.W]W148.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-JUN-2009 10:37:19 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.237934 through 0.257934



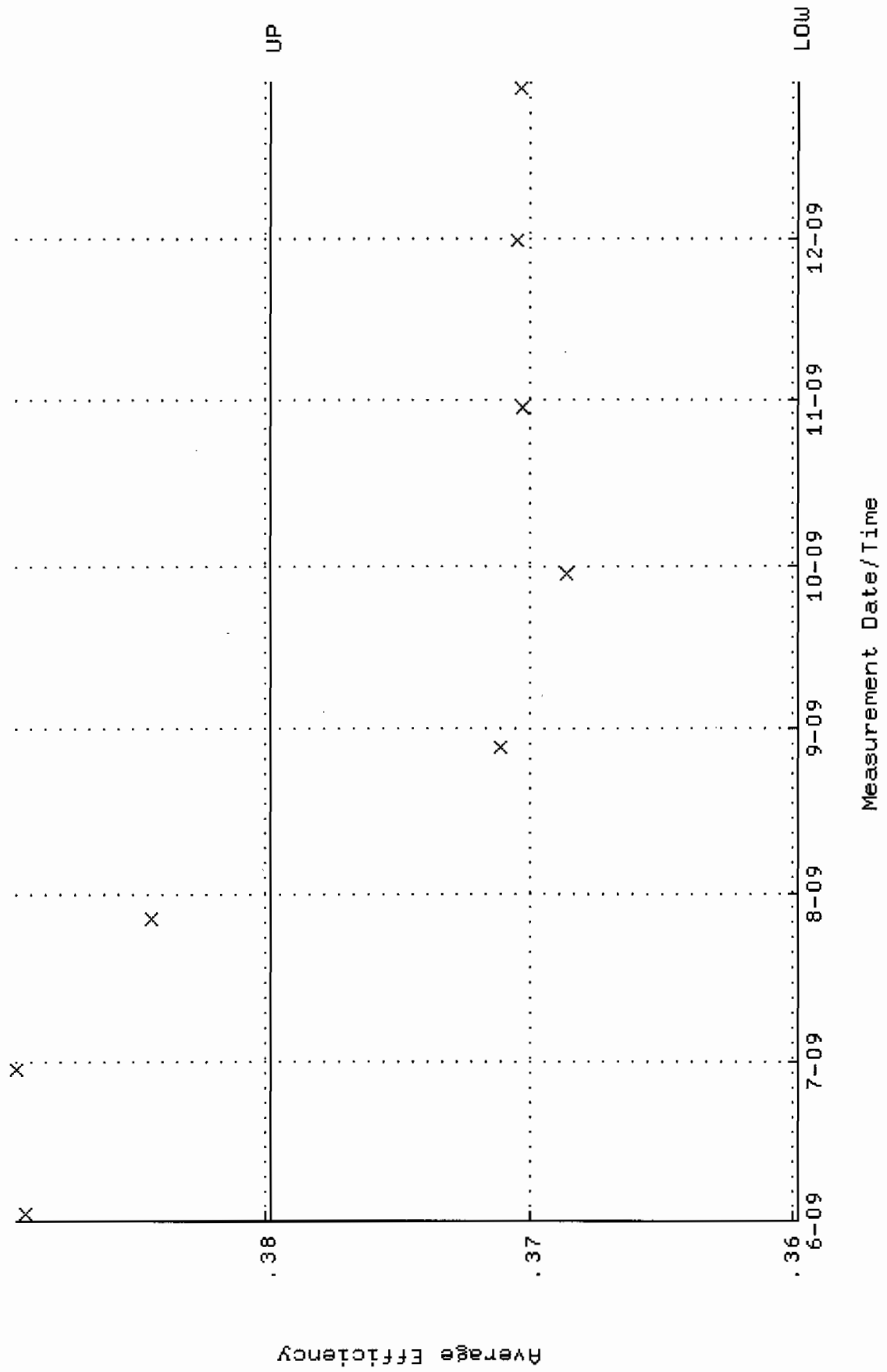
QA filename : DKA100:[ENV_ALPHA.QA.W]W148.QAF;1
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 15-JUN-2009 10:37:19 through 16-DEC-2009 12:00:00
Lower/Upper Lmts: 85.0831 through 94.0393



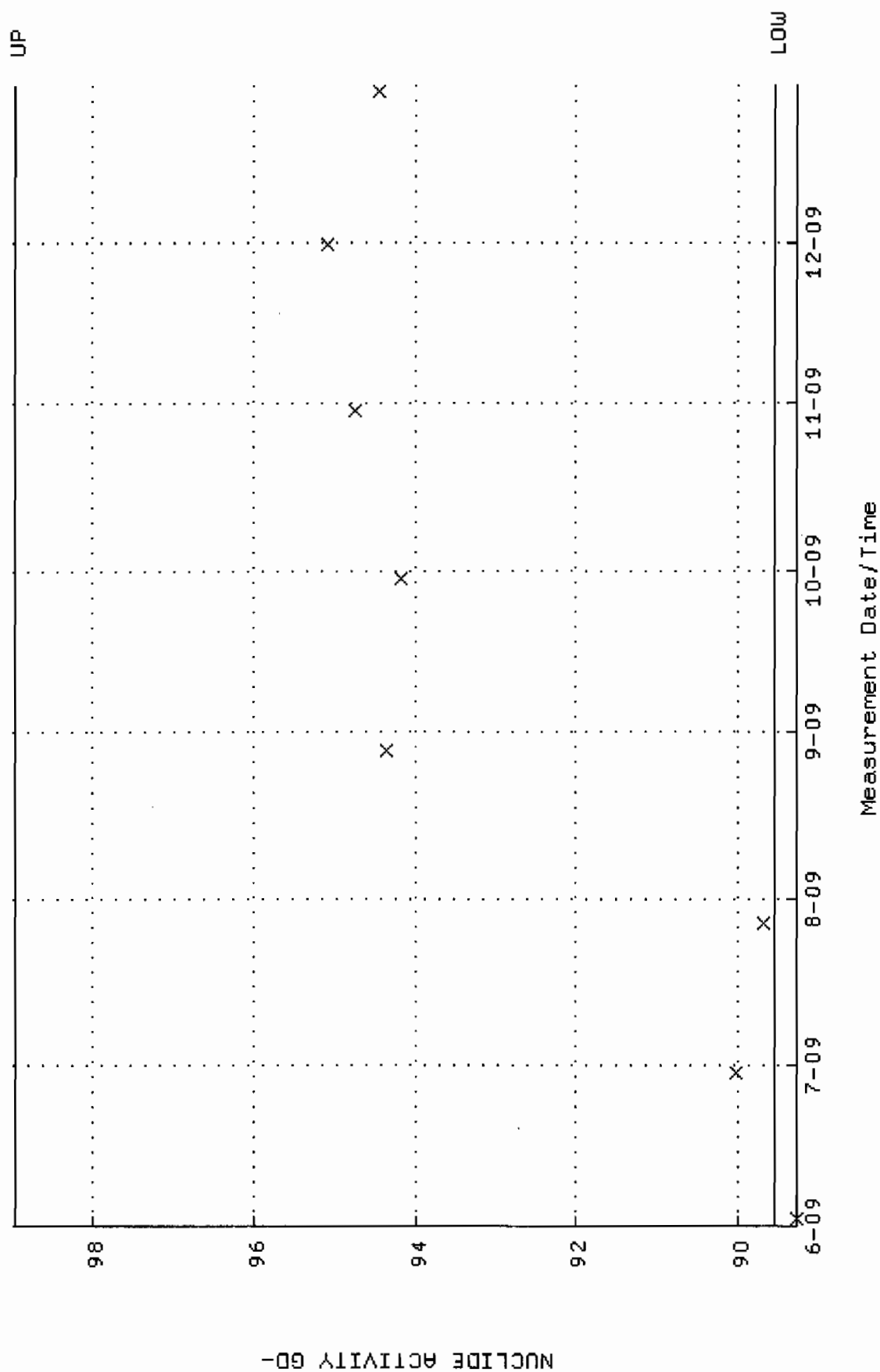
QA filename : DKA100:[ENV_ALPHA.QA.B]B148.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 8-JUN-2009 12:40:23 through 16-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



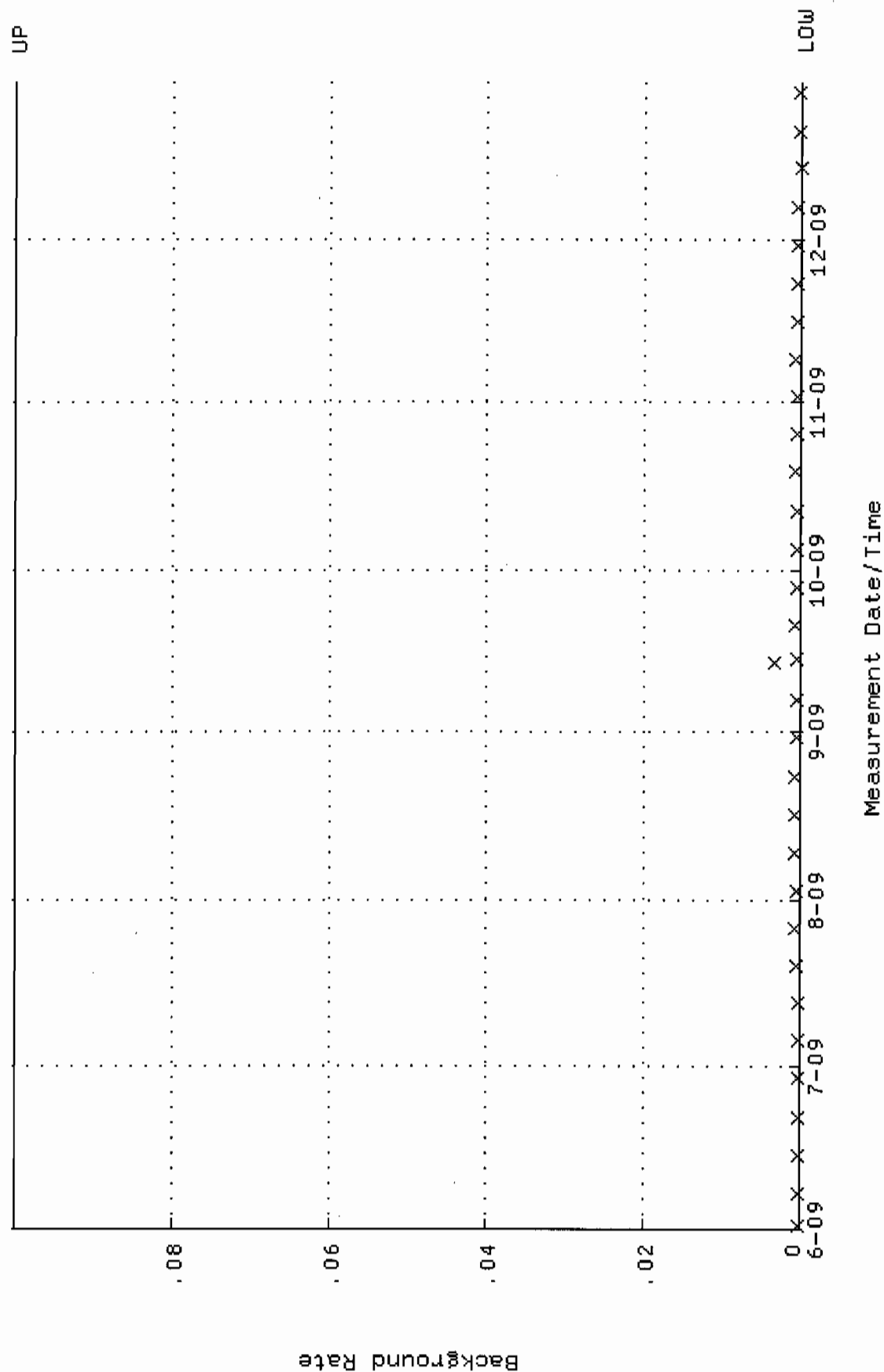
QA filename : DKA100:[ENV_ALPHA.QA.W]W223.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 2-JUN-2009 11:18:20 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.359804 through 0.379804



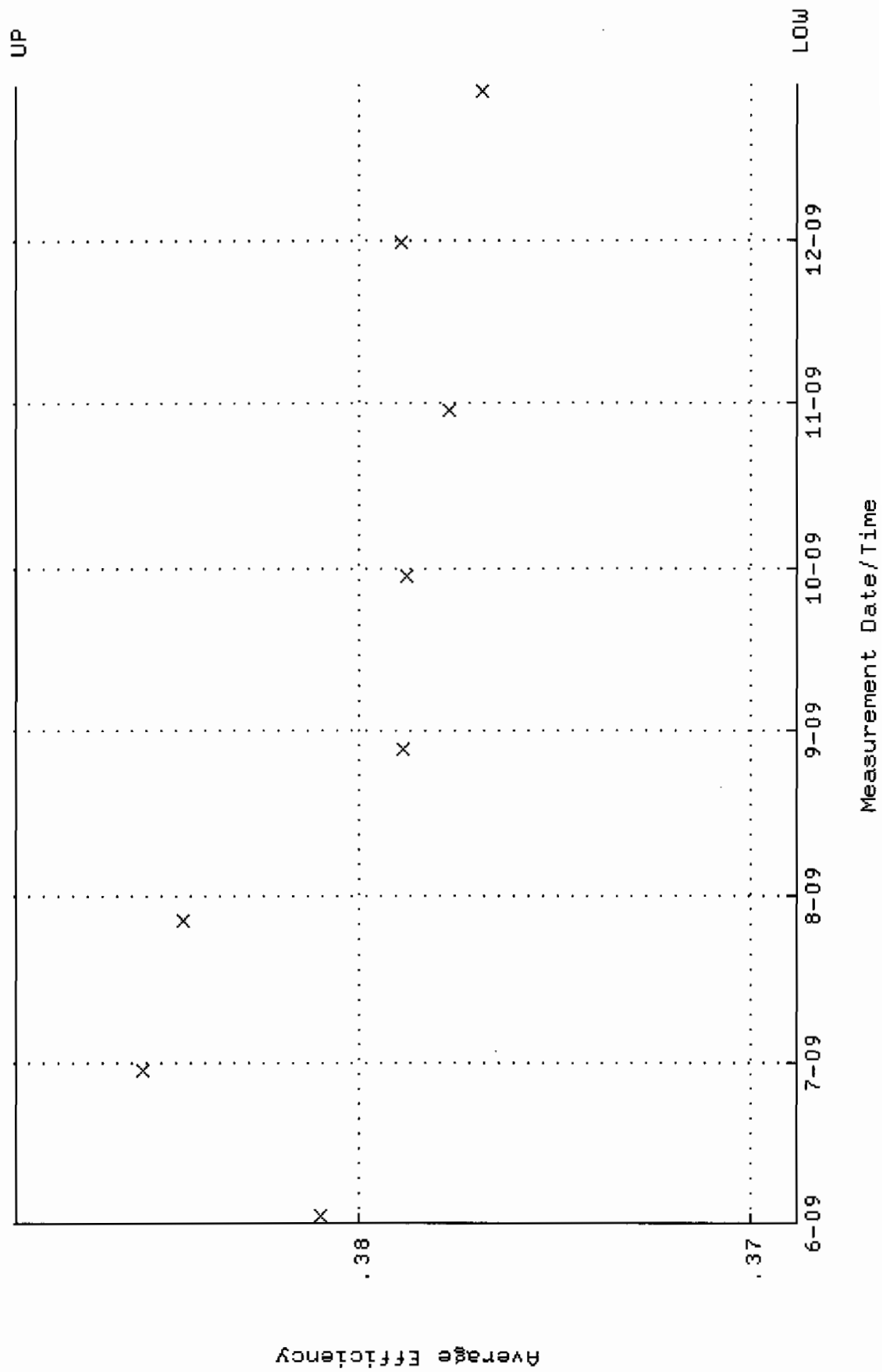
QA filename : DKA100:[ENV_ALPHA.QA.W]W223.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 2-JUN-2009 11:18:20 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 89.5441 through 98.9697



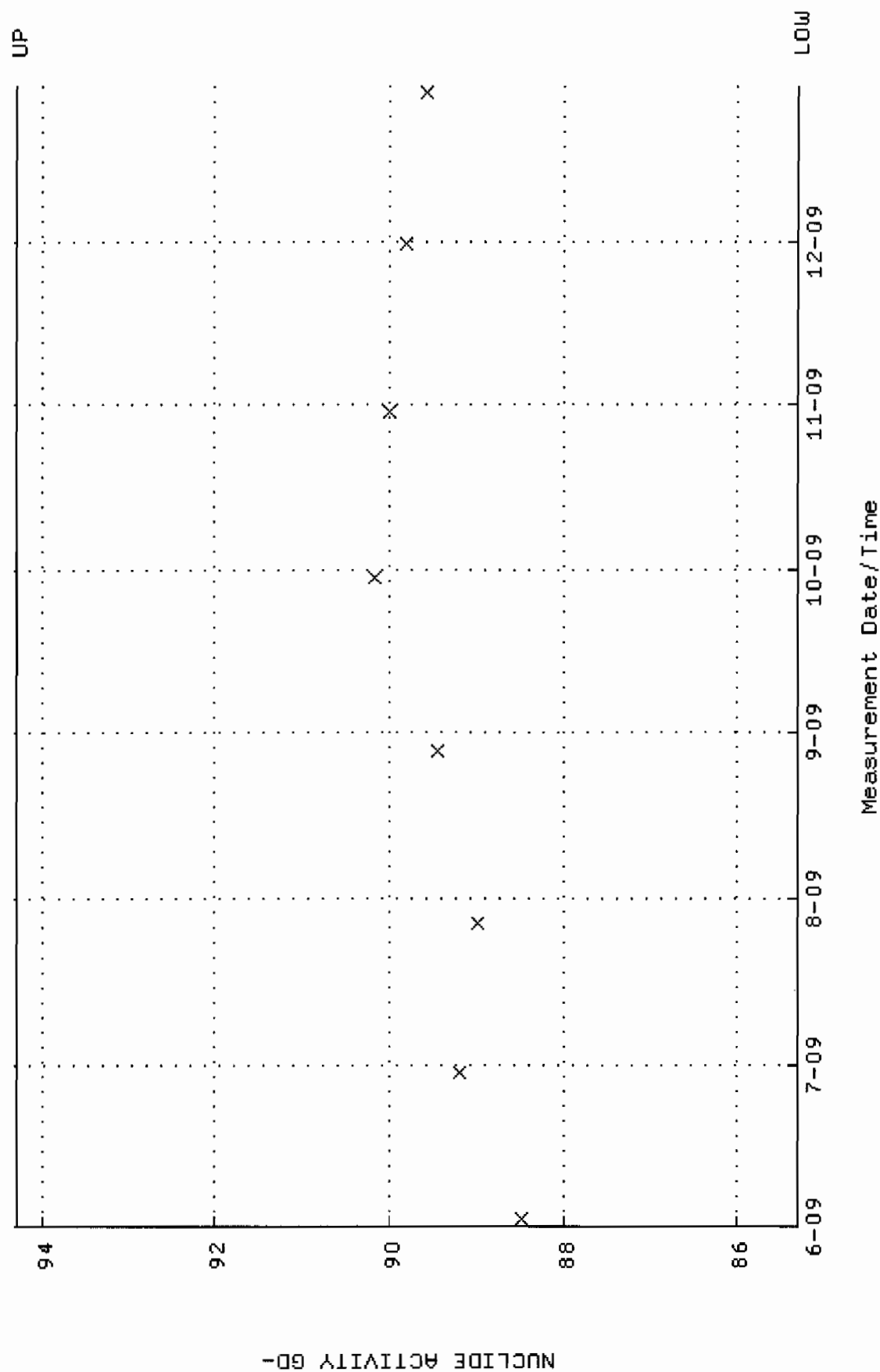
QA filename : DKA100:[ENV_ALPHA.QA.B]B223.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 1-JUN-2009 17:44:34 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



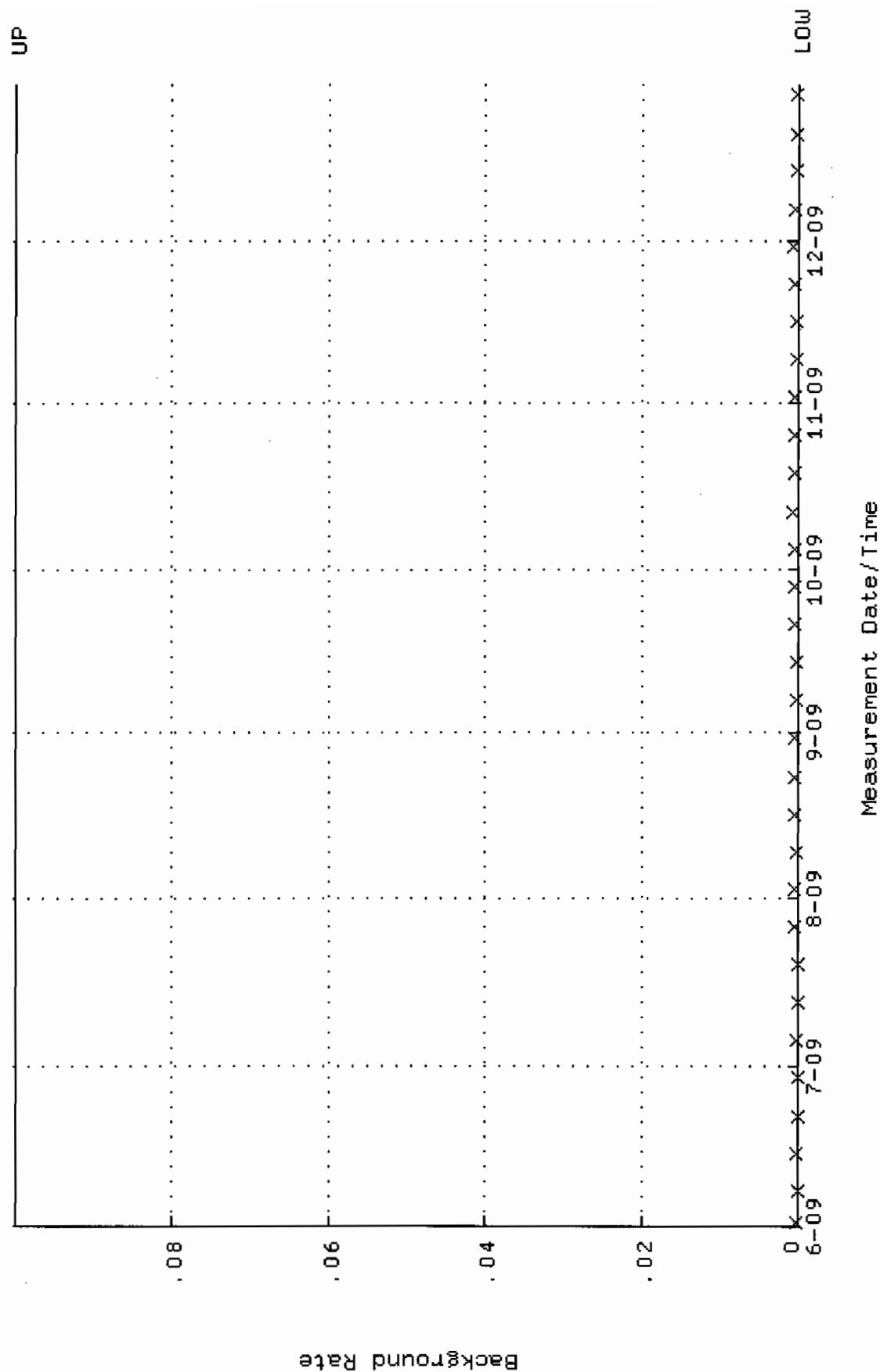
QA filename : DKA100:[ENV_ALPHA.QA.W]W224.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 2-JUN-2009 11:18:26 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.368812 through 0.388812



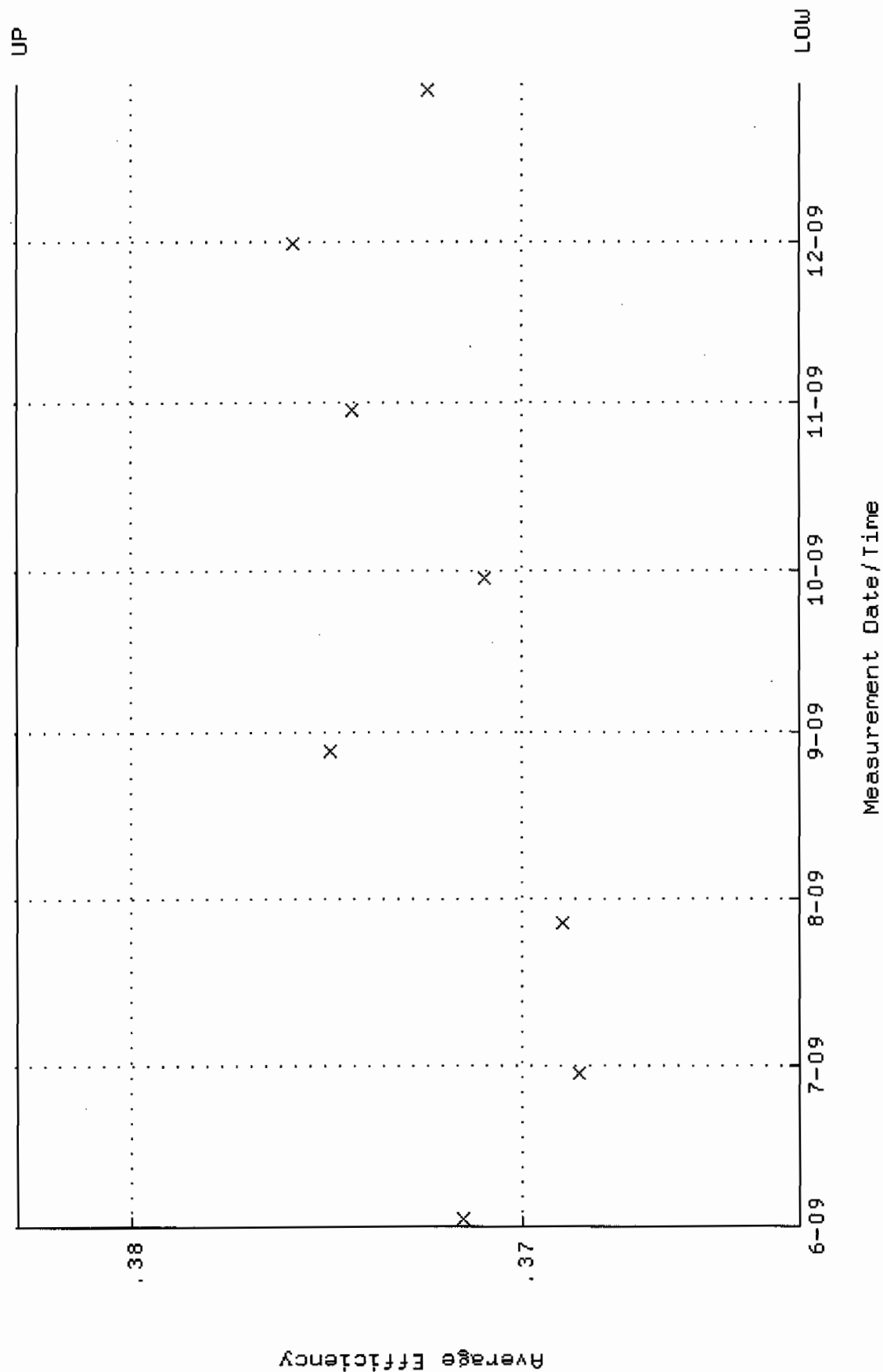
QA filename : DKA100:[ENV_ALPHA.QA.W]W224.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 2-JUN-2009 11:18:26 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 85.3066 through 94.2862



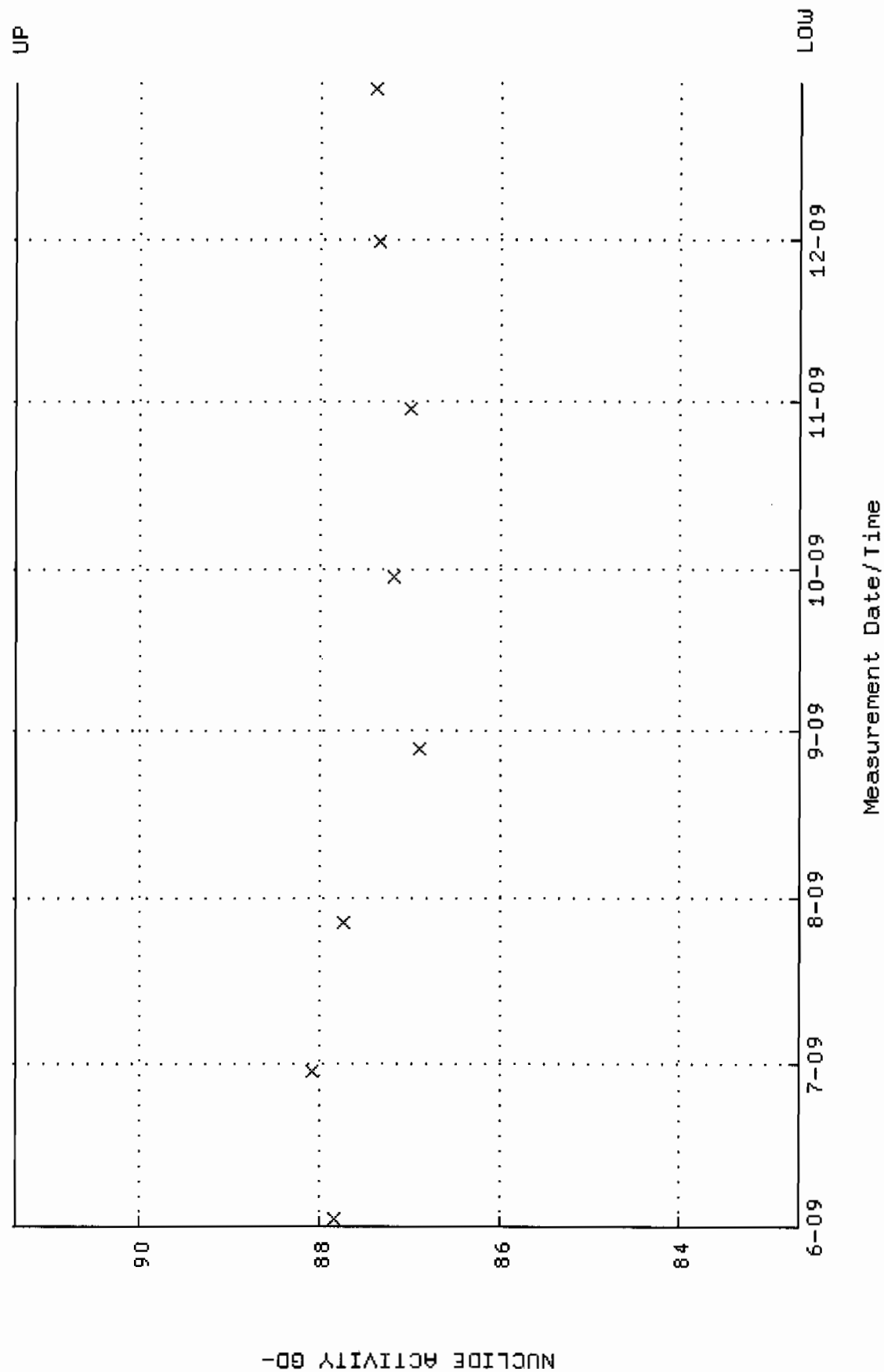
QA filename : DKA100:[ENV_ALPHA.QA.B]B224.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 1-JUN-2009 17:44:39 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



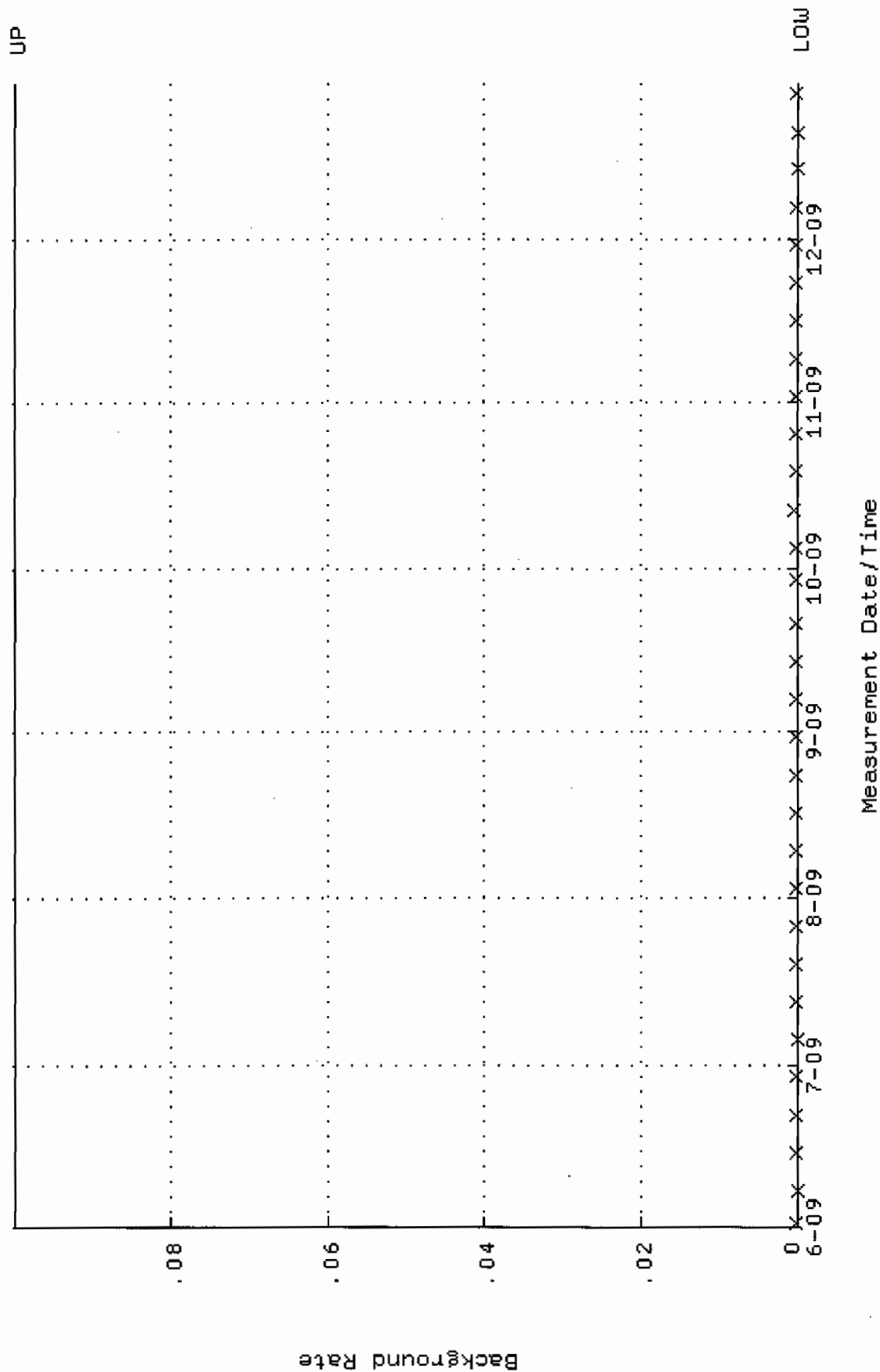
QA filename : DKA100: [ENV_ALPHA.QA.W]W243.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 2-JUN-2009 11:20:01 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.362914 through 0.382914



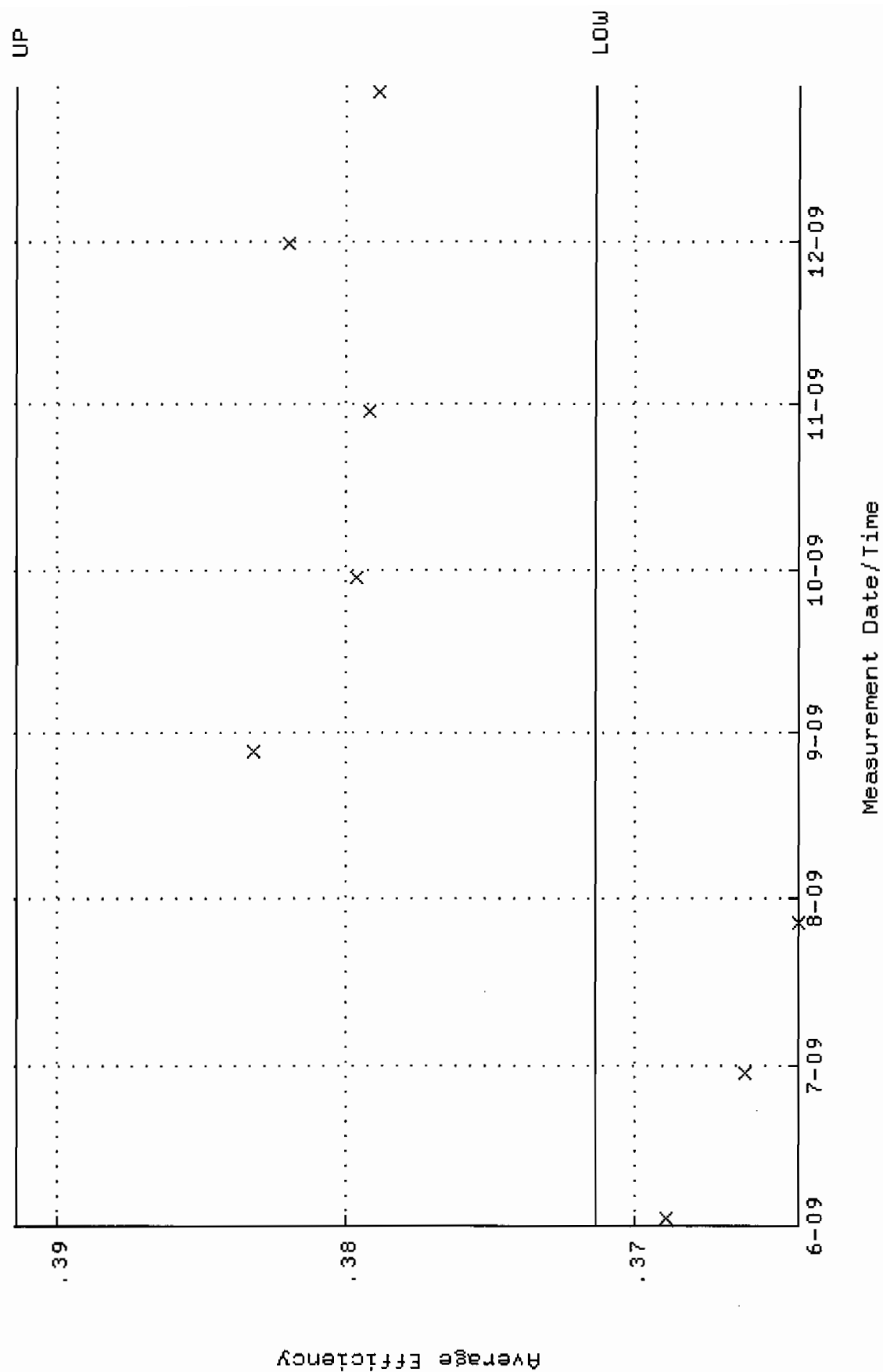
QA filename : DKA100:[ENV_ALPHA.QA.W]W243.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 2-JUN-2009 11:20:01 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 82.6788 through 91.3818



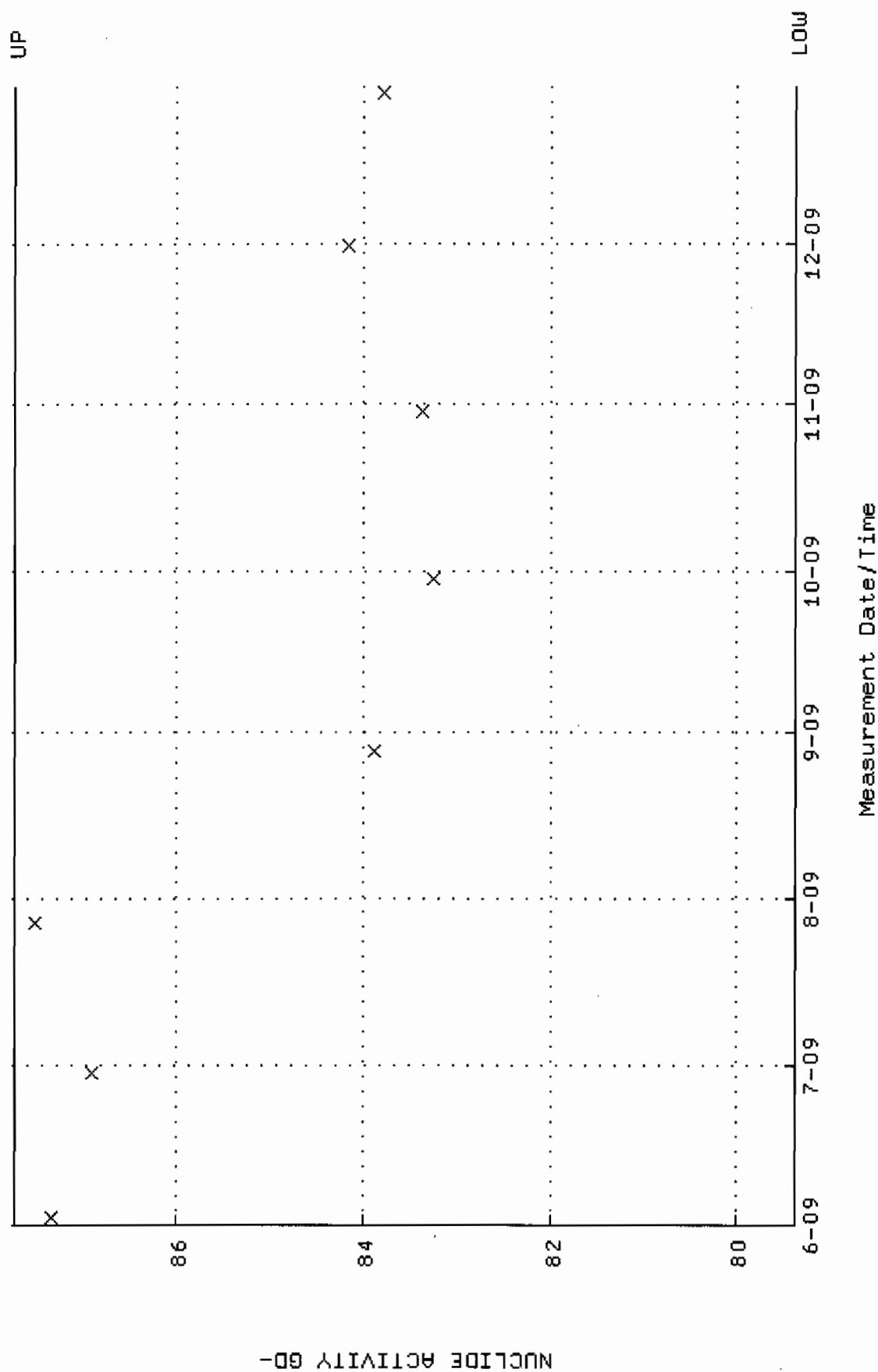
QA filename : DKA100:[ENV_ALPHA.QA.B]B243.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 1-JUN-2009 17:46:38 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



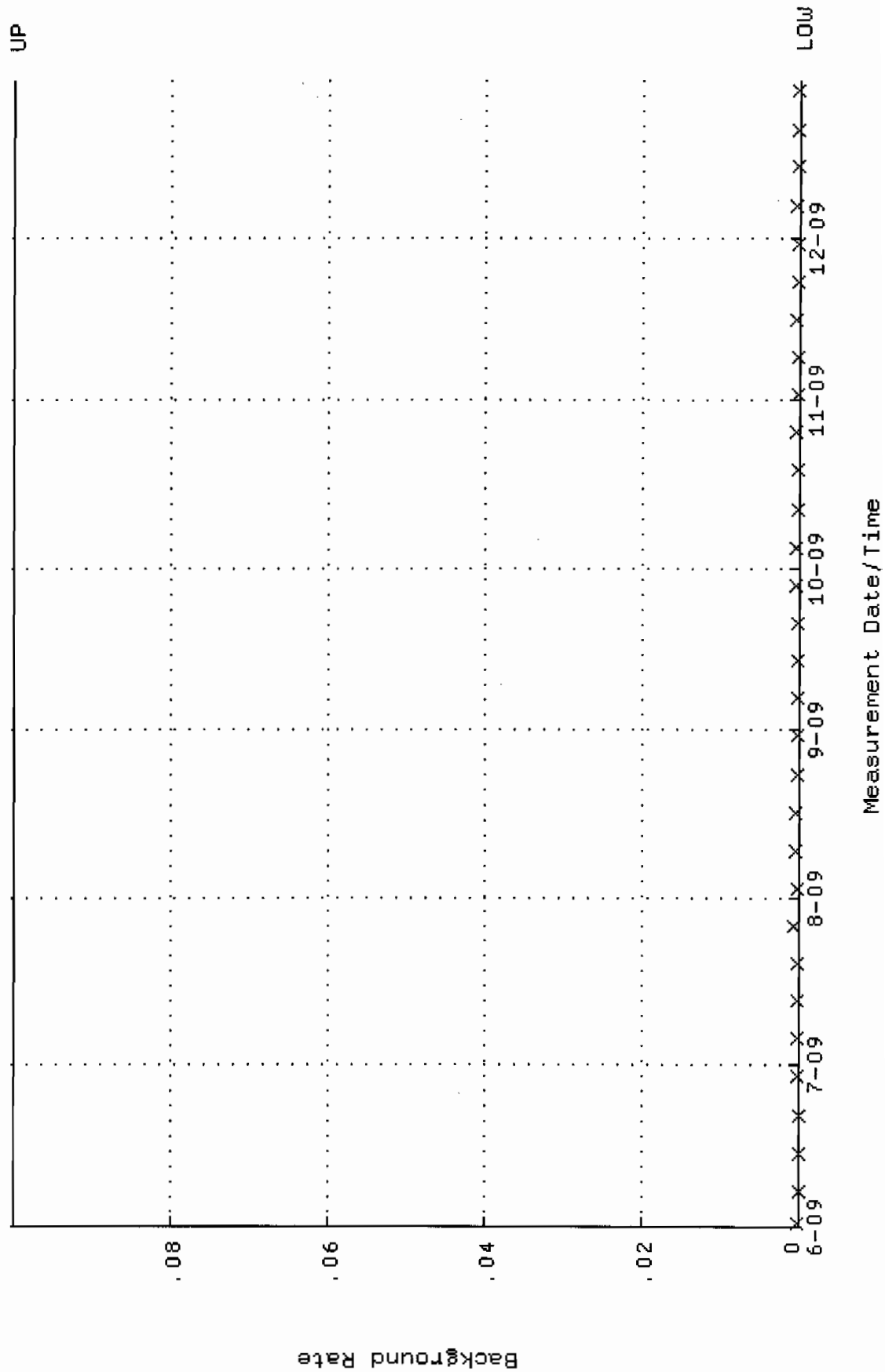
QA filename : DKA100:[ENV_ALPHA.QA.W]W255.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 2-JUN-2009 11:20:57 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.371403 through 0.391403



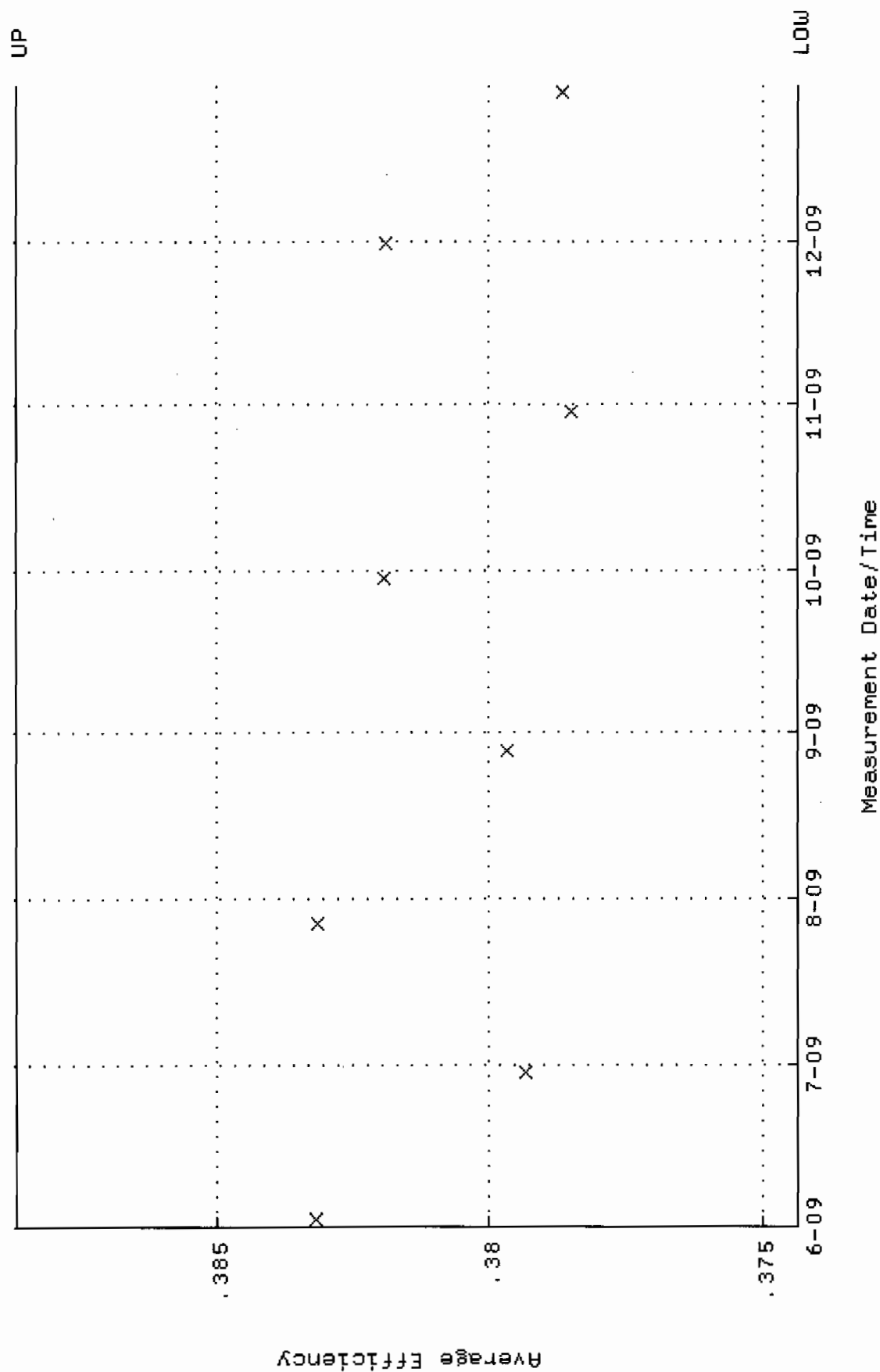
QA filename : DKA100:[ENV_ALPHA.QA.W]W255.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 2-JUN-2009 11:20:57 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 79.3783 through 87.7339



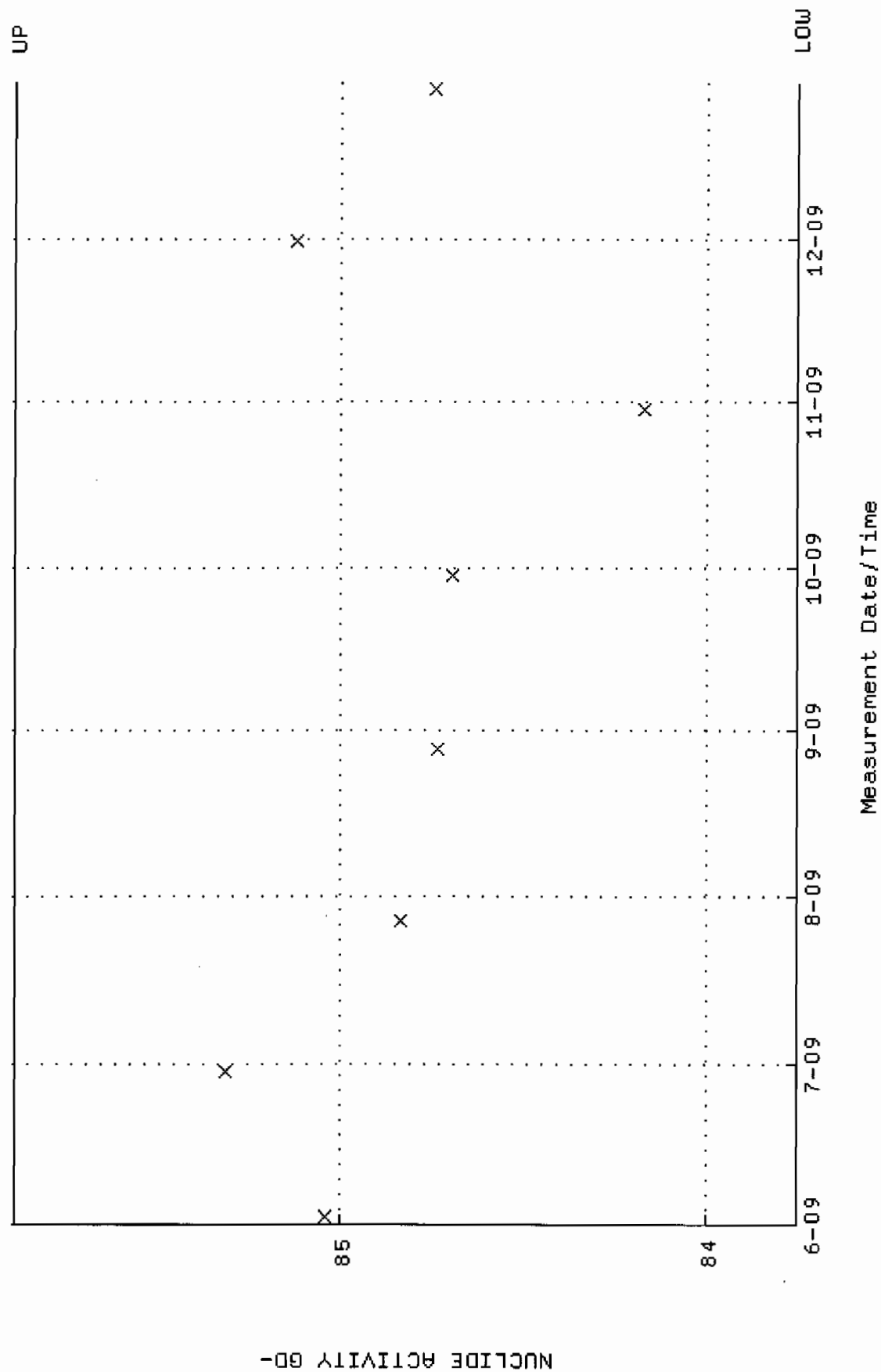
QA filename : DKA100:[ENV_ALPHA.QA.B]B255.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 1-JUN-2009 17:47:46 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



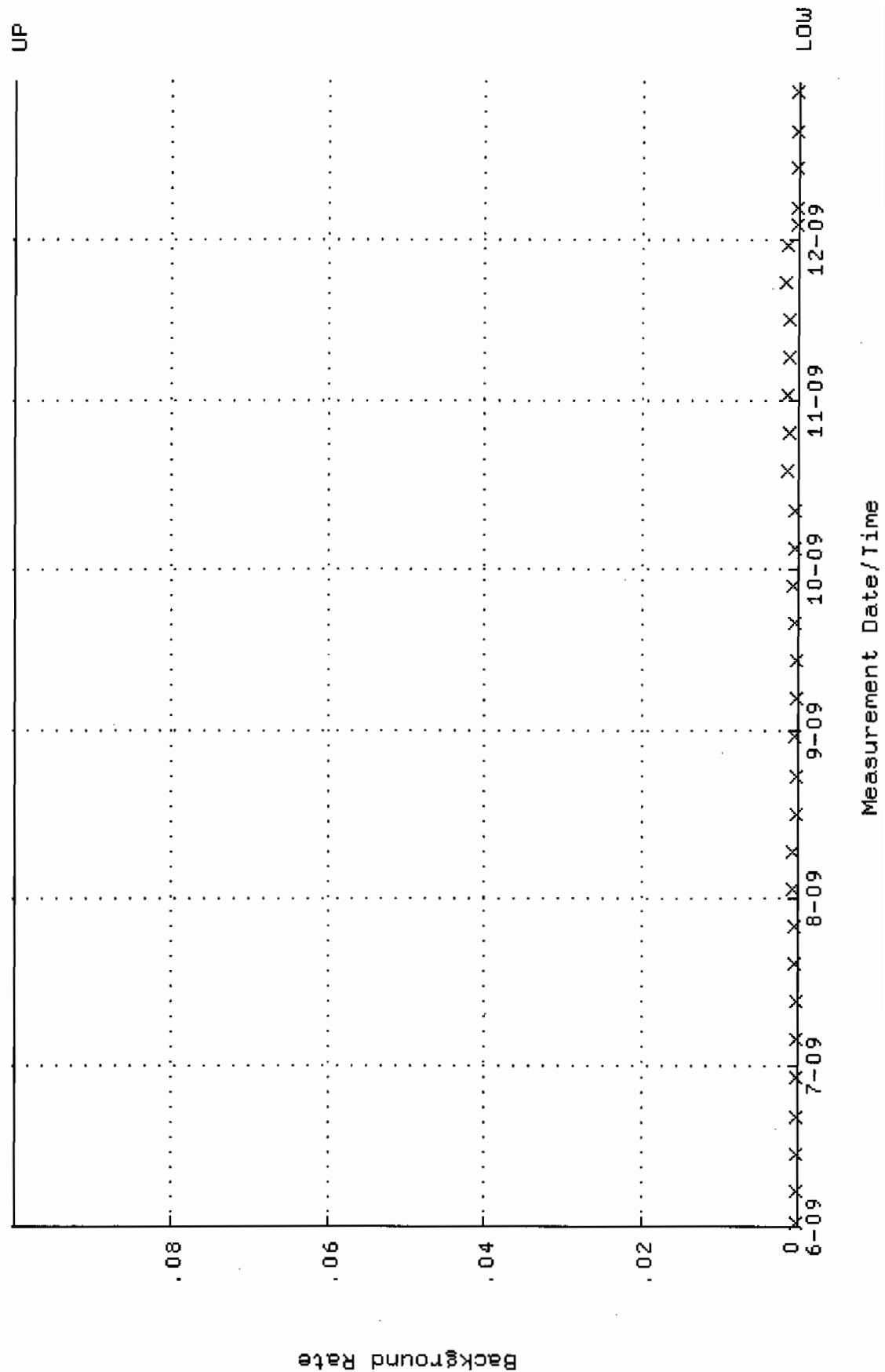
QA filename : OKA100:[ENV_ALPHA.QA.W]W256.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 2-JUN-2009 11:21:01 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.374371 through 0.388647



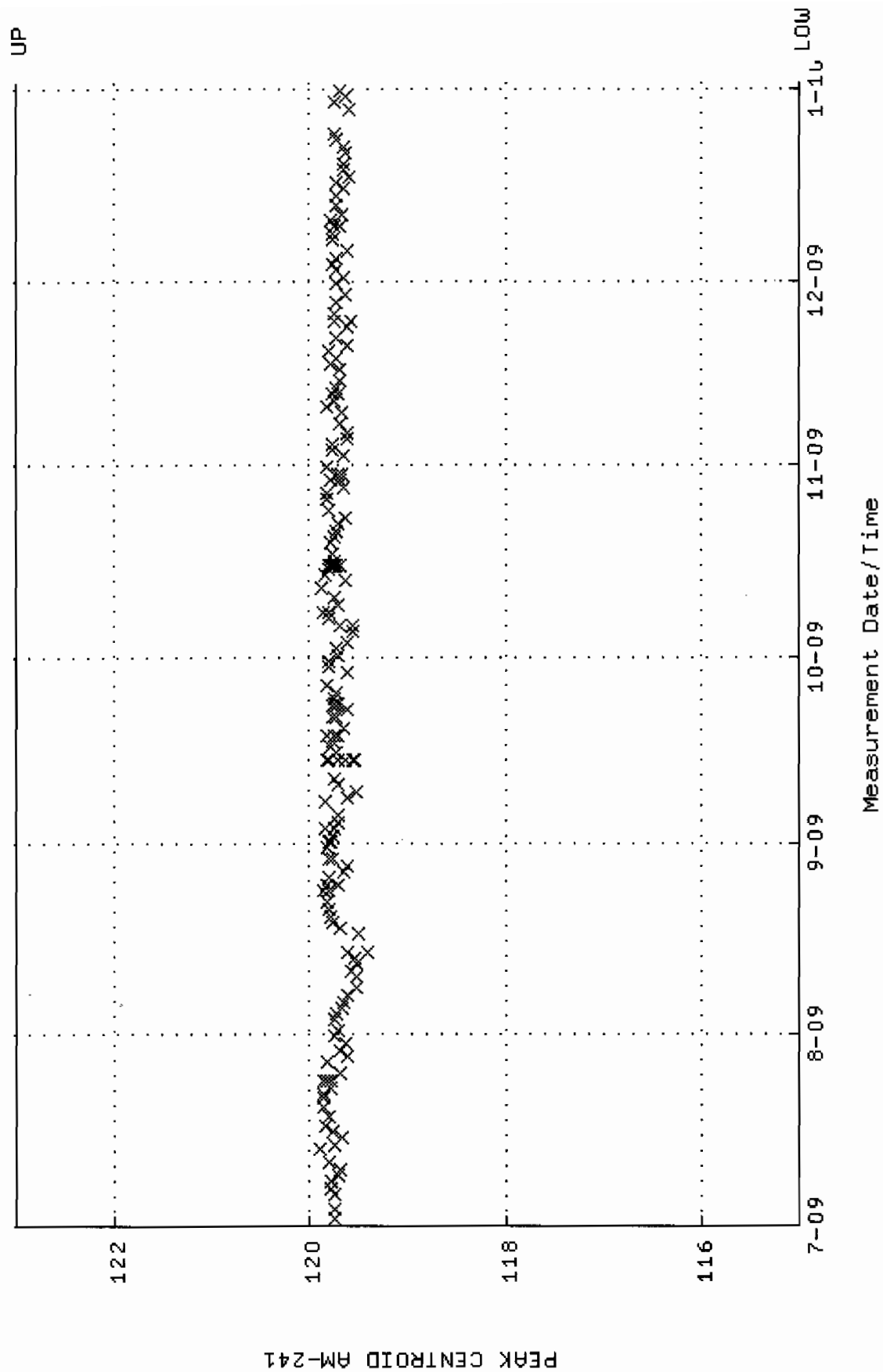
QA filename : DKA100:[ENV_ALPHA.QA.W]W256.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 2-JUN-2009 11:21:01 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 83.7553 through 85.8901



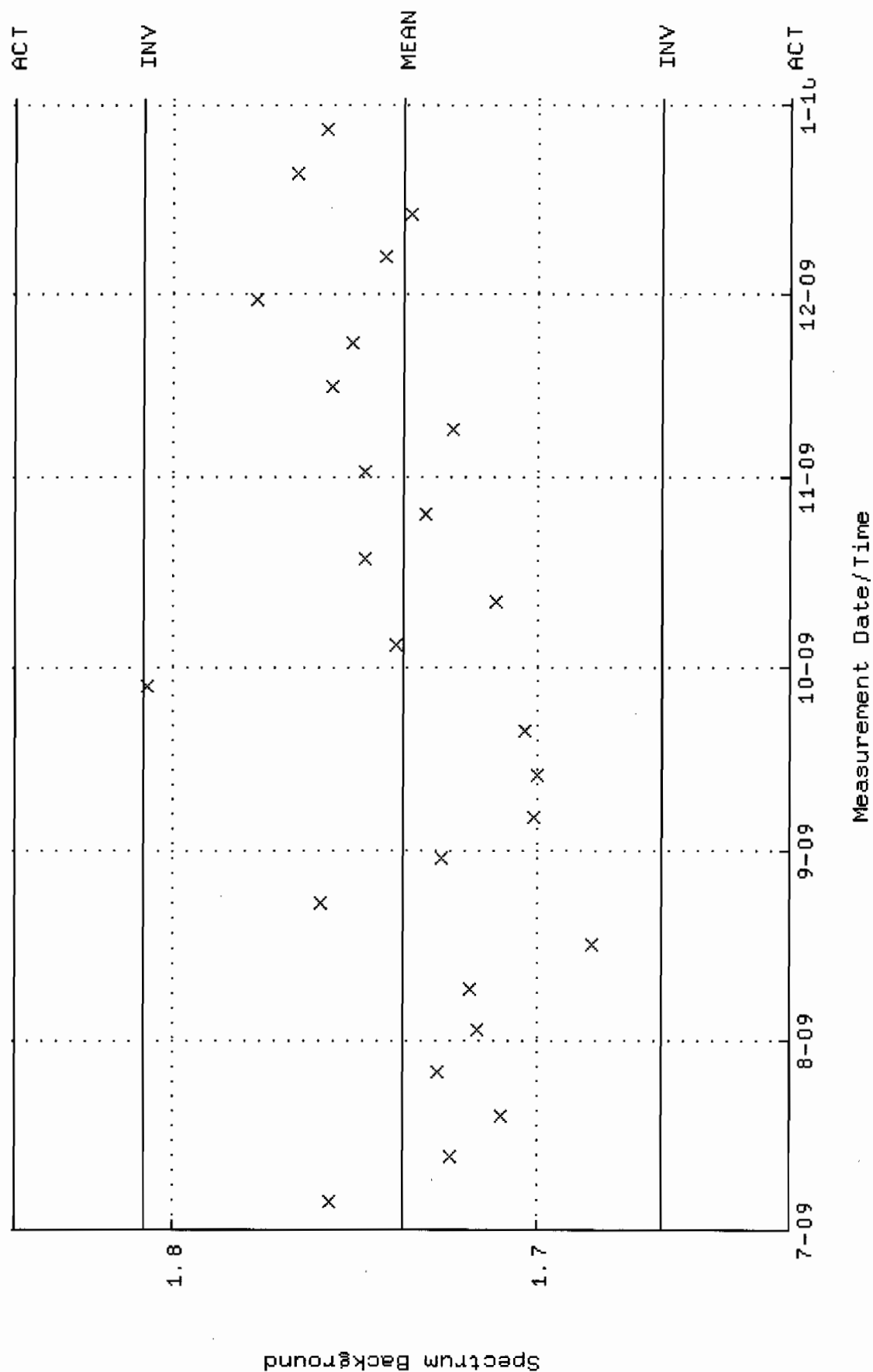
QA filename : DKA100:[ENV_ALPHA.QA.B]B256.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 1-JUN-2009 17:47:52 through 29-DEC-2009 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



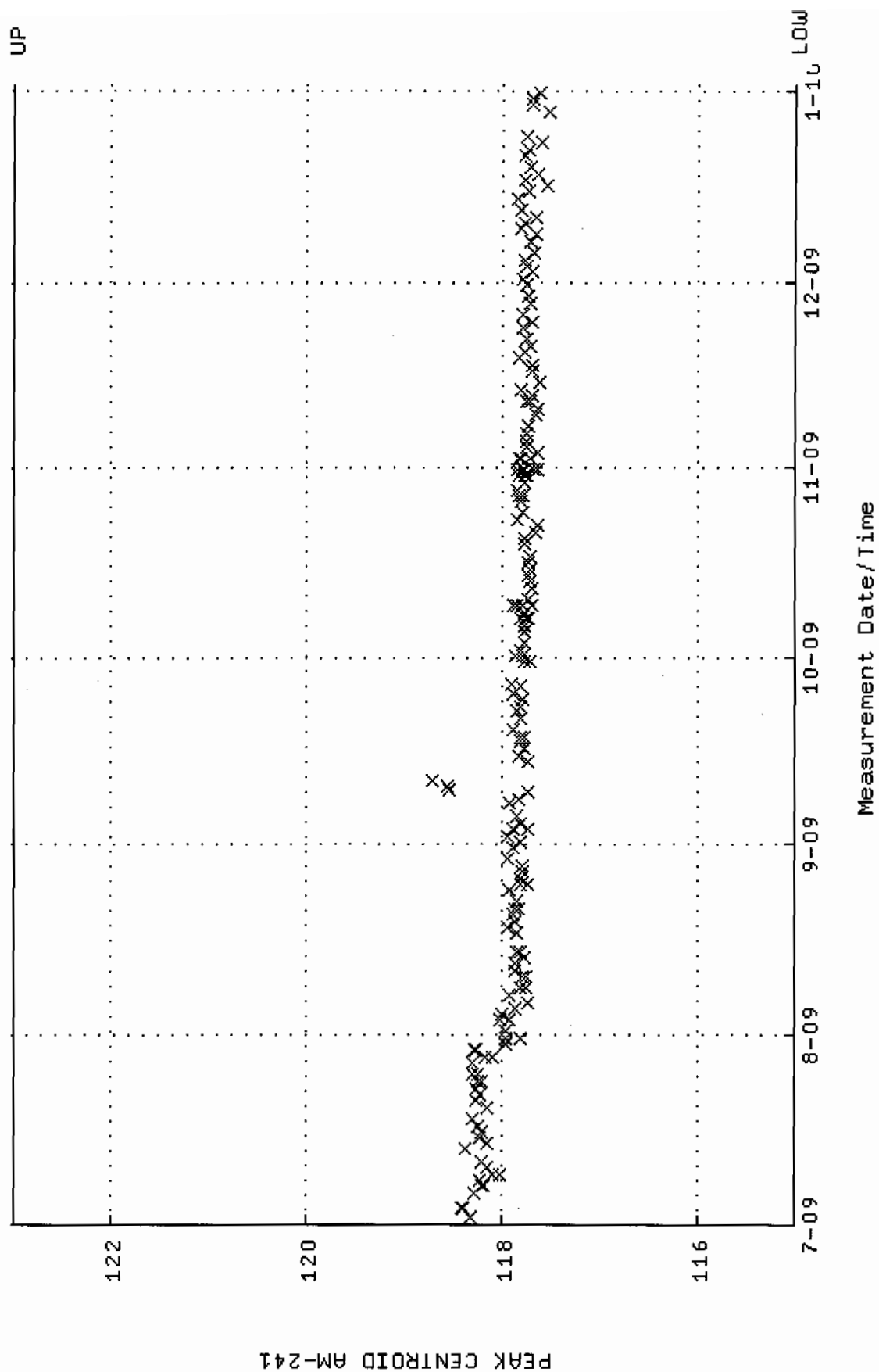
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM01_500MLMB.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-JUL-2009 04:58:53 through 1-JAN-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



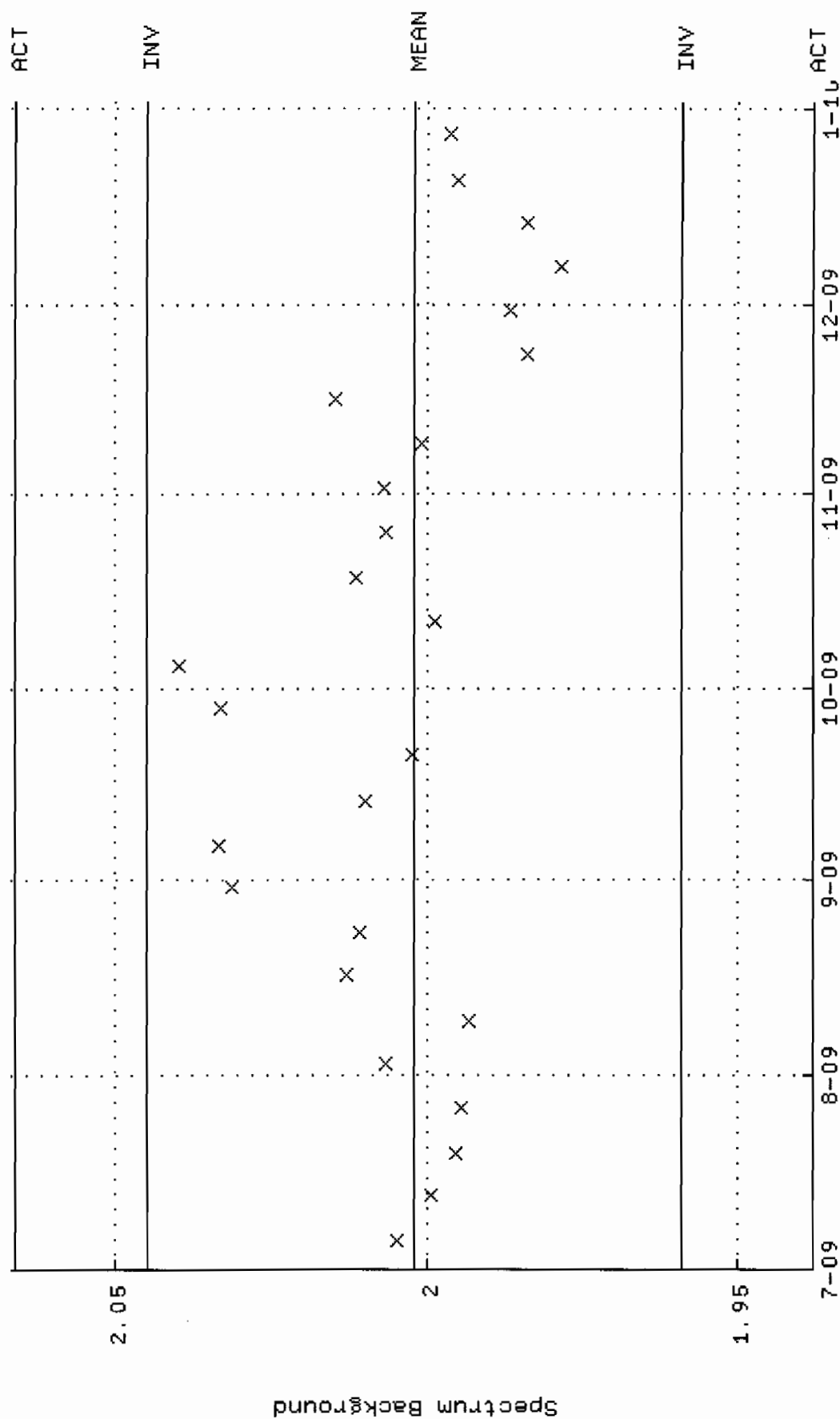
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM01.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:49:24 through 1-JAN-2010 12:00:00
 Mean \pm Std Dev : 1.73723 \pm 3.552524E-02 (2.04 %)



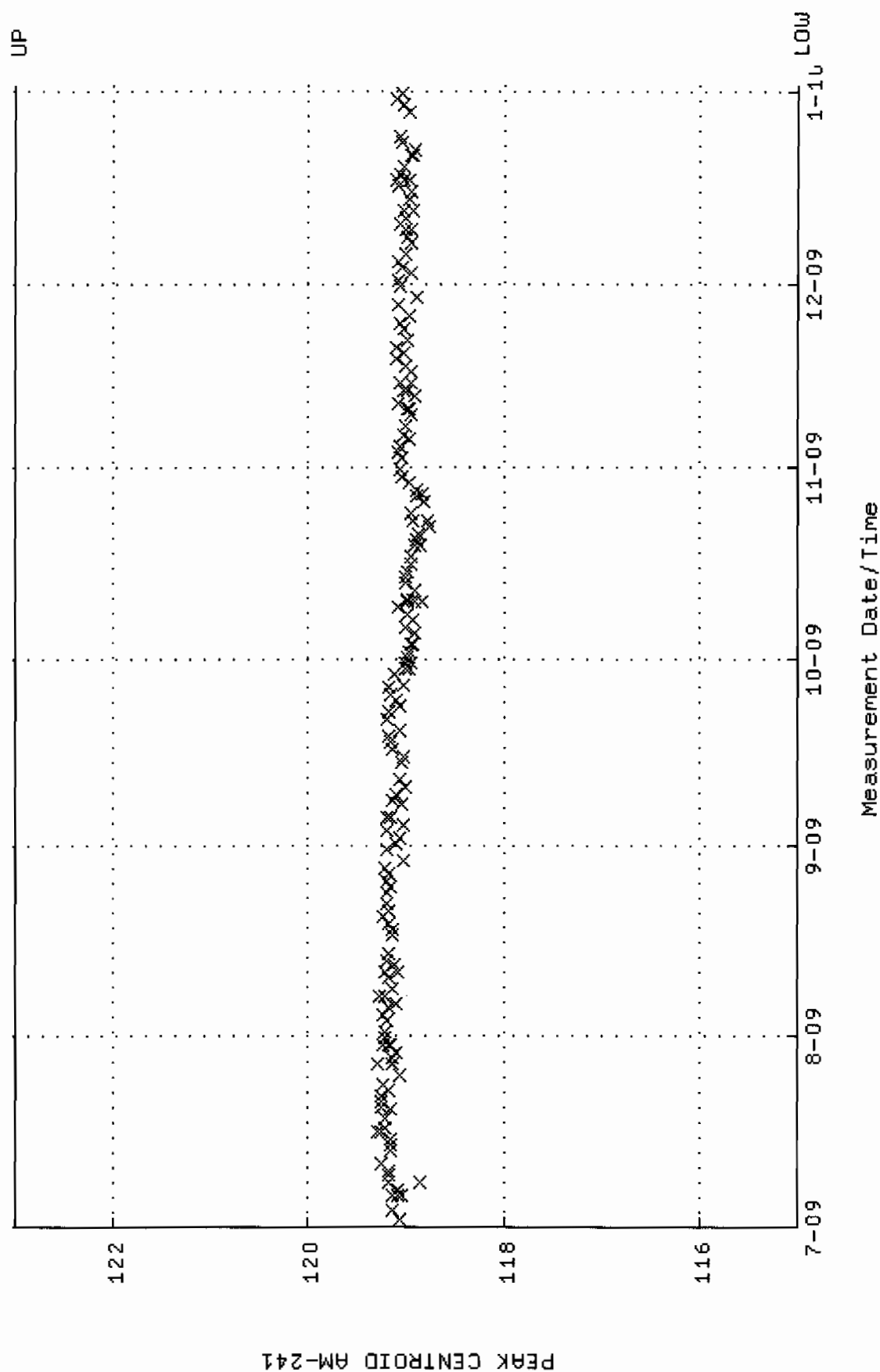
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM02_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 2-JUL-2009 04:58:43 through 1-JAN-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



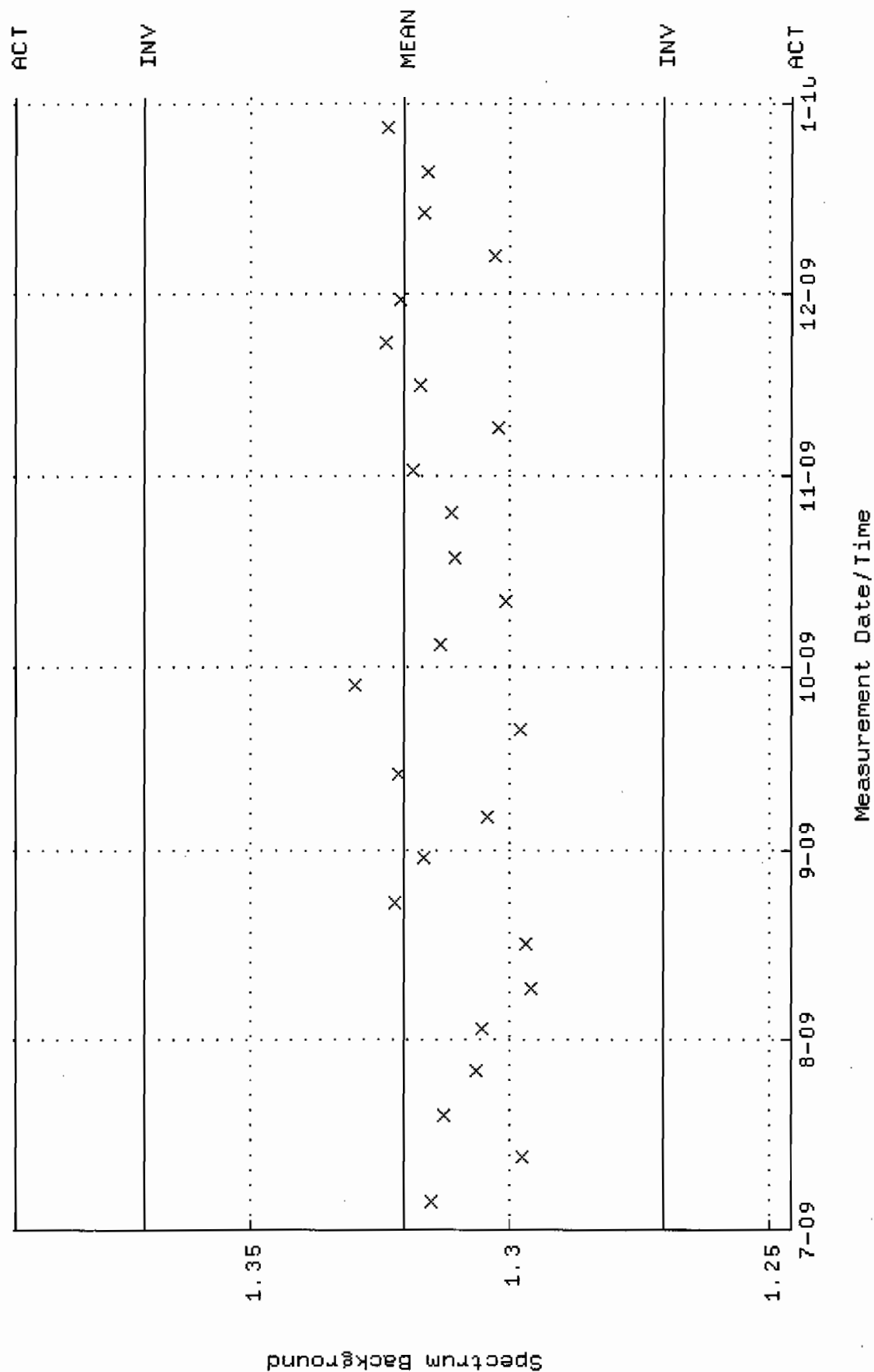
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM02.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:49:39 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 2.00226 +- 2.139827E-02 (1.07 %)



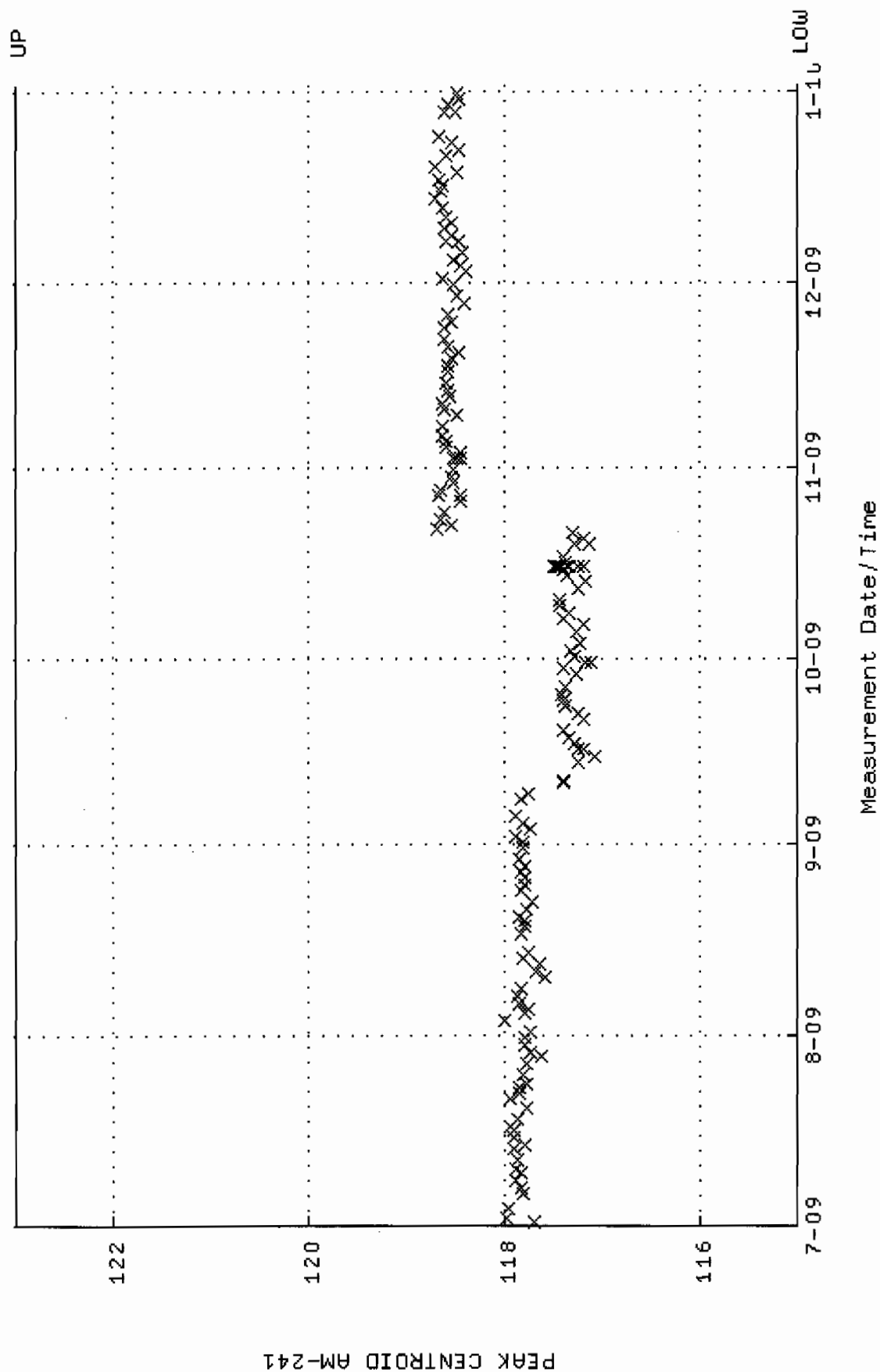
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM04-CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 04:59:00 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



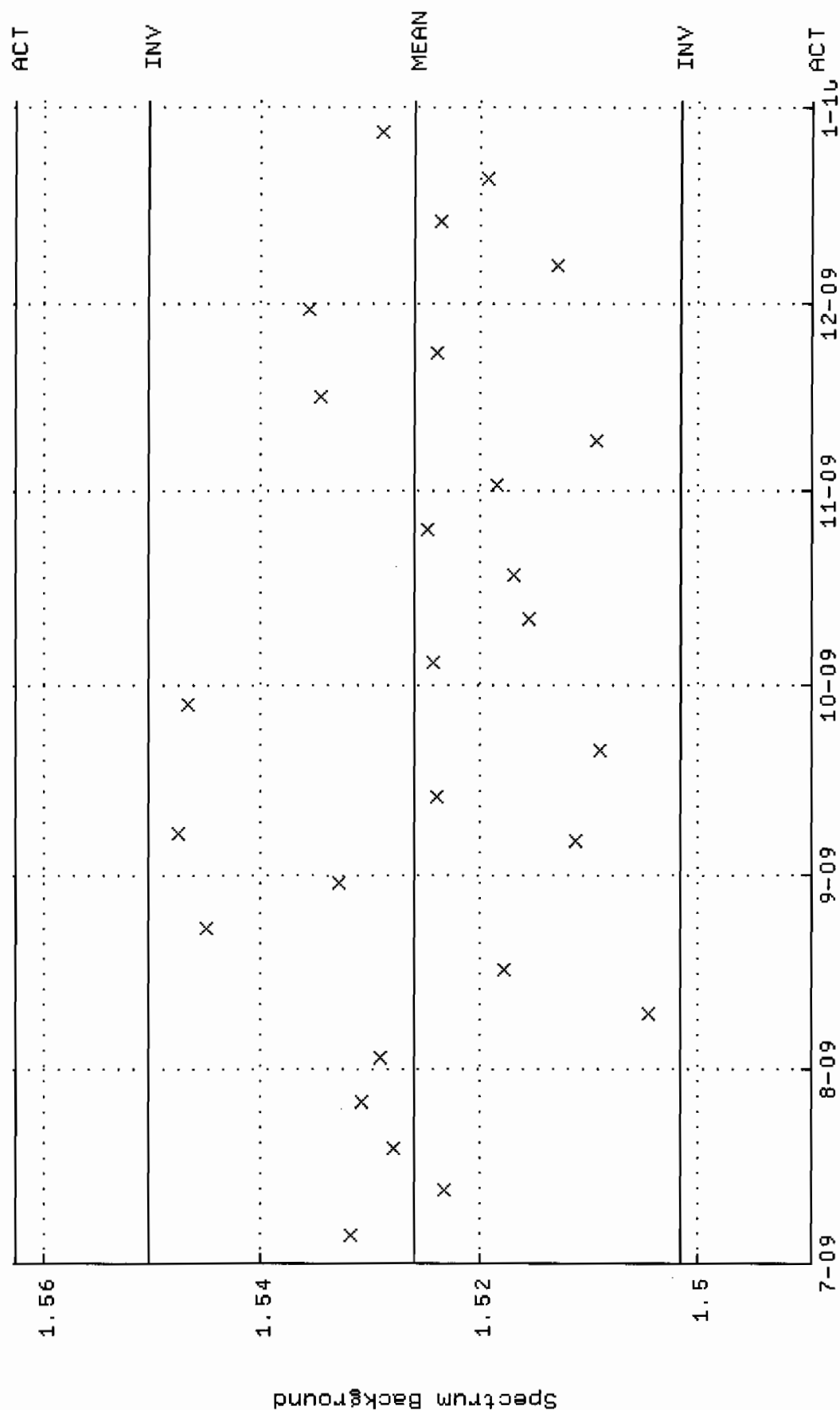
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM04.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:49:51 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 1.32050 +- 2.495234E-02 (1.89 %)



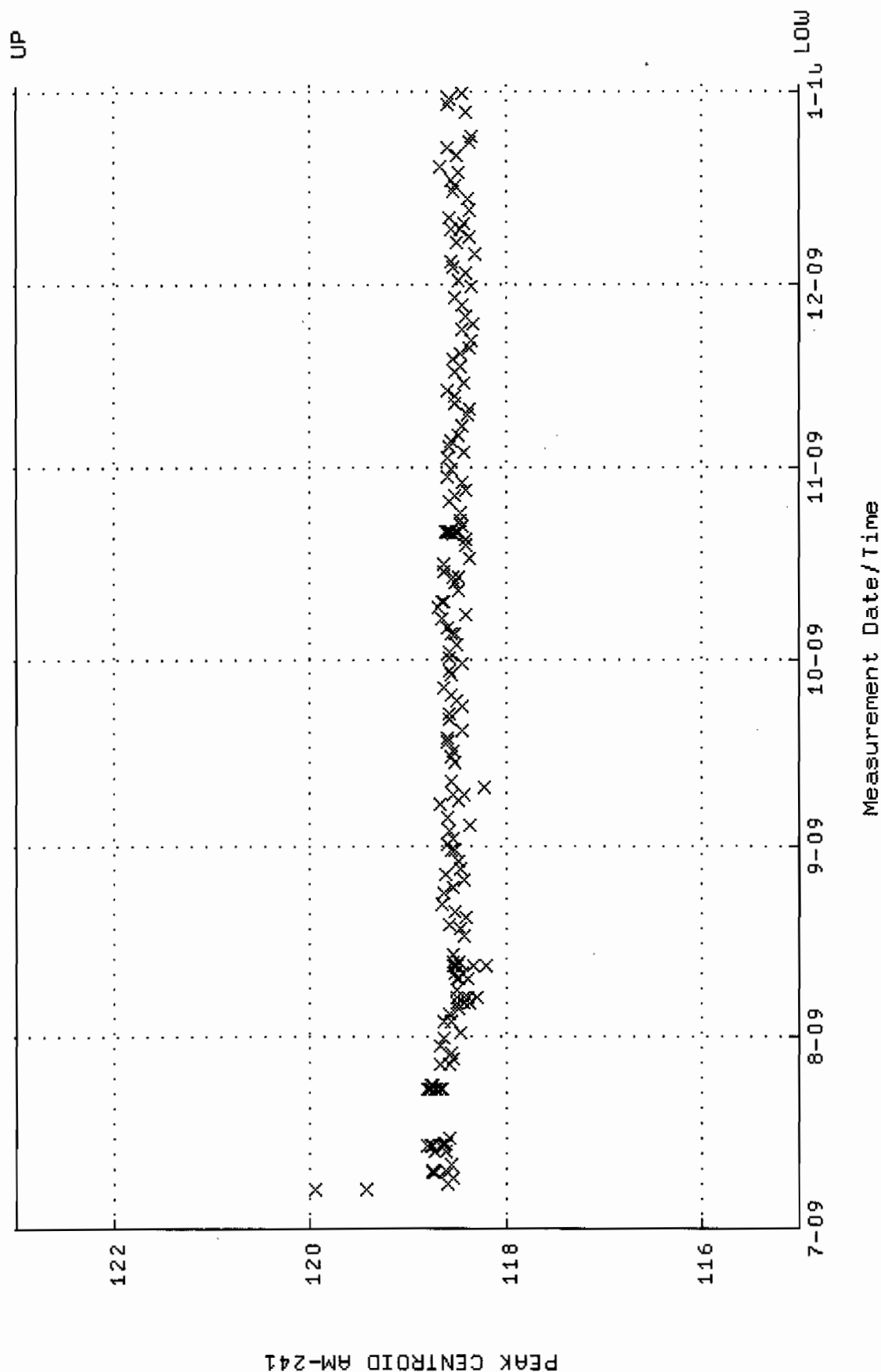
QA filename : DKA100:[CANBERRA,GAMMA,SCUSR.QA]QCC_GAM06_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-JUL-2009 14:30:59 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



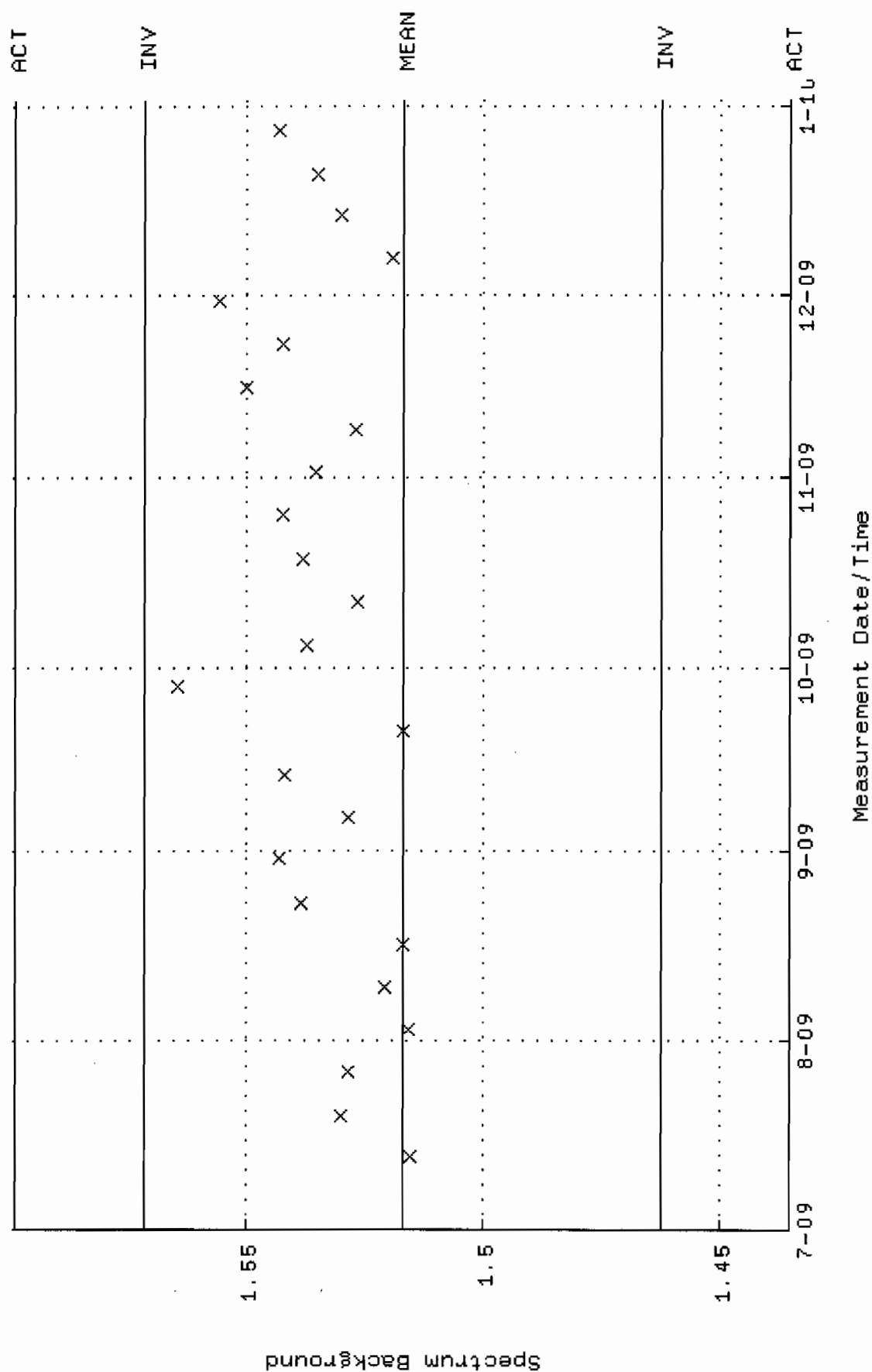
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM06.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:50:15 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 1.52603 +- 1.215987E-02 (0.80 %)



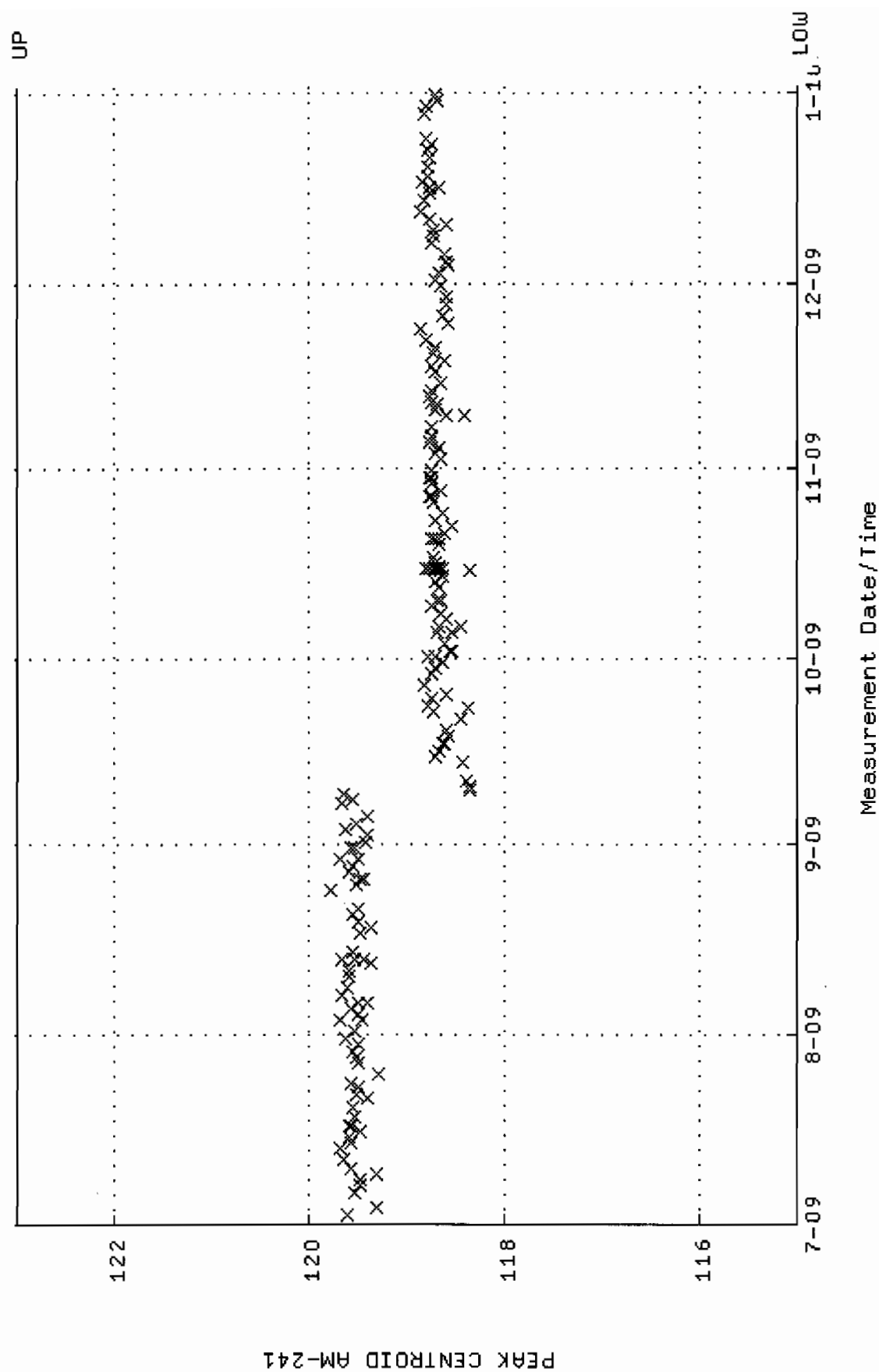
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM07_JAR.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 7-JUL-2009 09:02:00 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



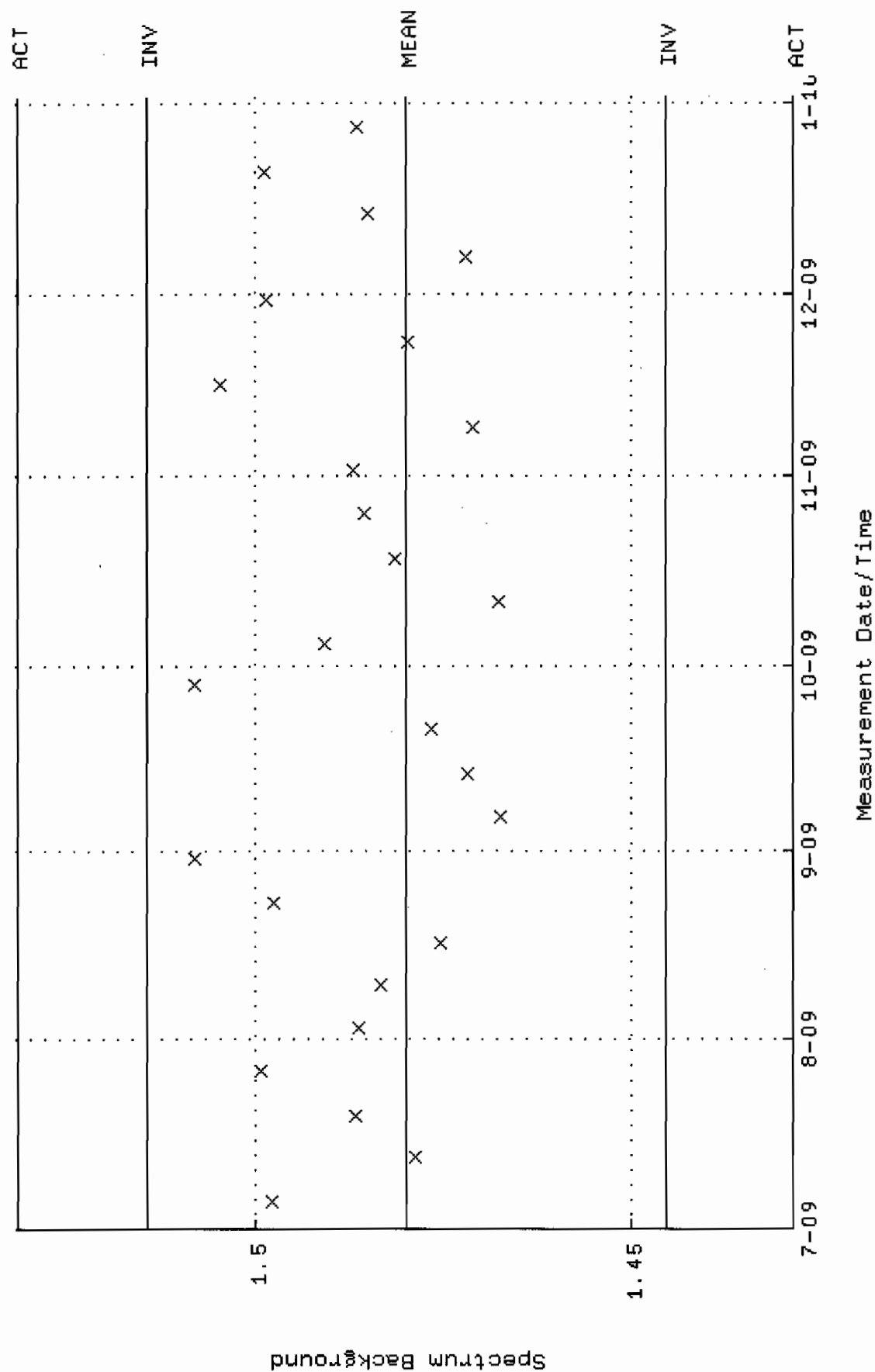
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM07.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 12-JUL-2009 17:17:31 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)



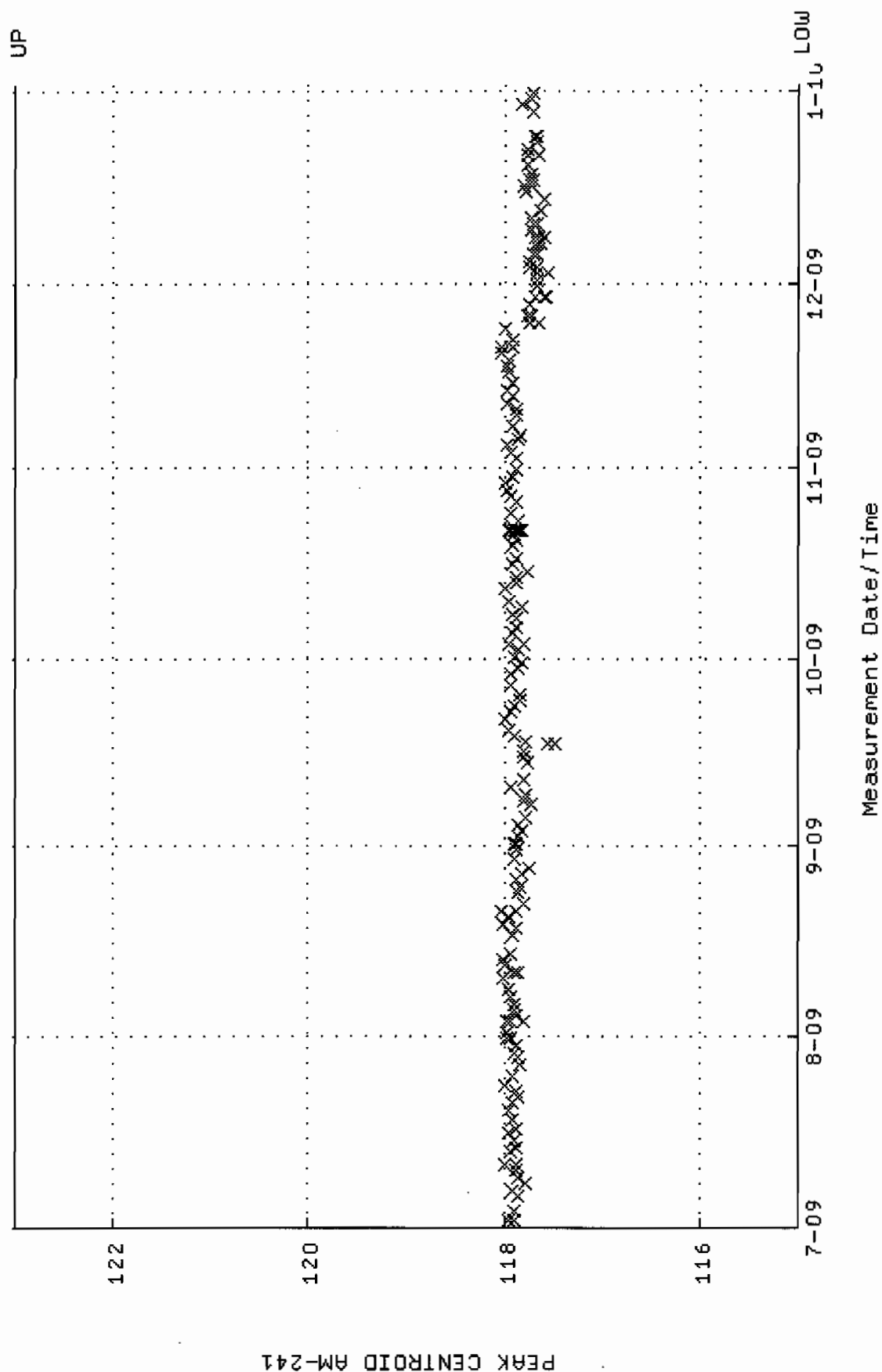
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM10_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 10:47:17 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



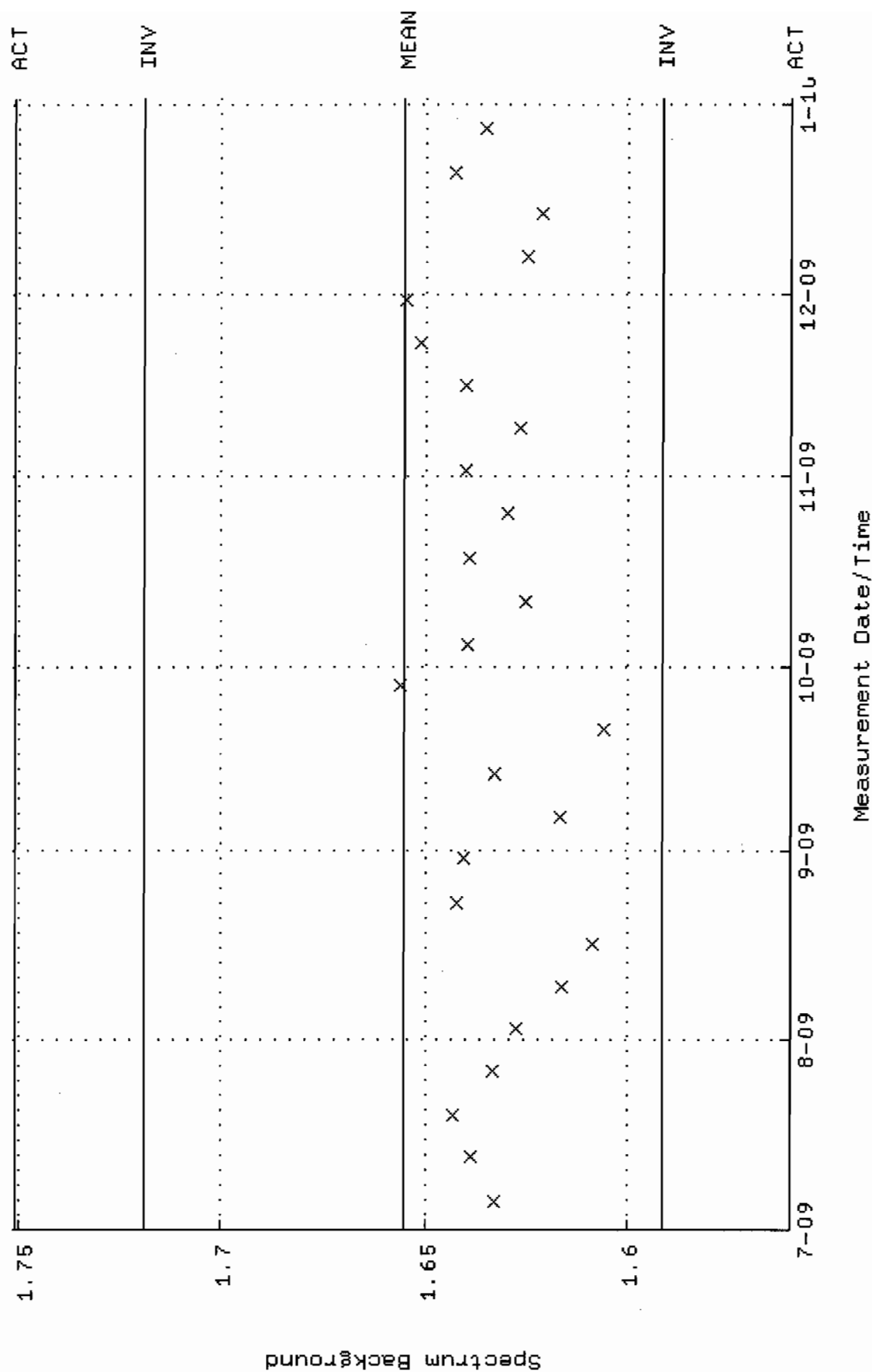
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM10.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:51:14 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 1.48000 +- 1.723892E-02 (1.16 %)



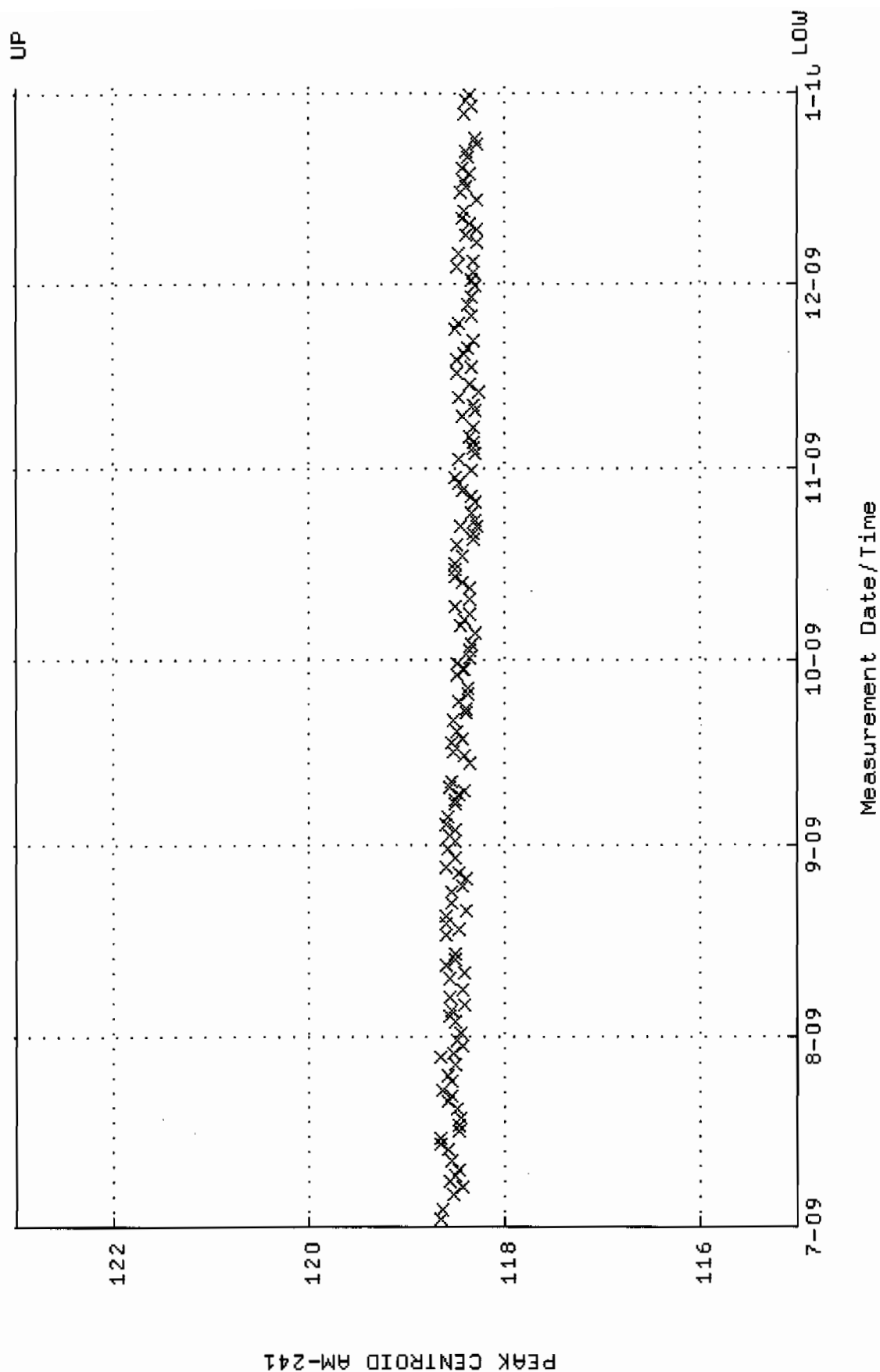
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM11-JAR.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 05:29:04 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



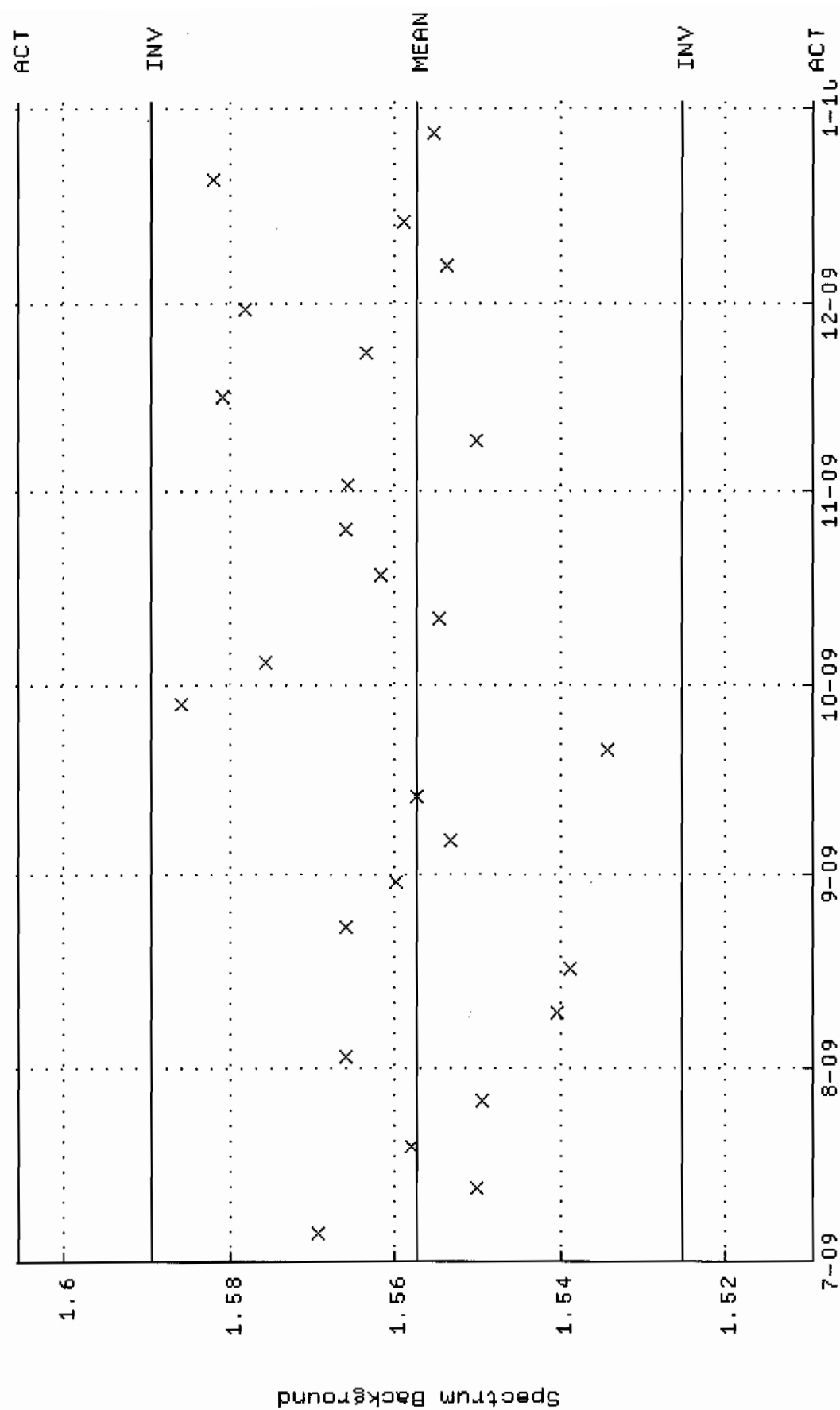
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM11.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:51:39 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



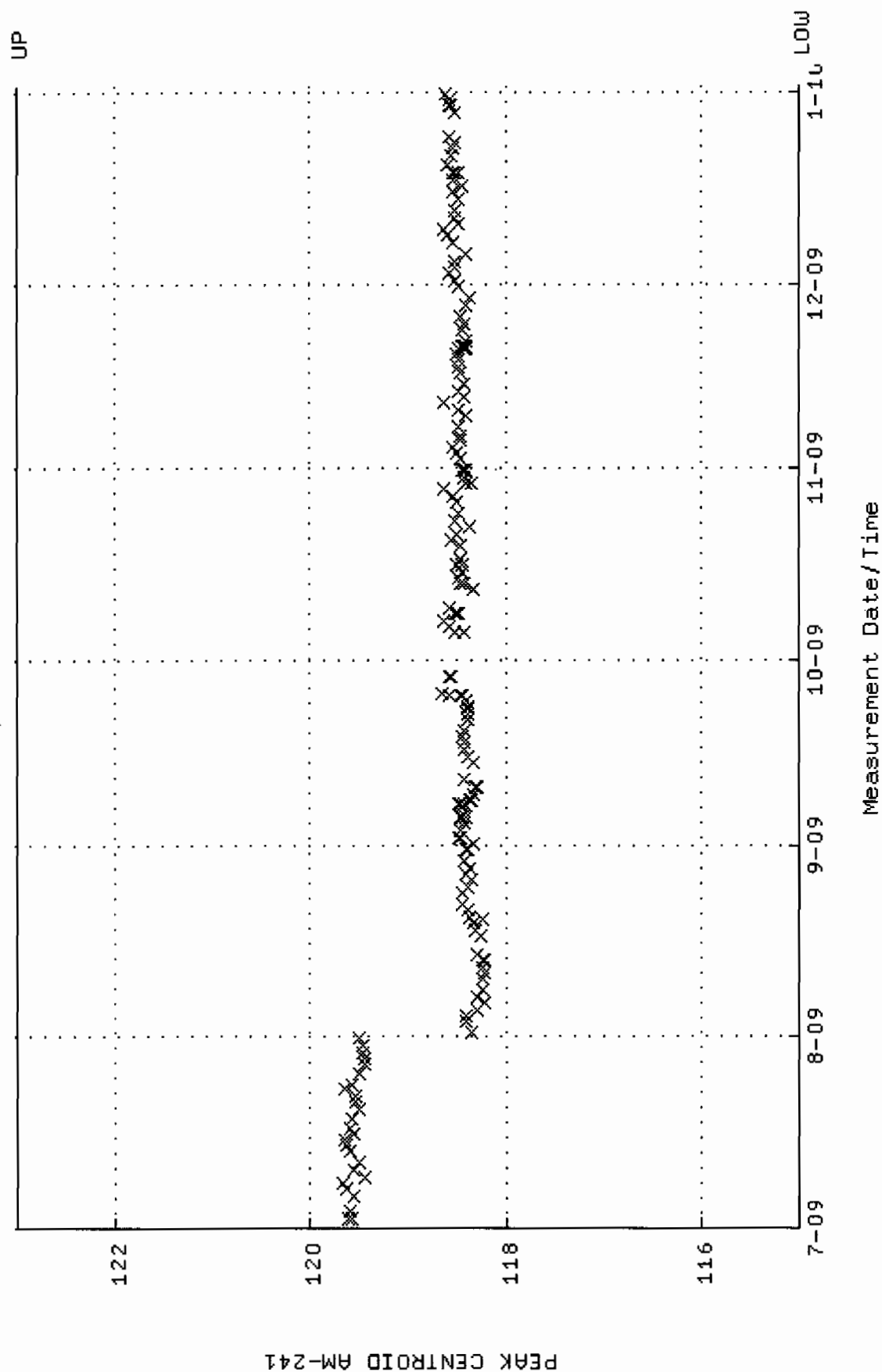
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM12_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 05:29:11 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



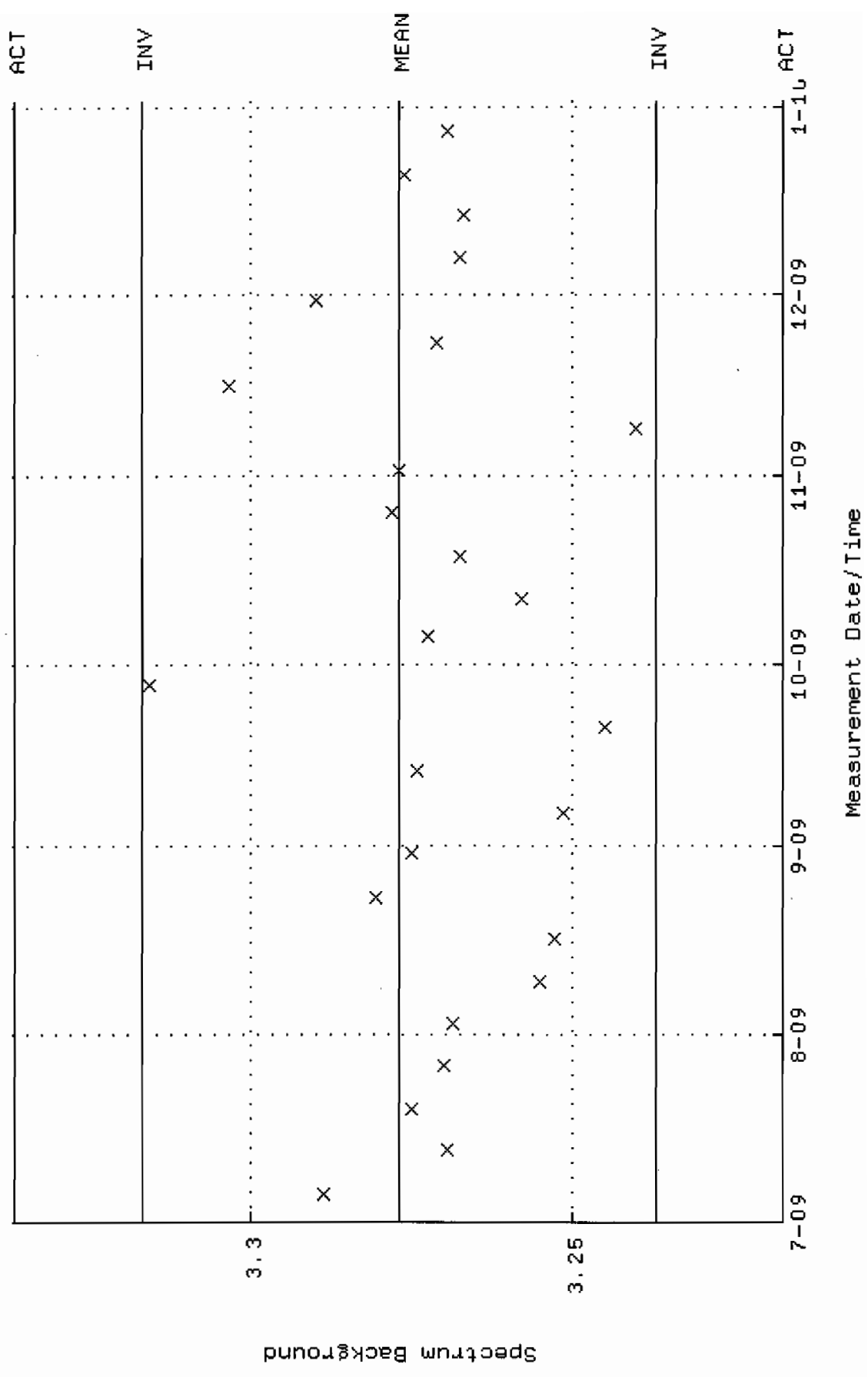
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM12.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:52:04 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 1.55746 +- 1.601675E-02 (1.03 %)



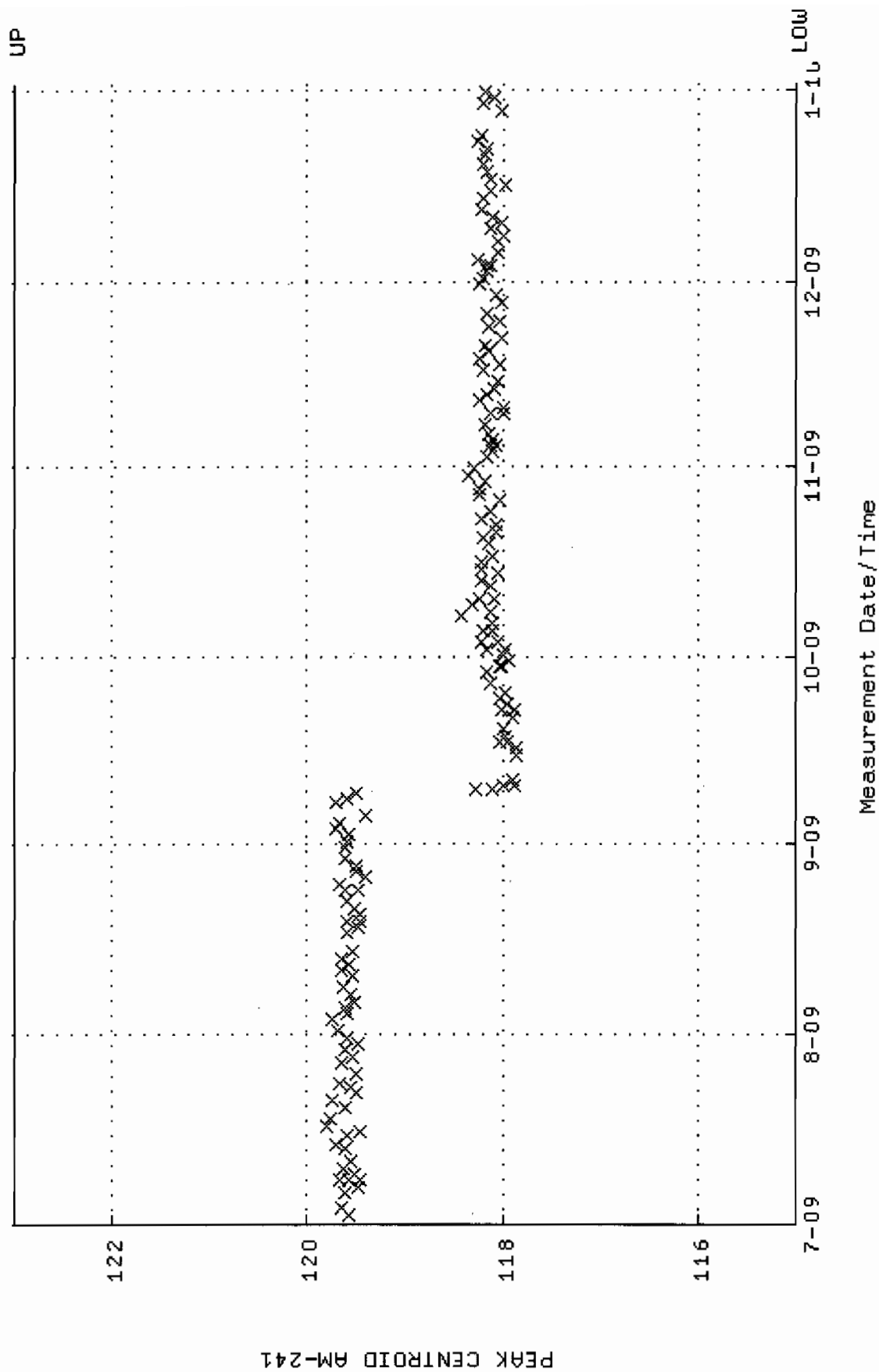
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM13_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 10:47:30 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



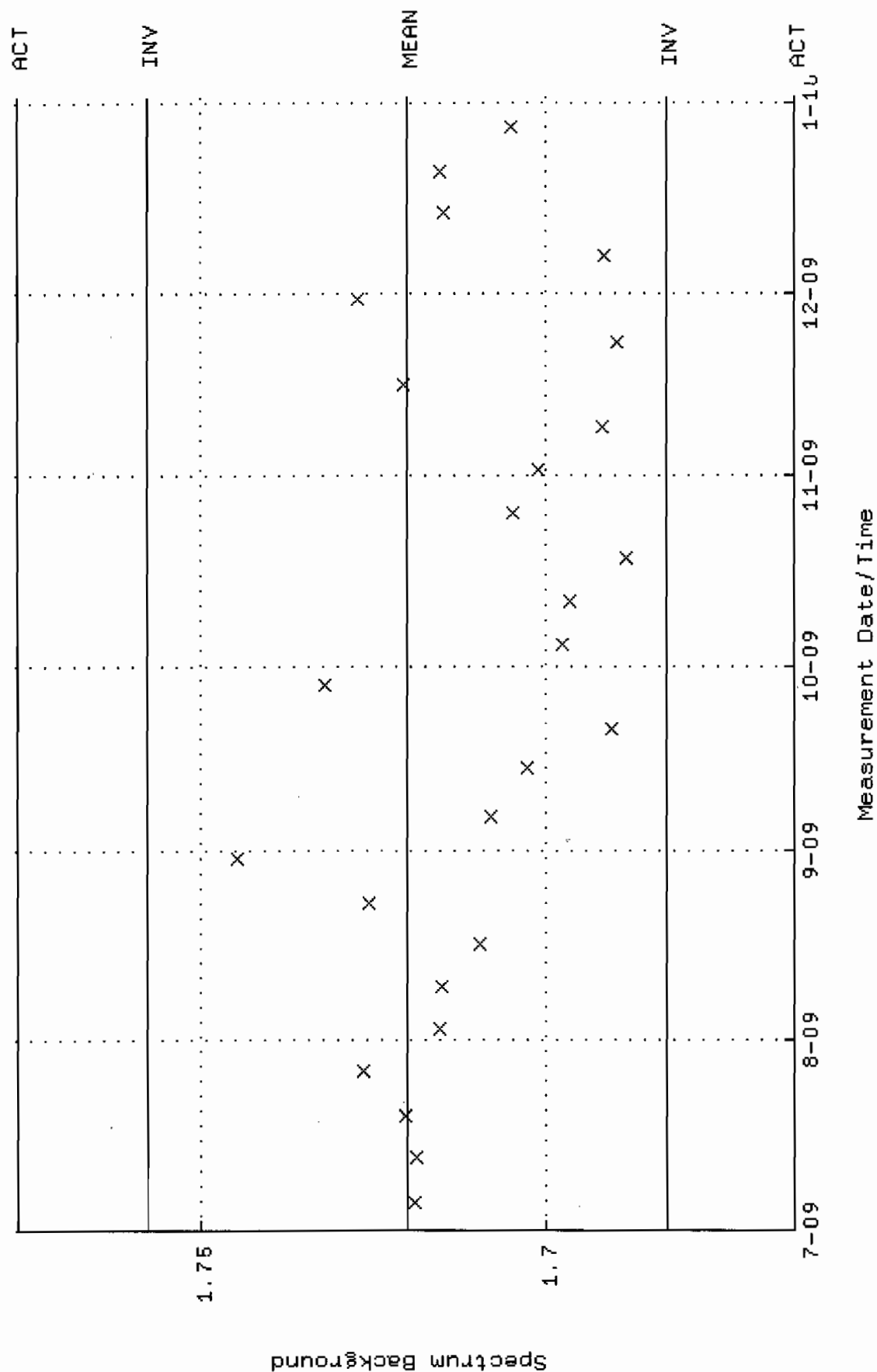
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM13.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:52:16 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 3.27712 +- 1.999120E-02 (0.61 %)



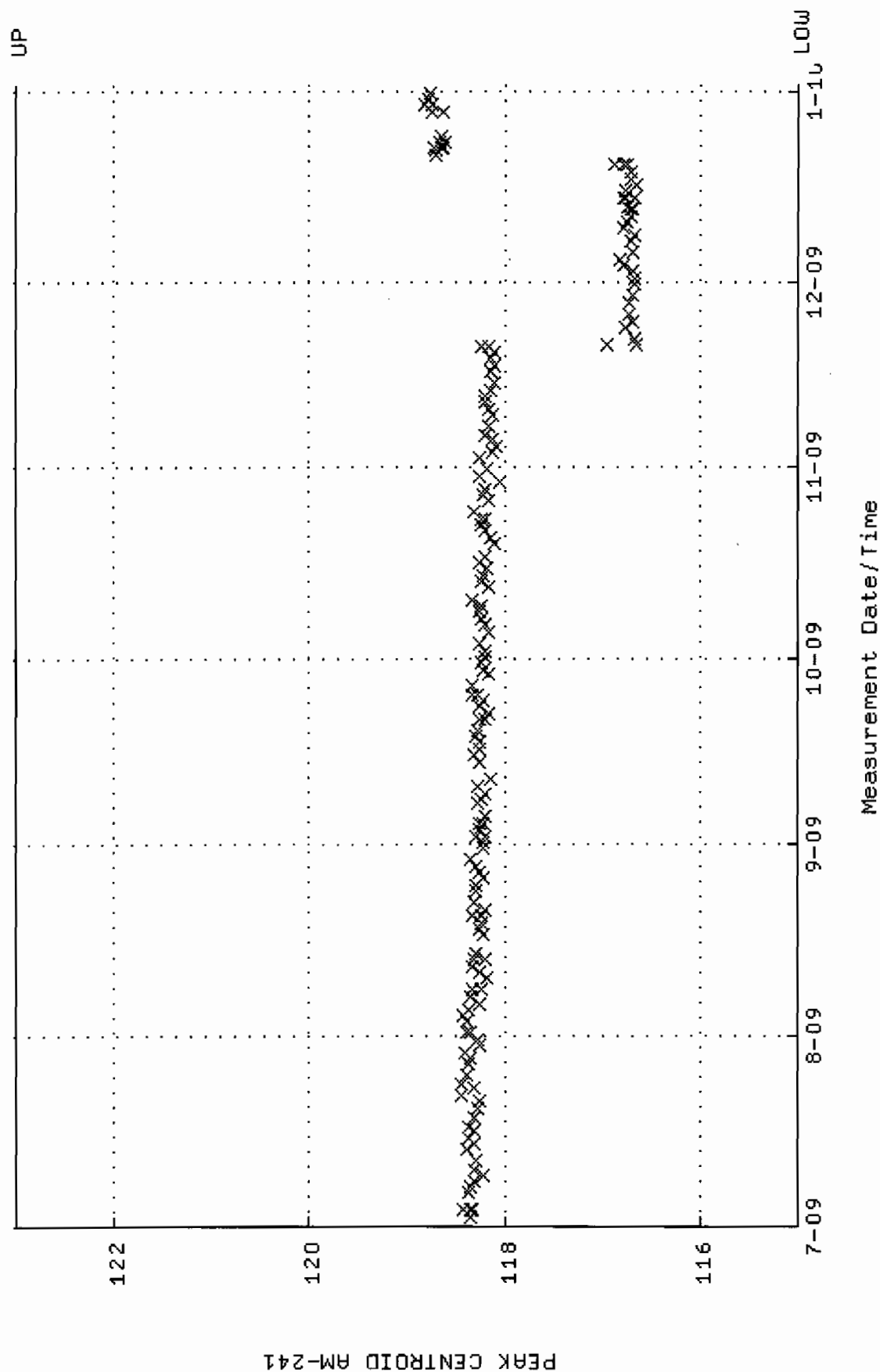
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM15_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 10:47:40 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



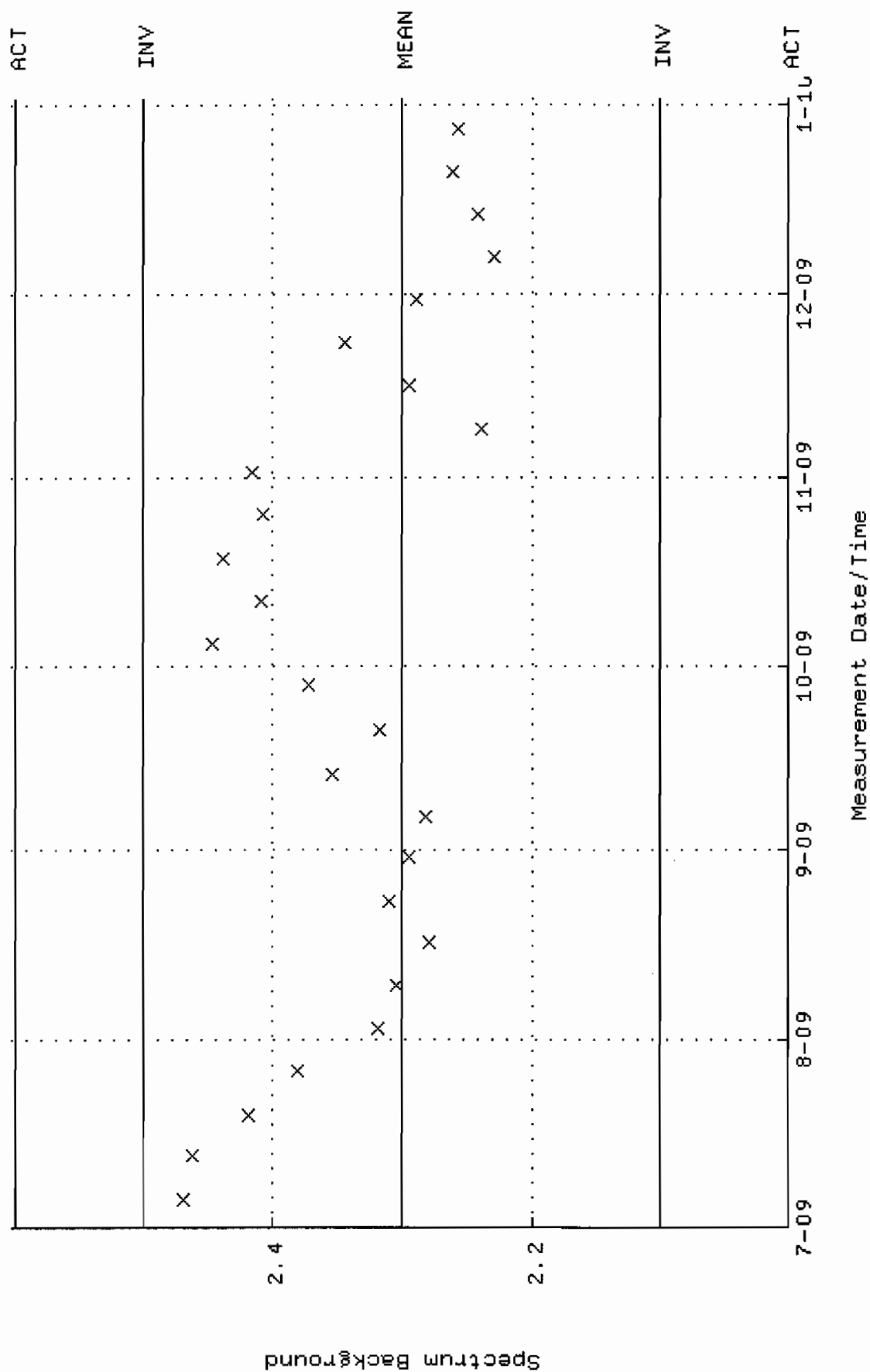
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM15.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:52:45 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 1.72024 +- 1.875820E-02 (1.09 %)



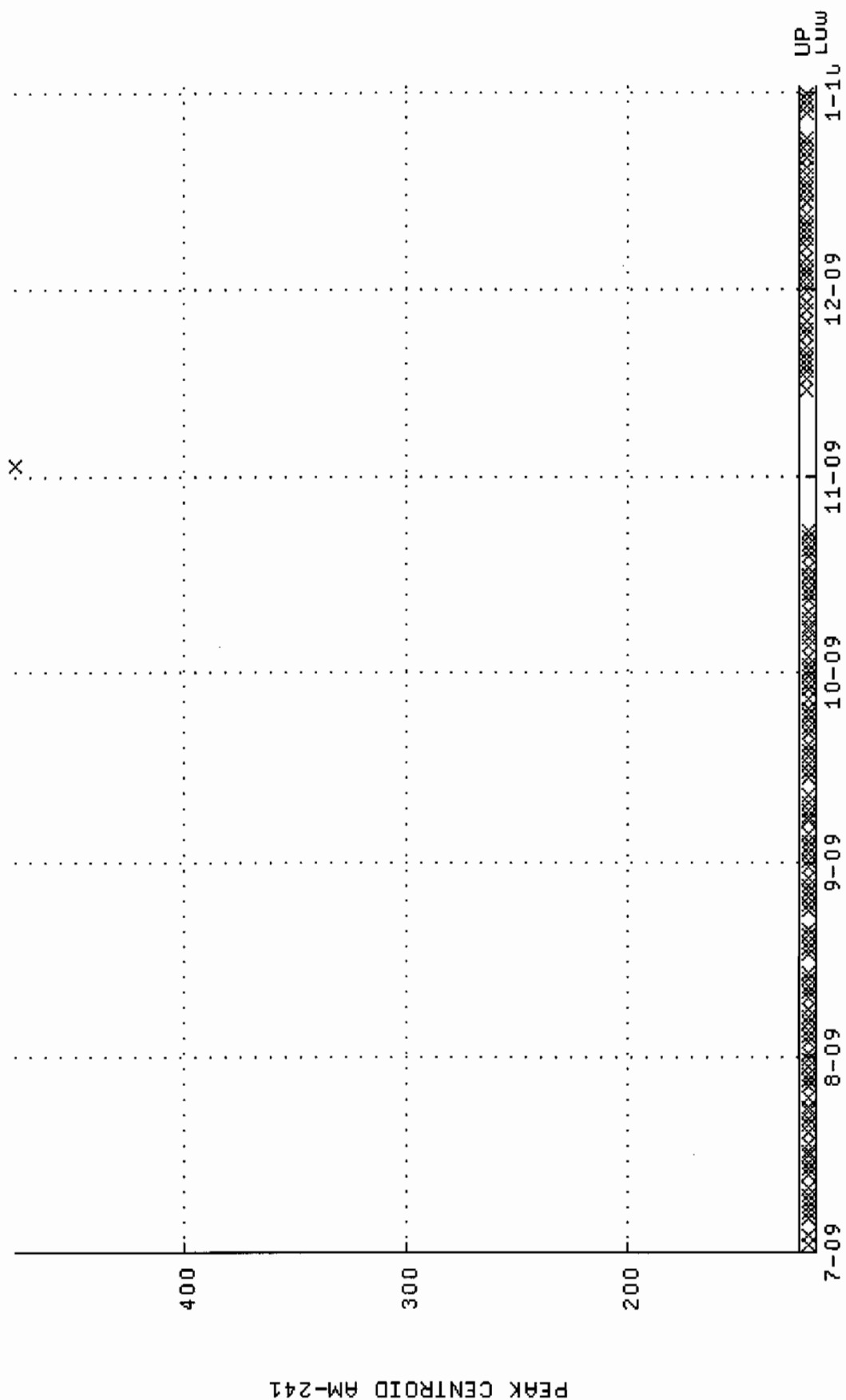
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM18_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 11:04:02 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



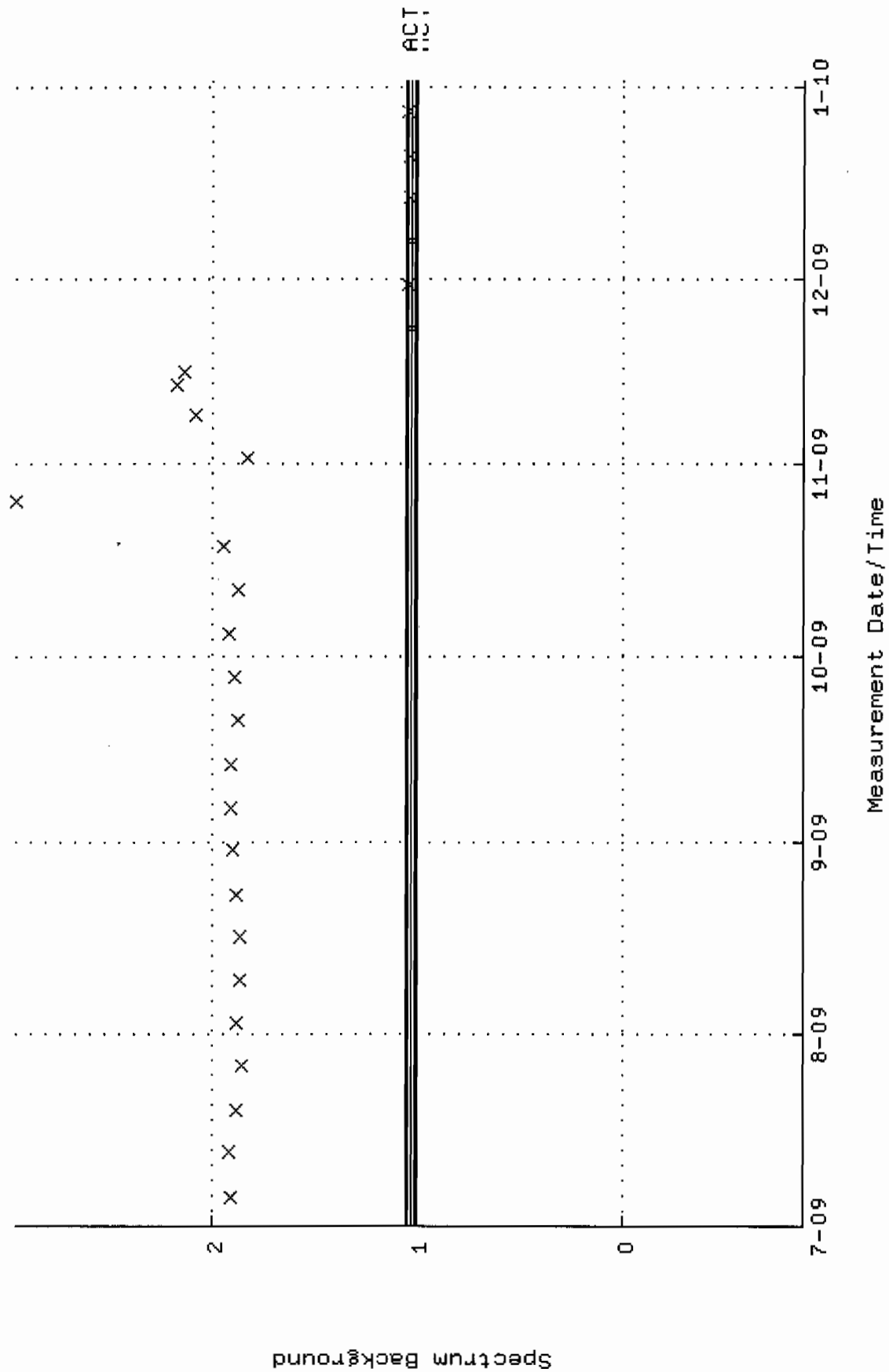
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM18.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:53:23 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 2.30164 +- 9.930626E-02 (4.31 %)



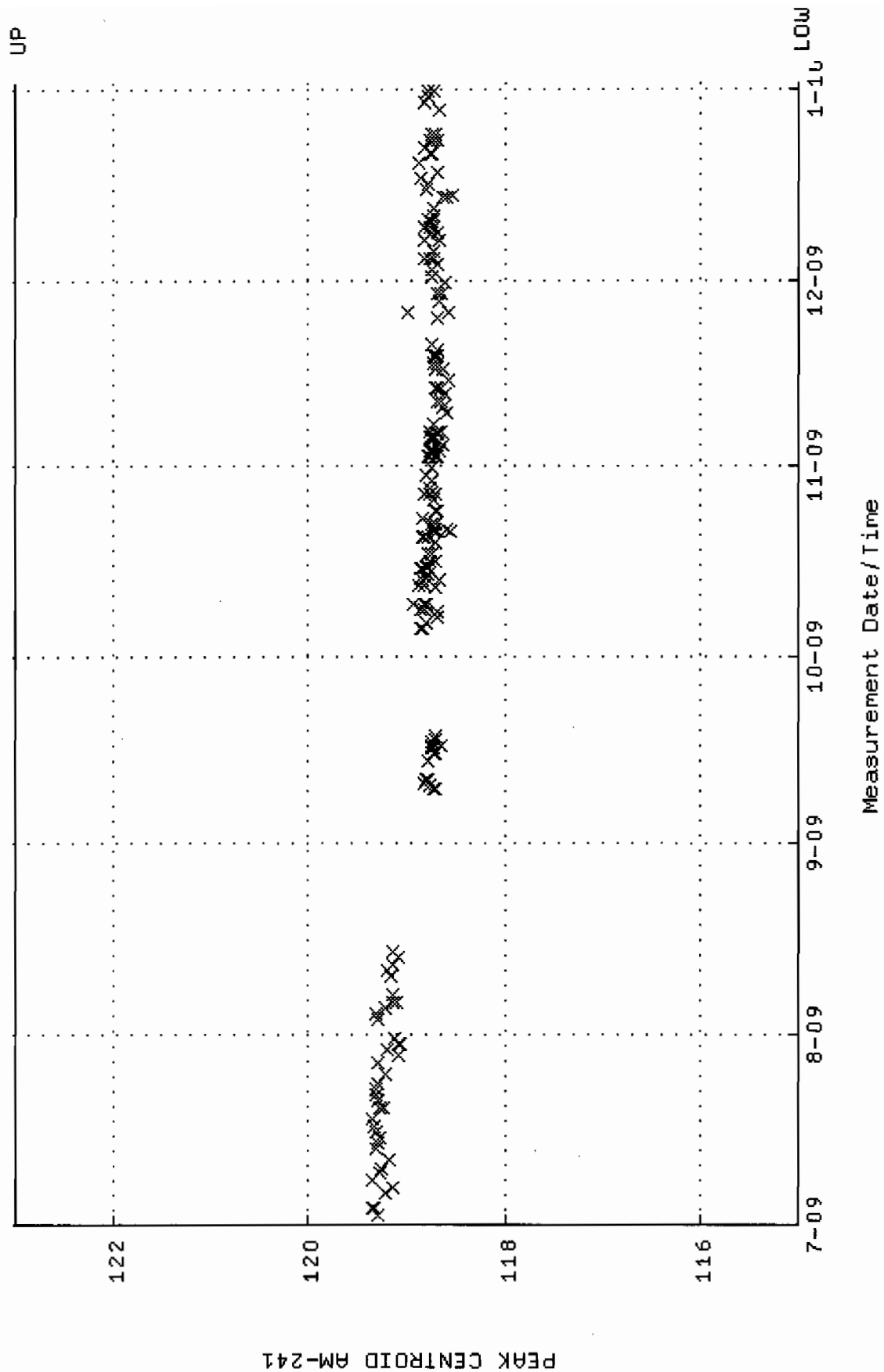
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM21-CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 05:49:13 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



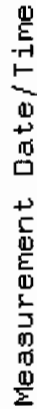
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM21.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 5-JUL-2009 13:54:04 through 1-JAN-2010 12:00:00
 Mean +- Std Dev : 1.03312 +- 8.784250E-03 (0.85 %)



QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM23_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 2-JUL-2009 11:00:38 through 1-JAN-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



Mean + 1 std Dev



STANDARDS DATA

1032

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

74047-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytix 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.

rec'd 11/30/06
RC-S-045-073-0

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytisticsinc.com

ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

CALIBRATION DATE: October 1, 2006 12:00 EST

Isotope	Energy (keV)	Calibration Method ¹	Statistics ²	Calibration ²	Peak Fitting ²	Geometry ²	Impurities ²	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)

²As 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

$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (dpm)}) * (\text{conversion dpm to dpm}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2163.7461 \text{ dpm/mL}$
$(5.2579 \text{ g}) * (218817 \text{ dpm}) * (1 \text{ dpm/dpm}) / (1.0611 \text{ g/mL}) / (5.31725 \text{ g} * 100 \text{ mL}) = 2039.2400 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
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GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Am-241

Isotope	Result	pCi/L - Var. Jar. 1
Mixed Gamma N1	2534	pCi/L
Mixed Gamma N2	2510	pCi/L
Mixed Gamma N3	2413	pCi/L

Mean Value (Counting) = 2485.67
Sidev = 64.065
Pass
Rule 3 (Pass/Fail)

Certificate Value = 2485.68018
Lower Limit = 2357.536524
Upper Limit = 2613.796809
Rule 1 (Pass/Fail)
Two sigma = 128.1301422
10 % of Mean = 248.5666667
Pass
Rule 2 (Pass/Fail)

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. Int. 1
Mixed Gamma N1	854.2	pCi/L	Ver. Int. 3
Mixed Gamma N2	907.6	pCi/L	Ver. Int. 2
Mixed Gamma N3	898.9	pCi/L	

Mean Value (Counting) = 886.90
Stdev = 28.651
Rule 3 (Pass/Fail) Pass

Certificate Value = 933.44144
Lower Limit = 829.597644
Upper Limit = 944.202356
Rule 1 (Pass/Fail) Pass
Two sigma = 57.30235597
10 % of Mean = 88.69000000
Rule 2 (Pass/Fail) Pass

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Handwritten: 12/2/09
12/2/09
12/2/09

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

Isotope	Result	pCi/L - Ver-Int-5
Mixed Gamma N1	1572	pCi/L - Ver-Int-2
Mixed Gamma N2	1495	pCi/L - Ver-Int-3
Mixed Gamma N3	1501	

Mean Value (Counting) = 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

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 4/14/2000 *lett c held 12/1/04*

angela d. johnson 12/13/04

TRM

Invoice:

5 boxes of TRM-1
 10 " " TRM-2 and 3
 5 " each of TRM-1 & 2 & 3 & 4 & 5 & 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	435 ± 18	22.1 ± 1.2	56.0 ± 2.1	38.9 ± 2.0

9911627-01-20

Attention Nancy Slater At GEL
Not For Log In

SF 2001-COC (10-97)
Supplies (6-97) use

Internal Lab
Batch No.

SARWR No. N/A

Press F1 for instructions for each field.

Page 1 of 1

AR/COC- 602945

Dept. No./Mail Stop: 7132 / 1042 Project/Task Manager: PAM PUISSANT Project Name: Record Center Code: N/A Logbook Ref. No.: N/A Service Order No.:		Date Samples Shipped: 11-16-99 Carrier/Waybill No.: 526799 Lab Contact: EDIE KENT Lab Destination: G.E.L. SMO Contact/Phone: Doug Salml / 844-3110 Send Report to SMO: Suzl Jensen/844-3184		Contract No.: AJ-2480A Case No.: 10204 13 SMO Authorization: [Signature] Bill to: Sandia National Laboratories Supplier Services, Dept. P.O. Box 5800 MS 0154	
Location Building N/A Sample No. - Fraction 050484 - 001 050486 - 001 050488 - 001		Tech Area VI Room N/A ER Sample ID or Sample Location Detail PEM-1 TRM-2 -HRM-2 NBHD		Reference LOV (available at SMO) Container Type Volume P 1 L G 1 L G 1 L	
Sample Type 050484 - 001 050486 - 001 050488 - 001		Date/Time Collected 11/15/99 1100 11/15/99 1100 11/15/99 1100		Sample Method S S S	
RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No. Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		Sample Tracking Data Entered (mm/dd/yyyy) Entered by: [Signature] Init Company/Organization/Phone Weston / 7577 / 845-0887		Special Instructions/QC Requirements EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No These "samples" are well characterized and materials being sent to GEL for help to track history Please list as separate report.	
Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Date Name Douglas E. Perry Signature: [Signature]		Date 11-16-99 Time 0900		Abnormal: Conditions on Receipt/Use	
Sample Team Members 1. Relinquished by [Signature] SMO P.O. #47		Date 11-16-99 Time 0900		Date	
1. Relinquished by		Org.		Org.	
2. Relinquished by		Org.		Org.	
2. Received by		Org.		Org.	
3. Relinquished by		Org.		Org.	
3. Received by		Org.		Org.	

Original To Accompany Samples, Laboratory Copy (White) 1st Copy To Accompany Samples, Return to SMO (Blue) 2nd Copy SMO Suspense Copy (Yellow) 3rd Copy Field Copy (Pink)

0244-B Characterization

Sample #	Plutonium-239 Result (pCi/g)	Plutonium-238 Result (pCi/g)	Americium-241 Result (pCi/g)
0244-B 1	39.9	7.88	38.4
0244-B 2	44.1	7.97	40.6
0244-B 3	45.8	6.56	31.8
0244-B 4	43.6	7.69	31.5
0244-B 5	43	7.9	40.2
0244-B 6	43.5	7.84	29.4
0244-B 7	41.3	7.67	36
0244-B 8	44.3	6.95	33.2
0244-B 9	42.7	7.2	29.2
0244-B 10	44.9	7.69	30
0244-B 11	41.4	7.22	30.2
0244-B 12	41.3	7.74	36
0244-B 13	39.2	6.65	33.8
0244-B 14	39.6	7.78	31.1
0244-B 15	45.3	8.41	37.3
0244-B 16	38.1	6.74	33.6
0244-B 17	48.5	8.51	30.5
0244-B 18	36.5	7.23	38.6
0244-B 19	35.3	6.98	30.9
0244-B 20	37.4	8.55	31.3
Mean Value	41.79	7.56	33.68
1 sigma	3.418	0.596	3.724
2 sigma	6.835	1.193	7.448
75% Limit	30.75	6.02	24.38
125% Limit	51.25	10.04	40.63
Expected Result	41.0 +/- 3.0	8.03 +/- 0.37	32.5 +/- 1.1
Achieved Results	41.79 +/- 3.418	7.56 +/- .596	33.68 +/- 3.724

REFERENCE DATA 4/14/2000

Amanda L. Lehn 4/30/04
 Lott & Staley 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 μ 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(NO₃)₃ in 2N HNO₃
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 μ 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. Kuen
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 μCi beta-gamma or 0.0001 μCi 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 μCi beta-gamma or 0.0001 μCi 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 μCi beta-gamma or 0.0001 μCi 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 μCi beta-gamma or 0.0001 μCi 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 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	445-96-2	Isotope:	Americium-243
Prepared By:	Genie Bost	Prepared By:	Angela Johnson
Carrier Conc:	2M HNO3	Prep Date:	01/05/1994
Reference Date:	01/01/1994	Verification Date:	05/11/2009
Ampoule Mass (g):	5.3739 g	Expiration Date:	05/11/2010
Uncertainty:	+/- 3 %	Primary Code:	445-96-2-A
LogBook No:	RC S 005 032	Dilution(mL):	100 mL
		Mass of Parent(g):	5.3419 g
		Density(g/mL):	1.0785
		Balance ID:	38080204

Calculations Converting parent activity to dpm/mL|dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (uCi/g)}) * (\text{conversion dpm to uCi}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (100 \text{ mL}) = 2234238.9912 \text{ dpm/mL}$
$(5.3419 \text{ g}) * (18.84 \text{ uCi/g}) * (2220000 \text{ dpm/uCi}) / (1.0785 \text{ g/mL}) / (100 \text{ mL}) = 2071617.0528 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/05/1994	Genie Bost	.0058	100	445-96-2-B	120.1 dpm/ml	01/05/1995	01/05/1996
09/10/2004	Amanda Fehr	.0325	1000	445-96-2-BB	67.328 dpm/mL	09/10/2005	09/10/2006
01/05/1994	Genie Bost	.0025	100	445-96-2-C	51.77 dpm/ml	01/05/1995	01/05/1996
05/27/2005	Brenda Burke	.000246	100	445-96-2-CC	5.10613 dpm/mL	05/31/2005	05/31/2006
03/25/1994	Genie Bost	.0064	100	445-96-2-D	132.53 dpm/ml	01/05/1995	01/05/1996
08/16/2005	Brenda Burke	.001224	500	445-96-2-DD	5.07144 dpm/mL	08/18/2007	08/18/2008
08/04/1994	Genie Bost	.0094	100	445-96-2-E	194.65 dpm/ml	01/05/1995	01/05/1996
10/13/2005	Brenda Burke	.0017	500	445-96-2-EE	7.0435 dpm/mL	11/15/2005	11/15/2006
08/04/1994	Genie Bost	.0046	100	445-96-2-F	95.25 dpm/ml	01/05/1995	01/05/1996
10/14/2005	Mary Aders	.0141	500	445-96-2-FF	58.4196 dpm/mL	10/14/2005	10/14/2006
09/01/1994	Genie Bost	.0031	100	445-96-2-G	64.19 dpm/ml	01/05/1995	01/05/1996
05/10/2006	Mary Aders	2.0753	1000	445-96-2-GG	4299.227 dpm/mL	09/30/2008	09/30/2009
10/17/1994	Genie Bost	.0969	100	445-96-2-H	2006.52 dpm/ml	01/05/1995	01/05/1996
06/07/2006	Mary Aders	.0365	1000	445-96-2-HH	75.614 dpm/mL	06/19/2006	06/19/2007
02/06/1995	Genie Bost	.0043	100	445-96-2-I	89.04 dpm/ml	01/05/1995	01/05/1996
05/11/2006	Brenda Burke	.000009739	100	445-96-2-II	.201761 dpm/mL	07/26/2006	07/26/2007
07/20/1995	Theresa Austin	.0041	100	445-96-2-J	84.9 dpm/ml	01/05/1995	01/05/1996
05/01/2007	Daniel Roy	.0352	1000	445-96-2-JJ	72.9209 dpm/ml	04/30/2008	04/30/2009
08/10/1995	Garret Ray	.0952	100	445-96-2-K	1971.32 dpm/ml	01/05/1995	01/05/1996
06/12/2007	Julie Strock	.01038	250	445-96-2-KK	22.1496 dpm/mL	05/28/2008	05/28/2009

09/11/1995	Theresa Austin	1.0525	100	445-96-2-L	21794.23 dpm/ml	01/05/1995	01/05/1996
09/11/1995	Theresa Austin	.5107	100	445-96-2-L-1	111.3 dpm/ml	01/05/1995	01/05/1996
04/28/1998	Richard Kinney	.1264	100	445-96-2-M	2617.4 dpm/ml	04/28/1998	04/28/1999
11/01/2007	Eric Williamson	.001274	500	445-96-2-MM	5.27945 dpm/mL	04/06/2008	04/06/2010
10/12/1998	Gregory Smith	.1348	100	445-96-2-N	2791.32 dpm/mL	01/05/1995	01/05/1996
01/25/1999	Gregory Smith	1.9382	100	445-96-2-N-1	50.16 dpm/ml	01/05/1995	01/05/1996
04/19/2008	Daniel Roy	.0424	1000	445-96-2-NN	87.8366 dpm/ml	04/16/2009	04/16/2010
04/21/1999	Greg Smith	.1645	100	445-96-2-O	3406.32 dpm/mL	04/21/1999	04/21/2000
07/27/1999	Gregory Smith	1.567	100	445-96-2-O-2	50.56 dpm/ml	05/13/1999	05/13/2000
10/12/1999	Richard Kinney	1.5589	100	445-96-2-O-3	50.31 dpm/mL	05/13/1999	05/13/2000
04/21/1999	Greg Smith	1.5309	100	445-96-2-O-1	49.4 dpm/mL	04/21/1999	04/21/2000
11/10/1999	Joe Davis	.1809	100	445-96-2-P	3745.92 dpm/mL	05/13/1999	05/13/2000
01/04/2008	Julie Strock	.00001005	100	445-96-2-PP	.20819 dpm/mL	12/29/2008	12/29/2009
01/28/2000	Angela Johnson	.0354	1000	445-96-2-Q	73.3 dpm/mL	02/08/2001	02/08/2002
09/29/2008	Julie Strock	.0025219	250	445-96-2-QQ	20.8977 dpm/mL	09/30/2008	09/29/2009
04/18/2000	Robert Timm	.429	250	445-96-2-R	3553.34 dpm/mL	04/18/2000	04/18/2001
04/23/2009	Tina Schoneman	.001251	500	445-96-2-RR	4.8075 dpm/mL	04/23/2009	04/23/2010
04/13/2001	Angela Johnson	.1869	100	445-96-2-S	3870.16 dpm/mL	04/13/2001	04/13/2002
05/08/2009	Mary Aders	.0141	1000	445-96-2-SS	29.2098 dpm/ml	05/11/2009	05/11/2010
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-103	4153.225 dpm/mL	07/03/2002	07/03/2003
07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-203	4153.225 dpm/mL	07/03/2002	07/03/2003

07/03/2001	Lonnie Morris	2.0057	1000	445-96-2-T-303	4153.225 dpm/mL	07/03/2002	07/03/2003
06/03/2009	Julie Strock	.00000927	100	445-96-2-TT	.1923 dpm/mL	06/05/2009	06/03/2010
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-103	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-203	80.34 dpm/mL	08/23/2001	08/23/2002
08/23/2001	Angela Johnson	.0194	500	445-96-2-U-303	80.34 dpm/ml	08/23/2001	08/23/2002
06/02/2009	Mary Aders	2.1177	1000	445-96-2-UU	4385.1449 dpm/ml	06/04/2009	06/04/2010
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-103	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-203	81.586 dpm/mL	08/27/2002	08/27/2003
08/27/2001	Angela Johnson	.0394	1000	445-96-2-V-303	81.586 dpm/mL	08/27/2002	08/27/2003
03/17/2003	Angela Johnson	2.1108	1000	445-96-2-W	4370.857 dpm/mL	03/14/2006	03/14/2007
04/14/2003	Lonnie Morris	.0315	1000	445-96-2-X	65.2559 dpm/mL	04/14/2004	04/14/2005
05/03/2003	Tim Chandler	.0103	1000	445-96-2-Y	21.3376 dpm/mL	05/05/2003	05/05/2004
05/05/2003	Eric Williamson	.011	1000	445-96-2-Z	22.7877 dpm/mL	04/03/2007	04/03/2008

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for Am-243 Standard 445-96-2-SS

M. Aders 5/15/2009	Isotope	Value	Uncertainty
	445-96-2-SS #1	1.360	0.1690
	445-96-2-SS #2	1.370	0.1690
	445-96-2-SS #3	1.290	0.1590
Mean Value (Counting) =	1.340	101.99	Pass
Stdev =	0.043588989		Rule 3 (Pass/Fail)
Target =	1.314		
Lower Limit =	1.252822021		
Upper Limit =	1.427177979		
Rule 1 Pass/Fail	Pass		
Two sigma =	0.087177979		
10 % of Mean =	0.134		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for standard 445-96-2-SS using 0.1 mL for each source. Each standard was combined with 0.1 mL of Cm-244 standard 0533-O and 50 micrograms of neodymium carrier in a disposable centrifuge tube. Each standard was diluted with 4 mL of 2 M HCl and 6 mL of DI Water. Two mL of 48% HF was added to precipitate Nd (and Americium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Am-243 were calculated by comparison to Am-241 certified values.

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 5% of the certificate value.

M. Aders 5/15/09
Taheri 07509



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 (HNO_3) with a concentration of 3 moles per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling: The SRM should be stored and used at a temperature between 5 °C and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least January 2015. The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation: This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, M.P. Unterwieser, Acting Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group. The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program.

RECEIVED
21/01/05

Lisa R. Karam, Acting Chief
Ionizing Radiation Division

Gaithersburg, Maryland 20899
January 2005

Robert L. Watters, Jr., Chief
Measurement Services Division

Recommended Procedure for Opening the SRM Ampoule

- 1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.
- 2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.
- 3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.
- 4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.
- 5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.
- 6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.
- 7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.
- 8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.
- 9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

PROPERTIES OF SRM 4334H

Certified values

Radionuclide	Plutonium-242
Reference time	1200 EST, 07 June 1994 [b]*
Massic activity of the solution [c]	26.31 Bq·g ⁻¹
Relative expanded uncertainty (k=2)	0.72% [d] [e]
Solution density	(1.105 ± 0.002) g·mL ⁻¹ 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 ⁻¹)	Mass Fraction (g·g ⁻¹)
	H ₂ O	50	0.81
	HNO ₃	3.2	0.19
	²⁴² Pu ⁺⁶	8 × 10 ⁻⁷	2 × 10 ⁻⁷
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 ⁻¹ [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 α 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, $u_i(y)/y$, (%) [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	²³⁹ Pu + ²⁴⁰ Pu <0.000 001 [u]	²³⁹ Pu + ²⁴⁰ Pu 0.000 020 ± 0.000 021 [v]
Plutonium-239	24 110 ± 30		
Plutonium-238	87.7 ± 0.1	²³⁸ Pu + ²⁴¹ 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 μSv 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 , $u_i(y) \equiv |\partial y / \partial x_i| \cdot u(x_i)$, called a **component of combined standard uncertainty** of y . The **combined standard uncertainty** of y , $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty. The combined standard uncertainty is multiplied by a **coverage factor** of $k=2$ to obtain U , the **expanded uncertainty** of y .

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic activity is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

- [e] The value of each component of combined standard uncertainty, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic response is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval $U/2$ to $2U$ (i.e., within a factor of 2 of the estimated value).
- [f] The stated uncertainty is two times the standard uncertainty.
- [g] Estimated limits of detection for alpha-particle-emitting impurities, expressed as massic alpha-particle emission rates (numbers of alpha particles per second per gram), are:
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies less than 3.1 MeV,
 $0.03 \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 3.1 and 4.4 MeV, and
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies greater than 5.0 MeV.
- [h] The plutonium-242 master solution was chemically purified at 1200 EST, 07 June 1994. Americium-241, the daughter of plutonium-241, was removed but has been growing in since that time.
- [i] Estimated limits of detection for photon-emitting impurities, expressed as massic photon emission rates (numbers of photons per second per gram), are:
 $5 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 19 and 39 keV,
 $7 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 49 and 92 keV,
 $2 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 106 and 507 keV,
 $1 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 515 and 1456 keV, and
 $5 \times 10^{-6} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 1465 and 2750 keV,
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of plutonium-242, plutonium-241, or americium-241.
- [j] The stated uncertainty is the standard uncertainty.
- [k] Relative standard uncertainty of the input quantity x_i .
- [m] The relative change in the output quantity y divided by the relative change in the input quantity x_i . If $|\partial y / \partial x_i| \cdot (x_i / y) = 1.0$, then a 1% change in x_i results in a 1% change in y . If $|\partial y / \partial x_i| \cdot (x_i / y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y .
- [n] Relative component of combined standard uncertainty of output quantity y , rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y / \partial x_i| \cdot u(x_i)/y = |\partial y / \partial x_i| \cdot (x_i / y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y / \partial x_i| \cdot (x_i / y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

- [p] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (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 $u_i(y) / y$ 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: Not called
12/8/09
12/9/09



Eckert & Ziegler

Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Isotope:	U-232
Activity (Bq):	3.754 E3
Half-Life:	68.9 years
Calibration Date:	December 9, 2008 12:00 EST
Relative Expanded Uncertainty (k=2):	5.0%

Comments:

Impurities: U-233 <0.3%, Am-241 <0.15%
5.20453 grams 1M HNO₃ solution.

Source Prepared By: WLS
W. Mao, Radiochemist

QA Approved: D. M. Montgomery
D. M. Montgomery, QA Manager

Date: 12-11-08

Standard Traceability Log Rad

Source Material Info		A Solution Material Info	
Parent Code:	1283	Isotope:	Uranium-232
Prepared By:	Daniel Roy	Prepared By:	Daniel Roy
Carrier Conc:	1M HNO3	Prep Date:	12/16/2008
Reference Date:	12/09/2008	Verification Date:	12/30/2008
Ampoule Mass (g):	5.20453 g	Expiration Date:	12/30/2009
Uncertainty:	+/- 5 %	Primary Code:	1283-A
LogBook No:	RC-S-051-002	Dilution(mL):	100 mL
		Mass of Parent(g):	5.0245 g
		Density(g/mL):	1.0285
		Balance ID:	

Calculations Converting parent activity to dpm/mL/dpm/g

$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / (\text{Ampoule Mass(g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/mL)}$
$(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq)}) * (\text{conversion dpm to Bq}) / \text{Density} / (\text{Ampoule Mass (g)} * (\text{Dilution Vol})) = \text{Parent Activity (dpm/g)}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2174.4872 \text{ dpm/mL}$
$(5.0245 \text{ g}) * (3754 \text{ Bq}) * (60 \text{ dpm/Bq}) / (1.0285 \text{ g/mL}) / (5.20453 \text{ g} * 100 \text{ mL}) = 2114.1700 \text{ dpm/g}$

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/16/2008	Daniel Roy	25.1813	1000	1283-B	53.2375 dpm/mL	12/16/2008	12/16/2009
12/30/2008	Tina Schoneman	2.05	250	1283-C	17.336 dpm/mL	12/30/2008	12/30/2009
12/30/2008	Tina Schoneman	.49	250	1283-D	4.1438 dpm/mL	01/09/2009	01/09/2010
01/14/2009	Mary Aders	25.0528	1000	1283-E	52.9659 dpm/mL	01/15/2009	01/15/2010
12/02/2009	Julie Strock	2.076	250	1283-F	17.5561 dpm/mL	01/09/2009	12/30/2009
12/02/2009	Julie Strock	.517	250	1283-G	4.3721 dpm/mL	01/09/2009	12/30/2009
12/09/2009	Ashley Drochter	21.56	1000	1283-H	45.58 dpm/mL	12/09/2009	12/09/2010

Verification for Uranium-232 Standard 1283-H

Analyst: A. Drochter
Date: 12/10/09

Serial #	Value	Uncertainty
1283-H N1	2.020	pCi/L 0.238
1283-H N2	2.000	pCi/L 0.234
1283-H N3	2.060	pCi/L 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 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

A. Drochter
12/14/09

RUNLOGS

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 937704

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243624001	SAMPLE	MXR1	GAM13	07-JAN-10 13:41	DONE	CAN	02-FEB-09 00:00
243624002	SAMPLE	MXR1	GAM21	07-JAN-10 13:52	DONE	CAN	28-JUL-09 00:00
243624003	SAMPLE	MXR1	GAM23	07-JAN-10 13:52	DONE	CAN	02-JUN-09 00:00
243624004	SAMPLE	MXR1	GAM01	07-JAN-10 14:34	DONE	CAN	30-JAN-09 00:00
243624005	SAMPLE	MXR1	GAM02	07-JAN-10 14:35	DONE	CAN	29-OCT-09 00:00
243624006	SAMPLE	MXR1	GAM15	07-JAN-10 14:44	DONE	CAN	16-FEB-09 00:00
243624007	SAMPLE	MXR1	GAM04	07-JAN-10 15:50	DONE	CAN	05-MAY-09 00:00
243624008	SAMPLE	MXR1	GAM12	07-JAN-10 15:50	DONE	CAN	10-FEB-09 00:00
243624009	SAMPLE	MXR1	GAM06	07-JAN-10 15:51	DONE	CAN	04-FEB-09 00:00
243624010	SAMPLE	MXR1	GAM07	07-JAN-10 15:51	DONE	CAN	20-JUL-09 00:00
243624011	SAMPLE	MXR1	GAM10	07-JAN-10 15:51	DONE	CAN	16-MAR-09 00:00
1202006617	MB	MXR1	GAM11	07-JAN-10 15:52	DONE	CAN	18-NOV-09 00:00
1202006618	DUP	MXR1	GAM18	07-JAN-10 16:06	DONE	CAN	23-APR-09 00:00
1202006619	LCS	MXR1	GAM13	07-JAN-10 16:06	DONE	CAN	02-FEB-09 00:00

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 938210

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1202007551	DUP	HAKB	1044	07-JAN-10 10:31	DONE		
1202007552	LCS	HAKB	1045	07-JAN-10 10:31	DONE		
1202007550	MB	HAKB	1046	07-JAN-10 10:31	DONE		
243624007	SAMPLE	HAKB	1077	07-JAN-10 10:31	DONE		
243624008	SAMPLE	HAKB	1078	07-JAN-10 10:31	DONE		
243624009	SAMPLE	HAKB	1079	07-JAN-10 10:31	DONE		
243624010	SAMPLE	HAKB	1080	07-JAN-10 10:31	DONE		
243624011	SAMPLE	HAKB	1256	07-JAN-10 10:33	DONE		
243557014	SAMPLE	HAKB	1001	07-JAN-10 11:38	DONE		
243557015	SAMPLE	HAKB	1002	07-JAN-10 11:38	DONE		
243624001	SAMPLE	HAKB	1003	07-JAN-10 11:38	DONE		
243624002	SAMPLE	HAKB	1004	07-JAN-10 11:38	DONE		
243624003	SAMPLE	HAKB	1005	07-JAN-10 11:38	DUSE		
243624004	SAMPLE	HAKB	1006	07-JAN-10 11:38	DONE		
243624005	SAMPLE	HAKB	1017	07-JAN-10 11:38	DONE		
243624006	SAMPLE	HAKB	1018	07-JAN-10 11:38	DONE		
243624003	SAMPLE	HAKB	1243	08-JAN-10 14:11	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 938221

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243624011	SAMPLE	HAKB	1043	07-JAN-10 10:31	DONE		
1202007553	MB	HAKB	1047	07-JAN-10 10:31	DONE		
1202007554	DUP	HAKB	1048	07-JAN-10 10:31	DONE		
243624005	SAMPLE	HAKB	1083	07-JAN-10 10:31	DUSE		
243624006	SAMPLE	HAKB	1084	07-JAN-10 10:31	DONE		
243624007	SAMPLE	HAKB	1085	07-JAN-10 10:31	DONE		
243624008	SAMPLE	HAKB	1086	07-JAN-10 10:31	DONE		
243624009	SAMPLE	HAKB	1087	07-JAN-10 10:31	DONE		
243624010	SAMPLE	HAKB	1088	07-JAN-10 10:31	DONE		
1202007555	LCS	HAKB	1255	07-JAN-10 10:33	DONE		
243557014	SAMPLE	HAKB	1209	07-JAN-10 11:37	DONE		
243557015	SAMPLE	HAKB	1210	07-JAN-10 11:37	DONE		
243624001	SAMPLE	HAKB	1223	07-JAN-10 11:37	DONE		
243624002	SAMPLE	HAKB	1224	07-JAN-10 11:37	DONE		
243624003	SAMPLE	HAKB	1071	07-JAN-10 11:38	DONE		
243624004	SAMPLE	HAKB	1076	07-JAN-10 11:38	DONE		
243624005	SAMPLE	HAKB	1210	08-JAN-10 14:23	DUSE		
243624005	SAMPLE	HAKB	1006	12-JAN-10 15:55	DUSE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 938222

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243624011	SAMPLE	HAKB	1114	09-JAN-10 11:00	DONE		
243557014	SAMPLE	HAKB	1130	09-JAN-10 11:00	DONE		
243557015	SAMPLE	HAKB	1135	09-JAN-10 11:01	DUSE		
1202007556	MB	HAKB	1136	09-JAN-10 11:01	DONE		
1202007557	DUP	HAKB	1137	09-JAN-10 11:01	DONE		
1202007558	LCS	HAKB	1138	09-JAN-10 11:01	DONE		
243624001	SAMPLE	HAKB	1139	09-JAN-10 11:01	DONE		
243624002	SAMPLE	HAKB	1140	09-JAN-10 11:01	DONE		
243624003	SAMPLE	HAKB	1141	09-JAN-10 11:01	DONE		
243624004	SAMPLE	HAKB	1142	09-JAN-10 11:01	DONE		
243624005	SAMPLE	HAKB	1143	09-JAN-10 11:01	DONE		
243624006	SAMPLE	HAKB	1144	09-JAN-10 11:01	DONE		
243624007	SAMPLE	HAKB	1145	09-JAN-10 11:01	DONE		
243624008	SAMPLE	HAKB	1146	09-JAN-10 11:01	DONE		
243624009	SAMPLE	HAKB	1147	09-JAN-10 11:01	DONE		
243624010	SAMPLE	HAKB	1148	09-JAN-10 11:01	DONE		
243557015	SAMPLE	HAKB	1132	11-JAN-10 11:56	DONE		

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 941241

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
243624005	SAMPLE	HAKB	1028	15-JAN-10 13:23	DONE		
1202014510	MB	HAKB	1029	15-JAN-10 13:23	DONE		
1202014511	DUP	HAKB	1030	15-JAN-10 13:23	DONE		
1202014512	LCS	HAKB	1031	15-JAN-10 13:23	DONE		